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SIMATIC

Process Control System PCS 7 APL Operator Guide (V9.0 SP3)

Operating Manual

06/2019
A5E39684785-AC

Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

⚠ DANGER

indicates that death or severe personal injury **will** result if proper precautions are not taken.

⚠ WARNING

indicates that death or severe personal injury **may** result if proper precautions are not taken.

⚠ CAUTION

indicates that minor personal injury can result if proper precautions are not taken.

NOTICE

indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

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Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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A5E39684785-AC
Ⓟ 08/2020 Subject to change

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Security information

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Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

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Introduction

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Introduction

The "Advanced Process Library" (APL) is the standard PCS 7 library for implementing automation and process control solutions. The numerous functions of APL are represented on the user interface by block icons and the corresponding faceplates. These feature display, control and navigation elements that enable a clear presentation of data from a process tag.

By using descriptions and instructions, the "APL Operator Guide" supports you in operating the APL block icons and faceplates. It offers information about the numerous displays, operator control functions and graphs, which you can use in your daily work.

Target group

The "APL Operator Guide" is aimed at people who operate and monitor APL block icons and faceplates.

Content

The "APL Operator Guide" contains information only for the operator control and monitoring of APL block icons and faceplates. You can find information on configuration with APL in the PCS 7 online help and the APL style guide.

The "APL Operator Guide" describes the main functions of the APL block icons and faceplates. The illustrations it contains should be regarded as examples and the charecteristics are project specific.

Motor and Valve blocks

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3.1 MotL - Motor (Large)

3.1.1 MotL views

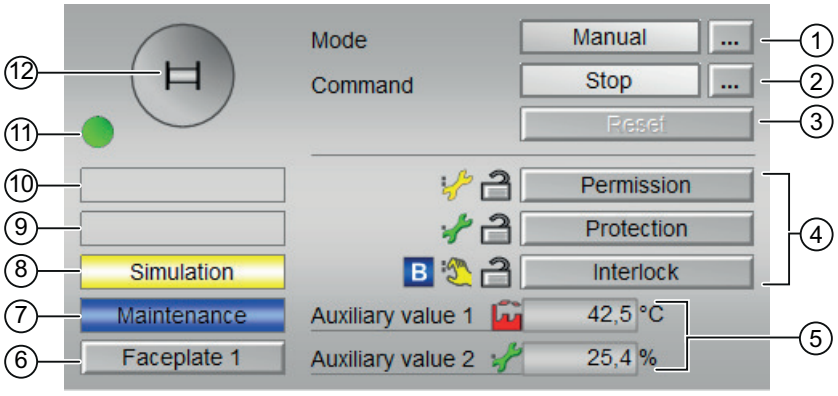
MotL views

The MotL views provides information on the following:

- MotL Standard view (Page 13)
- Alarm view (Page 450)
- Limit view of motors (Page 448)
- Trend view (Page 456)
- Parameter view for motors and valves (Page 446)
- MotL Preview (Page 18)
- Memo view (Page 453)
- Batch view (Page 452)

3.1.2 MotL Standard view

Standard view of MotL



The MotL Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Starting and stopping the motor

(3) Resetting the block

(4) Operator control and display area for interlock functions of the block

(5) Display of auxiliary values

(6) Navigation button for switching to the standard view of any faceplate

(7), (8), (9) and (10) Display area for block states

(11) Automatic preview

(12) Status display of the motor

(1) Displaying and switching the operating mode

This area provides information on the currently operating mode. In this block, the following operating modes are available:

1. Local mode
2. Automatic mode
3. Manual mode
4. Out of service mode

1. Local mode: This operating mode is used for motor unit. The control settings are made directly or through a locally available control station.
   In local mode, the following operations can be performed:
   - Start
   - Stop

   Note

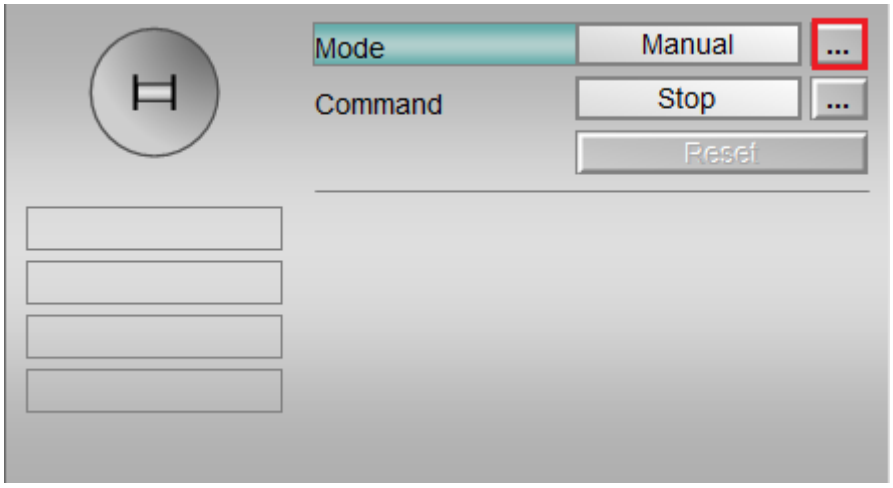
   A motor operated in local mode is controlled either by "local" signals or by feedback signals.

2. Automatic mode: In automatic mode, control of the device is performed automatically by the program.
3. Manual mode: In this mode, the control settings for the device are made manually by the operator. The operator can change the manipulated variable (output signal). The manipulated variable can be analog or binary.
4. Out of service mode: This operating mode is available to all devices that have an operating mode switchover and a direct connection to the process. This mode is intended for purposes of maintenance and servicing (replacing the device, for example). All functions of the device are disabled in this operating mode. Incoming or outgoing messages are not received or generated in this case. Only one operating mode switchover is possible in this operating mode.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

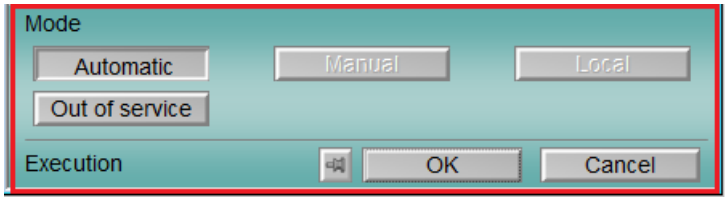
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.



4. If acknowledgement is required, click "OK".
5. The motor will be switched to the selected operating mode.

(2) Starting and Stopping the motor

This area displays the default operating state for the motor. In this block, the following operating states can be displayed and executed:

- Start
- Stop
- Rapid stop

Starting a motor

Follow the steps provided below to start a motor:

1. In the faceplate, select the appropriate mode that is required for the current operation.
2. Select [...] and choose the mode.
   The operating window is displayed as an extension of the faceplate.
3. To confirm execution, select the OK button.
   The mode changes to the respective mode you have selected.
4. Start the motor operation by providing the Start command.
   The operating window is displayed as an extension of the faceplate.

   Note

   Automatic mode

   In this mode, the motor is started automatically. You do not have the option to stop the motor.

5. In the operating window, confirm execution for the Start operation by clicking OK.
   The motor is started. This status is indicated with green color in the graphical block icon within the faceplate.

Stopping a motor

Follow the steps provided below to stop a motor:

1. In the faceplate, observe for the currently selected mode.
2. Select [...] and choose the Stop command.
   The operating window is displayed as an extension of the faceplate.
3. Next, confirm execution for the Stop operation by clicking OK.
   This will stop the motor that is in running state. The graphical block icon for motor changes to gray indicating the motor is stopped.

Rapid stop for motors

Rapid stop has the highest priority in all operating modes (manual and automatic as well as local mode) and operating states. Rapid stop is activated from the faceplate.

When you click on the "Rapid stop" button in the faceplate, the drive stops immediately with the status as displayed below:

Rapid stop is unlocked for all operating modes using the "Reset" button in faceplate. Rapid stop can be selected even with the motor in "Stop" state. In this case, the motor start is prevented.

(3) Resetting the block

Click "Reset" button in faceplate to reset the interlocks or errors.

(4) Operator control and display area for interlock functions of the block

This display is only visible when the corresponding block input is connected.

You can use this button to control the interlock functions of the block.

The following status is displayed in addition to the buttons:

- Interlock status

- Signal status

- Bypass information

(5) Display of auxiliary values

This display is only visible when the corresponding block input is connected.

(6) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected.

(7), (8), (9) and 10 Display area for block states

This area provides additional information on the operating state of the block (from high to low according to priority):

- Maintenance
- Simulation
- Delay
- Motor protection
- External error
- Status error
- Control error
- Invalid signal
- Changeover error
- Forced start
- Forced stop
- Request 0/1 : A reset to "automatic mode" is expected.

(11) Automatic preview

This display is only visible in "manual mode", "local mode" or with a reset request in "automatic mode", when the current output signals are not identical to the control in "automatic mode".

The display shows what state the motor would assume if you switched from "manual" or 'local" mode to "automatic mode", or performed a reset to "automatic mode".

(12) Status display of the motor

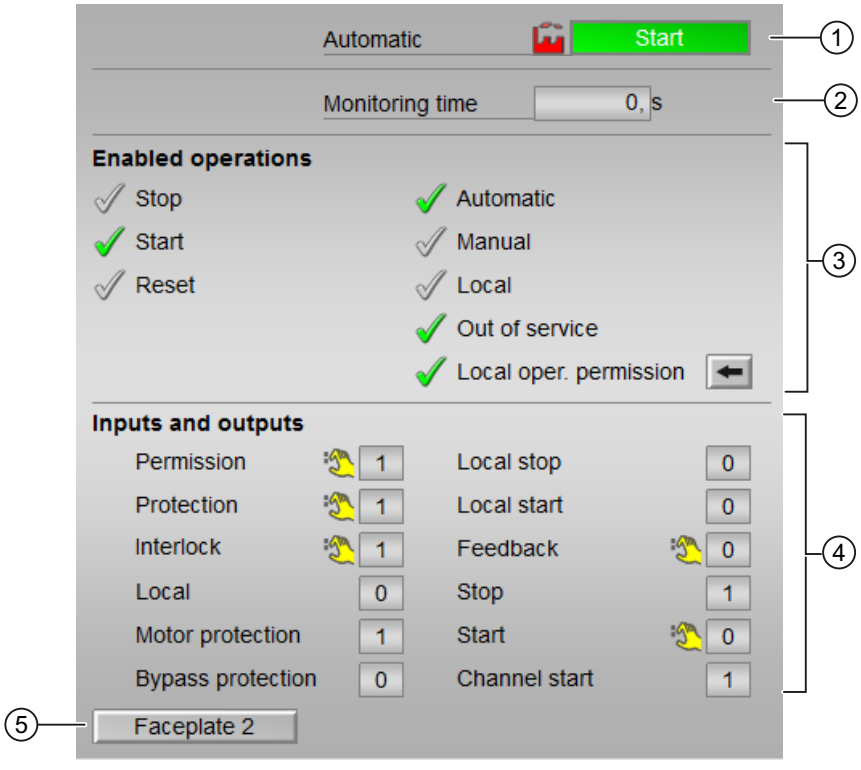
The current status of the motor is graphically displayed in this area.

The color code indicates the following status:

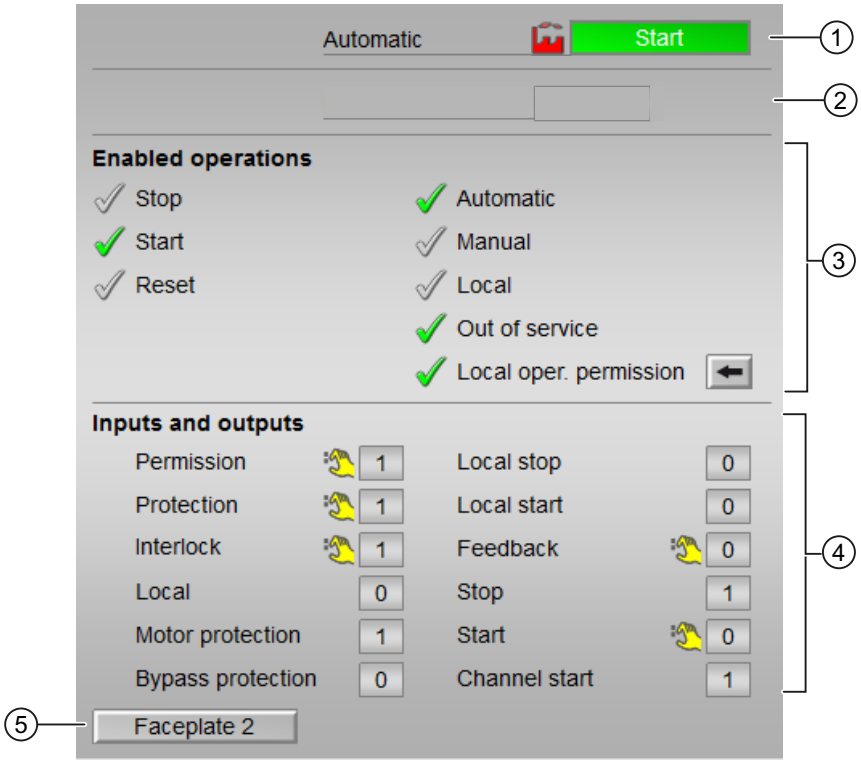
- Green: Motor is running
- Gray: Motor idle
- Red: A fault has occurred.

3.1.3 MotL Preview

Preview of MotL



Display of the remaining monitoring time is visible.



Display of the remaining monitoring time is not visible.

With respect to the screenshots shown above, the MotL preview consists of the following areas:

(1) Automatic preview

(2) Monitoring time

(3) Enable operations

(4) Displaying current control signals

(5) Navigation button for switching to the standard view of any faceplate

(1) Automatic preview

Automatic preview shows the state in which the drive is set after a change from the "manual" mode or "Local" mode to the "automatic" mode.

If the motor is already in "automatic" mode, the current operating state is displayed in this area.

(2) Monitoring time

In this area, the remaining "Monitoring time" is displayed in seconds.

(3) Enable operations

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: The operator can control this parameter
- Gray check mark: The operator cannot control this parameter at this time due to the process
- Red cross: The operator cannot control this parameter due to the configured AS operator permissions

Information about the feasibility of the below mentioned actions are displayed in this area of preview window.

Action	Description
Start	Start motor
Stop	Stop motor
Reset	Reset for interlocks and errors
Automatic	Switch to automatic mode
Manual	Switch to manual mode
Local	Switch to local mode
Out of service	Switch to "Out of service" operating mode
Local operator permission	Whether or not the device is released for operation generally depends on this permission. The local operator permission can be set individually for each device. Use the ← button to switch to the standard view of the OpStations block. Devices at work place can be released or locked independent of each other.
Monitoring time	Display of the remaining monitoring time

(4) Displaying current control signals

This area shows the most important parameters of the device with the current control.

The following table shows the parameters that are displayed in this area:

Parameter	Control
Permission	0: No activation enable
	1: Enable for start/stop for motors from the neutral position
Protection	0: Safety interlock enabled A reset must be performed once the interlock conditions are gone
	1: Safety interlock disabled
Interlock	0: Interlock enabled A reset is not necessary once the interlock conditions are gone.
	1: Interlock disabled
Motor protection (only for motors)	0: Motor protection in effect
	1: Motor protection not in effect

Parameter	Control
Interlock deact.	0: Bypass disabled
	1: Bypassing of interlock in local mode or during process value simulation
Local correct	0: No operation in local mode
	1: Operation in local mode
Start / open local	1: Start in local mode
Stop / close local	1: Stop in local mode
Feedback (only for motors)	1: Motor has started and is running
Start (only for motors)	1: Start motor
Stop (only for motors)	1: Stop motor
Channel Start	Signal from the output channel block "Start"

(5) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected.

3.2 MotS - Motor (Small)

3.2.1 MotS views

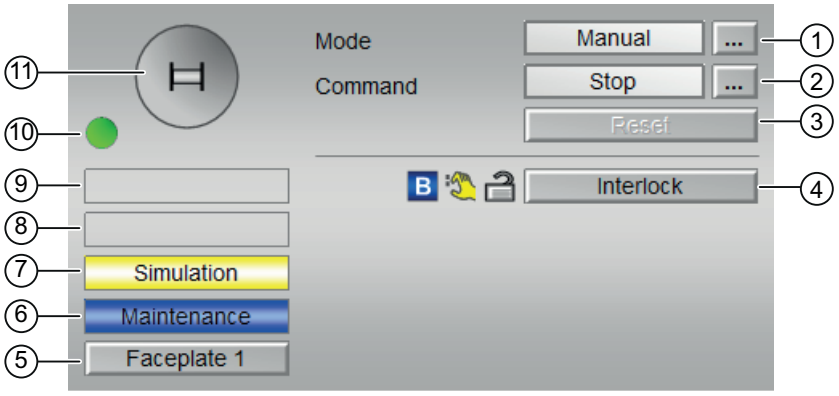
MotS views

The MotS views provides information on the following:

- MotS Standard view (Page 22)
- Alarm view (Page 450)
- Trend view (Page 456)
- Parameter view for motors and valves (Page 446)
- MotS Preview (Page 27)
- Memo view (Page 453)
- Batch view (Page 452)

3.2.2 MotS Standard view

Standard view of MotS



The MotS Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Starting and stopping the motor

(3) Resetting the block

(4) Operator control and display area for interlock functions of the block

(5) Navigation button for switching to the standard view of any faceplate

(6), (7), (8) and (9) Display area for block states

(10) Automatic preview

(11) Status display of the motor

(1) Displaying and switching the operating mode

This area provides information on the currently operating mode. In this block, the following operating modes are available:

1. Local mode
2. Automatic mode
3. Manual mode
4. Out of service mode

1. Local mode: This operating mode is used for motor unit. The control settings are made directly or through a locally available control station.
   In local mode, the following operations can be performed:
   - Start
   - Stop

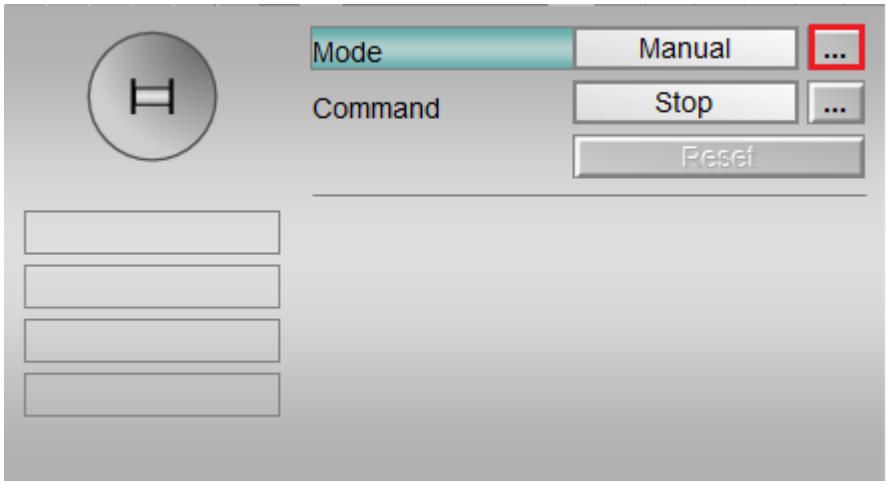
   Note

   A motor operated in local mode is controlled either by "local" signals or by feedback signals.
2. Automatic mode: In automatic mode, control of the device is performed automatically by the program.
3. Manual mode: In this mode, the control settings for the device are made manually by the operator. The operator can change the manipulated variable (output signal). The manipulated variable can be analog or binary.
4. Out of service mode: This operating mode is available to all devices that have an operating mode switchover and a direct connection to the process for example, with a connection to the process tag. This mode is mainly intended for the purpose of maintenance and servicing (replacing the device, for example). All device functions are disabled in this mode. Incoming and outgoing messages are not received or generated in this case. Only one operating mode switchover is possible in this operating mode. All outputs for the motor are set to the neutral position in this operating mode.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

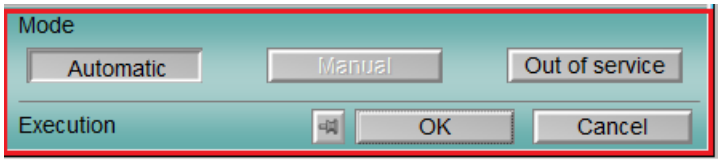
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.



4. If acknowledgement is required, click "OK".
5. The motor will be switched to the selected operating mode.

(2) Starting and stopping the motor

This area displays the default operating state for the motor. In the block, the following operating states can be displayed and executed:

- Start
- Stop

Starting a motor

Follow the steps provided below to start a motor:

1. In the faceplate, select the appropriate mode required for the current operation.
2. Select [...] and choose the respective mode.
   The operating window is displayed as an extension of the faceplate.
3. To confirm execution, select the OK button.
   The mode changes to the respective mode you have selected.
4. Start the motor operation by providing the Start command.
   The operating window is displayed as an extension of the faceplate.

   Note

   Automatic mode

   In this mode, the motor is started automatically. You do not have the option to stop the motor.

5. In the operating window, confirm execution for the Start operation by clicking OK.
   The motor is started. This status is indicated with the green color in the graphical block icon within the faceplate.

Stopping a motor

Follow the steps provided below to stop a motor:

1. In the faceplate, look for the currently selected mode.
2. Select [...] and choose the Stop command.
   The operating window is displayed as an extension of the faceplate.
3. Next, confirm execution for the Stop operation by clicking "OK".
   This will stop a motor that is in running state. The graphical block icon for the motor changes to the color gray, indicating that the motor has stopped.

(3) Resetting the block

Click "Reset" button in faceplate to reset the interlocks or errors.

(4) Operator control and display area for interlock functions of the block

This display is only visible when the corresponding block input is connected.

You can use this button to control the interlock functions of the block.

The following status is displayed in addition to the buttons:

- Interlock status

- Signal status

- Bypass information

(5) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected.

(6), (7), (8) and (9) Display area for block states

This area provides additional information on the operating state of the block (from high to low according to priority):

- Maintenance
- Simulation
- Motor protection
- External error
- Status error
- Control error
- Invalid signal
- Request 0/1: A reset to "automatic mode" is expected.

(10) Automatic preview

This display is visible only in "manual mode", "local mode" or with a reset request in "automatic mode", when the current output signals are not identical to the control in "automatic mode".

The display shows what state the motor would assume if you switched from "manual" or "local" mode to "automatic mode", or performed a reset to "automatic mode".

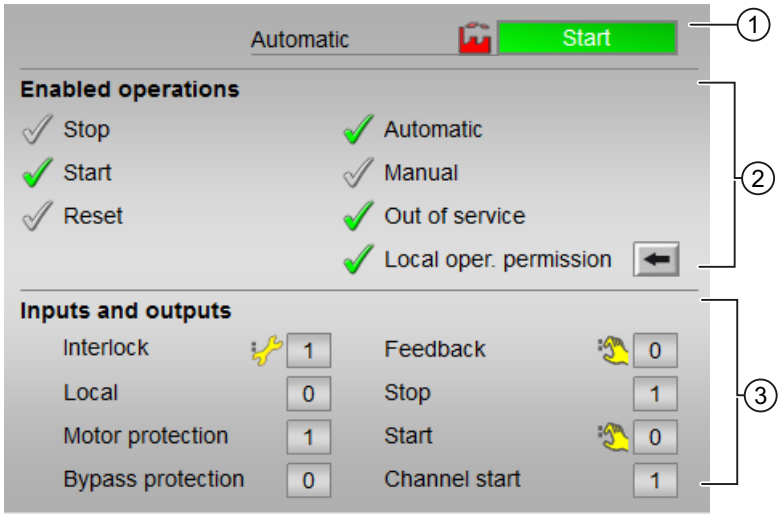
(11) Status display of the motor

The current status of the motor is graphically displayed here:

- Green: Motor is running
- Gray: Motor idle
- Red: A fault has occurred.

3.2.3 MotS Preview

Preview of MotS



With respect to the screenshots shown above, the MotS preview consists of the following areas:

(1) Automatic preview

(2) Enable operations

(3) Displaying current control signals

(1) Automatic preview

This area of the preview window displays the block status after it has switched from manual or local mode to automatic mode.

If the block is in automatic mode, the current block state is displayed.

(2) Enabled operations

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: The operator can control this parameter
- Gray check mark: The operator cannot control this parameter at this time due to the process
- Red cross: The operator cannot control this parameter due to the configured AS operator permissions

The list of enabled operations are explained below:

Action	Description
Start	Start motor
Stop	Stop motor
Reset	Reset motor after interlocks or errors
Automatic	Switch to automatic mode
Manual	Switch to manual mode
Out of service	Switch to "Out of service" operating mode
Local operator permission	Use the ← button to switch to the standard view of the faceplate block.

(3) Displaying current control signals

This area displays the important parameters for this block with the current selection:

Operation	Description
Interlock	0 = Interlocking without reset is active; the block can be operated without reset once the interlocking condition has disappeared.
	1 = Good state
Local correct	1 = control signal for local mode (LocalLi) is active
Motor protection	1 = motor is in "good" state
	0 = motor protection in effect
Interlock deact	0 = Bypass disabled
	1 = Bypassing interlock in "local mode" and in "simulation"
Feedback->	1 = motor has started and is running
Stop	1 = stop motor
Start	1 = start motor
Channel start	Signal from the output channel block for "Start"

3.3 MotRevL - Reversible motor

3.3.1 MotRevL views

MotRevL views

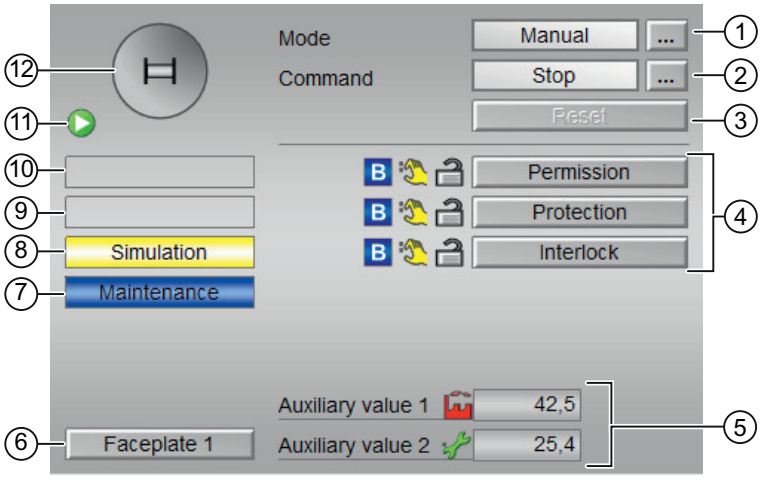
The MotRevL views provides information on the following:

- MotRevL Standard view (Page 29)
- Alarm view (Page 450)
- Limit view of motors (Page 448)
- Trend view (Page 456)
- Parameter view for motors and valves (Page 446)
- MotRevL Preview (Page 37)
- Memo view (Page 453)
- Batch view (Page 452)

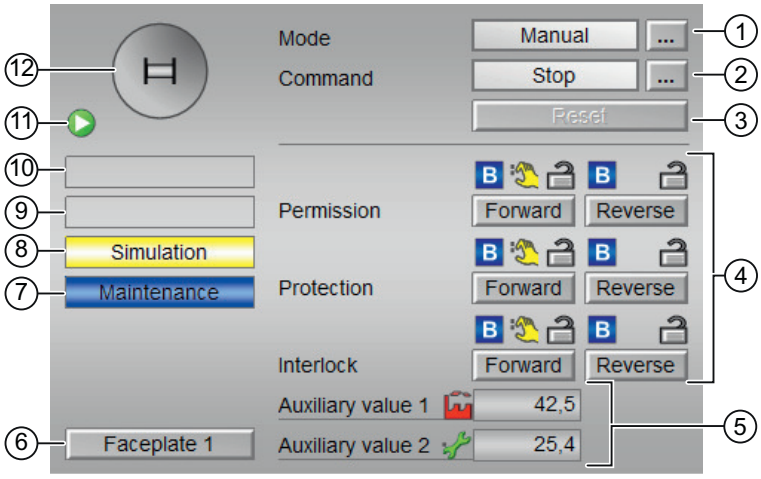
3.3.2 MotRevL Standard view

Standard view of MotRevL

Option 1:



Option 2:



The MotRevL Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Starting and stopping the motor

(3) Resetting the block

(4) Operating range for interlock functions of the block

(5) Display of auxiliary values

(6) Navigation button for switching to the standard view of any faceplate

(7), (8), (9) and (10) Display area for block states

(11) Automatic preview

(12) Status display of the motor

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. In this block, the following operating modes are available:

1. Local mode
2. Automatic mode
3. Manual mode
4. Out of service mode

1. Local mode: This operating mode is used for the motor unit. The control settings are made directly or through a locally available control station. The following actions can be performed on the motor in local mode:
   - Starting the motor in forward
   - Starting the motor in reverse
   - Stopping the motor

   Note

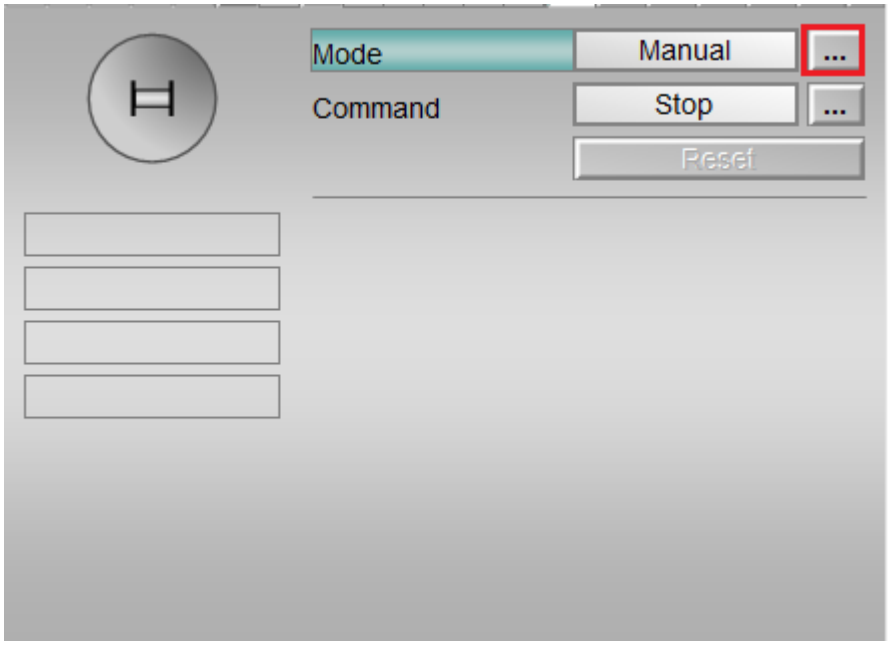
   A motor operated in local mode is controlled either by "local" signals or by feedback signals.

2. Automatic mode: In automatic mode, the following actions can be performed on the motor:
   - Starting the motor in forward
   - Starting the motor in reverse
   - Stopping the motor
3. Manual mode: In this mode, the control settings for the device are made manually by the operator. The operator can change the manipulated variable (output signal). The manipulated variable can be analog or binary.
   In manual mode, the following actions can be performed on the motor:
   - Starting the motor in forward
   - Starting the motor in reverse
   - Stopping the motor
4. Out of service mode: The out of service operating mode is available to all devices that have an operating mode switchover and a direct connection to the process (with a connection to process tag, for example).
   This operating mode is intended for the purpose of maintenance and servicing (replacing the device, for example). All functions of the device are disabled in the "Out of service" mode. Incoming and outgoing messages are not received or generated in this case. Only one operating mode switchover is possible in this mode.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

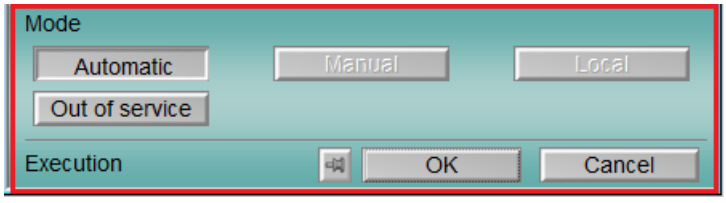
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.



4. If acknowledgement is required, click "OK".
5. The motor will be switched to the selected operating mode.

(2) Starting and stopping the motor

This area displays the default operating state for the motor. In this block, the following operating states can be displayed and executed:

- Start →
- Start ←

- Stop
- Rapid stop

Starting a motor

The reversible motor block can be used to start the motor in both forward and reverse directions with respect to the operator input.

Follow the steps below to start a motor:

1. In the faceplate, select the appropriate mode that is required for current operation.
2. Select [...] and choose the mode.
   The operating window is displayed as an extension of the faceplate.
3. To confirm execution, select the "OK" button.
   The mode changes to the mode you have selected.
4. Start the desired motor operation (forward or reverse) by providing the Start command.
   The operating window is displayed as an extension of the faceplate.

   Note

   Operating modes

   The starting of a motor in forward and reverse directions can be controlled in manual, automatic and local modes.

5. In the operating window, confirm execution for the Start operation by clicking "OK".
   The motor is started in the desired direction. This status is indicated with the color green in the graphical block icon within the faceplate.

Stopping a motor

Follow the steps below to stop a motor:

1. In the faceplate, observe for the currently selected mode.
2. Select [...] and choose the mode.
   The operating window is displayed as an extension of the faceplate.
3. Next, confirm execution for the Stop command by clicking "OK".
   This will stop the motor that is in running state. The graphical block icon for the motor changes to gray indicating the stopping of the motor.

Rapid stop for motors

Rapid stop has the highest priority in all operating modes (manual and automatic mode as well as local mode) and operating states. It is activated via the faceplate.

Note

The Rapid stop is supported only by "Large" blocks. Small blocks do not support rapid stop.

When the operator clicks on the "Rapid stop" button in faceplate, the drive stops immediately. This is shown as follows in the faceplate.

The Rapid stop is unlocked for all operating modes using the "Reset" button in faceplate. Rapid stop can be selected even with the motor in stop state. In this case, the motor start is prevented.

(3) Resetting the block

Click "Reset" button in faceplate to reset the interlocks or errors.

(4) Operator range for interlock functions of the block

This display is only visible when the corresponding block input is connected.

You can use this button to control the interlock functions of the block.

The following status is displayed in addition to the buttons:

- Interlock status

- Signal status

- Bypass information

Depending on the block, a maximum of three types of interlocks can be used. The block MotRevL supports the following interlocks:

Option 1

- Activation enable ("Permission")
- Interlock with reset ("Protection")
- Interlock without reset ("Interlock")

Option 2

- Activation enable forward
- Activation enable reverse
- Interlock forward without reset
- Interlock reverse without reset
- Interlock forward with reset
- Interlock reverse with reset

MotRevL block with interlock function and Option 1

- Activation enable (Permission): The activation enable makes it possible to leave the neutral position of the block in response to operator input. The activation enable has no effect if the block is not in neutral position.
- Interlock with reset (Protection): An active interlock condition brings the block to neutral position. After the interlock conditions are cleared, the operator or an activation sequence must perform a reset to once again enable activation of the control according to the input parameters.
- Interlock without reset (Interlock): An active interlock condition brings the block to neutral position. After the interlock condition has gone, the currently active control function becomes active again in automatic or local mode. In manual mode, the faceplate can be operated again after the interlock condition has gone.

MotRevL block with interlock function and Option 2

- Activation enable forward (Enable forward): This activation enable makes it possible to leave the neutral position of the block in forward direction in response to operator input. The activation enable has no effect if the block is not in neutral position.
- Activation enable reverse (Enable reverse): This activation enable makes it possible to leave the neutral position of the block in reverse direction in response to operator input. The activation enable has no effect if the block is not in neutral position.
- Interlock forward without reset (Interlock forward): A pending forward interlock condition only puts the block in the neutral position when the motor is running in this direction. Once the forward interlock condition is cleared, the currently active forward control becomes active again in automatic or local mode. In manual mode, the faceplate can be operated forward again.
- Interlock reverse without reset (Interlock reverse): A pending reverse interlock condition only puts the block in the neutral position when the motor is running in this direction. Once the reverse interlock condition is cleared, the currently active reverse control becomes active again in automatic or local mode. In manual mode, the faceplate can be operated reverse again.
- Interlock forward with reset (Protection forward): A pending forward interlock condition only puts the block in neutral position when the motor is running in this direction. Once the interlock condition is cleared, the operator or an active sequence must perform a reset to once again enable activation of the forward control according to input parameters.
- Interlock reverse with reset (Protection reverse): A pending reverse interlock condition only puts the block in neutral position when the motor is running in this direction. Once the interlock condition is cleared, the operator or an active sequence must perform a reset to once again enable activation of the reverse control according to input parameters.

(5) Display of auxiliary values

This display is only visible when the corresponding block input is connected.You can use this area to display two auxiliary values that have been configured in the engineering system (ES).

(6) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected. Use this navigation button to open the standard view of a block configured in the engineering system (ES).

(7), (8), (9) and (10) Display area for block states

This area provides additional information on the operating state of the block:

- Maintenance
- Simulation
- Delay
- Motor protection
- External error
- Status error
- Control error
- Invalid signal
- Changeover error
- Forced stop
- Forced start →
- Forced start ←
- Request 0/1: A reset to "automatic mode" is expected.

(11) Automatic preview

This display is only visible in "manual mode", "local mode", or with a reset request in "automatic mode", when the current output signals are not identical to the control in "automatic mode".

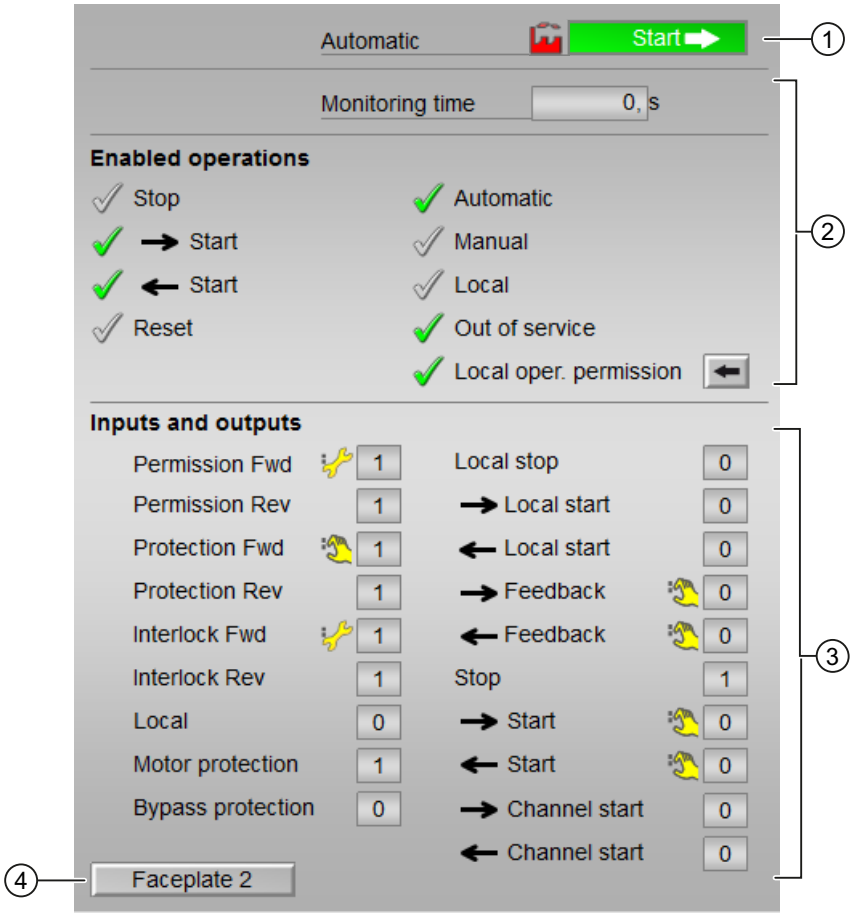
The display shows what state the motor would assume if you switched from "manual" or "local" mode to "automatic mode", or performed a reset to "automatic mode".

(12) Status display of the motor

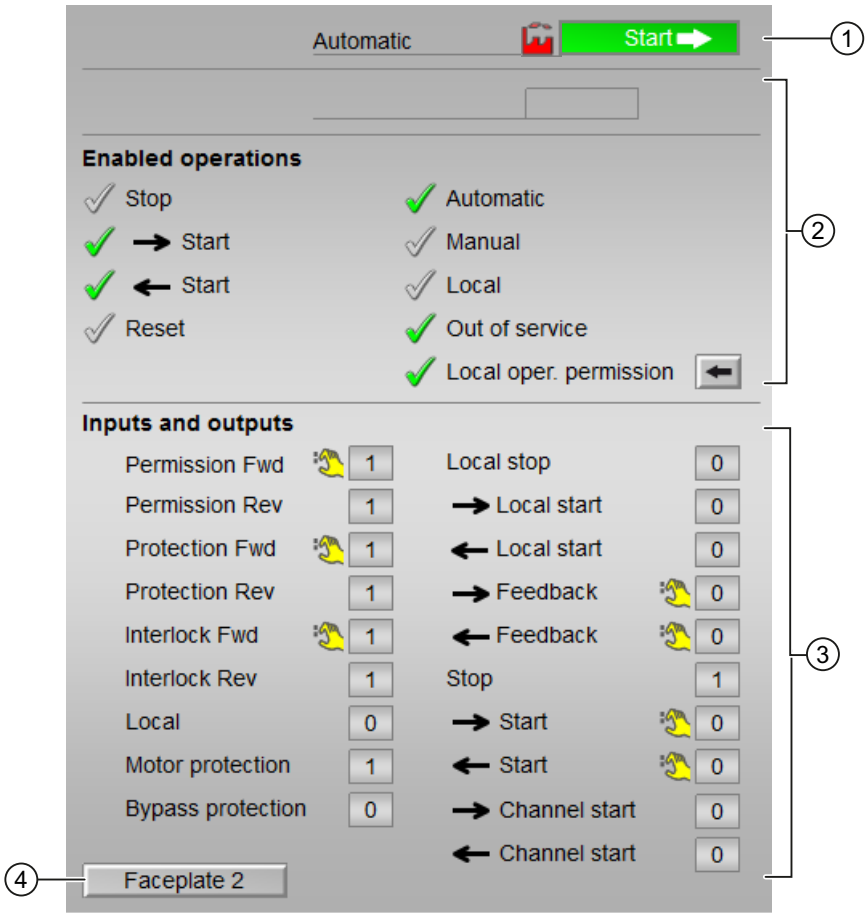
The current status of the motor is graphically displayed in this area.

3.3.3 MotRevL Preview

Preview of MotRevL



Display of the remaining monitoring time is visible.



Display of the remaining monitoring time is not visible.

(1) Automatic preview

(2) Enabled operations

(3) Displaying current control signals

(4) Navigation button for switching to standard view of any faceplate

(1) Automatic preview

This area diplays the block status after it has switched from manual to auomatic mode.

If the block is in automatic mode, the current block state is displayed.

(2) Enabled operations

This area displays all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: The operator can control this parameter.
- Gray check mark: The operator cannot control this parameter at this time due to the process.
- Red cross: The operator cannot control this parameter due to the configured operator permissions.

The following enabled operations are displayed in the faceplate area:

Action	Description
Stop	You can stop the motor
Start →	You can start the motor in forward direction
Start ←	You can start the motor in reverse direction
Reset	You can reset the motor after interlocks or errors
Automatic	You can switch to automatic mode
Manual	Manual: You can switch to manual mode
Local	You can switch to local mode
Out of service	You can switch to out of service operating mode
Local operator permission	Use the <-- button to switch to standard view of the block
Monitoring time	Display of the remaining monitoring time

(3) Displaying current control signals

This area displays the most important parameters for this block with current selection:

Parameter	Control
Permission	0 = No OS release for energizing motor
	1 = Enable for starting or stopping from the neutral position
Enable	0 = No OS release for energizing motor
	1 = Enables start from the neutral position
Permission Fwd	0 = No OS release for energizing motor in forward
	1 = Enables start forward from the neutral position
Permission Rev	0 = No OS release for energizing motor in reverse
	1 = Enables start reverse from the neutral position
Protection	0 = Protective interlocking is effective; once the interlocking condition has disappeared, you will have to reset the block
	1 = Good state
Protection Fwd	0 = Protective forward interlocking is effective; once the interlocking condition has disappeared,you will have to reset the block
	1 = Good state

Parameter	Control
Protection Rev	0 = Protective reverse interlocking is effective; once the interlocking condition has disappeared,you will have to reset the block
	1 = Good state
Interlock	0 = Interlocking without reset is active; you can operate the block without reset once the interlocking condition has disappeared
	1 = Good state
Interlock Fwd	0 = Forward interlocking without reset is active; you can operate the block without reset once theinterlocking condition has disappeared
	1 = Good state
Interlock Rev	0 = Reverse interlocking without reset is active; you can operate the block without reset once theinterlocking condition has disappeared
	1 = Good state
Local correct	1 = Control signal for local mode is active
Motor protection	1 = Motor is in good state
	0 = Motor protection in effect
Interlock deact	0 = Bypass disabled
	1 = Bypass interlock in local mode and in simulation
Local stop	1 = Stopping the motor in local mode
Local start →	1 = Forward starting the motor in local mode
Local start ←	1 = Reverse starting the motor in local mode
Feedback →	1 = Motor has started and is running forward
Feedback ←	1 = Motor has started and is running reverse
Stop	1 = Stop motor
Start →	1 = Start motor in forward
Start ←	1 = Start motor in reverse
Channel Start →	Signal from output channel block for "Start" forward
Channel Start ←	Signal from output channel block for "Start" reverse

(4) Navigation button for switching to standard view of any faceplate

This display is only visible when the corresponding block input is connected.

Use this navigation button to open the standard view of a block. The visibility of this navigation button depends on the configuration.

3.4 MotSpdCL - Controllable reversible motor

3.4.1 MotSpdCL views

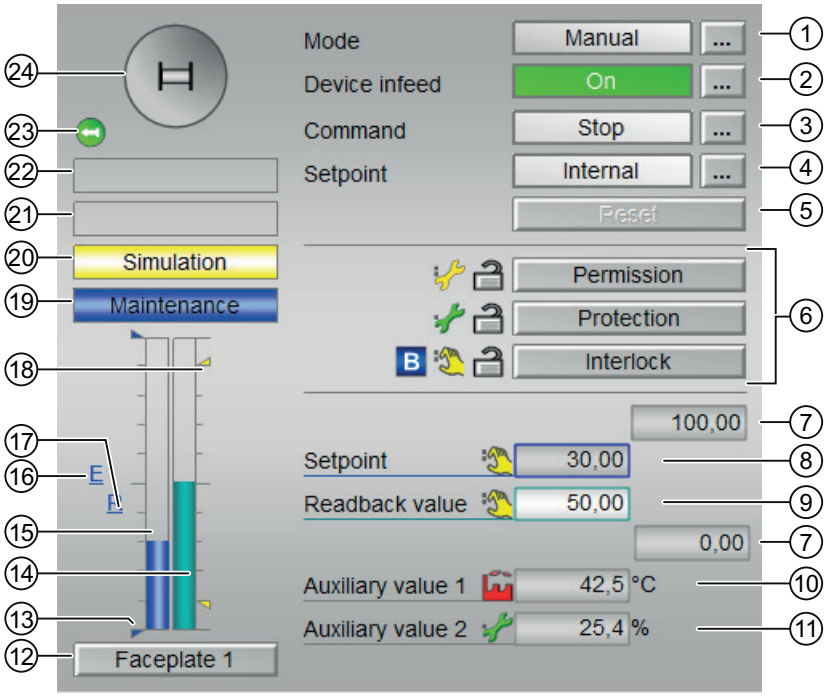
MotSpdCL views

The MotSpdCL views provides information on the following:

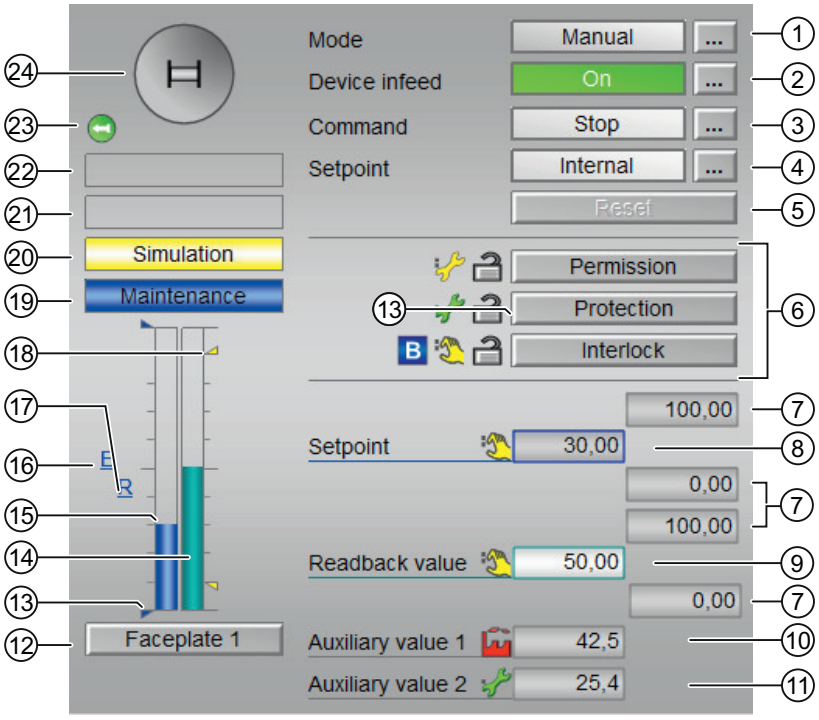
- MotSpdCL Standard view (Page 42)
- Alarm view (Page 450)
- Limit view of motors (Page 448)
- MotSpdCL limit view for readback values (Page 444)
- Trend view (Page 456)
- Ramp view (Page 457)
- MotSpdCL Parameter view (Page 55)
- MotSpdCL Preview (Page 52)
- Memo view (Page 453)
- Batch view (Page 452)

3.4.2 MotSpdCL Standard view

Standard view of MotSpdCL



Option 1: Setpoint and readback value have the same area of the feedback value.



Option 2: Setpoint and readback value have separate areas.

The MotSpdCL Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Separate switching on/off of the device infeed

(3) Starting and stopping the motor

(4) Switching the setpoint internal / external

(5) Resetting the block

(6) Operating range for the interlock functions of the block

(7) High and low scale range for the setpoint

(8) Displaying and changing the setpoint including signal status

(9) Displaying the readback value

(10) and (11) Displaying auxiliary values

(12) Navigation button for switching to the standard view of any faceplate

(13) Displaying the limits

(14) Bar graph for the readback value

(15) Bar graph for the setpoint

(16) Displaying external setpoint

(17) Target setpoint display of the setpoint ramp

(18) Limit display

(19), (20), (21), (22) Display area for block states

(23) Automatic preview

(24) Status display of the motor

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. In this block, the following operating modes are available:

1. Local mode
2. Automatic mode
3. Manual mode
4. Out of service mode

1. Local mode: This operating mode is used for the motor unit. The control settings are made directly or through a locally available control station

   Note

   Local mode for MotSpdCL block

   The motor operated in "local mode" is controlled either by "local" signals or by the feedback signals.

   The following actions can be controlled in the local mode:

   – Starting in forward direction
   – Starting in reverse direction
   – Stopping

2. Automatic mode: In automatic mode, control of the device is performed automatically by the program.
   The following actions can be controlled in the automatic mode:

   – Starting in forward direction
   – Starting in reverse direction
   – Stopping

3. Manual mode: In this mode, the control settings for the device are made manually by the operator. The operator can change the manipulated variable (output signal). The manipulated variable can be analog or binary.
   The following actions can be controlled in the manual mode:
   - Starting in forward direction
   - Starting in reverse direction
   - Stopping
4. Out of service mode: The "Out of service" operating mode is available to all devices that have an operating mode switchover and a direct connection to the process (for example, with a connection to a process tag). This operating mode is intended for purposes of maintenance and servicing (for example, replacing the device). All functions of the device are disabled in the "Out of service" operating mode. Incoming and outgoing messages are not received or generated in this case. Only one operating mode switchover is possible in this operating mode.

Note

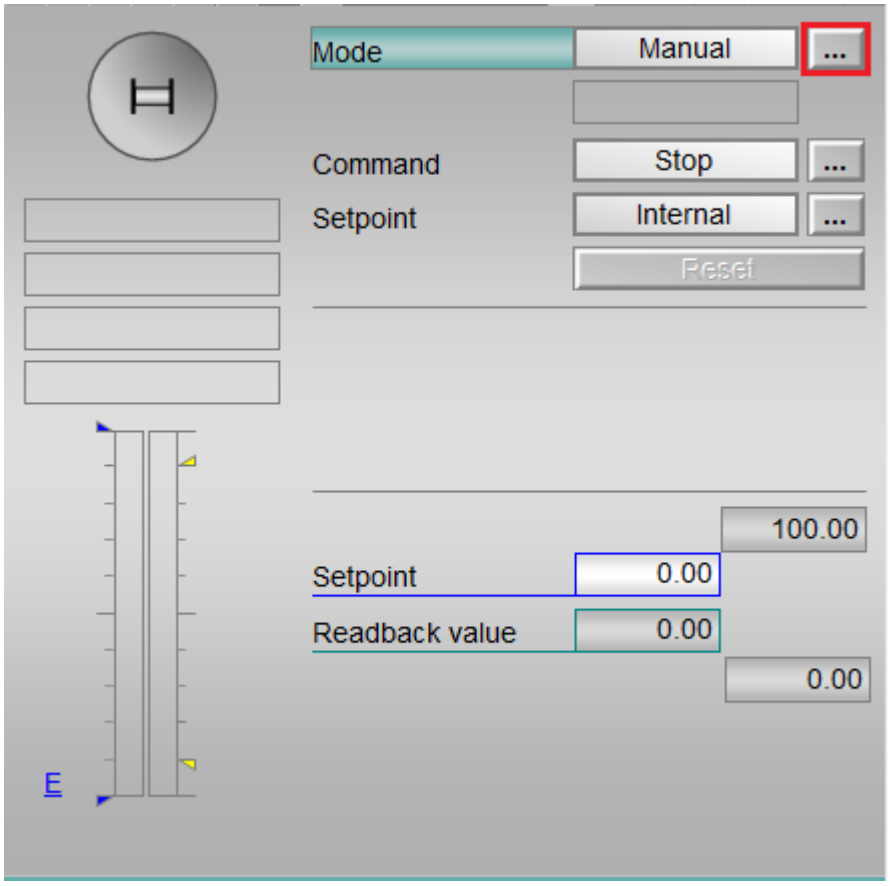
Out of service mode for MotSpdCL block

In case of external setpoint value specification, the block switches to internal setpoint value specification.

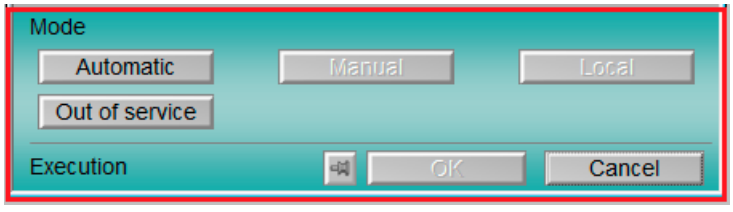
Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

1. Ensure the faceplate containing the respective block is open.
2. Click "[...]" under "Mode" to open the operating window.



3. Select the respective button for the desired operating mode.



4. Click "OK" if an acknowledgement is required,.
   The motor is switched to the selected operating mode.

(2) Separate switching on/off of the device infeed

This area displays the default operating state for the device infeed. In this block, the following states can be displayed and executed;

- "On"
- "Off"

(3) Starting and stopping the motor

This area displays the default operating state for the variable motor. In this block, the following states can be displayed and executed:

- "Start |→"
- "Start ←|"
- "Stop"
- "Rapid stop"

Starting the motor

The MotSpdCL block can be used to start the motor in both forward and reverse directions with respect to the operator input.

Follow the steps below to start a motor:

1. In the faceplate, Click "[...]" under "Mode"
   The operating window is displayed as an extension of the faceplate.
2. Click on the appropriate mode.
3. Click "OK" to confirm the execution.The mode changes to the respective mode that you have selected.
4. Start the desired motor operation ("Forward" or "Reverse") by providing the Start command.
   The operating window is displayed as an extension of the faceplate.

   Note

   Operating modes

   The starting of the motor in forward and reverse directions can be controlled in manual, automatic and local modes.

5. In the operating window, confirm execution for the Start operation by clicking "OK".
   The motor is started in the selected direction. This status is indicated with the color green in the graphical block icon within the faceplate.

Stopping the motor

Follow the steps below to stop a motor:

In the faceplate, look at the currently selected mode.

1. In the faceplate, Click "[...]" under "Mode"
   The operating window is displayed as an extension of the faceplate.
2. Select the desired motor operation ("Forward" or "Reverse").

3. Click "OK" to confirm the execution of the Stop command.
4. This stops the motor that is in running state. The graphical block icon for the motor changes to gray, indicating that the motor is stoppedstop of the motor.

Rapid stop for motors

Rapid stop has the highest priority in all operating modes (manual and automatic mode as well as local mode) and operating states. It is activated through the faceplate.

Note

Rapid stop for MotSpdCL

The Rapid stop is supported only by "Large" blocks. Small blocks do not support rapid stop.

When the operator clicks on the "Rapid stop" button in faceplate, the drive stops immediately. This is shown as follows in the faceplate.

The Rapid stop is unlocked for all operating modes using the "Reset" button in the faceplate.

Rapid stop can be selected even with the motor in stop state. In this case, the motor start is prevented.

(4) Switching the setpoint internal/external

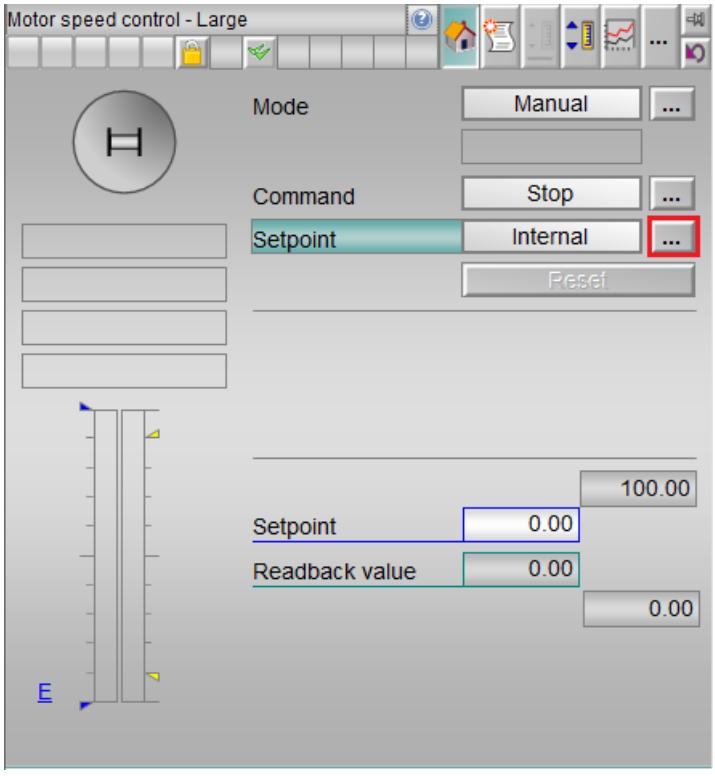
This area displays how to specify the setpoint. The setpoint can be specified as follows:

- By the application ("External")
- By the user directly in the faceplate ("Internal").

Switching setpoint type

Follow the steps mentioned below to switch to a particular setpoint type:

1. Click "[...]" next to "Setpoint"



The operating window is displayed as an extension of the faceplate.

2. Choose the setpoint type ("External / Internal")
3. To confirm execution, Click "OK".
   The setpoint type changes to the respective type you have selected.

(5) Resetting the block

In the faceplate, click "Reset" button to reset the block when any interlock or error has occured.

(6) Operating range for the interlock functions of the block

This display is only visible when the corresponding block input is connected.

The following status is displayed in addition to the buttons:

- Interlock status

- Signal status

- Bypass information

(7) High and low scale range for the setpoint

This area is already set and cannot be changed.

(8) Display and change the setpoint including signal status

This area displays the current setpoint with the corresponding signal status.

The setpoint specification also needs to be set to "Internal" for this block.

(9) Displaying the readback value

This area displays the current readback value with the corresponding signal status.

(10) and (11) Display of auxiliary values

This display is only visible when the corresponding block input is connected. You can use this area to display two auxiliary values that have been configured in the engineering system (ES).

(12) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected.

Use this navigation button to open the standard view of a block configured in the engineering system (ES). .

(13) Displaying the limits

These triangles display the setpoint limits configured.

(14) Bar graph for the readback value

This area displays the current readback value in the form of a bar graph.

(15) Bar graph for the setpoint

This area displays the current setpoint value in the form of a bar graph.

(16) Displaying external setpoint

This display [E] is only visible when you have selected "Internal" setpoint specification. It displays the external setpoint that would apply if you were to change the setpoint specification to "external".

(17) Target setpoint display of the setpoint ramp

This display [R] shows the target setpoint and is only visible if you have enabled ramp generation in the Ramp view.

(18) Limit display

These colored triangles displays the configured limits in the respective bar graph.

(19), (20), (21), (22) Display area for block states

This area provides additional information on the operating state of the block:

- Maintenance
- Simulation
- Delay
- Motor protection
- External error
- Status error
- Control error
- Invalid signal
- Changeover error
- Forced stop
- Forced start |→
- Forced start ←|
- Request 0/1: A reset to "automatic mode" is expected
- SP ramp active

(23) Automatic preview

This display is only visible in "manual mode", in "local mode", or with a reset request in "automatic mode", when the current output signals are not identical to the control in "automatic mode".

