

Rockwell Automation Library of Process Objects: High or Low Selector (P_HiLoSel)

Version 3.5

IMPORTANT

This manual applies to the Rockwell Automation Library of Process Objects version 3.5 or earlier.
For Rockwell Automation Library of Process Objects version 5.0, see

- [PROCES-RM200](#)

For Rockwell Automation Library of Process Objects version 4.0 or later, use the following manuals:

- [PROCES-RM013](#) contains logic instructions
- [PROCES-RM014](#) contains display elements



Important User Information

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

In no event will Rockwell Automation, Inc. 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, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

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



WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.



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 a hazard, and recognize the consequence.

IMPORTANT

Identifies information that is critical for successful application and understanding of the product.

Labels may also be on or inside the equipment to provide specific precautions.



SHOCK HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.



BURN HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.



ARC FLASH HAZARD: Labels may be on or inside the equipment, for example, a motor control center, to alert people to potential Arc Flash. Arc Flash will cause severe injury or death. Wear proper Personal Protective Equipment (PPE). Follow ALL Regulatory requirements for safe work practices and for Personal Protective Equipment (PPE).

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Notes:

Software Compatibility and Content Revision

Table 1 - Summary of Changes

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P_HiLoSel Local Configuration Tags - Navigation Tags	13

For the latest compatible software information and to download the Rockwell Automation® Library of Process Objects, see the Product Compatibility and Download Center at <http://www.rockwellautomation.com/rockwellautomation/support/pcdc.page>.

For general library considerations, see Rockwell Automation Library of Process Objects, publication [PROCES-RM002](#).

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
PlantPAx® Distributed Control System Selection Guide, publication PROCES-SG001	Provides information to assist with equipment procurement for your PlantPAx system.
PlantPAx Distributed Control System Reference Manual, publication PROCES-RM001	Provides characterized recommendations for implementing your PlantPAx system.
Rockwell Automation Library of Process Objects, publication PROCES-RM002	Provides general considerations for the PlantPAx system library of process objects.
FactoryTalk® View Machine Edition User Manual, publication VIEWME-UM004	Provides details on how to use this software package for creating an automation application.
FactoryTalk View Site Edition User Manual, publication VIEWSE-UM006	Provides details on how to use this software package for developing and running human-machine interface (HMI) applications.
Logix5000™ Controllers Add-On Instructions Programming Manual, publication 1756-PM010	Provides information for designing, configuring, and programming Add-On Instructions.

You can view or download publications at <http://www.rockwellautomation.com/literature/>. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

Notes:

High or Low Selector (P_HiLoSel)

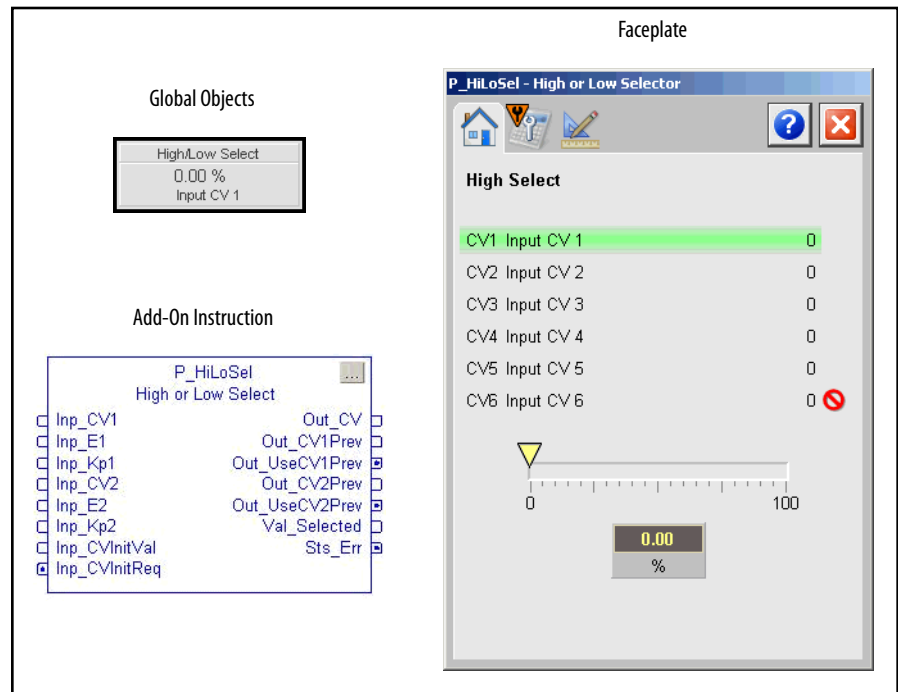
The P_HiLoSel (High or Low Selector Add-On Instruction) selects the lowest of the (up to 6) incoming CVs (if Cfg_HiLoSel = 0), or the highest of the incoming CVs (if Cfg_HiLoSel = 1) and outputs it (Out_CV).

The unselected CVs are flagged to track the selected CV.

The tracking value can optionally be offset by an amount equal to the upstream PID/PIDE Gain * Error to avoid problems with ever-decreasing (if Low-Select) or ever-increasing (if High-Select) output.

IMPORTANT Each CV input must come from the PIDE 'CV' (in percent); each proportional gain input must come from the PIDE 'PGain' parameter; and each error input must come from the PIDE 'EPercent' parameter.

Scaling of the output of this block to CVEU can be done by a downstream P_ValveC or P_AOut block. This block also supports initialization from a downstream block; the initialization is forwarded (with offset, if so configured) to upstream blocks.



Guidelines/Functional Description

Use this instruction when you want to implement an Override Select control strategy. An Override Select strategy provides for control of a primary process variable while allowing other process variables to override the output to the final control element to avoid exceeding constraints. For example, a pump station may use a PID loop with a variable speed drive on the main line pump as the final control element to control discharge pressure (the primary PV). But additional PID controls are provided which reduce the speed of the pump if pump motor current is too high or if pump suction pressure is too low. The three PID controls feed a P_HiLoSel instruction configured to select the lowest of the three PID outputs as the speed reference for the drive. In normal operation, the discharge pressure PID has control, and the other PIDs track the output of the discharge pressure loop. But when motor current exceeds its setpoint, or if suction pressure falls below its setpoint, the constraint being exceeded takes control to prevent motor overcurrent or pump cavitation.

Do **not** use this instruction when you have multiple interacting loops each with their own final control element. Use the Model Predictive Control built-in instructions (IMC, CC, MMC) instead.

Do **not** use this instruction when you have a single process variable control loop with multiple final control elements. Use the P_Fanout Add-On Instruction or the SRTP (split-range/time proportional) built-in instruction instead.

