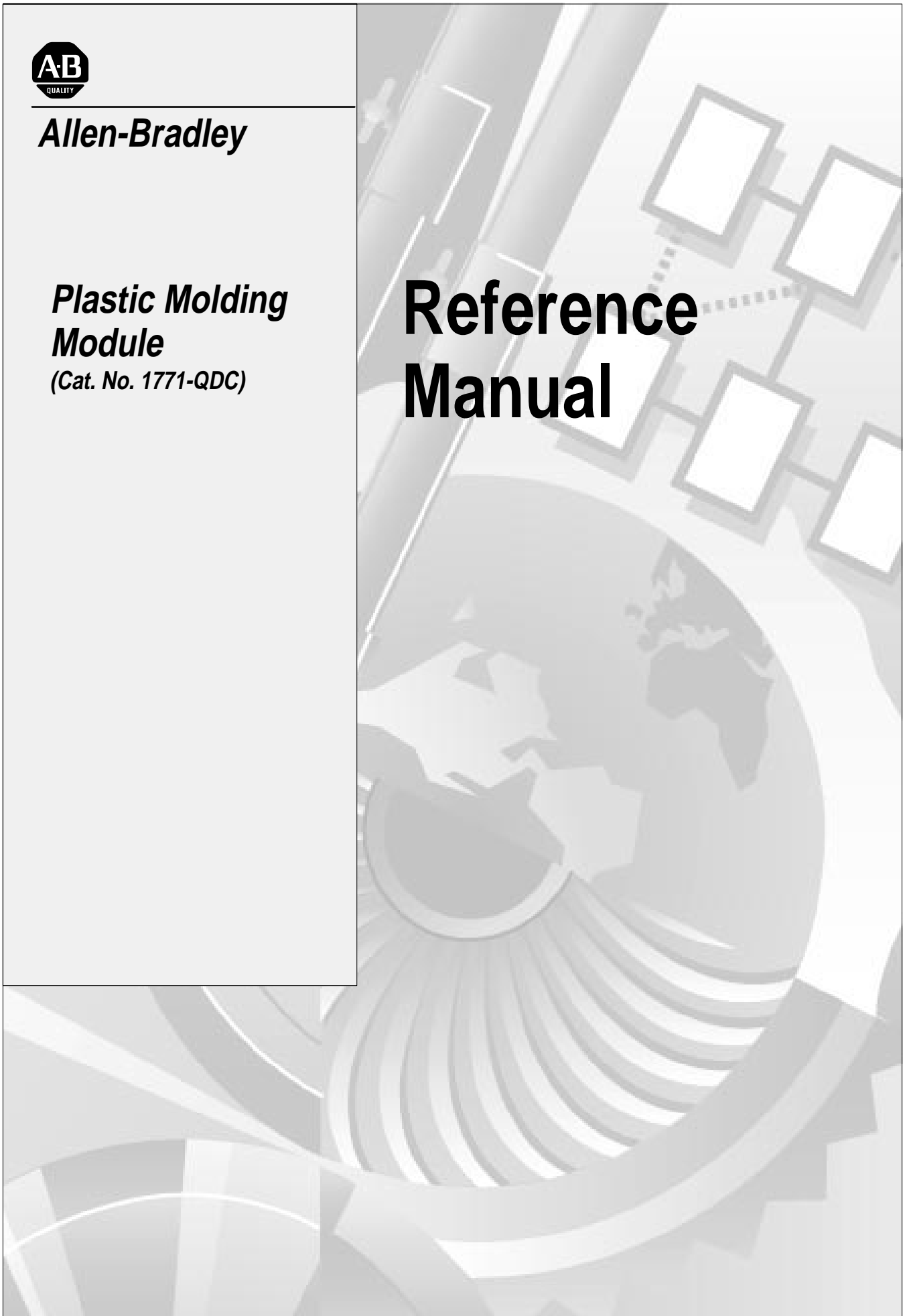**Allen-Bradley**

Plastic Molding Module
(Cat. No. 1771-QDC)

Reference Manual

Important User Information

Solid state equipment has operational characteristics differing from those of electromechanical equipment. "Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls" (Publication SGI-1.1) describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

In no event will the Allen-Bradley Company be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, the Allen-Bradley Company cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Allen-Bradley Company with respect to use of information, circuits, equipment, or software described in this manual.

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Throughout this manual we use notes to make you aware of safety considerations.

> ⚠ **ATTENTION:** Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss.

Attentions help you
- identify a hazard
- avoid the hazard
- recognize the consequences

Important: Identifies information that is especially important for successful application and understanding of the product.

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Table of Contents

New Information

This manual is a revision of the November 1992 edition for module upgrade to series C, revision E and series D, revision A.

It contains information on the following enhancements:

For this enhancement:	Refer to:	On page:
Pro-set 700 Software data table addresses (same as Pro-Set 600 addresses)	chapter 1	throughout
time delay to avoid nuisance alarms	MCC64	2-73
more accurate end-of-post-decompression position (now includes shot size (PPC61) + cushion size (PPC62)	PSC05	2-93
adjust the stop point to an offset rather than 0V or 4mA	MCC05-08, and MCC error codes 405-408	2-69 4-4
override loss-of-sensor protection	MCC02-B08 thru B15	2-68
loss-of-sensor protection with indication by system status bits	SYS08-B00 thru B07 SYS12-B00 thru B07	3-33 3-35
added a tolerance with hysteresis of 0.05" (0.5mm) to mold open and ejector retract positions indicated by their status bits	SYS03-B07 for OPC62 SYS03-B15 for EPC60	3-27 3-28
detect and report double-command-bit error in DYC01, and in DYC02	SYS23 SYS24	3-46
you can enter maximum travel limits as position setpoints	chapter 4, error codes	throughout
starting in Series D added process trace to store traces of machine performance (for Process Trace User Manual, see publication 6500-6.5.21)	configuration block PTC status block PTS command bits in DYC status bits in SYS PTC error codes	2-95 thru 2-96 3-22 thru 3-24 2-23 and 2-24 3-39, 40, 41, 42 4-57
single-transfer programming to report ejector status	appendix A	A-1

To help you find this new information, we added change bars as shown to the right.

New Format

We have rearranged the format of this manual for quicker reference and easier usage. The most prominent new feature is the order in which we present command and status blocks. They are now in alphabetical order.

Notes:

Preface

Read this preface to familiarize yourself with the manual.
This preface covers the following topics:

- who should use this manual
- the purpose of this manual
- abbreviations, symbols and terms
- Allen-Bradley support

Who Should Use this Manual

Use this manual if you are responsible for designing, installing, programming, or troubleshooting injection molding control systems that use Allen-Bradley programmable logic controllers.

You should have a basic understanding of Allen-Bradley PLC-5® processors and be able to interpret the ladder logic instructions required to control your application.

Purpose of this Manual

This manual provides reference information for the 1771-QDC Plastic Molding Module. It provides lists of words, bits, addresses, and error codes needed for all applications. It also describes procedures you use to calibrate the module.

Contents of this Manual

Chapter	Title	Contents
1	Abbreviated Command and Status Blocks	A summary list of command and status block words with Pro-Set addresses used by the QDC module.
2	Word/Bit Descriptions for Command Blocks	A detailed list of command block words with word/bit descriptions.
3	Word/Bit Descriptions for Status Blocks	A detailed list of status block words with word/bit descriptions.
4	Programming Error Codes	A list of all possible error codes that could be presented when you enter invalid data in command blocks.
5	Specifications	Provides physical, electrical, environmental, and functional specifications for the QDC module.
6	Calibration Instructions	Provides procedures for calibrating the QDC module.

Related Documentation

The following documents contain additional information concerning Allen-Bradley QDC and PLC products. To obtain a copy, contact your local Allen-Bradley office or distributor.

For	Read This Document	Document Number
In-depth information on grounding and wiring Allen-Bradley programmable controllers	Allen-Bradley Programmable Controller Grounding and Wiring Guidelines	1770-4.1
Selecting your QDC module's mode of operation and matching it to your machine's hydraulics	Plastic Molding Module Application Guide	1771-4.10
Installing and configuring your QDC module to control inject operations	Plastic Molding Module User Manual 1771-QDC Inject Mode Operation	1771-6.5.85
Installing and configuring your QDC module to control both inject and clamp operations	Plastic Molding Module User Manual, 1771-QDC Inject and Clamp Mode Operation	1771-6.5.86
Installing and configuring your QDC module to control both clamp and eject operations	Plastic Molding Module User Manual, 1771-QDC Clamp and Eject Mode Operation	1771-6.5.87
Installing and configuring your QDC module to control inject, clamp, and eject operations	Plastic Molding Module User Manual, 1771-QDC Inject, Clamp, and Eject Mode Operation	1771-6.5.93
Selecting instructions and organizing memory when writing ladder logic to run your machine	1785 PLC-5 Programmable Controller Instruction Set Reference	1785-6.1
Installing the PLC processor and I/O modules	1785 PLC-5 Programmable Controller Quick Start	1785-10.4
Installing Pro-Set 700 injection molding software	Pro-Set 700 Installation Instructions	6500-5.4
Installing your Pro-Set 700 operator interface	Pro-Set 700 Operator Interface Installation Manual	6500-6.2.1
Customizing Pro-Set 700 software for your application	Pro-Set 700 Software Release 2.1 Reference Manual	6500-6.4.3
Selecting the Pro-Set 600 software that matches the requirements of your molding machine	Pro-Set 600 Operator Interface Software for Injection Molding Designer's Guide	6500-6.5.11
Transferring your Pro-Set 600 software from a floppy to your hard drive and adding overlays into your PLC-5 and PanelView application files	Pro-Set 600 Operator Interface Software for Injection Molding Software Assembly Manual	6500-6.5.12
Installing Pro-Set 600 overlay(s) into your application files	Pro-Set 600 Operator Interface Software for Injection Molding Software Overlay Installation Manual	6500-6.5.13
Customizing your Pro-Set 600 build for your machine control requirements.	Pro-Set 600 Operator Interface Software for Injection Molding Software Customization Manual	6500-6.5.14
Support to customize your software control system.	Pro-Set 600 Operator Interface Software for Injection Molding Software Reference Manual	6500-6.5.15
Setting up your molding machine for use with Pro-Set 700 software	Pro-Set 700 Software Release 2.1 User Manual	6500-6.5.18
Using co-injection software	Pro-Set 700 Co-injection Software User Manual	6500-6.5.19
Inputting injection molding system setpoints and actuals	Pro-Set 700 Systems Jobsetting Guide	6500-6.9.3
Installing modules for co–injection applications	Installing Co-injection and Plastic Molding Modules Quick Start	6500-10.1
A description of important differences between solid-state programmable controller products and hard-wired electromechanical devices	Application Considerations for Solid-State Controls	SGI-1.1
An article on wire sizes and types for grounding electrical equipment	National Electrical Code	National Fire Protection Assoc. of Boston, MA.
A complete listing of current Allen-Bradley documentation	Allen-Bradley Publication Index	SD499
A glossary of industrial automation terms and abbreviations	Allen-Bradley Industrial Automation Glossary	AG-7.1

Abbreviations, Symbols, and Terms

The following abbreviations, symbols, and terms are specific to this

product or are commonly used throughout this manual.

We use an abbreviated catalog number or name when referring to Allen-Bradley equipment or software:

Abbreviated Name:	Item:
ERC™	Expert Response Compensation
PanelView™ Color display	PanelView Operator Interface Terminal (2711-KC1)
PLC Processor	PLC-5 Programmable Controller
Pro-Set™ 600 Software	Pro-Set 600 Injection Molding Operator Interface Software (6500-PS600)
Pro-Set™ 700 Software	Pro-Set 700 Software (6500-PS700)
QDC module	1771-QDC Plastic Molding Module

The following table presents other symbols and terms we commonly use throughout this manual:

Symbol/Term:	Definition:
$\leq$	is equal to or less than
$<$	is less than
$>$	is greater than
A-B	Allen-Bradley
A/D	analog to digital
BTR	Block-transfer Read
BTW	Block-transfer Write
Command Block	Data downloaded from the PLC data table to the QDC module to make configuration changes or to initiate machine actions
Configuration Block	Subset of command blocks containing machine-specific setpoints
D/A	digital to analog
Direct Acting Valve	An analog control valve that delivers increasing velocity or pressure with increasing signal input
FF	Feed Forward
F-to-T	False to True
in.(mm)/s	inches (millimeters) per second
I/O	Input/Ouput device
ISA	Instrument Society of America
PID	Proportional-Integral-Derivative
Profile	A group of mold/part setpoints which define a given machine operation to the QDC module
Profile Block	Command block containing mold/part setpoints
RFU	Reserved for future use

Reverse Acting Valve	An analog control valve that delivers increasing velocity or pressure with decreasing signal input
Selected Valve	In multi-valve systems, depending on the configured profile, the QDC module controls one valve and presets the setting of the remaining valves to produce molding-machine profiles. We call the valve being controlled by the QDC module's algorithms the selected valve. Multiple axes of control, such as the clamp and ejector cylinders, may require additional control valves.
Status Block	Blocks used by the QDC module to report information to the PLC-5 about the QDC module's current operating status
SWTL	Software travel limit
Unselected Valves	In multi-valve systems, depending on the configured profile, the QDC module controls one valve and presets the remaining valves to produce molding-machine profiles. We call the valves that are preset with an open loop percentage setpoint the unselected valves.

Allen-Bradley Support

Allen-Bradley offers support services worldwide, with over 75 Sales/Support Offices, 512 authorized Distributors and 260 authorized Systems Integrators located throughout the United States alone, plus Allen-Bradley representatives in every major country in the world.

Local Product Support

Contact your local Allen-Bradley representative for:

- sales and order support
- product technical training
- warranty support
- support service agreements

Technical Product Assistance

If you need to contact Allen-Bradley for technical assistance, please review the information in the Troubleshooting chapters of User Manuals 1771-6.85, 1771-6.86, 1771-6.87, and 1771-6.5.93 first. Then call your local Allen-Bradley representative.

Abbreviated Command and Status Blocks

Chapter Contents

Use this chapter as a quick reference to *word descriptions* and *Pro-Set addresses* of all data blocks used by the QDC module.

For complete word and bit descriptions of these data blocks, see Chapter 3 (command) and Chapter 4 (status).

The following tables list command and status blocks in this chapter by page number. Blocks are presented in abbreviated format. Addresses are for both Pro-Set 600 and Pro-Set 700. Where noted, use the alternate addresses for the singular combination of Pro-Set 600 and the clamp/Eject mode of operation.

Command Block:	Block ID:	Page:	Status Block:	Block ID:	Page:
CLC	27	1-2	CLS	27	1-36
CPC	7	1-3	CPS	7	1-37
DYC	25	1-4			
EAC	22	1-5			
EPC	24	1-6	EPS	24	1-39
ERC	23	1-7			
FCC	3	1-8			
FOC	17	1-10			
HDC	11	1-11			
HPC	12	1-13	HPS	12	1-40
INC	8	1-14			
IPC	9	1-15	IPS	9	1-41
JGC	2	1-16			
LPC	6	1-18			
MCC	1	1-19	SYS	1	1-47
OPC	21	1-21	OPS	21	1-42
OSC	20	1-22			
PKC	10	1-23			
PLC	14	1-24			
PPC	15	1-26	PPS	15	1-44
PRC	13	1-27			
PSC	16	1-28			
PTC	28	1-29	PTS	28	1-45
RLC	26	1-30	RLS	26	1-46
SCC	4	1-30			
SOC	18	1-32			
TCC	5	1-33			
TOC	19	1-35			

CLC – Clamp and Eject
ERC Values Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
CLC01	B37:40	Block ID 00000000 00011011
CLC02-04	B37:41-43	RFU
ERC Values for Clamp Close Profiles		
CLC05-08	N43:601-604	RFU
CLC09	N43:605	Segment 1 (first clamp close)
CLC10	N43:606	Segment 2 (first clamp close)
CLC11	N43:607	Segment 3 (first clamp close)
CLC12	N43:608	Segment 4 (second clamp close)
CLC13	N43:609	Segment 5 (second clamp close)
CLC14	N43:610	Segment 6 (second clamp close)
CLC15	N43:611	Segment 7 (third clamp close)
CLC16	N43:612	Segment 8 (third clamp close)
CLC17	N43:613	Segment 9 (third clamp close)
CLC18	N43:614	Segment 1 (clamp LPC)
CLC19	N43:615	Segment 2 (clamp LPC)
ERC Values for Clamp Open Profiles		
CLC20	N43:616	Segment 1 (first clamp open)
CLC21	N43:617	Segment 2 (first clamp open)
CLC22	N43:618	Segment 3 (first clamp open)
CLC23	N43:619	Segment 4 (second clamp open)
CLC24	N43:620	Segment 5 (second clamp open)
CLC25	N43:621	Segment 6 (second clamp open)
CLC26	N43:622	Segment 7 (third clamp open)
CLC27	N43:623	Segment 8 (third clamp open)
CLC28	N43:624	Segment 9 (third clamp open)
CLC29	N43:625	Segment 1 (clamp open slow)
CLC30	N43:626	Segment 2 (clamp open slow)
ERC Values for Ejector Profiles		
CLC31	N43:627	Segment 1 (full advance)
CLC32	N43:628	Segment 2 (full advance)
CLC33	N43:629	Segment 3 (full advance)
CLC34	N43:630	RFU
CLC35	N43:631	Tip retract segment
CLC36	N43:632	RFU
CLC37	N43:633	Tip advance segment
CLC38	N43:634	RFU
CLC39	N43:635	Segment 1 (full retract)
CLC40	N43:636	Segment 2 (full retract)
CLC41	N43:637	Segment 3 (full retract)
ERC Values for Ejector Profiles		
CLC42-64	N43:638-660	RFU

CPC – Clamp Close Profile Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
CPC01	B37:16	Block ID 00000000 00000111
CPC02	B37:17	RFU
CPC03	B37:18	Algorithm and logical bridging selections
CPC04	B37:19	Open/closed loop and ERC selections
Setpoints for 1st Clamp Close Profile		
CPC05-08	N43:241-244	RFU
CPC09	N43:245	Segment 1 velocity
CPC10	N43:246	Segment 1 pressure
CPC11	N43:247	End of Segment 1 position
CPC12	N43:248	Segment 2 velocity
CPC13	N43:249	Segment 2 pressure
CPC14	N43:250	End of Segment 2 position
CPC15	N43:251	Segment 3 velocity
CPC16	N43:252	Segment 3 pressure
CPC17	N43:253	End of Segment 3 position
Setpoints for 2nd Clamp Close Profile		
CPC18	N43:254	Segment 4 velocity
CPC19	N43:255	Segment 4 pressure
CPC20	N43:256	End of Segment 4 position
CPC21	N43:257	Segment 5 velocity
CPC22	N43:258	Segment 5 pressure
CPC23	N43:259	End of Segment 5 position
CPC24	N43:260	Segment 6 velocity
CPC25	N43:261	Segment 6 pressure
CPC26	N43:262	End of Segment 6 position
Setpoints for 3rd Clamp Close Profile		
CPC27	N43:263	Segment 7 velocity
CPC28	N43:264	Segment 7 pressure
CPC29	N43:265	End of Segment 7 position
CPC30	N43:266	Segment 8 velocity
CPC31	N43:267	Segment 8 pressure
CPC32	N43:268	End of Segment 8 position
CPC33	N43:269	Segment 9 velocity
CPC34	N43:270	Segment 9 pressure
CPC35	N43:271	End of Segment 9 position
Setpoints for Clamp Low Pressure Close Profile		
CPC36	N43:272	RFU
CPC37	N43:273	Segment 1 pressure
CPC38	N43:274	End of Segment 1 position
CPC39	N43:275	RFU
CPC40	N43:276	Segment 2 pressure
CPC41-60	N43:277-296	RFU
Critical Process Setpoints		
CPC61	N43:297	Start position for clamp LPC
CPC62	N43:298	Mold safe (parting line) position
CPC63	N43:299	Full tonnage pressure
CPC64	N43:300	RFU

DYC – Dynamic Command Block

Important: If using Pro-Set 600 and a QDC module configured for Clamp/Eject mode, this data is found in alternate files B35 and N41.

Word	Pro-Set Address	Description
Bit-mapped Control Words		
DYC01	B34:24	Block ID 00011001 and jog commands
DYC02	B34:25	Action-execution commands
DYC03	B34:26	Miscellaneous commands
DYC04	B34:27	Status request and status clear commands
DYC05-06	B34:28-29	RFU
DYC07	B34:30	Process trace commands (Series D and newer only)
DYC08	B34:31	Process trace data block request (Series D and newer only)
Direct Set-output Values		
DYC09	N40:121	Output #1
DYC10	N40:122	Output #2
DYC11	N40:123	Output #3
DYC12	N40:124	Output #4
DYC13	N40:125	Output #5
DYC14	N40:126	Output #6
DYC15	N40:127	Output #7
DYC16	N40:128	Output #8
Acceleration Ramp Rates		
DYC17	N40:129	Output #1
DYC18	N40:130	Output #2
DYC19	N40:131	Output #3
DYC20	N40:132	Output #4
DYC21	N40:133	Output #5
DYC22	N40:134	Output #6
DYC23	N40:135	Output #7
DYC24	N40:136	Output #8
Deceleration Ramp Rates		
DYC25	N40:137	Output #1
DYC26	N40:138	Output #2
DYC27	N40:139	Output #3
DYC28	N40:140	Output #4
DYC29	N40:141	Output #5
DYC30	N40:142	Output #6
DYC31	N40:143	Output #7
DYC32	N40:144	Output #8
DYC33-60	N40:145-172	RFU
Request for Programming Error		
DYC61	N40:173	Fetch SYS61 and SYS62
DYC62-64	N40:174-176	RFU

EAC – Ejector Advance Configuration Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
EAC01	B39:0	Block ID 00000000 00010110
EAC02	B39:1	Selected valve configurations
EAC03-04	B39:2-3	RFU
Expert Response Compensation Percentage		
EAC05	N45:1	ERC % minimum velocity
EAC06	N45:2	ERC % minimum pressure
EAC07	N45:3	RFU
Watchdog Timer		
EAC08	N45:4	Profile timer preset
Set-output Values for Unselected Valves (During Advance)		
EAC09	N45:5	Output #1
EAC10	N45:6	Output #2
EAC11	N45:7	Output #3
EAC12	N45:8	Output #4
EAC13	N45:9	Output #5
EAC14	N45:10	Output #6
EAC15	N45:11	Output #7
EAC16	N45:12	Output #8
Acceleration Ramp Rates		
EAC17	N45:13	Output #1
EAC18	N45:14	Output #2
EAC19	N45:15	Output #3
EAC20	N45:16	Output #4
EAC21	N45:17	Output #5
EAC22	N45:18	Output #6
EAC23	N45:19	Output #7
EAC24	N45:20	Output #8
Deceleration Ramp Rates		
EAC25	N45:21	Output #1
EAC26	N45:22	Output #2
EAC27	N45:23	Output #3
EAC28	N45:24	Output #4
EAC29	N45:25	Output #5
EAC30	N45:26	Output #6
EAC31	N45:27	Output #7
EAC32	N45:28	Output #8
End of Stroke Set-output Values		
EAC33	N45:29	Output #1
EAC34	N45:30	Output #2
EAC35	N45:31	Output #3
EAC36	N45:32	Output #4
EAC37	N45:33	Output #5
EAC38	N45:34	Output #6
EAC39	N45:35	Output #7
EAC40	N45:36	Output #8

Pressure Control Limits

EAC41	N45:37	Minimum limit
EAC42	N45:38	Maximum limit
EAC43	N45:39	% output for minimum
EAC44	N45:40	% output for maximum

Velocity Control Limits

EAC45	N45:41	Minimum limit
EAC46	N45:42	Maximum limit
EAC47	N45:43	% output for minimum
EAC48	N45:44	% output for maximum

Advance Stroke Tuning Constants

EAC49	N45:45	Proportional gain, pressure control
EAC50	N45:46	Integral gain, pressure control
EAC51	N45:47	Derivative gain, pressure control
EAC52	N45:48	Proportional gain, velocity control
EAC53	N45:49	Feedforward gain, velocity control
EAC54-56	N45:50-52	RFU

Setpoint for Profile Pressure Alarm

EAC57	N45:53	High pressure alarm
EAC58-64	N45:54-60	RFU

EPC – Ejector Profile Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
EPC01	B39:8	Block ID 00000000 00011000
EPC02	B39:9	RFU
EPC03	B39:10	Algorithm and logical bridging selections
EPC04	B39:11	Open/closed loop and ERC selections
Setpoints for Full Advance Profile		
EPC05-08	N45:121-124	RFU
EPC09	N45:125	Segment 1 velocity
EPC10	N45:126	Segment 1 pressure
EPC11	N45:127	End of Segment 1 position
EPC12	N45:128	Segment 2 velocity
EPC13	N45:129	Segment 2 pressure
EPC14	N45:130	End of Segment 2 position
EPC15	N45:131	Segment 3 velocity
EPC16	N45:132	Segment 3 pressure
EPC17-20	N45:133-136	RFU
Setpoints for Tip Retract Profile		
EPC21	N45:137	Velocity
EPC22	N45:138	Pressure
EPC23	N45:139	End of Tip Retract position
EPC24-26	N45:140-142	RFU
Setpoints for Tip Advance Profile		
EPC27	N45:143	Velocity
EPC28	N45:144	Pressure
EPC29	N45:145	End of Tip Advance position
EPC30-32	N45:146-148	RFU

Setpoints for Full Retract Profile

EPC33	N45:149	Segment 1 velocity
EPC34	N45:150	Segment 1 pressure
EPC35	N45:151	End of Segment 1 position
EPC36	N45:152	Segment 2 velocity
EPC37	N45:153	Segment 2 pressure
EPC38	N45:154	End of Segment 2 position
EPC39	N45:155	Segment 3 velocity
EPC40	N45:156	Segment 3 pressure
EPC41-56	N45:157-172	RFU

Critical Process Setpoints

EPC57	N45:173	Forward dwell timer preset
EPC58	N45:174	RFU
EPC59	N45:175	Fully advanced position
EPC60	N45:176	Fully retracted position
EPC61	N45:177	Clamp position to start ejector profile
EPC62	N45:178	Minimum clamp position for ejector profile
EPC63	N45:179	Maximum ejector position for clamp close profile
EPC64	N45:180	Counter preset for required ejector strokes

ERC – Ejector Retract Configuration Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
ERC01	B39:4	Block ID 00000000 00010111
ERC02	B39:5	Selected valve configurations
ERC03-04	B39:6-7	RFU
Expert Response Compensation Percentage		
ERC05	N45:61	ERC % minimum velocity
ERC06	N45:62	ERC % minimum pressure
ERC07	N45:63	RFU
ERC08	N45:64	RFU
Set-output Values for Unselected Valves (During Retract)		
ERC09	N45:65	Output #1
ERC10	N45:66	Output #2
ERC11	N45:67	Output #3
ERC12	N45:68	Output #4
ERC13	N45:69	Output #5
ERC14	N45:70	Output #6
ERC15	N45:71	Output #7
ERC16	N45:72	Output #8
Acceleration Ramp Rates		
ERC17	N45:73	Output #1
ERC18	N45:74	Output #2
ERC19	N45:75	Output #3
ERC20	N45:76	Output #4
ERC21	N45:77	Output #5
ERC22	N45:78	Output #6
ERC23	N45:79	Output #7
ERC24	N45:80	Output #8

Deceleration Ramp Rates

ERC25	N45:81	Output #1
ERC26	N45:82	Output #2
ERC27	N45:83	Output #3
ERC28	N45:84	Output #4
ERC29	N45:85	Output #5
ERC30	N45:86	Output #6
ERC31	N45:87	Output #7
ERC32	N45:88	Output #8

End of Stroke Set-output Values

ERC33	N45:89	Output #1
ERC34	N45:90	Output #2
ERC35	N45:91	Output #3
ERC36	N45:92	Output #4
ERC37	N45:93	Output #5
ERC38	N45:94	Output #6
ERC39	N45:95	Output #7
ERC40	N45:96	Output #8

Pressure Control Limits

ERC41	N45:97	Minimum limit
ERC42	N45:98	Maximum limit
ERC43	N45:99	% output for minimum
ERC44	N45:100	% output for maximum

Velocity Control Limits

ERC45	N45:101	Minimum limit
ERC46	N45:102	Maximum limit
ERC47	N45:103	% output for minimum
ERC48	N45:104	% output for maximum

Retract Stroke Tuning Constants

ERC49	N45:105	Proportional gain, pressure control
ERC50	N45:106	Integral gain, pressure control
ERC51	N45:107	Derivative gain, pressure control
ERC52	N45:108	Proportional gain, velocity control
ERC53	N45:109	Feedforward gain, velocity control
ERC54-64	N45:110-120	RFU

FCC – First Clamp Close Configuration Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
FCC01	B37:0	Block ID 00000000 00000011
FCC02	B37:1	Selected valve configurations
FCC03-04	B37:2-3	RFU
Expert Compensation Response Percentage		
FCC05	N43:1	ERC % minimum velocity
FCC06	N43:2	ERC % minimum pressure
FCC07	N43:3	RFU
Watchdog Timer		
FCC08	N43:4	Profile watchdog timer

Set-output Values for Unselected Valves (During Profile)

FCC09	N43:5	Output #1
FCC10	N43:6	Output #2
FCC11	N43:7	Output #3
FCC12	N43:8	Output #4
FCC13	N43:9	Output #5
FCC14	N43:10	Output #6
FCC15	N43:11	Output #7
FCC16	N43:12	Output #8

Acceleration Ramp Rates

FCC17	N43:13	Output #1
FCC18	N43:14	Output #2
FCC19	N43:15	Output #3
FCC20	N43:16	Output #4
FCC21	N43:17	Output #5
FCC22	N43:18	Output #6
FCC23	N43:19	Output #7
FCC24	N43:20	Output #8

Deceleration Ramp Rates

FCC25	N43:21	Output #1
FCC26	N43:22	Output #2
FCC27	N43:23	Output #3
FCC28	N43:24	Output #4
FCC29	N43:25	Output #5
FCC30	N43:26	Output #6
FCC31	N43:27	Output #7
FCC32	N43:28	Output #8

End of Profile Set-output Values

FCC33	N43:29	Output #1
FCC34	N43:30	Output #2
FCC35	N43:31	Output #3
FCC36	N43:32	Output #4
FCC37	N43:33	Output #5
FCC38	N43:34	Output #6
FCC39	N43:35	Output #7
FCC40	N43:36	Output #8

Pressure Control Limits

FCC41	N43:37	Minimum limit
FCC42	N43:38	Maximum limit
FCC43	N43:39	% output for minimum
FCC44	N43:40	% output for maximum

Velocity Control Limits

FCC45	N43:41	Minimum limit
FCC46	N43:42	Maximum limit
FCC47	N43:43	% output for minimum
FCC48	N43:44	% output for maximum

Profile Tuning Constants

FCC49	N43:45	Proportional gain, pressure control
FCC50	N43:46	Integral gain, pressure control
FCC51	N43:47	Derivative gain, pressure control
FCC52	N43:48	Proportional gain, velocity control
FCC53	N43:49	Feedforward gain, velocity control
FCC54-56	N43:50-52	RFU

Setpoint for Profile Pressure Alarm

FCC57	N43:53	High pressure alarm
FCC58-64	N43:54-60	RFU

FOC – First Clamp Open Configuration Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
FOC01	B37:20	Block ID 00000000 00010001
FOC02	B37:21	Selected valve configurations
FOC03-04	B37:22-23	RFU
Expert Response Compensation Percentage		
FOC05	N43:301	ERC % minimum velocity
FOC06	N43:302	ERC % minimum pressure
FOC07	N43:303	RFU
Watchdog Timer		
FOC08	N43:304	Profile timer preset
Set-output Values for Unselected Valves (During Profile)		
FOC09	N43:305	Output #1
FOC10	N43:306	Output #2
FOC11	N43:307	Output #3
FOC12	N43:308	Output #4
FOC13	N43:309	Output #5
FOC14	N43:310	Output #6
FOC15	N43:311	Output #7
FOC16	N43:312	Output #8
Acceleration Ramp Rates		
FOC17	N43:313	Output #1
FOC18	N43:314	Output #2
FOC19	N43:315	Output #3
FOC20	N43:316	Output #4
FOC21	N43:317	Output #5
FOC22	N43:318	Output #6
FOC23	N43:319	Output #7
FOC24	N43:320	Output #8
Deceleration Ramp Rates		
FOC25	N43:321	Output #1
FOC26	N43:322	Output #2
FOC27	N43:323	Output #3
FOC28	N43:324	Output #4
FOC29	N43:325	Output #5
FOC30	N43:326	Output #6
FOC31	N43:327	Output #7
FOC32	N43:328	Output #8

End of Profile Set-output Values

FOC33	N43:329	Output #1
FOC34	N43:330	Output #2
FOC35	N43:331	Output #3
FOC36	N43:332	Output #4
FOC37	N43:333	Output #5
FOC38	N43:334	Output #6
FOC39	N43:335	Output #7
FOC40	N43:336	Output #8
Pressure Control Limits		
FOC41	N43:337	Minimum limit
FOC42	N43:338	Maximum limit
FOC43	N43:339	% output for minimum
FOC44	N43:340	% output for maximum
Velocity Control Limits		
FOC45	N43:341	Minimum limit
FOC46	N43:342	Maximum limit
FOC47	N43:343	Minimum output for selected velocity valve
FOC48	N43:344	Maximum output for selected velocity valve
Profile Tuning Constants		
FOC49	N43:345	Proportional gain, pressure control
FOC50	N43:346	Integral gain, pressure control
FOC51	N43:347	Derivative gain, pressure control
FOC52	N43:348	Proportional gain, velocity control
FOC53	N43:349	Feedforward gain, velocity control
FOC54-56	N43:350-352	RFU
Setpoints for Profile Pressure Alarm		
FOC57	N43:353	High pressure alarm
FOC58-64	N43:354-360	RFU

HDC – Hold Configuration Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
HDC01	B38:12	Block ID 00000000 00001011
HDC02	B38:13	Selected valve configurations
HDC03-04	B38:14-15	RFU
Expert Response Compensation Percentage		
HDC05	N44:181	ERC % minimum cavity pressure
HDC06	N44:182	ERC % minimum ram pressure
HDC07-08	N44:183-184	RFU
Set-output Values for Unselected Valves (During Profile)		
HDC09	N44:185	Output #1
HDC10	N44:186	Output #2
HDC11	N44:187	Output #3
HDC12	N44:188	Output #4
HDC13	N44:189	Output #5
HDC14	N44:190	Output #6
HDC15	N44:191	Output #7
HDC16	N44:192	Output #8

Acceleration Ramp Rates

HDC17	N44:193	Output #1
HDC18	N44:194	Output #2
HDC19	N44:195	Output #3
HDC20	N44:196	Output #4
HDC21	N44:197	Output #5
HDC22	N44:198	Output #6
HDC23	N44:199	Output #7
HDC24	N44:200	Output #8

Deceleration Ramp Rates

HDC25	N44:201	Output #1
HDC26	N44:202	Output #2
HDC27	N44:203	Output #3
HDC28	N44:204	Output #4
HDC29	N44:205	Output #5
HDC30	N44:206	Output #6
HDC31	N44:207	Output #7
HDC32	N44:208	Output #8

End of Profile Set-output Values

HDC33	N44:209	Output #1
HDC34	N44:210	Output #2
HDC35	N44:211	Output #3
HDC36	N44:212	Output #4
HDC37	N44:213	Output #5
HDC38	N44:214	Output #6
HDC39	N44:215	Output #7
HDC40	N44:216	Output #8

Ram (Screw) Pressure Control Limits

HDC41	N44:217	Minimum limit
HDC42	N44:218	Maximum limit
HDC43	N44:219	% output for minimum
HDC44	N44:220	% output for maximum

Cavity Pressure Control Limits

HDC45	N44:221	Minimum limit
HDC46	N44:222	Maximum limit
HDC47	N44:223	% output for minimum
HDC48	N44:224	% output for maximum

Profile Tuning Constants

HDC49	N44:225	Proportional gain, ram (screw) pressure control
HDC50	N44:226	Integral gain, ram (screw) pressure control
HDC51	N44:227	Derivative gain, ram (screw) pressure control
HDC52	N44:228	Proportional gain, cavity pressure control
HDC53	N44:229	Integral gain, cavity pressure control
HDC54	N44:230	Derivative gain, cavity pressure control
HDC55-56	N44:231-232	RFU

Setpoints for Profile Pressure Alarms

HDC57	N44:233	High ram (screw) pressure alarm
HDC58	N44:234	High cavity pressure alarm
HDC59-64	N44:235-240	RFU

HPC – Pack/Hold
Profile Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
HPC01	B38:16	Block ID 00000000 00001100
HPC02	B38:17	RFU
HPC03	B38:18	Algorithm and logical bridging selections
HPC04	B38:19	Open/closed loop and ERC selections
Setpoints for Pack Profile		
HPC05-08	N44:241-244	RFU
HPC09	N44:245	Segment 1 cavity pressure
HPC10	N44:246	Segment 1 ram (screw) pressure
HPC11	N44:247	Segment 1 time
HPC12	N44:248	Segment 2 cavity pressure
HPC13	N44:249	Segment 2 ram (screw) pressure
HPC14	N44:250	Segment 2 time
HPC15	N44:251	Segment 3 cavity pressure
HPC16	N44:252	Segment 3 ram (screw) pressure
HPC17	N44:253	Segment 3 time
HPC18	N44:254	Segment 4 cavity pressure
HPC19	N44:255	Segment 4 ram (screw) pressure
HPC20	N44:256	Segment 4 time
HPC21	N44:257	Segment 5 cavity pressure
HPC22	N44:258	Segment 5 ram (screw) pressure
HPC23	N44:259	Segment 5 time
Pack Profile Offsets		
HPC24	N44:260	Cavity pressure
HPC25	N44:261	Ram (screw) pressure
Setpoints for Hold Profile		
HPC26	N44:262	Segment 1 cavity pressure
HPC27	N44:263	Segment 1 ram (screw) pressure
HPC28	N44:264	Segment 1 time
HPC29	N44:265	Segment 2 cavity pressure
HPC30	N44:266	Segment 2 ram (screw) pressure
HPC31	N44:267	Segment 2 time
HPC32	N44:268	Segment 3 cavity pressure
HPC33	N44:269	Segment 3 ram (screw) pressure
HPC34	N44:270	Segment 3 time
HPC35	N44:271	Segment 4 cavity pressure
HPC36	N44:272	Segment 4 ram (screw) pressure
HPC37	N44:273	Segment 4 time
HPC38	N44:274	Segment 5 cavity pressure
HPC39	N44:275	Segment 5 ram (screw) pressure
HPC40	N44:276	Segment 5 time
Hold Profile Offsets		
HPC41	N44:277	Cavity pressure
HPC42	N44:278	Ram (screw) pressure
HPC43-60	N44:279-296	RFU
Critical Process Setpoints		
HPC61	N44:297	Cure timer preset
HPC62-64	N44:298-300	RFU

INC – Injection Configuration Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
INC01	B38:0	Block ID 00000000 00001000
INC02	B38:1	Selected valve configurations
INC03-04	B38:2-3	RFU
Expert Response Compensation Percentage		
INC05	N44:1	ERC % minimum velocity
INC06	N44:2	ERC % minimum pressure
INC07	N44:3	RFU
INC08	N44:4	RFU
Set-output Values for Unselected Valves (During Profile)		
INC09	N44:5	Output #1
INC10	N44:6	Output #2
INC11	N44:7	Output #3
INC12	N44:8	Output #4
INC13	N44:9	Output #5
INC14	N44:10	Output #6
INC15	N44:11	Output #7
INC16	N44:12	Output #8
Acceleration Ramp Rates		
INC17	N44:13	Output #1
INC18	N44:14	Output #2
INC19	N44:15	Output #3
INC20	N44:16	Output #4
INC21	N44:17	Output #5
INC22	N44:18	Output #6
INC23	N44:19	Output #7
INC24	N44:20	Output #8
Deceleration Ramp Rates		
INC25	N44:21	Output #1
INC26	N44:22	Output #2
INC27	N44:23	Output #3
INC28	N44:24	Output #4
INC29	N44:25	Output #5
INC30	N44:26	Output #6
INC31	N44:27	Output #7
INC32	N44:28	Output #8
INC33-40	N44:29-36	RFU
Pressure Control Limits		
INC41	N44:37	Minimum limit
INC42	N44:38	Maximum limit
INC43	N44:39	% output for minimum
INC44	N44:40	% output for maximum
Velocity Control Limits		
INC45	N44:41	Minimum limit
INC46	N44:42	Maximum limit
INC47	N44:43	% output for minimum
INC48	N44:44	% output for maximum

Profile Tuning Constants

INC49	N44:45	Proportional gain, pressure control
INC50	N44:46	Integral gain, pressure control
INC51	N44:47	Derivative gain, pressure control
INC52	N44:48	Proportional gain, velocity control
INC53	N44:49	Feedforward gain, velocity control
INC54-56	N44:50-52	RFU

Setpoints for Profile Pressure Alarms

INC57	N44:53	High ram (screw) pressure alarm
INC58	N44:54	High cavity pressure alarm
INC59-64	N44:55-60	RFU

IPC – Injection Profile Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
IPC01	B38:4	Block ID 00000000 00001001
Bit-mapped Control Words		
IPC02	B38:5	RFU
IPC03	B38:6	Algorithm and offset polarity selections
IPC04	B38:7	Open/closed loop and ERC selections
Setpoints for Injection Profile		
IPC05-08	N44:61-64	RFU
IPC09	N44:65	Segment 1 velocity
IPC10	N44:66	Segment 1 pressure
IPC11	N44:67	End of Segment 1 position
IPC12	N44:68	Segment 1 time
IPC13	N44:69	Segment 2 velocity
IPC14	N44:70	Segment 2 pressure
IPC15	N44:71	End of Segment 2 position
IPC16	N44:72	Segment 2 time
IPC17	N44:73	Segment 3 velocity
IPC18	N44:74	Segment 3 pressure
IPC19	N44:75	End of Segment 3 position
IPC20	N44:76	Segment 3 time
IPC21	N44:77	Segment 4 velocity
IPC22	N44:78	Segment 4 pressure
IPC23	N44:79	End of Segment 4 position
IPC24	N44:80	Segment 4 time
IPC25	N44:81	Segment 5 velocity
IPC26	N44:82	Segment 5 pressure
IPC27	N44:83	End of Segment 5 position
IPC28	N44:84	Segment 5 time
IPC29	N44:85	Segment 6 velocity
IPC30	N44:86	Segment 6 pressure
IPC31	N44:87	End of Segment 6 position
IPC32	N44:88	Segment 6 time
IPC33	N44:89	Segment 7 velocity
IPC34	N44:90	Segment 7 pressure
IPC35	N44:91	End of Segment 7 position

Setpoints for Injection Profile (continued)

IPC36	N44:92	Segment 7 time
IPC37	N44:93	Segment 8 velocity
IPC38	N44:94	Segment 8 pressure
IPC39	N44:95	End of Segment 8 position
IPC40	N44:96	Segment 8 time
IPC41	N44:97	Segment 9 velocity
IPC42	N44:98	Segment 9 pressure
IPC43	N44:99	End of Segment 9 position
IPC44	N44:100	Segment 9 time
IPC45	N44:101	Segment 10 velocity
IPC46	N44:102	Segment 10 pressure
IPC47	N44:103	End of Segment 10 position
IPC48	N44:104	Segment 10 time
IPC49	N44:105	Segment 11 velocity
IPC50	N44:106	Segment 11 pressure

Profile Offsets

IPC51	N44:107	Velocity
IPC52	N44:108	Pressure
IPC53-56	N44:109-112	RFU

Pressure Limiting Values

IPC57	N44:113	Ram (Screw) pressure, LimVel/Pos profile
IPC58	N44:114	Ram (Screw) position to begin pressure limiting
IPC59	N44:115	Time delay for change in algorithm

Transition Values

IPC60	N44:116	Time
IPC61	N44:117	Ram (Screw) position
IPC62	N44:118	Ram (Screw) pressure
IPC63	N44:119	Cavity pressure

Transition Pressure Inhibit

IPC64	N44:120	Ram (Screw) position

JGC – Jog Configuration Block

Important: If using Pro-Set 600 and a QDC module configured for Clamp/Eject mode, this data is found in alternate files B35 and N41.

Word	Pro-Set Address	Description
Bit-mapped Control Words		
JGC01	B34:36	Block ID 00000000 00000010
JGC02-04	B34:37-39	RFU
Jog Alarm Setpoints		
JGC05	N40:61	Screw jog RPM alarm
JGC06	N40:62	Ram jog pressure alarm
JGC07	N40:63	Clamp jog pressure alarm
JGC08	N40:64	Ejector jog pressure alarm

Screw-rotate-jog Set-output Values

JGC09	N40:65	Output #1
JGC10	N40:66	Output #2
JGC11	N40:67	Output #3
JGC12	N40:68	Output #4
JGC13	N40:69	Output #5
JGC14	N40:70	Output #6
JGC15	N40:71	Output #7
JGC16	N40:72	Output #8

Ram(Screw)-forward-jog Set-output Values

JGC17	N40:73	Output #1
JGC18	N40:74	Output #2
JGC19	N40:75	Output #3
JGC20	N40:76	Output #4
JGC21	N40:77	Output #5
JGC22	N40:78	Output #6
JGC23	N40:79	Output #7
JGC24	N40:80	Output #8

Ram(Screw)-reverse-jog Set-output Values

JGC25	N40:81	Output #1
JGC26	N40:82	Output #2
JGC27	N40:83	Output #3
JGC28	N40:84	Output #4
JGC29	N40:85	Output #5
JGC30	N40:86	Output #6
JGC31	N40:87	Output #7
JGC32	N40:88	Output #8

Clamp-forward-jog Set-output Values

JGC33	N40:89	Output #1
JGC34	N40:90	Output #2
JGC35	N40:91	Output #3
JGC36	N40:92	Output #4
JGC37	N40:93	Output #5
JGC38	N40:94	Output #6
JGC39	N40:95	Output #7
JGC40	N40:96	Output #8

Clamp-reverse-jog Set-output Values

JGC41	N40:97	Output #1
JGC42	N40:98	Output #2
JGC43	N40:99	Output #3
JGC44	N40:100	Output #4
JGC45	N40:101	Output #5
JGC46	N40:102	Output #6
JGC47	N40:103	Output #7
JGC48	N40:104	Output #8

Ejector-advance-jog Set-output Values

JGC49	N40:105	Output #1
JGC50	N40:106	Output #2
JGC51	N40:107	Output #3
JGC52	N40:108	Output #4

JGC53	N40:109	Output #5
JGC54	N40:110	Output #6
JGC55	N40:111	Output #7
JGC56	N40:112	Output #8
Ejector-retract-jog Set-output Values		
JGC57	N40:113	Output #1
JGC58	N40:114	Output #2
JGC59	N40:115	Output #3
JGC60	N40:116	Output #4
JGC61	N40:117	Output #5
JGC62	N40:118	Output #6
JGC63	N40:119	Output #7
JGC64	N40:120	Output #8

LPC - Clamp Low Pressure Close Configuration Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
LPC01	B37:12	Block ID 00000000 00000110
LPC02	B37:13	Selected valve configurations
LPC03-04	B37:14-15	RFU
Expert Response Compensation Percentage		
LPC05	N43:181	RFU
LPC06	N43:182	ERC % minimum pressure
Watchdog Timer		
LPC07	N43:183	Tonnage timer preset
LPC08	N43:184	Profile timer preset
Set-output Values for Unselected Valves (During Profile)		
LPC09	N43:185	Output #1
LPC10	N43:186	Output #2
LPC11	N43:187	Output #3
LPC12	N43:188	Output #4
LPC13	N43:189	Output #5
LPC14	N43:190	Output #6
LPC15	N43:191	Output #7
LPC16	N43:192	Output #8
Acceleration Ramp Rates		
LPC17	N43:193	Output #1
LPC18	N43:194	Output #2
LPC19	N43:195	Output #3
LPC20	N43:196	Output #4
LPC21	N43:197	Output #5
LPC22	N43:198	Output #6
LPC23	N43:199	Output #7
LPC24	N43:200	Output #8
Deceleration Ramp Rates		
LPC25	N43:201	Output #1
LPC26	N43:202	Output #2
LPC27	N43:203	Output #3
LPC28	N43:204	Output #4

LPC29	N43:205	Output #5
LPC30	N43:206	Output #6
LPC31	N43:207	Output #7
LPC32	N43:208	Output #8
End of Profile Set-output Values		
LPC33	N43:209	Output #1
LPC34	N43:210	Output #2
LPC35	N43:211	Output #3
LPC36	N43:212	Output #4
LPC37	N43:213	Output #5
LPC38	N43:214	Output #6
LPC39	N43:215	Output #7
LPC40	N43:216	Output #8
Pressure Control Limits		
LPC41	N43:217	Minimum limit
LPC42	N43:218	Maximum limit
LPC43	N43:219	% output for minimum
LPC44	N43:220	% output for maximum
LPC45-48	N43:221-224	RFU
Profile Tuning Constants		
LPC49	N43:225	Proportional gain, pressure control
LPC50	N43:226	Integral gain, pressure control
LPC51	N43:227	Derivative gain, pressure control
LPC52-56	N43:228-232	RFU
Setpoint for Profile Pressure Alarm		
LPC57	N43:233	High pressure alarm
LPC58-64	N43:234-240	RFU

MCC – Module Configuration Command Block

Important: If using Pro-Set 600 and a QDC module configured for Clamp/Eject mode, this data is found in alternate files B35 and N41.

Word	Pro-Set Address	Description
Bit-mapped Control Words		
MCC01	B34:32	Block ID 00000000 00000001
MCC02	B34:33	Module density and operating modes
MCC03	B34:34	Input range selection
MCC04	B34:35	Output range selection
MCC05	N40:1	Output #1 stop position adjustment
MCC06	N40:2	Output #2 stop position adjustment
MCC07	N40:3	Output #3 stop position adjustment
MCC08	N40:4	Output #4 stop position adjustment
Ram (Screw) Position Sensor Configuration		
MCC09	N40:5	Minimum position
MCC10	N40:6	Maximum position
MCC11	N40:7	Analog signal @ min position
MCC12	N40:8	Analog signal @ max position
MCC13	N40:9	Minimum SWTL (software travel limit)
MCC14	N40:10	Maximum SWTL
MCC15	N40:11	SWTL alarm deadband
MCC16	N40:12	Digital filter

Ram (Screw) Pressure Sensor Configuration (continued)

MCC17	N40:13	Minimum pressure
MCC18	N40:14	Maximum pressure
MCC19	N40:15	Analog signal @ min pressure
MCC20	N40:16	Analog signal @ max pressure
MCC21	N40:17	High pressure alarm setpoint
MCC22	N40:18	Time delay for pressure alarms

Clamp Position Sensor Configuration

MCC23	N40:19	Minimum position
MCC24	N40:20	Maximum position
MCC25	N40:21	Analog signal @ min position
MCC26	N40:22	Analog signal @ max position
MCC27	N40:23	Minimum SWTL
MCC28	N40:24	Maximum SWTL
MCC29	N40:25	SWTL alarm deadband
MCC30	N40:26	Digital filter

Clamp Pressure Sensor Configuration

MCC31	N40:27	Minimum pressure
MCC32	N40:28	Maximum pressure
MCC33	N40:29	Analog signal @ min pressure
MCC34	N40:30	Analog signal @ max pressure
MCC35	N40:31	High pressure alarm setpoint
MCC36	N40:32	Time delay for pressure alarms

Ejector Position Sensor Configuration

MCC37	N40:33	Minimum position
MCC38	N40:34	Maximum position
MCC39	N40:35	Analog signal @ min position
MCC40	N40:36	Analog signal @ max position
MCC41	N40:37	Minimum SWTL
MCC42	N40:38	Maximum SWTL
MCC43	N40:39	SWTL alarm deadband
MCC44	N40:40	Digital filter

Ejector Pressure Sensor Configuration

MCC45	N40:41	Minimum pressure
MCC46	N40:42	Maximum pressure
MCC47	N40:43	Analog signal @ min pressure
MCC48	N40:44	Analog signal @ max pressure
MCC49	N40:45	High pressure alarm setpoint
MCC50	N40:46	Time delay for pressure alarms

Screw RPM Sensor Configuration

MCC51	N40:47	Minimum RPM
MCC52	N40:48	Maximum RPM
MCC53	N40:49	Analog signal @ min RPM
MCC54	N40:50	Analog signal @ max RPM
MCC55	N40:51	High RPM alarm setpoint
MCC56	N40:52	Time delay for RPM alarms

Cavity (or System) Pressure Sensor Configuration

MCC57	N40:53	Minimum pressure
MCC58	N40:54	Maximum pressure
MCC59	N40:55	Analog signal @ min pressure

MCC60	N40:56	Analog signal @ max pressure
MCC61	N40:57	High pressure alarm setpoint
MCC62	N40:58	Time delay for pressure alarms
MCC63	N40:59	RFU
MCC64	N40:60	Number of input samples for loss-of-sensor alarms

OPC – Clamp Open Profile Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
OPC01	B37:36	Block ID 00000000 00010101
OPC02	B37:37	RFU
OPC03	B37:38	Algorithm and logical bridging selections
OPC04	B37:39	Open/closed loop and ERC selections
Setpoints for 1st Clamp Open Profile		
OPC05-08	N43:541	RFU
OPC09	N43:545	Segment 1 velocity
OPC10	N43:546	Segment 1 pressure
OPC11	N43:547	End of Segment 1 position
OPC12	N43:548	Segment 2 velocity
OPC13	N43:549	Segment 2 pressure
OPC14	N43:550	End of Segment 2 position
OPC15	N43:551	Segment 3 velocity
OPC16	N43:552	Segment 3 pressure
OPC17	N43:553	End of Segment 3 position
Setpoints for 2nd Clamp Open Profile		
OPC18	N43:554	Segment 4 velocity
OPC19	N43:555	Segment 4 pressure
OPC20	N43:556	End of Segment 4 position
OPC21	N43:557	Segment 5 velocity
OPC22	N43:558	Segment 5 pressure
OPC23	N43:559	End of Segment 5 position
OPC24	N43:560	Segment 6 velocity
OPC25	N43:561	Segment 6 pressure
OPC26	N43:562	End of Segment 6 position
Setpoints for 3rd Clamp Open Profile		
OPC27	N43:563	Segment 7 velocity
OPC28	N43:564	Segment 7 pressure
OPC29	N43:565	End of Segment 7 position
OPC30	N43:566	Segment 8 velocity
OPC31	N43:567	Segment 8 pressure
OPC32	N43:568	End of Segment 8 position
OPC33	N43:569	Segment 9 velocity
OPC34	N43:570	Segment 9 pressure
OPC35	N43:571	End of Segment 9 position
Setpoints for Clamp Open Slow Profile		
OPC36	N43:572	Segment 1 velocity
OPC37	N43:573	Segment 1 pressure

Setpoints for Clamp Open Slow Profile (continued)

OPC38	N43:574	End of Segment 1 position
OPC39	N43:575	Segment 2 velocity
OPC40	N43:576	Segment 2 pressure
OPC41-60	N43:577-596	RFU

Critical Process Setpoints

OPC61	N43:597	Start position, clamp open slow
OPC62	N43:598	Full open position
OPC63	N43:599	Mold open dwell timer preset
OPC64	N43:600	RFU

OSC – Clamp Open Slow Configuration Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
OSC01	B37:32	Block ID 00000000 00010100
OSC02	B37:33	Selected valve configurations
OSC03-04	B37:34-35	RFU
Expert Response Compensation Percentage		
OSC05	N43:481	ERC % minimum velocity
OSC06	N43:482	ERC % minimum pressure
OSC07	N43:483	RFU
Watchdog Timer		
OSC08	N43:484	Profile timer preset
Set-output Values for Unselected Valves (during Profile)		
OSC09	N43:485	Output #1
OSC10	N43:486	Output #2
OSC11	N43:487	Output #3
OSC12	N43:488	Output #4
OSC13	N43:489	Output #5
OSC14	N43:490	Output #6
OSC15	N43:491	Output #7
OSC16	N43:492	Output #8
Acceleration Ramp Rates		
OSC17	N43:493	Output #1
OSC18	N43:494	Output #2
OSC19	N43:495	Output #3
OSC20	N43:496	Output #4
OSC21	N43:497	Output #5
OSC22	N43:498	Output #6
OSC23	N43:499	Output #7
OSC24	N43:500	Output #8
Deceleration Ramp Rates		
OSC25	N43:501	Output #1
OSC26	N43:502	Output #2
OSC27	N43:503	Output #3
OSC28	N43:504	Output #4
OSC29	N43:505	Output #5
OSC30	N43:506	Output #6
OSC31	N43:507	Output #7
OSC32	N43:508	Output #8

End of Profile Set-output Values

OSC33	N43:509	Output #1
OSC34	N43:510	Output #2
OSC35	N43:511	Output #3
OSC36	N43:512	Output #4
OSC37	N43:513	Output #5
OSC38	N43:514	Output #6
OSC39	N43:515	Output #7
OSC40	N43:516	Output #8

Pressure Control Limits

OSC41	N43:517	Minimum limit
OSC42	N43:518	Maximum limit
OSC43	N43:519	% output for minimum
OSC44	N43:520	% output for maximum

Velocity Control Limits

OSC45	N43:521	Minimum limit
OSC46	N43:522	Maximum limit
OSC47	N43:523	% output for minimum
OSC48	N43:524	% output for maximum

Profile Tuning Constants

OSC49	N43:525	Proportional gain, pressure control
OSC50	N43:526	Integral gain, pressure control
OSC51	N43:527	Derivative gain, pressure control
OSC52	N43:528	Proportional gain, velocity control
OSC53	N43:529	Feedforward gain, velocity control
OSC54-56	N43:530-532	RFU

Setpoint for Profile Pressure Alarm

OSC57	N43:533	High pressure alarm
OSC58-64	N43:534-540	RFU

PKC – Pack Configuration Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
PKC01	B38:8	Block ID 00000000 00001010
PKC02	B38:9	Selected valve configurations
PKC03-04	B38:10-11	RFU
Expert Response Compensation Percentage		
PKC05	N44:121	ERC % minimum cavity pressure
PKC06	N44:122	ERC % minimum ram pressure
PKC07-08	N44:123-124	RFU
Set-output Values for Unselected Valves (During Profile)		
PKC09	N44:125	Output #1
PKC10	N44:126	Output #2
PKC11	N44:127	Output #3
PKC12	N44:128	Output #4
PKC13	N44:129	Output #5
PKC14	N44:130	Output #6
PKC15	N44:131	Output #7
PKC16	N44:132	Output #8

Acceleration Ramp Rates

PKC17	N44:133	Output #1
PKC18	N44:134	Output #2
PKC19	N44:135	Output #3
PKC20	N44:136	Output #4
PKC21	N44:137	Output #5
PKC22	N44:138	Output #6
PKC23	N44:139	Output #7
PKC24	N44:140	Output #8

Deceleration Ramp Rates

PKC25	N44:141	Output #1
PKC26	N44:142	Output #2
PKC27	N44:143	Output #3
PKC28	N44:144	Output #4
PKC29	N44:145	Output #5
PKC30	N44:146	Output #6
PKC31	N44:147	Output #7
PKC32	N44:148	Output #8
PKC33-40	N44:149-156	RFU

Ram (Screw) Pressure Control Limits

PKC41	N44:157	Minimum limit
PKC42	N44:158	Maximum limit
PKC43	N44:159	% output for minimum
PKC44	N44:160	% output for maximum

Cavity Pressure Control Limits

PKC45	N44:161	Minimum limit
PKC46	N44:162	Maximum limit
PKC47	N44:163	% output for minimum
PKC48	N44:164	% output for maximum

Profile Tuning Constants

PKC49	N44:165	Proportional gain, ram (screw) pressure control
PKC50	N44:166	Integral gain, ram (screw) pressure control
PKC51	N44:167	Derivative gain, ram (screw) pressure control
PKC52	N44:168	Proportional gain, cavity pressure control
PKC53	N44:169	Integral gain, cavity pressure control
PKC54	N44:170	Derivative gain, cavity pressure control

Setpoints for Profile Pressure Alarms

PKC55-56	N44:171-172	RFU
PKC57	N44:173	High ram (screw) pressure alarm
PKC58	N44:174	High cavity pressure alarm
PKC59-64	N44:175-180	RFU

PLC – Plastication Configuration Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
PLC01	B38:24	Block ID 00000000 00001110
PLC02	B38:25	Selected valve configurations
PLC03-04	B38:26-27	RFU

Expert Response Compensation Percentage

PLC05	N44:361	ERC % minimum RPM
PLC06	N44:362	ERC % minimum pressure
PLC07	N44:363	RFU

Watchdog Timer

PLC08	N44:364	Profile timer preset

Set-output Values for Unselected Valves (During Profile)

PLC09	N44:365	Output #1
PLC10	N44:366	Output #2
PLC11	N44:367	Output #3
PLC12	N44:368	Output #4
PLC13	N44:369	Output #5
PLC14	N44:370	Output #6
PLC15	N44:371	Output #7
PLC16	N44:372	Output #8

Acceleration Ramp Rates

PLC17	N44:373	Output #1
PLC18	N44:374	Output #2
PLC19	N44:375	Output #3
PLC20	N44:376	Output #4
PLC21	N44:377	Output #5
PLC22	N44:378	Output #6
PLC23	N44:379	Output #7
PLC24	N44:380	Output #8

Deceleration Ramp Rates

PLC25	N44:381	Output #1
PLC26	N44:382	Output #2
PLC27	N44:383	Output #3
PLC28	N44:384	Output #4
PLC29	N44:385	Output #5
PLC30	N44:386	Output #6
PLC31	N44:387	Output #7
PLC32	N44:388	Output #8

End of Profile Set-output Values

PLC33	N44:389	Output #1
PLC34	N44:390	Output #2
PLC35	N44:391	Output #3
PLC36	N44:392	Output #4
PLC37	N44:393	Output #5
PLC38	N44:394	Output #6
PLC39	N44:395	Output #7
PLC40	N44:396	Output #8

Pressure Control Limits

PLC41	N44:397	Minimum limit
PLC42	N44:398	Maximum limit
PLC43	N44:399	% output for minimum
PLC44	N44:400	% output for maximum

RPM Control Limits

PLC45	N44:401	Minimum limit
PLC46	N44:402	Maximum limit

PLC47	N44:403	% output for minimum
PLC48	N44:404	% output for maximum
Profile Tuning Constants		
PLC49	N44:405	Proportional gain, pressure control
PLC50	N44:406	Integral gain, pressure control
PLC51	N44:407	Derivative gain, pressure control
PLC52	N44:408	Proportional gain, RPM control
PLC53	N44:409	Integral gain, RPM control
PLC54	N44:410	Derivative gain, RPM control
PLC55-56	N44:411-412	Open
Setpoint for Profile Pressure Alarm		
PLC57	N44:413	High pressure alarm
PLC58-64	N44:414-420	RFU

PPC – Plastication Profile Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
PPC01	B38:28	Block ID 00000000 00001111
PPC02	B38:29	RFU
PPC03	B38:30	Algorithm and logical bridging selections
PPC04	B38:31	Open/closed loop and ERC selections
Setpoints for Plastication Profile		
PPC05-08	N44:421-424	RFU
PPC09	N44:425	Segment 1 RPM
PPC10	N44:426	Segment 1 pressure
PPC11	N44:427	End of Segment 1 position
PPC12	N44:428	Segment 1 time
PPC13	N44:429	Segment 2 RPM
PPC14	N44:430	Segment 2 pressure
PPC15	N44:431	End of Segment 2 position
PPC16	N44:432	Segment 2 time
PPC17	N44:433	Segment 3 RPM
PPC18	N44:434	Segment 3 pressure
PPC19	N44:435	End of Segment 3 position
PPC20	N44:436	Segment 3 time
PPC21	N44:437	Segment 4 RPM
PPC22	N44:438	Segment 4 pressure
PPC23	N44:439	End of Segment 4 position
PPC24	N44:440	Segment 4 time
PPC25	N44:441	Segment 5 RPM
PPC26	N44:442	Segment 5 pressure
PPC27	N44:443	End of Segment 5 position
PPC28	N44:444	Segment 5 time
PPC29	N044:445	Segment 6 RPM
PPC30	N44:446	Segment 6 pressure
PPC31	N44:447	End of Segment 6 position
PPC32	N44:448	Segment 6 time
PPC33	N44:449	Segment 7 RPM
PPC34	N44:450	Segment 7 pressure

PPC35	N44:451	End of Segment 7 position
PPC36	N44:452	Segment 7 time
PPC37	N44:453	Segment 8 RPM
PPC38	N44:454	Segment 8 pressure
PPC39	N44:455	End of Segment 8 position
PPC40	N44:456	Segment 8 time
PPC41	N44:457	Segment 9 RPM
PPC42	N44:458	Segment 9 pressure
PPC43	N44:459	End of Segment 9 position
PPC44	N44:460	Segment 9 time
PPC45	N44:461	Segment 10 RPM
PPC46	N44:462	Segment 10 pressure
PPC47	N44:463	End of Segment 10 position
PPC48	N44:464	Segment 10 time
PPC49	N44:465	Segment 11 RPM
PPC50	N44:466	Segment 11 pressure
Profile Offsets		
PPC51	N44:467	RPM
PPC52	N44:468	Pressure
PPC53-60	N44:469-476	RFU
Critical Process Setpoints		
PPC61	N44:477	Cushion
PPC62	N44:478	Shot size
PPC63-64	N44:479-480	RFU

PRC – Pre-decompression Configuration Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
PRC01	B38:20	Block ID 00000000 00001101
PRC02-04	B38:21-23	RFU
Movement Length		
PRC05	N44:301	Length of pre-decompress movement
PRC06-07	N44:302-303	RFU
Watchdog Timer		
PRC08	N44:304	Movement timer preset
Set-output Values During Movement		
PRC09	N44:305	Output #1
PRC10	N44:306	Output #2
PRC11	N44:307	Output #3
PRC12	N44:308	Output #4
PRC13	N44:309	Output #5
PRC14	N44:310	Output #6
PRC15	N44:311	Output #7
PRC16	N44:312	Output #8
Acceleration Ramp Rates		
PRC17	N44:313	Output #1
PRC18	N44:314	Output #2
PRC19	N44:315	Output #3
PRC20	N44:316	Output #4

PRC21	N44:317	Output #5
PRC22	N44:318	Output #6
PRC23	N44:319	Output #7
PRC24	N44:320	Output #8
Deceleration Ramp Rates		
PRC25	N44:321	Output #1
PRC26	N44:322	Output #2
PRC27	N44:323	Output #3
PRC28	N44:324	Output #4
PRC29	N44:325	Output #5
PRC30	N44:326	Output #6
PRC31	N44:327	Output #7
PRC32	N44:328	Output #8
End of Movement Set-output Values		
PRC33	N44:329	Output #1
PRC34	N44:330	Output #2
PRC35	N44:331	Output #3
PRC36	N44:332	Output #4
PRC37	N44:333	Output #5
PRC38	N44:334	Output #6
PRC39	N44:335	Output #7
PRC40	N44:336	Output #8
PRC41-56	N44:337-352	RFU
Setpoint for Movement Pressure Alarm		
PRC57	N44:353	High pressure alarm
PRC58-64	N44:354-360	RFU

PSC –
Post-decompression
Configuration Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
PSC01	B38:32	Block ID 00000000 00010000
PSC02-04	B38:33-35	RFU
Movement Length		
PSC05	N44:481	Length of post-decompress movement
PSC06-07	N44:482-483	RFU
Watchdog Timer		
PSC08	N44:484	Movement timer preset
Set-output Values During Movement		
PSC09	N44:485	Output #1
PSC10	N44:486	Output #2
PSC11	N44:487	Output #3
PSC12	N44:488	Output #4
PSC13	N44:489	Output #5
PSC14	N44:490	Output #6
PSC15	N44:491	Output #7
PSC16	N44:492	Output #8

Acceleration Ramp Rates

PSC17	N44:493	Output #1
PSC18	N44:494	Output #2
PSC19	N44:495	Output #3
PSC20	N44:496	Output #4
PSC21	N44:497	Output #5
PSC22	N44:498	Output #6
PSC23	N44:499	Output #7
PSC24	N44:500	Output #8
Deceleration Ramp Rates		
PSC25	N44:501	Output #1
PSC26	N44:502	Output #2
PSC27	N44:503	Output #3
PSC28	N44:504	Output #4
PSC29	N44:505	Output #5
PSC30	N44:506	Output #6
PSC31	N44:507	Output #7
PSC32	N44:508	Output #8
End of Movement Set-output Values		
PSC33	N44:509	Output #1
PSC34	N44:510	Output #2
PSC35	N44:511	Output #3
PSC36	N44:512	Output #4
PSC37	N44:513	Output #5
PSC38	N44:514	Output #6
PSC39	N44:515	Output #7
PSC40	N44:516	Output #8
PSC41-56	N44:517-532	RFU
Setpoint for Movement Pressure Alarm		
PSC57	N44:533	High pressure alarm
PSC58-64	N44:534-40	RFU

PTC – Process Trace Configuration Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
PTC01	B131:9	Block ID 00000000 00011100
PTC02	B131:10	Process trace and trigger control
PTC03-04	B131:11-12	Open
PTC05	N132:0	Trigger delay
PTC06	N132:1	Trigger position
PTC07	N132:2	Trace data collection sample rate
PTC08	N132:3	Trace 1 selection
PTC09	N132:4	Trace 2 selection
PTC10	N132:5	Trace 3 selection
PTC11	N132:6	Trace 4 selection
PTC12-64	N132:7-59	RFU

RLC – Inject ERC Values Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
RLC01	B38:36	Block ID 00000000 00011010
RLC02-04	B38:37-39	RFU
ERC Values for Injection Profile		
RLC05-08	N44:541-544	RFU
RLC09	N44:545	Injection segment 1
RLC10	N44:546	Injection segment 2
RLC11	N44:547	Injection segment 3
RLC12	N44:548	Injection segment 4
RLC13	N44:549	Injection segment 5
RLC14	N44:550	Injection segment 6
RLC15	N44:551	Injection segment 7
RLC16	N44:552	Injection segment 8
RLC17	N44:553	Injection segment 9
RLC18	N44:554	Injection segment 10
RLC19	N44:555	Injection segment 11
ERC Values for Pack Profile		
RLC20	N44:556	Pack segment 1
RLC21	N44:557	Pack segment 2
RLC22	N44:558	Pack segment 3
RLC23	N44:559	Pack segment 4
RLC24	N44:560	Pack segment 5
ERC Values for Hold Profile		
RLC25	N44:561	Hold segment 1
RLC26	N44:562	Hold segment 2
RLC27	N44:563	Hold segment 3
RLC28	N44:564	Hold segment 4
RLC29	N44:565	Hold segment 5
ERC Values for Plastication Profile		
RLC30	N44:566	Plastication segment 1
RLC31	N44:567	Plastication segment 2
RLC32	N44:568	Plastication segment 3
RLC33	N44:569	Plastication segment 4
RLC34	N44:570	Plastication segment 5
RLC35	N44:571	Plastication segment 6
RLC36	N44:572	Plastication segment 7
RLC37	N44:573	Plastication segment 8
RLC38	N44:574	Plastication segment 9
RLC39	N44:575	Plastication segment 10
RLC40	N44:576	Plastication segment 11
RLC41-64	N44:577-600	RFU

SCC – Second Clamp Close Configuration Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
SCC01	B37:4	Block ID 00000000 00000100
SCC02	B37:5	Selected valve Configurations
SCC03-04	B37:6-7	RFU

Expert Response Compensation Percentage

SCC05	N43:61	ERC % minimum velocity
SCC06	N43:62	ERC % minimum pressure
SCC07	N43:63	RFU

Watchdog Timer

SCC08	N43:64	Profile watchdog timer

Set-output Values for Unselected Valves (During Profile)

SCC09	N43:65	Output #1
SCC10	N43:66	Output #2
SCC11	N43:67	Output #3
SCC12	N43:68	Output #4
SCC13	N43:69	Output #5
SCC14	N43:70	Output #6
SCC15	N43:71	Output #7
SCC16	N43:72	Output #8

Acceleration Ramp Rates

SCC17	N43:73	Output #1
SCC18	N43:74	Output #2
SCC19	N43:75	Output #3
SCC20	N43:76	Output #4
SCC21	N43:77	Output #5
SCC22	N43:78	Output #6
SCC23	N43:79	Output #7
SCC24	N43:80	Output #8

Deceleration Ramp Rates

SCC25	N43:81	Output #1
SCC26	N43:82	Output #2
SCC27	N43:83	Output #3
SCC28	N43:84	Output #4
SCC29	N43:85	Output #5
SCC30	N43:86	Output #6
SCC31	N43:87	Output #7
SCC32	N43:88	Output #8

End of Profile Set-output Values

SCC33	N43:89	Output #1
SCC34	N43:90	Output #2
SCC35	N43:91	Output #3
SCC36	N43:92	Output #4
SCC37	N43:93	Output #5
SCC38	N43:94	Output #6
SCC39	N43:95	Output #7
SCC40	N43:96	Output #8

Pressure Control Limits

SCC41	N43:97	Minimum limit
SCC42	N43:98	Maximum limit
SCC43	N43:99	% output for minimum
SCC44	N43:100	% output for maximum

Velocity Control Limits

SCC45	N43:101	Minimum limit
SCC46	N43:102	Maximum limit
SCC47	N43:103	% output for minimum
SCC48	N43:104	% output for maximum

Profile Tuning Constants

SCC49	N43:105	Proportional gain, pressure control
SCC50	N43:106	Integral gain, pressure control
SCC51	N43:107	Derivative gain, pressure control
SCC52	N43:108	Proportional gain, velocity control
SCC53	N43:109	Feedforward gain, velocity control
SCC54-56	N43:110-112	RFU

Setpoint for Profile Pressure Alarm

SCC57	N43:113	High pressure alarm
SCC58-64	N43:114-120	RFU

SOC – Second Clamp Open Configuration Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
SOC01	B37:24	Block ID 00000000 00010010
SOC02	B37:25	Selected valve configurations
SOC03-04	B37:26-27	RFU
Expert Response Compensation Percentage		
SOC05	N43:361	ERC % minimum velocity
SOC06	N43:362	ERC % minimum pressure
SOC07	N43:363	RFU
Watchdog Timer		
SOC08	N43:364	Profile timer preset
Set-output Values for Unselected Valves (During Profile)		
SOC09	N43:365	Output #1
SOC10	N43:366	Output #2
SOC11	N43:367	Output #3
SOC12	N43:368	Output #4
SOC13	N43:369	Output #5
SOC14	N43:370	Output #6
SOC15	N43:371	Output #7
SOC16	N43:372	Output #8
Acceleration Ramp Rates		
SOC17	N43:373	Output #1
SOC18	N43:374	Output #2
SOC19	N43:375	Output #3
SOC20	N43:376	Output #4
SOC21	N43:377	Output #5
SOC22	N43:378	Output #6
SOC23	N43:379	Output #7
SOC24	N43:380	Output #8
Deceleration Ramp Rates		
SOC25	N43:381	Output #1
SOC26	N43:382	Output #2

SOC27	N43:383	Output #3
SOC28	N43:384	Output #4
SOC29	N43:385	Output #5
SOC30	N43:386	Output #6
SOC31	N43:387	Output #7
SOC32	N43:388	Output #8
End of Profile Set-output Values		
SOC33	N43:389	Output #1
SOC34	N43:390	Output #2
SOC35	N43:391	Output #3
SOC36	N43:392	Output #4
SOC37	N43:393	Output #5
SOC38	N43:394	Output #6
SOC39	N43:395	Output #7
SOC40	N43:396	Output #8
Pressure Control Limits		
SOC41	N43:397	Minimum limit
SOC42	N43:398	Maximum limit
SOC43	N43:399	% output for minimum
SOC44	N43:400	% output for maximum
Velocity Control Limits		
SOC45	N43:401	Minimum limit
SOC46	N43:402	Maximum limit
SOC47	N43:403	% output for minimum
SOC48	N43:404	% output for maximum
Profile Tuning Constants		
SOC49	N43:405	Proportional gain, pressure control
SOC50	N43:406	Integral gain, pressure control
SOC51	N43:407	Derivative gain, pressure control
SOC52	N43:408	Proportional gain, velocity control
SOC53	N43:409	Feedforward gain, velocity control
SOC54-56	N43:410-412	RFU
Setpoint for Profile Pressure Alarm		
SOC57	N43:413	High pressure alarm
SOC58-64	N43:414-420	RFU

TCC – Third Clamp Close Configuration Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
TCC01	B37:8	Block ID 00000000 00000101
TCC02	B37:9	Selected valve configurations
TCC03-04	B37:10-11	RFU
Expert Response Compensation Percentage		
TCC05	N43:121	ERC % minimum velocity
TCC06	N43:122	ERC % minimum pressure
TCC07	N43:123	RFU
Watchdog Timer		
TCC08	N43:124	Profile watchdog timer

Set-output Values for Unselected Valves (During Profile)

TCC09	N43:125	Output #1
TCC10	N43:126	Output #2
TCC11	N43:127	Output #3
TCC12	N43:128	Output #4
TCC13	N43:129	Output #5
TCC14	N43:130	Output #6
TCC15	N43:131	Output #7
TCC16	N43:132	Output #8

Acceleration Ramp Rates

TCC17	N43:133	Output #1
TCC18	N43:134	Output #2
TCC19	N43:135	Output #3
TCC20	N43:136	Output #4
TCC21	N43:137	Output #5
TCC22	N43:138	Output #6
TCC23	N43:139	Output #7
TCC24	N43:140	Output #8

Deceleration Ramp Rates

TCC25	N43:141	Output #1
TCC26	N43:142	Output #2
TCC27	N43:143	Output #3
TCC28	N43:144	Output #4
TCC29	N43:145	Output #5
TCC30	N43:146	Output #6
TCC31	N43:147	Output #7
TCC32	N43:148	Output #8

End of Profile Set-output Values

TCC33	N43:149	Output #1
TCC34	N43:150	Output #2
TCC35	N43:151	Output #3
TCC36	N43:152	Output #4
TCC37	N43:153	Output #5
TCC38	N43:154	Output #6
TCC39	N43:155	Output #7
TCC40	N43:156	Output #8

Pressure Control Limits

TCC41	N43:157	Minimum limit
TCC42	N43:158	Maximum limit
TCC43	N43:159	% output for minimum
TCC44	N43:160	% output for maximum

Velocity Control Limits

TCC45	N43:161	Minimum limit
TCC46	N43:162	Maximum limit
TCC47	N43:163	% output for minimum
TCC48	N43:164	% output for maximum

Profile Tuning Constants

TCC49	N43:165	Proportional gain, pressure control
TCC50	N43:166	Integral gain, pressure control
TCC51	N43:167	Derivative gain, pressure control

TCC52	N43:168	Proportional gain, velocity control
TCC53	N43:169	Feedforward gain, velocity control
TCC54-56	N43:170-172	RFU
Setpoint for Profile Pressure Alarm		
TCC57	N43:173	High pressure alarm
TCC58-64	N43:174-180	RFU

TOC – Third Clamp Open Configuration Block

Word	Pro-Set Address	Description
Bit-mapped Control Words		
TOC01	B37:28	Block ID 00000000 00010011
TOC02	B37:29	Selected valve configurations
Bit-mapped Control Words		
TOC03-04	B37:30-31	RFU
Expert Response Compensation Percentage		
TOC05	N43:421	ERC % Minimum velocity
TOC06	N43:422	ERC % Minimum pressure
TOC07	N43:423	RFU
Watchdog Timer		
TOC08	N43:424	Profile timer preset
Set-output Values for Unselected Valves (During Profile)		
TOC09	N43:425	Output #1
TOC10	N43:426	Output #2
TOC11	N43:427	Output #3
TOC12	N43:428	Output #4
TOC13	N43:429	Output #5
TOC14	N43:430	Output #6
TOC15	N43:431	Output #7
TOC16	N43:432	Output #8
Acceleration Ramp Rates		
TOC17	N43:433	Output #1
TOC18	N43:434	Output #2
TOC19	N43:435	Output #3
TOC20	N43:436	Output #4
TOC21	N43:437	Output #5
TOC22	N43:438	Output #6
TOC23	N43:439	Output #7
TOC24	N43:440	Output #8
Deceleration Ramp Rates		
TOC25	N43:441	Output #1
TOC26	N43:442	Output #2
TOC27	N43:443	Output #3
TOC28	N43:444	Output #4
TOC29	N43:445	Output #5
TOC30	N43:446	Output #6
TOC31	N43:447	Output #7
TOC32	N43:448	Output #8

End of Profile Set-output Values

TOC33	N43:449	Output #1
TOC34	N43:450	Output #2
TOC35	N43:451	Output #3
TOC36	N43:452	Output #4
TOC37	N43:453	Output #5
TOC38	N43:454	Output #6
TOC39	N43:455	Output #7
TOC40	N43:456	Output #8
Pressure Control Limits		
TOC41	N43:457	Minimum limit
TOC42	N43:458	Maximum limit
TOC43	N43:459	% output for minimum
TOC44	N43:460	% output for maximum
Velocity Control Limits		
TOC45	N43:461	Minimum limit
TOC46	N43:462	Maximum limit
TOC47	N43:463	% output for minimum
TOC48	N43:464	% output for maximum
Profile Tuning Constants		
TOC49	N43:465	Proportional gain, pressure control
TOC50	N43:466	Integral gain, pressure control
TOC51	N43:467	Derivative gain, pressure control
TOC52	N43:468	Proportional gain, velocity control
TOC53	N43:469	Feedforward gain, velocity control
TOC54-56	N43:470-472	RFU
Setpoint for Profile Pressure Alarm		
TOC57	N43:473	High pressure alarm
TOC58-64	N43:474-480	RFU

CLS – Clamp and Eject ERC Values Status Block

Word	Pro-Set Address	Description
Bit-mapped Status Words		
CLS01	B34:0	Block ID 00001001 (lower byte)
CLS01	B34:0	Jog status (upper byte)
CLS02	B34:1	Status of profile execution
CLS03	B34:2	Miscellaneous status
CLS04	B34:3	Status of watchdog timers
CLS05-08	N43:601-604	RFU
ERC Actuals from Clamp Close Profiles		
CLS09	N43:605	Segment 1 (first clamp close)
CLS10	N43:606	Segment 2 (first clamp close)
CLS11	N43:607	Segment 3 (first clamp close)
CLS12	N43:608	Segment 4 (second clamp close)
CLS13	N43:609	Segment 5 (second clamp close)
CLS14	N43:610	Segment 6 (second clamp close)
CLS15	N43:611	Segment 7 (third clamp close)
ERC Actuals from Clamp Open Profiles		
CLS16	N43:612	Segment 8 (third clamp close)

CLS17	N43:613	Segment 9 (third clamp close)
CLS18	N43:614	Segment 1 (clamp LPC)
CLS19	N43:615	Segment 2 (clamp LPC)
CLS20	N43:616	Segment 1 (first clamp open)
CLS21	N43:617	Segment 2 (first clamp open)
CLS22	N43:618	Segment 3 (first clamp open)
CLS23	N43:619	Segment 4 (second clamp open)
CLS24	N43:620	Segment 5 (second clamp open)
CLS25	N43:621	Segment 6 (second clamp open)
CLS26	N43:622	Segment 7 (third clamp open)
CLS27	N43:623	Segment 8 (third clamp open)
CLS28	N43:624	Segment 9 (third clamp open)
CLS29	N43:625	Segment 1 (clamp open slow)
CLS30	N43:626	Segment 2 (clamp open slow)
ERC Actuals from Ejector Profile		
CLS31	N43:627	Segment 1 (full advance)
CLS32	N43:628	Segment 2 (full advance)
CLS33	N43:629	Segment 3 (full advance)
CLS34	N43:630	RFU
CLS35	N43:631	Tip retract segment
CLS36	N43:632	RFU
CLS37	N43:633	Tip advance segment
CLS38	N43:634	RFU
CLS39	N43:635	Segment 1 (full retract)
CLS40	N43:636	Segment 2 (full retract)
CLS41	N43:637	Segment 3 (full retract)
CLS42-64	N43:638-660	RFU

CPS – Clamp Close Profiles Status Block

Word	Pro-Set Address	Description
Bit-mapped Status Words		
CPS01	B34:0	Block ID 00000010 (lower byte)
CPS01	B34:0	Jog status (upper byte)
CPS02	B34:1	Status of profile execution
CPS03	B34:2	Miscellaneous status
CPS04	B34:3	Status of watchdog timers
CPS05-06	B37:44-45	RFU
CPS07	B37:46	High limit alarms
CPS08	B37:47	Low limit alarms
Actuals from 1st Clamp Close Profile		
CPS09	N43:661	Segment 1 velocity
CPS10	N43:662	Segment 1 pressure
CPS11	N43:663	Segment 1 execution time
CPS12	N43:664	Segment 2 velocity
CPS13	N43:665	Segment 2 pressure
CPS14	N43:666	Segment 2 execution time
CPS15	N43:667	Segment 3 velocity
CPS16	N43:668	Segment 3 pressure
CPS17	N43:669	Segment 3 execution time

Actuals from 2nd Clamp Close Profile

CPS18	N43:670	Segment 4 velocity
CPS19	N43:671	Segment 4 pressure
CPS20	N43:672	Segment 4 execution time
CPS21	N43:673	Segment 5 velocity
CPS22	N43:674	Segment 5 pressure
CPS23	N43:675	Segment 5 execution time
CPS24	N43:676	Segment 6 velocity
CPS25	N43:677	Segment 6 pressure
CPS26	N43:678	Segment 6 execution time

Actuals from 3rd Clamp Close Profile

CPS27	N43:679	Segment 7 velocity
CPS28	N43:680	Segment 7 pressure
CPS29	N43:681	Segment 7 execution time
CPS30	N43:682	Segment 8 velocity
CPS31	N43:683	Segment 8 pressure
CPS32	N43:684	Segment 8 execution time
CPS33	N43:685	Segment 9 velocity
CPS34	N43:686	Segment 9 pressure
CPS35	N43:687	Segment 9 execution time

Actuals from Clamp Low Pressure Close Profile

CPS36	N43:688	RFU
CPS37	N43:689	Segment 1 pressure
CPS38	N43:690	Segment 1 execution time
CPS39	N43:691	RFU
CPS40	N43:692	Segment 2 pressure
CPS41	N43:693	Segment 2 execution time
CPS42	N43:694	Starting velocity
CPS43	N43:695	Starting pressure
CPS44	N43:696	Starting position
CPS45	N43:697	Ending velocity
CPS46	N43:698	Ending pressure

Actuals from Clamp Low Pressure Close Profile

CPS47	N43:699	Ending position
CPS48-52	N43:700-704	RFU

Maximum Pressures During Clamp Close Profiles

CPS53	N43:705	During first profile
CPS54	N43:706	During second profile
CPS55	N43:707	During third profile
CPS56	N43:708	During LPC profile

Execution Times from Clamp Close Profiles

CPS57	N43:709	First profile
CPS58	N43:710	Second profile
CPS59	N43:711	Third profile
CPS60	N43:712	LPC profile
CPS61-64	N43:713-716	RFU

EPS – Ejector Profile Status Block

Word	Pro-Set Address	Description
Bit-mapped Status Words		
EPS01	B34:0	Block ID 00000111 (lower byte)
EPS01	B34:0	Jog status (upper byte)
EPS02	B34:1	Status of profile execution
EPS03	B34:2	Miscellaneous status
EPS04	B34:3	Status of watchdog timers
EPS05-06	B39:12-13	RFU
EPS07	B39:14	CV high limit alarms
EPS08	B39:15	CV low limit alarms
Actuals from Ejector Profile for Full Advance		
EPS09	N45:181	Segment 1 velocity
EPS10	N45:182	Segment 1 pressure
EPS11	N45:183	Segment 1 execution time
EPS12	N45:184	Segment 2 velocity
EPS13	N45:185	Segment 2 pressure
EPS14	N45:186	Segment 2 execution time
EPS15	N45:187	Segment 3 velocity
EPS16	N45:188	Segment 3 pressure
EPS17	N45:189	Segment 3 execution time
EPS18-20	N45:190-192	RFU
Actuals from Ejector Profile for Tip Retract		
EPS21	N45:193	Tip retract velocity
EPS22	N45:194	Tip retract pressure
EPS23	N45:195	Tip retract execution time
EPS24-26	N45:196-198	RFU
Actuals from Ejector Profile for Tip Advance		
EPS27	N45:199	Tip advance velocity
EPS28	N45:200	Tip advance pressure
EPS29	N45:201	Tip advance execution time
EPS30-32	N45:202-204	RFU
Actuals from Ejector Profile for Full Retract		
EPS33	N45:205	Segment 1 velocity
EPS34	N45:206	Segment 1 pressure
EPS35	N45:207	Segment 1 execution time
EPS36	N45:208	Segment 2 velocity
EPS37	N45:209	Segment 2 pressure
EPS38	N45:210	Segment 2 execution time
EPS39	N45:211	Segment 3 velocity
EPS40	N45:212	Segment 3 pressure
EPS41	N45:213	Segment 3 execution time
EPS42-52	N45:214-224	RFU
Maximum Pressure During Ejector Profile		
EPS53	N45:225	Ejector pressure
EPS54-56	N45:226-228	RFU
Profile Execution Time		
EPS57	N45:229	Ejector profile
EPS58-64	N45:230-236	RFU

HPS – Pack/Hold Profile Status Block

Word	Pro-Set Address	Description
Bit-mapped Status Words		
HPS01	B34:0	Block ID 00000100 (lower byte)
HPS01	B34:0	Jog status (upper byte)
HPS02	B34:1	Status of profile execution
HPS03	B34:2	Miscellaneous status
HPS04	B34:3	Status of watchdog timers
HPS05-06	B38:44-45	RFU
HPS07	B38:46	CV high limit alarms
HPS08	B38:47	CV low limit alarms
Actuals from Pack Profile		
HPS09	N44:657	Segment 1 cavity pressure
HPS10	N44:658	Segment 1 ram (screw) pressure
HPS11	N44:659	End of Segment 1 position
HPS12	N44:660	Segment 2 cavity pressure
HPS13	N44:661	Segment 2 ram (screw) pressure
HPS14	N44:662	End of Segment 2 position
HPS15	N44:663	Segment 3 cavity pressure
HPS16	N44:664	Segment 3 ram (screw) pressure
HPS17	N44:665	End of Segment 3 position
HPS18	N44:666	Segment 4 cavity pressure
HPS19	N44:667	Segment 4 ram (screw) pressure
HPS20	N44:668	End of Segment 4 position
HPS21	N44:669	Segment 5 cavity pressure
HPS22	N44:670	Segment 5 ram (screw) pressure
HPS23	N44:671	End of Segment 5 position
HPS24-25	N44:672	RFU
Actuals from Hold Profile		
HPS26	N44:674	Segment 1 cavity pressure
HPS27	N44:675	Segment 1 ram (screw) pressure
HPS28	N44:676	End of Segment 1 position
HPS29	N44:677	Segment 2 cavity pressure
HPS30	N44:678	Segment 2 ram (screw) pressure
HPS31	N44:679	End of Segment 2 position
HPS32	N44:680	Segment 3 cavity pressure
HPS33	N44:681	Segment 3 ram (screw) pressure
HPS34	N44:682	End of Segment 3 position
HPS35	N44:6834	Segment 4 cavity pressure
HPS36	N44:684	Segment 4 ram (screw) pressure
HPS37	N44:685	End of Segment 4 position
HPS38	N44:686	Segment 5 cavity pressure
HPS39	N44:687	Segment 5 ram (screw) pressure
HPS40	N44:688	End of Segment 5 position
HPS41-50	N44:689-698	RFU
Maximum Pressures During Pack		
HPS51	N44:699	Ram (screw)
HPS52	N44:700	Cavity

Maximum Pressures During Hold

HPS53	N44:701	Ram (screw)
HPS54	N44:702	Cavity

Maximum Pressure During Pre-decompression

HPS55	N44:703	Ram (screw)
HPS56	N44:704	RFU

Profile Execution Times

HPS57	N44:705	During pack
HPS58	N44:706	During hold
HPS59	N44:707	During pre-decompression
HPS60	N44:708	RFU

Actuals from Pre-decompression Movement

HPS61	N44:709	Velocity
HPS62	N44:710	Pressure

End of Hold Ram (Screw) Position

HPS63	N44:711	Position at End of-hold
HPS64	N44:712	RFU

IPS – Injection Profile Status Block

Word	Pro-Set Address	Description
Bit-mapped Status Words		
IPS01	B34:0	Block ID 00000011 (lower byte)
IPS01	B34:0	Jog status (upper byte)
IPS02	B34:1	Status of profile execution
IPS03	B34:2	Miscellaneous status
IPS04	B34:3	Status of watchdog timers
IPS05	B38:40	Status of pressure limit alarms
IPS06	B38:41	Status of injection transitions
IPS07	B38:42	CV high limit alarms
IPS08	B38:43	CV low limit alarms
Actuals from Injection Profile		
IPS09	N44:601	Segment 1 velocity
IPS10	N44:602	Segment 1 pressure
IPS11	N44:603	Segment 1 execution time
IPS12	N44:604	End of Segment 1 position
IPS13	N44:605	Segment 2 velocity
IPS14	N44:606	Segment 2 pressure
IPS15	N44:607	Segment 2 execution time
IPS16	N44:608	End of Segment 2 position
IPS17	N44:609	Segment 3 velocity
IPS18	N44:610	Segment 3 pressure
IPS19	N44:611	Segment 3 execution time
IPS20	N44:612	End of Segment 3 position
IPS21	N44:613	Segment 4 velocity
IPS22	N44:614	Segment 4 pressure
IPS23	N44:615	Segment 4 execution time
IPS24	N44:616	End of Segment 4 position
IPS25	N44:617	Segment 5 velocity
IPS26	N44:618	Segment 5 pressure

Actuals from Injection Profile

IPS27	N44:619	Segment 5 execution time
IPS28	N44:620	End of Segment 5 position
IPS29	N44:621	Segment 6 velocity
IPS30	N44:622	Segment 6 pressure
IPS31	N44:623	Segment 6 execution time
IPS32	N44:624	End of Segment 6 position
IPS33	N44:625	Segment 7 velocity
IPS34	N44:626	Segment 7 pressure
IPS35	N44:627	Segment 7 execution time
IPS36	N44:628	End of Segment 7 position
IPS37	N44:629	Segment 8 velocity
IPS38	N44:630	Segment 8 pressure
IPS39	N44:631	Segment 8 execution time
IPS40	N44:632	End of Segment 8 position
IPS41	N44:633	Segment 9 velocity
IPS42	N44:634	Segment 9 pressure
IPS43	N44:635	Segment 9 execution time
IPS44	N44:636	End of Segment 9 position
IPS45	N44:637	Segment 10 velocity
IPS46	N44:638	Segment 10 pressure
IPS47	N44:639	Segment 10 execution time
IPS48	N44:640	End of Segment 10 position
IPS49	N44:641	Segment 11 velocity
IPS50	N44:642	Segment 11 pressure
IPS51	N44:643	Segment 11 execution time
IPS52	N44:644	RFU

Maximum Pressures During Injection

IPS53	N44:645	Ram (screw)
IPS54	N44:646	Cavity
IPS55-60	N44:647-652	RFU

Transition Actuals

IPS61	N44:653	Time
IPS62	N44:654	Position
IPS63	N44:655	Ram (screw) pressure
IPS64	N44:656	Cavity pressure

OPS – Clamp Open Profiles Status Block

Word	Pro-Set Address	Description
Bit-mapped Status Words		
OPS01	B34:0	Block ID 00000110 (lower byte)
OPS01	B34:0	Jog status (upper byte)
OPS02	B34:1	Status of profile execution
OPS03	B34:2	Miscellaneous status
OPS04	B34:3	Status of watchdog timers
OPS05-06	B37:48-49	RFU
OPS07	B37:50	CV high limit alarms
OPS08	B37:51	CV low limit alarms

Actuals from 1st Clamp Open Profile

OPS09	N43:717	Segment 1 velocity
OPS10	N43:718	Segment 1 pressure
OPS11	N43:719	Segment 1 execution time
OPS12	N43:720	Segment 2 velocity
OPS13	N43:721	Segment 2 pressure
OPS14	N43:722	Segment 2 execution time
OPS15	N43:723	Segment 3 velocity
OPS16	N43:724	Segment 3 pressure
OPS17	N43:725	Segment 3 execution time

Actuals from 2nd Clamp Open Profile

OPS18	N43:726	Segment 4 velocity
OPS19	N43:727	Segment 4 pressure
OPS20	N43:728	Segment 4 execution time
OPS21	N43:729	Segment 5 velocity
OPS22	N43:730	Segment 5 pressure
OPS23	N43:731	Segment 5 execution time
OPS24	N43:732	Segment 6 velocity
OPS25	N43:733	Segment 6 pressure
OPS26	N43:734	Segment 6 execution time

Actuals from 3rd Clamp Open Profile

OPS27	N43:735	Segment 7 velocity
OPS28	N43:736	Segment 7 pressure
OPS29	N43:737	Segment 7 execution time
OPS30	N43:738	Segment 8 velocity
OPS31	N43:739	Segment 8 pressure
OPS32	N43:740	Segment 8 execution time
OPS33	N43:741	Segment 9 velocity
OPS34	N43:742	Segment 9 pressure
OPS35	N43:743	Segment 9 execution time

Actuals from Clamp Open Slow Profile

OPS36	N43:744	Segment 1 velocity
OPS37	N43:745	Segment 1 pressure
OPS38	N43:746	Segment 1 execution time
OPS39	N43:747	Segment 2 velocity
OPS40	N43:748	Segment 2 pressure
OPS41	N43:749	Segment 2 execution time
OPS42	N43:750	Starting velocity
OPS43	N43:751	Starting pressure
OPS44	N43:752	Starting position
OPS45	N43:753	Ending velocity
OPS46	N43:754	Ending pressure
OPS47	N43:755	Ending position
OPS48-52	N43:756-760	RFU

Maximum Pressures During Clamp Open Profiles

OPS53	N43:761	During first profile
OPS54	N43:762	During second profile
OPS55	N43:763	During third profile
OPS56	N43:764	During open slow profile

Execution Times from Clamp Open Profiles

OPS57	N43:765	First profile
OPS58	N43:766	Second profile
OPS59	N43:767	Third profile
OPS60	N43:768	Open slow profile
OPS61-64	N43:769-772	RFU

PPS – Plastication Profile Status Block

Word	Pro-Set Address	Description
Bit-mapped Status Words		
PPS01	B34:0	Block ID 00000101 (lower byte)
PPS01	B34:0	Jog status (upper byte)
PPS02	B34:1	Status of profile execution
PPS03	B34:2	Miscellaneous status
PPS04	B34:3	Status of watchdog timers
PPS05-06	B38:48-49	RFU
PPS07	B38:50	CV high limit alarms
PPS08	B38:51	CV low limit alarms
Actuals from Plastication Profile		
PPS09	N44:713	Segment 1 RPM
PPS10	N44:714	Segment 1 pressure
PPS11	N44:715	Segment 1 execution time
PPS12	N44:716	End of Segment 1 position
PPS13	N44:717	Segment 2 RPM
PPS14	N44:718	Segment 2 pressure
PPS15	N44:719	Segment 2 execution time
PPS16	N44:720	End of Segment 2 position
PPS17	N44:721	Segment 3 RPM
PPS18	N44:722	Segment 3 pressure
PPS19	N44:723	Segment 3 execution time
PPS20	N44:724	End of Segment 3 position
PPS21	N44:725	Segment 4 RPM
PPS22	N44:726	Segment 4 pressure
PPS23	N44:727	Segment 4 execution time
PPS24	N44:728	End of Segment 4 position
PPS25	N44:729	Segment 5 RPM
PPS26	N44:730	Segment 5 pressure
PPS27	N44:731	Segment 5 execution time
PPS28	N44:732	End of Segment 5 position
PPS29	N44:733	Segment 6 RPM
PPS30	N44:734	Segment 6 pressure
PPS31	N44:735	Segment 6 execution time
PPS32	N44:736	End of Segment 6 position
PPS33	N44:737	Segment 7 RPM
PPS34	N44:738	Segment 7 pressure
PPS35	N44:739	Segment 7 execution time
PPS36	N44:740	End of Segment 7 position
PPS37	N44:741	Segment 8 RPM
PPS38	N44:742	Segment 8 pressure

PPS39	N44:743	Segment 8 execution time
PPS40	N44:744	End of Segment 8 position
PPS41	N44:745	Segment 9 RPM
PPS42	N44:746	Segment 9 pressure
PPS43	N44:747	Segment 9 execution time
PPS44	N44:748	End of Segment 9 position
PPS45	N44:749	Segment 10 RPM
PPS46	N44:750	Segment 10 pressure
PPS47	N44:751	Segment 10 execution time
PPS48	N44:752	End of Segment 10 position
PPS49	N44:753	Segment 11 RPM
PPS50	N44:754	Segment 11 pressure
PPS51	N44:755	Segment 11 execution time
PPS52	N44:756	RFU
Maximum Plastication Pressure		
PPS53	N44:757	Ram (screw)
Maximum Post-decompression Pressure		
PPS54	N44:758	Ram (screw)
PPS55-56	N44:759-760	RFU
Profile Execution Times		
PPS57	N44:761	During plastication
PPS58	N44:762	During post-decompression
PPS59-60	N44:763-764	RFU
Actuals from Post-decompression Movement		
PPS61	N44:765	Velocity
PPS62	N44:766	Pressure
Actual Shot Size		
PPS63	N44:767	Total length
PPS64	N44:768	RFU

PTS – Process Trace Status Block

Word	Pro-Set Address	Description
Bit-mapped Status Words		
PTS01	B131:0	Block ID 00001010 (lower byte)
PTS01	B131:1	Power up, jog execution status (hi byte)
PTS02	B131:2	Status of profile execution
PTS03	B131:3	Miscellaneous status
PTS04	B131:4	Status of watchdog timers
PTS05	B131:5	Trace selection
PTS06	B131:6	Trace data block number
PTS07-08	B131:7-8	RFU
PTS09	N132:60	Time to first trace data point
PTS10	N132:61	Trace data point count
PTS11-14	N132:62-65	RFU
PTS15	N132:66	Inject segment 1 start data point
PTS16	N132:67	Inject segment 2 start data point
PTS17	N132:68	Inject segment 3 start data point
PTS18	N132:69	Inject segment 4 start data point

Bit-mapped Status Words

PTS19	N132:70	Inject segment 5 start data point
PTS20	N132:71	Inject segment 6 start data point
PTS21	N132:72	Inject segment 7 start data point
PTS22	N132:73	Inject segment 8 start data point
PTS23	N132:74	Inject segment 9 start data point
PTS24	N132:75	Inject segment 10 start data point
PTS25	N132:76	Inject segment 11 start data point
PTS26	N132:77	Pack segment 1 start data point
PTS27	N132:78	Pack segment 2 start data point
PTS28	N132:79	Pack segment 3 start data point
PTS29	N132:80	Pack segment 4 start data point
PTS30	N132:81	Pack segment 5 start data point
PTS31	N132:82	Hold segment 1 start data point
PTS32	N132:83	Hold segment 2 start data point
PTS33	N132:84	Hold segment 3 start data point
PTS34	N132:85	Hold segment 4 start data point
PTS35	N132:86	Hold segment 5 start data point
PTS36	N132:87	Pre-decompress start data point
PTS37	N132:88	Plastication segment 1 start data point
PTS38	N132:89	Plastication segment 2 start data point
PTS39	N132:90	Plastication segment 3 start data point
PTS40	N132:91	Plastication segment 4 start data point
PTS41	N132:92	Plastication segment 5 start data point
PTS42	N132:93	Plastication segment 6 start data point
PTS43	N132:94	Plastication segment 7 start data point
PTS44	N132:95	Plastication segment 8 start data point
PTS45	N132:96	Plastication segment 9 start data point
PTS46	N132:97	Plastication segment 10 start data point
PTS47	N132:98	Plastication segment 11 start data point
PTS48	N132:99	Post-decompress start data point
PTS49 - 64	N132:100-115	RFU

RLS – Inject ERC Values Status Block

Word	Pro-Set Address	Description
Bit-mapped Status Words		
RLS01	B34:0	Block ID 00001000 (lower byte)
RLS01	B34:0	Jog status (upper byte)
RLS02	B34:1	Status of profile execution
RLS03	B34:2	Miscellaneous status
RLS04	B34:3	Status of watchdog timers
RLS05-08	N44:541-544	RFU
ERC Actuals from Injection Profile		
RLS09	N44:545	Injection segment 1
RLS10	N44:546	Injection segment 2
RLS11	N44:547	Injection segment 3
RLS12	N44:548	Injection segment 4
RLS13	N44:549	Injection segment 5
RLS14	N44:550	Injection segment 6

RLS15	N44:551	Injection segment 7
RLS16	N44:552	Injection segment 8
RLS17	N44:553	Injection segment 9
RLS18	N44:554	Injection segment 10
RLS19	N44:555	Injection segment 11
ERC Actuals from Pack Profile		
RLS20	N44:556	Pack segment 1
RLS21	N44:557	Pack segment 2
RLS22	N44:558	Pack segment 3
RLS23	N44:559	Pack segment 4
RLS24	N44:560	Pack segment 5
ERC Actuals from Hold Profile		
RLS25	N44:561	Hold segment 1
RLS26	N44:562	Hold segment 2
RLS27	N44:563	Hold segment 3
RLS28	N44:564	Hold segment 4
RLS29	N44:565	Hold segment 5
ERC Actuals from Plastication Profile		
RLS30	N44:566	Plastication segment 1
RLS31	N44:567	Plastication segment 2
RLS32	N44:568	Plastication segment 3
RLS33	N44:569	Plastication segment 4
RLS34	N44:570	Plastication segment 5
RLS35	N44:571	Plastication segment 6
RLS36	N44:572	Plastication segment 7
RLS37	N44:573	Plastication segment 8
RLS38	N44:574	Plastication segment 9
RLS39	N44:575	Plastication segment 10
RLS40	N44:576	Plastication segment 11
RLS41-64	N44:577-600	RFU

SYS - System Status Block

Important: If using Pro-Set 600 and a QDC module configured for Clamp/Eject mode, this data is found in alternate files B35 and N41.