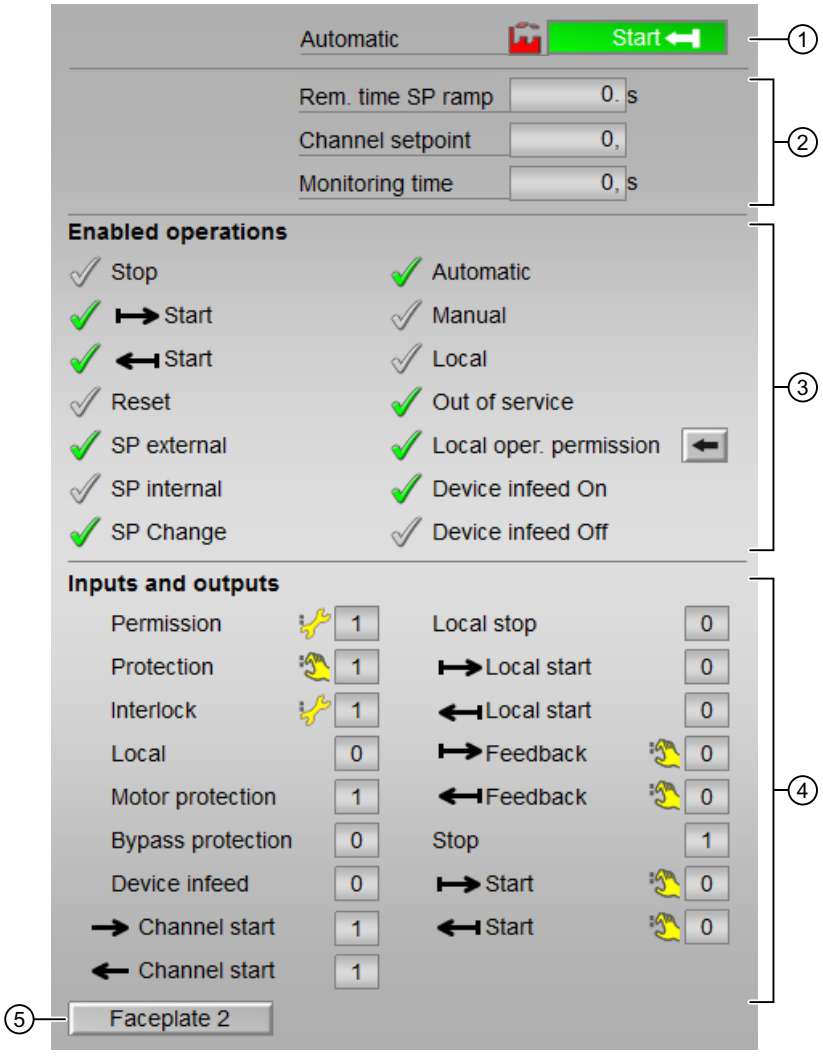
The display shows what state the motor would assume if you switched from "manual" or "local" mode to "automatic mode", or performed a reset to "automatic mode".

(24) Status display of the motor

The current status of the motor is graphically displayed here.

3.4.3 MotSpdCL Preview

Preview of MotSpdCL



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The preview of the MotSpdCL consists of the following:

(1) Automatic preview

(2) Preview Area

(3) Enable operations

(4) Displaying current control signals

(5) Navigation button for switching to the standard view of any faceplate

(1) Automatic preview

This area shows you the block status after it has switched from "manual" or "local" mode to "automatic" mode. If the block is in "automatic mode", the current block state is displayed.

(2) Preview Area

This area shows you a preview of the following values:

- "Rem. time SP ramp" : Remaining time to reach the ramp target value.
- "Channel Setpoint": Setpoint from the output channel block.
- "Monitoring time": Display of the remaining monitoring time.

(3) Enable operations

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter.
- Gray check mark: the OS operator cannot control this parameter at this time due to the process.
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

The following enabled operations are shown here:

Action	Description
Stop	You can stop the motor. If text is configured for this command, it is also displayed in brackets.
Start |→	You can start the motor in forward. If text is configured for this command, it is also displayed in brackets.
Start ←|	You can start the motor in reverse. If text is configured for this command, it is also displayed in brackets.
Reset	You can reset the motor after interlocks or errors.
SP external	You can feedforward the external setpoint.
SP internal	You can feedforward the internal setpoint.
Change SP	You can change the setpoint.
Automatic	You can switch to "automatic mode".
Manual	You can switch to "manual mode".
Local	You can switch to "local mode".
Out of service	You can switch to "Out of service" operating mode.

Action	Description
Local operator permission	Use the ← button to switch to the standard view of the OpStations block.
Device infeed On	You can activate the device infeed.
Device infeed Off	You can deactivate the device infeed.

(4) Displaying current control signals

This area shows the most important parameters for this block with the current selection:

Signals	Values
Permission	0 = No OS release for energizing motor.
	1 = Enables "opening"/"closing" from the neutral position.
Protection	0 = Protective interlocking is effective; once the interlocking condition has disappeared, you will have to reset the block.
	1 = "Good" state.
Interlock	0 = Interlocking without reset is active; you can operate the block without reset once the interlocking condition has disappeared.
	1 = "Good" state.
Local correct	1 = Control signal for "Local mode" (LocalLi) is active.
Motor protection	1 = Motor is in "good" state.
	0 = Motor protection in effect
Interlock deact	0 = Bypass disabled
	1 = Bypassing interlock in "local mode" and in "simulation".
Local stop	1= Block is operated in "local mode".
Local start |→	1= Block is operated forward a controlled manner in "local mode".
Local start ←|	1= Block is operated reverse in a controlled manner in "local mode".
Feedback |→	1 = Motor has started and is running forward.
Feedback←|	1 = Motor has started and is running reverse.
Stop	1 = Stop motor.
Start |→	1 = Start motor in forward
Start ←|	1 = Start motor in reverse
Device infeed	1 = Enable device infeed.
Channel Start →	Signal from the output channel block for "Start" forward.
Channel Start ←	Signal from the output channel block for "Start" reverse.

(5) Navigation button for switching to the standard view of any faceplate

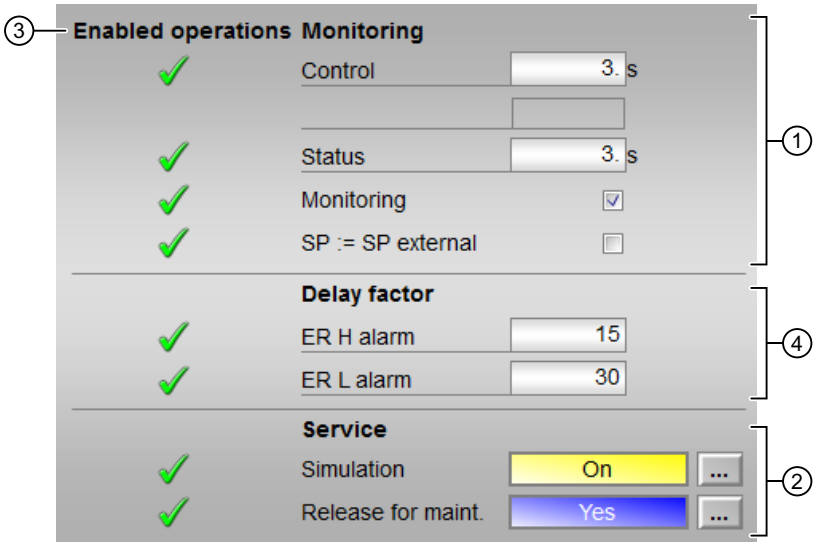
This display is only visible when the corresponding block input is connected.

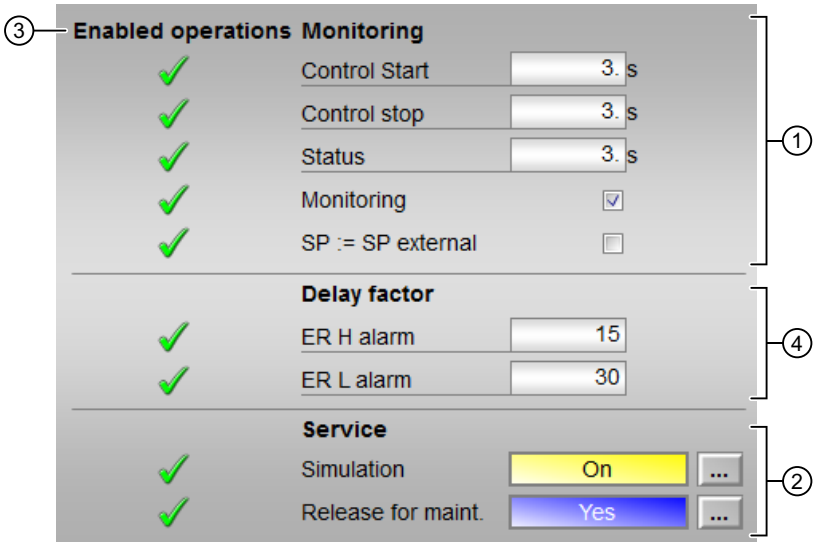
3.4.4 MotSpdCL Parameter view

Parameter view of MotSpdCL

The Parameter view consists of the following:

It depends on the control parameters





(1) Monitoring

(2) Service

(3) Enabled operation

(4) Delay factor

(1) Monitoring

In this area, you change parameters and therefore influence the motor.

You can influence the following parameters:

- "Control": Monitoring time during startup and shutdown of the motor (dynamic)
- "Control stop": Monitoring time during shutdown of the motor (dynamic)
- "Control start": Monitoring time during startup of the motor (dynamic)

Status monitoring

You can monitor time during permanent operation of the motor (static).

Enable monitoring

You can enable monitoring by selecting the check box (☑)

Activating bumpless switchover

"SP := SP external": ☑ Bumpless switchover of setpoint from external to internal. The internal setpoint is tracked to the external one.

(2) Service

You can select the following functions in this area:

- Simulation
- Release for maintenance

(3) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

(4) Delay factor

In this area, you can change the following:

- "ER H alarm": Delay factor at the positive setpoint step changes for incoming alarms at the control deviation monitoring.
- "ER L alarm": Delay factor at the negative setpoint step changes for incoming alarms at the control deviation monitoring.

3.5 MotSpdL - Two-speed motor

3.5.1 MotSpdL views

MotSpdL views

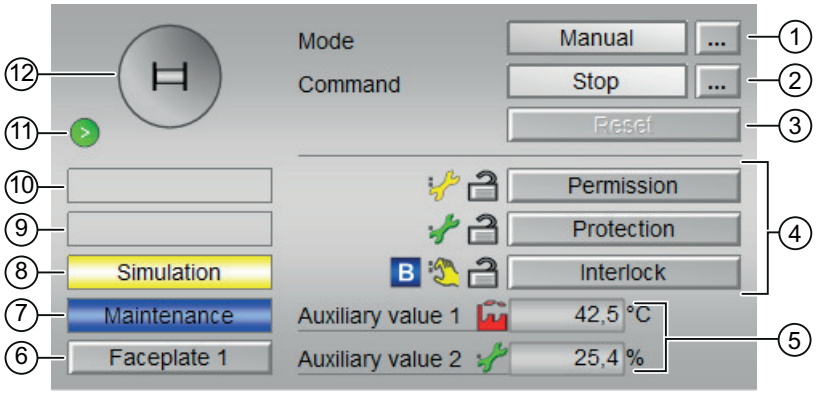
The MotSpdL views provides information on the following:

- MotSpdL Standard view (Page 58)
- Alarm view (Page 450)
- Limit view of motors (Page 448)
- Trend view (Page 456)
- Parameter view for motors and valves (Page 446)
- MotSpdL Preview (Page 65)
- Memo view (Page 453)
- Batch view (Page 452)

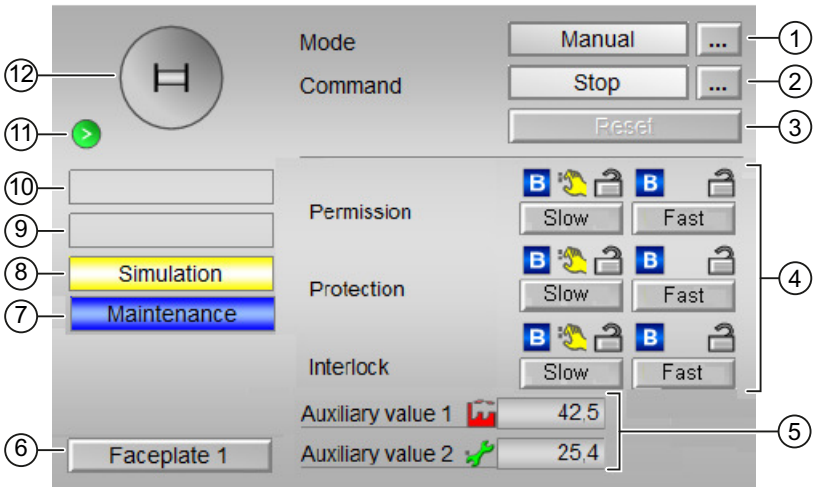
3.5.2 MotSpdL Standard view

Standard view of MotSpdL

Option 1:



Option 2:



The MotSpdL Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Starting and stopping the motor

(3) Resetting the block

(4) Operating range for the interlock functions of the block

(5) Displaying auxiliary values

(6) Navigation button for switching to the standard view of any faceplate

(7), (8), (9) and (10) Display area for block states

(11) Automatic preview

(12) Status display of the motor

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating node. In this block, the following operating modes are available:

1. Local mode
2. Automatic mode
3. Manual mode
4. Out of service mode

1. Local mode: This operating mode is used for the motor unit. The control settings are made directly or through a locally available control station.

   Note

   Local mode for the MotSpdL block

   The motor operated in "local mode" is controlled either by "local" signals or by the feedback signals.

   The following actions can be controlled in the local mode:

   – starting with speed 1
   – starting with speed 2
   – stopping

2. Automatic mode: In automatic mode, control of the device is performed automatically by the program.
   The following actions can be controlled in the automatic mode:

   – starting with speed 1
   – starting with speed 2
   – stopping

3. Manual mode: In this mode, the control settings for the device are made manually by the operator. The operator can change the manipulated variable (output signal). The manipulated variable can be analog or binary.
   The following actions can be controlled in the manual mode:

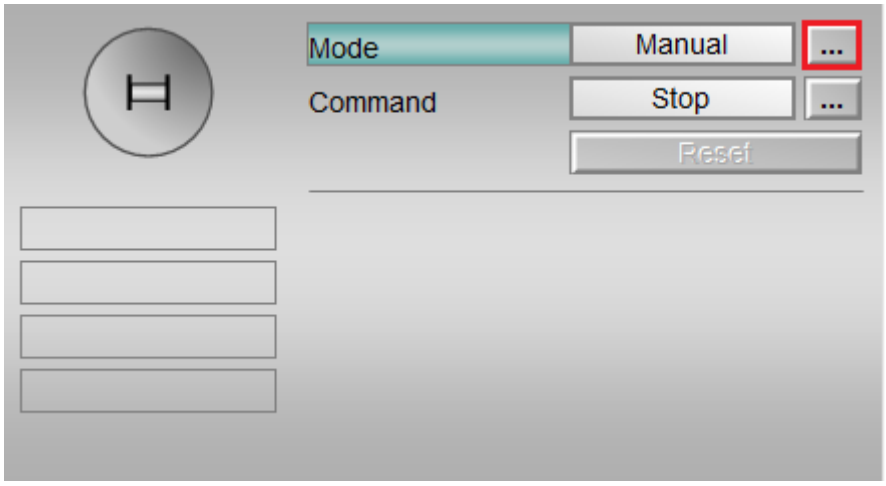
   – starting with speed 1
   – starting with speed 2
   – stopping

4. Out of service mode: The "Out of service" operating mode is available to all devices that have an operating mode switchover and a direct connection to the process (for example, with a connection to a process tag). This operating mode is intended for purposes of maintenance and servicing (for example, replacing the device).
   All functions of the device are disabled in the "Out of service" operating mode. Incoming and outgoing messages are not received or generated in this case. Only one operating mode switchover is possible in this operating mode.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

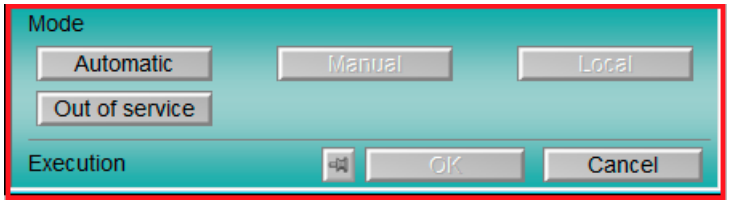
1. Ensure the faceplate containing the respective block is open.
2. Click "[...]" under "Mode" to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.



4. Click "OK" if the acknowledgement is required.
   The motor is switched to the selected operating mode.

(2) Starting and stopping the motor

This area displays the default operating state for the motor. In this block, the following states can be displayed and executed:

- Start >
- Start >>
- Stop
- Rapid stop

Starting the motor

The MotSpdL block can be used to start the motor in two different speed with respect to the operator input.

Follow the steps below to start a motor:

1. In the faceplate, Click "[...]" under "Mode"
   The operating window is displayed as an extension of the faceplate.
2. Click on the appropriate mode.
3. Click "OK" to confirm the execution.The mode changes to the respective mode that you have selected.
4. Start the desired motor operation ("Fast" or "Slow") by providing the Start command.
   The operating window is displayed as an extension of the faceplate

---

Note

Operating modes

The starting of the motor can be done with two speeds ("Fast" and "Slow") in manual, automatic and local modes.

---

5. In the operating window, confirm execution for the Start operation by clicking "OK".
   The motor is started with the respective speed. This status is indicated with the color green in the graphical block icon within the faceplate.

Stopping the motor

Follow the steps below to stop a motor:

In the faceplate, observe for the currently selected mode.

1. In the faceplate, Click "[...]" under "Mode"
   The operating window is displayed as an extension of the faceplate.
2. Select the desired motor operation ("Fast" or "Slow").
3. Click "OK" to confirm the execution of the Stop command.

This will stop the motor that is in running state. The graphical block icon for the motor changes to the color gray, indicating the stop of the motor.

Rapid stop for motors

Rapid stop has the highest priority in all operating modes (manual and automatic mode as well as local mode) and operating states. It is activated through the faceplate.

Note

Rapid stop for MotSpdL

The Rapid stop is supported only by "Large" blocks. Small blocks do not support rapid stop.

When the operator clicks on the "Rapid stop" button in faceplate, the drive stops immediately. This is shown as follows in the faceplate.

The Rapid stop is unlocked for all operating modes using the "Reset" button in the faceplate. Rapid stop can be selected even with the motor in stop state. In this case, the motor start is prevented.

(3) Resetting the block

In the faceplate, click "Reset" button to reset the block when any interlock or error has occured.

(4) Operating range for the interlock functions of the block

This display is only visible when the corresponding block input is connected.

The following status is displayed in addition to the buttons:

- Interlock status

- Signal status

- Bypass information

(5) Displaying auxiliary values

This display is only visible when the corresponding block input is connected. You can use this area to display two auxiliary values that have been configured in the engineering system (ES).

(6) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected. You can use this area to display two auxiliary values that have been configured in the engineering system (ES).

(7), (8), (9) and (10) Display area for block states

This area provides additional information on the operating state of the block:

- Maintenance
- Simulation
- Delay
- Motor protection
- External error
- Status error
- Control error
- Invalid signal

- Changeover error
- Forced stop
- Forced start >
- Forced start >>
- Request 0/1: A reset to "automatic mode" is expected

(11) Automatic preview

This display is only visible in "manual mode", in "local mode", or with a reset request in "automatic mode", when the current output signals are not identical to the control in "automatic mode".

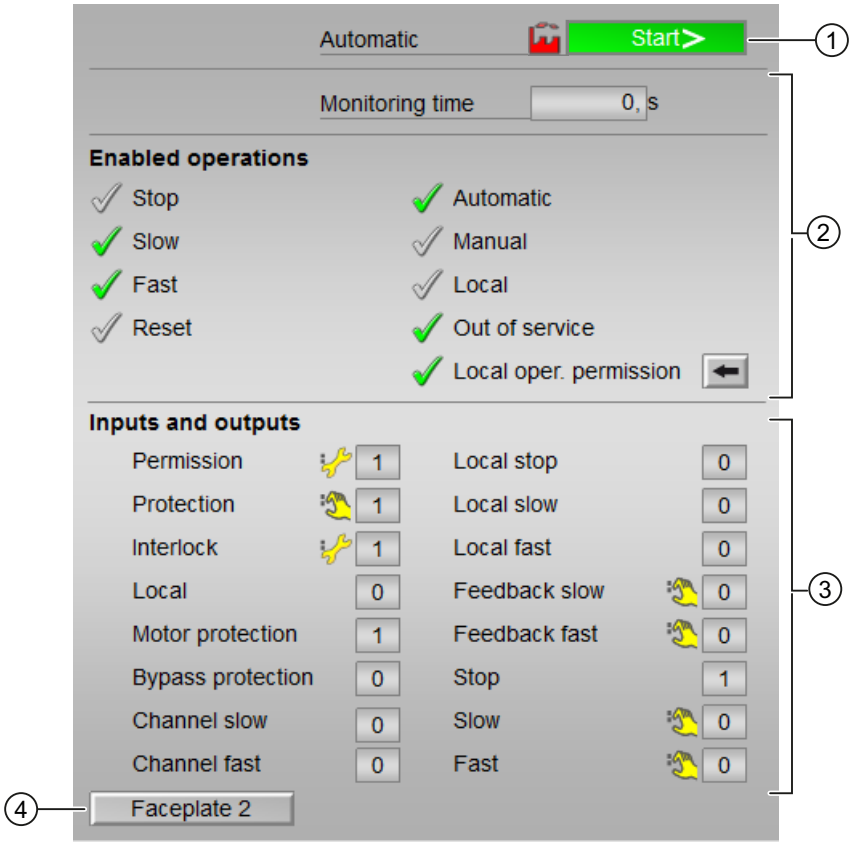
The display shows what state the motor would assume if you switched from "manual" or "local" mode to "automatic mode", or performed a reset to "automatic mode".

(12) Status display of the motor

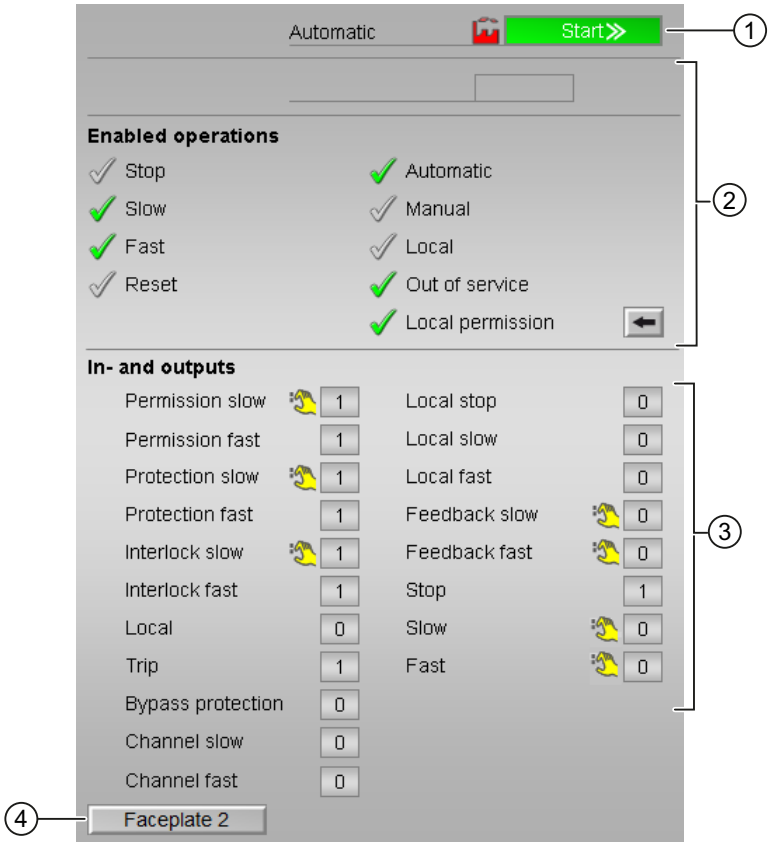
The current status of the motor is graphically displayed here.

3.5.3 MotSpdL Preview

Preview of MotSpdL



Option 1: Display of the current monitoring time is visible.



Option 2: Display of the current monitoring time is not visible.

The MotSpdL preview consists of the following areas:

(1) Automatic preview

(2) Enable operations

(3) Displaying current control signals

(4) Navigation button for switching to the standard view of any faceplate

(1) Automatic preview

This area shows you the block status after it has switched from "manual" or "local" mode to "automatic" mode.

(2) Enable operations

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process.
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

The following enabled operations are shown here:

Action	Description
Stop	You can stop the motor. If text is configured for this command, it is also displayed in brackets
Slow	You can start the motor in the "slow" state. If text is configured for this command, it is also displayed in brackets
Fast	You can start the motor in the "fast" state. If text is configured for this command, it is also displayed in brackets
Reset	You can reset the motor after interlocks or errors.
Automatic	You can switch to "automatic mode"
Manual	You can switch to "manual mode"
Local	You can switch to "local mode"
Out of service	You can switch to "Out of service" operating mode
Local operator permission	Use the ← button to switch to the standard view of the OpStations block
Monitoring time	Display of the remaining monitoring time

(3) Displaying current control signals

This area shows the most important parameters for this block with the current selection:

Signals	Description
Permission	0 = Motor valve activation not enabled on OS
	1 = Enable for "slow"/"fast" from the neutral position
Permission slow	0 = Motor valve activation not enabled on OS
	1 = Enable for "slow" from the neutral position
Permission fast	0 = Motor valve activation not enabled on OS
	1 = Enable for "fast" from the neutral position
Protection	0 = Protective interlocking is effective; once the interlocking condition has disappeared, you have to reset the block
	1 = "Good" state
Protection slow	0 = Protective interlocking for slow is effective; once the interlocking condition has disappeared, you will have to reset the block
	1 = "Good" state

Signals	Description
Protection fast	0 = Protective interlocking for fast is effective; once the interlocking condition has disappeared, you will have to reset the block
	1 = "Good" state
Interlock	0 = Interlocking without reset is active; you can operate the block without reset once the interlocking condition has disappeared
	1 = "Good" state
Interlock slow	0 = Interlocking for slow without reset is active; you can operate the block without reset once the interlocking condition has disappeared
	1 = "Good" state
Interlock fast	0 = Interlocking for fast without reset is active; you can operate the block without reset once the interlocking condition has disappeared
	1 = "Good" state
Local correct	1 = Control signal for "Local mode" (LocalLi) is active
Motor protection	1 = Motor is in "good" state
	0 = Motor protection in effect
Interlock deact	0 = Bypass disabled
	1 = Bypassing interlock in "local mode" and in "simulation"
Local stop	1 = Stopping the motor in "local mode"
Local slow	1 = Starting the motor in "local mode", slow
Local fast	1 = Starting the motor in "local mode", fast
Feedback slow	1 = Motor has started and is running slow
Feedback fast	1 = Motor has started and is running fast
Stop	1 = Stop motor
Slow	1 = Motor is running slow
Fast	1 = Motor is running fast
Channel Slow	Signal from the output channel block for "Slow"
Channel Fast	Signal from the output channel block for "Fast"

(4) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected.

3.6 ShrdResL - Multiplexer for shared resources (Large)

3.6.1 ShrdResL views

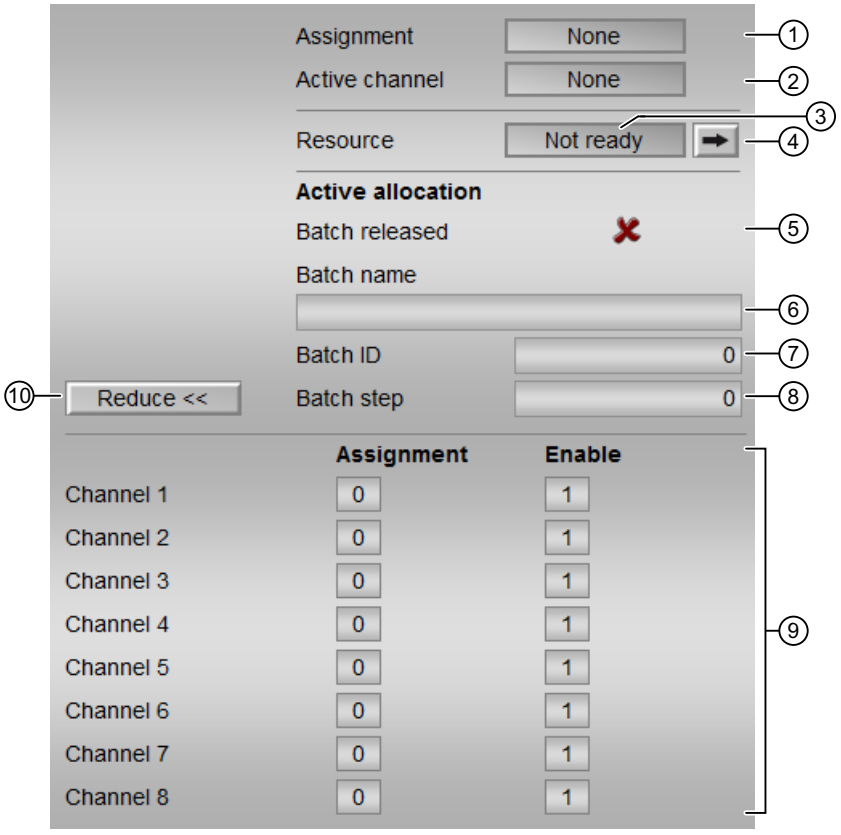
ShrdResL views

The ShrdResL views provides information on the following:

- ShrdResL Standard view (Page 70)
- ShrdResL Preview (Page 72)
- ShrdResL General Preview (Page 73)
- ShreResL Parameter View (Page 74)
- Memo view (Page 453)

3.6.2 ShrdResL Standard view

Standard view of ShrdResL



The ShrdResL Standard view consists of the following areas:

(1) Assignment

(2) Active channel

(3) Resource

(4) Jump key to standard view of any faceplate

(5) Release Batch

(6) Batch name

(7) Batch ID

(8) Batch step

(9) Display channel 1 - 8

(10) Reduce

(11) Expand/Collapse

(1) Assignment

This area displays the assignment status.

The options available are listed below:

- "None"
- "Requested"
- "Active"

(2) Active channel

The channel number of the active channel is displayed in this area.

(3) Resource

The status of the enable signal is displayed in this area:

- "Idle"
- "Not ready"

Note
ShrdResL

Use the → button to switch to the standard view of the connected SelFpRes block.

(4) Jump key to standard view of any faceplate

This display is only visible when the corresponding block input is interconnected.

(5) Release Batch

This area displays whether the block is released for operation through SIMATIC BATCH.

(6) Batch name

This area displays whether the block is released for operation via SIMATIC BATCH.

(7) Batch ID

This area displays the identification number of the batch that is currently running.

(8) Batch step

This area displays the step number of the batch that is currently running.

(9) Display channel 1 - 8

This area is only visible when the (10) "Expand" button is pressed.

The "Assignment" and "Release" status of channels 1 to 8 are displayed in this area.

(10) Reduce

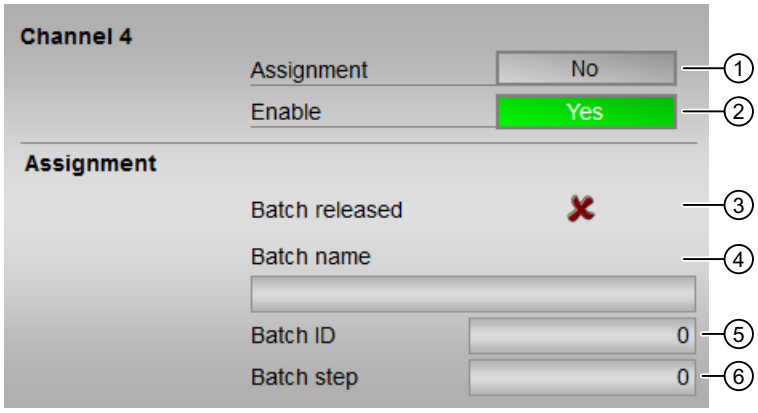
This button enables or disables the display area (9). The label of the button changes accordingly.

(11) Expand/Collapse

This button enables or disables the display areas (9). The label of the button changes accordingly.

3.6.3 ShrdResL Preview

Preview of ShrdResL



The preview displays information about the operability of the parameters in the entire faceplate.

Note

Each of the four channels has its own preview. The previews of the individual channels are identical. The preview described here is based on channel 4.

With respect to the screenshots above, the ShrdResL preview consists of the following areas:

(1) Assignment

(2) Enable

(3) Release Batch

(4) Batch name

(5) Batch ID

(6) Batch step

(1) Assignment

The assignment statuses of the channel is displayed in this area.

The options available are:

- "No"
- "Requested"
- "Active"

(2) Enable

The status of the "Enable" signal is displayed in this area:

- "Yes"
- "No"

(3) Release Batch

This area displays whether the block is released for operation through SIMATIC BATCH.

(4) Batch name

This area displays the name of the batch that is currently running.

(5) Batch ID

This area displays the identification number of the batch that is currently running.

(6) Batch step

This area displays the step number of the batch that is currently running.

3.6.4 ShrdResL General Preview

General preview of ShrdResL

(1) Enabled operations

(1) Enabled operations

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

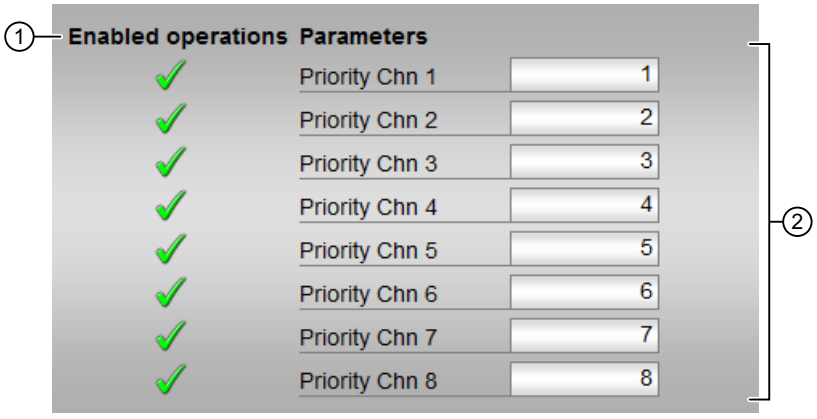
- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions.

The following enabled operation is shown here:

- "Local operator permission": Use the ← button to switch to the standard view of the OpStations block.

3.6.5 ShreResL Parameter View

Parameter view of ShrdResL



(1) Enabled operations

This area shows all operations for which special operator permissions are assigned.

Icons for operation enable:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions.

(2) Parameters

In this area, you can change the parameters and thereby influence the behavior of ShrdResL.

3.7 ShrdResS - Multiplexer for shared resources (Small)

3.7.1 ShrdResS views

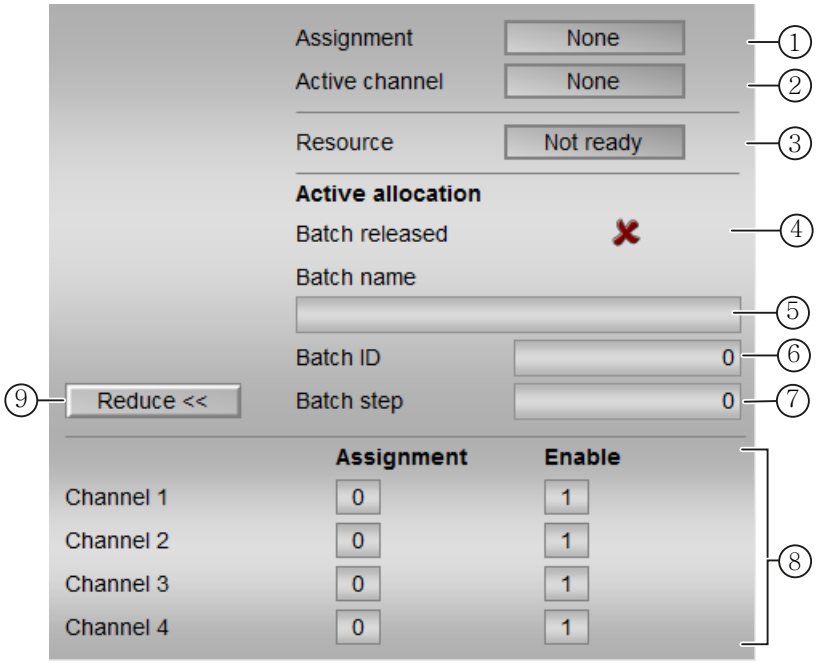
ShrdResS views

The ShrdResS views provides information on the following:

- ShrdResS Standard view (Page 70)
- ShrdResS Preview (Page 72)
- Memo view (Page 453)

3.7.2 ShrdResS Standard view

Standard view of ShrdResS



The ShrdResS Standard view consists of the following areas:

(1) Assignment

(2) Active channel

(3) Resource

(4) Release batch

(5) Batch name

(6) Batch ID

(7) Batch step

(8) Display channel 1 - 4

(9) Expand / Collapse

(1) Assignment

The allocation status is displayed in this area:

- "None"
- "Requested"
- "Active"

(2) Active channel

The channel number of the active channel is displayed in this area.

Note
ShrdResS Active channel

Use the ← button to switch to the standard view of the connected input block.

Use the → button to switch to the standard view of the connected output block.

(3) Resource

The status of the general enable signal is displayed in this area.

- Idle
- Not ready

Note
ShrdResS Resource

Use the → button to switch to the standard view.

(4) Release batch

This area displays if the block is released for operation through SIMATIC BATCH.

(5) Batch name

This area shows the name of the batch that is currently running.

(6) Batch ID

This area shows the identification number of the batch that is currently running.

(7) Batch step

This area displays the step number of the batch that is currently running.

(8) Display channel 1 - 4

This area is only visible when the (9) "Expand" button is pressed.

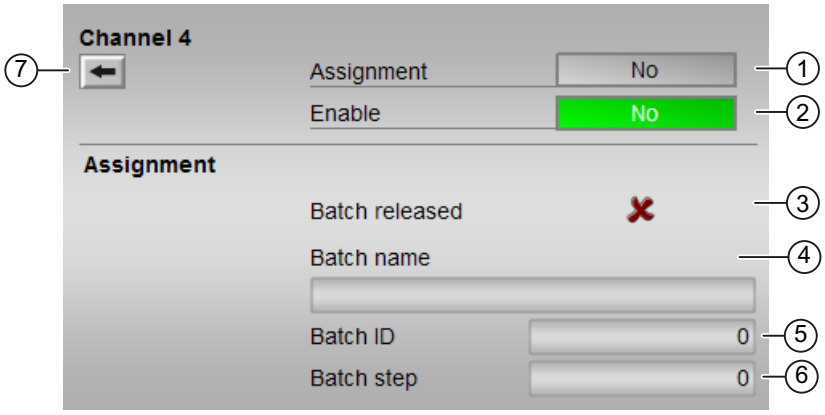
The "Allocation" and "Release" status of channels 1 - 4 are displayed in this area.

(9) Expand / collapse

This button enables or disables the display area (8). The label of the button changes accordingly.

3.7.3 ShrdResS Preview

Preview of ShrdResS



Note

Each of the four channels has its own preview. The previews of the individual channels are identical except for number (7) . The preview described here is based on "Channel 4".

With respect to the screenshot shown above, the ShrdResS preview consists of the following areas:

(1) Assignment

(2) Enable

(3) Release batch

(4) Batch name

(5) Batch ID

(6) Batch step

(7) Button ←

(1) Assignment

The allocation status of the channel is displayed in this area:

- "No"
- "Requested"
- "Active"

(2) Enable

The status of the enable is displayed in this area:

- "Yes"
- "No"

(3) Release batch

This area displays if the block is released for operation through SIMATIC BATCH.

(4) Batch name

This area displays the name of the batch that is currently running.

(5) Batch ID

This area displays the identification number of the batch that is currently running.

(6) Batch step

This area displays the step number of the batch that is currently running.

(7) Button ←

Use the ← button to switch to the standard view of the cascaded ShrdResS block. This button is only available for channel 4.

3.8 Vlv2WayL - Two-way valve

3.8.1 Vlv2WayL views

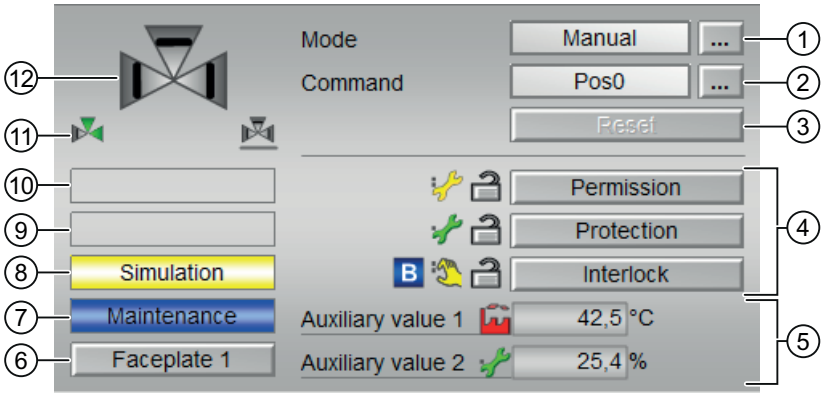
Vlv2WayL views

The Vlv2WayL views provides information on the following:

- Vlv2WayL Standard view (Page 79)
- Alarm view (Page 450)
- Trend view (Page 456)
- Vlv2WayL Parameter view (Page 90)
- Vlv2WayL Preview (Page 85)
- Memo view (Page 453)
- Batch view (Page 452)

3.8.2 Vlv2WayL Standard view

Standard view of Vlv2WayL



The Vlv2WayL Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Selecting the position for 2-way valve

(3) Resetting the block

(4) Operating range for the interlock functions of the block

(5) Display of auxiliary values

(6) Navigation button for switching to the standard view of any faceplate

(7), (8), (9) and (10) Display area for block states

(11) Automatic preview

(12) Status display of the valve

(13) Neutral position of the valve

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. In this block, the following operating modes are available:

1. Local mode
2. Automatic mode
3. Manual mode
4. Out of service mode

1. Local mode: This operating mode is used for valve units. The control settings are made directly or through a locally available control station.
   The following valve actions can be controlled in the "local mode":
   - Travel to neutral position
   - Moving to position 1
   - Moving to position 2

   Note

   A valve operated in local mode is controlled either by "local" signals or by feedback signals.

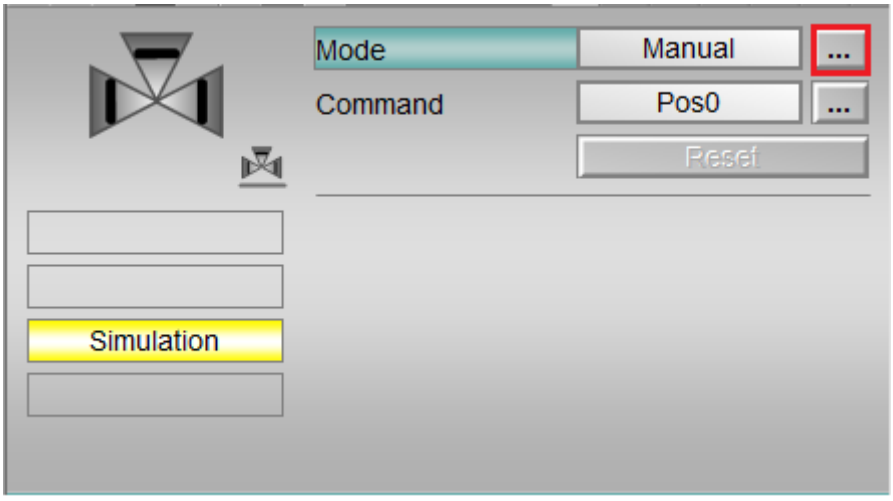
2. Automatic mode: In automatic mode, control of the device is performed automatically by the program.
   The following valve actions can be controlled in the "automatic mode":
   - Travel to neutral position
   - Moving to position 1
   - Moving to position 2

3. Manual mode: In this mode, the control settings for the device are made manually by the operator. The operator can change the manipulated variable (output signal). The manipulated variable can be analog or binary.
   The following valve actions can be controlled in the "manual mode":
   - Travel to neutral position
   - Moving to position 1
   - Moving to position 2
4. Out of service mode: The "Out of service" operating mode is available to all devices that have an operating mode switchover and a direct connection to the process (for example, with a connection to a process tag). This operating mode is intended for the purposes of maintenance and servicing (for example, replacing the device).
   All functions of the device are disabled in the "Out of service" operating mode. Incoming and outgoing messages are not received or generated in this case. Only one operating mode switchover is possible in this operating mode.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

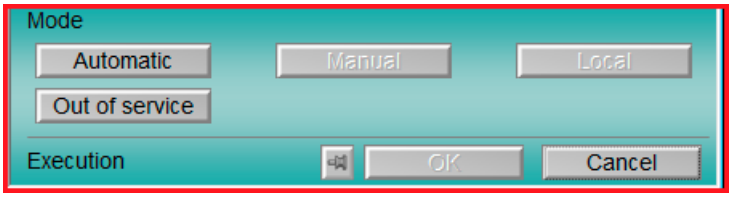
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.



4. Click "OK" if an acknowledgement is required.
5. The motor is switched to the selected operating mode.

(2) Selecting the position for 2-way valve

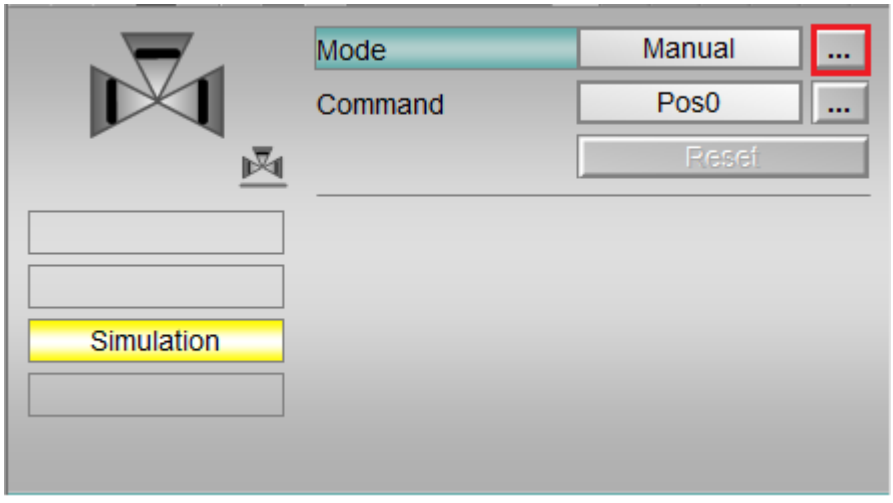
This area displays the default operating state for the valve. The following states can be displayed and executed:

- "Pos0"
- "Pos1"
- "Pos2"

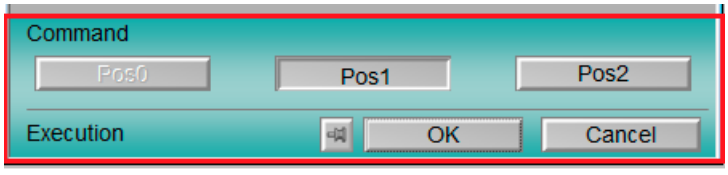
Selecting the valve position

The Vlv2WayL block valve position can be set in the following way:

1. In the faceplate, Click "[...]" under "Mode".
   The operating window is displayed as an extension of the faceplate.



2. Click on the appropriate mode.
3. Click "OK" to confirm the execution.The mode changes to the respective mode that you have selected.



4. Select the desired valve position ("Pos0", "Pos1", "Pos2"). The operating window is displayed as an extension of the faceplate.
5. In the operating window, confirm execution for the desired valve position by clicking "OK".

(3) Resetting the block

In the faceplate, click "Reset" button to reset the block when any interlock or error has occured.

(4) Operating range for the interlock functions of the block

This display is only visible when the corresponding block input is connected. You can use this button to control the interlock functions of the block.

The following status is displayed in addition to the buttons:

- Interlock status

- Signal status

- Bypass information

(5) Display of auxiliary values

This display is only visible when the corresponding block input is connected. You can use this area to display two auxiliary values that have been configured in the engineering system (ES).

(6) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected.You can use this area to display two auxiliary values that have been configured in the engineering system (ES).

(7), (8), (9) and (10) Display area for block states

This area provides additional information on the operating state of the block:

- Maintenance
- Simulation
- Delay
- External error
- End position error
- Control error
- Invalid signal
- Changeover error
- Force Pos0
- Force Pos1

- Force Pos2
- Request 0/1: A reset to "automatic mode" is expected.

(11) Automatic preview

This display is only visible in "manual mode", in "local mode", or with a reset request in "automatic mode", when the current output signals are not identical to the control in "automatic mode".

The display shows what state the valve would assume if you switched from "manual" or "local" mode to "automatic mode", or performed a reset to "automatic mode".

(12) Status display of the valve

The following valve states are shown here:

Icon	Meaning
	Valve open
	Error at valve
	Valve is opening
	Valve closed
	Valve is closing

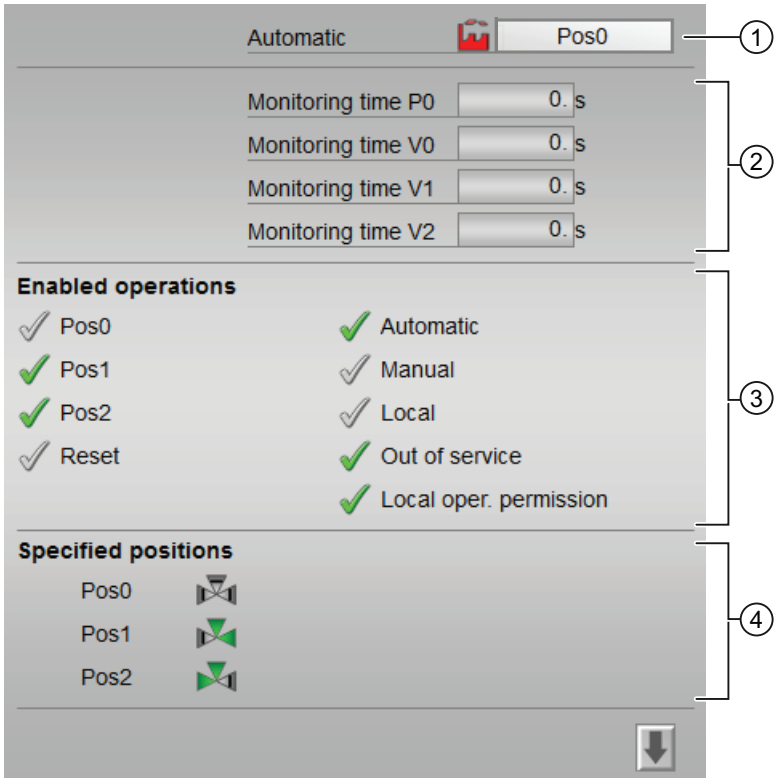
(13) Neutral position of the valve

The neutral position of the valve is shown here. If the neutral position of the valve is "Closed", a gray valve is shown. If the neutral position of the valve is "Open", a green valve is shown.

3.8.3 Vlv2WayL Preview

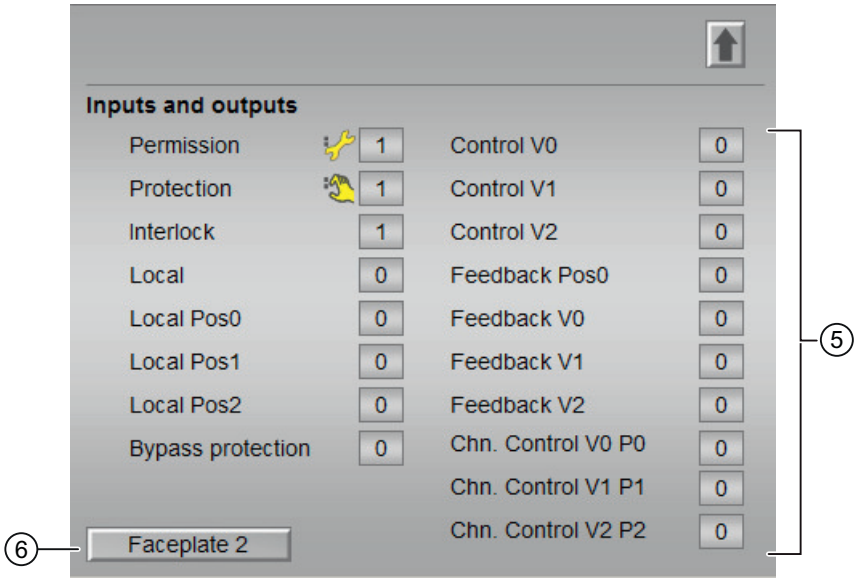
Preview of Vlv2WayL

Option 1: Two-way valve with single value feedback signals

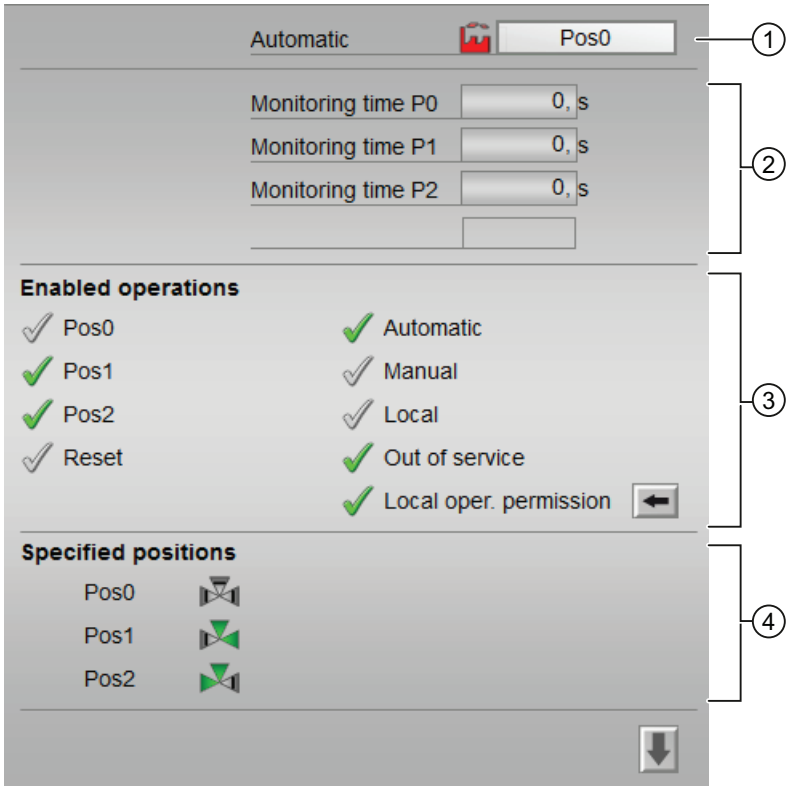


Note

The preview has an upper half and a lower half. You can change between the two halves with arrow keys.

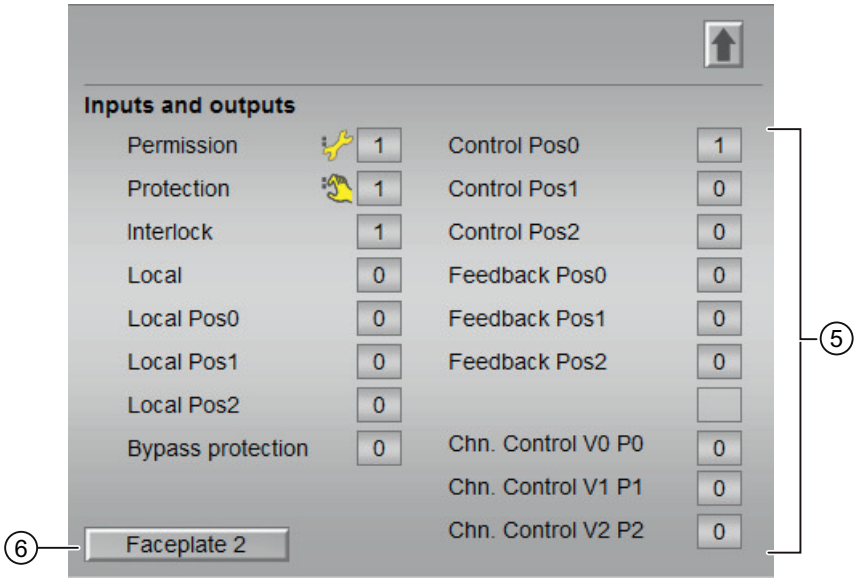


Option 2: Two-way valve with position feedback signals



Note

The preview has an upper half and a lower half. You can change between the two halves with arrow keys.



With respect to the screenshots shown above, the Vlv2WayL preview consists of the following areas:

(1) Automatic preview

(2) Preview area

(3) Enable operations

(4) Specified Position

(5) Displaying current control signals

(6) Navigation button for switching to the standard view of any faceplate

(1) Automatic preview

This area shows you the status of a block after it has switched from "manual" or "local" mode to "automatic" mode.

If the block is in "automatic mode", the current block state is displayed.

(2) Preview area

The following enabled operations are shown here:

Time	Operation
Monitoring time P0	Display of the remaining monitoring time P0
Monitoring time P1	Display of the remaining monitoring time P1
Monitoring time P2	Display of the remaining monitoring time P2
Monitoring time V0	Display of the remaining monitoring time V0
Monitoring time V1	Display of the remaning monitoring time V1
Monitoring time V2	Display of the remaining monitoring time V2

(3) Enable operations

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions

The following enabled operations are shown here:

Action	Description
Pos0	You can set the valve to position 0.
Pos1	You can set the valve to position 1.
Pos2	You can set the valve to position 2.
Reset	You can reset the valve if errors occur.
Automatic	You can switch to "automatic mode".
Manual	You can switch to "manual mode".
Local	You can switch to "local mode".
Out of service	You can switch to "Out of service" operating mode.
Local operator permission	Use the ← button to switch to the standard view of the OpStations block

(4) Specified Position

Preview of the valve positions.

(5) Displaying current control signals

This area shows the most important parameters for this block with the current selection:

Signals	Values
Permission	0 = Valve activation not enabled on OS
	1 = Enable for "starting"/"stopping" from the neutral position
Protection	0 = Protective interlocking is effective; once the interlocking condition has disappeared, you will have to reset the block.
	1 = "Good" state
Interlock	0 = Interlocking without reset is active; you can operate the block without reset once the interlocking condition has disappeared
	1 = "Good" state
Local correct	1 = Control signal for "Local mode" (LocalLi) is active
Local Pos0	1 = Block was set to position 0 in "local mode"
Local Pos1	1 = Block was set to position 1 in "local mode"
Local Pos2	1 = Block was set to position 2 in "local mode"
Interlock deact	0 = Bypass disabled
	1 = Bypassing interlock in "local mode" and in "simulation"
Control and feedback signals with Feature bit 12 = 0	
Control Pos0	1 = Control signal for the position 0
Control V0	1 = Control signal for the valve 0
Control V1	1 = Control signal for the valve 1
Control V2	1 = Control signal for the valve 2
Feedback Pos0	1 = Valve is in position 0
Feedback V0	1 = Feedback if valve 0 was opened
Feedback V1	1 = Feedback if valve 1 was opened
Feedback V2	1 = Feedback if valve 2 was opened
Control and feedback signals with Feature bit 12 = 1	
Control Pos0	1 = Control signal for the position 0
Control Pos1	1 = Control signal for the position 1
Control Pos2	1 = Control signal for the position 2
Feedback Pos0	1 = Valve is in position 0
Feedback Pos1	1 = Valve is in position 1
Feedback Pos2	1 = Valve is in position 2
Control signals of the output channel block	
Channel control V0 P0	Control signal for V0 or P0 of the output channel block
Channel control V1 P1	Control signal for V1 or P1 of the output channel block
Channel control V2 P2	Control signal for V2 or P2 of the output channel block

(6) Navigation button for switching to the standard view of any faceplate

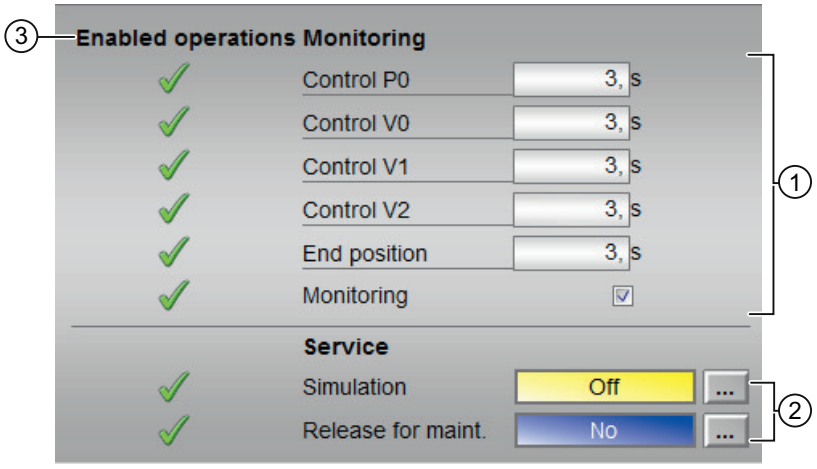
This display is only visible when the corresponding block input is connected. Use this navigation button to open the standard view of a block configured in the engineering system (ES).

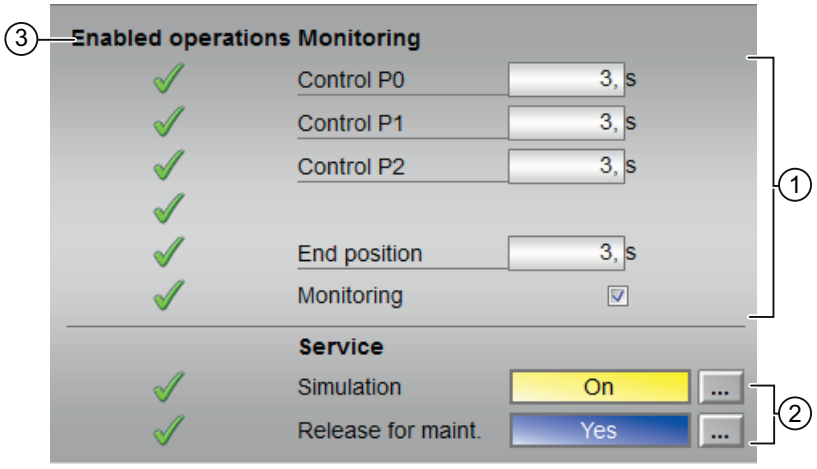
3.8.4 Vlv2WayL Parameter view

Parameter view of Vlv2WayL

The Parameter view consists of the following:

It depends on the two-way valve with separate valve feedback signals:





(1) Monitoring

(2) Service

(3) Enabled operation

(1) Monitoring

In this area, you change parameters and therefore influence the valve.