Required Files

Add-On Instructions are reusable code objects that contain encapsulated logic that can streamline implementing your system. This lets you create your own instruction set for programming logic as a supplement to the instruction set provided natively in the ControlLogix® firmware. An Add-On Instruction is defined once in each controller project, and can be instantiated multiple times in your application code as needed.

Controller File

The P_HiLoSel_3_5-00_AOIL5X Add-On Instruction must be imported into the controller project to be used in the controller configuration. The service release number (boldfaced) can change as service revisions are created.

Visualization Files

This Add-On Instruction has associated visualization files that provide a common user interface. These files can be downloaded from the Product Compatibility and Download Center at <http://www.rockwellautomation.com/rockwellautomation/support/pcdc.page>.

IMPORTANT The visualization file dependencies require Process Library content imports to occur in a specific order as reflected in the following tables:

- Images
- Global Objects
- Standard Displays
- HMI Tags
- Macros

Images are external graphic files that can be used in displays. They must be imported for FactoryTalk View to make use of them.

When PNG files are imported, they are renamed by FactoryTalk View with a .bmp file extension, but retain a .png format.

Table 2 - Visualization Files: Images (.png)

FactoryTalk View SE Software	FactoryTalk View ME Software	Description
All .png files in the images folder	All .png files in the images folder	These are the common icons used in the global objects and standard displays for all Process Objects.

The Global Object files (.ggfx file type) in the following table are Process Library display elements that are created once and referenced multiple times on multiple displays in an application. When changes are made to a Global Object, all instances in the application are automatically updated.

Table 3 - Visualization Files: Global Objects (.ggfx)

FactoryTalk View SE Software	FactoryTalk View ME Software	Description
(RA-BAS) Common Faceplate Objects	(RA-BAS-ME) Common Faceplate Objects	Global objects used on process object faceplates.
(RA-BAS) Process Faceplate Analog Objects	(RA-BAS-ME) Process Faceplate Analog Objects	Analog global objects used on process object faceplates.
(RA-BAS) Process Graphics Library	(RA-BAS-ME) Process Graphics Library	Process global object device symbols used to build process graphics
(RA-BAS) Process Help Objects	(RA-BAS-ME) Process Help Objects	Global objects used for all process objects help displays.

The Standard Display files (.gfx file type) in the following table are the Process Library displays that you see at runtime.

Table 4 - Visualization Files: Standard Displays (.gfx)

FactoryTalk View SE Software	FactoryTalk View ME Software	Description
(RA-BAS) Common-AnalogEdit	N/A	Faceplate used for analog input data entry. The FactoryTalk View ME faceplates use the native analog input data entry so no file is required.
(RA-BAS) P_HiLoSel-Faceplate	(RA-BAS-ME) P_HiLoSel-Faceplate	The faceplate that is used for the object

Table 4 - Visualization Files: Standard Displays (.gfx)

FactoryTalk View SE Software	FactoryTalk View ME Software	Description
(RA-BAS) Process Analog Family-Help	(RA-BAS-ME) Process Analog Family-Help	The Help display for Analog objects

HMI Tags are created in a FactoryTalk View ME application to support tab switching on Process Library faceplates. The HMI tags may be imported via the comma-separated values file (.csv file type) in the following table.

Table 5 - Visualization Files: HMI Tags (.csv)

FactoryTalk View SE Software	FactoryTalk View ME Software	Description
N/A	FTVME_PlantPAXLib_Tags_3_5_XX.csv where XX = the service release number.	These tags must be imported into the FactoryTalk View ME project to support switching tabs on any Process Object faceplate.

Controller Code

This section describes the parameter references for this Add-On Instruction.

High or Low Selector Input Structure

Input parameters include the following:

- Input data elements (Inp_) are typically used to connect field inputs from I/O modules or signals from other objects.
- Configuration data elements (Cfg_) are used to set configurable capabilities and features of the instruction.

Table 7 - P_HiLoSel Input Parameters

Input Parameter	Data Type	Default	Description
EnableIn	BOOL	1	<p>Ladder Diagram: If the rung-in condition is true, the instruction's Logic routine executes. If the rung-in condition is false, the instruction's EnableInFalse routine executes.</p> <p>Function Block Diagram: If true, or not connected, the instruction's Logic routine executes. If the parameter is exposed as a pin and wired, and the pin is false, the instruction's EnableInFalse routine executes.</p> <p>Structured Text: No effect. The instruction's Logic routine executes.</p>
Inp_CV1	REAL	0.0	CV from Primary #1...#6.
Inp_CV2			
Inp_CV3			
Inp_CV4			
Inp_CV5			
Inp_CV6			

Table 7 - P_HiLoSel Input Parameters

Input Parameter	Data Type	Default	Description
Inp_E1	REAL	0.0	Loop Error from Primary #1...#6 (optional for offset calculation).
Inp_E2			
Inp_E3			
Inp_E4			
Inp_E5			
Inp_E6			
Inp_Kp1	REAL	0.0	Proportional Gain from Primary #1...#6 (optional for offset calculation).
Inp_Kp2			
Inp_Kp3			
Inp_Kp4			
Inp_Kp5			
Inp_Kp6			
Inp_CVInitVal	REAL	0.0	Initialization Value from downstream block.
Inp_CVInitReq	BOOL	0	Initialization Request from downstream block (1 = initialize to Inp_CVInitVal).
Cfg_HiLoSel	BOOL	0	Selection: 1 = High-Select 0 = Low-Select
Cfg_HasCV1	BOOL	1	1 = Inp_CV1...Inp_CV6 is connected.
Cfg_HasCV2			
Cfg_HasCV3		0	
Cfg_HasCV4			
Cfg_HasCV5			
Cfg_HasCV6			
Cfg_UseCV1	BOOL	1	1 = Inp_CV1...Inp_CV6 is included in selection (for maintenance use).
Cfg_UseCV2			
Cfg_UseCV3		0	
Cfg_UseCV4			
Cfg_UseCV5			
Cfg_UseCV6			
Cfg_CV1Offset	BOOL	0	1 = Use CV1Init = CVSel \pm Kp1*E1 Offset. 0 = no Offset.
Cfg_CV2Offset			1 = Use CV2Init = CVSel \pm Kp2*E2 Offset. 0 = no Offset.
Cfg_CV3Offset			1 = Use CV3Init = CVSel \pm Kp3*E3 Offset. 0 = no Offset.
Cfg_CV4Offset			1 = Use CV4Init = CVSel \pm Kp4*E4 Offset. 0 = no Offset.
Cfg_CV5Offset			1 = Use CV5Init = CVSel \pm Kp5*E5 Offset. 0 = no Offset.
Cfg_CV6Offset			1 = Use CV6Init = CVSel \pm Kp6*E6 Offset. 0 = no Offset.
Cfg_HasCVNav	BOOL	0	1 = Tells HMI to enable navigation to a connected output CV object.