Word	Pro-Set Address	Description
Bit-Mapped Status Words		
SYS01	B34:0	Block ID 00000001 (lower byte)
SYS01	B34:0	Jog status (upper byte)
SYS02	B34:1	Status of profile execution
SYS03	B34:2	Miscellaneous status
SYS04	B34:3	Status of watchdog timers
SYS05-08	B34:4-7	Status of real-time alarms
SYS09-12	B34:8-11	Status of latched alarms
SYS13-14	B34:12-13	Command errors
SYS15-16	B34:14-15	Status of transferred command blocks
SYS17-18	B34:16-17	Status of last block decoding
SYS19-20	B34:18-19	Programming error alarms
SYS21	B34:20	Status of profile execution
SYS22	B34:21	Status of End of Profile action
SYS23	B34:22	Status of trace data collection in progress
SYS24	B34:23	Status of process trace data collected

Input Level in Engineering Units

SYS25	N40:177	Input #1
SYS26	N40:178	Input #2
SYS27	N40:179	Input #3
SYS28	N40:180	Input #4
SYS29	N40:181	Input #5
SYS30	N40:182	Input #6
SYS31	N40:183	Input #7
SYS32	N40:184	Input #8

Input Level, Raw Signal Level at A/D Converter

SYS33	N40:185	Input #1
SYS34	N40:186	Input #2
SYS35	N40:187	Input #3
SYS36	N40:188	Input #4
SYS37	N40:189	Input #5
SYS38	N40:190	Input #6
SYS39	N40:191	Input #7
SYS40	N40:192	Input #8

Output Level in Percent

SYS41	N40:193	Output #1
SYS42	N40:194	Output #2
SYS43	N40:195	Output #3
SYS44	N40:196	Output #4
SYS45	N40:197	Output #5
SYS46	N40:198	Output #6
SYS47	N40:199	Output #7
SYS48	N40:200	Output #8

Maximum Pressures of Each Cycle

SYS49	N40:201	Maximum ram (screw) pressure, last cycle
SYS50	N40:202	Maximum clamp pressure, last cycle
SYS51	N40:203	Maximum ejector pressure, last cycle
SYS52	N40:204	Maximum cavity pressure, last cycle
SYS53	N40:205	Open

Process Trace

SYS54	N40:206	Process trace data collection in progress
SYS55	N40:207	Process trace data collection done
SYS56	N40:208	RFU

Accumulated Process Times

SYS57	N40:209	Tonnage
SYS58	N40:210	Cure
SYS59	N40:211	Mold open dwell
SYS60	N40:212	Cycle

Programming Error Codes

SYS61	N40:213	ID of data block with error
SYS62	N40:214	Programming error code

Firmware ID

SYS63	N40:215	QDC Series/Revision

Confirmation of New Status

SYS64	N40:216	Counter accumulated value, each new SYS

Command Word/Bit Descriptions

Alphabetical List of Command Blocks and Block ID Codes

Command blocks provide the parameters that control machine operation. Command blocks are transferred from the PLC processor to the QDC module by block transfer write (BTW) instructions in software ladder logic.

Acronym:	Block ID Binary:	Decimal:	Description:	Page:
CLC	00011011	27	Clamp and Eject ERC Values Block	2-7
CPC	00000111	7	Clamp Close Profile Block	2-8
DYC	00011001	25	Dynamic Command Block	2-13
EAC	00010110	22	Ejector Advance Configuration Block	2-26
EPC	00011000	24	Ejector Profile Block	2-30
ERC	00010111	23	Ejector Retract Configuration Block	2-37
FCC	00000011	3	First Clamp Close Configuration Block	2-40
FOC	00010001	17	First Clamp Open Configuration Block	2-44
HDC	00001011	11	Hold Configuration Block	2-47
HPC	00001100	12	Pack/Hold Profile Block	2-50
INC	00001000	8	Injection Configuration Block	2-53
IPC	00001001	9	Injection Profile Block	2-56
JGC	00000010	2	Jog Configuration Block	2-62
LPC	00000110	6	Clamp Low Press Close Configuration Block	2-65
MCC	00000001	1	Module Configuration Command Block	2-68
OPC	00010101	21	Clamp Open Profile Block	2-74
OSC	00010100	20	Clamp Open Slow Configuration Block	2-79
PKC	00001010	10	Pack Configuration Block	2-82
PLC	00001110	14	Plastication Configuration Block	2-85
PPC	00001111	15	Plastication Profile Block	2-88
PRC	00001101	13	Pre-Decompression Configuration Block	2-91
PSC	00010000	16	Post-Decompression Configuration Block	2-93
PTC	00011100	28	Process Trace Configuration Block	2-95
RLC	00011010	26	Inject ERC Values Block	2-96
SCC	00000100	4	Second Clamp Close Configuration Block	2-97
SOC	00010010	18	Second Clamp Open Configuration Block	2-101
TCC	00000101	5	Third Clamp Close Configuration Block	2-104
TOC	00010011	19	Third Clamp Open Configuration Block	2-107

Refer to chapter 3 for the word/bit descriptions of status blocks.

List of Data Words

The listings of command blocks use five types of data words:

- Block ID
- Bit-mapped
- Stored-value
- Open
- Reserved

Block ID Word

The first word in each command block contains a binary number code in the low byte that identifies the block. The QDC module uses block IDs to identify command blocks sent from the PLC processor, while the PLC processor uses them to identify status blocks received from the QDC module.

Bit-mapped Words

The first several words in any data block are bit-mapped. For bit-mapped command words, you must set/reset or latch/ unlatch command bits to set QDC module operating configurations.

Stored-value Words

These words establish operating conditions for the QDC module, such as:

- output values for certain conditions
- minimum and maximum pressures, positions, and velocities
- alarm setpoints

Open Words

These words are not used by the QDC module. We recommend leaving them unused.

Reserved Words

These words are not currently used by the QDC module but are reserved for future enhancements. We recommend leaving them unused.

Engineering Units

In the listings of command blocks, each stored-value word is followed by a bracketed [ ] 2-digit number code denoting the engineering units and range associated with the value as shown in the following table:

Notes: 1. For [ ] engineering units, see page 3.
2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.
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#Code	Type of Block	Units and Range
01	Ram (Screw)	Pressure (0000.0 to 9999.0 PSI or 000.0 to 999.9 Bar)
02	Clamp	Pressure (0000.0 to 9999.0 PSI or 000.0 to 999.9 Bar)
03	Ejector	Pressure (0000.0 to 9999.0 PSI or 000.0 to 999.9 Bar)
04	Cavity	Pressure (00000.0 to 20000.0 PSI or 0000.0 to 2000.0 Bar)
05	Ram (Screw)	Percent of maximum velocity (00.00 to 99.99%)
07	Clamp	Percent of maximum velocity (00.00 to 99.99%)
09	Ejector	Percent of maximum velocity (00.00 to 99.99%)
06	Ram (Screw)	Velocity along axis (00.00 to 99.99 in. per sec. or 000.0 to 999.9 mm per sec.)
08	Clamp	Velocity along axis (00.00 to 99.99 in. per sec. or 000.0 to 999.9 mm per sec.)
10	Ejector	Velocity along axis (00.00 to 99.99 in. per sec. or 000.0 to 999.9 mm per sec.)
11	Ram (Screw) Measured from zero	Incremental distance (00.00 to 99.99 in. or 000.0 to 999.9 mm.)
12	Ram (Screw) Measured from MCC13	Incremental distance (00.00 to 99.99 in. or 000.0 to 999.9 mm.)
13	Clamp Axis Measured from zero	Incremental distance (00.00 to 99.99 in. or 000.0 to 999.9 mm.)
14	Clamp Axis Measured from MCC27	Incremental distance (00.00 to 99.99 in. or 000.0 to 999.9 mm.)
15	Ejector Axis Measured from zero	Incremental distance (00.00 to 99.99 in. or 000.0 to 999.9 mm.)
16	Ejector Axis Measured from MCC41	Incremental distance (00.00 to 99.99 in. or 000.0 to 999.9 mm.)
17	Measured as noted	Incremental distance (00.00 to 99.99 in. or 000.0 to 999.9 mm.)
18	Measured as noted	Incremental distance (00.00 to 00.99 in. or 000.0 to 009.9 mm.)
19		Percent signal output (00.00 to 99.99%)
20		Percent signal output per second (0000. To 9999.)
21		Time measured in seconds (00.00 to 99.99)
22		Time measured in seconds (000.0 to 999.9)
23		Time measured in seconds (00.00 to 00.99)
24		Input signal range (00.00 to 10.00 or 01.00 to 05.00 or 04.00 to 20.00)
25		Screw rotational speed (000.0 to 999.9 RPM)
26		Time (algorithm) (00.00 to 9.99 minutes)
27		Inverse time (algorithm) (00.00 to 99.99 inverse minutes)
28		Inverse time (algorithm) (00.00 to 99.99 inverse seconds)
29		Unit-less
30		Binary Bit Map: bit value of 0 or 1; range of 00-15
31		Percent (00.00 to 99.99%)

Data Blocks Require I/O Configuration

The QDC module decodes its own I/O configuration based on parameters that you provide in the Module Configuration Command Block (MCC). I/O configuration determines which of the command and status blocks the module supports. For the module to support the full complement of command and status blocks, you must establish the following position configurations for complete machine control:

- Connect a ram (screw) position sensor to input 1.
- Connect a clamp position sensor to input 3.
- Connect an ejector position sensor to input 4.

▶ **Important:** When using the inject, clamp, and eject mode, all pressure readings are system pressure at input 2, except where stated as cavity (or system) pressure. See User Manual, chapter 1, of publication 1771-6.5.93.

If you omit any of these three requirements, the QDC module rejects some of the defined command blocks and inhibits some of the defined status blocks because the module cannot use or generate block parameters without data from a critical input which may have been excluded during configuration. If you attempt to download an unusable command block from the host processor, the QDC module treats it as unrecognizable and discards the data. It does so in the same manner as if it had received a command block containing an undefined Block ID.

Data Blocks for System Control

Command Blocks for system level control are:

Block	Description
MCC	Module Configuration Command Block
JGC	Jog Configuration Command Block
DYC	Dynamic Command Block

You must establish the QDC module's I/O configuration before it can decide which command blocks to support. Although the module always accepts the Module Configuration Command Block (MCC), the module considers all other command blocks unrecognizable until it has received, processed, and successfully error checked an MCC download from the host processor. After you configure the QDC module with a valid MCC, the module always accepts and processes (considers them recognizable) either of the two basic command blocks JGC and DYC when received.

The module reports system status in the system status block (SYS). The module can always return the System Status Block to the host processor. It returns this block after each block transfer read (BTR) request from the PLC processor unless the previous block transfer write (BTW) to the module was a valid dynamic command block (DYC) containing a request for some other status block.

Data Blocks for Controlling Ram (Screw) Position

The host processor can write any of these command blocks to the QDC module to control ram (screw) position:

Command Block	Description	Corresponding Status Block
INC	Injection Configuration Block	–
IPC	Injection Profile Block	IPS
PKC	Pack Configuration Block	–
HDC	Hold Configuration Block	–
HPC	Pack/Hold Profile Block	HPS
PRC	Pre-decompression Configuration Block	–
PLC	Plastication Configuration Block	–
PPC	Plastication Profile Block	PPS
PSC	Post-decompression Configuration Block	–
PTC	Process Trace Configuration Block	PTS
RLC	Inject ERC Values Block	RLS

Notes: 1. For [ ] engineering units, see page 3.
    2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

After you configure the QDC module with a valid MCC, the module determines if it has access to ram (screw) position data from the ram (screw) position sensor. The module considers these command blocks recognizable and can return these status blocks when it has an analog input reserved for a ram (screw) position sensor, and the sensor is physically connected to input 1.

Data Blocks for Controlling Clamp Position

The host processor can write any of these command blocks to the QDC module to control clamp position

Command Block	Description	Corresponding Status Block
FCC	First Clamp Close Configuration Block	–
SCC	Second Clamp Close Configuration Block	–
TCC	Third Clamp Close Configuration Block	–
LPC	Clamp Low Pressure Close Configuration Block	–
CPC	Clamp Close Profile Block	CPS
FOC	First Clamp Open Configuration Block	–
SOC	Second Clamp Open Configuration Block	–
TOC	Third Clamp Open Configuration Block	–
OSC	Clamp Open Slow Configuration Block	–
OPC	Clamp Open Profile Block	OPS
CLC	Clamp and Eject ERC Values Block	CLS

After you configure the QDC module with a valid MCC, the module determines if it has access to clamp position data from the clamp position sensor. The module considers these command blocks recognizable and can return these status blocks when it has an analog input reserved for a clamp position sensor, and the sensor is physically connected to input 3.

Data Blocks for Controlling Ejector Position

The host processor can write any of these command blocks to the QDC module to control ejector position:

Command Block	Description	Corresponding Status Block
EAC	Ejector Advance Configuration Block	–
ERC	Ejector Retract Configuration Block	–
EPC	Ejector Profile Block	EPS

After you configure the QDC module with a valid MCC, the module determines if it has access to clamp and ejector position data from both position sensors. The module considers these command blocks recognizable and can return the status block when it has analog inputs reserved for ejector position and clamp position sensors, and both sensors are physically connected to inputs 3 and 4 respectively.

Sensors Required

The QDC module will not accept or process the following command (or status) blocks unless the module configuration includes an analog input reserved for connection of a clamp position sensor (MCC02):

Command Block	Status Block
CLC	CLS
CPC	CPS
FCC	OPS
FOC	
LPC	
OPC	
OSC	
SCC	
SOC	
TCC	
TOC	

The module will not accept or process the following command (or status) blocks unless the module configuration includes an analog input reserved for connection of an ejector position sensor (MCC02), and the module configuration indicates that the sensor is physically connected (MCC03):

Command Block	Status Block
EAC	EPS
EPC	
ERC	

The module will not accept or process the following command (or status) blocks unless the module configuration includes an analog input reserved for connection of a ram (screw) position sensor (MCC02):

Command Block	Status Block
HDC	HPS
HPC	IPS
INC	PPS
IPC	PTS
PKC	RLS
PLC	
PRC	
PSC	
PTC	
RLC	

-

Notes: 1. For [ ] engineering units, see page 3.
   2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

CLC

CLC – Clamp and Eject
ERC Values Block

Bit-mapped Control Words

Word	Description
CLC01	Block ID = 00011011 (low byte). High byte reserved for the module. Do not use.
CLC02 - 08	Open

Clamp Close Profiles ERC Values

Word	Description
CLC09	Segment 1 (First Clamp Close Profile)
CLC10	Segment 2 (First Clamp Close Profile)
CLC11	Segment 3 (First Clamp Close Profile)
CLC12	Segment 4 (Second Clamp Close Profile)
CLC13	Segment 5 (Second Clamp Close Profile)
CLC14	Segment 6 (Second Clamp Close Profile)
CLC15	Segment 7 (Third Clamp Close Profile)
CLC16	Segment 8 (Third Clamp Close Profile)
CLC17	Segment 9 (Third Clamp Close Profile)
CLC18	Segment 1 (Clamp Low Pressure Close Profile)
CLC19	Segment 2 (Clamp Low Pressure Close Profile)

Clamp Open Profiles ERC Values

Word	Description
CLC20	Segment 1 (First Clamp Open Profile)
CLC21	Segment 2 (First Clamp Open Profile)
CLC22	Segment 3 (First Clamp Open Profile)
CLC23	Segment 4 (Second Clamp Open Profile)
CLC24	Segment 5 (Second Clamp Open Profile)
CLC25	Segment 6 (Second Clamp Open Profile)
CLC26	Segment 7 (Third Clamp Open Profile)
CLC27	Segment 8 (Third Clamp Open Profile)
CLC28	Segment 9 (Third Clamp Open Profile)
CLC29	Segment 1 (Clamp Open Slow Profile)
CLC30	Segment 2 (Clamp Open Slow Profile)

Ejector Profile ERC Values

Word	Description
CLC31	Ejector Full Advance Segment 1
CLC32	Ejector Full Advance Segment 2
CLC33	Ejector Full Advance Segment 3
CLC34	Reserved
CLC35	Ejector Tip Retract Segment
CLC36	Reserved
CLC37	Ejector Tip Advance Segment
CLC38	Reserved
CLC39	Ejector Full Retract Segment 1
CLC40	Ejector Full Retract Segment 2

Word	Description
CLC41	Ejector Full Retract Segment 3
CLC42	Reserved
CLC43 - 64	Open

CPC – Clamp Close Profile Block

Bit-mapped Control Words

Word	Bit	Description
CPC01		Block ID = 00000111 (low byte). High byte reserved for the module. Do not use.
CPC02		Open
CPC03		Configuration Selections
		Profile Algorithm Selections
	B00	= 0 Vel/Pos selected for First Clamp Close Profile = 1 Press/Pos selected for First Clamp Close Profile
	B01	Open
	B02	= 0 Vel/Pos selected for Second Clamp Close Profile = 1 Press/Pos selected for Second Clamp Close Profile
	B03	Open
	B04	= 0 Vel/Pos selected for Third Clamp Close Profile = 1 Press/Pos selected for Third Clamp Close Profile
	B05-B07	Open
	B08	First/Second Clamp Close Logical Bridge Selection = 0 Start Second Clamp Close Profile at End of First Clamp Close Profile = 1 Stop and Set-output at End of First Clamp Close Profile The module checks this pause bit at end of the First Clamp Close Profile to determine what further action to take: **if B08 is:** **then the module:** SET sets its outputs to FCC33 - FCC40 RESET and CPC20 > 00000 immediately begins the Second Clamp Close Profile RESET and CPC20 = 00000 reacts as if it had just completed the Second Clamp Close Profile, and continues operation based on the state of CPC03-B09
	B09	Second/Third Clamp Close Logical Bridge Selection = 0 Start Third Clamp Close Profile at End of Second Clamp Close Profile = 1 Stop and Set-output at End of Second Clamp Close Profile The module checks this pause bit at end of the Second Clamp Close Profile to determine what further action to take: **if B09 is:** **then the module:** SET sets its outputs to SCC33 - SCC40 RESET and CPC29 > 00000 immediately begins the Second Clamp Close Profile RESET and CPC29 = 00000 reacts as if it had just completed the Second Clamp Close Profile, and continues operation based on the state of CPC03-B10
	B10	Third Clamp Close/Clamp Low Press Close (LPC) Logical Bridge Selection = 0 Start Clamp LPC Profile at End of Third Clamp Close Profile = 1 Stop and Set-output at End of Third Clamp Close Profile The module checks this pause bit at end of the Third Clamp Close Profile to determine what further action to take: **if B10 is:** **then the module:** SET sets its outputs to TCC33 - TCC40 RESET immediately begins the Clamp Low Pressure Close Profile

Notes: 1. For [ ] engineering units, see page 3.
      2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.
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CPC

Word	Bit	Description
	B11	Mold Protection Zone Overrun Selection = 0 Start Clamp Low Pressure Close Profile on Mold Protection Zone Overrun = 1 Stop and Zero Outputs on Mold Protection Zone Overrun During any of the first three Clamp Close Profiles, **if B11 is:** **then the module:** clamp position reaches a value immediately terminates the ongoing Clamp Close Profile and checks this bit less than or equal to CPC61 RESET immediately begins the Clamp Low Pressure Close Profile SET sets its outputs to zero
	B12-B13	Open
	B14	Velocity Units Selection = 0 Velocity Parameters in Percent Velocity = 1 Velocity Parameters in in.(mm)/s **if B14 is: then the module:** RESET returns all segment velocity actuals (and assumes all velocity setpoints) in units of percent velocity where FCC46, SCC46, and TCC46 represent 100% velocity SET returns all velocity actuals (and assumes all velocity setpoints) in units of in.(mm)/s
	B15	Open
CPC04		Configuration Selections
		Open/Closed Loop Selection
	B00	= 0 Vel/Pos First Clamp Close Profiles Closed Loop = 1 Vel/Pos First Clamp Close Profiles Open Loop
	B01	= 0 Press/Pos First Clamp Close Profiles Closed Loop = 1 Press/Pos First Clamp Close Profiles Open Loop
	B02	= 0 Vel/Pos Second Clamp Close Profiles Closed Loop = 1 Vel/Pos Second Clamp Close Profiles Open Loop
	B03	= 0 Press/Pos Second Clamp Close Profiles Closed Loop = 1 Press/Pos Second Clamp Close Profiles Open Loop
	B04	= 0 Vel/Pos Third Clamp Close Profiles Closed Loop = 1 Vel/Pos Third Clamp Close Profiles Open Loop
	B05	= 0 Press/Pos Third Clamp Close Profiles Closed Loop = 1 Press/Pos Third Clamp Close Profiles Open Loop
	B06	Open
	B07	= 0 Clamp Low Pressure Close Profiles Closed Loop = 1 Clamp Low Pressure Close Profiles Open Loop
		ERC Enabled/Disabled Selection
	B08	= 0 Vel/Pos First Clamp Close Profiles ERC On = 1 Vel/Pos First Clamp Close Profiles ERC Off
	B09	= 0 Press/Pos First Clamp Close Profiles ERC On = 1 Press/Pos First Clamp Close Profiles ERC Off
	B10	= 0 Vel/Pos Second Clamp Close Profiles ERC On = 1 Vel/Pos Second Clamp Close Profiles ERC Off
	B11	= 0 Press/Pos Second Clamp Close Profiles ERC On = 1 Press/Pos Second Clamp Close Profiles ERC Off
	B12	= 0 Vel/Pos Third Clamp Close Profiles ERC On = 1 Vel/Pos Third Clamp Close Profiles ERC Off
	B13	= 0 Press/Pos Third Clamp Close Profiles ERC ON = 1 Press/Pos Third Clamp Close Profiles ERC Off
	B14	Open
	B15	= 0 Clamp Low Pressure Close Profiles ERC On = 1 Clamp Low Pressure Close Profiles ERC Off
CPC05 - 08		Open

First Clamp Close Profile Setpoints

Word	Description
CPC09	Segment 1 Velocity Setpoint [07] or [08]
	if: **then the module:**
	you select Vel/Pos profile execution controls clamp close speed to this setpoint after starting the First Clamp Close Profile until clamp position reaches the larger of CPC11 or CPC61
	CPC03-B14 is RESET reads this parameter in percent velocity
	CPC03-B14 is SET reads it in in.(mm)/s
CPC10	Segment 1 Pressure Setpoint [02]
	if: **then the module:**
	you select Press/Pos profile execution controls clamp close pressure to this setpoint after starting the First Clamp Close Profile until clamp position reaches the larger of CPC11 or CPC61
CPC11	End of Segment 1 Position Setpoint [14]
CPC12	Segment 2 Velocity Setpoint [07] or [08]
	if: **then the module:**
	you select Vel/Pos profile execution controls clamp close speed to this setpoint from the clamp position CPC11 until clamp position reaches the larger of CPC14 or CPC61
	CPC03-B14 is RESET reads this parameter in percent velocity
	CPC03-B14 is SET reads it in in.(mm)/s
CPC13	Segment 2 Pressure Setpoint [02]
	if: **then the module:**
	you select Press/Pos profile execution controls clamp close pressure to this setpoint from the clamp position CPC11 until clamp position reaches the larger of CPC14 or CPC61
CPC14	End of Segment 2 Position Setpoint [14]
CPC15	Segment 3 Velocity Setpoint [07] or [08]
	if: **then the module:**
	you select Vel/Pos profile execution controls clamp close speed to this setpoint from the clamp position CPC14 until clamp position reaches the larger of CPC17 or CPC61
	CPC03-B14 is RESET reads this parameter in percent velocity
	CPC03-B14 is SET reads it in in.(mm)/s
CPC16	Segment 3 Pressure Setpoint [02]
	if: **then the module:**
	you select Press/Pos profile execution controls clamp close pressure to this setpoint from the clamp position CPC14 until clamp position reaches the larger of CPC17 or CPC61
CPC17	End of Segment 3 Position Setpoint [14]

Second Clamp Close Profile Setpoints

Word	Description
CPC18	Segment 4 Velocity Setpoint [07] or [08]
	if: **then the module:**
	you select Vel/Pos profile execution controls clamp close speed to this setpoint after starting the Second Clamp Close Profile until clamp position reaches the larger of CPC20 or CPC61
	CPC03-B14 is RESET reads this parameter in percent velocity
	CPC03-B14 is SET reads it in in.(mm)/s
CPC19	Segment 4 Pressure Setpoint [02]
	if: **then the module:**
	you select Press/Pos profile execution controls clamp close pressure to this setpoint after starting the Second Clamp Close Profile until clamp position reaches the larger of CPC20 or CPC61
CPC20	End of Segment 4 Position Setpoint [14]

Notes: 1. For [ ] engineering units, see page 3.
        2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

CPC

Word	Description
CPC21	Segment 5 Velocity Setpoint [07] or [08]
	if: **then the module:**
	you select Vel/Pos profile execution controls clamp close speed to this setpoint from the clamp position CPC20 until clamp position reaches the larger of CPC23 or CPC61
	CPC03-B14 is RESET reads this parameter in percent velocity
	CPC03-B14 is SET reads it in in.(mm)/s
CPC22	Segment 5 Pressure Setpoint [02]
	if: **then the module:**
	you select Press/Pos profile execution controls clamp close pressure to this setpoint from the clamp position CPC20 until clamp position reaches the larger of CPC23 or CPC61
CPC23	End of Segment 5 Position Setpoint [14]
CPC24	Segment 6 Velocity Setpoint [07] or [08]
	if: **then the module:**
	you select Vel/Pos profile execution controls clamp close speed to this setpoint from the clamp position CPC23 until clamp position reaches the larger of CPC26 or CPC61
	CPC03-B14 is RESET reads this parameter in percent velocity
	CPC03-B14 is SET reads it in in.(mm)/s
CPC25	Segment 6 Pressure Setpoint [02]
	if: **then the module:**
	you select Press/Pos profile execution controls clamp close pressure to this setpoint from the clamp position CPC23 until clamp position reaches the larger of CPC26 or CPC61
CPC26	End of Segment 6 Position Setpoint [14]

Third Clamp Close Profile Setpoints

Word	Description
CPC27	Segment 7 Velocity Setpoint [07] or [08]
	if: **then the module:**
	you select Vel/Pos profile execution controls clamp close speed to this setpoint after starting the Third Clamp Close Profile until clamp position reaches the larger of CPC29 or CPC61
	CPC03-B14 is RESET reads this parameter in percent velocity
	CPC03-B14 is SET reads it in in.(mm)/s
CPC28	Segment 7 Pressure Setpoint [02]
	if: **then the module:**
	you select Press/Pos profile execution controls clamp close pressure to this setpoint after starting the Third Clamp Close Profile until clamp position reaches the larger of CPC29 or CPC61
CPC29	End of Segment 7 Position Setpoint [14]
CPC30	Segment 8 Velocity Setpoint [07] or [08]
	if: **then the module:**
	you select Vel/Pos profile execution controls clamp close speed to this setpoint from the clamp position CPC29 until clamp position reaches the larger of CPC32 or CPC61
	CPC03-B14 is RESET reads this parameter in percent velocity
	CPC03-B14 is SET reads it in in.(mm)/s
CPC31	Segment 8 Pressure Setpoint [02]
	if: **then the module:**
	you select Press/Pos profile execution controls clamp close pressure to this setpoint from the clamp position CPC29 until clamp position reaches the larger of CPC32 or CPC61
CPC32	End of Segment 8 Position Setpoint [14]
CPC33	Segment 9 Velocity Setpoint [07] or [08]
	if: **then the module:**
	you select Vel/Pos profile execution controls clamp close speed to this setpoint from the clamp position CPC32 until clamp position reaches the larger of CPC35 or CPC61
	CPC03-B14 is RESET reads this parameter in percent velocity
	CPC03-B14 is SET reads it in in.(mm)/s

Word	Description
CPC34	Segment 9 Pressure Setpoint [02] **if:** **then the module:** you select Press/Pos profile execution controls clamp close pressure to this setpoint from the clamp position CPC32 until clamp position reaches the larger of CPC35 or CPC61
CPC35	End of Segment 9 Position Setpoint [14]

Clamp Low Pressure Close Profile Setpoints

Word	Description
CPC36	Reserved
CPC37	Segment 1 Pressure Setpoint [02] The module controls clamp close pressure to this setpoint after starting the Clamp Low Pressure Close Profile until clamp position reaches the larger of CPC38 or CPC62.
CPC38	End of Segment 1 Position Setpoint [14]
CPC39	Reserved
CPC40	Segment 2 Pressure Setpoint [02] The module controls clamp close pressure to this setpoint from the clamp position CPC38 until clamp position reaches CPC62.
CPC41 -60	Open

Critical Process Setpoints

Word	Description
CPC61	Start Clamp Low Pressure Close Position Setpoint [14] The module uses this clamp position (overrun bit) as protection against running a Clamp Close Profile into the Mold Protection Zone. **if:** **then the module:** this position is reached while the module is immediately terminates the ongoing profile and checks state of CPC03-B11 executing any of the first three Clamp Close Profiles RESET immediately begins the Clamp Low Pressure Close Profile SET sets its outputs to zero clamp position is less than or equal to this entry sets master status bit SYS03-B00 it reaches the Mold Protection Zone while executing sets alarm status bit SYS07-B06 one of the first three Clamp Close Profiles
CPC62	Mold Safe Position Setpoint (Mold Parting Line Touch) [14] This entry is the clamp position when the mold parting line mates. The module uses this clamp position as the End of Low-Pressure-Close position setpoint. **if:** **then the module:** this position is reached while module is executing immediately terminates the Clamp Low Pressure Close Profile and sets its the Clamp Low Pressure Close Profile outputs to LPC33 - LPC40 clamp position is less than or equal to this entry sets master status bit SYS03-B01
CPC63	Tonnage Complete Pressure Setpoint [02] **if:** **then the module:** clamp position is less than or equal to CPC62 compares real-time clamp pressure against this entry clamp pressure equals or exceeds this entry when sets master status bit SYS03-B02 the clamp position is less than or equal to CPC62
CPC64	Open

Notes: 1. For [ ] engineering units, see page 3.
   2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

DYC

DYC – Dynamic Command Block

The module will not accept or process the Dynamic Command Block unless it has a valid MCC installed.

Bit-mapped Control Words

Word	Bit	Description
DYC01		Block ID = 00011001 (low byte)
		Action Execution Commands in high byte Bits DYC01-B08 - DYC01-B15 and all 16 bits in DYC02 are the 24 *action execution* commands to control the module. Because the module cannot respond to more than one action execution command at a time (exception: it can start a Clamp Open Profile and Ejector Profile concurrently), the module ceases all action execution and sets its outputs to zero when it decodes a valid dynamic command block with more than one of these bits SET. The module senses this invalid request and latches alarm status bit SYS14-B00, and unlatches SYS14-B00 when it decodes a valid Dynamic Command Block with one or none of the action execution bits SET.
	B08	Set-output Command = 0 Normal = 1 Execute Set-output When the module decodes a valid DYC having this bit SET, it sets its outputs to DYC09 - DYC16. The outputs remain at these values as long as this bit is SET, and return to zero when this bit is RESET.
		Jog Commands
	B09	= 0 Normal = 1 Execute Screw Rotate Jog When the module decodes a valid DYC having this bit SET, it sets its outputs to JGC09 - JGC16. The outputs remain at these values as long as this bit is SET, and return to zero when this bit is RESET.
	B10	= 0 Normal = 1 Execute Ram (Screw) Forward Jog When the module decodes a valid DYC having this bit SET, it set its outputs to JGC17 - JGC24. The outputs remain at these values as long as this bit is SET, and return to zero when this bit is RESET.
	B11	= 0 Normal = 1 Execute Ram (Screw) Reverse Jog When the module decodes a valid DYC having this bit SET, it sets its outputs to JGC25 - JGC32. The outputs remain at these values as long as this bit is SET, and return to zero when this bit is RESET.
	B12	= 0 Normal = 1 Execute Clamp Forward Jog When the module decodes a valid DYC having this bit SET, it sets its outputs to JGC33 - JGC40. The outputs remain at these values as long as this bit is SET, and return to zero when this bit is RESET.
	B13	= 0 Normal = 1 Execute Clamp Reverse Jog When the module decodes a valid DYC having this bit SET, it sets its outputs to JGC41 - JGC48. The outputs remain at these values as long as this bit is SET, and return to zero when this bit is RESET.
	B14	= 0 Normal = 1 Execute Ejector Advance Jog When the module decodes a valid DYC having this bit SET, it sets its outputs to JGC49 - JGC56. The outputs remain at these values as long as this bit is SET, and return to zero when this bit is RESET.
	B15	= 0 Normal = 1 Execute Ejector Retract Jog When the module decodes a valid DYC having this bit SET, it sets its outputs to JGC57 - JGC64. The outputs remain at these values as long as this bit is SET, and return to zero when this bit is RESET.
DYC02		**Action Execution Commands** Bits DYC01-B08 - DYC01-B15 and all 16 bits in DYC02 are the 24 *action execution* commands to control the module. Because the module cannot respond to more than one action execution command at a time (exception: the module can start a Clamp Open Profile and Ejector Profile concurrently), the module ceases all action execution and sets its outputs to zero when it decodes a valid Dynamic Command Block with more than one of these SET. The module senses this invalid request and latches alarm status bit SYS14-B00, and unlatches SYS14-B00 when it decodes a valid Dynamic Command Block having one or none of the action execution bits SET.

Word	Bit	Description
DYC02		**Clamp Close Profiles Execution Commands** Bits DYC02-B00, -B01, -B02, -B03 are the four *action execution* commands available to initiate all profiled Clamp Close movements. The four Clamp Close Profiles may be logically linked as a single integrated machine movement if all three of the Clamp Close Profiles Logical Bridge Bits are RESET. These three Logical Bridge Bits are as follows: CPC03-B08 - Link First Close and Second Close CPC03-B09 - Link Second Close and Third Close CPC03-B10 - Link Third Close and Low Pressure Close If all three of these bits are RESET, transfer only DYC02-B00 to the module to execute the entire Clamp Close portion of an automatic machine cycle.

| | B00 | = 0   Normal
= 1   Execute First Clamp Close Profile
A false-to-true transition of this bit forces the module to do *one* of the following, attempted in the order listed. |

if:	then the module:
any of SYS07-B00 through B05 are SET	ignores any profile commands
ejector position exceeds EPC63	latches alarm status bit SYS14-B08
either of the following are true: – CPC03-B08 is SET and SYS15-B02 is RESET – SYS15-B06 is RESET	latches SYS13-B01

If clamp position exceeds CPC61 *and* all within any box are true:	then the module:
– CPC11 is not zero – clamp position exceeds non-zero entry in CPC11, CPC14, or CPC17	terminates any action in progress, and starts First Clamp Close Profile (see note)
– CPC11 is zero or is not zero when clamp position is less than all non- zero entries in CPC11,CPC14, and CPC17 – CPC03-B08 is SET	terminates any action in progress, and sets outputs to FCC33 - FCC40 (see note)
– CPC11 is zero or is not zero when clamp position is less than all non-zero entries in CPC11, CPC14, and CPC17, – CPC03-B08 is RESET – CPC20 is not zero – clamp position exceeds non-zero entry in CPC20, CPC23, or CPC26	terminates any action in progress, and starts Second Clamp Close Profile (see note)
– CPC11 is zero or is not zero when clamp position is less than all non-zero entries in CPC11,CPC14, and CPC17, – CPC03-B08 is RESET – CPC20 is zero or is not zero when clamp position is less than all non-zero entries in CPC20, CPC23, and CPC26 – CPC03-B09 is SET	terminates any action in progress, and sets outputs to SCC33 - SCC40 (see note)
– CPC11 is zero or is not zero when clamp position is less than all non-zero entries in CPC11, CPC14, and CPC17 – CPC03-B08 is RESET – CPC20 is zero or is not zero when clamp position is less than all non-zero entries in CPC20, CPC23, and CPC26 – CPC03-B09 is RESET – CPC29 is not zero – clamp position exceeds non-zero entry in CPC29, CPC32, or CPC35	terminates any action in progress, and starts Third Clamp Close Profile (see note)
– CPC11 is zero or is not zero when clamp position is less than all non-zero entries in CPC11,CPC14, and CPC17 – CPC03-B08 is RESET – CPC20 is zero or is not zero when clamp position is less than all non-zero entries in CPC20, CPC23, and CPC26 – CPC03-B09 is RESET – CPC29 is zero or is not zero when clamp position is less than all non-zero entries in CPC29, CPC32, and CPC35 – CPC03-B10 is SET	terminates any action in progress, and sets outputs to TCC33 - TCC40 (see note)

Note: If ejector position exceeds EPC63, the module ceases all action execution, sets its outputs to zero, and sets alarm status bit SYS14-B08.

DYC

Word	Bit	Description	
DYC02	B00	**If clamp position exceeds CPC61 *and* all within any box are true:**	**then the module:**
		– CPC11 is zero or is not zero when clamp position is less than all non-zero entries in CPC11, CPC14, and CPC17 – CPC03-B08 is RESET – CPC20 is zero or is not zero when clamp position is less than all non-zero entries in CPC20, CPC23, and CPC26 – CPC03-B09 is RESET – CPC29 is zero or is not zero when clamp position is less than all non-zero entries in CPC29, CPC32, and CPC35 – CPC03-B10 is RESET Also occurs when clamp position exceeds CPC62 but not CPC61	terminates any action in progress, and starts Low Pressure Close Profile
	B01	= 0 Normal = 1 Execute Second Clamp Close Profile A false-to-true transition of this bit forces the module to do *one* of the following, attempted in the order listed.	
		if:	**then the module:**
		any of SYS07-B00 through B05 are SET	ignores any profile commands
		ejector position exceeds EPC63	latches alarm status bit SYS14-B08
		either of the following are true: – CPC03-B09 is SET and SYS15-B03 is RESET – SYS15-B06 is RESET	latches SYS13-B02
		If clamp position exceeds CPC61 *and* all within any box are true:	**then the module:**
		– CPC20 is not zero – clamp position exceeds a non-zero entry in CPC20, CPC23, or CPC26	terminates any action in progress and starts Second Clamp Close Profile (see note)
		– CPC20 is zero or is not zero when clamp position is less than all non-zero entries in CPC20, CPC23, and CPC26 – CPC03-B09 is SET	terminates any action in progress and sets outputs to SCC33 - SCC40 (see note)
		– CPC20 is zero or is not zero when clamp position is less than all non-zero entries in CPC20, CPC23, and CPC26 – CPC03-B09 is RESET – CPC29 is not zero – clamp position exceeds a non-zero entry in CPC29, CPC32, or CPC35	terminates any action in progress and starts Third Clamp Close Profile (see note)
		– CPC20 is zero or is not zero when clamp position is less than all non-zero entries in CPC20, CPC23, and CPC26 – CPC03-B09 is RESET – CPC29 is zero or is not zero when clamp position is less than all non-zero entries in CPC29, CPC32, and CPC35 – CPC03-B10 is SET	terminates any action in progress and sets outputs to TCC33 - TCC40 (see note)
		– CPC20 is zero or is not zero when clamp position is less than all non-zero entries in CPC20, CPC23, and CPC26 – CPC03-B09 is RESET – CPC29 is zero or is not zero when clamp position is less than all non-zero entries in CPC29, CPC32, and CPC35 – CPC03-B10 is RESET Also occurs when clamp position exceeds CPC62 but not CPC61.	terminates any action in progress and starts Low Pressure Clamp Close Profile (see note)
		clamp position equals or is less than CPC62	terminates any action in progress and sets outputs to LPC33 - LPC40 (see note)
		Note: If ejector position exceeds EPC63, the module ceases all action execution, sets its outputs to zero, and sets alarm status bit SYS14-B08.	
	B02	= 0 Normal = 1 Execute Third Clamp Close Profile A false-to-true transition of this bit forces the module to do *one* of the following, attempted in the order listed.	
		if:	**then the module:**
		any of SYS07-B00 through B05 are SET	ignores any profile commands
		ejector position exceeds EPC63	latches alarm status bit SYS14-B08
		either of the following are true: – CPC03-B10 is SET and SYS15-B04 is RESET – SYS15-B06 is RESET	latches SYS13-B03

DYC02	B02	if:	then the module:
		If clamp position exceeds CPC61 _and_ all within any box are true:	**then the module:**
		– CPC29 is not zero – clamp position exceeds a non-zero entry in CPC29, CPC32, or CPC35	terminates any action in progress and starts Third Clamp Close Profile (see note)
		– CPC29 is zero or is not zero when clamp position is less than all non-zero entries in CPC29, CPC32, and CPC35 – CPC03-B10 is SET	terminates any action in progress and sets outputs to TCC33 - TCC40 (see note)
		– CPC29 is zero or is not zero when clamp position is less than all non-zero entries in CPC29, CPC32, and CPC35 – CPC03-B10 is RESET Also occurs when clamp position exceeds CPC62 but not CPC61.	terminates any action in progress and starts Low Pressure Clamp Close Profile (see note)
		clamp position equals or is less than CPC62	terminates any action in progress and sets outputs to LPC33 - LPC40 (see note)
		Note: If ejector position exceeds EPC63, the module ceases all action execution, sets its outputs to zero, and sets alarm status bit SYS14-B08.	
	B03	= 0 Normal = 1 Execute Low Pressure Clamp Close Profile A false-to-true transition of this bit forces the module to do _one_ of the following, attempted in the order listed.	
		if:	then the module:
		any of SYS07-B00 through B05 are SET	ignores any profile commands
		ejector position exceeds EPC63	latches alarm status bit SYS14-B08
		SYS15-B06 is RESET	latches SYS13-B04
		If all within any box are true:	**then the module:**
		– CPC38 is not zero – clamp position exceeds CPC38 Also occurs if clamp position exceeds CPC62 but not CPC61.	terminates any action in progress and starts Low Pressure Clamp Close Profile (see note)
		clamp position equals or is less than CPC62	terminates any action in progress and sets outputs to LPC33 - LPC40 (see note)
		Note: If ejector position exceeds EPC63, the module ceases all action execution, sets its outputs to zero, and sets alarm status bit SYS14-B08.	
	B04	**Ram (Screw) Profiles Execution Commands** Bits DYC02-B04 - DYC02-B09 are the six _action execution_ commands available to initiate all profiled ram (screw) movements (including both decompression movements). You may logically link all six in a single integrated machine movement if all three Logical Bridge Bits are RESET. These three bits are: HPC03-B08 - Link Inj/Pack/Hold and Pre-decompress (Inj/Pack/Hold always linked) HPC03-B09 - Link Pre-decompress and Plastication PPC03-B08 - Link Plastication and Post-decompress If all three of these bits are RESET, transfer only DYC02-B04 to the module to force the entire Ram (Screw) portion of an automatic machine cycle.	
		= 0 Normal = 1 Execute Injection Profile A false-to-true transition of this bit forces the module to do _one_ of the following, attempted in the order listed.	
		if:	then the module:
		any of SYS07-B00 through B05 are SET	ignores any profile commands
		SYS15-B08 is RESET	latches SYS13-B05
		either of the following are true: – ram (screw) position exceeds non-zero IPC61 – IPC61 is zero	terminates any action in progress and starts the Injection Profile
		both of the following are true: – ram (screw) position equals or is less than non-zero IPC61 – HPC11 is not zero	terminates any action in progress and starts the Pack Profile
		both of the following are true: – ram (screw) position equals or is less than non-zero IPC61 – HPC11 is zero	terminates any action in progress and starts the Hold Profile

Notes: 1. For [ ] engineering units, see page 3.
   2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

DYC

Word	Bit	Description	
DYC02	B05	**if:**	**then the module:**

		= 0 Normal = 1 Execute Pack Profile A false-to-true transition of this bit forces the module to do *one* of the following, attempted in the order listed.	
		if:	**then the module:**
		any of SYS07-B00 through B05 are SET	ignores any profile commands
		SYS15-B11 is RESET	latches SYS13-B06
		HPC11 is not zero	terminates any action in progress and starts the Pack Profile
		HPC11 is zero	terminates any action in progress and starts the Hold Profile
	B06	= 0 Normal = 1 Execute Hold Profile A false-to-true transition of this bit forces the module to do *one* of the following, attempted in the order listed.	
		if:	**then the module:**
		any of SYS07-B00 through B05 are SET	ignores any profile commands
		SYS15-B11 is RESET	latches SYS13-B07
		this bit (B06) is SET	terminates any action in progress and starts the Hold Profile
	B07	= 0 Normal = 1 Execute Pre-decompression Movement A false-to-true transition of this bit forces the module to do *one* of the following, attempted in the order listed.	
		if:	**then the module:**
		any of SYS07-B00 through B05 are SET	ignores any movement commands
		either of the following are true: – SYS15-B11 is RESET – HPC03-B09 is SET and SYS15-B12 is RESET	latches SYS13-B08
		all of the following are true: – PRC05 equals zero or SYS15-B12 is RESET – HPC03-B09 is RESET – SYS15-B14 is RESET	latches SYS13-B09
		PRC05 is not zero	terminates any action in progress and starts the Pre-decompression Movement
		both of the following are true: – PRC05 is zero – HPC03-B09 is SET	terminates any action in progress and sets outputs to PRC33 - PRC40
		either pair of the following are true: – PRC05 is zero or – SYS15-B12 is RESET – HPC03-B09 is RESET – HPC03-B09 is RESET	terminates any action in progress and starts the Plastication Profile

Word	Bit	Description
DYC02	B08	= 0 Normal = 1 Execute Plastication Profile A false-to-true transition of this bit forces the module to do *one* of the following, attempted in the order listed.

if:	then the module:
any of SYS07-B00 through B05 are SET	ignores any profile commands
SYS15-B14 is RESET	latches SYS13-B09
all of the following are true: – ram (screw) position equals or exceeds sum of PPC61 + PPC62 – PPC03-B08 is RESET – SYS15-B15 is RESET	latches SYS13-B10
ram (screw) position is less than the sum of PPC61 + PPC62	terminates any action in progress and starts the Plastication Profile
both of the following are true: – ram (screw) position equals or exceeds sum of PPC61 + PPC62 – PPC03-B08 is SET	terminates any action in progress and sets outputs to PLC33 - PLC40
all of the following are true: – ram (screw) position equals or exceeds sum of PPC61 + PPC62 – PPC03-B08 is SET – PSC05 is not zero	terminates any action in progress and starts Post-decompression Movement
all of the following are true: – ram (screw) position equals or exceeds sum of PPC61 + PPC62 – PPC03-B08 is SET – PSC05 is zero	terminates any action in progress and sets outputs to PSC33 - PSC40

Word	Bit	Description
	B09	= 0 Normal = 1 Execute Post-decompression Movement A false-to-true transition of this bit forces the module to do *one* of the following, attempted in the order listed.

if:	then the module:
any of SYS07-B00 through B05 are SET	ignores any movement commands
SYS15-B15 is RESET	latches SYS13-B10
PSC05 is not zero	terminates any action in progress and starts Post-decompression Movement
PSC05 is zero	terminates any action in progress and sets outputs to PSC33 - PSC40

Word	Bit	Description
	B10	**Clamp Open Profiles Execution Commands** Bits DYC02-B10 - DYC02-B14 are the five *action execution* commands available to initiate all profiled Clamp Open and Ejector movements. The four Clamp Open Profiles and the Ejector Profiles may be logically linked as a single integrated machine movement if all three Clamp Open Profiles Logical Bridge Bits and the single Ejector Profile Logical Bridge Bit are RESET. The four Logical Bridge Bits are: OPC03-B08 - Link First Open and Second Open OPC03-B09 - Link Second Open and Third Open OPC03-B10 - Link Third Open and Open Slow EPC03-B08 - Start Ejectors on Position. If all four bits are RESET, transmit only DYC02-B12 to the module to force the entire Clamp Open and Eject portion of an automatic machine cycle. = 0 Normal = 1 Execute First Clamp Open Profile A false-to-true transition of this bit forces the module to do *one* of the following, attempted in the order listed.

if:	then the module:
any of SYS07-B00 through B05 are SET	ignores any profile commands
either of the following are true: – OPC03-B08 is SET and SYS16-B00 is RESET – SYS16-B04 is RESET	latches SYS13-B11

Notes: 1. For [ ] engineering units, see page 3.
      2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

DYC

Word	Bit	Description	
DYC02	B10	**If clamp position is less than OPC61 and** *all within each group* **are true:**	**then the module:**
		– OPC11 is not zero – clamp position less than non-zero entry in OPC11, OPC14, or OPC17	terminates any action in progress (except ongoing Ejector Profile) and starts First Clamp Open Profile
		– OPC11 is zero or is not zero when clamp position exceeds all non-zero entries in OPC11, OPC14, and OPC17 –OPC03-B08 is SET	terminates any action in progress (except ongoing Ejector Profile) and sets outputs to FOC33 - FOC40
		– OPC11 is zero or is not zero when clamp position exceeds all non-zero entries in OPC11, OPC14, and OPC17 – OPC03-B08 is RESET – OPC20 is not zero – clamp position less than non-zero entry in OPC20, OPC23, or OPC26	terminates any action in progress (except ongoing Ejector Profile) and starts Second Clamp Open Profile
		– OPC11 is zero or is not zero when clamp position exceeds all non-zero entries in OPC11,OPC14, and OPC17 – OPC03-B08 is RESET – OPC20 is zero or is not zero when clamp position exceeds all non-zero entries in OPC20, OPC23, and OPC26 – OPC03-B09 is SET	terminates any action in progress (except ongoing Ejector Profile) and sets outputs to SOC33 - SOC40
		– OPC11 is zero or is not zero when clamp position exceeds all non-zero entries in OPC11, OPC14, and OPC17 – OPC03-B08 is RESET – OPC20 is zero or is not zero when clamp position exceeds all non-zero entries in OPC20, OPC23, and OPC26 – OPC03-B09 is RESET – OPC29 is not zero – clamp position exceeds non-zero entry in OPC29, OPC32, or OPC35	terminates any action in progress (except ongoing Ejector Profile) and starts Third Clamp Open Profile
		– OPC11 is zero or is not zero when clamp position exceeds all non-zero entries in OPC11,OPC14, and OPC17 – OPC03-B08 is RESET – OPC20 is zero or is not zero when clamp position exceeds all non-zero entries in OPC20, OPC23, and OPC26 – OPC03-B09 is RESET – OPC29 is zero or is not zero when clamp position exceeds all non-zero entries in OPC29, OPC32, and OPC35 – OPC03-B10 is SET	terminates any action in progress (except ongoing Ejector Profile) and sets outputs to TOC33 - TOC40
		– OPC11 is zero or is not zero when clamp position exceeds all non-zero entries in OPC11, OPC14, and OPC17 – OPC03-B08 is RESET – OPC20 is zero or is not zero when clamp position exceeds all non-zero entries in OPC20, OPC23, and OPC26 – OPC03-B09 is RESET – OPC29 is zero or is not zero when clamp position exceeds all non-zero entries in OPC29, OPC32, and OPC35 – OPC03-B10 is RESET Also occurs for clamp position less than OPC62 but not less than OPC61.	terminates any action in progress (except ongoing Ejector Profile) and starts Clamp Open Slow Profile
		clamp position equals or exceeds OPC62	terminates any action in progress (except ongoing Ejector Profile) and sets outputs to OSC33 - OSC40

Word	Bit	Description
DYC02	B11	= 0 Normal = 1 Execute Second Clamp Open Profile A false-to-true transition of this bit forces the module to do *one* of the following, attempted in the order listed.

if:	then the module:
any of SYS07-B00 through B05 are SET	ignores any profile commands
either of the following are true: – OPC03-B09 is SET and SYS16-B01 is RESET – SYS16-B04 is RESET	latches SYS13-B12

If clamp position is less than OPC61 *and* all within any box are true:	**then the module:**
– OPC20 is zero, or is not zero when clamp position is less than a non-zero entry in OPC20, OPC23, or OPC26	terminates any action in progress (except ongoing Ejector Profile) and starts 2nd Clamp Open Profile
– OPC20 is zero or is not zero when clamp position exceeds all non-zero entries in OPC20, OPC23, and OPC26 – OPC03-B09 is SET	terminates any action in progress (except ongoing Ejector Profile) and sets outputs to SOC33 - SOC40
– OPC20 is zero or is not zero when clamp position exceeds all non-zero entries in OPC20, OPC23, and OPC26 – OPC03-B09 is RESET – OPC29 is not zero – clamp position exceeds non-zero entry in OPC29, OPC32, or OPC35	terminates any action in progress (except ongoing Ejector Profile) and starts Third Clamp Open Profile
– OPC20 is zero or is not zero when clamp position exceeds all non-zero entries in OPC20, OPC23, and OPC26 – OPC03-B09 is RESET – OPC29 is zero or is not zero when clamp position exceeds all non-zero entries in OPC29, OPC32, and OPC35 – OPC03-B10 is SET	terminates any action in progress (except ongoing Ejector Profile) and sets outputs to TOC33 - TOC40
– OPC20 is zero or is not zero when clamp position exceeds all non-zero entries in OPC20, OPC23, and OPC26 – OPC03-B09 is RESET – OPC29 is zero or is not zero when clamp position exceeds all non-zero entries in OPC29, OPC32, and OPC35 – OPC03-B10 is RESET Also occurs for clamp position less than OPC62 but not less than OPC61.	terminates any action in progress (except ongoing Ejector Profile) and starts Clamp Open Slow Profile
clamp position equals or exceeds OPC62	terminates any action in progress (except ongoing Ejector Profile) and sets outputs to OSC33 - OSC40

Word	Bit	Description
	B12	= 0 Normal = 1 Execute Third Clamp Open Profile A false-to-true transition of this bit forces the module to do *one* of the following, attempted in the order listed.

if:	then the module:
any of SYS07-B00 through B05 are SET	ignores any profile commands until you correct overtravel or inhibit these alarm bits
either of the following are true: – OPC03-B10 is SET and SYS16-B02 is RESET – SYS16-B04 is RESET	latches SYS13-B13

If clamp position is less than OPC61 *and* all within any box are true:	**then the module:**
– OPC29 is not zero – clamp position less than non-zero entry in OPC29, OPC32, or OPC35	terminates any action in progress (except ongoing Ejector Profile) and starts Third Clamp Open Profile
– OPC29 is zero or is not zero when clamp position exceeds all non-zero entries in OPC29, OPC32, and OPC35 – OPC03-B10 is SET	terminates any action in progress (except ongoing Ejector Profile) and sets outputs to TOC33 - TOC40
– OPC29 is zero or is not zero when clamp position exceeds all non-zero entries in OPC29, OPC32, and OPC35 – OPC03-B10 is RESET Also occurs for clamp position less than OPC62 but not less than OPC61.	terminates any action in progress (except ongoing Ejector Profile) and starts Clamp Open Slow Profile
clamp position equals or exceeds OPC62	terminates any action in progress (except ongoing Ejector Profile) and sets outputs to OSC33 -OSC40

Notes: 1. For [ ] engineering units, see page 3.
    2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Word	Bit	Description	
DYC02	B13	**if:**	**then the module:**
		= 0 Normal = 1 Execute Clamp Open Slow Profile A false-to-true transition of this bit forces the module to do *one* of the following, attempted in the order listed.	
		if:	**then the module:**
		any of SYS07-B00 through B05 are SET	ignores any profile commands
		SYS16-B04 is RESET	latches SYS13-B14
		all of the following are true: – OPC38 is not zero – clamp position is less than OPC38 Also occurs for clamp position less than OPC62 but not less than OPC61.	terminates any action in progress (except ongoing Ejector Profile) and starts Clamp Open Slow Profile
		clamp position equals or exceeds OPC62	terminates any action in progress (except ongoing Ejector Profile) and sets outputs to OSC33 - OSC40
	B14	= 0 Normal = 1 Execute Ejector Profile A false-to-true transition of this bit forces the module to do *one* of the following, attempted in the order listed.	
		if:	**then the module:**
		any of SYS07-B00 through B05, SYS21-B00 through B03, or EPC03-B09 is SET, or EPC64 is zero	ignores any profile commands
		EPC03-B09 is zero and clamp position equals or is less than EPC62	latches alarm status bit SYS14-B09
		SYS16-B07 is RESET	latches SYS13-B15
		clamp position equals or is less than EPC62 during the Ejector Profile or while the Ejector Profile is in the *stop-and-notify* mode with EPC03-B12 and SYS03-B08 both SET	ceases all action execution, sets its outputs to zero, and sets alarm status bit SYS14-B09
		clamp position exceeds EPC62	terminates any action in progress (except ongoing Clamp Open Profiles) and starts the Ejector Profile
	B15	**Stop Command** = 0 Outputs Enabled = 1 Outputs Disabled When the module decodes a valid DYC having this bit SET, it halts any ongoing profile or jog movement and set its outputs to zero. The module will not respond to any new jog or profile execution commands as long as this bit remains SET. This bit may be latched by the end user to serve as a module Stop command, or may be momentarily asserted to force the module to terminate an ongoing profile.	
DYC03		**Timer Reset Commands**	
	B00	= 0 Normal = 1 Reset Tonnage Watchdog Timer A false-to-true transition of this bit forces the module to zero the accumulated value of the Tonnage Watchdog Timer in SYS57.	
	B01	= 0 Normal = 1 Reset Cure Timer A false-to-true transition of this bit forces the module to: reset master status bit SYS03-B03, reset master status bit SYS03-B05, and reset SYS58 to zero	
	B02- B07	Open	

Word	Bit	Description
DYC03	B08	**Power Start-up Reset Command** = 0 Normal = 1 Reset Power Start-up Bit A false-to-true transition of this bit forces the module to unlatch SYS01-B08.
	B09	**Alarm Reset Command** = 0 Normal = 1 Reset Latched Alarms A false-to-true transition of this bit forces the module to unlatch all bits in SYS09, SYS10, SYS11, and SYS12.
	B10	**Profile Status Bits Reset Command** = 0 Normal = 1 Reset Profile Status Bits A false-to-true transition of this bit forces the module to unlatch the 15 *profile complete* status bits, SYS02-B00 - SYS02-B14 inclusive.
	B11-B14	Open
	B15	**Continue Ejector Profile command** = 0 Normal = 1 Continue Ejector Profile A false-to-true transition of this bit forces the module to resume the Ejector Profile from the stop-and-notify pause. The module completes the next programmed Ejector Profile stroke unless interrupted by any *one* of: – any other action execution command (commands to start any Clamp Close Profile will be ignored) (commands to start any Clamp Open Profile will not interrupt) – the dynamic stop command (DYC02-B15 = 1), or – a clamp position equal to or less than EPC62
		if: **then the module:** – SYS21-B14 = 0, or SYS03-B08 = 0, or ignores this bit – EPC03-B09 = 1, or EPC03-B12 = 0, or – clamp position is equal to or less than EPC62 – the module receives this bit when EPC03-B09 = 0 sets alarm status bit SYS14-B09 and clamp position equals or is less than EPC62
DYC04		**Status Request Commands**
		Bits DYC04-B00 - DYC04-B07 are the eight command bits available to request the Status Blocks that the module returns with the next BTR to the PLC processor. The module does *not* respond to any bit associated with an unsupported status block (based on Module I/O configuration). The module defaults to returning System Status Block (SYS) if none of these eight bits are set or if the last BTW received at the module was not the Dynamic Command Block (DYC). If more than one of these eight bits are set, the module prioritizes BTR service by responding to the lowest-numbered bit.
	B00	= 0 Normal = 1 Return CPS with next BTR
	B01	= 0 Normal = 1 Return IPS with next BTR
	B02	= 0 Normal = 1 Return HPS with next BTR
	B03	= 0 Normal = 1 Return PPS with next BTR
	B04	= 0 Normal = 1 Return OPS with next BTR
	B05	= 0 Normal = 1 Return EPS with next BTR
	B06	= 0 Normal = 1 Return RLS with next BTR
	B07	= 0 Normal = 1 Return CLS with next BTR

Notes: 1. For [ ] engineering units, see page 3.
2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

DYC

Word	Bit	Description
DYC04		**Profile Status Block Clear Commands**
	B08	= 0 Normal = 1 Clear CPS A false-to-true transition of this bit forces the module to clear (zero) all words in its CPS buffer (except Master Status Words CPS01 - CPS04). The module does not respond to this bit if the CPS is an unsupported status block based upon Module I/O configuration.
	B09	= 0 Normal = 1 Clear IPS A false-to-true transition of this bit forces the module to clear (zero) all words in its IPS buffer (except Master Status Words IPS01 - IPS04). The module does not respond to this bit if the IPS is an unsupported status block based upon Module I/O configuration.
	B10	= 0 Normal = 1 Clear HPS A false-to-true transition of this bit forces the module to clear (zero) all words in its HPS buffer (except Master Status Words HPS01 - HPS04). The module does not respond to this bit if the HPS is an unsupported status block based upon Module I/O configuration.
	B11	= 0 Normal = 1 Clear PPS A false-to-true transition of this bit forces the module to clear (zero) all words in its PPS buffer (except Master Status Words PPS01 - PPS04). The module does not respond to this bit if the PPS is an unsupported status block based upon Module I/O configuration.
	B12	= 0 Normal = 1 Clear OPS A false-to-true transition of this bit forces the module to clear (zero) all words in its OPS buffer (except Master Status Words OPS01 - OPS04). The module does not respond to this bit if the OPS is an unsupported status block based upon Module I/O configuration.
	B13	= 0 Normal = 1 Clear EPS A false-to-true transition of this bit forces the module to clear (zero) all words in its EPS buffer (except Master Status Words EPS01 - EPS04). The module does not respond to this bit if the EPS is an unsupported status block based upon Module I/O configuration.
	B14	Open
	B15	= 0 Normal = 1 Clear PTS (Same description as B13, but for PTS.)
DYC05		**ERC Re-initialize Commands**
	B00	= 0 Normal = 1 Re-initialize First Clamp Close Profile ERC Values A false-to-true transition of this bit forces the module to re-initialize the three ERC values associated with the First Clamp Close Profile.
	B01	= 0 Normal = 1 Re-initialize Second Clamp Close Profile ERC Values A false-to-true transition of this bit forces the module to re-initialize the three ERC values associated with the Second Clamp Close Profile.
	B02	= 0 Normal = 1 Re-initialize Third Clamp Close Profile ERC Values A false-to-true transition of this bit forces the module to re-initialize the three ERC values associated with the Third Clamp Close Profile.
	B03	= 0 Normal = 1 Re-initialize Low Pressure Close Profile ERC Values A false-to-true transition of this bit forces the module to re-initialize the two ERC values associated with the Clamp Low Pressure Close Profile.
	B04	= 0 Normal = 1 Re-initialize Injection Profile ERC Values A false-to-true transition of this bit forces module to re-initialize the 11 ERC values associated with the Injection Profile.
	B05	= 0 Normal = 1 Re-initialize Pack Profile ERC Values A false-to-true transition of this bit forces the module to re-initialize the five ERC values associated with Pack Profile.

Word	Bit	Description
DYC05	B06	= 0 Normal = 1 Re-initialize Hold Profile ERC Values A false-to-true transition of this bit forces the module to re-initialize the five ERC values associated with the Hold Profile.
	B07	= 0 Normal = 1 Open
	B08	= 0 Normal = 1 Re-initialize Plastication Profile ERC Values A false-to-true transition of this bit forces module to re-initialize the 11 ERC values associated with Plastication Profile.
	B09	= 0 Normal = 1 Open
	B10	= 0 Normal = 1 Re-initialize First Clamp Open Profile ERC Values A false-to-true transition of this bit forces the module to re-initialize the three ERC values associated with the First Clamp Open Profile.
	B11	= 0 Normal = 1 Re-initialize Second Clamp Open Profile ERC Values A false-to-true transition of this bit forces the module to re-initialize the three ERC values associated with the Second Clamp Open Profile.
	B12	= 0 Normal = 1 Re-initialize Third Clamp Open Profile ERC Values A false-to-true transition of this bit forces the module to re-initialize the three ERC values associated with the Third Clamp Open Profile.
	B13	= 0 Normal = 1 Re-initialize Clamp Open Slow Profile ERC Values A false-to-true transition of this bit forces the module to re-initialize the two ERC values associated with the Clamp Open Slow Profile.
	B14	= 0 Normal = 1 Re-initialize Ejector Profile ERC Values A false-to-true transition of this bit forces module to re-initialize the eight ERC values associated with the Ejector Profile.
	B15	= 0 Normal = 1 Re-initialize All ERC Values A false-to-true transition of this bit forces the module to re-initialize the 62 ERC values associated with all profiles.
DYC06		Open
DYC07		**Process Trace Commands**
	B00	Process trace data collection inhibited (examined at beginning of injection phase)
	B01	Return injection position trace data in next PTS block
	B02	Return trace #1 data in next PTS block
	B03	Return trace #2 data in next PTS block
	B04	Return trace #3 data in next PTS block
	B05	Return trace #4 data in next PTS block
	B06 -B14	Open
	B15	Return phase/segment start information in next PTS block
DYC08		**Process Trace Data Block Request**
	B00	Return trace data points 1 to 50 in next PTS block
	B01	Return trace data points 51 to 100 in next PTS block
	B02	Return trace data points 101 to 150 in next PTS block
	B03	Return trace data points 151 to 200 in next PTS block
	B04	Return trace data points 201 to 250 in next PTS block
	B05	Return trace data points 251 to 300 in next PTS block
	B06	Return trace data points 301 to 350 in next PTS block
	B07	**Return trace data points 351 to 400 in next PTS block**
	B08 -B15	Open

Notes: 1. For [ ] engineering units, see page 3.
          2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

DYC

Direct Set-output Values

The module sets its outputs to the following values when responding to command bit DYC01-B08 = 1. The module uses ramp rates DYC17 - DYC32 when moving the outputs to these values after DYC01-B08 is SET, and will also use the ramps when one of DYC09 - DYC16 is changed while DYC01-B08 is SET.

Word	Description
DYC09	Output #1 Direct Set-output Value [19]
DYC10	Output #2 Direct Set-output Value [19]
DYC11	Output #3 Direct Set-output Value [19]
DYC12	Output #4 Direct Set-output Value [19]
DYC13	Output #5 Direct Set-output Value [19]
DYC14	Output #6 Direct Set-output Value [19]
DYC15	Output #7 Direct Set-output Value [19]
DYC16	Output #8 Direct Set-output Value [19]

Direct Set-output Ramp Rates

Word	Description
DYC17	Output #1 Accel Ramp Rate for Direct Set-output Moves [20]
DYC18	Output #2 Accel Ramp Rate for Direct Set-output Moves [20]
DYC19	Output #3 Accel Ramp Rate for Direct Set-output Moves [20]
DYC20	Output #4 Accel Ramp Rate for Direct Set-output Moves [20]
DYC21	Output #5 Accel Ramp Rate for Direct Set-output Moves [20]
DYC22	Output #6 Accel Ramp Rate for Direct Set-output Moves [20]
DYC23	Output #7 Accel Ramp Rate for Direct Set-output Moves [20]
DYC24	Output #8 Accel Ramp Rate for Direct Set-output Moves [20]
DYC25	Output #1 Decel Ramp Rate for Direct Set-output Moves [20]
DYC26	Output #2 Decel Ramp Rate for Direct Set-output Moves [20]
DYC27	Output #3 Decel Ramp Rate for Direct Set-output Moves [20]
DYC28	Output #4 Decel Ramp Rate for Direct Set-output Moves [20]
DYC29	Output #5 Decel Ramp Rate for Direct Set-output Moves [20]
DYC30	Output #6 Decel Ramp Rate for Direct Set-output Moves [20]
DYC31	Output #7 Decel Ramp Rate for Direct Set-output Moves [20]
DYC32	Output #8 Decel Ramp Rate for Direct Set-output Moves [20]
DYC33 - DYC60	Open
DYC61	Programming Error Return Request [29] When the module has a valid MCC and DYC installed, it responds to any non-zero command block ID to the lower byte of this word by returning the identical command block ID in SYS61. In SYS62, it also returns the existing programming error code associated with the command block. If the module does not have a current programming error associated with the requested command block, or if this entry is zero, the module reports values in SYS61 and SYS62 in the order that programming errors were received.
DYC62 - 64	Open

EAC – Ejector Advance Configuration Block

Bit-mapped Control Words

Word	Bit	Description
EAC01		Block ID = 00010110 (Low byte). High byte reserved for the module Do not use.
EAC02		**Configuration Selections**
	B00-B02	Selected Velocity Advance Control Valve The module uses its algorithm to drive the following output during any advance stroke (Vel/Pos Ejector Profile). **B02 B01 B00** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B03	Open
	B04-B06	Selected Pressure Advance Control Valve The module uses its algorithm to drive the following output during any advance stroke (Press/Pos Ejector Profile). **B06 B05 B04** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B07	Pressure Algorithm Selection = 0 Dependent Gains (ISA) = 1 Independent Gains (A-B)
	B08-B15	Open
EAC03 - 04		Open

Expert Response Compensation (ERC) Percentage

Word	Description
EAC05	Minimum Velocity-advance Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
EAC06	Minimum Pressure-advance Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
EAC07	Open

Watchdog Timer

Word	Description
EAC08	Full Profile Watchdog Timer Preset [21] When Module starts the Ejector Profile, it starts an internal Profile Watchdog Timer. It stops this timer and resets its accumulated value to zero (after reporting total execution time in EPS57) when it completes the profile. It sets master status bit SYS04-B14 when the accumulated value of this timer equals or exceeds this entry. A zero entry inhibits SYS04-B14.

Notes: 1. For [ ] engineering units, see page 3.
       2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

EAC

Unselected Valve Set-output Values

When the module starts an Ejector Profile advance stroke, it:

- sets its *unselected* outputs to the values listed below
- ignores the *unselected* value of the *selected* output
- uses ramp rates EAC17 - EAC32 to ramp *unselected* outputs

if	then
the module is commanded to start any of the four Clamp Open Profiles during an Ejector Profile advance stroke	the Ejector Profile gives control of all of its unselected valves to the executing Clamp Open Profile
the module is commanded to start an Ejector Profile advance stroke during any of the four Clamp Open Profiles	the executing Clamp Open Profile surrenders control of only the *selected* Ejector Profile advance valve
only one of the four Clamp Open Profiles and an Ejector Profile advance stroke are run concurrently	all outputs that are unselected in both profiles are controlled by the executing Clamp Open Profile

Word	Description
EAC09	Output #1 Set-output Value during Advance [19]
EAC10	Output #2 Set-output Value during Advance [19]
EAC11	Output #3 Set-output Value during Advance [19]
EAC12	Output #4 Set-output Value during Advance [19]
EAC13	Output #5 Set-output Value during Advance [19]
EAC14	Output #6 Set-output Value during Advance [19]
EAC15	Output #7 Set-output Value during Advance [19]
EAC16	Output #8 Set-output Value during Advance [19]

Output Ramp Rates

The module uses the following ramp rates when moving its outputs from setpoint to setpoint during any Ejector Profile advance stroke *not* being executed concurrently with one of the four Clamp Open Profiles. If the module is executing an Ejector Profile advance stroke concurrently with one of the four Clamp Open Profiles, the module will access only the two ramp rates in EAC17 - EAC32 that pertain to the *selected* Ejector Profile advance valve.

The module interprets a zero ramp rate entry as a step function ramp (ramp disable).

Word	Description
EAC17	Output #1 Acceleration Ramp Rate during Advance [20]
EAC18	Output #2 Acceleration Ramp Rate during Advance [20]
EAC19	Output #3 Acceleration Ramp Rate during Advance [20]
EAC20	Output #4 Acceleration Ramp Rate during Advance [20]
EAC21	Output #5 Acceleration Ramp Rate during Advance [20]
EAC22	Output #6 Acceleration Ramp Rate during Advance [20]
EAC23	Output #7 Acceleration Ramp Rate during Advance [20]
EAC24	Output #8 Acceleration Ramp Rate during Advance [20]
EAC25	Output #1 Deceleration Ramp Rate during Advance [20]
EAC26	Output #2 Deceleration Ramp Rate during Advance [20]
EAC27	Output #3 Deceleration Ramp Rate during Advance [20]
EAC28	Output #4 Deceleration Ramp Rate during Advance [20]
EAC29	Output #5 Deceleration Ramp Rate during Advance [20]
EAC30	Output #6 Deceleration Ramp Rate during Advance [20]
EAC31	Output #7 Deceleration Ramp Rate during Advance [20]
EAC32	Output #8 Deceleration Ramp Rate during Advance [20]

End of Advance Set-output Values

At the end of each advance stroke during the Ejector Profile, the module checks the following to determine further control action:

- state of EPC03-B12
- states of SYS21-B10 - SYS21-B13

if	then the module
EPC03-B12 = 0	ignores EAC33 - EAC40 and continues the Ejector Profile
EPC03-B12 = 1 and SYS21-B10 through B13 all bits = 0	uses the ramps EAC17 - EAC32 to move its outputs to EAC33 - EAC40, and sets status bit SYS22-B14
EPC03-B12 = 1 and SYS21-B10 through B13 any bit = 1	ignores EAC33 - EAC40 and gives all output control to the executing Clamp Open Profile

Word	Description
EAC33	Output #1 Set-output Value at End of Advance [19]
EAC34	Output #2 Set-output Value at End of Advance [19]
EAC35	Output #3 Set-output Value at End of Advance [19]
EAC36	Output #4 Set-output Value at End of Advance [19]
EAC37	Output #5 Set-output Value at End of Advance [19]
EAC38	Output #6 Set-output Value at End of Advance [19]
EAC39	Output #7 Set-output Value at End of Advance [19]
EAC40	Output #8 Set-output Value at End of Advance [19]

Notes: 1. For [ ] engineering units, see page 3.
2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.
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EAC

Pressure Control Limits

Word	Description
EAC41	Advance stroke Pressure Minimum Control Limit [03] Minimum controllable ejector-advance pressure attainable during any Press/Pos Ejector Profile advance stroke. The module expects this ejector-advance pressure when setting its selected pressure advance valve to the %- output in EAC43.
EAC42	Advance stroke Pressure Maximum Control Limit [03] Maximum controllable ejector-advance pressure attainable during any Press/Pos Ejector Profile advance stroke. The module expects this ejector-advance pressure when setting its selected pressure advance valve to the %- output in EAC44.
EAC43	Selected Pressure Advance Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected pressure advance valve during any Press/Pos Ejector Profile. The module expects a pressure equal to EAC41 when setting the selected pressure advance valve to this %-output during stroke execution. The Press/Pos Ejector Profile advance stroke will be executed as a reverse-acting algorithm if this entry is greater than EAC44.
EAC44	Selected Pressure Advance Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected pressure advance valve during any Press/Pos Ejector Profile. The module expects a pressure equal to EAC42 when setting the selected pressure advance valve to this %-output during stroke execution. The Press/Pos Ejector Profile advance stroke will be executed as a reverse-acting algorithm if this entry is less than EAC43.

Velocity Control Limits

Word	Description
EAC45	Advance stroke Velocity Minimum Control Limit [10] Minimum controllable ejector-advance velocity attainable during any Vel/Pos Ejector Profile advance stroke. The module expects this ejector-advance velocity when setting its selected velocity-advance valve to the %-output in EAC47.
EAC46	Advance stroke Velocity Maximum Control Limit [10] Maximum controllable ejector-advance velocity attainable during any Vel/Pos Ejector Profile advance stroke. The module expects this ejector-advance velocity when setting its selected velocity-advance valve to the %-output in EAC48.
EAC47	Selected Velocity Advance Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected velocity advance valve during any Vel/Pos Ejector Profile. The module expects a velocity equal to EAC45 when setting the selected velocity advance valve to this %-output during stroke execution. The Vel/Pos Ejector Profile advance stroke will be executed as a reverse-acting algorithm if this entry is greater than EAC48.
EAC48	Selected Velocity Advance Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected velocity advance valve during any Vel/Pos Ejector Profile. The module expects a velocity equal to EAC46 when setting the selected velocity advance valve to this %-output during stroke execution. The Vel/Pos Ejector Profile advance stroke will be executed as a reverse-acting algorithm if this entry is less than EAC47.