You can influence the following parameters:

- "Control P0": Monitoring time while "opening"/"closing" the valve
- "Control P1": Monitoring time while "opening"/"closing" the valve
- "Control P2": Monitoring time while "opening"/"closing" the valve
- "Control V0": Monitoring time while "opening"/"closing" the valve
- "Control V1": Monitoring time while "opening"/"closing" the valve
- "Control V2": Monitoring time while "opening"/"closing" the valve
- "End position": Monitoring time for maintaining the valve position

Enable monitoring

You can enable monitoring by selecting the check box (☑)

(2) Service

You can select the following functions in this area:

- "Simulation"
- "Release for maintenance"

(3) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

● Green check mark: the OS operator can control this parameter

● Gray check mark: the OS operator cannot control this parameter at this time due to the process

● Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

3.9 VlvL - Valve (Large)

3.9.1 VlvL views

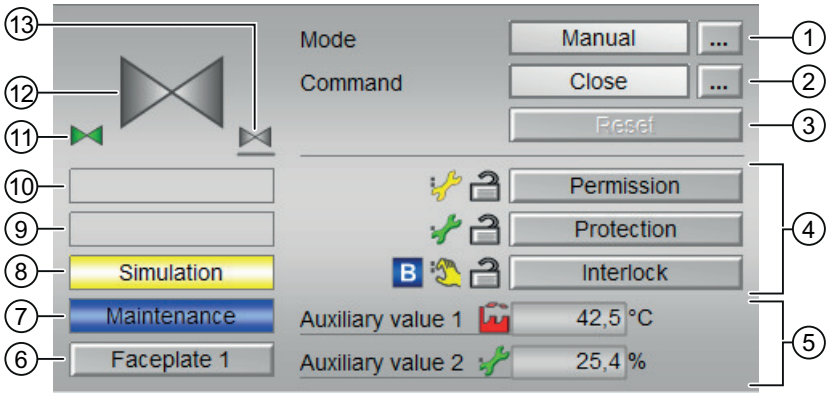
VlvL views

The VlvL views provides information on the following:

- VlvL Standard view (Page 92)
- Alarm view (Page 450)
- Trend view (Page 456)
- Parameter view for motors and valves (Page 446)
- VlvL Preview (Page 98)
- Memo view (Page 453)
- Batch view (Page 452)

3.9.2 VlvL Standard view

Standard view of VlvL



The VlvL Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Opening and closing the valve

(3) Resetting the block

(4) Operating range for the interlock functions of the block

(5) Display of auxiliary values

(6) Navigation button for switching to the standard view of any faceplate

(7), (8), (9) and (10) Display area for block states

(11) Automatic preview

(12) Status display of the valve

(13) Neutral position of the valve

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. In this block, the following operating modes are available:

1. Local mode
2. Automatic mode
3. Manual mode
4. Out of service mode

1. Local mode: This operating mode is used for valve units. The control settings are made directly or through a locally available control station.
   The following valve actions can be controlled in the "Local mode":
   - "Open"
   - "Close"

   Note

   A valve operated in local mode is controlled either by "local" signals or by feedback signals.

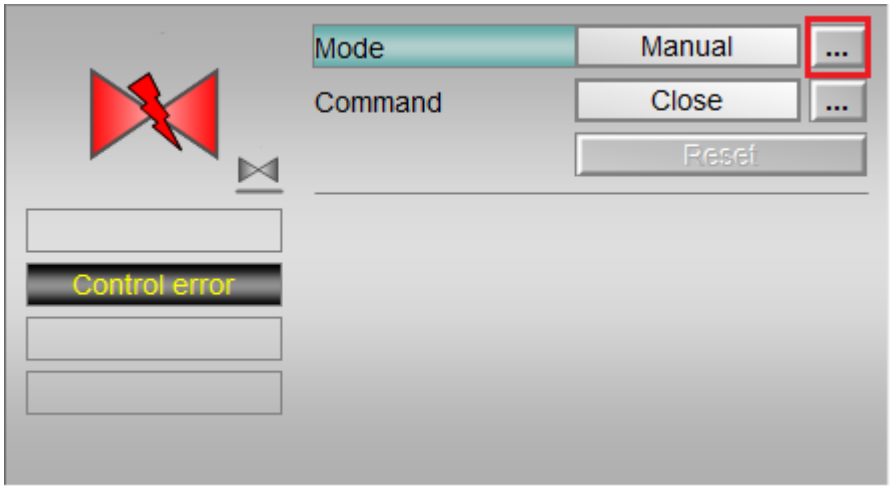
2. Automatic mode: In automatic mode, control of the device is performed automatically by the program.
   The following valve actions can be controlled in the "Automatic mode":
   - "Open"
   - "Close"

3. Manual mode: In this mode, the control settings for the device are made manually by the operator. The operator can change the manipulated variable (output signal). The manipulated variable can be analog or binary.
   The following valve actions can be controlled in the "Manual mode":
   - "Open"
   - "Close"
4. Out of service mode: The "Out of service" operating mode is available to all devices that have an operating mode switchover and a direct connection to the process (for example, with a connection to a process tag). This operating mode is intended for the purposes of maintenance and servicing (for example, replacing the device).
   All functions of the device are disabled in the "Out of service" operating mode. Incoming and outgoing messages are not received or generated in this case. Only one operating mode switchover is possible in this operating mode.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

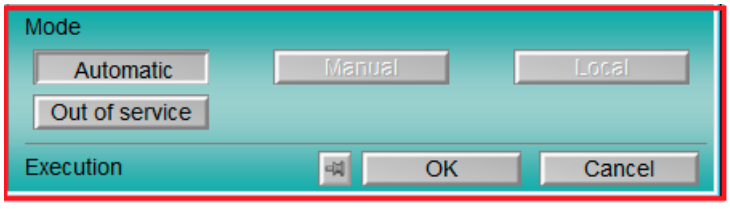
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.



4. Click "OK" if an acknowledgement is required.
5. The motor is switched to the selected operating mode.

(2) Opening and closing the valve

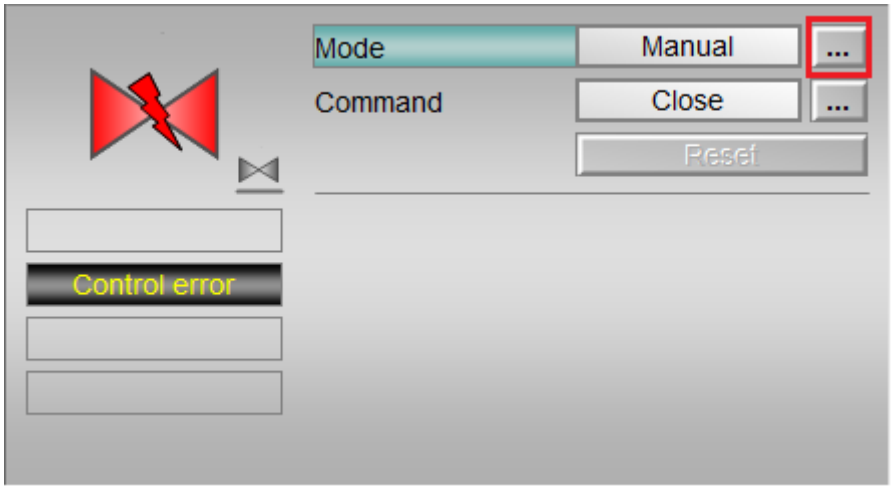
This area displays the default operating state for the valve. The following states can be displayed and executed:

- Open
- Close

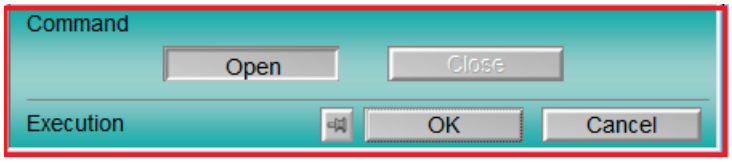
Opening the valve

The VlvL block valve can be opened in the following way:

1. In the faceplate, Click "[...]" under "Mode"
   The operating window is displayed as an extension of the faceplate.



2. Click on the appropriate mode.
3. Click "OK" to confirm the execution.The mode changes to the respective mode that you have selected.
4. Select the "Open" command
   The operating window is displayed as an extension of the faceplate



5. In the operating window, confirm execution for the desired valve position by clicking "OK".

Closing the valve

Once the VlvL block is opened, the valve can be closed in the following way:

1. Select the "Close" command
   The operating window is displayed as an extension of the faceplate
2. In the operating window, confirm execution for the desired valve position by clicking "OK".

(3) Resetting the block

Click "Reset" for interlocks or errors.

(4) Operating range for the interlock functions of the block

This display is only visible when the corresponding block input is connected.

You can use this button to control the interlock functions of the block.

The following are displayed in addition to the buttons:

- Interlock status

- Signal status

- Bypass information

(5) Display of auxiliary values

This display is only visible when the corresponding block input is connected. You can use this area to display two auxiliary values that have been configured in the engineering system (ES).

(6) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected. You can use this area to display two auxiliary values that have been configured in the engineering system (ES).

(7), (8), (9) and (10) Display area for block states

This area provides additional information on the operating state of the block:

- Maintenance
- Simulation
- Delay
- External error
- End position error

- Control error
- Invalid signal
- Changeover error
- Forced open
- Forced close
- Request 0/1: A reset to "automatic mode" is expected.

(11) Automatic preview

This display is only visible in "manual mode", in "local mode", or with a reset request in "automatic mode", when the current output signals are not identical to the control in "automatic mode".

The display shows what state the valve would assume if you switched from "manual" or "local" mode to "automatic mode", or performed a reset to "automatic mode".

(12) Status display of the valve

The current status of the valve is graphically displayed here:

The following valve states are shown here:

Icon	Meaning
	Valve open
	Error at valve
	Valve is opening
	Valve closed
	Valve is closing
	Valve closed
	Valve is closing

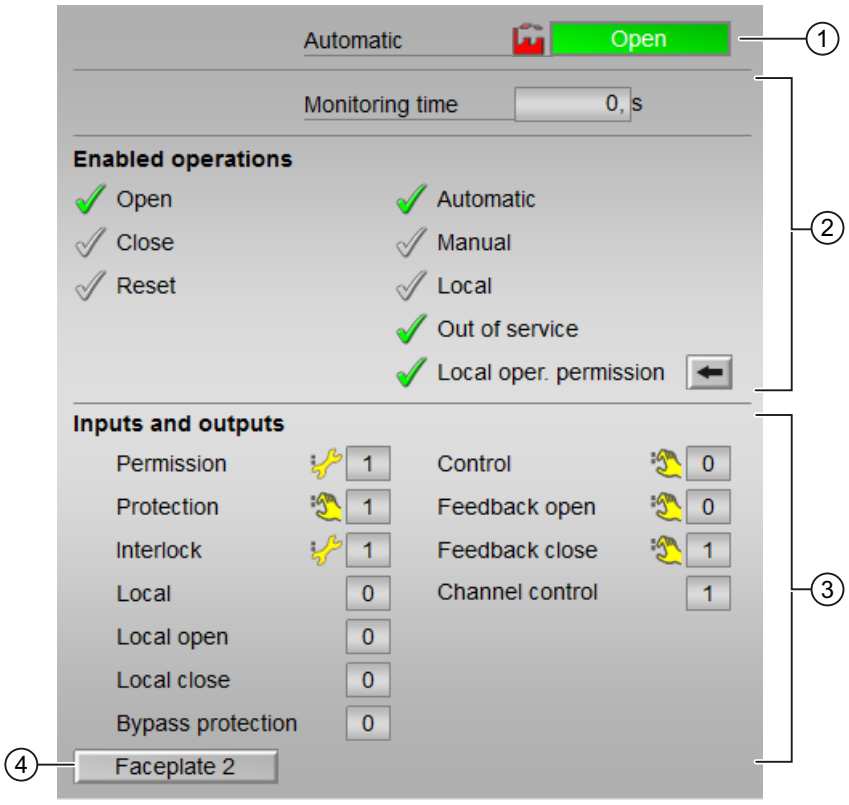
(13) Neutral position of the valve

Display the neutral position for the valve:

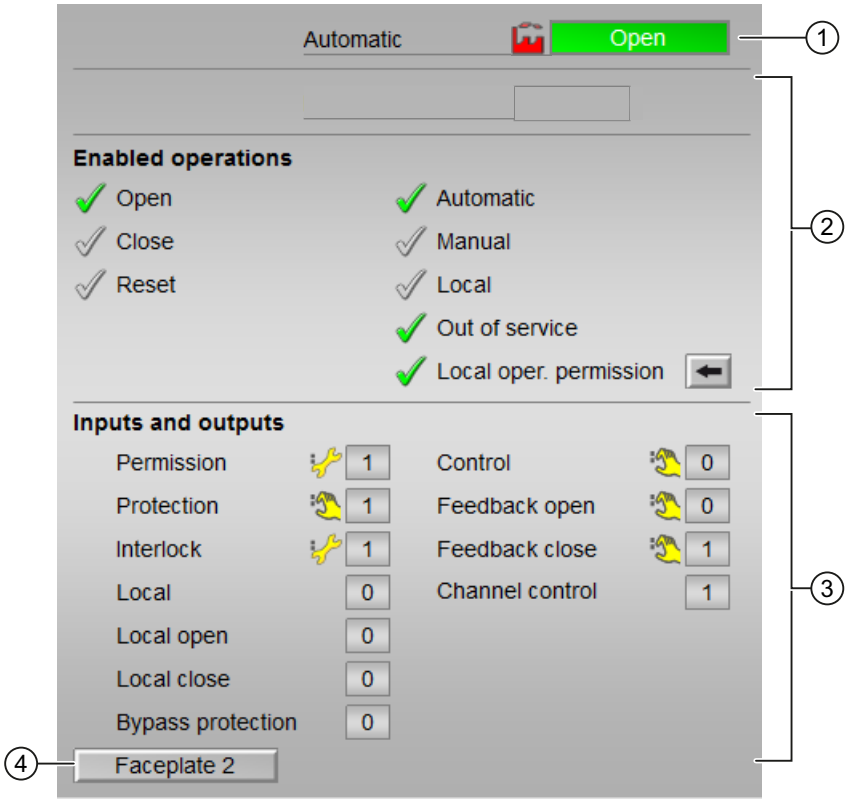
- If the neutral position of the valve is "Closed", a gray valve is shown.
- If the neutral position of the valve is "Open", a green valve is shown.

3.9.3 VlvL Preview

Preview of VlvL



Display of the remaining monitoring time is visible.



Display of the remaining monitoring time is not visible.

With respect to the screenshots shown above, the VlvL preview consists of the following areas:

(1) Automatic preview

(2) Enable operations

(3) Displaying current control signals

(4) Navigation button for switching to the standard view of any faceplate

(1) Automatic preview

This area shows you the block status after it has switched from "manual" or "local" mode to "automatic" mode.

If the block is in "automatic mode", the current block state is displayed.

(2) Enable operations

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions

The following enabled operations are shown here:

Signals	Description
Open	You can open the valve.
Close	You can close the valve.
Reset	You can reset the valve if interlocks or errors occur.
Automatic	You can switch to "automatic mode".
Manual	You can switch to "manual mode".
Local	You can switch to "local mode".
Out of service	You can switch to "Out of service" operating mode.
Local operator permission	Use the ← button to switch to the standard view of the OpStations block.
Monitoring time	Display of the remaining monitoring time.

(3) Displaying current control signals

This area shows the most important parameters for this block with the current selection:

Signals	Description
Permission	0 = Valve activation not enabled on OS
	1 = Enable for "opening"/"closing" from the neutral position
Protection	0 = Protective interlocking is effective; once the interlocking condition has disappeared, you will have to reset the block
	1 = "Good" state
Interlock	0 = Interlocking without reset is active; you can operate the block without reset once the interlocking condition has disappeared
	1 = "Good" state
Local correct	1 = Control signal for "Local mode" (LocalLi) is active
Local open	1 = Opening the valve in "local mode"
Local close	1 = Closing the valve in "local mode"
Interlock deact	0 = Bypass disabled
	1 = Bypassing interlock in "local mode" and in "simulation"
Control	0 = Valve is closing
	1 = Valve is opening
Feedback open	1 = Valve is open

Signals	Description
Feedback close	1 = Valve is closed
Channel Control	Control signal of the output channel.

(4) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected. Use this navigation button to open the standard view of a block configured in the engineering system.

3.10 VlvS - Valve (small)

3.10.1 VlvS views

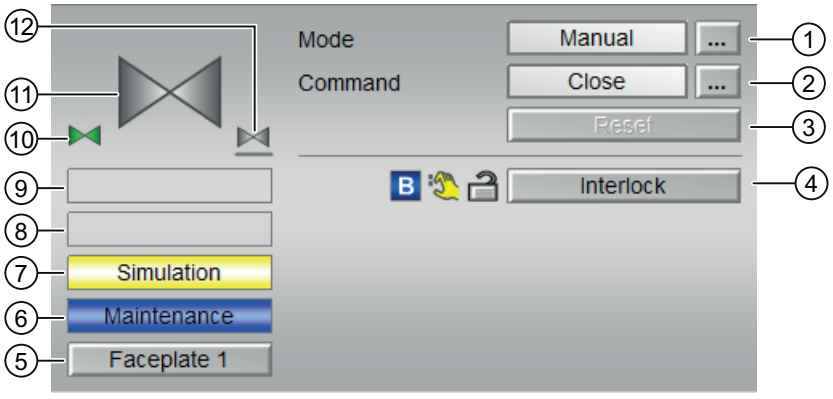
VlvS views

The VlvS views provides information on the following:

- VlvS Standard view (Page 92)
- Alarm view (Page 450)
- Trend view (Page 456)
- Parameter view for motors and valves (Page 446)
- VlvS Preview (Page 107)
- Memo view (Page 453)
- Batch view (Page 452)

3.10.2 VlvS Standard view

Standard view of VlvS



The VlvS Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Opening and closing the valve

(3) Resetting the block

(4) Operating range for the interlock functions of the block

(5) Navigation button for switching to the standard view of any faceplate

(6), (7), (8) and (9) Display area for block states

(10) Automatic preview

(11) Status display of the valve

(12) Neutral position of the valve

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. In the block, the following operating modes are available:

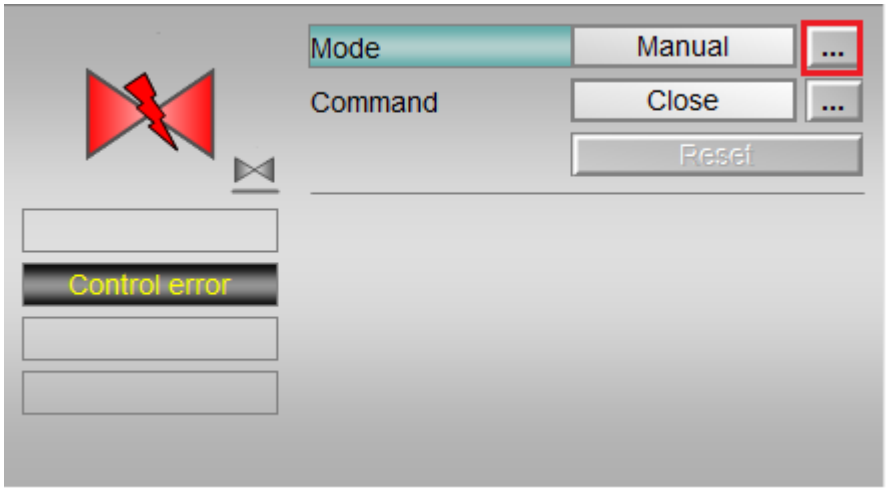
1. Local mode
2. Automatic mode
3. Manual mode
4. Out of service mode

1. Local mode: This operating mode is used for valve units. The control settings are made directly or through a locally available control station.
   The following valve actions can be controlled in the "Local mode":
   - Open
   - Close
2. Automatic mode: In automatic mode, control of the device is performed automatically by the program.
   The following valve actions can be controlled in the "Automatic mode":
   - Open
   - Close
3. Manual mode: In this mode, the control settings for the device are made manually by the operator. The operator can change the manipulated variable (output signal). The manipulated variable can be analog or binary.
   The following valve actions can be controlled in the "Manual mode":
   - Open
   - Close
4. Out of service mode: The "Out of service" operating mode is available to all devices that have an operating mode switchover and a direct connection to the process (for example, with a connection to a process tag). This operating mode is intended for the purposes of maintenance and servicing (for example, replacing the device).
   All functions of the device are disabled in the "Out of service" operating mode. Incoming and outgoing messages are not received or generated in this case. Only one operating mode switchover is possible in this operating mode.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

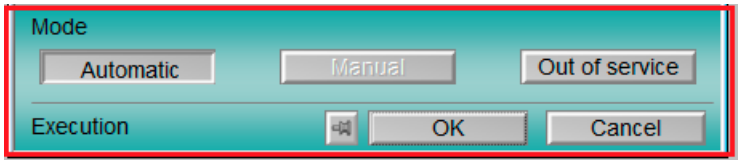
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.



4. Click "OK" if an acknowledgement is required.
5. The motor is switched to the selected operating mode.

(2) Opening and closing the valve

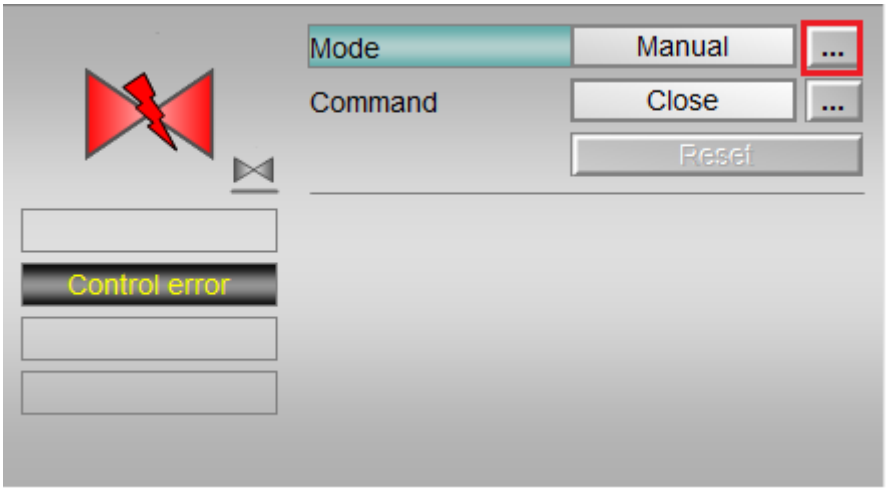
This area displays the default operating state for the valve. The following states can be displayed and executed:

- Open
- Close

Opening the valve

The VlvS block valve can be opened in the following way:

1. In the faceplate, Click "[...]" under "Mode"
   The operating window is displayed as an extension of the faceplate.



2. Click on the appropriate mode.
3. Click "OK" to confirm the execution.The mode changes to the respective mode that you have selected.

4. Select the "Open" command
   The operating window is displayed as an extension of the faceplate.
5. In the operating window, confirm execution for the desired valve position by clicking "OK".

Closing the valve

Once the VlvS block is opened, the valve can be closed in the following way:

1. Select the "Close" command
   The operating window is displayed as an extension of the faceplate.
2. In the operating window, confirm execution for the desired valve position by clicking "OK".

(3) Resetting the block

Click "Reset" for interlocks or errors.

(4) Operating range for the interlock functions of the block

This display is only visible when the corresponding block input is connected.

You can use this button to control the interlock functions of the block.

The following icons are displayed in addition to the buttons:

- Interlock status

- Signal status

- Bypass information

(5) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected. Use this navigation button to open the standard view of a block configured in the engineering system (ES).

(6), (7), (8) and (9) Display area for block states

This area provides additional information on the following operating state of the block:

- Maintenance
- Simulation
- External error
- End position error
- Control error
- Invalid signal
- Request 0/1: A reset to "automatic mode" is expected.

(10) Automatic preview

This display is only visible in "manual mode", "local mode", or with a reset request in "automatic mode", when the current output signals are not identical to the control in "automatic mode".

The display shows what state the valve would assume if you switched from "manual" or "local" mode to "automatic mode", or performed a reset to "automatic mode".

(11) Status display of the valve

The current status of the valve is graphically displayed here.

Icon	Meaning
	Valve is open
	Valve is closed
	Fault at valve

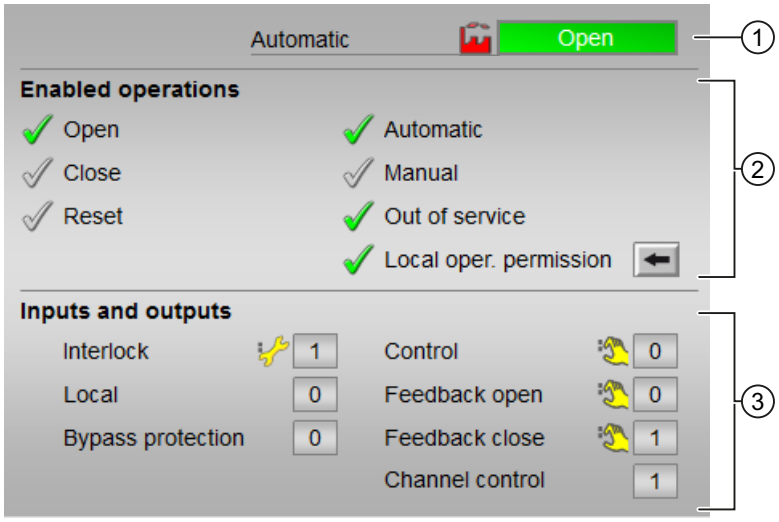
(12) Neutral position of the valve

Display the neutral position for the valve:

- If the neutral position of the valve is "Closed", a gray valve is shown.
- If the neutral position of the valve is "Open", a green valve is shown.

3.10.3 VlvS Preview

Preview of VlvS



With respect to the screenshots shown above, the VlvS preview consists of the following areas:

(1) Automatic preview

(2) Enable operations

(3) Displaying current control signals

(1) Automatic preview

This area shows you the block status after it has switched from "manual" or "local" mode to "automatic" mode.

If the block is in "automatic mode", the current block state is displayed.

(2) Enable operations

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions

The following enabled operations are shown here:

Signals	Description
Open	You can open the valve.
Close	You can close the valve.
Reset	You can reset the valve if interlocks or errors occur.
Automatic	You can switch to "automatic mode".
Manual	You can switch to "manual mode".
Out of service	You can switch to "Out of service" operating mode.
Local operator permission	Use the ← button to switch to the standard view of the OpStations block.

(3) Displaying current control signals

This area shows the most important parameters for this block with the current selection:

Signals	Descriptions
Interlock	0 = Interlocking without reset is active; you can operate the block without reset once the interlocking condition has disappeared
	1 = "Good" state
Local correct	1 = Control signal for "Local mode" (LocalLi) is active.
Interlock deact	0 = Bypass disabled
	1 = Bypassing interlock in "local mode" and in "simulation"
Control	0 = Valve is closing
	1 = Valve is opening
Feedback open	1 = Valve is open.

Signals	Descriptions
Feedback close	1 = Valve is closed.
Channel Control	Control signal of the output channel block

3.11 VlvMotL - Motor valve

3.11.1 VlvMotL views

VlvMotL views

The VlvMotL views provides information on the following:

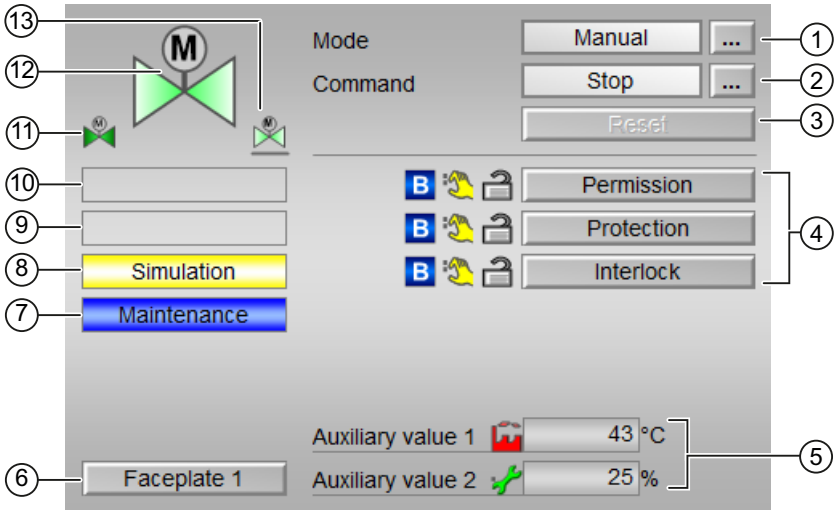
- VlvMotL Standard view (Page 110)
- Limit view of motors (Page 448)
- Alarm view (Page 450)
- Trend view (Page 456)
- VlvMotL Parameter view (Page 121)
- VlvMotL Preview (Page 116)
- Memo view (Page 453)
- Batch view (Page 452)

3.11.2 VlvMotL Standard view

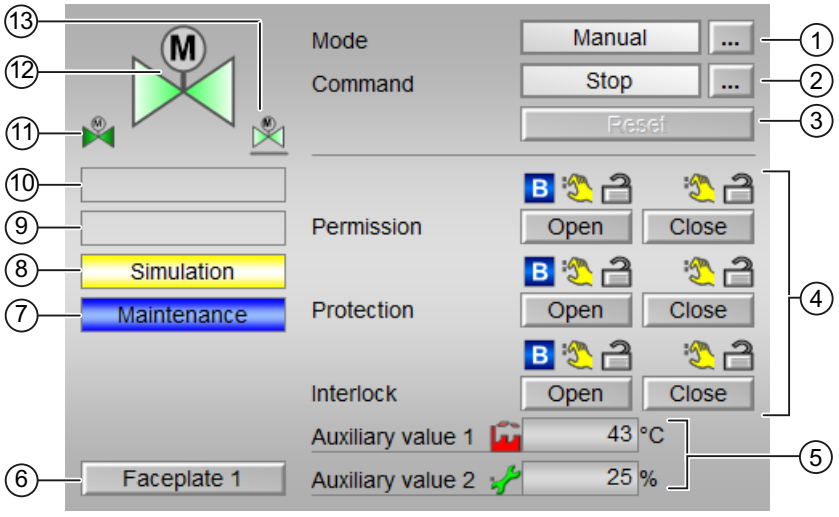
Standard view of VlvMotL

The images shown below provide the standard view of the VlvMotL block:

Display of the remaining monitoring time of the motor/valve is visible.



Display of the remaining monitoring time of the motor/valve is visible.



The VlvMotL Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Open, close and stop the motor valve

(3) Resetting the block

(4) Operating range for the interlock functions of the block

(5) Auxiliary values display

(6) Navigation button for switching to the standard view of any faceplate

(7), (8), (9) and (10) Block states display area

(11) Automatic preview

(12) Status display of the motor valve

(13) Neutral position of the valve

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. The following operating modes can be seen here:

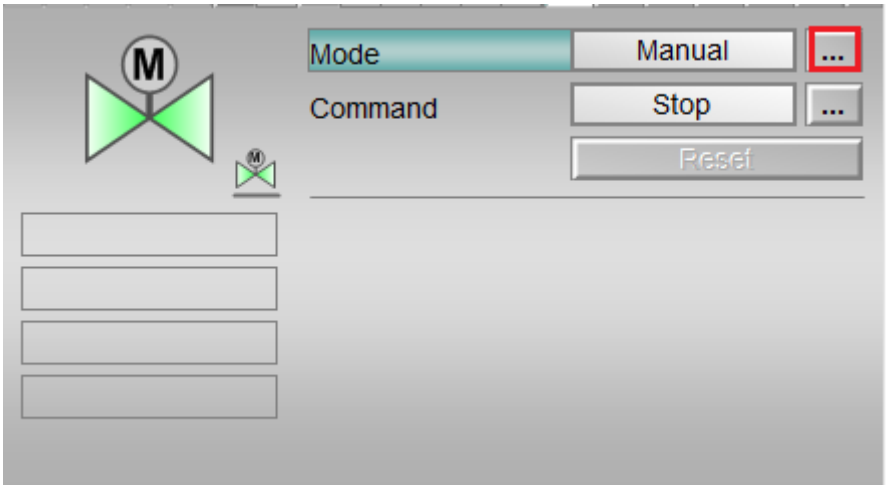
1. Local mode
2. Automatic mode
3. Manual mode
4. Out of service

1. Local Mode: This operating mode is used for motor unit. The control settings are made directly or through a locally available control station.
   In local mode, the following operations can be performed:
   - Open
   - Close
   - Stop
2. Automatic Mode: In automatic mode, control of the device is performed automatically by the program.
   In automatic mode, the following operations can be performed:
   - Open
   - Close
   - Stop
3. Manual Mode: In manual mode, the control settings for the device are made manually by the operator. The operator can change the manipulated variable (output signal). The manipulated variable can be analog or binary. In Manual mode, the following operations can be performed:
   - Open
   - Close
   - Stop
4. Out of service Mode: This operating mode is available to all devices that have an operating mode switchover and a direct connection to the process. This mode is intended for purposes of maintenance and servicing (replacing the device, for example). All functions of the device are disabled in this operating mode. Incoming or outgoing messages are not received or generated in this case. Only one operating mode switchover is possible in this operating mode.

Switching operating modes

1. Follow these steps to set the motor to a particular mode or to switch between the different operating modes:
2. Ensure the faceplate containing the respective block is open.

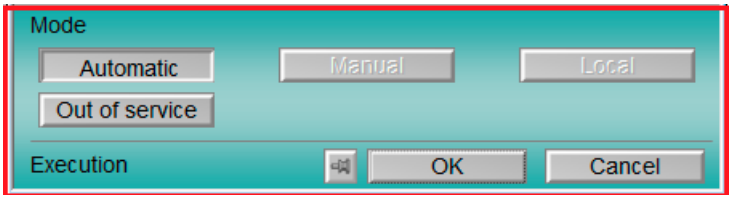
3. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

4. Select the respective button for the desired operating mode.



5. If acknowledgement is required, click "OK".
6. The motor will be switched to the selected operating mode.

(2) Open, close and stop the motor valve

This area shows you the default operating state for the motor valve. The following states can be seen and executed here:

- "Open"
- "Close"
- "Stop"
- "Rapid stop"

Opening, Closing and Stopping the motor valve

1. In the faceplate, select the appropriate mode that is required for the current operation.
2. Select [...] and choose the mode.
   The operating window is displayed as an extension of the faceplate.

3. To confirm execution, select the OK button.
   The mode changes to the respective mode you have selected.
4. Open the valve by providing the Open command.
   The operating window is displayed as an extension of the faceplate.
5. In the operating window, confirm execution for the Start operation by clicking OK. The motor is started. This status is indicated with green color in the graphical block icon within the faceplate.

Closing/Stopping the motor valve

1. Select the Close/Stop command.
   The operating window is displayed as an extension of the faceplate.
2. In the operating window, confirm execution for the desired valve position by clicking OK.

Rapid stop

Rapid stop has the highest priority in all operating modes (manual and automatic as well as local mode) and operating states. Rapid stop is activated from the faceplate.

When you click on the "Rapid stop" button in the faceplate, the drive stops immediately with the status as displayed below:

Rapid stop is unlocked for all operating modes using the "Reset" button in faceplate. Rapid stop can be selected even with the motor in "Stop" state. In this case, the motor start is prevented.

(3) Resetting the block

Click "Reset" for interlocks or errors.

(4) Operating range for the interlock functions of the block

This display is only visible when the corresponding block input is connected.

You can use this button to control the interlock functions of the block.

The following icons are displayed in addition to the buttons:

- Interlock status

- Signal status

- Bypass information

(5) Display area for auxillary values

This display is only visible when the corresponding block input is connected. You can use this area to display two auxiliary values that have been configured in the engineering system

6) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected. You can use this area to display two auxiliary values that have been configured in the engineering system

(7), (8), (9), (10) Display area for block states

This area provides additional information on the following operating states of the block:

- Maintenance
- Simulation
- Delay
- Motor protection
- External error
- Torque active
- End position error
- Control error
- Invalid signal
- Changeover error
- Forced open
- Forced close
- Forced stop
- Request 0/1: A reset to "automatic mode" is expected.

(11) Automatic preview

This display is only visible in "manual mode", "local mode", or with a reset request in "automatic mode", when the current output signals are not identical to the control in "automatic mode".

The display shows what state the valve would assume if you switch from "manual" or "local" mode to "automatic mode", or performed a reset to "automatic mode".

(12) Status display of the motor valve

The current status of the motor valve is graphically displayed here.

Icon	Meaning
	Valve is open
	Valve is closed
	Fault at valve
	Valve is opening
	Valve is closing

(13) Neutral position of the valve

This representation shows the neutral position for the valve:

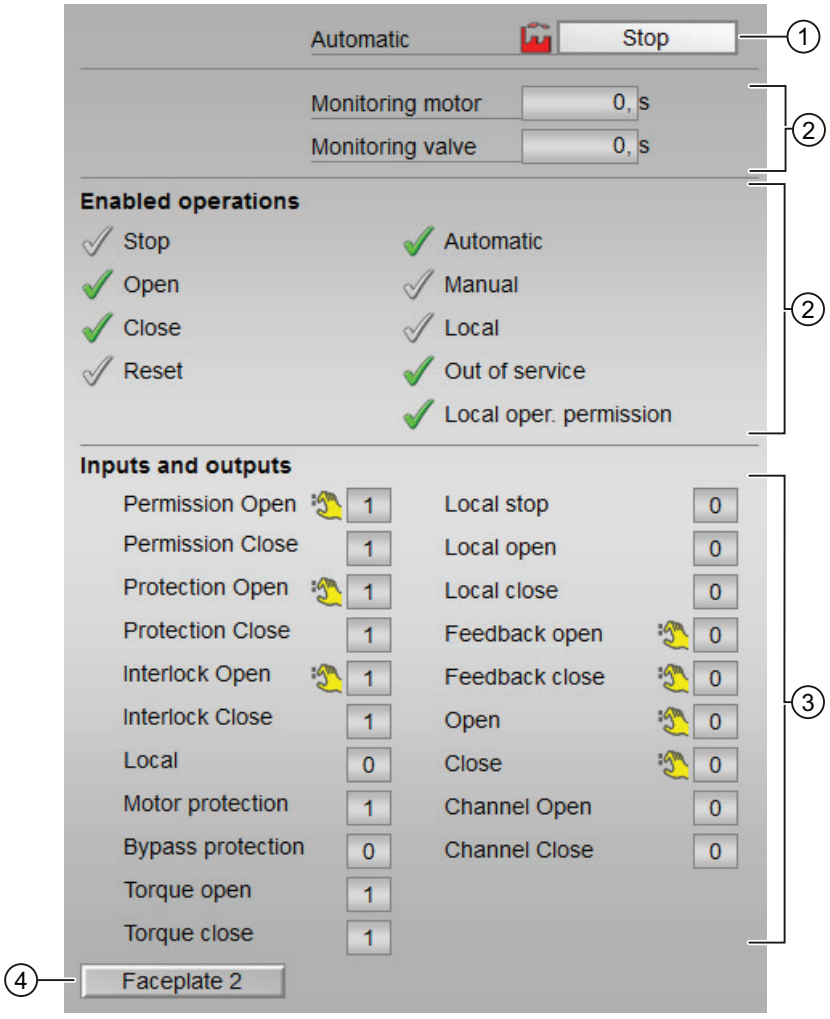
- Green: Neutral position is "Open"
- Gray: Neutral position is "Closed"
- Light green: Neutral position is "Stop"

3.11.3 VlvMotL Preview

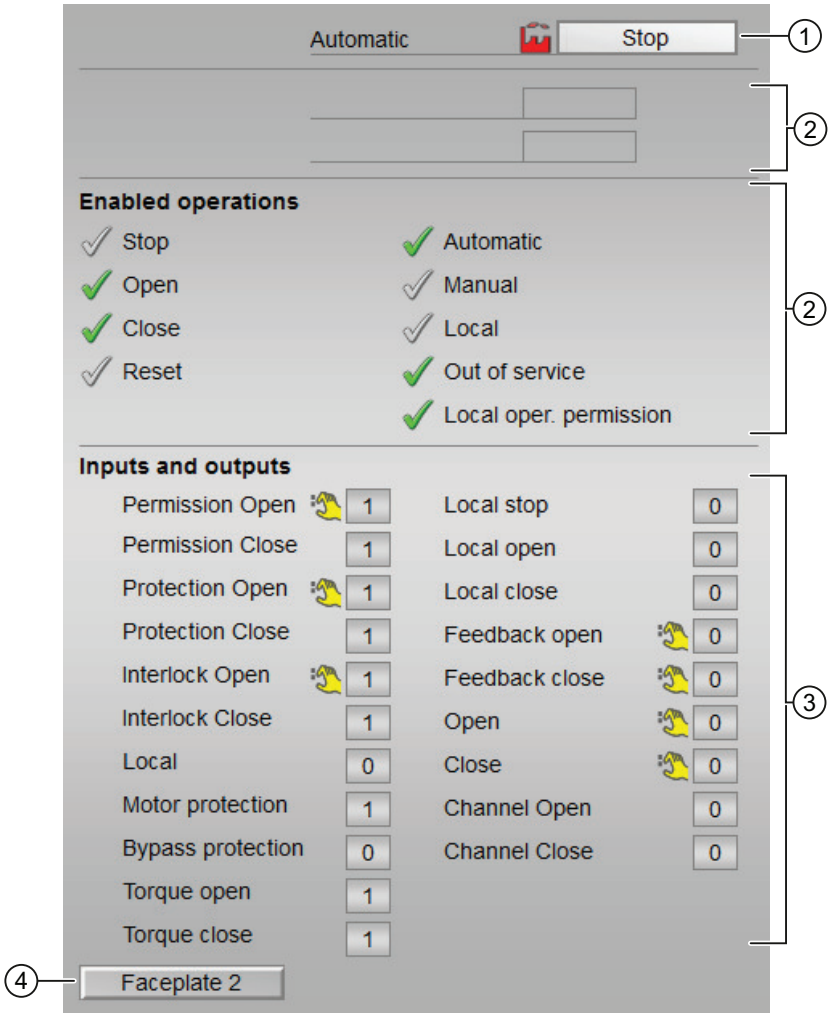
Preview of VlvMotL

The preview of VlvMotL consists the following:

Display of the remaining monitoring time of the motor/valve is visible.



Display of the remaining monitoring time of the motor/valve not visible.



The preview of VlvMotL consists the following:

(1) Automatic preview

(2) Enable operations

(3) Displaying current control signals

(4) Navigation button for switching to the standard view of any faceplate

(1) Automatic Preview

This area shows you the block status after it has switched from "manual" or "local" mode to "automatic" mode.

If the block is in "automatic mode", the current block state is displayed.

(2) Enable operations

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions

Information about the feasibility of the below mentioned actions are displayed in this area of preview window.

Action	Description
Stop	Stop the motor valve
Open	Open the motor valve
Close	Close the motor valve
Reset	Reset the motor valve if interlocks or errors occur.
Automatic	Switch to "automatic mode".
Manual	Switch to "manual mode".
Local	Switch to "local mode".
Out of service	Switch to "out of service mode".
Local operator permission	Use the ← button to switch to the standard view of the OpStations block..
Monitoring motor	Remaining monitoring time of the motor
Monitoring valve	Remaining monitoring time of the valve

(3) Displaying current control signals

This area shows the most important parameters of the device with the current control.

The following table shows the parameters that are displayed in this area:

Parameter	Control
Permission	0 = Motor valve activation not enabled on OS
	1 = Enable for "opening"/"closing" from the neutral position
Permission Open	0 = Motor valve "open" activation not enabled on OS
	1 = Enable for "open" from the neutral position
Permission Close	0 = Motor valve "close" activation not enabled on OS
	1 = Enable for "close" from the neutral position
Protection	0 = Protective interlocking is effective; once the interlocking condition has disappeared,you will have to reset the block
	1 = "Good" state
Protection Open	0 = Protective open interlocking is effective; once the interlocking condition has disappeared, you will have to reset the block
	1 = "Good" state

Parameter	Control
Protection Close	0 = Protective close interlocking is effective; once the interlocking condition has disappeared, you will have to reset the block
	1 = "Good" state
Interlock	0 = Interlocking without reset is active; you can operate the block without reset once theinterlocking condition has disappeared
	1 = "Good" state
Interlock Open	0 = Interlocking open without reset is active; you can operate the block without reset once the interlocking condition has disappeared
	1 = "Good" state
Interlock Close	0 = Interlocking close without reset is active; you can operate the block without reset once the interlocking condition has disappeared
	1 = "Good" state
Local correct	1 = Control signal for "Local mode" (LocalLi) is active
Motor protection	1 = Motor is in "good" state
	0 = Motor protection in effect
Interlock deact	0 = Bypass disabled
	1 = Bypassing interlock in "local mode" and in "simulation"
Torque opening	0 = Torque shutdown when opening
Torque closing	0 = Torque shutdown when closing
Local stop	1 = Stopping the motor valve in "local mode"
Local open	1 = Opening the motor valve in "local mode"
Local close	1 = Closing the motor valve in "local mode"
Feedback open	1 = Motor valve is open
Feedback close	1 = Motor valve is closed
Open	1 = Motor valve is opening
Close	1 = Motor valve is closing
Channel Open	Signal from the output channel block for "Open"
Channel Close	Signal from the output channel block for "Close"

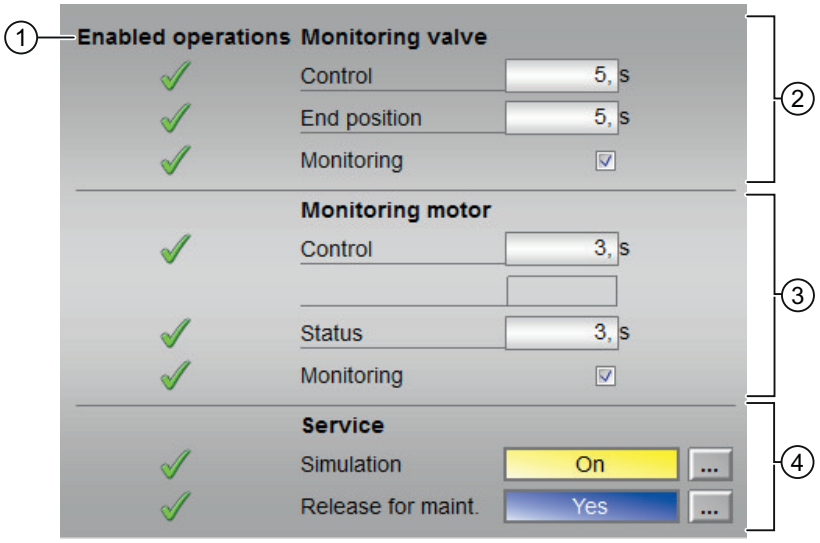
(4) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected.

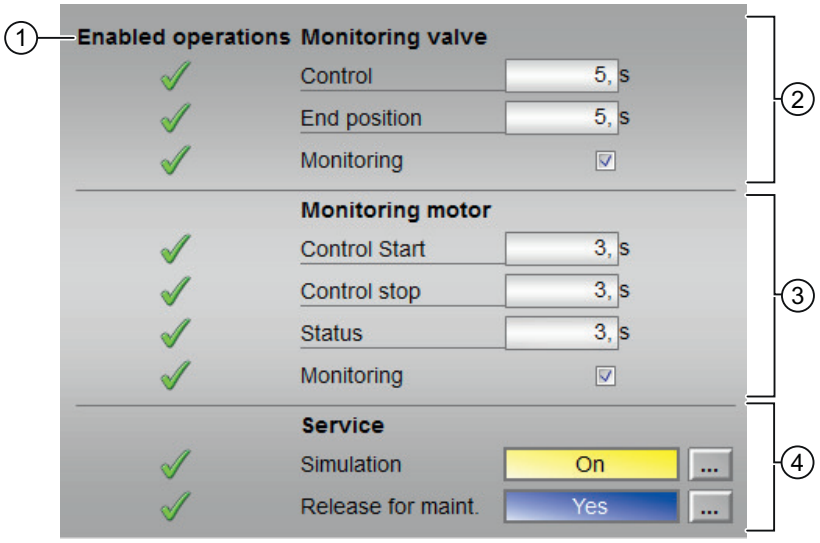
3.11.4 VlvMotL Parameter view

Parameter view of VlvMotL

Option 1:



Option 2:



The parameter view of VlvMotL consists of:

(1) Enabled operation

(2) Monitoring valve

(3) Monitoring motor

(1) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions

(2) Monitoring valve

In this area, you change parameters and therefore influence the valve.

You can influence the following parameters:

- "Control": Monitoring time for the valve run time (dynamic)
- "End position": Monitoring time for maintaining the valve position (static)
- "Monitoring": You can enable monitoring by selecting the check box (☑

(3) Monitoring motor

In this area, you change parameters and therefore influence the motor.

- "Control": Monitoring time during startup and shutdown of the motor (dynamic) in option 1 picture.
- "Status": Monitoring time during permanent operation of the motor (static) in option 1 picture.
- "Control start": Monitoring time during startup of the motor (dynamic) in option 2 picture.
- "Control stop": Monitoring time during shutdown of the motor (dynamic) in option 2 picture.
- "Status": Monitoring time during permanent operation of the motor (static) in option 2 picture.
- "Monitoring": You can enable monitoring by selecting the check box (☑

(4) Service

You can select the following functions in this area:

- "Simulation"
- "Release for maintenance" (with display for a maintenance request)

3.12 VlvAnL - Control valve

3.12.1 VlvAnL views

VlvAnL views

The VlvAnL views provides information on the following:

- VlvAnL Standard view (Page 123)
- Limit view of VlvAnL (Page 138)
- Alarm view (Page 450)
- Trend view (Page 456)
- Parameter view of VlvAnL (Page 137)
- VlvAnL Preview (Page 132)
- Memo view (Page 453)
- Batch view (Page 452)
- Ramp view (Page 457)

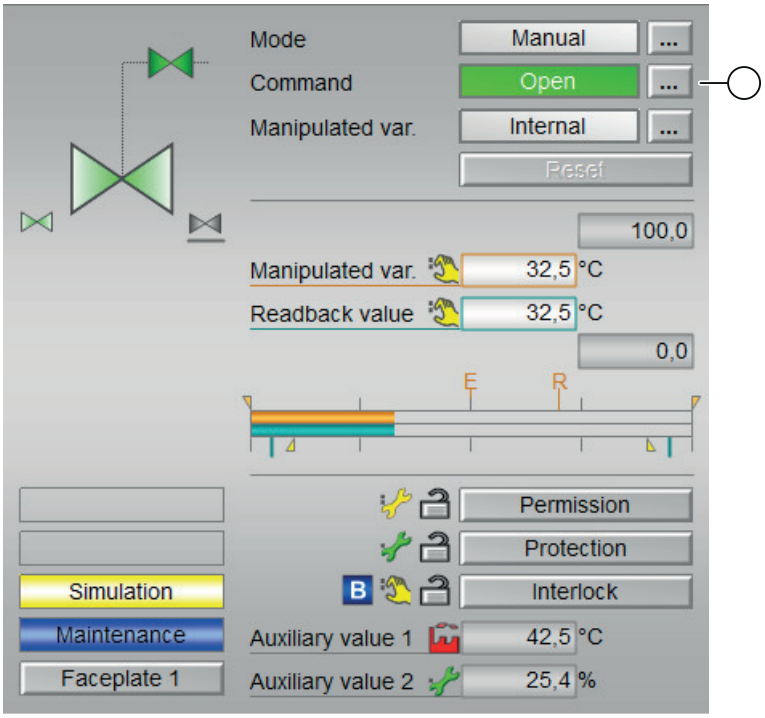
3.12.2 VlvAnL Standard view

Standard view of VlvAnL

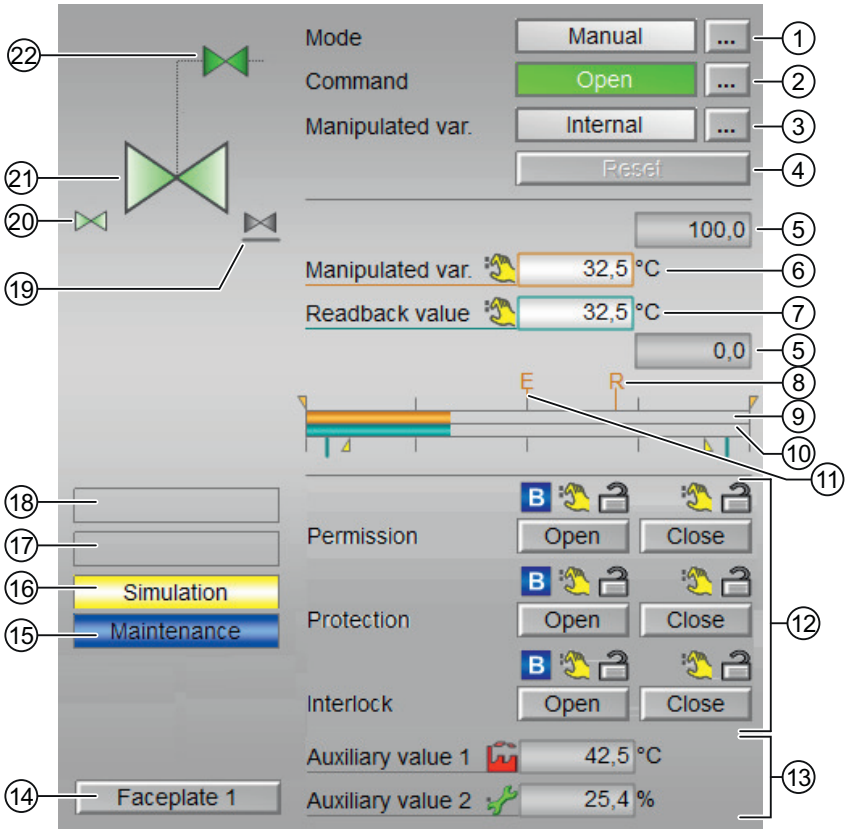
The images shown below provide the standard view of the VlvL block:

Standard view with auxiliary valve of VlvAnL

Option 1:

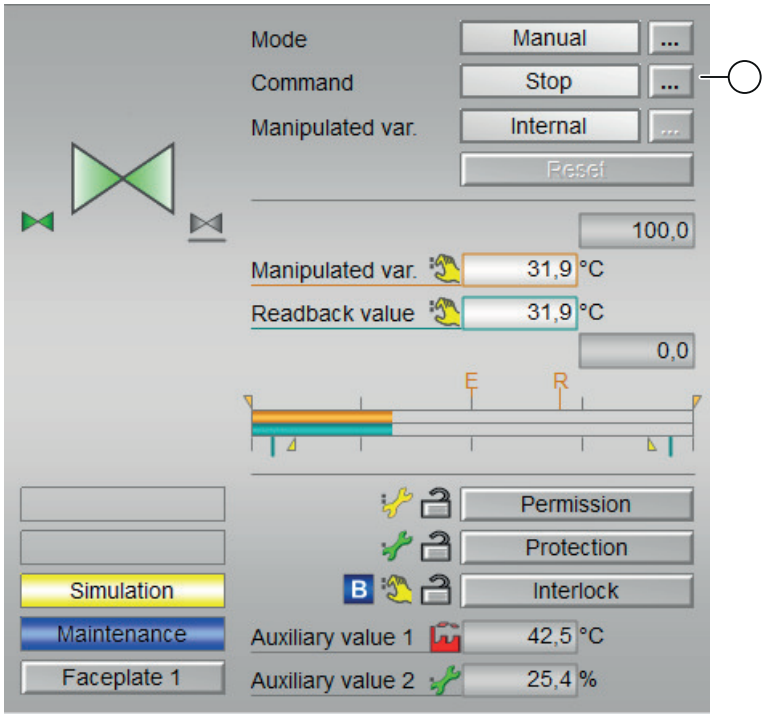

Mode
Manual
Command
Open
Manipulated var.
Internal
Reset
100,0
Manipulated var.
32,5 °C
Readback value
32,5 °C
0,0
E
R
Permission
Protection
Simulation
Interlock
Maintenance
Auxiliary value 1
42,5 °C
Faceplate 1
Auxiliary value 2
25,4 %

Option 2:

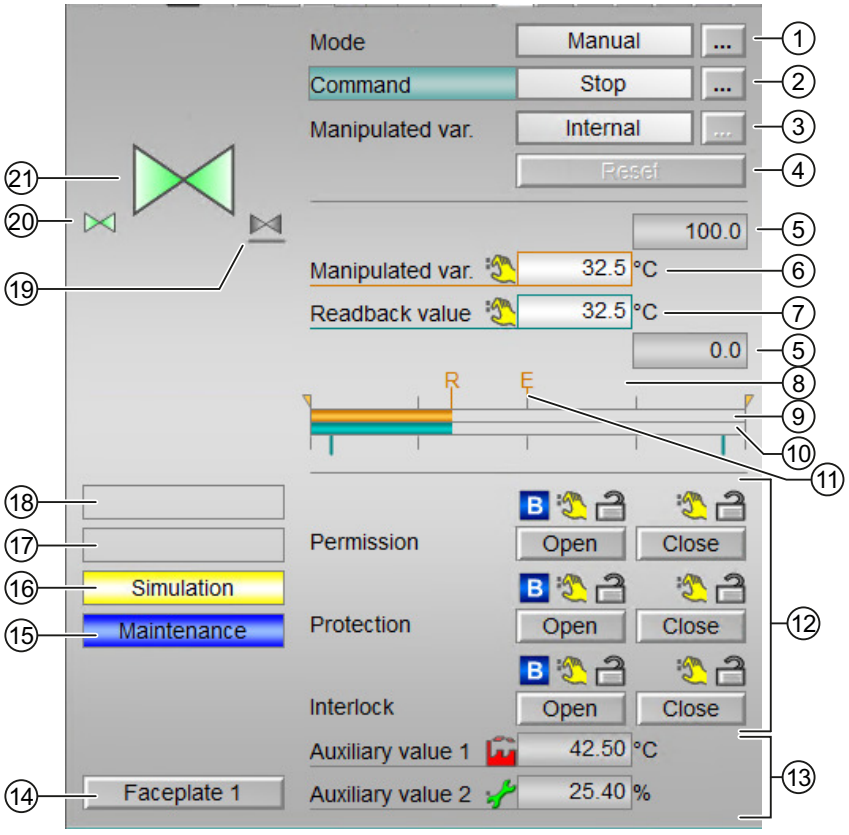

Mode
Manual
Command
Open
Manipulated var.
Internal
Reset
100,0
Manipulated var.
32,5 °C
Readback value
32,5 °C
0,0
E
R
Permission
Open
Close
Protection
Open
Close
Interlock
Open
Close
Auxiliary value 1
42,5 °C
Auxiliary value 2
25,4 %
Simulation
Maintenance
Faceplate 1
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

Standard view without auxiliary valve of VlvAnL

Option 1:



Option 2:



(1) Displaying and switching the operating mode

(2) Opening, closing and stopping the control valve

(3) Displaying and switching the default manipulated variable

(4) Resetting the block

(5) High and low scale range for the manipulated variable

(6) Displaying and changing the manipulated variable including signal status

(7) Displaying the position feedback including signal status

(8) Target manipulated variable display of the manipulated variable ramp

(9) Bar graph for the manipulated variable

(10) Bar graph for position feedback

(11) Display of external manipulated variable

(12) Operating range for the interlock functions of the block

(13) Display of auxiliary values

(14) Navigation button for switching to the standard view of any faceplate

(15), (16), (17), (18) Display area for block states

(19) Representation of neutral position

(20) Automatic preview

(21) Status display of the control valve

(22) Picture of auxiliary valve

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. The following operating modes are supported:

1. Local mode
2. Automatic mode
3. Manual mode
4. Out of service mode

1. Local mode: In local mode, The block supports the local modes 2 and 4. Therefore, the control settings for the block are also made based on internal adjustment of the feedback value.
2. Automatic mode: In automatic mode, control of the device is performed automatically by the program.
   The following valve actions can be controlled in the "Automatic mode":
   - Open
   - Close

   Note

   If no auxiliary valve is configured, no internal manipulated variable specifications can be made in "automatic mode". Manipulated variable specification is set to external when the mode is switched to "automatic".
3. Manual mode: In manual mode, the control settings for the device are made manually by the operator. The operator can change the manipulated variable (output signal). The manipulated variable can be analog or binary.
   The following valve actions can be controlled in the "Manual mode":
   - Open
   - Close

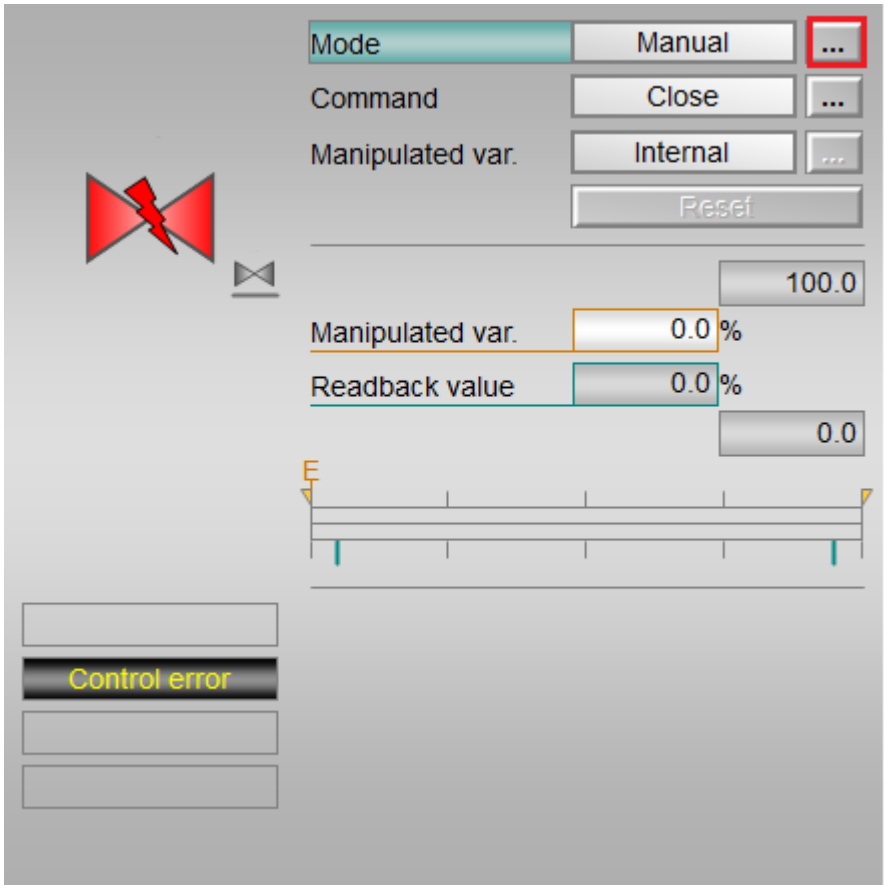
   Note

   If no auxiliary valve is configured, no external manipulated variable specifications can be made in the manual operating mode. Manipulated variable specification is set to internal when the mode is switched to manual.
4. Out of service mode: This operating mode is available to all devices that have an operating mode switchover and a direct connection to the process. This mode is intended for purposes of maintenance and servicing (replacing the device, for example). All functions of the device are disabled in this operating mode. Incoming or outgoing messages are not received or generated in this case. Only one operating mode switchover is possible in this operating mode.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

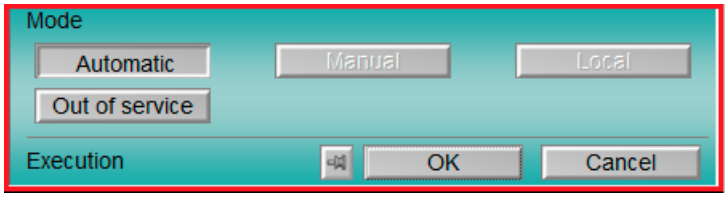
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.



