

Rockwell Automation Library of Process Objects: Hand-operated Motor (P_MotorH0)

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.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

Reproduction of the contents of this manual, in whole or in part, without written permission of Rockwell Automation, Inc., is prohibited.

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).

IPreface	Software Compatibility and Content Revisions	5
	Additional Resources	6
Hand-operated Motor (P_MotorHO)	Guidelines	7
	Functional Description	8
	Required Files	8
	Controller File	8
	Visualization Files	9
	Controller Code	11
	Hand-operated Motor Input Structure	11
	Hand-operated Motor Output Structure	14
	Hand-operated Motor Local Configuration Tags	17
	Operations	17
	Modes	17
	Alarms	17
	Simulation	18
	Execution	19
	Programming Example	19
	Display Elements	20
	State Indicators	22
	Status/Quality Indicators	23
	Alarm Indicators	24
	Maintenance Bypass Indicator	25
	Using Display Elements	25
	Quick Display	27
	Faceplate	27
	Operator Tab	28
	Maintenance Tab	32
	Engineering Tab	34
	Diagnostics Tab	38
	Alarms Tab	39
	Hand-operated Motor Faceplate Help	41

Notes:

Software Compatibility and Content Revisions

Table 1 - Summary of Changes

Topic	Page
Visualization Files: Global Objects (.ggfx) - Process Diagnostic Objects	9

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

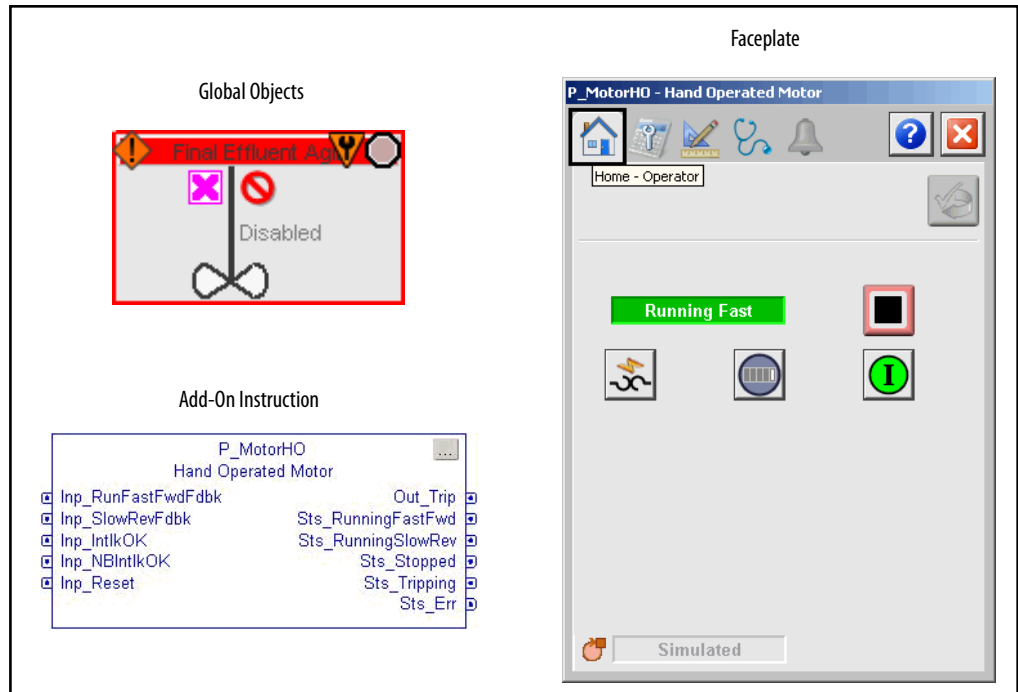
These documents contain additional information concerning related products from Rockwell Automation.

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 that can involve multiple users and servers, distributed over a network.
Logix5000™ Controllers Add-On Instructions Programming Manual, publication 1756-PM010	Provides information for designing, configuring, and programming Add-On Instructions.
Rockwell Automation Library of Process Objects: Common Alarm Block (P_Alarm) Reference Manual, publication SYSLIB-RM002	Details how to monitor an input condition to raise an alarm. Information includes acknowledging, resetting, inhibiting, and disabling an alarm. Generally the P_Alarm faceplate is accessible from the Alarms tab.
Rockwell Automation Library of Process Objects: Interlocks with First Out and Bypass (P_Intlk) Reference Manual, publication SYSLIB-RM004	Explains how to collect (sum up) the interlock conditions that stop or de-energize a running or energized piece of equipment or prevent it from starting or being energized.
Rockwell Automation Library of Process Objects: Run Time and Starts (P_RunTime) Reference Manual, publication SYSLIB-RM010	Explains how to accumulate the total run time and count of starts for a motor or other equipment
Rockwell Automation Library of Process Objects: E1 Plus™ Overload Relay (P_E1PlusE) Reference Manual, publication SYSLIB-RM049A-EN-P	Details how to control and monitor a 193-ETN (E1 Plus on EtherNet/IP) overload relay.
Rockwell Automation Library of Process Objects: E3™/E3 Plus™ Overload Relay (EtherNet/IP) (P_E3Ovld) Reference Manual, publication SYSLIB-RM050A-EN-P	Details how to control and monitor a 193/592-EC1, -EC2, -EC3, or -EC5 (E3 or E3 Plus) overload relay.
Rockwell Automation Library of Process Objects: E300™ Overload Relay (EtherNet/IP) (P_E300Ovld) Reference Manual, publication SYSLIB-RM051A-EN-P	Details how to control and monitors a 193-ECM-ETR (E300 on EtherNet/IP) overload relay.

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.

Hand-operated Motor (P_MotorHO)

The P_MotorHO (Hand-operated Motor) Add-On Instruction monitors a locally-controlled (hand-operated) motor.



Guidelines

The P_MotorHO instruction supports single-speed motors (running or stopped), two-speed motors (running fast, running slow, or stopped), and reversing motors (running forward, running reverse, and stopped). The motor must provide run feedback.

This instruction supports an optional trip function and output, used to stop the motor. If the trip output is used, this instruction confirms that the motor stops if tripped, and alarms if it does not stop.

Do **not** use this instruction in these situations:

- You need to do more than monitor or trip the motor.
- You need to operate a single-speed motor (running/stopped). Use the P_Motor Single-Speed Motor instruction instead.
- You need to operate a continuously-variable speed motor, such as one wired to a variable-frequency AC drive or variable-speed DC drive. Use the P_VSD Variable Speed Drive instruction instead.
- You need to operate a two-speed motor that runs in one direction (Fast, Slow, or Stopped). Use the P_Motor2Spd Two Speed Motor instruction instead.
- You need to operate a simple reversing motor (forward/reverse/stopped). Use the P_MotorRev Reversing Motor instruction instead.

Functional Description

The P_MotorHO instruction provides the following capabilities:

- Monitor the run feedback signals from a single-speed, two-speed, or reversing motor and display actual motor status.
- Optionally provide the ability to trip (de-energize) the motor. The program (via program commands) or the operator (via the HMI faceplate) can trip the motor any time it is running. Interlocks can also be used to trip the motor.

The optional trip function provides the following capabilities:

- Detect failure to stop when tripped and generate an appropriate alarm.
- Monitor interlock conditions to trip the motor, and alarm when an interlock stops a running motor.
- Provide for simulation of a working motor while disabling the trip output, for use in off-process training, testing, or simulation.
- Monitor I/O communication, and alarm (and trip if the Shed On I/O Fault function is enabled) on a communication fault.

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_MotorHO_3_5-00_AOIL5X** Add-On Instruction must be imported into the controller project 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) P_MotorHO Graphics Library	(RA-BAS-ME) P_MotorHO Graphics Library	P_MotorHO global object device symbols used to build process graphics.
(RA-BAS) Process Alarm Objects	(RA-BAS-ME) Process Alarm Objects	Global objects used for managing alarms on process object faceplates.
(RA-BAS) Process Diagnostic Objects	(RA-BAS-ME) Process Diagnostic Objects	Diagnostic global objects used on process object faceplates.
(RA-BAS) Process Faceplate Motor Objects	(RA-BAS-ME) Process Faceplate Motor Objects	Motor global objects used on process object faceplates.
(RA-BAS) Process Help Objects	(RA-BAS-ME) Process Help Objects	Global objects used for all process objects help displays.
(RA-BAS) Process Interlock Objects	(RA-BAS-ME) Process Interlock Objects	Global objects used for managing interlocks and permissives on process object faceplates.