Advance Stroke Tuning Constants

Word	Description
EAC49	Proportional Gain for Pressure Control [30]
EAC50	Integral Gain for Pressure Control [27] or [28]
EAC51	Derivative Gain for Pressure Control [26] or [21]
EAC52	Proportional Gain for Velocity Control [28]
EAC53	Feed Forward Gain for Velocity Control [30]
EAC54 - 56	Open

Profile Pressure Alarm Setpoint

Word	Description
EAC57	Profile High Pressure Alarm Setpoint [03] The module compares real-time ejector pressure against this entry when executing the Ejector Profile. The module sets alarm status bit SYS06-B13 when ejector pressure equals or exceeds this entry during the Ejector Profile. A zero entry inhibits SYS06-B13.
EAC58 - 64	Open

EPC – Ejector Profile Block   Bit-mapped Control Words

Word	Bit	Description	
EPC01		Block ID = 00011000 (Low byte) High byte reserved for the module. Do not use.	
EPC02		Open	
EPC03		**Configuration Selections**	
	B00	Profile Algorithm Selection = 0 Vel/Pos selected for Ejector Profile = 1 Press/Pos selected for Ejector Profile	
	B01-B07	Open	
	B08	Ejector Profile Logical Bridge Selection = 0 Start Ejector Profile on Position during Open = 1 Start Ejector Profile on Command	
		if:	**then the module:**
		EPC03-B09 = 0 and the clamp position equals or exceeds EPC61 during any of the four Clamp Open Profiles or while it is holding its outputs to any of the four sets of End of Open Profile Set-output values (FOC33 - FOC40, SOC33 - SOC40, TOC33 -TOC40, or OSC33 - OSC40)	checks this bit
		RESET	immediately begins the Ejector Profile concurrently with any executing Clamp Open Profiles
	B09	= 0 Ejector Profile Enabled = 1 Ejector Profile Disabled	
		if:	**then the module:**
		RESET and one of the following is true: EPC03-B08 = 0 and the *clamp* position equals or exceeds EPC61 during the four Clamp Open Profiles EPC03-B08 = 0 and the *clamp* position equals or exceeds EPC61 while module is holding its outputs to any of the four sets of End of Open Profile Set-output values (FOC33 - FOC40, SOC33 - SOC40, TOC33 - TOC40, or OSC33 - OSC40) EPC03-B08 = 1 and module decodes a valid Dynamic Block with DYC02-B14 = 1	immediately begins execution of the Ejector Profile
		SET	does not execute the Ejector Profile
	B10 - B11	Open	
	B12	Ejector Profile Stop-and-Notify Selection = 0 Ejector Profile to run without interruption. = 1 Module to stop and notify the PLC processor at End of Stroke **if:** **then the module:**	
		RESET	executes the entire Ejector Profile when commanded, never sets master status bit SYS03-B08, nor responds to DYC03-B15
		SET	stops to notify the PLC processor when it completes advance stroke by setting its outputs to EAC33 - EAC40, retract stroke by setting its outputs to ERC33 - ERC40, and sets master status bit SYS03-B08
		paused during the Ejector Profile	may respond to DYC03-B15 to continue execution

Notes: 1. For [ ] engineering units, see page 3.
     2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

EPC

Word	Bit	Description

EPC03	B13	Ejector Tip Strokes Selection
		= 0 All Ejector Strokes to be Full Strokes.
		= 1 Intermediate Ejector Strokes to be Tip Strokes
		if: **then the module:**
		EPC64 is greater than one determines from this bit what type of ejector strokes are required
		
		RESET executes Ejector Profile using only full ejector strokes and ignores EPC21 - EPC32
		
		SET executes the Ejector Profile using the:
		                                                full advance setpoints (EPC09 - EPC20) only for initial advance stroke
		                                                full retract setpoints (EPC33 - EPC44) only for final retract stroke
		                                                tip advance/retract setpoints (EPC21 - EPC32) for all intermediate ejector strokes

	B14	Velocity Units Selection = 0 Velocity Parameters in Percent Velocity = 1 Velocity Parameters in in.(mm)/s **if:** **then the module:** RESET returns all segment velocity actuals (and assumes all velocity setpoints) in percent velocity where EAC46 and ERC46 represent 100% velocity. SET returns all velocity actuals (and assumes all velocity setpoints) in in.(mm)/s.
	B15	Ejector Forward Dwell Selection = 0 Apply Forward Dwell on Final Stroke. = 1 Apply Forward Dwell on Initial Stroke. Informs Module when to start internal Ejector Forward Dwell Timer (EPC57) **if:** **then the module:** RESET starts the timer when ejector reaches its final advanced position (EPC59 when EPC03-B13 = 0 or EPC29 when EPC03-B13 = 1) The timer accumulated value must equal or exceed EPC57 before the module may start the final full retract portion of the Ejector Profile. **if:** **then the module:** SET starts the timer when the ejector reaches its initial fully advanced position (EPC59) The timer accumulated value must equal or exceed EPC57 before the module may resume executing the Ejector Pro- file. The state of this bit has no effect on Ejector Profile execution if EPC57 is zero, or if EPC64 is one.
EPC04		Configuration Selections
		Open/Closed Loop Selection
	B00	= 0 Vel/Pos Ejector Profiles Closed Loop = 1 Vel/Pos Ejector Profiles Open Loop
	B01	= 0 Press/Pos Ejector Profiles Closed Loop = 1 Press/Pos Ejector Profiles Open Loop
	B02-B07	Open
		ERC Enabled/Disabled Selection
	B08	= 0 Vel/Pos ERC On = 1 Vel/Pos ERC Off
	B09	= 0 Press/Pos ERC On = 1 Press/Pos ERC Off
	B10-B15	Open
EPC05 - 08		Open

Ejector Full Advance Profile Setpoints

Word	Description
EPC09	Full Advance Segment 1 Velocity Setpoint [09] or [10] **if:** **then the module:** you select Vel/Pos profile execution controls ejector advance speed to this setpoint after starting any full advance portion of the Ejector Profile until ejector position reaches the smaller of non-zero EPC11 or EPC59 EPC03-B14 is RESET reads this parameter in percent velocity EPC03-B14 is SET reads it in in.(mm)/s.
EPC10	Full Advance Segment 1 Pressure Setpoint [03] **if:** **then the module:** you select Press/Pos profile execution controls ejector advance pressure to this setpoint after starting any full advance portion of the Ejector Profile until ejector position reaches the smaller of non-zero EPC11 or EPC59
EPC11	End of Full Advance Segment 1 Position Setpoint [16]
EPC12	Full Advance Segment 2 Velocity Setpoint [09] or [10] **if:** **then the module:** you select Vel/Pos profile execution controls ejector advance speed to this setpoint during any full advance portion of the Ejector Profile from the ejector position EPC11until ejector position reaches the smaller of non-zero EPC14 or EPC59 EPC03-B14 is RESET reads this parameter in percent velocity EPC03-B14 is SET reads it in in.(mm)/s
EPC13	Full Advance Segment 2 Pressure Setpoint [03] **if:** **then the module:** you select Press/Pos profile execution controls ejector advance pressure to this setpoint after during any full advance portion of the Ejector Profile from the ejector position EPC11 until ejector position reaches the smaller of non-zero EPC14 or EPC59
EPC14	End of Full Advance Segment 2 Position Setpoint [16]
EPC15	Full Advance Segment 3 Velocity Setpoint [09] or [10] **if:** **then the module:** you select Vel/Pos profile execution controls ejector advance speed to this setpoint during any full advance portion of the Ejector Profile from the ejector position EPC14 until ejector position reaches EPC59 EPC03-B14 is RESET reads this parameter in percent velocity EPC03-B14 is SET reads it in in.(mm)/s
EPC16	Full Advance Segment 3 Pressure Setpoint [03] **if:** **then the module:** you select Press/Pos profile execution controls ejector advance pressure to this setpoint during any full advance portion of the Ejector Profile from the ejector position EPC14 until ejector position reaches EPC59
EPC17 - 20	Reserved

Ejector Tip Retract Profile Setpoints

Word	Description
EPC21	Tip Retract Velocity Setpoint [09] or [10] **if:** **then the module:** you select Vel/Pos profile execution controls ejector retract speed to this setpoint after starting any tip retract portion of the Ejector Profile until ejector position reaches the larger of EPC23 or EPC60 EPC03-B14 is RESET reads this parameter in percent velocity EPC03-B14 is SET reads it in in.(mm)/s
EPC22	Tip Retract Pressure Setpoint [03] **if:** **then the module:** you select Press/Pos profile execution controls ejector retract pressure to this setpoint after starting any tip retract portion of the Ejector Profile until ejector position reaches the larger of EPC23 or EPC60

Notes: 1. For [ ] engineering units, see page 3.
     2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

EPC

Word	Description
EPC23	Tip Retract Position Setpoint [16] When this ejector position is reached while the module is executing any tip retract portion of the Ejector Profile, it immediately halts the tip retract portion of the Ejector Profile and checks the state of EPC03-B12 to determine if it may immediately start the tip retract portion of the profile or wait for an F-to-T transition of DYC03-B15 to continue. **if:** **then the module:** non-zero sets master status bit SYS03-B14 when ejector position equals or is less than this entry zero causes SYS03-B14 to operate identically to SYS03-B15
EPC24 - 26	Reserved

Ejector Tip Advance Profile Setpoints

Word	Description
EPC27	Tip Advance Velocity Setpoint [09] or [10] **if:** **then the module:** you select Vel/Pos profile execution controls ejector advance speed to this setpoint after starting any tip advance portion of the Ejector Profile until ejector position reaches the smaller of EPC29 or EPC59 EPC03-B14 is RESET reads this parameter in percent velocity EPC03-B14 is SET reads it in in.(mm)/s
EPC28	Tip Advance Pressure Setpoint [03] **if:** **then the module:** you select Press/Pos profile execution controls ejector advance pressure to this setpoint after starting any tip advance portion of the Ejector Profile until ejector position reaches the smaller of EPC29 or EPC59
EPC29	End of Tip Advance Position When this ejector position is reached while the module is executing any tip advance portion of the Ejector Profile, the module immediately terminates the tip advance portion of the Ejector Profile and checks the following for further control action: EPC64, the state of EPC03-B15, and the state of EPC03-B12.

	if:	**then the module:**
	non-zero	sets master bit status bit SYS03-B13 when ejector position equals or exceeds this entry
	zero	causes SYS03-B13 to operate identically to SYS03-B12
	total advance (full + tip strokes) at Ejector Profile completion is equal to entry in EPC64 and EPC03-B15 is SET	checks EPC03-B12 to determine whether to start final full retract or wait for an F-to-T transition of DYC03-B15 to continue
	total advance (full + tip strokes) at Ejector Profile completion is equal to entry in EPC64 and EPC03-B15 is RESET	sets its valve outputs to End of Advance stroke values (EAC33-EAC40) for the duration of the dwell preset (EPC57) and checks EPC03-B12 to determine whether to start final full retract or wait for an F-to-T transition of DYC03-B15 to continue
	total advance (full + tip strokes) at Ejector Profile completion is less than entry in EPC64	checks EPC03-B12 to determine whether to start tip retract or wait for an F-to-T transition of DYC03-B15 to continue

Word	Description
EPC30 - 32	Reserved

Ejector Full Retract Profile Setpoints

Word	Description
EPC33	Full Retract Segment 1 Velocity Setpoint [09] or [10]
	if: **then the module:**
	you select Vel/Pos profile execution controls ejector retract speed to this setpoint after starting any full retract portion of the Ejector Profile until ejector position reaches the larger of EPC35 or EPC60
	EPC03-B14 is RESET reads this parameter in percent velocity
	EPC03-B14 is SET reads it in in.(mm)/s
EPC34	Full Retract Segment 1 Pressure Setpoint [03]
	if: **then the module:**
	you select Press/Pos profile execution controls ejector retract pressure to this setpoint after starting any full retract portion of the Ejector Profile until ejector position reaches the larger of EPC35 or EPC60
EPC35	End of Full Retract Segment 1 Position Setpoint [16]
EPC36	Full Retract Segment 2 Velocity Setpoint [09] or [10]
	if: **then the module:**
	you select Vel/Pos profile execution controls ejector retract speed to this setpoint during any full retract portion of the Ejector Profile from the ejector position EPC35 until ejector position reaches the larger of EPC38 or EPC60
	EPC03-B14 is RESET reads this parameter in percent velocity
	EPC03-B14 is SET reads it in in.(mm)/s
EPC37	Full Retract Segment 2 Pressure Setpoint [03]
	if: **then the module:**
	you select Press/Pos profile execution controls ejector retract pressure to this setpoint during any full retract portion of the Ejector Profile from the ejector position EPC35 until ejector position reaches the larger of EPC38 or EPC60
EPC38	End of Full Retract Segment 2 Position Setpoint [16]
EPC39	Full Retract Segment 3 Velocity Setpoint [09] or [10]
	if: **then the module:**
	you select Vel/Pos profile execution controls ejector retract speed to this setpoint during any full retract Ejector Profile from the ejector position EPC38 until ejector position reaches EPC60
	EPC03-B14 is RESET reads this parameter in percent velocity
	EPC03-B14 is SET reads it in in.(mm)/s
EPC40	Full Retract Segment 3 Pressure Setpoint [03]
	if: **then the module:**
	you select Press/Pos profile execution controls ejector retract pressure to this setpoint during any full retract portion of the Ejector Profile from the ejector position EPC38 until ejector position reaches EPC60
EPC41 -56	Reserved

Notes: 1. For [ ] engineering units, see page 3.
      2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Critical Process Setpoints

Word	Description	
EPC57	Ejector Forward Dwell Timer Preset [21] The module starts an internal Ejector Forward Dwell Timer dependent upon the state of EPC03-B15.	
	if:	**then the module:**
	EPC03-B15 is RESET	starts the timer when the ejector has achieved its final advanced position (EPC59 when EPC03-B13 = 0, EPC29 when EPC03-B13 = 1) and the timer accumulated value must equal or exceed this entry before the module may start the final full retract portion of the Ejector Profile
	EPC03-B15 is SET	starts the timer when the ejector has achieved its initial fully advanced position (EPC59) and the timer accumulated value must equal or exceed this entry before the module may start the remaining portion of the Ejector Profile
	EPC57 is zero	causes EPC03-B15 to have no effect on Ejector Profile execution
	timer is timing	sets master status bit SYS03-B10
	it receives any action command (except DYC02-B10, -B11, -B12, or -B13) when the timer is timing	stops this timer and resets SYS03-B10
EPC58	Open	
EPC59	Ejector Fully Advanced Position Setpoint [16] When this ejector position is reached during any advance portion of the Ejector Profile, the module immediately halts the advance portion and checks the following for further control action: EPC64, state of EPC03-B12, state of EPC03-B13, state of EPC03-B15.	
	if total advance (full + tip strokes) at Ejector Profile completion is:	**then the module:**
	equal to entry in EPC64 and EPC03-B15 is SET	checks EPC03-B12 to determine whether to start final full retract or wait for an F-to-T transition of DYC03-B15 to continue
	equal to entry in EPC64 and EPC03-B15 is RESET	sets its valve outputs to End of Advance stroke values (EAC33-EAC40) for the duration of the dwell preset (EPC57) and checks EPC03-B12 to determine whether to start final full retract or wait for an F-to-T transition of DYC03-B15 to continue
	greater than one and less than entry in EPC64, and EPC03-B13 is SET	checks EPC03-B12 to determine whether to start tip retract or wait for an F-to-T transition of DYC03-B15 to continue
	greater than one and less than entry in EPC64, and EPC03-B13 is RESET	checks EPC03-B12 to determine whether to start full retract or wait for an F-to-T transition of DYC03-B15 to continue
	if full advance portion of Ejector Profile just completed was the *initial* full advance stroke, and :	**then the module, in the order given:**
	EPC03-15 is RESET and EPC03-B13 is RESET	checks EPC03-B12 to determine whether to start full retract or wait for an F-to-T transition of DYC03-B15 to continue
	EPC03-15 is RESET and EPC03-B13 is SET	checks EPC03-B12 to determine whether to start tip retract or wait for an F-to-T transition of DYC03-B15 to continue
	EPC03-15 is SET and EPC03-B13 is RESET	sets its valve outputs to End of Advance stroke values (EAC33-EAC40) for the duration of the dwell preset (EPC57) and checks EPC03-B12 to determine whether to start full retract or wait for an F-to-T transition of DYC03-B15 to continue
	EPC03-15 is SET and EPC03-B13 is SET	sets its valve outputs to End of Advance stroke values (EAC33-EAC40) for the duration of the dwell preset (EPC57) and checks EPC03-B12 to determine whether to start tip retract or wait for an F-to-T transition of DYC03-B15 to continue
	ejector position equals or exceeds this entry	sets master bit status bit SYS03-B12

Word	Description
EPC60	Ejector Fully Retracted Position Setpoint [16] When this position is reached during any full retract portion of the Ejector Profile, the module immediately halts the retract portion and checks the following to determine further control action: EPC64, states of SYS21-B10 - SYS21-B13, and state of EPC03-B12.

if total advance (full + tip strokes) at Ejector Profile completion is:	then the module:
equal to entry in EPC64 and all bits in SYS21-B10-B13 equal zero	sets outputs to values entered in ERC33-ERC40
equal to entry in EPC64 and any bit in SYS21-B10-B13 equals one	gives all output control to ongoing Clamp Open Profile
less than entry in EPC64 and EPC03-B13 equals one	checks EPC03-B12 to determine whether to start tip advance or wait for an F-to-T transition of DYC03-B15 to continue
less than entry in EPC64 and EPC03-B13 equals zero	checks EPC03-B12 to determine whether to start full advance or wait for an F-to-T transition of DYC03-B15 to continue
ejector position equals or is less than this entry	sets master status bit SYS03-B15

Word	Description
EPC61	Clamp Position for Start of Ejector Profile [14]

if: clamp position equals or exceeds this entry:	then the module: checks EPC03-B08 during any of the four Clamp Open Profiles or while it is holding its outputs to any of the four sets of End of Open Profile Set-output values (FOC33 - FOC40, SOC33 - SOC40, TOC33 -TOC40, or OSC33 - OSC40)
EPC03-B08 is RESET	immediately begins the Ejector Profile concurrently with any executing Clamp Open Profiles

Word	Description
EPC62	Clamp Position for Ejector Inhibit [14] Minimum allowable clamp position for ejector profile action.

if: clamp position is less than or equalsEPC62	then the module: ignores DYC02-B14 (Execute Ejector Profile) and DYC03-B15 (Continue Ejector Profile)
it receives DYC02-B14 or DYC03-B15 when EPC03-B09 = 0 and clamp position is less than or equal to this entry	sets alarm status bit SYS14-B09
actual clamp position equals or is less than this value during the execution of an ejector profile	sets its outputs to zero and sets alarm status bit SYS14-B09

Word	Description
EPC63	Ejector Position for Clamp Close Enable (Ejector Safe) [16] Maximum allowable clamp position for ejector profile action. When ejector position exceeds this entry, the module ignores the following action execution commands : DYC02-B00 - Execute First Clamp Close Profile DYC02-B01 - Execute Second Clamp Close Profile DYC02-B02 - Execute Third Clamp Close Profile DYC02-B03 - Execute Low Pressure Close Profile

if:	then the module:
it receives one of these action execution commands when ejector position exceeds this entry	sets alarm status bit SYS14-B08
ejector position exceeds this value during execution of one of the four Clamp Close Profiles	sets its outputs to zero and sets alarm status bit SYS14-B08

Word	Description
EPC64	Ejector Strokes Required [30] The module uses this entry as a counter preset to determine how many times the ejector position must attain one of its advanced positions (EPC59 or EPC29) during the Ejector Profile before the module is allowed to initiate the final full retract portion of the Ejector Profile. A zero entry inhibits the entire Ejector Profile and the module will not respond to command bit DYC02-B14. If EPC63 = 1, EPC03-B13 and EPC03-B15 have no effect on Ejector Profile execution.

ERC – Ejector Retract
Configuration Block
Bit-mapped Control Words

Word	Bit	Description
ERC01		Block ID = 00010111 (Low byte). High byte reserved for the module. Do not use.
ERC02		**Configuration Selections**
	B00-B02	Selected Velocity Retract Control Valve The module uses its algorithm to drive the following output during any retract stroke (Vel/Pos Ejector Profile). **B02 B01 B00** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B03	Open
	B04-B06	Selected Pressure Retract Control Valve The module uses its algorithm to drive the following output during any retract stroke (Press/Pos Ejector Profile). **B06 B05 B04** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B07	Pressure Algorithm Selection = 0 Dependent Gains (ISA) = 1 Independent Gains (A-B)
	B08-B15	Open
ERC03 -04		Open

Expert Response Compensation (ERC) Percentage

Word	Description
ERC05	Minimum Velocity-retract Control ERC Percentage [31] Although error coding allows this entry to be within the range of 00000 to 09999, the module limits it to a minimum of 01000.
ERC06	Minimum Pressure-retract Control ERC Percentage [31] Although error coding allows this entry to be within the range of 00000 to 09999, the module limits it to a minimum of 01000.
ERC07, 08	Open

Unselected Valve Set-output Values

When the module starts an Ejector Profile retract stroke, it:

- sets its unselected outputs to the values listed below
- ignores the unselected value of the selected output
- uses ramp rates ERC17 - ERC32 to ramp unselected outputs

if	then
the module is commanded to start any of the four Clamp Open Profiles during an Ejector Profile retract stroke	the Ejector Profile gives control of all of its unselected valves to the executing Clamp Open Profile
the module is commanded to start an Ejector Profile retract stroke during any of the four Clamp Open Profiles	the executing Clamp Open Profile surrenders control of only the *selected* Ejector Profile retract valve
one of the four Clamp Open Profiles and an Ejector Profile retract stroke are run concurrently	all outputs that are unselected in both profiles are controlled by the executing Clamp Open Profile

Word	Description
ERC09	Output #1 Set-output Value during Retract [19]
ERC10	Output #2 Set-output Value during Retract [19]
ERC11	Output #3 Set-output Value during Retract [19]
ERC12	Output #4 Set-output Value during Retract [19]
ERC13	Output #5 Set-output Value during Retract [19]
ERC14	Output #6 Set-output Value during Retract [19]
ERC15	Output #7 Set-output Value during Retract [19]
ERC16	Output #8 Set-output Value during Retract [19]

Output Ramp Rates

The module uses the following ramp rates when moving its outputs from setpoint to setpoint during any Ejector Profile retract stroke *not* being executed concurrently with one of the four Clamp Open Profiles.

If the module is executing an Ejector Profile retract stroke concurrently with one of the four Clamp Open Profiles, the module will access only the two ramp rates in ERC17 - ERC32 that pertain to the *selected* Ejector Profile retract valve. The module interprets a zero ramp rate entry as a step function ramp (ramp disable).

Word	Description
ERC17	Output #1 Acceleration Ramp Rate during Retract [20]
ERC18	Output #2 Acceleration Ramp Rate during Retract [20]
ERC19	Output #3 Acceleration Ramp Rate during Retract [20]
ERC20	Output #4 Acceleration Ramp Rate during Retract [20]
ERC21	Output #5 Acceleration Ramp Rate during Retract [20]
ERC22	Output #6 Acceleration Ramp Rate during Retract [20]
ERC23	Output #7 Acceleration Ramp Rate during Retract [20]
ERC24	Output #8 Acceleration Ramp Rate during Retract [20]
ERC25	Output #1 Deceleration Ramp Rate during Retract [20]
ERC26	Output #2 Deceleration Ramp Rate during Retract [20]
ERC27	Output #3 Deceleration Ramp Rate during Retract [20]
ERC28	Output #4 Deceleration Ramp Rate during Retract [20]

Notes: 1. For [ ] engineering units, see page 3.
    2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Word	Description
ERC29	Output #5 Deceleration Ramp Rate during Retract [20]
ERC30	Output #6 Deceleration Ramp Rate during Retract [20]
ERC31	Output #7 Deceleration Ramp Rate during Retract [20]
ERC32	Output #8 Deceleration Ramp Rate during Retract [20]

End of Retract Set-output Values

At the end of each retract stroke during the Ejector Profile, the module checks the following to determine further control action:

- state of EPC03-B12
- states of SYS21-B10 through SYS21-B13
- completion status of the Ejector Profile

if	and	and	then the module:
EPC03-B12= 0	B10-B13 in SYS21 all = 0	Ejector Profile is complete	uses the ramps ERC17-ERC32 to move its outputs to ERC33-ERC40, and sets status bit SYS22-B15
EPC03-B12= 0	any one of B10-B13 in SYS21 = 1	Ejector Profile is complete	ignores ERC33-ERC40 and gives all output control to the executing Clamp Open Profile
EPC03-B12= 0	N/A	Ejector Profile is incomplete	ignores ERC33-ERC40 and continues the Ejector Profile
EPC03-B12= 1	B10-B13 in SYS21 all = 0	N/A	uses the ramps ERC17-ERC32 to move its outputs to ERC33-ERC40, and sets status bit SYS22-B15
EPC03-B12= 1	any one of B10-B13 in SYS21 = 1	N/A	ignores ERC33-ERC40 and gives all output control to the executing Clamp Open Profile

Word	Description
ERC33	Output #1 Set-output Value at End of Retract [19]
ERC34	Output #2 Set-output Value at End of Retract [19]
ERC35	Output #3 Set-output Value at End of Retract [19]
ERC36	Output #4 Set-output Value at End of Retract [19]
ERC37	Output #5 Set-output Value at End of Retract [19]
ERC38	Output #6 Set-output Value at End of Retract [19]
ERC39	Output #7 Set-output Value at End of Retract [19]
ERC40	Output #8 Set-output Value at End of Retract [19]

Pressure Control Limits

Word	Description
ERC41	Retract stroke Pressure Minimum Control Limit [03] Minimum controllable ejector-retract pressure attainable during any Press/Pos Ejector Profile retract stroke. The module expects this ejector- retractpressure when setting its selected pressure retract valve to the %- output in ERC43.
ERC42	Retract stroke Pressure Maximum Control Limit [03] Maximum controllable ejector-retract pressure attainable during any Press/Pos Ejector Profile retract stroke. The module expects this ejector- retract pressure when setting its selected pressure retract valve to the %- output in ERC44.
ERC43	Selected Pressure Retract Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected pressure retract valve during any Press/Pos Ejector Profile. The module expects a pressure equal to ERC41 when setting the se-lected pressure retract valve to this %-output during stroke execution. The Press/Pos Ejector Profile retract stroke will be executed as a reverse-acting algorithm if this entry is greater than ERC44.
ERC44	Selected Pressure Retract Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected pressure retract valve during any Press/Pos Ejector Profile. The module expects a pressure equal to ERC42 when setting the se-lected pressure retract valve to this %-output during stroke execution. The Press/Pos Ejector Profileretract stroke will be executed as a reverse-acting algorithm if this entry is less than ERC43.

Velocity Control Limits

Word	Description
ERC45	Retract stroke Velocity Minimum Control Limit [10] Minimum controllable ejector-retract velocity attainable during any Vel/Pos Ejector Profile retract stroke. The module expects this ejector-retract velocity when setting its selected velocity-retract valve to the %-output in ERC47.
ERC46	Retract stroke Velocity Maximum Control Limit [10] Maximum controllable ejector-retract velocity attainable during any Vel/Pos Ejector Profile retract stroke. The module expects this ejector-retract velocity when setting its selected velocity-retract valve to the %-output in ERC48.
ERC47	Selected Velocity Retract Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected velocity retract valve during any Vel/Pos Ejector Profile. The module expects a velocity equal to ERC45 when setting the selected velocity retract valve to this %-output during stroke execution. The Vel/Pos Ejector Profile retract stroke will be executed as a reverse-acting algorithm if this entry is greater than ERC48.
ERC48	Selected Velocity Retract Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected velocity retract valve during any Vel/Pos Ejector Profile. The module expects a velocity equal to ERC46 when setting the selected velocity retract valve to this %-output during stroke execution. The Vel/Pos Ejector Profile retract stroke will be executed as a reverse-acting algorithm if this entry is less than ERC47.

Retract-stroke Tuning Constants

Word	Description
ERC49	Proportional Gain for Pressure Control [30]
ERC50	Integral Gain for Pressure Control [27] or [28]
ERC51	Derivative Gain for Pressure Control [26] or [21]
ERC52	Proportional Gain for Velocity Control [28]
ERC53	Feed Forward Gain for Velocity Control [30]
ERC54 -64	Open

FCC – First Clamp Close
Configuration Block

Bit-mapped Control Words

Word	Bit	Description
FCC01		Block ID = 00000011 (Low byte). High byte reserved for the module. Do not use.
FCC02		**Configuration Selections**
	B00-B02	Selected Velocity Control Valve The module uses its algorithm to drive the following output during any Vel/Pos First Clamp Close Profile. **B02 B01 B00** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B03	Open

Notes: 1. For [ ] engineering units, see page 3.
2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

FCC

Word	Bit	Description
FCC02	B04-B06	Selected Pressure Control Valve The module uses its algorithm to drive the following output during any Press/Pos First Clamp Close Profile. **B06 B05 B04** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B07	Pressure Algorithm Selection = 0 Dependent Gains (ISA) = 1 Independent Gains (A-B)
	B08 - B15	Open
FCC03 - 04		Open

Expert Response Compensation (ERC) Percentage

Word	Description
FCC05	Minimum Velocity Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, Module limits it to a minimum of 01000.
FCC06	Minimum Pressure Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, Module limits it to a minimum of 01000.
FCC07	Open

Watchdog Timer

Word	Description
FCC08	Profile Watchdog Timer Preset [21] When Module starts the First Clamp Close Profile, it starts an internal Profile Watchdog timer, stops this timer and resets its accumulated value to zero (after reporting total execution time in CPS57) when it completes the profile, and sets master status bit SYS04-B00 when the accumulated value of this timer equals or exceeds this entry. A zero entry inhibits SYS04-B00.

Unselected Valve Set-output Values

When the module starts the First Clamp Close Profile, it:

- sets its unselected outputs to the values listed below
- ignores the unselected value of the selected output
- uses ramp rates FCC17 - FCC32 to ramp unselected outputs

Word	Description
FCC09	Output #1 Set-output Value during Profile [19]
FCC10	Output #2 Set-output Value during Profile [19]
FCC11	Output #3 Set-output Value during Profile [19]
FCC12	Output #4 Set-output Value during Profile [19]
FCC13	Output #5 Set-output Value during Profile [19]
FCC14	Output #6 Set-output Value during Profile [19]
FCC15	Output #7 Set-output Value during Profile [19]
FCC16	Output #8 Set-output Value during Profile [19]

Output Ramp Rates

The module uses the following ramp rates when moving its outputs from setpoint to setpoint during the First Clamp Close Profile. The module interprets a ramp rate entry of zero as a step function ramp (ramp disable).

Word	Description
FCC17	Output #1 Acceleration Ramp Rate during Profile [20]
FCC18	Output #2 Acceleration Ramp Rate during Profile [20]
FCC19	Output #3 Acceleration Ramp Rate during Profile [20]
FCC20	Output #4 Acceleration Ramp Rate during Profile [20]
FCC21	Output #5 Acceleration Ramp Rate during Profile [20]
FCC22	Output #6 Acceleration Ramp Rate during Profile [20]
FCC23	Output #7 Acceleration Ramp Rate during Profile [20]
FCC24	Output #8 Acceleration Ramp Rate during Profile [20]
FCC25	Output #1 Deceleration Ramp Rate during Profile [20]
FCC26	Output #2 Deceleration Ramp Rate during Profile [20]
FCC27	Output #3 Deceleration Ramp Rate during Profile [20]
FCC28	Output #4 Deceleration Ramp Rate during Profile [20]
FCC29	Output #5 Deceleration Ramp Rate during Profile [20]
FCC30	Output #6 Deceleration Ramp Rate during Profile [20]
FCC31	Output #7 Deceleration Ramp Rate during Profile [20]
FCC32	Output #8 Deceleration Ramp Rate during Profile [20]

End of Profile Set-output Values

When the module completes the First Clamp Close Profile and CPC03-B08 is SET, it:

- sets its outputs to the following values
- sets status bit SYS22-B00
- uses ramp rates FCC17 - FCC32 when changing outputs to these values

Use these values for setting cores if applied before starting the Second Clamp Close Profile.

Word	Description
FCC33	Output #1 Set-output Value at End of Profile [19]
FCC34	Output #2 Set-output Value at End of Profile [19]
FCC35	Output #3 Set-output Value at End of Profile [19]
FCC36	Output #4 Set-output Value at End of Profile [19]
FCC37	Output #5 Set-output Value at End of Profile [19]
FCC38	Output #6 Set-output Value at End of Profile [19]
FCC39	Output #7 Set-output Value at End of Profile [19]
FCC40	Output #8 Set-output Value at End of Profile [19]

Notes: 1. For [ ] engineering units, see page 3.
2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Pressure Control Limits

Word	Description
FCC41	Pressure Minimum Control Limit [02] Minimum controllable clamp pressure attainable during any Press/Pos First Clamp Close Profile. The module expects this clamp pressure when setting its selected pressure valve to the%-output in FCC43.
FCC42	Pressure Maximum Control Limit [02] Maximum controllable clamp pressure attainable during any Press/Pos First Clamp Close Profile. The module expects this clamp pressure when setting its selected pressure valve to the%-output in FCC44.
FCC43	Selected Pressure Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected pressure valveduring any Press/Pos First Clamp Close Profile. The module expects a pressure equal to FCC41 when setting the selected pressure valve to this %-output during profile execution. The Press/Pos First Clamp Close Profile will be executed as a reverse-acting algorithm if this entry is greater than FCC44.
FCC44	Selected Pressure Valve Output for Maximum [19] 100% CV output percentage that Module uses to drive the selected pressure valveduring any Press/Pos First Clamp Close Profile. The module expects a pressure equal to FCC42 when setting the selected pressure valve to this %-output during profile execution. The Press/Pos First Clamp Close Profile will be executed as a reverse-acting algorithm if this entry is less than FCC43.

Velocity Control Limits

Word	Description
FCC45	Velocity Minimum Control Limit [08] Minimum controllable clamp velocity attainable during any Vel/Pos First Clamp Close Profile. The module expects this clamp velocity when setting its selected velocity valve to the %-output in FCC47.
FCC46	Velocity Maximum Control Limit [08] Maximum controllable clamp velocity attainable during any Vel/Pos First Clamp Close Profile. The module expects this clamp velocity when setting its selected velocity valve to the %-output in FCC48.
FCC47	Selected Velocity Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected velocity valve during anyVel/Pos First Clamp Close Profile. The module expects a velocity equal to FCC45 when setting the selected velocity valve to this %-output during profile execution. The Vel/Pos First ClampClose Profile will be executed as a reverse-acting algorithm if this entry is greater than FCC48.
FCC48	Selected Velocity Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected velocity valve during any Vel/Pos First Clamp Close Profile. The module expects a velocity equal to FCC46 when setting the selected velocity valve to this %-output during profile execution. The Vel/Pos First Clamp Close Profile will be executed as a reverse-acting algorithm if this entry is less than FCC47.

Profile Tuning Constants

Word	Description
FCC49	Proportional Gain for Pressure Control [30]
FCC50	Integral Gain for Pressure Control [27] or [28]
FCC51	Derivative Gain for Pressure Control [26] or [21]
FCC52	Proportional Gain for Velocity Control [28]
FCC53	Feed Forward Gain for Velocity Control [30]
FCC54 - 56	Open

Profile Pressure Alarm Setpoint

Word	Description
FCC57	Profile High Pressure Alarm Setpoint [02] The module compares real-time clamp pressure against this entry when executing the First Clamp Close Profile. The module sets alarm status bit SYS05-B12 when clamp pressure equals or exceeds this entry during the First Clamp Close Profile. A zero entry inhibits SYS05-B12.
FCC58 - 64	Open

FOC – First Clamp Open Configuration Block

Bit-mapped Control Words

Word	Bit	Description
FOC01		Block ID = 00010001 (Low byte). High byte reserved for the module. Do not use.
FOC02		**Configuration Selections**
	B00 -B02	Selected Velocity Control Valve The module uses its algorithm to drive the following output during any Vel/Pos First Clamp Open Profile. **B02 B01 B00** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B03	Open
	B04-B06	Selected Pressure Control Valve The module uses its algorithm to drive the following output during any Press/Pos First Clamp Open Profile. **B06 B05 B04** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B07	Pressure Algorithm Selection = 0 Dependent Gains (ISA) = 1 Independent Gains (A-B)
	B08-B15	Open
FOC03 - 04		Open

Expert Response Compensation (ERC) Percentage

Word	Description
FOC05	Minimum Velocity Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
FOC06	Minimum Pressure Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
FOC07	Open

Watchdog Timer

Word	Description
FOC08	Profile Watchdog Timer Preset [21] When the module starts the First Clamp Open Profile, it starts an internal Profile Watchdog timer, stops this timer and resets its accumulated value to zero (after reporting total execution time in OPS57) when it completes the profile, and sets master status bit SYS04-B10 when the accumulated value of this timer equals or exceeds this entry. A zero entry inhibits SYS04-B10.

Notes: 1. For [ ] engineering units, see page 3.
     2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

FOC

Unselected Valve Set-output Values

When Module starts the First Clamp Open Profile, it:

- sets its unselected outputs to the values listed below
- ignores the unselected value of the selected output
- uses ramp rates FOC17 - FOC32 to ramp unselected outputs

if	then
the module is commanded to start the Ejector Profile during this FOC Profile	this FOC Profile surrenders control of the unselected valve that is the selected Ejector Profile valve
the module is commanded to start this FOC Profile during the Ejector Profile	the Ejector Profile gives control of all of its unselected valves to this FOC Profile
First Clamp Open and Ejector Profiles are run concurrently	all outputs that are unselected in both profiles are controlled by this FOC Profile

Word	Description
FOC09	Output #1 Set-output Value during Profile [19]
FOC10	Output #2 Set-output Value during Profile [19]
FOC11	Output #3 Set-output Value during Profile [19]
FOC12	Output #4 Set-output Value during Profile [19]
FOC13	Output #5 Set-output Value during Profile [19]
FOC14	Output #6 Set-output Value during Profile [19]
FOC15	Output #7 Set-output Value during Profile [19]
FOC16	Output #8 Set-output Value during Profile [19]

Output Ramp Rates

The module uses the following ramp rates when moving its outputs between setpoints during the First Clamp Open Profile. The module interprets a ramp rate of zero as a step function ramp (ramp disable).

Word	Description
FOC17	Output #1 Acceleration Ramp Rate during Profile [20]
FOC18	Output #2 Acceleration Ramp Rate during Profile [20]
FOC19	Output #3 Acceleration Ramp Rate during Profile [20]
FOC20	Output #4 Acceleration Ramp Rate during Profile [20]
FOC21	Output #5 Acceleration Ramp Rate during Profile [20]
FOC22	Output #6 Acceleration Ramp Rate during Profile [20]
FOC23	Output #7 Acceleration Ramp Rate during Profile [20]
FOC24	Output #8 Acceleration Ramp Rate during Profile [20]
FOC25	Output #1 Deceleration Ramp Rate during Profile [20]
FOC26	Output #2 Deceleration Ramp Rate during Profile [20]
FOC27	Output #3 Deceleration Ramp Rate during Profile [20]
FOC28	Output #4 Deceleration Ramp Rate during Profile [20]
FOC29	Output #5 Deceleration Ramp Rate during Profile [20]
FOC30	Output #6 Deceleration Ramp Rate during Profile [20]
FOC31	Output #7 Deceleration Ramp Rate during Profile [20]
FOC32	Output #8 Deceleration Ramp Rate during Profile [20]

End of Profile Set-output Values

When the module completes the First Clamp Open Profile and OPC03-B08 is SET and SYS21-B14 is RESET, it:

- sets its outputs to the following values
- sets status bit SYS22-B10
- ignores SYS22 and these values and gives output control to the Ejector Profile SYS21-B14 is SET
- uses ramp rates FOC17 - 32 when changing outputs to these values

Use these values for pulling cores if applied before starting the Second Clamp Open Profile.

Word	Description
FOC33	Output #1 Set-output Value at End of Profile [19]
FOC34	Output #2 Set-output Value at End of Profile [19]
FOC35	Output #3 Set-output Value at End of Profile [19]
FOC36	Output #4 Set-output Value at End of Profile [19]
FOC37	Output #5 Set-output Value at End of Profile [19]
FOC38	Output #6 Set-output Value at End of Profile [19]
FOC39	Output #7 Set-output Value at End of Profile [19]
FOC40	Output #8 Set-output Value at End of Profile [19]

Pressure Control Limits

Word	Description
FOC41	Pressure Minimum Control Limit [02] Minimum controllable clamp pressure attainable during any Press/Pos First Clamp Open Profile. The module expects this clamp pressure when setting its selected pressure valve to the %-output in FOC43.
FOC42	Pressure Maximum Control Limit [02] Maximum controllable clamp pressure attainable during any Press/Pos First Clamp Open Profile. The module expects this clamp pressure when setting its selected pressure valve to the %-output in FOC44.
FOC43	Selected Pressure Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected pressure valve during any Press/Pos First Clamp Open Profile. The module expects a pressure equal to FOC41 when setting the selected pressure valve to this %-output during profile execution. The Press/Pos First Clamp Open Profile will be executed as a reverse-acting algorithm if this entry is greater than FOC44.
FOC44	Selected Pressure Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected pressure valve during any Press/Pos First Clamp Open Profile. The module expects a pressure equal to FOC42 when setting the selected pressure valve to this %-output during profile execution. The Press/Pos First Clamp Open Profile will be executed as a reverse-acting algorithm if this entry is less than FOC43.

Velocity Control Limits

Word	Description
FOC45	Velocity Minimum Control Limit [08] Minimum controllable clamp velocity attainable during any Vel/Pos First Clamp Open Profile. The module expects this clamp velocity when setting its selected velocity valve to the %-output in FOC47.
FOC46	Velocity Maximum Control Limit [08] Maximum controllable clamp velocity attainable during any Vel/Pos First Clamp Open Profile. The module expects this clamp velocity when setting its selected velocity valve to the %-output in FOC48.
FOC47	Selected Velocity Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected velocity valve during any Vel/Pos First Clamp Open Profile. The module expects a velocity equal to FOC45 when setting the selected velocity valve to this %-output during profile execution. The Vel/Pos First Clamp Open Profile will be executed as a reverse-acting algorithm if this entry is greater than FOC48.
FOC48	Selected Velocity Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected velocity valve during any Vel/Pos First Clamp Open Profile. The module expects a velocity equal to FOC46 when setting the selected velocity valve to this %-output during profile execution. The Vel/Pos First Clamp Open Profile will be executed as a reverse-acting algorithm if this entry is less than FOC47.

Notes: 1. For [ ] engineering units, see page 3.
     2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Profile Tuning Constants

Word	Description
FOC49	Proportional Gain for Pressure Control [30]
FOC50	Integral Gain for Pressure Control [27] or [28]
FOC51	Derivative Gain for Pressure Control [26] or [21]
FOC52	Proportional Gain for Velocity Control [28]
FOC53	Feed Forward Gain for Velocity Control [30]
FOC54 - 56	Open

Profile Pressure Alarm Setpoint

Word	Description
FOC57	Profile High Pressure Alarm Setpoint [02] The module compares real-time clamp pressure against this entry when executing the First Clamp Open Profile. The module sets alarm status bit SYS06-B09 when clamp pressure equals or exceeds this entry during the First Clamp Open Profile. A zero entry inhibits SYS06-B09.
FOC58 - 64	Open

HDC – Hold Configuration Block

Bit-mapped Control Words

Word	Bit	Description
HDC01		Block ID = 00001011 (Low byte). High byte reserved for the module. Do not use.
HDC02		**Configuration Selections**
	B00-B02	Selected Cavity Pressure Control Valve The module uses its algorithm to drive the following output during any Cav Press/Time Hold Profile. **B02 B01 B00** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B03	Cavity Pressure Algorithm Selection = 0 Dependent Gains (ISA) = 1 Independent Gains (A-B)
	B04-B06	Selected Ram (Screw) Pressure Control Valve The module uses its algorithm to drive the following output during any Ram Press/Time Hold Profile. **B06 B05 B04** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B07	Ram (Screw) Pressure Algorithm Selection = 0 Dependent Gains (ISA) = 1 Independent Gains (A-B)
	B08-B15	Open
HDC03 - 04		Open

Expert Response Compensation (ERC) Percentage

Word	Description
HDC05	Minimum Cav Press Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
HDC06	Minimum Ram Press Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
HDC07 - 08	Open

Unselected Valve Set-output Values

When the module starts the Hold Profile, it:

- sets its unselected outputs to the values listed below
- ignores the unselected value of the selected output
- uses ramp rates HDC17 - HDC32 to ramp unselected outputs

Word	Description
HDC09	Output #1 Set-output Value during Profile [19]
HDC10	Output #2 Set-output Value during Profile [19]
HDC11	Output #3 Set-output Value during Profile [19]
HDC12	Output #4 Set-output Value during Profile [19]
HDC13	Output #5 Set-output Value during Profile [19]
HDC14	Output #6 Set-output Value during Profile [19]
HDC15	Output #7 Set-output Value during Profile [19]
HDC16	Output #8 Set-output Value during Profile [19]

Output Ramp Rates

The module uses the following ramp rates when moving its outputs from setpoint to setpoint during the Hold Profile. The module interprets a ramp rate of zero as a step function ramp (ramp disable).

Word	Description
HDC17	Output #1 Acceleration Ramp Rate during Profile [20]
HDC18	Output #2 Acceleration Ramp Rate during Profile [20]
HDC19	Output #3 Acceleration Ramp Rate during Profile [20]
HDC20	Output #4 Acceleration Ramp Rate during Profile [20]
HDC21	Output #5 Acceleration Ramp Rate during Profile [20]
HDC22	Output #6 Acceleration Ramp Rate during Profile [20]
HDC23	Output #7 Acceleration Ramp Rate during Profile [20]
HDC24	Output #8 Acceleration Ramp Rate during Profile [20]
HDC25	Output #1 Deceleration Ramp Rate during Profile [20]
HDC26	Output #2 Deceleration Ramp Rate during Profile [20]
HDC27	Output #3 Deceleration Ramp Rate during Profile [20]
HDC28	Output #4 Deceleration Ramp Rate during Profile [20]
HDC29	Output #5 Deceleration Ramp Rate during Profile [20]
HDC30	Output #6 Deceleration Ramp Rate during Profile [20]
HDC31	Output #7 Deceleration Ramp Rate during Profile [20]
HDC32	Output #8 Deceleration Ramp Rate during Profile [20]

Notes: 1. For [ ] engineering units, see page 3.
2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

HDC

End of Profile Set-output Values

When the module completes the Hold Profile and HPC03-B08 is SET, it:

- sets its outputs to the following values

- sets status bit SYS22-B06

- uses ramp rates HDC17 - 32 when changing outputs to these values

Word	Description
HDC33	Output #1 Set-output Value at End of Profile [19]
HDC34	Output #2 Set-output Value at End of Profile [19]
HDC35	Output #3 Set-output Value at End of Profile [19]
HDC36	Output #4 Set-output Value at End of Profile [19]
HDC37	Output #5 Set-output Value at End of Profile [19]
HDC38	Output #6 Set-output Value at End of Profile [19]
HDC39	Output #7 Set-output Value at End of Profile [19]
HDC40	Output #8 Set-output Value at End of Profile [19]

Ram (Screw) Pressure Control Limits

Word	Description
HDC41	Ram (Screw) Pressure Minimum Control Limit [01] Minimum controllable ram (screw) pressure attainable during any Ram Press/Time Hold Profile. The module expects this ram (screw) pressure when setting its selected ram (screw) pressure valve to the %-output in HDC43.
HDC42	Ram (Screw) Pressure Maximum Control Limit [01] Maximum controllable ram (screw) pressure attainable during any Ram Press/Time Hold Profile. The module expects this ram (screw) pressure when setting its selected ram (screw) pressure valve to the %-output in HDC44.
HDC43	Selected Ram (Screw) Pressure Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected pressure valve during any Ram Press/Time Hold Profile. The module expects a pressure equal to HDC41 when setting the selected ram (screw) pressure valve to this %-output during profile execution. Ram Press/Time Hold Profile will be executed as a reverse-acting algorithm if this entry is greater than HDC44.
HDC44	Selected Ram (Screw) Pressure Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected pressure valve during any Ram Press/Time Hold Profile. The module expects a pressure equal to HDC42 when setting the selected ram (screw) pressure valve to this %-output during profile execution. Ram Press/Time Hold Profile will be executed as a reverse-acting algorithm if this entry is less than HDC43.

Cavity Pressure Control Limits

Word	Description
HDC45	Cavity Pressure Minimum Control Limit [04] Minimum controllable cavity pressure attainable during any Cav Press/Time Hold Profile. The module expects this cavity pressure when setting its selected cavity pressure valve to the %-output in HDC47.
HDC46	Cavity Pressure Maximum Control Limit [04] Maximum controllable cavity pressure attainable during any Cav Press/Time Hold Profile . The module expects this cavity pressure when setting its selected cavity pressure valve to the %-output in HDC48.
HDC47	Selected Cavity Pressure Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected pressure valve during any Cav Press/Time Hold Profile. The module expects a pressure equal to HDC45 when setting the selected cavity pressure valve to this %-output during profile execution. The Cav Press/Time Hold Profile will be executed as a reverse-acting algorithm if this entry is greater than HDC48.
HDC48	Selected Cavity Pressure Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected pressure valve during any Cav Press/Time Hold Profile. The module expects a pressure equal to HDC46 when setting the selected cavity pressure valve to this %-output during profile execution. The Cav Press/Time Hold Profile will be executed as a reverse-acting algorithm if this entry is less than HDC47.

Profile Tuning Constants

Word	Description
HDC49	Proportional Gain for Ram Press Control [30]
HDC50	Integral Gain for Ram Press Control [27] or [28]
HDC51	Derivative Gain for Ram Press Control [26] or [21]
HDC52	Proportional Gain for Cav Press Control [30]
HDC53	Integral Gain for Cav Press Control [27] or [28]
HDC54	Derivative Gain for Cav Press Control [26] or [21]
HDC55 - 56	Open

Profile Pressure Alarm Setpoint

Word	Description
HDC57	Profile High Ram (Screw) Pressure Alarm Setpoint [01] The module compares real-time ram (screw) pressure against this entry when executing the Hold Profile. The module sets alarm status bit SYS06-B04 when ram (screw) pressure equals or exceeds this entry during the Hold Profile. A zero entry inhibits SYS06-B04.
HDC58	Profile High Cavity Pressure Alarm Setpoint [04] The module compares real-time cavity pressure against this entry when executing the Hold Profile. The module sets alarm status bit SYS06-B05 when cavity pressure equals or exceeds this entry during the Hold Profile. A zero entry inhibits SYS06-B05.
HDC59 - 64	Open

HPC – Pack/Hold Profile Block

Bit-mapped Control Words

Word	Bit	Description
HPC01		Block ID = 00001100 (Low byte). High byte reserved for the module. Do not use.
HPC02		Open
HPC03		**Configuration Selections**
		Profile Algorithm Selections
	B00	= 0 Ram Press/Time selected for Pack Profile = 1 Cav Press/Time selected for Pack Profile
	B01	Open
	B02	= 0 Ram Press/Time selected for Hold Profile = 1 Cav Press/Time selected for Hold Profile
	B03-B07	Open
	B08	Hold/Pre-decompression Logical Bridge Selection = 0 Start Pre-decompression Movement at End of Hold Profile = 1 Stop and Set-output at End of Hold Profile The module checks the state of this pause bit upon completion of Hold Profile to determine what further action to take: **if:** **then the module:** SET sets its outputs to HDC33 - HDC40 RESET, SYS15-B12 = 1, immediately begins the Pre-decompression Movement and PRC05 > 00000 RESET, SYS15-B12 = 1, reacts as if it had just completed the Pre-decompression Movement and continues and PRC05 = 00000 operation based on the state of HPC03-B09 RESET, SYS15-B12 = 0, reacts as if it had just received an F-to-T transition of DYC02-B08 and HPC03-B09 = 0 RESET, SYS15-B12 = 0, sets its outputs to zero and latches SYS13-B08 and HPC03-B09 = 1

Notes: 1. For [ ] engineering units, see page 3.
       2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

HPC

Word	Bit	Description
	B09	Pre-decompression/Plastication Logical Bridge Selection = 0 Start Plastication Profile at End of Pre-decompression Movement = 1 Stop and Set-output at End of Pre-decompression Movement The module checks the state of this pause bit after completing the Pre-decompression Movement to determine what further action to take: **if:** **then the module:** SET sets its outputs to PRC33 - PRC40 RESET and SYS15-B14 = 1 immediately begins the Plastication Profile RESET and SYS15-B14 = 0 sets its outputs to zero and latches SYS13-B09
	B10-B11	Open
		Profile Offset Sign Selection
	B12	= 0 Pack Cav Press Profile Offset is Positive = 1 Pack Cav Press Profile Offset is Negative
	B13	= 0 Pack Ram Press Profile Offset is Positive = 1 Pack Ram Press Profile Offset is Negative
	B14	= 0 Hold Cav Press Profile Offset is Positive = 1 Hold Cav Press Profile Offset is Negative
	B15	= 0 Hold Ram Press Profile Offset is Positive = 1 Hold Ram Press Profile Offset is Negative
HPC04		Configuration Selections
		Open/Closed Loop Selection
	B00	= 0 Ram Press/Time Pack Profiles Closed Loop = 1 Ram Press/Time Pack Profiles Open Loop
	B01	= 0 Cav Press/Time Pack Profiles Closed Loop = 1 Cav Press/Time Pack Profiles Open Loop
	B02	= 0 Ram Press/Time Hold Profiles Closed Loop = 1 Ram Press/Time Hold Profiles Open Loop
	B03	= 0 Cav Press/Time Hold Profiles Closed Loop = 1 Cav Press/Time Hold Profiles Open Loop
	B04-B07	Open
		ERC Enabled/Disabled Selection
	B08	= 0 Ram Press/Time Pack Profiles ERC On = 1 Ram Press/Time Pack Profiles ERC Off
	B09	= 0 Cav Press/Time Pack Profiles ERC On = 1 Cav Press/Time Pack Profiles ERC Off
	B10	= 0 Ram Press/Time Hold Profiles ERC On = 1 Ram Press/Time Hold Profiles ERC Off
	B11	= 0 Cav Press/Time Hold Profiles ERC On = 1 Cav Press/Time Hold Profiles ERC Off
	B12-B15	Open
HPC05 - 08		Open

Pack Profile Setpoints

Word	Description
HPC09	Pack Segment 1 Cavity Pressure Setpoint [04] If you select Cav Press/Time profile execution, the module controls cavity pressure to this setpoint after starting the Pack Profile for time period specified by HPC11.
HPC10	Pack Segment 1 Ram (Screw) Pressure Setpoint [01] If you select Ram Press/Time profile execution, the module controls ram (screw) pressure to this setpoint after starting the Pack Profile for time period specified by HPC11.
HPC11	Pack Segment 1 Time Setpoint [21] The module controls the selected process pressure to the setpoint HPC09 or HPC10 for this time period beginning with initiation of the Pack Profile.
HPC12	Pack Segment 2 Cavity Pressure Setpoint [04] If you select Cav Press/Time profile execution, the module controls cavity pressure to this setpoint at completion of segment 1 for time period specified by HPC14.

Word	Description
HPC13	Pack Segment 2 Ram (Screw) Pressure Setpoint [01] If you select Ram Press/Time profile execution, the module controls ram (screw) pressure to this setpoint at completion of segment 1 for time period specified by HPC14.
HPC14	Pack Segment 2 Time Setpoint [21] The module controls the selected process pressure to the setpoint HPC12 or HPC13 for this time period beginning at completion of Segment 1.
HPC15	Pack Segment 3 Cavity Pressure Setpoint [04] If you select Cav Press/Time profile execution, the module controls cavity pressure to this setpoint at completion of segment 2 for time period specified by HPC17.
HPC16	Pack Segment 3 Ram (Screw) Pressure Setpoint [01] If you select Ram Press/Time profile execution, the module controls ram (screw) pressure to this setpoint at completion of segment 2 for time period specified by HPC17.
HPC17	Pack Segment 3 Time Setpoint [21] The module controls the selected process pressure to the setpoint HPC15 or HPC16 for this time period beginning at completion of Segment 2.
HPC18	Pack Segment 4 Cavity Pressure Setpoint [04] If you select Cav Press/Time profile execution, the module controls cavity pressure to this setpoint at completion of segment 3 for time period specified by HPC20.
HPC19	Pack Segment 4 Ram (Screw) Pressure Setpoint [01] If you select Ram Press/Time profile execution, the module controls ram (screw) pressure to this setpoint at completion of segment 3 for time period specified by HPC20.
HPC20	Pack Segment 4 Time Setpoint [21] The module controls the selected process pressure to the setpoint HPC18 or HPC19 for this time period beginning at completion of Segment 3.
HPC21	Pack Segment 5 Cavity Pressure Setpoint [04] If you select Cav Press/Time profile execution, the module controls cavity pressure to this setpoint at completion of segment 4 for time period specified by HPC23.
HPC22	Pack Segment 5 Ram (Screw) Pressure Setpoint [01] If you select Ram Press/Time profile execution, the module controls ram (screw) pressure to this setpoint at completion of segment 4 for time period specified by HPC23.
HPC23	Pack Segment 5 Time Setpoint [21] The module controls the selected process pressure to the setpoint HPC21 or HPC22 for this time period beginning at completion of Segment 4.

Pack Profile Offsets

Word	Description
HPC24	Pack Profile Cavity Pressure Offset [04] If you select Cav Press/Time profile execution , the module applies this entry (after reading the sign bit) to each cavity pressure profile setpoint.
HPC25	Pack Profile Ram (Screw) Pressure Offset [01] If you select Ram Press/Time profile execution, the module applies this entry (after reading the sign bit) to each ram (screw) pressure profile setpoint.

Hold Profile Setpoints

Word	Description
HPC26	Hold Segment 1 Cavity Pressure Setpoint [04] If you select Cav Press/Time profile execution, the module controls cavity pressure to this setpoint after starting the Hold Profile for time period specified by HPC28.
HPC27	Hold Segment 1 Ram (Screw) Pressure Setpoint [01] If you select Ram Press/Time profile execution, the module controls ram (screw) pressure to this setpoint after starting the Hold Profile for time period specified by HPC28.
HPC28	Hold Segment 1 Time Setpoint [21] The module controls the selected process pressure to the setpoint HPC26 or HPC27 for this time period beginning with initiation of the Hold Profile.
HPC29	Hold Segment 2 Cavity Pressure Setpoint [04] If you select Cav Press/Time profile execution, the module controls cavity pressure to this setpoint at completion of segment 1 for time period specified by HPC31.
HPC30	Hold Segment 2 Ram (Screw) Pressure Setpoint [01] If you select Ram Press/Time profile execution, the module controls ram (screw) pressure to this setpoint at completion of segment 1 for time period specified by HPC31.
HPC31	Hold Segment 2 Time Setpoint [21] The module controls the selected process pressure to the setpoint HPC29 or HPC30 for this time period beginning at completion of Segment 1.
HPC32	Hold Segment 3 Cavity Pressure Setpoint [04] If you select Cav Press/Time profile execution, the module controls cavity pressure to this setpoint at completion of segment 2 for time period specified by HPC34.
HPC33	Hold Segment 3 Ram (Screw) Pressure Setpoint [01] If you select Ram Press/Time profile execution, the module controls ram (screw) pressure to this setpoint at completion of segment 2 for time period specified by HPC34.
HPC34	Hold Segment 3 Time Setpoint [21] The module controls the selected process pressure to the setpoint HPC32 or HPC33 for this time period beginning at completion of Segment 2.
HPC35	Hold Segment 4 Cavity Pressure Setpoint [04] If you select Cav Press/Time profile execution, the module controls cavity pressure to this setpoint at completion of segment 3 for time period specified by HPC37.
HPC36	Hold Segment 4 Ram (Screw) Pressure Setpoint [01] If you select Ram Press/Time profile execution, the module controls ram (screw) pressure to this setpoint at completion of segment 3 for time period specified by HPC37.

Notes: 1. For [ ] engineering units, see page 3.

　　　　2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Word	Description
HPC37	Hold Segment 4 Time Setpoint [21] The module controls the selected process pressure to the setpoint HPC35 or HPC36 for this time period beginning at completion of Segment 3.
HPC38	Hold Segment 5 Cavity Pressure Setpoint [04] If you select Cav Press/Time profile execution, the module controls cavity pressure to this setpoint at completion of segment 4 for time period specified by HPC40.
HPC39	Hold Segment 5 Ram (Screw) Pressure Setpoint [01] If you select Ram Press/Time profile execution, the module controls ram (screw) pressure to this setpoint at completion of segment 4 for time period specified by HPC40.
HPC40	Hold Segment 5 Time Setpoint [21] The module controls the selected process pressure to the setpoint HPC38 or HPC39 for this time period beginning at completion of Segment 4.

Hold Profile Offsets

Word	Description
HPC41	Hold Profile Cavity Pressure Offset [04] If you select Cav Press/Time profile execution, the module applies this entry (after reading the sign bit) to each cavity pressure profile setpoint.
HPC42	Hold Profile Ram (Screw) Pressure Offset [01] If you select Ram Press/Time profile execution, the module applies this entry (after reading the sign bit) to each ram (screw) pressure profile setpoint.
HPC43 - 60	Open

Critical Process Setpoints

Word	Description
HPC61	Cure Timer Preset [22] At completion of the Hold Profile, the module: • starts an internal Cure Timer • sets master status bit SYS03-B03 • reports the accumulated time in SYS58 When the Cure Timer accumulated value in SYS58 equals this entry, the module: • resets master status bit SYS03-B03 • sets master status bit SYS03-B05 • stops accumulating time in SYS58 If it receives an F-to-T transition of DYC02-B00, -B01, -B02, -B03 or DYC03-B01, the module: • resets master status bit SYS03-B03 • resets master status bit SYS03-B05 • resets SYS58 to zero
HPC62 - 64	Open

INC – Injection Configuration Block

Bit-mapped Control Words

Word	Bit	Description
INC01		Block ID = 00001000 (Low byte). High byte reserved for the module. Do not use.
INC02		**Configuration Selections**
	B00-B02	Selected Velocity Control Valve The module uses its algorithm to drive the following output during any Vel/Pos or LimVel/Pos Injection Profile. **B02 B01 B00** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
INC02	B03	Open

Word	Bit	Description
	B04-B06	Selected Pressure Control Valve The module uses its algorithm to drive the following output during any Press/Pos or Press/Time Injection Profile. **B06 B05 B04** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B07	Pressure Algorithm Selection = 0 Dependent Gains (ISA) = 1 Independent Gains (A-B)
	B08-B15	Open
INC03 - 04		Open

Expert Response Compensation (ERC) Percentage

Word	Description
INC05	Minimum Velocity Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
INC06	Minimum Pressure Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
INC07, 08	Open

Unselected Valve Set-output Values

When the module starts the Injection Profile, it:

- sets its unselected outputs to the values listed below
- ignores the unselected value of the selected output
- uses ramp rates INC17 - INC32 to ramp unselected outputs

Word	Description
INC09	Output #1 Set-output Value during Profile [19]
INC10	Output #2 Set-output Value during Profile [19]
INC11	Output #3 Set-output Value during Profile [19]
INC12	Output #4 Set-output Value during Profile [19]
INC13	Output #5 Set-output Value during Profile [19]
INC14	Output #6 Set-output Value during Profile [19]
INC15	Output #7 Set-output Value during Profile [19]
INC16	Output #8 Set-output Value during Profile [19]

Output Ramp Rates

The module uses the following ramp rates when moving its outputs from setpoint to setpoint during the Injection Profile. The module interprets a ramp rate of zero as a step function ramp (ramp disable).

Notes: 1. For [ ] engineering units, see page 3.
      2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Word	Description
INC17	Output #1 Acceleration Ramp Rate during Profile [20]
INC18	Output #2 Acceleration Ramp Rate during Profile [20]
INC19	Output #3 Acceleration Ramp Rate during Profile [20]
INC20	Output #4 Acceleration Ramp Rate during Profile [20]
INC21	Output #5 Acceleration Ramp Rate during Profile [20]
INC22	Output #6 Acceleration Ramp Rate during Profile [20]
INC23	Output #7 Acceleration Ramp Rate during Profile [20]
INC24	Output #8 Acceleration Ramp Rate during Profile [20]
INC25	Output #1 Deceleration Ramp Rate during Profile [20]
INC26	Output #2 Deceleration Ramp Rate during Profile [20]
INC27	Output #3 Deceleration Ramp Rate during Profile [20]
INC28	Output #4 Deceleration Ramp Rate during Profile [20]
INC29	Output #5 Deceleration Ramp Rate during Profile [20]
INC30	Output #6 Deceleration Ramp Rate during Profile [20]
INC31	Output #7 Deceleration Ramp Rate during Profile [20]
INC32	Output #8 Deceleration Ramp Rate during Profile [20]
INC33 - 40	Open

Pressure Control Limits

Word	Description
INC41	Pressure Minimum Control Limit [01] Minimum controllable ram (screw) pressure attainable during any Press/Pos or Press/Time Injection Profile. The module expects this ram (screw) pressure when setting its selected pressure valve to the %-output in INC43.
INC42	Pressure Maximum Control Limit [01] Maximum controllable ram (screw) pressure attainable during any Press/Pos or Press/Time Injection Profile. The module expects this ram (screw) pressure when setting its selected pressure valve to the %-output in INC44.
INC43	Selected Pressure Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected pressure valve during any Press/Pos or Press/Time Injection Profile. The module expects a pressure equal to INC41 when setting the selected pressure valve to this %-output during profile execution. The Press/Pos or Press/Time Injection Profile will be executed as a reverse-acting algorithm if this entry is greater than INC44.
INC44	Selected Pressure Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected pressure valve during any Press/Pos or Press/Time Injection Profile. The module expects a pressure equal to INC42 when setting the selected pressure valve to this %-output during profile execution. The Press/Pos or Press/Time Injection Profile will be executed as a reverse-acting algorithm if this entry is less than INC43.

Velocity Control Limits

Word	Description
INC45	Velocity Minimum Control Limit [06] Minimum controllable ram (screw) velocity attainable during any Vel/Pos Injection Profile. The module expects this ram (screw) velocity when setting its selected velocity valve to the %-output in INC47.
INC46	Velocity Maximum Control Limit [06] Maximum controllable ram (screw) velocity attainable during any Vel/Pos Injection Profile. The module expects this ram (screw) velocity when setting its selected velocity valve to the %-output in INC48.
INC47	Selected Velocity Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected velocity valve during any Vel/Pos or LimVel/Pos Injection Profile. The module expects a velocity equal to INC45 when setting the selected velocity valve to this %-output during profile execution. The Vel/Pos or LimVel/Pos Injection Profile will be executed as a reverse-acting algorithm if this entry is greater than INC48.
INC48	Selected Velocity Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected velocity valve during any Vel/Pos or LimVel/Pos Injection Profile. The module expects a velocity equal to INC46 when setting the selected velocity valve to this %-output during profile execution. The Vel/Pos or LimVel/Pos Injection Profile will be executed as a reverse-acting algorithm if this entry is less than INC47.

Profile Tuning Constants

Word	Description
INC49	Proportional Gain for Pressure Control [30]
INC50	Integral Gain for Pressure Control [27] or [28]
INC51	Derivative Gain for Pressure Control [26] or [21]
INC52	Proportional Gain for Velocity Control [28]
INC53	Feed Forward Gain for Velocity Control [30]
INC54 - 56	Open

Profile Pressure Alarm Setpoint

Word	Description
INC57	Profile High Ram (screw) Pressure Alarm Setpoint [01] The module compares real-time ram (screw) pressure against this entry when executing the Injection Profile. The module sets alarm status bit SYS06-B00 when ram (screw) pressure equals or exceeds this entry during the Injection Profile. A zero entry inhibits SYS06-B00.
INC58	Profile High Cavity Pressure Alarm Setpoint [04] The module compares real-time cavity pressure against this entry when executing the Injection Profile. The module sets alarm status bit SYS06-B01 when cavity pressure equals or exceeds this entry during the Injection Profile. A zero entry inhibits SYS06-B01.
INC59 - 64	Open

IPC – Injection Profile Block

Bit-mapped Control Words

Word	Bit	Description
IPC01		Block ID = 00001001 (Low byte). High byte reserved for the module. Do not use.
IPC02		Open
IPC03		**Configuration Selections**
	B00-B01	Profile Algorithm Selection
		B01 B00 0 0 Vel/Pos selected 0 1 Vel/Pos (pressure limited) selected 1 0 Press/Pos selected 1 1 Press/Time selected
	B02-B11	Open
		Profile Offset Sign Selection
	B12	= 0 Injection Velocity Profile Offset is Positive = 1 Injection Velocity Profile Offset is Negative
	B13	= 0 Injection Pressure Profile Offset is Positive = 1 Injection Pressure Profile Offset is Negative
		Velocity Units Selection
	B14	= 0 Velocity Parameters in Percent Velocity = 1 Velocity Parameters in in.(mm)/s **if: then the module:** RESET returns all segment velocity actuals (and assumes all velocity setpoints) in percent velocity where INC46 represents 100% velocity SET returns all velocity actuals (and assumes all velocity setpoints) in in.(mm)/s
	B15	Open
IPC04		Configuration Selections
		Open/Closed Loop Selection
	B00	= 0 Vel/Pos Injection Profiles Closed Loop = 1 Vel/Pos Injection Profiles Open Loop

Notes: 1. For [ ] engineering units, see page 3.
     2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

IPC

Word	Bit	Description
	B01	= 0 Vel/Pos (limited) Injection Profiles Closed Loop = 1 Vel/Pos (limited) Injection Profiles Open Loop
	B02	= 0 Press/Pos Injection Profiles Closed Loop = 1 Press/Pos Injection Profiles Open Loop
	B03	= 0 Press/Time Injection Profiles Closed Loop = 1 Press/Time Injection Profiles Open Loop
		Selections to Inhibit Closed Loop Up To Shot Size
	B04	= 0 Allow Closed Loop Vel/Pos During Entire Profile = 1 Inhibit Closed Loop Vel/Pos Until 100% Shot Size **if:** **then the module:** SET when IPC04-B00 is SET inhibits closed-loop control of all Vel/Pos Injection Profiles until ram (screw) position equals or is less than the 100% shot size position RESET when IPC04-B00 is SET performs closed-loop control of the entire Vel/Pos Injection Profile. If IPC04-B00 is RESET ignores the state of this bit.
	B05	= 0 Allow Closed Loop LimVel/Pos During = 1 Inhibit Closed Loop LimVel/Pos Until 100% **if:** **then the module:** SET when IPC04-B01 is SET inhibits closed-loop control of all LimVel/Pos Injection Profiles until ram (screw) position equals or is less than the 100% shot size position RESET when IPC04-B01 is SET performs closed-loop control of the entire LimVel/Pos Injection Profile IPC04-B01 is RESET ignores the state of this bit
	B06	= 0 Allow Closed Loop Press/Pos During Entire Profile = 1 Inhibit Closed Loop Press/Pos Until 100% Shot Size **if:** **then the module:** SET when IPC04-B02 is SET inhibits closed-loop control of all Press/Pos Injection Profiles until ram (screw) position equals or is less than the 100% shot size position RESET when IPC04-B02 is SET performs closed-loop control of the entire Press/Pos Injection Profile IPC04-B02 is RESET ignores the state of this bit
	B07	= 0 Allow Closed Loop Press/Time During Entire Profile = 1 Inhibit Closed Loop Press/Time Until 100% Shot Size **if:** **then the module:** SET when IPC04-B03 is SET inhibits closed-loop control of all Press/Time Injection Profiles until ram (screw) positionequals or is less than the 100% shot size position RESET when IPC04-B03 is SET performs closed-loop control of the entire Press/Time Injection Profile IPC04-B03 is RESET ignores the state of this bit
		ERC Enabled/Disabled Selection
	B08	= 0 Vel/Pos ERC On = 1 Vel/Pos ERC Off
	B09	= 0 Vel/Pos (limited) ERC On = 1 Vel/Pos (limited) ERC Off
	B10	= 0 Press/Pos ERC On = 1 Press/Pos ERC Off
	B11	= 0 Press/Time ERC On = 1 Press/Time ERC Off
	B12-B15	Open
IPC05 - 08		Open

Injection Profile Setpoints

Word	Description
IPC09	Segment 1 Velocity Setpoint [05] or [06] **if:** / **then the module:** you select Vel/Pos profile execution / controls ram (screw) forward speed to this setpoint after starting the Injection Profile until ram (screw) position reaches IPC11 (or until transition if sooner) IPC03-B14 is RESET / reads this parameter in percent velocity IPC03-B14 is SET / reads it in in.(mm)/s
IPC10	Segment 1 Pressure Setpoint [01] **if:** / **then the module:** If you select Press/Pos profile execution / controls ram (screw) pressure to this setpoint after starting the Injection Profile until ram (screw) position reaches IPC11 (or until transition if sooner) you select Press/Time profile execution / controls ram (screw) pressure to this setpoint after starting the Injection Profile for time period IPC12 (or until transition if sooner)
IPC11	End of Segment 1 Position Setpoint [12]
IPC12	Segment 1 Time Setpoint [21] If you select Press/Time profile execution, the module controls ram (screw) pressure to the setpoint IPC10 for this time period (or until transition if sooner) after starting the Injection Profile.
IPC13	Segment 2 Velocity Setpoint [05] or [06] **if:** / **then the module:** you select Vel/Pos profile execution / controls ram (screw) forward speed to this setpoint from ram (screw) position IPC11 until ram (screw) position reaches IPC15 (or until transition if sooner) IPC03-B14 is RESET / reads this parameter in percent velocity IPC03-B14 is SET / reads it in in.(mm)/s
IPC14	Segment 2 Pressure Setpoint [01] **if:** / **then the module:** you select Press/Pos profile execution / controls ram (screw) pressure to this setpoint from ram (screw) position IPC11 until ram (screw) position reaches IPC15 (or until transition if sooner) you select Press/Time profile execution / controls ram (screw) pressure to this setpoint at completion of Segment 1 for time period IPC16 period IPC16 (or until transition if sooner)
IPC15	End of Segment 2 Position Setpoint [12]
IPC16	Segment 2 Time Setpoint [21] If you select Press/Time profile execution, the module controls ram (screw) pressure to setpoint IPC14 for this time period (or until transition if sooner) beginning at completion of Segment 1.
IPC17	Segment 3 Velocity Setpoint [05] or [06] **if:** / **then the module:** you select Vel/Pos profile execution / controls ram (screw) forward speed to this setpoint from ram (screw) position IPC15 until ram (screw) position reaches IPC19 (or until transition if sooner) IPC03-B14 is RESET / reads this parameter in percent velocity IPC03-B14 is SET / reads it in in.(mm)/s
IPC18	Segment 3 Pressure Setpoint [01] **if:** / **then the module:** you select Press/Pos profile execution / controls ram (screw) pressure to this setpoint from ram (screw) position IPC15 until ram (screw) position reaches IPC19 (or until transition if sooner) you select Press/Time profile execution / controls ram (screw) pressure to this setpoint at completion of Segment 2 for time period IPC20 (or until transition if sooner)
IPC19	End of Segment 3 Position Setpoint [12]
IPC20	Segment 3 Time Setpoint [21] If you select Press/Time profile execution, the module controls ram (screw) pressure to setpoint IPC18 for this time period (or until transition if sooner) beginning at completion of Segment 2.
IPC21	Segment 4 Velocity Setpoint [05] or [06] **if:** / **then the module:** you select Vel/Pos profile execution / controls ram (screw) forward speed to this setpoint from ram (screw) position IPC19 until ram (screw) position reaches IPC23 (or until transition if sooner) IPC03-B14 is RESET / reads this parameter in percent velocity IPC03-B14 is SET / reads it in in.(mm)/s

Notes: 1. For [ ] engineering units, see page 3.
     2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

IPC

Word	Description
IPC22	Segment 4 Pressure Setpoint [01] **if:** **then the module:** you select Press/Pos controls ram (screw) pressure to this setpoint from ram (screw) position IPC19 until ram (screw) profile execution position reaches IPC23 (or until transition if sooner) you select Press/Time controls ram (screw) pressure to this setpoint at completion of Segment 3 for time period IPC24 profile execution (or until transition if sooner)
IPC23	End of Segment 4 Position Setpoint [12]
IPC24	Segment 4 Time Setpoint [21] If you select Press/Time profile execution, the module controls ram (screw) pressure to setpoint IPC22 for this time period (or until transition if sooner) beginning at completion of Segment 3.
IPC25	Segment 5 Velocity Setpoint [05] or [06] Segment 4 Velocity Setpoint [05] or [06] **if:** **then the module:** you select Vel/Pos controls ram (screw) forward speed to this setpoint from ram (screw) position IPC23 until ram profile execution (screw) position reaches IPC27 (or until transition if sooner) IPC03-B14 is RESET reads this parameter in percent velocity IPC03-B14 is SET reads it in in.(mm)/s
IPC26	Segment 5 Pressure Setpoint [01] **if:** **then the module:** you select Press/Pos controls ram (screw) pressure to this setpoint from ram (screw) position IPC23 until ram (screw) profile execution position reaches IPC27 (or until transition if sooner) you select Press/Time controls ram (screw) pressure to this setpoint at completion of Segment 4 for time period IPC28 profile execution (or until transition if sooner)
IPC27	End of Segment 5 Position Setpoint [12]
IPC28	Segment 5 Time Setpoint [21] If you select Press/Time profile execution, the module controls ram (screw) pressure to setpoint IPC26 for this time period (or until transition if sooner) beginning at completion of Segment 4.
IPC29	Segment 6 Velocity Setpoint [05] or [06] **if:** **then the module:** you select Vel/Pos controls ram (screw) forward speed to this setpoint from ram (screw) position IPC27 until ram profile execution (screw) position reaches IPC31 (or until transition if sooner) IPC03-B14 is RESET reads this parameter in percent velocity IPC03-B14 is SET reads it in in.(mm)/s
IPC30	Segment 6 Pressure Setpoint [01] **if:** **then the module:** you select Press/Pos controls ram (screw) pressure to this setpoint from ram (screw) position IPC27 until ram (screw) profile execution position reaches IPC31 (or until transition if sooner) you select Press/Time controls ram (screw) pressure to this setpoint at completion of Segment 5 for time period IPC32 profile execution (or until transition if sooner)
IPC31	End of Segment 6 Position Setpoint [12]
IPC32	Segment 6 Time Setpoint [21] If you select Press/Time profile execution, the module controls ram (screw) pressure to setpoint IPC30 for this time period (or until transition if sooner) beginning at completion of Segment 5.
IPC33	Segment 7 Velocity Setpoint [05] or [06] **if:** **then the module:** you select Vel/Pos controls ram (screw) forward speed to this setpoint from ram (screw) position IPC31 until ram profile execution (screw) position reaches IPC35 (or until transition if sooner) IPC03-B14 is RESET reads this parameter in percent velocity IPC03-B14 is SET reads it in in.(mm)/s
IPC34	Segment 7 Pressure Setpoint [01] **if:** **then the module:** you select Press/Pos controls ram (screw) pressure to this setpoint from ram (screw) position IPC31 until ram (screw) profile execution position reaches IPC35 (or until transition if sooner) you select Press/Time controls ram (screw) pressure to this setpoint at completion of Segment 6 for time period IPC36 profile execution (or until transition if sooner)
IPC35	End of Segment 7 Position Setpoint [12]
IPC36	Segment 7 Time Setpoint [21] If you select Press/Time profile execution, the module controls ram (screw) pressure to setpoint IPC34 for this time period (or until transition if sooner) beginning at completion of Segment 6.

Word	Description
IPC37	Segment 8 Velocity Setpoint [05] or [06]
	if: **then the module:**
	you select Vel/Pos controls ram (screw) forward speed to this setpoint from ram (screw) position IPC35 until ram
	profile execution (screw) position reaches IPC39 (or until transition if sooner)
	IPC03-B14 is RESET reads this parameter in percent velocity
	IPC03-B14 is SET reads it in in.(mm)/s
IPC38	Segment 8 Pressure Setpoint [01]
	if: **then the module:**
	you select Press/Pos controls ram (screw) pressure to this setpoint from ram (screw) position IPC35 until ram (screw)
	profile execution position reaches IPC39 (or until transition if sooner)
	you select Press/Time controls ram (screw) pressure to this setpoint at completion of Segment 7 for time period IPC40
	profile execution (or until transition if sooner)
IPC39	End of Segment 8 Position Setpoint [12]
IPC40	Segment 8 Time Setpoint [21] If you select Press/Time profile execution, the module controls ram (screw) pressure to setpoint IPC38 for this time period (or until transition if sooner) beginning at completion of Segment 7.
IPC41	Segment 9 Velocity Setpoint [05] or [06]
	if: **then the module:**
	you select Vel/Pos controls ram (screw) forward speed to this setpoint from ram (screw) position IPC39 until ram
	profile execution (screw) position reaches IPC43 (or until transition if sooner)
	IPC03-B14 is RESET reads this parameter in percent velocity
	IPC03-B14 is SET reads it in in.(mm)/s
IPC42	Segment 9 Pressure Setpoint [01]
	if: **then the module:**
	you select Press/Pos controls ram (screw) pressure to this setpoint from ram (screw) position IPC39 until ram (screw)
	profile execution position reaches IPC43 (or until transition if sooner)
	you select Press/Time controls ram (screw) pressure to this setpoint at completion of Segment 8 for time period IPC44
	profile execution (or until transition if sooner)
IPC43	End of Segment 9 Position Setpoint [12]
IPC44	Segment 9 Time Setpoint [21] If you select Press/Time profile execution, the module controls ram (screw) pressure to setpoint IPC42 for this time period (or until transition if sooner) beginning at completion of Segment 8.
IPC45	Segment 10 Velocity Setpoint [05] or [06]
	if: **then the module:**
	you select Vel/Pos controls ram (screw) forward speed to this setpoint from ram (screw) position IPC43 until ram
	profile execution (screw) position reaches IPC47 (or until transition if sooner)
	IPC03-B14 is RESET reads this parameter in percent velocity
	IPC03-B14 is SET reads it in in.(mm)/s
IPC46	Segment 10 Pressure Setpoint [01]
	if: **then the module:**
	you select Press/Pos controls ram (screw) pressure to this setpoint from ram (screw) position IPC43 until ram (screw)
	profile execution position reaches IPC47 (or until transition if sooner)
	you select Press/Time controls ram (screw) pressure to this setpoint at completion of Segment 9 for time period IPC48
	profile execution (or until transition if sooner)
IPC47	End of Segment 10 Position Setpoint [12]
IPC48	Segment 10 Time Setpoint [21] If you select Press/Time profile execution, the module controls ram (screw) pressure to setpoint IPC46 for this time period (or until transition if sooner) beginning at completion of Segment 9.
IPC49	Segment 11 Velocity Setpoint [05] or [06]
	if: **then the module:**
	you select Vel/Pos controls ram (screw) forward speed to this setpoint from ram (screw) position IPC47 until transition
	profile execution
	IPC03-B14 is RESET reads this parameter in percent velocity
	IPC03-B14 is SET reads it in in.(mm)/s

Notes: 1. For [ ] engineering units, see page 3.
2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

IPC

Word	Description
IPC50	Segment 11 Pressure Setpoint [01]

if:	**then the module:**
you select Press/Pos profile execution	controls ram (screw) pressure to this setpoint from ram (screw) position IPC47 until transition
you select Press/Time profile execution	controls ram (screw) pressure to this setpoint at completion of Segment 10 until transition

Injection Profile Offsets

Word	Description
IPC51	Profile Velocity Offset [05] or [06]

if:	**then the module:**
you select Vel/Pos profile execution	applies this entry (after reading the sign bit) to each velocity profile setpoint
IPC03-B14 is RESET	reads this parameter in percent velocity
IPC03-B14 is SET	reads it in in.(mm)/s

Word	Description
IPC52	Profile Pressure Offset [01] If you select Press/Pos or Press/Time profile execution, the module applies this entry (after reading the sign bit) to each pressure profile setpoint.
IPC53 - 56	Open

Pressure Limited Injection Parameters

Word	Description
IPC57	Ram (Screw) Pressure Limit for Vel/Pos Injection Profile [01], Profile Velocity Offset [05] or [06]

if:	**then the module:**
you select Pressure Limited Vel/Pos profile execution	limits action of the selected valve(s) during the Injection Profile to maintain ram (screw) pressure equal to or below this entry
ram (screw) pressure equals or exceeds this entry during a Pressure Limited Injection Profile and ram (screw) position is equal to or less than IPC58	sets the applicable status bit in IPS05 and freezes output to selected *velocity* valve for time period IPC59
ram (screw) pressure equals or exceeds this entry after expiration of time delay IPC59	continues Injection Profile execution using its internal PID algorithm with this entry used as the algorithm setpoint
the module switches to PID control during a Pressure Limited Injection Profile, and bit pattern in INC02 requires the module to control injection velocity and pressure with different outputs	returns the selected velocity valve to its profile Set-output value as defined in INC09-INC16
the module switches to the PID algorithm during a Pressure Limited Injection Profile, and the actual ram (screw) velocity equals or exceeds the velocity setpoint for the segment under execution	freezes output to selected *pressure* valve for time period IPC59
the actual ram (screw) velocity equals or exceeds the velocity setpoint after expiration of time delay IPC59	returns to the VelFF mode of profile execution to drive the selected *velocity* valve using the segment's programmed setpoint
the module returns to VelFF control during a Pressure Limited Injection Profile, and bit pattern in INC02 requires the module to control injection velocity and pressure with different outputs	returns the selected *pressure* valve to its profile Set-output value as defined in INC09-INC16

Word	Description
IPC58	Ram (Screw) Position for Pressure Limiting Inhibit [12] A non-zero entry forces the module to ignore the magnitude of ram (screw) pressure during a Pressure Limited Vel/Pos Injection Profile until ram (screw) position is equal to or less than this entry. A zero entry forces the module to pressure limit the entire Injection Profile if you have selected Pressure Limited Vel/Pos as the profile mode.
IPC59	Algorithm Change Time Delay During Pressure Limit [23] Total time that the module must monitor a continuous ram (screw) pressure in excess of the non-zero entry in IPC57 before changing to its internal PID algorithm for continuing a Pressure Limited Vel/Pos Injection Profile. Also the total time that the module must monitor a continuous ram (screw) velocity greater than the programmed setpoint before changing back to its internal VelFF algorithm during a Pressure Limited Vel/Pos Injection Profile that has entered pressure limit. Use a non-zero entry to filter out early ram (screw) pressure spikes of short duration to avoid pressure limiting during the Injection Profile.

Injection Transition Parameters

Injection transition-to-pack or hold occurs when the four words in this table go to a state of non-zero. If you want the module to ignore one or more parameters when monitoring the Injection Profile for transition, enter zero for that parameter.

Word	Description
IPC60	Time Limit for Transition [21] The module immediately terminates the Injection Profile and begins the Pack(Hold) Profile if the total Injection Profile execution time equals or exceeds the non-zero entry in this word. The module ignores this parameter if zero.
IPC61	Ram (Screw) Position for Transition [12] The module immediately terminates the Injection Profile and begins the Pack(Hold) Profile if real-time ram (screw) position is less than or equal to the non-zero entry in this word. The module ignores this parameter if zero.
IPC62	Ram (Screw) Pressure for Transition [01] If real-time ram (screw) position is less than or equal to any non-zero entry in IPC64, the module immediately terminates the Injection Profile and begins the Pack(Hold) Profile if real-time ram (screw) pressure equals or exceeds this non-zero entry. The module ignores this parameter if zero.
IPC63	Cavity Pressure for Transition [04] If real-time ram (screw) position is less than or equal to any non-zero entry in IPC64, the module immediately terminates the Injection Profile and begins the Pack(Hold) Profile if real-time cavity pressure equals or exceeds this non-zero entry. The module ignores this setpoint if zero.

Pressure Transition Inhibit

Word	Description
IPC64	Ram (Screw) Position for Pressure Transition Inhibit [12] A non-zero entry forces the module to ignore any non-zero IPC62 and IPC63 until ram (screw) position is equal to or less than this entry. A zero entry forces the module to use any non-zero entry in IPC62 and IPC63 during the entire Injection Profile.

JGC – Jog Configuration Block

The The module will not accept or process the Jog Configuration Command Block unless it has a valid MCC installed.

Bit-mapped Control Words

Word	Description
JGC01	Block ID = 00000010 (Low byte). High byte reserved for the module. Do not use
JGC02 - 04	Open

Jog Alarm Setpoints

Word	Description
JGC05	Screw Rotate Jog RPM Alarm Setpoint [25] The module compares real-time screw RPM against this entry when responding to command bit DYC01-B09 = 1. The module sets alarm status bit SYS05-B08 when screw RPM equals or exceeds this entry during a Screw Rotate Jog. A zero entry inhibits SYS05-B08.
JGC06	Ram (Screw) Jog Pressure Alarm Setpoint [01] The module compares real-time ram (screw) pressure against this entry when re-sponding to command bit DYC01-B10 = 1 or DYC01-B11 = 1. The module sets alarm status bit SYS05-B09 when ram (screw) pres-sure equals or exceeds this entry during a Ram (Screw) Jog. A zero entry inhibits SYS05-B09.
JGC07	Clamp Jog Pressure Alarm Setpoint [02] The module compares real-time clamp pressure against this entry when responding to command bit DYC01-B12 = 1 or DYC01-B13 = 1. The module sets alarm status bit SYS05-B10 when clamp pressure equals or exceeds this entry during a Clamp Jog. A zero entry inhibits SYS05-B10.
JGC08	Ejector Jog Pressure Alarm Setpoint [03] the module compares real-time ejector pressure against this entry when responding to command bit DYC01-B14 = 1 or DYC01-B15 = 1. The module sets alarm status bit SYS05-B11 when ejector pressure equals or exceeds this entry during an Ejector Jog. A zero entry inhibits SYS05-B11.

Notes: 1. For [ ] engineering units, see page 3.
     2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

JGC

Screw Rotate Jog Set-output Values

The module sets its outputs to these values when DYC01-B09 = 1.

Word	Description
JGC09	Output #1 Set-output Value for Screw Rotate Jogs [19]
JGC10	Output #2 Set-output Value for Screw Rotate Jogs [19]
JGC11	Output #3 Set-output Value for Screw Rotate Jogs [19]
JGC12	Output #4 Set-output Value for Screw Rotate Jogs [19]
JGC13	Output #5 Set-output Value for Screw Rotate Jogs [19]
JGC14	Output #6 Set-output Value for Screw Rotate Jogs [19]
JGC15	Output #7 Set-output Value for Screw Rotate Jogs [19]
JGC16	Output #8 Set-output Value for Screw Rotate Jogs [19]

Ram (Screw) Forward Jog Set-output Values

The module sets its outputs to these values when DYC01-B10 = 1.

Word	Description
JGC17	Output #1 Set-output Value for Ram (Screw) Forward Jogs [19]
JGC18	Output #2 Set-output Value for Ram (Screw) Forward Jogs [19]
JGC19	Output #3 Set-output Value for Ram (Screw) Forward Jogs [19]
JGC20	Output #4 Set-output Value for Ram (Screw) Forward Jogs [19]
JGC21	Output #5 Set-output Value for Ram (Screw) Forward Jogs [19]
JGC22	Output #6 Set-output Value for Ram (Screw) Forward Jogs [19]
JGC23	Output #7 Set-output Value for Ram (Screw) Forward Jogs [19]
JGC24	Output #8 Set-output Value for Ram (Screw) Forward Jogs [19]

Ram (Screw) Reverse Jog Set-output Values

The module sets its outputs to these values when DYC01-B11 = 1.

Word	Description
JGC25	Output #1 Set-output Value for Ram (Screw) Reverse Jogs [19]
JGC26	Output #2 Set-output Value for Ram (Screw) Reverse Jogs [19]
JGC27	Output #3 Set-output Value for Ram (Screw) Reverse Jogs [19]
JGC28	Output #4 Set-output Value for Ram (Screw) Reverse Jogs [19]
JGC29	Output #5 Set-output Value for Ram (Screw) Reverse Jogs [19]
JGC30	Output #6 Set-output Value for Ram (Screw) Reverse Jogs [19]
JGC31	Output #7 Set-output Value for Ram (Screw) Reverse Jogs [19]
JGC32	Output #8 Set-output Value for Ram (Screw) Reverse Jogs [19]

Clamp Forward Jog Set-output Values

The module sets its outputs to these values when DYC01-B12 = 1.

Word	Description
JGC33	Output #1 Set-output Value for Clamp Forward Jogs [19]
JGC34	Output #2 Set-output Value for Clamp Forward Jogs [19]
JGC35	Output #3 Set-output Value for Clamp Forward Jogs [19]
JGC36	Output #4 Set-output Value for Clamp Forward Jogs [19]

Word	Description
JGC37	Output #5 Set-output Value for Clamp Forward Jogs [19]
JGC38	Output #6 Set-output Value for Clamp Forward Jogs [19]
JGC39	Output #7 Set-output Value for Clamp Forward Jogs [19]
JGC40	Output #8 Set-output Value for Clamp Forward Jogs [19]

Clamp Reverse Jog Set-output Values

The module sets its outputs to these values when DYC01-B13 = 1.

Word	Description
JGC41	Output #1 Set-output Value for Clamp Reverse Jogs [19]
JGC42	Output #2 Set-output Value for Clamp Reverse Jogs [19]
JGC43	Output #3 Set-output Value for Clamp Reverse Jogs [19]
JGC44	Output #4 Set-output Value for Clamp Reverse Jogs [19]
JGC45	Output #5 Set-output Value for Clamp Reverse Jogs [19]
JGC46	Output #6 Set-output Value for Clamp Reverse Jogs [19]
JGC47	Output #7 Set-output Value for Clamp Reverse Jogs [19]
JGC48	Output #8 Set-output Value for Clamp Reverse Jogs [19]

Ejector Advance Jog Set-output Values

The module sets its outputs to these values when DYC01-B14 = 1.

Word	Description
JGC49	Output #1 Set-output Value for Ejector Advance Jogs [19]
JGC50	Output #2 Set-output Value for Ejector Advance Jogs [19]
JGC51	Output #3 Set-output Value for Ejector Advance Jogs [19]
JGC52	Output #4 Set-output Value for Ejector Advance Jogs [19]
JGC53	Output #5 Set-output Value for Ejector Advance Jogs [19]
JGC54	Output #6 Set-output Value for Ejector Advance Jogs [19]
JGC55	Output #7 Set-output Value for Ejector Advance Jogs [19]
JGC56	Output #8 Set-output Value for Ejector Advance Jogs [19]

Ejector Retract Jog Set-output Values

The module sets its outputs to these values when DYC01-B15 = 1.

Word	Description
JGC57	Output #1 Set-output Value for Ejector Retract Jogs [19]
JGC58	Output #2 Set-output Value for Ejector Retract Jogs [19]
JGC59	Output #3 Set-output Value for Ejector Retract Jogs [19]
JGC60	Output #4 Set-output Value for Ejector Retract Jogs [19]
JGC61	Output #5 Set-output Value for Ejector Retract Jogs [19]
JGC62	Output #6 Set-output Value for Ejector Retract Jogs [19]
JGC63	Output #7 Set-output Value for Ejector Retract Jogs [19]
JGC64	Output #8 Set-output Value for Ejector Retract Jogs [19]

Notes: 1. For [ ] engineering units, see page 3.

2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

LPC

LPC – Clamp Low Pressure Close Configuration Block

Bit-mapped Control Words

Word	Bit	Description
LPC01		Block ID = 00000110 (Low byte). High byte reserved for the module. Do not use.
LPC02		**Configuration Selections**
	B00-B03	Open
	B04-B06	Selected Pressure Control Valve the module uses its algorithm to drive the following output during any Clamp Low Pressure Close Profile. **B06 B05 B04** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B07	Pressure Algorithm Selection = 0 Dependent Gains (ISA) = 1 Independent Gains (A-B)
	B08 - B15	Open
LPC03 - 05		Open

Expert Response Compensation (ERC) Percentage

Word	Description
LPC06	Minimum Pressure Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.

Watchdog Timers

Word	Description
LPC07	Tonnage Watchdog Timer Preset [21] When the module completes the Clamp Low Pressure Close Profile and sets its outputs to LPC33 - LPC40, it: • starts an internal Tonnage Watchdog timer • stops this timer when it sets master status bit SYS03-B02 and reports the accumulated value of the timer in SYS57 • resets SYS57 to zero when it detects an F-to-T transition of DYC03-B00 • sets master status bit SYS04-B15 when SYS57 equals or exceeds this entry A zero entry inhibits SYS04-B15.
LPC08	Profile Watchdog Timer Preset [21] When the module starts the Clamp Low Pressure Close Profile, it: • starts an internal Profile Watchdog timer • stops this timer and resets its accumulated value to zero (after reporting total execution time in CPS60) when it completes the profile • sets master status bit SYS04-B03 when the accumulated value of this timer equals or exceeds this entry A zero entry inhibits SYS04-B03.