Table 7 - P_HiLoSel Input Parameters

Input Parameter	Data Type	Default	Description
Cfg_HasNav	SINT	2#0000_0000	Set bits indicate which Navigation buttons are enabled .0 = CV1. . . .5=CV6.
Cfg_CVMin	REAL	0.0	Minimum CV to output.
Cfg_CVMax	REAL	100.0	Maximum CV to output.

High or Low Selector Output Structure

Output parameters include the following:

- Output data elements (Out_) are the primary outputs of the instruction, typically used by hardware output modules; however' they can be used by other application logic.
- Value data elements (Val_) are numeric outputs of the instruction for use by the HMI. Values can also be used by other application logic or software packages.
- Status data elements (Sts_) are bit outputs of the instruction for use by the HMI. Status bits can also be used by other application logic.
- Error data elements (Err_) are outputs of the instruction that indicate a particular configuration error. If any Err_ bit is set then the Sts_Err configuration error summary status is set and the Invalid Configuration indicator is displayed on the HMI.

Table 8 - P_HiLoSel Output Parameters

Output Parameter	Data Type	Description
EnableOut	BOOL	1
Out_CV	REAL	Output CV (selected minimum or maximum) for downstream block.
Out_CV1Prev	REAL	Previous (Feedback) CV Value to Primary #1 . . . #6.
Out_CV2Prev		
Out_CV3Prev		
Out_CV4Prev		
Out_CV5Prev		
Out_CV6Prev		
Out_UseCV1Prev	BOOL	Request to Primary #1 . . . #6 to use feedback Out_CV1Prev . . . Out_CV6Prev.
Out_UseCV2Prev		
Out_UseCV3Prev		
Out_UseCV4Prev		
Out_UseCV5Prev		
Out_UseCV6Prev		
Val_CVOut	REAL	Output CV (selected minimum or maximum) for HMI.

Table 8 - P_HiLoSel Output Parameters

Output Parameter	Data Type	Description
Val_Selected	DINT	Selected CV: 0 = CVMin 1 = CV1 2 = CV2 3 = CV3 4 = CV4 5 = CV5 6 = CV6 7 = CVMax 8 = Inp_CVInitVal
Sts_MaintByp	BOOL	1 = A Maintenance Bypass is active, display icon.
Sts_Err	BOOL	1 = Error in configuration, check Err_bits for reason.
Err_Has	BOOL	1 = Config Error: must have at least one CV.
Err_Limit	BOOL	1 = CVMax less than or equal to CVMin, must be greater.
P_HiLoSel	BOOL	Unique Parameter Name for auto-discovery.

High or Low Selector Local Configuration Tags

Configuration parameters that are array, string, or structure data types cannot be configured as parameters for Add-On Instructions. Configuration parameters of these types appear as local tags to the Add-On Instruction. Local tags can be configured through the HMI faceplates or in Studio 5000 Logix Designer® application by opening the instruction logic of the Add-On Instruction instance and then opening the Data Monitor on a local tag. These parameters cannot be modified by using controller logic or Logix Designer application export/import functionality.

Table 9 - P_HiLoSel Local Configuration Tags

Tag Name	Data Type	Default	Description
Cfg_CV1_Label	STRING_20	'Input CV 1'...'Input CV 6'	Incoming CV1...CV6 label for display on HMI.
Cfg_CV2_Label			
Cfg_CV3_Label			
Cfg_CV4_Label			
Cfg_CV5_Label			
Cfg_CV6_Label			
Cfg_CVNavTag	STRING_NavTag	''	Tag name for destination of output CV Navigation button. IMPORTANT: This tag does not work in FactoryTalk ME Software.
Cfg_Desc	STRING_40	'High or Low Selector'	Description for display on HMI. This string is shown in the title bar of the faceplate.
Cfg_EU	STRING_8	'%'	CV Engineering Units for display on HMI.
Cfg_Label	STRING_20	'High/Low Select'	Label for graphic symbol displayed on HMI. This string appears on the graphic symbol.
Cfg_NavTag	STRING_NavTag[6]	All ''	Tag names for destinations of Navigation buttons ([0]=input 1...[5] = input 6). IMPORTANT: This tag does not work in FactoryTalk ME Software.
Cfg_Tag	STRING_20	'P_HiLoSel'	Tag name for display on HMI. This string is shown in the title bar of the faceplate.

Operations

This section describes the primary operations for Add-On Instructions.

Modes

The P_HiLoSel Add-On Instruction does not have no Modes or contain a P_Mode instruction instance.

Alarms

The P_HiLoSel Add-On Instruction does not generate any alarms. Alarms are usually provided by upstream (P_PIDE) and downstream (P_ValveC, P_VSD, P_AOut) instructions as necessary.

Simulation

The P_HiLoSel Add-On Instruction does not have a Simulation capability.

Execution

The following table explains the handling of instruction execution conditions.