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_Alarm-Faceplate	(RA-BAS-ME) P_Alarm-Faceplate	The faceplate that is used for managing alarms for the object.
(RA-BAS) P_Alarm-Help	(RA-BAS-ME) P_Alarm-Help	Alarm Help information that is accessed from the P_Alarm faceplate.
(RA-BAS) P_MotorHO-Faceplate	(RA-BAS-ME) P_MotorHO-Faceplate	The faceplate that is used for the object
(RA-BAS) P_MotorHO-Quick	(RA-BAS-ME) P_MotorHO-Quick	The Quick display that is used for the object
(RA-BAS) Process Motor Family-Help	(RA-BAS-ME) Process Motor Family-Help	The Help display for Motor objects
(RA-BAS) E1PlusE-Faceplate (RA-BAS) E30vld-Faceplate (RA-BAS) E3000vld-Faceplate	(RA-BAS-ME) E1PlusE-Faceplate (RA-BAS-ME) E30vld-Faceplate (RA-BAS-ME) E3000vld-Faceplate	Optional Overload faceplate displays that are used for the object Use one of these files if your object has an associated P_E1PlusE, P_E30vld, or P_E3000vld object and you enable navigation to one of these faceplates from the object faceplate.
(RA-BAS) P_Intlk-Faceplate	(RA-BAS-ME) P_Intlk-Faceplate	Optional The interlock faceplate used for the object. Use this file if your Discrete Output has an associated P_Intlk object and you enable navigation to its faceplate from the Discrete Output faceplate.
(RA-BAS) P_RunTime-Faceplate	(RA-BAS-ME) P_RunTime-Faceplate	Optional RunTime faceplate display that is used for the object Use this file if your object has an associated P_RunTime object and you enable navigation to the P_RunTime faceplate from the object faceplate.
(RA-BAS) Process Interlock Family-Help	(RA-BAS-ME) Process Interlock Family-Help	Optional Interlock/permissives help display that is used for the object Use this file if you use the P_Intlk or P_Perm faceplate.

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.

Hand-operated Motor 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.
- Commands (PCmd_, OCmd_, MCmd_) are used by program logic, operators, and maintenance personnel to request instruction actions.

Table 6 - P_MotorHO Input Parameters

Input Parameter	Data Type	Alias For	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_RunFastFwdFdbk	BOOL		0	1 = Motor running (single-speed), fast (2-speed), or forward (reversing).
Inp_SlowRevFdbk	BOOL		0	1 = Motor running slow (2-speed) or reverse (reversing).
Inp_IntlkOK	BOOL		1	1 = Interlocks OK, interlock not tripping motor.
Inp_NBIntlkOK	BOOL		1	1 = Non-Bypassable Interlocks OK, interlock not tripping motor.
Inp_IOFault	BOOL		0	Input communication status: 0 = OK 1 = Fail
Inp_Sim	BOOL		0	Simulation input. When set to 1, the instruction uses simulation inputs (for example, Inp_SimRunFastFwd). When set to 0, the instruction uses input parameters (for example, Inp_RunFastFwdFdbk).
Inp_SimRunFastFwd	BOOL		0	1 = Sets simulated motor to running (fast or forward). 0 = No change.
Inp_SimSlowRev	BOOL		0	1 = Sets simulated motor to running slow or reverse. 0 = No change.
Inp_SimStopped	BOOL		0	1 = Sets simulated motor to stopped. 0 = No change.
Inp_Reset	BOOL		0	Input parameter used to programmatically reset alarms. When set to 1, all alarms requiring reset are reset.
Cfg_HasTrip	BOOL		0	1 = Trip Output is connected to motor. 0 = Monitor only.
Cfg_2Spd	BOOL		0	1 = Two-Speed Motor (fast, slow or stopped) connected.
Cfg_Rev	BOOL		0	1 = Reversing Motor (forward, reverse or stopped) connected.

Table 6 - P_MotorHO Input Parameters

Input Parameter	Data Type	Alias For	Default	Description
Cfg_HasIntlkObj	BOOL		0	1 = Tells HMI a P_Intlk is connected to Inp_Intlk. IMPORTANT: The name of the Interlock object in the controller must be this object's name with the suffix '_Intlk'. For example, if your P_MotorHO object has the name 'MotorHO123', then its Interlock object must be named 'MotorHO123_Intlk'.
Cfg_HasRunTimeObj	BOOL		0	1 = Tells HMI a P_RunTime is connected. IMPORTANT: The name of the runtime object in the controller must be this object's name with the suffix '_RunTime'. For example, if your P_MotorHO object has the name 'MotorHO123', then its runtime object must be named 'MotorHO123_RunTime'.
Cfg_HasOvldObj	BOOL		0	1 = Enables navigation to connected overload object's faceplate. IMPORTANT: The name of the Overload object in the controller must be this object's name with the suffix '_Ovld'. For example, if your P_MotorHO object has the name 'MotorHO123', then its Overload object must be named 'MotorHO123_Ovld'.
Cfg_PCmdClear	BOOL		1	When this parameter is 1, program commands are cleared once they are acted upon. When set to 0, program commands remain set until cleared by the application program logic. IMPORTANT: Clearing this parameter online can cause unintended program command execution.
Cfg_OCcmdResets	BOOL		0	1 = New Operator Trip command resets fault. 0 = Reset required to clear fault.
Cfg_ShedOnFailToTrip	BOOL		1	1 = Continue Trip and Alarm on Fail to Trip or I/O Fault. 0 = Alarm only on Fail to Trip or I/O Fault.
Cfg_ShedOnIOFault	BOOL			
Cfg_HasTripFailAlm	BOOL	TripFail.Cfg_Exists	0	These parameters determine whether the corresponding alarm exists and is checked or if the alarm does not exist and is not used. When these parameters are 1, the corresponding alarm exists.
Cfg_HasIntlkTripAlm		IntlkTrip.Cfg_Exists		
Cfg_HasIOFaultAlm		IOFault.Cfg_Exists		
Cfg_TripFailResetReqd	BOOL	TripFail.Cfg_ResetReqd	0	These parameters determine whether a reset is required to clear the alarm status. When these parameters are 1, the alarm is latched ON when the alarm occurs. After the alarm condition returns to normal, a reset is required to clear the alarm status. When these parameters are 0, no reset is required and the alarm status is cleared when the alarm condition returns to normal. IMPORTANT: If the reset clears the alarm, it also acknowledges the alarm.
Cfg_IntlkTripResetReqd		IntlkTrip.Cfg_ResetReqd		
Cfg_IOFaultResetReqd		IOFault.Cfg_ResetReqd		
Cfg_TripFailAckReqd	BOOL	TripFail.Cfg_AckReqd	1	These parameters determine whether an acknowledgement is required for an alarm. When these parameters are 1, the acknowledge (ack) bit is cleared when the alarm occurs. An acknowledge command (for example, PCmd_FailAck or Fail.OCmd_Ack) is required to acknowledge the alarm. When set to 0, the Acknowledge bit is set when an alarm occurs indicating an acknowledged alarm and no acknowledge command is required.
Cfg_IntlkTripAckReqd		IntlkTrip.Cfg_AckReqd		
Cfg_IOFaultAckReqd		IOFault.Cfg_AckReqd		
Cfg_TripFailSeverity	INT	TripFail.Cfg_Severity	1000	These parameters determine the severity of each alarm. This drives the color and symbol that are used to indicate alarm status on the faceplate and global object. The following are valid values: 1...250 = Low 251...500 = Medium 501...750 = High 751...1000 = Urgent IMPORTANT: For FactoryTalk View software version 7.0, these severity parameters drive only the indication on the global object and faceplate. The Alarms and Events definition of severity drives the color and symbol that is used on the alarm banner and alarm summary as well as the value returned by FactoryTalk Alarms and Events display commands.
Cfg_IntlkTripSeverity		IntlkTrip.Cfg_Severity	500	
Cfg_IOFaultSeverity		IOFault.Cfg_Severity	1000	
Cfg_SimFdbkT	DINT		3	Delay to echo back Running/Stopped status when in simulation (seconds).
Cfg_TripFailT	DINT		10	After tripped, time to reach trip position before alarm (seconds).

Table 6 - P_MotorHO Input Parameters

Input Parameter	Data Type	Alias For	Default	Description
PCmd_Trip	BOOL		0	When Cfg_PCcmdClear is 1: <ul style="list-style-type: none"> Set PCmd_Trip to 1 to send remote trip request to Overload Relay This parameter resets automatically When Cfg_PCcmdClear is 0: <ul style="list-style-type: none"> Set PCmd_Trip to 1 to send remote trip request to Overload Relay This parameter does not reset automatically
PCmd_Reset	BOOL		0	<ul style="list-style-type: none"> Set PCmd_Reset to 1 to reset all alarms requiring reset This parameter is always reset automatically
PCmd_TripFailAck	BOOL	TripFail.PCcmd_Ack	0	<ul style="list-style-type: none"> Set PCmd_<Alarm>Ack to 1 to Acknowledge alarm The parameter is reset automatically
PCmd_IntlkTripAck		IntlkTrip.PCcmd_Ack		
PCmd_IOFaultAck		IOFault.PCcmd_Ack		
PCmd_TripFailSuppress	BOOL	TripFail.PCcmd_Suppress	0	When Cfg_PCcmdClear is 1: <ul style="list-style-type: none"> Set PCmd_<Alarm>Suppress to 1 to suppress alarm Set PCmd_<Alarm>Unsuppress to 1 to unsuppress alarm These parameters reset automatically When Cfg_PCcmdClear is 0: <ul style="list-style-type: none"> Set PCmd_<Alarm>Suppress to 1 to suppress alarm Set PCmd_<Alarm>Unsuppress to 0 to unsuppress alarm PCmd_<Alarm>Unsuppress is not used These Parameters do not reset automatically
PCmd_IntlkTripSuppress		IntlkTrip.PCcmd_Suppress		
PCmd_IOFaultSuppress		IOFault.PCcmd_Suppress		
PCmd_TripFailUnsuppress		TripFail.PCcmd_Unsuppress		
PCmd_IntlkTripUnsuppress		IntlkTrip.PCcmd_Unsuppress		
PCmd_IOFaultUnsuppress		IOFault.PCcmd_Unsuppress		
PCmd_TripFailUnshelve	BOOL	TripFail.PCcmd_Unshelve	0	<ul style="list-style-type: none"> Set PCmd_<Alarm>Unshelve to 1 to Unshelve alarm The parameter is reset automatically
PCmd_IntlkTripUnshelve		IntlkTrip.PCcmd_Unshelve		
PCmd_IOFaultUnshelve		IOFault.PCcmd_Unshelve		
OCmd_Trip	BOOL		0	Operator command to trip motor.
OCmd_Bypass	BOOL		0	Operator command to bypass all bypassable interlocks.
OCmd_Check	BOOL		0	Operator command to check (not bypass) all interlocks.
MCmd_Disable	BOOL		0	Maintenance command to disable motor (continuously tripped).
MCmd_Enable	BOOL		0	Maintenance command to enable motor (not tripped unless required).
OCmd_Reset	BOOL		0	Operator command to reset all alarms requiring reset.
OCmd_ResetAckAll	BOOL		0	Operator command to reset all alarm and latched shed conditions and acknowledge alarms.