Unselected Valve Set-output Values

When the module starts the Clamp Low Pressure Close Profile, it:

- sets its unselected outputs to the values listed below

- ignores the unselected value of the selected output

- uses ramp rates LPC17 - LPC32 to ramp unselected outputs

Word	Description
LPC09	Output #1 Set-output Value during Profile [19]
LPC10	Output #2 Set-output Value during Profile [19]
LPC11	Output #3 Set-output Value during Profile [19]
LPC12	Output #4 Set-output Value during Profile [19]
LPC13	Output #5 Set-output Value during Profile [19]
LPC14	Output #6 Set-output Value during Profile [19]
LPC15	Output #7 Set-output Value during Profile [19]
LPC16	Output #8 Set-output Value during Profile [19]

Output Ramp Rates

The module uses the following ramp rates when moving its outputs from setpoint to setpoint during the Clamp Low Pressure Close Profile. The module interprets a ramp rate entry of zero as a step function ramp (ramp disable).

Word	Description
LPC17	Output #1 Acceleration Ramp Rate during Profile [20]
LPC18	Output #2 Acceleration Ramp Rate during Profile [20]
LPC19	Output #3 Acceleration Ramp Rate during Profile [20]
LPC20	Output #4 Acceleration Ramp Rate during Profile [20]
LPC21	Output #5 Acceleration Ramp Rate during Profile [20]
LPC22	Output #6 Acceleration Ramp Rate during Profile [20]
LPC23	Output #7 Acceleration Ramp Rate during Profile [20]
LPC24	Output #8 Acceleration Ramp Rate during Profile [20]
LPC25	Output #1 Deceleration Ramp Rate during Profile [20]
LPC26	Output #2 Deceleration Ramp Rate during Profile [20]
LPC27	Output #3 Deceleration Ramp Rate during Profile [20]
LPC28	Output #4 Deceleration Ramp Rate during Profile [20]
LPC29	Output #5 Deceleration Ramp Rate during Profile [20]
LPC30	Output #6 Deceleration Ramp Rate during Profile [20]
LPC31	Output #7 Deceleration Ramp Rate during Profile [20]
LPC32	Output #8 Deceleration Ramp Rate during Profile [20]

End of Profile Set-output Values

When the module completes the Clamp Low Pressure Close Profile, it:

- sets its outputs to the following values
- sets status bit SYS22-B03
- uses ramp rates LPC17 - 32 when changing outputs to these values

Use these values to apply tonnage to the mold before starting the Injection Profile, or for setting cores if applied before starting the Injection Profile.

Notes: 1. For [ ] engineering units, see page 3.
        2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.
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LPC

Word	Description
LPC33	Output #1 Set-output Value at End of Profile [19]
LPC34	Output #2 Set-output Value at End of Profile [19]
LPC35	Output #3 Set-output Value at End of Profile [19]
LPC36	Output #4 Set-output Value at End of Profile [19]
LPC37	Output #5 Set-output Value at End of Profile [19]
LPC38	Output #6 Set-output Value at End of Profile [19]
LPC39	Output #7 Set-output Value at End of Profile [19]
LPC40	Output #8 Set-output Value at End of Profile [19]

Pressure Control Limits

Word	Description
LPC41	Pressure Minimum Control Limit [02] Minimum controllable clamp pressure attainable during any Clamp Low Pressure Close Profile. The module expects this clamp pressure when setting its selected valve to the %-output in LPC43.
LPC42	Pressure Maximum Control Limit [02] Maximum controllable clamp pressure attainable during any Clamp Low Pressure Close Profile. The module expects this clamp pressure when setting its selected valve to the %-output in LPC44.
LPC43	Selected Pressure Valve Output of Minimum [19] 0% CV output percentage that the module uses to drive the selected pressure valve during any Clamp Low Pressure Close Profile. The module expects a pressure equal to LPC41 when setting the selected pressure valve to this %-output during profile execution. The Clamp Low Pressure Close Profile will be executed as a reverse-acting algorithm if this entry is greater than LPC44.
LPC44	Selected Pressure Valve Output of Maximum [19] 100% CV output percentage that the module uses to drive the selected pressure valve during any Clamp Low Pressure Close Profile. The module expects a pressure equal to LPC42 when setting the selected pressure valve to this %-output during profile execution. The Clamp Low Pressure Close Profile will be executed as a reverse-acting algorithm if this entry is less than LPC43.
LPC45 - 48	Open

Profile Tuning Constants

Word	Description
LPC49	Proportional Gain for Pressure Control [30]
LPC50	Integral Gain for Pressure Control [27] or [28]
LPC51	Derivative Gain for Pressure Control [26] or [21]
LPC52 - 56	Open

Profile Pressure Alarm Setpoint

Word	Description
LPC57	Profile High Pressure Alarm Setpoint [02] The module compares real-time clamp pressure against this entry when executing the Clamp Low Pressure Close Profile. The module sets alarm status bit SYS05-B15 when clamp pressure equals or exceeds this entry during the Clamp Low Pressure Close Profile. A zero entry inhibits SYS05-B15.
LPC58 - 64	Open

MCC – Module Configuration Command Block

Bit-mapped Control Words

Word	Bit	Description
MCC01	B00 - B07	Block ID 00000001
	B08 - B15	Reserved for the module. Do not use.
MCC02		**MCC Configuration Selections**
	B00	Data Range Selection 0 = English Units (Inches and PSI) 1 = Metric Units (Millimeters and Bar)
	B01	Module designation for co-injection 0 = QIA 1 = QIB
	B02	Open
	B03	Module I/O Density 0 = invalid 1 = Four/Four I/O (required selection) Four/Four I/O Configuration MUST BE SET. The module configures itself as a 1-slot module containing four inputs and four outputs, and accesses bits MCC02-B04 and MCC02-B05 to determine layout of its inputs.
	B04 -B05	**B05 B04 Four/Four I/O Configuration** 0 0 Inject Control 0 1 Inject and Clamp Control 1 0 Clamp and Eject Control 1 1 Inject, Clamp, and Eject Control **B05 B04 Input #1 / Input #2 / Input #3 / Input #4** 0 0 Ram (Screw) Position Ram (Screw) Pressure Screw RPM Cavity Pressure 0 1 Ram (Screw) Position Ram (Screw) Pressure Clamp Position Clamp Pressure 1 0 Ejector Position Ejector Pressure Clamp Position Clamp Pressure 1 1 Ram (Screw) Position System Pressure Clamp Position Ejector Position The module accesses these bits only if MCC02-B03 is SET.
	B06-B07	Open
	B08	inhibit (override) loss of sensor protection for screw position input
	B09	Inhibit (override) loss of sensor protection for screw pressure input
	B10	Inhibit (override) loss of sensor protection for clamp position input
	B11	Inhibit (override) loss of sensor protection for clamp pressure input
	B12	Inhibit (override) loss of sensor protection for ejector position input
	B13	Inhibit (override) loss of sensor protection for ejector pressure input
	B14	Inhibit (override) loss of sensor protection for screw RPM input
	B15	Inhibit (override) loss of sensor protection for cavity pressure input (system pressure in Inject-Clamp-Eject mode)

Notes: 1. For [ ] engineering units, see page 3.
    2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

MCC

Word	Bit	Description
MCC03		MCC Input Range Selection
		All inputs have the following range selections: **Byy Bxx Range** 0 0 0 to 10 V dc 0 1 1 to 5 V dc 1 0 4 to 20 mA dc 1 1 Not Connected
		Use these bit pairs to select the input range:
	B01 B00	Input #1
	B03 B02	Input #2
	B05 B04	Input #3
	B07 B06	Input #4
	B09 B08	Input #5 Both of these bits must be SET.
	B11 B10	Input #6 Both of these bits must be SET.
	B13 B12	Input #7 Both of these bits must be SET.
	B15 B14	Input #8 Both of these bits must be SET.
MCC04		MCC Output Range Selection
		All outputs have the following range selections: **Byy Bxx Range** 0 0 –10 to +10 V dc 0 1 0 to +10 V dc 1 0 4 to 20 mA dc 1 1 Not Connected
		Use these bit pairs to select the output range:
	B01 B00	Output #1
	B03 B02	Output #2
	B05 B04	Output #3
	B07 B06	Output #4
	B09 B08	Output #5 Both of these bits must be SET.
	B11 B10	Output #6 Both of these bits must be SET.
	B13 B12	Output #7 Both of these bits must be SET.
	B15 B14	Output #8 Both of these bits must be SET.
MCC05		Adds percentage offset up to ± 10% (–1000 to +1000) to Stop Position of Output #1 (0 V dc or 4 mA).
MCC06		Adds percentage offset up to ± 10% (–1000 to +1000) to Stop Position of Output #2 (0 V dc or 4 mA).
MCC07		Adds percentage offset up to ± 10% (–1000 to +1000) to Stop Position of Output #3 (0 V dc or 4 mA).
MCC08		Adds percentage offset up to ± 10% (–1000 to +1000) to Stop Position of Output #4 (0 V dc or 4 mA).

Ram (Screw) Position Transducer Configuration

The module accesses data in MCC09-MCC16 if bit patterns in MCC02 and MCC03 indicate that the module is connected to a ram (screw) position sensor.

Word	Description
MCC09	Minimum Ram (Screw) Position [11]
MCC10	Maximum Ram (Screw) Position [11]
MCC11	Analog Signal at Minimum Ram (Screw) Position [24]
MCC12	Analog Signal at Maximum Ram (Screw) Position [24] The module continuously compares real-time ram (screw) position against this entry. The module sets alarm status bit SYS07-B00 and forces all of its outputs to zero when executing a ram (screw) forward profile (Injection, Pack, Hold) and ram (screw) position is less than or equals this entry. A zero entry inhibits SYS07-B00.
MCC13	Ram (Screw) Position Minimum Software Travel Limit [11]

Word	Description
MCC14	Ram (Screw) Position Maximum Software Travel Limit [11] The module continuously compares real-time ram (screw) position against this entry. The module sets alarm status bit SYS07-B01 and forces all of its outputs to zero when executing a ram (screw) reverse profile or movement (Pre-decompression, Plastication, Post-decompression) and ram (screw) position equals or exceeds this entry. A zero entry inhibits SYS07-B01.
MCC15	Ram (Screw) Software Travel Limit Alarm Deadband [17] After sensing a ram (screw) overtravel and latching alarm status bit SYS07-B00 or SYS07-B01, the module will not unlatch bit until real-time ram (screw) position is inside the overtravel setpoint by an incremental length equal to this entry. This incremental position is added to MCC13 in order to determine ram (screw) position required to unlatch SYS07-B00. This incremental position is subtracted from MCC14 in order to determine ram (screw) position required to unlatch SYS07-B01.
MCC16	Ram (Screw) Position Transducer Digital Filter [23] A non-zero entry forces the module to filter the input before using the result for all ram (screw) position calculations. Use this parameter when required to soften the input signal from a linear potentiometer.

Ram (Screw) Pressure Transducer Configuration

The module accesses data in MCC17-MCC22 if bit patterns in MCC02 and MCC03 indicate that the module is connected to a ram (screw) pressure sensor.

Word	Description
MCC17	Minimum Ram (Screw) Pressure [01]
MCC18	Maximum Ram (Screw) Pressure [01]
MCC19	Analog Signal at Minimum Ram (Screw) Pressure [24]
MCC20	Analog Signal at Maximum Ram (Screw) Pressure [24]
MCC21	High Ram (Screw) Pressure Alarm Setpoint [01] The module continuously compares real-time ram (screw) pressure against this entry. The module sets alarm status bit SYS05-B00 when ram (screw) pressure equals or exceeds this entry. A zero entry inhibits SYS05-B00.
MCC22	Ram (Screw) Pressure Alarm Time Delay [23] Total time the module must monitor a continuous ram (screw) pressure in excess of the non-zero entry in all ram (screw) pressure alarm setpoints before setting the associated alarm status bit. Setpoint/bit pairs affected are: **Setpoint** **Alarm Status Bit** MCC21 SYS05-B00 JGC06 SYS05-B09 INC57 SYS06-B00 PKC57 SYS06-B02 HDC57 SYS06-B04 PRC57 SYS06-B06 PLC57 SYS06-B07 PSC57 SYS06-B08 Use a non-zero entry to filter out ram (screw) pressure spikes of short enough duration that they should not be considered an alarm.

Clamp Position Transducer Configuration

The module accesses data in MCC23-MCC30 if bit patterns in MCC02 and MCC03 indicate that the module is connected to a clamp position sensor.

Word	Description
MCC23	Minimum Clamp Position [13]
MCC24	Maximum Clamp Position [13]
MCC25	Analog Signal at Minimum Clamp Position [24]
MCC26	Analog Signal at Maximum Clamp Position [24]

Notes: 1. For [ ] engineering units, see page 3.

        2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

MCC

MCC27	Clamp Position Minimum Software Travel Limit [13] The module continuously compares real-time clamp position against this entry. The module sets alarm status bit SYS07-B02 and forces all of its outputs to zero when executing a clamp close profile and clamp position is less than or equals this entry. A zero entry inhibits SYS07-B02.
MCC28	Clamp Position Maximum Software Travel Limit[13] The module continuously compares real-time clamp position against this entry. the module sets alarm status bit SYS07-B03 and forces all of its outputs to zero when executing a clamp open profile and clamp position equals or exceeds this entry. A zero entry inhibits SYS07-B03.
MCC29	Clamp Software Travel Limit Alarm Deadband [17] After sensing a clamp overtravel and latching alarm status bit SYS07-B02 or SYS07-B03, the module will not unlatch bit until real-time clamp position is inside the overtravel setpoint by an incremental length equal to this entry. This incremental position will be added to MCC27 in order to determine the clamp position required to unlatch SYS07-B02. This incremental position will be subtracted from MCC28 in order to determine the clamp position required to unlatch SYS07-B03.
MCC30	Clamp Position Transducer Digital Filter [23] A non-zero entry forces the module to filter the input before using the result for all clamp position calculations. Use this parameter to soften the input signal from a linear potentiometer.

Clamp Pressure Transducer Configuration

The module accesses data in MCC31-MCC36 if bit patterns in MCC02 and MCC03 indicate that the module is connected to a clamp pressure sensor.

Word	Description
MCC31	Minimum Clamp Pressure [02]
MCC32	Maximum Clamp Pressure [02]
MCC33	Analog Signal at Minimum Clamp Pressure [24]
MCC34	Analog Signal at Maximum Clamp Pressure [24]
MCC35	High Clamp Pressure Alarm Setpoint [02] The module continuously compares real-time clamp pressure against this entry. and sets alarm status bit SYS05-B01 when clamp pressure equals or exceeds this entry. A zero entry inhibits SYS05-B01.
MCC36	Clamp Pressure Alarm Time Delay [23] Total time the module must monitor a continuous clamp pressure in excess of the non-zero entry in all clamp pressure alarm setpoints before setting the associated alarm status bit. Setpoint/bit pairs affected are: **Setpoint** **Alarm Status Bit** MCC35 SYS05-B01 JGC07 SYS05-B10 FCC57 SYS05-B12 SCC57 SYS05-B13 TCC57 SYS05-B14 LPC57 SYS05-B15 FOC57 SYS06-B09 SOC57 SYS06-B10 TOC57 SYS06-B11 OSC57 SYS06-B12 Use a non-zero entry in this word to filter out clamp pressure spikes of short enough duration to avoid nuisance alarms.

Ejector Position Transducer Configuration

The module accesses data in MCC37-MCC44 if bit patterns in MCC02 and MCC03 indicate that the module is connected to an ejector position sensor.

Word	Description
MCC37	Minimum Ejector Position [15]
MCC38	Maximum Ejector Position [15]
MCC39	Analog Signal at Minimum Ejector Position [24]
MCC40	Analog Signal at Maximum Ejector Position [24]
MCC41	Ejector Position Minimum Software Travel Limit [15] The module continuously compares real-time ejector position against this entry. The module sets alarm status bit SYS07-B04 and forces all of its outputs to zero when executing an ejector retract profile and ejector position is less than or equals this entry. A zero entry inhibits SYS07-B04.

Word	Description
MCC42	Ejector Position Maximum Software Travel Limit [15] The module continuously compares real-time ejector position against this entry. The module sets alarm status bitSYS07-B05 and forces all of its outputs to zero when executing an ejector advance profile and ejector position equals or exceeds this entry. A zero entry inhibits SYS07-B05.
MCC43	Ejector Software Travel Limit Alarm Deadband [17] After sensing an ejector overtravel and latching alarm status bit SYS07-B04 or SYS07-B05, the module will not unlatch bit until real-time ejector position is inside the overtravel setpoint by an incremental length equal to this entry. This incremental position will be added to MCC41 in order to determine the ejector position required to unlatch SYS07-B04. This incremental position will be subtracted from MCC42 in order to determine the ejector position required to unlatch SYS07-B05.
MCC44	Ejector Position Transducer Digital Filter [23] A non-zero entry forces the module to filter the input before using the result for all ejector position calculations. Use this parameter to soften the input signal from a linear potentiometer.

Ejector Pressure Transducer Configuration

The module accesses data in MCC45-MCC50 if bit patterns in MCC02 and MCC03 indicate that the module is connected to an ejector pressure sensor.

Word	Description
MCC45	Minimum Ejector Pressure [03]
MCC46	Maximum Ejector Pressure [03]
MCC47	Analog Signal at Minimum Ejector Pressure [24]
MCC48	Analog Signal at Maximum Ejector Pressure [24]
MCC49	High Ejector Pressure Alarm Setpoint [03] The module continuously compares real-time ejector pressure against this entry. The module sets alarm status bit SYS05-B02 when ejector pressure equals or exceeds this entry. A zero entry inhibits SYS05-B02.
MCC50	Ejector Pressure Alarm Time Delay [23] Total time the module must monitor a continuous ejector pressure in excess of the non-zero entry in all ejector pressure alarm setpoints before setting the associated alarm status bit. Setpoint/bit pairs affected are: **Setpoint** **Alarm Status Bit** MCC49 SYS05-B02 JGC08 SYS05-B11 EAC57 SYS06-B13 Use a non-zero entry in this word to filter out ejector pressure spikes of short enough duration to avoid nuisance alarms.

Screw RPM Transducer Configuration

The module accesses data in MCC51 - 56 if bit patterns in MCC02 and MCC03 indicate that the module is connected to a screw RPM sensor.

Word	Description
MCC51	Minimum Screw RPM [25]
MCC52	Maximum Screw RPM [25]
MCC53	Analog Signal at Minimum Screw RPM [24]
MCC54	Analog Signal at Maximum Screw RPM [24]
MCC55	High Screw RPM Alarm Setpoint [25] The module continuously compares real-time screw RPM against this entry. The module sets alarm status bit SYS05-B03 when screw RPM equals or exceeds this entry. A zero entry inhibits SYS05-B03.
MCC56	High Screw RPM Alarm Time Delay [23] Total time the module must monitor a continuous screw RPM in excess of the non-zero entry in all screw RPM alarm setpoints before setting the associated alarm status bit. Setpoint/bitpairs affected are: **Setpoint** **Alarm Status Bit** MCC55 SYS05-B03 JGC05 SYS05-B08 Use a non-zero entry in this word to filter out screw RPM spikes of short enough duration to avoid nuisance alarms.

Notes: 1. For [ ] engineering units, see page 3.
2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

MCC

Cavity (or System) Pressure Transducer Configuration

The module accesses data in MCC57-MCC62 if bit patterns in MCC02 and MCC03 indicate that the module is connected to a cavity (or system) pressure sensor. The data will refer to a system pressure sensor at input #2 only if MCC02-B03, -B04, and -B05 are all SET.

Word	Description
MCC57	Minimum Cavity (or System) Pressure [04] or [01]
MCC58	Maximum Cavity (or System) Pressure [04] or [01]
MCC59	Analog Signal at Minimum Cavity (or System) Pressure [24]
MCC60	Analog Signal at Maximum Cavity (or System) Pressure [24]
MCC61	High Cavity (or System) Pressure Alarm Setpoint [04] or [01] The module continuously compares real-time cavity (or system) pressure against this entry. The module sets alarm status bit SYS05-B04 when cavity (or system) pressure equals or exceeds this entry. A zero entry inhibits SYS05-B04.
MCC62	High Cavity (or System) Pressure Alarm Time Delay [23] Total time the module must monitor a continuous cavity (or system) pressure in excess of the non-zero entry in all cavity (or system) pressure alarm setpoints before setting the associated alarm status bit. If bit patterns in MCC02 and MCC03 indicate that the module is connected to a cavity pressure sensor, setpoint/bit pairs affected are: **Setpoint** **Alarm Status Bit** MCC61 SYS05-B04 INC58 SYS06-B01 PKC58 SYS06-B03 HDC58 SYS06-B05 If bit patterns in MCC02 and MCC03 indicate that the module is connected to a system pressure sensor, setpoint/bit pairs affected are: **Setpoint** **Alarm Status Bit** MCC61 SYS05-B04 JGC06 SYS05-B09 JGC07 SYS05-B10 JGC08 SYS05-B11 FCC57 SYS05-B12 SCC57 SYS05-B13 TCC57 SYS05-B14 LPC57 SYS05-B15 INC57 SYS06-B00 PKC57 SYS06-B02 HDC57 SYS06-B04 PRC57 SYS06-B06 PLC57 SYS06-B07 PSC57 SYS06-B08 FOC57 SYS06-B09 SOC57 SYS06-B10 TOC57 SYS06-B11 OSC57 SYS06-B12 EAC57 SYS06-B13 Use a non-zero entry in this word to filter out cavity (or system) pressure spikes of short enough duration to avoid nuisance alarms.
MCC63	Reserved
MCC64	Number of Input Samples for Loss-of-sensor Alarms [29] Range of 0-200. The module monitors sensor inputs for out-of-range signals. To avoid nuisance alarms caused by electrical noise, enter a non-zero value. When the module detects a number of consecutive *out-of-range* input scans (consecutive loss-of-sensor samples) equal to or greater than this value, it sets the loss-of-sensor alarm. Setting to zero gives no protection against nuisance alarms.

OPC – Clamp Open
Profile Block

Bit-mapped Control Words

Word	Bit	Description
OPC01		Block ID = 00010101 (Low byte). High byte reserved for the module. Do not use.
OPC02		Open
OPC03		**Configuration Selections**
		Profile Algorithm Selections
	B00	= 0 Vel/Pos selected for First Clamp Open Profile = 1 Press/Pos selected for First Clamp Open Profile
	B01	Open
	B02	= 0 Vel/Pos selected for Second Clamp Open Profile = 1 Press/Pos selected for Second Clamp Open Profile
	B03	Open
	B04	= 0 Vel/Pos selected for Third Clamp Open Profile = 1 Press/Pos selected for Third Clamp Open Profile
	B05	Open
	B06	= 0 Vel/Pos selected for Clamp Open Slow Profile = 1 Press/Pos selected for Clamp Open Slow Profile
	B07	Open
	B08	First Clamp Open/Second Clamp Open Logical Bridge Selection = 0 Start Second Clamp Open Profile at End of First Clamp Open Profile = 1 Stop and Set-output at End of First Clamp Open Profile **if this pause Bit is:** **then the module:** SET and SYS21-B14 is SET gives output control to the Ejector Profile RESET and OPC20 > 00000 immediately begins the Second Clamp Open Profile RESET and OPC20 = 00000 reacts as if it just completed the Second Clamp Open Profile, and continues operation based on the state of OPC03-B09
	B09	Second Clamp Open/Third Clamp Open Logical Bridge Selection = 0 Start Third Clamp Open Profile at End of Second Clamp Open Profile = 1 Stop and Set-output at End of Second Clamp Open Profile The module checks the state of this bit at completion of the Second Clamp Open Profile to determine what further action to take: **if this pause Bit is:** **then the module:** SET and SYS21-B14 is RESET sets its outputs to SOC33 - SOC40 SET, and SYS21-B14 is SET gives output control to the Ejector Profile RESET and OPC29 > 00000 immediately begins the Third Clamp Open Profile RESET and OPC29 = 00000 reacts as if it just completed the Third Clamp Open Profile, and continues operation based the state of OPC03-B10
	B10	Third Clamp Open/Clamp Open Slow Logical Bridge Selection = 0 Start Clamp Open Slow Profile at End of Third Clamp Open Profile = 1 Stop and Set-output at End of Third Clamp Open Profile The module checks the state of this bit at completion of the Third Clamp Open Profile to determine what further action to take: **if this pause Bit is:** **then the module:** SET and SYS21-B14 is RESET sets its outputs to TOC33 - TOC40 SET and SYS21-B14 is SET gives output control to the Ejector Profile RESET immediately begins the Clamp Open Slow Profile

Notes: 1. For [ ] engineering units, see page 3.
        2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

OPC

Word	Bit	Description
	B11	Open Slow Zone Overrun Selection = 0 Start Clamp Open Slow Profile on Open Slow Zone Overrun = 1 Stop and zero outputs on Open Slow Zone Overrun If the clamp position equals or exceeds OPC61 while the module is executing any of the first three Clamp Open Profiles, the module immediately terminates the ongoing Clamp Open Profile and checks the state of this bit. **if:** **then the module:** RESET immediately begins the Clamp Open Slow Profile SET and SYS21-B14 is RESET sets its outputs to zero SET and SYS21-B14 is SET gives output control to the Ejector Profile
	B12 - B13	Open
	B14	Velocity Units Selection = 0 Velocity Parameters in Percent Velocity = 1 Velocity Parameters in in.(mm)/s If RESET, the module returns all segment velocity actuals (and assumes all velocity setpoints) in percent velocity where FOC46, SOC46, TOC46, and OSC46 represent 100% velocity. If SET, the module returns all velocity actuals (and assume all velocity setpoints) in in.(mm)/s.
	B15	Mold Open Dwell Start Selection = 0 Start Open Dwell Timer when Mold Open = 1 Start Open Dwell Timer when Mold Open and Ejectors Done If bit patterns in MCC02 and MCC03 indicate that the module is connected to an ejector position transducer, and EPC03-B09 is RESET, the state of this bit informs the module when to start its internal Mold Open Dwell Timer (see OPC63 and SYS59). **if:** **then the module:** RESET starts the timer when it completes the Clamp Open Slow Profile SET and SYS03-B07 is SET starts the timer when it completes the Ejector Profile bit patterns in MCC02 and MCC03 indicate that the module is *not* connected to an ejector position transducer, or if EPC03-B09 is SET ignores the state of this bit and starts the timer when it completes the Clamp Open Slow Profile
OPC04		Configuration Selections
		Open/Closed Loop Selection
	B00	= 0 Vel/Pos First Clamp Open Profiles Closed Loop = 1 Vel/Pos First Clamp Open Profiles Open Loop
	B01	= 0 Press/Pos First Clamp Open Profiles Closed Loop = 1 Press/Pos First Clamp Open Profiles Open Loop
	B02	= 0 Vel/Pos Second Clamp Open Profiles Closed Loop = 1 Vel/Pos Second Clamp Open Profiles Open Loop
	B03	= 0 Press/Pos Second Clamp Open Profiles Closed Loop = 1 Press/Pos Second Clamp Open Profiles Open Loop
	B04	= 0 Vel/Pos Third Clamp Open Profiles Closed Loop = 1 Vel/Pos Third Clamp Open Profiles Open Loop
	B05	= 0 Press/Pos Third Clamp Open Profiles Closed Loop = 1 Press/Pos Third Clamp Open Profiles Open Loop
	B06	= 0 Vel/Pos Clamp Open Slow Profiles Closed Loop = 1 Vel/Pos Clamp Open Slow Profiles Open Loop
	B07	= 0 Press/Pos Clamp Open Slow Profiles Closed Loop = 1 Press/Pos Clamp Open Slow Profiles Open Loop
		ERC Enabled/Disabled Selection
	B08	= 0 Vel/Pos First Clamp Open Profiles ERC On = 1 Vel/Pos First Clamp Open Profiles ERC Off
	B09	= 0 Press/Pos First Clamp Open Profiles ERC On = 1 Press/Pos First Clamp Open Profiles ERC Off
	B10	= 0 Vel/Pos Second Clamp Open Profiles ERC On = 1 Vel/Pos Second Clamp Open Profiles ERC Off
	B11	= 0 Press/Pos Second Clamp Open Profiles ERC On = 1 Press/Pos Second Clamp Open Profiles ERC Off

Word	Bit	Description
	B12	= 0 Vel/Pos Third Clamp Open Profiles ERC On = 1 Vel/Pos Third Clamp Open Profiles ERC Off
	B13	= 0 Press/Pos Third Clamp Open Profiles ERC On = 1 Press/Pos Third Clamp Open Profiles ERC Off
	B14	= 0 Vel/Pos Clamp Open Slow Profiles ERC On = 1 Vel/Pos Clamp Open Slow Profiles ERC Off
	B15	= 0 Press/Pos Clamp Open Slow Profiles ERC On = 1 Press/Pos Clamp Open Slow Profiles ERC Off
OPC05 - 08		Open

First Clamp Open Profile Setpoints

Word	Description
OPC09	Segment 1 Velocity Setpoint [07] or [08] **if:** **then the module:** you select Vel/Pos profile execution — controls clamp open speed to this setpoint after starting the First Clamp Open Profile until clamp position reaches the smaller of non-zero OPC11 or OPC61 OPC03-B14 is RESET — reads this parameter in percent velocity OPC03-B14 is SET — reads it in in.(mm)/s.
OPC10	Segment 1 Pressure Setpoint [02] If you select Press/Pos profile execution, the module controls clamp open pressure to this setpoint after starting the First Clamp Open Profile until clamp position reaches the smaller of non-zero OPC11 or OPC61.
OPC11	End of Segment 1 Position Setpoint [14]
OPC12	Segment 2 Velocity Setpoint [07] or [08] **if:** **then the module:** you select Vel/Pos profile execution — controls clamp open speed to this setpoint from the clamp position OPC11 until clamp position reaches the smaller of non-zero OPC14 or OPC61 OPC03-B14 is RESET — reads this parameter in percent velocity OPC03-B14 is SET — reads it in in.(mm)/s
OPC13	Segment 2 Pressure Setpoint [02] If you select Press/Pos profile execution, the module controls clamp open pressure to this setpoint from the clamp position OPC11 until clamp position reaches the smaller of non-zero OPC14 or OPC61.
OPC14	End of Segment 2 Position Setpoint [14]
OPC15	Segment 3 Velocity Setpoint [07] or [08] **if:** **then the module:** you select Vel/Pos profile execution — controls clamp open speed to this setpoint from the clamp position OPC14 until clamp position reaches the smaller of non-zero OPC17 or OPC61 OPC03-B14 is RESET — reads this parameter in percent velocity OPC03-B14 is SET — reads it in in.(mm)/s
OPC16	Segment 3 Pressure Setpoint [02] If you select Press/Pos profile execution, the module controls clamp open pressure to this setpoint from the clamp position OPC14 until clamp position reaches the smaller of non-zero OPC17 or OPC61.
OPC17	End of Segment 3 Position Setpoint [14]

Second Clamp Open Profile Setpoints

Word	Description
OPC18	Segment 4 Velocity Setpoint [07] or [08] **if:** **then the module:** you select Vel/Pos profile execution — controls clamp open speed to this setpoint after starting the Second Clamp Open Profile until clamp position reaches the smaller of non-zero OPC20 or OPC61 OPC03-B14 is RESET — reads this parameter in percent velocity OPC03-B14 is SET — reads it in in.(mm)/s
OPC19	Segment 4 Pressure Setpoint [02] If you select Press/Pos profile execution, the module controls clamp open pressure to this setpoint after starting the Second Clamp Open Profile until clamp position reaches the smaller of non-zero OPC20 or OPC61.
OPC20	End of Segment 4 Position Setpoint [14]

Notes: 1. For [ ] engineering units, see page 3.
2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Word	Description
OPC21	Segment 5 Velocity Setpoint [07] or [08]
	if: **then the module:**
	you select Vel/Pos profile execution controls clamp open speed to this setpoint from the clamp position OPC20 until clamp position reaches the smaller of non-zero OPC23 or OPC61
	OPC03-B14 is RESET reads this parameter in percent velocity
	OPC03-B14 is SET reads it in in.(mm)/s
OPC22	Segment 5 Pressure Setpoint [02] If you select Press/Pos profile execution, the module controls clamp open pressure to this setpoint from the clamp position OPC20 until clamp position reaches the smaller of non-zero OPC23 or OPC61.
OPC23	End of Segment 5 Position Setpoint [14]
OPC24	Segment 6 Velocity Setpoint [07] or [08]
	if: **then the module:**
	you select Vel/Pos profile execution controls clamp open speed to this setpoint from the clamp position OPC23 until clamp position reaches the smaller of non-zero OPC26 or OPC61
	OPC03-B14 is RESET reads this parameter in percent velocity
	OPC03-B14 is SET reads it in in.(mm)/s
OPC25	Segment 6 Pressure Setpoint [02] If you select Press/Pos profile execution, the module controls clamp open pressure to this setpoint from the clamp position OPC23 until clamp position reaches the smaller of non-zero OPC26 or OPC61.
OPC26	End of Segment 6 Position Setpoint [14]

Third Clamp Open Profile Setpoints

Word	Description
OPC27	Segment 7 Velocity Setpoint [07] or [08]
	if: **then the module:**
	you select Vel/Pos profile execution controls clamp open speed to this setpoint after starting the Third Clamp Open Profile until clamp position reaches the smaller of non-zero OPC29 or OPC61
	OPC03-B14 is RESET reads this parameter in percent velocity
	OPC03-B14 is SET, reads it in in.(mm)/s
OPC28	Segment 7 Pressure Setpoint [02] If you select Press/Pos profile execution, the module controls clamp open pressure to this setpoint after starting the Third Clamp Open Profile until clamp position reaches the smaller of non-zero OPC29 or OPC61.
OPC29	End of Segment 7 Position Setpoint [14]
OPC30	Segment 8 Velocity Setpoint [07] or [08]
	if: **then the module:**
	you select Vel/Pos profile execution controls clamp open speed to this setpoint from the clamp position OPC29 until clamp position reaches the smaller of non-zero OPC32 or OPC61
	OPC03-B14 is RESET reads this parameter in percent velocity
	OPC03-B14 is SET reads it in in.(mm)/s
OPC31	Segment 8 Pressure Setpoint [02] If you select Press/Pos profile execution, the module controls clamp open pressure to this setpoint from the clamp position OPC29 until clamp position reaches the smaller of non-zero OPC32 or OPC61.
OPC32	End of Segment 8 Position Setpoint [14]
OPC33	Segment 9 Velocity Setpoint [07] or [08]
	if: **then the module:**
	you select Vel/Pos profile execution controls clamp open speed to this setpoint from the clamp position OPC32 until clamp position reaches the smaller of non-zero OPC35 or OPC61
	OPC03-B14 is RESET reads this parameter in percent velocity
	OPC03-B14 is SET reads it in in.(mm)/s
OPC34	Segment 9 Pressure Setpoint [02] If you select Press/Pos profile execution, the module controls clamp open pressure to this setpoint from the clamp position OPC32 until clamp position reaches the smaller of non-zero OPC35 or OPC61.
OPC35	End of Segment 9 Position Setpoint [14]

Clamp Open Slow Profile Setpoints

Word	Description
OPC36	Segment 1 Velocity Setpoint [07] or [08] **if:** **then the module:** you select Vel/Pos profile execution controls clamp open speed to this setpoint after starting the Clamp Open Slow Profile until clamp position reaches the smaller of non-zero OPC38 or OPC62 OPC03-B14 is RESET reads this parameter in percent velocity OPC03-B14 is SET reads it in in.(mm)/s
OPC37	Segment 1 Pressure Setpoint [02] If you select Press/Pos profile execution, the module controls clamp open pressure to this setpoint after starting the Clamp Open Slow Profile until clamp position reaches the smaller of non-zero OPC38 or OPC62.
OPC38	End of Segment 1 Position Setpoint [14]
OPC39	Segment 2 Velocity Setpoint [07] or [08] **if:** **then the module:** you select Vel/Pos profile execution controls clamp open speed to this setpoint from the clamp position OPC38 until clamp position reaches OPC62 OPC03-B14 is RESET reads this parameter in percent velocity OPC03-B14 is SET reads it in in.(mm)/s
OPC40	Segment 2 Pressure Setpoint [02] If you select Press/Pos profile execution, the module controls clamp open pressure to this setpoint from the clamp position OPC38 until clamp position reaches OPC62.
OPC41 - 60	Open

Critical Process Setpoints

Word	Description
OPC61	Start Clamp Open Slow Position Setpoint [14] The module uses this clamp position as protection against running a Clamp Open Profile into the Open Slow Zone. If this position is reached while the module is executing any of the first three Clamp Open Profiles, the module immediately terminates the ongoing profile and checks the state of OPC03-B11. **if this overrun Bit:** **then the module:** is RESET immediately begins the Clamp Open Slow Profile is SET and SYS21-B14 is RESET sets its outputs to zero is SET and SYS21-B14 is SET gives output control to the Ejector Profile is less than or equal to clamp position sets master status bit SYS03-B06 reaches the Open Slow Zone while executing one of the first three Clamp Open Profiles sets alarm status bit SYS07-B07
OPC62	Mold Open Position Setpoint [14] The module uses this clamp position as the End of Open Slow position setpoint. **if:** **then the module:** this position is reached while the module is executing the Clamp OpenSlow Profile immediately terminates Clamp Open Slow Profile and SYS21-B14 is RESET sets outputs to values OSC33 - OSC40 SYS21-B14 is SET gives output control to the Ejector Profile clamp position equals or exceeds this entry sets master status bit SYS03-B07
OPC63	Mold Open Dwell Timer Preset [21] When the module starts its internal Mold Open Dwell Timer (see OPC03-B15), it: • sets master status bit SYS03-B09 • reports the accumulated value of the timer in SYS59 When the Mold Open Dwell Timer accumulated value in SYS59 equals this entry, the module: • resets master status bit SYS03-B09 • stops accumulating time in SYS59 If it receives an F-to-T transition of any new action execution command except DYC02-B14 (Execute Ejector Profile), the module: • resets master status bit SYS03-B09 • resets SYS59 to zero
OPC64	Open

Notes: 1. For [ ] engineering units, see page 3.
        2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

OSC

OSC – Clamp Open Slow Configuration Block

Bit-mapped Control Words

Word	Bit	Description
OSC01		Block ID = 0010100 (Low byte). High byte reserved for the module. Do not use.
OSC02		**Configuration Selections**
	B00-B02	Selected Velocity Control Valve The module uses its algorithm to drive the following output during any Vel/Pos Clamp Open Slow Profile. **B02 B01 B00** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B03	Open
	B04-B06	Selected Pressure Control Valve The module uses its algorithm to drive the following output during any Press/Pos Clamp Open Slow Profile. **B06 B05 B04** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B07	Pressure Algorithm Selection = 0 Dependent Gains (ISA) = 1 Independent Gains (A-B)
	B08-B15	Open
OSC03 - 04		Open

Expert Response Compensation (ERC) Percentage

Word	Description
OSC05	Minimum Velocity Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
OSC06	Minimum Pressure Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
OSC07	Open

Watchdog Timer

Word	Description
OSC08	Profile Watchdog Timer Preset [21] When the module starts the Clamp Open Slow Profile, it: • starts an internal Profile Watchdog timer • stops this timer and reset its accumulated value to zero (after reporting total execution time in OPS60) when it completes the profile • sets master status bit SYS04-B13 when the accumulated value of this timer equals or exceeds this entry. A zero entry inhibits SYS04-B13.

Unselected Valve Set-output Values

When the module starts the Clamp Open Slow Profile, it:

- sets its unselected outputs to the values listed below
- ignores the unselected value of the selected output
- uses ramp rates OSC17 - OSC32 to ramp unselected outputs

if	then
the module is commanded to start the Ejector Profile during this OSC Profile	this OSC Profile surrenders control of the unselected valve that is the selected Ejector Profile valve
the module is commanded to start this OSC Profile during the Ejector Profile	the Ejector Profile gives control of all of its unselected valves to this OSC Profile
Clamp Open Slow and Ejector Profiles are run concurrently	all outputs that are unselected in both profiles are controlled by this OSC Profile

Word	Description
OSC09	Output #1 Set-output Value during Profile [19]
OSC10	Output #2 Set-output Value during Profile [19]
OSC11	Output #3 Set-output Value during Profile [19]
OSC12	Output #4 Set-output Value during Profile [19]
OSC13	Output #5 Set-output Value during Profile [19]
OSC14	Output #6 Set-output Value during Profile [19]
OSC15	Output #7 Set-output Value during Profile [19]
OSC16	Output #8 Set-output Value during Profile [19]

Output Ramp Rates

The module uses the following ramp rates when moving its outputs from setpoint to setpoint during the Clamp Open Slow Profile. The module interprets a ramp rate entry of zero as a step function ramp (ramp disable).

Word	Description
OSC17	Output #1 Acceleration Ramp Rate during Profile [20]
OSC18	Output #2 Acceleration Ramp Rate during Profile [20]
OSC19	Output #3 Acceleration Ramp Rate during Profile [20]
OSC20	Output #4 Acceleration Ramp Rate during Profile [20]
OSC21	Output #5 Acceleration Ramp Rate during Profile [20]
OSC22	Output #6 Acceleration Ramp Rate during Profile [20]
OSC23	Output #7 Acceleration Ramp Rate during Profile [20]
OSC24	Output #8 Acceleration Ramp Rate during Profile [20]
OSC25	Output #1 Deceleration Ramp Rate during Profile [20]
OSC26	Output #2 Deceleration Ramp Rate during Profile [20]
OSC27	Output #3 Deceleration Ramp Rate during Profile [20]
OSC28	Output #4 Deceleration Ramp Rate during Profile [20]
OSC29	Output #5 Deceleration Ramp Rate during Profile [20]
OSC30	Output #6 Deceleration Ramp Rate during Profile [20]
OSC31	Output #7 Deceleration Ramp Rate during Profile [20]
OSC32	Output #8 Deceleration Ramp Rate during Profile [20]

Notes: 1. For [ ] engineering units, see page 3.
　　　　2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

End of Profile Set-output Values

When the module completes the Clamp Open Slow Profile and
SYS21-B14 is RESET, it:

- sets its outputs to the values listed below

- sets status bit SYS22-B13

- ignores SYS22 and these values and gives output control to the
  Ejector Profile if SYS21-B14 is SET

- uses ramp rates OSC17 - 32 when changing outputs to these values

Use these values for pulling cores if applied before starting the
Ejector Profile.

Word	Description
OSC33	Output #1 Set-output Value at End of Profile [19]
OSC34	Output #2 Set-output Value at End of Profile [19]
OSC35	Output #3 Set-output Value at End of Profile [19]
OSC36	Output #4 Set-output Value at End of Profile [19]
OSC37	Output #5 Set-output Value at End of Profile [19]
OSC38	Output #6 Set-output Value at End of Profile [19]
OSC39	Output #7 Set-output Value at End of Profile [19]
OSC40	Output #8 Set-output Value at End of Profile [19]

Pressure Control Limits

Word	Description
OSC41	Pressure Minimum Control Limit [02] Minimum controllable clamp pressure attainable during any Press/Pos Clamp Open Slow Profile. The module expects this clamp pressure when setting its selected pressure valve to the %-output in OSC43.
OSC42	Pressure Maximum Control Limit [02] Maximum controllable clamp pressure attainable during any Press/Pos Clamp Open Slow Profile. The module expects this clamp pressure when setting its selected pressure valve to the %-output in OSC44.
OSC43	Selected Pressure Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected pressure valve during any Press/Pos Clamp Open Slow Profile. The module expects a pressure equal to OSC41 when setting the selected pressure valve to this %-output during profile execution. The Press/Pos Clamp Open Slow Profile will be executed as a reverse-acting algorithm if this entry is greater than OSC44.
OSC44	Selected Pressure Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected pressure valve during any Press/Pos Clamp Open Slow Profile. The module expects a pressure equal to OSC42 when setting the selected pressure valve to this %-output during profile execution. The Press/Pos Clamp Open Slow Profile will be executed as a reverse-acting algorithm if this entry is less than OSC43.

Velocity Control Limits

Word	Description
OSC45	Velocity Minimum Control Limit [08] Minimum controllable clamp velocity attainable during any Vel/Pos Clamp Open Slow Profile. The module expects this clamp velocity when setting its selected velocity valve to the %-output in OSC47.
OSC46	Velocity Maximum Control Limit [08] Maximum controllable clamp velocity attainable during any Vel/Pos Clamp Open Slow Profile. The module expects this clamp velocity when setting its selected velocity valve to the %-output in OSC48.
OSC47	Selected Velocity Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected velocity valve during any Vel/Pos Clamp Open Slow Profile. The module expects a velocity equal to OSC45 when setting the selected velocity valve to this %-output during profile execution. The Vel/Pos Clamp Open Slow Profile will be executed as a reverse-acting algorithm if this entry is greater than OSC48.
OSC48	Selected Velocity Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected velocity valve during any Vel/Pos Clamp Open Slow Profile. The module expects a velocity equal to OSC46 when setting the selected velocity valve to this %-output during profile execution. The Vel/Pos Clamp Open Slow Profile will be executed as a reverse-acting algorithm if this entry is less than OSC47.

Profile Tuning Constants

Word	Description
OSC49	Proportional Gain for Pressure Control [30]
OSC50	Integral Gain for Pressure Control [27] or [28]
OSC51	Derivative Gain for Pressure Control [26] or [21]
OSC52	Proportional Gain for Velocity Control [28]
OSC53	Feed Forward Gain for Velocity Control [30]
OSC54 - 56	Open

Profile Pressure Alarm Setpoint

Word	Description
OSC57	Profile High Pressure Alarm Setpoint [02] The module compares real-time clamp pressure against this entry when executing the Clamp Open Slow Profile. The module sets alarm status bit SYS06-B12 when clamp pressure equals or exceeds this entry during the Clamp Open Slow Profile. A zero entry inhibits SYS06-B12.
OSC58 - 64	Open

PKC – Pack Configuration Block

Bit-mapped Control Words

Word	Bit	Description
PKC01		Block ID = 00001010 (Low byte). High byte reserved for the module. Do not use.
PKC02		**Configuration Selections**
	B00-B02	Selected Cavity Pressure Control Valve The module uses its algorithm to drive the following output during any Cav Press/Time Pack Profile. **B02 B01 B00** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B03	Cavity Pressure Algorithm Selection = 0 Dependent Gains (ISA) = 1 Independent Gains (A-B)
	B04-B06	Selected Ram (Screw) Pressure Control Valve The module uses its algorithm to drive the following output during any Ram Press/Time Pack Profile. **B06 B05 B04** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B07	Ram (Screw) Pressure Algorithm Selection = 0 Dependent Gains (ISA) = 1 Independent Gains (A-B)
	B08-B15	Open
PKC03 - 04		Open

Notes: 1. For [ ] engineering units, see page 3.
    2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

PKC

Expert Response Compensation (ERC) Percentage

Word	Description
PKC05	Minimum Cav Press Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
PKC06	Minimum Ram Press Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
PKC07 - 08	Open

Unselected Valve Set-output Values

When the module starts the Pack Profile, it:

- sets its unselected outputs to the values listed below
- ignores the unselected value of the selected output
- uses ramp rates PKC17 - PKC32 to ramp unselected outputs

Word	Description
PKC09	Output #1 Set-output Value during Profile [19]
PKC10	Output #2 Set-output Value during Profile [19]
PKC11	Output #3 Set-output Value during Profile [19]
PKC12	Output #4 Set-output Value during Profile [19]
PKC13	Output #5 Set-output Value during Profile [19]
PKC14	Output #6 Set-output Value during Profile [19]
PKC15	Output #7 Set-output Value during Profile [19]
PKC16	Output #8 Set-output Value during Profile [19]

Output Ramp Rates

The module uses the following ramp rates when moving its outputs from setpoint to setpoint during the Pack Profile. The module interprets a ramp rate of zero as a step function ramp (ramp disable).

Word	Description
PKC17	Output #1 Acceleration Ramp Rate during Profile [20]
PKC18	Output #2 Acceleration Ramp Rate during Profile [20]
PKC19	Output #3 Acceleration Ramp Rate during Profile [20]
PKC20	Output #4 Acceleration Ramp Rate during Profile [20]
PKC21	Output #5 Acceleration Ramp Rate during Profile [20]
PKC22	Output #6 Acceleration Ramp Rate during Profile [20]
PKC23	Output #7 Acceleration Ramp Rate during Profile [20]
PKC24	Output #8 Acceleration Ramp Rate during Profile [20]
PKC25	Output #1 Deceleration Ramp Rate during Profile [20]
PKC26	Output #2 Deceleration Ramp Rate during Profile [20]
PKC27	Output #3 Deceleration Ramp Rate during Profile [20]
PKC28	Output #4 Deceleration Ramp Rate during Profile [20]
PKC29	Output #5 Deceleration Ramp Rate during Profile [20]
PKC30	Output #6 Deceleration Ramp Rate during Profile [20]
PKC31	Output #7 Deceleration Ramp Rate during Profile [20]
PKC32	Output #8 Deceleration Ramp Rate during Profile [20]
PKC33 - 40	Open

Ram (Screw) Pressure Control Limits

Word	Description
PKC41	Ram (Screw) Pressure Minimum Control Limit [01] Minimum controllable ram (screw) pressure attainable during any Ram Press/Time Pack Profile. The module expects this ram (screw) pressure when setting its selected ram (screw) pressure valve to the %-output in PKC43.
PKC42	Ram (Screw) Pressure Maximum Control Limit [01] Maximum controllable ram (screw) pressure attainable during any Ram Press/Time Pack Profile. The module expects this ram (screw) pressure when setting its selected ram (screw) pressure valve to the %-output in PKC44.
PKC43	Selected Ram (Screw) Pressure Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected pressure valve during any Ram Press/Time Pack Profile. The module expects a pressure equal to PKC41 when setting the selected ram (screw) pressure valve to this %-output during profile execution. Ram Press/Time Pack Profile will be executed as a reverse-acting algorithm if this entry is greater than PKC44.
PKC44	Selected Ram (Screw) Pressure Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected pressure valve during any Ram Press/Time Pack Profile. The module expects a pressure equal to PKC42 when setting the selected ram (screw) pressure valve to this %-output during profile execution. Ram Press/Time Pack Profile will be executed as a reverse-acting algorithm if this entry is less than PKC43.

Cavity Pressure Control Limits

Word	Description
PKC45	Cavity Pressure Minimum Control Limit [04] Minimum controllable cavity pressure attainable during any Cav Press/Time Pack Profile . The module expects this cavity pressure when setting its selected cavity pressure valve to the %-output in PKC47.
PKC46	Cavity Pressure Maximum Control Limit [04] Maximum controllable cavity pressure attainable during any Cav Press/Time Pack Profile . The module expects this cavity pressure when setting its selected cavity pressure valve to the %-output in PKC48.
PKC47	Selected Cavity Pressure Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected pressure valve during any Cav Press/Time Pack Profile. The module expects a pressure equal to PKC45 when setting the selected cavity pressure valve to this %-output during profile execution. The Cav Press/Time Pack Profile will be executed as a reverse-acting algorithm if this entry is greater than PKC48.
PKC48	Selected Cavity Pressure Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected pressure valve during any Cav Press/Time Pack Profile. The module expects a pressure equal to PKC46 when setting the selected cavity pressure valve to this %-output during profile execution. The Cav Press/Time Pack Profile will be executed as a reverse-acting algorithm if this entry is less than PKC47.

Profile Tuning Constants

Word	Description
PKC49	Proportional Gain for Ram Press Control [30]
PKC50	Integral Gain for Ram Press Control [27] or [28]
PKC51	Derivative Gain for Ram Press Control [26] or [21]
PKC52	Proportional Gain for Cav Press Control [30]
PKC53	Integral Gain for Cav Press Control [27] or [28]
PKC54	Derivative Gain for Cav Press Control [26] or [21]
PKC55 - 56	Open

Profile Pressure Alarm Setpoint

Word	Description
PKC57	Profile High Ram (Screw) Pressure Alarm Setpoint [01] The module compares real-time ram (screw) pressure against this entry when executing the Pack Profile. The module sets alarm status bit SYS06-B02 when ram (screw) pressure equals or exceeds this entry during the Pack Profile. A zero entry inhibits SYS06-B02.
PKC58	Profile High Cavity Pressure Alarm Setpoint [04] The module compares real-time cavity pressure against this entry when executing Pack Profile. The module sets alarm status bit SYS06-B03 when cavity pressure equals or exceeds this entry during the Pack Profile. A zero entry inhibits SYS06-B03.
PKC59 - 64	Open

Notes: 1. For [ ] engineering units, see page 3.
     2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Plastication Configuration
Command Block (PLC)   **Bit-mapped Control Words**

Word	Bit	Description
PLC01		Block ID = 00001110 (Low byte). High byte reserved for the module. Do not use.
PLC02		**Configuration Selections**
	B00-B02	Selected RPM Control Valve The module uses its algorithm to drive the following output during any RPM/Pos or RPM/Time Plastication Profile. **B02 B01 B00** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
PLC02	B03	RPM Algorithm Selection = 0 Dependent Gains (ISA) = 1 Independent Gains (A-B)
	B04-B06	Selected Pressure Control Valve The module uses its algorithm to drive the following output during any RPM/Pos or RPM/Time Plastication Profile. **B06 B05 B04** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B07	Pressure Algorithm Selection = 0 Dependent Gains (ISA) = 1 Independent Gains (A-B)
	B08-B15	Open
PLC03 - 04		Open

Expert Response Compensation (ERC) Percentage

Word	Description
PLC05	Minimum RPM Control ERC Percentage [31]
PLC06	Minimum Pressure Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
PLC07	Open

Watchdog Timer

Word	Description
PLC08	Profile Watchdog Timer Preset [21] When the module starts Plastication Profile, it: • starts an internal Profile Watchdog timer • stops this timer and reset its accumulated value to zero (after reporting total execution time in PPS57) when it completes the profile • sets master status bit SYS04-B08 when the accumulated value of this timer equals or exceeds this entry A zero entry inhibits SYS04-B08.

Unselected Valve Set-output Values

When the module starts the Plastication Profile, it:

- sets its unselected outputs to the values listed below
- ignores the unselected value of the selected output
- uses ramp rates PLC17 - PLC32 to ramp unselected outputs

Word	Description
PLC09	Output #1 Set-output Value during Profile [19]
PLC10	Output #2 Set-output Value during Profile [19]
PLC11	Output #3 Set-output Value during Profile [19]
PLC12	Output #4 Set-output Value during Profile [19]
PLC13	Output #5 Set-output Value during Profile [19]
PLC14	Output #6 Set-output Value during Profile [19]
PLC15	Output #7 Set-output Value during Profile [19]
PLC16	Output #8 Set-output Value during Profile [19]

Output Ramp Rates

The module uses the following ramp rates when moving its outputs from setpoint to setpoint during the Plastication Profile. The module interprets a ramp rate of zero as a step function ramp (ramp disable).

Word	Description
PLC17	Output #1 Acceleration Ramp Rate during Profile [20]
PLC18	Output #2 Acceleration Ramp Rate during Profile [20]
PLC19	Output #3 Acceleration Ramp Rate during Profile [20]
PLC20	Output #4 Acceleration Ramp Rate during Profile [20]
PLC21	Output #5 Acceleration Ramp Rate during Profile [20]
PLC22	Output #6 Acceleration Ramp Rate during Profile [20]
PLC23	Output #7 Acceleration Ramp Rate during Profile [20]
PLC24	Output #8 Acceleration Ramp Rate during Profile [20]
PLC25	Output #1 Deceleration Ramp Rate during Profile [20]
PLC26	Output #2 Deceleration Ramp Rate during Profile [20]
PLC27	Output #3 Deceleration Ramp Rate during Profile [20]
PLC28	Output #4 Deceleration Ramp Rate during Profile [20]
PLC29	Output #5 Deceleration Ramp Rate during Profile [20]
PLC30	Output #6 Deceleration Ramp Rate during Profile [20]
PLC31	Output #7 Deceleration Ramp Rate during Profile [20]
PLC32	Output #8 Deceleration Ramp Rate during Profile [20]

End of Profile Set-output Values

When the module completes the Plastication Profile and PPC03-B08 is set, it:

- sets its outputs to the following values
- sets status bit SYS22-B08
- uses ramp rates PLC17 - 32 when changing outputs to these values

Notes: 1. For [ ] engineering units, see page 3.
    2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.
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PLC

Word	Description
PLC33	Output #1 Set-output Value at End of Profile [19]
PLC34	Output #2 Set-output Value at End of Profile [19]
PLC35	Output #3 Set-output Value at End of Profile [19]
PLC36	Output #4 Set-output Value at End of Profile [19]
PLC37	Output #5 Set-output Value at End of Profile [19]
PLC38	Output #6 Set-output Value at End of Profile [19]
PLC39	Output #7 Set-output Value at End of Profile [19]
PLC40	Output #8 Set-output Value at End of Profile [19]

Pressure Control Limits

Word	Description
PLC41	Pressure Minimum Control Limit [01] Minimum controllable ram (screw) pressure attainable during any Press/Pos or Press/Time Plastication Profile. The module expects this ram (screw) pressure when setting its selected valve to the %-output in PLC43.
PLC42	Pressure Maximum Control Limit [01] Maximum controllable ram (screw) pressure attainable during any Press/Pos or Press/Time Plastication Profile. The module expects this ram (screw) pressure when setting its selected valve to the %-output in PLC44.
PLC43	Selected Pressure Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected pressure valve during any Press/Pos or Press/Time Plastication Profile. The module expects a pressure equal to PLC41 when setting the selected pressure valve to this %-output during profile execution. The profile will be executed as a reverse-acting algorithm if this entry is greater than PLC44.
PLC44	Selected Pressure Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected pressure valve during any Press/Position or Press/Time Plastication Profile. The module expects a pressure equal to PLC42 when setting the selected pressure valve to this %-output during profile execution. The profile will be executed as a reverse-acting algorithm if this entry is less than PLC43.

RPM Control Limits

Word	Description
PLC45	RPM Minimum Control Limit [25] Minimum controllable RPM attainable during any RPM/Pos or RPM/Time Plastication Profile. The module expects this RPM when setting its selected valve to the %-output in PLC47.
PLC46	RPM Maximum Control Limit [25] Maximum controllable RPM attainable during any RPM/Pos or RPM/Time Plastication Profile. The module expects this RPM when setting its selected valve to the %-output in PLC48.
PLC47	Selected RPM Valve Output for Minimum [19] 0% CV output (%) that the module uses to drive the selected RPM valve during any Press/Position or Press/Time Plastication Profile. The module expects an RPM equal to PLC45 when setting the selected RPM valve to this %-output during profile execution. The profile will be executed as reverse-acting if this entry is greater than PLC48.
PLC48	Selected RPM Valve Output for Maximum [19] 100% CV output (%) that the module uses to drive the selected RPM valve during any Press/Position or Press/Time Plastication Profile. The module expects an RPM equal to PLC46 when setting the selected RPM valve to this %-output during profile execution. The profile will be executed as reverse-acting if this entry is less than PLC47.

Profile Tuning Constants

Word	Description
PLC49	Proportional Gain for Pressure Control [30]
PLC50	Integral Gain for Pressure Control [27] or [28]
PLC51	Derivative Gain for Pressure Control [26] or [21]
PLC52	Proportional Gain for RPM Control [30]
PLC53	Integral Gain for RPM Control [27] or [28]
PLC54	Derivative Gain for RPM Control [26] or [21]
PLC55 - 56	Open

Profile Pressure Alarm Setpoint

Word	Description
PLC57	Profile High Pressure Alarm Setpoint [01] The module compares real-time ram (screw) pressure against this entry when executing the Plastication Profile. The module sets alarm status bit SYS06-B07 when ram (screw) pressure equals or exceeds this entry during the Plastication Profile. A zero entry inhibits SYS06-B07.
PLC58 - 64	Open

PPC – Plastication
Profile Block

Bit-mapped Control Words

Word	Bit	Description
PPC01		Block ID = 00001111 (Low byte). High byte reserved for the module. Do not use.
PPC02		Open
PPC03		**Configuration Selections**
	B00-B01	Profile Algorithm Selection **B01 B00** 0 0 Ram (Screw) Press/Pos 0 1 Ram (Screw) Press/Time 1 0 RPM/Pos 1 1 RPM/Time
	B02-B07	Open
	B08	Plastication/Post-decompression Logical Bridge Selection End of Plastication Profile = 0 Start Post-decompression Movement at End of Plastication Profile = 1 Stop and Set-output at End of Plastication Profile Module checks the state of this pause bit at completion of Plastication Profile to determine what further action to take: **if:** **then the module:** SET sets its outputs to PLC33 - PLC40 RESET, SYS15-B15 = 1, immediately begins the Post-decompression Movement and PSC05 > 00000 RESET, SYS15-B15 = 1, sets its outputs to PSC33 - PSC40 and PRC05 = 00000 RESET and SYS15-B12 = 0 sets its outputs to zero and latches SYS13-B10
	B09-B11	Open
		Profile Offset Sign Selection
	B12	= 0 Plastication RPM Profile Offset is Positive = 1 Plastication RPM Profile Offset is Negative
	B13	= 0 Plastication Pressure Profile Offset is Positive = 1 Plastication Pressure Profile Offset is Negative
	B14-B15	Open
PPC04		Configuration Selections
		Open/Closed Loop Selection
	B00	= 0 Press/Pos Plastication Profiles Closed Loop = 1 Press/Pos Plastication Profiles Open Loop
	B01	= 0 Press/Time Plastication Profiles Closed Loop = 1 Press/Time Plastication Profiles Open Loop
	B02	= 0 RPM/Pos Plastication Profiles Closed Loop = 1 RPM/Pos Plastication Profiles Open Loop
	B03	= 0 RPM/Time Plastication Profiles Closed Loop = 1 RPM/Time Plastication Profiles Open Loop
	B04-B07	Open
		ERC Enabled/Disabled Selection
	B08	= 0 Press/Pos Plastication ERC On = 1 Press/Pos Plastication ERC Off
	B09	= 0 Press/Time Plastication ERC On = 1 Press/Time Plastication ERC Off
	B10	= 0 RPM/Pos Plastication ERC On = 1 RPM/Pos Plastication ERC Off
	B11	= 0 RPM/Time Plastication ERC On = 1 RPM/Time Plastication ERC Off
	B12-B15	Open
PPC05 - 08		Open

Notes: 1. For [ ] engineering units, see page 3.
2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Plastication Profile Setpoints

Word	Description
PPC09	Segment 1 RPM Setpoint [25] If you select RPM/Pos profile execution, the module controls RPM to this setpoint after starting the Plastication Profile until ram (screw) position reaches PPC11 (or until 100% shot size if sooner). If you select RPM/Time profile execution, the module controls RPM to this setpoint after starting the Plastication Profile for time period PPC12 (or until 100% shot size if sooner).
PPC10	Segment 1 Pressure Setpoint [01] If you select Press/Pos profile execution, the module controls ram (screw) backpressure to this setpoint after starting the Plastication Profile until ram (screw) position reaches PPC11 (or until 100% shot size if sooner). If you select Press/Time profile execution, the module controls ram (screw) backpressure to this setpoint after starting the Plastication Profile for time period PPC12 (or until 100% shot size if sooner).
PPC11	End of Segment 1 Position Setpoint [12]
PPC12	Segment 1 Time Setpoint [21] If you select RPM/Time or Press/Time profile execution, the module controls RPM to PPC09 or ram (screw) backpressure to PPC10 for this time period (or until 100% shot size if sooner) beginning with initiation of Plastication Profile.
PPC13	Segment 2 RPM Setpoint [25] If you select RPM/Pos profile execution, the module controls RPM to this setpoint from ram (screw) position PPC11 to position PPC15 (or until 100% shot size if sooner). If you select RPM/Time profile execution, the module controls RPM to this setpoint for time period PPC12 (or until 100% shot size if sooner).
PPC14	Segment 2 Pressure Setpoint [01] If you select Press/Pos profile execution, the module controls ram (screw) backpressure to this setpoint from ram (screw) position PPC11 to position PPC15 (or until 100% shot size if sooner). If you select Press/Time profile execution, the module controls ram (screw) backpressure to this setpoint starting at completion of Segment 1 for time period PPC16 (or until 100% shot size if sooner).
PPC15	End of Segment 2 Position Setpoint [12]
PPC16	Segment 2 Time Setpoint [21] If you select RPM/Time or Press/Time profile execution, the module controls RPM to PPC13 or ram (screw) backpressure to PPC14 for this time period (or until 100% shot size if sooner) beginning at completion of Segment 1.
PPC17	Segment 3 RPM Setpoint [25] If you select RPM/Pos profile execution, the module controls RPM to this setpoint from ram (screw) position PPC15 to position PPC19 (or until 100% shot size if sooner). If you select RPM/Time profile execution, the module controls RPM to this setpoint for time period PPC20 (or until 100% shot size if sooner).
PPC18	Segment 3 Pressure Setpoint [01] If you select Press/Pos profile execution, the module controls ram (screw) backpressure to this setpoint from ram (screw) position PPC15 to position PPC19 (or until 100% shot size if sooner). If you select Press/Time profile execution, the module controls ram (screw) backpressure to this setpoint starting at completion of Segment 2 for time period PPC20 (or until 100% shot size if sooner).
PPC19	End of Segment 3 Position Setpoint [12]
PPC20	Segment 3 Time Setpoint [21] If you select RPM/Time or Press/Time profile execution, the module controls RPM to PPC17 or ram (screw) backpressure to PPC18 for this time period (or until 100% shot size if sooner) beginning at completion of Segment 2.
PPC21	Segment 4 RPM Setpoint [25] If you select RPM/Pos profile execution, the module controls RPM to this setpoint from ram (screw) position PPC19 to position PPC23 (or until 100% shot size if sooner). If you select RPM/Time profile execution, the module controls ram (screw) RPM to this setpoint for time period PPC24 (or until 100% shot size if sooner).
PPC22	Segment 4 Pressure Setpoint [01] If you select Press/Pos profile execution, the module controls ram (screw) backpressure to this setpoint from ram (screw) position PPC19 to position PPC23 (or until 100% shot size if sooner). If you select Press/Time profile execution, the module controls ram (screw) backpressure to this setpoint starting at completion of Segment 3 for time period PPC24 (or until 100% shot size if sooner).
PPC23	End of Segment 4 Position Setpoint [12]
PPC24	Segment 4 Time Setpoint [21] If you select RPM/Time or Press/Time profile execution, the module controls RPM to PPC21 or ram (screw) backpressure to PPC22 for this time period (or until 100% shot size if sooner) beginning at completion of Segment 4.
PPC25	Segment 5 RPM Setpoint [25] If you select RPM/Pos profile execution, the module controls RPM to this setpoint from ram (screw) position PPC23 to position PPC27 (or until 100% shot size if sooner). If you select RPM/Time profile execution, the module controls RPM to this setpoint for time period PPC28 (or until 100% shot size if sooner).
PPC26	Segment 5 Pressure Setpoint [01] If you select Press/Pos profile execution, the module controls ram (screw) backpressure to this setpoint from ram (screw) position PPC23 to position PPC27 (or until 100% shot size if sooner). If you select Press/Time profile execution, the module controls ram (screw) backpressure to this setpoint starting at completion of Segment 4 for time period PPC28 (or until 100% shot size if sooner).
PPC27	End of Segment 5 Position Setpoint [12]
PPC28	Segment 5 Time Setpoint [21] If you select RPM/Time or Press/Time profile execution, the module controls RPM to PPC25 or ram (screw) backpressure to PPC26 for this time period (or until 100% shot size if sooner) beginning at completion of Segment 4.
PPC29	Segment 6 RPM Setpoint [25] If you select RPM/Pos profile execution, the module controls RPM to this setpoint from ram (screw) position PPC27 to position PPC31 (or until 100% shot size if sooner). If you select RPM/Time profile execution, the module controls RPM to this setpoint for time period PPC32 (or until 100% shot size if sooner).

Word	Description
PPC30	Segment 6 Pressure Setpoint [01] If you select Press/Pos profile execution, the module controls ram (screw) backpressure to this setpoint from ram (screw) position PPC27 to position PPC31 (or until 100% shot size if sooner). If you select Press/Time profile execution, the module controls ram (screw) backpressure to this setpoint starting at completion of Segment 5 for time period PPC32 (or until 100% shot size if sooner).
PPC31	End of Segment 6 Position Setpoint [12]
PPC32	Segment 6 Time Setpoint [21] If you select RPM/Time or Press/Time profile execution, the module controls RPM to PPC29 or backpressure to PPC30 for this time period (or until 100% shot size if sooner) beginning at completion of Segment 5.
PPC33	Segment 7 Ram (Screw) RPM Setpoint [25] If you select RPM/Pos profile execution, the module controls RPM to this setpoint from ram (screw) position PPC31 to position PPC35 (or until 100% shot size if sooner). If you select RPM/Time profile execution, the module controls RPM to this setpoint for time period PPC36 (or until 100% shot size if sooner).
PPC34	Segment 7 Pressure Setpoint [01] If you select Press/Pos profile execution, the module controls ram (screw) backpressure to this setpoint from ram (screw) position PPC31 to position PPC35 (or until 100% shot size if sooner). If you select Press/Time profile execution, the module controls ram (screw) backpressure to this setpoint starting at completion of Segment 6 for time period PPC36 (or until 100% shot size if sooner).
PPC35	End of Segment 7 Position Setpoint [12]
PPC36	Segment 7 Time Setpoint [21] If you select RPM/Time or Press/Time profile execution, the module controls RPM to PPC33 or ram (screw) backpressure to PPC34 for this time period (or until 100% shot size if sooner) beginning at completion of Segment 6.
PPC37	Segment 8 RPM Setpoint [25] If you select RPM/Pos profile execution, the module controls RPM to this setpoint from ram (screw) position PPC35 to position PPC39 (or until 100% shot size if sooner). If you select RPM/Time profile execution, the module controls RPM to this setpoint for time period PPC40 (or until 100% shot size if sooner).
PPC38	Segment 8 Pressure Setpoint [01] If you select Press/Pos profile execution, the module controls ram (screw) backpressure to this setpoint from ram (screw) position PPC35 to position PPC39 (or until 100% shot size if sooner). If you select Press/Time profile execution, the module controls ram (screw) backpressure to this setpoint starting at completion of Segment 7 for time period PPC40 (or until 100% shot size if sooner).
PPC39	End of Segment 8 Position Setpoint [12]
PPC40	Segment 8 Time Setpoint [21] If you select RPM/Time or Press/Time profile execution, the module controls RPM to PPC37 or ram (screw) backpressure to PPC38 for this time period (or until 100% shot size if sooner) beginning at completion of Segment 7.
PPC41	Segment 9 RPM Setpoint [25] If you select RPM/Pos profile execution, the module controls RPM to this setpoint from ram (screw) position PPC39 to position PPC43 (or until 100% shot size if sooner). If you select RPM/Time profile execution, the module controls RPM to this setpoint for time period PPC44 (or until 100% shot size if sooner).
PPC42	Segment 9 Pressure Setpoint [01] If you select Press/Pos profile execution, the module controls ram (screw) backpressure to this setpoint from ram (screw) position PPC39 to position PPC43 (or until 100% shot size if sooner). If you select Press/Time profile execution, the module controls ram (screw) backpressure to this setpoint starting at completion of Segment 8 for time period PPC44 (or until 100% shot size if sooner).
PPC43	End of Segment 9 Position Setpoint [12]
PPC44	Segment 9 Time Setpoint [21] If you select RPM/Time or Press/Time profile execution, the module controls ram (screw) RPM to PPC41 or ram (screw) backpressure to PPC42 for this time period (or until 100% shot size if sooner) beginning at completion of Segment 8.
PPC45	Segment 10 Ram (Screw) RPM Setpoint [25] If you select RPM/Pos profile execution, the module controls RPM to this setpoint from ram (screw) position PPC43 to position PPC47 (or until 100% shot size if sooner). If you select RPM/Time profile execution, the module controls RPM to this setpoint for time period PPC48 (or until 100% shot size if sooner).
PPC46	Segment 10 Pressure Setpoint [01] If you select Press/Pos profile execution, the module controls ram (screw) backpressure to this setpoint from ram (screw) position PPC43 to position PPC47 (or until 100% shot size if sooner). If you select Press/Time profile execution, the module controls ram (screw) backpressure to this setpoint at completion of Segment 9 for time period PPC48 (or until 100% shot size if sooner).
PPC47	End of Segment 10 Position Setpoint [12]
PPC48	Segment 10 Time Setpoint If you select RPM/Time or Press/Time profile execution, the module controls RPM to PPC45 or ram (screw) backpressure to PPC46 for this time period (or until 100% shot size if sooner) beginning at completion of Segment 9.
PPC49	Segment 11 Ram (Screw) RPM Setpoint [25] If you select RPM/Pos profile execution, the module controls RPM to this setpoint from ram (screw) position PPC47 until 100% shot size. If you select RPM/Time profile execution, the module controls RPM to this setpoint at completion or segment 10 until 100% shot size.
PPC50	Segment 11 Pressure Setpoint [01] If you select Press/Pos profile execution, the module controls ram (screw) backpressure to this setpoint from ram (screw) position PPC47 until 100% shot size. If you select Press/Time profile execution, the module controls ram (screw) backpressure to this setpoint at completion of Segment 10 until 100% shot size.

Notes: 1. For [ ] engineering units, see page 3.
2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Plastication Profile Offsets

Word	Description
PPC51	Profile RPM Offset [01] If you select RPM/Pos or RPM/Time profile execution, the module applies this entry (after reading the sign bit) to each RPM profile setpoint.
PPC52	Profile Pressure Offset [01] If you select Press/Pos or Press/Time profile execution, the module applies this entry (after reading the sign bit) to each pressure profile setpoint.
PPC53 - 60	Open

Critical Process Setpoints

These two entries let the module establish the 100% shot size position, defined at ram (screw) position of MCC13 + PPC61 + PPC62. The module terminates all Plastication Profiles at 100% shot size position.

Word	Description
PPC61	Cushion Size [12] Informs the module of the nominal length of molten plastic that should remain in the barrel at conclusion of the Hold Profile. The module uses it only to calculate the 100% shot size position.
PPC62	Shot Size [17] Informs the module of the nominal length of molten plastic that should be drawn during the Plastication Profile. The module uses it only to calculate the 100% shot size position.
PPC63 - 64	Open

PRC – Pre-decompression Configuration Block

Bit-mapped Control Words

Word	Description
PRC01	Block ID = 00001101 (Low byte). High byte reserved for the module. Do not use.
PRC02 - 04	Open

Movement Length

Word	Description
PRC05	Incremental Movement Length [17] When the module starts the Pre-decompression Movement, it adds this entry to the current ram (screw) position to establish the End of Pre-decompression position. The module uses the End of pre-decompression position as the termination point of all pre-decompression movements.
PRC06 - 07	Open

Watchdog Timer

Word	Description
PRC08	Movement Watchdog Timer Preset [21] When the module starts the Pre-decompression Movement, it: • starts an internal Movement Watchdog timer • stops this timer and resets its accumulated value to zero (after reporting total execution time in HPS59) when it completes the movement • sets master status bit SYS04-B07 when the accumulated value of this timer equals or exceeds this entry. A zero entry inhibits SYS04-B07.

Movement Set-output Values

When the module starts the Pre-decompression Movement, it:

- sets its outputs to the values listed below

- uses ramp rates PRC17 - PRC32 to ramp outputs

Word	Description
PRC09	Output #1 Set-output Value during Movement [19]
PRC10	Output #2 Set-output Value during Movement [19]
PRC11	Output #3 Set-output Value during Movement [19]
PRC12	Output #4 Set-output Value during Movement [19]
PRC13	Output #5 Set-output Value during Movement [19]
PRC14	Output #6 Set-output Value during Movement [19]
PRC15	Output #7 Set-output Value during Movement [19]
PRC16	Output #8 Set-output Value during Movement [19]

Output Ramp Rates

The module uses the following ramp rates when moving its outputs
from setpoint to setpoint during the Pre-decompression Movement.
The module interprets a ramp rate entry of zero as a step function
ramp (ramp disable).

Word	Description
PRC17	Output #1 Acceleration Ramp Rate during Movement [20]
PRC18	Output #2 Acceleration Ramp Rate during Movement [20]
PRC19	Output #3 Acceleration Ramp Rate during Movement [20]
PRC20	Output #4 Acceleration Ramp Rate during Movement [20]
PRC21	Output #5 Acceleration Ramp Rate during Movement [20]
PRC22	Output #6 Acceleration Ramp Rate during Movement [20]
PRC23	Output #7 Acceleration Ramp Rate during Movement [20]
PRC24	Output #8 Acceleration Ramp Rate during Movement [20]
PRC25	Output #1 Deceleration Ramp Rate during Movement [20]
PRC26	Output #2 Deceleration Ramp Rate during Movement [20]
PRC27	Output #3 Deceleration Ramp Rate during Movement [20]
PRC28	Output #4 Deceleration Ramp Rate during Movement [20]
PRC29	Output #5 Deceleration Ramp Rate during Movement [20]
PRC30	Output #6 Deceleration Ramp Rate during Movement [20]
PRC31	Output #7 Deceleration Ramp Rate during Movement [20]
PRC32	Output #8 Deceleration Ramp Rate during Movement [20]

End of Movement Set-output Values

When the module completes the Pre-decompression Movement and
HPC03-B09 is SET, it:

- sets its outputs to the following values
- sets status bit SYS22-B07
- uses ramp rates PRC17 - 32 when changing outputs to these values

Word	Description
PRC33	Output #1 Set-output Value at End of Movement [19]
PRC34	Output #2 Set-output Value at End of Movement [19]
PRC35	Output #3 Set-output Value at End of Movement [19]
PRC36	Output #4 Set-output Value at End of Movement [19]

Notes: 1. For [ ] engineering units, see page 3.
  2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

PSC

Word	Description
PRC37	Output #5 Set-output Value at End of Movement [19]
PRC38	Output #6 Set-output Value at End of Movement [19]
PRC39	Output #7 Set-output Value at End of Movement [19]
PRC40	Output #8 Set-output Value at End of Movement [19]
PRC41 - 56	Open

Movement Pressure Alarm Setpoint

Word	Description
PRC57	Movement High Pressure Alarm Setpoint [01] The module compares real-time ram (screw) pressure against this entry during the Pre-decompression Movement. The module sets alarm status bit SYS06-B06 when ram (screw) pressure equals or exceeds this entry during the Pre- decompression Movement. A zero entry inhibits SYS06-B06.
PRC58 - 64	Open

PSC – Post-decompression Configuration Block

Bit-mapped Control Words

Word	Bit	Description
PSC01		Block ID = 00010000 (Low byte). High byte reserved for the module. Do not use.
PSC02 - 04		Open

Movement Length

Word	Description
PSC05	Incremental Movement Length [17] When the module starts the Post-decompression Movement, it adds this entry to the sum of cushion size (PPC61) + shot size (PPC62) to establish the End of Post-decompression ram (screw) position. The module uses End of Post-decompression position as termination point of all Post-decompression Movements.
PSC06 - 07	Open

Watchdog Timer

Word	Description
PSC08	Movement Watchdog Timer Preset [21] When the module starts the Post-decompression Movement, it: • starts an internal Movement Watchdog timer • stops this timer and resets its accumulated value to zero (after reporting total execution time in PPS58) when it completes the movement • sets master status bit SYS04-B09 when the accumulated value of this timer equals or exceeds this entry. A zero entry inhibits SYS04-B09.

Movement Set-output Values

When the module starts the Post-decompression Movement, it:

- sets its outputs to the values listed below
- uses ramp rates PRC17 - PRC32 to ramp outputs

Word	Description
PSC09	Output #1 Set-output Value during Movement [19]
PSC10	Output #2 Set-output Value during Movement [19]
PSC11	Output #3 Set-output Value during Movement [19]
PSC12	Output #4 Set-output Value during Movement [19]

Word	Description
PSC13	Output #5 Set-output Value during Movement [19]
PSC14	Output #6 Set-output Value during Movement [19]
PSC15	Output #7 Set-output Value during Movement [19]
PSC16	Output #8 Set-output Value during Movement [19]

Output Ramp Rates

The module uses the following ramp rates when moving its outputs between setpoints during Post-decompression Movement. The module interprets a ramp rate of zero as a step function ramp (ramp disable).

Word	Description
PSC17	Output #1 Acceleration Ramp Rate during Movement [20]
PSC18	Output #2 Acceleration Ramp Rate during Movement [20]
PSC19	Output #3 Acceleration Ramp Rate during Movement [20]
PSC20	Output #4 Acceleration Ramp Rate during Movement [20]
PSC21	Output #5 Acceleration Ramp Rate during Movement [20]
PSC22	Output #6 Acceleration Ramp Rate during Movement [20]
PSC23	Output #7 Acceleration Ramp Rate during Movement [20]
PSC24	Output #8 Acceleration Ramp Rate during Movement [20]
PSC25	Output #1 Deceleration Ramp Rate during Movement [20]
PSC26	Output #2 Deceleration Ramp Rate during Movement [20]
PSC27	Output #3 Deceleration Ramp Rate during Movement [20]
PSC28	Output #4 Deceleration Ramp Rate during Movement [20]
PSC29	Output #5 Deceleration Ramp Rate during Movement [20]
PSC30	Output #6 Deceleration Ramp Rate during Movement [20]
PSC31	Output #7 Deceleration Ramp Rate during Movement [20]
PSC32	Output #8 Deceleration Ramp Rate during Movement [20]

End of Movement Set-output Values

When the module completes the Post-decompression Movement, it:

• sets its outputs to the following values

• sets status bit SYS22-B09

• uses ramp rates PSC17 - 32 when changing outputs to these values

Use these values for-pulling cores if applied before starting the first clamp open profile.

Word	Description
PSC33	Output #1 Set-output Value at End of Movement [19]
PSC34	Output #2 Set-output Value at End of Movement [19]
PSC35	Output #3 Set-output Value at End of Movement [19]
PSC36	Output #4 Set-output Value at End of Movement [19]
PSC37	Output #5 Set-output Value at End of Movement [19]
PSC38	Output #6 Set-output Value at End of Movement [19]
PSC39	Output #7 Set-output Value at End of Movement [19]
PSC40	Output #8 Set-output Value at End of Movement [19]
PSC41 - 56	Open

Notes: 1. For [ ] engineering units, see page 3.

2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Movement Pressure Alarm Setpoint

Word	Description
PSC57	Movement High Pressure Alarm Setpoint [01] The module compares real-time ram (screw) pressure against this entry when executing the Post-decompression Movement. The module sets alarm status bit SYS06-B08 when ram (screw) pressure equals or exceeds this entry during the Post-decompression Movement. A zero entry inhibits SYS06-B08.
PSC58 - 64	Open

PTC – Process Trace
Configuration Block

Bit-mapped Control Words

Word	Bit	Description
PTC01		Block ID = 00011100 (Low Byte). High byte reserved for the module. Do not use.
PTC02		**Control bits**
	B00	0 = Process trace disabled 1 = Process trace enabled
	B01	0 = Trigger on time delay 1 = Trigger on position
PTC03		Open
PTC04		Open
PTC05		Trigger delay (in hundredths of seconds) for data collection after injection begins (when PTC02-B01 = 0)
PTC06		Trigger position (in hundredths of inches or tenths of millimeters) on which to collect data when PTC02-B01 = 1
PTC07		Sample rate at which the module collects trace data in milliseconds (must be an even number between 2 and 230)
PTC08		Trace #1 selection
	B01	Injection position
	B02	Injection pressure
	B03	Injection velocity The module will return unscaled injection position data if injection velocity is selected. The process trace screen uses this position information to calculate and display velocity.
	B04	Cavity pressure
	B05	Screw RPM
	B06	Injection flow valve output
	B07	Injection pressure valve output
	B08 - B15	Reserved Do not use.
PTC09		Trace #2 selection
	B01	Injection position
	B02	Injection pressure
	B03	Injection velocity The module will return unscaled injection position data if injection velocity is selected. The process trace screen uses this position information to calculate and display velocity.
	B04	Cavity pressure
	B05	Screw RPM
	B06	Injection flow valve output
	B07	Injection pressure valve output
	B08 - B15	Reserved Do not use.

Word	Bit	Description
PTC10		Trace #3 selection
	B01	Injection position
	B02	Injection pressure
	B03	Injection velocity The module will return unscaled injection position data if injection velocity is selected. The process trace screen uses this position information to calculate and display velocity.
	B04	Cavity pressure
	B05	Screw RPM
	B06	Injection flow valve output
	B07	Injection pressure valve output
	B08 - B15	Reserved Do not use.
PTC11		Trace #4 selection
	B01	Injection position
	B02	Injection pressure
	B03	Injection velocity The module will return unscaled injection position data if injection velocity is selected. The process trace screen uses this position information to calculate and display velocity.
	B04	Cavity pressure
	B05	Screw RPM
	B06	Injection flow valve output
	B07	Injection pressure valve output
	B08 - B15	Reserved Do not use.
PTC12 - 64		Open

RLC – Inject ERC Values
Block

Bit-mapped Control Words

Word	Description
RLC01	Block ID = 00011010 (Low byte). High byte reserved for the module. Do not use.
RLC02 - 08	Open

Injection Profile ERC Values

Word	Description
RLC09	Injection Segment 1
RLC10	Injection Segment 2
RLC11	Injection Segment 3
RLC12	Injection Segment 4
RLC13	Injection Segment 5
RLC14	Injection Segment 6
RLC15	Injection Segment 7
RLC16	Injection Segment 8
RLC17	Injection Segment 9
RLC18	Injection Segment 10
RLC19	Injection Segment 11

Notes: 1. For [ ] engineering units, see page 3.
2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

RLC

Pack Profile ERC Values

Word	Description
RLC20	Pack Segment 1
RLC21	Pack Segment 2
RLC22	Pack Segment 3
RLC23	Pack Segment 4
RLC24	Pack Segment 5

Hold Profile ERC Values

Word	Description
RLC25	Hold Segment 1
RLC26	Hold Segment 2
RLC27	Hold Segment 3
RLC28	Hold Segment 4
RLC29	Hold Segment 5

Plastication Profile ERC Values

Word	Description
RLC30	Plastication Segment 1
RLC31	Plastication Segment 2
RLC32	Plastication Segment 3
RLC33	Plastication Segment 4
RLC34	Plastication Segment 5
RLC35	Plastication Segment 6
RLC36	Plastication Segment 7
RLC37	Plastication Segment 8
RLC38	Plastication Segment 9
RLC39	Plastication Segment 10
RLC40	Plastication Segment 11
RLC41 - 64	Open

SCC – Second Clamp
Close Configuration Block

Bit-mapped Control Words

Word	Bit	Description
SCC01		Block ID = 00000100 (Low byte). High byte reserved for the module. Do not use.
SCC02		**Configuration Selections**
	B00-B02	Selected Velocity Control Valve The module uses its algorithm to drive the following output during any Vel/Pos Second Clamp Close Profile. **B02 B01 B00** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8

Word	Bit	Description
SCC02	B03	Open
	B04-B06	Selected Pressure Control Valve The module uses its algorithm to drive the following output during any Press/Pos Second Clamp Close Profile. **B06 B05 B04** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B07	Pressure Algorithm Selection = 0 Dependent Gains (ISA) = 1 Independent Gains (A-B)
	B08 - B15	Open
SCC03 - 04		Open

Expert Response Compensation (ERC) Percentage

Word	Description
SCC05	Minimum Velocity Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
SCC06	Minimum Pressure Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
SCC07	Open

Watchdog Timer

Word	Description
SCC08	Profile Watchdog Timer Preset [21] When the module starts the Second Clamp Close Profile, it • starts an internal Profile Watchdog timer • stops this timer and resets its accumulated value to zero (after reporting total execution time in CPS58) when it completes the profile • sets master status bit SYS04-B01 when the accumulated value of this timer equals or exceeds this entry A zero entry inhibits SYS04-B01.

Unselected Valve Set-output Values

When the module starts the Second Clamp Close Profile, it:

• sets its unselected outputs to the values listed below

• ignores the unselected value of the selected output

• uses ramp rates SCC17 - SCC32 to ramp unselected outputs

Word	Description
SCC09	Output #1 Set-output Value during Profile [19]
SCC10	Output #2 Set-output Value during Profile [19]
SCC11	Output #3 Set-output Value during Profile [19]
SCC12	Output #4 Set-output Value during Profile [19]
SCC13	Output #5 Set-output Value during Profile [19]
SCC14	Output #6 Set-output Value during Profile [19]
SCC15	Output #7 Set-output Value during Profile [19]
SCC16	Output #8 Set-output Value during Profile [19]

Notes: 1.   For [ ] engineering units, see page 3.
        2.   When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

SCC

Output Ramp Rate

The module uses the following ramp rates when moving its outputs from setpoint to setpoint during the Second Clamp Close Profile. The module interprets a ramp rate entry of zero as a step function ramp (ramp disable).

Word	Description
SCC17	Output #1 Acceleration Ramp Rate during Profile [20]
SCC18	Output #2 Acceleration Ramp Rate during Profile [20]
SCC19	Output #3 Acceleration Ramp Rate during Profile [20]
SCC20	Output #4 Acceleration Ramp Rate during Profile [20]
SCC21	Output #5 Acceleration Ramp Rate during Profile [20]
SCC22	Output #6 Acceleration Ramp Rate during Profile [20]
SCC23	Output #7 Acceleration Ramp Rate during Profile [20]
SCC24	Output #8 Acceleration Ramp Rate during Profile [20]
SCC25	Output #1 Deceleration Ramp Rate during Profile [20]
SCC26	Output #2 Deceleration Ramp Rate during Profile [20]
SCC27	Output #3 Deceleration Ramp Rate during Profile [20]
SCC28	Output #4 Deceleration Ramp Rate during Profile [20]
SCC29	Output #5 Deceleration Ramp Rate during Profile [20]
SCC30	Output #6 Deceleration Ramp Rate during Profile [20]
SCC31	Output #7 Deceleration Ramp Rate during Profile [20]
SCC32	Output #8 Deceleration Ramp Rate during Profile [20]

End of Profile Set-output Values

When the module completes the second clamp close profile and CPC03-B09 is set, it:

- sets its outputs to the following values
- sets status bit SYS22-B01
- uses ramp rates SCC17 - 32 when changing outputs to these values

Use these values for setting cores if applied before starting the Third Clamp Close Profile:

Word	Description
SCC33	Output #1 Set-output Value at End of Profile [19]
SCC34	Output #2 Set-output Value at End of Profile [19]
SCC35	Output #3 Set-output Value at End of Profile [19]
SCC36	Output #4 Set-output Value at End of Profile [19]
SCC37	Output #5 Set-output Value at End of Profile [19]
SCC38	Output #6 Set-output Value at End of Profile [19]
SCC39	Output #7 Set-output Value at End of Profile [19]
SCC40	Output #8 Set-output Value at End of Profile [19]

Pressure Control Limits

Word	Description
SCC41	Pressure Minimum Control Limit [02] Minimum controllable clamp pressure attainable during any Press/Pos Second Clamp Close Profile. The module expects this clamp pressure when setting its selected pressure valve to the %-output in SCC43.
SCC42	Pressure Maximum Control Limit [02] Maximum controllable clamp pressure attainable during any Press/Pos Second Clamp Close Profile. The module expects this clamp pressure when setting its selected pressure valve to the %-output in SCC44.
SCC43	Selected Pressure Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected pressure valve during anyPress/Pos Second Clamp Close Profile. The module expects a pressure equal to SCC41 when setting the selected pressure valve to this %-output during profile execution. The Press/Pos Second Clamp Close Profile will be executed as a reverse-acting algorithm if this entry is greater than SCC44.
SCC44	Selected Pressure Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected pressure valve during any Press/Pos Second Clamp Close Profile. The module expects a pressure equal to SCC42 when setting the selected pressure valve to this %-output during profile execution. The Press/Pos Second Clamp Close Profile will be executed as a reverse-acting algorithm if this entry is less than SCC43.

Velocity Control Limits

Word	Description
SCC45	Velocity Minimum Control Limit [08] Minimum controllable clamp velocity attainable during any Vel/Pos Second Clamp Close Profile. The module expects this clamp velocity when setting its selected velocity valve to the %-output in SCC47.
SCC46	Velocity Maximum Control Limit [08] Maximum controllable clamp velocity attainable during any Vel/Pos Second Clamp Close Profile. The module expects this clamp velocity when setting its selected velocity valve to the %-output in SCC48.
SCC47	Selected Velocity Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected velocity valve during anyVel/Pos Second Clamp Close Profile. The module expects a velocity equal to SCC45 when setting the selected velocity valve to this %-output during profile execution. The Vel/Pos Second Clamp Close Profile will be executed as a reverse-acting algorithm if this entry is greater than SCC48.
SCC48	Selected Velocity Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected velocity valve during any Vel/Pos Second Clamp Close Profile. The module expects a velocity equal to SCC46 when setting the selected velocity valve to this %-output during profile execution. The Vel/Pos Second Clamp Close Profile will be executed as a reverse-acting algorithm if this entry is less than SCC47.

