



Linear Positioning Module Firmware Series C, Revision C

Catalog Number 1771-QB

Use These Release Notes

Use these release notes with your Linear Positioning Module User Manual, publication 1771-6.5.44, dated September 1993.

New For This Release

This document contains information about the corrected anomalies for series C, revision C firmware.

Corrected Anomalies in Series C, Revision C

The following anomaly has been corrected in series C, revision C firmware.

Anomaly	Description
While operating normally, the 1771-QB module responds to a Hardware Stop input to the module by stopping manual and automatic motion on that axis, and has always responded in that way. Previous to revision C, if a new manual or auto motion command is sent to the axis, it responds and moves according to the command, even though the Hardware Stop input is still being asserted.	This anomaly has been corrected in revision C. The hardware stop input continues to override any firmware/hardware-commanded motion. You must first de-assert the Hardware Stop input, and then issue a Reset command, after which normal programmed motion or motion caused by a Jog input can resume.

Series C, Revision B Enhancements

Series C, revision B includes the following enhancements:

- RSLogix 5 software for the Allen-Bradley hydraulic configuration and operation (HCO) option features
- Increased functionality of the stop/start enhancement bit
- Additional motion segments
- Recall of command blocks, parameter blocks, and set point blocks
- Enhanced block transfer read functionality
- New diagnostic error code

Hydraulic Configuration and Operation (HCO) Option

All functionality of the ControlView hydraulic configuration and operation (HCO) Option, catalog number 6190-HCO, now resides in the RSLogix 5 software.

If you are **not** using RSLogix 5 software, contact your local distributor or Rockwell Automation representative to purchase this software.

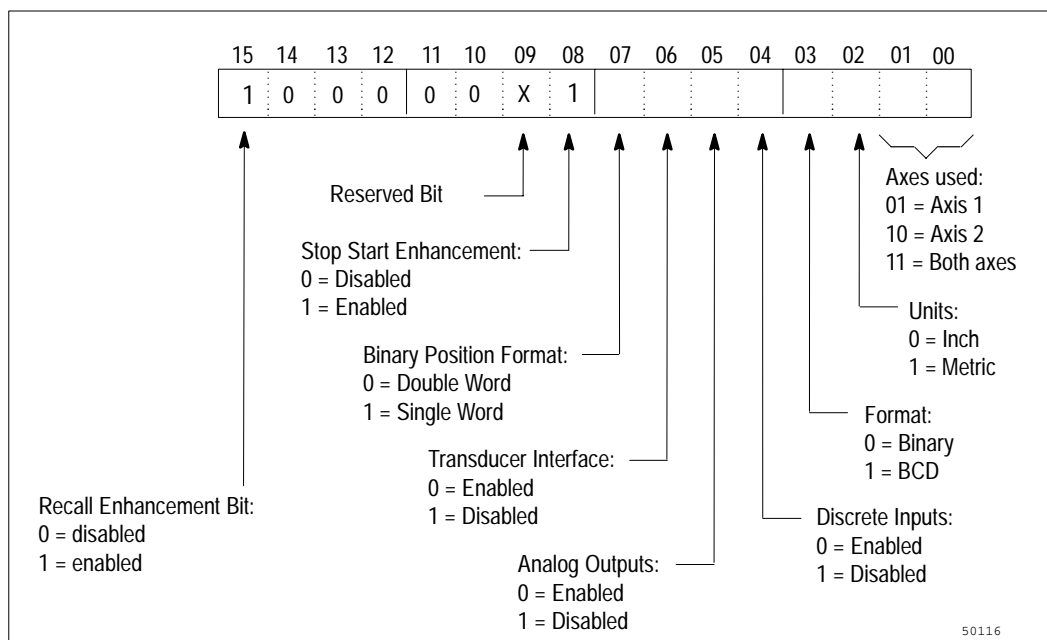
Stop/Start Enhancement Bit

All the enhancements for the QB series C, described in this document, including support for the Allen-Bradley HCO option, require that the Stop/Start Enhancement bit (bit 8, word 1 of the parameter block) be enabled, that is, set to 1. If you want to use the series C features, be sure that your application does not clear this bit. All the Stop/Start Enhancement bit's previous functionality, as described in Chapter 7 of the Linear Positioning Module User Manual, is still provided.