Hand-operated Motor 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.
- Source and Quality data elements (SrcQ_) are outputs of the instruction used by the HMI to indicate PV source and quality.
- 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.
- Not Ready data elements (Nrdy_) are bit outputs of the instruction for use by the HMI for displaying the Device Not Ready indicator.
- Alarm data elements (Alm_) are outputs of the instruction that indicate a particular alarm has occurred.
- Acknowledge data elements (Ack_) are outputs of the instruction that indicate the corresponding alarm has been acknowledged.
- Ready data elements (Rdy_) are bit outputs of the instruction used by the HMI to enable or disable command buttons and entry fields.

Table 7 - P_MotorHO Output Parameters

Output Parameter	Data Type	Alias For	Description
EnableOut	BOOL		Enable Output: The EnableOut signal is not manipulated by this instruction. Its output state always reflects EnableIn input state.
Out_Trip	BOOL		1 = Trip (stop) motor.
SrcQ_IO	SINT		I/O signal source and quality.
SrcQ			Final motor status source and quality: GOOD 0 = I/O live and confirmed good quality 1 = I/O live and assumed good quality 2 = No feedback configured, assumed good quality TEST 8 = Device simulated 9 = Device loopback simulation 10 = Manually entered value UNCERTAIN 16 = Live input, off-specification 17 = Value substituted at device/bus 18 = Value substituted by maintenance (Has and not Use) 19 = Shed, using last good value 20 = Shed, using replacement value BAD 32 = Signal failure (out-of-range, NaN, invalid combination) 33 = I/O channel fault 34 = I/O module fault 35 = Bad I/O configuration (for example, scaling parameters)
Val_Cmd	SINT		This shows the command being processed, returns to zero once the command succeeds or fails: 0 = None 7 = Trip

Table 7 - P_MotorHO Output Parameters

Output Parameter	Data Type	Alias For	Description
Val_Fdbk	SINT		This shows the (usually raw, interpreted) input from the device: 0 = Stopped 1 = Running 2 = Running Fast 3 = Running Slow 4 = Running Forward 5 = Running Reverse 6 = Invalid
Val_Sts	SINT		This is the Primary Status used to show the operator the confirmed device status: 0 = Powerup or Unknown 1 = Stop 2 = Run 3 = Fast 4 = Slow 5 = Forward 6 = Reverse 13 = Tripping 33 = Disabled
Val_Fault	SINT		This is the Device Fault Status used to show the operator the most severe device fault: 0 = None 18 = Fail to Trip 32 = I/O Fault 34 = Configuration Error
Val_Notify	SINT		Current alarm level and acknowledgement (enumeration): 0 = No alarm 1 = Alarm cleared: a reset or acknowledge required 2 = Low (acknowledged) 3 = Low (unacknowledged) 4 = Medium (acknowledged) 5 = Medium (unacknowledged) 6 = High (acknowledged) 7 = High (unacknowledged) 8 = Urgent (acknowledged) 9 = Urgent (unacknowledged)
Sts_RunningFastFwd	BOOL		1 = Motor is running (single-speed), running forward (reversing), or running fast (2-speed).
Sts_RunningSlowRev	BOOL		1 = Motor is running reverse (reversing) or running slow (2-speed).
Sts_Stopped	BOOL		1 = Motor is confirmed stopped.
Sts_Tripping	BOOL		1 = Motor requested to trip and is not yet stopped.
Sts_Bypass	BOOL		1 = Bypassable interlocks are bypassed.
Sts_BypActive	BOOL		1 = Bypassing active (bypassed or maintenance).
Sts_Disabled	BOOL		1 = Motor is disabled.
Sts_BadFdbk	BOOL		1 = Motor reports both fast and slow (or forward and reverse) feedback.
Sts_NotRdy	BOOL		1 = Motor is not ready to energize (independent of mode).
Nrdy_Disabled	BOOL		1 = Device Not Ready: <ul style="list-style-type: none"> • Device disabled by Maintenance • Configuration error • Interlock not OK • Tripped (at device or by command) • Device Failure (shed requires reset) • I/O Fault (shed requires reset)
Nrdy_CfgErr			
Nrdy_Intlk			
Nrdy_Trip			
Nrdy_Fail			
Nrdy_IOFault			
Sts_MaintByp	BOOL		1 = A Maintenance bypass is active, display icon.
Sts_Almlnh	BOOL		1 = An Alarm is shelved, disabled, or suppressed display icon.

Table 7 - P_MotorHO Output Parameters

Output Parameter	Data Type	Alias For	Description
Sts_Err	BOOL		1 = Error in configuration: see detail bits for reason.
Err_Timer	BOOL		1 = Error in configuration: see detail bits for reason.
Err_Sim	BOOL		1 = Error in configuration: simulation timer preset (use 0...2,147,483).
Err_Alarm	BOOL		1 = Error in configuration: invalid Alarm Minimum On Time or Severity.
Sts_TripFail	BOOL	TripFail.Inp	1 = Motor Failed to Trip (did not stop).
Sts_IntlkTrip	BOOL	IntlkTrip.Inp	1 = Motor tripped by an Interlock Not OK.
Sts_IOFault	BOOL	IOFault.Inp	I/O Communication Fault status: 0 = OK 1 = Bad
Alm_TripFail	BOOL	TripFail.Alm	1 = Motor Failed to Trip (did not stop) alarm.
Alm_IntlkTrip		IntlkTrip.Alm	1 = Alarm: motor tripped by an Interlock Not OK.
Alm_IOFault		IOFault.Alm	1 = I/O Fault alarm.
Ack_TripFail	BOOL	TripFail.Ack	1 = Alarm (Fail to Trip, Interlock Trip, or I/O Fault) acknowledged.
Ack_IntlkTrip		IntlkTrip.Ack	
Ack_IOFault		IOFault.Ack	
Sts_TripFailDisabled	BOOL	TripFail.Disabled	1 = Alarm (Fail to Trip, Interlock Trip, or I/O Fault) has been disabled by Maintenance.
Sts_IntlkTripDisabled		IntlkTrip.Disabled	
Sts_IOFaultDisabled		IOFault.Disabled	
Sts_TripFailShelved	BOOL	TripFail.Shelved	1 = Alarm (Fail to Trip, Interlock Trip, or I/O Fault) has been shelved by Operator.
Sts_IntlkTripShelved		IntlkTrip.Shelved	
Sts_IOFaultShelved		IOFault.Shelved	
Sts_TripFailSuppressed	BOOL	TripFail.Suppressed	1 = Alarm (Fail to Trip, Interlock Trip, or I/O Fault) has been suppressed by Program.
Sts_IntlkTripSuppressed		IntlkTrip.Suppressed	
Sts_IOFaultSuppressed		IOFault.Suppressed	
Rdy_Trip	BOOL		1 = Ready to receive Operator command (Trip, Bypass, Check, Disable, or Enable) (enables HMI button).
Rdy_Bypass			
Rdy_Check			
Rdy_Disable			
Rdy_Enable			
Rdy_Reset	BOOL		1 = Ready for Operator command (Reset or Reset and Acknowledge All Alarms) (enables HMI button).
Rdy_ResetAckAll			
P_MotorHO	BOOL		Unique parameter name for auto-discovery.

Hand-operated Motor Local Configuration Tags

Configuration parameters that are arrayed, 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 8 - Local Configuration Tags

Tag Name	Data Type	Default	Description
Cfg_Desc	STRING_40	'Hand-operated Motor'	Description for display on HMI. This string is shown in the title bar of the faceplate.
Cfg_FastFwdText	STRING_16	'Running'	Text for Running, Fast or Forward for display on HMI.
Cfg_Label	STRING_20	'Motor Monitor'	Label for graphic symbol displayed on HMI. This string appears on the graphic symbol.
Cfg_SlowRevText	STRING_16	'Slow'	Text for Slow or Reverse for display on HMI.
Cfg_Tag	STRING_20	'P_MotorHO'	Tagname 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_MotorHO instruction does not have modes and does not use an embedded P_Mode Add-On Instruction. The P_MotorHO instruction is used to monitor a locally operated motor. If the optional trip function is used, the operator, program, or interlock logic can trip the motor at any time.