Profile Tuning Constants

Word	Description
SCC49	Proportional Gain for Pressure Control [30]
SCC50	Integral Gain for Pressure Control [27] or [28]
SCC51	Derivative Gain for Pressure Control [26] or [21]
SCC52	Proportional Gain for Velocity Control [28]
SCC53	Feed Forward Gain for Velocity Control [30]
SCC54 - 56	Open

Profile Pressure Alarm Setpoint

Word	Description
SCC57	Profile High Pressure Alarm Setpoint [02] The module compares real-time clamp pressure against this entry when executing the Second Clamp Close Profile. The module sets alarm status bit SYS05-B13 when clamp pressure equals or exceeds this entry during the Second Clamp Close Profile. A zero entry inhibits SYS05-B13.
SCC58 - 64	Open

Notes: 1. For [ ] engineering units, see page 3.
   2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

SOC

SOC – Second Clamp
Open Configuration Block   **Bit-mapped Control Words**

Word	Bit	Description
SOC01		Block ID = 00010010 (Low byte). High byte reserved for the module. Do not use.
SOC02		**Configuration Selections**
	B00-B02	Selected Velocity Control Valve The module uses its algorithm to drive the following output during any Vel/Pos Second Clamp Open Profile. **B02 B01 B00** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B03	Open
	B04-B06	Selected Pressure Control Valve The module uses its algorithm to drive the following output during any Press/Pos Second Clamp Open Profile. **B06 B05 B04** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B07	Pressure Algorithm Selection = 0 Dependent Gains (ISA) = 1 Independent Gains (A-B)
	B08-B15	Open
SOC03 - 04		Open

Expert Response Compensation (ERC) Percentage

Word	Description
SOC05	Minimum Velocity Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
SOC06	Minimum Pressure Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
SOC07	Open

Watchdog Timer

Word	Description
SOC08	Profile Watchdog Timer Preset [21] When the module starts the Second Clamp Open Profile, it: • starts an internal Profile Watchdog timer • stops the timer and reset accumulated value to zero (after reporting total execution time in OPS58) when it completes the profile • sets master status bit SYS04-B11 when the accumulated value of this timer equals or exceeds this entry. A zero entry inhibits SYS04-B11.

Unselected Valve Set-output Values

When the module starts the Second Clamp Open Profile, it:

- sets its unselected outputs to the values listed below
- ignores the unselected value of the selected output
- uses ramp rates SOC17 - SOC32 to ramp unselected outputs

if	then
the module is commanded to start the Ejector Profile during this SOC Profile	this SOC Profile surrenders control of the unselected valve that is the selected Ejector Profile valve
the module is commanded to start this SOC Profile during the Ejector Profile	the Ejector Profile gives control of all of its unselected valves to this SOC Profile
Second Clamp Open and Ejector Profiles are run concurrently	all outputs that are unselected in both profiles are controlled by this SOC Profile

Word	Description
SOC09	Output #1 Set-output Value during Profile [19]
SOC10	Output #2 Set-output Value during Profile [19]
SOC11	Output #3 Set-output Value during Profile [19]
SOC12	Output #4 Set-output Value during Profile [19]
SOC13	Output #5 Set-output Value during Profile [19]
SOC14	Output #6 Set-output Value during Profile [19]
SOC15	Output #7 Set-output Value during Profile [19]
SOC16	Output #8 Set-output Value during Profile [19]

Output Ramp Rates

The module uses the following ramp rates when moving its outputs between setpoints during the Second Clamp Open Profile. The module interprets a ramp rate of zero as a step function ramp (ramp disable).

Word	Description
SOC17	Output #1 Acceleration Ramp Rate during Profile [20]
SOC18	Output #2 Acceleration Ramp Rate during Profile [20]
SOC19	Output #3 Acceleration Ramp Rate during Profile [20]
SOC20	Output #4 Acceleration Ramp Rate during Profile [20]
SOC21	Output #5 Acceleration Ramp Rate during Profile [20]
SOC22	Output #6 Acceleration Ramp Rate during Profile [20]
SOC23	Output #7 Acceleration Ramp Rate during Profile [20]
SOC24	Output #8 Acceleration Ramp Rate during Profile [20]
SOC25	Output #1 Deceleration Ramp Rate during Profile [20]
SOC26	Output #2 Deceleration Ramp Rate during Profile [20]
SOC27	Output #3 Deceleration Ramp Rate during Profile [20]
SOC28	Output #4 Deceleration Ramp Rate during Profile [20]
SOC29	Output #5 Deceleration Ramp Rate during Profile [20]
SOC30	Output #6 Deceleration Ramp Rate during Profile [20]
SOC31	Output #7 Deceleration Ramp Rate during Profile [20]
SOC32	Output #8 Deceleration Ramp Rate during Profile [20]

Notes: 1. For [ ] engineering units, see page 3.
     2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

SOC

End of Profile Set-output Values

When the module completes the Second Clamp Open Profile and
OPC03-B09 is SET and SYS21-B14 is RESET, it:

- sets its outputs to the values listed below

- sets status bit SYS22-B11

- ignores SYS22 and these values and gives output control to the
  Ejector Profile if SYS21-B14 is SET

- uses ramp rates SOC17 - 32 when changing outputs to these value

Use these values for pulling cores if applied before starting the Third
Clamp Open Profile.

Word	Description
SOC33	Output #1 Set-output Value at End of Profile [19]
SOC34	Output #2 Set-output Value at End of Profile [19]
SOC35	Output #3 Set-output Value at End of Profile [19]
SOC36	Output #4 Set-output Value at End of Profile [19]
SOC37	Output #5 Set-output Value at End of Profile [19]
SOC38	Output #6 Set-output Value at End of Profile [19]
SOC39	Output #7 Set-output Value at End of Profile [19]
SOC40	Output #8 Set-output Value at End of Profile [19]

Pressure Control Limits

Word	Description
SOC41	Pressure Minimum Control Limit [02] Minimum controllable clamp pressure attainable during any Press/Pos Second Clamp Open Profile. The module expects this clamp pressure when setting its selected pressure valve to the %-output in SOC43.
SOC42	Pressure Maximum Control Limit [02] Maximum controllable clamp pressure attainable during any Press/Pos Second Clamp Open Profile. The module expects this clamp pressure when setting its selected pressure valve to the %-output in SOC44.
SOC43	Selected Pressure Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected pressure valve during any Press/Pos Second Clamp Open Profile. The module expects a pressure equal to SOC41 when setting the selected pressure valve to this %-output during profile execution. The Press/Pos Second Clamp Open Profile will be executed as a reverse-acting algorithm if this entry is greater than SOC44.
SOC44	Selected Pressure Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected pressure valve during any Press/Pos Second Clamp Open Profile. The module expects a pressure equal to SOC42 when setting the selected pressure valve to this %-output during profile execution. The Press/Pos Second Clamp Open Profile will be executed as a reverse-acting algorithm if this entry is less than SOC43.

Velocity Control Limits

Word	Description
SOC45	Velocity Minimum Control Limit [08] Minimum controllable clamp velocity attainable during any Vel/Pos Second Clamp Open Profile. The module expects this clamp velocity when setting its selected velocity valve to the %-output in SOC47.
SOC46	Velocity Maximum Control Limit [08] Maximum controllable clamp velocity attainable during any Vel/Pos Second Clamp Open Profile. The module expects this clamp velocity when setting its selected velocity valve to the %-output in SOC48.
SOC47	Selected Velocity Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected velocity valve during any Vel/Pos Second Clamp Open Profile. The module expects a velocity equal to SOC45 when setting the selected velocity valve to this %-output during profile execution. The Vel/Pos Second Clamp Open Profile will be executed as a reverse-acting algorithm if this entry is greater than SOC48.
SOC48	Selected Velocity Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected velocity valve during any Vel/Pos Second Clamp Open Profile. The module expects a velocity equal to SOC46 when setting the selected velocity valve to this %-output during profile execution. The Vel/Pos Second Clamp Open Profile will be executed as a reverse-acting algorithm if this entry is less than SOC47.

Profile Tuning Constants

Word	Description
SOC49	Proportional Gain for Pressure Control [30]
SOC50	Integral Gain for Pressure Control [27] or [28]
SOC51	Derivative Gain for Pressure Control [26] or [21]
SOC52	Proportional Gain for Velocity Control [28]
SOC53	Feed Forward Gain for Velocity Control [30]
SOC54 - SOC56	Open

Profile Pressure Alarm Setpoint

Word	Description
SOC57	Profile High Pressure Alarm Setpoint [02] The module compares real-time clamp pressure against this entry when executing the Second Clamp Open Profile. The module sets alarm status bit SYS06-B10 when clamp pressure equals or exceeds this entry during the Second Clamp Open Profile. A zero entry inhibits SYS06-B10.
SOC58 - 64	Open

TCC – Third Clamp Close
Configuration Block

Bit-mapped Control Words

Word	Bit	Description
TCC01		Block ID = 00000101 (Low byte). High byte reserved for the module. Do not use.
TCC02		**Configuration Selections**
	B00-B02	Selected Velocity Control Valve The module uses its algorithm to drive the following output during any Vel/Pos Third Clamp Close Profile. **B02 B01 B00** 0　　0　　0　　Output #1 0　　0　　1　　Output #2 0　　1　　0　　Output #3 0　　1　　1　　Output #4 1　　0　　0　　Output #5 1　　0　　1　　Output #6 1　　1　　0　　Output #7 1　　1　　1　　Output #8
	B03	Open
	B04-B06	Selected Pressure Control Valve The module uses its algorithm to drive the following output during any Press/Pos Third Clamp Close Profile. **B06 B05 B04** 0　　0　　0　　Output #1 0　　0　　1　　Output #2 0　　1　　0　　Output #3 0　　1　　1　　Output #4 1　　0　　0　　Output #5 1　　0　　1　　Output #6 1　　1　　0　　Output #7 1　　1　　1　　Output #8
	B07	Pressure Algorithm Selection = 0　Dependent Gains (ISA) = 1　Independent Gains (A-B)
	B08 - B15	Open
TCC03 - 04		Open

Notes: 1. For [ ] engineering units, see page 3.
　　　　2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

TCC

Expert Response Compensation (ERC) Percentage

Word	Description
TCC05	Minimum Velocity Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
TCC06	Minimum Pressure Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
TCC07	Open

Watchdog Timer

Word	Description
TCC08	Profile Watchdog Timer Preset [21] When the module starts the Third Clamp Close Profile, it: • starts an internal Profile Watchdog timer • stops this timer and resets its accumulated value to zero (after reporting total execution time in CPS59) when it completes the profile • sets master status bit SYS04-B02 when the accumulated value of this timer equals or exceeds this entry A zero entry inhibits SYS04-B02.

Unselected Valve Set-output Values

When the module starts the Third Clamp Close Profile, it:

- sets its unselected outputs to the values listed below
- ignores the unselected value of the selected output
- uses ramp rates TCC17 - TCC32 to ramp unselected outputs

Word	Description
TCC09	Output #1 Set-output Value during Profile [19]
TCC10	Output #2 Set-output Value during Profile [19]
TCC11	Output #3 Set-output Value during Profile [19]
TCC12	Output #4 Set-output Value during Profile [19]
TCC13	Output #5 Set-output Value during Profile [19]
TCC14	Output #6 Set-output Value during Profile [19]
TCC15	Output #7 Set-output Value during Profile [19]
TCC16	Output #8 Set-output Value during Profile [19]

Output Ramp Rates

The module uses the following ramp rates when moving its outputs from setpoint to setpoint during the Third Clamp Close Profile. The module interprets a ramp rate entry of zero as a step function ramp (ramp disable).

Word	Description
TCC17	Output #1 Acceleration Ramp Rate during Profile [20]
TCC18	Output #2 Acceleration Ramp Rate during Profile [20]
TCC19	Output #3 Acceleration Ramp Rate during Profile [20]
TCC20	Output #4 Acceleration Ramp Rate during Profile [20]
TCC21	Output #5 Acceleration Ramp Rate during Profile [20]
TCC22	Output #6 Acceleration Ramp Rate during Profile [20]
TCC23	Output #7 Acceleration Ramp Rate during Profile [20]
TCC24	Output #8 Acceleration Ramp Rate during Profile [20]

Word	Description
TCC17	Output #1 Acceleration Ramp Rate during Profile [20]
TCC25	Output #1 Deceleration Ramp Rate during Profile [20]
TCC26	Output #2 Deceleration Ramp Rate during Profile [20]
TCC27	Output #3 Deceleration Ramp Rate during Profile [20]
TCC28	Output #4 Deceleration Ramp Rate during Profile [20]
TCC29	Output #5 Deceleration Ramp Rate during Profile [20]
TCC30	Output #6 Deceleration Ramp Rate during Profile [20]
TCC31	Output #7 Deceleration Ramp Rate during Profile [20]
TCC32	Output #8 Deceleration Ramp Rate during Profile [20]

End of Profile Set-output Values

When the module completes the Third Clamp Close Profile and CPC03-B10 is set, it:

- sets its outputs to the following values
- sets status bit SYS22-B02
- uses ramp rates TCC17 - 32 when changing outputs to these values

Use these values for setting cores if applied before starting the Clamp Low Pressure Close Profile.

Word	Description
TCC33	Output #1 Set-output Value at End of Profile [19]
TCC34	Output #2 Set-output Value at End of Profile [19]
TCC35	Output #3 Set-output Value at End of Profile [19]
TCC36	Output #4 Set-output Value at End of Profile [19]
TCC37	Output #5 Set-output Value at End of Profile [19]
TCC38	Output #6 Set-output Value at End of Profile [19]
TCC39	Output #7 Set-output Value at End of Profile [19]
TCC40	Output #8 Set-output Value at End of Profile [19]

Pressure Control Limits

Word	Description
TCC41	Pressure Minimum Control Limit [02] Minimum controllable clamp pressure attainable during any Press/Pos Third Clamp Close Profile. The module expects this clamp pressure when setting its selected pressure valve to the %-output in TCC43.
TCC42	Pressure Maximum Control Limit [02] Maximum controllable clamp pressure attainable during any Press/Pos Third Clamp Close Profile. The module expects this clamp pressure when setting its selected pressure valve to the %-output in TCC44.
TCC43	Selected Pressure Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected pressure valve during any Press/Pos Third Clamp Close Profile. The module expects a pressure equal to TCC41 when setting the selected pressure valve to this %-output during profile execution. The Press/Pos Third Clamp Close Profile will be executed as a reverse-acting algorithm if this entry is greater than TCC44.
TCC44	Selected Pressure Valve Output for Maximum [19] 100% CV output percentage t hat the module uses to drive the selected pressure valve during any Press/Pos Third Clamp Close Profile. The module expects a pressure equal to TCC42 when setting the selected pressure valve to this %-output during profile execution. The Press/Pos Third Clamp Close Profile will be executed as a reverse-acting algorithm if this entry is less than TCC43.

Notes: 1. For [ ] engineering units, see page 3.

2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

TOC

Velocity Control Limits

Word	Description
TCC45	Velocity Minimum Control Limit [08] Minimum controllable clamp velocity attainable during any Vel/Pos Third Clamp Close Profile. The module expects this clamp velocity when setting its selected velocity valve to the %-output in TCC47.
TCC46	Velocity Maximum Control Limit [08] Maximum controllable clamp velocity attainable during any Vel/Pos Third Clamp Close Profile. The module expects this clamp velocity when setting its selected velocity valve to the %-output in TCC48.
TCC47	Selected Velocity Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected velocity valve during any Vel/Pos Third Clamp Close Profile. The module expects a velocity equal to TCC45 when setting the selected velocity valve to this %-output during profile execution. The Vel/Pos Third Clamp Close Profile will be executed as a reverse-acting algorithm if this entry is greater than TCC48.
TCC48	Selected Velocity Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected velocity valve during any Vel/Pos Third Clamp Close Profile. The module expects a velocity equal to TCC46 when setting the selected velocity valve to this %-output during profile execution. The Vel/Pos Third Clamp Close Profile will be executed as a reverse-acting algorithm if this entry is less than TCC47.

Profile Tuning Constants

Word	Description
TCC49	Proportional Gain for Pressure Control [30]
TCC50	Integral Gain for Pressure Control [27] or [28]
TCC51	Derivative Gain for Pressure Control [26] or [21]
TCC52	Proportional Gain for Velocity Control [28]
TCC53	Feed Forward Gain for Velocity Control [30]
TCC54 - 56	Open

Profile Pressure Alarm Setpoint

Word	Description
TCC57	Profile High Pressure Alarm Setpoint [02] The module compares real-time clamp pressure against this entry when executing the Third Clamp CloseProfile. The module sets alarm status bit SYS05-B14 when clamp pressure equals or exceeds this entry during the Third Clamp Close Profile. A zero entry inhibits SYS05-B14.
TCC58 - 64	Open

TOC – Third Clamp Open
Configuration Block
Bit-mapped Control Words

Word	Bit	Description
TOC01		Block ID = 00010011 (Low byte). High byte reserved for the module. Do not use.
TOC02		**Configuration Selections**
	B00-B02	Selected Velocity Control Valve The module uses its algorithm to drive the following output during any Vel/Pos Third Clamp Open Profile. **B02 B01 B00** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
TOC02	B03	Open

Word	Bit	Description
	B04-B06	Selected Pressure Control Valve The module uses its algorithm to drive the following output during any Press/Pos Third Clamp Open Profile. **B06 B05 B04** 0 0 0 Output #1 0 0 1 Output #2 0 1 0 Output #3 0 1 1 Output #4 1 0 0 Output #5 1 0 1 Output #6 1 1 0 Output #7 1 1 1 Output #8
	B07	Pressure Algorithm Selection = 0 Dependent Gains (ISA) = 1 Independent Gains (A-B)
	B08-B15	Open
TOC03 - 04		Open

Expert Response Compensation (ERC) Percentage

Word	Description
TOC05	Minimum Velocity Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
TOC06	Minimum Pressure Control ERC Percentage [31] Although error coding allows range of 00000 to 09999, the module limits it to a minimum of 01000.
TOC07	Open

Watchdog Timer

Word	Description
TOC08	Profile Watchdog Timer Preset [21] When the module starts the Third Clamp Open Profile, it: • starts an internal Profile Watchdog timer • stops the timer and reset accumulated value to zero (after reporting total execution time in OPS59) when it completes the profile • sets master status bit SYS04-B12 when the accumulated value of this timer equals or exceeds this entry A zero entry inhibits SYS04-B12.

Unselected Valve Set-output Values

When the module starts the Third Clamp Open Profile, it:

- sets its unselected outputs to the values listed below

- ignores the unselected value of the selected output

- uses ramp rates TOC17 - TOC32 to ramp unselected outputs

if	then
the module is commanded to start the Ejector Profile during this TOC Profile	this TOC Profile surrenders control of the unselected valve that is the selected Ejector Profile valve
the module is commanded to start this TOC Profile during the Ejector Profile	the Ejector Profile gives control of all of its unselected valves to this TOC Profile
Third Clamp Open and Ejector Profiles are run concurrently	all outputs that are unselected in both profiles are controlled by this TOC Profile

Word	Description
TOC09	Output #1 Set-output Value during Profile [19]
TOC10	Output #2 Set-output Value during Profile [19]
TOC11	Output #3 Set-output Value during Profile [19]
TOC12	Output #4 Set-output Value during Profile [19]

Notes: 1. For [ ] engineering units, see page 3.
   2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Word	Description
TOC13	Output #5 Set-output Value during Profile [19]
TOC14	Output #6 Set-output Value during Profile [19]
TOC15	Output #7 Set-output Value during Profile [19]
TOC16	Output #8 Set-output Value during Profile [19]

Output Ramp Rates

The module uses the following ramp rates when moving its outputs between setpoints during the Third Clamp Open Profile. The module interprets a ramp rate of zero as a step function ramp (ramp disable).

Word	Description
TOC17	Output #1 Acceleration Ramp Rate during Profile [20]
TOC18	Output #2 Acceleration Ramp Rate during Profile [20]
TOC19	Output #3 Acceleration Ramp Rate during Profile [20]
TOC20	Output #4 Acceleration Ramp Rate during Profile [20]
TOC21	Output #5 Acceleration Ramp Rate during Profile [20]
TOC22	Output #6 Acceleration Ramp Rate during Profile [20]
TOC23	Output #7 Acceleration Ramp Rate during Profile [20]
TOC24	Output #8 Acceleration Ramp Rate during Profile [20]
TOC25	Output #1 Deceleration Ramp Rate during Profile [20]
TOC26	Output #2 Deceleration Ramp Rate during Profile [20]
TOC27	Output #3 Deceleration Ramp Rate during Profile [20]
TOC28	Output #4 Deceleration Ramp Rate during Profile [20]
TOC29	Output #5 Deceleration Ramp Rate during Profile [20]
TOC30	Output #6 Deceleration Ramp Rate during Profile [20]
TOC31	Output #7 Deceleration Ramp Rate during Profile [20]
TOC32	Output #8 Deceleration Ramp Rate during Profile [20]

End of Profile Set-output Values

When the module completes the Third Clamp Open Profile and OPC03-B10 is set and SYS21-B14 is reset, it:

- sets its outputs to the values listed below
- sets status bit SYS22-B12
- ignores SYS22 and these values and gives output control to the Ejector Profile if SYS21-B14 is set
- uses ramp rates TOC17 - 32 when changing outputs to these values

Use these values for pulling cores if applied before starting the Clamp Open Slow Profile.

Word	Description
TOC33	Output #1 Set-output Value at End of Profile [19]
TOC34	Output #2 Set-output Value at End of Profile [19]
TOC35	Output #3 Set-output Value at End of Profile [19]
TOC36	Output #4 Set-output Value at End of Profile [19]

Word	Description
TOC37	Output #5 Set-output Value at End of Profile [19]
TOC38	Output #6 Set-output Value at End of Profile [19]
TOC39	Output #7 Set-output Value at End of Profile [19]
TOC40	Output #8 Set-output Value at End of Profile [19]

Pressure Control Limits

Word	Description
TOC41	Pressure Minimum Control Limit [02] Minimum controllable clamp pressure attainable during any Press/Pos Third Clamp Open Profile. The module expects this clamp pressure when setting its selected pressure valve to the %-output in TOC43.
TOC42	Pressure Maximum Control Limit [02] Maximum controllable clamp pressure attainable during any Press/Pos Third Clamp Open Profile. The module expects this clamp pressure when setting its selected pressure valve to the %-output in TOC44.
TOC43	Selected Pressure Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected pressure valve during any Press/Pos Third Clamp Open Profile. The module expects a pressure equal to TOC41 when setting the selected pressure valve to this %-output during profile execution. The Press/Pos Third Clamp Open Profile will be executed as a reverse-acting algorithm if this entry is greater than TOC44.
TOC44	Selected Pressure Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected pressure valve during any Press/Pos Third Clamp Open Profile. The module expects a pressure equal to TOC42 when setting the selected pressure valve to this %-output during profile execution. The Press/Pos Third Clamp Open Profile will be executed as a reverse-acting algorithm if this entry is less than TOC43.

Velocity Control Limits

Word	Description
TOC45	Velocity Minimum Control Limit [08] Minimum controllable clamp velocity attainable during any Vel/Pos Third Clamp Open Profile. The module expects this clamp velocity when setting its selected velocity valve to the %-output in TOC47.
TOC46	Velocity Maximum Control Limit [08] Maximum controllable clamp velocity attainable during any Vel/Pos Third Clamp Open Profile. The module expects this clamp velocity when setting its selected velocity valve to the %-output in TOC48.
TOC47	Selected Velocity Valve Output for Minimum [19] 0% CV output percentage that the module uses to drive the selected velocity valve during any Vel/Pos Third Clamp Open Profile. The module expects a velocity equal to TOC45 when setting the selected velocity valve to this %-output during profile execution. The Vel/Pos Third Clamp Open Profile will be executed as a reverse-acting algorithm if this entry is greater than TOC48.
TOC48	Selected Velocity Valve Output for Maximum [19] 100% CV output percentage that the module uses to drive the selected velocity valve during any Vel/Pos Third Clamp Open Profile. The module expects a velocity equal to TOC46 when setting the selected velocity valve to this %-output during profile execution. The Vel/Pos Third Clamp Open Profile will be executed as a reverse-acting algorithm if this entry is less than TOC47.

Profile Tuning Constants

Word	Description
TOC49	Proportional Gain for Pressure Control [30]
TOC50	Integral Gain for Pressure Control [27] or [28]
TOC51	Derivative Gain for Pressure Control [26] or [21]
TOC52	Proportional Gain for Velocity Control [28]
TOC53	Feed Forward Gain for Velocity Control [30]
TOC54 - 56	Open

Profile Pressure Alarm Setpoint

Word	Description
TOC57	Profile High Pressure Alarm Setpoint [02] The module compares real-time clamp pressure against this entry when executing the Third Clamp Open Profile. The module sets alarm status bit SYS06-B11 when clamp pressure equals or exceeds this entry during the Third Clamp Open Profile. A zero entry inhibits SYS06-B11.
TOC58 - 64	Open

Notes: 1. For [ ] engineering units, see page 3.
  2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Status Word/Bit Descriptions

List of Status Blocks and Block ID Codes

Status blocks report current status of molding machine operation. Status blocks are returned from the QDC module to the PLC processor by means of block transfer read (BTR) instructions in software ladder logic.

Acronym:	Block ID Binary:	Decimal:	Description:	Page:
CLS	00001001	27	Clamp and Eject ERC Values Status Block	3-5
CPS	00000010	7	Clamp Close Profile Status Block	3-6
EPS	00000111	24	Ejector Profile Status Block	3-9
HPS	00000100	12	Pack/Hold Profile Status Block	3-11
IPS	00000011	9	Injection Profile Status Block	3-14
OPS	00000110	21	Clamp Open Profile Status Block	3-17
PPS	00000101	15	Plastication Profile Status Block	3-20
PTS	00001010	28	Process Trace Status Block	3-22
RLS	00001000	26	Inject ERC Values Status Block	3-24
SYS	00000001	1	System Status Block	3-25

List of Data Words

The listings of status blocks use five types of data words:

- Block ID
- Bit-mapped
- Stored-value
- Open
- Reserved

Block ID Word

The first word in each status block contains a binary number code in the low byte that identifies the block. The PLC processor uses them to identify status blocks received from the QDC module.

For all status block ID words, the high byte is identical to the high byte of the system status word SYS01, and contains jog-execution and power start-up status.

Bit-mapped Words

The first several words in any data block are bit-mapped. As the QDC module monitors and detects changes in events of machine cycles, it sets/resets or latches/unlatches status bits to inform the PLC-5 processor that these events have occurred.

Stored-value Words

The QDC module reports actual values of machine operation obtained from sensor devices that you connect to its input terminals. The values are transferred to the PLC processor for data processing and alarm purposes. These values include positions, pressures, and velocities.

Open Words

These words are not used by the QDC module. We recommend leaving them unused.

Reserved Words

These words are not currently used by the QDC module but are reserved for future enhancements. We recommend leaving them unused.

Data Blocks Require I/O Configuration

The QDC module decodes its own I/O configuration based on parameters that you provide in the Module Configuration Command Block (MCC). I/O configuration determines which of the command and status blocks the module supports. For the module to support the full complement of command and status blocks, you must establish the following position configurations for complete machine control:

- Connect a ram (screw) position sensor to input 1.
- Connect a clamp position sensor to input 3.
- Connect an ejector position sensor to input 4.

If you omit any of these three requirements, the QDC module rejects some of the defined command blocks and inhibits some of the defined status blocks because the module cannot use or generate block parameters without data from a critical input which may have been excluded during configuration. If you attempt to download an unusable command block from the host processor, the QDC module treats it as unrecognizable and discards the data. It does so in the same manner as if it had received a command block containing an undefined Block ID.

▶ **Important:** When using the inject/clamp/eject mode, all pressure readings are system pressure at input 2, except where stated as cavity (or system) pressure. See System Pressure in Chapter 1 of the corresponding User Manual.

Notes: 1. For [ ] engineering units, see page 3.
　　　　2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Engineering Units

In the listings of status blocks, each stored-value word is followed by a bracketed [ ] 2-digit number code denoting the engineering units and range associated with the value as shown in the following table:

#Code	Type of Block	Units and Range
01	Ram (Screw)	Pressure (0000.0 to 9999.0 PSI or 000.0 to 999.9 Bar)
02	Clamp	Pressure (0000.0 to 9999.0 PSI or 000.0 to 999.9 Bar)
03	Ejector	Pressure (0000.0 to 9999.0 PSI or 000.0 to 999.9 Bar)
04	Cavity	Pressure (00000.0 to 20000.0 PSI or 0000.0 to 2000.0 Bar)
05	Ram (Screw)	Percent of maximum velocity (00.00 to 99.99%)
07	Clamp	Percent of maximum velocity (00.00 to 99.99%)
09	Ejector	Percent of maximum velocity (00.00 to 99.99%)
06	Ram (Screw)	Velocity along axis (00.00 to 99.99 in. per sec. or 000.0 to 999.9 mm per sec.)
08	Clamp	Velocity along axis (00.00 to 99.99 in. per sec. or 000.0 to 999.9 mm per sec.)
10	Ejector	Velocity along axis (00.00 to 99.99 in. per sec. or 000.0 to 999.9 mm per sec.)
11	Ram (Screw) Measured from zero	Incremental distance (00.00 to 99.99 in. or 000.0 to 999.9 mm.)
12	Ram (Screw) Measured from MCC13	Incremental distance (00.00 to 99.99 in. or 000.0 to 999.9 mm.)
13	Clamp Axis Measured from zero	Incremental distance (00.00 to 99.99 in. or 000.0 to 999.9 mm.)
14	Clamp Axis Measured from MCC27	Incremental distance (00.00 to 99.99 in. or 000.0 to 999.9 mm.)
15	Ejector Axis Measured from zero	Incremental distance (00.00 to 99.99 in. or 000.0 to 999.9 mm.)
16	Ejector Axis Measured from MCC41	Incremental distance (00.00 to 99.99 in. or 000.0 to 999.9 mm.)
17	Measured as noted	Incremental distance (00.00 to 99.99 in. or 000.0 to 999.9 mm.)
18	Measured as noted	Incremental distance (00.00 to 00.99 in. or 000.0 to 009.9 mm.)
19		Percent signal output (00.00 to 99.99%)
20		Percent signal output per second (0000. To 9999.)
21		Time measured in seconds (00.00 to 99.99)
22		Time measured in seconds (000.0 to 999.9)
23		Time measured in seconds (00.00 to 00.99)
24		Input signal range (00.00 to 10.00 or 01.00 to 05.00 or 04.00 to 20.00)
25		Screw rotational speed (000.0 to 999.9 RPM)
26		Time (algorithm) (00.00 to 9.99 minutes)
27		Inverse time (algorithm) (00.00 to 99.99 inverse minutes)
28		Inverse time (algorithm) (00.00 to 99.99 inverse seconds)
31		Percent (00.00 to 99.99%)

Status Block for Reporting System Status

The System Status Block (SYS) reports system status.

The module can always return the System Status Block to the host processor. It returns this block after each block transfer read (BTR) request from the PLC processor unless the previous block transfer write (BTW) to the module was a valid dynamic command block (DYC) containing a request for some other status block.

Status Blocks for Reporting Ram (Screw) Position

The QDC module can return any of these status blocks:

Block	Description
IPS	Injection Profile Status Block
HPS	Pack/Hold Profile Status Block
PPS	Plastication Profile Status Block
PTS	Process Trace Status Block
RLS	Inject ERC Values Status Block

After you configure the QDC module with a valid MCC, the module determines if it has access to ram (screw) position data from the ram (screw) position sensor. The module considers these command blocks recognizable and can return these status blocks when it has an analog input reserved for a ram (screw) position sensor, and the sensor is physically connected to input 1.

Status Blocks for Reporting Clamp Position

The QDC module can return any of these status blocks:

Block	Description
CPS	Clamp Close Profile Status Block
OPS	Clamp Open Profile Status Block
CLS	Clamp and Eject ERC Values Status Block

After you configure the QDC module with a valid MCC, the module determines if it has access to clamp position data from the clamp position sensor. The module considers these command blocks recognizable and can return these status blocks when it has an analog input reserved for a clamp position sensor, and the sensor is physically connected to input 3.

Status Blocks for Reporting Ejector Position

The QDC module can return this status block:

Block	Description
EPS	Ejector Profile Status Block

After you configure the QDC module with a valid MCC, the module determines if it has access to clamp and ejector position data from both position sensors. The module considers these command blocks recognizable and can return the status block when it has analog inputs reserved for ejector position and clamp position sensors, and both sensors are physically connected to inputs 3 and 4 respectively.

Notes: 1. For [ ] engineering units, see page 3.
       2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.
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CLS

CLS – Clamp and Eject
ERC Values Status Block   **Bit-mapped Status Words**

Word	Description
CLS01	Block ID = 00001001 (Low byte). High byte identical to SYS01
CLS02	See SYS02
CLS03	See SYS03
CLS04	See SYS04
CLS05 - 08	Open

Clamp Close Profiles ERC Actuals

Word	Description
CLS09	Segment 1 (First Clamp Close Profile)
CLS10	Segment 2 (First Clamp Close Profile)
CLS11	Segment 3 (First Clamp Close Profile)
CLS12	Segment 4 (Second Clamp Close Profile)
CLS13	Segment 5 (Second Clamp Close Profile)
CLS14	Segment 6 (Second Clamp Close Profile)
CLS15	Segment 7 (Third Clamp Close Profile)
CLS16	Segment 8 (Third Clamp Close Profile)
CLS17	Segment 9 (Third Clamp Close Profile)
CLS18	Segment 1 (Clamp Low Pressure Close Profile)
CLS19	Segment 2 (Clamp Low Pressure Close Profile)

Clamp Open Profiles ERC Actuals

Word	Description
CLS20	Segment 1 (First Clamp Open Profile)
CLS21	Segment 2 (First Clamp Open Profile)
CLS22	Segment 3 (First Clamp Open Profile)
CLS23	Segment 4 (Second Clamp Open Profile)
CLS24	Segment 5 (Second Clamp Open Profile)
CLS25	Segment 6 (Second Clamp Open Profile)
CLS26	Segment 7 (Third Clamp Open Profile)
CLS27	Segment 8 (Third Clamp Open Profile)
CLS28	Segment 9 (Third Clamp Open Profile)
CLS29	Segment 1 (Clamp Open Slow Profile)
CLS30	Segment 2 (Clamp Open Slow Profile)

Ejector Profile ERC Actuals

Word	Description
CLS31	Ejector Full Advance Segment 1
CLS32	Ejector Full Advance Segment 2
CLS33	Ejector Full Advance Segment 3
CLS34	Reserved
CLS35	Ejector Tip Retract Segment
CLS36	Reserved

Word	Description
CLS37	Ejector Tip Advance Segment
CLS38	Reserved
CLS39	Ejector Full Retract Segment 1
CLS40	Ejector Full Retract Segment 2
CLS41	Ejector Full Retract Segment 3
CLS42	Reserved
CLS43 - 64	Open

CPS – Clamp Close Profiles Status Block

Bit-mapped Status Words

Word	Bit	Description
CPS01		Block ID = 00000010 (Low byte). High byte identical to SYS01
CPS02		See SYS02
CPS03		See SYS03
CPS04		See SYS04
CPS05		Open
CPS06		Open
CPS07		CV High Limit Alarms
		The module latches each bit when executing the subject profile segment in closed loop, and drives its algorithm CV to maximum (100%) in an attempt to control the profile setpoint. The module unlatches each bit when it completes execution of the subject profile segment in open loop, or in closed loop without driving its algorithm CV to maximum (100%).
	When this bit is latched ON:	algorithm CV is maximum during:
	B00	Segment 1 (First Clamp Close)
	B01	Segment 2 (First Clamp Close)
	B02	Segment 3 (First Clamp Close)
	B03	Segment 4 (Second Clamp Close)
	B04	Segment 5 (Second Clamp Close)
	B05	Segment 6 (Second Clamp Close)
	B06	Segment 7 (Third Clamp Close)
	B07	Segment 8 (Third Clamp Close)
	B08	Segment 9 (Third Clamp Close)
	B09	Segment 1 (Clamp Low Pressure Close)
	B10	Segment 2 (Clamp Low Pressure Close)
	B11-B15	Open
CPS08		CV Low Limit Alarms
		The module latches each bit when executing the subject profile segment in closed loop, and drives its algorithm CV to minimum (0%) in an attempt to control the profile setpoint. The module unlatches each bit when it completes execution of the subject profile segment in open loop, or in closed loop without driving its algorithm CV to minimum (0%).
	When this bit is latched ON:	algorithm CV is maximum during:
	B00	Segment 1 (First Clamp Close)
	B01	Segment 2 (First Clamp Close)
	B02	Segment 3 (First Clamp Close)
	B03	Segment 4 (Second Clamp Close)

Notes: 1. For [ ] engineering units, see page 3.
      2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

CPS

Word	Bit	Description
	B04	Segment 5 (Second Clamp Close)
	B05	Segment 6 (Second Clamp Close)
	B06	Segment 7 (Third Clamp Close)
	B07	Segment 8 (Third Clamp Close)
	B08	Segment 9 (Third Clamp Close)
	B09	Segment 1 (Clamp Low Pressure Close)
	B10	Segment 2 (Clamp Low Pressure Close)
	B11-B15	Open

First Clamp Close Profile Actuals

Word	Description
CPS09	Actual Segment 1 Velocity [07] or [08] Average clamp velocity during last Segment 1. If CPC03-B14 is RESET, the module reports this average in percent velocity. If CPC03-B14 is SET, it reports it in in.(mm)/s.
CPS10	Actual Segment 1 Pressure [02] Average clamp pressure during last Segment 1.
CPS11	Actual Segment 1 Execution Time [21] Time required for last Segment 1.
CPS12	Actual Segment 2 Velocity [07] or [08] Average clamp velocity during last Segment 2. If CPC03-B14 is RESET, the module reports this average in percent velocity. If CPC03-B14 is SET, it reports it in in.(mm)/s.
CPS13	Actual Segment 2 Pressure [02] Average clamp pressure during last Segment 2.
CPS14	Actual Segment 2 Execution Time [21] Time required for last Segment 2.
CPS15	Actual Segment 3 Velocity [07] or [08] Average clamp velocity during last Segment 3. If CPC03-B14 is RESET, the module reports this average in percent velocity. If CPC03-B14 is SET, it reports it in in.(mm)/s.
CPS16	Actual Segment 3 Pressure [02] Average clamp pressure during last Segment 3.
CPS17	Actual Segment 3 Execution Time [21] Time required for last Segment 3.

Second Clamp Close Profile Actuals

Word	Description
CPS18	Actual Segment 4 Velocity [07] or [08] Average clamp velocity during last Segment 4. If CPC03-B14 is RESET, the module reports this average in percent velocity. If CPC03-B14 is SET, it reports it in in.(mm)/s.
CPS19	Actual Segment 4 Pressure [02] Average clamp pressure during last Segment 4.
CPS20	Actual Segment 4 Execution Time [21] Time required for last Segment 4.
CPS21	Actual Segment 5 Velocity [07] or [08] Average clamp velocity during last Segment 5. If CPC03-B14 is RESET, the module reports this average in percent velocity. If CPC03-B14 is SET, it reports it in in.(mm)/s.
CPS22	Actual Segment 5 Pressure [02] Average clamp pressure during last Segment 5.
CPS23	Actual Segment 5 Execution Time [21] Time required for last Segment 5.
CPS24	Actual Segment 6 Velocity [07] or [08] Average clamp velocity during last Segment 6. If CPC03-B14 is RESET, the module reports this average in percent velocity. If CPC03-B14 is SET, it reports it in in.(mm)/s.
CPS25	Actual Segment 6 Pressure [02] Average clamp pressure during last Segment 6.
CPS26	Actual Segment 6 Execution Time [21] Time required for last Segment 6.

Third Clamp Close Profile Actuals

Word	Description
CPS27	Actual Segment 7 Velocity [07] or [08] Average clamp velocity during last Segment 7. If CPC03-B14 is RESET, the module reports this average in percent velocity. If CPC03-B14 is SET, it reports it in in.(mm)/s.
CPS28	Actual Segment 7 Pressure [02] Average clamp pressure during last Segment 7.
CPS29	Actual Segment 7 Execution Time [21] Time required for last Segment 7.
CPS30	Actual Segment 8 Velocity [07] or [08] Average clamp velocity during last Segment 8. If CPC03-B14 is RESET, the module reports this average in percent velocity. If CPC03-B14 is SET, it reports it in in.(mm)/s.
CPS31	Actual Segment 8 Pressure [02] Average clamp pressure during last Segment 8.
CPS32	Actual Segment 8 Execution Time [21] Time required for last Segment 8.
CPS33	Actual Segment 9 Velocity [07] or [08] Average clamp velocity during last Segment 9. If CPC03-B14 is RESET, the module reports this average in percent velocity. If CPC03-B14 is SET, it reports it in in.(mm)/s.
CPS34	Actual Segment 9 Pressure [02] Average clamp pressure during last Segment 9.
CPS35	Actual Segment 9 Execution Time [21] Time required for last Segment 9.

Clamp Low Pressure Close Profile Actuals

Word	Description
CPS36	Reserved
CPS37	Actual Segment 1 Pressure [02] Average clamp pressure during last Segment 1.
CPS38	Actual Segment 1 Execution Time [21] Time required for last Segment 1.
CPS39	Reserved
CPS40	Actual Segment 2 Pressure [02] Average clamp pressure during last Segment 2.
CPS41	Actual Segment 2 Execution Time [21] Time required for last Segment 2.
CPS42	Velocity at Start-of Clamp Low Press Close Profile [07] or [08] Instantaneous clamp velocity at start of last profile. If CPC03-B14 is RESET, the module reports this average in percent velocity. If CPC03-B14 is SET, it reports it in in.(mm)/s.
CPS43	Pressure at Start-of Clamp Low Pressure Close Profile [02] Instantaneous clamp pressure at start of last profile.
CPS44	Position at Start-of Clamp Low Pressure Close Profile [14] Instantaneous clamp position at start of last profile.
CPS45	Velocity at End of Clamp Low Pressure Close Profile [07] or [08] Instantaneous clamp velocity at completion of last profile. If CPC03-B14 is RESET, the module reports this average in percent velocity. If CPC03-B14 is SET, it reports it in in.(mm)/s.
CPS46	Pressure at End of Clamp Low Pressure Close Profile [02] Instantaneous clamp pressure at completion of last profile.
CPS47	Position at End of Clamp Low Pressure Close Profile [14] Instantaneous clamp position at completion of last profile.
CPS48 - 52	Open

Close Profile Maximum Pressures

Word	Description
CPS53	Maximum Pressure During First Clamp Close Profile [02] Maximum instantaneous clamp pressure during last profile.
CPS54	Maximum Pressure During Second Clamp Close Profile [02]Maximum instantaneous clamp pressure during last profile.
CPS55	Maximum Pressure During Third Clamp Close Profile [02] Maximum instantaneous clamp pressure during last profile.
CPS56	Maximum Pressure During Clamp Low Pressure Close Profile [02] Maximum instantaneous clamp pressure during last profile.

Notes: 1. For [ ] engineering units, see page 3.
2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

EPS

Close Profile Execution Times

Word	Description
CPS57	First Clamp Close Profile Execution Time [21] Total time required for last profile.
CPS58	Second Clamp Close Profile Execution Time [21] Total time required for last profile.
CPS59	Third Clamp Close Profile Execution Time [21] Total time required for last profile.
CPS60	Clamp Low Pressure Close Profile Execution Time [21] Total time required for last profile.
CPS61 - 64	Open

EPS – Ejector Profile
Status Block

Bit-mapped Status Words

Word	Bit	Description
EPS01		Block ID = 00000111 (Low byte). High byte identical to SYS01
EPS01		See SYS01
EPS02		See SYS02
EPS03		See SYS03
EPS04		See SYS04
EPS05		Open
EPS06		Open
EPS07		CV High Limit Alarms
		The module latches each bit when executing the subject profile segment in closed loop, and drives its algorithm CV to maximum (100%) in an attempt to control the profile setpoint. The module unlatches each bit when it completes execution of the subject profile segment in open loop, or in closed loop without driving its algorithm CV to maximum (100%).
	When this bit is latched ON:	algorithm CV is maximum during:
	B00	Full Advance Segment 1
	B01	Full Advance Segment 2
	B02	Full Advance Segment 3
	B03	Open
	B04	Tip Retract Segment
	B05	Open
	B06	Tip Advance Segment
	B07	Open
	B08	Full Retract Segment 1
	B09	Full Retract Segment 2
	B10	Full Retract Segment 3
	B11-B15	Open
EPS08		CV Low Limit Alarms
		The module latches each bit when executing the subject profile segment in closed loop, and drives its algorithm CV to minimum (0%) in an attempt to control the profile setpoint. The module unlatches each bit when it completes execution of the subject profile segment in open loop, or in closed loop without driving its algorithm CV to minimum (0%).
	When this bit is latched ON:	algorithm CV is minimum during:
	B00	Full Advance Segment 1
	B01	Full Advance Segment 2
	B02	Full Advance Segment 3
	B03	Open
	B04	Tip Retract Segment
	B05	Open

Word	Bit	Description
	B06	Tip Advance Segment
	B07	Open
	B08	Full Retract Segment 1
	B09	Full Retract Segment 2
	B10	Full Retract Segment 3
	B11-B15	Open

Ejector Profile Actuals

Word	Description
EPS09	Actual Full Advance Segment 1 Velocity [09] or [10] Average ejector velocity during last Full Advance Segment 1. If EPC03-B14 is RESET, the module reports this average in percent velocity. If EPC03-B14 is SET, it reports it in in.(mm)/s.
EPS10	Actual Full Advance Segment 1 Pressure [03] Average ejector pressure during last Full Advance Segment 1.
EPS11	Actual Full Advance Segment 1 Execution Time [21] Time required for last Full Advance Segment 1.
EPS12	Actual Full Advance Segment 2 Velocity [09] or [10] Average ejector velocity during last Full Advance Segment 2. If EPC03-B14 is RESET, the module reports this average in percent velocity. If EPC03-B14 is SET, it reports it in in.(mm)/s.
EPS13	Actual Full Advance Segment 2 Pressure [03] Average ejector pressure during last Full Advance Segment 2.
EPS14	Actual Full Advance Segment 2 Execution Time [21] Time required for last Full Advance Segment 2.
EPS15	Actual Full Advance Segment 3 Velocity [09] or [10] Average ejector velocity during last Full Advance Segment 3. If EPC03-B14 is RESET, the module reports this average in percent velocity. If EPC03-B14 is SET, it reports it in in.(mm)/s.
EPS16	Actual Full Advance Segment 3 Pressure [03] Average ejector pressure during last Full Advance Segment 3.
EPS17	Actual Full Advance Segment 3 Execution Time [21] Time required for last Full Advance Segment 3.
EPS18 - 20	Reserved
EPS21	Actual Tip Retract Segment Velocity [09] or [10] Average ejector velocity during last Tip Retract Segment.
EPS22	Actual Tip Retract Segment Pressure [03] Average ejector pressure during last Tip Retract Segment.
EPS23	Actual Tip Retract Segment Execution Time [21] Time required for last Tip Retract Segment.
EPS24 - 26	Reserved
EPS27	Actual Tip Advance Segment Velocity [09] or [10] Average ejector velocity during last Tip Advance Segment. If EPC03-B14 is RESET, the module reports this average in percent velocity. If EPC03-B14 is SET, it reports it in in.(mm)/s.
EPS28	Actual Tip Advance Segment Pressure [03] Average ejector pressure during last Tip Advance Segment.
EPS29	Actual Tip Advance Segment Execution Time [21] Time required for last Tip Advance Segment.
EPS30 - 32	Reserved
EPS33	Actual Full Retract Segment 1 Velocity [09] or [10] Average ejector velocity during last Full Retract Segment 1.
EPS34	Actual Full Retract Segment 1 Pressure [03] Average ejector pressure during last Full Retract Segment 1.
EPS35	Actual Full Retract Segment 1 Execution Time [21] Time required for last Full Retract Segment 1.
EPS36	Actual Full Retract Segment 2 Velocity [09] or [10] Average ejector velocity during last Full Retract Segment 2. If EPC03-B14 is RESET, the module reports this average in percent velocity. If EPC03-B14 is SET, it reports it in in.(mm)/s.
EPS37	Actual Full Retract Segment 2 Pressure [03] Average ejector pressure during last Full Retract Segment 2.
EPS38	Actual Full Retract Segment 2 Execution Time [21] Time required for last Full Retract Segment 2.
EPS39	Actual Full Retract Segment 3 Velocity [09] or [10] Average ejector velocity during last Full Retract Segment 3. If EPC03-B14 is RESET, the module reports this average in percent velocity. If EPC03-B14 is SET, it reports it in in.(mm)/s.
EPS40	Actual Full Retract Segment 3 Pressure [03] Average ejector pressure during last Full Retract Segment 3.
EPS41	Actual Full Retract Segment 3 Execution Time [21] Time required for last Full Retract Segment 3.
EPS42 - 44	Reserved
EPS45 - 52	Open

Notes: 1. For [ ] engineering units, see page 3.

2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

HPS

Ejector Profile Maximum Pressure

Word	Description
EPS53	Maximum Pressure During Ejector Profile [03] Maximum instantaneous ejector pressure during last profile.
EPS54 - 56	Open

Ejector Profile Execution Time

Word	Description
EPS57	Ejector Profile Execution Time [21] Total time required for last profile.
EPS58 - 64	Open

HPS – Pack/Hold Profile
Status Block

Bit-mapped Status Words

Word	Bit	Description
HPS01		Block ID = 00000100 (Low byte). High byte identical to SYS01
HPS02		See SYS02
HPS03		See SYS03
HPS04		See SYS04
HPS05		Open
HPS06		Open
HPS07		CV High Limit Alarms
		For Pack Phase
		The module latches each bit when executing the subject profile segment in closed loop, and drives its algorithm CV to maximum (100%) in an attempt to control the profile setpoint. The module unlatches each bit when it completes execution of the subject profile segment in open loop, or in closed loop without driving its algorithm CV to maximum (100%).
	When this bit is latched ON:	algorithm CV is maximum during:
	B00	Pack Segment 1
	B01	Pack Segment 2
	B02	Pack Segment 3
	B03	Pack Segment 4
	B04	Pack Segment 5
	B05-B07	Open
		For Hold Phase
		The module latches each bit when executing the subject profile segment in closed loop, and drives its algorithm CV to maximum (100%) in an attempt to control the profile setpoint. The module unlatches each bit when it completes execution of the subject profile segment in open loop, or in closed loop without driving its algorithm CV to maximum (100%).
	When this bit is latched ON:	algorithm CV is maximum during:
	B08	Hold Segment 1
	B09	Hold Segment 2
	B10	Hold Segment 3
	B11	Hold Segment 4
	B12	Hold Segment 5
	B13-B15	Open

Word	Bit	Description
HPS08		CV Low Limit Alarms
		For Pack Phase
		The module latches each bit when executing the subject profile segment in closed loop, and drives its algorithm CV to minimum (0%) in an attempt to control the profile setpoint. The module unlatches each bit when it completes execution of the subject profile segment in open loop, or in closed loop without driving its algorithm CV to minimum (0%).
	When this bit is latched ON:	algorithm CV is minimum during:
	B00	Pack Segment 1
	B01	Pack Segment 2
	B02	Pack Segment 3
	B03	Pack Segment 4
	B04	Pack Segment 5
	B05-B07	Open
		For Hold Phase
		The module latches each bit when executing the subject profile segment in closed loop, and drives its algorithm CV to minimum (0%) in an attempt to control the profile setpoint. The module unlatches each bit when it completes execution of the subject profile segment in open loop, or in closed loop without driving its algorithm CV to minimum (0%).
	When this bit is latched ON:	algorithm CV is minimum during:
	B08	Hold Segment 1
	B09	Hold Segment 2
	B10	Hold Segment 3
	B11	Hold Segment 4
	B12	Hold Segment 5
	B13-B15	Open

Pack Profile Actuals

Word	Description
HPS09	Actual Pack Segment 1 Cavity Pressure [04] Average cavity pressure during last Segment 1.
HPS10	Actual Pack Segment 1 Ram (Screw) Pressure [01] Average ram (screw) pressure during last Segment 1.
HPS11	Actual Pack End of Segment 1 Position [12] Ram (Screw) position at completion of last Segment 1.
HPS12	Actual Pack Segment 2 Cavity Pressure [04] Average cavity pressure during last Segment 2.
HPS13	Actual Pack Segment 2 Ram (Screw) Pressure [01] Average ram (screw) pressure during last Segment 2.
HPS14	Actual Pack End of Segment 2 Position [12] Ram (Screw) position at completion of last Segment 2.
HPS15	Actual Pack Segment 3 Cavity Pressure [04] Average cavity pressure during last Segment 3.
HPS16	Actual Pack Segment 3 Ram (Screw) Pressure [01] Average ram (screw) pressure during last Segment 3.
HPS17	Actual Pack End of Segment 3 Position [12] Ram (Screw) position at completion of last Segment 3.
HPS18	Actual Pack Segment 4 Cavity Pressure [04] Average cavity pressure during last Segment 4.
HPS19	Actual Pack Segment 4 Ram (Screw) Pressure [01] Average ram (screw) pressure during last Segment 4.
HPS20	Actual Pack End of Segment 4 Position [12] Ram (Screw) position at completion of last Segment 4.
HPS21	Actual Pack Segment 5 Cavity Pressure [04] Average cavity pressure during last Segment 5.
HPS22	Actual Pack Segment 5 Ram (Screw) Pressure [01] Average ram (screw) pressure during last Segment 5.
HPS23	Actual Pack End of Segment 5 Position [12] Ram (Screw) position at completion of last Segment 5.
HPS24 - 25	Open

Notes: 1. For [ ] engineering units, see page 3.
2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Hold Profile Actuals

Word	Description
HPS26	Actual Hold Segment 1 Cavity Pressure [04] Average cavity pressure during last Segment 1.
HPS27	Actual Hold Segment 1 Ram (Screw) Pressure [01] Average ram (screw) pressure during last Segment 1.
HPS28	Actual Hold End of Segment 1 Position [12] Ram (Screw) position at completion of last Segment 1.
HPS29	Actual Hold Segment 2 Cavity Pressure [04] Average cavity pressure during last Segment 2.
HPS30	Actual Hold Segment 2 Ram (Screw) Pressure [01] Average ram (screw) pressure during last Segment 2.
HPS31	Actual Hold End of Segment 2 Position [12] Ram (Screw) position at completion of last Segment 2.
HPS32	Actual Hold Segment 3 Cavity Pressure [04] Average cavity pressure during last Segment 3.
HPS33	Actual Hold Segment 3 Ram (Screw) Pressure [01] Average ram (screw) pressure during last Segment 3.
HPS34	Actual Hold End of Segment 3 Position [12] Ram (Screw) position at completion of last Segment 3.
HPS35	Actual Hold Segment 4 Cavity Pressure [04] Average cavity pressure during last Segment 4.
HPS36	Actual Hold Segment 4 Ram (Screw) Pressure [01] Average ram (screw) pressure during last Segment 4
HPS37	Actual Hold End of Segment 4 Position [12] Ram (Screw) position at completion of last Segment 4.
HPS38	Actual Hold Segment 5 Cavity Pressure [04] Average cavity pressure during last Segment 5.
HPS39	Actual Hold Segment 5 Ram (Screw) Pressure [01] Average ram (screw) pressure during last Segment 5.
HPS40	Actual Hold End of Segment 5 Position [12] Ram (Screw) position at completion of last Segment 5
HPS41 - 50	Open

Pack Maximum Pressures

Word	Description
HPS51	Maximum Ram (Screw) Pressure During Pack [01] Maximum instantaneous ram (screw) pressure during last profile.
HPS52	Maximum Cavity Pressure During Pack [04] Maximum instantaneous cavity pressure during last profile.

Hold Maximum Pressures

Word	Description
HPS53	Maximum Ram (Screw) Pressure During Hold [01] Maximum instantaneous ram (screw) pressure during last profile.
HPS54	Maximum Cavity Pressure During Hold [04] Maximum instantaneous cavity pressure during last profile.

Pre-decompression Maximum Pressure

Word	Description
HPS55	Maximum Ram (Screw) Pressure During Pre-decompression [01] Max instantaneous ram (screw) pressure during last movement.
HPS56	Open

Execution Times

Word	Description
HPS57	Pack Profile Execution Time [21] Total time required for last profile.
HPS58	Hold Profile Execution Time [21] Total time required for last profile.
HPS59	Pre-decompression Movement Execution Time [21] Total time required for last movement.
HPS60	Open

Pre-decompression Movement Actuals

Word	Description
HPS61	Pre-decompression Movement Actual Velocity [06] Average ram (screw) velocity during last movement, reported in in.(mm)/s.
HPS62	Pre-decompression Movement Actual Pressure [01] Average ram (screw) pressure during last movement.

End of Hold Ram (Screw) Position

Word	Bit	Description
HPS63		Position at End of Hold [12] Instantaneous ram (screw) position at completion of last profile.
HPS64		Open

IPS – Injection Profile Status Block

Bit-mapped Status Words

Word	Bit	Description
IPS01		Block ID = 00000011 (Low byte). High byte identical to SYS01
IPS02		See SYS02
IPS03		See SYS03
IPS04		See SYS04
IPS05		Pressure Limit Alarms
		The module latches bits individually when executing a pressure-limited Vel/Pos Injection Profile and monitors a real-time ram (screw) pressure equal to or greater than IPC57 during the subject profile segment. The module unlatches each bit when it completes the segment without monitoring a real-time ram (screw) pressure equal to or greater than IPC57.
	This bit is latched ON:	at pressure limit for this LimVel/Pos segment:
	B00	Segment 1
	B01	Segment 2
	B02	Segment 3
	B03	Segment 4
	B04	Segment 5
	B05	Segment 6
	B06	Segment 7
	B07	Segment 8
	B08	Segment 9
	B09	Segment 10
	B10	Segment 11
	B11-B15	Open
IPS06		Injection Transition Status
	B00	= 0 Normal = 1 Injection Transition on Time The module sets this bit when the Transition Time Setpoint (IPC60) triggered completion of last Injection Profile.
	B01	= 0 Normal = 1 Injection Transition on Ram (Screw) Position Module sets this bit when Transition Ram (Screw) Position Setpoint (IPC61) triggered completion of last Injection Profile
	B02	= 0 Normal = 1 Injection Transition on Ram (Screw) Pressure Module sets bit when Transition Ram (Screw) Pressure Setpoint (IPC62) triggered completion of last Injection Profile.
	B03	= 0 Normal = 1 Injection Transition on Cavity Pressure Module sets this bit when the Transition Cavity Pressure Setpoint (IPC63) triggered completion of last Injection Profile.
	B04-B15	Open
IPS07		CV High Limit Alarms
		The module latches each bit when executing the subject profile segment in closed loop, and drives its algorithm CV to maximum (100%) in an attempt to control the profile setpoint. The module unlatches each bit when it completes execution of the subject profile segment in open loop, or in closed loop without driving its algorithm CV to maximum (100%).
	When this bit is latched ON:	algorithm CV is maximum during:
	B00	Segment 1
	B01	Segment 2
	B02	Segment 3
	B03	Segment 4
	B04	Segment 5
	B05	Segment 6

Notes: 1. For [ ] engineering units, see page 3.
       2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

IPS

Word	Bit	Description
	B06	Segment 7
	B07	Segment 8
	B08	Segment 9
	B09	Segment 10
	B10	Segment 11
	B11-B15	Open
IPS08		CV Low Limit Alarms
		The module latches each bit when executing the subject profile segment in closed loop, and drives its algorithm CV to minimum (0%) in an attempt to control the profile setpoint. The module unlatches each bit when it completes execution of the subject profile segment in open loop, or in closed loop without driving its algorithm CV to minimum (0%).
	When this bit is latched ON:	algorithm CV is maximum during:
	B00	Segment 1
	B01	Segment 2
	B02	Segment 3
	B03	Segment 4
	B04	Segment 5
	B05	Segment 6
	B06	Segment 7
	B07	Segment 8
	B08	Segment 9
	B09	Segment 10
	B10	Segment 11
	B11-B15	Open

Injection Profile Actuals

Word	Description
IPS09	Actual Segment 1 Velocity [05] or [06] Average ram (screw) velocity during last Segment 1. If IPC03-B14 is RESET, the module reports this average in percent velocity. If IPC03-B14 is SET, it reports it in in.(mm)/s.
IPS10	Actual Segment 1 Pressure [01] Average ram (screw) pressure during last Segment 1.
IPS11	Actual Segment 1 Execution Time [21] Time required for last Segment 1.
IPS12	Actual End of Segment 1 Position [12] Ram (Screw) position at completion of last Segment 1.
IPS13	Actual Segment 2 Velocity [05] or [06] Average ram (screw) velocity during last Segment 2. If IPC03-B14 is RESET, the module reports this average in percent velocity. If IPC03-B14 is SET, it reports it in in.(mm)/s.
IPS14	Actual Segment 2 Pressure [01] Average ram (screw) pressure during last Segment 2.
IPS15	Actual Segment 2 Execution Time [21] Time required for last Segment 2.
IPS16	Actual End of Segment 2 Position [12] Ram (Screw) position at completion of last Segment 2.
IPS17	Actual Segment 3 Velocity [05] or [06] Average ram (screw) velocity during last Segment 3. If IPC03-B14 is RESET, the module reports this average in percent velocity. If IPC03-B14 is SET, it reports it in in.(mm)/s.
IPS18	Actual Segment 3 Pressure [01] Average ram (screw) pressure during last Segment 3.
IPS19	Actual Segment 3 Execution Time [21] Time required for last Segment 3.
IPS20	Actual End of Segment 3 Position [12] Ram (Screw) position at completion of last Segment 3.
IPS21	Actual Segment 4 Velocity [05] or [06] Average ram (screw) velocity during last Segment 4. If IPC03-B14 is RESET, the module reports this average in percent velocity. If IPC03-B14 is SET, it reports it in in.(mm)/s.
IPS22	Actual Segment 4 Pressure [01] Average ram (screw) pressure during last Segment 4.

Word	Description
IPS23	Actual Segment 4 Execution Time [21] Time required for last Segment 4.
IPS24	Actual End of Segment 4 Position [12] Ram (Screw) position at completion of last Segment 4.
IPS25	Actual Segment 5 Velocity [05] or [06] Average ram (screw) velocity during last Segment 5. If IPC03-B14 is RESET, the module reports this average in percent velocity. If IPC03-B14 is SET, it reports it in in.(mm)/s.
IPS26	Actual Segment 5 Pressure [01] Average ram (screw) pressure during last Segment 5.
IPS27	Actual Segment 5 Execution Time [21] Time required for last Segment 5.
IPS28	Actual End of Segment 5 Position [12] Ram (Screw) position at completion of last Segment 5.
IPS29	Actual Segment 6 Velocity [05] or [06] Average ram (screw) velocity during last Segment 6. If IPC03-B14 is RESET, the module reports this average in percent velocity. If IPC03-B14 is SET, it reports it in in.(mm)/s.
IPS30	Actual Segment 6 Pressure [01] Average ram (screw) pressure during last Segment 6.
IPS31	Actual Segment 6 Execution Time [21] Time required for last Segment 6.
IPS32	Actual End of Segment 6 Position [12] Ram (Screw) position at completion of last Segment 6.
IPS33	Actual Segment 7 Velocity [05] or [06] Average ram (screw) velocity during last Segment 7. If IPC03-B14 is RESET, the module reports this average in percent velocity. If IPC03-B14 is SET, it reports it in in.(mm)/s.
IPS34	Actual Segment 7 Pressure [01] Average ram (screw) pressure during last Segment 7.
IPS35	Actual Segment 7 Execution Time [21] Time required for last Segment 7.
IPS36	Actual End of Segment 7 Position [12] Ram (Screw) position at completion of last Segment 7.
IPS37	Actual Segment 8 Velocity [05] or [06] Average ram (screw) velocity during last Segment 8. If IPC03-B14 is RESET, the module reports this average in percent velocity. If IPC03-B14 is SET, it reports it in in.(mm)/s.
IPS38	Actual Segment 8 Pressure [01] Average ram (screw) pressure during last Segment 8.
IPS39	Actual Segment 8 Execution Time [21] Time required for last Segment 8.
IPS40	Actual End of Segment 8 Position [12] Ram (Screw) position at completion of last Segment 8.
IPS41	Actual Segment 9 Velocity [05] or [06] Average ram (screw) velocity during last Segment 9. If IPC03-B14 is RESET, the module reports this average in percent velocity. If IPC03-B14 is SET, it reports it in in.(mm)/s.
IPS42	Actual Segment 9 Pressure [01] Average ram (screw) pressure during last Segment 9.
IPS43	Actual Segment 9 Execution Time [21] Time required for last Segment 9.
IPS44	Actual End of Segment 9 Position [12] Ram (Screw) position at completion of last Segment 9.
IPS45	Actual Segment 10 Velocity [05] or [06] Average ram (screw) velocity during last Segment 10. If IPC03-B14 is RESET, the module reports this average in percent velocity. If IPC03-B14 is SET, it reports it in in.(mm)/s.
IPS46	Actual Segment 10 Pressure [01] Ram (screw) pressure during last Segment 10.
IPS47	Actual Segment 10 Execution Time [21] Time required for last Segment 10.
IPS48	Actual End of Segment 10 Position [12] Ram (Screw) position at completion of last Segment 10.
IPS49	Actual Segment 11 Velocity [05] or [06] Average ram (screw) velocity during last Segment 11. If IPC03-B14 is RESET, the module reports this average in percent velocity. If IPC03-B14 is SET, it reports it in in.(mm)/s.
IPS50	Actual Segment 11 Pressure [01] Average ram (screw) pressure during last Segment 11.
IPS51	Actual Segment 11 Execution Time [21] Time required for last Segment 11.
IPS52	Open

Injection Maximum Pressures

Word	Description
IPS53	Maximum Ram (Screw) Pressure During Injection [01] Maximum instantaneous ram (screw) pressure during last profile.
IPS54	Maximum Cavity Pressure During Injection [04] Maximum instantaneous cavity pressure during last profile.
IPS55 - 60	Open

Notes: 1. For [ ] engineering units, see page 3.
      2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

OPS

<div align="center">

Injection Transition Actuals

</div>

Word	Description
IPS61	Actual Time to Transition [21] Total time required for last Injection Profile.
IPS62	Actual Ram (Screw) Position at Transition [12] Instantaneous ram (screw) position at completion of last Injection Profile.
IPS63	Actual Ram (Screw) Pressure at Transition [01] Instantaneous ram (screw) pressure at completion of last Injection Profile.
IPS64	Actual Cavity Pressure at Transition [04] Instantaneous cavity pressure at completion of last Injection Profile.

OPS – Clamp Open
Profiles Status Block

Bit-mapped Status Words

Word	Bit	Description
OPS01		Block ID = 00000110 (Low byte). High byte identical to SYS01.
OPS02		See SYS02
OPS03		See SYS03
OPS04		See SYS04
OPS05		Open
OPS06		Open
OPS07		CV High Limit Alarms
		The module latches each bit when executing the subject profile segment in closed loop, and drives its algorithm CV to maximum (100%) in an attempt to control the profile setpoint. The module unlatches each bit when it completes execution of the subject profile segment in open loop, or in closed loop without driving its algorithm CV to maximum (100%).
	When this bit is latched ON:	algorithm CV is maximum during:
	B00	Segment 1 (First Clamp Open)
	B01	Segment 2 (First Clamp Open)
	B02	Segment 3 (First Clamp Open)
	B03	Segment 4 (Second Clamp Open)
	B04	Segment 5 (Second Clamp Open)
	B05	Segment 6 (Second Clamp Open)
	B06	Segment 7 (Third Clamp Open)
	B07	Segment 8 (Third Clamp Open)
	B08	Segment 9 (Third Clamp Open)
	B09	Segment 1 (Clamp Open Slow)
	B10	Segment 2 (Clamp Open Slow)
	B11-B15	Open
OPS08		CV Low Limit Alarms
		The module latches each bit when executing the subject profile segment in closed loop, and drives its algorithm CV to minimum (0%) in an attempt to control the profile setpoint. The module unlatches each bit when it completes execution of the subject profile segment in open loop, or in closed loop without driving its algorithm CV to minimum (0%).
	When this bit is latched ON:	algorithm CV is minimum during:
	B00	Segment 1 (First Clamp Open)
	B01	Segment 2 (First Clamp Open)
	B02	Segment 3 (First Clamp Open)
	B03	Segment 4 (Second Clamp Open)
	B04	Segment 5 (Second Clamp Open)
	B05	Segment 6 (Second Clamp Open)
	B06	Segment 7 (Third Clamp Open)

Word	Bit	Description
	B07	Segment 8 (Third Clamp Open)
	B08	Segment 9 (Third Clamp Open)
	B09	Segment 1 (Clamp Open Slow)
	B10	Segment 2 (Clamp Open Slow)
	B11-B15	Open

First Clamp Open Profile Actuals

Word	Description
OPS09	Actual Segment 1 Velocity [07] or [08] Average clamp velocity during last Segment 1. If OPC03-B14 is RESET, the module reports this average in percent velocity. If OPC03-B14 is SET, it reports it in in.(mm)/s.
OPS10	Actual Segment 1 Pressure [02] Average clamp pressure during last Segment 1.
OPS11	Actual Segment 1 Execution Time [21] Time required for last Segment 1.
OPS12	Actual Segment 2 Velocity [07] or [08] Average clamp velocity during last Segment 2. If OPC03-B14 is RESET, the module reports this average in percent velocity. If OPC03-B14 is SET, it reports it in in.(mm)/s.
OPS13	Actual Segment 2 Pressure [02] Average clamp pressure during last Segment 2.
OPS14	Actual Segment 2 Execution Time [21] Time required for last Segment 2.
OPS15	Actual Segment 3 Velocity [07] or [08] Average clamp velocity during last Segment 3. If OPC03-B14 is RESET, the module reports this average in percent velocity. If OPC03-B14 is SET, it reports it in in.(mm)/s.
OPS16	Actual Segment 3 Pressure [02] Average clamp pressure during last Segment 3.
OPS17	Actual Segment 3 Execution Time [21] Time required for last Segment 3.

Second Clamp Open Profile Actuals

Word	Description
OPS18	Actual Segment 4 Velocity [07] or [08] Average clamp velocity during last Segment 4. If OPC03-B14 is RESET, the module reports this average in percent velocity. If OPC03-B14 is SET, it reports it in in.(mm)/s.
OPS19	Actual Segment 4 Pressure [02] Average clamp pressure during last Segment 4.
OPS20	Actual Segment 4 Execution Time [21] Time required for last Segment 4.
OPS21	Actual Segment 5 Velocity [07] or [08] Average clamp velocity during last Segment 5. If OPC03-B14 is RESET, the module reports this average in percent velocity. If OPC03-B14 is SET, it reports it in in.(mm)/s.
OPS22	Actual Segment 5 Pressure [02] Average clamp pressure during last Segment 5.
OPS23	Actual Segment 5 Execution Time [21] Time required for last Segment 5
OPS24	Actual Segment 6 Velocity [07] or [08] Average clamp velocity during last Segment 6. If OPC03-B14 is RESET, the module reports this average in percent velocity. If OPC03-B14 is SET, it reports it in in.(mm)/s.
OPS25	Actual Segment 6 Pressure [02] Average clamp pressure during last Segment 6.
OPS26	Actual Segment 6 Execution Time [21] Time required for last Segment 6.

Notes: 1. For [ ] engineering units, see page 3.
2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

OPS

Third Clamp Open Profile Actuals

Word	Description
OPS27	Actual Segment 7 Velocity [07] or [08] Average clamp velocity during last Segment 7. If OPC03-B14 is RESET, the module reports this average in percent velocity. If OPC03-B14 is SET, it reports it in in.(mm)/s.
OPS28	Actual Segment 7 Pressure [02] Average clamp pressure during last Segment 7.
OPS29	Actual Segment 7 Execution Time [21] Time required for last Segment 7.
OPS30	Actual Segment 8 Velocity [07] or [08] Average clamp velocity during last Segment 8. If OPC03-B14 is RESET, the module reports this average in percent velocity. If OPC03-B14 is SET, it reports it in in.(mm)/s.
OPS31	Actual Segment 8 Pressure [02] Average clamp pressure during last Segment 8.
OPS32	Actual Segment 8 Execution Time [21] Time required for last Segment 8.
OPS33	Actual Segment 9 Velocity [07] or [08] Average clamp velocity during last Segment 9. If OPC03-B14 is RESET, the module reports this average in percent velocity. If OPC03-B14 is SET, it reports it in in.(mm)/s.
OPS34	Actual Segment 9 Pressure [02] Average clamp pressure during last Segment 9.
OPS35	Actual Segment 9 Execution Time [21] Time required for last Segment 9.

Clamp Open Slow Profile Actuals

Word	Description
OPS36	Actual Segment 1 Velocity [07] or [08] Average clamp velocity during last Segment 1. If OPC03-B14 is RESET, the module reports this average in percent velocity. If OPC03-B14 is SET, it reports it in in.(mm)/s.
OPS37	Actual Segment 1 Pressure [02] Average clamp pressure during last Segment 1.
OPS38	Actual Segment 1 Execution Time [21] Time required for last Segment 1.
OPS39	Actual Segment 2 Velocity [07] or [08] Average clamp velocity during last Segment 2. If OPC03-B14 is RESET, the module reports this average in percent velocity. If OPC03-B14 is SET, it reports it in in.(mm)/s.
OPS40	Actual Segment 2 Pressure [02] Average clamp pressure during last Segment 2.
OPS41	Actual Segment 2 Execution Time [21] Time required for last Segment 2.
OPS42	Velocity at Start-of Clamp Open Slow Profile [07] or [08] Instantaneous clamp velocity at start of last profile. If OPC03-B14 is RESET, the module reports this average in percent velocity. If OPC03-B14 is SET, it reports it in in.(mm)/s.
OPS43	Pressure at Start-of Clamp Open Slow Profile [02] Instantaneous clamp pressure at start of last profile.
OPS44	Position at Start-of Clamp Open Slow Profile [14] Instantaneous clamp position at start of last profile.
OPS45	Velocity at End of Clamp Open Slow Profile [07] or [08] Instantaneous clamp velocity at completion of last profile. If OPC03-B14 is RESET, the module reports this average in percent velocity. If OPC03-B14 is SET, it reports it in in.(mm)/s.
OPS46	Pressure at End of Clamp Open Slow Profile [02] Instantaneous clamp pressure at completion of last profile.
OPS47	Position at End of Clamp Open Slow Profile [14] Instantaneous clamp position at completion of last profile.
OPS48 - 52	Open

Open Profile Maximum Pressures

Word	Description
OPS53	Maximum Pressure During First Clamp Open Profile [02] Maximum instantaneous clamp pressure during last profile.
OPS54	Maximum Pressure During Second Clamp Open Profile [02] Maximum instantaneous clamp pressure during last profile.
OPS55	Maximum Pressure During Third Clamp Open Profile [02] Maximum instantaneous clamp pressure during last profile.
OPS56	Maximum Pressure During Clamp Open Slow Profile [02] Maximum instantaneous clamp pressure during last profile.

Open Profile Execution Times

Word	Description
OPS57	First Clamp Open Profile Execution Time [21] Total time required for last profile.
OPS58	Second Clamp Open Profile Execution Time [21] Total time required for last profile.
OPS59	Third Clamp Open Profile Execution Time [21] Total time required for last profile.
OPS60	Clamp Open Slow Profile Execution Time [21] Total time required for last profile.
OPS61 - 64	Open

PPS – Plastication Profile
Status Block

Bit-mapped Status Words

Word	Bit	Description
PPS01		Block ID = 00000101 (Low byte). High byte identical to SYS01
PPS02		See SYS02
PPS03		See SYS03
PPS04		See SYS04
PPS05		Open
PPS06		Open
PPS07		CV High Limit Alarms
		The module latches each bit when executing the subject profile segment in closed loop, and drives its algorithm CV to maximum (100%) in an attempt to control the profile setpoint. The module unlatches each bit when it completes execution of the subject profile segment in open loop, or in closed loop without driving its algorithm CV to maximum (100%).
	When this bit is latched ON:	algorithm CV is maximum during:
	B00	Segment 1
	B01	Segment 2
	B02	Segment 3
	B03	Segment 4
	B04	Segment 5
	B05	Segment 6
	B06	Segment 7
	B07	Segment 8
	B08	Segment 9
	B09	Segment 10
	B10	Segment 11
	B11-B15	Open
PPS08		CV Low Limit Alarms
		The module latches each bit when executing the subject profile segment in closed loop, and drives its algorithm CV to minimum (0%) in an attempt to control the profile setpoint. The module unlatches each bit when it completes execution of the subject profile segment in open loop, or in closed loop without driving its algorithm CV to minimum (0%).
	When this bit is latched ON:	algorithm CV is minimum during:
	B00	Segment 1
	B01	Segment 2
	B02	Segment 3
	B03	Segment 4
	B04	Segment 5
	B05	Segment 6

Notes: 1. For [ ] engineering units, see page 3.
    2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

PPS

Word	Bit	Description
	B06	Segment 7
	B07	Segment 8
	B08	Segment 9
	B09	Segment 10
	B10	Segment 11
	B11-B15	Open

Plastication Profile Actuals

Word	Description
PPS09	Actual Segment 1 RPM [25] Average RPM during last Segment 1.
PPS10	Actual Segment 1 Pressure [01] Average ram (screw) pressure during last Segment 1.
PPS11	Actual Segment 1 Execution Time [21] Time required for last Segment 1.
PPS12	Actual End of Segment 1 Position [12] Ram (Screw) position at completion of last Segment 1.
PPS13	Actual Segment 2 RPM [25] Average RPM during last Segment 2.
PPS14	Actual Segment 2 Pressure [01] Average ram (screw) pressure during last Segment 2.
PPS15	Actual Segment 2 Execution Time [21] Time required for last Segment 2.
PPS16	Actual End of Segment 2 Position [12] Ram (Screw) position at completion of last Segment 2.
PPS17	Actual Segment 3 RPM [25] Average RPM during last Segment 3.
PPS18	Actual Segment 3 Pressure [01] Average ram (screw) pressure during last Segment 3.
PPS19	Actual Segment 3 Execution Time [21] Time required for last Segment 3.
PPS20	Actual End of Segment 3 Position [12] Ram (Screw) position at completion of last Segment 3.
PPS21	Actual Segment 4 RPM [25] Average RPM during last Segment 4.
PPS22	Actual Segment 4 Pressure [01] Average ram (screw) pressure during last Segment 4.
PPS23	Actual Segment 4 Execution Time [21] Time required for last Segment 4.
PPS24	Actual End of Segment 4 Position [12] Ram (Screw) position at completion of last Segment 4.
PPS25	Actual Segment 5 RPM [25] Average RPM during last Segment 5.
PPS26	Actual Segment 5 Pressure [01] Average ram (screw) pressure during last Segment 5.
PPS27	Actual Segment 5 Execution Time [21] Time required for last Segment 5.
PPS28	Actual End of Segment 5 Position [12] Ram (Screw) position at completion of last Segment 5.
PPS29	Actual Segment 6 RPM [25] Average RPM during last Segment 6.
PPS30	Actual Segment 6 Pressure [01] Average ram (screw) pressure during last Segment 6.
PPS31	Actual Segment 6 Execution Time [21] Time required for last Segment 6.
PPS32	Actual End of Segment 6 Position [12] Ram (Screw) position at completion of last Segment 6.
PPS33	Actual Segment 7 RPM [25] Average RPM during last Segment 7.
PPS34	Actual Segment 7 Pressure [01] Average ram (screw) pressure during last Segment 7.
PPS35	Actual Segment 7 Execution Time [21] Time required for last Segment 7.
PPS36	Actual End of Segment 7 Position [12] Ram (Screw) position at completion of last Segment 7.
PPS37	Actual Segment 8 RPM [25] Average RPM during last Segment 8.
PPS38	Actual Segment 8 Pressure [01] Average ram (screw) pressure during last Segment 8.
PPS39	Actual Segment 8 Execution Time [21] Time required for last Segment 8.
PPS40	Actual End of Segment 8 Position [12] Ram (Screw) position at completion of last Segment 8.
PPS41	Actual Segment 9 RPM [25] Average RPM during last Segment 9.
PPS42	Actual Segment 9 Pressure [01] Average ram (screw) pressure during last Segment 9.
PPS43	Actual Segment 9 Execution Time [21] Time required for last Segment 9.
PPS44	Actual End of Segment 9 Position [12] Ram (Screw) position at completion of last Segment 9.
PPS45	Actual Segment 10 RPM [25] Average RPM during last Segment 10.
PPS46	Actual Segment 10 Pressure [01] Average ram (screw) pressure during last Segment 10.

Word	Description
PPS47	Actual Segment 10 Execution Time [21] Time required for last Segment 10.
PPS48	Actual End of Segment 10 Position [12] Ram (Screw) position at completion of last Segment 10.
PPS49	Actual Segment 11 RPM [25] Average RPM during last Segment 11.
PPS50	Actual Segment 11 Pressure [01] Average ram (screw) pressure during last Segment 11.
PPS51	Actual Segment 11 Execution Time [21] Time required for last Segment 11.
PPS52	Open

Plastication Maximum Pressure

Word	Description
PPS53	Maximum Ram (Screw) Pressure During Plastication [01] Maximum instantaneous ram (screw) pressure during last profile.

Post-decompression Maximum Pressure

Word	Description
PPS54	Maximum Ram (Screw) Pressure During Post-decompression [01] Max instantaneous ram (screw) pressure during last movement.
PPS55 - 56	Open

Execution Times

Word	Description
PPS57	Plastication Profile Execution Time [21] Total time required for last profile.
PPS58	Post-decompression Movement Execution Time [21] Total time required for last movement.
PPS59 - 60	Open

Post-decompression Movement Actuals

Word	Description
PPS61	Post-decompression Movement Actual Velocity [06] Average ram (screw) velocity during last movement, reported in in.(mm)/s.
PPS62	Post-decompression Movement Actual Pressure [01] Average ram (screw) pressure during last movement.

Shot Size Actual

Word	Description
PPS63	Actual Shot Size Extruded [17] Total shot size length drawn at completion of last Plastication Profile. The module measures total shot size as an incremental length from the End of Hold position (HPS63).
PPS64	Open

PTS – Process Trace
Status Block   **Bit-mapped Status Words**

Word	Bit	Description
PTS01	B00 - B07	Block ID = 00001010 (Low byte).
	B08 - B15	Power start-up and jog execution status (refer to bit description for SYS01)
PTS02		Profile execution status (refer to bit description for SYS02)
PTS03		Miscellaneous status (refer to bit description for SYS03)
PTS04		Watchdog timeout status (refer to bit description for SYS04)
PTS05		Trace selection If one of PTS05-B01 to B05 is set, PTS15 to PTS64 contain trace data. If PTS05-B15 is set, PTS15 to PTS48 contain phase/segment start information. Each word contains starting data point (1 - 400) for the listed phase or segment. If the phase or segment was not executed, this value will be zero.
	B00	Open
	B01	Block contains injection position trace data
	B02	Block contains trace #1 data

Notes: 1. For [ ] engineering units, see page 3.
　　　　 2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

PTS

Word	Bit	Description
	B03	Block contains trace #2 data
	B04	Block contains trace #3 data
	B05	Block contains trace #4 data
	B06 - B14	Open
	B15	Block contains phase/segment start information
PTS06		Trace data block number
	B00	Block contains trace data points 1 to 50
	B01	Block contains trace data points 51 to 100
	B02	Block contains trace data points 101 to 150
	B03	Block contains trace data points 151 to 200
	B04	Block contains trace data points 201 to 250
	B05	Block contains trace data points 251 to 300
	B06	Block contains trace data points 301 to 350
	B07	Block contains trace data points 351 to 400
	B08 - B15	Reserved
PTS07, 08		Open
PTS09		Reports the time (in hundredths of seconds) after injection starts until the first trace data point is recorded.
PTS10		Reports how many data points (0 to 400) have been collected for the trace indicated in PTS05 and PTS06. This value will not exceed the last data point for the block indicated in PTS06.
PTS11 - 14		Open
PTS15		Injection Segment 1 starting data point If one of PTS05-B01 to -B05 is set, PTS15 to PTS64 contain trace data. If PTS05-B15 is set, PTS15 to PTS48 contain phase/segment start information. Each word contains starting data point (1 - 400) for the listed phase or segment. If the phase or segment was not executed, this value will be zero.
PTS16		Injection Segment 2 starting data point
PTS17		Injection Segment 3 starting data point
PTS18		Injection Segment 4 starting data point
PTS19		Injection Segment 5 starting data point
PTS20		Injection Segment 6 starting data point
PTS21		Injection Segment 7 starting data point
PTS22		Injection Segment 8 starting data point
PTS23		Injection Segment 9 starting data point
PTS24		Injection Segment 10 starting data point
PTS25		Injection Segment 11 starting data point
PTS26		Pack Segment 1 starting data point
PTS27		Pack Segment 2 starting data point
PTS28		Pack Segment 3 starting data point
PTS29		Pack Segment 4 starting data point
PTS30		Pack Segment 5 starting data point
PTS31		Hold Segment 1 starting data point
PTS32		Hold Segment 2 starting data point
PTS33		Hold Segment 3 starting data point
PTS34		Hold Segment 4 starting data point
PTS35		Hold Segment 5 starting data point
PTS36		Pre-decompress starting data point
PTS37		Plastication Segment 1 starting data point
PTS38		Plastication Segment 2 starting data point
PTS39		Plastication Segment 3 starting data point

Word	Bit	Description
PTS40		Plastication Segment 4 starting data point
PTS41		Plastication Segment 5 starting data point
PTS42		Plastication Segment 6 starting data point
PTS43		Plastication Segment 7 starting data point
PTS44		Plastication Segment 8 starting data point
PTS45		Plastication Segment 9 starting data point
PTS46		Plastication Segment 10 starting data point
PTS47		Plastication Segment 11 starting data point
PTS48		Post-decompress starting data point
PTS49 - 64		Open

RLS – Inject ERC Values
Status Block   **Bit-mapped Status Words**

Word	Description
RLS01	Block ID = 00001000 (Low byte). High byte identical to SYS01
RLS02	See SYS02
RLS03	See SYS03
RLS04	See SYS04
RLS05 - 08	Open

Injection Profile ERC Actuals

Word	Description
RLS09	Injection Segment 1
RLS10	Injection Segment 2
RLS11	Injection Segment 3
RLS12	Injection Segment 4
RLS13	Injection Segment 5
RLS14	Injection Segment 6
RLS15	Injection Segment 7
RLS16	Injection Segment 8
RLS17	Injection Segment 9
RLS18	Injection Segment 10
RLS19	Injection Segment 11

Pack Profile ERC Actuals

Word	Description
RLS20	Pack Segment 1
RLS21	Pack Segment 2
RLS22	Pack Segment 3
RLS23	Pack Segment 4
RLS24	Pack Segment 5

Notes: 1. For [ ] engineering units, see page 3.
  2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

RLS

Hold Profile ERC Actuals

Word	Description
RLS25	Hold Segment 1
RLS26	Hold Segment 2
RLS27	Hold Segment 3
RLS28	Hold Segment 4
RLS29	Hold Segment 5

Plastication Profile ERC Actuals

Word	Description
RLS30	Plastication Segment 1
RLS31	Plastication Segment 2
RLS32	Plastication Segment 3
RLS33	Plastication Segment 4
RLS34	Plastication Segment 5
RLS35	Plastication Segment 6
RLS36	Plastication Segment 7
RLS37	Plastication Segment 8
RLS38	Plastication Segment 9
RLS39	Plastication Segment 10
RLS40	Plastication Segment 11
RLS41 - 64	Open

SYS – System Status Block   **Bit-mapped Status Words**

Word	Bit	Description
SYS01	B00-B07	Block ID = 00000001
	B08-B15	Power-up Status
	B08	= 0 The module Wants Complete Download = 1 Valid MCC on Board
		Jog Execution Status
	B09	= 0 Normal = 1 Executing Screw Rotate Jog The module sets this bit when responding to command bit DYC01-B09 = 1 and sets its outputs to JGC09 – JGC16.
	B10	= 0 Normal = 1 Executing Ram (Screw) Jog Forward The module sets this bit when responding to command bit DYC01-B10 = 1 and sets its outputs to JGC17 – JGC24.
	B11	= 0 Normal = 1 Executing Ram (Screw) Jog Reverse The module sets this bit when responding to command bit DYC01-B11 = 1 and sets its outputs to JGC25 – JGC32.
	B12	= 0 Normal = 1 Executing Clamp Jog Forward The module sets this bit when responding to command bit DYC01-B12 = 1 and sets its outputs to JGC33 – JGC40.
	B13	= 0 Normal = 1 Executing Clamp Jog Reverse The module sets this bit when responding to command bit DYC01-B13 = 1 and sets its outputs to JGC41 – JGC48.
	B14	= 0 Normal = 1 Executing Ejector Jog Advance The module sets this bit when responding to command bit DYC01-B14 = 1 and sets its outputs to JGC49 – JGC56.
	B15	= 0 Normal = 1 Executing Ejector Jog Retract The module sets this bit when responding to command bit DYC01-B15 = 1 and sets its outputs to JGC57 – JGC64.

Word	Bit	Description
SYS02		Profile Execution Status The module sets each bit, SYS02 - B00 through B14 when: • it completes the profile or movement, or • it receives a new action execution command that terminates the profile or movement The module resets each bit, SYS02 - B00 through B14 when: • it starts the profile or movement, or • it receives a valid DYC with DYC03-B10 SET
	B00	= 0 Normal = 1 First Clamp Close Profile Complete
	B01	= 0 Normal = 1 Second Clamp Close Profile Complete
	B02	= 0 Normal = 1 Third Clamp Close Profile Complete
	B03	= 0 Normal = 1 Clamp Low Pressure Close Profile Complete
	B04	= 0 Normal = 1 Injection Profile Complete
	B05	= 0 Normal = 1 Pack Profile Complete
	B06	= 0 Normal = 1 Hold Profile Complete
	B07	= 0 Normal = 1 Pre-decompression Movement Complete
	B08	= 0 Normal = 1 Plastication Profile Complete
	B09	= 0 Normal = 1 Post-decompression Movement Complete
	B10	= 0 Normal = 1 First Clamp Open Profile Complete
	B11	= 0 Normal = 1 Second Clamp Open Profile Complete
	B12	= 0 Normal = 1 Third Clamp Open Profile Complete
	B13	= 0 Normal = 1 Clamp Open Slow Profile Complete
	B14	= 0 Normal = 1 Ejector Profile Complete
		Module Busy Status
	B15	= 0 Normal = 1 No Action in Progress The module resets this bit when it is performing one of the following: • executing a profile or decompression movement • holding its outputs at any End of phase values • executing any jog movement

Notes: 1. For [ ] engineering units, see page 3.
      2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

SYS

Word	Bit	Description
SYS03		Miscellaneous Status
	B00	= 0 Normal = 1 Clamp in Mold Protection Zone If bit patterns in MCC02 and MCC03 indicate that the module is connected to a clamp position transducer, the module sets this bit when clamp position is equal to or less than the Start Clamp Low Pressure Close position (CPC61).
	B01	= 0 Normal = 1 Mold Safe If bit patterns in MCC02 and MCC03 indicate that the module is connected to a clamp position transducer, the module sets this bit when clamp position is equal to or less than the Mold Safe position (CPC62).
	B02	= 0 Normal = 1 Tonnage Complete If bit patterns in MCC02 and MCC03 indicate that the module is connected to a clamp pressure transducer, the module latches this bit when both of the following are true: • clamp pressure equals or exceeds the Tonnage Pressure (CPC63). • clamp position equals or is less than the Mold Safe position (CPC62). The module unlatches this bit when either of the following are true: • clamp pressure is less than the Tonnage Pressure (CPC63). • clamp position exceeds the Mold Safe position (CPC62).
	B03	= 0 Normal = 1 Cure Timer Timing If bit patterns in MCC02 and MCC03 indicate that the module is connected to a ram (screw) position transducer, the module sets this bit when the internal Cure Timer is timing and the accumulated Cure Time (SYS58) is less than the Cure Timer preset (HPC61).
	B04	= 0 Normal = 1 Ram (Screw) Retracted If bit patterns in MCC02 and MCC03 indicate that the module is connected to a ram (screw) position transducer, the module sets this bit when ram (screw) position equals or exceeds the Full Retract position of Cushion + Shot Size + Post-decompression (PPC61 + PPC62 + PSC05).
	B05	= 0 Normal = 1 Cure Time Complete If bit patterns in MCC02 and MCC03 indicate that the module is connected to a ram (screw) position transducer, the module sets this bit when the accumulated value of its internal Cure Timer (SYS58) equals the Cure Timer preset (HPC61).
	B06	= 0 Normal = 1 Clamp in Open Slow Zone If bit patterns in MCC02 and MCC03 indicate that the module is connected to a clamp position transducer, the module sets this bit when clamp position equals or exceeds the Start Clamp Open Slow position (OPC61).
	B07	= 0 Normal = 1 Mold Open If bit patterns in MCC02 and MCC03 indicate that the module is connected to a clamp position transducer, the module sets this bit when clamp position equals or exceeds the Mold Open position (OPC62) with hysteresis of 0.05" (0.5mm).
	B08	= 0 Normal = 1 Ejector Profile stopped at End of Stroke. If bit patterns in MCC02 and MCC03 indicate that the module is connected to a ejector position transducer, the module: latches this bit if EPC03-B12 is SET and ejector position reaches any of the following: • EPC59 during Ejector Profile full-advance stroke • EPC23 during Ejector Profile tip-retract stroke • EPC29 during Ejector Profile tip-advance stroke • EPC60 during Ejector Profile full-retract stroke when the total advance strokes executed during the profile is less than EPC64 does not latch this bit at completion of final full-retract stroke unlatches this bit when any one of the following occur: • the module decodes a valid DYC having DYC03-B15 SET. • the module decodes a valid EPC having EPC03-B12 RESET. • Early termination of the Ejector Profile is forced by receipt of a new action execution command bit.