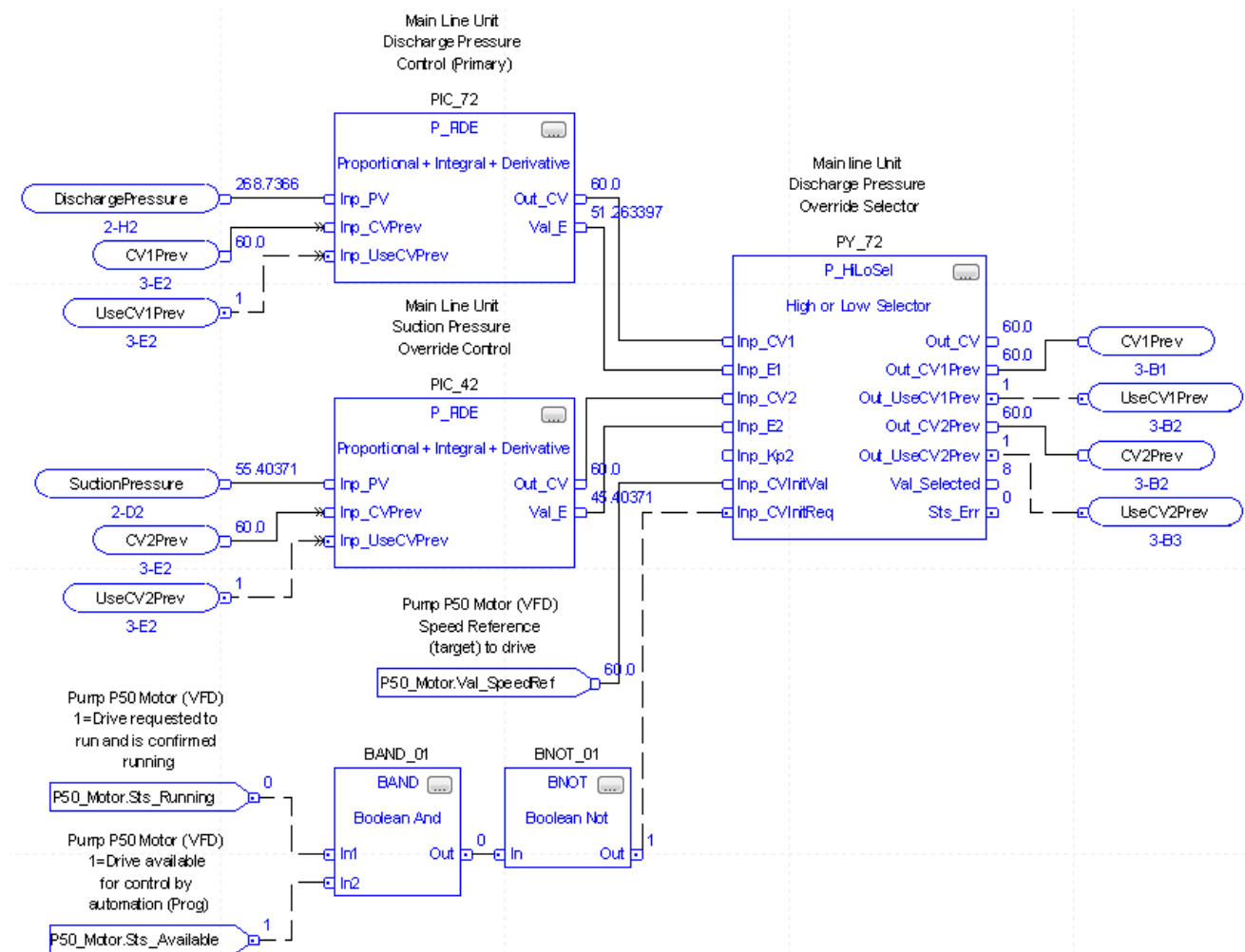
Condition	Description
EnableIn False (false rung)	No enableIn false logic is provided. If scanned in a Ladder or Function Block routine with the EnableIn input false, all values are held in their last states.
Powerup (prescan, first scan)	No prescan logic is provided.
Postscan (SFC transition)	No SFC postscan logic is provided.

See the Logix5000 Controllers Add-On Instructions Programming Manual, publication [1756-PM010](#), for more information.

Programming Example

The following example shows the P_HiLoSel in function block context and implements part of the pressure control strategy described in the Guidelines/Functional Description on [page 8](#). In this case, two P_PIDE instructions are used as inputs for P_HiLoSel. The PIDE instructions are for Suction Pressure Override Control and Discharge Pressure Control. The P_PIDE output values Out_CV (CV to final control element) and Val_E (Loop Error) are used as inputs th P_HiLoSel.

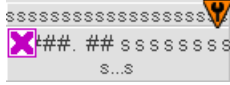
This example also shows P_HiLoSel inputs for Initial Value (Inp_CVInitVal) and Initialization Required (Inp_CVInitReq). In this case, the Initial Value is taken from the speed reference to the pump motor drive. The Initialization Required flag is set based on the motor's running and availability status.



Display Elements

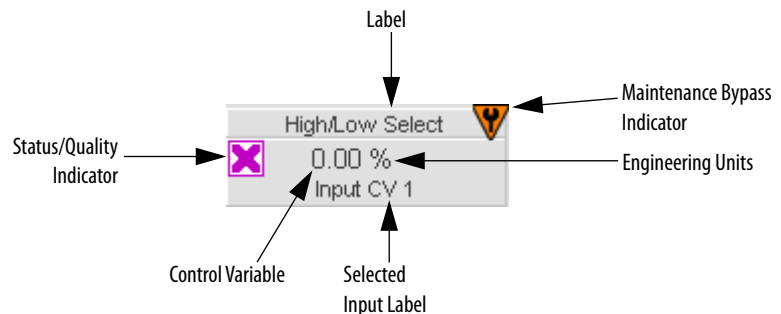
A display element (global object) is created once and can be referenced multiple times on multiple displays in an application. When changes are made to the original (base) object, the instantiated copies (reference objects) are automatically updated. Use of global objects, in conjunction with tag structures in the ControlLogix system, aid consistency and save engineering time.

Table 10 - P_HiLoSel Display Elements Description

Display Element Name	Display Element	Description
P_HiLoSel		Standard High or Low Selector global object.





Common attributes of the P_HiLoSel global objects include the following:




- Maintenance bypass indicator
- Engineering units
- Selected Input label
- Control variable
- Status/Quality indicator



Status/Quality Indicators

One of these symbols appears on the graphic symbol when the described condition is true.

Graphic Symbol	Description
	Invalid configuration.
	Data quality bad/failure.
	Data Quality degraded: uncertain, test, simulation, substitution, or out of specification.
	The input or device has been disabled.

Graphic Symbol	Description
	Device not ready to operate.
	Output CV clamped to minimum/maximum.
	Output value clamped to minimum/maximum.

TIP When the Invalid Configuration indicator appears, you can find what configuration setting is invalid by following the indicators. Click the graphic symbol to open the faceplate. The Invalid Configuration indicator appears next to the appropriate tab at the top of the faceplate to guide you in finding the configuration error. Once you navigate to the tab, the misconfigured item is flagged with this indicator or appears in a magenta box.






For the High or Low Selector Instruction, the Invalid Configuration indicator appears under the following conditions:




- The minimum CV (clamping limit) is greater than or equal to the maximum CV.

The instruction does not have a CV input; there must be at least one CV input.

Mode Indicators

One of these symbols appears on the right side of the graphic symbol to indicate the mode of the object instruction.

Graphic Symbol	Description
Transparent	Operator mode (if the default mode is Operator and the current mode is Operator, the mode indicator is transparent).
	Operator mode (if the default mode is Program).
	Operator mode locked.
Transparent	Program mode (if the default mode is Program and the current mode is Program, the mode indicator is transparent).
	Program mode (if the default mode is Operator).
	Program mode locked.
	Override mode

Graphic Symbol	Description
	Maintenance mode.
	Hand mode
	No mode.







When the object is in the default mode, the mode indicator is transparent.