Alarms

This instruction uses the following alarms, which are implemented by using embedded P_Alarm and P_Gate Add-On Instructions.

Alarm Name	P_Alarm Name	P_Gate Name	Description
Interlock Trip	IntlkTrip	None	Raised when the motor is running, the optional trip function is used, and an interlock 'not OK' condition triggers the trip function to stop the motor. If interlocks are not bypassed, a bypassable interlock or a non-bypassable interlock 'not OK' condition initiates an interlock trip. If interlocks are bypassed, only a non-bypassable interlock 'not OK' condition initiates an interlock trip.
I/O Fault	IOFault	None	Raised when the Inp_IOFault input is true. This input is usually used to indicate to the instruction that a communication failure has occurred for its I/O. If the I/O Fault is configured as a shed fault and the optional trip function is used, the trip output is triggered until reset.

Alarm Name	P_Alarm Name	P_Gate Name	Description
Trip Failure	TripFail	None	Raised is the motor has and is using the optional trip feature, an attempt is made to trip (stop) the motor, and the run feedbacks show that the motor did not stop within the configured fail to trip time.

Parameters of the P_Alarm object can be accessed by using the following convention: [P_Alarm Name].[P_Alarm Parameter].


The trip fail alarm has a configurable delay to allow the run feedback time to show that the motor actually stopped (when tripped) before raising an alarm.

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

Simulation

Simulation in P_MotorHO disables the normal input and lets you select a simulated input to see the reaction of the Hand-operated Motor.

You must set the Inp_Sim parameter in the controller to '1' to enable simulation.

The Simulation icon  is displayed at the bottom left of the Operator faceplate, indicating the device is in simulation.

You can set the following parameters to simulate the corresponding input and feedback time to the Hand-operated Motor:

- Inp_SimRunFastfwd - sets the simulated motor to run fast or forward
- Inp_SimSlowRev - sets the simulated motor to run slow or in reverse
- Inp_SimStopped - sets the simulated motor to stop
- CfgSimFdbkT - sets the number of seconds to delay echoing back the running or stopped status in simulation

When you have finished in simulation, set the Inp_Sim parameter in the controller to '0' to return to normal operation.

Execution

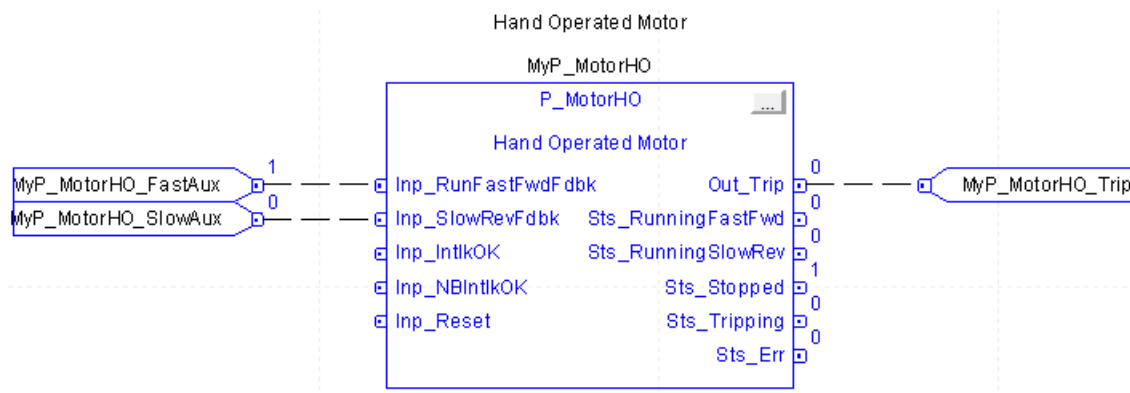
The following table explains the handling of instruction execution conditions.

Condition	Description
EnableIn false (false rung)	Handled the same as if the trip function option were disabled. The trip output (Out_Trip) is de-energized. The instruction reverts to monitoring only the current state of the motor. All alarms are cleared.
Powerup (pre-scan, first scan)	Any commands received before first scan are discarded. The Trip output is de-energized to prevent a nuisance trip on first scan. Embedded P_Alarm instructions are handled in accordance with their standard powerup procedures. Refer to the reference manual for the P_Alarm instructions for more information.
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 is a simple example of P_MotorHO. Boolean parameters MyP_MotorHO_FastAux and MyP_MotorHO_SlowAux are used as inputs. One output, MyP_MotorHO_Trip, is wired to an output that trips the motor circuit.



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.

The P_MotorHO instruction has graphic symbols for motors, blowers, agitators, and pumps for use on process graphic displays.

Table 9 - P_MotorHO Display Elements

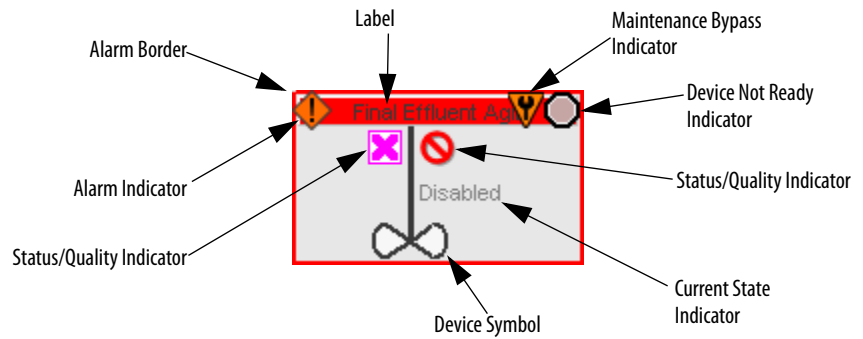
Display Element Name	Display Element	Description
GO_P_MotorHO_R GO_P_MotorHO_U GO_P_MotorHO_D	<p>The image shows three motor symbols. The top one is labeled 'Running' and has a green indicator. The middle one is labeled 'Stopped' and has a red indicator. The bottom one is labeled 'Unknown' and has a red indicator. Each symbol includes a status bar with a red 'X' and a red '!' icon.</p>	Motors operating in different positions.
GO_P_MotorHO_Blower_R GO_P_MotorHO_Blower_L GO_P_MotorHO_Blower_U GO_P_MotorHO_Blower_D	<p>The image shows four blower symbols. The top one is labeled 'Stopped' and has a red indicator. The middle one is labeled 'Running' and has a green indicator. The bottom one is labeled 'Unknown' and has a red indicator. Each symbol includes a status bar with a red 'X' and a red '!' icon.</p>	Blowers operating in different positions.
GO_P_MotorHO_Conveyor_R	<p>The image shows a conveyor symbol labeled 'Unknown' with a red indicator. It includes a status bar with a red 'X' and a red '!' icon.</p>	Conveyor shown as a display element.

Table 9 - P_MotorHO Display Elements

Display Element Name	Display Element	Description
GO_P_MotorHO_Inline_U GO_P_MotorHO_Inline_R GO_P_MotorHO_Inline_L GO_P_MotorHO_Inline_D		Inline motors operating in different positions.
GO_P_MotorHO_Pump_R GO_P_MotorHO_Pump_L GO_P_MotorHO_Pump_U		Pumps operating in different positions.
GO_P_MotorHO_Agitator_D		Agitator shown as a display element.
GO_P_MotorHO_Mixer_U		Mixer shown as a display element.
GO_P_MotorHO_RPump_U		Rotary gear pump shown as a display element.
GO_P_MotorHO_Fan_D		Fan shown as a display element.

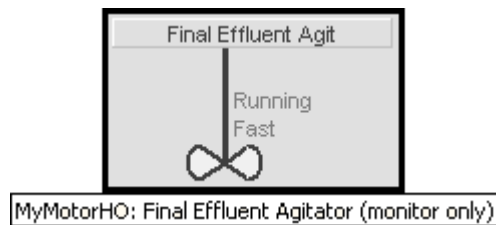
Common attributes of the P_MotorHO global objects include the following:

- Graphical representation of the device
- Current state of the motor in text
- Status/quality indicators
- Maintenance bypass indicator
- Device not ready indicator
- Device not ready indicator
- Label
- Color changing alarm border that blinks on unacknowledged alarm
- Alarm indicator that changes color with the severity of the alarm



The P_MotorHO graphic symbol displays the current state of the motor.

Each graphic symbol includes a touch field over it that opens the instruction object's faceplate. In addition there is a tooltip on the graphic symbol that displays the object's configured tag and description.



State Indicators






The state indicator text changes and the graphic symbol color changes depending on the state of the motor.

Table 10 - Motor State Indicator Colors

Color	State
Dark Gray	Stopped
Blue	Tripping
Light Gray	Running

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.
	Device not ready to operate.

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 appear in a magenta box.

For the Hand-operated Motor instruction, the invalid configuration indicator appears under any of the following conditions:

- The trip fail check time is set to a value less than zero or greater than 2,147,483 seconds.
- The feedback simulation time is set to a value less than zero or greater than 2,147,483 seconds.
- An alarm minimum on time is set to a value less than zero or greater than 2,147,483 seconds.
- Alarm Severity is set to a value less than 1 or greater than 1000.

TIP When the Not Ready indicator appears, you can find what condition is preventing operation by following the indicators. Click the graphic symbol to open the faceplate. The Not Ready indicator appears next to the appropriate tab at the top of the faceplate to guide you in finding the condition. When you navigate to the tab, the condition preventing operation is flagged.