4. If acknowledgement is required, click "OK".
5. The motor will be switched to the selected operating mode.

(2) Opening, closing and stopping the control valve

This area shows you the default operating state for the valve. The following states can be shown and executed here:

- "Open"
- "Close"
- "Stop" (display only, no operation possible)

Note

"Close"/"open" command relates to the auxiliary valve. If no auxiliary valve is required for controlling the control valve, the "Open" and "Close" commands affect the control valve.

Opening the valve

The VlvAnL block valve can be opened in the following way:

In the faceplate, Click "[...]" under "Mode". The operating window is displayed as an extension of the faceplate.

Click on the appropriate mode.

Click "OK" to confirm the execution.The mode changes to the respective mode that you have selected.

Select the "Open" command. The operating window is displayed as an extension of the faceplate.

In the operating window, confirm execution for the desired valve position by clicking "OK".

Closing/Stopping the valve

Once the VlvAnL block is opened, the valve can be closed in the following way:

Select the "Close/Stop" command. The operating window is displayed as an extension of the faceplate.

(3) Displaying and switching the default manipulated variable

This area shows how to specify the manipulated variable. The manipulated variable can be specified as follows:

- "External"
- "Internal"

(4) Resetting the block

Click "Reset" for interlocks or errors.

(5) High and low scale range for the manipulated variable

These values provide information on the display range for the bar graph of the manipulated variable.

(6) Displaying and changing the manipulated variable including signal status

This area shows the current manipulated variable with the corresponding signal status.

The manipulated variable can only be changed by the following:

- Internal manipulated variable specification
- An opened auxiliary valve

(7) Displaying the position feedback including signal status

This area shows the current feedback of the manipulated variable with the corresponding signal status.

(8) Target manipulated variable display of the manipulated variable ramp

This display [R] shows the target setpoint and is only visible if you have enabled ramp generation in the Ramp view.

(9) Bar graph for the manipulated variable

This area shows the current manipulated variable in the form of a bar graph. The visible area in the bar graph depends on the configuration in the engineering system (ES).

(10) Bar graph for position feedback

This area shows the current position feedback in the form of a bar graph.

(11) Display of external manipulated variable

This display [E] is only visible when you have selected "Internal" manipulated variable specification. It shows the external manipulated variable that would apply if you were to change the manipulated variable specification to "External".

(12) Operating range for the interlock functions of the block

This display is only visible when the corresponding block input is connected.

You can use this button to control the interlock functions of the block.

The following icons are displayed in addition to the buttons:

- Interlock status

- Signal status

- Bypass information

(13) Display of auxiliary values

This display is only visible when the corresponding block input is connected. You can use this area to display two auxiliary values that have been configured in the engineering system (ES).

(14) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected. You can use this area to display two auxiliary values that have been configured in the engineering system (ES).

(15), (16), (17) and (18) Display area for block states

This area provides additional information on the following operating states of the block:

- Maintenance
- Simulation
- Delay
- External error
- End position error
- Control error
- Invalid signal
- Changeover error
- Forced open
- Forced close
- Forced tracking
- Tracking
- Request 0/1: A reset to "automatic mode" is expected.
- MV ramp active

(19) Representation of neutral position

This representation shows the neutral position for the control valve:

- Green: Neutral position is "Open"
- Gray: Neutral position is "Closed"
- Light green: Neutral position is "Stop"

(20) Automatic preview

This display is only visible in "manual mode", in "local mode", or with a reset request in "automatic mode", when the current output signals are not identical to the control in "automatic mode".

The display shows what state the valve would assume if you switched from "manual" or "local" mode to "automatic mode" or performed a reset to "automatic mode".

(21) Status display of the control valve

This display provides the state of the control valve.

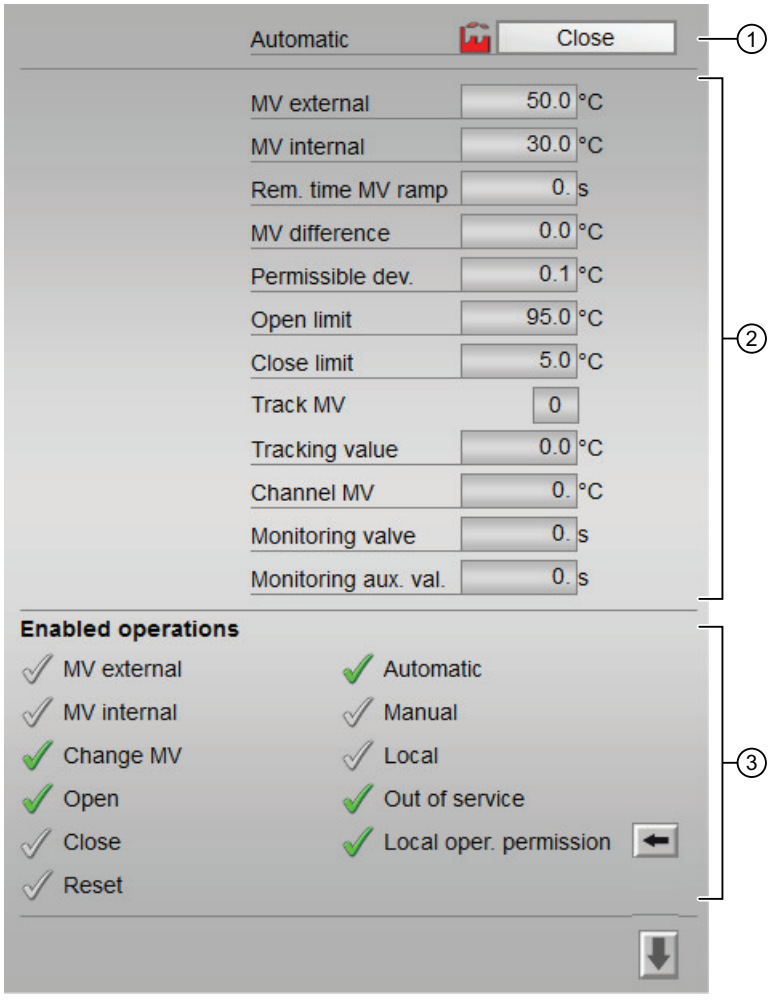
(22) Picture of auxiliary valve

The current status of the auxiliary valve is graphically displayed here.

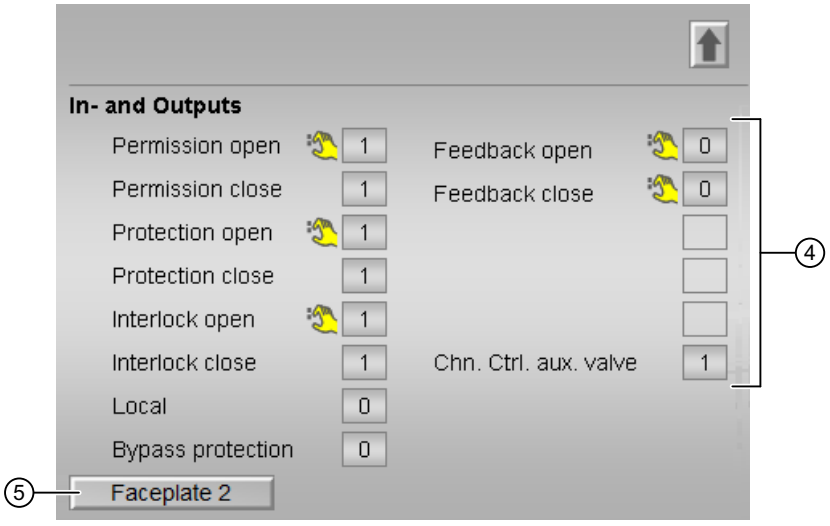
3.12.3 VlvAnL Preview

Preview of VlvAnL

The preview of VlvAnL is as shown below:



The preview has an upper half and a lower half. You can change between the two halves with the arrow keys.



The preview of VlvAnL consists of the following:

(1) Automatic preview

(2) Preview area

(3) Enable operations

(4) Inputs and outputs

(5) Navigation button for switching to the standard view of any faceplate

(1) Automatic preview

This shows the operating status of the control valve after it has switched from "manual" or "local" mode to "automatic" mode.

If the block is in "automatic mode", the current block state is displayed.

(2) Preview area

Components	Description
Manipulated variable external	Display current external manipulated variable
Manipulated variable internal	Display current internal manipulated variable
Rem. time MV ramp	Remaining time to reach the ramp target value
Manipulated variable difference	Current manipulated variable error
Permissible dev	Permissible ± deviation of manipulated variable that is output. If the manipulated variable feedback Rbk is within this range, the manipulated variable is considered reached.
Open limit	Limit for forming the "Control valve Open" signal. If the position feedback reaches this limit, the control valve is open.
Close limit	Limit for forming the "Control valve Closed" signal. If the position feedback reaches this limit, the control valve is closed.
Manipulated variable tracking	Manipulated variable is corrected to the tracking value. Tracking value for the "Track manipulated variable".
Channel MV	Display of the manipulated variable by the output channel block.
Auxiliary valve monitoring	Display of the remaining monitoring time of the auxiliary valve.
Monitoring valve	Display of the remaining monitoring time of the valve.

(3) Enabled operations

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions

The following enabled operations are shown here:

Action	Description
Manipulated variable external	Enables external manipulated variable specification
Manipulated variable internal	Enables internal manipulated variable specification
Change MV	Changes the manipulated variable
Open	Opens the valve.
Close	Closes the valve.
Reset	Resets the valve if interlocks or errors occur.
Automatic	You can switch to "automatic mode".
Manual	You can switch to "manual mode".
Local	You can switch to "local mode".
Out of service	You can switch to "Out of service" operating mode.
Local operator permission	Use the ← button to switch to the standard view of the Op-Stations block.

(4) Inputs and outputs

This area shows the most important parameters for this block with the current selection.

Parameter	Control
Permission	0 = Valve activation not enabled on OS.
	1 = Enable for "opening"/"closing" from the neutral position.
Permission open	0 = Motor valve "open" activation not enabled on OS
	1 = Enable for "open" from the neutral position
Permission close	0 = Motor valve "close" activation not enabled on OS
	1 = Enable for "close" from the neutral position
Protection	0 = Protective interlocking is in effect; once the interlocking condition in automatic mode has disappeared, you will have to reset the block.
	1 = "Good" state
Protection open	0 = Protective open interlocking is in effect; once the interlocking condition has disappeared, you will have to reset the block
	1 = "Good" state

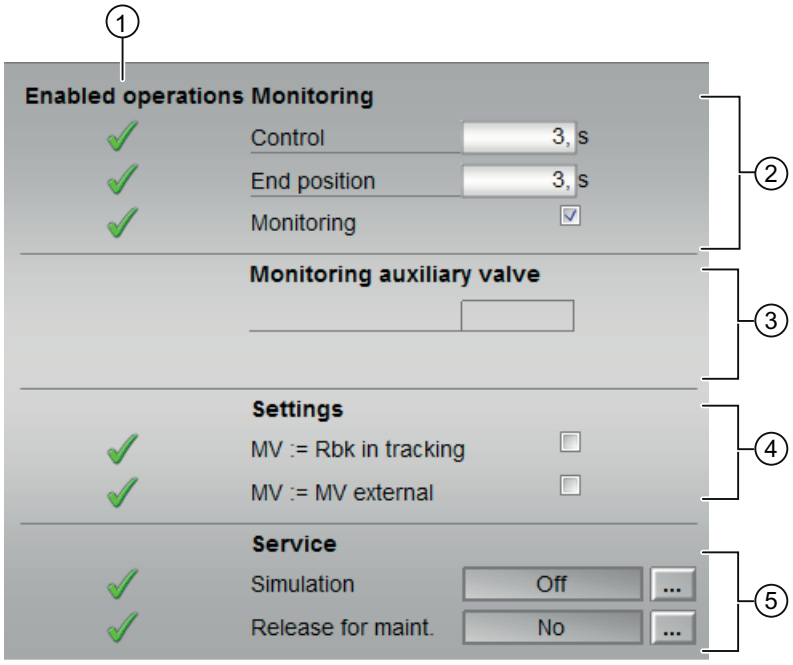
Parameter	Control
Protection close	0 = Protective close interlocking is in effect; once the interlocking condition has disappeared, you will have to reset the block
	1 = "Good" state
Interlock	0 = Interlocking without reset is active; you can operate the block without reset once the interlocking condition has disappeared
	1 = "Good" state
Interlock open	0 = Open interlocking without reset is active; you can operate the block without reset once the interlocking condition has disappeared
	1 = "Good" state
Interlock close	0 = Close interlocking without reset is active; you can operate the block without reset once the interlocking condition has disappeared
	1 = "Good" state
Local correct	1 = Control signal for "Local mode" (LocalLi) is active
Interlock deact	0 = Bypass disabled
	1 = Bypassing interlock in "local mode" and in "simulation"
Control valve	"Feedback open": The display is derived from the FbkOpenOut output. However, this output is formed from the configured limit for the "Open" position.
	"Feedback close": The display is derived from the FbkCloseOut output. However, this output is formed from the configured limit for the "Closed" position.
Control auxiliary valve: only visible when there is a auxiliary valve	Control binary control
	Feedback open auxiliary valve
	Feedback closed auxiliary valve
	Channel Control auxiliary valve: Signal for controlling the auxiliary valve by the outputchannel block.

(5) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected.

3.12.4 VlvAnL Parameter view

Parameter view of VlvAnL



The Parameter view consists of the following:

(1) Enabled operation

(2) Monitoring

(3) Monitoring auxiliary valve

(4) Settings

(5) Service

(1) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

(2) Monitoring

In this area, you change parameters and therefore influence the control valve.

You can influence the following parameters:

- "Control": Monitoring time during opening and closing of the control valve (dynamic)
- "End position": Monitoring time of the end position of the control valve (static)

Enable monitoring

You can enable monitoring by selecting the check box (☑).

(3) Monitoring auxiliary valve

As under (2) Monitoring, but only visible when there is an auxiliary valve. Only one common monitoring time can be entered for dynamic and static monitoring.

(4) Settings

MV = Rbk in tracking mode: Correction is performed with the position feedback Rbk instead of the MV_Trk tracking value. The switchover from "Track manipulated variable" to "Do not track manipulated variable" is bumpless.

MV = MV extern: Bumpless switchover of manipulated variable from external to internal. The internal manipulated variable is tracked to the external one.

(5) Service

You can select the following functions in this area:

- "Simulation"
- "Release for maintenance" (with display for a maintenance request)

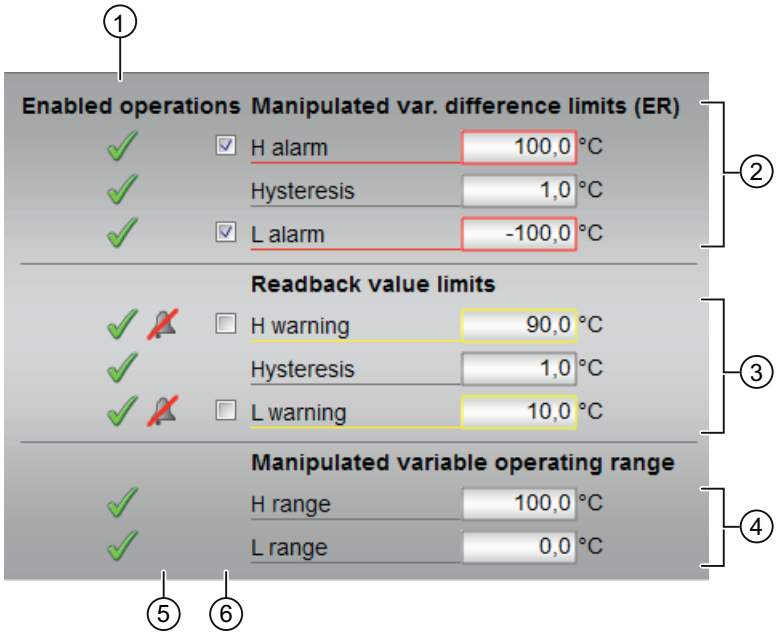
3.12.5 VlvAnL Limit view

Limit view of VlvAnL

Several values are set in this view by default:

- Manipulated variable difference limits
- Readback value limits
- Manipulated variable operating range

The toolbars of the faceplate and the block icon indicate when the limits are reached or violated.



The Limit view consists of the following:

(1) Enabled operation

(2) Manipulated variable difference limits

(3) Readback value limits (MV)

(4) Manipulated variable operating range (MV)

(5) Message suppression / delay

(6) Suppress messages

(1) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

(2) Manipulated variable difference limits

In this area, you can enter the limits for the manipulated variable error.

You can change the following limits:

- "H alarm": Alarm high
- "Hysteresis"
- "L alarm": Alarm low

(3) Readback value limits (MV)

In this area, you can enter the limits for the readback value (position feedback).

You can change the following limits:

- "H warning": Warning high
- "Hysteresis"
- "L warning": Warning low

(4) Manipulated variable operating range (MV)

In this area, you can enter the limits for the manipulated variable operation range.

You can change the following limits:

- "H range": Range limit high
- "L range": Range limit low

(5) Message suppression / delay

Message suppression indicates whether or not the suppression of the associated message inthe AS block is activated with the xx_MsgEn parameter. The output of messages is not suppressed when the block is installed (all xx_MsgEn parameters are preset to 1). Messages can only be output if limit monitoring of the additional analog value has been enabled.

Alarm delays are also displayed in this position.

(6) Suppress messages

You can enable / disable messages by setting the check mark.

3.13 VlvPosL - Valve positioner

3.13.1 VlvPosL views

VlvPosL views

The VlvPosL views provides information on the following:

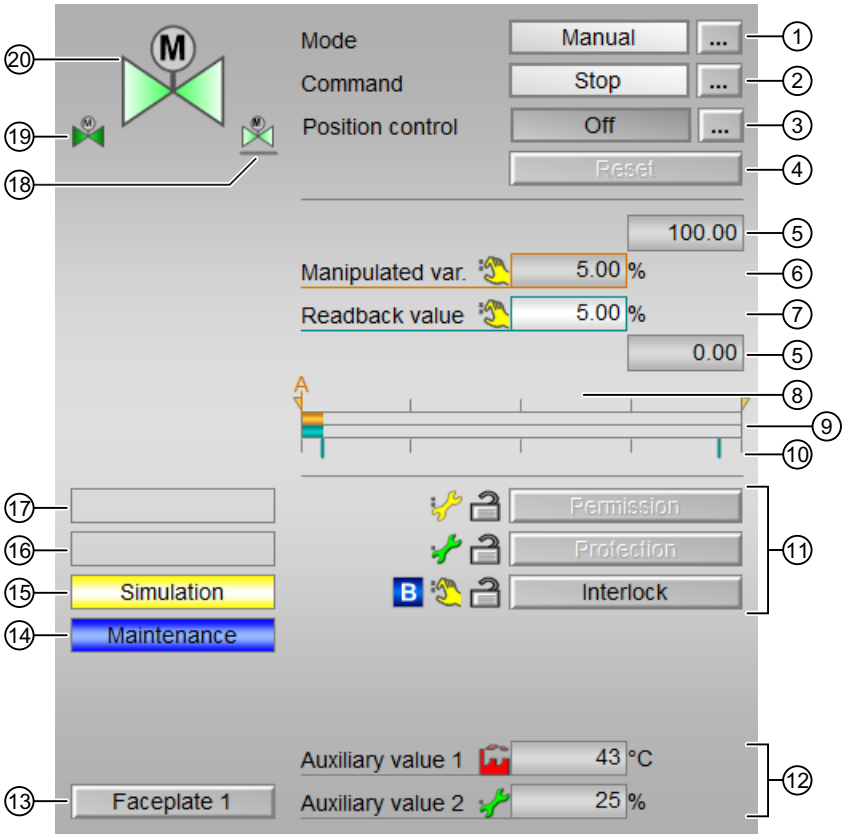
- VlvPosL Standard view (Page 141)
- VlvPosL Limit view (Page 157)
- Alarm view (Page 450)
- Trend view (Page 456)
- VlvPosL Parameter view (Page 154)
- VlvPosL Preview (Page 150)
- Memo view (Page 453)
- Batch view (Page 452)

3.13.2 VlvPosL Standard view

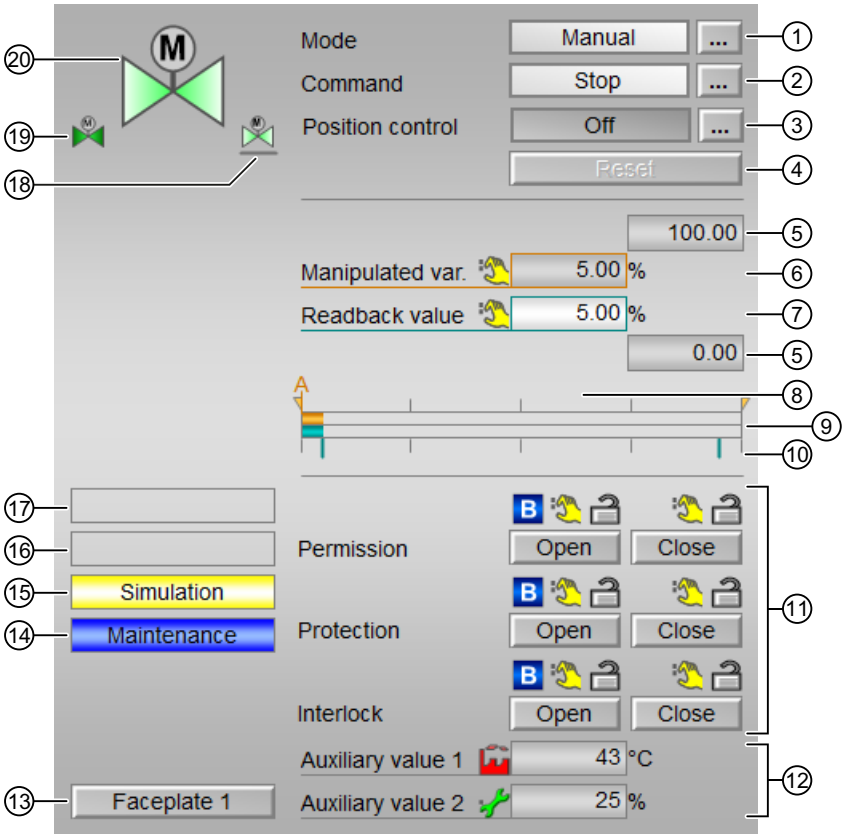
Standard view of VlvPosL

The image shown below provides the standard view of the VlvPosL block:

Option1:


Mode
Manual
Command
Stop
Position control
Off
Reset
100.00
Manipulated var.
5.00 %
Readback value
5.00 %
0.00
A
Permission
Protection
B
Interlock
Simulation
Maintenance
Auxiliary value 1
43 °C
Auxiliary value 2
25 %
Faceplate 1
1
2
3
4
5
6
7
5
8
9
10
11
12
13
14
15
16
17
18
19
20

Option2:



(1) Display and switch the operating mode

(2) Open, close and stop the motor valve

(3) Activate positioning at an analog manipulated variable

(4) Reset the block

(5) High and low scale range for the manipulated variable

(6) Display and change the manipulated variable including signal status

(7) Position feedback display including signal status

(8) Manipulated variable display for automatic mode

(9) Bar display for manipulated variable

(10) Bar display for position feedback

(11) Area for operating the interlock functions of the block

(12) Display for auxiliary values

(13) Jump key to standard view of any faceplate

(14), (15), (16) and (17) Display area for block states

(18) Neutral position of the valve

(19) Automatic preview

(20) Status display of the motor valve

(1) Displaying and switching the operating mode

This area provides information on the operating mode currently in use. The following operating modes can be shown here:

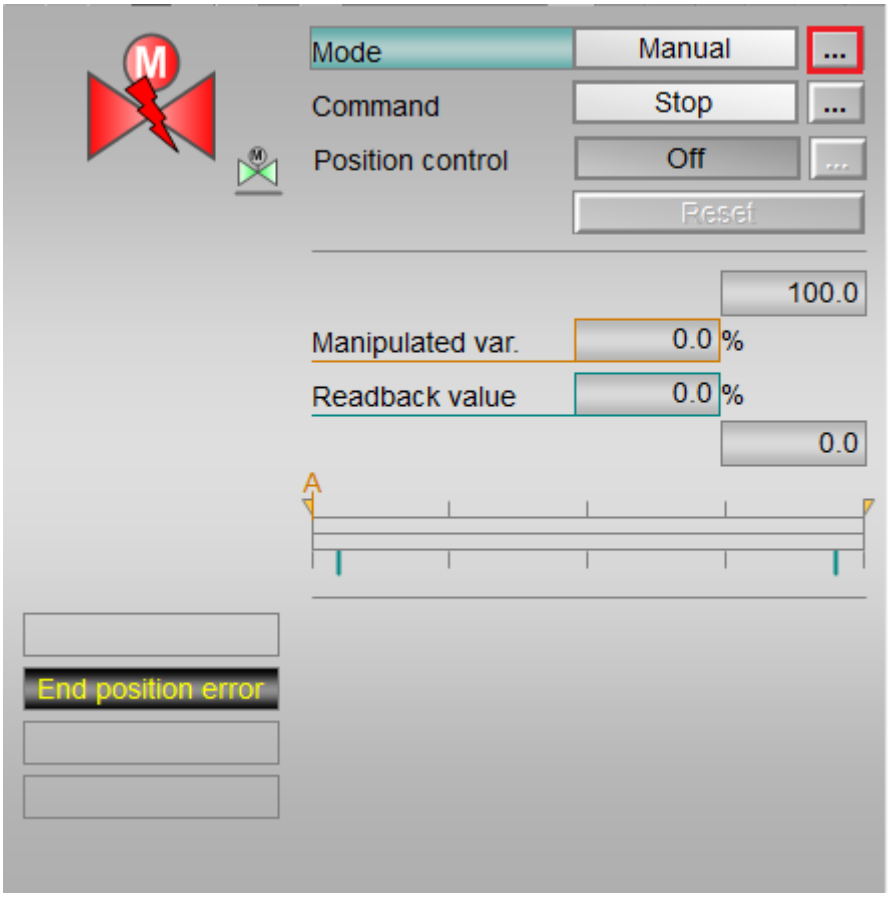
1. Local mode
2. Automatic mode
3. Manual mode
4. Out of service mode

1. Local mode: This operating mode is used for motor unit. The control settings are made directly or through a locally available control station.
   In local mode, the following operations can be performed:
   - Open
   - Close
   - Stop
2. Automatic mode: In automatic mode, control of the device is performed automatically by the program.
   In automatic mode, the following operations can be performed:
   - Open
   - Close
   - Stop
3. Manual mode: In this mode, the control settings for the device are made manually by the operator. The operator can change the manipulated variable (output signal). The manipulated variable can be analor or binary.
   In manual mode, the following operations can be performed:
   - Open
   - Close
   - Stop
4. Out of service mode: This operating mode is available to all devices that have an operating mode switchover and a direct connection to the process. This mode is intended for purposes of maintenance and servicing (replacing the device, for example). All functions of the device are disabled in this operating mode. Incoming or outgoing messages are not received or generated in this case. Only one operating mode switchover is possible in this operating mode.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

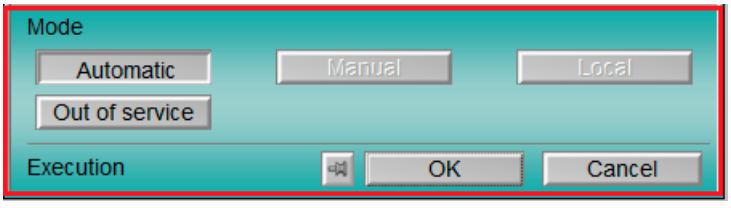
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.
4. If acknowledgement is required, click "OK".



5. The motor will be switched to the selected operating mode.

(2) Open, close and stop the motor valve

This area shows you the default operating state for the motor valve. The following states can be shown and executed here:

- "Open"
- "Close"
- "Stop"
- "Rapid stop"

Note

The Analog positioning mode is terminated if one of these commands is executed. Positioning mode can be reactivated using the (3) button.

Opening the valve

1. In the faceplate, Click "[...]" under "Mode".
   The operating window is displayed as an extension of the faceplate.
2. Click on the appropriate mode.
3. Click "OK" to confirm the execution.The mode changes to the respective mode that you have selected.
4. Select the "Open" command.
   The operating window is displayed as an extension of the faceplate.
5. In the operating window, confirm execution for the desired valve position by clicking "OK".

Closing/Stopping the valve

Once the VlvPosL block is opened, the valve can be closed in the following way:

1. Select the "Close/Stop" command.
   The operating window is displayed as an extension of the faceplate.
2. In the operating window, confirm execution for the desired valve position by clicking "OK".

Rapid stop

Rapid stop has the highest priority in all operating modes (manual and automatic as well as local mode) and operating states. Rapid stop is activated from the faceplate.

When you click on the "Rapid stop" button in the faceplate, the drive stops immediately with the status as displayed below:

Rapid stop is unlocked for all operating modes using the "Reset" button in faceplate. Rapid stop can be selected even with the motor in "Stop" state. In this case, the motor start is prevented.

(3) Activate positioning at an analog manipulated variable

This area shows you the default operating state for positioning to the analog manipulated variable. The following states can be shown here:

- "On"
- "Off"

If only the positioning mode is activated :

- "On"

Note

Positioning mode is terminated when the motor valve is operated using the (2) button.

(4) Reset the block

Click "Reset" in the event of interlocks or errors.

(5) High and low scale range for the manipulated variable

These values provide information on the display range for the bar graph of the manipulated variable.

(6) Display and change the manipulated variable including signal status

This area shows the current manipulated variable with the corresponding signal status.

The manipulated variable can only be changed in manual mode and active position control.

(7) Position feedback display including signal status

This area shows the current feedback of the manipulated variable with the corresponding signal status.

(8) Manipulated variable display for automatic mode

The display [A] is only visible when the block is not in automatic mode. In Automatic mode, it is displayed when it needs to be reset or when tracking or forced tracking is enabled.

This display shows the manipulated variable that would apply if you were to switch to automatic mode or if you were to reset in automatic mode or disable tracking or forced tracking.

(9) Bar display for manipulated variable

This area shows the current manipulated variable in the form of a bar graph.

(10) Bar display for position feedback

This area shows the current position feedback in the form of a bar graph.

The limits for the "open" and "closed" positions are shown with 2 green lines.

(11) Area for operating the interlock functions of the block

This display is only visible when the corresponding block input is interconnected.

You can use these buttons to control the interlock functions of the block.

The following is displayed in addition to the buttons:

- Interlock status

- Signal status

- Bypass information

(12) Display for auxiliary values

This display is only visible when the corresponding block input is interconnected.

(13) Jump key to standard view of any faceplate

This display is only visible when the corresponding block input is interconnected.

(14), (15), (16) and (17) Display area for block states

This area provides additional information on the following operating states of the block:

- Maintenance
- Simulation
- Time delay
- Motor protection
- External error
- Vibrate enabled
- End position error
- Control error
- Invalid signal
- Changeover error
- Torque active

- Forced open
- Forced closed
- Forced stop
- Forced tracking
- Tracking
- Request 0/1: A reset to "automatic mode" is expected.

(18) Neutral position of the valve

This representation shows the neutral position for the valve:

- Green: Neutral position is "Open"
- Gray: Neutral position is "Closed"
- Light green: Neutral position is "Stop"

(19) Automatic preview

This display is only visible in "Manual mode", in "Local mode", or with a reset request in "Automatic mode", when the current output signals are not identical to the control in "Automatic mode".

The display shows what state the valve would assume if you switched from "Manual" or "Local" mode to "Automatic mode", or performed a reset to "Automatic mode".

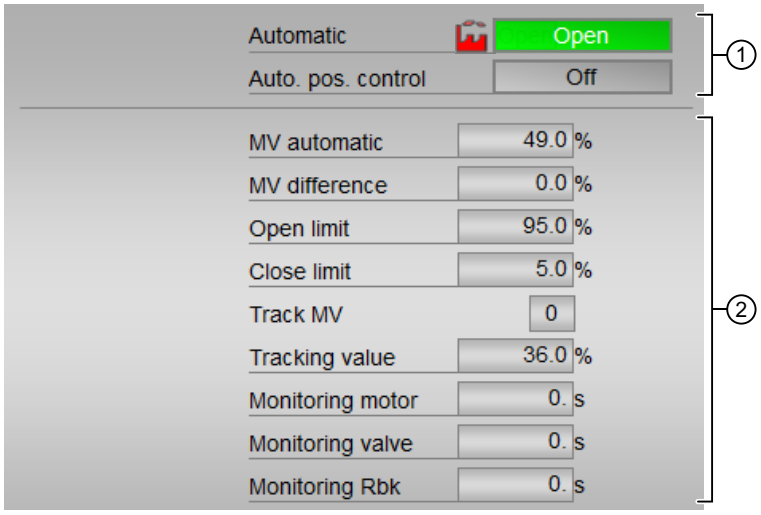
(20) Status display of the motor valve

The current status of the motor valve is graphically displayed here.

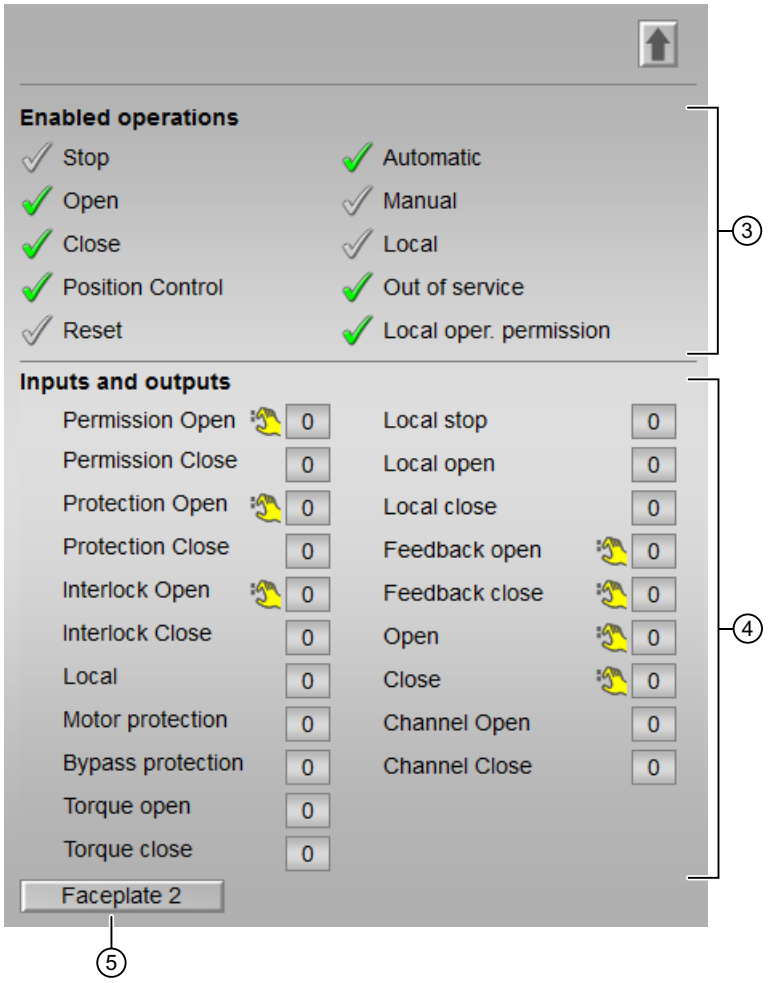
3.13.3 VlvPosL Preview

Preview of VlvPosL

The preview of VlvPosL is as shown below:



The preview has an upper half and a lower half. You can navigate between the two halves with the arrow keys.



The preview of VlvPosL consists of the following:

(1) Automatic preview

(2) Preview area

(3) Enabled operations

(4) Display current control signals

(5) Jump key to standard view of any faceplate

(1) Automatic preview

This area shows you the block status after it has switched from "manual" or "local" mode to "automatic" mode.

If the block is in "Automatic" mode, the current block state is displayed.

(2) Preview area

Options	Description
MV Automatic	Display of the current automatic manipulated variable (MV).
MV difference	Current manipulated variable difference (ER).
Open limit	Limit for forming the "Control valve open" signal. If the position feedback reaches this limit, the control valve is open
Close limit	Limit for forming the "Control valve closed" signal. If the position feedback reaches this limit, the control valve is closed.
Manipulated variable tracking	Manipulated variable is tracked to the tracking value.
Tracking value	Effective manipulated variable for "Track manipulated variable"
Monitoring motor	Display of the current monitoring time of the motor. This display is only visible when monitoring is activated.
Monitor valve	Display of the current monitoring time of the valve. This display is only visible when monitoring is activated.
Monitoring Rbk	Display of the current monitoring time for the position feedback. This display is only visible when monitoring is activated.

(3) Enabled operations

This area shows all operations for which special operator permissions are assigned.

Icons enabled for operation:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions

Actions	Description
Stop	Stops the motor of the valve.
Open	Opens the motor valve.
Close	Closes the motor valve
Position Control	You can switch on the position control.
Reset	Resets the motor valve
Automatic	Switch to automatic mode
Manual	Switch to manual mode
Local	Switch to local mode

Actions	Description
Out of service	Switch to "Out of service" operating mode
Local operating permission	Whether or not the device is released for operation generally depends on this permission. The localoperator permission can be set individually for each device. Devices at work place can be released or locked independent of each other.

(4) Display current control signals

This area shows the most important parameters for this block with the current selection:

Parameter	Control
Permission	0 = Motor valve activation not enabled on OS
	1 = Enable for "opening"/"closing" from the neutral position
Permission Open	0 = Motor valve "open" activation not enabled on OS
	1 = Enable for "open" from the neutral position
Permission Close	0 = Motor valve "close" activation not enabled on OS
	1 = Enable for "close" from the neutral position
Protection	0 = Protective interlock is in effect; once the interlock condition has cleared, you have to reset the block
	1 = Good state
Protection Open	0 = Protective open interlocking is effective; once the interlocking condition has disappeared, you will have to reset the block
	1 = "Good" state
Protection Close	0 = Protective close interlocking is effective; once the interlocking condition has disappeared, you will have to reset the block
	1 = "Good" state
Interlock	0 = Interlock without reset is enabled; you can operate the block without reset once the interlock condition has cleared
	1 = Good state
Interlock Open	0 = Open interlocking without reset is active; you can operate the block without reset once the interlocking condition has disappeared
	1 = "Good" state
Interlock Close	0 = Close interlocking without reset is active; you can operate the block without reset once the interlocking condition has disappeared
	1 = "Good" state
Local correct	1 = Control signal for "Local mode" (LocalLi) is active
Motor protection	1 = Motor is in "good" state
	0 = Motor protection in effect

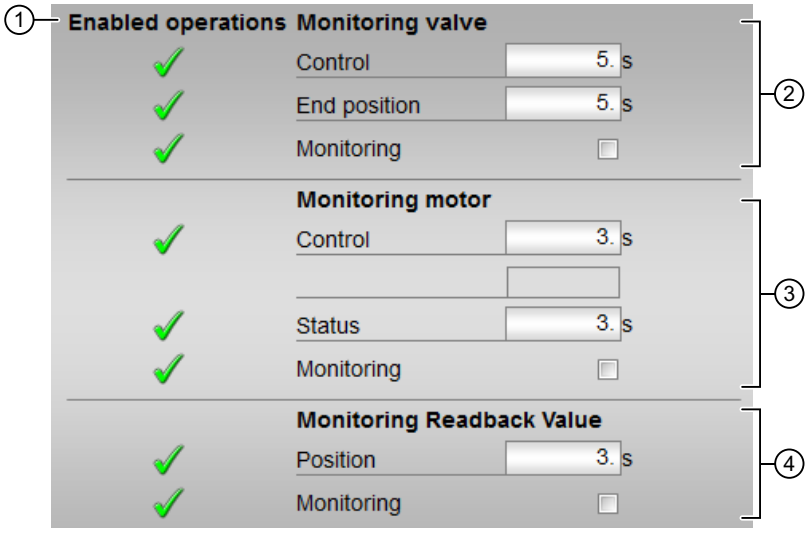
Parameter	Control
Interlock deact	0 = Bypass disabled
	1 = Bypass interlock in "Local mode" and in simulation
Torque opening	0 = Torque shutoff when opening
Torque closing	0 = Torque shutoff when closing
Local stop	1 = Stop the motor valve in "Local mode"
Local open	1 = Open the motor valve in "Local mode"
Local close	1 = Close the motor valve in "Local mode"
Feedback open	1 = Motor valve is opened
Feedback closed	1 = Motor valve is closed
Open	1 = Motor valve is opening
Close	1 = Motor valve is closing
Channel Open	Signal from the output channel block for "Open"
Channel Close	Signal from the output channel block for "Close"

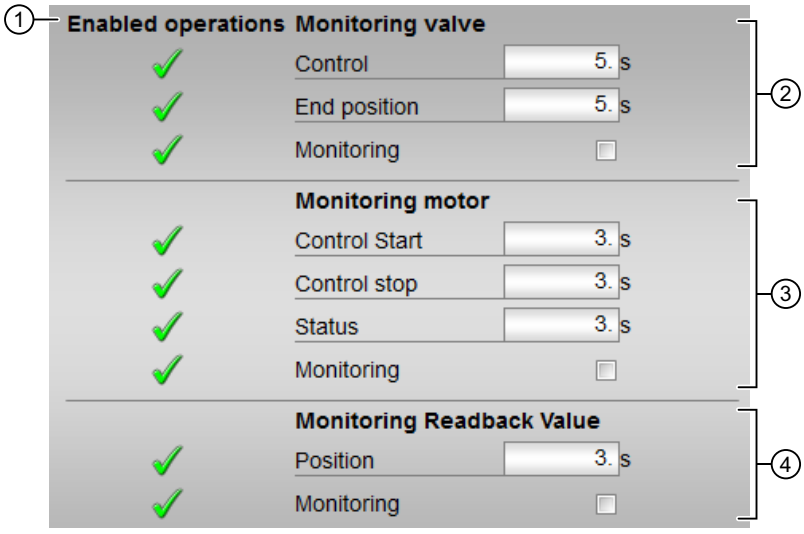
(5) Jump key to standard view of any faceplate

This display is only visible when the corresponding block input is interconnected.

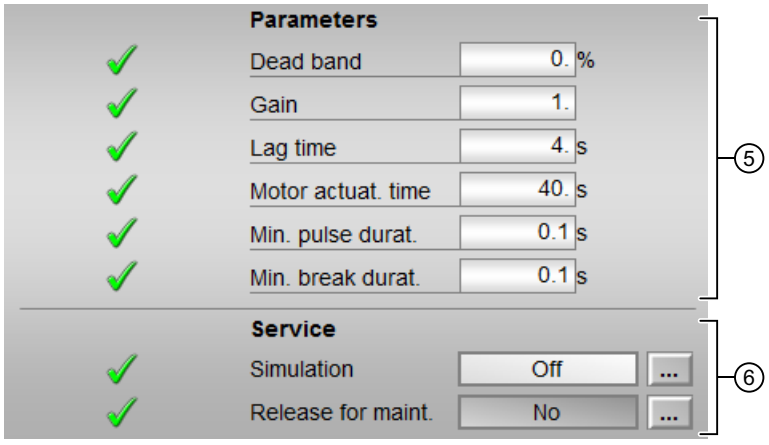
3.13.4 VlvPosL Parameter view

Parameter view of VlvPosL





The parameter has an upper half and a lower half. You can navigate between the two halves with the arrow keys.



The Parameter view consists of the following:

(1) Enabled operations

(2) Monitor valve

(3) Automatic preview

(4) Monitoring the valve position

(5) "Parameters"

(6) Service

(1) Enabled operations

This area shows all operations for which special operator permissions are assigned.

Icons for operation enable:

- Green check mark: The OS operator can control this parameter
- Gray check mark: The OS operator cannot control this parameter at this time due to the process
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions.

(2) Monitor valve

In this area, you change parameters and thereby influence the valve.

You can influence the following parameters:

- "Control": Monitoring time while "opening"/"closing" the valve (dynamic)
- "End position": Monitoring time for maintaining the valve position (static)

Enable monitoring

You can enable monitoring by selecting the check box (☑).

(3) Monitor motor

In this area, you change parameters and thereby influence the motor.

You can influence the following parameters:

- "Control": Monitoring time during startup and stopping of the motor (dynamic)
- "Control start": Monitoring time during startup of the motor (dynamic)
- "Control stop": Monitoring time during stopping of the motor (dynamic)
- "Status": Monitoring time during permanent operation of the motor (static)

Enable monitoring

You can enable monitoring by selecting the check box (☑).

(4) Monitoring the valve position

In this area, you change parameters and thereby influence the valve.

You can influence the following parameters:

- "Position": Monitoring time for the valve

Enable monitoring

You can enable monitoring by selecting the check box (☑).

(5) "Parameters"

In this area, you change parameters and thereby influence the controller.

You can influence the following parameters:

- "Deadband": Width of deadband
- "Gain": Gain
- "Delay": Delay time in [s]
- "Motor actuating time": Motor actuating time [s]
- "Minimum pulse duration": Minimum pulse duration [s]
- "Minimum break duration": Minimum break duration [s]

(6) Service

You activate the following functions in this area:

- "Simulation"
- "Release for maintenance" (with display for maintenance demanded)

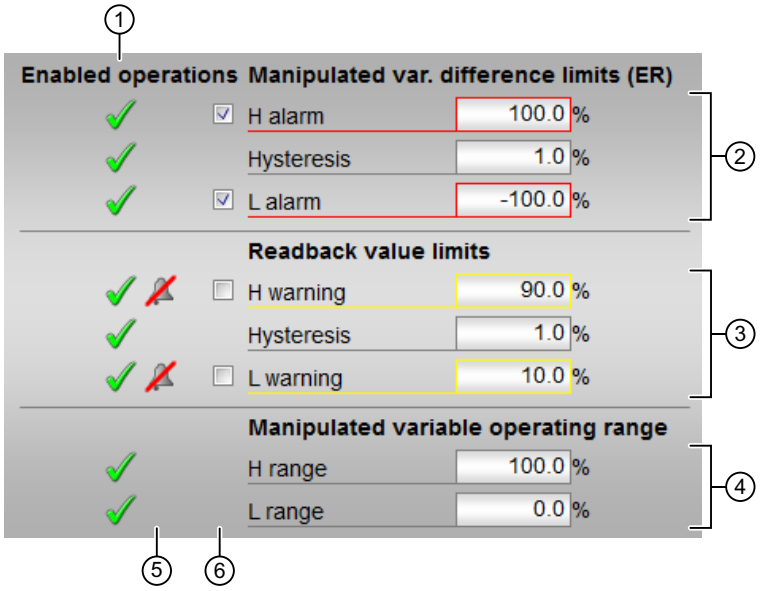
3.13.5 VlvPosL Limit view

Limit view of VlvAnL

Several values are set in this view by default:

- Manipulated variable difference limits
- Readback value limits
- Manipulated variable operating range

The toolbars of the faceplate and the block icon indicate when the limits are reached or violated.



The Limit view consists of the following:

(1) Enabled operation

(2) Manipulated variable difference limits

(3) Readback value limits (MV)

(4) Manipulated variable operating range (MV)

(5) Message suppression / delay

(6) Suppress messages

(1) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

(2) Manipulated variable difference limits

In this area, you can enter the limits for the manipulated variable error.

You can change the following limits:

- "H alarm": Alarm high
- "Hysteresis"
- "L alarm": Alarm low

(3) Readback value limits (MV)

In this area, you can enter the limits for the readback value (position feedback).

You can change the following limits:

- "H warning": Warning high
- "Hysteresis"
- "L warning": Warning low

(4) Manipulated variable operating range (MV)

In this area, you can enter the limits for the manipulated variable operation range.

You can change the following limits:

- "H range": Range limit high
- "L range": Range limit low

(5) Message suppression / delay

Message suppression indicates whether or not the suppression of the associated message inthe AS block is activated with the xx_MsgEn parameter. The output of messages is notsuppressed when the block is installed (all xx_MsgEn parameters are preset to 1). Messages can only be output if limit monitoring of the additional analog value has been enabled.

Alarm delays are also displayed in this position.

(6) Suppress messages

You can enable / disable messages by setting the check mark.

Operator control blocks

4

4.1 OpAnL - Check and output analog signals (large)

4.1.1 OpAnL views

OpAnL views

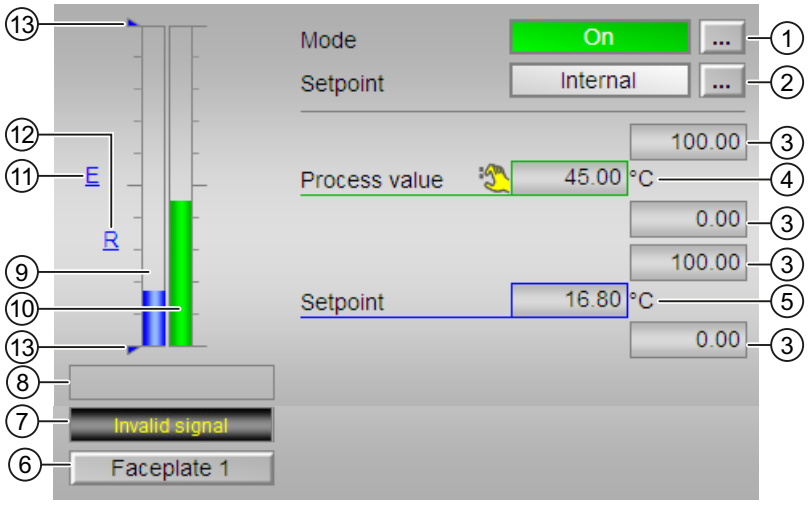
The OpAnL views provides information on the following:

- OpAnL Standard view (Page 162)
- Alarm view (Page 450)
- Trend view (Page 456)
- Ramp view (Page 457)
- OpAnL Parameter view (Page 168)
- OpAnL Preview (Page 166)
- Memo view (Page 453)
- Batch view (Page 452)

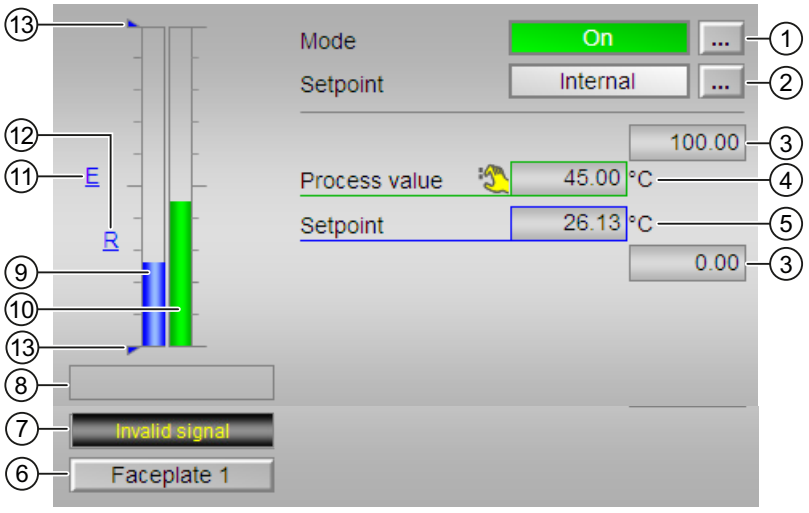
4.1.2 OpAnL Standard view

Standard view of OpAnL

Process value with separate scale range



Process value and setpoint with common scale range



The OpAnL Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Displaying and switching the setpoint specification

(3) High and low scale range for process value and setpoint

(4) Displaying the process value including signal status

(5) Displaying and changing the setpoint including signal status

(6) Navigation button for switching to the standard view of any faceplate

(7) (8) Display area for block states

(9) Bar graph for the process value

(10) Bar graph for the setpoint

(11) External setpoint display

(12) The target setpoint of setpoint Ramp display

(13) Displaying the limits

(1) Displaying and switching the operating mode

This area provides information on the currently operating mode. In this block, the following operating modes are available:

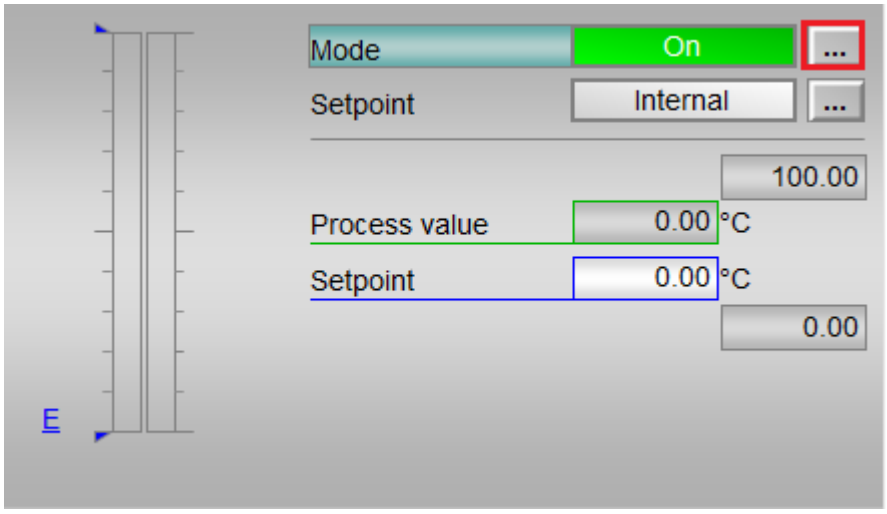
1. On mode
2. Out of service mode

1. On mode : The "On" operating mode is used for switching on the output. The operating mode is a clear indication that the block algorithm is being processed. The "On" mode can be activated only using the control on the faceplate block. The block must be in "Out of service" mode for this to be possible. This operating mode is only available for blocks that have faceplates which do not provide support for manual or automatic or local operating modes
2. Out of service mode: This operating mode is available to all blocks that have an operating mode switchover and a direct connection to the process (with a connection to a process tag, for example). The out of service operating mode is intended for the purpose of maintenance and servicing. All of the block's functions are disabled. No incoming or outgoing messages are generated or received. The only function still possible is an operating mode switchover.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

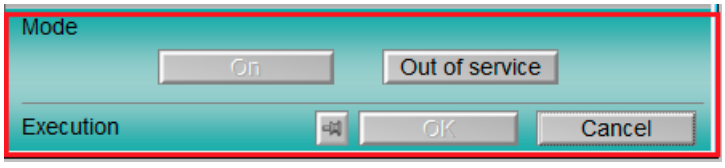
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.



4. If acknowledgement is required, click "OK".
5. The operator block will be switched to the selected operating mode.

(2) Displaying and switching the setpoint specification

The operator control block OpAnL allows the operator to view and select the appropriate setpoint type. The OpAnL Standard view provides options to choose the setpoint type. After selection of the corresponding setpoint type, the setpoint value can be added or modified from the block window.

Switching the setpoint specification

The OpAnL operator control block allows the setpoints to be set based on the corresponding operating mode selection. Switching the setpoint specification is carried out by means of a program or by means of the faceplate (operator).

This faceplate block supports the following setpoint types:

- Internal
- External

Follow the steps mentioned below to switch to a particular setpoint type:

1. Ensure the faceplate containing the respective block is open.
2. Select [...] and choose the setpoint type.The operating window is displayed as an extension of the faceplate.
3. To confirm execution, select OK.The setpoint type changes to the respective type you have selected.

(3) High and low scale range for the process value and setpoint

These values provide information on the display range for the bar graph of the process value. The scale range is defined in the Engineering System.

(4) Displaying the process value including signal status

This area shows the current process value with the corresponding signal status.

(5) Display and change the setpoint including signal status

This area shows the current setpoint with the corresponding signal status. The setpoint specification also needs to be set to "Internal" for this block.

(6) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected. Use this navigation button to open the standard view of a corresponding block.

(7), (8) Display area for block states

This area provides additional information on the operating state of the block:

- "invaild signal"
- "SP ramp active"

(8) Bar graph for the process value

This area shows the current process value in the form of a bar graph.

(9) Bar graph for the setpoint

This area shows the current setpoint in the form of a bar graph.

(10) Display of external setpoint

This display [E] is only visible when you have selected "Internal" setpoint specification. It shows the external setpoint that would apply if you were to change the setpoint specification to "external".

(11) Display for the target setpoint of the setpoint ramp

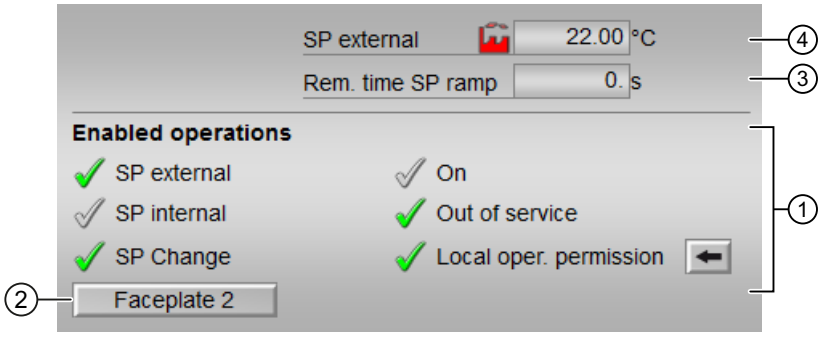
This display [R] shows the target setpoint and is only visible if you have enabled ramp generation in the Ramp view

(12) Displaying the limits

These triangles show the high and low setpoint limits.

4.1.3 OpAnL Preview

Preview of OpAnL



With respect to the screenshot shown above, the OpAnL preview consists of the following areas:

(1) Enabled operations

(2) Navigation button for switching to the standard view of any faceplate

(3) Remaining time to reach SP ramp

(4) SP external

(1) Enabled operations

This area displays all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions.

The following enabled operations are dislayed in the faceplate area:

Actions	Description
SP external	You can feedforward the external setpoint.
SP internal	You can feedforward the internal setpoint.
Change SP	You can change the setpoint.
On:	You can switch to "On" operating mode.
Out of service	You can switch to "Out of service" operating mode.
Local operator permission	Whether or not the device is released for operation-generally depends on this permission. The localop-erator permission can be set individually foreach device. Devices at work place can be released or lockedin-dependent of each other.

(2) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected.

Use this navigation button to open the standard view of a block.

(3) Remaining time to reach SP ramp

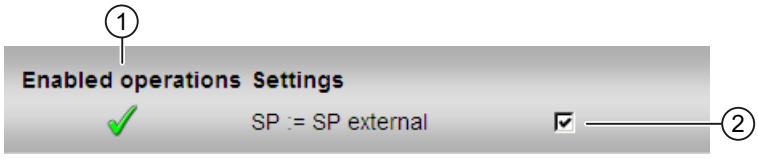
"Rem. time SP ramp" : Remaining time to reach the ramp target value.

(4) SP external

Currently applicable external setpoint with the corresponding signal status.

4.1.4 OpAnL Parameter view

Parameter view of OpAnL



The Parameter view consists of the following:

(1) Enabled operations

(2) Settings

(1) Enabled operations

This area shows all operations for which special operator control permissions are assigned.

Icons enabled for these operations:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator control permissions.

(2) Settings

You can select the following functions in this area:

- "SP := SP external": ☑Bumpless switchover of setpoint from external to internal. The internal setpoint is tracked to the external one.

4.2 OpAnS - Check and output analog signals (small)

4.2.1 OpAnS views

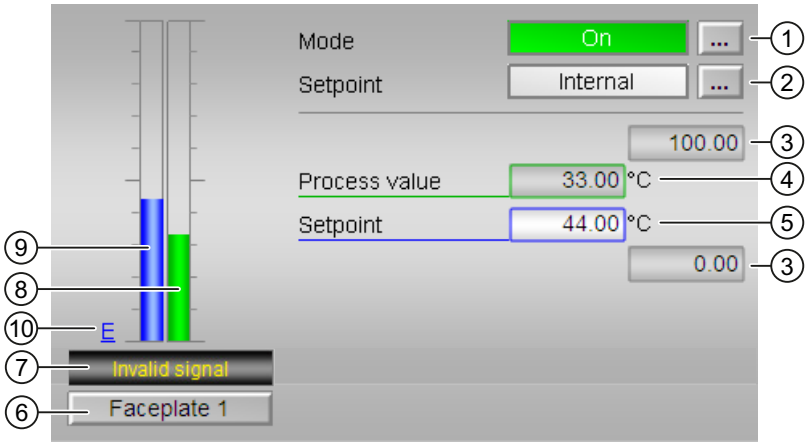
OpAnS views

The OpAnS views provides information on the following:

- OpAnS Standard view (Page 169)
- OpAnS Parameter view (Page 175)
- OpAnS Preview (Page 174)
- Memo view (Page 453)
- Batch view (Page 452)
- Trend view (Page 456)

4.2.2 OpAnS Standard view

Standard view of OpAnS



The OpAnS Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Displaying and switching the setpoint specification

(3) High and low scale range for the process value

(4) Display of the process value, including signal status

(5) Displaying and changing the setpoint, including signal status

(6) Navigation button for switching to standard view of any faceplate

(7) Display area for block states

(8) Bar graph for the process value

(8) Bar graph for the setpoint

(9) Display of external setpoint

Displaying and switching the operating mode

This area provides information on the currently operating mode. In this block, the following operating modes are available:

1. On mode
2. Out of service mode

On mode : The "On" operating mode is used for switching on the output. The operating mode is a clear indication that the block algorithm is being processed. The "On" mode can be activated using the control on the faceplate block. The block must be in "Out of service" mode for this to be possible.

This operating mode is only available for blocks that have faceplates which do not provide support for manual, automatic or local operating modes.