TIP The images provided for the Operator and Program default modes are transparent; therefore, no mode indicators are visible if the device is in its default mode. This behavior can be changed by replacing the image files for these mode indicators with images that are not transparent.

See Rockwell Automation Library of Process Objects: Common Mode Block (P_Mode) Reference Manual, publication [SYSLIB-RM005](#), for more information.

Alarm Indicators


One of these symbols appears on the left side of the label to indicate the described alarm condition and the alarm border and label background change color. The alarm border and label background blink if acknowledgement of an alarm condition is required. Once the alarm is acknowledged, the alarm border and label background remain the color that corresponds to the severity of the alarm.

Symbol	Border and Label Background	Description
	No change in color	Alarm Inhibit: an alarm is suppressed by the Program, disabled by Maintenance, or shelved by the Operator.
	White	Return to normal (no alarm condition), but a previous alarm has not been acknowledged.
	Blue	Low severity alarm.
	Yellow	Medium severity alarm.
	Red	High severity alarm.
	Magenta	Urgent severity alarm.
No symbol	No change in color	No alarm or alarm inhibit condition, and all alarms are acknowledged.

See Rockwell Automation Library of Process Objects: Common Alarm Block (P_Alarm) Reference Manual, publication [SYSLIB-RM002](#), for more information.

Maintenance Bypass Indicator

This symbol appears to the right of the label to indicate that a maintenance bypass has been activated.

Graphic Symbol	Description
	A maintenance bypass is active.
No symbol displayed	No maintenance bypass is active.

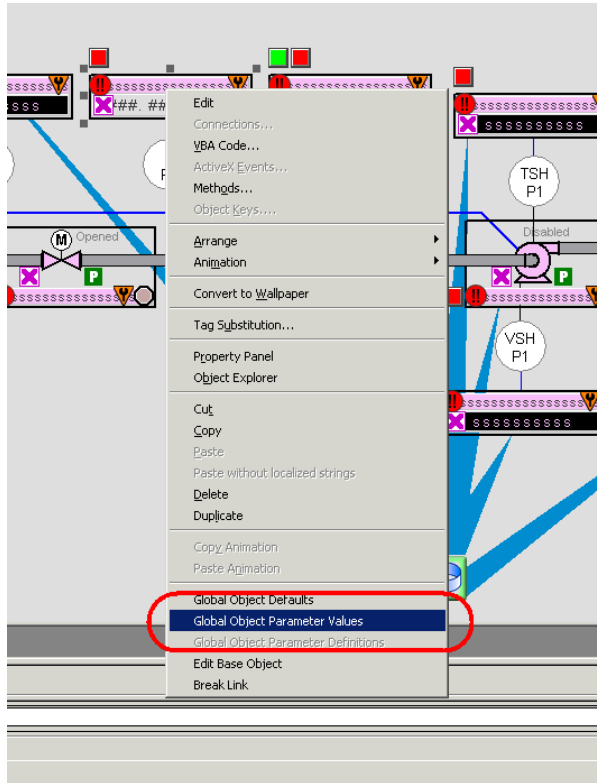
TIP When the Maintenance Bypass indicator appears, you can find what condition was bypassed by following the indicators. Click the graphic symbol to open the faceplate. The Maintenance Bypass indicator appears next to the appropriate tab at the top of the faceplate to guide you in finding the bypass. Once you navigate to the tab, the bypassed item is flagged with this indicator.

For the High or Low Selector instruction, the Maintenance Bypass Indicator appears when any CV has its 'Has' bit set (See [Engineering Tab Page 2 on page 26](#)) and its 'Use' bit cleared by Maintenance. (See [Maintenance Tab on page 23](#).)

Using Display Element

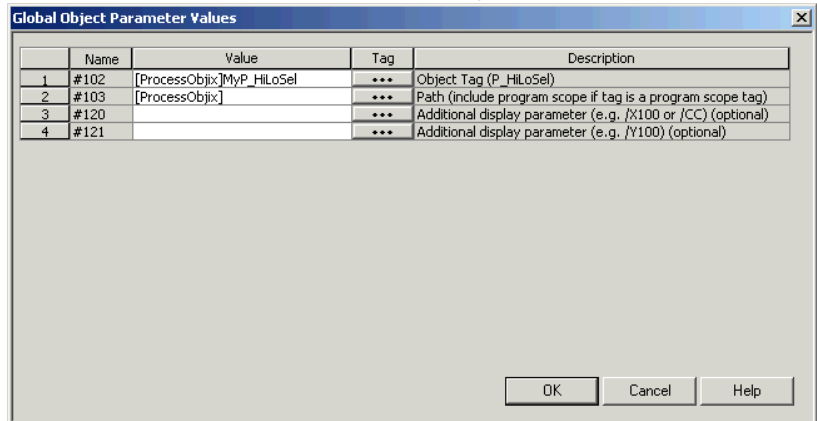
The global objects for P_HiLoSel can be found in the global object file (RA-BAS) Process Graphics Library.ggfx. Follow these steps to use a global object.

1. Copy the global object from the global object file and paste it in the display file.



2. In the display, right-click the global object and choose Global Object Parameter Values.

The Global Object Parameter Values dialog box appears.



The global object parameters are as follows.

Parameter	Required	Description
#102	Y	Object tag to point to the name of the associated object Add-On Instruction in the controller.
#103	Y	Path used for display navigation features to other objects. Include program scope if tag is a program scope tag.
#120	N	Additional parameter to pass to the display command to open the faceplate. Typically used to define position for the faceplate.
#121	N	Additional parameter to pass to the display command to open the faceplate. If defining X and Y coordinate, separate parameters so that X is defined by #120 and Y is defined by #121. This lets these same parameters to be used in subsequent display commands originating from the faceplate.

- In the Value column, type the tag or value as specified in the Description column.

TIP Click the ellipsis (...) to browse and select a tag.
Values for items marked '(optional)' can be left blank.

- Click OK.

Quick Display

There is no Quick display for the P_HiLoSel instruction.

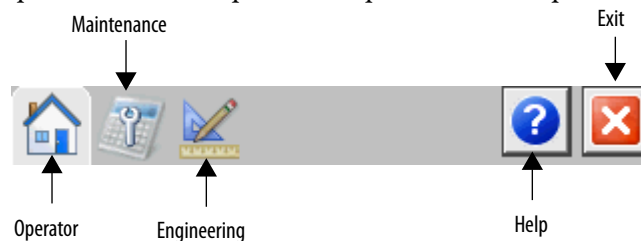
Faceplate

The P_HiLoSel faceplate consists of three tabs and each tab consists of one or more pages.