Word	Bit	Description
SYS03	B09	= 0 Normal = 1 Open Dwell Timer Timing If bit patterns in MCC02 and MCC03 indicate that the module is connected to a clamp position transducer, the module sets this bit when the internal Mold Open Dwell Timer is timing and the accumulated Mold Open Dwell Time (SYS59) is less than Mold Open Dwell Timer preset (OPC63).
	B10	= 0 Normal = 1 Ejector Forward Dwell Timer Timing If bit patterns in MCC02 and MCC03 indicate that the module is connected to a ejector position transducer, the module sets this bit when the internal Ejector Forward Dwell Timer is timing and its accumulated time is less than its preset (EPC57).
	B11	= 0 Normal = 1 Cycle Complete If bit patterns in MCC02 and MCC03 indicate that the module is connected to a clamp position transducer but *not* an ejector position transducer, the module: • latches this bit on each F-toT transition of SYS02-B13 if OPC63 is zero • latches this bit on each T-to-F transition of SYS03-B09 • unlatches this bit upon receipt of any new action execution command If bit patterns in MCC02 and MCC03 indicate that the module is connected to a clamp position transducer and also an ejector position transducer, the module performs as follows:

if	and	then the module:
OPC63 is zero	EPC03-B09 is SET	latches this bit on each F-to-T transition of SYS02-B13
OPC63 is zero	an action execution command has not been received since the last F-to-T transition of SYS02-B14	latches this bit on each F-to-T transition of SYS02-B13
OPC63 is zero	SYS03-B07 is SET	latches this bit on each F-to-T transition of SYS02-B14
OPC03-B15 is RESET, SYS03-B07 is SET	SYS03-B09 is RESET	latches this bit on each F-to-T transition of SYS02-B14
an action execution command has not been received since the last F-to-T transition of SYS02-B14	N/A	latches this bit on each T-to-F transition of SYS03-B09
it receives any new action execution command	N/A	unlatches this bit

Word	Bit	Description
	B12	= 0 Normal = 1 Ejector Fully Advanced If bit patterns in MCC02 and MCC03 indicate that the module is connected to a ejector position transducer, the module sets this bit when ejector position equals or exceeds the Ejector Fully Advanced position (EPC59).
	B13	= 0 Normal = 1 Ejector Beyond Tip Advance Position If bit patterns in MCC02 and MCC03 indicate that the module is connected to a ejector position transducer, the module: • sets this bit when ejector position equals or exceeds a non-zero Ejector End of Tip Advance position (EPC29) or, • sets this bit when ejector position equals or exceeds the Ejector Fully Advanced position (EPC59) and EPC29 is zero
	B14	= 0 Normal = 1 Ejector Inside Tip Retract Position If bit patterns in MCC02 and MCC03 indicate that the module is connected to a ejector position transducer, the module: • sets this bit when ejector position equals or is less than a non-zero Ejector End of Tip Retract position (EPC23) • sets this bit when ejector position equals or is less than Ejector Fully Retracted position (EPC60) and EPC23 is zero
	B15	= 0 Normal = 1 Ejector Fully Retracted If bit patterns in MCC02 and MCC03 indicate the module is connected to an ejector position transducer, the module sets this bit when ejector position equals or is less than Ejector Fully Retracted position (EPC60) with hysteresis of 0.05" (0.5mm).

Notes: 1. For [ ] engineering units, see page 3.
   2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

SYS

Word	Bit	Description
SYS04		Watchdog Time-Out Status
	B00	= 0 Normal = 1 First Clamp Close Profile Watchdog Time-Out The module sets this bit when the time required for the profile equals or exceeds the Watchdog Timer preset (FCC08). The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile The module does not leave this bit set when holding its outputs to FCC33 - FCC40 at completion of this profile.
	B01	= 0 Normal = 1 Second Clamp Close Profile Watchdog Time-Out The module sets this bit when the time required for the profile equals or exceeds the Watchdog Timer preset (SCC08). The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile The module does not leave this bit set when holding its outputs to SCC33 - SCC40 at completion of this profile.
	B02	= 0 Normal = 1 Third Clamp Close Profile Watchdog Time-Out The module sets this bit when the time required for the profile equals or exceeds the Watchdog Timer preset (TCC08). The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile The module does not leave this bit set when holding its outputs to TCC33 - TCC40 at completion of this profile.
	B03	= 0 Normal = 1 Clamp Low Pressure Close Profile Watchdog Time-Out The module sets this bit when the time required for the profile equals or exceeds the Watchdog Timer preset (LPC08). The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile The module does not leave this bit set when holding its outputs to LPC33 - LPC40 at completion of this profile.
	B04-B06	Open
	B07	= 0 Normal = 1 Pre-decompression Movement Watchdog Time-Out Module sets this bit when the time required for the movement equals or exceeds the Watchdog Timer preset (PRC08). The module resets this bit when: • it completes the movement, or • it receives a new action execution command that terminates the movement The module does not leave this bit set when holding its outputs to PRC33 - PRC40 at completion of this movement.
	B08	= 0 Normal = 1 Plastication Profile Watchdog Time-Out The module sets this bit when the time required for the profile equals or exceeds the Watchdog Timer preset (PLC08). The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile The module does not leave this bit set when holding its outputs to PLC33 - PLC40 at completion of this profile.
	B09	= 0 Normal = 1 Post-decompression Movement Watchdog Time-Out The module sets this bit when the time required for the movement equals or exceeds the Watchdog Timer preset (PSC08). The module resets this bit when: • it completes the movement, or • it receives a new action execution command that terminates the movement The module does not leave this bit set when holding its outputs to PSC33 - PSC40 at completion of this movement.
	B10	= 0 Normal = 1 First Clamp Open Profile Watchdog Time-Out The module sets this bit when the time required for the profile equals or exceeds the Watchdog Timer preset (FOC08). The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile. The module does not leave this bit set when holding its outputs to FOC33 - FOC40 at completion of this profile.

Word	Bit	Description
SYS04	B11	= 0 Normal = 1 Second Clamp Open Profile Watchdog Time-Out The module sets this bit when the time required for the profile equals or exceeds the Watchdog Timer preset (SOC08). The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile The module does not leave this bit set when holding its outputs to SOC33 - SOC40 at completion of this profile.
	B12	= 0 Normal = 1 Third Clamp Open Profile Watchdog Time-Out The module sets this bit when the time required for the profile equals or exceeds the Watchdog Timer preset (TOC08). The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile The module does not leave this bit set when holding its outputs toTOC33 - TOC40 at completion of this profile.
	B13	= 0 Normal = 1 Clamp Open Slow Profile Watchdog Time-Out The module sets this bit when the time required for the profile equals or exceeds the Watchdog Timer preset (OSC08). The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile The module does not leave this bit set when holding its outputs to OSC33 - OSC40 at completion of this profile.
	B14	= 0 Normal = 1 Ejector Profile Watchdog Time-Out The module sets this bit when the time required for the profile equals or exceeds Watchdog Timer preset (EAC08). The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile The module does not leave this bit set when holding its outputs to ERC33 - ERC40 at completion of Ejector Profile.
	B15	= 0 Normal = 1 Tonnage Watchdog Time-Out The module sets this bit when it has completed the Clamp Low Pressure Close Profile and the time required for tonnage build-up equals or exceeds the Watchdog Timer preset (LPC07). The module resets this bit when: • it sets SYS03-B02, or • a new execution command bit forces termination of tonnage build-up
SYS05		High Pressure Alarm Status (Real Time)
		The module sets alarm bits on a real-time basis. These bits are not latched. You can inhibit each bit by setting its associated alarm setpoint to zero.
	B00	= 0 Normal = 1 High Ram (Screw) Pressure The module sets this bit when real-time ram (screw) pressure equals or exceeds MCC21.
	B01	= 0 Normal = 1 High Clamp Pressure The module sets this bit when real-time clamp pressure equals or exceeds MCC35.
	B02	= 0 Normal = 1 High Ejector Pressure The module sets this bit when real-time ejector pressure equals or exceeds MCC49.
	B03	= 0 Normal = 1 High Screw RPM The module sets this bit when real-time screw RPM equals or exceeds MCC55.
	B04	= 0 Normal = 1 High Cavity (or System) Pressure The module sets this bit when real-time cavity (or system) pressure equals or exceeds MCC61.
	B05-B07	Open

Notes: 1. For [ ] engineering units, see page 3.
       2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Word	Bit	Description
	B08	= 0 Normal = 1 High Screw Rotate Jog RPM The module sets this bit when responding to command DYC01-B09 = 1 and real-time screw RPM equals or exceeds JGC05.
	B09	= 0 Normal = 1 High Ram (Screw) Jog Pressure The module sets this bit when responding to command DYC01-B10 = 1 or DYC01-B11 = 1 and real-time ram (screw) pressure equals or exceeds JGC06.
	B10	= 0 Normal = 1 High Clamp Jog Pressure The module sets this bit when responding to command DYC01-B12 = 1 or DYC01-B13 = 1 and real-time clamp pressure equals or exceeds JGC07.
	B11	= 0 Normal = 1 High Ejector Jog Pressure The module sets this bit when responding to command DYC01-B14 = 1 or DYC01-B15 = 1 and real-time ejector pressure equals or exceeds JGC08.
	B12	= 0 Normal = 1 First Clamp Close Profile High Clamp Pressure The module sets this bit when real-time clamp pressure equals or exceeds FCC57.
	B13	= 0 Normal = 1 Second Clamp Close Profile High Clamp Pressure The module sets this bit when real-time clamp pressure equals or exceeds SCC57.
	B14	= 0 Normal = 1 Third Clamp Close Profile High Clamp Pressure The module sets this bit when real-time clamp pressure equals or exceeds TCC57.
	B15	= 0 Normal = 1 Clamp Low Press Close Profile High Clamp Pressure The module sets this bit when real-time clamp pressure equals or exceeds LPC57.
SYS06		High Pressure Alarm Status (Real Time) The module sets alarm bits on a real-time basis. These bits are not latched. You can inhibit each bit by setting its associated alarm setpoint to zero.
	B00	= 0 Normal = 1 Injection Profile High Ram (Screw) Pressure The module sets this bit when real-time ram (screw) pressure equals or exceeds INC57.
	B01	= 0 Normal = 1 Injection Profile High Cavity Pressure The module sets this bit when real-time cavity pressure equals or exceeds INC58.
	B02	= 0 Normal = 1 Pack Profile High Ram (Screw) Pressure The module sets this bit when real-time ram (screw) pressure equals or exceeds PKC57.
	B03	= 0 Normal = 1 Pack Profile High Cavity Pressure The module sets this bit when real-time cavity pressure equals or exceeds PKC58.
	B04	= 0 Normal = 1 Hold Profile High Ram (Screw) Pressure The module sets this bit when real-time ram (screw) pressure equals or exceeds HDC57.
	B05	= 0 Normal = 1 Hold Profile High Cavity Pressure The module sets this bit when real-time cavity pressure equals or exceeds HDC58.
	B06	= 0 Normal = 1 Pre-decompress Movement High Ram (Screw) Pressure The module sets this bit when real-time ram (screw) pressure equals or exceeds PRC57.
	B07	= 0 Normal = 1 Plastication Profile High Ram (Screw) Pressure The module sets this bit when real-time ram (screw) pressure equals or exceeds PLC57.

Word	Bit	Description
SYS06	B08	= 0 Normal = 1 Post-decompress Movement High Ram (Screw) Pressure The module sets this bit when real-time ram (screw) pressure equals or exceeds PSC57.
	B09	= 0 Normal = 1 First Clamp Open Profile High Clamp Pressure The module sets this bit when real-time clamp pressure equals or exceeds FOC57.
	B10	= 0 Normal = 1 Second Clamp Open Profile High Clamp Pressure The module sets this bit when real-time clamp pressure equals or exceeds SOC57.
	B11	= 0 Normal = 1 Third Clamp Open Profile High Clamp Pressure The module sets this bit when real-time clamp pressure equals or exceeds TOC57.
	B12	= 0 Normal = 1 Clamp Open Slow Profile High Clamp Pressure The module sets this bit when real-time clamp pressure equals or exceeds OSC57.
	B13	= 0 Normal = 1 Ejector Profile High Ejector Pressure The module sets this bit when real-time ejector pressure equals or exceeds EAC57.
	B14 - B15	Open
SYS07		Overtravel Alarm Status (Real Time) The module sets alarm bits in real time. These bits are not latched. You can inhibit each bit by setting its associated alarm setpoint to zero.
	B00	= 0 Normal = 1 Ram (Screw) Overtravel at Bottom The module sets this bit when real-time ram (screw) position is less than or equal to MCC13. The module resets this bit when real-time position equals or exceeds the position defined by MCC13 + MCC15. When SET, the module ignores any profile action execution command in DYC02.
	B01	= 0 Normal = 1 Ram (Screw) Overtravel at Top The module sets this bit when real-time ram (screw) position equals or exceeds MCC14. The module resets this bit when real-time position is less than or equal to the position defined by MCC14 – MCC15. When SET, the module ignores any profile action execution command in DYC02.
	B02	= 0 Normal = 1 Clamp Overtravel on Close The module sets this bit when real-time clamp position is less than or equal to MCC27. The module resets this bit when real-time clamp position equals or exceeds the position defined by MCC27 + MCC29. When SET, the module ignores any profile action execution command in DYC02.
	B03	= 0 Normal = 1 Clamp Overtravel on Open The module sets this bit when real-time clamp position equals or exceeds MCC28. The module resets this bit when real-time clamp position is less than or equal to the position defined by MCC28 – MCC29. When SET, the module ignores any profile action execution command in DYC02.
	B04	= 0 Normal = 1 Ejector Overtravel on Retract The module sets this bit when real-time ejector position is less than or equal to MCC41. The module resets this bit when real-time ejector position equals or exceeds the position defined by MCC41 + MCC43. When SET, the module ignores any profile action execution command in DYC02.
	B05	= 0 Normal = 1 Ejector Overtravel on Advance The module sets this bit when real-time ejector position equals or exceeds MCC42. The module resets this bit when real-time ejector position is less than or equal to the position defined by MCC42 – MCC43. When SET, the module ignores any profile action execution command in DYC02
	B06	= 0 Normal = 1 Clamp Close Profile Overtravel into Mold Protection Zone The module sets this bit during one of the first three Clamp Close Profiles when real-time clamp position is less than or equal to CPC61. Module resets this bit on next false-to-true transition of an action execution bit in DYC01 or DYC02.

Notes: 1. For [ ] engineering units, see page 3.
  2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

SYS

Word	Bit	Description
	B07	= 0 Normal = 1 Clamp Open Profile Overtravel into Open Slow Zone The module sets this bit during one of the first three Clamp Open Profiles when real-time clamp position equals or exceeds OPC61. The module resets this bit on next false-to-true transition of an action execution bit in DYC01 or DYC02.
	B08-B15	Reserved for the module. Do not use.
SYS08		Alarm Status for Loss of Input Sensor (Real Time). The module sets alarm bits in real time. These bits are not latched.
	B00	= 0 Normal = 1 Loss of Ram (Screw) Position Sensor (Set MCC64 to inhibit) If bit patterns in MCC02 and MCC03 indicate that the module is connected to a ram (screw) position transducer, the module sets this bit when it detects a loss of signal input from the transducer. When this bit is SET, the module stops any profile in progress and ignores any action execution command in DYC02 unless MCC64 is SET.
	B01	= 0 Normal = 1 Loss of Ram (Screw) Pressure Sensor (Set MCC64 to inhibit) If bit patterns in MCC02 and MCC03 indicate that the module is connected to a ram (screw) pressure transducer, the module sets this bit when it detects a loss of signal input from the transducer. When this bit is SET, the module stops any profile in progress and ignores any action execution command in DYC02 unless MCC64 is SET.
	B02	= 0 Normal = 1 Loss of Clamp Position Sensor If bit patterns in MCC02 and MCC03 indicate that the module is connected to a clamp position transducer, the module sets this bit when it detects a loss of signal input from the transducer. When this bit is SET, the module stops any profile in progress and ignores any action execution command in DYC02 unless MCC64 is SET.
	B03	= 0 Normal = 1 Loss of Clamp Pressure Sensor If bit patterns in MCC02 and MCC03 indicate that the module is connected to a clamp pressure transducer, the module sets this bit when it detects a loss of signal input from the transducer. When this bit is SET, the module stops any profile in progress and ignores any action execution command in DYC02 unless MCC64 is SET.
	B04	= 0 Normal = 1 Loss of Ejector Position Sensor If bit patterns in MCC02 and MCC03 indicate that the module is connected to a ejector position transducer, the module sets this bit when it detects a loss of signal input from the transducer. When this bit is SET, the module stops any profile in progress and ignores any action execution command in DYC02 unless MCC64 is SET.
	B05	= 0 Normal = 1 Loss of Ejector Pressure Sensor If bit patterns in MCC02 and MCC03 indicate that the module is connected to a ejector pressure transducer, the module sets this bit when it detects a loss of signal input from the transducer. When this bit is SET, the module stops any profile in progress and ignores any action execution command in DYC02 unless MCC64 is SET.
	B06	= 0 Normal = 1 Loss of Ram (Screw) RPM Sensor (Set MCC64 to inhibit) If bit patterns in MCC02 and MCC03 indicate that the module is connected to a screw RPM transducer, the module sets this bit when it detects a loss of signal input from the transducer. When this bit is SET, the module stops any profile in progress and ignores any action execution command in DYC02 unless MCC64 is SET.
	B07	= 0 Normal = 1 Loss of Cavity (or System) Pressure Sensor (Set MCC64 to inhibit) If bit patterns in MCC02 and MCC03 indicate that the module is connected to a cavity pressure transducer, the module sets this bit when it detects a loss of signal input from the transducer. When this bit is SET, the module stops any profile in progress and ignores any action execution command in DYC02 unless MCC64 is SET.
	B08-B15	Open

Word	Bit	Description
SYS09		High Pressure Alarm Status (Latched)
		The module latches alarm bits on each false-to-true transition of the corresponding real-time alarm bit in SYS05. The module unlatches all 16 bits when it receives a false- to-true transition of DYC03-B09. You can inhibit each bit by setting its associated alarm setpoint to zero.
	When this bit is latched ON:	the module detected this alarm:
	B00	High Ram (Screw) Pressure
	B01	High Clamp Pressure
	B02	High Ejector Pressure
	When this bit is latched ON:	the module detected this alarm:
	B03	High Screw RPM
	B04	High Cavity (or System) Pressure
	B05-B07	Open
	B08	High Screw Rotate Jog RPM
	B09	High Ram (Screw) Jog Pressure
	B10	High Clamp Jog Pressure
	B11	High Ejector Jog Pressure
	B12	First Clamp Close Profile High Clamp Pressure
	B13	Second Clamp Close Profile High Clamp Pressure
	B14	Third Clamp Close Profile High Clamp Pressure
	B15	Clamp Low Press Close Profile High Clamp Pressure
SYS10		High Pressure Alarm Status (Latched)
		The module latches alarm bits on each false-to-true transition of the corresponding real-time alarm bit in SYS06. The module unlatches all 16 bits when it receives a false-to-true transition of DYC03-B09. You can inhibit each bit by setting its associated alarm setpoint to zero.
	When this bit is latched ON:	the module detected this alarm:
	B00	Injection Profile High Ram (Screw) Pressure
	B01	Injection Profile High Cavity Pressure
	B02	Pack Profile High Ram (Screw) Pressure
	B03	Pack Profile High Cavity Pressure
	B04	Hold Profile High Ram (Screw) Pressure
	B05	Hold Profile High Cavity Pressure
	B06	Pre-decompress Movement High Ram (Screw) Pressure
	B07	Plastication Profile High Ram (Screw) Pressure
	B08	Post-decompress Movement High Ram (Screw) Pressure
	B09	First Clamp Open Profile High Clamp Pressure
	B10	Second Clamp Open Profile High Clamp Pressure
	B11	Third Clamp Open Profile High Clamp Pressure
	B12	Clamp Open Slow Profile High Clamp Pressure
	B13	Ejector Profile High Ejector Pressure
	B14-B15	Open
SYS11		Overtravel Alarm Status (Latched)
		The module latches alarm bits on each false-to-true transition of the corresponding real-time alarm bit in SYS07. The module unlatches all 16 bits when it receives a false-to-true transition of DYC03-B09. You can inhibit each bit by setting its associated alarm setpoint to zero.
	When this bit is latched ON:	the module detected this alarm:
	B00	Ram (Screw) Overtravel at Bottom
	B01	Ram (Screw) Overtravel at Top

Notes: 1. For [ ] engineering units, see page 3.
      2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

SYS

Word	Bit	Description
	B02	Clamp Overtravel on Close
	B03	Clamp Overtravel on Open
	When this bit is latched ON:	the module detected this alarm:
	B04	Ejector Overtravel on Retract
	B05	Ejector Overtravel on Advance
	B06	Clamp Close Profile Overtravel into Mold Protection Zone
	B07	Clamp Open Profile Overtravel into Open Slow Zone
	B08-B15	Reserved for the module. Do not use.
SYS12		Alarm Status for Loss of Input Sensor (Latched)
		The module latches alarm bits on each false-to-true transition of the corresponding real-time alarm bit in SYS08. The module unlatches all 16 bits when it receives a false-to-true transition of DYC03-B09.
	When this bit is latched ON,	the module detected this alarm
	B00	Loss of Ram (Screw) Position Sensor (except when MCC64 is SET)
	B01	Loss of Ram (Screw) Pressure Sensor (except when MCC64 is SET)
	B02	Loss of Clamp Position Sensor (except when MCC64 is SET)
	B03	Loss of Clamp Pressure Sensor (except when MCC64 is SET)
	B04	Loss of Ejector Position Sensor (except when MCC64 is SET)
	B05	Loss of Ejector Pressure Sensor (except when MCC64 is SET)
	B06	Loss of Screw RPM Sensor (except when MCC64 is SET)
	B07	Loss of Cavity Pressure Sensor (except when MCC64 is SET)
	B08-B15	Open
SYS13		Action-execution Command Errors
	B00	= 0 Normal = 1 Jog Command Error The module latches this bit when SYS15-B01 is RESET and one of the following is true: • DYC01-B09 is SET • DYC01-B10 is SET • DYC01-B11 is SET • DYC01-B12 is SET • DYC01-B13 is SET • DYC01-B14 is SET • DYC01-B15 is SET The module unlatches this bit when it decodes a valid DYC Block with any SET action execution bit other than the ones listed above.
	B01	= 0 Normal = 1 First Clamp Close Profile Command Error The module latches this bit when all of the following are true: • DYC02-B00 is SET • CPC03-B08 is SET • SYS15-B02 is RESET The module also latches this bit when both of the following are true: • DYC02-B00 is SET • SYS15-B06 is RESET Module unlatches this bit when it decodes a valid DYC Block with any SET action execution bit other than DYC02-B00.

Word	Bit	Description
SYS13	B02	= 0 Normal = 1 Second Clamp Close Profile Command Error The module latches this bit when both of the following are true: • DYC02-B01 is SET • SYS15-B06 is RESET The module unlatches this bit when it decodes a valid Dynamic Command Block with any SET action execution bit other than DYC02-B01.
	B03	= 0 Normal = 1 Third Clamp Close Profile Command Error The module latches this bit when both of the following are true: • DYC02-B02 is SET • SYS15-B06 is RESET The module unlatches this bit when it decodes a valid Dynamic Command Block with any SET action execution bit other than DYC02-B02.
	B04	= 0 Normal = 1 Clamp Low Pressure Close Profile Command Error The module latches this bit when both of the following are true: • DYC02-B03 is SET • SYS15-B06 is RESET The module unlatches this bit when it decodes a valid Dynamic Command Block with any SET action execution bit other than DYC02-B03.
	B05	= 0 Normal = 1 Injection Profile Command Error The module latches this bit when both of the following are true: • DYC02-B04 is SET • SYS15-B08 is RESET The module unlatches this bit when it decodes a valid Dynamic Command Block with any SET action execution bit other than DYC02-B04.
	B06	= 0 Normal = 1 Pack Profile Command Error The module latches this bit when both of the following are true: • DYC02-B05 is SET • the Injection Profile completes The module unlatches this bit when it decodes a valid Dynamic Command Block with any SET action execution bit other than DYC02-B05.
	B07	= 0 Normal = 1 Hold Profile Command Error The module latches this bit when both of the following are true: • DYC02-B06 is SET • SYS15-B11 is RESET The module unlatches this bit when it decodes a valid Dynamic Command Block with any SET action execution bit other than DYC02-B06.
	B08	= 0 Normal = 1 Pre-decompression Movement Command Error The module latches this bit at completion of the Hold Profile if all of the following are true: • HPC03-B08 is RESET • HPC03-B09 is SET • SYS15-B12 is RESET The module also latches this bit if all of the following are true: • DYC02-B07 is SET • HPC03-B09 is SET • SYS15-B12 is RESET The module also latches this bit if both of the following are true: • DYC02-B07 is SET • SYS15-B11 is RESET The module also latches this bit if both of the following are true: • DYC02-B07 is SET • PRC05 added to the actual ram (screw) position equals or exceeds MCC12 Module unlatches this bit when it decodes a valid DYC Block with any SET action execution bit other than DYC02-B07.

Notes: 1. For [ ] engineering units, see page 3.
       2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Word	Bit	Description
	B09	= 0 Normal = 1 Plastication Profile Command Error The module latches this bit at completion of the Hold Profile if all of the following are true: • HPC03-B08 is RESET • SYS15-B12 is RESET • HPC03-B09 is RESET • SYS15-B14 is RESET The module also latches this bit at completion of the Pre-decompression Movement if both of the following are true: • HPC03-B09 is RESET • SYS15-B14 is RESET The module also latches this bit if all of the following are true: • DYC02-B07 is RESET • PRC05 equal zero • HPC03-B09 is RESET • SYS15-B14 is RESET The module also latches this bit if all of the following are true: • DYC02-B07 is RESET • SYS15-B12 is RESET • HPC03-B09 is RESET • SYS15-B14 is RESET The module also latches this bit if both of the following are true: • DYC02-B08 is SET • SYS15-B14 is RESET The module unlatches this bit when it decodes a valid DYC Block with any SET action execution bit other than DYC02-B07 or DYC02-B08.
	B10	= 0 Normal = 1 Post-decompression Movement Command Error The module latches this bit at completion of the Plastication Profile if both of the following are true: • PPC03-B08 is RESET • SYS15-B15 is RESET The module also latches this bit if all of the following are true: • Ram (screw) position equals or exceeds the sum of PPC61 and PPC62 • PPC03-B08 is RESET • SYS15-B15 is RESET The module also latches this bit if both of the following are true: • DYC02-B09 is SET • SYS15-B15 is RESET The module also latches this bit if both of the following are true: • DYC02-B09 is SET • PSC05 added to the actual ram (screw) position equals or exceeds MCC12 The module unlatches this bit when it decodes a valid Dynamic Command Block with any SET action execution bit other than DYC02-B08 or DYC02-B09.
	B11	= 0 Normal = 1 First Clamp Open Profile Command Error The module latches this bit when all of the following are true: • DYC02-B10 is SET • OPC03-B08 is SET • SYS16-B00 is RESET The module also latches this bit when both of the following are true: • DYC02-B10 is SET • SYS16-B04 is RESET Module unlatches this bit when it decodes a valid DYC Block with any SET action execution bit other than DYC02-B10.

Word	Bit	Description
SYS13	B12	= 0 Normal = 1 Second Clamp Open Profile Command Error The module latches this bit when both of the following are true: • DYC02-B11 is SET • SYS16-B04 is RESET Module unlatches this bit when it decodes a valid DYC Block with any SET action execution bit other than DYC02-B11.
	B13	= 0 Normal = 1 Third Clamp Open Profile Command Error The module latches this bit when both of the following are true: • DYC02-B12 is SET • SYS16-B04 is RESET Module unlatches this bit when it decodes a valid DYC Block with any SET action execution bit other than DYC02-B12.
	B14	= 0 Normal = 1 Clamp Open Slow Profile Command Error The module latches this bit when both of the following are true: • DYC02-B13 is SET • SYS16-B04 is RESET Module unlatches this bit when it decodes a valid DYC Block with any SET action execution bit other than DYC02-B13.
	B15	= 0 Normal = 1 Ejector Profile Command Error The module latches this bit when both of the following are true: • DYC02-B14 is SET. • SYS16-B07 is RESET. Module unlatches this bit when it decodes a valid DYC Block with any SET action execution bit other than DYC02-B14.
SYS14		Miscellaneous
	B00	= 0 Normal = 1 Dual-command Error The module latches this bit when it decodes a valid Dynamic Command Block having more than one of the twenty-four action execution command bits SET. Bits DYC01-B08 through DYC01-B15 and all 16 bits in DYC02 are the 24 action execution commands available to the end user for control of the module. The module unlatches this bit when it decodes a valid Dynamic Command Block having one or none of the action execution bits SET.
	B01	Open
		Command Block Rejection Errors The module discards and does not attempt to decode any command block associated with a profiled movement in progress.
	B02	= 0 Normal = 1 Clamp Close Command Block Rejected The module latches this bit when it receives an FCC, SCC, TCC, LPC, or CPC for decode and any one of SYS21-B00 - SYS21-B03 is SET. The module unlatches this bit when it receives an FCC, SCC, TCC, LPC, or CPC for decode and all of SYS21-B00 - SYS21-B03 are RESET.
	B03	= 0 Normal = 1 Injection Command Block Rejected The module latches this bit when it receives an INC or IPC for decode and SYS21-B04 is SET. The module unlatches this bit when it receives an INC or IPC for decode and SYS21-B04 is RESET.

Notes: 1. For [ ] engineering units, see page 3.
           2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.
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SYS

Word	Bit	Description
	B04	= 0 Normal = 1 Pack/Hold Command Block Rejected The module latches this bit when it receives a PKC, HDC, HPC, or PRC for decode and any one of SYS21-B05 - SYS21-B07 is SET. The module unlatches this bit when it receives a PKC, HDC, HPC, or PRC for decode and all of SYS21-B05 - SYS21-B07 are RESET.
	B05	= 0 Normal = 1 Plastication Command Block Rejected The module latches this bit when it receives a PLC, PPC, or PSC for decode and SYS21-B08 or SYS21-B09 is SET. The module unlatches this bit when it receives a PLC, PPC, or PSC for decode and both SYS21-B08 and SYS21-B09 are RESET.
	B06	= 0 Normal = 1 Clamp Open Command Block Rejected The module latches this bit when it receives an FOC, SOC, TOC, OSC, or OPC for decode and any one of SYS21-B10 - SYS21-B13 is SET. The module unlatches this bit when it receives an FOC, SOC, TOC, OSC, or OPC for decode and all of SYS21-B10 - SYS21-B13 are RESET.
	B07	= 0 Normal = 1 Ejector Command Block Rejected The module latches this bit when it receives an EAC, ERC, or EPC for decode and SYS21-B14 is SET. The module unlatches this bit when it receives an EAC, ERC, or EPC for decode and SYS21-B14 is RESET.
	B08	= 0 Normal = 1 Ejector Not Back The module latches this bit and ignores the action execution command if ejector position exceeds EPC63 when the module decodes a valid Dynamic Command block having one of the following four action execution command bits SET. DYC02-B00 - Execute First Close Profile DYC02-B01 - Execute Second Close Profile DYC02-B02 - Execute Third Close Profile DYC02-B03 - Execute LP Close Profile The module latches this bit and sets its outputs to zero if it is executing one of the four clamp close profiles and the ejector achieves a position greater than EPC63. The module unlatches this bit when ejector position equals or is less than EPC63, or when the module decodes a valid DYC having all four action execution command bits RESET.
	B09	= 0 Normal = 1 Ejector Action Prohibited The module latches this bit and ignores the action execution command if EPC03-B09 is RESET and clamp position equals or is less than EPC62 when the module decodes a valid DYC having DYC02-B14 or DYC03-B15 is SET. The module latches this bit and sets its outputs to zero if clamp position equals or is less than EPC62 during the Ejector Profile. The module unlatches this bit when clamp position exceeds EPC62, or when the module decodes a valid DYC having DYC02-B14 and DYC03-B15 RESET.
	B09	= 0 Normal = 1 Ejector Action Prohibited The module latches this bit and ignores the action execution command if EPC03-B09 is RESET and clamp position equals or is less than EPC62 when the module decodes a valid DYC having DYC02-B14 or DYC03-B15 is SET. The module latches this bit and sets its outputs to zero if clamp position equals or is less than EPC62 during the Ejector Profile. The module unlatches this bit when clamp position exceeds EPC62, or when the module decodes a valid DYC having DYC02-B14 and DYC03-B15 RESET.
	B10	The module latches this bit when it receives a PTC block for decode, and SYS53-B00 is SET. The module unlatches this bit when it receives a PTC block for decode, and SYS53-B00 is RESET. Process trace command rejected.
	B11-B15	Open

Word	Bit	Description
SYS15		Status of On-board Command Blocks The module latches bits individually when it successfully decodes the referenced command block and places new data into operational memory. The module does not latch any bit associated with an unrecognizable command block. The module unlatches all bits in this word: • on power start-up, or • when it receives a new MCC for decode
	When this bit is latched ON:	this on-board block is valid:
	B00	MCC
	B01	JGC
	B02	FCC
	B03	SCC
	B04	TCC
	B05	LPC
	B06	CPC The module also unlatches this bit when it successfully decodes a new FCC, SCC, TCC, or LPC.
	B07	INC
	B08	IPC The module also unlatches this bit when it successfully decodes a new INC.
	B09	PKC
	B10	HDC
	B11	HPC The module also unlatches this bit when it successfully decodes a new PKC or HDC.
	B12	PRC
	B13	PLC
	B14	PPC The module also unlatches this bit when it successfully decodes a new PLC.
	B15	PSC
SYS16		Status of On-board Command Block
		The module latches bits individually when it successfully decodes the referenced command block and places new data into operational memory. The module does not latch any bit associated with an unrecognizable command block. The module unlatches all bits in this word on power start-up or when it receives a new MCC for decoding.
	When this bit is latched ON:	this on-board block is valid:
	B00	FOC
	B01	SOC
	B02	TOC
	B03	OSC
	B04	OPC The module also unlatches this bit when it successfully decodes a new FOC, SOC, TOC, or OPC.
	B05	EAC
	When this bit is latched ON:	this on-board block is valid:
	B06	ERC
	B07	EPC The module also unlatches this bit when it successfully decodes a new EAC or ERC.
	B08	DYC
	B09	RLC
	B10	CLC
	B11	PTC
	B12-B15	Open

Notes: 1. For [ ] engineering units, see page 3.
　　　2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

SYS

Word	Bit	Description
SYS17		Status of Last Successful Decode
		The module latches one of the bits in SYS17 and SYS18 (while unlatching all others) when it successfully decodes the referenced command block and places the new data into operational memory. The module does not latch any bit associated with an unrecognizable command block. Set no more than one bit at a time in SYS17 and SYS18.
	When this bit is latched ON:	last successful decode was:
	B00	MCC
	B01	JCC
	B02	FCC
	B03	SCC
	B04	TCC
	B05	LPC
	B06	CPC
	B07	INC
	B08	IPC
	B09	PKC
	B10	HDC
	B11	HPC
	B12	PRC
	B13	PLC
	B14	PPC
	B15	PSC
SYS18		Status of Last Successful Decode
		The module latches one of the bits in SYS17 and SYS18 (while unlatching all others) when it successfully decodes the referenced command block and places the new data into operational memory. The module does not latch any bit associated with an unrecognizable command block. Set no more than one bit at a time in SYS17 and SYS18.
	When this bit is latched ON:	last successful decode was:
	B00	FOC
	B01	SOC
	B02	TOC
	B03	OSC
	B04	OPC
	B05	EAC
	B06	ERC
	When this bit is latched ON:	last successful decode was:
	B07	EPC
	B08	DYC
	B09	RLC
	B10	CLC
	B11	PTC
	B12-B15	Open

Word	Bit	Description
SYS19		Programming-error Alarms
		The module latches bits when it attempts to decode a newly received copy of the subject command block and is forced to discard the data due to the presence of a programming error in the newly received block. The module does not latch any bit associated with an unrecognizable command block. The module unlatches each bit when it successfully de-codes the referenced command block and places the new data into operational memory.
	When this bit is latched ON:	the module detected a programming error in:
	B00	MCC The module ceases all action execution and sets its outputs to zero when forced to set this bit. The module does not respond to any action execution commands as long as this bit remains SET.
	B01	JGC
	B02	FCC
	B03	SCC
	B04	TCC
	B05	LPC
	B06	CPC
	B07	INC
	B08	IPC
	B09	PKC
	B10	HDC
	B11	HPC
	B12	PRC
	B13	PLC
	B14	PPC
	B15	PSC
SYS20		Programming-error Alarms
		The module latches bits when it attempts to decode a newly received copy of the subject command block and is forced to discard the data due to the presence of a programming error in the newly received block. The module does not latch any bit associated with an unrecognizable command block. The module unlatches each bit when it successfully de-codes the referenced command block and places the new data into operational memory.
	When this bit is latched ON:	the module detected a programming error in:
	B00	FOC
	B01	SOC
	B02	TOC
	B03	OSC
	B04	OPC
	When this bit is latched ON:	the module detected a programming error in:
	B05	EAC
	B06	ERC
	B07	EPC
	B08	DYC The module ceases all action execution and sets its outputs to zero when forced to set this bit. The module does not respond to any action execution commands as long as this bit remains SET.
	B09	RLC
	B10	CLC
	B11	PTC
	B12-B15	Open

Notes: 1. For [ ] engineering units, see page 3.
        2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

SYS

Word	Bit	Description
SYS21		Status of Profile Execution
	B00	= 0 Normal = 1 First Clamp Close Profile in Progress The module sets this bit when it starts the profile. The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile Module does not leave this bit set when holding outputs to FCC33 - 40 at completion of the First Clamp Close profile.
	B01	= 0 Normal = 1 Second Clamp Close Profile in Progress The module sets this bit when it starts the profile. The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile Module does not leave this bit set when holding outputs to SCC33 - 40 at completion of Second Clamp Close profile.
	B02	= 0 Normal = 1 Third Clamp Close Profile in Progress The module sets this bit when it starts the profile. The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile Module does not leave this bit set when holding outputs to TCC33 - 40 at completion of the Third Clamp Close profile.
	B03	= 0 Normal = 1 Low Pressure Close (LPC) Profile in Progress The module sets this bit when it starts the profile. The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile Mdule does not leave this bit set when holding outputs to LPC33 - 40 at completion of Clamp LPC profile.
	B04	= 0 Normal = 1 Injection Profile in Progress The module sets this bit when it starts the profile. The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile
	B05	= 0 Normal = 1 Pack Profile in Progress The module sets this bit when it starts the profile. The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile
	B06	= 0 Normal = 1 Hold Profile in Progress The module sets this bit when it starts the profile. The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile The module does not leave this bit set when holding outputs to HDC33 - 40 at completion of the hold profile.
	B07	= 0 Normal = 1 Pre-decompression Movement in Progress The module sets this bit when it starts the movement. The module resets this bit when: • it completes the movement, or • it receives a new action execution command that terminates the movement Module does not leave this bit set when holding outputs to PRC33 - 40 at completion of Pre-decompression movement.

Word	Bit	Description
SYS21	B08	= 0 Normal = 1 Plastication Profile in Progress The module sets this bit when it starts the profile. The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile Module does not leave this bit set when holding outputs to PLC33 - 40 at completion of the plastication profile.
	B09	= 0 Normal = 1 Post-decompression Movement in Progress The module sets this bit when it starts the movement. The module resets this bit when: • it completes the movement, or • it receives a new action execution command that terminates the movement Module does not leave this bit set when holding outputs to PSC33 - 40 at completion of Post-decompression movement
	B10	= 0 Normal = 1 First Clamp Open Profile in Progress The module sets this bit when it starts the profile. The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile Module does not leave this bit set when holding outputs to FOC33 - 40 at completion of the First Clamp Open profile.
	B11	= 0 Normal = 1 Second Clamp Open Profile in Progress The module sets this bit when it starts the profile. The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile Module does not leave this bit set when holding outputs to SOC33 - 40 at completion of the second clamp open profile.
	B12	= 0 Normal = 1 Third Clamp Open Profile in Progress The module sets this bit when it starts the profile. The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile Module does not leave this bit set when holding outputs to TOC33 - 40 at completion of the third clamp open profile.
	B13	= 0 Normal = 1 Clamp Open Slow Profile in Progress The module sets this bit when it starts the profile The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile Module does not leave this bit set when holding outputs to OSC33 - 40 at completion of the clamp open slow profile.
	B14	= 0 Normal = 1 Ejector Profile in Progress The module sets this bit when it starts the profile. The module resets this bit when: • it completes the profile, or • it receives a new action execution command that terminates the profile The module does not leave this bit set when holding outputs to ERC33 - 40 at completion of the ejector profile.
	B15	Open

Word	Bit	Description
SYS22		Status of End of Profile Set-Output Execution
	B00	= 0 Normal = 1 End of First Clamp Close Profile Set-Output in Progress The module sets this bit when holding its outputs to FCC33 - FCC40 after completion of the profile. The module resets this bit when it receives any new action execution command bit.
	B01	= 0 Normal = 1 End of Second Clamp Close Profile Set-Output in Progress The module sets this bit when holding its outputs to SCC33 - 40 after completion of the profile. The module resets this bit when it receives any new action execution command bit.
	B02	= 0 Normal = 1 End of Third Clamp Close Profile Set-Output in Progress The module sets this bit when holding its outputs to TCC33 - TCC40 after completion of the profile. The module resets this bit when it receives any new action execution command bit.
	B03	= 0 Normal = 1 End of Clamp LP Close Profile Set-Output in Progress The module sets this bit when holding its outputs to LPC33 - LPC40 after completion of the profile. The module resets this bit when it receives any new action execution command bit.
	B04	= 0 Normal = 1 Open
	B05	= 0 Normal = 1 Open
	B06	= 0 Normal = 1 End of Hold Profile Set-Output in Progress The module sets this bit when holding its outputs to HDC33 - HDC40 after completion of the profile. The module resets this bit when it receives any new action execution command bit.
	B07	= 0 Normal = 1 End of Pre-decompression Movement Set-Output in Progress The module sets this bit when holding its outputs to PRC33 - PRC40 after completion of the movement. The module resets this bit when it receives any new action execution command bit.
	B08	= 0 Normal = 1 End of Plastication Profile Set-Output in Progress The module sets this bit when holding its outputs to PLC33 - PLC40 after completion of the profile. The module resets this bit when it receives any new action execution command bit.
	B09	= 0 Normal = 1 End of Post-decompression Movement Set-Output in Progress The module sets this bit when holding its outputs in PSC33 - PSC40 after completion of the movement. The module resets this bit when it receives any new action execution command bit.
	B10	= 0 Normal = 1 End of First Clamp Open Profile Set-Output in Progress The module sets this bit when holding its outputs to FOC33 - FOC40 after completion of the profile. The module resets this bit when it receives any new action execution command bit.
	B11	= 0 Normal = 1 End of Second Clamp Open Profile Set-Output in Progress The module sets this bit when holding its outputs to SOC33 - SOC40 after completion of the profile. The module resets this bit when it receives any new action execution command bit.
	B12	= 0 Normal = 1 End of Third Clamp Open Profile Set-Output in Progress The module sets this bit when holding its outputs to TOC33 - TOC40 after completion of the profile. The module resets this bit when it receives any new action execution command bit.
	B13	= 0 Normal = 1 End of Clamp Open Slow Profile Set-Output in Progress The module sets this bit when holding its outputs to OSC33 - OSC40 after completion of the profile. The module resets this bit when it receives any new action execution command bit.
	B14	= 0 Normal = 1 End of Ejector Advance Set-Output in Progress The module sets this bit when holding its outputs to EAC33 - EAC40 after completion of an ejector advance stroke. The module resets this bit when it receives any new action execution command bit, or when commanded to continue the ejector profile by DYC03-B15 = 1.

Word	Bit	Description
	B15	= 0 Normal = 1 End of Ejector Retract Set-Output in Progress The module sets this bit when holding its outputs to ERC33 - ERC40 after completion of an ejector retract stroke. The module resets this bit when it receives any new action execution command bit, or when commanded to continue the ejector profile by DYC03-B15 = 1.
SYS23		Double command error. You can determine from DYC01 which bits were set or downloaded at the same time.
SYS24		Double command error. You can determine from DYC02 which bits were set or downloaded at the same time.

Input Level In Engineering Units

The module reports real-time input levels scaled to engineering units.

Word	Description
SYS25	Input #1 [11] or [15]
SYS26	Input #2 [01] or [02] or [03]
SYS27	Input #3 [13] or [25]
SYS28	Input #4 [02] or [04]
SYS29	Input #5 [15]
SYS30	Input #6 [03]
SYS31	Input #7 [25]
SYS32	Input #8 [04]

Input Level, Raw Signal

The module reports real-time signal levels at the input to each A/D input converter.

Word	Description
SYS33	Input #1 [24]
SYS34	Input #2 [24]
SYS35	Input #3 [24]
SYS36	Input #4 [24]
SYS37	Input #5 [24]
SYS38	Input #6 [24]
SYS39	Input #7 [24]
SYS40	Input #8 [24]

Output Level in Percentage

The module reports real-time output percentage it sends to each D/A output converter.

Word	Description
SYS41	Output #1 [19]
SYS42	Output #2 [19]
SYS43	Output #3 [19]
SYS44	Output #4 [19]
SYS45	Output #5 [19]
SYS46	Output #6 [19]
SYS47	Output #7 [19]
SYS48	Output #8 [19]

Notes: 1. For [ ] engineering units, see page 3.
        2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

SYS

Cycle Maximum Pressures

Word	Description
SYS49	Maximum Ram (Screw) Pressure During Last Cycle [01] If bit patterns in MCC02 and MCC03 indicate that the module is connected to a ram (screw) pressure transducer but *not* a clamp position transducer, the module reports the highest ram (screw) pressure it detected since the last F-to-T transition of DYC02-B04. If bit patterns in MCC02 and MCC03 indicate that the module is connected to a clamp position transducer, the module reports the highest ram (screw) pressure it detected since the last F-to-T transition of DYC02-B00.
SYS50	Maximum Clamp Pressure During Last Cycle [02] If bit patterns in MCC02 and MCC03 indicate that the module is connected to a clamp pressure transducer, the module reports the highest clamp pressure it detected since last F-to-T transition of DYC02-B00.
SYS51	Maximum Ejector Pressure During Last Cycle [03] If bit patterns in MCC02 and MCC03 indicate that the module is connected to a ejector pressure transducer, the module reports the highest ejector pressure it detected since last F-to-T transition of DYC02-B00.
SYS52	Maximum Cavity (or System) Pressure During Last Cycle [04] If bit patterns in MCC02 and MCC03 indicate that the module is connected to a cavity pressure transducer but *not* a clamp position transducer, the module reports the highest cavity pressure it detected since the last F-to-T transition of DYC02-B04. If bit patterns in MCC02 and MCC03 indicate that the module is connected to both a cavity pressure transducer and a clamp position transducer, the module reports the highest cavity pressure it detected since the last F-to-T transition of DYC02-B00. If MCC02-B03, B04, B05 are all set, (inject/clamp/eject mode) the module reports the highest system pressure it detected since the last F-to-T transition of DYC02-B00. If MCC02-B03 is set with B04, B05 in opposite states (inject/clamp mode or clamp/eject mode) module will not report data in this word

Process Trace Data Collection Status

Word	Bit	Description
SYS53		Process Trace status
	B00	Process Trace data collection in progress.
	B01	Process Trace data collection complete.
	B02 - B15	Open
SYS54		Process Trace data collection in progress
	B00	The module is collecting trace data points 1 to 50.
	B01	The module is collecting trace data points 51 to 100.
	B02	The module is collecting trace data points 101 to 150.
	B03	The module is collecting trace data points 151 to 200.
	B04	The module is collecting trace data points 201 to 250.
	B05	The module is collecting trace data points 251 to 300.
	B06	The module is collecting trace data points 301 to 350.
	B07	The module is collecting trace data points 351 to 400.
	B08 - B15	Open
SYS55		Process Trace data collection done
	B00	The module has collected trace data points 1 to 50.
	B01	The module has collected trace data points 51 to 100.
	B02	The module has collected trace data points 101 to 150.
	B03	The module has collected trace data points 151 to 200.
	B04	The module has collected trace data points 201 to 250.
	B05	The module has collected trace data points 251 to 300.
	B06	The module has collected trace data points 301 to 350.
	B07	The module has collected trace data points 351 to 400.
	B08 - B15	Open
SYS56		Open

Process Times

Word	Description
SYS57	Accumulated Tonnage Time [21] If bit patterns in MCC02 and MCC03 indicate that the module is connected to a clamp pressure transducer, the module: • clears this word and starts tonnage watchdog timer when it completes Clamp LPC Profile and sets its outputs to LPC33 - 40 • stops timer when it sets master status bit SYS03-B02 and reports accumulated value of timer (99.99 seconds max) in this word • sets master status bit SYS04-B15 when this value equals or exceeds LPC07. A zero entry in LPC07 inhibits SYS04-B15. The module also resets this word to zero when it detects an F-to-T transition of DYC03-B00.
SYS58	Accumulated Cure Time [22] If bit patterns in MCC02 and MCC03 indicate that the module is connected to a ram (screw) position transducer, the module: At completion of the Hold Profile: • starts an internal cure timer • sets master status bit SYS03-B03 • reports the accumulated time in this word When the value in this word equals the cure timer preset (HPC6: • resets master status bit SYS03-B03 • sets master status bit SYS03-B05 • stops accumulating time in this word **When it receives an F-to-T transition of DYC03-B01** • resets master status bit SYS03-B03 • resets master status bit SYS03-B05 resets this word to zero If bit patterns in MCC02 and MCC03 indicate that the module is connected to both a ram (screw) position transducer and a clamp position transducer, the module also (when it receives an F-to-T transition of DYC02-B00, -B01, -B02, or -B03): • resets master status bit SYS03-B03 • resets master status bit SYS03-B05 • resets this word to zero
SYS59	Accumulated Mold Open Dwell Time [21] If bit patterns in MCC02 and MCC03 indicate that the module is connected to a clamp position transducer, the module: • reports the accumulated value of its internal Mold Open Dwell timer (maximum 99.99 seconds) in this word. • sets master status bit SYS03-B09 when the timer is timing. • stops the timer, resets SYS03-B09, and resets this word to zero upon receipt of any action execution command bit except DYC02-B14 (execute ejector profile).
SYS60	Accumulated Cycle Time [22] If bit patterns in MCC02 and MCC03 indicate that the module is connected to a clamp position transducer, the module: • resets this word to zero and starts an internal cycle timer when it detects an F-to-T transition of DYC02-B00 • stops this timer when it sets master status bit SYS03-B11 and reports the accumulated value of the timer (maximum of 999.9 seconds) in this word

Diagnostics

Word	Description
SYS61	Programming Error Block Module reports in the lower byte of this word a bit pattern copy of the block id associated with the command block that contained the error referred to in SYS62. The priority order to be used by the module when reporting programming error codes will be as follows: • any MCC programming error • any DYC programming error • any programming error associated with DYC61 • any other current programming error
SYS62	Programming Error Code
SYS63	Module Series/Revision Upper byte - The module reports its firmware series in ASCII. Lower byte - The module reports its firmware revision in ASCII.

New Status Confirmation

Word	Description
SYS64	New data counter. The module sets this counter to zero on power start-up or above 9999, and increments this counter when it sends a new SYS to its internal TIC chip. Use this value to indicate that a most recent BTR of SYS is old data (last SYS64 equals new SYS64) or new data (last SYS64 is less than new SYS64). You may also monitor the value to determine if you are missing any data (last SYS + 1 is less than new SYS64).

Notes: 1. For [ ] engineering units, see page 3.
2. When using the Inject/Clamp/Eject mode, all pressure readings are system pressure at input 2, except where noted.

Programming Error Codes

Programming error codes indicate that you entered invalid data in a
command block. This chapter lists programming error codes for all
command blocks.

Block ID:	Acronym:	Description:	Page:
1	MCC	Module Configuration Command Block	4-3
2	JGC	Jog Configuration Block	4-6
3	FCC	First Clamp Close Configuration Block	4-7
4	SCC	Second Clamp Close Configuration Block	4-9
5	TCC	Third Clamp Close Configuration Block	4-10
6	LPC	Clamp Low Press Close Configuration Block	4-11
7	CPC	Clamp Close Profile Block	4-12
8	INC	Injection Configuration Block	4-17
9	IPC	Injection Profile Block	4-18
10	PKC	Pack Configuration Block	4-25
11	HDC	Hold Configuration Block	4-26
12	HPC	Pack/Hold Profile Block	4-28
13	PRC	Pre-Decompression Configuration Block	4-30
14	PLC	Plastication Configuration Block	4-31
15	PPC	Plastication Profile Block	4-33
16	PSC	Post-Decompression Configuration Block	4-38
17	FOC	First Clamp Open Configuration Block	4-39
18	SOC	Second Clamp Open Configuration Block	4-40
19	TOC	Third Clamp Open Configuration Block	4-42
20	OSC	Clamp Open Slow Configuration Block	4-43
21	OPC	Clamp Open Profile Block	4-44
22	EAC	Ejector Advance Configuration Block	4-50
23	ERC	Ejector Retract Configuration Block	4-51
24	EPC	Ejector Profile Block	4-52
25	DYC	Dynamic Command Block	4-55
26	RLC	Inject ERC Values Block	4-56
27	CLC	Clamp and Eject ERC Values Block	4-57
28	PTC	Process Trace Configuration Block	4-57

Important: Refer to the block ID returned in SYS61 to determine
the command block to which the error code relates. Then refer to
SYS62 for the error code.

How to Read Error Codes

You read error codes on your programming terminal by examining system status words in the PLC data table:

- SYS61 = ID of the block that contains the error
- SYS62 = error code

You can interpret most error codes by memorizing 9 basic types and knowing how the codes are organized.

The 4-digit code, xxyy, has two parts:

- xx = type description
- yy = word in the command block that contains the error

Here we list the type descriptions, each with an example error code.

Type	Example	Description
02	0222	Outside fixed limits
		MCC22 is out of range. Valid range is 00000 ≤ MCC22 ≤ 00099.
03		Cannot be equal
	0311	MCC11 is equal to MCC12. They must not be equal.
04	0427	Outside range established by another entry
		MCC27 is out of range. If MCC28 is non-zero, MCC27 must be within MCC23 ≤ MCC27 ≤ MCC28. If MCC28 is zero, MCC27 must be within MCC23 ≤ MCC27 ≤ MCC24.
05	0502	Bit selection error
		You configured the module for 4/4 I/O by MCC02-B03=1. Therefore, MCC02-B04=1 and MCC02-B05=1 is illegal.
06	0609	Block-related configuration error
		Your CPC10 must be zero because of invalid FCC. (SYS15-B02 = 0)
07	0712	Required non-zero entry
		IPC12 cannot be zero when IPC14 > 00000.
08	0816	Entry must be zero
		IPC16 must be 00000 when IPC12 = 00000.
09	0960	Entry combination error (group is outside fixed limits)
		Your entry combination is illegal: IPC60 = IPC61 = IPC62 = IPC63 = 00000.
10	1015	Error in entry order
		IPC is not in decreasing positional order. If non-zero, IPC15 must be less than IPC11.

ID = 1

MCC – Module Configuration Command Block

Error Code	Description **ID = 1**
0211	MCC11 is out of range. MCC11 must be within: $00000 \leq MCC11 \leq 01000$ (0 to 10 V dc sensor) $00100 \leq MCC11 \leq 00500$ (1 to 5 V dc sensor) $00400 \leq MCC11 \leq 02000$ (4 to 20 mA dc sensor)
0212	MCC12 is out of range. MCC12 must be within: $00000 \leq MCC12 \leq 01000$ (0 to 10 V dc sensor) $00100 \leq MCC12 \leq 00500$ (1 to 5 V dc sensor) $00400 \leq MCC12 \leq 02000$ (4 to 20 mA dc sensor)
0215	MCC15 is out of range. Valid range is $00000 \leq MCC15 \leq 00099$
0216	MCC16 is out of range. Valid range is $00000 \leq MCC16 \leq 00099$
0219	MCC19 is out of range. MCC19 must be within: $00000 \leq MCC19 \leq 01000$ (0 to 10 V dc sensor) $00100 \leq MCC19 \leq 00500$ (1 to 5 V dc sensor) $00400 \leq MCC19 \leq 02000$ (4 to 20 mA dc sensor)
0220	MCC20 is out of range. MCC20 must be within: $00000 \leq MCC20 \leq 01000$ (0 to 10 V dc sensor) $00100 \leq MCC20 \leq 00500$ (1 to 5 V dc sensor) $00400 \leq MCC20 \leq 02000$ (4 to 20 mA dc sensor)
0222	MCC22 is out of range. Valid range is $00000 \leq MCC22 \leq 00099$
0225	MCC25 is out of range. MCC25 must be within: $00000 \leq MCC25 \leq 01000$ (0 to 10 V dc sensor) $00100 \leq MCC25 \leq 00500$ (1 to 5 V dc sensor) $00400 \leq MCC25 \leq 02000$ (4 to 20 mA dc sensor)
0226	MCC26 is out of range. MCC26 must be within: $00000 \leq MCC26 \leq 01000$ (0 to 10 V dc sensor) $00100 \leq MCC26 \leq 00500$ (1 to 5 V dc sensor) $00400 \leq MCC26 \leq 02000$ (4 to 20 mA dc sensor)
0229	MCC29 is out of range. Valid range is $00000 \leq MCC29 \leq 00099$
0230	MCC30 is out of range. Valid range is $00000 \leq MCC30 \leq 00099$
0233	MCC33 is out of range. MCC33 must be within: $00000 \leq MCC33 \leq 01000$ (0 to 10 V dc sensor) $00100 \leq MCC33 \leq 00500$ (1 to 5 V dc sensor) $00400 \leq MCC33 \leq 02000$ (4 to 20 mA dc sensor)
0234	MCC34 is out of range. MCC34 must be within: $00000 \leq MCC34 \leq 01000$ (0 to 10 V dc sensor) $00100 \leq MCC34 \leq 00500$ (1 to 5 V dc sensor) $00400 \leq MCC34 \leq 02000$ (4 to 20 mA dc sensor)
0236	MCC36 is out of range. Valid range is $00000 \leq MCC36 \leq 00099$
0239	MCC39 is out of range. MCC39 must be within: $00000 \leq MCC39 \leq 01000$ (0 to 10 V dc sensor) $00100 \leq MCC39 \leq 00500$ (1 to 5 V dc sensor) $00400 \leq MCC39 \leq 02000$ (4 to 20 mA dc sensor)
0240	MCC40 is out of range. MCC40 must be within: $00000 \leq MCC40 \leq 01000$ (0 to 10 V dc sensor) $00100 \leq MCC40 \leq 00500$ (1 to 5 V dc sensor) $00400 \leq MCC40 \leq 02000$ (4 to 20 mA dc sensor)
0243	MCC43 is out of range. Valid range is $00000 \leq MCC43 \leq 00099$
0244	MCC44 is out of range. Valid range is $00000 \leq MCC44 \leq 00099$
0247	MCC47 is out of range. MCC47 must be within: $00000 \leq MCC47 \leq 01000$ (0 to 10 V dc sensor) $00100 \leq MCC47 \leq 00500$ (1 to 5 V dc sensor) $00400 \leq MCC47 \leq 02000$ (4 to 20 mA dc sensor)

Error Code	Description **ID = 1**
0248	MCC48 is out of range. MCC48 must be within: $00000 \leq$ MCC48 ≤ 01000 (0 to 10 V dc sensor) $00100 \leq$ MCC48 ≤ 00500 (1 to 5 V dc sensor) $00400 \leq$ MCC48 ≤ 02000 (4 to 20 mA dc sensor)
0250	MCC50 is out of range. Valid range is $00000 \leq$ MCC50 ≤ 00099
0253	MCC53 is out of range. MCC53 must be within: $00000 \leq$ MCC53 ≤ 01000 (0 to 10 V dc sensor) $00100 \leq$ MCC53 ≤ 00500 (1 to 5 V dc sensor) $00400 \leq$ MCC53 ≤ 02000 (4 to 20 mA dc sensor)
0254	MCC54 is out of range. MCC54 must be within: $00000 \leq$ MCC54 ≤ 01000 (0 to 10 V dc sensor) $00100 \leq$ MCC54 ≤ 00500 (1 to 5 V dc sensor) $00400 \leq$ MCC54 ≤ 02000 (4 to 20 mA dc sensor)
0256	MCC56 is out of range. Valid range is $00000 \leq$ MCC56 ≤ 00099
0259	MCC59 is out of range. MCC59 must be within: $00000 \leq$ MCC59 ≤ 01000 (0 to 10 V dc sensor) $00100 \leq$ MCC59 ≤ 00500 (1 to 5 V dc sensor) $00400 \leq$ MCC59 ≤ 02000 (4 to 20 mA dc sensor)
0260	MCC60 is out of range. MCC60 must be within $00000 \leq$ MCC60 ≤ 01000 (0 to 10 V dc sensor) $00100 \leq$ MCC60 ≤ 00500 (1 to 5 V dc sensor) $00400 \leq$ MCC60 ≤ 02000 (4 to 20 mA dc sensor)
0262	MCC62 is out of range. Valid range is $00000 \leq$ MCC62 ≤ 00099
0311	MCC11 is equal to MCC12. They must not be equal.
0319	MCC19 is equal to MCC20. They must not be equal.
0325	MCC25 is equal to MCC26. They must not be equal.
0333	MCC33 is equal to MCC34. They must not be equal.
0339	MCC39 is equal to MCC40. They must not be equal.
0347	MCC47 is equal to MCC48. They must not be equal.
0353	MCC53 is equal to MCC54. They must not be equal.
0359	MCC59 is equal to MCC60. They must not be equal.
0405-0408	Your entry for MCC05-MCC08 is out of range. Valid range is $-1000 \leq$ entry $\leq +1000$.
0409	MCC09 is out of range. Valid range is $00000 \leq$ MCC09 $<$ MCC10
0410	MCC10 is out of range. Valid range is MCC09 $<$ MCC10 ≤ 09999
0413	Your non-zero entry for MCC13 is out of range. If MCC14 is non-zero, MCC13 must be within MCC09 $\leq$ MCC13 $<$ MCC14 If MCC14 is zero, MCC13 must be within MCC09 $\leq$ MCC13 $<$ MCC10
0414	Your non-zero entry for MCC14 is out of range. If MCC13 is non-zero, MCC14 must be within MCC13 $<$ MCC14 $\leq$ MCC10 If MCC13 is zero, MCC14 must be within MCC09 $<$ MCC14 $\leq$ MCC10
0417	MCC17 is out of range. Valid range is $00000 \leq$ MCC17 $<$ MCC18
0418	MCC18 is out of range. Valid range is MCC17 $<$ MCC18 ≤ 09999
0421	MCC21 is out of range. If non-zero, MCC21 must be within MCC17 $<$ MCC21 $\leq$ MCC18
0423	MCC23 is out of range. Valid range is $00000 \leq$ MCC23 $<$ MCC24
0424	MCC24 is out of range. Valid range is MCC23 $<$ MCC24 ≤ 09999
0427	Your non-zero entry for MCC27 is out of range. If MCC28 is non-zero, MCC27 must be within MCC23 $\leq$ MCC27 $<$ MCC28 If MCC28 is zero, MCC27 must be within MCC23 $\leq$ MCC27 $<$ MCC24
0428	Your non-zero entry for MCC28 is out of range. If MCC27 is non-zero, MCC28 must be within MCC27 $<$ MCC28 $\leq$ MCC24 If MCC27 is zero, MCC28 must be within MCC23 $<$ MCC28 $\leq$ MCC24
0431	MCC31 is out of range. Valid range is $00000 \leq$ MCC31 $<$ MCC32

Error Code	Description $ID = 1$	
0432	MCC32 is out of range. Valid range is MCC31 < MCC32 ≤ 09999	
0435	MCC35 is out of range. If non-zero, MCC35 must be within MCC31 < MCC35 ≤ MCC32	
0437	MCC37 is out of range. Valid range is 00000 ≤ MCC37 < MCC38	
0438	MCC38 is out of range. Valid range is MCC37 < MCC38 ≤ 09999	
0441	Your non-zero entry for MCC41 is out of range. If MCC42 is non-zero, MCC41 must be within MCC37 ≤ MCC41 < MCC42 If MCC42 is zero, MCC41 must be within MCC37 ≤ MCC41 < MCC38	
0442	Your non-zero entry for MCC42 is out of range. If MCC41 is non-zero, MCC42 must be within MCC41 < MCC42 ≤ MCC38 If MCC41 is zero, MCC42 must be within MCC37 < MCC42 ≤ MCC38	
0445	MCC45 is out of range. Valid range is 00000 ≤ MCC45 < MCC46	
0446	MCC46 is out of range. Valid range is MCC45 < MCC46 ≤ 09999	
0449	MCC49 is out of range. If non-zero, MCC49 must be within MCC45 < MCC49 ≤ MCC46	
0451	MCC51 is out of range. Valid range is 00000 ≤ MCC51 < MCC52	
0452	MCC52 is out of range. Valid range is MCC51 < MCC52 ≤ 09999	
0455	MCC55 is out of range. If non-zero, MCC55 must be within MCC51 < MCC55 ≤ MCC52	
0457	MCC57 is out of range. Valid range is 00000 ≤ MCC57 < MCC58	
0458	MCC58 is out of range. Valid range is MCC57 < MCC58 ≤ 20000	
0461	MCC61 is out of range. If non-zero, MCC61 must be within MCC57 < MCC61 ≤ MCC58	
0502	You configured the module for 4x4 I/O by MCC02-B03 = 1. Therefore, MCC02-B04 = 1 and MCC02-B05 = 1 is illegal.	
0503	You configured the module for 4x4 I/O by MCC02-B03 = 1. Therefore, your bit pattern in the upper byte of MCC03 must be 11111111 to indicate that inputs #5 through #8 are "unconnected".	
0504	You configured the module for 4x4 I/O by MCC02-B03 = 1. Therefore, your bit pattern in the upper byte of MCC04 must be 11111111 to indicate that outputs #5 through #8 are "unconnected".	
0507	Your settings for MCC02-B03, B04, and B05 indicate that module input #1 is reserved for a ram (screw) position transducer. Therefore MCC03-B00 and B01 cannot both = 1.	
0511	Your settings for MCC02-B03, B04, and B05 indicate that module input #3 is reserved for a clamp position transducer. Therefore MCC03-B00 and B01 cannot both = 1.	
0602	You configured the module for 8x8 I/O by MCC02-B03 = 0. This configuration is not supported by your series/revision of firmware.	
0915	MCC15 is too large. **if:**	**then:**
	MCC13 and MCC14 are both non-zero	MCC15 must be within MCC13 + MCC15 < MCC14 – MCC15
	MCC13 is zero and MCC14 is non-zero	MCC15 must be within MCC09 + MCC15 < MCC14 – MCC15
	MCC13 is non-zero and MCC14 is zero	MCC15 must be within MCC13 + MCC15 < MCC10 – MCC15
0929	MCC29 is too large. **if:**	**then:**
	MCC27 and MCC28 are both non-zero	MCC29 must be within MCC27 + MCC29 < MCC28 – MCC29
	MCC27 is zero and MCC28 is non-zero	MCC29 must be within MCC23 + MCC29 < MCC28 – MCC29
	MCC27 is non-zero and MCC28 is zero	MCC29 must be within MCC27 + MCC29 < MCC24 – MCC29

Error Code	Description $ID = 1$	
0943	MCC43 is too large.	
	if:	**then:**
	MCC41 and MCC42 are both non-zero	MCC43 must be within MCC41 + MCC43 < MCC42 − MCC43
	MCC41 is zero and MCC42 is non-zero	MCC43 must be within MCC37 + MCC43 < MCC42 − MCC43
	MCC41 is non-zero and MCC42 is zero	MCC43 must be within MCC41 + MCC43 < MCC38 − MCC43

ID = 2

JGC – Jog Configuration Block

Error Code	Description $ID = 2$
0209	JGC09 is out of range. Valid range is $00000 \leq JGC09 \leq 09999$
0210	JGC10 is out of range. Valid range is $00000 \leq JGC10 \leq 09999$
0211	JGC11 is out of range. Valid range is $00000 \leq JGC11 \leq 09999$
0212	JGC12 is out of range. Valid range is $00000 \leq JGC12 \leq 09999$
0213	JGC13 is out of range. Valid range is $00000 \leq JGC13 \leq 09999$
0214	JGC14 is out of range. Valid range is $00000 \leq JGC14 \leq 09999$
0215	JGC15 is out of range. Valid range is $00000 \leq JGC15 \leq 09999$
0216	JGC16 is out of range. Valid range is $00000 \leq JGC16 \leq 09999$
0217	JGC17 is out of range. Valid range is $00000 \leq JGC17 \leq 09999$
0218	JGC18 is out of range. Valid range is $00000 \leq JGC18 \leq 09999$
0219	JGC19 is out of range. Valid range is $00000 \leq JGC19 \leq 09999$
0220	JGC20 is out of range. Valid range is $00000 \leq JGC20 \leq 09999$
0221	JGC21 is out of range. Valid range is $00000 \leq JGC21 \leq 09999$
0222	JGC22 is out of range. Valid range is $00000 \leq JGC22 \leq 09999$
0223	JGC23 is out of range. Valid range is $00000 \leq JGC23 \leq 09999$
0224	JGC24 is out of range. Valid range is $00000 \leq JGC24 \leq 09999$
0225	JGC25 is out of range. Valid range is $00000 \leq JGC25 \leq 09999$
0226	JGC26 is out of range. Valid range is $00000 \leq JGC26 \leq 09999$
0227	JGC27 is out of range. Valid range is $00000 \leq JGC27 \leq 09999$
0228	JGC28 is out of range. Valid range is $00000 \leq JGC28 \leq 09999$
0229	JGC29 is out of range. Valid range is $00000 \leq JGC29 \leq 09999$
0230	JGC30 is out of range. Valid range is $00000 \leq JGC30 \leq 09999$
0231	JGC31 is out of range. Valid range is $00000 \leq JGC31 \leq 09999$
0232	JGC32 is out of range. Valid range is $00000 \leq JGC32 \leq 09999$
0233	JGC33 is out of range. Valid range is $00000 \leq JGC33 \leq 09999$
0234	JGC34 is out of range. Valid range is $00000 \leq JGC34 \leq 09999$
0235	JGC35 is out of range. Valid range is $00000 \leq JGC35 \leq 09999$
0236	JGC36 is out of range. Valid range is $00000 \leq JGC36 \leq 09999$
0237	JGC37 is out of range. Valid range is $00000 \leq JGC37 \leq 09999$
0238	JGC38 is out of range. Valid range is $00000 \leq JGC38 \leq 09999$
0239	JGC39 is out of range. Valid range is $00000 \leq JGC39 \leq 09999$
0240	JGC40 is out of range. Valid range is $00000 \leq JGC40 \leq 09999$
0241	JGC41 is out of range. Valid range is $00000 \leq JGC41 \leq 09999$
0242	JGC42 is out of range. Valid range is $00000 \leq JGC42 \leq 09999$
0243	JGC43 is out of range. Valid range is $00000 \leq JGC43 \leq 09999$

Error Code	Description $ID = 2$
0244	JGC44 is out of range. Valid range is $00000 \leq JGC44 \leq 09999$
0245	JGC45 is out of range. Valid range is $00000 \leq JGC45 \leq 09999$
0246	JGC46 is out of range. Valid range is $00000 \leq JGC46 \leq 09999$
0247	JGC47 is out of range. Valid range is $00000 \leq JGC47 \leq 09999$
0248	JGC48 is out of range. Valid range is $00000 \leq JGC48 \leq 09999$
0249	JGC49 is out of range. Valid range is $00000 \leq JGC49 \leq 09999$
0250	JGC50 is out of range. Valid range is $00000 \leq JGC50 \leq 09999$
0251	JGC51 is out of range. Valid range is $00000 \leq JGC51 \leq 09999$
0252	JGC52 is out of range. Valid range is $00000 \leq JGC52 \leq 09999$
0253	JGC53 is out of range. Valid range is $00000 \leq JGC53 \leq 09999$
0254	JGC54 is out of range. Valid range is $00000 \leq JGC54 \leq 09999$
0255	JGC55 is out of range. Valid range is $00000 \leq JGC55 \leq 09999$
0256	JGC56 is out of range. Valid range is $00000 \leq JGC56 \leq 09999$
0257	JGC57 is out of range. Valid range is $00000 \leq JGC57 \leq 09999$
0258	JGC58 is out of range. Valid range is $00000 \leq JGC58 \leq 09999$
0259	JGC59 is out of range. Valid range is $00000 \leq JGC59 \leq 09999$
0260	JGC60 is out of range. Valid range is $00000 \leq JGC60 \leq 09999$
0261	JGC61 is out of range. Valid range is $00000 \leq JGC61 \leq 09999$
0262	JGC62 is out of range. Valid range is $00000 \leq JGC62 \leq 09999$
0263	JGC63 is out of range. Valid range is $00000 \leq JGC63 \leq 09999$
0264	JGC64 is out of range. Valid range is $00000 \leq JGC64 \leq 09999$
0405	JGC05 is out of range. If non-zero, JGC05 must be within $MCC51 < JGC05 \leq MCC52$
0406	JGC06 is out of range. If non-zero, JGC06 must be within $MCC17 < JGC06 \leq MCC18$
0407	JGC07 is out of range. If non-zero, JGC07 must be within $MCC31 < JGC07 \leq MCC32$
0408	JGC08 is out of range. If non-zero, JGC08 must be within $MCC45 < JGC08 \leq MCC46$

ID = 3

FCC – First Clamp Close Configuration Block

Error Code	Description $ID = 3$
0205	FCC05 is out of range. Valid range is $00000 \leq FCC05 \leq 09999$
0206	FCC06 is out of range. Valid range is $00000 \leq FCC06 \leq 09999$
0208	FCC08 is out of range. Valid range is $00000 \leq FCC08 \leq 09999$
0209	FCC09 is out of range. Valid range is $00000 \leq FCC09 \leq 09999$
0210	FCC10 is out of range. Valid range is $00000 \leq FCC10 \leq 09999$
0211	FCC11 is out of range. Valid range is $00000 \leq FCC11 \leq 09999$
0212	FCC12 is out of range. Valid range is $00000 \leq FCC12 \leq 09999$
0213	FCC13 is out of range. Valid range is $00000 \leq FCC13 \leq 09999$
0214	FCC14 is out of range. Valid range is $00000 \leq FCC14 \leq 09999$
0215	FCC15 is out of range. Valid range is $00000 \leq FCC15 \leq 09999$
0216	FCC16 is out of range. Valid range is $00000 \leq FCC16 \leq 09999$
0217	FCC17 is out of range. Valid range is $00000 \leq FCC17 \leq 09999$
0218	FCC18 is out of range. Valid range is $00000 \leq FCC18 \leq 09999$
0219	FCC19 is out of range. Valid range is $00000 \leq FCC19 \leq 09999$

Error Code	Description $ID = 3$
0220	FCC20 is out of range. Valid range is $00000 \leq FCC20 \leq 09999$
0221	FCC21 is out of range. Valid range is $00000 \leq FCC21 \leq 09999$
0222	FCC22 is out of range. Valid range is $00000 \leq FCC22 \leq 09999$
0223	FCC23 is out of range. Valid range is $00000 \leq FCC23 \leq 09999$
0224	FCC24 is out of range. Valid range is $00000 \leq FCC24 \leq 09999$
0225	FCC25 is out of range. Valid range is $00000 \leq FCC25 \leq 09999$
0226	FCC26 is out of range. Valid range is $00000 \leq FCC26 \leq 09999$
0227	FCC27 is out of range. Valid range is $00000 \leq FCC27 \leq 09999$
0228	FCC28 is out of range. Valid range is $00000 \leq FCC28 \leq 09999$
0229	FCC29 is out of range. Valid range is $00000 \leq FCC29 \leq 09999$
0230	FCC30 is out of range. Valid range is $00000 \leq FCC30 \leq 09999$
0231	FCC31 is out of range. Valid range is $00000 \leq FCC31 \leq 09999$
0232	FCC32 is out of range. Valid range is $00000 \leq FCC32 \leq 09999$
0233	FCC33 is out of range. Valid range is $00000 \leq FCC33 \leq 09999$
0234	FCC34 is out of range. Valid range is $00000 \leq FCC34 \leq 09999$
0235	FCC35 is out of range. Valid range is $00000 \leq FCC35 \leq 09999$
0236	FCC36 is out of range. Valid range is $00000 \leq FCC36 \leq 09999$
0237	FCC37 is out of range. Valid range is $00000 \leq FCC37 \leq 09999$
0238	FCC38 is out of range. Valid range is $00000 \leq FCC38 \leq 09999$
0239	FCC39 is out of range. Valid range is $00000 \leq FCC39 \leq 09999$
0240	FCC40 is out of range. Valid range is $00000 \leq FCC40 \leq 09999$
0243	FCC43 is out of range. Valid range is $00000 \leq FCC43 \leq 09999$
0244	FCC44 is out of range. Valid range is $00000 \leq FCC44 \leq 09999$
0247	FCC47 is out of range. Valid range is $00000 \leq FCC47 \leq 09999$
0248	FCC48 is out of range. Valid range is $00000 \leq FCC48 \leq 09999$
0249	FCC49 is out of range. Valid range is $00000 \leq FCC49 \leq 09999$
0250	FCC50 is out of range. Valid range is $00000 \leq FCC50 \leq 09999$
0251	FCC51 is out of range. Valid range is $00000 \leq FCC51 \leq 09999$
0252	FCC52 is out of range. Valid range is $00000 \leq FCC52 \leq 09999$
0253	FCC53 is out of range. Valid range is $00000 \leq FCC53 \leq 09999$
0343	FCC43 is equal to FCC44. They must not be equal.
0347	FCC47 is equal to FCC48. They must not be equal.
0441	FCC41 is out of range. Valid range is $00000 \leq FCC41 < FCC42$
0442	FCC42 is out of range. Valid range is $FCC41 < FCC42 \leq 09999$
0445	FCC45 is out of range. Valid range is $00000 \leq FCC45 < FCC46$
0446	FCC46 is out of range. Valid range is $FCC45 < FCC46 \leq 09999$
0457	FCC57 is out of range. If non-zero, FCC57 must be within $MCC31 < FCC57 \leq MCC32$
0502	Your bit pattern in FCC02-B02, FCC02-B01, and FCC02-B00 indicates a selected clamp velocity control valve that is unconnected according to your entries in MCC02and MCC04.
0506	Your bit pattern in FCC02-B06, FCC02-B05, and FCC02-B04 indicates a selected clamp pressure control valve that is unconnected according to your entries in MCC02and MCC04.

ID = 4

SCC – Second Clamp Close Configuration Block

Error Code	Description ID = 4
0205	SCC05 is out of range. Valid range is $00000 \leq SCC05 \leq 09999$
0206	SCC06 is out of range. Valid range is $00000 \leq SCC06 \leq 09999$
0208	SCC08 is out of range. Valid range is $00000 \leq SCC08 \leq 09999$
0209	SCC09 is out of range. Valid range is $00000 \leq SCC09 \leq 09999$
0210	SCC10 is out of range. Valid range is $00000 \leq SCC10 \leq 09999$
0211	SCC11 is out of range. Valid range is $00000 \leq SCC11 \leq 09999$
0212	SCC12 is out of range. Valid range is $00000 \leq SCC12 \leq 09999$
0213	SCC13 is out of range. Valid range is $00000 \leq SCC13 \leq 09999$
0214	SCC14 is out of range. Valid range is $00000 \leq SCC14 \leq 09999$
0215	SCC15 is out of range. Valid range is $00000 \leq SCC15 \leq 09999$
0216	SCC16 is out of range. Valid range is $00000 \leq SCC16 \leq 09999$
0217	SCC17 is out of range. Valid range is $00000 \leq SCC17 \leq 09999$
0218	SCC18 is out of range. Valid range is $00000 \leq SCC18 \leq 09999$
0219	SCC19 is out of range. Valid range is $00000 \leq SCC19 \leq 09999$
0220	SCC20 is out of range. Valid range is $00000 \leq SCC20 \leq 09999$
0221	SCC21 is out of range. Valid range is $00000 \leq SCC21 \leq 09999$
0222	SCC22 is out of range. Valid range is $00000 \leq SCC22 \leq 09999$
0223	SCC23 is out of range. Valid range is $00000 \leq SCC23 \leq 09999$
0224	SCC24 is out of range. Valid range is $00000 \leq SCC24 \leq 09999$
0225	SCC25 is out of range. Valid range is $00000 \leq SCC25 \leq 09999$
0226	SCC26 is out of range. Valid range is $00000 \leq SCC26 \leq 09999$
0227	SCC27 is out of range. Valid range is $00000 \leq SCC27 \leq 09999$
0228	SCC28 is out of range. Valid range is $00000 \leq SCC28 \leq 09999$
0229	SCC29 is out of range. Valid range is $00000 \leq SCC29 \leq 09999$
0230	SCC30 is out of range. Valid range is $00000 \leq SCC30 \leq 09999$
0231	SCC31 is out of range. Valid range is $00000 \leq SCC31 \leq 09999$
0232	SCC32 is out of range. Valid range is $00000 \leq SCC32 \leq 09999$
0233	SCC33 is out of range. Valid range is $00000 \leq SCC33 \leq 09999$
0234	SCC34 is out of range. Valid range is $00000 \leq SCC34 \leq 09999$
0235	SCC35 is out of range. Valid range is $00000 \leq SCC35 \leq 09999$
0236	SCC36 is out of range. Valid range is $00000 \leq SCC36 \leq 09999$
0237	SCC37 is out of range. Valid range is $00000 \leq SCC37 \leq 09999$
0238	SCC38 is out of range. Valid range is $00000 \leq SCC38 \leq 09999$
0239	SCC39 is out of range. Valid range is $00000 \leq SCC39 \leq 09999$
0240	SCC40 is out of range. Valid range is $00000 \leq SCC40 \leq 09999$
0243	SCC43 is out of range. Valid range is $00000 \leq SCC43 \leq 09999$
0244	SCC44 is out of range. Valid range is $00000 \leq SCC44 \leq 09999$
0247	SCC47 is out of range. Valid range is $00000 \leq SCC47 \leq 09999$
0248	SCC48 is out of range. Valid range is $00000 \leq SCC48 \leq 09999$
0249	SCC49 is out of range. Valid range is $00000 \leq SCC49 \leq 09999$
0250	SCC50 is out of range. Valid range is $00000 \leq SCC50 \leq 09999$
0251	SCC51 is out of range. Valid range is $00000 \leq SCC51 \leq 09999$
0252	SCC52 is out of range. Valid range is $00000 \leq SCC52 \leq 09999$

Error Code	Description ID = 4
0253	SCC53 is out of range. Valid range is $00000 \leq SCC53 \leq 09999$
0343	SCC43 is equal to SCC44. They must not be equal.
0347	SCC47 is equal to SCC48. These must not be equal.
0441	SCC41 is out of range. Valid range is $00000 \leq SCC41 < SCC42$
0442	SCC42 is out of range. Valid range is $SCC41 < SCC42 \leq 09999$
0445	SCC45 is out of range. Valid range is $00000 \leq SCC45 < SCC46$
0446	SCC46 is out of range. Valid range is $SCC45 < SCC46 \leq 09999$
0457	SCC57 is out of range. If non-zero, SCC57 must be within $MCC31 < SCC57 \leq MCC32$
0502	Your bit pattern in SCC02-B02, SCC02-B01, and SCC02-B00 indicates a selected clamp velocity control valve that is unconnected according to your entries in MCC02 and MCC04.
0506	Your bit pattern in SCC02-B06, SCC02-B05, and SCC02-B04 indicates a selected clamp pressure control valve that is unconnected according to your entries in MCC02 and MCC04.

ID = 5

TCC – Third Clamp Close Configuration Block

Error Code	Description ID = 5
0205	TCC05 is out of range. Valid range is $00000 \leq TCC05 \leq 09999$
0206	TCC06 is out of range. Valid range is $00000 \leq TCC06 \leq 09999$
0208	TCC08 is out of range. Valid range is $00000 \leq TCC08 \leq 09999$
0209	TCC09 is out of range. Valid range is $00000 \leq TCC09 \leq 09999$
0210	TCC10 is out of range. Valid range is $00000 \leq TCC10 \leq 09999$
0211	TCC11 is out of range. Valid range is $00000 \leq TCC11 \leq 09999$
0212	TCC12 is out of range. Valid range is $00000 \leq TCC12 \leq 09999$
0213	TCC13 is out of range. Valid range is $00000 \leq TCC13 \leq 09999$
0214	TCC14 is out of range. Valid range is $00000 \leq TCC14 \leq 09999$
0215	TCC15 is out of range. Valid range is $00000 \leq TCC15 \leq 09999$
0216	TCC16 is out of range. Valid range is $00000 \leq TCC16 \leq 09999$
0217	TCC17 is out of range. Valid range is $00000 \leq TCC17 \leq 09999$
0218	TCC18 is out of range. Valid range is $00000 \leq TCC18 \leq 09999$
0219	TCC19 is out of range. Valid range is $00000 \leq TCC19 \leq 09999$
0220	TCC20 is out of range. Valid range is $00000 \leq TCC20 \leq 09999$
0221	TCC21 is out of range. Valid range is $00000 \leq TCC21 \leq 09999$
0222	TCC22 is out of range. Valid range is $00000 \leq TCC22 \leq 09999$
0223	TCC23 is out of range. Valid range is $00000 \leq TCC23 \leq 09999$
0224	TCC24 is out of range. Valid range is $00000 \leq TCC24 \leq 09999$
0225	TCC25 is out of range. Valid range is $00000 \leq TCC25 \leq 09999$
0226	TCC26 is out of range. Valid range is $00000 \leq TCC26 \leq 09999$
0227	TCC27 is out of range. Valid range is $00000 \leq TCC27 \leq 09999$
0228	TCC28 is out of range. Valid range is $00000 \leq TCC28 \leq 09999$
0229	TCC29 is out of range. Valid range is $00000 \leq TCC29 \leq 09999$
0230	TCC30 is out of range. Valid range is $00000 \leq TCC30 \leq 09999$
0231	TCC31 is out of range. Valid range is $00000 \leq TCC31 \leq 09999$
0232	TCC32 is out of range. Valid range is $00000 \leq TCC32 \leq 09999$
0233	TCC33 is out of range. Valid range is $00000 \leq TCC33 \leq 09999$
0234	TCC34 is out of range. Valid range is $00000 \leq TCC34 \leq 09999$
0235	TCC35 is out of range. Valid range is $00000 \leq TCC35 \leq 09999$

Error Code	Description $ID = 5$
0236	TCC36 is out of range. Valid range is $00000 \leq TCC36 \leq 09999$
0237	TCC37 is out of range. Valid range is $00000 \leq TCC37 \leq 09999$
0238	TCC38 is out of range. Valid range is $00000 \leq TCC38 \leq 09999$
0239	TCC39 is out of range. Valid range is $00000 \leq TCC39 \leq 09999$
0240	TCC40 is out of range. Valid range is $00000 \leq TCC40 \leq 09999$
0243	TCC43 is out of range. Valid range is $00000 \leq TCC43 \leq 09999$
0244	TCC44 is out of range. Valid range is $00000 \leq TCC44 \leq 09999$
0247	TCC47 is out of range. Valid range is $00000 \leq TCC47 \leq 09999$
0248	TCC48 is out of range. Valid range is $00000 \leq TCC48 \leq 09999$
0249	TCC49 is out of range. Valid range is $00000 \leq TCC49 \leq 09999$
0250	TCC50 is out of range. Valid range is $00000 \leq TCC50 \leq 09999$
0251	TCC51 is out of range. Valid range is $00000 \leq TCC51 \leq 09999$
0252	TCC52 is out of range. Valid range is $00000 \leq TCC52 \leq 09999$
0253	TCC53 is out of range. Valid range is $00000 \leq TCC53 \leq 09999$
0343	TCC43 is equal to TCC44. They must not be equal.
0347	TCC47 is equal to TCC48. They must not be equal.
0441	TCC41 is out of range. Valid range is $00000 \leq TCC41 < TCC42$
0442	TCC42 is out of range. Valid range is $TCC41 < TCC42 \leq 09999$
0445	TCC45 is out of range. Valid range is $00000 \leq TCC45 < TCC46$
0446	TCC46 is out of range. Valid range is $TCC45 < TCC46 \leq 09999$
0457	TCC57 is out of range. If non-zero, TCC57 must be within $MCC31 < TCC57 \leq MCC32$
0502	Your bit pattern in TCC02-B02, TCC02-B01, and TCC02-B00 indicates a selected clamp velocity control valve that is unconnected according to your entries in MCC02and MCC04.
0506	Your bit pattern in TCC02-B06, TCC02-B05, and TCC02-B04 indicates a selected clamp pressure control valve that is unconnected according to your entries in MCC02and MCC04.

ID = 6

LPC – Clamp Low Pressure Close Configuration Block

Error Code	Description $ID = 6$
0206	LPC06 is out of range. Valid range is $00000 \leq LPC06 \leq 09999$
0207	LPC07 is out of range. Valid range is $00000 \leq LPC07 \leq 09999$
0208	LPC08 is out of range. Valid range is $00000 \leq LPC08 \leq 09999$
0209	LPC09 is out of range. Valid range is $00000 \leq LPC09 \leq 09999$
0210	LPC10 is out of range. Valid range is $00000 \leq LPC10 \leq 09999$
0211	LPC11 is out of range. Valid range is $00000 \leq LPC11 \leq 09999$
0212	LPC12 is out of range. Valid range is $00000 \leq LPC12 \leq 09999$
0213	LPC13 is out of range. Valid range is $00000 \leq LPC13 \leq 09999$
0214	LPC14 is out of range. Valid range is $00000 \leq LPC14 \leq 09999$
0215	LPC15 is out of range. Valid range is $00000 \leq LPC15 \leq 09999$
0216	LPC16 is out of range. Valid range is $00000 \leq LPC16 \leq 09999$
0217	LPC17 is out of range. Valid range is $00000 \leq LPC17 \leq 09999$
0218	LPC18 is out of range. Valid range is $00000 \leq LPC18 \leq 09999$
0219	LPC19 is out of range. Valid range is $00000 \leq LPC19 \leq 09999$
0220	LPC20 is out of range. Valid range is $00000 \leq LPC20 \leq 09999$
0221	LPC21 is out of range. Valid range is $00000 \leq LPC21 \leq 09999$
0222	LPC22 is out of range. Valid range is $00000 \leq LPC22 \leq 09999$

Error Code	Description $ID = 6$
0223	LPC23 is out of range. Valid range is $00000 \leq LPC23 \leq 09999$
0224	LPC24 is out of range. Valid range is $00000 \leq LPC24 \leq 09999$
0225	LPC25 is out of range. Valid range is $00000 \leq LPC25 \leq 09999$
0226	LPC26 is out of range. Valid range is $00000 \leq LPC26 \leq 09999$
0227	LPC27 is out of range. Valid range is $00000 \leq LPC27 \leq 09999$
0228	LPC28 is out of range. Valid range is $00000 \leq LPC28 \leq 09999$
0229	LPC29 is out of range. Valid range is $00000 \leq LPC29 \leq 09999$
0230	LPC30 is out of range. Valid range is $00000 \leq LPC30 \leq 09999$
0231	LPC31 is out of range. Valid range is $00000 \leq LPC31 \leq 09999$
0232	LPC32 is out of range. Valid range is $00000 \leq LPC32 \leq 09999$
0233	LPC33 is out of range. Valid range is $00000 \leq LPC33 \leq 09999$
0234	LPC34 is out of range. Valid range is $00000 \leq LPC34 \leq 09999$
0235	LPC35 is out of range. Valid range is $00000 \leq LPC35 \leq 09999$
0236	LPC36 is out of range. Valid range is $00000 \leq LPC36 \leq 09999$
0237	LPC37 is out of range. Valid range is $00000 \leq LPC37 \leq 09999$
0238	LPC38 is out of range. Valid range is $00000 \leq LPC38 \leq 09999$
0239	LPC39 is out of range. Valid range is $00000 \leq LPC39 \leq 09999$
0240	LPC40 is out of range. Valid range is $00000 \leq LPC40 \leq 09999$
0243	LPC43 is out of range. Valid range is $00000 \leq LPC43 \leq 09999$
0244	LPC44 is out of range. Valid range is $00000 \leq LPC44 \leq 09999$
0249	LPC49 is out of range. Valid range is $00000 \leq LPC49 \leq 09999$
0250	LPC50 is out of range. Valid range is $00000 \leq LPC50 \leq 09999$
0251	LPC51 is out of range. Valid range is $00000 \leq LPC51 \leq 09999$
0343	LPC43 is equal to LPC44. They must not be equal.
0441	LPC41 is out of range. Valid range is $00000 \leq LPC41 < LPC42$
0442	LPC42 is out of range. Valid range is $LPC41 < LPC42 \leq 09999$
0457	LPC57 is out of range. If non-zero, LPC57 must be within $MCC31 < LPC57 \leq MCC32$
0506	Your bit pattern in LPC02-B06, LPC02-B05, and LPC02-B04 indicates a selected clamp pressure control valve that is unconnected according to your entries in MCC02 and MCC04.