For the Hand-operated Motor instruction, the Device Not Ready indicator appears under the following conditions:

- Device has been disabled by Maintenance.
- There is a configuration error.
- Interlock is not OK.
- Device has tripped at the device or by command.
- Device Failure and shed requires reset.

I/O Fault and shed requires reset.

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.

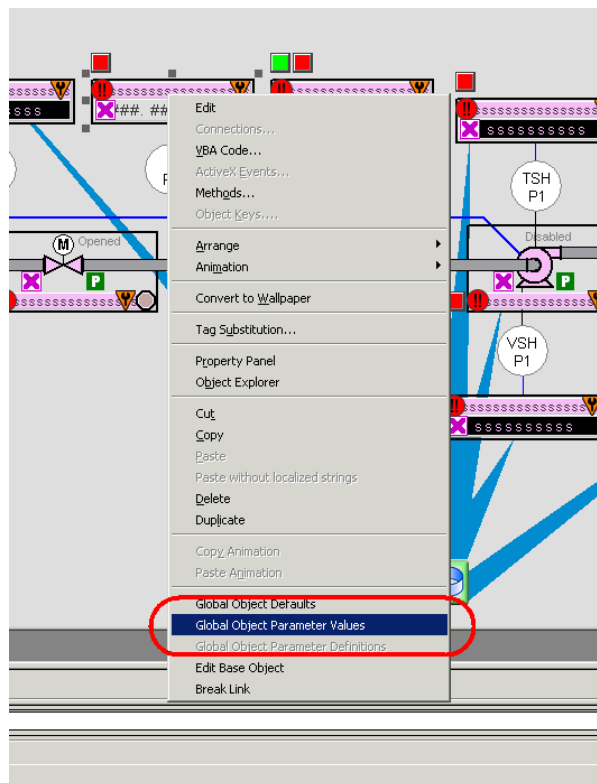
TIP When the Maintenance Bypass indicator appears, you can find what condition was bypassed by following the indicators. Click the graphic symbol to open the faceplate. The Maintenance Bypass indicator appears next to the appropriate tab at the top of the faceplate to guide you in finding then bypass.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

For the Hand-operated Motor instruction, the Maintenance Bypass indicator appears when bypassable Interlocks and Permissives have been bypassed.

Using Display Elements

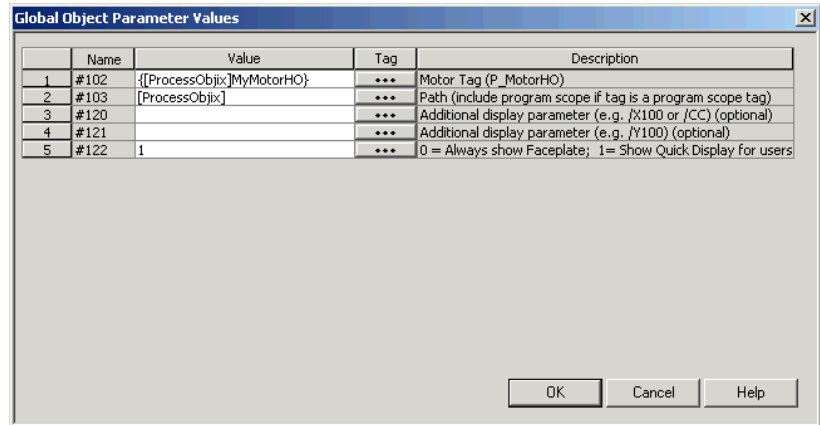
The graphic symbol for P_MotorHO instruction can be found in the global object file (RA-BAS) P_MotorHO Graphics Library.ggfx.

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 the same parameters be used in subsequent display commands originating from the faceplate.
#122	Y	These are the options for the global object display: 0 = Always show faceplate 1 = Show Quick Display for users without Maintenance access (Code C) 2 = Always show Quick Display

3. Type the tag or value in the Value column as specified in the Description column.

TIP

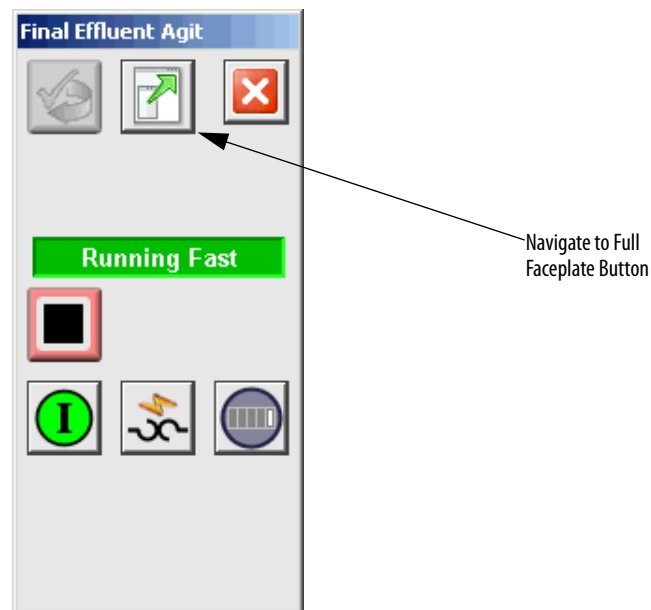
Click the ellipsis (...) to browse and choose a tag.

Values for items marked '(optional)' can be left blank.

4. Click OK.

Quick Display

The Quick Display screen provides the means for operators to perform simple interactions with the P_MotorHO instruction instance. From the Quick Display, you can navigate to the faceplate for full access for operation, maintenance, and configuration.



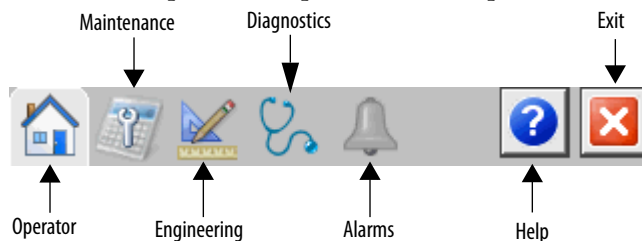
Faceplate

The P_MotorHO faceplate consists of five 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.



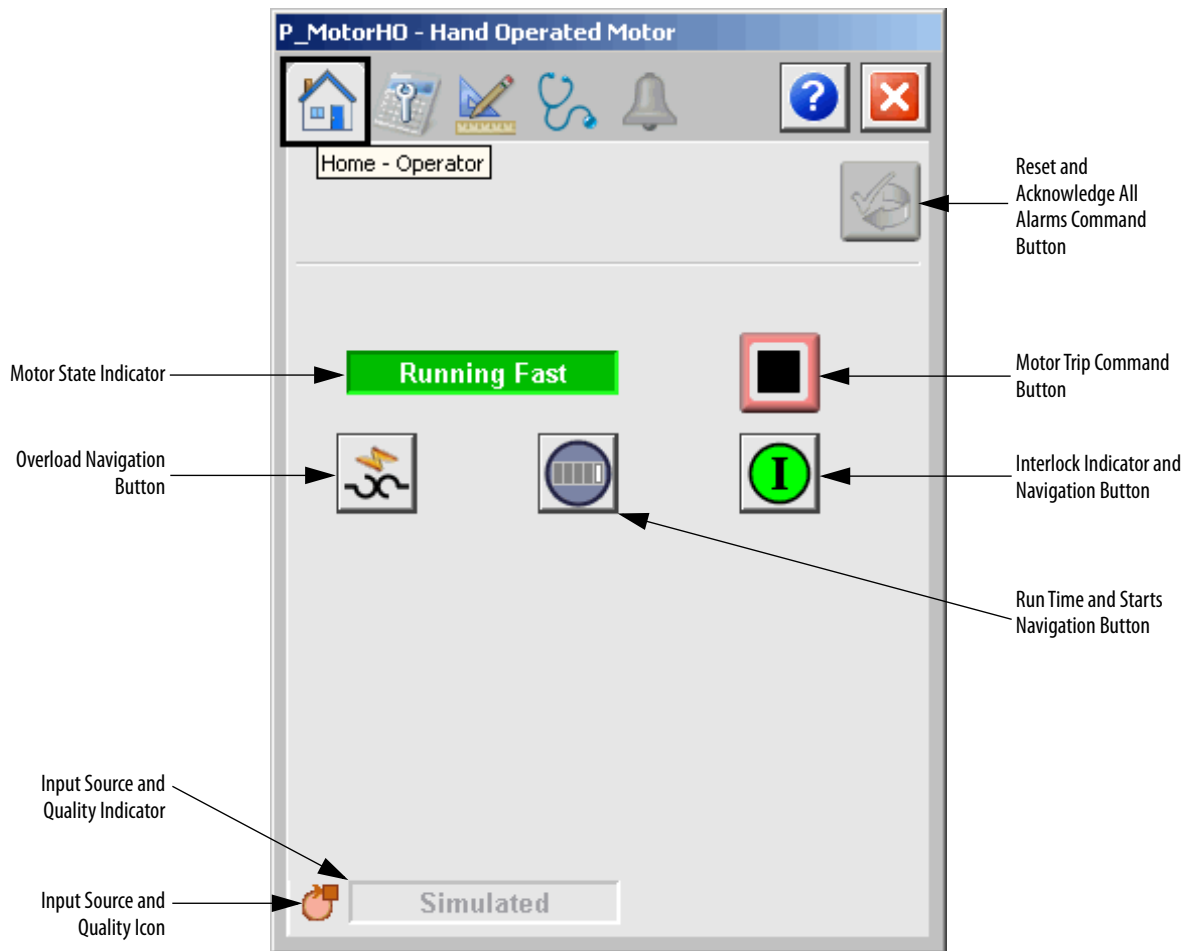
The faceplate provides the means for operators, maintenance personnel, engineers, and others to interact with the P_MotorHO instruction instance, including viewing its status and values and manipulating it through its commands and settings. When a given input is restricted via FactoryTalk View security, 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:

- Motor state (stopped, tripping, running, disabled, or I/O fault)
- Interlock status
- Input Source and Quality indicator (See 'SrcQ' in the Output parameters table on [page 14](#) for details)



The following table shows the functions on the Operator tab.