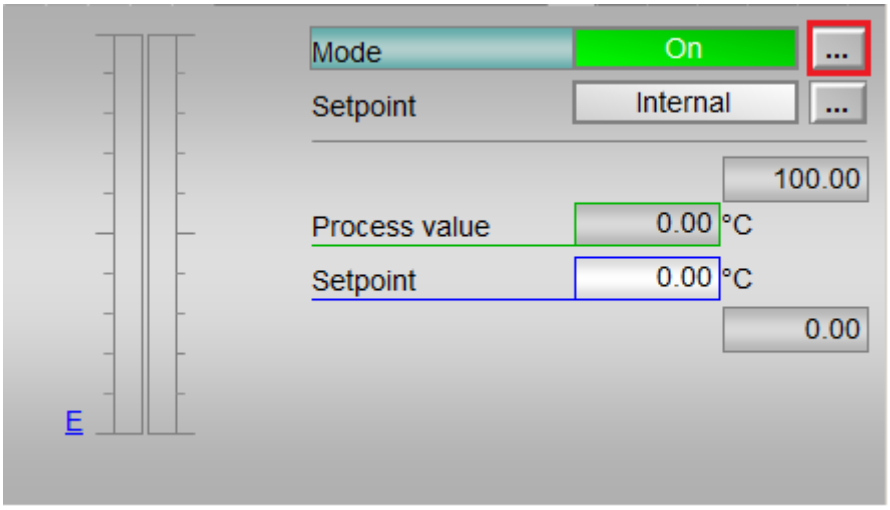
Out of service mode: This operating mode is available to all blocks that have an operating mode switchover and a direct connection to the process (with a connection to a process tag, for example).

The out of service operating mode is intended for the purpose of maintenance and servicing. All of the block's functions are disabled. No incoming or outgoing messages are generated or received. The only function still possible is an operating mode switchover.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

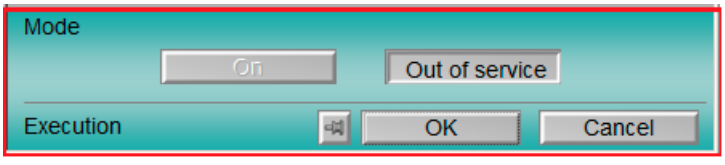
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.



4. To confirm execution, select "OK".
5. The operator block will be switched to the selected operating mode.

(2) Displaying and switching the setpoint specification

The operator control block OpAnS allows the operator to view and select the appropriate setpoint type. The Standard view provides options to choose the setpoint type. After selection of the corresponding setpoint type, the setpoint value can be added or modified from the block window.

Switching the setpoint specification

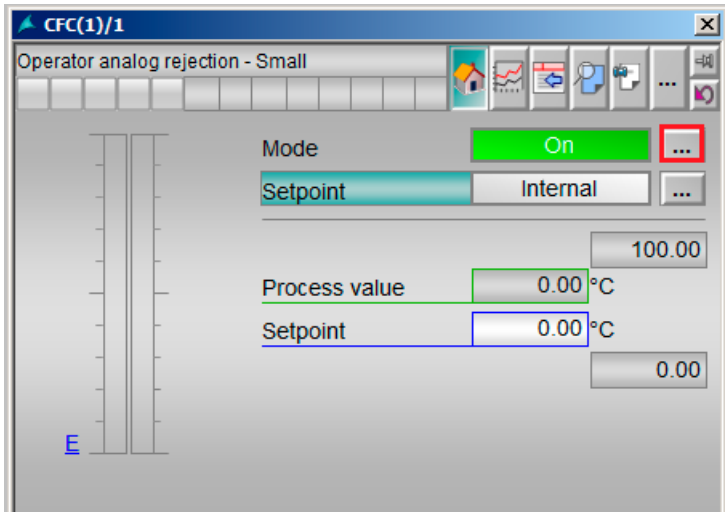
This block allows the setpoint to be set based on the corresponding operating mode selection. Switching the setpoint specification is carried out by means of a program or by means of the faceplate (operator).

This faceplate block supports the following setpoint types:

- Internal
- External

Follow the steps mentioned below to switch to a particular setpoint type:

1. Ensure the faceplate containing the respective block is open.
2. Select [...] and choose the setpoint type.The operating window is displayed as an extension of the faceplate.



3. Select the respective button for the desired operating mode.

4. To confirm execution, select "OK".
5. The setpoint type changes to the respective type you have selected.

(3) High and low scale range for the process value

These values provide information on the display range for the process value bar graph.

(4) Displaying of the process value including signal status

This area displays the current process value with the corresponding signal status.

(5) Display and change the setpoint including signal status

This area displays the current setpoint with the corresponding signal status. The setpoint value is displayed in the setpoint input box existing within the faceplate block.

Changing setpoint value

Follow the steps mentioned below to add or change the setpoint value:

1. Ensure the appropriate mode is selected within the faceplate.
2. Click the "Setpoint" input box in the faceplate.
   Thereby, the bottom portion of faceplate expands to display the operating window that lists the options for changing the setpoint value.
3. Enter the value or select value and confirm execution by clicking "OK".
   The setpoint value will be reflected in the "Setpoint" input box in the faceplate window.

Note

The operator will not be able to perform any modifications to the setpoint value while the setpoint type is selected as "External"

(6) Navigation button for switching to standard view of any faceplate

This display is only visible when the corresponding block input is connected.

(7) Display area for block states

This area provides additional information on the operating state of the block:

- "Invalid signal"

(8) Bar graph for the process value

This area displays the current process value in the form of a bar graph.

(9) Bar graph for the setpoint

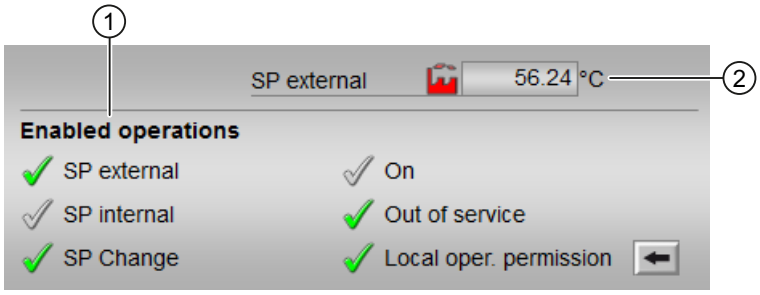
This area displays the current setpoint in the form of a bar graph.

(10) Display of external setpoint

This display [E] is only visible when you have selected "Internal" setpoint specification. It shows the external setpoint that would apply if you were to change the setpoint specification to "external".

4.2.3 OpAnS Preview

Preview of OpAnS



With respect to the screenshot shown above, the OpAnS preview consists of the following areas:

(1) Enabled operations

(2) SP external

(1) Enabled operations

This area shows all operations for which special operating permissions are assigned.

Symbols for enabled operations:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter at all due to the configured AS operating permissions.

The following enabled operations are displayed here:

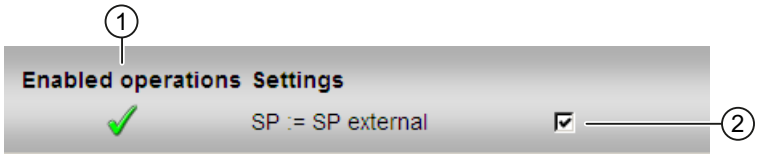
Parameter	Description
"SP external"	You can feedforward the external setpoint.
"SP internal"	You can feedforward the internal setpoint.
"Change SP"	You can change the setpoint.
"On"	You can switch to "On" operating mode.
"Out of service"	You can switch to "Out of service" operating mode.
"Local operating permission"	Use the ← button to switch to the standard view of the "OPStations" block.

(2) SP external

Currently applicable external setpoint with the corresponding signal status.

4.2.4 OpAnS Parameter view

Parameter view of OpAnS



(1) Enabled operations

(2) Settings

(1) Enabled operations

This area shows all operations for which special operator control permissions are assigned.

Icons for enabled operations:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator control permissions

(2) Settings

You can select the following functions in this area:

- "SP := SP external": ☑ Bumpless switchover of setpoint from external to internal. The internal setpoint is tracked to the external one.

4.3 OpDi01 - Manipulating a digital value (2 pushbuttons)

4.3.1 OpDi01 views

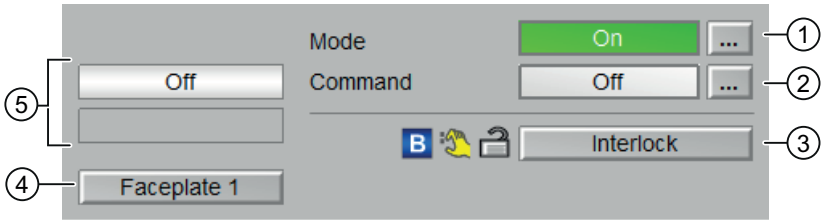
OpDi01 views

The OpDi01 views provides information on the following:

- OpDi01 Standard view (Page 176)
- Trend view (Page 456)
- OpDi01 Preview (Page 179)
- Memo view (Page 453)
- Batch view (Page 452)

4.3.2 OpDi01 Standard view

Standard view of OpDi01



The OpDi01 Standard view consists of the following areas:

(1) Displaying and switching the operating mode
(2) Displaying and switching the command
(3) Operating range for the interlock functions of the block
(4) Button for switching to the standard view of any faceplate
(5) Displaying the feedback of the command

(1) Displaying and switching the operating mode

This area provides information on the currently operating mode. In this block, the following operating modes are available:

1. On mode
2. Out of service mode

On mode: The "On" operating mode is used for switching on the output. The operating mode is a clear indication that the block algorithm is being processed. The "On" mode can be activated using the control on the faceplate block. The block must be in "Out of service" mode for this to be possible.

This operating mode is only available for blocks that have faceplates which do not provide support for manual, automatic or local operating modes.

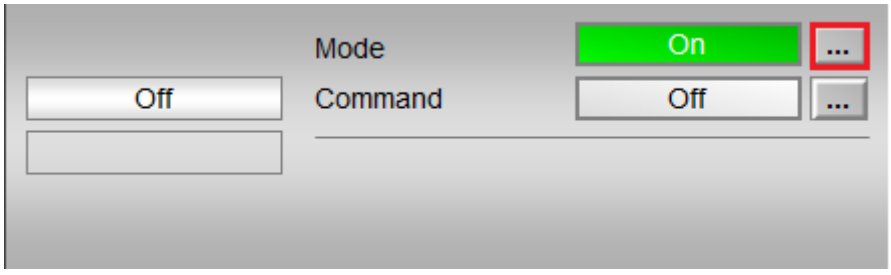
Out of service mode: This operating mode is available to all blocks that have an operating mode switchover and a direct connection to the process (with a connection to a process tag, for example).

The out of service operating mode is intended for the purpose of maintenance and servicing. All of the block's functions are disabled. No incoming or outgoing messages are generated or received. The only function still possible is an operating mode switchover.

Switching operating modes

Follow these steps to set the device to a particular mode or to switch between the different operating modes:

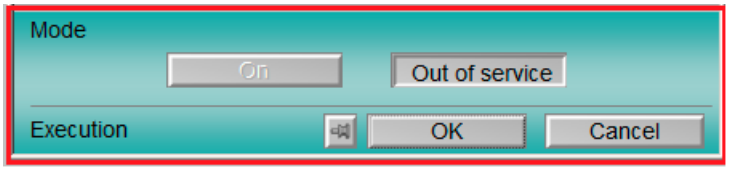
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.



4. To confirm execution, select "OK".
5. The operator block will be switched to the selected operating mode.

(2) Displaying and switching the command

This area displays the current selection. You can output a continuous signal as follows:

- "On": Continuous signal is output
- "Off"

(3) Operating range for the interlock functions of the block

This display is only visible when the corresponding input block is interconnected. You can use this button to control the interlock functions of the block.

- Bypass information

(4) Button for switching to the standard view of any faceplate

Use this navigation button to reach the standard view of a block configured in the Engineering System (ES). The visibility of this navigation button depends on the configuration in the ES.

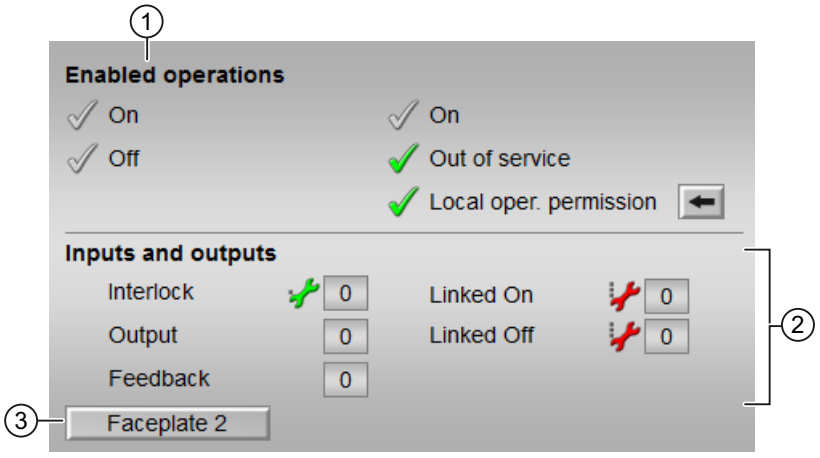
(5) Displaying the feedback of the command

This area displays the currently valid command. The following commands can be displayed here:

- "On"
- "Off"
- "Invalid signal"

4.3.3 OpDi01 Preview

Preview of OpDi01



With respect to the screenshot shown above, the OpDi01 preview consists of the following areas:

(1) Enabled operations

(2) Display of current inputs and outputs

(3) Navigation button for switching to the standard view of any faceplate

(1) Enabled operations

This area displays all operations for which special operator control permissions are assigned.

Icons for enabled operations:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator control permissions.

The list of enabled operations provided within the preview window are explained below:

Operations	Descriptions
"On"	You can set the digital value (0 - 1 edge)
"Off"	You can set the digital value (1 - 0 edge)

Operations	Descriptions
"On"	You can switch to "On" operating mode
"Out of service"	You can switch to "Out of service" operating mode
"Local operating permission"	Use the ← button to switch to the standard view of the OpStations block.

(2) Display of current inputs and outputs

This area displays the most important parameters for this block with the current selection:

Operations	Descriptions
"Interlock"	This display is only visible when the corresponding block input is connected. • 0 = Interlocking without reset is active; you can operate the block without reset once the interlocking condition has disappeared. • 1 = "Good" state
"Output"	1 = Digital output value set
"Feedback"	1 = Feedback set
"Linked On"	1 = Linked input on
"Linked Off"	1 = Linked input off

(3) Navigation button for switching to the standard view of any faceplate

Use this navigation button to reach the standard view of a block configured in the Engineering System (ES). The visibility of this navigation button depends on the configuration in the ES.

4.4 OpDi03 - Manipulating a digital value (3 pushbuttons)

4.4.1 OpDi03 views

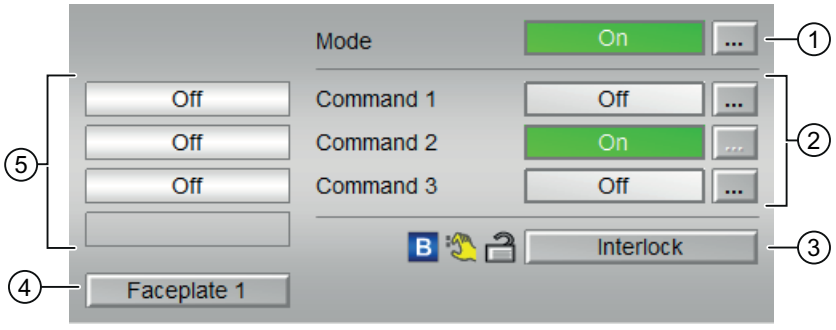
OpDi03 views

The OpDi03 views provides information on the following:

- OpDi03 Standard view (Page 181)
- Trend view (Page 456)
- OpDi03 Preview (Page 184)
- Memo view (Page 453)
- Batch view (Page 452)

4.4.2 OpDi03 Standard view

Standard view of OpDi03



The OpDi03 Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Displaying and switching the command 1 to 3

(3) Operating range for the interlock functions of the block

(4) Button for switching to the standard view of any faceplate

(5) Displaying the feedback of the command 1 to 3

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. In this block, the following operating modes are available:

1. On mode
2. Out of service mode

On mode: The "On" operating mode is used for switching on the output. The operating mode is a clear indication that the block algorithm is being processed. The "On" mode can be activated using the control on the faceplate block. The block must be in "Out of service" mode for this to be possible.

This operating mode is only available for blocks that have faceplates which do not provide support for manual, automatic or local operating modes.

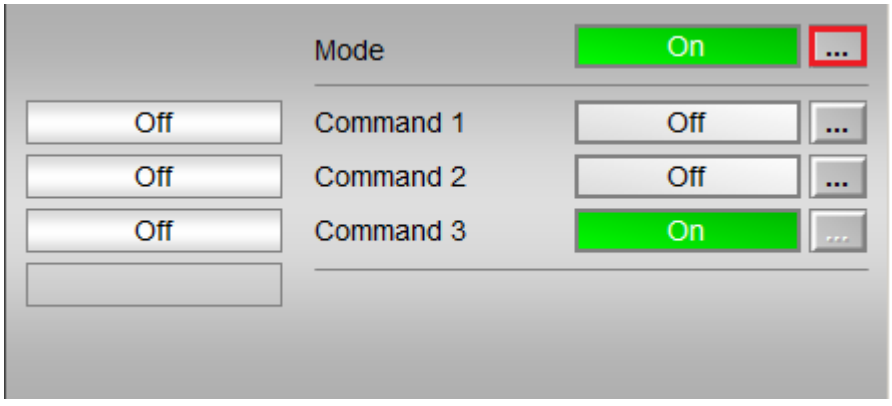
Out of service mode: This operating mode is available to all blocks that have an operating mode switchover and a direct connection to the process (with a connection to a process tag, for example).

The out of service operating mode is intended for the purpose of maintenance and servicing. All of the block's functions are disabled. No incoming or outgoing messages are generated or received. The only function still possible is an operating mode switchover.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

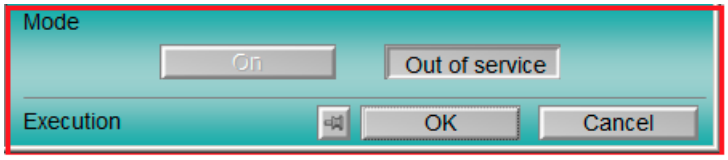
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.



4. To confirm execution, select "OK".
5. The operator block will be switched to the selected operating mode.

(2) Displaying and switching the command 1 to 3

This area displays the current selection. You can output a continuous signal at the outputs Out1 to Out3 as follows:

- "On": Continuous signal is output
- "Off"

(3) Operating range for the interlock functions of the block

This display is only visible when the corresponding block input is connected.

You can use this button to control the interlock functions of the block.

(4) Button for switching to the standard view of any faceplate

Use this navigation button to reach the standard view of a block configured in the Engineering System (ES). The visibility of this navigation button depends on the configuration in the ES.

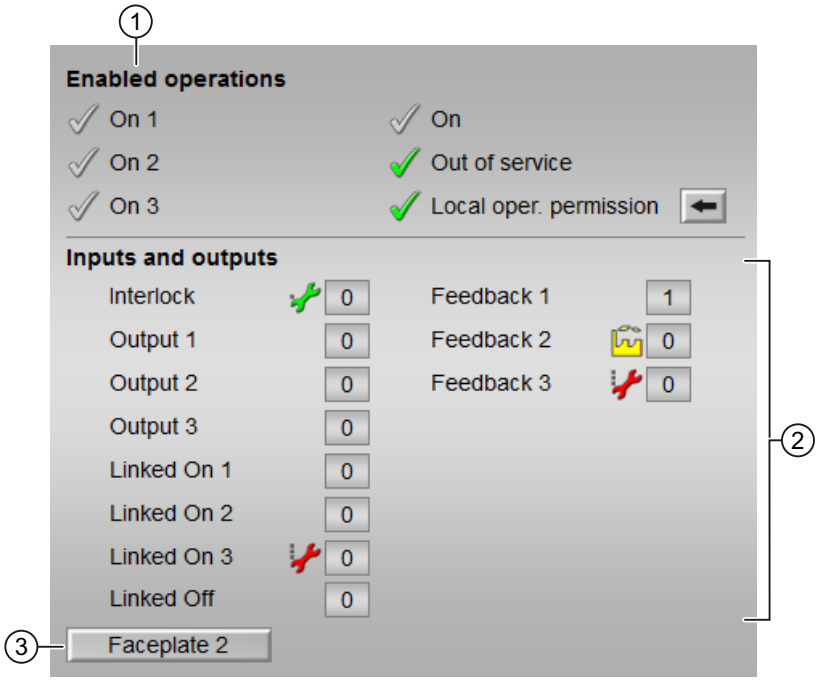
(5) Displaying the feedback of the command 1 to 3

This area displays the current valid selection from Out 1 to Out 3.

- "On"
- "Off"
- "Invalid signal"

4.4.3 OpDi03 Preview

Preview of OpDi03



With respect to the screenshot shown above, the OpDi03 preview consists of the following areas:

(1) Enabled operations

(2) Display of current inputs and outputs

(3) Navigation button for switching to the standard view of any faceplate

(1) Enabled operations

This area displays all operations for which special operator control permissions are assigned.

Icons for enabled operations:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator control permissions.

The list of enabled operations provided within the preview window are explained below:

Parameter	Description
"On 1 to 3"	You can now set the digital value (0 - 1 edge)
"On"	You can switch to "On" operating mode
"Out of service"	You can switch to "Out of service" operating mode
"Local operating permission"	Use the ← button to switch to the standard view of the OpStations block.

(2) Display of current inputs and outputs

This area displays the most important parameters for this block with the current selection:

Action	Description
"Interlock"	This display is only visible when the corresponding block input is connected. 0 = Interlocking without reset is active; you can operate the block without reset once the interlocking condition has disappeared.
	1 = "Good" state
"Output 1 to 3"	1 = Digital output value set
"Feedback 1 to 3"	1 = Feedback set
"Linked On 1 to 3"	1 = Linked input on
"Linked Off"	1 = Linked input off

(3) Navigation button for switching to the standard view of any faceplate

Use this navigation button to reach the standard view of a block configured in the Engineering System (ES). The visibility of this navigation button depends on the configuration in the ES.

4.5 OpStations - Configuration of the local operator authorization

4.5.1 OpStations views

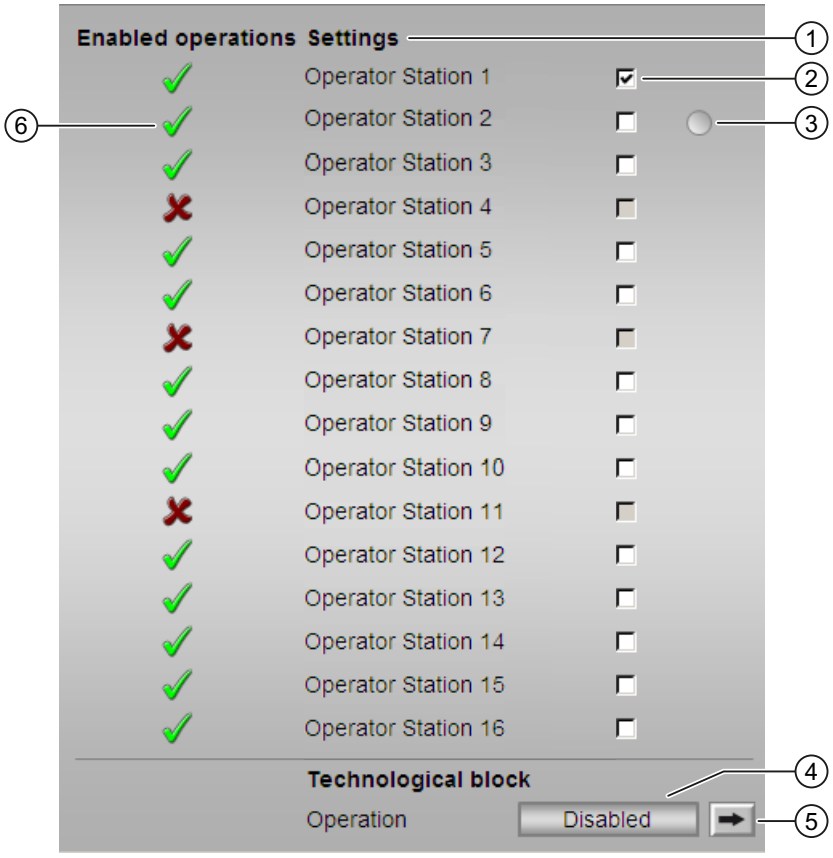
OpStations views

The OpStations views provides information on the following:

- OpStations Standard view (Page 186)
- Memo view (Page 453)

4.5.2 OpStations Standard view

Standard view of OpStations



The OpStations Standard view consists of the following areas:

(1) Operator stations (0 to 15)

(2) Disabling or enabling operation for operator stations

(3) Display for the current operator station

(4) Display for operability

(5) Navigation button for switching to the standard view of the technologic block

(6) Enabled operations

(1) Operator stations (0 to 15)

The configured operator stations are listed below "Enabled operations Settings".

(2) Disabling or enabling operation for operator stations

In this area, you can enable or disable the operation for an operator station of the connected technologic block.

(3) Display for the current operator station

The value of the current operator station is displayed as a grey dot in the corresponding line.

(4) Display for operability

Display of the operability of technologic block on the current operator station.

(5) Navigation button for switching to the standard view of the technologic block

Use this navigation button to reach the standard view of the technologic block.

(6) Enabled operations

This area displays all operations for which special operator permissions are assigned.

Icons for enabled operations:

- Green check mark: The OS operator can control this parameter.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator control permissions.

4.6 OpTrig - Manipulating a digital value (1 pushbutton)

4.6.1 OpTrig views

OpTrig views

The OpTrig views provides information on the following:

- OpTrig Standard view (Page 189)
- OpTrig Preview (Page 191)
- Memo view (Page 453)
- Batch view (Page 452)

4.6.2 OpTrig Standard view

Standard view of OpTrig

The OpTrig Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Set

(3) Navigation button for switching to the standard view of any faceplate

(1) Displaying and switching the operating mode

This area provides information on the currently operating mode. In this block, the following operating modes are available:

1. On mode
2. Out of service mode

On mode: The "On" operating mode is used for switching on the output. The operating mode is a clear indication that the block algorithm is being processed. The "On" mode can be activated using the control on the faceplate block. The block must be in "Out of service" mode for this to be possible.

This operating mode is only available for blocks that have faceplates which do not provide support for manual, automatic or local operating modes.

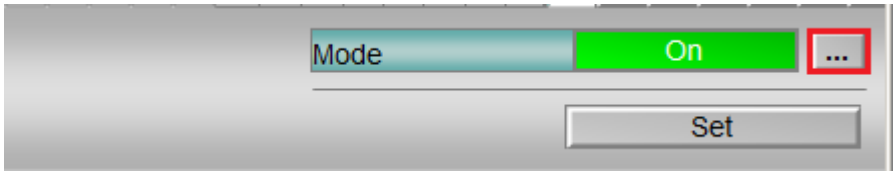
Out of service mode: This operating mode is available to all blocks that have an operating mode switchover and a direct connection to the process (with a connection to a process tag, for example).

The out of service operating mode is intended for the purpose of maintenance and servicing. All of the block's functions are disabled. No incoming or outgoing messages are generated or received. The only function still possible is an operating mode switchover.

Switching operating modes

Follow these steps to set the block to a particular mode or to switch between the different operating modes:

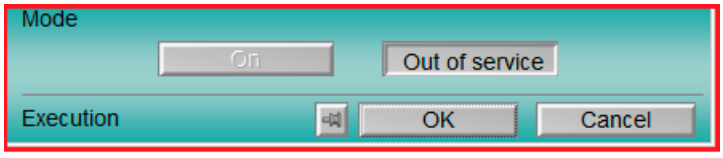
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.



4. To confirm execution, select "OK".
5. The operator block will be switched to the selected operating mode.

(2) Set

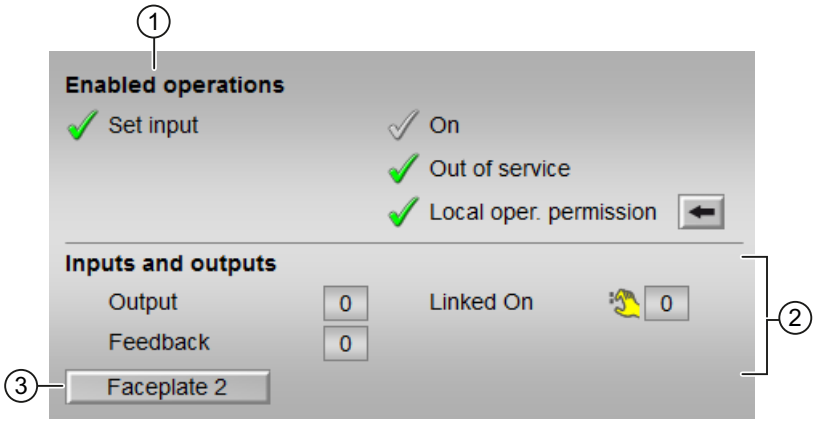
Use this "Set" button to output a pulse signal with the length of the cycle time at the `Out` output.

(3) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected. Use this navigation button to open the standard view of a block.

4.6.3 OpTrig Preview

Preview of OpTrig



With respect to the screenshot shown above, the OpTrig preview consists of the following areas:

(1) Enabled operations

(2) Display of current inputs and outputs

(3) Navigation button for switching to the standard view of any faceplate

(1) Enabled operations

This area displays all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions.

The following enabled operations are dislayed in the faceplate area:

Action	Description
Set input	You can set the input.
On	You can switch to "On" operating mode.
Out of service	You can switch to "Out of service" operating mode.
Local operator permission	Use the ← button to switch to the standard view of the OpStations block.

(2) Display of current inputs and outputs

This area displays the most important parameters for this block with the current selection:

Parameter	Description
Output	1 = Digital output value set
Feedback	1 = Feedback set
Linked On	1 = Linked input on

(3) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected.

Use this navigation button to open the standard view of a block.

Monitoring blocks

5

5.1 MonAnL - Monitoring of an analog process tag (Large)

5.1.1 MonAnL views

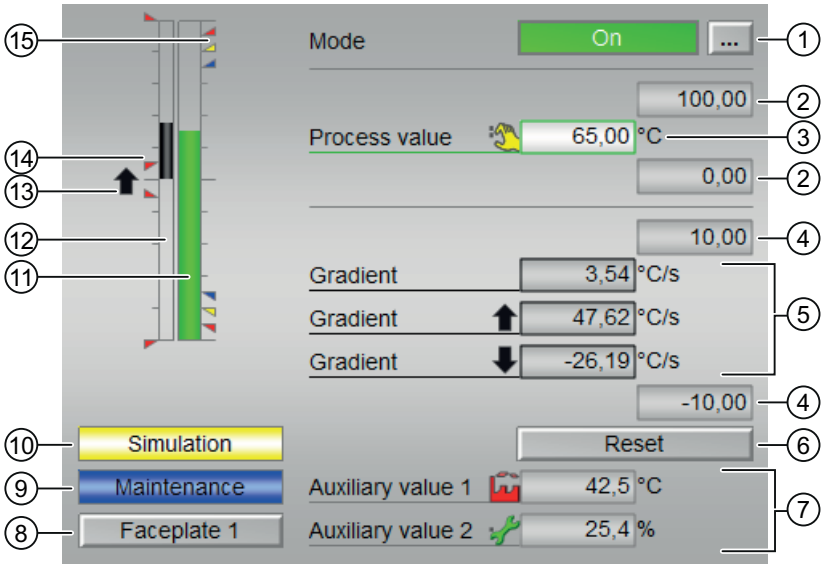
MonAnL views

The MonAnL views provides information on the following:

- MonAnL Standard view (Page 194)
- Alarm view (Page 450)
- MonAnL limit view (Page 201)
- Trend view (Page 456)
- MonAnL Parameter view (Page 200)
- MonAnL Preview (Page 199)
- Memo view (Page 453)
- Batch view (Page 452)

5.1.2 MonAnL Standard view

Standard view of MonAnL



The MonAnL Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) High and low scale range for the process value

(3) Display of the process value including signal status

(4) High and low scale range for the gradient value

(5) Display of the gradient

(6) Resetting the peak values of the gradient

(7) Display of auxiliary values

(8) Navigation button for switching to the standard view of any faceplate

(9) and (10) Display area for block states

(11) Bar graph for the process value

(12) Bar graph for the gradient

(13) Display of the gradient

(14) Display of limits in the bar graph

(15) Limit display

(1) Displaying and switching the operating mode

This area provides information on the currently operating mode. In this block, the following operating modes are available:

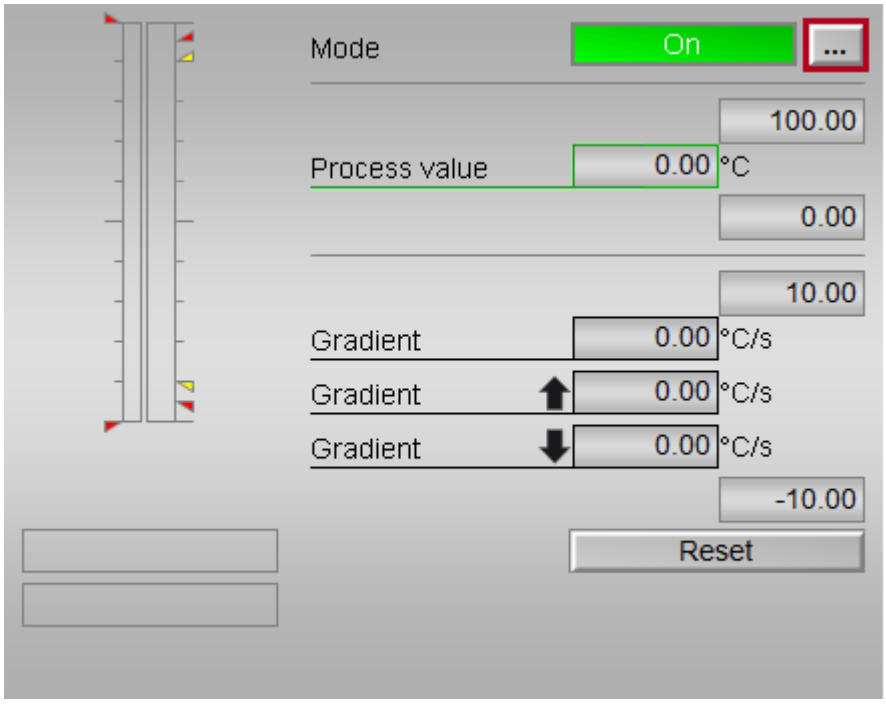
1. On mode
2. Out of service mode

1. On mode : The "On" operating mode is used for switching on the output. The operating mode is a clear indication that the block algorithm is being processed. The "On" mode can be activated only using the control on the faceplate block. The block must be in "Out of service" mode for this to be possible. This operating mode is only available for blocks that have faceplates which do not provide support for manual or automatic or local operating modes
2. Out of service mode: This operating mode is available to all blocks that have an operating mode switchover and a direct connection to the process (with a connection to a process tag, for example). The out of service operating mode is intended for the purpose of maintenance and servicing. All of the block's functions are disabled. No incoming or outgoing messages are generated or received. The only function still possible is an operating mode switchover.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

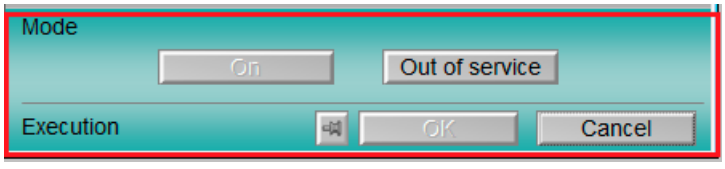
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.
4. If acknowledgement is required, click "OK".



5. The monitor block will be switched to the selected operating mode.

(2) High and low scale range for the process value

These values provide information on the display range for the process value bar graph .

(3) Display of the process value including signal status

This area shows the current process value with the corresponding signal status.

(4) High and low scale range for the gradient value

These values provide information on the display range for the bar graph of the gradient. The scale range corresponds to 10% of the scale range for the process value: For example, once you have specified a process value scale range of 0 to 100, the scale range of the gradient will be automatically set to a value between -10 and 10.

The current gradient value is displayed when one of the following monitoring functions is activated:

- Gradient monitoring for positive changes
- Gradient monitoring for negative changes
- Gradient monitoring

(5) Display of the gradient

This area shows the current, minimum and maximum gradient value and the rise and fall of the value. This display of the minimum and maximum gradient value functions like a min/max pointer.

Gradient value: The current gradient value is displayed when one of the following monitoring functions is activated:

- Gradient monitoring for positive changes
- Gradient monitoring for negative changes
- Gradient monitoring

The maximum peak gradient value is displayed when the gradient monitoring is activated for positive changes. This is shown within the faceplate next to the gradient value indicating the movement of the gradient up (↑).

The minimum peak gradient value is displayed when the gradient monitoring is activated for negative changes. This is shown within the faceplate next to the gradient value indicating the movement of the gradient down (↓).

(6) Resetting the peak values of the gradient

You can use this button to reset the maximum or minimum peak value of the gradient. The "Reset" button is displayed within the faceplate window when gradient monitoring is activated for positive or negative changes. The operator can use the reset button to reset the maximum or minimum peak value of the gradient.

(7) Display of auxiliary values

You can use this area to display two auxiliary values.

(8) Navigation button for switching to the standard view of any faceplate

Use this navigation button to reach the standard view of a block.

(9) and (10) Display area for block states

This area provides additional information on the operating state of the block:

- Maintenance
- Simulation

(11) Bar graph for the "process value"

This area shows the current "Process value" in the form of a bar graph.

(12) Bar graph for the gradient

This area shows the current gradient value in the form of a bar graph.

(13) Display of the gradient

This display indicates the movement of the gradient up (↑) or down (↓).

Gradient monitoring is displayed when the gradient value PV_Grad ≠ 0 and one of the following monitoring functions is activated:

- Gradient monitoring for positive changes
- Gradient monitoring for negative changes
- Gradient monitoring

(14) Display of limits in the bar graph

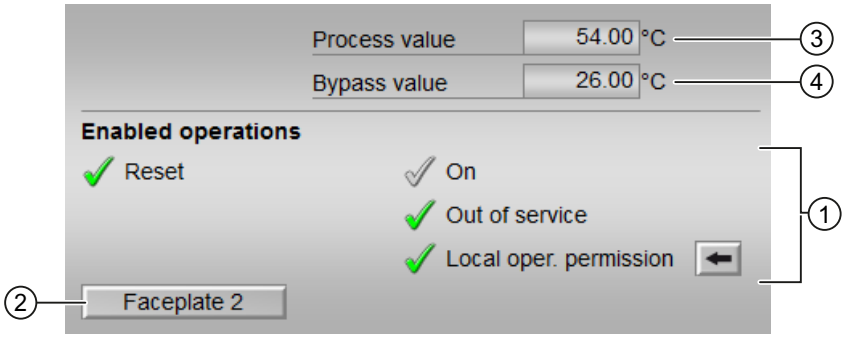
This area shows you the specified limits. The display only appears when the bar for the gradients is also displayed.

(15) Limit display

These colored triangles show you the specified limits in the respective bar graph.

5.1.3 MonAnL Preview

Preview of MonAnL



With respect to the screenshot shown above, the MonAnL preview consists of the following areas:

(1) Enabled operations

(2) Navigation button for switching to the standard view of any faceplate

(3) Process value

(4) Bypass value

(1) Enabled operations

This area displays all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions.

The following enabled operations are shown here:

Actions	Description
Reset	Resets the peak value of the gradient.
On	Switch to "On" operating mode.
Out of service	Switch to "Out of service" operating mode.
Local operator permission	Use the ← button to switch to the standard view of the OpStations block.

(2) Navigation button for switching to the standard view of any faceplate

Use this navigation button to open the standard view of a block configured in the Engineering System (ES).

(3) Process value

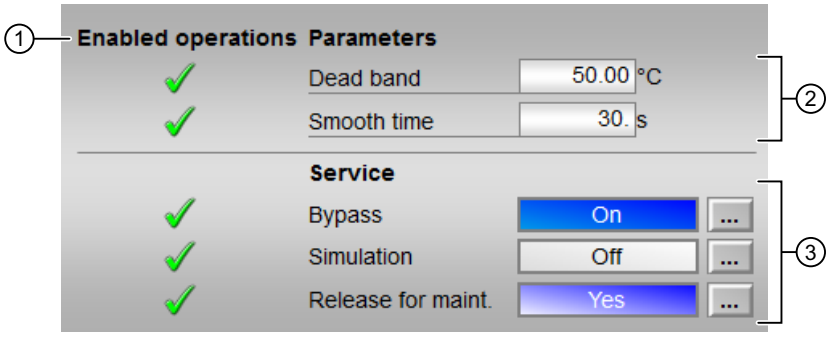
This area displays the process value.

(4) Bypass value

This area displays the bypass value.

5.1.4 MonAnL Parameter view

Parameter view of MonAnL



The Parameter view consists of the following:

(1) Enabled operations

(2) Parameter

(3) Service

(1) Enabled operations

This area shows all operations for which special operator control permissions are assigned.

Icons for enabled operations:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator control permissions.

(2) Parameter

You can change the following parameter in this area:

- "Dead band"
- "Smooth time"

(3) Service

You can select the following functions in this area:

- "Bypass"
- "Simulation"
- "Release for maintenance"

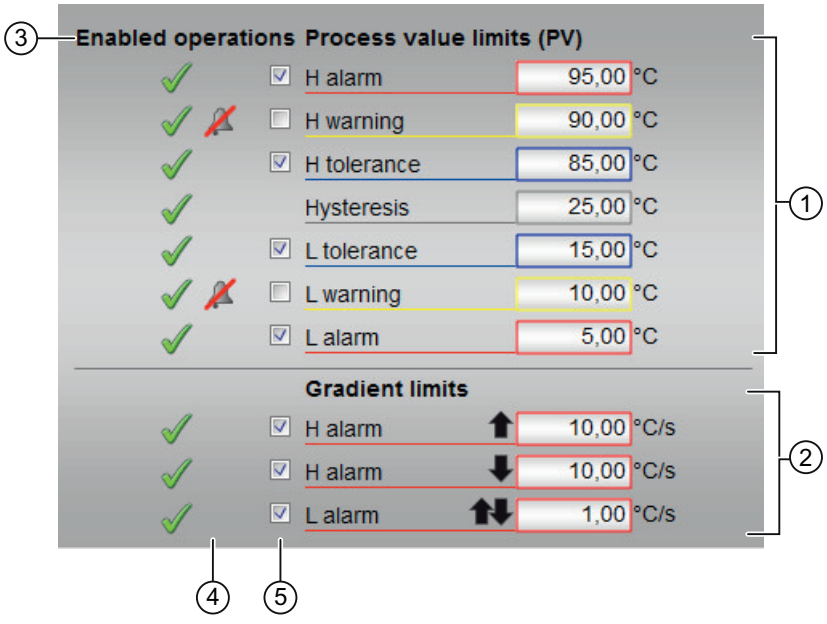
5.1.5 MonAnL Limit view

Limit view of MonAnL

Several values are set in this view by default:

- Process value limits
- Gradient limits

The toolbars of the faceplate and the block icon indicate when the limits are reached or violated.



The Limit view consists of the following:

(1) Process value limits

(2) Gradient limits

(3) Enabled operation

(4) Message suppression / delays

(5) Suppress messages

(1) Process value limits

In this area, you can enter the limits for the process value.

You can change the following limits:

- "H alarm": Alarm high
- "H warning": Warning high
- "H tolerance": Tolerance high
- "Hysteresis"
- "L tolerance": Tolerance low
- "L warning": Warning low
- "L alarm": Alarm low

(2) Gradient limits

You can enter the gradient limits in this area.

You can change the following limits:

- "H alarm ⇑ : Gradient for the high slope for positive changes
- "H alarm ⇓ : Gradient for the high slope for negative changes
- "L alarm ⇑ ⇓ : Gradient for the low slope (absolute)

(3) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

(4) Message suppression / delays

Message suppression indicates whether or not the suppression of the associated message in the AS block is activated with the xx_MsgEn parameter. The output of messages is not suppressed when the block is installed (all xx_MsgEn parameters are preset to 1). Messages can only be output if limit monitoring of the additional analog value has been enabled.

Alarm delays are also displayed in this position.

(5) Suppress messages

You can enable / disable messages by setting the check mark.

5.2 MonAnS - Monitoring of an analog process tag (Small)

5.2.1 MonAnS views

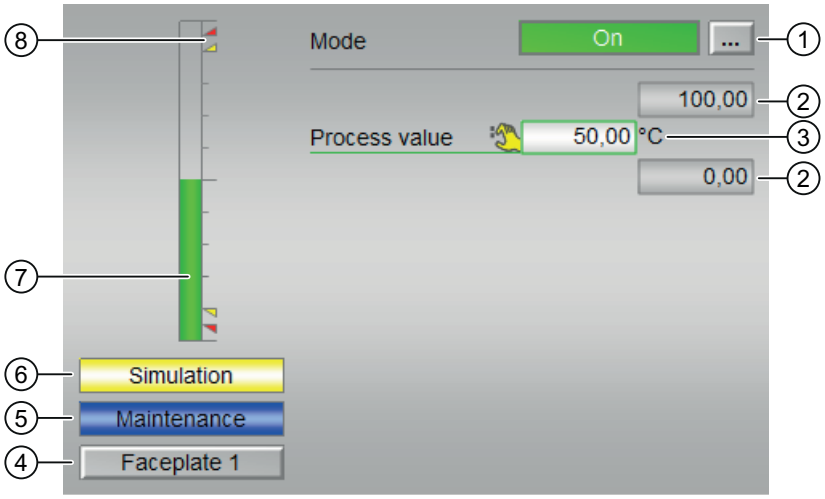
MonAnS views

The MonAnS views provides information on the following:

- MonAnS Standard view (Page 204)
- Alarm view (Page 450)
- MonAnS Limit view (Page 209)
- Trend view (Page 456)
- MonAnS Parameter view (Page 208)
- MonAnS Preview (Page 207)
- Memo view (Page 453)
- Batch view (Page 452)

5.2.2 MonAnS Standard view

Standard view of MonAnS



The MonAns Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) High and low scale range for the process value

(3) Display of the process value, including signal status

(4) Navigation button for switching to the standard view of any faceplate

(5) and (6) Display area for block states

(7) Bar graph for the "process value"

(8) Limit display

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. In this block, the following operating modes are available:

1. On mode
2. Out of service mode

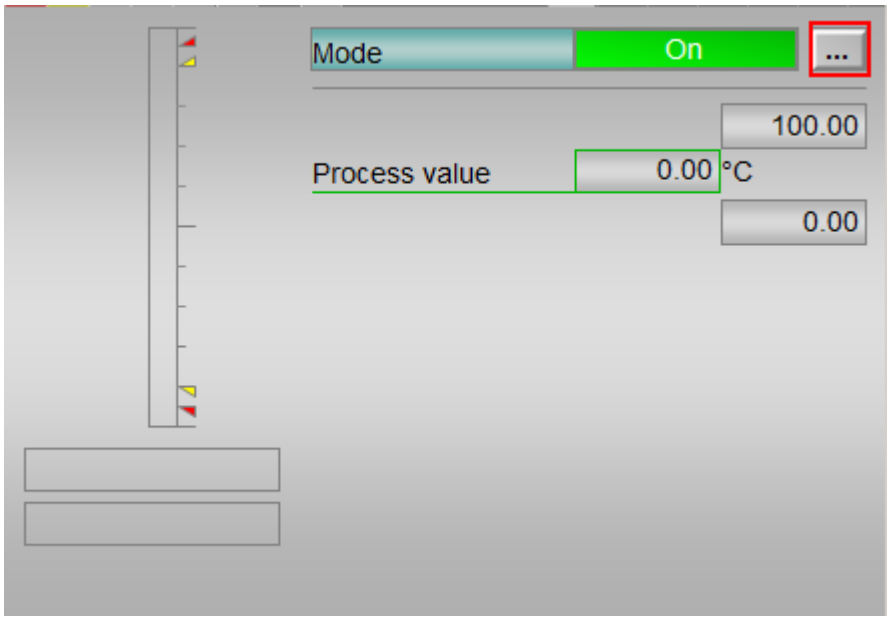
On mode: The "On" operating mode is used for switching on the output. The operating mode is a clear indication that the block algorithm is being processed. The "On" mode can only be activated by using the control on the faceplate block. The block must be in "Out of service" mode for this to be possible. This operating mode is only available for blocks that have faceplates which do not provide support for manual, automatic or local modes.

Out of service mode: This operating mode is available to all blocks that have an operating mode switchover and a direct connection to the process (with a connection to a process tag, for example). The out of service operating mode is intended for the purpose of maintenance and servicing. All of the block's functions are disabled. No incoming or outgoing messages are generated or received. In this instance, the only function still possible is an operating mode switchover.

Switching operating modes

Follow these steps to set the block to a particular mode or to switch between the different operating modes:

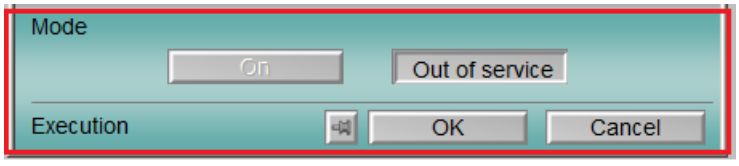
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.
4. If acknowledgement is required, click "OK".



5. The monitor block will be switched to the selected operating mode.

(2) High and low scale range for the process value

These values provide information on the display range for the process value bar graph.

(3) Display of the process value including signal status

This area shows the current process value with the corresponding signal status.

(4) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected. Use this navigation button to open the standard view of a corresponding block.

(5) and (6) Display area for block states

This area provides additional information on the operating state of the block:

- Maintenance
- Simulation

(7) Bar graph for the "process value"

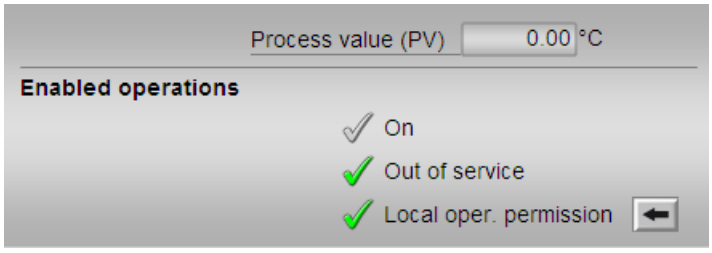
This area shows the current "Process value" in the form of a bar graph.

(8) Limit display

These colored triangles show you the configured limits in the respective bar graph.

5.2.3 MonAnS Preview

Preview of MonAnS



Process value

This area displays the real process value (PV).

Enabled operations

This area displays all operations for which special operator permissions are assigned.

Icons for enabled operation:

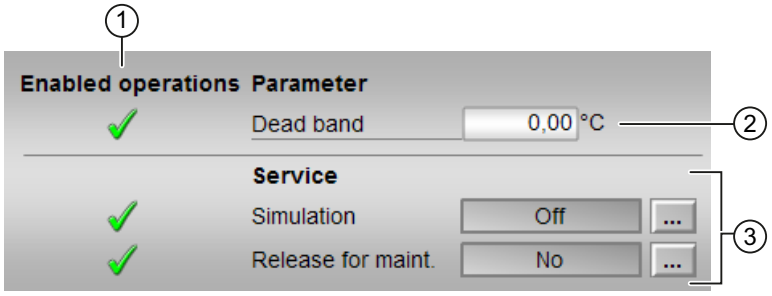
- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions.

The following enabled operations are displayed in the faceplate area:

Action	Description
On	Switch to "On" operating mode.
Out of service	Switch to "Out of service" operating mode.
Local operator permission	Use the ← button to switch to the standard view of the OpStations block.

5.2.4 MonAnS Parameter view

Parameter view of MonAnS



The Parameter view consists of the following:

(1) Enabled operations

(2) Parameter

(3) Service

(1) Enabled operations

This area shows all operations for which special operator control permissions are assigned.

Icons for enabled operations:

- Green check mark: The OS operator can control this parameter
- Gray check mark: The OS operator cannot control this parameter at this time due to the process
- Red cross: The OS operator cannot control this parameter due to the configured AS operator control permissions.

(2) Parameter

You can change the following parameter in this area:

- "Dead band"

(3) Service

You can select the following functions in this area:

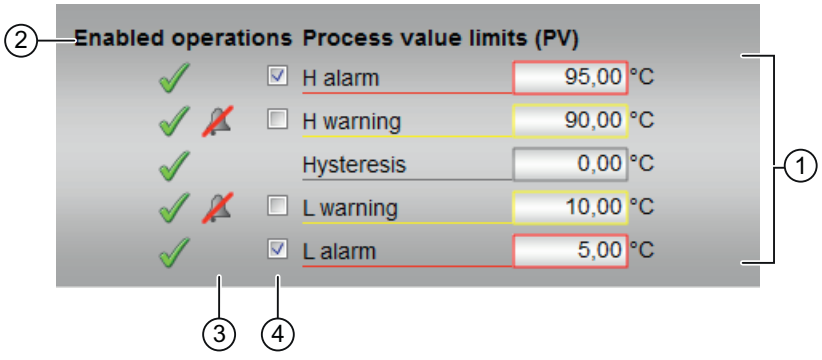
- "Simulation"
- "Release for maintenance"

5.2.5 MonAnS Limit view

Limit view of MonAnS

You can specify the process value limits in this view:

The toolbars of the faceplate and the block icon indicate when the limits are reached or violated.



The Limit view consists of the following:

(1) Process value limits

(2) Enabled operation

(3) Message suppression / delays

(4) Suppress messages

(1) Process value limits

In this area, you can enter the limits for the process value.

You can change the following limits:

- "H alarm": Alarm high
- "H warning": Warning high
- "Hysteresis"
- "L warning": Warning low
- "L alarm": Alarm low

(2) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

(3) Message suppression / delays

Message suppression indicates whether or not the suppression of the associated message in the AS block is activated with the xx_MsgEn parameter. The output of messages is not suppressed when the block is installed (all xx_MsgEn parameters are preset to 1). Messages can only be output if limit monitoring of the additional analog value has been enabled.

Alarm delays are also displayed in this position.

(4) Suppress messages

You can enable / disable messages by setting the check mark.

5.3 MonDiL - Monitoring of a digital process tag (Large)

5.3.1 MonDiL views

MonDiL views

The MonDiL views provides information on the following:

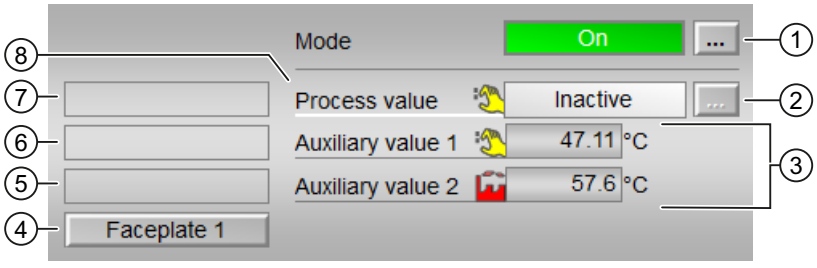
- MonDiL Standard view (Page 211)
- Alarm view (Page 450)
- Trend view (Page 456)
- MonDiL parameter view (Page 215)
- MonDiL Preview (Page 214)
- Memo view (Page 453)
- Batch view (Page 211)

See also

Batch view (Page 452)

5.3.2 MonDiL Standard view

Standard view of MonDiL



The MonDiL Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Display of process value enabled/disabled

(3) Display of auxiliary values

(4) Navigation button for switching to the standard view of any faceplate

(5), (6) and (7) Display area for block states

(8) Displaying input values

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. In this block, the following operating modes are available:

1. On mode
2. Out of service mode

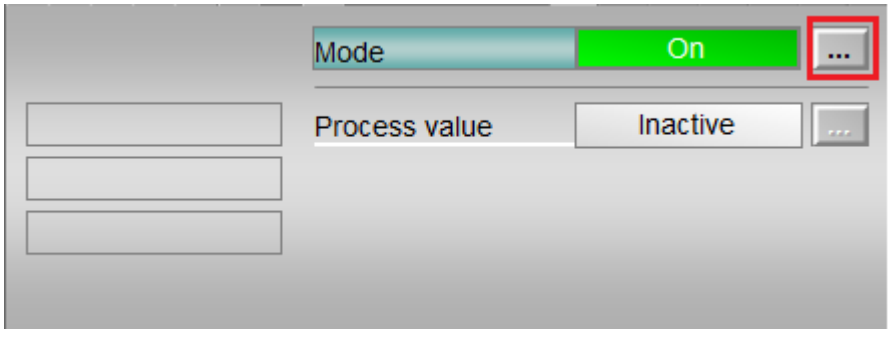
On mode : The "On" operating mode is used for switching on the output. The operating mode is a clear indication that the block algorithm is being processed. The "On" mode can only be activated by using the control on the faceplate block. The block must be in "Out of service" mode for this to be possible. This operating mode is only available for blocks that have faceplates which do not provide support for manual, automatic or local modes.

Out of service mode: This operating mode is available to all blocks that have an operating mode switchover and a direct connection to the process (with a connection to a process tag, for example). The out of service operating mode is intended for the purpose of maintenance and servicing. All of the block's functions are disabled. No incoming or outgoing messages are generated or received. In this instance, the only function still possible is an operating mode switchover.

Switching operating modes

Follow these steps to set the block to a particular mode or to switch between the different operating modes:

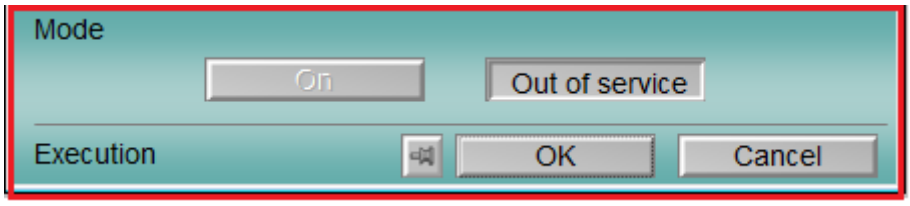
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.
4. If acknowledgement is required, click "OK".
   The monitor block will be switched to the selected operating mode.



(2) Display of process value enabled/disabled

This area displays the status of the individual connected parameters. If the block is in simulation, you can enable or disable the process value. To do this, click on the display to open the operator input area.

(3) Display of auxiliary values

You can use this area to display two auxiliary values.

(4) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected.

Use this navigation button to open the standard view of a corresponding block.

(5), (6) and (7) Display area for block states

This area provides additional information on the operating state of the block:

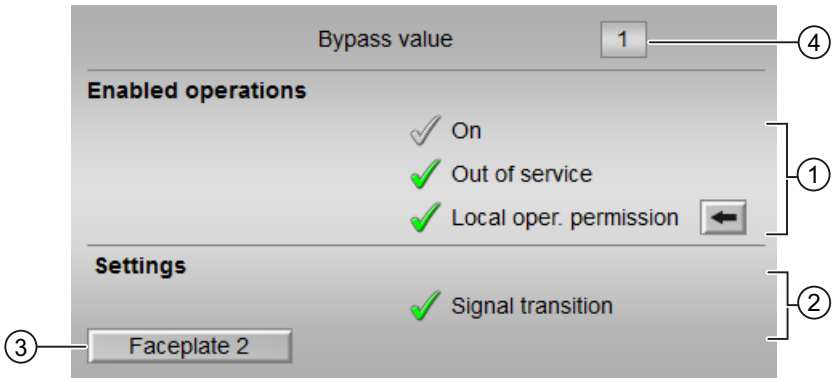
- Maintenance
- Simulation
- Fluttering

(8) Displaying input values

This area provides you the option of Changing the display.

5.3.3 MonDiL Preview

Preview of MonDiL



With respect to the screenshot shown above, the MonDiL preview consists of the following areas:

(1) Enabled operations

(2) Settings

(3) Navigation button for switching to the standard view of any faceplate

(4) Bypass value

(1) Enabled operations

This area displays all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions.

The following enabled operations are displayed in the faceplate area:

Action	Description
On	You can switch to "On" operating mode.
Out of service	You can switch to "Out of service" operating mode.
Local operator permission	Use the ← button to switch to the standard view of the OpStations block.

(2) Settings

- "Signal transition":
  - Activated: A message is generated with a "0 → 1" signal transition at the monitored input.
  - Deactivated: No message is generated.

(3) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected.

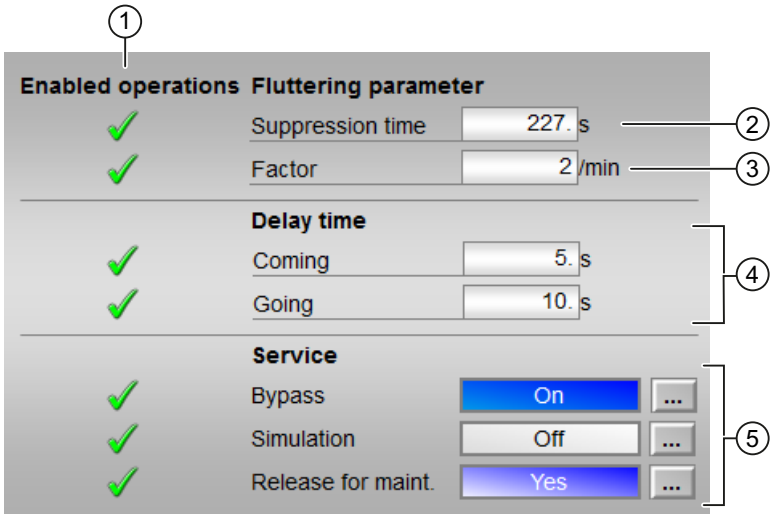
Use this navigation button to open the standard view of a corresponding block.

(4) Bypass value

This area displays the bypass value

5.3.4 MonDiL Parameter view

Parameter view of MonDiL



The Parameter view consists of the following areas:

(1) Enabled operations

(2) Suppression time

(3) Factor

(4) Delay time

(5) Service

(1) Enabled operations

This area displays all operations for which special operator control permissions are assigned.

Icons for enabled operations:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator control permissions.

(2) Suppression time

Enter the time period during which signal flutter is suppressed.

(3) Factor

Enter the number of flutter signals that can be suppressed.