ID = 7

CPC – Clamp Close Profile Block

Error Code	Description $ID = 7$
0209	CPC09 is out of range. When CPC03-B14 = 0, CPC09 must be within $00000 \leq CPC09 \leq 09999$
0212	CPC12 is out of range. When CPC03-B14 = 0, CPC12 must be within $00000 \leq CPC12 \leq 09999$
0215	CPC15 is out of range. When CPC03-B14 = 0, CPC15 must be within $00000 \leq CPC15 \leq 09999$
0218	CPC18 is out of range. When CPC03-B14 = 0, CPC18 must be within $00000 \leq CPC18 \leq 09999$
0221	CPC21 is out of range. When CPC03-B14 = 0, CPC21 must be within $00000 \leq CPC21 \leq 09999$
0224	CPC24 is out of range. When CPC03-B14 = 0, CPC24 must be within $00000 \leq CPC24 \leq 09999$
0227	CPC27 is out of range. When CPC03-B14 = 0, CPC27 must be within $00000 \leq CPC27 \leq 09999$

Error Code	Description $ID = 7$	
0230	CPC30 is out of range. When CPC03-B14 = 0, CPC30 must be within $00000 \leq CPC30 \leq 09999$	
0233	CPC33 is out of range. When CPC03-B14 = 0, CPC33 must be within $00000 \leq CPC33 \leq 09999$	
0409	CPC09 is out of range. When CPC03-B14 = 1, a non-zero entry for CPC09 must be within $FCC45 \leq CPC09 \leq FCC46$	
0410	CPC10 is out of range. If non-zero, CPC10 must be within $FCC41 \leq CPC10 \leq FCC42$	
0411	CPC11 is out of range. **if:**	**then:**
	MCC27 and MCC28 are both non-zero	CPC11 must be within $00000 \leq CPC11 \leq MCC28 - MCC27$
	MCC27 is non-zero and MCC28 is zero	CPC11 must be within $00000 \leq CPC11 \leq MCC24 - MCC27$.
	MCC27 is zero and MCC28 is non-zero	CPC11 must be within $00000 \leq CPC11 \leq MCC28 - MCC23$.
	MCC27 and MCC28 are both zero	CPC11 must be within $00000 \leq CPC11 \leq MCC24 - MCC23$
0412	CPC12 is out of range. When CPC03-B14 = 1, a non-zero entry for CPC12 must be within $FCC45 \leq CPC12 \leq FCC46$	
0413	CPC13 is out of range. If non-zero, CPC13 must be within $FCC41 \leq CPC13 \leq FCC42$	
0414	CPC14 is out of range. **if:**	**then:**
	MCC27 and MCC28 are both non-zero	CPC14 must be within $00000 \leq CPC14 \leq MCC28 - MCC27$
	MCC27 is non-zero and MCC28 is zero	CPC14 must be within $00000 \leq CPC14 \leq MCC24 - MCC27$.
	MCC27 is zero and MCC28 is non-zero	CPC14 must be within $00000 \leq CPC14 \leq MCC28 - MCC23$.
	MCC27 and MCC28 are both zero	CPC14 must be within $00000 \leq CPC14 \leq MCC24 - MCC23$
0415	CPC15 is out of range. When CPC03-B14 = 1, a non-zero entry for CPC15 must be within $FCC45 \leq CPC15 \leq FCC46$	
0416	CPC16 is out of range. If non-zero, CPC16 must be within $FCC41 \leq CPC16 \leq FCC42$	
0417	CPC17 is out of range. **if:**	**then:**
	MCC27 and MCC28 are both non-zero	CPC17 must be within $00000 \leq CPC17 \leq MCC28 - MCC27$
	MCC27 is non-zero and MCC28 is zero	CPC17 must be within $00000 \leq CPC17 \leq MCC24 - MCC27$.
	MCC27 is zero and MCC28 is non-zero	CPC17 must be within $00000 \leq CPC17 \leq MCC28 - MCC23$.
	MCC27 and MCC28 are both zero	CPC17 must be within $00000 \leq CPC17 \leq MCC24 - MCC23$
0418	CPC18 is out of range. When CPC03-B14 = 1, a non-zero entry for CPC18 must be within $SCC45 \leq CPC18 \leq SCC46$	
0419	CPC19 is out of range. If non-zero, CPC19 must be within $SCC41 \leq CPC19 \leq SCC42$	

Error Code	Description $\quad\quad$ ID $= 7$	
0420	CPC20 is out of range.	
	if:	**then:**
	MCC27 and MCC28 are both non-zero	CPC20 must be within 00000 $\le$ CPC20 $\le$ MCC28 – MCC27
	MCC27 is non-zero and MCC28 is zero	CPC20 must be within 00000 $\le$ CPC20 $\le$ MCC24 – MCC27.
	MCC27 is zero and MCC28 is non-zero	CPC20 must be within 00000 $\le$ CPC20 $\le$ MCC28 – MCC23
	MCC27 and MCC28 are both zero	CPC20 must be within 00000 $\le$ CPC20 $\le$ MCC24 – MCC23
0421	CPC21 is out of range. When CPC03-B14 = 1, a non-zero entry for CPC21 must be within SCC45 $\le$ CPC21 $\le$ SCC46	
0422	CPC22 is out of range. If non-zero, CPC22 must be within SCC41 $\le$ CPC22 $\le$ SCC42	
0423	CPC23 is out of range.	
	if:	**then:**
	MCC27 and MCC28 are both non-zero	CPC23 must be within 00000 $\le$ CPC23 $\le$ MCC28 – MCC27
	MCC27 is non-zero and MCC28 is zero	CPC23 must be within 00000 $\le$ CPC23 $\le$ MCC24 – MCC27.
	MCC27 is zero and MCC28 is non-zero	CPC23 must be within 00000 $\le$ CPC23 $\le$ MCC28 – MCC23.
	MCC27 and MCC28 are both zero	CPC23 must be within 00000 $\le$ CPC23 $\le$ MCC24 – MCC23
0424	CPC24 is out of range. When CPC03-B14 = 1, a non-zero entry for CPC24 must be within SCC45 $\le$ CPC24 $\le$ SCC46	
0425	CPC25 is out of range. If non-zero, CPC25 must be within SCC41 $\le$ CPC25 $\le$ SCC42	
0426	CPC26 is out of range.	
	if:	**then:**
	MCC27 and MCC28 are both non-zero	CPC26 must be within 00000 $\le$ CPC26 $\le$ MCC28 – MCC27
	MCC27 is non-zero and MCC28 is zero	CPC26 must be within 00000 $\le$ CPC26 $\le$ MCC24 – MCC27.
	MCC27 is zero and MCC28 is non-zero	CPC26 must be within 00000 $\le$ CPC26 $\le$ MCC28 – MCC23.
	MCC27 and MCC28 are both zero	CPC26 must be within 00000 $\le$ CPC26 $\le$ MCC24 – MCC23
0427	CPC27 is out of range. When CPC03-B14 = 1, a non-zero entry for CPC27 must be within TCC45 $\le$ CPC27 $\le$ TCC46	
0428	CPC28 is out of range. If non-zero, CPC28 must be within TCC41 $\le$ CPC28 $\le$ TCC42	
0429	CPC29 is out of range.	
	if:	**then:**
	MCC27 and MCC28 are both non-zero	CPC29 must be within 00000 $\le$ CPC29 $\le$ MCC28 – MCC27
	MCC27 is non-zero and MCC28 is zero	CPC29 must be within 00000 $\le$ CPC29 $\le$ MCC24 – MCC27.
	MCC27 is zero and MCC28 is non-zero	CPC29 must be within 00000 $\le$ CPC29 $\le$ MCC28 – MCC23.
	MCC27 and MCC28 are both zero	CPC29 must be within 00000 $\le$ CPC29 $\le$ MCC24 – MCC23
0430	CPC30 is out of range. When CPC03-B14 = 1, a non-zero entry for CPC30 must be within TCC45 $\le$ CPC30 $\le$ TCC46	
0431	CPC31 is out of range. If non-zero, CPC31 must be within TCC41 $\le$ CPC31 $\le$ TCC42	

Error Code	Description $\mathbf{ID = 7}$	
0432	CPC32 is out of range.	
	if:	**then:**
	MCC27 and MCC28 are both non-zero	CPC32 must be within $00000 \leq CPC32 \leq MCC28 - MCC27$
	MCC27 is non-zero and MCC28 is zero	CPC32 must be within $00000 \leq CPC32 \leq MCC24 - MCC27$.
	MCC27 is zero and MCC28 is non-zero	CPC32 must be within $00000 \leq CPC32 \leq MCC28 - MCC23$.
	MCC27 and MCC28 are both zero	CPC32 must be within $00000 \leq CPC32 \leq MCC24 - MCC23$
0433	CPC33 is out of range. When CPC03-B14(16) = 1, a non-zero entry for CPC33 must be within $TCC45 \leq CPC33 \leq TCC46$	
0434	CPC34 is out of range. If non-zero, CPC34 must be within $TCC41 \leq CPC34 \leq TCC42$	
0435	CPC35 is out of range.	
	if:	**then:**
	MCC27 and MCC28 are both non-zero	CPC35 must be within $00000 \leq CPC35 \leq MCC28 - MCC27$
	MCC27 is non-zero and MCC28 is zero	CPC35 must be within $00000 \leq CPC35 \leq MCC24 - MCC27$.
	MCC27 is zero and MCC28 is non-zero	CPC35 must be within $00000 \leq CPC35 \leq MCC28 - MCC23$.
	MCC27 and MCC28 are both zero	CPC35 must be within $00000 \leq CPC35 \leq MCC24 - MCC23$
0437	CPC37 is out of range. If non-zero, CPC37 must be within $LPC41 \leq CPC37 \leq LPC42$	
0438	CPC38 is out of range.	
	if:	**then:**
	MCC27 and MCC28 are both non-zero	CPC38 must be within $00000 \leq CPC38 \leq MCC28 - MCC27$
	MCC27 is non-zero and MCC28 is zero	CPC38 must be within $00000 \leq CPC38 \leq MCC24 - MCC27$.
	MCC27 is zero and MCC28 is non-zero	CPC38 must be within $00000 \leq CPC38 \leq MCC28 - MCC23$.
	MCC27 and MCC28 are both zero	CPC38 must be within $00000 \leq CPC38 \leq MCC24 - MCC23$
0440	CPC40 is out of range. If non-zero, CPC40 must be within $LPC41 \leq CPC40 \leq LPC42$	
0461	CPC61 is out of range.	
	if:	**then:**
	MCC27 and MCC28 are both non-zero	CPC61 must be within $CPC62 < CPC61 \leq MCC28 - MCC27$
	MCC27 is non-zero and MCC28 is zero	CPC61 must be within $CPC62 < CPC61 \leq MCC24 - MCC27$.
	MCC27 is zero and MCC28 is non-zero	CPC61 must be within $CPC62 < CPC61 \leq MCC28 - MCC23$
	MCC27 and MCC28 are both zero	CPC61 must be within $CPC62 < CPC61 \leq MCC24 - MCC23$
0462	CPC62 is out of range. CPC62 must be within $00000 \leq CPC62 < CPC61$	
0463	CPC63 is out of range. If non-zero, CPC63 must be within $MCC31 < CPC63 \leq MCC32$	
0504	You have selected closed-loop Press/Pos execution for the First Clamp Close Profile by CPC04-B01 = 0; however, your bit patterns in MCC02 and MCC03 indicate that the QDC module does not have access to a connected clamp pressure transducer.	

Error Code	Description $\mathbf{ID} = 7$
0503	Your selection to bridge the First Clamp Close Profile directly into the Second Clamp Close Profile, and set-output upon conclusion of the Second Clamp Close Profile (CPC03-B08 = 0 and CPC03-B09 = 1) is invalid because the QDC module does not have a valid SCC on-board (SYS15-B03 = 0).
0507	Your selection to bridge the first two Clamp Close Profiles directly into the Third Clamp Close Profile, and set-output upon conclusion of the Third Clamp Close Profile (CPC03-B08 = 0, CPC03-B09 = 0, and CPC03-B10 = 1) is invalid because the QDC module does not have a valid TCC on-board (SYS15-B04 = 0).
0508	You have selected closed-loop Press/Pos execution for the Second Clamp Close Profile by CPC04-B03 = 0; however, your bit patterns in MCC02 and MCC03 indicate that the QDC module does not have access to a connected clamp pressure transducer.
0511	Your selection to bridge the Second Clamp Close Profile directly into the Third Clamp Close Profile, and set-output upon conclusion of the Third Clamp Close Profile (CPC03-B09 = 0, and CPC03-B10 = 1) is invalid because the QDC module does not have a valid TCC on-board (SYS15-B04 = 0).
0512	You have selected closed-loop Press/Pos execution for the Third Clamp Close Profile by CPC04-B05 = 0; however, your bit patterns in MCC02 and MCC03 indicate that the QDC module does not have access to a connected clamp pressure transducer.
0516	You have selected closed-loop Press/Pos execution for the Clamp Low Pressure Close Profile by CPC04-B07 = 0; however, your bit patterns in MCC02 and MCC03 indicate that the QDC module does not have access to a connected clamp pressure transducer.
0600	Your entire Clamp Close Profile Command Block has been rejected because the QDC module does not have a valid Clamp Low Pressure Close Configuration Command Block on-board (SYS15-B05 = 0).
0609	Your CPC09 must be zero because of invalid FCC. (SYS15-B02 = 0).
0610	Your CPC10 must be zero because of invalid FCC. (SYS15-B02 = 0).
0611	Your CPC11 must be zero because of invalid FCC. (SYS15-B02 = 0).
0612	Your CPC12 must be zero because of invalid FCC. (SYS15-B02 = 0).
0613	Your CPC13 must be zero because of invalid FCC. (SYS15-B02 = 0).
0614	Your CPC14 must be zero because of invalid FCC. (SYS15-B02 = 0).
0615	Your CPC15 must be zero because of invalid FCC. (SYS15-B02 = 0).
0616	Your CPC16 must be zero because of invalid FCC. (SYS15-B02 = 0).
0617	Your CPC17 must be zero because of invalid FCC. (SYS15-B02 = 0).
0618	Your CPC18 must be zero because of invalid SCC. (SYS15-B03 = 0).
0619	Your CPC19 must be zero because of invalid SCC. (SYS15-B03 = 0).
0620	Your CPC20 must be zero because of invalid SCC. (SYS15-B03 = 0).
0621	Your CPC21 must be zero because of invalid SCC. (SYS15-B03 = 0).
0622	Your CPC22 must be zero because of invalid SCC. (SYS15-B03 = 0).
0623	Your CPC23 must be zero because of invalid SCC. (SYS15-B03 = 0).
0624	Your CPC24 must be zero because of invalid SCC. (SYS15-B03 = 0).
0625	Your CPC25 must be zero because of invalid SCC. (SYS15-B03 = 0).
0626	Your CPC26 must be zero because of invalid SCC. (SYS15-B03 = 0).
0627	Your CPC27 must be zero because of invalid TCC. (SYS15-B04 = 0).
0628	Your CPC28 must be zero because of invalid TCC. (SYS15-B04 = 0).
0629	Your CPC29 must be zero because of invalid TCC. (SYS15-B04 = 0).
0630	Your CPC30 must be zero because of invalid TCC. (SYS15-B04 = 0).
0631	Your CPC31 must be zero because of invalid TCC. (SYS15-B04 = 0).
0632	Your CPC32 must be zero because of invalid TCC. (SYS15-B04 = 0).
0633	Your CPC33 must be zero because of invalid TCC. (SYS15-B04 = 0).
0634	Your CPC34 must be zero because of invalid TCC. (SYS15-B04 = 0).
0635	Your CPC35 must be zero because of invalid TCC. (SYS15-B04 = 0).
0812	CPC12 must be 00000 when CPC11 = 00000.

Error Code	Description $ID = 7$
0813	CPC13 must be 00000 when CPC11 = 00000.
0814	CPC14 must be 00000 when CPC11 = 00000.
0815	CPC15 must be 00000 when CPC14 = 00000.
0816	CPC16 must be 00000 when CPC14 = 00000.
0817	CPC17 must be 00000 when CPC14 = 00000.
0821	CPC21 must be 00000 when CPC20 = 00000.
0822	CPC22 must be 00000 when CPC20 = 00000.
0823	CPC23 must be 00000 when CPC20 = 00000.
0824	CPC24 must be 00000 when CPC23 = 00000.
0825	CPC25 must be 00000 when CPC23 = 00000.
0826	CPC26 must be 00000 when CPC23 = 00000.
0830	CPC30 must be 00000 when CPC29 = 00000.
0831	CPC31 must be 00000 when CPC29 = 00000.
0832	CPC32 must be 00000 when CPC29 = 00000.
0833	CPC33 must be 00000 when CPC32 = 00000.
0834	CPC34 must be 00000 when CPC32 = 00000.
0835	CPC35 must be 00000 when CPC32 = 00000.
0840	CPC40 must be 00000 when CPC38 = 00000.
1014	CPC14 is not in decreasing positional order. If non-zero, CPC14 must be less than CPC11.
1017	CPC17 is not in decreasing positional order. If non-zero, CPC17 must be less than CPC14.
1020	CPC20 is not in decreasing positional order. If non-zero, CPC20 must be less than all non-zero entries in CPC11, CPC14, and CPC17.
1023	CPC23 is not in decreasing positional order. If non-zero, CPC23 must be less than CPC20.
1026	CPC26 is not in decreasing positional order. If non-zero, CPC26 must be less than CPC23.
1029	CPC29 is not in decreasing positional order. If non-zero, CPC29 must be less than all non-zero entries in CPC11, CPC14, CPC17, CPC20, CPC23, and CPC26.
1032	CPC32 is not in decreasing positional order. If non-zero, CPC32 must be less than CPC29.
1035	CPC35 is not in decreasing positional order. If non-zero, CPC35 must be less than CPC32.
1038	CPC38 is not in decreasing positional order. If non-zero, CPC38 must be less than all non-zero entries in CPC11, CPC14, CPC17, CPC20, CPC23, CPC26, CPC29, CPC32, and CPC35.

ID = 8

INC – Injection Configuration Block

Error Code	Description $ID = 8$
0205	INC05 is out of range. Valid range is $00000 \leq INC05 \leq 09999$
0206	INC06 is out of range. Valid range is $00000 \leq INC06 \leq 09999$
0209	INC09 is out of range. Valid range is $00000 \leq INC09 \leq 09999$
0210	INC10 is out of range. Valid range is $00000 \leq INC10 \leq 09999$
0211	INC11 is out of range. Valid range is $00000 \leq INC11 \leq 09999$
0212	INC12 is out of range. Valid range is $00000 \leq INC12 \leq 09999$
0213	INC13 is out of range. Valid range is $00000 \leq INC13 \leq 09999$
0214	INC14 is out of range. Valid range is $00000 \leq INC14 \leq 09999$
0215	INC15 is out of range. Valid range is $00000 \leq INC15 \leq 09999$

Error Code	Description ID = 8
0216	INC16 is out of range. Valid range is 00000 ≤ INC16 ≤ 09999
0217	INC17 is out of range. Valid range is 00000 ≤ INC17 ≤ 09999
0218	INC18 is out of range. Valid range is 00000 ≤ INC18 ≤ 09999
0219	INC19 is out of range. Valid range is 00000 ≤ INC19 ≤ 09999
0220	INC20 is out of range. Valid range is 00000 ≤ INC20 ≤ 09999
0221	INC21 is out of range. Valid range is 00000 ≤ INC21 ≤ 09999
0222	INC22 is out of range. Valid range is 00000 ≤ INC22 ≤ 09999
0223	INC23 is out of range. Valid range is 00000 ≤ INC23 ≤ 09999
0224	INC24 is out of range. Valid range is 00000 ≤ INC24 ≤ 09999
0225	INC25 is out of range. Valid range is 00000 ≤ INC25 ≤ 09999
0226	INC26 is out of range. Valid range is 00000 ≤ INC26 ≤ 09999
0227	INC27 is out of range. Valid range is 00000 ≤ INC27 ≤ 09999
0228	INC28 is out of range. Valid range is 00000 ≤ INC28 ≤ 09999
0229	INC29 is out of range. Valid range is 00000 ≤ INC29 ≤ 09999
0230	INC30 is out of range. Valid range is 00000 ≤ INC30 ≤ 09999
0231	INC31 is out of range. Valid range is 00000 ≤ INC31 ≤ 09999
0232	INC32 is out of range. Valid range is 00000 ≤ INC32 ≤ 09999
0243	INC43 is out of range. Valid range is 00000 ≤ INC43 ≤ 09999
0244	INC44 is out of range. Valid range is 00000 ≤ INC44 ≤ 09999
0247	INC47 is out of range. Valid range is 00000 ≤ INC47 ≤ 09999
0248	INC48 is out of range. Valid range is 00000 ≤ INC48 ≤ 09999
0249	INC49 is out of range. Valid range is 00000 ≤ INC49 ≤ 09999
0250	INC50 is out of range. Valid range is 00000 ≤ INC50 ≤ 09999
0251	INC51 is out of range. Valid range is 00000 ≤ INC51 ≤ 09999
0252	INC52 is out of range. Valid range is 00000 ≤ INC52 ≤ 09999
0253	INC53 is out of range. Valid range is 00000 ≤ INC53 ≤ 09999
0343	INC43 is equal to INC44. They must not be equal.
0347	INC47 is equal to INC48. They must not be equal.
0442	INC42 is out of range. Valid range is INC41 < INC42 ≤ 09999
0445	INC45 is out of range. Valid range is 00000 ≤ INC45 < INC46
0446	INC46 is out of range. Valid range is INC45 < INC46 ≤ 09999
0457	INC57 is out of range. If non-zero, INC57 must be within MCC17 < INC57 ≤ MCC18
0458	INC58 is out of range. If non-zero, INC58 must be within MCC57 < INC58 ≤ MCC58
0502	Your bit pattern in INC02-B02, INC02-B01, and INC02-B00 indicates a selected ram (screw) velocity control valve that is unconnected according to your entries in MCC02 and MCC04.
0506	Your bit pattern in INC02-B06, INC02-B05, and INC02-B04 indicates a selected ram (screw) pressure control valve that is unconnected according to your entries in MCC02 and MCC04.

ID = 9

IPC – Injection Profile Block

Error Code	Description ID = 9
0209	IPC09 is out of range. When IPC03-B01 = 0, IPC09 must be within 00000 ≤ IPC09 ≤ 09999

Error Code	Description ID = 9
0212	IPC12 is out of range. Valid range is $00000 \leq IPC12 \leq 09999$
0213	IPC13 is out of range. When IPC03-B01 = 0, IPC13 must be within $00000 \leq IPC13 \leq 09999$
0216	IPC16 is out of range. Valid range is $00000 \leq IPC16 \leq 09999$
0217	IPC17 is out of range. When IPC03-B01 = 0, IPC17 must be within $00000 \leq IPC17 \leq 09999$
0220	IPC20 is out of range. Valid range is $00000 \leq IPC20 \leq 09999$
0221	IPC21 is out of range. When IPC03-B01 = 0, IPC21 must be within $00000 \leq IPC21 \leq 09999$
0224	IPC24 is out of range. Valid range is $00000 \leq IPC24 \leq 09999$
0225	IPC25 is out of range. When IPC03-B01 = 0, IPC25 must be within $00000 \leq IPC25 \leq 09999$
0228	IPC28 is out of range. Valid range is $00000 \leq IPC28 \leq 09999$
0229	IPC29 is out of range. When IPC03-B01 = 0, IPC29 must be within $00000 \leq IPC29 \leq 09999$
0232	IPC32 is out of range. Valid range is $00000 \leq IPC32 \leq 09999$
0233	IPC33 is out of range. When IPC03-B01 = 0, IPC33 must be within $00000 \leq IPC33 \leq 09999$
0236	IPC36 is out of range. Valid range is $00000 \leq IPC36 \leq 09999$
0237	IPC37 is out of range. When IPC03-B01 = 0, IPC37 must be within $00000 \leq IPC37 \leq 09999$
0240	IPC40 is out of range. Valid range is $00000 \leq IPC40 \leq 09999$
0241	IPC41 is out of range. When IPC03-B01 = 0, IPC41 must be within $00000 \leq IPC41 \leq 09999$
0244	IPC44 is out of range. Valid range is $00000 \leq IPC44 \leq 09999$
0245	IPC45 is out of range. When IPC03-B01 = 0, IPC45 must be within $00000 \leq IPC45 \leq 09999$
0248	IPC48 is out of range. Valid range is $00000 \leq IPC48 \leq 09999$
0249	IPC49 is out of range. When IPC03-B01 = 0, IPC49 must be within $00000 \leq IPC49 \leq 09999$
0251	IPC51 is out of range. When IPC03-B01 = 0, IPC51 must be within $00000 \leq IPC51 \leq 09999$
0259	IPC59 is out of range. Valid range is $00000 \leq IPC59 \leq 00099$
0260	IPC60 is out of range. Valid range is $00000 \leq IPC60 \leq 09999$
0409	IPC09 is out of range. When IPC03-B14 = 1, a non-zero entry for IPC09 must be within $INC45 \leq IPC09 \leq INC46$
0410	IPC10 is out of range. If non-zero, IPC10 must be within $INC41 \leq IPC10 \leq INC42$
0411	IPC11 is out of range.

	if:	then:
	MCC13 and MCC14 are both non-zero	IPC11 must be within $00000 \leq IPC11 \leq MCC14 - MCC13$
	MCC13 is non-zero and MCC14 is zero	IPC11 must be within $00000 \leq IPC11 \leq MCC10 - MCC13$.
	MCC13 is zero and MCC14 is non-zero	IPC11 must be within $00000 \leq IPC11 \leq MCC14 - MCC09$.
	MCC13 and MCC14 are both zero	IPC11 must be within $00000 \leq IPC11 \leq MCC10 - MCC09$

Error Code	Description
0413	IPC13 is out of range. When IPC03-B14 = 1, a non-zero IPC13 must be within $INC45 \leq IPC13 \leq INC46$
0414	IPC14 is out of range. If non-zero, IPC14 must be within $INC41 \leq IPC14 \leq INC42$

Error Code	Description $\quad$ **ID = 9**	
0415	IPC15 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	IPC15 must be within $00000 \leq IPC15 \leq MCC14 - MCC13$
	MCC13 is non-zero and MCC14 is zero	IPC15 must be within $00000 \leq IPC15 \leq MCC10 - MCC13$.
	MCC13 is zero and MCC14 is non-zero	IPC15 must be within $00000 \leq IPC15 \leq MCC14 - MCC09$
	MCC13 and MCC14 are both zero	IPC15 must be within $00000 \leq IPC15 \leq MCC10 - MCC09$
0417	IPC17 is out of range. When IPC03-B14 = 1, a non-zero IPC17 must be within $INC45 \leq IPC17 \leq INC46$	
0418	IPC18 is out of range. If non-zero, IPC18 must be within $INC41 \leq IPC18 \leq INC42$	
0419	IPC19 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	IPC19 must be within $00000 \leq IPC19 \leq MCC14 - MCC13$
	MCC13 is non-zero and MCC14 is zero	PC19 must be within $00000 \leq IPC19 \leq MCC10 - MCC13$.
	MCC13 is zero and MCC14 is non-zero	IPC19 must be within $00000 \leq IPC19 \leq MCC14 - MCC09$.
	MCC13 and MCC14 are both zero	IPC19 must be within $00000 \leq IPC19 \leq MCC10 - MCC09$
0421	IPC21 is out of range. When IPC03-B14 = 1, a non-zero IPC21 must be within $INC45 \leq IPC21 \leq INC46$	
0422	IPC22 is out of range. If non-zero, IPC22 must be within $INC41 \leq IPC22 \leq INC42$	
0423	IPC23 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	IPC23 must be within $00000 \leq IPC23 \leq MCC14 - MCC13$
	MCC13 is non-zero and MCC14 is zero .	IPC23 must be within $00000 \leq IPC23 \leq MCC10 - MCC13$
	MCC13 is zero and MCC14 is non-zero	IPC23 must be within $00000 \leq IPC23 \leq MCC14 - MCC09$.
	MCC13 and MCC14 are both zero	IPC23 must be within $00000 \leq IPC23 \leq MCC10 - MCC09$
0425	IPC25 is out of range. When IPC03-B14 = 1, a non-zero IPC25 must be within $INC45 \leq IPC25 \leq INC46$	
0426	IPC26 is out of range. If non-zero, IPC26 must be within $INC41 \leq IPC26 \leq INC42$	
0427	IPC27 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	IPC27 must be within $00000 \leq IPC27 \leq MCC14 - MCC13$
	MCC13 is non-zero and MCC14 is zero	IPC27 must be within $00000 \leq IPC27 \leq MCC10 - MCC13$.
	MCC13 is zero and MCC14 is non-zero	IPC27 must be within $00000 \leq IPC27 \leq MCC14 - MCC09$.
	MCC13 and MCC14 are both zero	IPC27 must be within $00000 \leq IPC27 \leq MCC10 - MCC09$

Error Code	Description ID = 9	
0429	IPC29 is out of range. When IPC03-B14 = 1, a non-zero IPC29 must be within INC45 ≤ IPC29 ≤ INC46	
0430	IPC30 is out of range. If non-zero, IPC30 must be within INC41 ≤ IPC30 ≤ INC42	
0431	IPC31 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	IPC31 must be within 00000 ≤ IPC31 ≤ MCC14 – MCC13
	MCC13 is non-zero and MCC14 is zero	IPC31 must be within 00000 ≤ IPC31 ≤ MCC10 – MCC13.
	MCC13 is zero and MCC14 is non-zero .	IPC31 must be within 00000 ≤ IPC31 ≤ MCC14 – MCC09
	If MCC13 and MCC14 are both zero	IPC31 must be within 00000 ≤ IPC31 ≤ MCC10 – MCC09
0433	IPC33 is out of range. When IPC03-B14 = 1, a non-zero IPC33 must be within INC45 ≤ IPC33 ≤ INC46	
0434	IPC34 is out of range. If non-zero, IPC34 must be within INC41 ≤ IPC34 ≤ INC42	
0435	IPC35 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	IPC35 must be within 00000 ≤ IPC35 ≤ MCC14 – MCC13
	MCC13 is non-zero and MCC14 is zero	IPC35 must be within 00000 ≤ IPC35 ≤ MCC10 – MCC13.
	MCC13 is zero and MCC14 is non-zero	IPC35 must be within 00000 ≤ IPC35 ≤ MCC14 – MCC09
	MCC13 and MCC14 are both zero	IPC35 must be within 00000 ≤ IPC35 ≤ MCC10 – MCC09
0437	IPC37 is out of range. When IPC03-B14 = 1, a non-zero IPC37 must be within INC45 ≤ IPC37 ≤ INC46	
0438	IPC38 is out of range. If non-zero, IPC38 must be within INC41 ≤ IPC38 ≤ INC42	
0439	IPC39 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	IPC39 must be within 00000 ≤ IPC39 ≤ MCC14 – MCC13
	MCC13 is non-zero and MCC14 is zero	IPC39 must be within 00000 ≤ IPC39 ≤ MCC10 – MCC13.
	MCC13 is zero and MCC14 is non-zero	IPC39 must be within 00000 ≤ IPC39 ≤ MCC14 – MCC09.
	MCC13 and MCC14 are both zero	IPC39 must be within 00000 ≤ IPC39 ≤ MCC10 – MCC09
0441	IPC41 is out of range. When IPC03-B14 = 1, a non-zero IPC41 must be within INC45 ≤ IPC41 ≤ INC46	
0442	IPC42 is out of range. If non-zero, IPC42 must be within INC41 ≤ IPC42 ≤ INC42	

Error Code	Description $ID = 9$	
0443	IPC43 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	IPC43 must be within $00000 \leq IPC43 \leq MCC14 - MCC13$
	MCC13 is non-zero and MCC14 is zero	IPC43 must be within $00000 \leq IPC43 \leq MCC10 - MCC13$.
	MCC13 is zero and MCC14 is non-zero	IPC43 must be within $00000 \leq IPC43 \leq MCC14 - MCC09$.
	MCC13 and MCC14 are both zero	IPC43 must be within $00000 \leq IPC43 \leq MCC10 - MCC09$
0445	IPC45 is out of range. When IPC03-B14 = 1, a non-zero IPC45 must be within $INC45 \leq IPC45 \leq INC46$	
0446	IPC46 is out of range. If non-zero, IPC46 must be within $INC41 \leq IPC46 \leq INC42$	
0447	IPC47 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	IPC47 must be within $00000 \leq IPC47 \leq MCC14 - MCC13$
	MCC13 is non-zero and MCC14 is zero	IPC47 must be within $00000 \leq IPC47 \leq MCC10 - MCC13$.
	MCC13 is zero and MCC14 is non-zero	IPC47 must be within $00000 \leq IPC47 \leq MCC14 - MCC09$.
	MCC13 and MCC14 are both zero	IPC47 must be within $00000 \leq IPC47 \leq MCC10 - MCC09$
0449	IPC49 is out of range. When IPC03-B14 = 1, a non-zero IPC49 must be within $INC45 \leq IPC49 \leq INC46$	
0450	IPC50 is out of range. If non-zero, IPC50 must be within $INC41 \leq IPC50 \leq INC42$	
0451	IPC51 is out of range. When IPC03-B14 = 1, IPC51 must be within $00000 \leq IPC51 \leq INC46$	
0452	IPC52 is out of range. Valid range is $00000 \leq IPC52 \leq INC42$	
0457	You have selected Pressure Limited Vel/Pos execution for the Injection Profile by **IPC03-B01 = 0 and IPC03-B00 = 1; however,** IPC57 is out of range. IPC57 must be within $MCC17 < IPC57 \leq MCC18$	
0458	You have selected Pressure Limited Vel/Pos execution for the Injection Profile by IPC03-B01 = 0 and IPC03-B00 = 1. IPC58 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	IPC58 must be within $00000 \leq IPC58 \leq MCC14 - MCC13$
	MCC13 is non-zero and MCC14 is zero	IPC58 must be within $00000 \leq IPC58 \leq MCC10 - MCC13$.
	MCC13 is zero and MCC14 is non-zero	IPC58 must be within $00000 \leq IPC58 \leq MCC14 - MCC09$.
	MCC13 and MCC14 are both zero	IPC58 must be within $00000 \leq IPC58 \leq MCC10 - MCC09$

Error Code	Description ID = 9	
0461	Your non-zero entry for IPC61 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	IPC61 must be within $00000 \leq IPC61 \leq MCC14 - MCC13$
	MCC13 is non-zero and MCC14 is zero	IPC61 must be within $00000 \leq IPC61 \leq MCC10 - MCC13$.
	MCC13 is zero and MCC14 is non-zero .	IPC61 must be within $00000 \leq IPC61 \leq MCC14 - MCC09$
	MCC13 and MCC14 are both zero	IPC61 must be within $00000 \leq IPC61 \leq MCC10 - MCC09$
0462	IPC62 is out of range. If non-zero, IPC62 must be within $MCC17 \leq IPC62 \leq MCC18$	
0463	IPC63 is out of range. If non-zero, IPC63 must be within $MCC57 \leq IPC63 \leq MCC58$	
0464	IPC64 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	IPC64 must be within $00000 \leq IPC64 \leq MCC14 - MCC13$
	MCC13 is non-zero and MCC14 is zero	IPC64 must be within $00000 \leq IPC64 \leq MCC10 - MCC13$.
	MCC13 is zero and MCC14 is non-zero	IPC64 must be within $00000 \leq IPC64 \leq MCC14 - MCC09$.
	MCC13 and MCC14 are both zero	IPC64 must be within $00000 \leq IPC64 \leq MCC10 - MCC09$
0503	You have selected Pressure Limited Vel/Pos execution for the Injection Profile by IPC03-B01 = 0 and IPC03-B00 = 1; however, your bit patterns in MCC02 and MCC03 indicate that the QDC module does not have access to a connected ram (screw) pressure transducer.	
0504	You have selected closed-loop Press/Pos execution for the Injection Profile by IPC04-B02 = 0; however, your bit patterns in MCC02 and MCC03 indicate that the QDC module does not have access to a connected ram (screw) pressure transducer.	
0508	You have selected closed-loop Press/Time execution for the Injection Profile by IPC04-B03 = 0; however, your bit patterns in MCC02 and MCC03 indicate that the QDC module does not have access to a connected ram (screw) pressure transducer.	
0600	Your entire Injection Profile Command Block has been rejected because the QDC module does not have a valid Injection Configuration Command Block on-board (SYS15-B07 = 0).	
0711	IPC11 cannot be 00000 because it conflicts with one of:	
	IPC13 > 00000 when IPC03-B01 = 0	
	IPC14 > 00000 when IPC03-B01 = 1	
0712	IPC12 cannot be 00000 when IPC14 > 00000.	
0715	IPC15 cannot be 00000 because it conflicts with one of:	
	IPC17 > 00000 when IPC03-B01 = 0	
	IPC18 > 00000 when IPC03-B01 = 1	
0716	IPC16 cannot be 00000 when IPC18 > 00000.	
0719	IPC19 cannot be 00000 because it conflicts with one of:	
	IPC21 > 00000 when IPC03-B01 = 0	
	IPC22 > 00000 when IPC03-B01 = 1	
0720	IPC20 cannot be 00000 when IPC22 > 00000.	
0723	IPC23 cannot be 00000 because it conflicts with one of:	
	IPC25 > 00000 when IPC03-B01 = 0	
	IPC26 > 00000 when IPC03-B01 = 1	
0724	IPC24 cannot be 00000 when IPC26 > 00000.	

Error Code	Description ID = 9
0727	IPC27 cannot be 00000 because it conflicts with one of:
	IPC29 > 00000 when IPC03-B01 = 0
	IPC30 > 00000 when IPC03-B01 = 1
0728	IPC28 cannot be 00000 when IPC30 > 00000.
0731	IPC31 cannot be 00000 because it conflicts with one of:
	IPC33 > 00000 when IPC03-B01 = 0
	IPC34 > 00000 when IPC03-B01 = 1
0732	IPC32 cannot be 00000 when IPC34 > 00000.
0735	IPC35 cannot be 00000 because it conflicts with one of:
	IPC37 > 00000 when IPC03-B01 = 0
	IPC38 > 00000 when IPC03-B01 = 1
0736	IPC36 cannot be 00000 when IPC38 > 00000.
0739	IPC39 cannot be 00000 because it conflicts with one of:
	IPC41 > 00000 when IPC03-B01 = 0
	IPC42 > 00000 when IPC03-B01 = 1
0740	IPC40 cannot be 00000 when IPC42 > 00000.
0743	IPC43 cannot be 00000 because it conflicts with one of:
	IPC45 > 00000 when IPC03-B01 = 0
	IPC46 > 00000 when IPC03-B01 = 1
0744	IPC44 cannot be 00000 when IPC46 > 00000.
0747	IPC47 cannot be 00000 because it conflicts with one of:
	IPC49 > 00000 when IPC03-B01 = 0
	IPC50 > 00000 when IPC03-B01 = 1
0748	IPC48 cannot be 00000 when IPC50 > 00000.
0757	You have selected Pressure Limited Vel/Pos execution for the Injection Profile by IPC03-B01 = 0 and IPC03-B00 = 1. This mode of Injection Profile execution does not allow a 00000 entry for IPC57.
0815	IPC15 must be 00000 when IPC11 = 00000.
0816	IPC16 must be 00000 when IPC12 = 00000.
0819	IPC19 must be 00000 when IPC15 = 00000.
0820	IPC20 must be 00000 when IPC16 = 00000.
0823	IPC23 must be 00000 when IPC19 = 00000.
0824	IPC24 must be 00000 when IPC20 = 00000.
0827	IPC27 must be 00000 when IPC23 = 00000.
0828	IPC28 must be 00000 when IPC24 = 00000.
0831	IPC31 must be 00000 when IPC27 = 00000.
0832	IPC32 must be 00000 when IPC28 = 00000.
0835	IPC35 must be 00000 when IPC31 = 00000.
0836	IPC36 must be 00000 when IPC32 = 00000.
0839	IPC39 must be 00000 when IPC35 = 00000.
0840	IPC40 must be 00000 when IPC36 = 00000.
0843	IPC43 must be 00000 when IPC39 = 00000.
0844	IPC44 must be 00000 when IPC40 = 00000.
0847	IPC47 must be 00000 when IPC43 = 00000.
0848	IPC48 must be 00000 when IPC44 = 00000.
0862	IPC62 must be zero because your bit patterns in MCC02 and MCC03 indicate that the QDC module does not have access to a connected ram (screw) pressure transducer.
0863	IPC63 must be zero because your bit patterns in MCC02 and MCC03 indicate that the QDC module has no access to a connected cavity pressure transducer.

Error Code	Description **ID = 9**
0960	Your entry combination as follows is illegal: IPC60 = IPC61 = IPC62 = IPC63 = 00000
1015	IPC15 is not in decreasing positional order. If non-zero, IPC15 must be less than IPC11.
1019	IPC19 is not in decreasing positional order. If non-zero, IPC19 must be less than IPC15.
1023	IPC23 is not in decreasing positional order. If non-zero, IPC23 must be less than IPC19.
1027	IPC27 is not in decreasing positional order. If non-zero, IPC27 must be less than IPC23.
1031	IPC31 is not in decreasing positional order. If non-zero, IPC31 must be less than IPC27.
1035	IPC35 is not in decreasing positional order. If non-zero, IPC35 must be less than IPC31.
1039	IPC39 is not in decreasing positional order. If non-zero, IPC39 must be less than IPC35.
1043	IPC43 is not in decreasing positional order. If non-zero, IPC43 must be less than IPC39.
1047	IPC47 is not in decreasing positional order. If non-zero, IPC47 must be less than IPC43.

ID = 10

PKC – Pack Configuration Block

Error Code	Description **ID = 10**
0205	PKC05 is out of range. Valid range is $00000 \leq PKC05 \leq 09999$
0206	PKC06 is out of range. Valid range is $00000 \leq PKC06 \leq 09999$
0209	PKC09 is out of range. Valid range is $00000 \leq PKC09 \leq 09999$
0210	PKC10 is out of range. Valid range is $00000 \leq PKC10 \leq 09999$
0211	PKC11 is out of range. Valid range is $00000 \leq PKC11 \leq 09999$
0212	PKC12 is out of range. Valid range is $00000 \leq PKC12 \leq 09999$
0213	PKC13 is out of range. Valid range is $00000 \leq PKC13 \leq 09999$
0214	PKC14 is out of range. Valid range is $00000 \leq PKC14 \leq 09999$
0215	PKC15 is out of range. Valid range is $00000 \leq PKC15 \leq 09999$
0216	PKC16 is out of range. Valid range is $00000 \leq PKC16 \leq 09999$
0217	PKC17 is out of range. Valid range is $00000 \leq PKC17 \leq 09999$
0218	PKC18 is out of range. Valid range is $00000 \leq PKC18 \leq 09999$
0219	PKC19 is out of range. Valid range is $00000 \leq PKC19 \leq 09999$
0220	PKC20 is out of range. Valid range is $00000 \leq PKC20 \leq 09999$
0221	PKC21 is out of range. Valid range is $00000 \leq PKC21 \leq 09999$
0222	PKC22 is out of range. Valid range is $00000 \leq PKC22 \leq 09999$
0223	PKC23 is out of range. Valid range is $00000 \leq PKC23 \leq 09999$
0224	PKC24 is out of range. Valid range is $00000 \leq PKC24 \leq 09999$
0225	PKC25 is out of range. Valid range is $00000 \leq PKC25 \leq 09999$
0226	PKC26 is out of range. Valid range is $00000 \leq PKC26 \leq 09999$
0227	PKC27 is out of range. Valid range is $00000 \leq PKC27 \leq 09999$
0228	PKC28 is out of range. Valid range is $00000 \leq PKC28 \leq 09999$
0229	PKC29 is out of range. Valid range is $00000 \leq PKC29 \leq 09999$
0230	PKC30 is out of range. Valid range is $00000 \leq PKC30 \leq 09999$
0231	PKC31 is out of range. Valid range is $00000 \leq PKC31 \leq 09999$
0232	PKC32 is out of range. Valid range is $00000 \leq PKC32 \leq 09999$

Error Code	Description ID = 10
0243	PKC43 is out of range. Valid range is 00000 ≤ PKC43 ≤ 09999
0244	PKC44 is out of range. Valid range is 00000 ≤ PKC44 ≤ 09999
0247	PKC47 is out of range. Valid range is 00000 ≤ PKC47 ≤ 09999
0248	PKC48 is out of range. Valid range is 00000 ≤ PKC48 ≤ 09999
0249	PKC49 is out of range. Valid range is 00000 ≤ PKC49 ≤ 09999
0250	PKC50 is out of range. Valid range is 00000 ≤ PKC50 ≤ 09999
0251	PKC51 is out of range. Valid range is 00000 ≤ PKC51 ≤ 09999
0252	PKC52 is out of range. Valid range is 00000 ≤ PKC52 ≤ 09999
0253	PKC53 is out of range. Valid range is 00000 ≤ PKC53 ≤ 09999
0254	PKC54 is out of range. Valid range is 00000 ≤ PKC54 ≤ 09999
0343	PKC43 is equal to PKC44. They must not be equal.
0347	PKC47 is equal to PKC48. They must not be equal.
0441	PKC41 is out of range. Valid range is 00000 ≤ PKC41 < PKC42
0442	PKC42 is out of range. Valid range is PKC41 < PKC42 ≤ 09999
0445	PKC45 is out of range. Valid range is 00000 ≤ PKC45 < PKC46
0446	PKC46 is out of range. Valid range is PKC45 < PKC46 ≤ 20000
0457	PKC57 is out of range. If non-zero, PKC57 must be within MCC17 < PKC57 ≤ MCC18
0458	PKC58 is out of range. If non-zero, PKC58 must be within MCC57 < PKC58 ≤ MCC58
0502	Your bit pattern in PKC02-B02, PKC02-B01, and PKC02-B00 indicates a selected cavity pressure control valve that is unconnected according to your entries in MCC02 and MCC04.
0506	Your bit pattern in PKC02-B06, PKC02-B05, and PKC02-B04 indicates a selected ram (screw) pressure control valve that is unconnected according to your entries in MCC02 and MCC04.

ID = 11

HDC – Hold Configuration Block

Error Code	Description ID = 11
0205	HDC05 is out of range. Valid range is 00000 ≤ HDC05 ≤ 09999
0206	HDC06 is out of range. Valid range is 00000 ≤ HDC06 ≤ 09999
0209	HDC09 is out of range. Valid range is 00000 ≤ HDC09 ≤ 09999
0210	HDC10 is out of range. Valid range is 00000 ≤ HDC10 ≤ 09999
0211	HDC11 is out of range. Valid range is 00000 ≤ HDC11 ≤ 09999
0212	HDC12 is out of range. Valid range is 00000 ≤ HDC12 ≤ 09999
0213	HDC13 is out of range. Valid range is 00000 ≤ HDC13 ≤ 09999
0214	HDC14 is out of range. Valid range is 00000 ≤ HDC14 ≤ 09999
0215	HDC15 is out of range. Valid range is 00000 ≤ HDC15 ≤ 09999
0216	HDC16 is out of range. Valid range is 00000 ≤ HDC16 ≤ 09999
0217	HDC17 is out of range. Valid range is 00000 ≤ HDC17 ≤ 09999
0218	HDC18 is out of range. Valid range is 00000 ≤ HDC18 ≤ 09999
0219	HDC19 is out of range. Valid range is 00000 ≤ HDC19 ≤ 09999
0220	HDC20 is out of range. Valid range is 00000 ≤ HDC20 ≤ 09999
0221	HDC21 is out of range. Valid range is 00000 ≤ HDC21 ≤ 09999
0222	HDC22 is out of range. Valid range is 00000 ≤ HDC22 ≤ 09999
0223	HDC23 is out of range. Valid range is 00000 ≤ HDC23 ≤ 09999
0224	HDC24 is out of range. Valid range is 00000 ≤ HDC24 ≤ 09999

Error Code	Description $ID = 11$
0225	HDC25 is out of range. Valid range is 00000 ≤ HDC25 ≤ 09999
0226	HDC26 is out of range. Valid range is 00000 ≤ HDC26 ≤ 09999
0227	HDC27 is out of range. Valid range is 00000 ≤ HDC27 ≤ 09999
0228	HDC28 is out of range. Valid range is 00000 ≤ HDC28 ≤ 09999
0229	HDC29 is out of range. Valid range is 00000 ≤ HDC29 ≤ 09999
0230	HDC30 is out of range. Valid range is 00000 ≤ HDC30 ≤ 09999
0231	HDC31 is out of range. Valid range is 00000 ≤ HDC31 ≤ 09999
0232	HDC32 is out of range. Valid range is 00000 ≤ HDC32 ≤ 09999
0233	HDC33 is out of range. Valid range is 00000 ≤ HDC33 ≤ 09999
0234	HDC34 is out of range. Valid range is 00000 ≤ HDC34 ≤ 09999
0235	HDC35 is out of range. Valid range is 00000 ≤ HDC35 ≤ 09999
0236	HDC36 is out of range. Valid range is 00000 ≤ HDC36 ≤ 09999
0237	HDC37 is out of range. Valid range is 00000 ≤ HDC37 ≤ 09999
0238	HDC38 is out of range. Valid range is 00000 ≤ HDC38 ≤ 09999
0239	HDC39 is out of range. Valid range is 00000 ≤ HDC39 ≤ 09999
0240	HDC40 is out of range. Valid range is 00000 ≤ HDC40 ≤ 09999
0243	HDC43 is out of range. Valid range is 00000 ≤ HDC43 ≤ 09999
0244	HDC44 is out of range. Valid range is 00000 ≤ HDC44 ≤ 09999
0247	HDC47 is out of range. Valid range is 00000 ≤ HDC47 ≤ 09999
0248	HDC48 is out of range. Valid range is 00000 ≤ HDC48 > 09999
0249	HDC49 is out of range. Valid range is 00000 ≤ HDC49 ≤ 09999
0250	HDC50 is out of range. Valid range is 00000 ≤ HDC50 ≤ 09999
0251	HDC51 is out of range. Valid range is 00000 ≤ HDC51 ≤ 09999
0252	HDC52 is out of range. Valid range is 00000 ≤ HDC52 ≤ 09999
0253	HDC53 is out of range. Valid range is 00000 ≤ HDC53 ≤ 09999
0254	HDC54 is out of range. Valid range is 00000 ≤ HDC54 ≤ 09999
0253	HDC53 is out of range. Valid range is 00000 ≤ HDC53 ≤ 09999
0254	HDC54 is out of range. Valid range is 00000 ≤ HDC54 ≤ 09999
0343	HDC43 is equal to HDC44. They must not be equal.
0347	HDC47 is equal to HDC48. They must not be equal.
0441	HDC41 is out of range. Valid range is 00000 ≤ HDC41 < HDC42
0442	HDC42 is out of range. Valid range is HDC41 < HDC42 ≤ 09999
0445	HDC45 is out of range. Valid range is 00000 ≤ HDC45 < HDC46
0446	HDC46 is out of range. Valid range is HDC45 < HDC46 ≤ 20000
0457	HDC57 is out of range. If non-zero, HDC57 must be within MCC17 < HDC57 ≤ MCC18
0458	HDC58 is out of range. If non-zero, HDC58 must be within MCC57 < HDC58 ≤ MCC58
0502	Your bit pattern in HDC02-B02, HDC02-B01, and HDC02-B00 indicates a selected cavity pressure control valve that is unconnected according to your entries in MCC02 and MCC04.
0506	Your bit pattern in HDC02-B06, HDC02-B05, and HDC02-B04 indicates a selected ram (screw) pressure control valve that is unconnected according to your entries in MCC02 and MCC04.

ID = 12   **HPC – Pack/Hold Profile Block**

Error Code	Description ID = 12
0211	HPC11 is out of range. Valid range is $00000 \leq HPC11 \leq 09999$
0214	HPC14 is out of range. Valid range is $00000 \leq HPC14 \leq 09999$
0217	HPC17 is out of range. Valid range is $00000 \leq HPC17 \leq 09999$
0220	HPC20 is out of range. Valid range is $00000 \leq HPC20 \leq 09999$
0223	HPC23 is out of range. Valid range is $00000 \leq HPC23 \leq 09999$
0228	HPC28 is out of range. Valid range is $00000 \leq HPC28 \leq 09999$
0231	HPC31 is out of range. Valid range is $00000 \leq HPC31 \leq 09999$
0234	HPC34 is out of range. Valid range is $00000 \leq HPC34 \leq 09999$
0237	HPC37 is out of range. Valid range is $00000 \leq HPC37 \leq 09999$
0240	HPC40 is out of range. Valid range is $00000 \leq HPC40 \leq 09999$
0261	HPC61 is out of range. Valid range is $00000 \leq HPC61 \leq 09999$
0409	HPC09 is out of range. If non-zero, HPC09 must be within $PKC45 \leq HPC09 \leq PKC46$
0410	HPC10 is out of range. If non-zero, HPC10 must be within $PKC41 \leq HPC10 \leq PKC42$
0412	HPC12 is out of range. If non-zero, HPC12 must be within $PKC45 \leq HPC12 \leq PKC46$
0413	HPC13 is out of range. If non-zero, HPC13 must be within $PKC41 \leq HPC13 \leq PKC42$
0415	HPC15 is out of range. If non-zero, HPC15 must be within $PKC45 \leq HPC15 \leq PKC46$
0416	HPC16 is out of range. If non-zero, HPC16 must be within $PKC41 \leq HPC16 \leq PKC42$
0418	HPC18 is out of range. If non-zero, HPC18 must be within $PKC45 \leq HPC18 \leq PKC46$
0419	HPC19 is out of range. If non-zero, HPC19 must be within $PKC41 \leq HPC19 \leq PKC42$
0421	HPC21 is out of range. If non-zero, HPC21 must be within $PKC45 \leq HPC21 \leq PKC46$
0422	HPC22 is out of range. If non-zero, HPC22 must be within $PKC41 \leq HPC22 \leq PKC42$
0424	HPC24 is out of range. Valid range is $00000 \leq HPC24 \leq PKC46$
0425	HPC25 is out of range. Valid range is $00000 \leq HPC25 \leq PKC42$
0426	HPC26 is out of range. If non-zero, HPC26 must be within $HDC45 \leq HPC26 \leq HDC46$
0427	HPC27 is out of range. If non-zero, HPC27 must be within $HDC41 \leq HPC27 \leq HDC42$
0429	HPC29 is out of range. If non-zero, HPC29 must be within $HDC45 \leq HPC29 \leq HDC46$
0430	HPC30 is out of range. If non-zero, HPC30 must be within $HDC41 \leq HPC30 \leq HDC42$
0432	HPC32 is out of range. If non-zero, HPC32 must be within $HDC45 \leq HPC32 \leq HDC46$
0433	HPC33 is out of range. If non-zero, HPC33 must be within $HDC41 \leq HPC33 \leq HDC42$
0435	HPC35 is out of range. If non-zero, HPC35 must be within $HDC45 \leq HPC35 \leq HDC46$
0436	HPC36 is out of range. If non-zero, HPC36 must be within $HDC41 \leq HPC36 \leq HDC42$

Error Code	Description $\quad\quad \mathbf{ID = 12}$
0438	HPC38 is out of range. If non-zero, HPC38 must be within HDC45 ≤ HPC38 ≤ HDC46
0439	HPC39 is out of range. If non-zero, HPC39 must be within HDC41 ≤ HPC39 ≤ HDC42
0441	HPC41 is out of range. Valid range is 00000 ≤ HPC41 ≤ HDC46
0442	HPC42 is out of range. Valid range is 00000 ≤ HPC42 ≤ HDC42
0503	You have selected CavPress/Time execution for the Pack Profile by HPC03-B00 = 1; however, your bit pattern in MCC02 indicates that your QDC module is not configured for connection of a cavity pressure sensor.
0504	You have selected closed-loop RamPress/Time execution for the Pack Profile by HPC04-B00 = 0; however, your bit patterns in MCC02 and MCC03 indicate that the QDC module does not have access to a connected ram (screw) pressure transducer.
0507	You have selected CavPress/Time execution for the Hold Profile by HPC03-B02 = 1; however, your bit pattern in MCC02 indicates that your QDC module is not configured for connection of a cavity pressure sensor.
0508	You have selected closed-loop CavPress/Time execution for the Pack Profile by HPC04-B01 = 0; however, your bit patterns in MCC02 and MCC03 indicate that the QDC module does not have access to a connected cavity pressure transducer.
0512	You have selected closed-loop RamPress/Time execution for the Hold Profile by HPC04-B02 = 0; however, your bit patterns in MCC02 and MCC03 indicate that the QDC module does not have access to a connected ram (screw) pressure transducer.
0516	You have selected closed-loop CavPress/Time execution for the Hold Profile by HPC04-B03 = 0; however, your bit patterns in MCC02 and MCC03 indicate that the QDC module does not have access to a connected cavity pressure transducer.
0600	Your entire Pack/Hold Profile Command Block has been rejected because the QDC module does not have a valid Hold Configuration Command Block on-board (SYS15-B10 = 0).
0609	Your HPC09 must be zero because PKC is invalid (SYS15-B09 = 0).
0610	Your HPC10 must be zero because PKC is invalid (SYS15-B09 = 0).
0611	Your HPC11 must be zero because PKC is invalid (SYS15-B09 = 0).
0612	Your HPC12 must be zero because PKC is invalid (SYS15-B09 = 0).
0613	Your HPC13 must be zero because PKC is invalid (SYS15-B09 = 0).
0614	Your HPC14 must be zero because PKC is invalid (SYS15-B09 = 0).
0615	Your HPC15 must be zero because PKC is invalid (SYS15-B09 = 0).
0616	Your HPC16 must be zero because PKC is invalid (SYS15-B09 = 0).
0617	Your HPC17 must be zero because PKC is invalid (SYS15-B09 = 0).
0618	Your HPC18 must be zero because PKC is invalid (SYS15-B09 = 0).
0619	Your HPC19 must be zero because PKC is invalid (SYS15-B09 = 0).
0620	Your HPC20 must be zero because PKC is invalid (SYS15-B09 = 0).
0621	Your HPC21 must be zero because PKC is invalid (SYS15-B09 = 0).
0622	Your HPC22 must be zero because PKC is invalid (SYS15-B09 = 0).
0623	Your HPC23 must be zero because PKC is invalid (SYS15-B09 = 0).
0624	Your HPC24 must be zero because PKC is invalid (SYS15-B09 = 0).
0625	Your HPC25 must be zero because PKC is invalid (SYS15-B09 = 0).
0711	HPC11 cannot be 00000 because HPC14 > 00000.
0714	HPC14 cannot be 00000 because HPC17 > 00000.
0717	HPC17 cannot be 00000 because HPC20 > 00000.
0720	HPC20 cannot be 00000 because HPC23 > 00000.
0728	HPC28 cannot be 00000.
0731	HPC31 cannot be 00000 because HPC34 > 00000.
0734	HPC34 cannot be 00000 because HPC37 > 00000.
0737	HPC37 cannot be 00000 because HPC40 > 00000.
0809	HPC09 must be 00000 when HPC11 = 00000.

Error Code	Description ID = 12
0810	HPC10 must be 00000 when HPC11 = 00000.
0812	HPC12 must be 00000 when HPC14 = 00000.
0813	HPC13 must be 00000 when HPC14 = 00000.
0815	HPC15 must be 00000 when HPC17 = 00000.
0816	HPC16 must be 00000 when HPC17 = 00000.
0818	HPC18 must be 00000 when HPC20 = 00000.
0819	HPC19 must be 00000 when HPC20 = 00000.
0821	HPC21 must be 00000 when HPC23 = 00000.
0822	HPC22 must be 00000 when HPC23 = 00000.
0829	HPC29 must be 00000 when HPC31 = 00000.
0830	HPC30 must be 00000 when HPC31 = 00000.
0832	HPC32 must be 00000 when HPC34 = 00000.
0833	HPC33 must be 00000 when HPC34 = 00000.
0835	HPC35 must be 00000 when HPC37 = 00000.
0836	HPC36 must be 00000 when HPC37 = 00000.
0838	HPC38 must be 00000 when HPC40 = 00000.
0839	HPC39 must be 00000 when HPC40 = 00000.

ID = 13

PRC – Pre-Decompression Configuration Block

Error Code	Description ID = 13
0208	PRC08 is out of range. Valid range is $00000 \leq PRC08 \leq 09999$
0209	PRC09 is out of range. Valid range is $00000 \leq PRC09 \leq 09999$
0210	PRC10 is out of range. Valid range is $00000 \leq PRC10 \leq 09999$
0211	PRC11 is out of range. Valid range is $00000 \leq PRC11 \leq 09999$
0212	PRC12 is out of range. Valid range is $00000 \leq PRC12 \leq 09999$
0213	PRC13 is out of range. Valid range is $00000 \leq PRC13 \leq 09999$
0214	PRC14 is out of range. Valid range is $00000 \leq PRC14 \leq 09999$
0215	PRC15 is out of range. Valid range is $00000 \leq PRC15 \leq 09999$
0216	PRC16 is out of range. Valid range is $00000 \leq PRC16 \leq 09999$
0217	PRC17 is out of range. Valid range is $00000 \leq PRC17 \leq 09999$
0218	PRC18 is out of range. Valid range is $00000 \leq PRC18 \leq 09999$
0219	PRC19 is out of range. Valid range is $00000 \leq PRC19 \leq 09999$
0220	PRC20 is out of range. Valid range is $00000 \leq PRC20 \leq 09999$
0221	PRC21 is out of range. Valid range is $00000 \leq PRC21 \leq 09999$
0222	PRC22 is out of range. Valid range is $00000 \leq PRC22 \leq 09999$
0223	PRC23 is out of range. Valid range is $00000 \leq PRC23 \leq 09999$
0224	PRC24 is out of range. Valid range is $00000 \leq PRC24 \leq 09999$
0225	PRC25 is out of range. Valid range is $00000 \leq PRC25 \leq 09999$
0226	PRC25 is out of range. Valid range is $00000 \leq PRC26 \leq 09999$
0227	PRC27 is out of range. Valid range is $00000 \leq PRC27 \leq 09999$
0228	PRC28 is out of range. Valid range is $00000 \leq PRC28 \leq 09999$
0229	PRC29 is out of range. Valid range is $00000 \leq PRC29 \leq 09999$
0230	PRC30 is out of range. Valid range is $00000 \leq PRC30 \leq 09999$
0231	PRC31 is out of range. Valid range is $00000 \leq PRC31 \leq 09999$
0232	PRC32 is out of range. Valid range is $00000 \leq PRC32 \leq 09999$

Error Code	Description	ID = 13	
0233	PRC33 is out of range. Valid range is $00000 \leq PRC33 \leq 09999$		
0234	PRC34 is out of range. Valid range is $00000 \leq PRC34 \leq 09999$		
0235	PRC35 is out of range. Valid range is $00000 \leq PRC35 \leq 09999$		
0236	PRC36 is out of range. Valid range is $00000 \leq PRC36 \leq 09999$		
0237	PRC37 is out of range. Valid range is $00000 \leq PRC37 \leq 09999$		
0238	PRC38 is out of range. Valid range is $00000 \leq PRC38 \leq 09999$		
0239	PRC39 is out of range. Valid range is $00000 \leq PRC39 \leq 09999$		
0240	PRC40 is out of range. Valid range is $00000 \leq PRC40 \leq 09999$		
0405	PRC05 is out of range.		
	if:	**then:**	
	MCC13 and MCC14 are both non-zero	PRC05 must be within $00000 \leq PRC05 \leq MCC14 - MCC13$	
	MCC13 is non-zero and MCC14 is zero	PRC05 must be within $00000 \leq PRC05 \leq MCC10 - MCC13$	
	MCC13 is zero and MCC14 is non-zero	PRC05 must be within $00000 \leq PRC05 \leq MCC14 - MCC09$	
	MCC13 and MCC14 are both zero	PRC05 must be within $00000 \leq PRC05 \leq MCC10 - MCC09$	
0457	PRC57 is out of range. If non-zero, PRC57 must be within $MCC17 < PRC57 \leq MCC18$		
0905	PRC05 is too large.		
	if:	**then:**	
	MCC13 and MCC14 are both non-zero	PRC05 must be within $MCC13 + PPC61 + PRC05 \leq MCC14$	
	MCC13 is zero and MCC14 is non-zero	PRC05 must be within $MCC09 + PPC61 + PRC05 \leq MCC14$	
	MCC13 is non-zero and MCC14 is zero	PRC05 must be within $MCC13 + PPC61 + PRC05 \leq MCC10$	
	MCC13 and MCC14 are both zero	PRC05 must be within $MCC09 + PPC61 + PRC05 \leq MCC10$	

ID = 14

PLC – Plastication Configuration Block

Error Code	Description ID = 14
0206	PLC06 is out of range. Valid range is $00000 \leq PLC06 \leq 09999$
0208	PLC08 is out of range. Valid range is $00000 \leq PLC08 \leq 09999$
0209	PLC09 is out of range. Valid range is $00000 \leq PLC09 \leq 09999$
0210	PLC10 is out of range. Valid range is $00000 \leq PLC10 \leq 09999$
0211	PLC11 is out of range. Valid range is $00000 \leq PLC11 \leq 09999$
0212	PLC12 is out of range. Valid range is $00000 \leq PLC12 \leq 09999$
0213	PLC13 is out of range. Valid range is $00000 \leq PLC13 \leq 09999$
0214	PLC14 is out of range. Valid range is $00000 \leq PLC14 \leq 09999$
0215	PLC15 is out of range. Valid range is $00000 \leq PLC15 \leq 09999$
0216	PLC16 is out of range. Valid range is $00000 \leq PLC16 \leq 09999$
0217	PLC17 is out of range. Valid range is $00000 \leq PLC17 \leq 09999$
0218	PLC18 is out of range. Valid range is $00000 \leq PLC18 \leq 09999$
0219	PLC19 is out of range. Valid range is $00000 \leq PLC19 \leq 09999$
0220	PLC20 is out of range. Valid range is $00000 \leq PLC20 \leq 09999$
0221	PLC21 is out of range. Valid range is $00000 \leq PLC21 \leq 09999$

Error Code	Description ID = 14
0222	PLC22 is out of range. Valid range is $00000 \leq PLC22 \leq 09999$
0223	PLC23 is out of range. Valid range is $00000 \leq PLC23 \leq 09999$
0224	PLC24 is out of range. Valid range is $00000 \leq PLC24 \leq 09999$
0225	PLC25 is out of range. Valid range is $00000 \leq PLC25 \leq 09999$
0226	PLC26 is out of range. Valid range is $00000 \leq PLC26 \leq 09999$
0227	PLC27 is out of range. Valid range is $00000 \leq PLC27 \leq 09999$
0228	PLC28 is out of range. Valid range is $00000 \leq PLC28 \leq 09999$
0229	PLC29 is out of range. Valid range is $00000 \leq PLC29 \leq 09999$
0230	PLC30 is out of range. Valid range is $00000 \leq PLC30 \leq 09999$
0231	PLC31 is out of range. Valid range is $00000 \leq PLC31 \leq 09999$
0232	PLC32 is out of range. Valid range is $00000 \leq PLC32 \leq 09999$
0233	PLC33 is out of range. Valid range is $00000 \leq PLC33 \leq 09999$
0234	PLC34 is out of range. Valid range is $00000 \leq PLC34 \leq 09999$
0235	PLC35 is out of range. Valid range is $00000 \leq PLC35 \leq 09999$
0236	PLC36 is out of range. Valid range is $00000 \leq PLC36 \leq 09999$
0237	PLC37 is out of range. Valid range is $00000 \leq PLC37 \leq 09999$
0238	PLC38 is out of range. Valid range is $00000 \leq PLC38 \leq 09999$
0239	PLC39 is out of range. Valid range is $00000 \leq PLC39 \leq 09999$
0240	PLC40 is out of range. Valid range is $00000 \leq PLC40 \leq 09999$
0243	PLC43 is out of range. Valid range is $00000 \leq PLC43 \leq 09999$
0244	PLC44 is out of range. Valid range is $00000 \leq PLC44 \leq 09999$
0247	PLC47 is out of range. Valid range is $00000 \leq PLC47 \leq 09999$
0248	PLC48 is out of range. Valid range is $00000 \leq PLC48 \leq 09999$
0249	PLC49 is out of range. Valid range is $00000 \leq PLC49 \leq 09999$
0250	PLC50 is out of range. Valid range is $00000 \leq PLC50 \leq 09999$
0251	PLC51 is out of range. Valid range is $00000 \leq PLC51 \leq 09999$
0252	PLC52 is out of range. Valid range is $00000 \leq PLC52 \leq 09999$
0253	PLC53 is out of range. Valid range is $00000 \leq PLC53 \leq 09999$
0254	PLC54 is out of range. Valid range is $00000 \leq PLC54 \leq 09999$
0343	PLC43 is equal to PLC44. They must not be equal.
0347	PLC47 is equal to PLC48. They must not be equal.
0441	PLC41 is out of range. Valid range is $00000 \leq PLC41 < PLC42$
0442	PLC42 is out of range. Valid range is $PLC41 < PLC42 \leq 09999$
0445	PLC45 is out of range. Valid range is $00000 \leq PLC45 < INC46$
0446	PLC46 is out of range. Valid range is $PLC45 < PLC46 \leq 09999$
0457	PLC57 is out of range. If non-zero, PLC57 must be within $MCC17 < PLC57 \leq MCC18$
0502	Your bit pattern in PLC02-B02, PLC02-B01, and PLC02-B00 indicates a selected screw RPM control valve that is unconnected according to your entries in MCC02 and MCC04.
0506	Your bit pattern in PLC02-B06, PLC02-B05, and PLC02-B04 indicates a selected ram (screw) backpressure control valve that is unconnected according to your entries in MCC02 and MCC04.

ID = 15

PPC – Plastication Profile Block

Error Code	Description ID = 15
0209	PPC09 is out of range. Valid range is $00000 \leq PPC09 \leq 09999$
0212	PPC12 is out of range. Valid range is $00000 \leq PPC12 \leq 09999$
0213	PPC13 is out of range. Valid range is $00000 \leq PPC13 \leq 09999$
0216	PPC16 is out of range. Valid range is $00000 \leq PPC16 \leq 09999$
0217	PPC17 is out of range. Valid range is $00000 \leq PPC17 \leq 09999$
0220	PPC20 is out of range. Valid range is $PPC20 \leq PPC20 \leq 09999$
0221	PPC21 is out of range. Valid range is $PPC20 \leq PPC21 \leq 09999$
0224	PPC24 is out of range. Valid range is $00000 \leq PPC24 \leq 09999$
0225	PPC25 is out of range. Valid range is $00000 \leq PPC25 \leq 09999$
0228	PPC28 is out of range. Valid range is $00000 \leq PPC28 \leq 09999$
0229	PPC29 is out of range. Valid range is $00000 \leq PPC29 \leq 09999$
0232	PPC32 is out of range. Valid range is $00000 \leq PPC32 \leq 09999$
0233	PPC33 is out of range. Valid range is $00000 \leq PPC33 \leq 09999$
0236	PPC36 is out of range. Valid range is $00000 \leq PPC36 \leq 09999$
0237	PPC37 is out of range. Valid range is $00000 \leq PPC37 \leq 09999$
0240	PPC40 is out of range. Valid range is $PPC40 \leq PPC40 \leq 09999$
0241	PPC41 is out of range. Valid range is $PPC41 \leq PPC40 \leq 09999$
0244	PPC44 is out of range. Valid range is $00000 \leq PPC44 \leq 09999$
0245	PPC45 is out of range. Valid range is $00000 \leq PPC45 \leq 09999$
0248	PPC48 is out of range. Valid range is $00000 \leq PPC48 \leq 09999$
0249	PPC49 is out of range. Valid range is $00000 \leq PPC49 \leq 09999$
0251	PPC51 is out of range. Valid range is $00000 \leq PPC51 \leq 09999$
0410	PPC10 is out of range. If non-zero, PPC10 must be within $PLC41 \leq PPC10 \leq PLC42$

0411 — PPC11 is out of range.

if:	then:
MCC13 and MCC14 are both non-zero	PPC11 must be within $00000 \leq PPC11 \leq MCC14 - MCC13$
MCC13 is non-zero and MCC14 is zero	PPC11 must be within $00000 \leq PPC11 \leq MCC10 - MCC13$.
MCC13 is zero and MCC14 is non-zero	PPC11 must be within $00000 \leq PPC11 \leq MCC14 - MCC09$.
MCC13 and MCC14 are both zero	PPC11 must be within $00000 \leq PPC11 \leq MCC10 - MCC09$

Error Code	Description
0414	PPC14 is out of range. If non-zero, PPC14 must be within $PLC41 \leq PPC14 \leq PLC42$

0415 — PPC15 is out of range.

if:	then:
MCC13 and MCC14 are both non-zero	PPC15 must be within $00000 \leq PPC15 \leq MCC14 - MCC13$
MCC13 is non-zero and MCC14 is zero	PPC15 must be within $00000 \leq PPC15 \leq MCC10 - MCC13$.
MCC13 is zero and MCC14 is non-zero .	PPC15 must be within $00000 \leq PPC15 \leq MCC14 - MCC09$
MCC13 and MCC14 are both zero	PPC15 must be within $00000 \leq PPC15 \leq MCC10 - MCC09$

Error Code	Description
0418	PPC18 is out of range. If non-zero, PPC18 must be within $PLC41 \leq PPC18 \leq PLC42$

Error Code	Description $\quad\quad$ ID $= 15$	
0419	PPC19 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	PPC19 must be within $00000 \leq$ PPC19 $\leq$ MCC14 – MCC13
	MCC13 is non-zero and MCC14 is zero	PPC19 must be within $00000 \leq$ PPC19 $\leq$ MCC10 – MCC13.
	MCC13 is zero and MCC14 is non-zero	PPC19 must be within $00000 \leq$ PPC19 $\leq$ MCC14 – MCC09.
	MCC13 and MCC14 are both zero	PPC19 must be within $00000 \leq$ PPC19 $\leq$ MCC10 – MCC09
0422	PPC22 is out of range. If non-zero, PPC22 must be within PLC41 $\leq$ PPC22 $\leq$ PLC42	
0423	PPC23 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	PPC23 must be within $00000 \leq$ PPC23 $\leq$ MCC14 – MCC13
	MCC13 is non-zero and MCC14 is zero	PPC23 must be within $00000 \leq$ PPC23 $\leq$ MCC10 – MCC13.
	MCC13 is zero and MCC14 is non-zero .	PPC23 must be within $00000 \leq$ PPC23 $\leq$ MCC14 – MCC09
	MCC13 and MCC14 are both zero	PPC23 must be within $00000 \leq$ PPC23 $\leq$ MCC10 – MCC09
0426	PPC26 is out of range. If non-zero, PPC26 must be within PLC41 $\leq$ PPC26 $\leq$ PLC42	
0427	PPC27 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	PPC27 must be within $00000 \leq$ PPC27 $\leq$ MCC14 – MCC13
	MCC13 is non-zero and MCC14 is zero	PPC27 must be within $00000 \leq$ PPC27 $\leq$ MCC10 – MCC13.
	MCC13 is zero and MCC14 is non-zero	PPC27 must be within $00000 \leq$ PPC27 $\leq$ MCC14 – MCC09.
	MCC13 and MCC14 are both zero	PPC27 must be within $00000 \leq$ PPC27 $\leq$ MCC10 – MCC09
0430	PPC30 is out of range. If non-zero, PPC30 must be within PLC41 $\leq$ PPC30 $\leq$ PLC42	
0431	PPC31 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	PPC31 must be within $00000 \leq$ PPC31 $\leq$ MCC14 – MCC13
	MCC13 is non-zero and MCC14 is zero	PPC31 must be within $00000 \leq$ PPC31 $\leq$ MCC10 – MCC13.
	MCC13 is zero and MCC14 is non-zero	PPC31 must be within $00000 \leq$ PPC31 $\leq$ MCC14 – MCC09.
	MCC13 and MCC14 are both zero	PPC31 must be within $00000 \leq$ PPC31 $\leq$ MCC10 – MCC09
0434	PPC34 is out of range. If non-zero, PPC34 must be within PLC41 $\leq$ PPC34 $\leq$ PLC42	

Error Code	Description $ID = 15$	
0435	PPC35 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	PPC35 must be within $00000 \leq PPC35 \leq MCC14 - MCC13$
	MCC13 is non-zero and MCC14 is zero	PPC35 must be within $00000 \leq PPC35 \leq MCC10 - MCC13$.
	MCC13 is zero and MCC14 is non-zero	PPC35 must be within $00000 \leq PPC35 \leq MCC14 - MCC09$.
	MCC13 and MCC14 are both zero	PPC35 must be within $00000 \leq PPC35 \leq MCC10 - MCC09$
0438	PPC38 is out of range. If non-zero, PPC38 must be within $PLC41 \leq PPC38 \leq PLC42$	
0439	PPC39 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	PPC39 must be within $00000 \leq PPC39 \leq MCC14 - MCC13$
	MCC13 is non-zero and MCC14 is zero	PPC39 must be within $00000 \leq PPC39 \leq MCC10 - MCC13$
	MCC13 is zero and MCC14 is non-zero .	PPC39 must be within $00000 \leq PPC39 \leq MCC14 - MCC09$
	MCC13 and MCC14 are both zero	PPC39 must be within $00000 \leq PPC39 \leq MCC10 - MCC09$
0442	PPC42 is out of range. If non-zero, PPC42 must be within $PLC41 \leq PPC42 \leq PLC42$	
0443	PPC43 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	PPC43 must be within $00000 \leq PPC43 \leq MCC14 - MCC13$
	MCC13 is non-zero and MCC14 is zero	PPC43 must be within $00000 \leq PPC43 \leq MCC10 - MCC13$.
	MCC13 is zero and MCC14 is non-zero	PPC43 must be within $00000 \leq PPC43 \leq MCC14 - MCC09$.
	MCC13 and MCC14 are both zero	PPC43 must be within $00000 \leq PPC43 \leq MCC10 - MCC09$
0446	PPC46 is out of range. If non-zero, PPC46 must be within $PLC41 \leq PPC46 \leq PLC42$	
0447	PPC47 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	PPC47 must be within $00000 \leq PPC47 \leq MCC14 - MCC13$
	MCC13 is non-zero and MCC14 is zero	PPC47 must be within $00000 \leq PPC47 \leq MCC10 - MCC13$.
	MCC13 is zero and MCC14 is non-zero	PPC47 must be within $00000 \leq PPC47 \leq MCC14 - MCC09$.
	MCC13 and MCC14 are both zero	PPC47 must be within $00000 \leq PPC47 \leq MCC10 - MCC09$
0450	PPC50 is out of range. If non-zero, PPC50 must be within $PLC41 \leq PPC50 \leq PLC42$	
0452	PPC52 is out of range. Valid range is $00000 \leq PPC52 \leq PLC42$	

Error Code	Description ID = 15
0461	PPC61 is out of range.
	if: **then:**
	MCC13 and MCC14 are both non-zero PPC61 must be within 00000 ≤ PPC61 ≤ MCC14 – MCC13
	MCC13 is non-zero and MCC14 is zero PPC61 must be within 00000 ≤ PPC61 ≤ MCC10 – MCC13.
	MCC13 is zero and MCC14 is non-zero . PPC61 must be within 00000 ≤ PPC61 ≤ MCC14 – MCC09
	MCC13 and MCC14 are both zero PPC61 must be within 00000 ≤ PPC61 ≤ MCC10 – MCC09
0462	PPC62 is out of range.
	if: **then:**
	MCC13 and MCC14 are both non-zero PPC62 must be within 00000 ≤ PPC62 ≤ MCC14 – MCC13
	MCC13 is non-zero and MCC14 is zero PPC62 must be within 00000 ≤ PPC62 ≤ MCC10 – MCC13.
	MCC13 is zero and MCC14 is non-zero PPC62 must be within 00000 ≤ PPC62 ≤ MCC14 – MCC09
	MCC13 and MCC14 are both zero PPC62 must be within 00000 ≤ PPC62 ≤ MCC10 – MCC09
0503	You have selected RPM/Pos execution of the Plastication profile by PPC03-B01 = 1 and PPC03 -B00 = 0, but your bit pattern in MCC02 indicates that the QDC module is not configured for connection of a screw RPM sensor.
0504	You have selected closed-loop Press/Pos execution for the Plastication Profile by PPC04-B00 = 0, but your bit patterns in MCC02 and MCC03 indicate that the QDC module is not connected to a ram (screw) pressure transducer.
0507	You have selected RPM/Time execution of the Plastication profile by PPC03-B01 = 1 and PPC03-B00 = 1, but your bit pattern in MCC02 indicates that the QDC module is not configured for connection of a screw RPM sensor.
0508	You have selected closed-loop Press/Time execution of the Plastication Profile by PPC04-B01 = 0, but your bit patterns in MCC02 and MCC03 indicate that the QDC module is not connected to a ram (screw) pressure transducer.
0512	You have selected closed-loop RPM/Pos execution of the Plastication profile by PPC04-B02 = 0, but your bit patterns in MCC02 and MCC03 indicate that the QDC module is not connected to a screw RPM sensor.
0516	You have selected closed-loop RPM/Time execution of the Plastication profile by PPC04-B03 = 0, but your bit patterns in MCC02 and MCc03 indicate that the QDC module is not connected to a screw RPM sensor.
0600	Your entire Plastication Profile Command Block has been rejected because the QDC module module does not have a valid Plastication Configuration Command Block on-board (SYS15-B13 = 0).
0711	PPC11 cannot be 00000 when PPC14 > 00000.
0712	PPC12 cannot be 00000 when PPC14 > 00000.
0715	PPC15 cannot be 00000 when PPC18 > 00000.
0716	PPC16 cannot be 00000 when PPC18 > 00000.
0719	PPC19 cannot be 00000 when PPC22 > 00000.
0720	PPC20 cannot be 00000 when PPC22 > 00000.
0723	PPC23 cannot be 00000 when PPC26 > 00000.
0724	PPC24 cannot be 00000 when PPC26 > 00000.
0727	PPC27 cannot be 00000 when PPC30 > 00000.
0728	PPC28 cannot be 00000 when PPC30 > 00000.
0731	PPC31 cannot be 00000 when PPC34 > 00000.
0732	PPC32 cannot be 00000 when PPC34 > 00000.
0735	PPC35 cannot be 00000 when PPC38 > 00000.

Error Code	Description $\text{ID} = 15$	
0736	PPC36 cannot be 00000 when PPC38 > 00000.	
0739	PPC39 cannot be 00000 when PPC42 > 00000.	
0740	PPC40 cannot be 00000 when PPC42 > 00000.	
0743	PPC43 cannot be 00000 when PPC46 > 00000.	
0744	PPC44 cannot be 00000 when PPC46 > 00000.	
0747	PPC47 cannot be 00000 when PPC50 > 00000.	
0748	PPC48 cannot be 00000 when PPC50 > 00000.	
0815	PPC15 must be 00000 when PPC11 = 00000.	
0816	PPC16 must be 00000 when PPC12 = 00000.	
0819	PPC19 must be 00000 when PPC15 = 00000.	
0820	PPC20 must be 00000 when PPC16 = 00000.	
0823	PPC23 must be 00000 when PPC19 = 00000.	
0824	PPC24 must be 00000 when PPC20 = 00000.	
0827	PPC27 must be 00000 when PPC23 = 00000.	
0828	PPC28 must be 00000 when PPC24 = 00000.	
0831	PPC31 must be 00000 when PPC27 = 00000.	
0832	PPC32 must be 00000 when PPC28 = 00000.	
0835	PPC35 must be 00000 when PPC31 = 00000.	
0836	PPC36 must be 00000 when PPC32 = 00000.	
0839	PPC39 must be 00000 when PPC35 = 00000.	
0840	PPC40 must be 00000 when PPC36 = 00000.	
0843	PPC43 must be 00000 when PPC39 = 00000.	
0844	PPC44 must be 00000 when PPC40 = 00000.	
0847	PPC47 must be 00000 when PPC43 = 00000.	
0848	PPC48 must be 00000 when PPC44 = 00000.	
0961	PPC61 is too large.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	PPC61 must be within MCC13 + PPC61 + PRC05 $\leq$ MCC14
	MCC13 is zero and is non-zero	PPC61 must be within MCC09 + PPC61 + PRC05 $\leq$ MCC14
	MCC13 is non-zero and MCC14 is zero	PPC61 must be within MCC13 + PPC61 + PRC05 $\leq$ MCC10
	MCC13 and MCC14 are both zero	PPC61 must be within MCC09 + PPC61 + PRC05 $\leq$ MCC10
0962	PPC62 is too large.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	PPC62 must be within MCC13 + PPC61 + PPC62 + PSC05 $\leq$ MCC14
	MCC13 is zero and MCC14 is non-zero	PPC62 must be within MCC09 + PPC61 + PPC62 + PSC05 $\leq$ MCC14
	MCC13 is non-zero and MCC14 is zero	PPC62 must be within MCC13 + PPC61 + PPC62 + PSC05 $\leq$ MCC10
	MCC13 and MCC14 are both zero	PPC62 must be within MCC09 + PPC61 + PPC62 + PSC05 $\leq$ MCC10
1015	PPC15 is not in increasing positional order. If non-zero, PPC15 must be greater than PPC11.	
1019	PPC19 is not in increasing positional order. If non-zero, PPC19 must be greater than PPC15.	
1023	PPC23 is not in increasing positional order. If non-zero, PPC23 must be greater than PPC19.	

Error Code	Description $ID = 15$
1027	PPC27 is not in increasing positional order. If non-zero, PPC27 must be greater than PPC23.
1031	PPC31 is not in increasing positional order. If non-zero, PPC31 must be greater than PPC27.
1035	PPC35 is not in increasing positional order. If non-zero, PPC35 must be greater than PPC31.
1039	PPC39 is not in increasing positional order. If non-zero, PPC39 must be greater than PPC35.
1043	PPC43 is not in increasing positional order. If non-zero, PPC43 must be greater than PPC39.
1047	PPC47 is not in increasing positional order. If non-zero, PPC47 must be greater than PPC43.

ID = 16

PSC – Post-Decompression Configuration Block

Error Code	Description $ID = 16$
0208	PSC08 is out of range. Valid range is $00000 \leq PSC08 \leq 09999$
0209	PSC09 is out of range. Valid range is $00000 \leq PSC09 \leq 09999$
0210	PSC10 is out of range. Valid range is $00000 \leq PSC10 \leq 09999$
0211	PSC11 is out of range. Valid range is $00000 \leq PSC11 \leq 09999$
0212	PSC12 is out of range. Valid range is $00000 \leq PSC12 \leq 09999$
0213	PSC13 is out of range. Valid range is $00000 \leq PSC13 \leq 09999$
0214	PSC14 is out of range. Valid range is $00000 \leq PSC14 \leq 09999$
0215	PSC15 is out of range. Valid range is $00000 \leq PSC15 \leq 09999$
0216	PSC16 is out of range. Valid range is $00000 \leq PSC16 \leq 09999$
0217	PSC17 is out of range. Valid range is $00000 \leq PSC17 \leq 09999$
0218	PSC18 is out of range. Valid range is $00000 \leq PSC18 \leq 09999$
0219	PSC19 is out of range. Valid range is $00000 \leq PSC19 \leq 09999$
0220	PSC20 is out of range. Valid range is $00000 \leq PSC20 \leq 09999$
0221	PSC21 is out of range. Valid range is $00000 \leq PSC21 \leq 09999$
0222	PSC22 is out of range. Valid range is $00000 \leq PSC22 \leq 09999$
0223	PSC23 is out of range. Valid range is $00000 \leq PSC23 \leq 09999$
0224	PSC24 is out of range. Valid range is $00000 \leq PSC24 \leq 09999$
0225	PSC25 is out of range. Valid range is $00000 \leq PSC25 \leq 09999$
0226	PSC26 is out of range. Valid range is $00000 \leq PSC26 \leq 09999$
0227	PSC27 is out of range. Valid range is $00000 \leq PSC27 \leq 09999$
0228	PSC28 is out of range. Valid range is $00000 \leq PSC28 \leq 09999$
0229	PSC29 is out of range. Valid range is $00000 \leq PSC29 \leq 09999$
0230	PSC30 is out of range. Valid range is $00000 \leq PSC30 \leq 09999$
0231	PSC31 is out of range. Valid range is $00000 \leq PSC31 \leq 09999$
0232	PSC32 is out of range. Valid range is $00000 \leq PSC32 \leq 09999$
0233	PSC33 is out of range. Valid range is $00000 \leq PSC33 \leq 09999$
0234	PSC34 is out of range. Valid range is $00000 \leq PSC34 \leq 09999$
0235	PSC35 is out of range. Valid range is $00000 \leq PSC35 \leq 09999$
0236	PSC36 is out of range. Valid range is $00000 \leq PSC36 \leq 09999$
0237	PSC37 is out of range. Valid range is $00000 \leq PSC37 \leq 09999$
0238	PSC38 is out of range. Valid range is $00000 \leq PSC38 \leq 09999$
0239	PSC39 is out of range. Valid range is $00000 \leq PSC39 \leq 09999$

Error Code	Description ID = 16	
0240	PSC40 is out of range. Valid range is $00000 \leq PSC40 \leq 09999$	
0405	PSC05 is out of range.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	PSC05 must be within $00000 \leq PSC05 \leq MCC14 - MCC13$
	MCC13 is non-zero and MCC14 is zero	PSC05 must be within $00000 \leq PSC05 \leq MCC10 - MCC13$
	MCC13 is zero and MCC14 is non-zero	PSC05 must be within $00000 \leq PSC05 \leq MCC14 - MCC09$
	MCC13 and MCC14 are both zero	PSC05 must be within $00000 \leq PSC05 \leq MCC10 - MCC09$
0457	PSC57 is out of range. If non-zero, PSC57 must be within $MCC17 < PSC57 \leq MCC18$	
0905	PSC05 is too large.	
	if:	**then:**
	MCC13 and MCC14 are both non-zero	PSC05 must be within $MCC13 + PPC61 + PPC62 + PSC05 \leq MCC14$
	MCC13 is zero and MCC14 is non-zero	PSC05 must be within $MCC09 + PPC61 + PPC62 + PSC05 \leq MCC14$
	MCC13 is non-zero and MCC14 is zero	PSC05 must be within $MCC13 + PPC61 + PPC62 + PSC05 \leq MCC10$
	MCC13 and MCC14 are both zero	PSC05 must be within $MCC09 + PPC61 + PPC62 + PSC05 \leq MCC10$

ID = 17

FOC – First Clamp Open Configuration Block

Error Code	Description ID = 17
0205	FOC05 is out of range. Valid range is $00000 \leq FOC05 \leq 09999$
0206	FOC06 is out of range. Valid range is $00000 \leq FOC06 \leq 09999$
0208	FOC08 is out of range. Valid range is $00000 \leq FOC08 \leq 09999$
0209	FOC09 is out of range. Valid range is $00000 \leq FOC09 \leq 09999$
0210	FOC10 is out of range. Valid range is $00000 \leq FOC10 \leq 09999$
0211	FOC11 is out of range. Valid range is $00000 \leq FOC11 \leq 09999$
0212	FOC12 is out of range. Valid range is $00000 \leq FOC12 \leq 09999$
0213	FOC13 is out of range. Valid range is $00000 \leq FOC13 \leq 09999$
0214	FOC14 is out of range. Valid range is $00000 \leq FOC14 \leq 09999$
0215	FOC15 is out of range. Valid range is $00000 \leq FOC15 \leq 09999$
0216	FOC16 is out of range. Valid range is $00000 \leq FOC16 \leq 09999$
0217	FOC17 is out of range. Valid range is $00000 \leq FOC17 \leq 09999$
0218	FOC18 is out of range. Valid range is $00000 \leq FOC18 \leq 09999$
0219	FOC19 is out of range. Valid range is $00000 \leq FOC19 \leq 09999$
0220	FOC20 is out of range. Valid range is $00000 \leq FOC20 \leq 09999$
0221	FOC21 is out of range. Valid range is $00000 \leq FOC21 \leq 09999$
0222	FOC22 is out of range. Valid range is $00000 \leq FOC22 \leq 09999$
0223	FOC23 is out of range. Valid range is $00000 \leq FOC23 \leq 09999$
0224	FOC24 is out of range. Valid range is $00000 \leq FOC24 \leq 09999$
0225	FOC25 is out of range. Valid range is $00000 \leq FOC25 \leq 09999$
0226	FOC26 is out of range. Valid range is $00000 \leq FOC26 \leq 09999$
0227	FOC27 is out of range. Valid range is $00000 \leq FOC27 \leq 09999$

Error Code	Description ID = 17
0228	FOC28 is out of range. Valid range is $00000 \leq FOC28 \leq 09999$
0229	FOC29 is out of range. Valid range is $00000 \leq FOC29 \leq 09999$
0230	FOC30 is out of range. Valid range is $00000 \leq FOC30 \leq 09999$
0231	FOC31 is out of range. Valid range is $00000 \leq FOC31 \leq 09999$
0232	FOC32 is out of range. Valid range is $00000 \leq FOC32 \leq 09999$
0233	FOC33 is out of range. Valid range is $00000 \leq FOC33 \leq 09999$
0234	FOC34 is out of range. Valid range is $00000 \leq FOC34 \leq 09999$
0235	FOC35 is out of range. Valid range is $00000 \leq FOC35 \leq 09999$
0236	FOC36 is out of range. Valid range is $00000 \leq FOC36 \leq 09999$
0237	FOC37 is out of range. Valid range is $00000 \leq FOC37 \leq 09999$
0238	FOC38 is out of range. Valid range is $00000 \leq FOC38 \leq 09999$
0239	FOC39 is out of range. Valid range is $00000 \leq FOC39 \leq 09999$
0240	FOC40 is out of range. Valid range is $00000 \leq FOC40 \leq 09999$
0243	FOC43 is out of range. Valid range is $00000 \leq FOC43 \leq 09999$
0244	FOC44 is out of range. Valid range is $00000 \leq FOC44 \leq 09999$
0247	FOC47 is out of range. Valid range is $00000 \leq FOC47 \leq 09999$
0248	FOC48 is out of range. Valid range is $00000 \leq FOC48 \leq 09999$
0249	FOC49 is out of range. Valid range is $00000 \leq FOC49 \leq 09999$
0250	FOC50 is out of range. Valid range is $00000 \leq FOC50 \leq 09999$
0251	FOC51 is out of range. Valid range is $00000 \leq FOC51 \leq 09999$
0252	FOC52 is out of range. Valid range is $00000 \leq FOC52 \leq 09999$
0253	FOC53 is out of range. Valid range is $00000 \leq FOC53 \leq 09999$
0343	FOC43 is equal to FOC44. They must not be equal.
0347	FOC47 is equal to FOC48. They must not be equal.
0441	FOC41 is out of range. Valid range is $00000 \leq FOC41 < FOC42$
0442	FOC42 is out of range. Valid range is $TOC41 < FOC42 \leq 09999$
0445	FOC45 is out of range. Valid range is $00000 \leq FOC45 < FOC46$
0446	FOC46 is out of range. Valid range is $FOC45 < FOC46 \leq 09999$
0457	FOC57 is out of range. If non-zero, FOC57 must be within $MCC31 < FOC57 \leq MCC32$
0502	Your bit pattern in FOC02-B02, FOC02-B01, and FOC02-B00 indicates a selected clamp velocity control valve that is unconnected according to your entries in MCC02 and MCC04.
0506	Your bit pattern in FOC02-B06, FOC02-B05, and FOC02-B04 indicates a selected clamp pressure control valve that is unconnected according to your entries in MCC02 and MCC04.