The title bar of the faceplate contains the value of local configuration tags Cfg_Tag and Cfg_Desc.

Tag - Description

The Operator tab is displayed when the faceplate is initially opened. Click the appropriate icon at the top of the faceplate to access a specific tab.



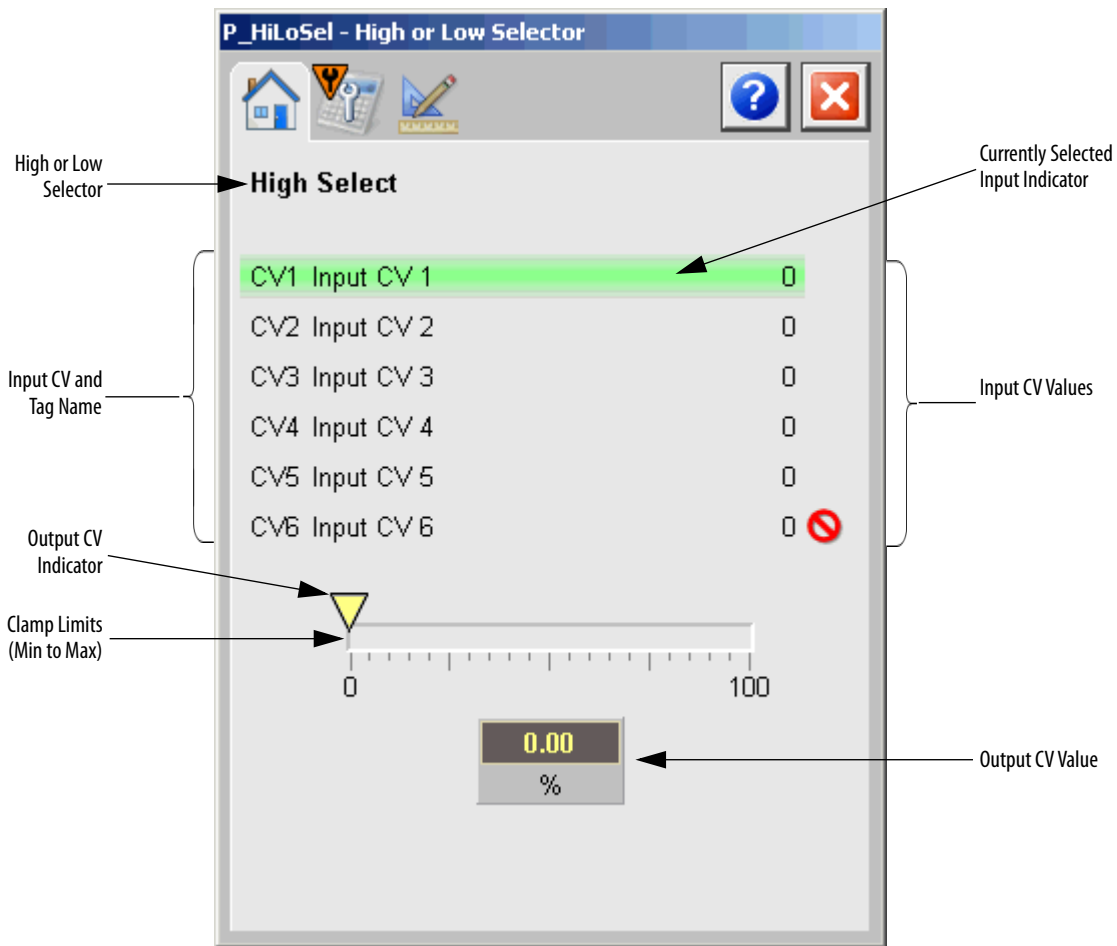
The faceplate provides the means for operators, maintenance workers, engineers, and others to interact with the P_HiLoSel instruction instance, including viewing its status and values. When a given input is restricted via FactoryTalk View security, the required user security code letter is shown in the tables that follow.

Operator Tab

The Faceplate initially opens to the Operator (‘Home’) tab. From here, an operator can monitor the device status.

The Operator tab shows the following information:

- Current operation (High or Low Select)
- Currently selected input (green highlight)
- Bar graph for clamp limits from minimum to maximum plus Output CV indicator
- Input CV values and Output CV value



The following table shows the functions included on the Operator tab.

Table 11 - Operator Tab Description

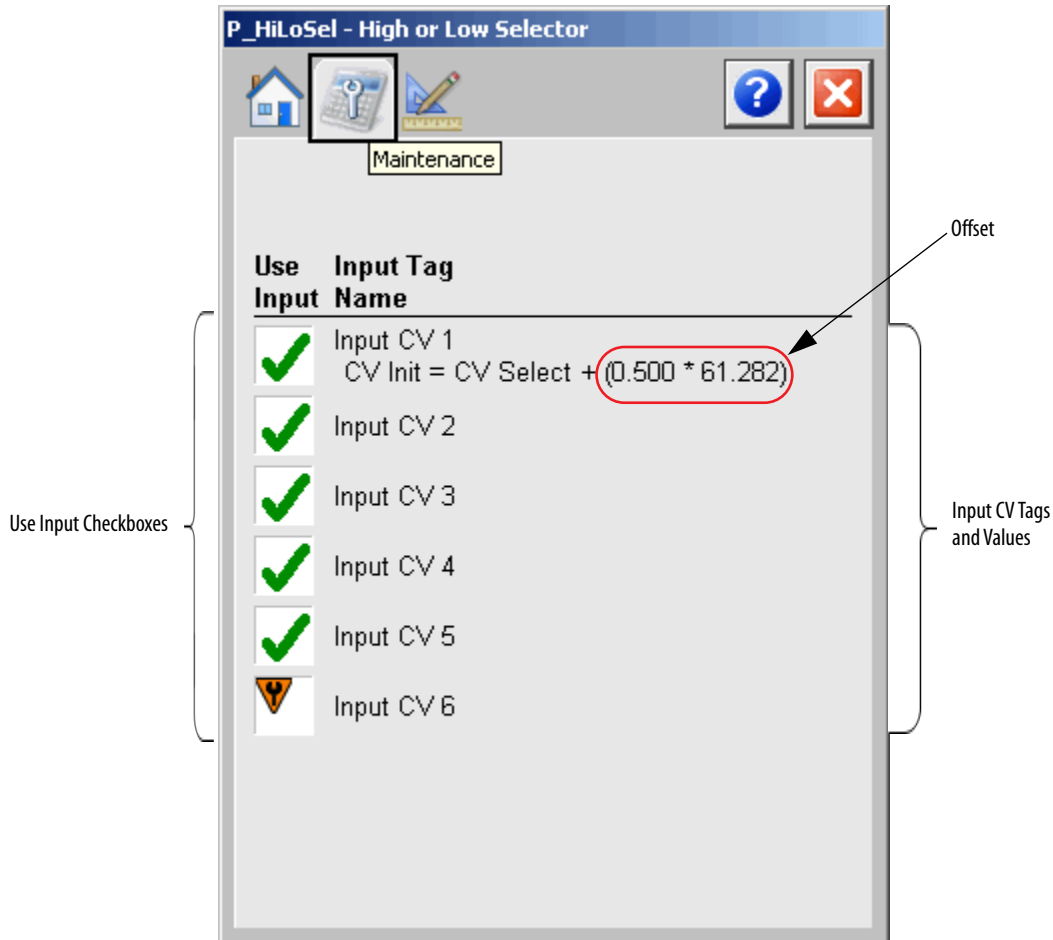
Function	Action	Security
Input CV 1...Input CV 6	Click an input CV to navigate to the assigned object. (See Engineering Tab Page 3 on page 27.)	None
Output CV Value	Click to navigate to the assigned object. (See Engineering Tab Page 3 on page 27.)	