Table 11 - Operator Tab Descriptions

Function	Action	Security Required
	Click to reset and acknowledge all alarms.	Acknowledge alarms (Code F)
	Click to trip (stop) the motor.	Normal operation of devices (Code A)
	Click to open the Interlocks faceplate.	N/A
	Click to open Runtime faceplate.	
	Click to open the Overload faceplate.	

If the object is configured to have an interlock object (for example, Cfg_HasIntlkObj is true), the interlock indication becomes a button that opens the faceplate of the source object used as an interlock (often this is a P_Intlk interlock object). If the object is not configured in this way, the interlock is an indicator only.





The Operator tab also has buttons to open the runtime and Overload faceplates if the motor is configured to have associated runtime or Overload objects (for example, Cfg_HasRunTimeObj = 1). When the object is not configured to have an associated runtime or Overload object, the runtime and/or Overload buttons are not displayed.

For more information, see the following publications:

- Rockwell Automation Library of Process Objects: Interlock with First Out and Bypass (P_Intlk) Reference Manual, publication [SYSLIB-RM004](#)
- Rockwell Automation Library of Process Objects: RunTime and Starts (P_RunTime) Reference Manual, publication [SYSLIB-RM010](#)
- Rockwell Automation Library of Process Objects: E1 Plus Overload Relay (P_E1PlusE) Reference Manual, publication [SYSLIB-RM049](#)
- Rockwell Automation Library of Process Objects: E3/E3Plus Overload Relay (EtherNet/IP) (P_E3Ovld) Reference Manual, publication [SYSLIB-RM050](#)
- Rockwell Automation Library of Process Objects: E300 Overload Relay (EtherNet/IP) (P_E300Ovld) Reference Manual, publication [SYSLIB-RM051](#)







One of these symbols appears to indicate the described interlock condition.

Table 12 - Interlock Status Indicators

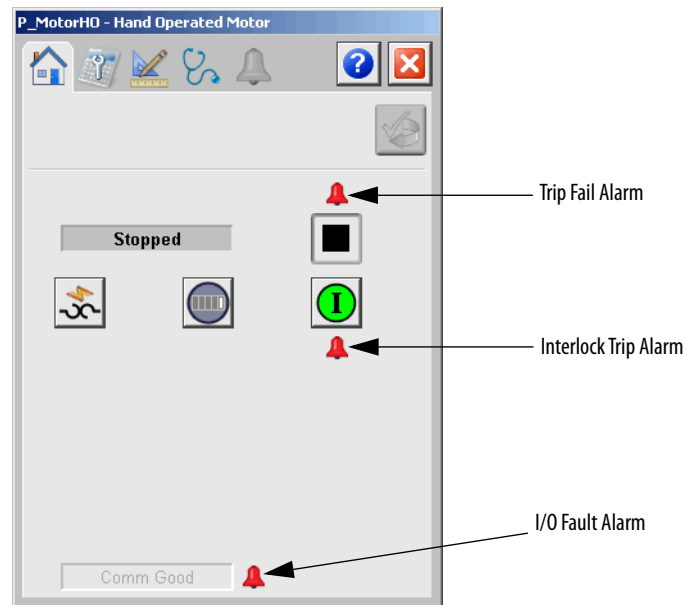
Graphic Symbol	Description
	One or more conditions not OK
	Non-bypassed conditions OK
	All conditions OK, bypass active
	All conditions OK

The following table shows the alarm status symbols that are used on the Operator tab.

Table 13 - Operator Tab Alarm Status

Graphic Symbol	Alarm Status
	In Alarm (Active Alarm)
	In Alarm and Acknowledged
	Out of Alarm but not Acknowledged
	Alarm Suppressed (by Operator) (Alarm is logged but not displayed)
	Alarm Disabled (by Maintenance)
	Alarm Shelved (by Program)

Alarm indicators appear on the Operator tab when the corresponding alarm occurs.

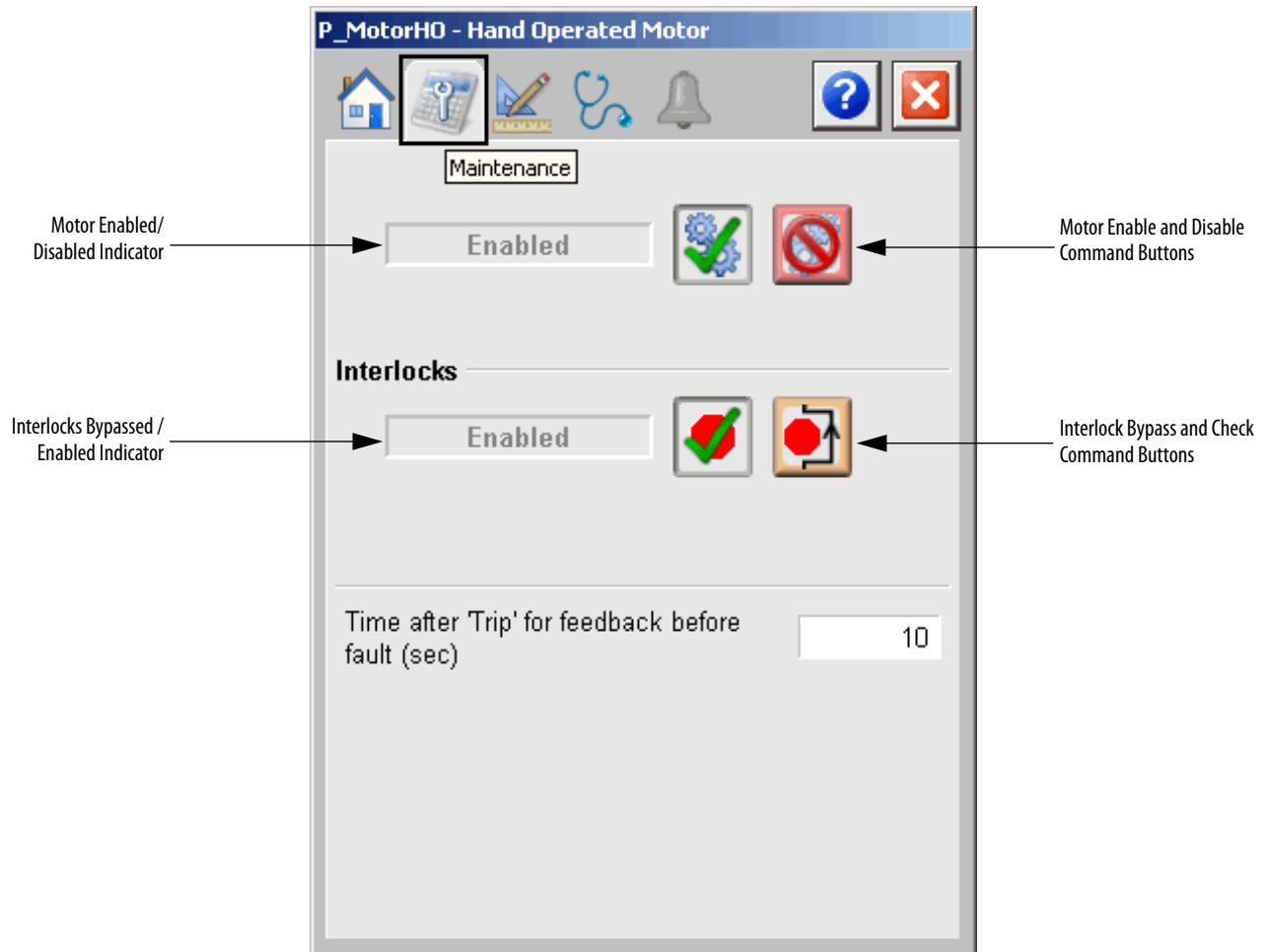


Maintenance Tab

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:

- Whether the motor is enabled or disabled
- Whether interlocks are checked or bypassed



The following table shows the function on the Maintenance tab.

Table 14 - Maintenance Tab Descriptions

Function	Action	Security	Configuration Parameters
	Click to enable motor.	Equipment Maintenance (Code C)	None
	Click to disable motor.		
	Click to enable checking all interlocks.	Disable alarms, bypass permissives, and interlocks (code H)	Cfg_TripFailT
	Click to bypass checking of bypassable interlocks.		
Time after 'Trip' for feedback before Fault (seconds)	Enter the amount of time to allow motor run feedback to show that the motor stopped after a trip is commanded. If the motor does not show stopped in the allowed time, a Trip Fail alarm is raised.		