ID = 18   SOC – Second Clamp Open Configuration Block

Error Code	Description ID = 18
0205	SOC05 is out of range. Valid range is $00000 \leq SOC05 \leq 09999$
0206	SOC06 is out of range. Valid range is $SOC06 \leq SOC06 \leq 09999$
0208	SOC08 is out of range. Valid range is $00000 \leq SOC08 \leq 09999$
0209	SOC09 is out of range. Valid range is $00000 \leq SOC09 \leq 09999$
0210	SOC10 is out of range. Valid range is $00000 \leq SOC10 \leq 09999$
0211	SOC11 is out of range. Valid range is $00000 \leq SOC11 \leq 09999$
0212	SOC12 is out of range. Valid range is $00000 \leq SOC12 \leq 09999$
0213	SOC13 is out of range. Valid range is $00000 \leq SOC13 \leq 09999$
0214	SOC14 is out of range. Valid range is $00000 \leq SOC14 \leq 09999$

Error Code	Description $ID = 18$
0215	SOC15 is out of range. Valid range is $00000 \leq SOC15 \leq 09999$
0216	SOC16 is out of range. Valid range is $00000 \leq SOC16 \leq 09999$
0217	SOC17 is out of range. Valid range is $00000 \leq SOC17 \leq 09999$
0218	SOC18 is out of range. Valid range is $00000 \leq SOC18 \leq 09999$
0219	SOC19 is out of range. Valid range is $00000 \leq SOC19 \leq 09999$
0220	SOC20 is out of range. Valid range is $00000 \leq SOC20 \leq 09999$
0221	SOC21 is out of range. Valid range is $00000 \leq SOC21 \leq 09999$
0222	SOC22 is out of range. Valid range is $00000 \leq SOC22 \leq 09999$
0223	SOC23 is out of range. Valid range is $00000 \leq SOC23 \leq 09999$
0224	SOC24 is out of range. Valid range is $00000 \leq SOC24 \leq 09999$
0225	SOC25 is out of range. Valid range is $00000 \leq SOC25 \leq 09999$
0226	SOC26 is out of range. Valid range is $00000 \leq SOC26 \leq 09999$
0227	SOC27 is out of range. Valid range is $00000 \leq SOC27 \leq 09999$
0228	SOC28 is out of range. Valid range is $00000 \leq SOC28 \leq 09999$
0229	SOC29 is out of range. Valid range is $00000 \leq SOC29 \leq 09999$
0230	SOC30 is out of range. Valid range is $00000 \leq SOC30 \leq 09999$
0231	SOC31 is out of range. Valid range is $00000 \leq SOC31 \leq 09999$
0232	SOC32 is out of range. Valid range is $00000 \leq SOC32 \leq 09999$
0233	SOC33 is out of range. Valid range is $00000 \leq SOC33 \leq 09999$
0234	SOC34 is out of range. Valid range is $00000 \leq SOC34 \leq 09999$
0235	SOC35 is out of range. Valid range is $00000 \leq SOC35 \leq 09999$
0236	SOC36 is out of range. Valid range is $00000 \leq SOC36 \leq 09999$
0237	SOC37 is out of range. Valid range is $00000 \leq SOC37 \leq 09999$
0238	SOC38 is out of range. Valid range is $00000 \leq SOC38 \leq 09999$
0239	SOC39 is out of range. Valid range is $00000 \leq SOC39 \leq 09999$
0240	SOC40 is out of range. Valid range is $00000 \leq SOC40 \leq 09999$
0243	SOC43 is out of range. Valid range is $00000 \leq SOC43 \leq 09999$
0244	SOC44 is out of range. Valid range is $00000 \leq SOC44 \leq 09999$
0247	SOC47 is out of range. Valid range is $00000 \leq SOC47 \leq 09999$
0248	SOC48 is out of range. Valid range is $00000 \leq SOC48 \leq 09999$
0249	SOC49 is out of range. Valid range is $00000 \leq SOC49 \leq 09999$
0250	SOC50 is out of range. Valid range is $00000 \leq SOC50 \leq 09999$
0251	SOC51 is out of range. Valid range is $00000 \leq SOC51 \leq 09999$
0252	SOC52 is out of range. Valid range is $00000 \leq SOC52 \leq 09999$
0253	SOC53 is out of range. Valid range is $00000 \leq SOC53 \leq 09999$
0343	SOC43 is equal to SOC44. They must not be equal.
0347	SOC47 is equal to SOC48. They must not be equal.
0441	SOC41 is out of range. Valid range is $00000 \leq SOC41 < SOC42$
0442	SOC42 is out of range. Valid range is $SOC41 < SOC42 \leq 09999$
0445	SOC45 is out of range. Valid range is $00000 \leq SOC45 < SOC46$
0446	SOC46 is out of range. Valid range is $SOC45 < SOC46 \leq 09999$
0457	SOC57 is out of range. If non-zero, SOC57 must be within $MCC31 < SOC57 \leq MCC32$

Error Code	Description ID = 18
0502	Your bit pattern in SOC02-B02, SOC02-B01, and SOC02-B00 indicates a selected clamp velocity control valve that is unconnected according to your entries in MCC02 and MCC04.
0506	Your bit pattern in SOC02-B06, SOC02-B05, and SOC02-B04 indicates a selected clamp pressure control valve that is unconnected according to your entries in MCC02 and MCC04.

ID = 19

TOC – Third Clamp Open Configuration Block

Error Code	Description ID = 19
0205	TOC05 is out of range. Valid range is $00000 \leq TOC05 \leq 09999$
0206	TOC06 is out of range. Valid range is $00000 \leq TOC06 \leq 09999$
0208	TOC08 is out of range. Valid range is $00000 \leq TOC08 \leq 09999$
0209	TOC09 is out of range. Valid range is $00000 \leq TOC09 \leq 09999$
0210	TOC10 is out of range. Valid range is $00000 \leq TOC10 \leq 09999$
0211	TOC11 is out of range. Valid range is $00000 \leq TOC11 \leq 09999$
0212	TOC12 is out of range. Valid range is $00000 \leq TOC12 \leq 09999$
0213	TOC13 is out of range. Valid range is $00000 \leq TOC13 \leq 09999$
0214	TOC14 is out of range. Valid range is $00000 \leq TOC14 \leq 09999$
0215	TOC15 is out of range. Valid range is $00000 \leq TOC15 \leq 09999$
0216	TOC16 is out of range. Valid range is $00000 \leq TOC16 \leq 09999$
0217	TOC17 is out of range. Valid range is $00000 \leq TOC17 \leq 09999$
0218	TOC18 is out of range. Valid range is $00000 \leq TOC18 \leq 09999$
0219	TOC19 is out of range. Valid range is $00000 \leq TOC19 \leq 09999$
0220	TOC20 is out of range. Valid range is $00000 \leq TOC20 \leq 09999$
0221	TOC21 is out of range. Valid range is $00000 \leq TOC21 \leq 09999$
0222	TOC22 is out of range. Valid range is $00000 \leq TOC22 \leq 09999$
0223	TOC23 is out of range. Valid range is $00000 \leq TOC23 \leq 09999$
0224	TOC24 is out of range. Valid range is $00000 \leq TOC24 \leq 09999$
0225	TOC25 is out of range. Valid range is $00000 \leq TOC25 \leq 09999$
0226	TOC26 is out of range. Valid range is $00000 \leq TOC26 \leq 09999$
0227	TOC27 is out of range. Valid range is $00000 \leq TOC27 \leq 09999$
0228	TOC28 is out of range. Valid range is $00000 \leq TOC28 \leq 09999$
0229	TOC29 is out of range. Valid range is $00000 \leq TOC29 \leq 09999$
0230	TOC30 is out of range. Valid range is $00000 \leq TOC30 \leq 09999$
0231	TOC31 is out of range. Valid range is $00000 \leq TOC31 \leq 09999$
0232	TOC32 is out of range. Valid range is $00000 \leq TOC32 \leq 09999$
0233	TOC33 is out of range. Valid range is $00000 \leq TOC33 \leq 09999$
0234	TOC34 is out of range. Valid range is $00000 \leq TOC34 \leq 09999$
0235	TOC35 is out of range. Valid range is $00000 \leq TOC35 \leq 09999$
0236	TOC36 is out of range. Valid range is $00000 \leq TOC36 \leq 09999$
0237	TOC37 is out of range. Valid range is $00000 \leq TOC37 \leq 09999$
0238	TOC38 is out of range. Valid range is $00000 \leq TOC38 \leq 09999$
0239	TOC39 is out of range. Valid range is $00000 \leq TOC39 \leq 09999$
0240	TOC40 is out of range. Valid range is $00000 \leq TOC40 \leq 09999$
0243	TOC43 is out of range. Valid range is $00000 \leq TOC43 \leq 09999$
0244	TOC44 is out of range. Valid range is $00000 \leq TOC44 \leq 09999$
0247	TOC47 is out of range. Valid range is $00000 \leq TOC47 \leq 09999$

Error Code	Description $ID = 19$
0248	TOC48 is out of range. Valid range is $00000 \leq TOC48 \leq 09999$
0249	TOC49 is out of range. Valid range is $00000 \leq TOC49 \leq 09999$
0250	TOC50 is out of range. Valid range is $00000 \leq TOC50 \leq 09999$
0251	TOC51 is out of range. Valid range is $00000 \leq TOC51 \leq 09999$
0252	TOC52 is out of range. Valid range is $00000 \leq TOC52 \leq 09999$
0253	TOC53 is out of range. Valid range is $00000 \leq TOC53 \leq 09999$
0343	TOC43 is equal to TOC44. They must not be equal.
0347	TOC47 is equal to TOC48. They must not be equal.
0441	TOC41 is out of range. Valid range is $00000 \leq TOC41 < TOC42$
0442	TOC42 is out of range. Valid range is $TOC41 < TOC42 \leq 09999$
0445	TOC45 is out of range. Valid range is $00000 \leq TOC45 < TOC46$
0446	TOC46 is out of range. Valid range is $TOC45 < TOC46 \leq 09999$
0457	TOC57 is out of range. If non-zero, TOC57 must be within $MCC31 < TOC57 \leq MCC32$
0502	Your bit pattern in TOC02-B02, TOC02-B01, and TOC02-B00 indicates a selected clamp velocity control valve that is unconnected according to your entries in MCC02 and MCC04.
0506	Your bit pattern in TOC02-B06, TOC02-B05, and TOC02-B04 indicates a selected clamp pressure control valve that is unconnected according to your entries in MCC02 and MCC04.

ID = 20

OSC – Clamp Open Slow Configuration Block

Error Code	Description $ID = 20$
0205	OSC05 is out of range. Valid range is $00000 \leq OSC05 \leq 09999$
0206	OSC06 is out of range. Valid range is $00000 \leq OSC06 \leq 09999$
0208	OSC08 is out of range. Valid range is $00000 \leq OSC08 \leq 09999$
0209	OSC09 is out of range. Valid range is $00000 \leq OSC09 \leq 09999$
0210	OSC10 is out of range. Valid range is $00000 \leq OSC10 \leq 09999$
0211	OSC11 is out of range. Valid range is $00000 \leq OSC11 \leq 09999$
0212	OSC12 is out of range. Valid range is $00000 \leq OSC12 \leq 09999$
0213	OSC13 is out of range. Valid range is $00000 \leq OSC13 \leq 09999$
0214	OSC14 is out of range. Valid range is $00000 \leq OSC14 \leq 09999$
0215	OSC15 is out of range. Valid range is $00000 \leq OSC15 \leq 09999$
0216	OSC16 is out of range. Valid range is $00000 \leq OSC16 \leq 09999$
0217	OSC17 is out of range. Valid range is $00000 \leq OSC17 \leq 09999$
0218	OSC18 is out of range. Valid range is $00000 \leq OSC18 \leq 09999$
0219	OSC19 is out of range. Valid range is $00000 \leq OSC19 \leq 09999$
0220	OSC20 is out of range. Valid range is $00000 \leq OSC20 \leq 09999$
0221	OSC21 is out of range. Valid range is $00000 \leq OSC21 \leq 09999$
0222	OSC22 is out of range. Valid range is $00000 \leq OSC22 \leq 09999$
0223	OSC23 is out of range. Valid range is $00000 \leq OSC23 \leq 09999$
0224	OSC24 is out of range. Valid range is $00000 \leq OSC24 \leq 09999$
0225	OSC25 is out of range. Valid range is $00000 \leq OSC25 \leq 09999$
0226	OSC26 is out of range. Valid range is $00000 \leq OSC26 \leq 09999$
0227	OSC27 is out of range. Valid range is $00000 \leq OSC27 \leq 09999$
0228	OSC28 is out of range. Valid range is $00000 \leq OSC28 \leq 09999$
0229	OSC29 is out of range. Valid range is $00000 \leq OSC29 \leq 09999$
0230	OSC30 is out of range. Valid range is $00000 \leq OSC30 \leq 09999$

Error Code	Description ID = 20
0231	OSC31 is out of range. Valid range is 00000 ≤ OSC31 ≤ 09999
0232	OSC32 is out of range. Valid range is 00000 ≤ OSC32 ≤ 09999
0233	OSC33 is out of range. Valid range is 00000 ≤ OSC33 ≤ 09999
0234	OSC34 is out of range. Valid range is 00000 ≤ OSC34 ≤ 09999
0235	OSC35 is out of range. Valid range is 00000 ≤ OSC35 ≤ 09999
0236	OSC36 is out of range. Valid range is 00000 ≤ OSC36 ≤ 09999
0237	OSC37 is out of range. Valid range is 00000 ≤ OSC37 ≤ 09999
0238	OSC38 is out of range. Valid range is 00000 ≤ OSC38 ≤ 09999
0239	OSC39 is out of range. Valid range is 00000 ≤ OSC39 ≤ 09999
0240	OSC40 is out of range. Valid range is 00000 ≤ OSC40 ≤ 09999
0243	OSC43 is out of range. Valid range is 00000 ≤ OSC43 ≤ 09999
0244	OSC44 is out of range. Valid range is 00000 ≤ OSC44 ≤ 09999
0247	OSC47 is out of range. Valid range is 00000 ≤ OSC47 ≤ 09999
0248	OSC48 is out of range. Valid range is 00000 ≤ OSC48 ≤ 09999
0249	OSC49 is out of range. Valid range is 00000 ≤ OSC49 ≤ 09999
0250	OSC50 is out of range. Valid range is 00000 ≤ OSC50 ≤ 09999
0251	OSC51 is out of range. Valid range is 00000 ≤ OSC51 ≤ 09999
0252	OSC52 is out of range. Valid range is 00000 ≤ OSC52 ≤ 09999
0253	OSC53 is out of range. Valid range is 00000 ≤ OSC53 ≤ 09999
0343	OSC43 is equal to OSC44. They must not be equal.
0347	OSC47 is equal to OSC48. They must not be equal.
0441	OSC41 is out of range. Valid range is 00000 ≤ OSC41 < OSC42
0442	OSC42 is out of range. Valid range is OSC41 < OSC42 ≤ 09999
0445	OSC45 is out of range. Valid range is 00000 ≤ OSC45 < OSC46
0446	OSC46 is out of range. Valid range is OSC45 < OSC46 ≤ 09999
0457	OSC57 is out of range. If non-zero, OSC57 must be within MCC31 < OSC57 ≤ MCC32
0502	Your bit pattern in OSC02-B02, OSC02-B01, and OSC02-B00 indicates a selected clamp velocity control valve that is unconnected according to your entries in MCC02 and MCC04.
0506	Your bit pattern in OSC02-B06, OSC02-B05, and OSC02-B04 indicates a selected clamp pressure control valve that is unconnected according to your entries in MCC02 and MCC04.

ID = 21   OPC – Clamp Open Profile Block

Error Code	Description ID = 21
0209	OPC09 is out of range. When OPC03-B14 = 0, OPC09 must be within 00000 ≤ OPC09 ≤ 09999
0212	OPC12 is out of range. When OPC03-B14 = 0, OPC12 must be within 00000 ≤ OPC12 ≤ 09999
0215	OPC15 is out of range. When OPC03-B14 = 0, OPC15 must be within 00000 ≤ OPC15 ≤ 09999
0218	OPC18 is out of range. When OPC03-B14 = 0, OPC18 must be within 00000 ≤ OPC18 ≤ 09999
0221	OPC21 is out of range. When OPC03-B14 = 0, OPC21 must be within 00000 ≤ OPC21 ≤ 09999
0224	OPC24 is out of range. When OPC03-B14 = 0, OPC24 must be within 00000 ≤ OPC24 ≤ 09999
0227	OPC27 is out of range. When OPC03-B14 = 0, OPC27 must be within 00000 ≤ OPC27 ≤ 09999

Error Code	Description ID = 21
0230	OPC30 is out of range. When OPC03-B14 = 0, OPC30 must be within $00000 \leq OPC30 \leq 09999$
0233	OPC33 is out of range. When OPC03-B14 = 0, OPC33 must be within $00000 \leq OPC33 \leq 09999$
0236	OPC36 is out of range. When OPC03-B14 = 0, OPC36 must be within $00000 \leq OPC36 \leq 09999$
0239	OPC39 is out of range. When OPC03-B14 = 0, OPC39 must be within $00000 \leq OPC39 \leq 09999$
0263	OPC63 is out of range. Valid range is $00000 \leq OPC63 \leq 09999$
0409	OPC09 is out of range. When OPC03-B14 = 0, OPC39 must be within $00000 \leq OPC39 \leq 09999$ When OPC03-B14 = 1, a non-zero entry for OPC09 must be within $FOC45 \leq OPC09 \leq FOC46$
0410	OPC10 is out of range. If non-zero, OPC10 must be within $FOC41 \leq OPC10 \leq FOC42$
0411	OPC11 is out of range.

	if:	then:
	MCC27 and MCC28 are both non-zero	OPC11 must be within $00000 \leq OPC11 \leq MCC28 - MCC27$
	MCC27 is non-zero and MCC28 is zero	OPC11 must be within $00000 \leq OPC11 \leq MCC24 - MCC27$.
	MCC27 is zero and MCC28 is non-zero	OPC11 must be within $00000 \leq OPC11 \leq MCC28 - MCC23$.
	MCC27 and MCC28 are both zero	OPC11 must be within $00000 \leq OPC11 \leq MCC24 - MCC23$

Error Code	Description
0412	OPC12 is out of range. When OPC03-B14 = 1, a non-zero entry for OPC12 must be within $FOC45 \leq OPC12 \leq FOC46$
0413	OPC13 is out of range. If non-zero, OPC13 must be within $FOC41 \leq OPC13 \leq FOC42$
0414	OPC14 is out of range.

	if:	then:
	MCC27 and MCC28 are both non-zero	OPC14 must be within $00000 \leq OPC14 \leq MCC28 - MCC27$
	MCC27 is non-zero and MCC28 is zero	OPC14 must be within $00000 \leq OPC14 \leq MCC24 - MCC27$.
	MCC27 is zero and MCC28 is non-zero	OPC14 must be within $00000 \leq OPC14 \leq MCC28 - MCC23$
	MCC27 and MCC28 are both zero	OPC14 must be within $00000 \leq OPC14 \leq MCC24 - MCC23$

Error Code	Description
0415	OPC15 is out of range. When OPC03-B14 = 1, a non-zero entry for OPC15 must be within $FOC45 \leq OPC15 \leq FOC46$
0416	OPC16 is out of range. If non-zero, OPC16 must be within $FOC41 \leq OPC16 \leq FOC42$
0417	OPC17 is out of range.

	if:	then:
	MCC27 and MCC28 are both non-zero	OPC17 must be within $00000 \leq OPC17 \leq MCC28 - MCC27$
	MCC27 is non-zero and MCC28 is zero	OPC17 must be within $00000 \leq OPC17 \leq MCC24 - MCC27$.
	MCC27 is zero and MCC28 is non-zero	OPC17 must be within $00000 \leq OPC17 \leq MCC28 - MCC23$
	If MCC27 and MCC28 are both zero	OPC17 must be within $00000 \leq OPC17 \leq MCC24 - MCC23$

Error Code	Description
0418	OPC18 is out of range. When OPC03-B14 = 1, a non-zero entry for OPC18 must be within $SOC45 \leq OPC18 \leq SOC46$

Error Code	Description $\mathbf{ID = 21}$	
0419	OPC19 is out of range. If non-zero, OPC19 must be within SOC41 $\leq$ OPC19 $\leq$ SOC42	
0420	OPC20 is out of range.	
	if:	**then:**
	MCC27 and MCC28 are both non-zero	OPC20 must be within 00000 $\leq$ OPC20 $\leq$ MCC28 – MCC27
	MCC27 is non-zero and MCC28 is zero	OPC20 must be within 00000 $\leq$ OPC20 $\leq$ MCC24 – MCC27.
	MCC27 is zero and MCC28 is non-zero	OPC20 must be within 00000 $\leq$ OPC20 $\leq$ MCC28 – MCC23.
	MCC27 and MCC28 are both zero	OPC20 must be within 00000 $\leq$ OPC20 $\leq$ MCC24 – MCC23
0421	OPC21 is out of range. When OPC03-B14 = 1, a non-zero entry for OPC21 must be within SOC45 $\leq$ OPC21 $\leq$ SOC46	
0422	OPC22 is out of range. If non-zero, OPC22 must be within SOC41 $\leq$ OPC22 $\leq$ SOC42	
0423	OPC23 is out of range.	
	if:	**then:**
	MCC27 and MCC28 are both non-zero	OPC23 must be within 00000 $\leq$ OPC23 $\leq$ MCC28 – MCC27
	MCC27 is non-zero and MCC28 is zero	OPC23 must be within 00000 $\leq$ OPC23 $\leq$ MCC24 – MCC27.
	MCC27 is zero and MCC28 is non-zero	OPC23 must be within 00000 $\leq$ OPC23 $\leq$ MCC28 – MCC23.
	MCC27 and MCC28 are both zero	OPC23 must be within 00000 $\leq$ OPC23 $\leq$ MCC24 – MCC23
0424	OPC24 is out of range. When OPC03-B14 = 1, a non-zero entry for OPC24 must be within SOC45 $\leq$ OPC24 $\leq$ SOC46	
0425	OPC25 is out of range. If non-zero, OPC25 must be within SOC41 $\leq$ OPC25 $\leq$ SOC42	
0426	OPC26 is out of range.	
	if:	**then:**
	MCC27 and MCC28 are both non-zero	OPC26 must be within 00000 $\leq$ OPC26 $\leq$ MCC28 – MCC27
	MCC27 is non-zero and MCC28 is zero	OPC26 must be within 00000 $\leq$ OPC26 $\leq$ MCC24 – MCC27.
	MCC27 is zero and MCC28 is non-zero	OPC26 must be within 00000 $\leq$ OPC26 $\leq$ MCC28 – MCC23
	MCC27 and MCC28 are both zero	OPC26 must be within 00000 $\leq$ OPC26 $\leq$ MCC24 – MCC23
0427	OPC27 is out of range. When OPC03-B14 = 1, a non-zero entry for OPC27 must be within TOC45 $\leq$ OPC27 $\leq$ TOC46	
0428	OPC28 is out of range. If non-zero, OPC28 must be within TOC41 $\leq$ OPC28 $\leq$ TOC42	
0429	OPC29 is out of range.	
	if:	**then:**
	MCC27 and MCC28 are both non-zero	OPC29 must be within 00000 $\leq$ OPC29 $\leq$ MCC28 – MCC27
	MCC27 is non-zero and MCC28 is zero	OPC29 must be within 00000 $\leq$ OPC29 $\leq$ MCC24 – MCC27.
	MCC27 is zero and MCC28 is non-zero	OPC29 must be within 00000 $\leq$ OPC29 $\leq$ MCC28 – MCC23
	MCC27 and MCC28 are both zero	OPC29 must be within 00000 $\leq$ OPC29 $\leq$ MCC24 – MCC23

Error Code	Description ID = 21	
0430	OPC30 is out of range. When OPC03-B14 = 1, a non-zero entry for OPC30 must be within $TOC45 \leq OPC30 \leq TOC46$	
0431	OPC31 is out of range. If non-zero, OPC31 must be within $TOC41 \leq OPC31 \leq TOC42$	
0432	OPC32 is out of range.	
	if:	**then:**
	MCC27 and MCC28 are both non-zero	OPC32 must be within $00000 \leq OPC32 \leq MCC28 – MCC27$
	MCC27 is non-zero and MCC28 is zero	OPC32 must be within $00000 \leq OPC32 \leq MCC24 – MCC27.$
	MCC27 is zero and MCC28 is non-zero	OPC32 must be within $00000 \leq OPC32 \leq MCC28 – MCC23.$
	MCC27 and MCC28 are both zero	OPC32 must be within $00000 \leq OPC32 \leq MCC24 – MCC23$
0433	OPC33 is out of range. When OPC03-B14 = 1, a non-zero entry for OPC33 must be within $TOC45 \leq OPC33 \leq TOC46$	
0434	OPC34 is out of range. If non-zero, OPC34 must be within $TOC41 \leq OPC34 \leq TOC42$	
0435	OPC35 is out of range.	
	if:	**then:**
	MCC27 and MCC28 are both non-zero	OPC35 must be within $00000 \leq OPC35 \leq MCC28 – MCC27$
	MCC27 is non-zero and MCC28 is zero	OPC35 must be within $00000 \leq OPC35 \leq MCC24 – MCC27.$
	MCC27 is zero and MCC28 is non-zero	OPC35 must be within $00000 \leq OPC35 \leq MCC28 – MCC23$
	MCC27 and MCC28 are both zero	OPC35 must be within $00000 \leq OPC3 \leq MCC24 – MCC23$
0436	OPC36 is out of range. When OPC03-B14 = 1, a non-zero entry for OPC36 must be within $OSC45 \leq OPC36 \leq OSC46$	
0437	OPC37 is out of range. If non-zero, OPC37 must be within $OSC41 \leq OPC37 \leq OSC42$	
0438	OPC38 is out of range.	
	if:	**then:**
	MCC27 and MCC28 are both non-zero	OPC38 must be within $00000 \leq OPC38 \leq MCC28 – MCC27$
	MCC27 is non-zero and MCC28 is zero	OPC38 must be within $00000 \leq OPC38 \leq MCC24 – MCC27.$
	MCC27 is zero and MCC28 is non-zero	OPC38 must be within $00000 \leq OPC3 \leq MCC28 – MCC23.$
	MCC27 and MCC28 are both zero	OPC38 must be within $00000 \leq OPC3 \leq MCC24 – MCC23$
0439	OPC39 is out of range. When OPC03-B14 = 1, a non-zero entry for OPC39 must be within $OSC45 \leq OPC39 \leq OSC46$	
0440	OPC40 is out of range. If non-zero, OPC40 must be within $OSC41 \leq OPC40 \leq OSC42$	
0461	OPC61 is out of range. Valid range is $00000 \leq OPC61 < OPC62$	
0462	OPC62 is out of range.	
	if:	**then:**
	MCC27 and MCC28 are both non-zero	OPC62 must be within $OPC61 < OPC62 \leq MCC28 – MCC27$
	MCC27 is non-zero and MCC28 is zero	OPC62 must be within $OPC61 < OPC62 \leq MCC24 – MCC27.$

Error Code	Description **ID = 21**	
	MCC27 is zero and MCC28 is non-zero	OPC62 must be within OPC61 < OPC62 ≤ MCC28 – MCC23.
	MCC27 and MCC28 are both zero	OPC62 must be within OPC61 < OPC62 ≤ MCC24 – MCC23
0503	Your selection to bridge the First Clamp Open Profile directly into Second Clamp Open Profile, and set-output upon conclusion of Second Clamp Open Profile (OPC03-B08 = 0 and OPC03-B09 = 1) is invalid because QDC module does not have a valid SOC (SYS16-B01 = 0).	
0504	You have selected closed-loop Press/Pos execution for the First Clamp Open Profile by OPC04-B01 = 0; however, your bit patterns in MCC02 and MCC03 indicate that the QDC module does not have access to a connected clamp pressure transducer.	
0507	Your selection to bridge the first two Clamp Open Profiles directly into the Third Clamp Open Profile, and set-output upon conclusion of the Third Clamp Open Profile (OPC03-B08 = 0, OPC03-B09 = 0, and OPC03-B10 = 1) is invalid because the QDC module does not have a valid TOC on-board (SYS16-B02 = 0).	
0508	You have selected closed-loop Press/Pos execution for the Second Clamp Open Profile by OPC04-B03 = 0; however, your bit patterns in MCC02 and MCC03 indicate that the QDC module does not have access to a connected clamp pressure transducer.	
0511	Your selection to bridge the Second Clamp Open Profile directly into the Third Clamp Open Profile, and set-output upon conclusion of the Third Clamp Open Profile (OPC03-B09 = 0, and OPC03-B10 = 1) is invalid because the QDC module does not have a valid TOC on-board (SYS16-B02 = 0).	
0512	You have selected closed-loop Press/Pos execution for the Third Clamp Open Profile by OPC04-B05 = 0; however, your bit patterns in MCC02 and MCC03 indicate that the QDC module does not have access to a connected clamp pressure transducer.	
0516	You have selected closed-loop Press/Pos execution for the Clamp Open Slow Profile by OPC04-B07 = 0; however, your bit patterns in MCC02 and MCC03 indicate that the QDC module does not have access to a connected clamp pressure transducer.	
0600	Your entire Clamp Open Profile Command Block has been rejected because the QDC module does not have a valid Clamp Open Slow Configuration Block on-board (SYS16-B03 = 0).	
0609	Your OPC09 must be zero because FOC is invalid (SYS16-B00 = 0).	
0610	Your OPC10 must be zero because FOC is invalid (SYS16-B00 = 0).	
0611	Your OPC11 must be zero because FOC is invalid (SYS16-B00 = 0).	
0612	Your OPC12 must be zero because FOC is invalid (SYS16-B00 = 0).	
0613	Your OPC13 must be zero because FOC is invalid (SYS16-B00 = 0).	
0614	Your OPC14 must be zero because FOC is invalid (SYS16-B00 = 0).	
0615	Your OPC15 must be zero because FOC is invalid (SYS16-B00 = 0).	
0616	Your OPC16 must be zero because FOC is invalid (SYS16-B00 = 0).	
0617	Your OPC17 must be zero because FOC is invalid (SYS16-B00 = 0).	
0618	Your OPC18 must be zero because SOC is invalid (SYS16-B01 = 0).	
0619	Your OPC19 must be zero because SOC is invalid (SYS16-B01 = 0).	
0620	Your OPC20 must be zero because SOC is invalid (SYS16-B01 = 0).	
0621	Your OPC21 must be zero because SOC is invalid (SYS16-B01 = 0).	
0622	Your OPC22 must be zero because SOC is invalid (SYS16-B01 = 0).	
0623	Your OPC23 must be zero because SOC is invalid (SYS16-B01 = 0).	
0624	Your OPC24 must be zero because SOC is invalid (SYS16-B01 = 0).	
0625	Your OPC25 must be zero because SOC is invalid (SYS16-B01 = 0).	
0626	Your OPC26 must be zero because SOC is invalid (SYS16-B01 = 0).	
0627	Your OPC27 must be zero because TOC is invalid (SYS16-B02 = 0).	
0628	Your OPC28 must be zero because TOC is invalid (SYS16-B02 = 0).	
0629	Your OPC29 must be zero because TOC is invalid (SYS16-B02 = 0).	
0630	Your OPC30 must be zero because TOC is invalid (SYS16-B02 = 0).	
0631	Your OPC31 must be zero because TOC is invalid (SYS16-B02 = 0).	
0632	Your OPC32 must be zero because TOC is invalid (SYS16-B02 = 0).	

Error Code	Description **ID = 21**
0633	Your OPC33 must be zero because TOC is invalid (SYS16-B02 = 0).
0634	Your OPC34 must be zero because TOC is invalid (SYS16-B02 = 0).
0635	Your OPC35 must be zero because TOC is invalid (SYS16-B02 = 0).
0812	OPC12 must be 00000 when OPC11 = 00000.
0813	OPC13 must be 00000 when OPC11 = 00000.
0814	OPC14 must be 00000 when OPC11 = 00000.
0815	OPC15 must be 00000 when OPC14 = 00000.
0816	OPC16 must be 00000 when OPC14 = 00000.
0817	OPC17 must be 00000 when OPC14 = 00000.
0821	OPC21 must be 00000 when OPC20 = 00000.
0822	OPC22 must be 00000 when OPC20 = 00000.
0823	OPC23 must be 00000 when OPC20 = 00000.
0824	OPC24 must be 00000 when OPC23 = 00000.
0825	OPC25 must be 00000 when OPC23 = 00000.
0826	OPC26 must be 00000 when OPC23 = 00000.
0830	OPC30 must be 00000 when OPC29 = 00000.
0831	OPC31 must be 00000 when OPC29 = 00000.
0832	OPC32 must be 00000 when OPC29 = 00000.
0833	OPC33 must be 00000 when OPC32 = 00000.
0834	OPC34 must be 00000 when OPC32 = 00000.
0835	OPC35 must be 00000 when OPC32 = 00000.
0839	OPC39 must be 00000 when OPC38 = 00000.
0840	OPC40 must be 00000 when OPC38 = 00000.
1014	OPC14 is not in increasing positional order. If non-zero, OPC14 must be greater than OPC11.
1017	OPC17 is not in increasing positional order. If non-zero, OPC17 must be greater than OPC14.
1020	OPC20 is not in increasing positional order. If non-zero, OPC20 must be greater than OPC11, OPC14, and OPC17.
1023	OPC23 is not in increasing positional order. If non-zero, OPC23 must be greater than OPC20.
1026	OPC26 is not in increasing positional order. If non-zero, OPC26 must be greater than OPC23.
1029	OPC29 is not in increasing positional order. If non-zero, OPC29 must be greater than OPC11, OPC14, OPC17, OPC20, OPC23, and OPC26.
1032	OPC32 is not in increasing positional order. If non-zero, OPC32 must be greater than OPC29.
1035	OPC35 is not in increasing positional order. If non-zero, OPC35 must be greater than OPC32.
1038	OPC38 is not in increasing positional order. If non-zero, OPC38 must be greater than OPC11, OPC14, OPC17, OPC20, OPC23, OPC26, OPC29, OPC32, and OPC35.
0209	CLC09 is out of range. Valid range is $00000 \leq CLC09 \leq 09999$
0210	CLC10 is out of range. Valid range is $00000 \leq CLC10 \leq 09999$
0211	CLC11 is out of range. Valid range is $00000 \leq CLC11 \leq 09999$
0212	CLC12 is out of range. Valid range is $00000 \leq CLC12 \leq 09999$
0213	CLC13 is out of range. Valid range is $00000 \leq CLC13 \leq 09999$
0214	CLC14 is out of range. Valid range is $00000 \leq CLC14 \leq 09999$
0215	CLC15 is out of range. Valid range is $00000 \leq CLC15 \leq 09999$
0216	CLC16 is out of range. Valid range is $00000 \leq CLC16 \leq 09999$
0217	CLC17 is out of range. Valid range is $00000 \leq CLC17 \leq 09999$

Error Code	Description ID = 21
0218	CLC18 is out of range. Valid range is 00000 ≤ CLC18 ≤ 09999
0219	CLC19 is out of range. Valid range is 00000 ≤ CLC19 ≤ 09999
0220	CLC20 is out of range. Valid range is 00000 ≤ CLC20 ≤ 09999
0221	CLC21 is out of range. Valid range is 00000 ≤ CLC21 ≤ 09999
0222	CLC22 is out of range. Valid range is 00000 ≤ CLC22 ≤ 09999
0223	CLC23 is out of range. Valid range is 00000 ≤ CLC23 ≤ 09999
0224	CLC24 is out of range. Valid range is 00000 ≤ CLC24 ≤ 09999

ID = 22

EAC – Ejector Advance Configuration Block

Error Code	Description ID = 22
0205	EAC05 is out of range. Valid range is 00000 ≤ EAC05 ≤ 09999
0206	EAC06 is out of range. Valid range is 00000 ≤ EAC06 ≤ 09999
0208	EAC08 is out of range. Valid range is 00000 ≤ EAC08 ≤ 09999
0209	EAC09 is out of range. Valid range is 00000 ≤ EAC09 ≤ 09999
0210	EAC10 is out of range. Valid range is 00000 ≤ EAC10 ≤ 09999
0211	EAC11 is out of range. Valid range is 00000 ≤ EAC11 ≤ 09999
0212	EAC12 is out of range. Valid range is 00000 ≤ EAC12 ≤ 09999
0213	EAC13 is out of range. Valid range is 00000 ≤ EAC13 ≤ 09999
0214	EAC14 is out of range. Valid range is 00000 ≤ EAC14 ≤ 09999
0215	EAC15 is out of range. Valid range is 00000 ≤ EAC15 ≤ 09999
0216	EAC16 is out of range. Valid range is 00000 ≤ EAC16 ≤ 09999
0217	EAC17 is out of range. Valid range is 00000 ≤ EAC17 ≤ 09999
0218	EAC18 is out of range. Valid range is 00000 ≤ EAC18 ≤ 09999
0219	EAC19 is out of range. Valid range is 00000 ≤ EAC19 ≤ 09999
0220	EAC20 is out of range. Valid range is 00000 ≤ EAC20 ≤ 09999
0221	EAC21 is out of range. Valid range is 00000 ≤ EAC21 ≤ 09999
0222	EAC22 is out of range. Valid range is 00000 ≤ EAC22 ≤ 09999
0223	EAC23 is out of range. Valid range is 00000 ≤ EAC23 ≤ 09999
0224	EAC24 is out of range. Valid range is 00000 ≤ EAC24 ≤ 09999
0225	EAC25 is out of range. Valid range is 00000 ≤ EAC25 ≤ 09999
0226	EAC26 is out of range. Valid range is 00000 ≤ EAC26 ≤ 09999
0227	EAC27 is out of range. Valid range is 00000 ≤ EAC27 ≤ 09999
0228	EAC28 is out of range. Valid range is 00000 ≤ EAC28 ≤ 09999
0229	EAC29 is out of range. Valid range is 00000 ≤ EAC29 ≤ 09999
0230	EAC30 is out of range. Valid range is 00000 ≤ EAC30 ≤ 09999
0231	EAC31 is out of range. Valid range is 00000 ≤ EAC31 ≤ 09999
0232	EAC32 is out of range. Valid range is 00000 ≤ EAC32 ≤ 09999
0233	EAC33 is out of range. Valid range is 00000 ≤ EAC33 ≤ 09999
0234	EAC34 is out of range. Valid range is 00000 ≤ EAC34 ≤ 09999
0235	EAC35 is out of range. Valid range is 00000 ≤ EAC35 ≤ 09999
0236	EAC36 is out of range. Valid range is 00000 ≤ EAC36 ≤ 09999
0237	EAC37 is out of range. Valid range is 00000 ≤ EAC37 ≤ 09999
0238	EAC38 is out of range. Valid range is 00000 ≤ EAC38 ≤ 09999
0239	EAC39 is out of range. Valid range is 00000 ≤ EAC39 ≤ 09999

Error Code	Description **ID = 22**
0240	EAC40 is out of range. Valid range is $00000 \leq EAC40 \leq 09999$
0243	EAC43 is out of range. Valid range is $00000 \leq EAC43 \leq 09999$
0244	EAC44 is out of range. Valid range is $00000 \leq EAC44 \leq 09999$
0247	EAC47 is out of range. Valid range is $00000 \leq EAC47 \leq 09999$
0248	EAC48 is out of range. Valid range is $00000 \leq EAC48 \leq 09999$
0249	EAC49 is out of range. Valid range is $00000 \leq EAC49 \leq 09999$
0250	EAC50 is out of range. Valid range is $00000 \leq EAC50 \leq 09999$
0251	EAC51 is out of range. Valid range is $00000 \leq EAC51 \leq 09999$
0252	EAC52 is out of range. Valid range is $00000 \leq EAC52 \leq 09999$
0253	EAC53 is out of range. Valid range is $00000 \leq EAC53 \leq 09999$
0343	EAC43 is equal to EAC44. They must not be equal.
0347	EAC47 is equal to EAC48. They must not be equal.
0441	EAC41 is out of range. Valid range is $00000 \leq EAC41 < EAC42$
0442	EAC42 is out of range. Valid range is $EAC41 < EAC42 \leq 09999$
0445	EAC45 is out of range. Valid range is $00000 \leq EAC45 < EAC46$
0446	EAC46 is out of range. Valid range is $EAC45 < EAC46 \leq 09999$
0457	EAC57 is out of range. If non-zero, EAC57 must be within $MCC45 < EAC57 \leq MCC46$
0502	Your bit pattern in EAC02-B02, EAC02-B01, and EAC02-B00 indicates a selected ejector velocity control valve that is unconnected according to your entries in MCC02 and MCC04.
0506	Your bit pattern in EAC02-B06, EAC02-B05, and EAC02-B04 indicates a selected ejector pressure control valve that is unconnected according to your entries in MCC02 and MCC04.

ID = 23

ERC – Ejector Retract Configuration Block

Error Code	Description **ID = 23**
0205	ERC05 is out of range. Valid range is $00000 \leq ERC05 \leq 09999$
0206	ERC06 is out of range. Valid range is $00000 \leq ERC06 \leq 09999$
0209	ERC09 is out of range. Valid range is $00000 \leq ERC09 \leq 09999$
0210	ERC10 is out of range. Valid range is $00000 \leq ERC10 \leq 09999$
0211	ERC11 is out of range. Valid range is $00000 \leq ERC11 \leq 09999$
0212	ERC12 is out of range. Valid range is $00000 \leq ERC12 \leq 09999$
0213	ERC13 is out of range. Valid range is $00000 \leq ERC13 \leq 09999$
0214	ERC14 is out of range. Valid range is $00000 \leq ERC14 \leq 09999$
0215	ERC15 is out of range. Valid range is $00000 \leq ERC15 \leq 09999$
0216	ERC16 is out of range. Valid range is $00000 \leq ERC16 \leq 09999$
0217	ERC17 is out of range. Valid range is $00000 \leq ERC17 \leq 09999$
0218	ERC18 is out of range. Valid range is $00000 \leq ERC18 \leq 09999$
0219	ERC19 is out of range. Valid range is $00000 \leq ERC19 \leq 09999$
0220	ERC20 is out of range. Valid range is $00000 \leq ERC20 \leq 09999$
0221	ERC21 is out of range. Valid range is $00000 \leq ERC21 \leq 09999$
0222	ERC22 is out of range. Valid range is $00000 \leq ERC22 \leq 09999$
0223	ERC23 is out of range. Valid range is $00000 \leq ERC23 \leq 09999$
0224	ERC24 is out of range. Valid range is $00000 \leq ERC24 \leq 09999$
0225	ERC25 is out of range. Valid range is $00000 \leq ERC25 \leq 09999$
0226	ERC26 is out of range. Valid range is $00000 \leq ERC26 \leq 09999$
0227	ERC27 is out of range. Valid range is $00000 \leq ERC27 \leq 09999$

Error Code	Description $ID = 23$
0228	ERC28 is out of range. Valid range is $00000 \leq ERC28 \leq 09999$
0229	ERC29 is out of range. Valid range is $00000 \leq ERC29 \leq 09999$
0230	ERC30 is out of range. Valid range is $00000 \leq ERC30 \leq 09999$
0231	ERC31 is out of range. Valid range is $00000 \leq ERC31 \leq 09999$
0232	ERC32 is out of range. Valid range is $00000 \leq ERC32 \leq 09999$
0233	ERC33 is out of range. Valid range is $00000 \leq ERC33 \leq 09999$
0234	ERC34 is out of range. Valid range is $00000 \leq ERC34 \leq 09999$
0235	ERC35 is out of range. Valid range is $00000 \leq ERC35 \leq 09999$
0236	ERC36 is out of range. Valid range is $00000 \leq ERC36 \leq 09999$
0237	ERC37 is out of range. Valid range is $00000 \leq ERC37 \leq 09999$
0238	ERC38 is out of range. Valid range is $00000 \leq ERC38 \leq 09999$
0239	ERC39 is out of range. Valid range is $00000 \leq ERC39 \leq 09999$
0240	ERC40 is out of range. Valid range is $00000 \leq ERC40 \leq 09999$
0243	ERC43 is out of range. Valid range is $00000 \leq ERC43 \leq 09999$
0244	ERC44 is out of range. Valid range is $00000 \leq ERC44 \leq 09999$
0247	ERC47 is out of range. Valid range is $00000 \leq ERC47 \leq 09999$
0248	ERC48 is out of range. Valid range is $00000 \leq ERC48 \leq 09999$
0249	ERC49 is out of range. Valid range is $00000 \leq ERC49 \leq 09999$
0250	ERC50 is out of range. Valid range is $00000 \leq ERC50 \leq 09999$
0251	ERC51 is out of range. Valid range is $00000 \leq ERC51 \leq 09999$
0252	ERC52 is out of range. Valid range is $00000 \leq ERC52 \leq 09999$
0253	ERC53 is out of range. Valid range is $00000 \leq ERC53 \leq 09999$
0343	ERC43 is equal to ERC44. They must not be equal.
0347	ERC47 is equal to ERC48. They must not be equal.
0441	ERC41 is out of range. Valid range is $00000 \leq ERC41 < ERC42$
0442	ERC42 is out of range. Valid range is $ERC41 < ERC42 \leq 09999$
0445	ERC45 is out of range. Valid range is $00000 \leq ERC45 < ERC46$
0446	ERC46 is out of range. Valid range is $ERC45 < ERC46 \leq 09999$
0502	Your bit pattern in ERC02-B02, ERC02-B01, and ERC02-B00 indicates a selected ejector velocity control valve that is unconnected according to your entries in MCC02 and MCC04.
0506	Your bit pattern in ERC02-B06, ERC02-B05, and ERC02-B04 indicates a selected ejector pressure control valve that is unconnected according to your entries in MCC02 and MCC04.

ID = 24   **EPC – Ejector Profile Block**

Error Code	Description $ID = 24$
0209	EPC09 is out of range. When EPC03-B14 = 0, EPC09 must be within $00000 \leq EPC09 \leq 09999$
0212	EPC12 is out of range. When EPC03-B14 = 0, EPC12 must be within $00000 \leq EPC12 \leq 09999$
0215	EPC15 is out of range. When EPC03-B14 = 0, EPC15 must be within $00000 \leq EPC15 \leq 09999$
0221	EPC21 is out of range. When EPC03-B14 = 0, EPC21 must be within $00000 \leq EPC21 \leq 09999$
0227	EPC27 is out of range. When EPC03-B14 = 0, EPC27 must be within $00000 \leq EPC27 \leq 09999$
0233	EPC33 is out of range. When EPC03-B14 = 0, EPC33 must be within $00000 \leq EPC33 \leq 09999$

Error Code	Description $ID = 24$	
0236	EPC36 is out of range. When EPC03-B14 = 0, EPC36 must be within $00000 \leq EPC36 \leq 09999$	
0239	EPC39 is out of range. When EPC03-B14 = 0, EPC39 must be within $00000 \leq EPC39 \leq 09999$	
0257	EPC57 is out of range. Valid range is $00000 \leq EPC57 \leq 09999$	
0264	EPC64 is out of range. Valid range is $00000 \leq EPC64 \leq 09999$	
0409	EPC09 is out of range. When EPC03-B14 = 1, a non-zero entry for EPC09 must be within $EAC45 \leq EPC09 \leq EAC46$	
0410	EPC10 is out of range. If non-zero, EPC10 must be within $EAC41 \leq EPC10 \leq EAC42$	
0411	EPC11 is out of range. **if:**	**then:**
	MCC41 and MCC42 are both non-zero	EPC11 must be within $00000 \leq EPC11 \leq MCC42 - MCC41$
	MCC41 is non-zero and MCC42 is zero	EPC11 must be within $00000 \leq EPC11 \leq MCC38 - MCC41$
	MCC41 is zero and MCC42 is non-zero	EPC11 must be within $00000 \leq EPC11 \leq MCC42 - MCC37$
	MCC41 and MCC42 are both zero	EPC11 must be within $00000 \leq EPC11 \leq MCC38 - MCC37$
0412	EPC12 is out of range. When EPC03-B14 = 1, a non-zero entry for EPC12 must be within $EAC45 \leq EPC12 \leq EAC46$	
0413	EPC13 is out of range. If non-zero, EPC13 must be within $EAC41 \leq EPC13 \leq EAC42$	
0414	EPC14 is out of range. **if:**	**then:**
	MCC41 and MCC42 are both non-zero	EPC14 must be within $00000 \leq EPC14 \leq MCC42 - MCC41$
	MCC41 is non-zero and MCC42 is zero	EPC14 must be within $00000 \leq EPC14 \leq MCC38 - MCC41$
	MCC41 is zero and MCC42 is non-zero	EPC14 must be within $00000 \leq EPC14 \leq MCC42 - MCC37$
	MCC41 and MCC42 are both zero	EPC14 must be within $00000 \leq EPC14 \leq MCC38 - MCC37$
0415	EPC15 is out of range. When EPC03-B14 = 1, a non-zero entry for EPC15 must be within $EAC45 \leq EPC15 \leq EAC46$	
0416	EPC16 is out of range. If non-zero, EPC16 must be within $EAC41 \leq EPC16 \leq EAC42$	
0421	EPC21 is out of range. When EPC03-B14 = 1, a non-zero entry for EPC21 must be within $ERC45 \leq EPC21 \leq ERC46$	
0422	EPC22 is out of range. If non-zero, EPC22 must be within $ERC41 \leq EPC22 \leq ERC42$	
0423	EPC23 is out of range. **if:**	**then:**
	MCC41 and MCC42 are both non-zero	EPC23 must be within $00000 \leq EPC23 \leq MCC42 - MCC41$
	MCC41 is non-zero and MCC42 is zero	EPC23 must be within $00000 \leq EPC23 \leq MCC38 - MCC41$
	MCC41 is zero and MCC42 is non-zero	EPC23 must be within $00000 \leq EPC23 \leq MCC42 - MCC37$
	MCC41 and MCC42 are both zero	EPC23 must be within $00000 \leq EPC23 \leq MCC38 - MCC37$
0427	EPC27 is out of range. When EPC03-B14 = 1, a non-zero entry for EPC27 must be within $EAC45 \leq EPC27 \leq EAC46$	
0428	EPC28 is out of range. If non-zero, EPC28 must be within $EAC41 \leq EPC28 \leq EAC42$	

Error Code	Description $\quad$ ID = 24	
0429	EPC29 is out of range.	
	if:	**then:**
	MCC41 and MCC42 are both non-zero	EPC29 must be within $00000 \leq EPC29 \leq MCC42 - MCC41$
	MCC41 is non-zero and MCC42 is zero	EPC29 must be within $00000 \leq EPC29 \leq MCC38 - MCC41$
	MCC41 is zero and MCC42 is non-zero	EPC29 must be within $00000 \leq EPC29 \leq MCC42 - MCC37$
	MCC41 and MCC42 are both zero	EPC29 must be within $00000 \leq EPC29 \leq MCC38 - MCC37$
0433	EPC33 is out of range. When EPC03-B14 = 1, a non-zero entry for EPC33 must be within $ERC45 \leq EPC33 \leq ERC46$	
0434	EPC34 is out of range. If non-zero, EPC34 must be within $ERC41 \leq EPC34 \leq ERC42$	
0435	EPC35 is out of range.	
	if:	**then:**
	MCC41 and MCC42 are both non-zero	EPC35 must be within $00000 \leq EPC35 < MCC42 - MCC41$
	MCC41 is non-zero and MCC42 is zero	EPC35 must be within $00000 \leq EPC35 \leq MCC38 - MCC41$
	MCC41 is zero and MCC42 is non-zero	EPC35 must be within $00000 \leq EPC35 < MCC42 - MCC37$
	MCC41 and MCC42 are both zero	EPC35 must be within $00000 \leq EPC35 \leq MCC38 - MCC37$
0436	EPC36 is out of range. When EPC03-B14 = 1, a non-zero entry for EPC36 must be within $ERC45 \leq EPC36 \leq ERC46$	
0437	EPC37 is out of range. If non-zero, EPC37 must be within $ERC41 \leq EPC37 \leq ERC42$	
0438	EPC38 is out of range.	
	if:	**then:**
	MCC41 and MCC42 are both non-zero	EPC38 must be within $00000 \leq EPC38 \leq MCC42 - MCC41$
	MCC41 is non-zero and MCC42 is zero	EPC38 must be within $00000 \leq EPC38 \leq MCC38 - MCC41$
	MCC41 is zero and MCC42 is non-zero	EPC38 must be within $00000 \leq EPC38 \leq MCC42 - MCC37$
	MCC41 and MCC42 are both zero	EPC38 must be within $00000 \leq EPC38 \leq MCC38 - MCC37$
0439	EPC39 is out of range. When EPC03-B14 = 1, a non-zero entry for EPC39 must be within $ERC45 \leq EPC39 \leq ERC46$	
0440	EPC40 is out of range. If non-zero, EPC40 must be within $ERC41 \leq EPC40 \leq ERC42$	
0459	EPC59 is out of range.	
	if:	**then:**
	MCC41 and MCC42 are both non-zero	EPC59 must be within $EPC60 < EPC59 \leq MCC42 - MCC41$
	MCC41 is non-zero and MCC42 is zero	EPC59 must be within $EPC60 < EPC59 \leq MCC38 - MCC41$
	MCC41 is zero and MCC42 is non-zero	EPC59 must be within $EPC60 < EPC59 \leq MCC42 - MCC37$
	MCC41 and MCC42 are both zero	EPC59 must be within $EPC60 < EPC59 \leq MCC38 - MCC37$
0460	EPC60 is out of range. Valid range is $00000 \leq EPC60 < EPC59$	

Error Code	Description ID = 24	
0461	EPC61 is out of range.	
	if:	**then:**
	MCC27 and MCC28 are both non-zero	EPC61 must be within EPC62 < EPC61 ≤ MCC28 – MCC27
	MCC27 is non-zero and MCC28 is zero	EPC61 must be within EPC62 < EPC61 ≤ MCC24 – MCC27
	MCC27 is zero and MCC28 is non-zero	EPC61 must be within EPC62 < EPC61 ≤ MCC28 – MCC23
	MCC27 and MCC28 are both zero	EPC61 must be within EPC62 < EPC61 ≤ MCC24 – MCC23
0462	EPC62 is out of range. Valid range is 00000 ≤ EPC62 < EPC61	
0463	EPC63 is out of range. Valid range is EPC60 ≤ EPC63 < EPC59	
0503	Your selection to start the Ejector Profile based upon clamp position during the Clamp Open Profile is invalid because QDC module does not have a valid OPC (SYS16-B04 = 0).	
0504	You have selected closed-loop Press/Pos execution for the Ejector Profile by EPC04-B01 = 0; however, your bit patterns in MCC02 and MCC03 indicate that the QDC module does not have access to a connected ejector pressure transducer.	
0600	Your entire Ejector Profile Command Block has been rejected because the QDC module does not have both a valid Ejector Advance Configuration Command Block and a valid Ejector Retract Configuration Command Block on-board.	
0812	EPC12 must be 00000 when EPC11 = 00000.	
0813	EPC13 must be 00000 when EPC11 = 00000.	
0814	EPC14 must be 00000 when EPC11 = 00000.	
0815	EPC15 must be 00000 when EPC14 = 00000.	
0816	EPC16 must be 00000 when EPC14 = 00000.	
0836	EPC36 must be 00000 when EPC35 = 00000.	
0837	EPC37 must be 00000 when EPC35 = 00000.	
0838	EPC38 must be 00000 when EPC35 = 00000.	
0839	EPC39 must be 00000 when EPC38 = 00000.	
0840	EPC40 must be 00000 when EPC38 = 00000.	
1014	EPC14 is not in increasing positional order. If non-zero, EPC14 must be greater than EPC11.	
1038	EPC38 is not in decreasing positional order. If non-zero, EPC38 must be less than EPC35.	

ID = 25

DYC – Dynamic Command Block

Error Code	Description ID = 25
0209	DYC09 is out of range. Valid range is 00000 ≤ DYC09 ≤ 09999
0210	DYC10 is out of range. Valid range is 00000 ≤ DYC10 ≤ 09999
0211	DYC11 is out of range. Valid range is 00000 ≤ DYC11 ≤ 09999
0212	DYC12 is out of range. Valid range is 00000 ≤ DYC12 ≤ 09999
0213	DYC13 is out of range. Valid range is 00000 ≤ DYC13 ≤ 09999
0214	DYC14 is out of range. Valid range is 00000 ≤ DYC14 ≤ 09999
0215	DYC15 is out of range. Valid range is 00000 ≤ DYC15 ≤ 09999
0216	DYC16 is out of range. Valid range is 00000 ≤ DYC16 ≤ 09999
0217	DYC17 is out of range. Valid range is 00000 ≤ DYC17 ≤ 09999
0218	DYC18 is out of range. Valid range is 00000 ≤ DYC18 ≤ 09999
0219	DYC19 is out of range. Valid range is 00000 ≤ DYC19 ≤ 09999
0220	DYC20 is out of range. Valid range is 00000 ≤ DYC20 ≤ 09999

Error Code	Description ID = 25
0221	DYC21 is out of range. Valid range is 00000 ≤ DYC21 ≤ 09999
0222	DYC22 is out of range. Valid range is 00000 ≤ DYC22 ≤ 09999
0223	DYC23 is out of range. Valid range is 00000 ≤ DYC23 ≤ 09999
0224	DYC24 is out of range. Valid range is 00000 ≤ DYC24 ≤ 09999
0225	DYC25 is out of range. Valid range is 00000 ≤ DYC25 ≤ 09999
0226	DYC26 is out of range. Valid range is 00000 ≤ DYC26 ≤ 09999
0227	DYC27 is out of range. Valid range is 00000 ≤ DYC27 ≤ 09999
0228	DYC28 is out of range. Valid range is 00000 ≤ DYC28 ≤ 09999
0229	DYC29 is out of range. Valid range is 00000 ≤ DYC29 ≤ 09999
0230	DYC30 is out of range. Valid range is 00000 ≤ DYC30 ≤ 09999
0231	DYC31 is out of range. Valid range is 00000 ≤ DYC31 ≤ 09999
0232	DYC32 is out of range. Valid range is 00000 ≤ DYC32 ≤ 09999
0261	DYC61 is out of range. Valid range is 00000 ≤ DYC61 ≤ 00027

ID = 26

RLC – Inject ERC Values Block

Error Code	Description ID = 26
0209	RLC09 is out of range. Valid range is 00000 ≤ RLC09 ≤ 09999
0210	RLC10 is out of range. Valid range is 00000 ≤ RLC10 ≤ 09999
0211	RLC11 is out of range. Valid range is 00000 ≤ RLC11 ≤ 09999
0212	RLC12 is out of range. Valid range is 00000 ≤ RLC12 ≤ 09999
0213	RLC13 is out of range. Valid range is 00000 ≤ RLC13 ≤ 09999
0214	RLC14 is out of range. Valid range is 00000 ≤ RLC14 ≤ 09999
0215	RLC15 is out of range. Valid range is 00000 ≤ RLC15 ≤ 09999
0216	RLC16 is out of range. Valid range is 00000 ≤ RLC16 ≤ 09999
0217	RLC17 is out of range. Valid range is 00000 ≤ RLC17 ≤ 09999
0218	RLC18 is out of range. Valid range is 00000 ≤ RLC18 ≤ 09999
0219	RLC19 is out of range. Valid range is 00000 ≤ RLC19 ≤ 09999
0220	RLC20 is out of range. Valid range is 00000 ≤ RLC20 ≤ 09999
0221	RLC21 is out of range. Valid range is 00000 ≤ RLC21 ≤ 09999
0222	RLC22 is out of range. Valid range is 00000 ≤ RLC22 ≤ 09999
0223	RLC23 is out of range. Valid range is 00000 ≤ RLC23 ≤ 09999
0224	RLC24 is out of range. Valid range is 00000 ≤ RLC24 ≤ 09999
0225	RLC25 is out of range. Valid range is 00000 ≤ RLC25 ≤ 09999
0226	RLC26 is out of range. Valid range is 00000 ≤ RLC26 ≤ 09999
0227	RLC27 is out of range. Valid range is 00000 ≤ RLC27 ≤ 09999
0228	RLC28 is out of range. Valid range is 00000 ≤ RLC28 ≤ 09999
0229	RLC29 is out of range. Valid range is 00000 ≤ RLC29 ≤ 09999
0230	RLC30 is out of range. Valid range is 00000 ≤ RLC30 ≤ 09999
0231	RLC31 is out of range. Valid range is 00000 ≤ RLC31 ≤ 09999
0232	RLC32 is out of range. Valid range is 00000 ≤ RLC32 ≤ 09999
0233	RLC33 is out of range. Valid range is 00000 ≤ RLC33 ≤ 09999
0234	RLC34 is out of range. Valid range is 00000 ≤ RLC34 ≤ 09999
0235	RLC35 is out of range. Valid range is 00000 ≤ RLC35 ≤ 09999
0236	RLC36 is out of range. Valid range is 00000 ≤ RLC36 ≤ 09999

Error Code	Description $\text{ID} = 26$
0237	RLC37 is out of range. Valid range is $00000 \leq RLC37 \leq 09999$
0238	RLC38 is out of range. Valid range is $00000 \leq RLC38 \leq 09999$
0239	RLC39 is out of range. Valid range is $00000 \leq RLC39 \leq 09999$
0240	RLC40 is out of range. Valid range is $00000 \leq RLC40 \leq 09999$

ID = 27

CLC– Clamp and Eject ERC Values Block

Error Code	Description $\text{ID} = 27$
0225	CLC25 is out of range. Valid range is $00000 \leq CLC25 \leq 09999$
0226	CLC26 is out of range. Valid range is $00000 \leq CLC26 \leq 09999$
0227	CLC27 is out of range. Valid range is $00000 \leq CLC27 \leq 09999$
0228	CLC28 is out of range. Valid range is $00000 \leq CLC28 \leq 09999$
0229	CLC29 is out of range. Valid range is $00000 \leq CLC29 \leq 09999$
0230	CLC30 is out of range. Valid range is $00000 \leq CLC30 \leq 09999$
0231	CLC31 is out of range. Valid range is $00000 \leq CLC31 \leq 09999$
0232	CLC32 is out of range. Valid range is $00000 \leq CLC32 \leq 09999$
0233	CLC33 is out of range. Valid range is $00000 \leq CLC33 \leq 09999$
0235	CLC35 is out of range. Valid range is $00000 \leq CLC35 \leq 09999$
0237	CLC37 is out of range. Valid range is $00000 \leq CLC37 \leq 09999$
0239	CLC39 is out of range. Valid range is $00000 \leq CLC39 \leq 09999$
0240	CLC40 is out of range. Valid range is $00000 \leq CLC40 \leq 09999$
0241	CLC41 is out of range. Valid range is $00000 \leq CLC41 \leq 09999$

ID = 28

PTC – Process Trace Configuration Block

Error Code	Description $\text{ID} = 28$
0205	PTC05 (trigger delay) is out of range. Valid range is $00000 \leq PTC05 \leq 09999$.
0206	PTC06 (trigger position) is out of range. Valid range is $IPC61 \leq PTC06 \leq PPC61 + PPC62 + PSC05$
0207	PTC07 (sample rate) is out of range. Valid range is $00002 \leq PTC07 \leq 00230$.
0407	PTC07 (sample rate) is not an even number.
0208	PTC08 (trace #1 selection) is invalid.
0209	PTC09 (trace #2 selection) is invalid.
0210	PTC10 (trace #3 selection) is invalid.
0211	PTC11 (trace #4 selection) is invalid.

Notes:

Module Specifications

This chapter gives 1771-QDC module specifications including:

- I/O specifications
- environmental conditions
- hardware requirements
- process control options

I/O Specifications

The following table lists the I/O specifications.

Inputs	4 analog (4-20 mA, 1 to +5V dc, 0 to +10V dc selectable)
Outputs	4 analog (4-20 mA, 0 to +10V dc, –10 to +10V dc selectable)
I/O Resolution	12-bit binary
I/O Isolation	1500V rms between chassis and swingarm terminals, and between input and output terminals
I/O Accuracy (linearity, gain, and offset)	0.1% full scale @ 25ºC, and +/–50ppm/ºC of full scale range
Input Impedance	Voltage Input: 50K ohms, differential mode 25K ohms, common mode Current Input: 250 ohms

Loss of Input Detection	Detects loss of position, pressure, and RPM input sensors:
	   out of range 4-20 mA sensors
	   out of range 1-5V dc sensors
	   out of range 0-10V dc sensors

Output Loading	Voltage: 5 mA max for any range Current: 15V dc compliance (supports a max current-loop impedance of 750 ohms)
Output Overload Protection	Protects against short circuit for one minute, maximum

Environmental Conditions

The following table lists environmental conditions.

Operational Temperature	0 to 85ºC (32 to 140ºF)
Thermal Dissipation	21 BTU/hr (outputs full ON)
Storage Temperature	–40 to +85ºC (–40 to +140ºF)
Relative Humidity	5 to 95% (without condensation)

Hardware Requirements

The following table lists the hardware requirements.

Compatible I/O Chassis	Allen-Bradley Series B
Slot Size	Any single I/O slot in 1771-I/O chassis
Power Requirements (Backplane)	1.2 amps at 5V dc
Swingarm Style	1771-WF
Keying Bands	Between: 20-22 and 26-28

Process Control Options

The following table lists process control options.

Phase:	Type of Profile:	Mode:
Injection phase: 10-step profile with selectable transition	velocity vs. position or velocity vs. position pressure limited or injection pressure vs. position or injection pressure vs. time	open/closed with ERC open/closed with ERC open/closed with ERC open/closed with ERC
Selectable Transition dependent on: • Time • Ram (screw) pressure • Cavity pressure • or Ram (screw) position	N/A	N/A
Pack phase: 5-step profile	ram (screw) pressure vs. time or cavity pressure vs. time	open/closed with ERC open/closed with ERC
Hold phase: 5-step profile	ram (screw) pressure vs. time or cavity pressure vs. time	open/closed with ERC open/closed with ERC
Plastication phase: 10-step profile	backpressure vs. position or backpressure vs. time or screw RPM vs. position or screw RPM vs. time	open/closed with ERC open/closed with ERC open/closed with ERC open/closed with ERC
Clamp close phase: three 3-step profiles (for a total of 9 steps)	velocity vs. position or pressure vs. position	open/closed with ERC open/closed with ERC
Clamp low pressure close with re-try: 2-step profile	pressure vs. position	open/closed with ERC
Clamp open phase: three 3-step profiles (for a total of 9 steps)	velocity vs. position or pressure vs. position	open/closed with ERC open/closed with ERC
Clamp open slow phase: 2-step profile	velocity vs. position or pressure vs. position	open/closed with ERC open/closed with ERC
Ejector adv. phase: 3-step profile (with tip strokes)	velocity vs. position or pressure vs. position	open/closed with ERC open/closed with ERC
Ejector ret. phase: 3-step profile	velocity vs. position or pressure vs. position	open/closed with ERC open/closed with ERC
Alarms	Process Programming	N/A
Control Options	P, I, PI, PD, PID, and FF Expert Response Compensation Open/Closed Loop	N/A

Calibration Instructions

Use this section to calibrate your 1771-QDC module.
You should calibrate it once a year.

Calibration Equipment Required

Calibrate the QDC module with the following equipment:

- digital dc voltage source (1 mV accuracy)
- Allen-Bradley programming device
- digital dc voltmeter (1 mV accuracy)

To calibrate the QDC module in a location away from your control application, we recommend this additional equipment:

- spare PLC-5 processor
- spare I/O chassis
- extender card (1771-EX)
- two spare wiring arms (1771-WF)

If you do not have the optional equipment to calibrate the QDC module in a location away from your control application, do the following:

If you do *not* have this optional equipment:	you must:
PLC-5 processor	inhibit your application program with jump/label instructions (Jump prior to the first rung to a label after the last rung)
I/O chassis	remove all I/O modules from the application I/O chassis
two wiring arms (1771-WF)	• disconnect application wiring, then rewire after calibration • rewire for input calibration, then rewire for output calibration
extender card (1771-EX)	install the QDC module (without covers) in the right-most I/O slot, so you can access the jumper plugs from inside the I/O chassis (removing the module invalidates the procedure)
digital DC voltmeter	omit verifying calibration accuracy

About This Procedure

The QDC module has no potentiometers to adjust. Instead, you apply precision input voltages and corresponding reference values to the QDC module so it can calibrate itself. You must:

- map two data blocks: one for BTW and one for BTR
- write calibration ladder logic
- set internal jumpers beforehand and afterwards
- follow the calibration procedures without error

> **Important:** If the QDC module detects an error during calibration, it reports it in the BTR status byte. Then you must restart the procedure.

Map Your BTW and BTR Data Blocks

Create BTR and BTW calibration data blocks in your PLC-5 data table.

word	BTW file		description
1	–	1C	ID that you enter
2	Command Word		Command codes that you enter
3	Output 1		Codes that you enter during the calibration procedure
4	Output 2		
5	Output 3		
6	Output 4		
word	**BTR file**		**description**
1	Status	0A	Status and ID that you observe
2	–	Min Input	Values that you observe during the calibration procedure
3	–	Max Input	
4	–	Min Output	
5	–	Max Output	
6	Actual Input 1		Raw data from D/A converter (useful but not required during calibration)
7	Actual Input 2		
8	Actual Input 3		
9	Actual Input 4		
10	Calibrated Input 1		Values that you observe during the calibration procedure
11	Calibrated Input 2		
12	Calibrated Input 3		
13	Calibrated Input 4		
15	Echo of your command		Indicates the transfer of data blocks

Record BTR and BTW file addresses for use in your calibration logic.

Write Your Calibration Logic

Write your calibration logic as follows:

1. Write unconditional BTW and BTR instructions
   (use a block length of 0 for processor-controlled length).

2. Unlatch BTW and BTR enable bits with BTW and BTR done bits.

3. Assign the module address and data table addresses.

Important: The module address of your BTR and BTW instructions depends on the location of the QDC module in the I/O chassis. If you do *not* have an extender card that lets you access jumpers on the QDC module circuit board, place the module in the right-most slot and access the jumpers from inside the I/O chassis. Change the slot block transfer address to match the I/O chassis slot location of the module.

We present example calibration logic for instructional purposes only.

```
                                   ┌─ BTW ──────────────────────┐
                                   │  BLOCK TRNSFR WRITE        │──(EN)─
                                   │  Rack                 00   │
                                   │  Group                 3   │
                                   │  Module                0   │──(DN)─
                                   │  Control Block       N10:0 │
                                   │  Data file           N11:0 │──(ER)─
                                   │  Length                0   │
                                   │  Continuous            Y   │
                                   └────────────────────────────┘
        N10:0                                                         N10:0
     ───┤ ├─────────────────────────────────────────────────────────( U )─
        12                                                              15
                                   ┌─ BTR ──────────────────────┐
                                   │  BLOCK TRNSFR READ         │──(EN)─
                                   │  Rack                 00   │
                                   │  Group                 3   │
                                   │  Module                0   │──(DN)─
                                   │  Control Block      N10:10 │
                                   │  Data file          N11:70 │──(ER)─
                                   │  Length                0   │
                                   │  Continuous            Y   │
                                   └────────────────────────────┘
        N10:10                                                       N10:10
     ───┤ ├─────────────────────────────────────────────────────────( U )─
        12                                                             15
```
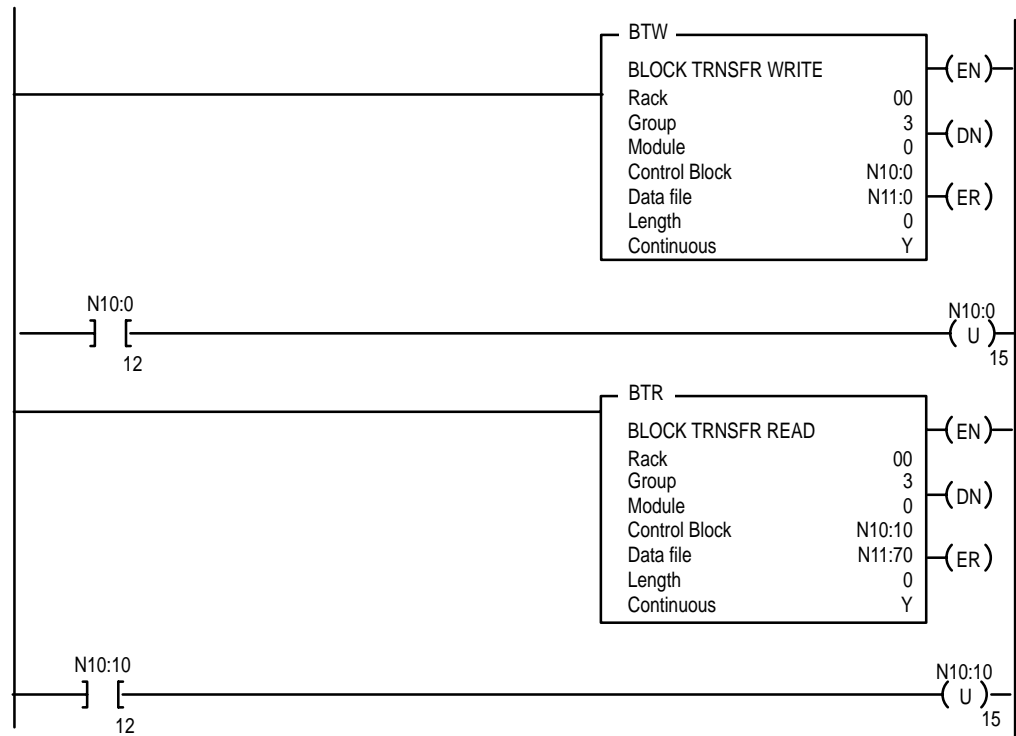
Set Internal Jumpers

Set jumpers on the circuit board inside the QDC module as follows:

Important: To avoid electrostatic damage to internal electronic circuits, rid yourself of electric charge by touching a grounded object before opening the module. Avoid touching circuit components or conductor surfaces. We recommend that you use a static-free workstation.

1. Remove the label-side cover by removing the corner screws.

2. Remove the circuit board by removing the two screws located front-center. Then place it on a table, component-side down.

3. Record jumper settings on figure 6.1 before changing them.

⚠ **ATTENTION:** If you reset the jumpers improperly after calibration, unexpected operation could occur with possible personal injury or equipment damage.

Jumper settings of left, right, top, or bottom represent the position of the jumper on the 3-pin connector (figure 6.1).

4. Set all jumpers within each group the same way:
   (E6-E9) to voltage
   (E10, E14, E13, E17) to voltage
   (E11, E12, E15, E16) to –10 to +10V

Figure 6.1 Jumper Settings and Locations on the Circuit Board

Record Operational Jumper Settings Here:

	Operational Setting		Calibration	
Jumper	Left	Right	Left	Right
E1				X
E6			Current	Voltage
E7				
E8				
E9				

Jumper	Top	Bottom	Top	Bottom
E10			Current	Voltage
E14				
E13				
E17				
E11			−10 to	0 to 10V
E12			+10 V	or
E15				4-20mA
E16				
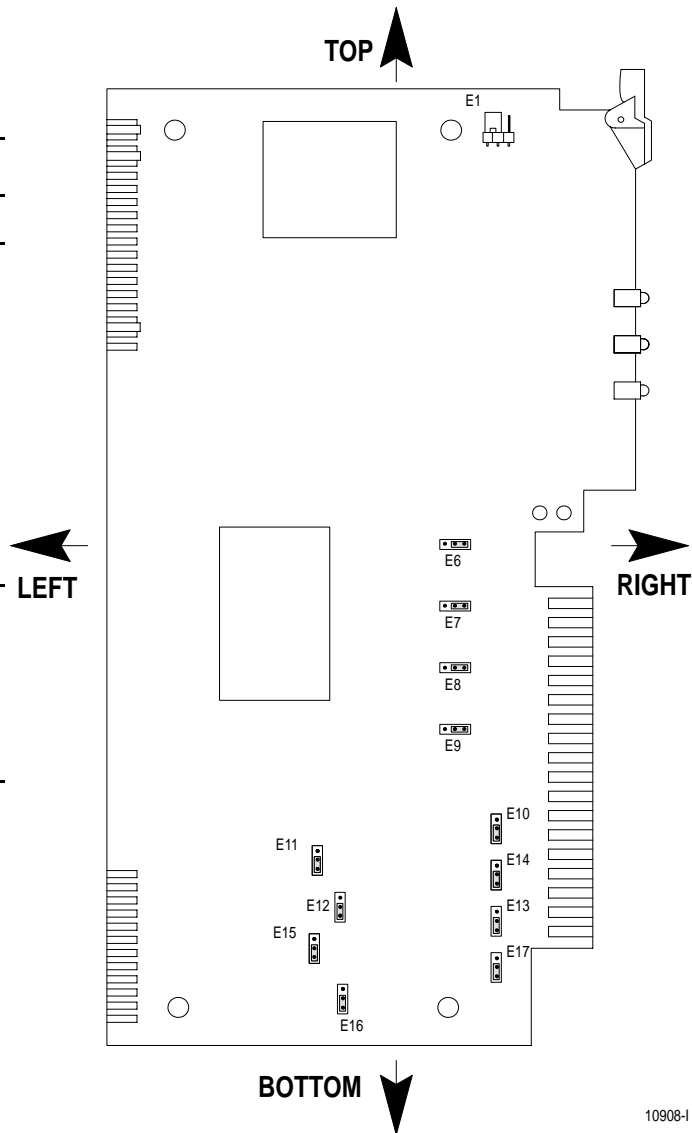
10908-I

5. Install the circuit board on an extender card.

6. Install the extender card and circuit board in the I/O chassis using the module slot that corresponds to the address you assigned to the module in your calibration ladder logic.

7. If you do not have an extender card, install the circuit board in the right-most module slot so you can access the jumper plugs by reaching inside the I/O chassis. The module address must match the slot location in the I/O chassis.

Wire the Wiring Arms

If you have extra wiring arms, wire them in advance to save time. Otherwise, remove system wiring and rewire for this procedure.

Input Wiring

1. Connect all four (+) input terminals (18, 16, 13, 11) to the (+) terminal of the precision voltage source.

2. Connect all four (–) input terminals (17, 15, 12, 10) to the (–) terminal of the precision voltage source.

Output Wiring

1. Wrap all four (+) output terminals (9, 7, 5, 3) back to their corresponding (+) input terminals (18, 16, 13, 11), respectively.

2. Connect all input and output commons together: (17, 15, 12, 10, 8, 6, 4, 2).

Input Wiring

Precision Voltage Source

+

–

Output Wiring

Wiring Arms
1771-WF
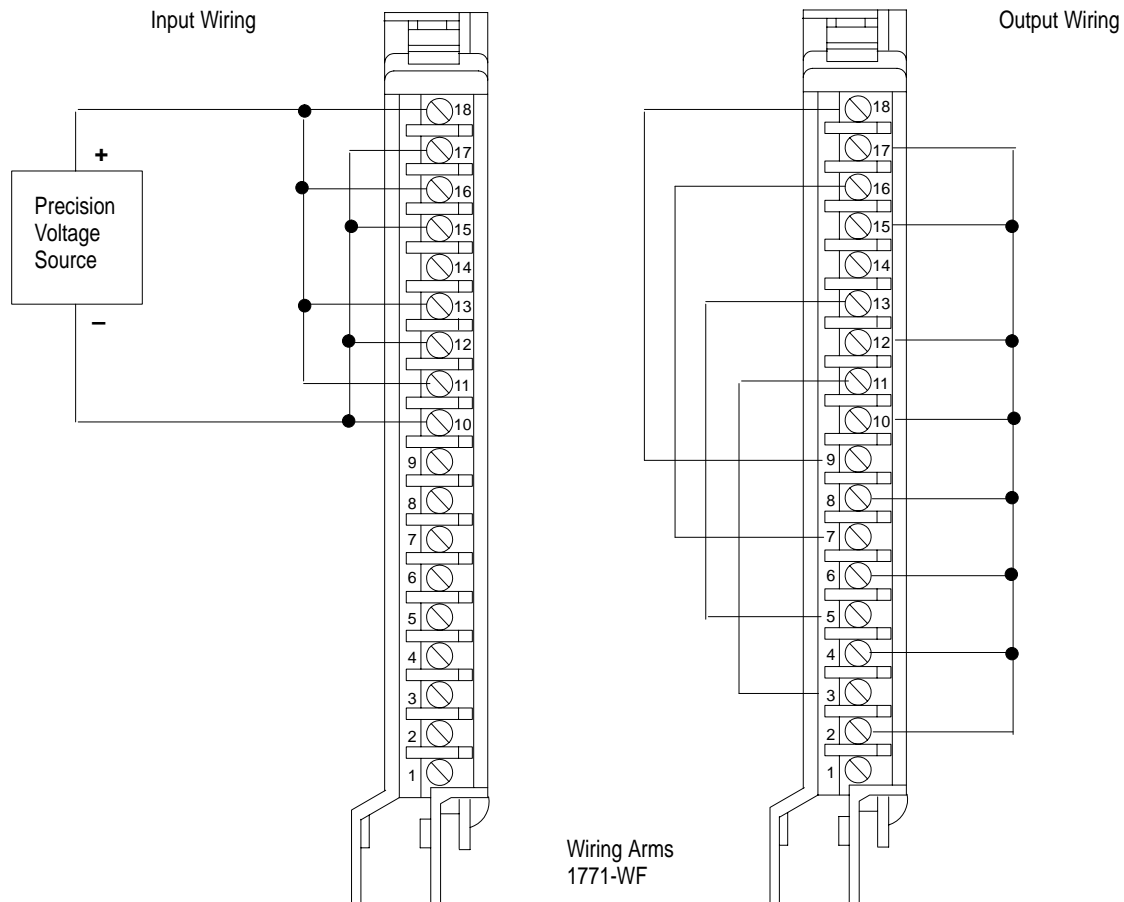
10909-2

Calibration Setup Using Optional Equipment

Set up your calibration equipment at a remote location as follows:

1. Install the PLC-5 processor in the I/O chassis.

2. Verify that you set all the QDC module's jumpers to initial calibration settings (see Set Internal Jumpers, above).

3. Install the QDC module circuit board with extender card in the I/O chassis slot location corresponding to the module address of your BTR and BTW instructions.

   If you do not have an extender card, place the module circuit board in the right-most slot so you can access the jumpers by reaching inside the I/O chassis.

4. Connect the pre-wired input wiring arm to the module circuit board.

5. Connect other wiring as needed for the calibration setup.

6. Apply power.

7. Switch the PLC-5 processor to program mode and enter your calibration ladder logic.

Calibration Setup at the Machine Location

Set up your calibration equipment at your machine location as follows:

1. Remove all I/O modules from the I/O chassis.

2. Verify that you set all the QDC module's jumpers to initial calibration settings (see Set Internal Jumpers).

3. Install the QDC module circuit board in the right-most slot so you can access the jumpers by reaching inside the I/O chassis. Be sure the module address of your BTR and BTW instructions matches the module's slot location in the I/O chassis.

4. Wire the wiring arm and connect it to the QDC module circuit board (see Wire the Wiring Arms, above).

5. Connect other wiring as needed for the calibration setup.

6. Apply power.

7. Switch the PLC-5 processor to program mode and disable your entire ladder logic program by inserting a jump to label around the application program.

8. Enter your calibration ladder logic.

Calibration Procedure for Inputs

Important: Calibrate inputs before outputs. Follow this procedure for:

- calibrating the QDC module's inputs
- verifying the calibration

For each calibration below, you will:

- apply precise voltages using the input wiring arm
- enter command codes in BTW word 2 with your programming terminal

For each verification below, you will:

- apply precise voltages using the input wiring arm
- read verification codes in BTR words 10-13

1. To calibrate the 0 to +10V dc range:

Step	Enter Command Code (BTW 2):	With Applied Voltage	and Read in BTR:
1	0000H	000.0	word 2 = 000F
2	8000H		
3	0008H		
4	8008H		
5	0008H	10.000	word 3 = 000F
6	8008H		

2. To verify 0 to +10V range, enter command codes 0100H and 8100H. Then apply the following voltages:

Step	Apply this Voltage	and Read Verification Code (BTR 10-13):
1	000.0	000H
2	5.000	800H
3	9.997	FFFH

3. To calibrate the 1 to 5V dc range:

Step	Enter Command Code (BTW 2):	With Applied Voltage	and Read in BTR
1	0010H	1.000	word 2 = 00FF
2	8010H		
3	0010H	5.000	word 3 = 00FF
4	8010H		

4. To verify 1 to 5V range, enter command codes 0400H and 8400H. Then apply the following voltages:

Step	Apply this Voltage	and Read Verification Code (BTR 10-13):
1	1.000	000H
2	3.000	800H
3	5.000	FFFH

Calibration Procedure for Outputs

After calibrating inputs, calibrate outputs as follows:

- change jumpers as required (with power ON)
- enter command codes in BTW word 2
- enter voltage codes in BTW words 3, 4, 5, and 6
- read verification codes in BTR words 10, 11, 12, and 13

Important: Do not remove module from the I/O chassis or turn off power. Loss of power voids the procedure and requires that you repeat the entire calibration procedure starting with inputs.

1. With the power remaining ON, connect the output wiring arm.

2. To calibrate the –10 to +10V dc output range, follow these steps:

Step	Enter Command Code (BTW 2):	and Read in BTR:
1	0020H	word 4 = 000F
2	8020H	word 5 = 000F

3. To verify –10 to +10V range, enter command codes 0100H and 8100H. Then enter voltage codes:

Step	Enter Voltage Code (BTW 3-6):	and Read Verification Code (BTR 10-13):
1	000H (for 0 volts)	000H
2	0400H (for +5 volts)	0800H
3	7FFH (for +10 volts)	FFFH

4. To calibrate the 0 to +10V dc range, first change these jumpers with power ON: E11, E12, E15, E16 to the 0 to +10V dc position (bottom)
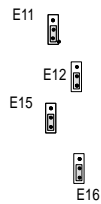
Step	Enter Command Code (BTW 2):	and Read in BTR:
1	0040H	word 4 = 00FF
2	8040H	word 5 = 00FF

5. To verify 0 to +10V range, enter command codes 0400H and 8400H. Then enter voltage codes:

Step	Enter Voltage Code (BTW 3-6):	and Read Verification Code (BTR 10-13):
1	000H (for 0 volts)	000H
2	0800H (for +5 volts)	0800H
3	FFFH (for +10 volts)	FFFH

6. To calibrate the 4-20mA output range, first change the following jumpers with power ON, then calibrate:

- E6-E9 to the current position (left)

E6

E7

E8

E9

- E10, E14, E13, E17 to the current position (top)

E10

E14

E13

E17

Step	Enter Command Code (BTW 2):	and Read in BTR:
1	0080H	word 4 = 0FFF
2	8080H	word 5 = 0FFF

7. To verify 4-20mA range, enter command codes 0400H and 8400H. Then apply these codes for current:

Step	Apply Code for Current (BTW 3-6):	and Read Verification Code (BTR 10-13):
1	000H (4mA)	000H
2	0800H (12mA)	0800H
3	FFFH (20mA)	FFFH

8. To store the calibration data in EEPROM, follow these steps:

Step	Enter this Command Code (BTW 2):
1	0800H
2	8800H
3	0000H

⚠ **ATTENTION:** To avoid possible injury or machine damage when you return the QDC module for service, make sure you reset the jumpers to the original *pre-calibration settings*.

9. If there is no error in the BTR status byte, you completed the procedure. Reset jumpers, re-assemble the module, and return it for service.

Notes:

Single-transfer for Reporting Ejector Status

How the Enhancement Effects System Operation

Status information is now returned by single transfer. This improves the PLC processor's ability to detect ejector status because single transfer enables quicker detection and reporting of ejector operation.

The following table lists the status bits now available for single-transfer programming. Address these bits as follows:

- rack group address (Ixx:...) corresponding to module's I/O slot
- the module defaults to 1/2-slot (double-density) addressing

Bit	Description
B08	Initial advance stroke completed SET during ejector profile execution when module monitors completion of the initial advance stroke. RESET when the module receives any execution command **except** DYC02–B10 through DYC02–B13.
B09	Ejector is retracting or ready to retract Set during ejector profile execution when module monitors completion of any advance stroke. RESET during ejector profile execution when the module monitors completion of any retract stroke.
B10	Dwell timer timing SET and RESET as specified by bit SYS03–B10.
B11	Final advance stroke completed SET during ejector profile execution when module monitors completion of the final advance stroke. RESET when the module receives any execution command **except** DYC02–B10 through DYC02–B13.
B12	End-of-dwell ejector profile continuation pending SET during ejector profile execution when ejector forward dwell timer is timing and the module is prepared to continue the ejector profile when dwell time expires. RESET at all other times.
B13	Reserved
B14	Ejectors running SET during ejector profile execution when SYS03–B08 and SYS03–B10 are both RESET. RESET during ejector profile execution when either SYS03–B08 or SYS03–B10 are SET.
B15	Ejector profile complete SET and RESET as specified by bit SYS02–B14 **except** that it is not RESET by DYC03–B10

Notes:

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