(4) Delay time

Enter the delay time by which the output should be set. You can enter delay time for positive ("incoming", 0 - 1 edge) and negative ("outgoing", 1 - 0 edge) edges.

(5) Service

You can select the following functions in this area:

- "Bypass"
- "Simulation"
- "Release for maintenance"

5.4 MonDiS - Monitoring of a digital process tag (Small)

5.4.1 MonDiS views

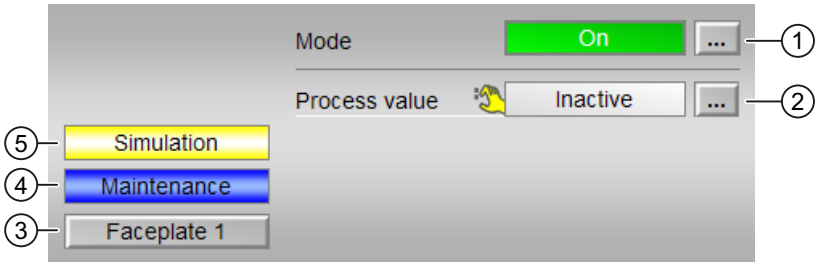
MonDiS views

The MonDiS views provides information on the following:

- MonDiS Standard view (Page 217)
- Alarm view (Page 450)
- MonDiS Parameter view (Page 220)
- MonDiS Preview (Page 219)
- Memo view (Page 453)
- Batch view (Page 452)
- Trend view (Page 456)

5.4.2 MonDiS Standard view

Standard view of MonDiS



The MonDis Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Display of process value enabled/disabled

(3) Navigation button for switching to the standard view of any faceplate

(4) and (5) Display area for block states

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. In this block, the following operating modes are available:

1. On mode
2. Out of service mode

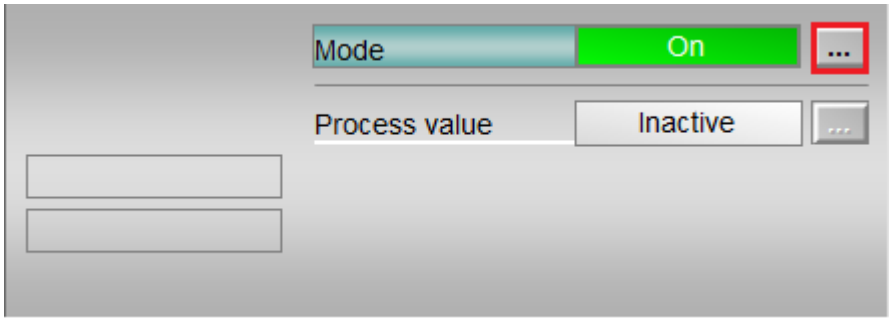
On mode: The "On" operating mode is used for switching on the output. The operating mode is a clear indication that the block algorithm is being processed. The "On" mode can only be activated by using the control on the faceplate block. The block must be in "Out of service" mode for this to be possible. This operating mode is only available for blocks that have faceplates which do not provide support for manual, automatic, or local operating modes.

Out of service mode: This operating mode is available to all blocks that have an operating mode switchover and a direct connection to the process (with a connection to a process tag, for example). The out of service operating mode is intended for the purpose of maintenance and servicing. All of the block's functions are disabled. No incoming or outgoing messages are generated or received. The only function still possible is an operating mode switchover.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

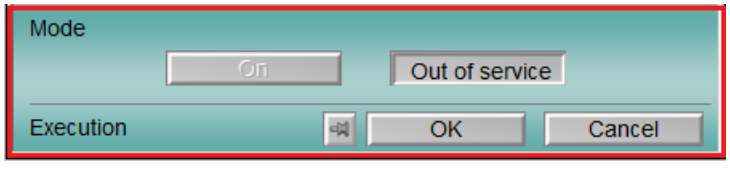
1. Ensure the faceplate containing the respective block is open.
2. Click the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.
4. If acknowledgement is required, click "OK".
The monitor block will be switched to the selected operating mode.



(2) Display of process values enabled/disabled

This area shows the status of the individual connected parameters.

(3) Navigation button for switching to the standard view of any faceplate

Use this navigation button to reach the standard view of a block configured in the Engineering System (ES). The visibility of this navigation button depends on the configuration in the ES.

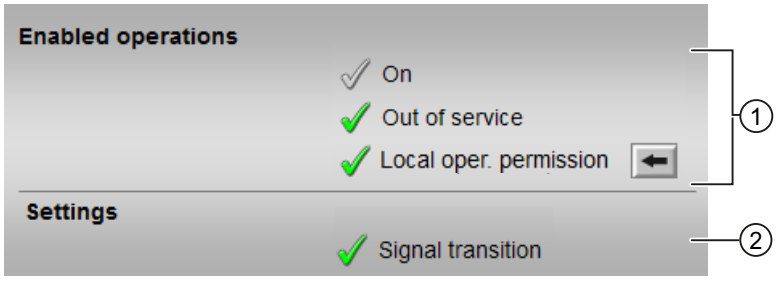
(4) and (5) Display area for block states

This area provides additional information on the operating state of the block:

- Maintenance
- Simulation

5.4.3 MonDiS Preview

Preview of MonDiS



The MonDiS preview consists of the following areas:

(1) Enabled operations

(2) Settings

(1) Enabled operations

This area displays all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions

The following enabled operations are shown here:

Action	Description
Reset	Resets the peak value of the gradient.
On	Switch to "On" operating mode.
Out of service	Switch to "Out of service" operating mode
Local operator permission	Use the ← button to switch to the standard view of the OpStations block.

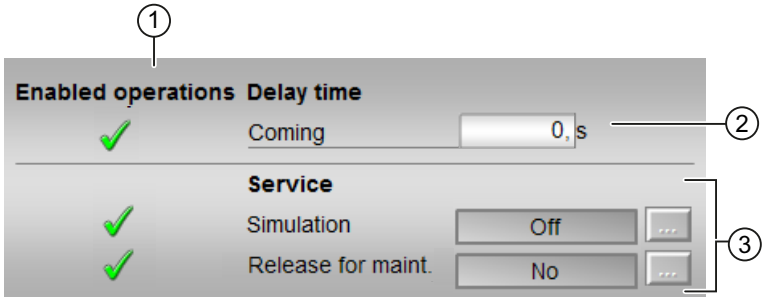
(2) Settings

This area displays the status of "Signal transition":

- Activated: A message is generated with a "0 → 1" signal transition at the monitored input.
- Deactivated: No message is generated.

5.4.4 MonDiS Parameter view

Parameter view of MonDiS



The MonDis Parameter view consists of the following areas:

(1) Enabled operations

(2) Delay time

(3) Service

(1) Enabled operations

This area shows all operations for which special operator control permissions are assigned.

Icons for enabled operations:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator-control permissions.

(2) Delay time

The delay time by which the output should be set.

(3) Service

You can select the following functions in this area:

- "Simulation"
- "Release for maintenance"

5.5 MonDi08 - Monitoring 8 digital process tags

5.5.1 MonDi08 views

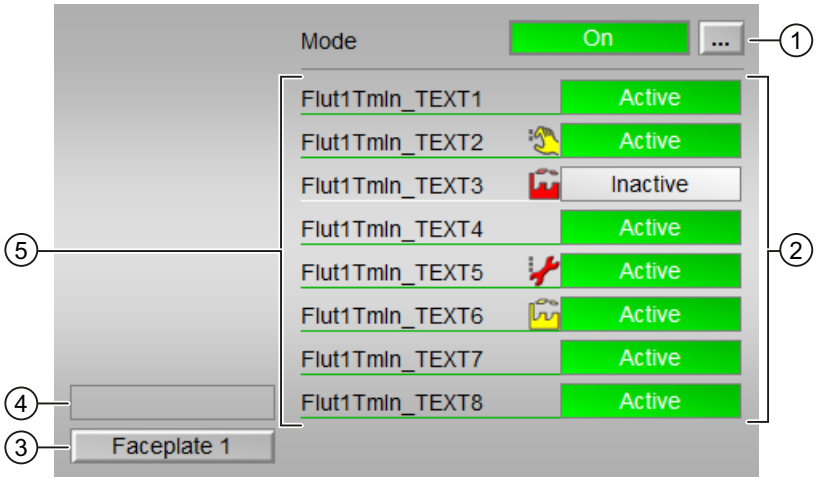
MonDi08 views

The MonDi08 views provides information on the following:

- MonDi08 Standard view (Page 222)
- Alarm view (Page 450)
- Trend view (Page 456)
- MonDi08 Parameter view (Page 226)
- MonDi08 Preview (Page 225)
- Memo view (Page 453)
- Batch view (Page 452)

5.5.2 MonDi08 Standard view

Standard view of MonDi08



The MonDi08 Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Display of the status for each parameter

(3) Navigation button for switching to the standard view of any faceplate

(4) Display area for block states

(5) Displaying input values

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. In this block, the following operating modes are available:

1. On mode
2. Out of service mode

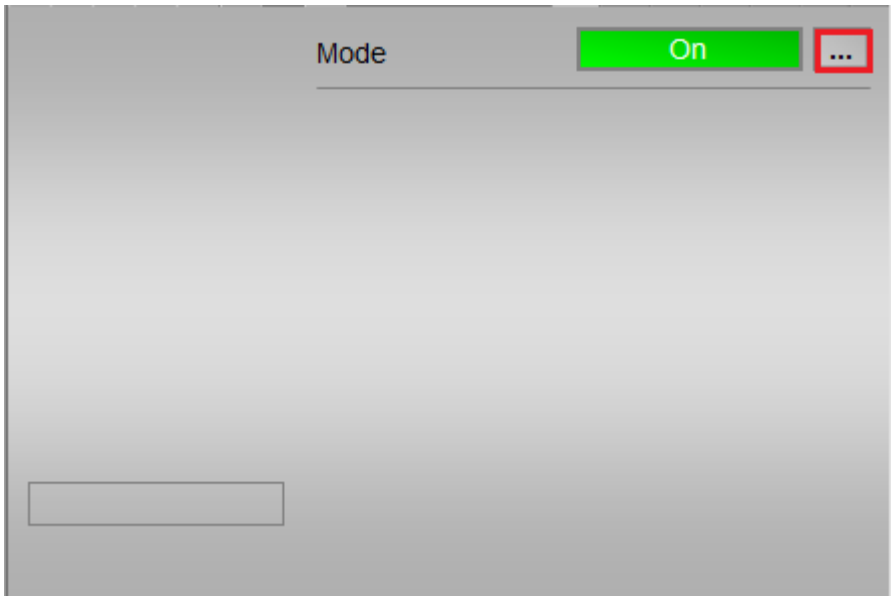
On mode: The "On" operating mode is used for switching on the output. The operating mode is a clear indication that the block algorithm is being processed. The "On" mode can only be activated by using the control on the faceplate block. The block must be in "Out of service" mode for this to be possible. This operating mode is only available for blocks that have faceplates which do not provide support for manual, automatic or local operating modes.

Out of service mode: This operating mode is available to all blocks that have an operating mode switchover and a direct connection to the process (with a connection to a process tag, for example). The out of service operating mode is intended for the purpose of maintenance and servicing. All of the block's functions are disabled. No incoming or outgoing messages are generated or received. The only function still possible is an operating mode switchover.

Switching operating modes

Follow these steps to set the block to a particular mode or to switch between the different operating modes:

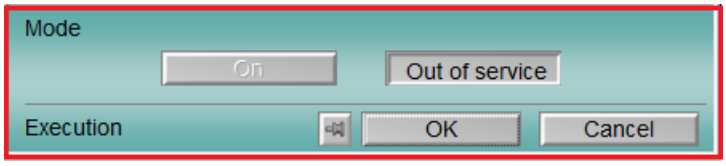
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.
4. If acknowledgement is required, click "OK".
   The monitor block will be switched to the selected operating mode.



(2) Display of the status for each parameter

This display is only visible when the corresponding block input is connected.

This area displays the status of the individual parameters available.

(3) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected.

Use this navigation button to open the standard view of a corresponding block.

(4) Display area for block states

This area provides additional information on the operating state of the block:

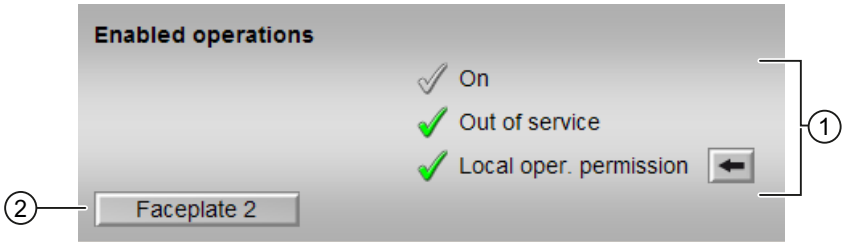
- Maintenance

(5) Displaying input values

This area provides additional information on how to change the displays.

5.5.3 MonDi08 Preview

Preview of MonDi08



With respect to the screenshot shown above, the MonDi08 preview consists of the following areas:

(1) Enabled operations

(2) Navigation button for switching to the standard view of any faceplate

(1) Enabled operations

This area displays all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions.

The following enabled operations are displayed in the faceplate area:

Action	Description
On	You can switch to "On" operating mode.
Out of service	You can switch to "Out of service" operating mode.
Local operator permission	Use the ← button to switch to the standard view of the OpStations block.

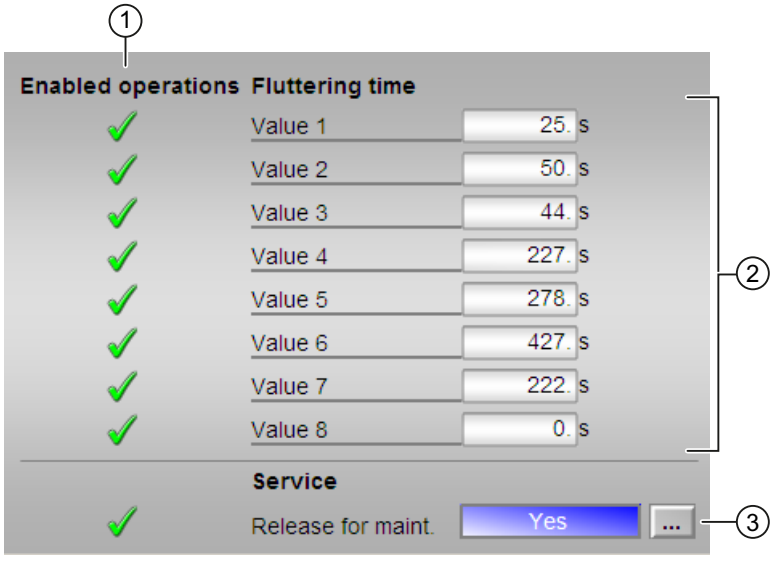
(2) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected.

Use this navigation button to open the standard view of a corresponding block.

5.5.4 MonDi08 Parameter view

Parameter view of MonDi08



The Parameter view consists of the following:

(1) Enabled operations

(2) Area for entering the flutter time

(3) Service

(1) Enabled operations

This area shows all operations for which special operator control permissions are assigned.

Icons for enabled operations:

- Green check mark: The OS operator can control this parameter
- Gray check mark: The OS operator cannot control this parameter at this time due to the process
- Red cross: The OS operator cannot control this parameter due to the configured AS operator control permissions.

(2) Area for entering the flutter time

Use this area to set the time period to determine how long a continuous signal should last in order for it to be transferred to the process without flutter.

(3) Service

You can select the following function in this area:

- "Release for maintenance"

Dosing blocks

6

6.1 DoseL

6.1.1 DoseL views

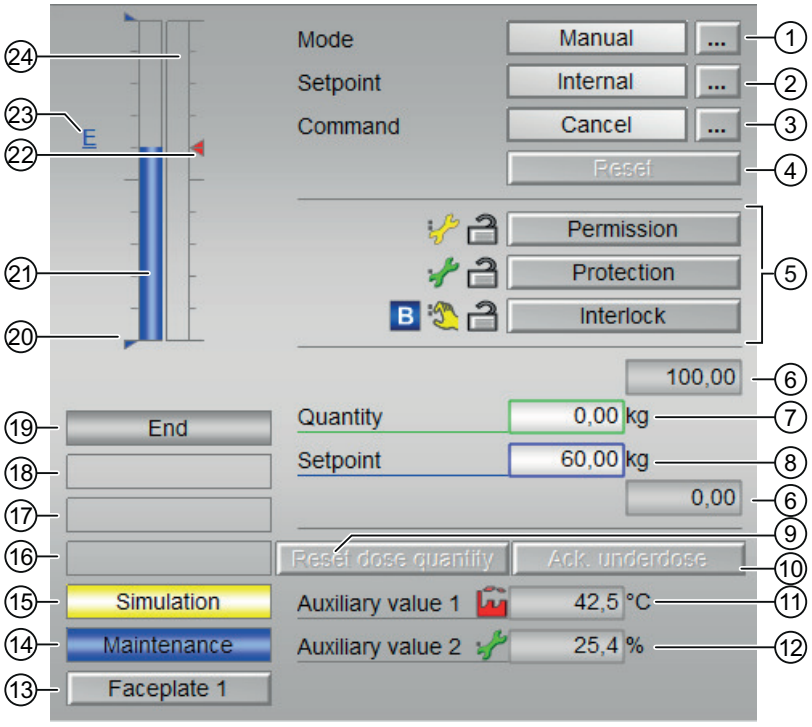
DoseL views

The DoseL views provides information on the following:

- DoseL Standard view (Page 230)
- Alarm view (Page 450)
- DoseL Limit view (Page 241)
- Trend view (Page 456)
- DoseL Parameter view (Page 243)
- Flow setpoint view of DoseL (Page 245)
- Quantity setpoint view of DoseL (Page 247)
- DoseL Preview (Page 238)
- Memo view (Page 453)
- Batch view (Page 452)

6.1.2 DoseL Standard view

Standard view of DoseL



The DoseL Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Displaying and changing the setpoint

(3) Displaying and changing the command

(4) Resetting the block

(5) Operating range for interlock functions of the block

(6) High and low scale range for the setpoint

(7) Displaying and changing the quantity

(8) Displaying and changing the setpoint

(9) Button: Reset dose quantity

(10) Button: Acknowledge underdosing and overdosing

(11) and (12) Display of auxiliary values

(13) Button for switching to the standard view of any faceplate

(14), (15), (16), (17), (18), and (19) Display area for block states

(20) Limit display for the setpoint

(21) Bar graph for the setpoint

(22) Limit display

(23) Display of external setpoint

(24) Bar graph for the quantity

(1) Displaying and switching the operating mode

This area provides information on the currently operating mode. In this block, the following operating modes are available:

1. Local mode
2. Automatic mode
3. Manual mode
4. Out of service mode

1. Local mode: This operating mode is used for dosing unit. The control settings are made directly or through a locally available control station.
   In local mode, the following dosing operations can be performed:
   - Start
   - Cancel
   - Pause
   - Continue

   Note

   Tracking in "local" mode is not possible with DoseL.

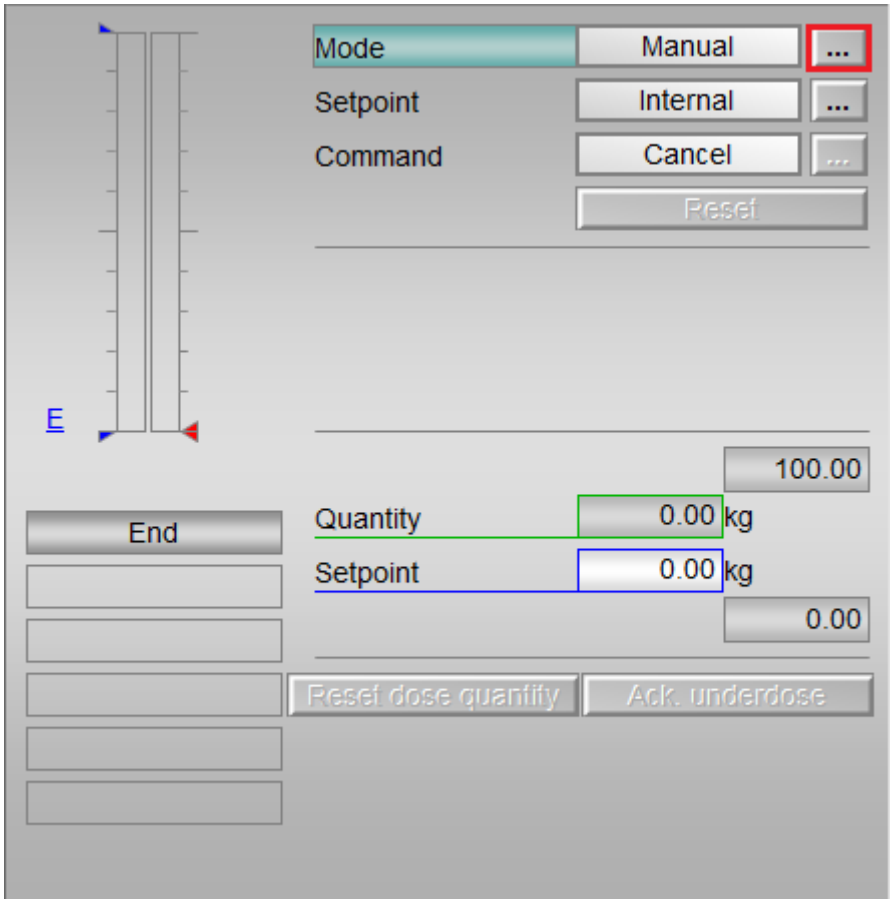
2. Automatic mode: In automatic mode, control of the device is performed automatically by the program.
   In automatic mode, the following operations can be performed:
   - Start
   - Cancel
   - Pause
   - Continue

3. Manual mode: In this mode, the control settings for the device are made manually by the operator. The operator can change the manipulated variable (output signal). The manipulated variable can be analor or binary.
   In manual mode, the following operations can be performed:
   - Start
   - Cancel
   - Pause
   - Continue
4. Out of service mode: This operating mode is available to all devices that have an operating mode switchover and a direct connection to the process. This mode is intended for purposes of maintenance and servicing (replacing the device, for example). All functions of the device are disabled in this operating mode. Incoming or outgoing messages are not received or generated in this case. Only one operating mode switchover is possible in this operating mode.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

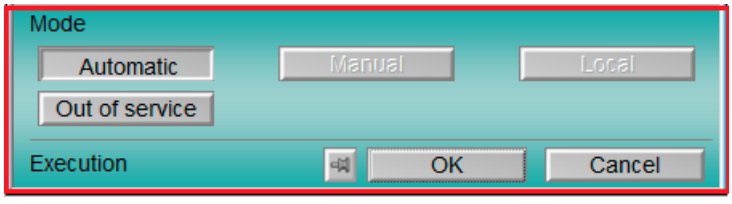
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.
4. If acknowledgement is required, click "OK".



5. The motor will be switched to the selected operating mode.

(2) Displaying and changing the setpoint

The DoseL block allows setpoints to be specified. This specification is carried out by means of a program or by means of the faceplate (operator).

The block supports the following setpoint types:

- Internal
- External

Follow the steps mentioned below to switch to a particular setpoint type:

Note

DoseL faceplate

Ensure the faceplate containing the respective block is open.

1. Select [...] and choose the setpoint type.
   The operating window is displayed as an extension of the faceplate.
2. To confirm execution, select OK.
   The setpoint type changes to the respective type you have selected.

(3) Displaying and changing the command

The commands are provided to the operator for switching the operating state of the doser.

The following commands are supported by the DoseL block:

- "Start"
- "Continue"
- "Pause"
- "Cancel"

Follow the steps mentioned below to switch to a particular setpoint type:

Note

DoseL faceplate

Ensure the faceplate containing the respective block is open

1. Select [...] under the "Command" option and choose the command type.
   The operating window is displayed as an extension of the faceplate.
2. Click on the required command type ("Start", "Continue", "Pause", "Cancel").
3. To confirm execution, select OK.
   The command type changes to the respective type you have selected.

   Note

   The selected command type is displayed in the drop down list next to the "Command" option.

(4) Resetting the block

Click "Reset" for interlocks or errors.

(5) Operating range for the interlock functions of the block

This display area is only visible when the corresponding block input is connected. You can use this button to control the interlock functions of the block. Depending on the block, a maximum of three types of interlock can be used.

Interlock types

The following interlock types exist in the DoseL block:

- Activation enable (Permission): The activation enable makes it possible to leave the neutral position of the block in response to operator input. The activation enable has no effect if the block is not in neutral position.
- Interlock without reset (Interlock): An active interlock condition brings the block to the neutral position. After the interlock condition has gone, the currently active control becomes active again in automatic or local mode. In manual mode, the faceplate can be operated again after the interlock condition has gone.
- Interlock with reset (Protection): An interlock condition brings the block to the neutral position. After the interlock conditions are cleared, the operator or an activation sequence must perform a reset to once again enable activation of the control according to input parameters.

Display of the interlock in the faceplacte

The interlock state is visualized in the faceplate by a status display (padlock).

- Open padlock: No interlock pending
- Closed padlock; One or more interlocks are pending
- No padlock: Individual interlocks are not active

(6) High and low scale range for the setpoint

This area is already set and cannot be changed.

(7) Displaying and changing the quantity

This area allows you to change the values for various parameters.

(8) Displaying and changing the setpoint

This area within the faceplate shows the current setpoint with the corresponding signal status. The setpoint value is displayed in the setpoint input box which exists within the faceplate.

Follow the steps mentioned below to add or change the setpoint value:

1. Ensure the appropriate mode is selected within the faceplate.
2. Click the setpoint input box. The bottom portion of faceplate which lists the options for changing setpoint value will expand.
3. To confirm execution, select **OK**.
   The setpoint value will be reflected in the setpoint input box in the faceplate window.

Note

External setpoint type

In external setpoint type, the operator will not be able to modify the setpoint value in manual or automatic mode.

(9) Button: Reset dose quantity

The dosing quantity can only be reset in the "End" or "Ackn Dos End" state.

With resetting dose quantity also the display "Ackn Dos End" is resetted to "End".

(10) Button: Acknowledge underdosing and overdosing

Acknowledgment of overdosing and underdosing can only be made in the "Off" state.

(11) and (12) Display of auxiliary values

You can use this area to display two auxiliary values.

(13) Button for switching to the standard view of any faceplate

Use this button for the standard view of a block configured in the Engineering Station (ES).

(14),(15), (16), (17), (18), and (19) Display area for block states

This area provides additional information on the operating state of the block:

- Simulation
- Maintenance
- Invalid signal
- Changeover error
- Flow
- Forced start
- Force continue
- Force pause

- Forced stop
- Request 0/1: A reset to "automatic mode" is expected.
- Underdosed
- Overdosed
- Coarse dosing
- Fine dosing
- Relax
- Pause
- Off
- End: The display in the standard view shows "Ackn Dos End" block state if underdosage or overdosage was identified.
- Taring

(20) Limit display for the setpoint

These triangles show the setpoint limits configured.

(21) Bar graph for the setpoint

This area shows the current setpoint in the form of a bar graph.

(22) Limit display

These colored triangles indicate the configured limits in the respective bar graph:

- Red: Alarm
- Yellow: Warning
- Blue: Tolerance

(23) Display of external setpoint

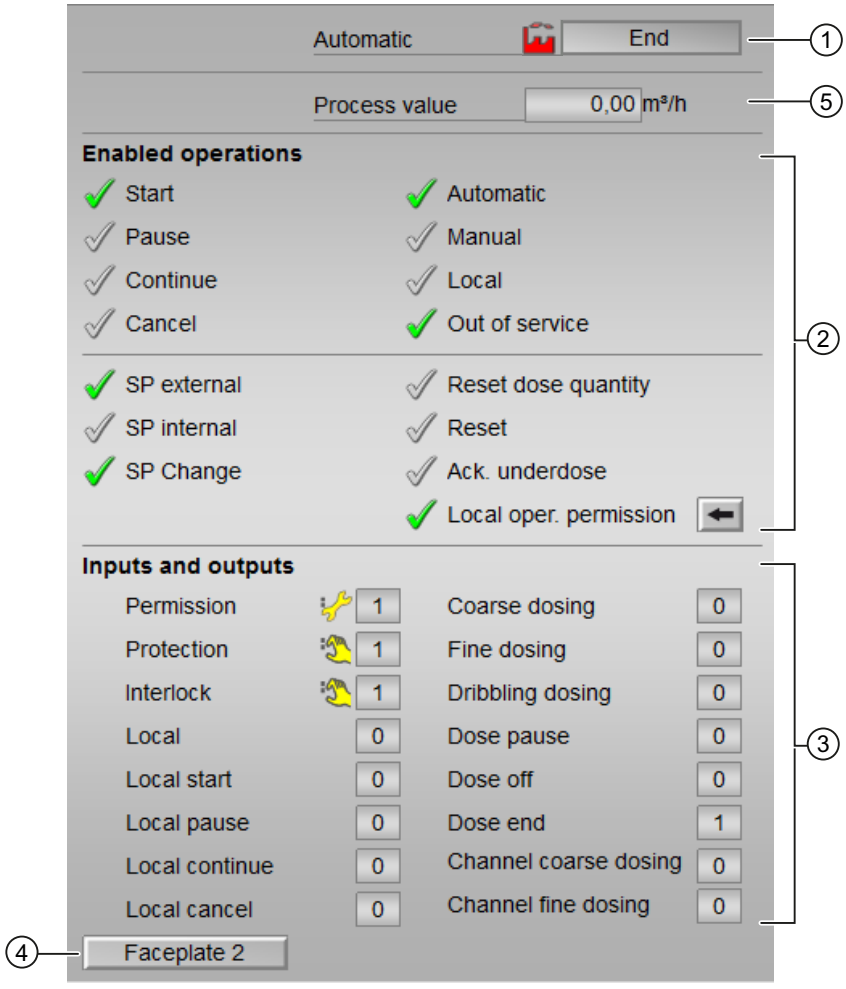
This display [E] is only visible when you have selected "Internal" setpoint specification. It shows the external setpoint that would apply if you were to change the setpoint specification to "external".

(24) Bar graph for the quantity

This area shows you the current quantity in the form of a bar graph.

6.1.3 DoseL Preview

Preview of DoseL



With respect to the screenshots shown above, the DoseL preview consists of the following areas:

(1) Automatic preview

(2) Enabled operations

(3) Displaying current control signals

(4) Navigation button for switching to the standard view of any faceplate

(5) Process values

(1) Automatic preview

This area shows you the block status after it has switched from "manual" to "automatic" mode.

If the block is in automatic mode, the current block state is displayed.

This area also displays the worst signal status of the following automatic commands:

- StartAut
- CancelAut
- PauseAut
- ContAut
- SP_Ext

(2) Enabled operations

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions.

The following enabled operations are displayed below:

Actions	Descriptions
Start	You can start the dosing procedure
Pause	You can pause the dosing procedure
Continue	You can continue the dosing procedure after a pause or an abort.
Cancel	You can abort the dosing procedure.
Automatic	You can switch to automatic mode.
Manual	You can switch to manual mode.
Local	You can switch to local mode.
Out of service	You can switch to out of service operating mode.
SP external	You can use the external setpoint.
SP internal	You can use the internal setpoint.
Change SP	You can change the setpoint.
Reset dose quantity	You can reset the dosing quantity.
Reset	You can reset the block after interlocks or errors.
Acknowledge underdosing	You can acknowledge the underdosing.
Local operator permission	Use the ← button to switch to the standard view of the OpStations block.

(3) Displaying current control signals

This area shows the most important parameters for this block with the current selection:

Signals	Values
Permission	0 = No OS release for energizing motor
	1 = Enable for starting / stopping from the neutral position
Protection	0 = Protective interlocking is effective; once the interlocking condition has disappeared, you will have to reset the block
	1 = "Good" state
Interlock	0 = Interlocking without reset is active; you can operate the block without reset once the interlocking condition has disappeared
	1 = "Good" state
Local correct	1 = Control signal for "Local mode" (LocalLi) is active
Local start	1 = Block is started in local mode
Local pause	1 = Dosing paused in local mode
Local continue	1 = Dosing is continued in local mode
Local cancel	1 = Dosing is canceled in local mode
Coarse dosing	1 = Coarse dosing is performed
Fine dosing	1 = Fine dosing is performed
Relax phase	1 = Dosing procedure is in the relax phase
Dose pause	1 =Dosing pause
Dose off	1 = No dosing taking place
Dose end	1 = Dosing is stopped
Channel Coarse Dosing	Signal from the output channel block for "Coarse dosing"
Channel Fine Dosing	Signal from the output channel block for "Fine dosing"

(4) Navigation button for switching to the standard view of any faceplate

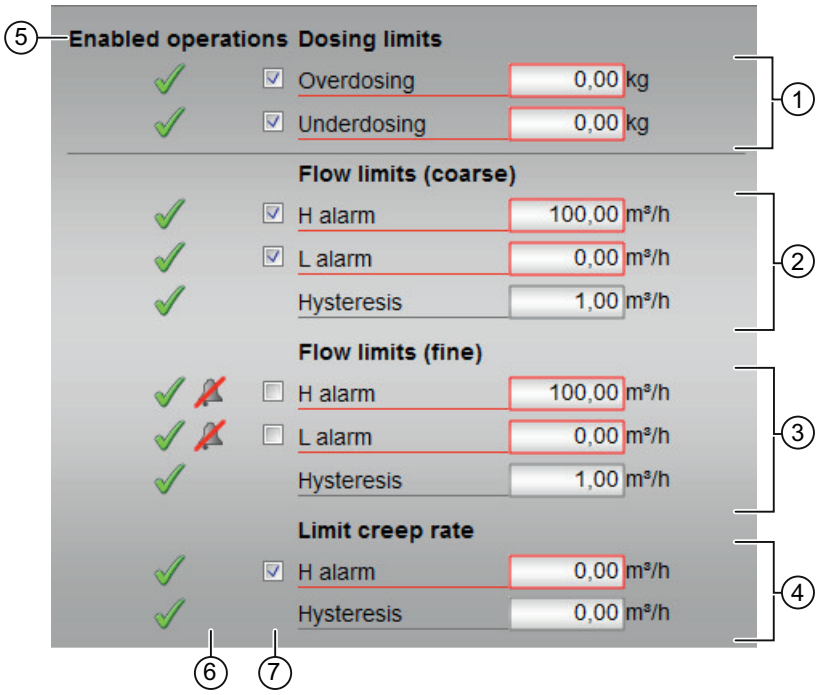
Use this navigation button to open the standard view of a block configured in the Engineering Station (ES).

(5) Process value

This area displays the real process value.

6.1.4 DoseL Limit view

Limit view of DoseL



The limit view of DoseL consists of the following:

(1) Displaying and changing the dosing limits

(2) Displaying and changing the flow limits (coarse)

(3) Displaying and changing the flow limits (fine)

(4) Displaying and changing the limit for the creep flow

(5) Enabled operation

(6) "Message suppression/delay"

(7) Suppress messages

(1) Displaying and changing the dosing limits

You can change the dosing limits in this area:

- "Overdosing"
- "Underdosing"

(2) Displaying and changing the flow limits (coarse)

You can change the flow limits (coarse) in this area:

- "H alarm"
- "L alarm"
- "Hysteresis"

(3) Displaying and changing the flow limits (fine)

You can change the flow limits (fine) in this area:

- "H alarm"
- "L alarm"
- "Hysteresis"

(4) Displaying and changing the limit for the creep flow

You can change the flow limits (creep flow) in this area:

- "H alarm"
- "Hysteresis"

(5) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons enabled for these operations:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

(6) "Message suppression/delay"

Message suppression indicates whether or not the suppression of the associated message inthe AS block is activated with the xx_MsgEn parameter. The output of messages is not suppressed when the block is installed (all xx_MsgEn parameters are preset to 1). Messages can only be output if limit monitoring of the additional analog value has been enabled.

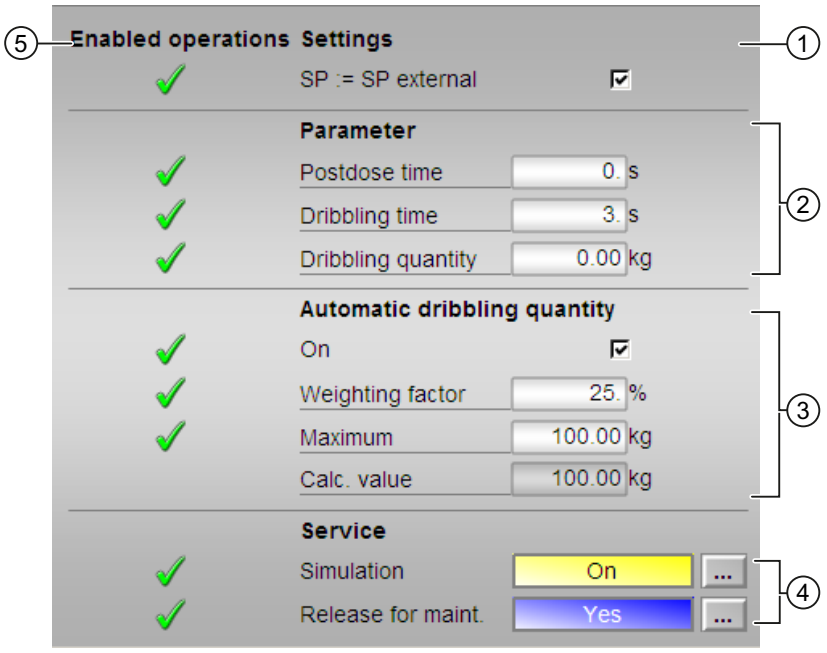
Alarm delays are also displayed in this position.

(7) Suppress messages

You can enable / disable messages by setting the check mark.

6.1.5 DoseL Parameter view

Parameter view of DoseL



The parameter view of DoseL consists of the following:

(1) Settings

(2) Parameter

(3) Automatic dribbling quantity

(4) Service

(5) Enabled operations

(1) Settings

You can select the following functions in this area:

- "SP:=SP external": ☑Bumpless switchover of setpoint from external to internal. The internal setpoint is tracked to the external one.

(2) Parameter

In this area, you change parameters and therefore influence the doser.

You can influence the following parameters:

- "Relax time"
- "Dribble time"
- "Dribble value"

(3) Automatic dribbling quantity

In this area, you change the automatic dribbling quantity parameters, which affects the doser.

You can change the parameters when the "On" check box is selected ☑.

You can influence the following parameters:

- "Weighting factor"
- "Maximum"
- "Calc. value"

(4) Service

You can select the following functions in this area:

- "Simulation"
- "Release for maintenance"

(5) Enabled operations

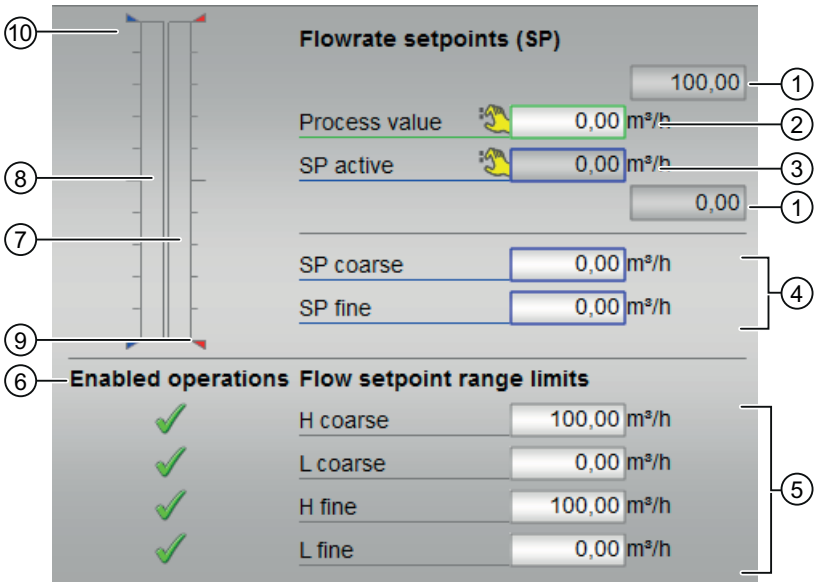
This area shows all operations for which special operator control permissions are assigned.

Icone for these enabled operations:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator control permissions.

6.1.6 DoseL Flow setpoint view

Flow setpoint view for DoseL



The Flow setpoint view consists of the following:

(1) High and low scale range for the process value

(2) Display of the process value including signal status

(3) Displaying and changing the SP active value

(4) Additional setpoint parameters

(5) Displaying and changing the limits

(6) Enabled operations

(7) Bar graph for the process value

(8) Bar graph for the SP active setpoint

(9) Limit display

(10) Limit display for the setpoint

(1) High and low scale range for the process value

These values provide information on the display range for the bar graph (7) of the process value.

(2) Display of the process value including signal status

This area shows the current process value with the corresponding signal status.

(3) Displaying and changing the SP active value

You can change the values in faceplates and in the block icons if you have the corresponding operator authorization

(4) Additional setpoint parameters

You can change the following setpoint parameters in this area:

- "SP coarse"
- "SP fine"

(5) Displaying and changing the limits

You can change the limits in this area:

- "H coarse"
- "L coarse"
- "H fine"
- "L fine"

(6) Enabled operations

This area shows all operations for which special operator control permissions are assigned.

Icons for enabled operations:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator control permissions.

(7) Bar graph for the process value

This area shows the current process value in the form of a bar graph. The visible area in the bar graph depends on the configuration in the Engineering System (ES).

(8) Bar graph for the SP active setpoint

This area shows the current setpoint "SP active" in the form of a bar graph. The visible area in the bar graph depends on the configuration in the ES.

(9) Limit display

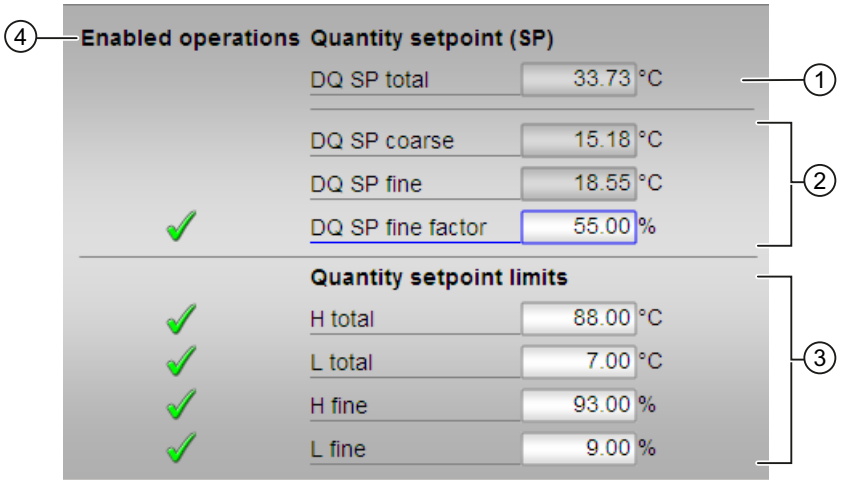
These triangles show limits for the flow limits. The flow limits are set in the limit value view.

(10) Limit display for the setpoint

These triangles show the `SP_HiLim` and `SP_LoLim` setpoint limits configured in the ES.

6.1.7 DoseLQuantity setpoint view

Quantity setpoint view for DoseL



The Quantity setpoint view for DoseL consists of the following:

(1) Displaying and changing the DQ SP total setpoint

(2) Displaying and changing additional setpoints

(3) Displaying and changing the limits

(4) Enabled operations

(1) Displaying and changing the DQ SP total setpoint

You can change the "DQ SP total" setpoint in this area.

(2) Displaying and changing additional setpoints

You can change the limits in this area:

- "DQ SP coarse"
- "DQ SP fine"
- "DQ SP fine factor"

(3) Displaying and changing the limits

You can change the limits in this area:

- "H total"
- "L total"
- "H fine"
- "L fine"

(4) Enabled operations

This area shows all operations for which special operator control permissions are assigned.

Icons for enabled operations:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: The OS operator cannot control this parameter due to the configured AS operator control permissions.

Interlock blocks

7

7.1 Intlk02, Intlk04, Intlk08, Intlk16

7.1.1 Interlock views

Intlk02, Intlk04, Intlk08, Intlk16 views

The interlock views provides information on the following:

- Interlock blocks Standard view (Page 249)
- Interlock blocks Preview (Page 254)

7.1.2 Interlock blocks Standard view

Standard view of Interlock blocks (Intlk02, Intlk04, Intlk08, Intlk16)

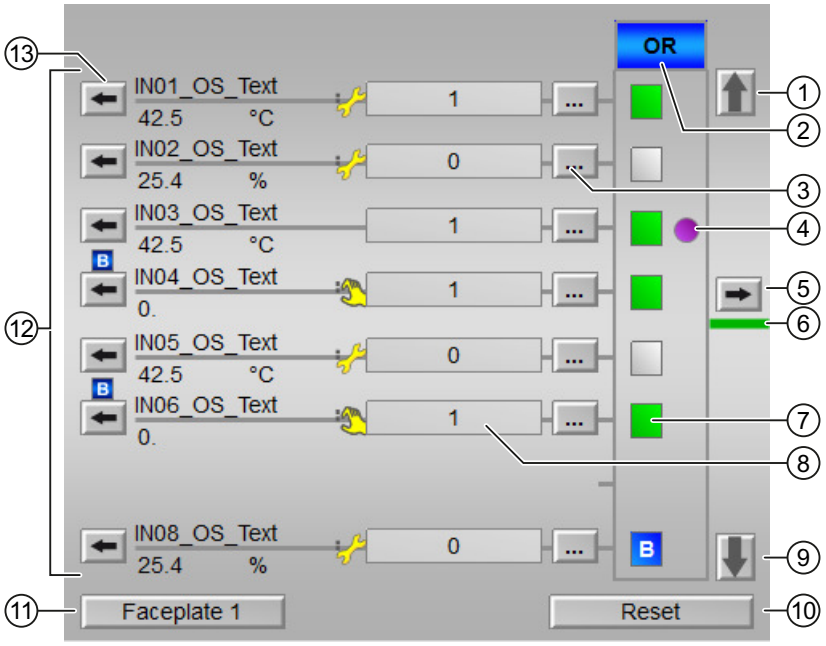
The number of displayed input values depends on the interlock block you have selected.

The operation and function are identical for all interlock blocks and do not depend on the number of input values.

Note

Intlk16

The Interlock block Intlk16 has two additional buttons for switching between the input values 1 to 8 and 9 to 16.



The Interlock blocks' Standard view consists of the following areas:

(1), (9) Switching between the input values 1 to 8 and 9 to 16 (for Intlk16 only)

(2) Status of the output signal of the interlock block

(3) Exclude input values

(4) "First in" status display

(5) Open faceplate of the output value

(6) Status of the block output

(7) Display the status for further processing

(8) Display of input values with signal status

(9) Switching input values

(10) "Reset" the settings for further processing

(11) Navigation button for switching to the standard view of any faceplate

(12) Displaying analog input values

(13) Open faceplate of the input value

(1), (9) Switching between the input values 1 to 8 and 9 to 16 (for Intlk16 only)

The button (1) or (9) is displayed depending on the view you are in. These buttons are only available for the Intlk16 block.

The Intlk16 block provides two views:

- First view: the input values 1 to 8 are made available in the area (12).
- Second view: the input values 9 to 16 are made available in the area (12).

You can use the button (1) or (9) to switch between the two views.

(2) Status of the output signal of the interlock block

This area (2) shows the status of the output signal of the interlock block.

Color of the field	**Logic**	
	AND	**OR**
Gray	Block is not used	
Blue	Excluded (Bypass)	
Yellow	Simulated	
Red	Interlocked	
Green	Not interlocked	

(3) Exclude input values

You can use the button (3) to exclude input values from processing. This button is indicated with three dots [...], as displayed in the standard view. Depending on the previous setting, you can "Set" or "Reset" this property.

If the input value has been excluded, the following symbol appears in field (8):

Follow the steps given below to exclude input values in the Interlock block:

1. In the Interlock block, click [...] bypass button (indicated as button (3) in standard view) to set or reset this property.
2. In the operating window displayed below the faceplate, click "Set" button to set this property.
3. Next, click "OK" to confirm or accept the changes.
4. If the input value has already been set, you can reset the specific input value.
   Click the [...] bypass button and click "Reset" button in operating window.
5. Confirm the changes by clicking the "OK" button. The property will be thus reset.

(4) "First in" status display

The following symbol is displayed next to an input value, if this input value has caused the last output signal to change from 1 to 0 (good state to locked):

Note

This function can only be executed in the faceplate with "process control" operating permission.

(5) Open faceplate of the output value

When you press the button (5), you can open the faceplate associated with the output value.

(6) Status of the block output

The line color indicates the status of the block output:

Color of the line	Output status
Green	Output is enabled
White	Output is disabled

(7) Display the status for further processing

The symbol below the output signal indicated with (7), as shown in standard view, depicts the status for further processing of input values. For each input value, a symbol in the shape of a rectangular icon is displayed, which contains a specifically filled color. The rectangle icon with its specific color and description is displayed in the following table:

Icon	Further processing
	The input value is processed further with value 1
	The input value is processed further with value 0
	The input value is excluded from further processing

(8) Display of input values (BOOL) with signal status (in front of the field)

These fields show the interlock information associated with the analog value (13) with a signal status:

- 1 = "Good" state
- 0 = "Locked"

(9) Switching input values

Read point (1) for this.

(10) "Reset" the settings for further processing

When you press the button (10), you can "Reset" all input values:

- "Reset exclusions": the exclusions of the input values are reset.
- "Reset first-in": First-in detection / status display (4) is reset.

Note

The First-in (initial) signal can be reset using the reset button (10).

(11) Navigation button for switching to the standard view of any faceplate

Use this navigation button to open the standard view of a block.

(12) Displaying analog input values

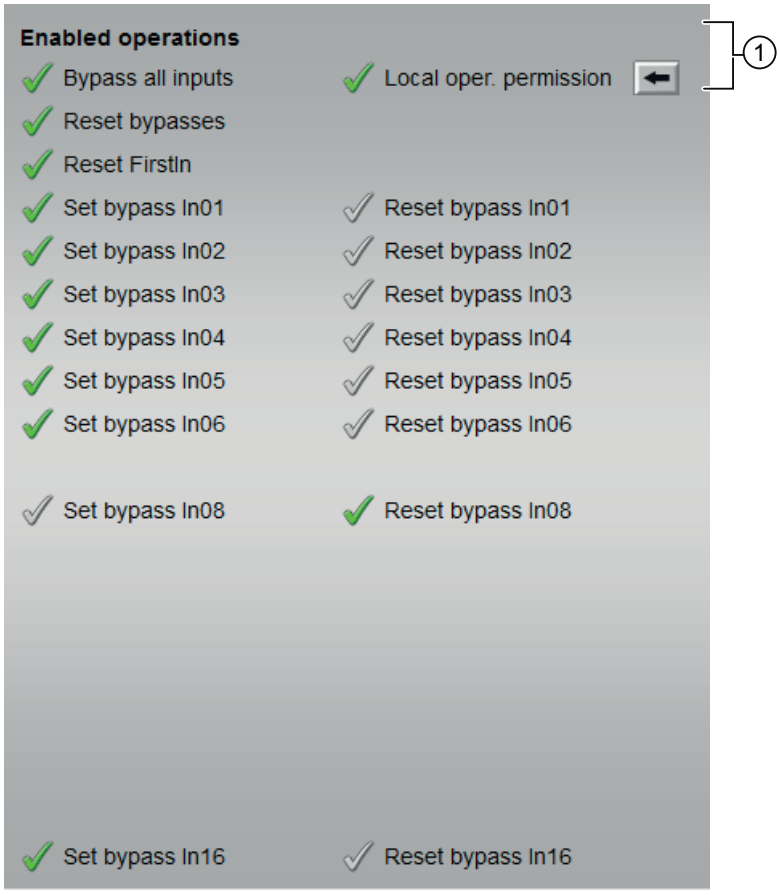
The interconnected analog input values (AVxx) are displayed in this area.

(13) Open faceplate of the input value

When you press the button (13), you can open the faceplate associated with each input value.

7.1.3 Interlock blocks Preview

Preview of Interlock blocks



With respect to the screenshot shown above, the Interlock block preview consists of the following areas:

(1) Enabled operations

(1) Enabled operations

This area displays all operations for which special operator control permissions are assigned.

Icons for enabled operations:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator control permissions.

The following enabled operations are displayed here:

- "Local operating permission": Use the ← button to switch to the standard view of the OpStations block.

Counter blocks

8

8.1 CountScL - Counter with up and down counting direction

8.1.1 CountScL views

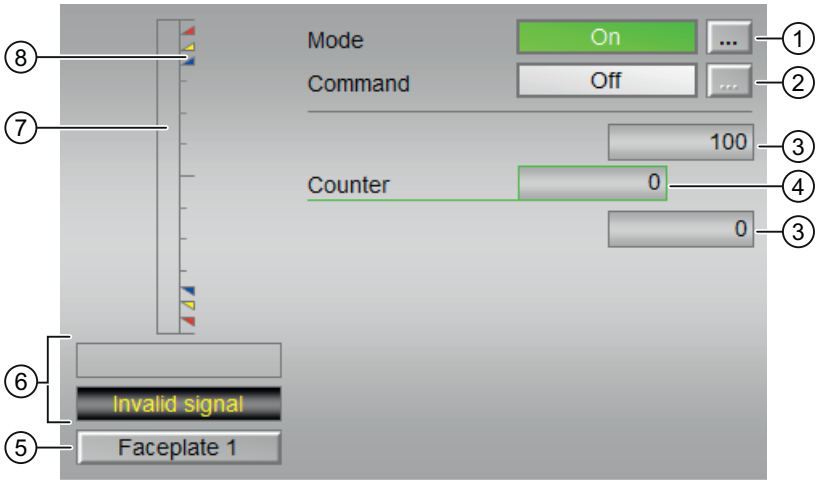
CountScL views

The CountScL views provides information on the following:

- CountScL standard view (Page 257)
- Alarm view (Page 450)
- CountScL Limit view (Page 263)
- Trend view (Page 456)
- CountScL Parameter view (Page 262)
- CountScL Preview (Page 261)
- Memo view (Page 453)
- Batch view (Page 452)

8.1.2 CountScL Standard view

Standard view of CountScL



The CountScL Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Enabling and disabling the counter

(3) High and low scale range for the count value

(4) Display of the count value

(5) Navigation button for switching to the standard view of any faceplate

(6) Display area for block state

(7) Graphic display of the current count value

(8) Limit display

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. The following operating modes can be displayed within this block:

1. On
2. Out of service

1. On mode: The "On" operating mode is an indication to the operator that the block algorithm is being processed. This operating mode is only available for blocks that have faceplates which do not have the following operating modes:
   - Manual mode or
   - Automatic mode or
   - Local mode

   The On mode can be activated within the faceplate by clicking the [...] button. The block must be in the "Out of service" operating mode for this to be possible.
2. Out of service mode: The "Out of service" operating mode is available to all blocks that have an operating mode switch over and a direct connection to the process (with a connection to a process tag, for example).
   The out of service operating mode is intended for purposes of maintenance and servicing (replacing the device, for example). All of the block's functions are disabled. No incoming or outgoing messages are received or generated. The only function still possible is an operating mode switch over.
   The prerequisite for switching to this operating mode is that the block is in "On" mode.

(2) Enabling and disabling the counter

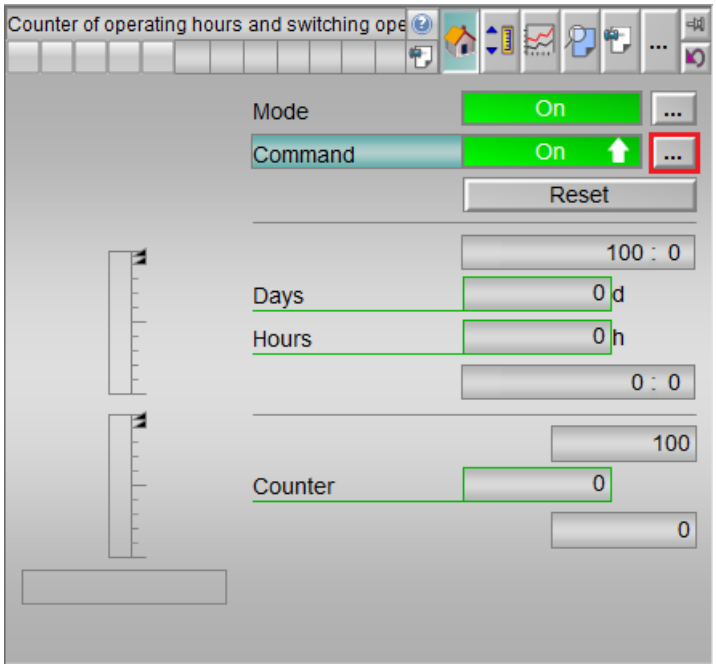
This area displays the operating state for the counter. The following list of operating states can be displayed and executed in this block:

- "On ⇑"
- "On ⇓"
- "Off"

Enabling the counter

Follow the steps provided below to enable the counter:

1. In the faceplate, select the required state ("On ⇑" or "On ⇓") for enabling the counter by clicking the [...] button.



   The operating window will be displayed as an extension of the faceplate.

2. Choose the required state from the operating window.
3. To confirm execution, select the OK button.

   The state will be thus changed, indicating the counter enabled status. This will be displayed in the faceplate.

Disabling the counter

Follow the steps provided below to disable the counter:

1. In the faceplate, select the required state for disabling the counter by clicking the [...] button. The operating window will be displayed as an extension of the faceplate.
2. Choose the required state from the operating window.
3. To confirm execution, select the OK button.
   The state will be thus changed, indicating the counter disabled state. This will be displayed in the faceplate.

(3) High and low scale range for the count value

These values provide information on the display range for the bar graph of the count.

(4) Display of the count value

This area displays the current count value.

(5) Navigation button for switching to the standard view of any faceplate

This navigation button can be used to open the standard view of a block .

(6) Display area for block state

This area provides additional information on the operating state of the block:

- "Maintenance"
- "Invalid signal"

(7) Graphic display of the current count value

This area displays the current count in the form of a bar graph.

(8) Limit display

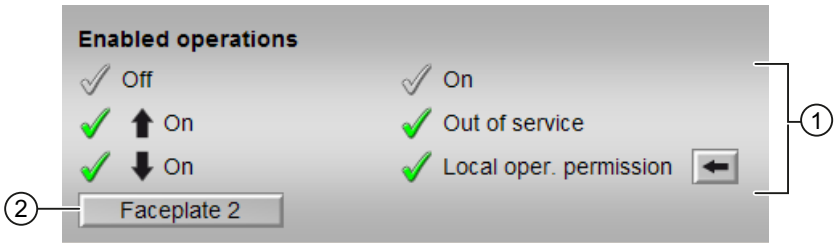
These colored triangles indicate the configured limits in the respective bar graph:

- Red: Alarm
- Yellow: Warning
- Blue: Tolerance

In counting mode "count up", only the colored triangles of the upper limits are visible. In counting mode "count down", only the colored triangles of the lower limits are vislble.

8.1.3 CountScL Preview

Preview of CountScL



(1) Enabled operations

(2) Navigation button for switching to the standard view of any faceplate

(1) Enabled operations

This area displays all operations for which special operator permissions are assigned.

Symbols for enabled oeprations:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process
- Red cross: The OS operator cannot control this parameter due to the configured AS operator control permissions.

The following enabled operations are shown here:

Actions	Descriptions
Off	You can disable the counter.
On ⇑	You can operate the incremental counter.
On ⇓	You can operate the decremental counter.
On	You can switch to "On" operating mode.
Out of service	You can switch to "Out of service" operating mode.
Local operator permission	Use the ← button to switch to the standard view of the OpStations block.

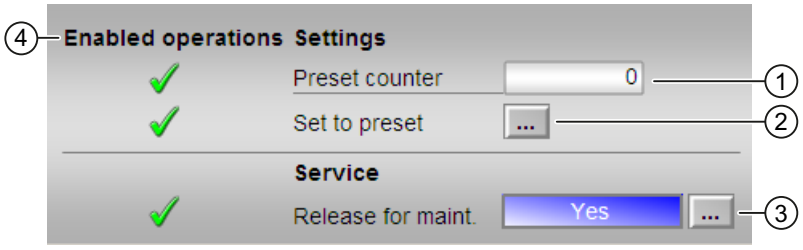
(2) Navigation button for switching to the standard view of any faceplate

Use this navigation button to reach the standard view of a block.

8.1.4 CountScL Parameter view

Parameter view of CountScL

The parameter view of CountScL consists of the following:



(1) Preset counter

(2) Set to default

(3) Service

(4) Enabled operations

(1) Preset counter

Enter the default setting here, where the counter should start.

(2) Set to default

Set the counter to the default value here.

(3) Service

You can select the following function in this area:

- "Release for maintenance"

(4) Enabled operations

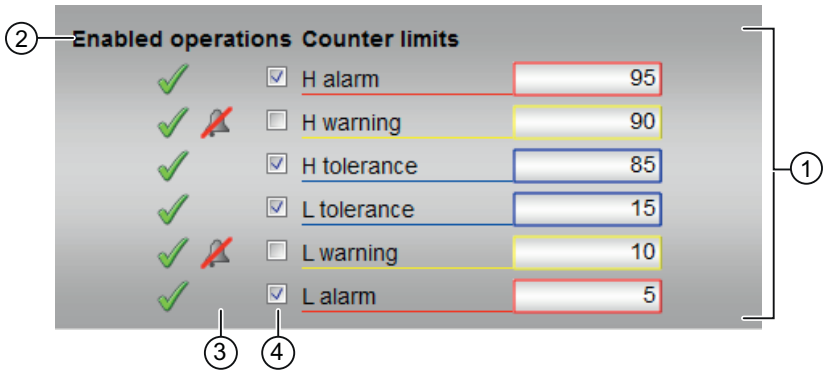
This area shows all operations for which special operator control permissions are assigned.

Icons enabled for these operations:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator control permissions.

8.1.5 CountScL Limit view

Limit view of CountScL



The Limit View consists of the following:

(1) Limits for the counter

(2) Enabled operation

(3) Message suppression

(4) Suppress messages

(1) Limits for the counter

In this area, you can enter the limits for the counter.

You can change the following limits:

- "H alarm": Alarm high
- "H warning": Warning high
- "H tolerance": Tolerance high
- "L tolerance": Tolerance low
- "L warning": Warning low
- "L alarm": Alarm low

(2) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

(3) Message suppression

Message suppression indicates whether or not the suppression of the associated message inthe AS block is activated with the xx_MsgEn parameter. The output of messages is not suppressed when the block is installed (all xx_MsgEn parameters are preset to 1). Messages can only be output if limit monitoring of the additional analog value has been enabled.