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 two pages.

Engineering Tab Page 1

Hand Operated Motor

Label: Motor Monitor
Tag: P_MotorHO
Run Text: Running

Motor has Trip output
 Clear Program commands upon receipt
 Operator command resets fault
 Motor is 2 speed
 Motor is reversing

Two-speed Motor ('Motor is 2 speed' is checked)

Fast Text: Running
Slow Text: Slow

Reversing Motor ('Motor is reversing' is checked)

Forward Text: Forward
Reverse Text: Reverse

Configure Device Description, Label, Tag, Run Text

Configure Fast and Slow Text

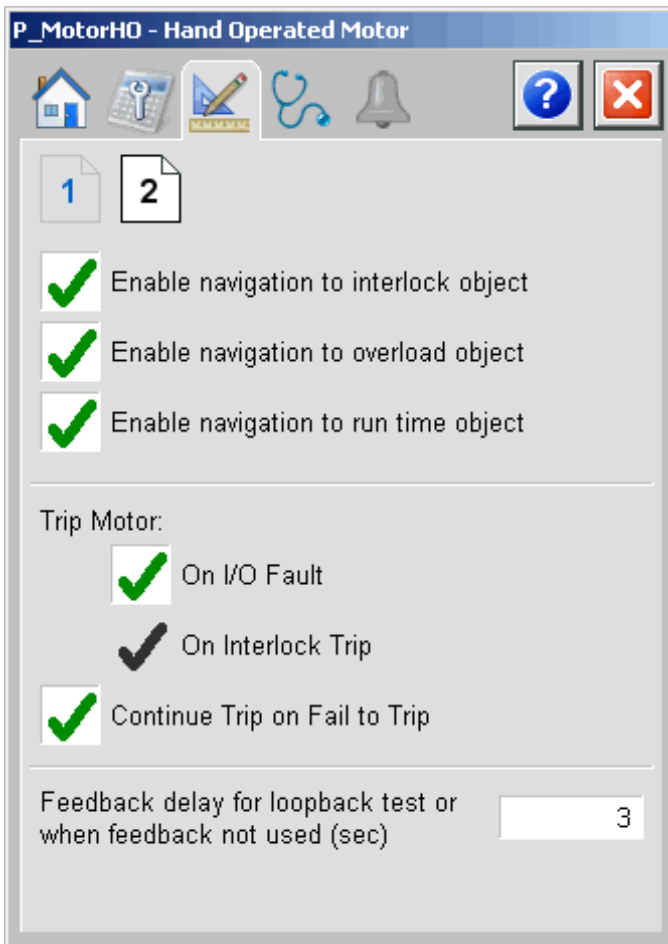
Configure Forward and Reverse Text

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

Table 15 - Engineering Tab Page One Descriptions

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 tagname to show on the faceplate title bar and in the Tooltip.		Cfg_Tag
Run Text	Type the text to show when a single-speed motor is running.		Cfg_RunFastFwdText
Fast Text	Type the text to show after 'running' when a 2-speed motor is running fast.		Cfg_RunFastFwdText
Slow Text	Type the text to show after 'running' when a 2-speed motor is running slow.		Cfg_SlowRevText
Forward Text	Type the text to show after 'running' when a reversing motor is running forward.		Cfg_RunFastFwdText
Reverse Text	Type the text to show after 'running' when a reversing motor is running reverse.		Cfg_SlowRevText
Motor has trip output	Check if a trip output is connected to the P_MotorHO instruction to stop the motor on an interlock or trip command. This makes the trip (stop) command button visible on the Operator tab.		Cfg_HasTrip
Clear program commands on receipt	Check to clear program commands on receipt.		Cfg_PCmdClear
Operator command resets fault	Check to allow the operator trip command to reset any previous faults (I/O fault, fail to trip, interlock trip) then trip motor. Clear this checkbox to reset faults by using only the reset command.		Cfg_OCmdResets
Motor is 2 speed	Check for a two speed (fast/slow) motor. IMPORTANT: This option is unavailable if 'Motor is reversing' is checked. Clear this checkbox for a reversing motor or a single speed motor.		Cfg_2Spd
Motor is reversing	Check for a reversing (forward/reverse) motor. IMPORTANT: This option is unavailable if 'Motor is 2 speed' is checked. Clear this checkbox for a two-speed motor or a single speed motor.		Cfg_Rev

Engineering Tab Page 2



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

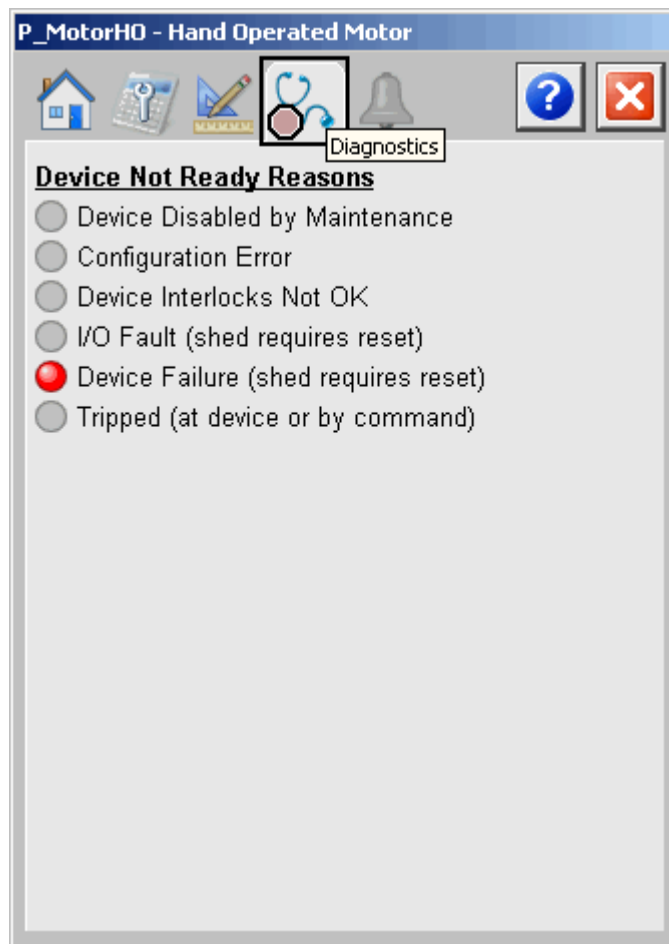
Table 16 - Engineering Tab Page Two Descriptions

Function	Action	Security	Configuration Parameters
Enable navigation to interlock object	<p>Check if an interlock object is connected to Inp_Intlk. This changes the interlock indicator on the Operator tab to a button that opens the interlocks faceplate.</p> <p>IMPORTANT: The name of the Interlock object in the controller must be this object's name with the suffix '_Intlk'. For example, if your P_MotorHO object has the name 'MotorHO123', then its Interlock object must be named 'MotorHO123_Intlk'.</p>	Engineering configuration (code E)	Cfg_HasIntlkObj
Enable navigation to overload object	<p>Check if an Overload object is connected. This displays the button, which opens the Overload faceplate, visible on the Operator tab.</p> <p>IMPORTANT: The name of the Overload object in the controller must be this object's name with the suffix '_Ovld'. For example, if your P_MotorHO object has the name 'MotorHO123', then its Overload object must be named 'MotorHO123_Ovld'.</p>		Cfg_HasOvldObj
Enable navigation to runtime object	<p>Check if a Runtime instruction is connected to the status of this instruction for accumulating total motor runtime and number of starts. This displays the 'hour meter' button, that opens the runtime faceplate, visible on the Operator tab.</p> <p>IMPORTANT: The name of the runtime object in the controller must be this object's name with the suffix '_RunTime'. For example, if your P_MotorHO object has the name 'MotorHO123', then its runtime object must be named 'MotorHO123_RunTime'.</p>		Cfg_HasRunTimeObj
Trip motor: On I/O fault	<p>Check to send the trip output to the motor if an I/O fault is detected.</p> <p>Clear this checkbox to show only the I/O fault status/alarm and not trip the motor if an I/O fault is detected.</p>		Cfg_ShedOnIOFault
Trip motor: On interlock trip	The motor always trips on an Interlock Trip. This item cannot be unchecked. It is displayed as a reminder that the interlock trip function always trips the motor.		None
Continue trip on fail to trip	<p>Check to keep sending the trip output to the motor on a trip, even if position feedback does not confirm the motor stopped.</p> <p>Clear this checkbox to stop sending the trip output to the motor when the motor trip times out and the fail to trip status is set.</p>		Cfg_ShedOnFailToTrip
Feedback delay for loopback test or when feedback is not used (seconds)	Type the amount of time (in seconds) the motor status shows tripping before showing a stopped or running status when the motor is tripped and the I/O are being simulated (Inp_Sim = 1).		Cfg_SimFdbkT

Diagnostics Tab

The Diagnostic tab provides indications that are helpful in diagnosing or preventing device problems, which can include specific reasons a device is 'Not Ready', device warnings and faults, warning and fault history, and predictive/preventive maintenance data.