Recall Enhancement Bit

When the series C features are implemented, (the Stop/Start Enhancement bit is enabled), the high bit (bit 15) in the Module Configuration Word of the Status Block is also set. PLC programs can use this bit to determine whether parameter, setpoint, and command blocks can be recalled.

Module Configuration Word (Word 1)

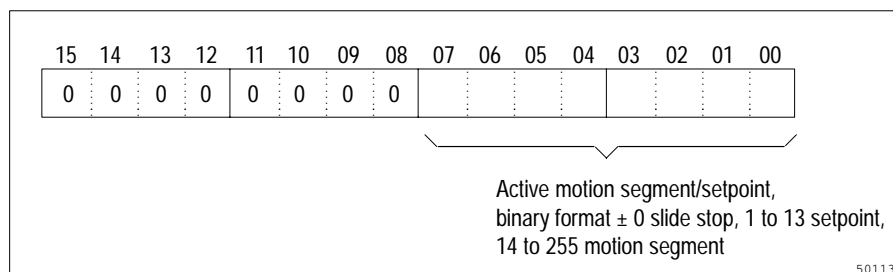


Increased Number of Motion Segments

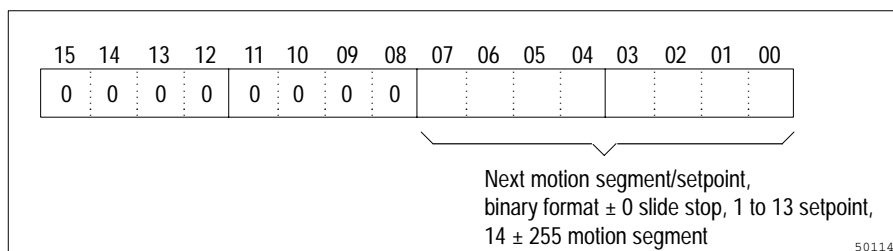
In previous revisions of the Linear Positioning Module, the motion segments were identified using 7 bits. In series C, the motion segment number has been increased to 8 bits. The number of motion segments has been increased from 114 to 242, allowing you finer resolution for CAM (computer assisted manufacturing) emulation.

This requires changes to a number of words in various data blocks. The following figures show the changes.

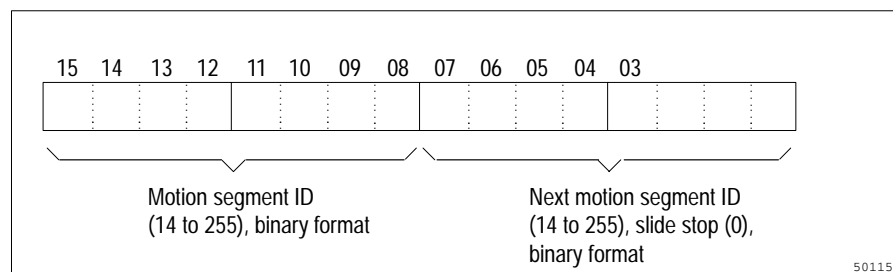
Status Block, Active Motion Segment/Setpoint (Words 10, 11, Bit 7)



Command Block Axis, Axis Control Word 2 (Words 2, 9, Bit 7)



Motion Segment, Motion Segment Control Word 1 (Bits 7, 15)



Each of the above formats previously had 7 bit numbers, with a zero in bit positions 7 and 15.

Recall of Command, Parameter and Setpoint Blocks

All parameters written to the Linear Positioning Module are now available to you through block transfer reads. You will probably find access to the parameter block useful for setup purposes, and access to setpoints and command blocks useful for debugging motion profiles.