(4) Suppress messages

You can enable / disable messages by setting the check mark.

8.2 CountOh - Determining runtime

8.2.1 CountOh views

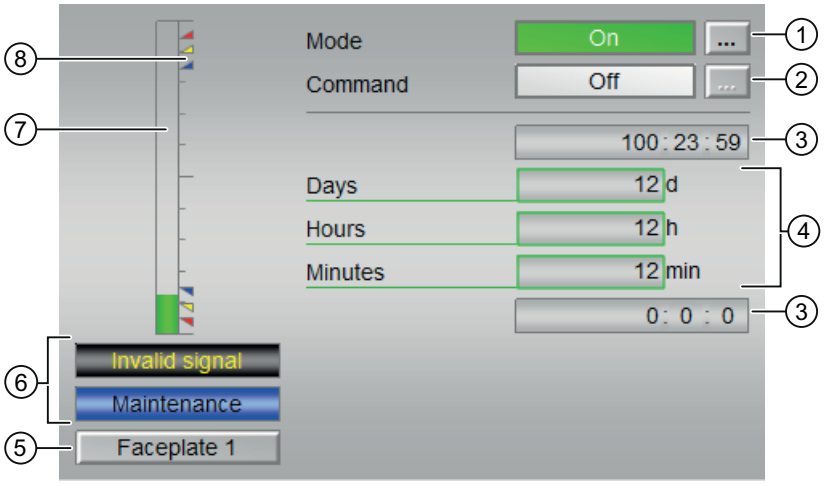
CountOh views

The CountOh views provides information on the following:

- CountOh Standard view (Page 265)
- Alarm view (Page 450)
- CountOh Limit view (Page 270)
- Trend view (Page 456)
- CountOh Parameter view (Page 269)
- CountOh Preview (Page 268)
- Memo view (Page 453)
- Batch view (Page 452)

8.2.2 CountOh Standard view

Standard view of CountOh



The CountOh Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Enabling and disabling the counter

(3) High and low scale range for the count value

(4) Displaying the counts values

(5) Navigation button for switching to the standard view of any faceplate

(6) Display area for block states

(7) Graphic display of the current count value

(8) Limits

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode.

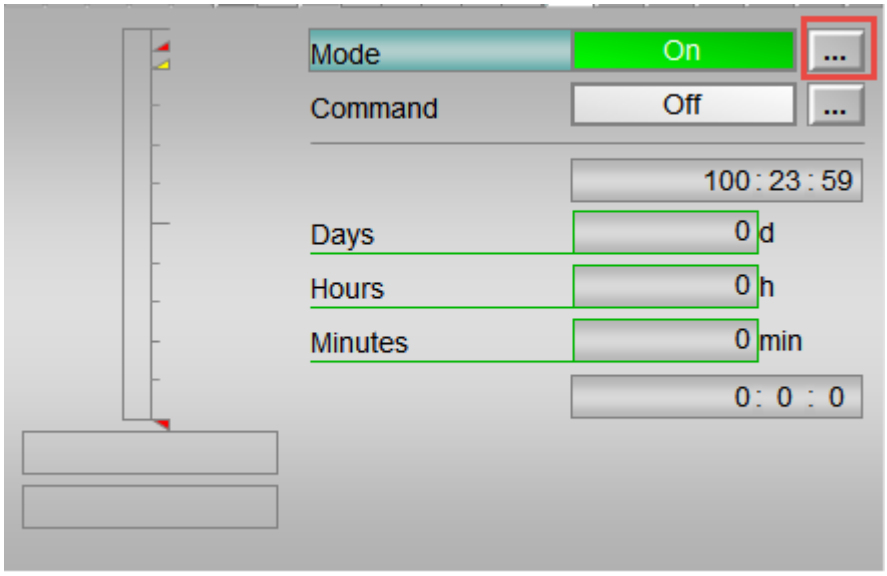
In this block, the following operating modes are available:

1. On mode
2. Out of service mode

Switching operating modes

Follow these steps to set the block to a particular mode or to switch between the different operating modes:

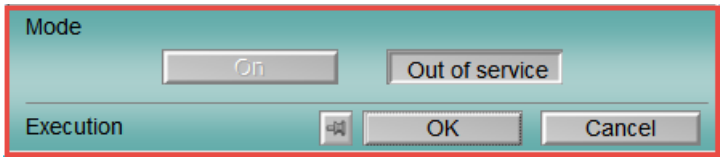
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.
4. If acknowledgement is required, click "OK".
   The block will be switched to the selected operating mode.



(2) Enabling and disabling the counter

This area shows you the default operating state for the counter.

The following states can be shown and executed here:

- "On ⇑"
- "On ⇓"
- "Off"

(3) High and low scale range for the count value

These values provide information on the display range for the bar graph (5) of the count value.

(4) Displaying the counts values

The following counts are shown here:

- "Days"
- "Hours"
- "Minutes"

(5) Navigation button for switching to the standard view of any faceplate

Use this navigation button to open the standard view of a block configured.

(6) Display area for block states

This area provides the following additional information on the operating state of the block:

- "Maintenance"
- "Invalid signal"

(7) Graphic display of the current count value

This area shows you the current count in the form of a bar graph.

(8) Limits

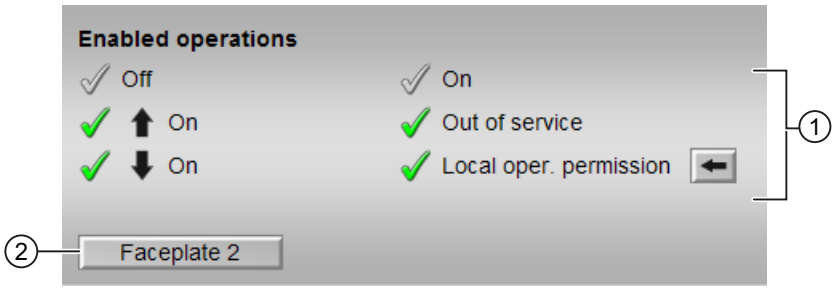
These colored triangles indicate the configured limits in the respective bar graph:

- Red: Alarm
- Yellow: Warning
- Blue: Tolerance

In counting mode "count up", only the colored triangles of the upper limits are visible. In counting mode "count down", only the colored triangles of the lower limits are visible.

8.2.3 CountOh Preview

Preview of CountOh



With respect to the screenshot shown above, the CountOh preview consists of the following areas:

(1) Enabled operations

(2) Navigation button for switching to the standard view of any faceplate

(1) Enabled operations

This area shows all operations for which special operator control permissions are assigned. They depend on the configuration in the engineering system that applies to this block.

Symbols for enabled operations:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator control permissions

The following enabled operations are displayed in the faceplate area:

Action	Description
Off	You can disable the counter.
On ⇑	You can operate the incremental counter.

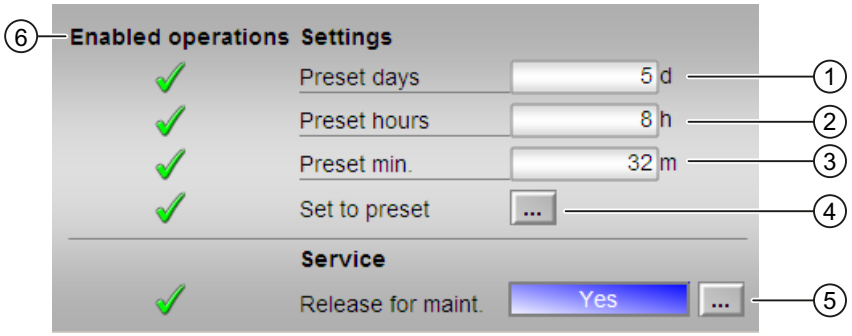
Action	Description
On ⇓	You can operate the decremental counter.
On	You can switch to "On" operating mode.
Out of service	You can switch to "Out of service" operating mode.
Local operating permission	Use the ← button to switch to the standard view of the OpStations block.

(2) Navigation button for switching to the standard view of any faceplate

This display is only visible when the corresponding block input is connected.

8.2.4 CountOh Parameter view

Parameter view of CountOh



The Parameter view consists of the following:

(1), (2), and (3) Preset counter

(4) Set to default

(5) Service

(6) Enabled operations

(1), (2), and (3) Preset counter

Enter the default setting here, where the counter should start.

You can change the following presets:

- "Days"
- "Hours"
- "Minutes"

(4) Set to preset

Set the counter to the default value here.

(5) Service

You can select the following function in this area:

- "Release for maintenance"

(6) Enabled operations

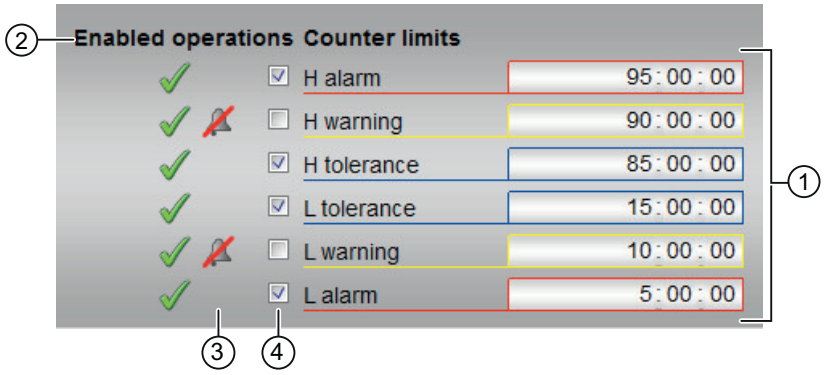
This area shows all operations for which special operator control permissions are assigned.

Icons for enabled operations:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator control permissions

8.2.5 CountOh Limit view

Limit view of CountOh



The limit view of CountOh consists of the following:

(1) Limits for the counter

(2) Enabled operation

(3) Message suppression

(4) Suppress messages

(1) Limits for the counter

You can change the following limits:

- "H alarm": Alarm high
- "H warning": Warning high
- "H tolerance": Tolerance high
- "L tolerance": Tolerance low
- "L warning": Warning low
- "L alarm": Alarm low

(2) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons enabled for these operations:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions

(3) Message suppression

Message suppression indicates whether or not the suppression of the associated message in the AS block is activated with the xx_MsgEn parameter. The output of messages is not suppressed when the block is installed (all xx_MsgEn parameters are preset to 1). Messages can only be output if limit monitoring of the additional analog value has been enabled.

(4) Suppress messages

You can enable / disable messages by setting the check mark.

8.3 TotalL - Additive counter with upward or downward counting direction

8.3.1 TotalL views

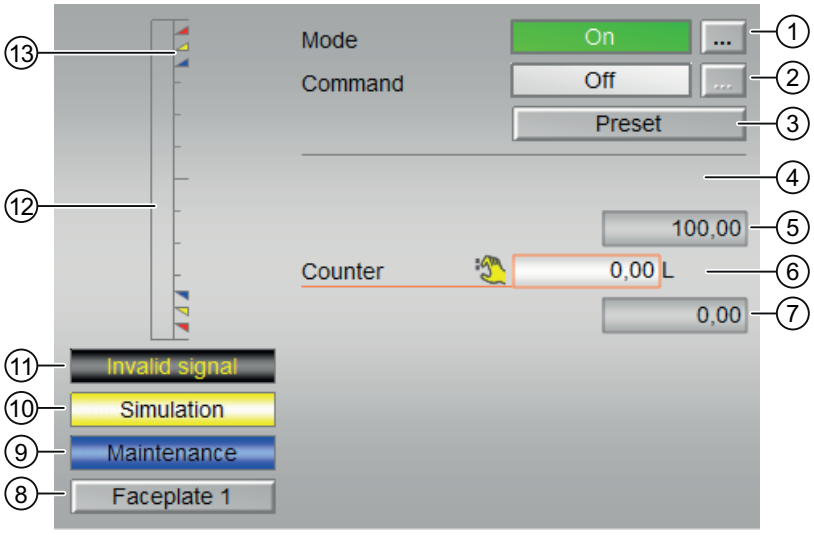
TotalL views

The TotalL views provides information on the following:

- TotalL Standard view (Page 272)
- Alarm view (Page 450)
- TotalL limit view (Page 279)
- Trend view (Page 456)
- TotalL Parameter view (Page 277)
- TotalL Preview (Page 276)
- Memo view (Page 453)
- Batch view (Page 452)

8.3.2 TotalL Standard view

Standard view of TotalL



The TotalL Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Enabling and disabling the counter

(3) Default setting

(4) Display of the count value

(5) High scale range for the count value

(6) Display of the count value

(7) Low scale range for the count value

(8) Navigation button for switching to the standard view of any faceplate

(9) Display area for block states

(10) Display area for block states

(11) Display area for block states

(12) Graphic display of the current count value

(13) Limit display

(1) Displaying and switching the operating mode

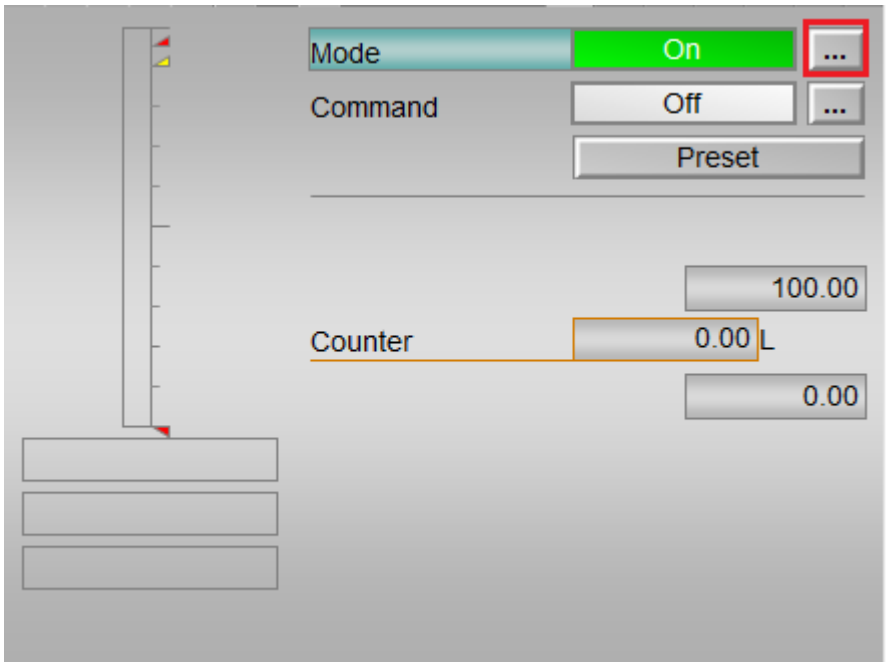
This area provides information on the currently valid operating mode. In this block, the following operating modes are available:

1. On mode
2. Out of service mode

Switching operating modes

Follow these steps to set the block to a particular mode or to switch between the different operating modes:

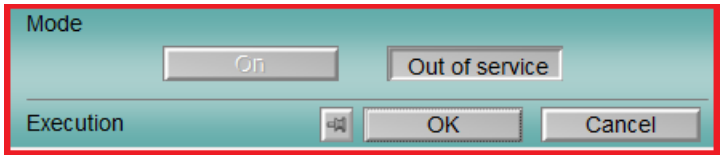
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.
4. If acknowledgement is required, click "OK".



5. The block will be switched to the selected operating mode.

(2) Enabling and disabling the counter

This area shows you the default operating state for the counter. The following states can be shown and executed here:

- "On ⇑"
- "On ⇓"
- "Off"

(3) Default setting

Operation of the input RstOp.

This button activates the preset value.

(4) Display of the count value

The current count values are displayed here.

(5) High scale range for the count value

This value provides information on the display range for the bar graph (above) of the count value.

(6) Display of the count value

The current count values are displayed here.

(7) Low scale range for the count value

This value provides information on the display range for the bar graph (below) of the count value.

(8) Navigation button for switching to the standard view of any faceplate

Use this navigation button to open the standard view of a block.

(9), (10) and (11) Display area for block states

This area provides additional information on the operating state of the block:

- "Maintenance"
- "Simulation"
- "Invalid signal"

(12) Graphic display of the current count value

This area shows you the current count in the form of a bar graph.

(13) Limit display

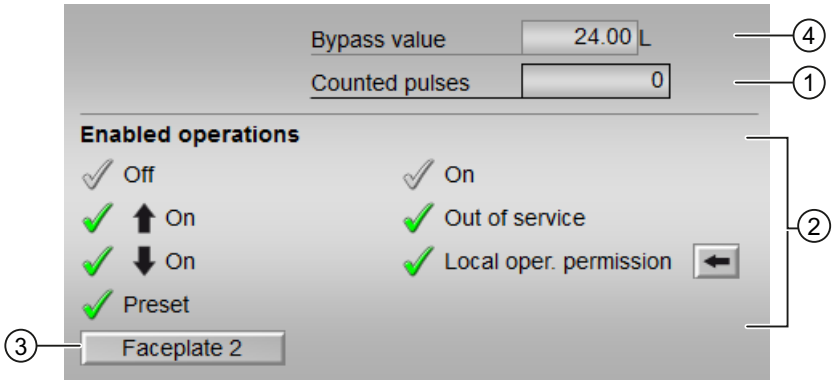
These colored triangles indicate the configured limits in the respective bar graph:

- Red: Alarm
- Yellow: Warning
- Blue: Tolerance

In counting mode "count up", only the colored triangles of the upper limits are visible. In counting mode "count down", only the colored triangles of the lower limits are visible.

8.3.3 TotalL Preview

Preview of TotalL



(1) Counted pulses

(2) Enabled operations

(3) Navigation button for switching to the standard view of any faceplate

(4) Bypass value

(1) Counted pulses

The number of pulses already counted is displayed in this area.

(2) Enabled operations

This area displays all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions.

The following enabled operations are displayed in the faceplate area:

Action	Description
Off	You can disable the counter.
On ⇑	You can operate the incremental counter.
On ⇓	You can operate the decremental counter.
Default	You can change the default setting.

Action	Description
On	You can switch to "On" operating mode.
Out of service	You can switch to "Out of service" operating mode.
Local operating permission	Use the ← button to switch to the standard view of theOpStations block.

(3) Navigation button for switching to the standard view of any faceplate

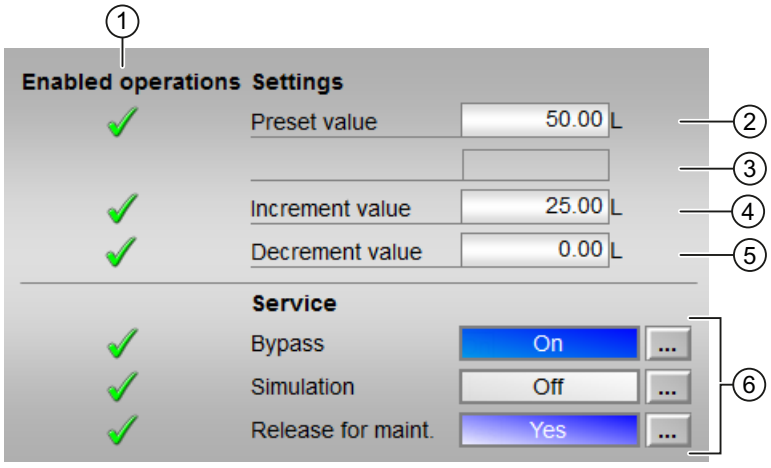
Use this navigation button to open the standard view of a block.

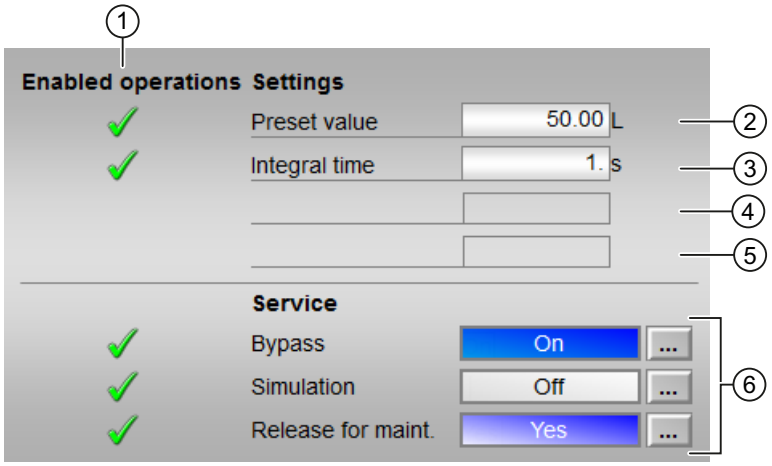
(4) Bypass value

This area displays the bypass value

8.3.4 TotalL Parameter view

Parameter view of TotalL





The Parameter view consists of the following:

(1) Enabled operations

(2) Default value

(3) Integral time

(4) Increment value

(5) Decrement value

(6) Service

(1) Enabled operations

This area shows all operations for which special operator control permissions are assigned.

Icons for enabled operations:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator control permissions.

(2) Default value

In this section you can enter the value from which the counting should begin.

(3) Integral time

The current integral time in seconds, is displayed in this area.

(4) Increment value

The increment value is displayed in this area.

(5) Decrement value

The decrement value is displayed in this area.

(6) Service

You can select the following functions in this area:

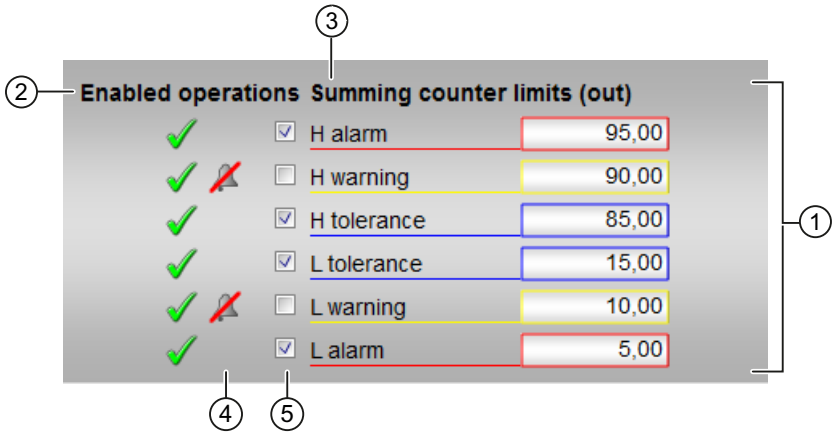
- "Bypass"
- "Simulation"
- "Release for maintenance"

8.3.5 TotalL Limit view

Limit view of TotalL

You can specify the process value limits in this view:

The toolbars of the faceplate and the block icon indicate when the limits are reached or violated.



The limit view of TotalL consists of the following:

(1) Limits for the counter

(2) Enabled operations Summing counter limits (out)

(3) Dynamic text

(4) Message suppression

(5) Suppress messages

(1) Limits for the counter

In this area, you can enter the limits for the counter.

You can change the following limits:

- "H alarm": Alarm high
- "H warning": Warning high
- "H tolerance": Tolerance high
- "L tolerance": Tolerance low
- "L warning": Warning low
- "L alarm": Alarm low
  Format and unit is like the Out display in the standard view.

(2) Enabled operation Summing counter limits (out)

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: The OS operator can control this parameter
- Gray check mark: The OS operator cannot control this parameter at this time due to the process
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions.

(3) Dynamic text

Depending on Feature Bit 6, the text is switched:

- "Integrator limits (out)": Display for Feature Bit 6 = 1
- "Summer limits (out)": Display for Feature Bit 6 = 0

(4) Message suppression

Message suppression indicates whether or not the suppression of the associated message in the AS block is activated with the xx_MsgEn parameter. The output of messages is not suppressed when the block is installed (all xx_MsgEn parameters are preset to 1). Messages can only be output if limit monitoring of the additional analog value has been enabled.

(5) Suppress messages

You can enable / disable messages by setting the check mark.

8.4 CntOhSc - Runtime determination and counters with counting

8.4.1 CntOhSc views

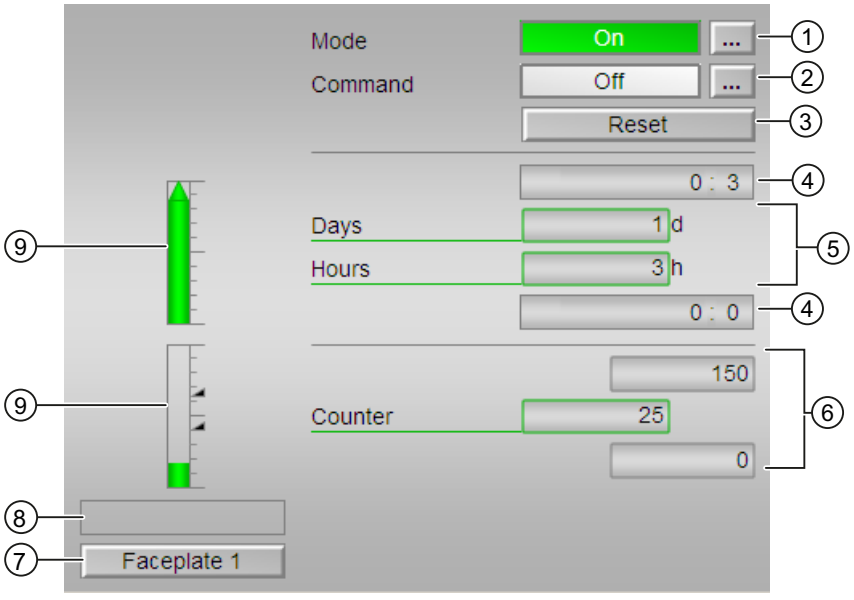
CntOhSc views

The CntOhSc views provides information on the following:

- CntOhSc Standard view (Page 281)
- CntOhSc Limit view (Page 286)
- CntOhSc Preview (Page 285)
- Memo view (Page 453)
- Trend view (Page 456)

8.4.2 CntOhSc Standard view

Standard view of CntOhSc



The CntOhSc Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Enabling and disabling the counter

(3) Reset

(4) High and low scale range for the count value

(5) Display for counts

(6) Counter

(7) Navigation button for switching to the standard view of any faceplate

(8) Display area for block states

(9) Graphic display for the current count

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. In this block, the following operating modes are available:

1. On mode
2. Out of service mode

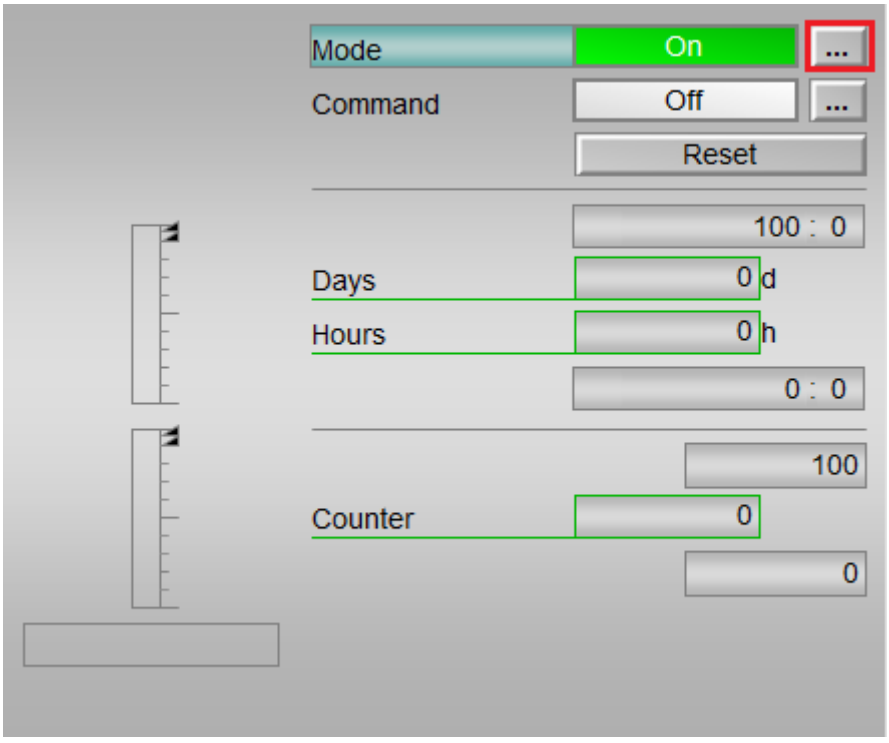
On mode: The "On" operating mode is used for switching on the output. The operating mode is a clear indication that the block algorithm is being processed. The "On" mode can only be activated by using the control on the faceplate block. The block must be in "Out of service" mode for this to be possible. This operating mode is only available for blocks that have faceplates which do not provide support for manual, automatic, or local operating modes.

Out of service mode: This operating mode is available to all blocks that have an operating mode switchover and a direct connection to the process (with a connection to a process tag, for example). The out of service operating mode is intended for the purpose of maintenance and servicing. All of the block's functions are disabled. No incoming or outgoing messages are generated or received. The only function still possible is an operating mode switchover.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

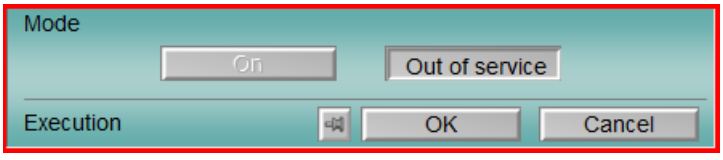
1. Ensure the faceplate containing the respective block is open.
2. Click the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.
4. If acknowledgement is required, click "OK".
   The block will be switched to the selected operating mode.



(2) Enabling and disabling the counter

This area displays the operating state for the counter. The following list of operating states can be displayed and executed in this block:

- "On ⇑"
- "On ⇓"
- "Off"

Enabling the counter

Follow the steps provided below to enable the counter:

1. In the faceplate, select the required state ("On ⇑ ") for enabling the counter by clicking the [...] button. The operating window will be displayed as an extension of the faceplate.
2. Choose the required state from the operating window.
3. To confirm execution, click "OK".
   The state will thus be changed, indicating the counter enabled status. This will be displayed in the faceplate.

Disabling the counter

Follow the steps provided below to disable the counter:

1. In the faceplate, select the required state for disabling the counter by clicking the [...] button. The operating window will be displayed as an extension of the faceplate.
2. Choose the required state from the operating window.
3. To confirm execution, click "OK".
   The state will thus be changed, indicating the counter disabled state. This will be displayed in the faceplate.

(3) Resetting the block

Click "Reset" button in faceplate to reset the interlocks or errors.

(4) High and low scale range for the count value

These values provide information on the display range for the count's bar graph.

(5) Display for counts

This area displays the counts (in numbers) of the following:

- Days
- Hours

(6) Counter

This area displays the current count value and high and low scale range for the count.

(7) Navigation button for switching to the standard view of any faceplate

Use this navigation button to reach the standard view of a block.

(8) Display area for block states

This area provides additional information on the operating state of the block:

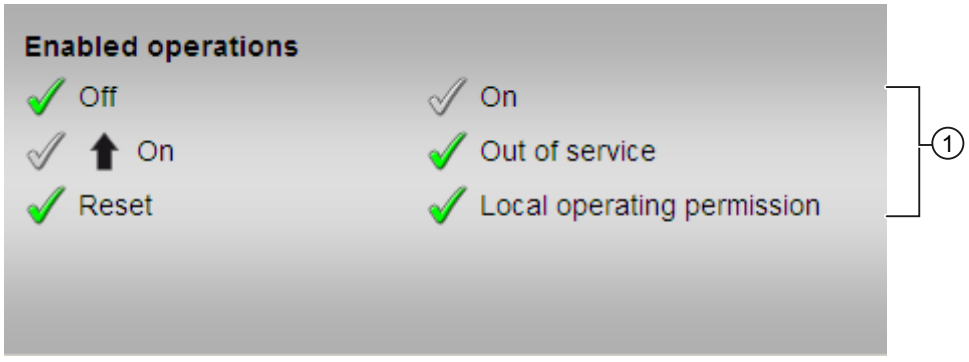
- "Invalid signal"

(9) Graphic display of the current count value

This area displays the current count in the form of a bar graph.

8.4.3 CntOhSc Preview

Preview of CntOhSc



The CntOhSc preview consists of the following area:

(1) Enabled operations

(1) Enabled operations

This area displays all operations for which special operator permissions are assigned.

Icons for enabled operation:

Green check mark: the OS operator can control this parameter.

Gray check mark: the OS operator cannot control this parameter at this time due to the process.

Red cross: the OS operator cannot control this parameter due to the configured AS operator-control permissions.

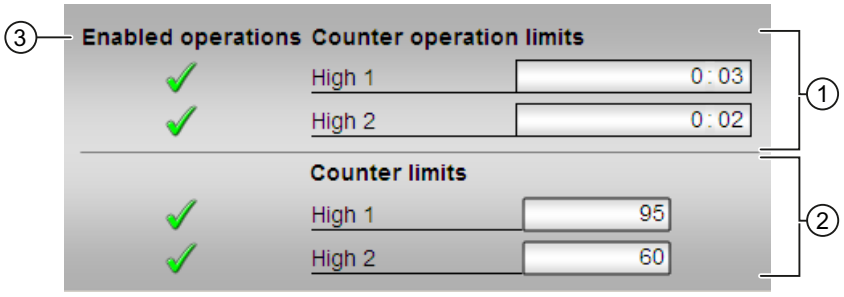
The following enabled operations are displayed in the faceplate area:

Action	Description
Off	You can disable the counter.
On ⇑	You can operate the counter.
Reset	You can reset the counter after interlocks or errors.
On	You can switch to "On" operating mode.

Action	Description
Out of service	You can switch to "Out of service" operating mode.
Local operating permission	Use the ← button to switch to the standard view of the OpStations block.

8.4.4 CntOhSc Limit view

Limit view of CntOhSc



The CntOhSc Limit view consists of the following areas:

(1) Operating hours limits

(2) Counter limits

(3) Enabled operation

(1) Operating hours limits

In this area, you can enter the limits for the operating hours.

You can change the following limits:

- "High 1": Operating hours high limit 1
- "High 2": Operating hours high limit 2

(2) Counter limits

In this area, you can enter the limits for the counter.

You can change the following limits:

- "High 1": Counter high limit 1
- "High 2": Counter high limit 2

(3) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator-control permissions.

Controller blocks

9

9.1 ConPerMon - Monitoring of the control performance of control loops

9.1.1 ConPerMon views

ConPerMon views

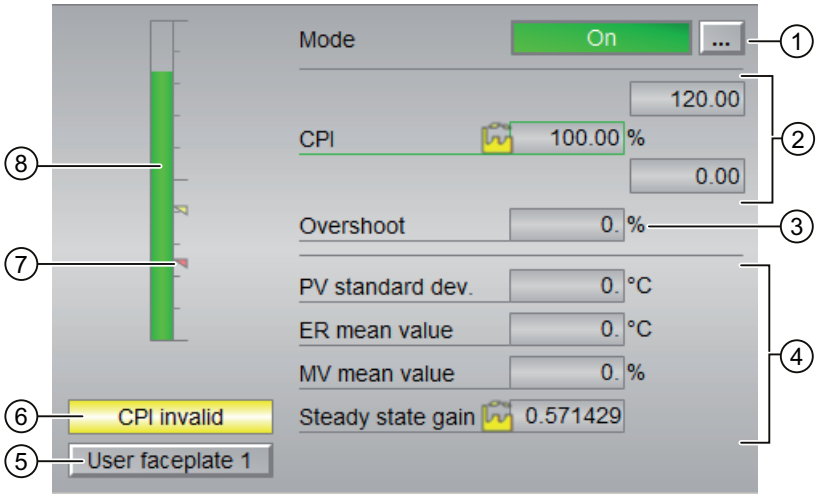
The ConPerMon views provides information on the following:

- ConPerMon Standard view (Page 289)
- Alarm view (Page 450)
- ConPerMon Limit view (Page 293)
- Trend view (Page 456)
- ConPerMon Parameter view (Page 295)
- ConPerMon Preview (Page 292)
- Memo view (Page 453)
- Batch view (Page 452)
- ConPerMon Setpoint view (Page 296)

9.1.2 ConPerMon Standard view

Standard view of ConPerMon

The image shown below provides the standard view of the ConPerMon block:



The ConPerMon standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Display area for control performance

(3) Display area for the overshoot

(4) Display area for the static evaluation of the current time window (TimeWindow)

(5) Navigation button for switching to the standard view of any faceplate

(6) Display for CPI valid / CPI invalid

(7) Limit display

(8) Bar graph for control performance index

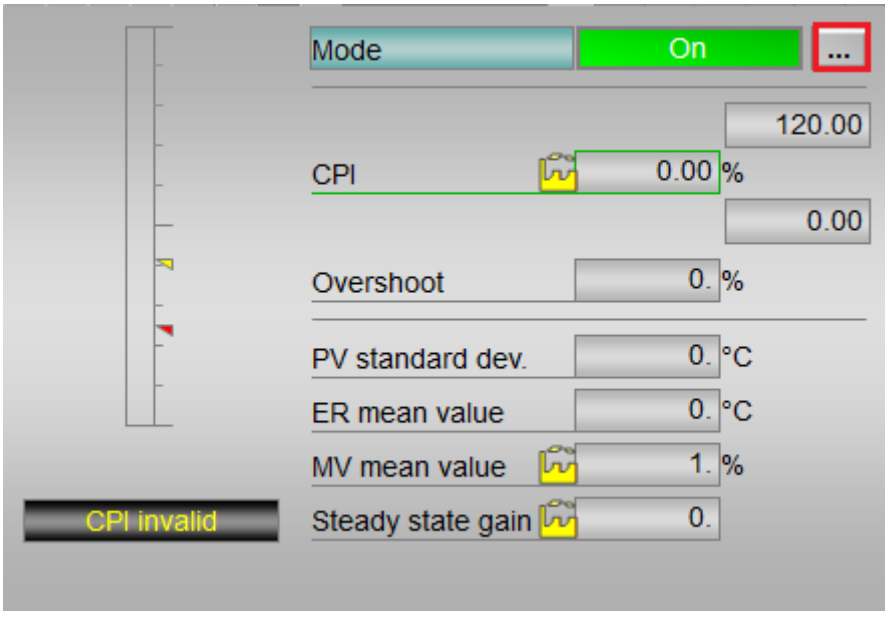
(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. The following operating modes are supported:

1. On mode
2. Out of service mode

1. On mode: The "On" operating mode is an indication to the operator that the block algorithm is being processed. This operating mode is only available for blocks that have faceplates which do not have the following operating modes:
   - Manual mode or
   - Automatic mode or
   - Local mode

   The On mode can be activated within the faceplate by clicking the [...] button. The block must be in the "Out of service" operating mode for this to be possible.



2. Out of service mode: The "Out of service" operating mode is available to all blocks that have an operating mode switch over and a direct connection to the process (for example, with a connection to a process tag).
   The out of service operating mode is intended for purposes of maintenance and servicing (for example, replacing the device). All of the block's functions are disabled. No incoming or outgoing messages are received or generated. The only function still possible is an operating mode switch over.
   The prerequisite for switching to this operating mode is that the block is in "On" mode.

.

(2) Display area for control performance

This area shows the current control performance index.

(3) Display area for the overshoot

This area shows you the relative overshoot based on a step change [%].

(4) Display area for the static evaluation of the current time window (TimeWindow)

This area shows you the statistical evaluation of the current time window. The following values are evaluated:

- "PV standard dev"
- "ER mean value"
- "MV mean value":
- "Steady state gain"

(5) Navigation button for switching to the standard view of any faceplate

Use this navigation button to reach the standard view of a block configured in the Engineering Station (ES).

(6) Display for CPI valid / CPI invalid

This area shows you if the control performance index is valid or invalid:

- "CPI valid":
- "CPI invalid"

(7) Limit display

These colored triangles show you the configured limits in the respective bar graph.

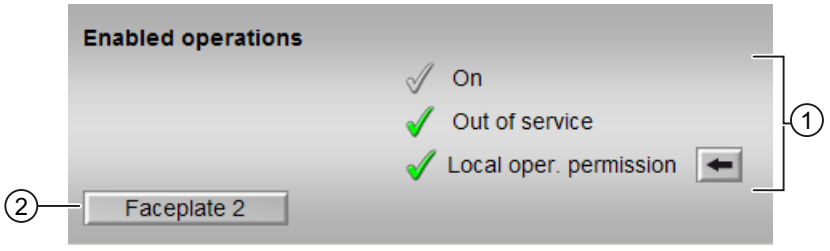
(8) Bar graph for control performance index

This area shows you the current CPI control performance index in the form of a bar graph

9.1.3 ConPerMon Preview

Preview of ConPerMon

The preview of ConPerMon is as shown in the figure:



The preview of ConPerMon consists of the following:

(1) Enabled operations

(2) Navigation button for switching to the standard view of any faceplate

(1) Enabled operations

This area shows all operations for which special operator control permissions are assigned.

Symbols for enabled operations:

- Green check mark: the OS operator can control this parameter.
- Gray check mark: the OS operator cannot control this parameter at this time due to the process.
- Red cross: the OS operator cannot control this parameter due to the configured AS operator control permissions.

The following enabled operations are shown here:

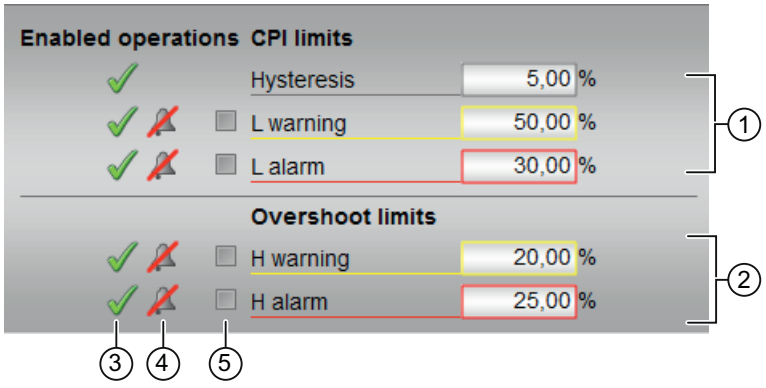
Actions	Description
On	Switch to "On" operating mode.
Out of service	Switch to "Out of service" operating mode
Local operating permission	Use the ← button to switch to the standard view of the OpStations block.

(2) Navigation button for switching to the standard view of any faceplate

Use this navigation button to reach the standard view of a block configured in the Engineering Station (ES).

9.1.4 ConPerMon Limit view

Limit view of ConPerMon



The Limit view consists of the following:

(1) CPI limits

(2) Overshoot limits

(3) Enabled operation

(4) "Message suppression/delay"

(5) Suppress messages

(1) CPI limits

In this area, you can enter the limits for the CPI control performance index.

You can change the following limits:

- "Hysteresis"
- "L warning": Warning low
- "L alarm": Alarm low

(2) Overshoot limits

In this area, you can enter the limits for the overshoot.

You can change the following limits:

- "H warning": Warning high
- "H alarm": Alarm high

(3) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons enabled for these operations:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

(4) "Message suppression/delay"

Message suppression indicates whether or not the suppression of the associated message inthe AS block is activated with the xx_MsgEn parameter. The output of messages is not suppressed when the block is installed (all xx_MsgEn parameters are preset to 1). Messages can only be output if limit monitoring of the additional analog value has been enabled.

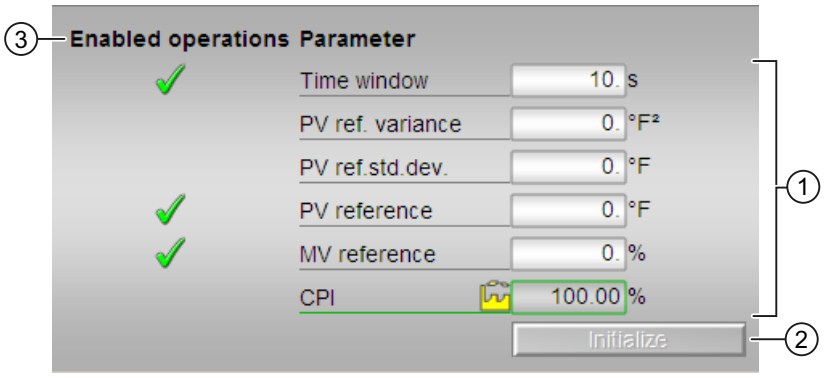
Alarm delays are also displayed in this position.

(5) Suppress messages

You can enable / disable messages by setting the check mark.

9.1.5 ConPerMon Parameter view

Parameter view of ConPerMon



The Parameter view consists of the following:

(1) Parameter

(2) Initialize button

(3) Enabled operations

(1) Parameter

In this area, you change parameters and therefore influence the controller.

You can influence the following parameters:

- "Time window": Set the time window here, in which the statical evaluation for the following values is to be performed:
  - Standard deviation of the controlled variable
  - Mean value of the control deviation
  - Mean value of the manipulated variable
  - Steady-state process gain
- "PV reference": Reference value for controlled variable
- "MV reference": Reference value of the manipulated variable

(2) Initialize button

Clicking this button initializes the block. The benchmark of the controlled variable variance and the reference values of the controlled variable and manipulated variable are measured in the steady state.

(3) Enabled operations

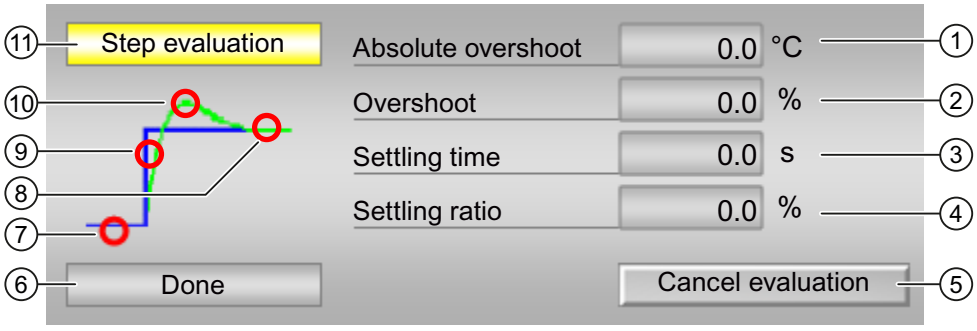
This area shows all operations for which special operator control permissions are assigned.

Icons enabled for these operations:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator control permissions.

9.1.6 ConPerMon Setpoint view

Setpoint view of ConPerMon



The setpoint view consists of the following:

(1) Absolute overshoot

(2) Overshoot

(3) Settling time

(4) Settling time ratio

(5) Cancel evaluation button

(6), (7), (8), (9) and (10): Status of the step response

(11) Display: Evaluation of the step response in progress

(1) Absolute overshoot

The absolute overshoot is given in the physical unit of the actual value.

(2) Overshoot

Output of the relative overshoot base on a step change.

(3) Settling time

Settling time of the step response in seconds.

(4) Settling time ratio

The settling time ratio is formed from the ramp time by the settling time.

(5) Cancel evaluation button

You can use the button to show the evaluation of the step response.

Note

The "Cancel evaluation" button is operable when all of the following conditions are met:

- Operator permission level = 2 (Higher-level process control)
- Parameter `OS_Perm.Bit30` = 1 (Operator can abort the evaluation of the step response)

(6), (7), (8), (9) and (10): Status of the step response

The following states are shown here:

- (6) Textual display of the states
- (7) "Idle": steady state
- (8) "Steady-state": i.e. the actual value is located within the tolerance band of the setpoint
- (9) "Rising phase": from the initial state to the first time the setpoint is reached
- (10) "Overshoot"

(11) Display: Evaluation of the step response in progress

- "Step evaluation"
- "Constant PV"

9.2 FmCont - Interface to module FM 355

9.2.1 FmCont views

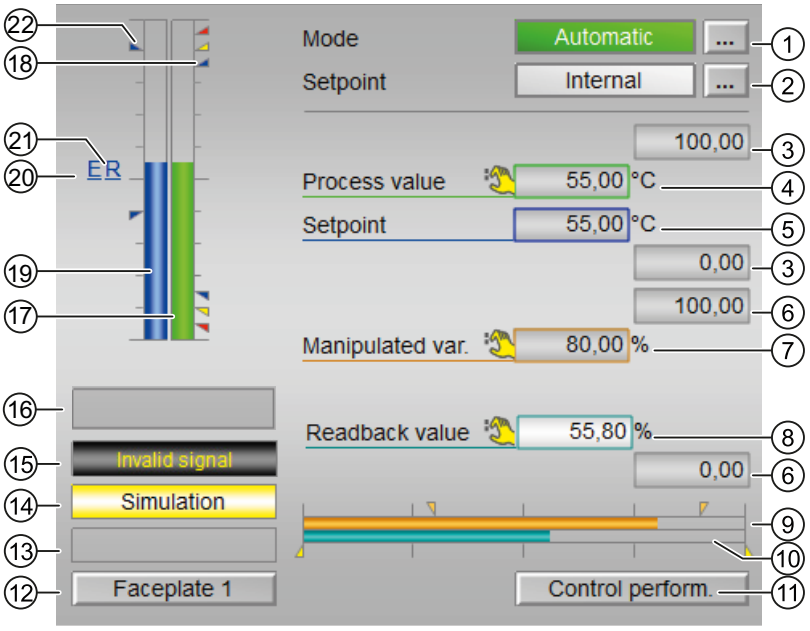
FmCont views

The FmCont views provides information on the following:

- FM controllers standard view (analog, pulse controller, and step controller with position feedback) (Page 299)
- FM controllers standard view (step controller without position feedback) (Page 303)
- Alarm view (Page 450)
- Limit view of FM controllers (Page 310)
- Trend view (Page 456)
- Ramp view (Page 457)
- Parameter view of FM controllers (Page 313)
- FM controllers Preview (Page 308)
- Memo view (Page 453)
- Batch view (Page 452)

9.2.2 FmCont Standard view (analog, pulse controller, and step controller with position feedback)

Standard view of FmCont



The FmCont Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Displaying and switching the setpoint specification

(3) High and low scale range for the process value

(4) Display of the process value including signal status

(5) Display and change the setpoint including signal status

(6) High and low scale range for the setpoint

(7) Display and change the manipulated variable including signal status

(8) Display of the position feedback including signal status

(9) Bar graph for the Manipulated variable

(10) Bar graph for position feedback

(11) Navigation button for switching to the standard view of the ConPerMon block

(12) Navigation button for switching to the standard view of any faceplate

(13), (14), (15), (16) Display area for block states

(17) Limit display

(18) Bar graph for the Process value

(19) Bar graph for the Setpoint

(20) Display of external setpoint

(21) Display for the target setpoint of the setpoint ramp

(22) Limit display for the setpoint

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode.

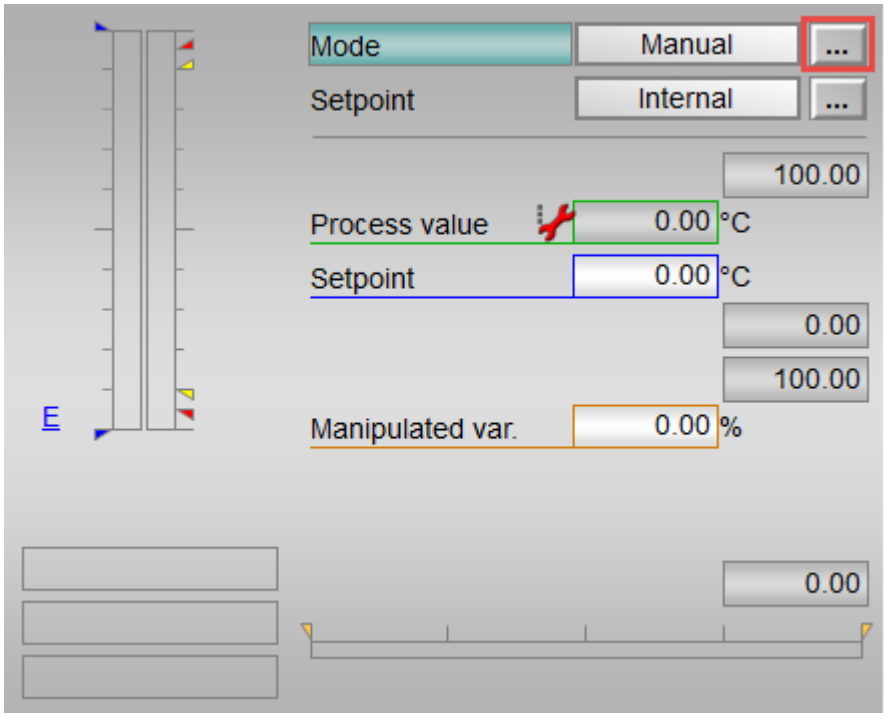
In this block, the following operating modes are available:

1. Manual mode
2. Automatic mode
3. Program mode for controllers
4. Out of service

Switching operating modes

Follow these steps to set the block to a particular mode or to switch between the different operating modes:

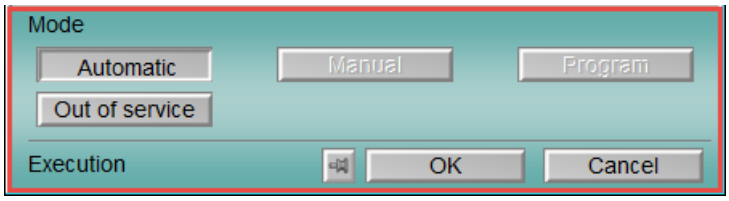
1. Ensure the faceplate containing the respective block is open.
2. Click the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.
4. If acknowledgement is required, click "OK".
   The motor will be switched to the selected operating mode.



(2) Displaying and switching the setpoint specification

This area shows how to specify the setpoint.

The setpoint can be specified as follows:

- By the application ("External", CFC/SFC)
- By the user directly in the faceplate ("Internal")

(3) High and low scale range for the process value

These values provide information on the display range for the bar graph of the process value.

(4) Display of the process value including signal status

This area shows the current process value with the corresponding signal status.

(5) Display and change the setpoint including signal status

This area shows the current setpoint with the corresponding signal status. The setpoint specification also needs to be set to "Internal" for this block.

(6) High and low scale range for the setpoint

This area is already set and cannot be changed.

(7) Display and change the manipulated variable including signal status

This area shows the current Manipulated variable (MV) with the corresponding signal status.

You can only make a change in manual mode.

(8) Display of the position feedback including signal status

This display is only visible when the corresponding block input is interconnected.

This area provides information on the current readback value of the manipulated variable with the corresponding signal status. This display is only available when the readback value in the box is interconnected to the Rbk input parameter.

(9) Bar graph for the Manipulated variable

This area shows the current Manipulated variable in the form of a bar graph. The visible area in the bar graph depends on the configuration in the Engineering System (ES).

(10) Bar graph for position feedback

This display is only visible when the corresponding block input is connected.

This area shows the current position feedback in the form of a bar graph.

(11) Navigation button for switching to the standard view of the ConPerMon block

Use this navigation button to reach the standard view of the ConPerMon block.

(12) Navigation button for switching to the standard view of any faceplate

Use this navigation button to reach the standard view of a block configured in the ES.

(13), (14), (15), (16) Display area for block states

This area provides additional information on the operating state of the block:

- "Maintenance"
- "Simulation"
- "Invalid signal"
- "Fuzzy Optim." (FmCont only)
- "Tracking FB"
- "Tracking FM"
- "Safety mode FM"
- "Fuzzy control" (FmCont only)

(17) Limit display

These colored triangles indicate the configured limits in the respective bar graph:

- Red: Alarm
- Yellow: Warning
- Blue: Tolerance

Note

The symbols displayed are not valid for user-configured message classes.

(18) Bar graph for the Process value

This area shows the current "Process value" in the form of a bar graph. The visible area in the bar graph depends on the configuration in the Engineering System (ES).

(19) Bar graph for the Setpoint

This area shows the current "Setpoint" in the form of a bar graph. The visible area in the bar graph depends on the configuration in the ES.

(20) Display of external setpoint

This display [E] is only visible when you have selected Internal setpoint specification.

(21) Display for the target setpoint of the setpoint ramp

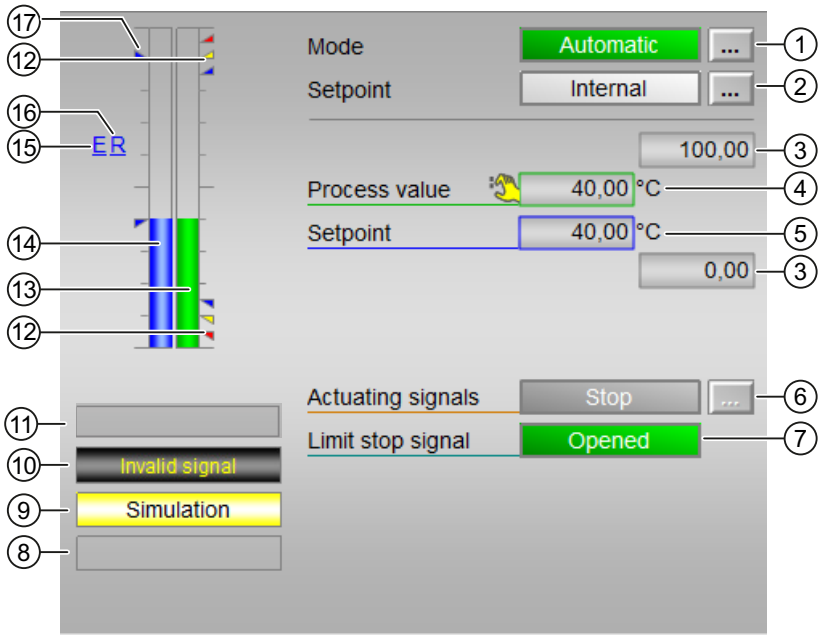
This display [R] shows the target setpoint and is only visible if you have enabled ramp generation in the Ramp view.

(22) Limit display for the setpoint

These triangles show the `SP_HiLim` and `SP_LoLim` setpoint limits configured.

9.2.3 FmCont Standard view (step controller without position feedback)

Standard view (step controller without position feedback)



The FMCont Standard view (step controller without position feedback) consists of the following areas:

(1) Displaying and switching the operating mode

(2) Displaying and switching the setpoint specification

(3) High and low scale range for the process value

(4) Display of the process value including signal status

(5) Display and change the setpoint including signal status

(6) Operating and displaying the actuating signal

(7) Display of the limit stop value including signal status

(8), (9) and (10) Display area for block states

(11) Limit display

(12) Bar graph for the Process value

(13) Bar graph for the Setpoint

(14) Display of external setpoint

(15) Display for the target setpoint of the setpoint ramp

(16) Limit display for the setpoint

(1) Displaying and switching the operating mode

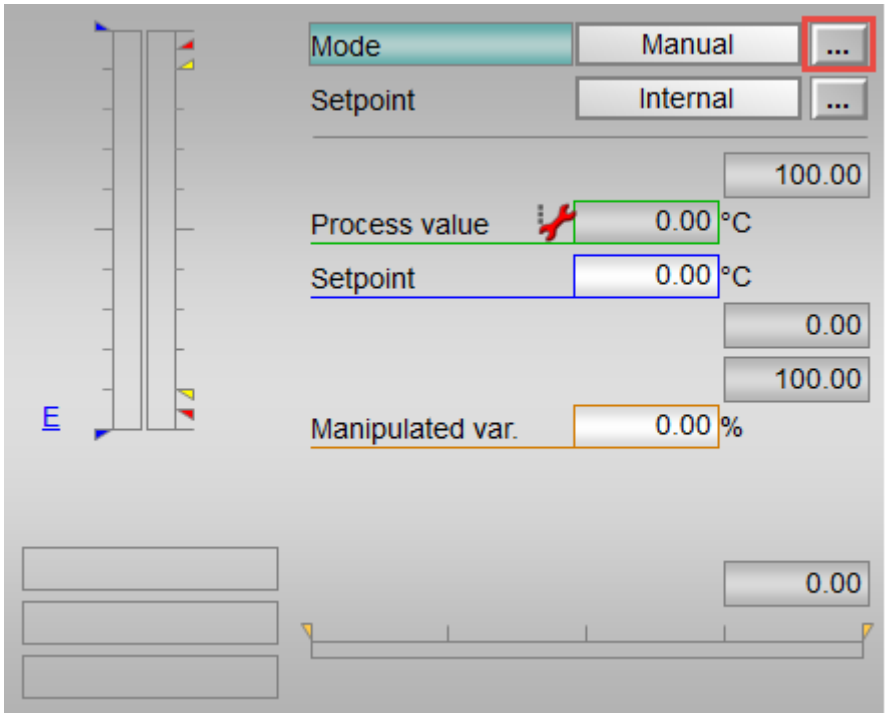
This area provides information on the currently valid operating mode. In this block, the following operating modes are available:

1. Manual mode
2. Automatic mode
3. Program mode for controllers
4. Out of service

Switching operating modes

Follow these steps to set the block to a particular mode or to switch between the different operating modes:

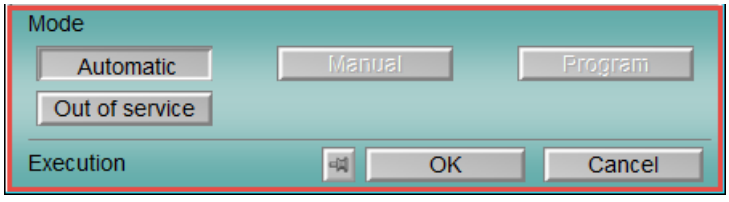
1. Ensure the faceplate containing the respective block is open.
2. Click the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.
4. If acknowledgement is required, click "OK".
5. The motor will be switched to the selected operating mode.



(2) Displaying and switching the setpoint specification

This area shows how to specify the setpoint. The setpoint can be specified as follows:

- By the application ("External", CFC/SFC)
- By the user directly in the faceplate ("Internal").

(3) High and low scale range for the process value

These values provide information on the display range for the bar graph of the process value.

(4) Display of the process value including signal status

This area provides information on the current process value with the corresponding signal status.

(5) Display and change the setpoint including signal status

This area provides information on the current setpoint with the corresponding signal status.

(6) Operating and displaying the actuating signal

This area shows the current feedback of the actuating signal.

- "Open"
- "Stop"
- "Close"

(7) Display of the limit stop value including signal status

This area shows the limit stop signal with the corresponding signal status.

- "Open"
- "Closed"

(8), (9) and (10) Display area for block states

This area provides additional information on the operating state of the block (from high to low according to priority):

- Maintenance
- Simulation
- Fuzzy Optim (FmCont only)
- Tracking FB
- Tracking FM
- Safety mode FM
- Fuzzy control (FmCont only)

(11) Limit display

These colored triangles indicate the configured limits in the respective bar graph:

- Red: Alarm
- Yellow: Warning
- Blue: Tolerance

Note

The symbols displayed are not valid for user-configured message classes.