Maintenance Tab

Maintenance personnel use the information and controls on the Maintenance tab to adjust device parameters, troubleshoot and temporarily work around device problems, and disable the device for routine maintenance.

The Maintenance tab shows the following information:

- Input Tags and current input values (if any)
- Inputs that are being used or not (in Maintenance Bypass)



The following table shows the functions on the Maintenance tab.

Table 12 - Maintenance Tab Description

Function	Action	Security	Configuration Parameters
Use Input	Check to use a CV input. Clear a checkbox and not use the input and in Maintenance Bypass.	Equipment Maintenance (Code C)	Cfg_UseCV1...Cfg_UseCV6

Engineering Tab

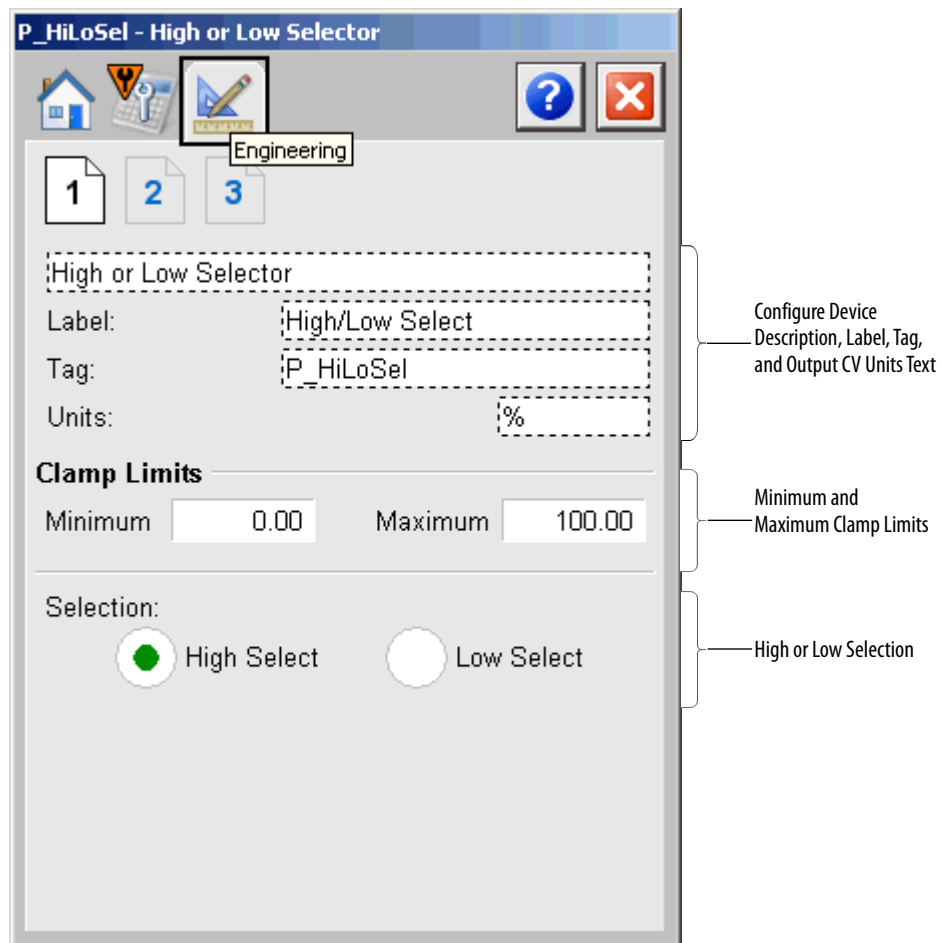
The Engineering tab provides access to device configuration parameters and ranges, options for device and I/O setup, displayed text, and faceplate-to-faceplate navigation settings, for initial system commissioning or later system changes.

The Engineering tab is divided into three pages.

Engineering Tab Page 1

On page 1 of the Engineering tab, you can do the following:

- Configure the description, label, tag, and output CV units for the device.
- Set the minimum and maximum clamp limits.
- Select High Select or Low Select.

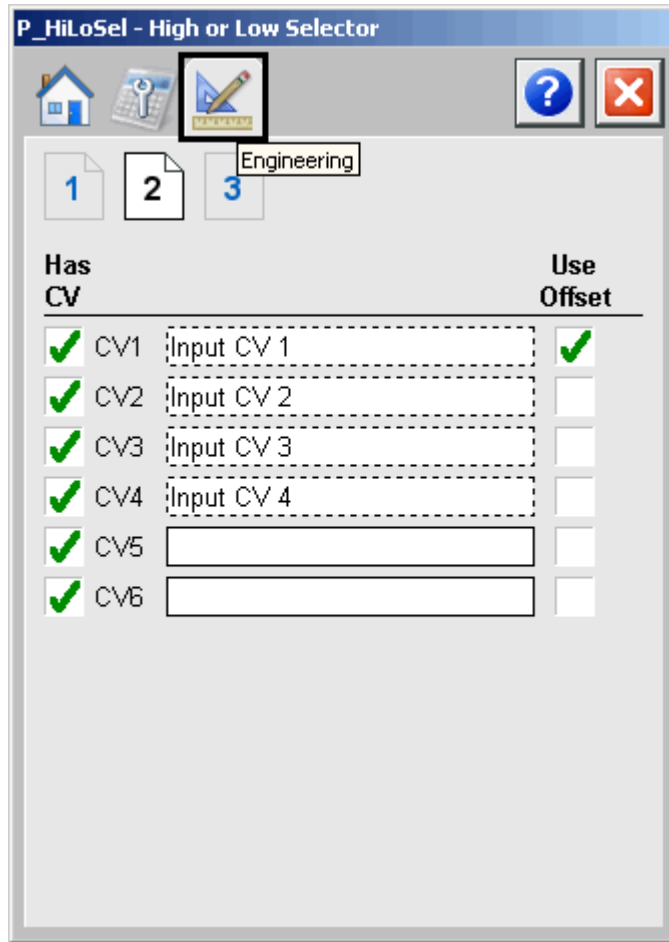


The following table lists the functions on page 1 of the Engineering tab.