BTR commands of specific lengths read specific blocks. The block length identifier (BLI) command tells the Linear Positioning Module what length of block to transfer to the PLC controller. The length of the block identifies the information to be returned to the PLC controller.

Block Length Identifier (BLI) List for 1771-QB Series C module

BLI	Information sent back to PLC controller
0	Default status block, 5 words for 1 axis, 9 words for 2 axes
5	Status block for 1 axis
9	Status block for 2 axes
33	Extended status block
40	Reserved
41	Reserved
42	Reserved
48	Command block
49	Reserved
59	Parameter block
61	Reserved
62	Setpoint block axis 1
63	Setpoint block axis 2

Reserved Block Transfer Read (BTR) Commands

As indicated above, lengths of 40, 41, 42, 49, and 61 are reserved. These lengths support the features of the HCO option. Attempting BTR commands of these lengths without the HCO Option will return unpredictable information.

Undefined Block Transfer Read (BTR) Commands

Series C of the Linear Positioning Module accepts only certain lengths of block transfer read (BTR) commands. If you enter an undefined length, that is, a length that is both greater than 33 words and not defined above, the Linear Positioning Module will return the status block padded with zeroes, and will set the diagnostic word to the new diagnostic error code 26.

Reserved Bit

Bit 9 of the status block's Module Configuration Word can change between 0 and 1 when the unit is used with the HCO option.

Corrections to the User Manual

Fault Indicators, Page 11–1

In previous versions of the Linear Positioning Module, the FAULT indicator would light up for a second after powerup diagnostics. This function has been corrected so that the FAULT indicator will light up only when powerup diagnostics detect a fault.

Parameter Block Word Assignments, Pages 7–2 and C–1

The Parameter Block Word Assignments table appears in the Allen-Bradley Linear Positioning Module User Manual as Figure 7.1 and Figure C.1. It shows words 1...30 as parameters for axis 1. **This is incorrect.** Word 1 is the parameter control word. Words 2...30 are parameters for axis 1, while words 31...59 are the same parameters for axis 2.

See page 6 for the correct table.

Parameter Block Word Assignments

WORD	
1	Parameter control word
2	Analog range
3	+ Analog calibration constant
4	± Analog calibration constant
5	(MS) Transducer calibration constant
6	(LS) Transducer calibration constant
7	(MS) Zero±position offset
8	(LS) Zero±position offset
9	+ Software travel limit
10	± Software travel limit
11	In±position band
12	PID band
13	Deadband
14	Excess following error
15	Maximum PID error
16	Integral term limit
17	Proportional gain
18	Gain break speed
19	Gain factor
20	Integral gain
21	Derivative gain
22	Feed±forward gain
23	Global velocity
24	Global acceleration
25	Global deceleration
26	Velocity smoothing constant
27	Low jog rate
28	High jog rate
29	Reserved
30	Reserved
	Words 31 to 59 specify same parameters as words 2 to 30, but for axis 2. (Values may differ)

Parameters for axis 1

Parameters for axis 2

50057

Notes:

Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products. At <http://support.rockwellautomation.com>, you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

For an additional level of technical phone support for installation, configuration, and troubleshooting, we offer TechConnect Support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://support.rockwellautomation.com>.

Installation Assistance

If you experience a problem with a hardware module within the first 24 hours of installation, please review the information that's contained in this manual. You can also contact a special Customer Support number for initial help in getting your module up and running.

United States	1.440.646.3223 Monday – Friday, 8am – 5pm EST
Outside United States	Please contact your local Rockwell Automation representative for any technical support issues.

New Product Satisfaction Return

Rockwell tests all of its products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning, it may need to be returned.

United States	Contact your distributor. You must provide a Customer Support case number (see phone number above to obtain one) to your distributor in order to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for return procedure.

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