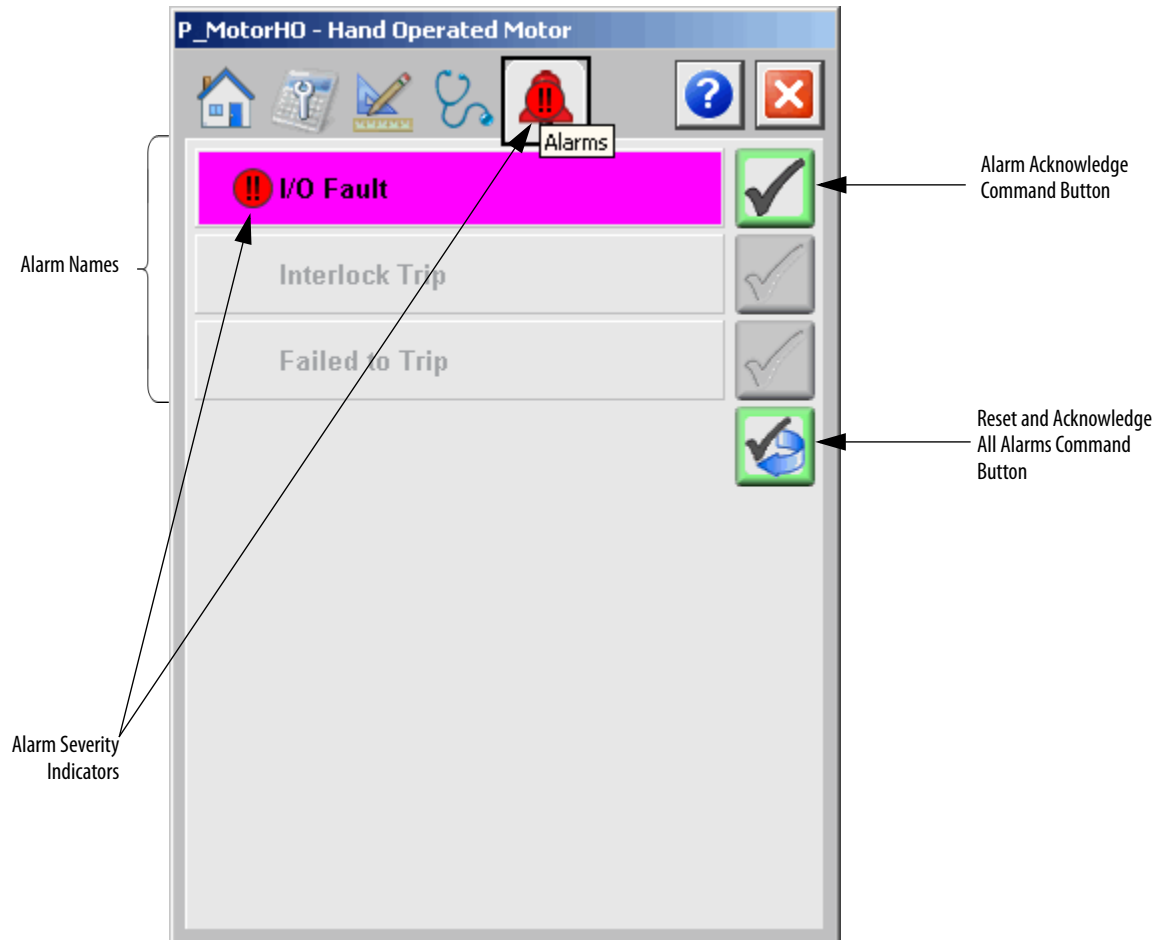
The Diagnostics tab displays possible reasons the device is not ready.



The preceding image indicates the device is not ready due to a device failure and that shed requires a reset before a restart can be performed.

Alarms Tab

The Alarms tab displays each configured alarm for the P_MotorHO instruction. The icon on the tab for the alarms page changes color based on the current active alarms. A blinking alarm icon indicates that one or more alarms must be acknowledged or the device must be reset.





Click an alarm name to open the P_Alarm faceplate for that alarm. From the P_Alarm faceplate, you can configure and perform additional operations on the alarm.

If an alarm is active, the panel behind the alarm changes color to match the severity of the alarm. The color of the bell icon at the top of the faceplate shows the severity of the highest active alarm, and the icon blinks if any alarm is unacknowledged or requires reset.

Color	Definition
Magenta	Urgent
Red	High
Yellow	Medium
Blue	Low
White (bell icon)	Alarm has cleared but is unacknowledged
Background (Light Gray)	No alarm

The following table shows the functions on the Alarms tab.

Table 17 - Alarms Tab Description

Function	Action	Security
Alarm Name	Click an alarm name to open the associated P_Alarm faceplate.	None
	Click to acknowledge the alarm.	Acknowledge Alarms (Code F)
	Click to reset and acknowledge all alarms.	

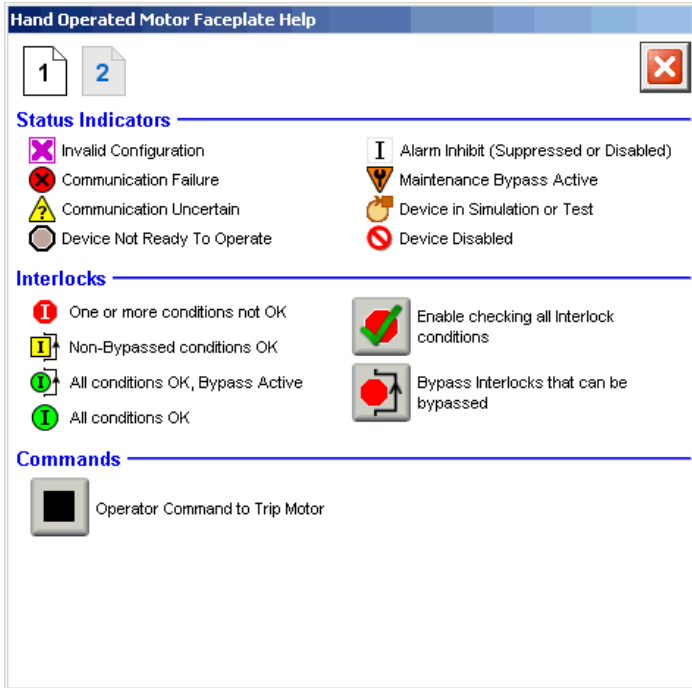
When the Reset and Acknowledge All Alarms button is enabled, the panel behind the alarm blinks, indicating the alarm requires acknowledgement or reset. The Alarm Acknowledge button is enabled if the alarm requires acknowledgement. Click the button with the check mark to acknowledge the alarm.

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

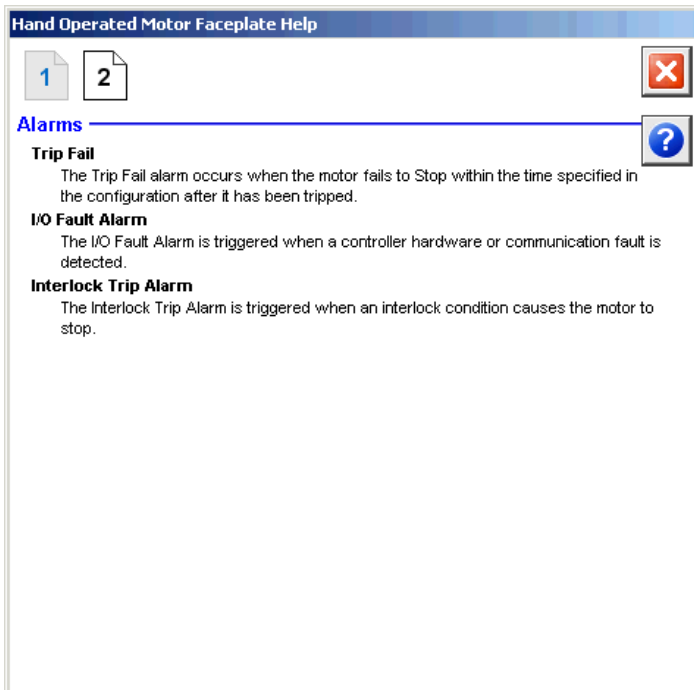
Hand-operated Motor Faceplate Help

The Faceplate Help is divided into two pages.

Faceplate Help Page 1



Faceplate Help Page 2



Notes:

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.

In addition, we offer multiple support programs for installation, configuration, and troubleshooting. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://www.rockwellautomation.com/services/online-phone>.

Installation Assistance

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
Outside United States or Canada	Use the Worldwide Locator at http://www.rockwellautomation.com/rockwellautomation/support/overview.page , or contact your local Rockwell Automation representative.

New Product Satisfaction Return

Rockwell Automation tests all of its products to help ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

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

Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete this form, publication [RA-DU002](#), available at <http://www.rockwellautomation.com/literature/>.

Rockwell Automation maintains current product environmental information on its website at <http://www.rockwellautomation.com/rockwellautomation/about-us/sustainability-ethics/product-environmental-compliance.page>.

Rockwell Otomasyon Ticaret A.Ş., Kar Plaza İş Merkezi E Blok Kat:6 34752 İçerenköy, İstanbul, Tel: +90 (216) 5698400

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444
Europe/Middle East/Africa: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640
Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

Publication SYSLIB-RM022G-EN-E - February 2017

Supersedes Publication SYSLIB-RM022F-EN-E - January 2016

Copyright © 2017 Rockwell Automation, Inc. All rights reserved. Printed in the U.S.A.