Table 13 - Engineering Tab Page 1 Description

Function	Action	Security	Configuration Parameters
Description	Type the device description to show on the faceplate title bar.	Engineering Configuration (Code E)	Cfg_Desc
Label	Type the label to show on the graphic symbol.		Cfg_Label
Tag	Type the tag name to show on the faceplate and in the Tooltip. IMPORTANT: Pausing the mouse over this field displays a tool tip with the configured Logix tag/path.		Cfg_Tag
Units	Type the engineering units for display on the HMI. Percent (%) is the default.		Cfg_EU
Clamp Limits: Maximum	Type in the minimum and maximum to set the range for the selected input CV.		Cfg_CVMax
Clamp Limits: Maximum	If the selected input CV is below the minimum, it is clamped to the minimum value. If the selected input CV is above the maximum, it is clamped to the maximum value.		Cfg_CVMin
Selection: High Select	Click High Select to select the highest input CV value to pass to the output.		Cfg_HiLoSel
Selection: Low Select	Click Low Select to select the lowest input CV value to pass to the output.		

Engineering Tab Page 2

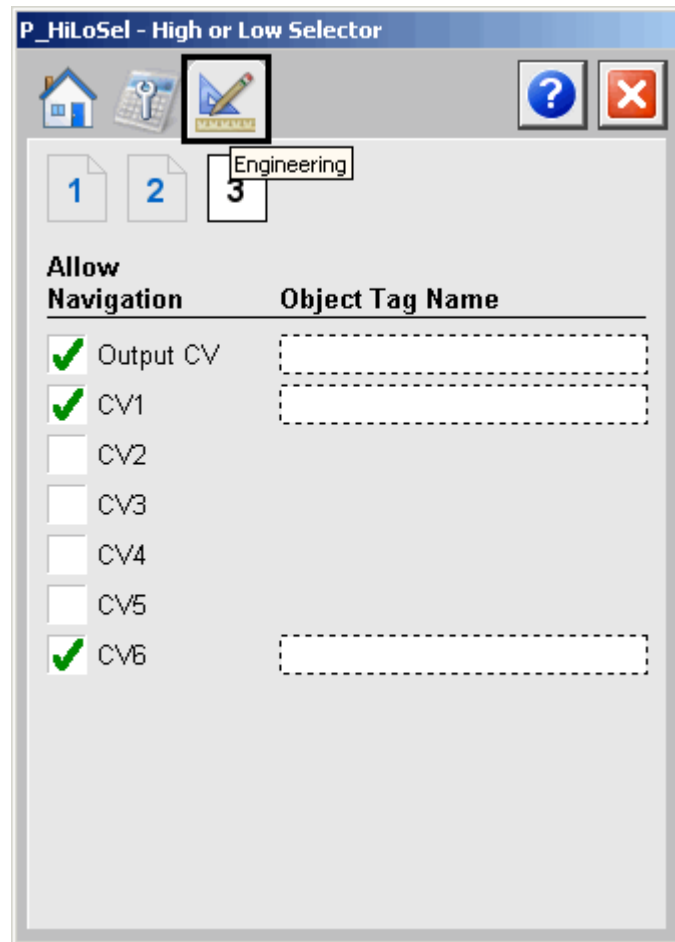


The following table lists the functions on page 2 of the Engineering tab.

Table 14 - Engineering Tab Page 2 Description

Function	Action	Security	Configuration Parameters
Has CV	Check a 'Has CV' (CV1...CV6) where an input is connected.	Engineering Configuration (Code E)	Cfg_HasCV1...Cfg_HasCV6
Use Offset	Check a 'Use Offset' (CV1...CV6) to include the Kp*E offset in initialization calculation.		Cfg_Offset1...Cfg_Offset6

Engineering Tab Page 3

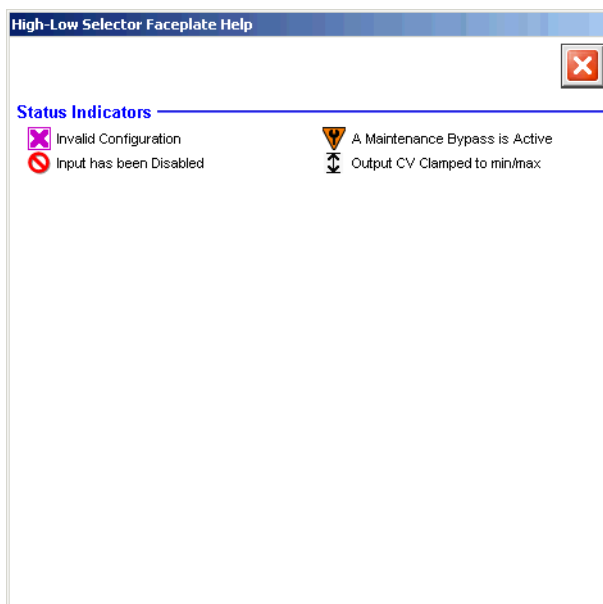


The following table lists the functions on page 3 of the Engineering tab.

Table 15 - Engineering Tab Page 3 Description

Function	Action	Security	Configuration Parameters
Allow Navigation	Check an input (CV1...CV6) or the Output CV to allow navigation to a specified object.	Engineering Configuration (Code E)	Cfg_HasCVNav Cfg_HasNav.0...Cfg_HasNav.5
Object Tag Name	Type the tag name for the corresponding input (CV1...CV6) or Output CV object.		Cfg_CVNavTag Cfg_NavTag[0]...Cfg_HasNav[5]

High or Low Selector Faceplate Help



Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products.

At <http://www.rockwellautomation.com/support> you can find technical and application notes, sample code, and links to software service packs. You can also visit our Support Center at <https://rockwellautomation.custhelp.com/> for software updates, support chats and forums, technical information, FAQs, and to sign up for product notification updates.

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If you experience a problem within the first 24 hours of installation, review the information that is contained in this manual. You can contact Customer Support for initial help in getting your product up and running.

United States or Canada	1.440.646.3434
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