(12) Bar graph for the Process value

This area shows the current "Process value" in the form of a bar graph.

(13) Bar graph for the Setpoint

This area shows the current "Setpoint" in the form of a bar graph.

(14) Display of external setpoint

This display [E] is only visible when you have selected "Internal" setpoint specification. It shows the external setpoint that would apply if you were to change the setpoint specification to "external".

(15) Display for the target setpoint of the setpoint ramp

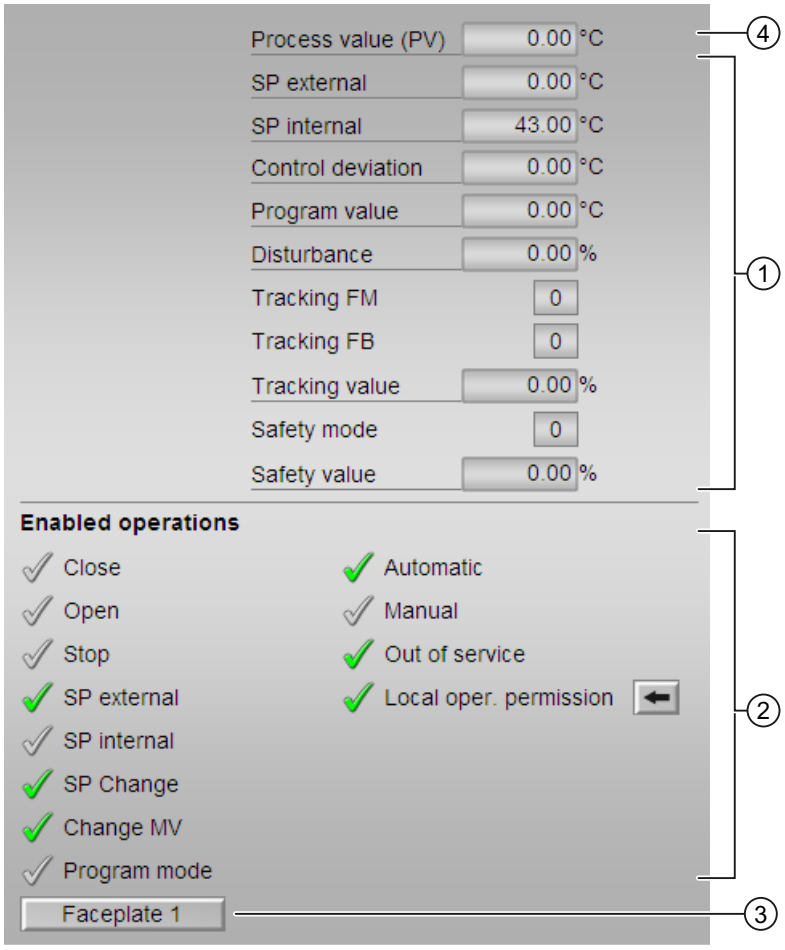
This display [R] shows the target setpoint.

(16) Limit display for the setpoint

These triangles show the SP_HiLim and SP_LoLim setpoint limits.

9.2.4 FmCont Preview

Preview of FmCont



With respect to the screenshot shown above, the FmCont preview consists of the following areas:

(1) Preview area

(2) Enabled operations

(3) Navigation button for switching to the standard view of any faceplate

(4) Process value

(1) Preview area

This area shows you a preview for the following values:

- "SP external": currently applicable external setpoint
- "SP internal": currently applicable internal setpoint
- "Control deviation": Current Control deviation

- "Program mode": Specified value for program mode
- "Disturbance variable": additive value for feedforward control
- "Tracking FM": track a manipulated variable in the FM module (value is 1)
- "Tracking FB": Track manipulated variable at the block (value is 1)
- "Tracking value": Effective manipulated variable for "Track manipulated variable at block"
- "Safety mode": safety mode in the FM module (value is 1)
- "Safety value": effective manipulated variable for "Safety mode"

(2) Enabled operations

This area displays all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions.

The following enabled operations are displayed in the faceplate area:

Action	Description
Close	You can select the manipulated variable "Close".
Open	You can select the manipulated variable "Open".
Stop	You can select the manipulated variable "Stop".
SP external	You can feedforward the external setpoint.
SP internal	You can feedforward the internal setpoint.
Change SP	You can change the setpoint.
Change MV	You can change the manipulated variable.
Program mode	You can switch to program mode.
Automatic	You can switch to automatic mode.
Manual	You can switch to manual mode.
Out of service	You can switch to "Out of service" operating mode.
Local operating permission	Use the ← button to switch to the standard view of the "OpStations" block.

(3) Navigation button for switching to the standard view of any faceplate

Use this navigation button to open the standard view of a block in the Engineering System (ES).

(4) Process value

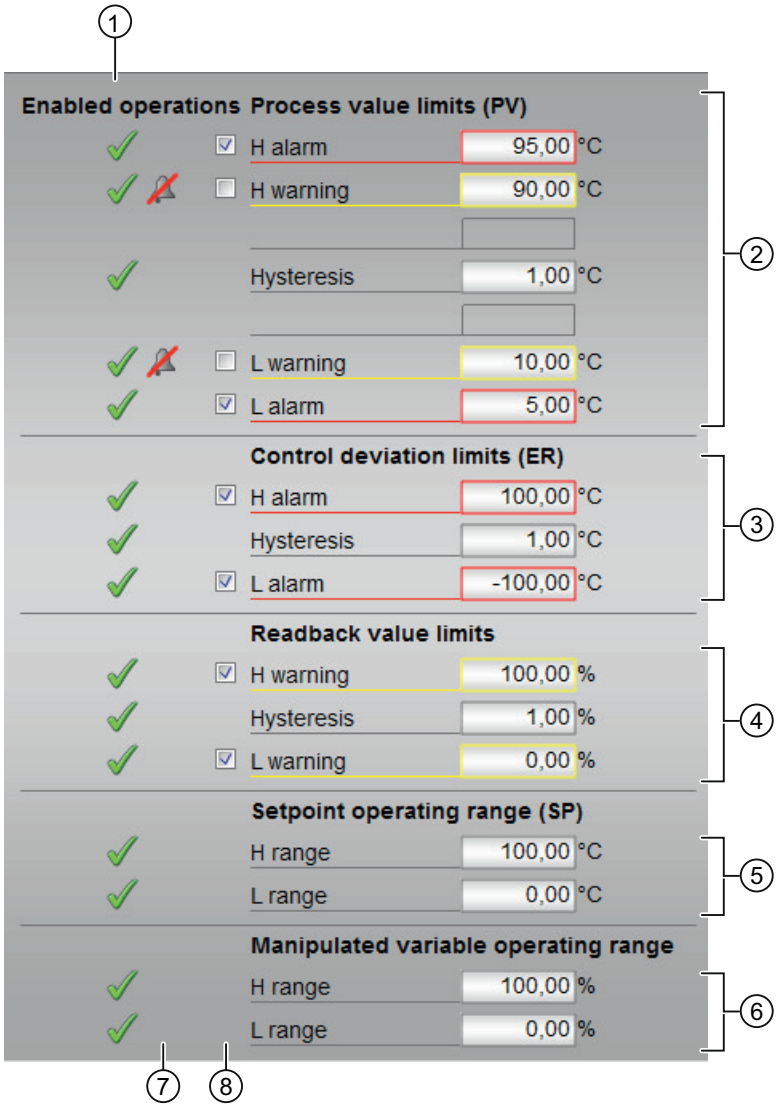
This area displays the real process value.

9.2.5 FmCont Limit view

Limit view of FmCont

You can specify the process value limits in this view:

The toolbars of the faceplate and the block icon indicate when the limits are reached or violated.



The FmCont view consists of the following:

(1) Enabled operation

(2) Process value limits (**PV**)

(3) Error signal limits (**ER**)

(4) Readback value limits (**RBK**)

(5) Setpoint operation range (**SP**)

(6) Manipulated variable operating range

(7) Message suppression/delay

(8) Suppressing messages

(1) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions.

(2) Process value limits (PV)

In this area, you can enter the limits for the process value.

You can change the following limits:

- "H alarm": Alarm high
- "H warning": Warning high
- "H tolerance": Tolerance high
- "Hysteresis"
- "L tolerance": Tolerance low
- "L warning": Warning low
- "L alarm": Alarm low

(3) Error signal limits (ER)

In this area, you can enter the limits for the control deviation.

You can change the following limits:

- "H alarm": Alarm high
- "Hysteresis"
- "L alarm": Alarm low

(4) Readback value limits (RBK)

In this area, you can enter the limits for the readback value.

You can change the following limits:

- "H warning": Warning high
- "Hysteresis"
- "L warning": Warning low

(5) Setpoint operation range (SP)

In this area, you can enter the limits for the setpoint operation range.

You can change the following limits:

- "H range": Range limit high
- "L range": Range limit low

(6) Manipulated variable operating range

In this area, you can enter the limits for the manipulated variable operation range.

You can change the following limits:

- "H range": Range limit high
- "L range": Range limit low

(7) Message suppression/delay

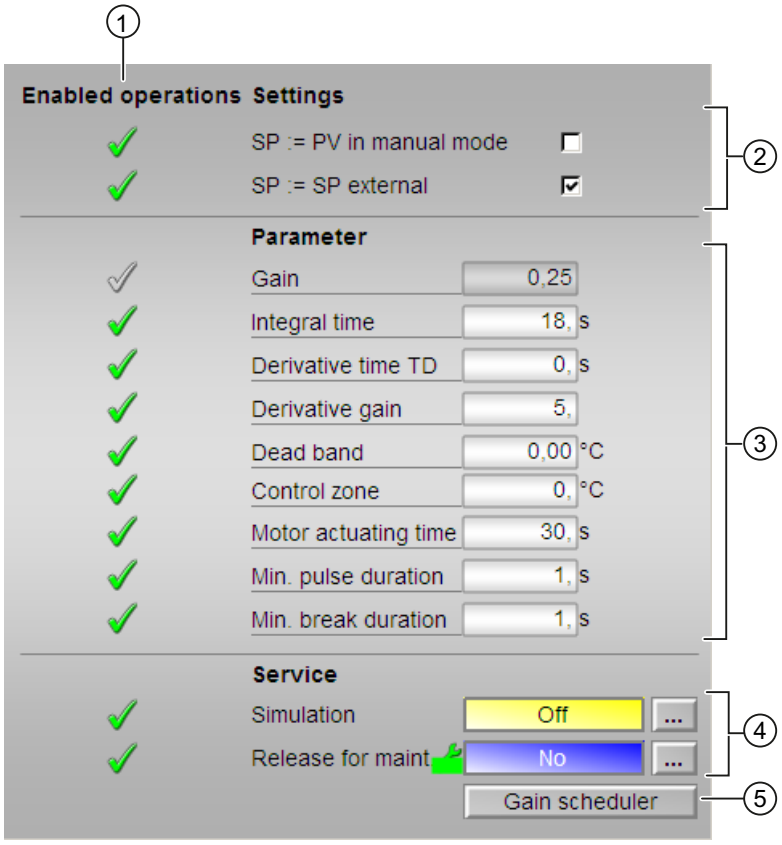
Message suppression indicates whether or not the suppression of the associated message in the AS block is activated with the xx_MsgEn parameter. The output of messages is not suppressed when the block is installed (all xx_MsgEn parameters are preset to 1). Messages can only be output if limit monitoring of the additional analog value has been enabled.

(8) Suppressing messages

You can enable/disable messages by setting the check mark.

9.2.6 FmCont Parameter view

Parameter view of FMCont



The Parameter view consists of the following:

(1) Enabled operations

(2) Settings

(3) Parameters

(4) Service

(5) Navigation button for the GainSched block

(1) Enabled operations

This area shows all operations for which special operator control permissions are assigned.

Icons for enabled operations:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator control permissions.

2) Settings

You can activate the following functions for the controller in this area:

- "SP := PV in manual mode": ☑ Bumpless switchover from manual mode to automatic mode.
- "SP := SP external": ☑ Bumpless switchover of the setpoint for setpoint switchover from "external" to "internal". The internal setpoint is tracked to the external one.

(3) Parameters

In this area, you change parameters and therefore influence the controller.

You can influence the following parameters:

- "Gain": Proportional gain
- "Integral time": Integral action time in [s]
- "Derivative time TD": Derivative action time in [s]
- "Derivative gain": Gain of the derivative action
- "Dead band": Width of dead band
- "Control zone": Width of the control zone (for block FmTemp only)
- "Motor actuating time": Motor actuating time [s]
- "Minimum pulse duration": Minimum pulse duration [s]
- "Minimum break duration": Minimum break duration [s]

(4) Service

You can activate the following functions in this area:

- "Simulation"
- "Release for maintenance" (with display for a maintenance request)

(5) Navigation button for the GainSched block

You can use this navigation button to reach the GainSched block.

9.3 FmTemp - Interface to temperature controller modules FM 355-2

9.3.1 FmTemp views

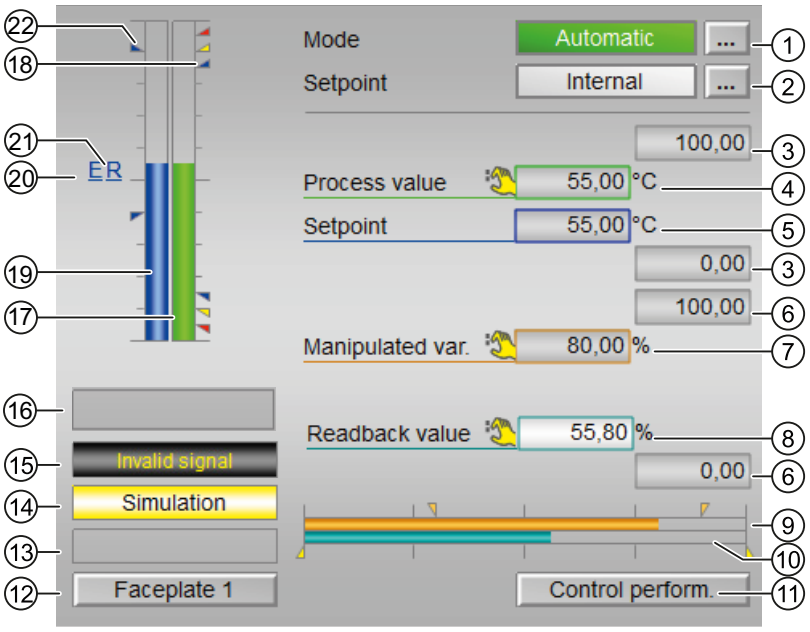
FmTemp views

The FmTemp views provides information on the following:

- FM controllers Standard view (analog) (Page 316)
- FM controllers Standard view (pulse controller (Page 317))
- FM controllers Standard view (step controller with position feedback) (Page 321)
- FM controllers Standard view (step controller without position feedback) (Page 328)
- Alarm view (Page 450)
- Limit view of FM controllers (Page 328)
- Trend view (Page 456)
- Parameter view of FM controllers (Page 332)
- FM controllers Preview (Page 326)
- Memo view (Page 453)
- Batch view (Page 452)

9.3.2 FmTemp Standard view (analog)

Standard view (analog) of FmTemp



The FmTemp Standard view (analog) consists of the following areas:

(1) Display and switch the operating mode

(2) Display and switch the setpoint specification

(3) High and low scale range for the process value

(4) Display of the process value including signal status

(5) Display and change the setpoint including signal status

(6) High and low scale range for the setpoint

(7) Display and change the manipulated variable including signal status

(8) Display of the position feedback including signal status

(9) Bar graph for the "Manipulated variable"

(10) Bar graph for position feedback

(11) Navigation button for switching to the standard view of the ConPerMon block

(12) Navigation button for switching to the standard view of any faceplate

(13), (14) and (15) Display area for block states

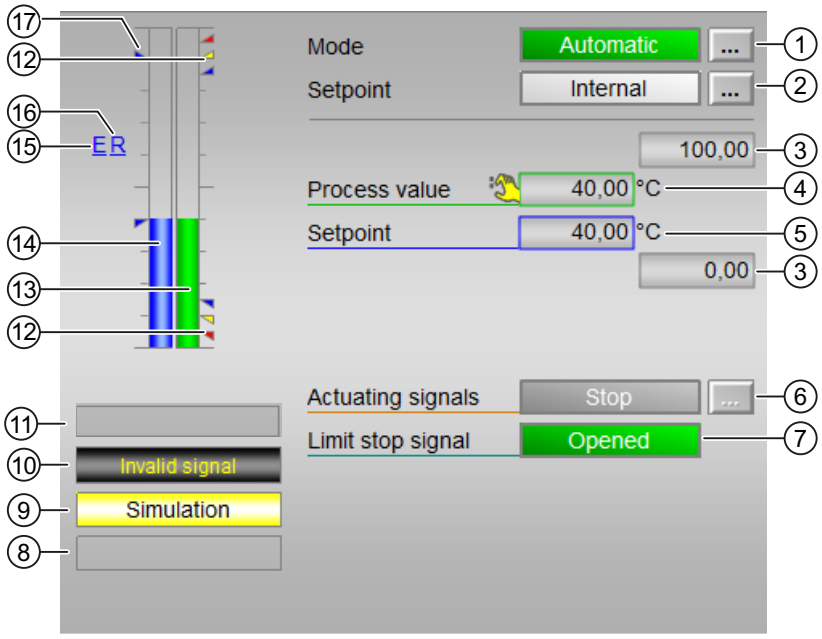
(16) Limit display

(17) Bar graph for the "Process value"

For descriptions about the areas, refer to FmCont Standard view (Page 299).

9.3.3 FmTemp Standard view (step controller without position feedback)

Standard view (step controller without position feedback) of FmTemp



The FmTemp Standard view (step controller without position feedback) consists of the following areas:

(1) Displaying and switching the operating mode

(2) Displaying and switching the setpoint specification

(3) High and low scale range for the process value

(4) Display of the process value including signal status

(5) Display and change the setpoint including signal status

(6) Operating and displaying the actuating signal

(7) Display of the limit stop value including signal status

(8), (9) and (10) Display area for block states

(11) Limit display

(12) Bar graph for the Process value

(13) Bar graph for the Setpoint

(14) Display of external setpoint

(15) Display for the target setpoint of the setpoint ramp

(16) Limit display for the setpoint

(1) Displaying and switching the operating mode

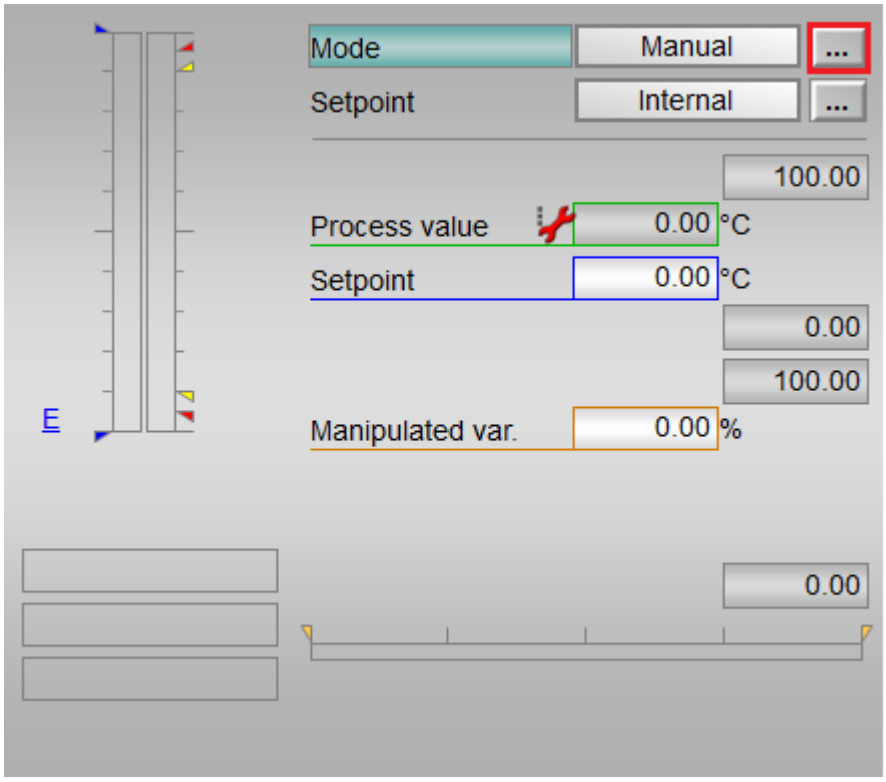
This area provides information on the currently valid operating mode. In this block, the following operating modes are available:

1. Manual mode
2. Automatic mode
3. Program mode for controllers
4. Out of service

Switching operating modes

Follow these steps to set the block to a particular mode or to switch between the different operating modes:

1. Ensure the faceplate containing the respective block is open.
2. Click the [...] button to open the operating window.

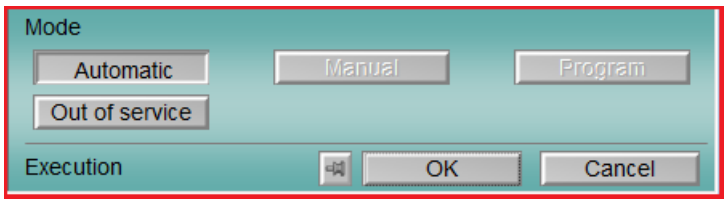


Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.

4. If acknowledgement is required, click "OK".



5. The motor will be switched to the selected operating mode.

(2) Displaying and switching the setpoint specification

This area shows how to specify the setpoint. The setpoint can be specified as follows:

- By the application ("External", CFC/SFC)
- By the user directly in the faceplate ("Internal").

(3) High and low scale range for the process value

These values provide information on the display range (PV_OpScale) for the bar graph of the process value.

(4) Display of the process value including signal status

This area provides information on the current process value (PV) with the corresponding signal status.

(5) Display and change the setpoint including signal status

This area provides information on the current setpoint (SP) with the corresponding signal status.

(6) Operating and displaying the actuating signal

This area shows the current feedback of the actuating signal.

- "Open"
- "Stop"
- "Close"

If text is configured for these commands, it is displayed as status text and as button labels for command selection.

(7) Display of the limit stop value including signal status

This area shows the limit stop signal with the corresponding signal status.

- "Open"
- "Closed"

If text is configured for these commands, it is displayed as status text and as button labels for command selection.

(8), (9) and (10) Display area for block states

This area provides additional information on the operating state of the block (from high to low according to priority):

- Maintenance
- Simulation
- Fuzzy Optim (FmCont only)
- Tracking FB
- Tracking FM
- Safety mode FM
- Fuzzy control (FmCont only)

(11) Limit display

These colored triangles indicate the configured limits in the respective bar graph:

- Red: Alarm
- Yellow: Warning
- Blue: Tolerance

Note

The symbols displayed are not valid for user-configured message classes.

(12) Bar graph for the Process value

This area shows the current "Process value" in the form of a bar graph.

(13) Bar graph for the Setpoint

This area shows the current "Setpoint" in the form of a bar graph.

(14) Display of external setpoint

This display [E] is only visible when you have selected "Internal" setpoint specification. It shows the external setpoint that would apply if you were to change the setpoint specification to "external".

(15) Display for the target setpoint of the setpoint ramp

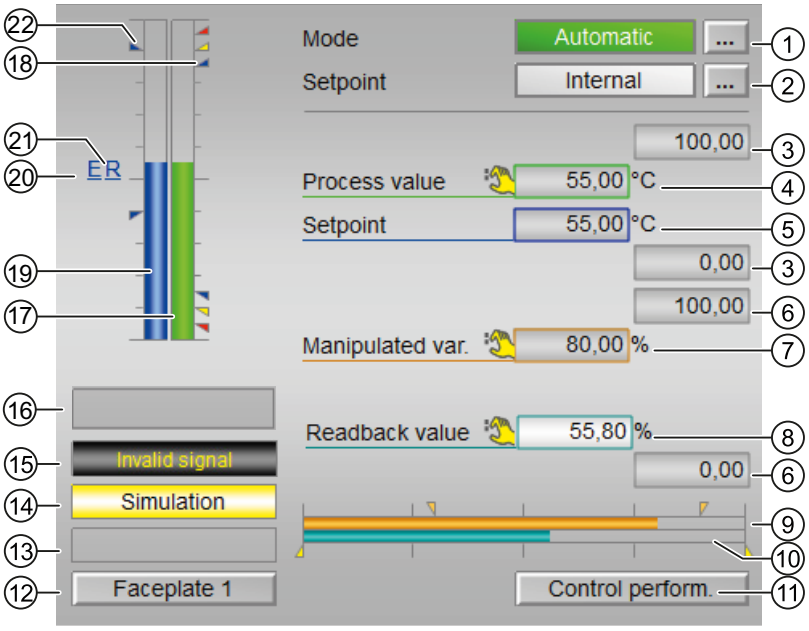
This display [R] shows the target setpoint.

(16) Limit display for the setpoint

These triangles show the SP_HiLim and SP_LoLim setpoint limits.

9.3.4 FmTemp Standard view (analog, pulse controller, and step controller with position feedback)

Standard view of FmTemp



The FmTemp Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Displaying and switching the setpoint specification

(3) High and low scale range for the process value

(4) Display of the process value including signal status

(5) Display and change the setpoint including signal status

(6) High and low scale range for the setpoint

(7) Display and change the manipulated variable including signal status

(8) Display of the position feedback including signal status

(9) Bar graph for the Manipulated variable

(10) Bar graph for position feedback

(11) Button for switching to the standard view of the ConPerMon block

(12) Button for switching to the standard view of any faceplate

(13), (14), (15), (16) Display area for block states

(17) Limit display

(18) Bar graph for the Process value

(19) Bar graph for the Setpoint

(20) Display of external setpoint

(21) Display for the target setpoint of the setpoint ramp

(22) Limit display for the setpoint

(1) Displaying and switching the operating mode

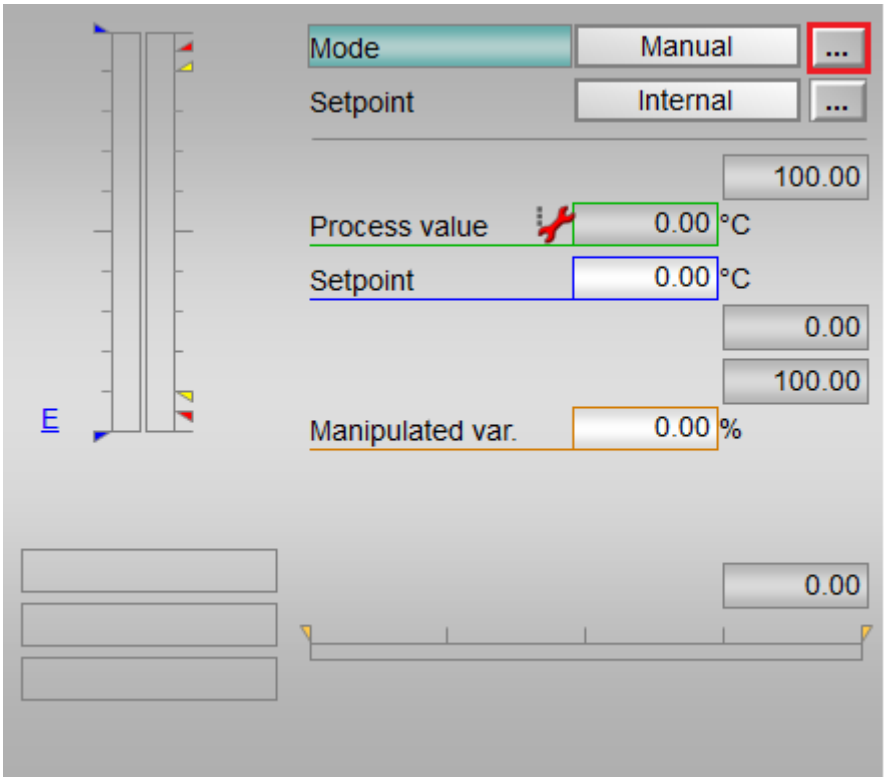
This area provides information on the currently valid operating mode. In this block, the following operating modes are available:

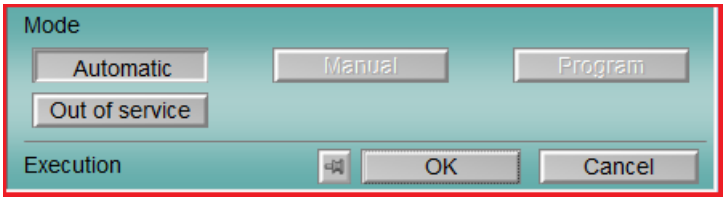
1. Manual mode
2. Automatic mode
3. Program mode for controllers
4. Out of service

Switching operating modes

Follow these steps to set the block to a particular mode or to switch between the different operating modes:

1. Ensure the faceplate containing the respective block is open.
2. Click the [...] button to open the operating window.





Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.
4. If acknowledgement is required, click "OK".
   The motor will be switched to the selected operating mode.

(2) Displaying and switching the setpoint specification

This area shows how to specify the setpoint. The setpoint can be specified as follows:

- By the application ("External", CFC/SFC)
- By the user directly in the faceplate ("Internal")

(3) High and low scale range for the process value

These values provide information on the display range for the bar graph of the process value.

(4) Display of the process value including signal status

This area shows the current process value with the corresponding signal status.

(5) Display and change the setpoint including signal status

This area shows the current setpoint with the corresponding signal status. The setpoint specification also needs to be set to "Internal" for this block.

(6) High and low scale range for the setpoint

This area is already set and cannot be changed.

(7) Display and change the manipulated variable including signal status

This area shows the current Manipulated variable (MV) with the corresponding signal status.

You can only make a change in manual mode.

(8) Display of the position feedback including signal status

This display is only visible when the corresponding block input is connected.

This area provides information on the current readback value of the manipulated variable with the corresponding signal status. This display is only available when the readback value in the box is interconnected to the Rbk input parameter.

(9) Bar graph for the Manipulated variable

This area shows the current Manipulated variable in the form of a bar graph.

(10) Bar graph for position feedback

This display is only visible when the corresponding block input is connected.

This area shows the current position feedback in the form of a bar graph.

(11) Button for switching to the standard view of the ConPerMon block

Use this navigation button to reach the standard view of the ConPerMon block. The visible area in the bar graph depends on the configuration in the Engineering System (ES).

(12) Button for switching to the standard view of any faceplate

Use this navigation button to reach the standard view of a block configured. The visibility of this navigation button depends on the configuration in the ES.

(13), (14), (15), (16) Display area for block states

This area provides additional information on the operating state of the block:

- "Maintenance"
- "Simulation"
- "Invalid signal"
- "Fuzzy Optim." (FmCont only)
- "Tracking FB"
- "Tracking FM"
- "Safety mode FM"
- "Fuzzy control" (FmCont only)

(17) Limit display

These colored triangles indicate the configured limits in the respective bar graph:

- Red: Alarm
- Yellow: Warning
- Blue: Tolerance

Note

The symbols displayed are not valid for user-configured message classes.

(18) Bar graph for the Process value

This area shows the current Process value in the form of a bar graph.

(19) Bar graph for the Setpoint

This area shows the current Setpoint in the form of a bar graph.

(20) Display of external setpoint

This display [E] is only visible when you have selected Internal setpoint specification.

(21) Display for the target setpoint of the setpoint ramp

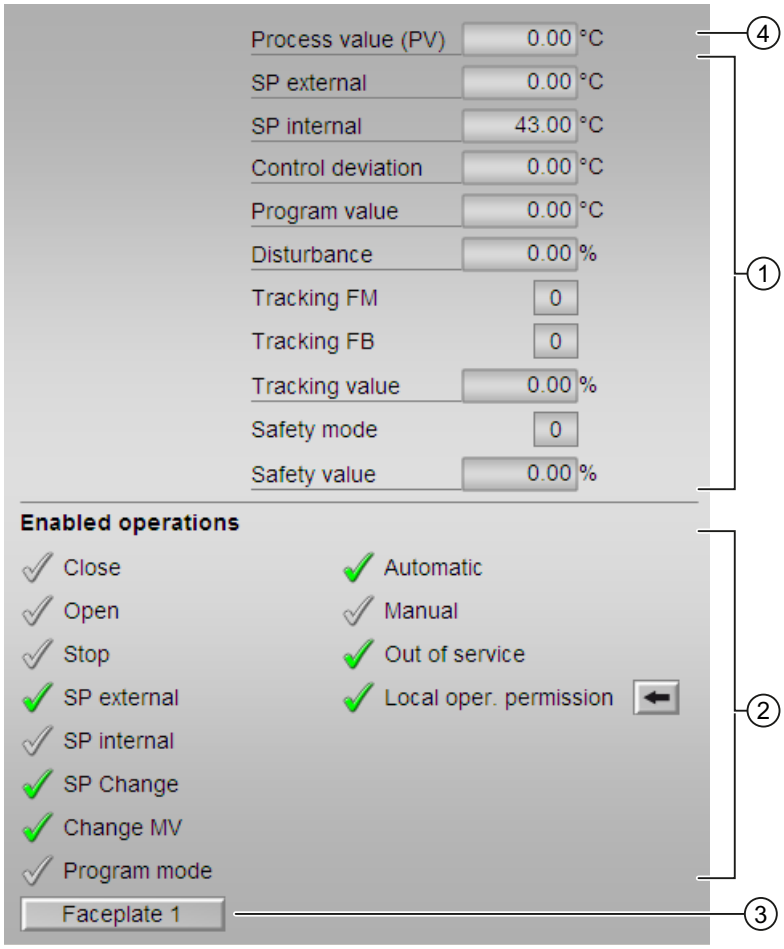
This display [R] shows the target setpoint and is only visible if you have enabled ramp generation in the Ramp view.

(22) Limit display for the setpoint

These triangles show the SP_HiLim and SP_LoLim setpoint limits configured.

9.3.5 FmTemp Preview

Preview of FmTemp



With respect to the screenshot shown above, the FmTemp preview consists of the following areas:

(1) Preview area

(2) Enabled operations

(3) Navigation button for switching to the standard view of any faceplate

(4) Process value

(1) Preview area

This area shows you a preview for the following values:

- "SP external": currently applicable external setpoint
- "SP internal": currently applicable internal setpoint
- "Control deviation": Current Control deviation
- "Program mode": Specified value for program mode
- "Disturbance variable": additive value for feedforward control
- "Tracking FM": track a manipulated variable in the FM module (value is 1)
- "Tracking FB": Track manipulated variable at the block (value is 1)
- "Tracking value": Effective manipulated variable for "Track manipulated variable at block"
- "Safety mode": safety mode in the FM module (value is 1)
- "Safety value": effective manipulated variable for "Safety mode"

(2) Enabled operations

This area displays all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions.

The following enabled operations are displayed in the faceplate area:

Action	Description
Close	You can select the manipulated variable "Close".
Open	You can select the manipulated variable "Open".
Stop	You can select the manipulated variable "Stop".
SP external	You can feedforward the external setpoint.
SP internal	You can feedforward the internal setpoint.
Change SP	You can change the setpoint.
Change MV	You can change the manipulated variable.
Program mode	You can switch to program mode.
Automatic	You can switch to automatic mode.
Manual	You can switch to manual mode.

Action	Description
Out of service	You can switch to "Out of service" operating mode.
Local operating permission	Use the ← button to switch to the standard view of the "OpStations" block.

(3) Navigation button for switching to the standard view of any faceplate

Use this navigation button to reach the standard view of a block configured in the engineering system. The visibility of this navigation button depends on the configuration in the Engineering System (ES).

(4) Process value

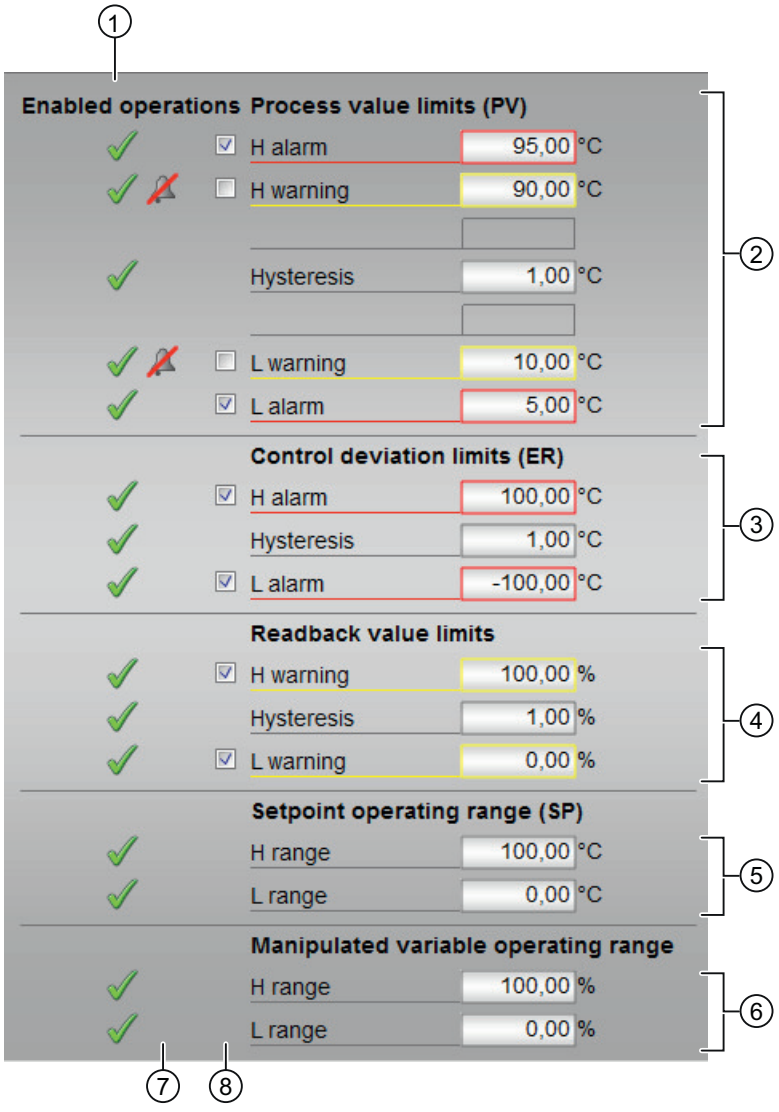
This area displays the real process value.

9.3.6 FmTemp Limit view

Limit view of FmTemp

You can specify the process value limits in this view:

The toolbars of the faceplate and the block icon indicate when the limits are reached or violated.



The FmTemp view consists of the following:

(1) Enabled operation

(2) Process value limits **(PV)**

(3) Error signal limits (**ER**)

(4) Readback value limits (**RBK**)

(5) Setpoint operation range (**SP**)

(6) Manipulated variable operating range

(7) Message suppression/delay

(8) Suppressing messages

(1) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator permissions.

(2) Process value limits (PV)

In this area, you can enter the limits for the process value.

You can change the following limits:

- "H alarm": Alarm high
- "H warning": Warning high
- "H tolerance": Tolerance high
- "Hysteresis"
- "L tolerance": Tolerance low
- "L warning": Warning low
- "L alarm": Alarm low

(3) Error signal limits (ER)

In this area, you can enter the limits for the control deviation.

You can change the following limits:

- "H alarm": Alarm high
- "Hysteresis"
- "L alarm": Alarm low

(4) Readback value limits (RBK)

In this area, you can enter the limits for the readback value.

You can change the following limits:

- "H warning": Warning high
- "Hysteresis"
- "L warning": Warning low

(5) Setpoint operation range (SP)

In this area, you can enter the limits for the setpoint operation range.

You can change the following limits:

- "H range": Range limit high
- "L range": Range limit low

(6) Manipulated variable operating range (MV)

In this area, you can enter the limits for the manipulated variable operation range.

You can change the following limits:

- "H range": Range limit high
- "L range": Range limit low

(7) Message suppression/delay

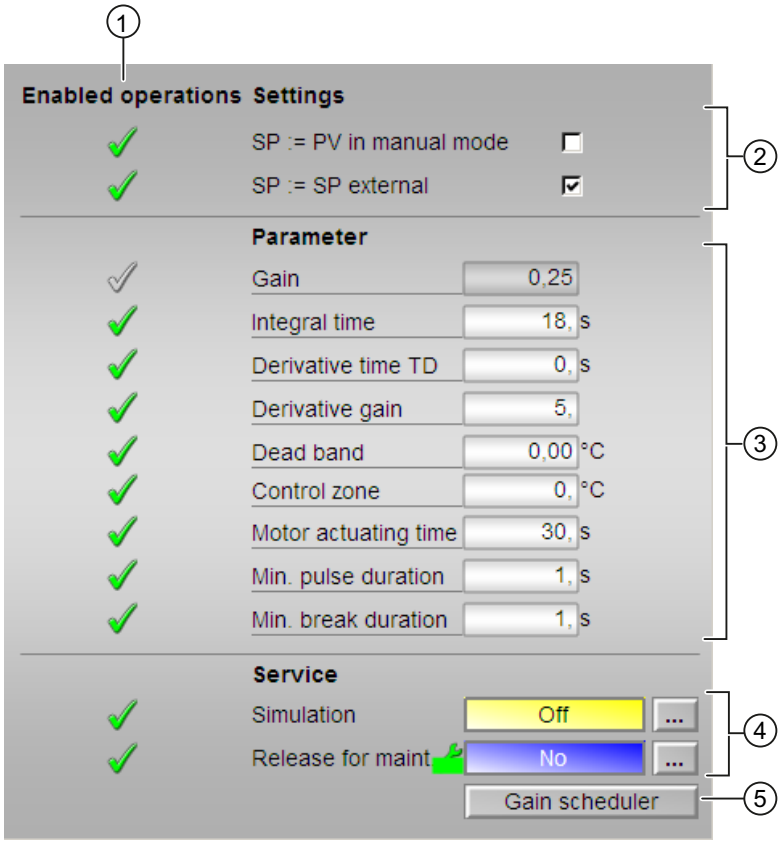
Message suppression indicates whether or not the suppression of the associated message in the AS block is activated with the xx_MsgEn parameter. The output of messages is not suppressed when the block is installed (all xx_MsgEn parameters are preset to 1). Messages can only be output if limit monitoring of the additional analog value has been enabled.

(8) Suppressing messages

You can enable/disable messages by setting the check mark.

9.3.7 FmTemp Parameter view

Parameter view of FmTemp



The Parameter view consists of the following:

(1) Enabled operations

(2) Settings

(3) Parameters

(4) Service

(5) Navigation button for the GainSched block

(1) Enabled operations

This area shows all operations for which special operator control permissions are assigned.

Icons for enabled operations:

- Green check mark: The OS operator can control this parameter.
- Gray check mark: The OS operator cannot control this parameter at this time due to the process.
- Red cross: The OS operator cannot control this parameter due to the configured AS operator control permissions.

2) Settings

You can activate the following functions for the controller in this area:

- "SP := PV in manual mode": ☑ Bumpless switchover from manual mode to automatic mode.
- "SP := SP external": ☑ Bumpless switchover of the setpoint for setpoint switchover from "external" to "internal". The internal setpoint is tracked to the external one.

(3) Parameters

In this area, you change parameters and therefore influence the controller.

You can influence the following parameters:

- "Gain": Proportional gain
- "Integral time": Integral action time in [s]
- "Derivative time TD": Derivative action time in [s]
- "Derivative gain": Gain of the derivative action
- "Dead band": Width of dead band
- "Control zone": Width of the control zone (for block FmTemp only)
- "Motor actuating time": Motor actuating time [s]
- "Minimum pulse duration": Minimum pulse duration [s]
- "Minimum break duration": Minimum break duration [s]

(4) Service

You can activate the following functions in this area:

- "Simulation"
- "Release for maintenance" (with display for a maintenance request)

(5) Navigation button for the GainSched block

You can use this navigation button to reach the "GainSched" block configured in the Engineering System (ES). The visibility of this navigation button depends on the configuration in the ES.

9.4 GainSched - Adapting parameter values for a PID controller

9.4.1 GainSched views

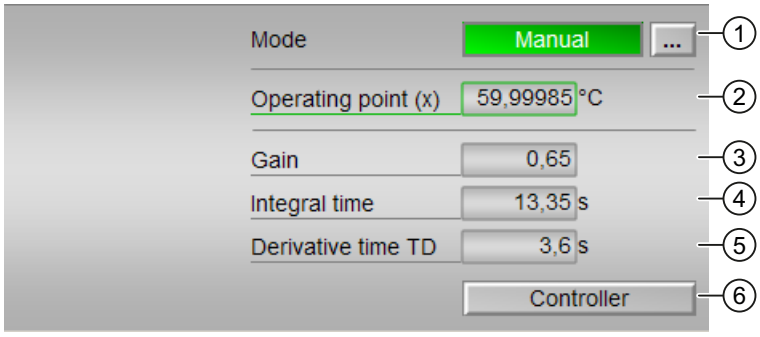
GainSched views

The GainSched views provides information on the following:

- GainSched Standard view (Page 334)
- GainSched Parameter view (Page 337)
- GainSched Preview (Page 336)
- Memo view (Page 453)

9.4.2 GainSched Standard view

Standard view of GainSched



The GainSched Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Displaying the operating point (X)

(3) Displaying the gain

(4) Displaying the integration time **TI**

(5) Displaying and changing the derivative time **TD**

(6) Navigation button to GainSched block

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. The following operating modes can be shown here:

1. Manual mode
2. Automatic mode

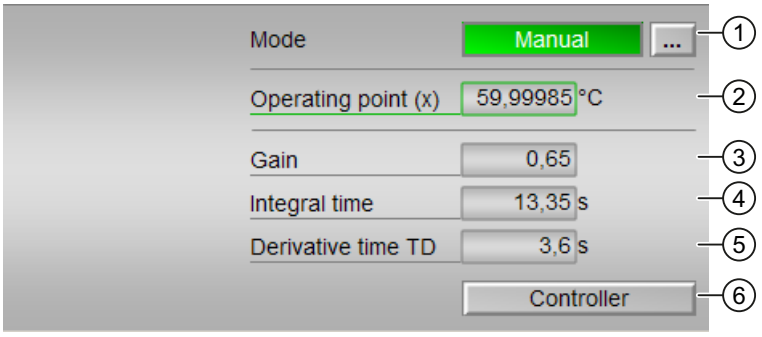
1. Manual mode: In this mode, the control settings for the device are made manually by the operator. The operator can change the manipulated variable (output signal). The manipulated variable can be analor or binary.
2. Automatic mode: In automatic mode, control of the device is performed automatically by the program.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

Ensure the faceplate containing the respective block is open.

1. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

2. Select the respective button for the desired operating mode.
3. If acknowledgement is required, click "OK".

The motor will be switched to the selected operating mode.

(2) Displaying the operating point (X)

This area provides information on the currently used operating point.

(3) Displaying the gain

This area provides information about the controller gain.

(4) Displaying the integration time TI

This area provides information about the integration time.

(5) Displaying and changing the derivative time TD

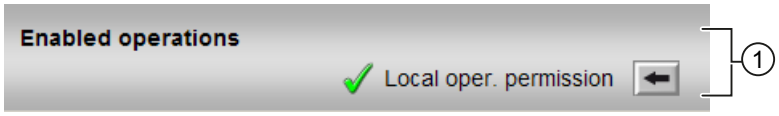
This area provides information about the derivative time.

(6) Navigation button to GainSched block

Use this navigation button to reach the standard view of a controller block configured in the engineering system.

9.4.3 GainSched Preview

Preview of GainSched



The GainSched preview provides you the information on the following:

(1) Enabled operations

(1) Enabled operations

This area shows all operations for which special operator control permissions are assigned.

Icons enabled for operations:

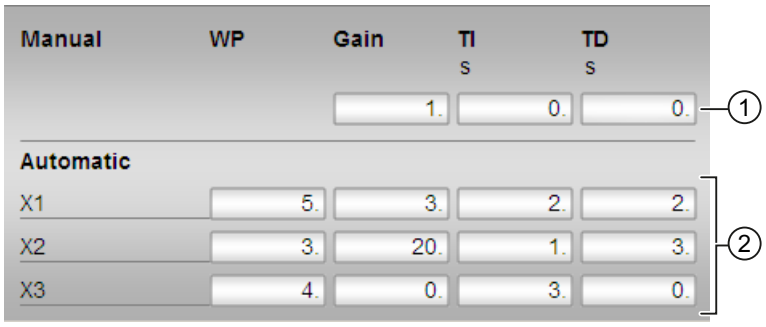
- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator control permissions

The following enabled operations are shown here:

- "Local operating permission": Use the ← button to switch to the standard view of the OpStations block.

9.4.4 GainSched Parameter view

Parameter view of GainSched



The parameter view provides informationabout the following areas:

(1) Displaying and changing the values for the controller parameters in "manual mode"

(2) Displaying and changing the values for the controller parameters in "automatic mode"

(1) Displaying and changing the values for the controller parameters in "manual mode"

This is where you enter the values for the parameters to be used in "manual mode" at the corresponding output parameters of the block:

- Gain
- TI
- TD

(2) Displaying and changing the values for the controller parameters in "automatic mode"

This is where you enter the values for the parameters to be used in "automatic mode" for the interpolation (max. 3 values):

- X1
- X2
- X3
- Gain
- TI
- TD

9.5 ModPreCon - Model predictive controller

9.5.1 ModPreCon views

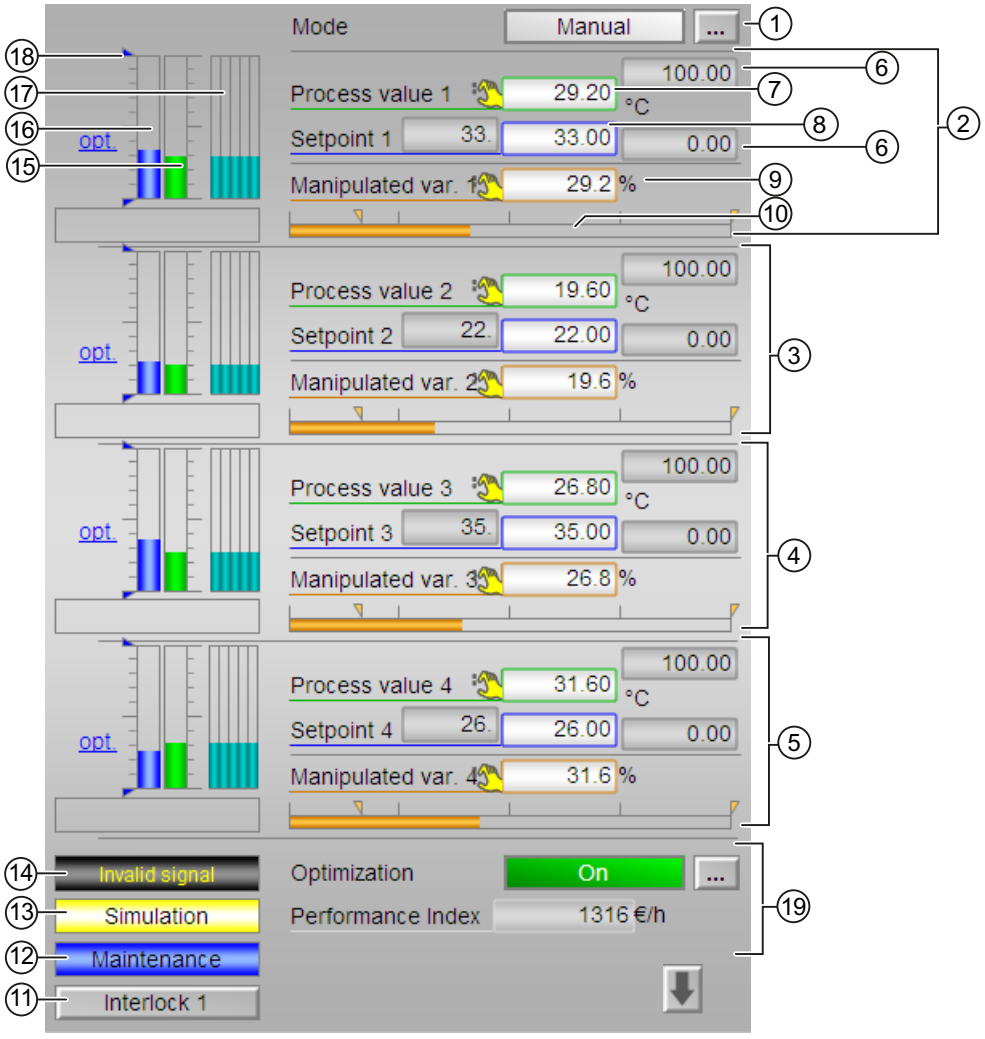
ModPreCon views

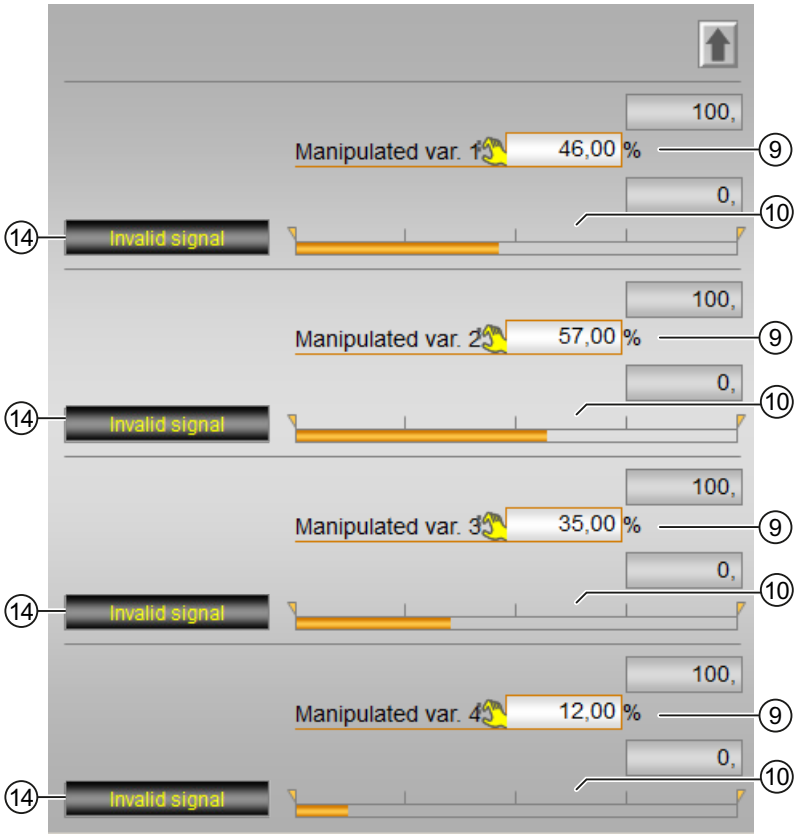
The ModPreCon views provides information on the following:

- ModPreCon Standard view (Page 339)
- ModPreCon Trend view (Page 347)
- ModPreCon Parameter view (Page 348)
- ModPreCon Parameter view channel 1 to 4 (Page 350)
- ModPreCon Preview (Page 345)
- Memo view (Page 453)
- Batch view (Page 452)

9.5.2 ModPreCon Standard View

Standard view of ModPreCon





The ModPreCon Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2), (3), (4) and (5) Displaying and switching for values for channels 1 to 4

(6) High and low scale range for the process value

(7) Displaying and changing the process value including signal status

(8) Displaying and changing the setpoint including signal status

(9) Displaying and changing the manipulated variable including signal status

(10) Bar graph for the manipulated variable with limit display

(11) Navigation button for switching to the standard view of any faceplate

(12), (13), (14) and (15) Display area for block states

(16) Bar graph for the process value 1

(17) Bar graph for the setpoint 1

(18) Prediction of free movement

(19) Displaying the limits

(20) Static operating point optimization

Note

The standard view has an upper half and a lower half. You can change between the two halves with the arrow keys. The upper half shows all available controlled variable channels with their setpoints, while the lower half shows all available manipulated variable channels.

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. The following operating modes can be shown here:

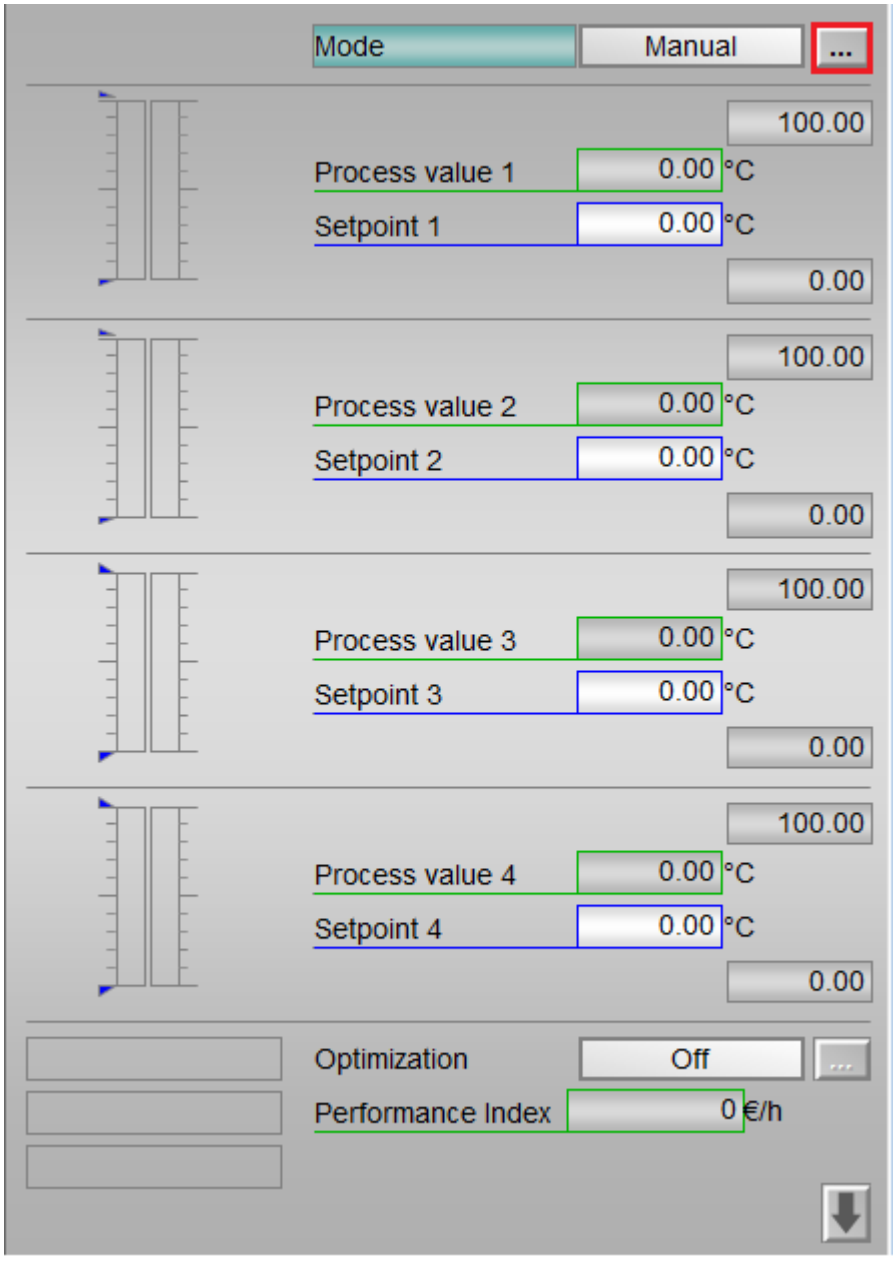
1. Manual mode
2. Automatic mode
3. Out of service

1. Manual mode: In this mode, the control settings for the device are made manually by the operator. The operator can change the manipulated variable (output signal). The manipulated variable can be analor or binary.
2. Automatic mode: In automatic mode, control of the device is performed automatically by the program. The control settings for the controller are made automatically as calculated by the block algorithm.
3. Out of service mode: This operating mode is available to all blocks that have an operating mode switchover and a direct connection to the process (with a connection to a process tag, for example). The out of service operating mode is intended for the purpose of maintenance and servicing. All of the block's functions are disabled. No incoming or outgoing messages are generated or received. The only function still possible is an operating mode switchover.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

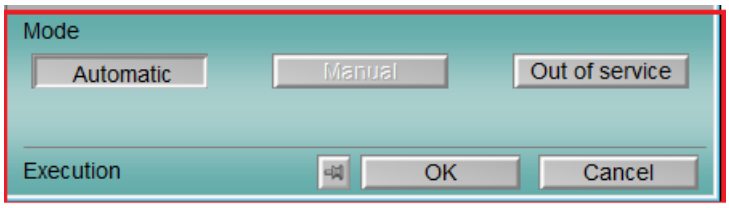
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.
4. If acknowledgement is required, click "OK".



The motor will be switched to the selected operating mode.

(2), (3), (4) and (5) Displaying and switching for values for channels 1 to 4

This area always has the same layout for channels 1 to 4

(6) High and low scale range for the process value

These values provide information on the display range for the bar graph of the process value.

(7) Displaying and changing the process value including signal status

This area shows the current process value with the corresponding signal status.

In the object properties (I/Os `PVx_Out` > Identifier) of the block in CFC, you can specify the text to be displayed for these parameters.

(8) Displaying and changing the setpoint including signal status

This area shows the current setpoint with the corresponding signal status.

(9) Displaying and changing the manipulated variable including signal status

This area shows the current manipulated variable with the corresponding signal status. For more information, Refer to the Changing values.

You can only make a change in manual mode. In the object properties (I/Os `MVx` > Identifier) of the block in CFC, you can specify the text to be displayed for these parameters.

(10) Bar graph for the manipulated variable with limit display

This area shows the following current manipulated variables in the form of a bar graph.

- "Limits"
- "Display area"

(11) Navigation button for switching to the standard view of any faceplate

Use this navigation button to open the standard view of a configured block. The visibility of this navigation button depends on the configuration in the Engineering System (ES).

(12), (13), (14), and (15) Display for block states

This area provides a display for the following state of the block for each channel from 1 to 4:

- Maintenance
- Process excitation
- Simulation
- Invalid signal
- Tracking

(16) Bar graph for the process value 1

This area provides a bar graph for the process values for each channel from 1 to 4.

(17) Bar graph for the setpoint 1

This area provides a bar graph for the process values for each channel from 1 to 4

(18) Prediction of free movement

This area shows you the prediction of free movement in the form of a bar graph.

For each channel from 1 to 4, there is a bar graph for the prediction of free movement, that is, for the future behavior of the process within the overall prediction horizon, under the assumption that all manipulated variables are frozen at their current values.

This is why the prediction of free movement is only displayed in manual mode or in automatic mode with active tracking function.

The value range of the bar graph matches the value range of the assigned setpoint and current value bar.

(19) Displaying the limits

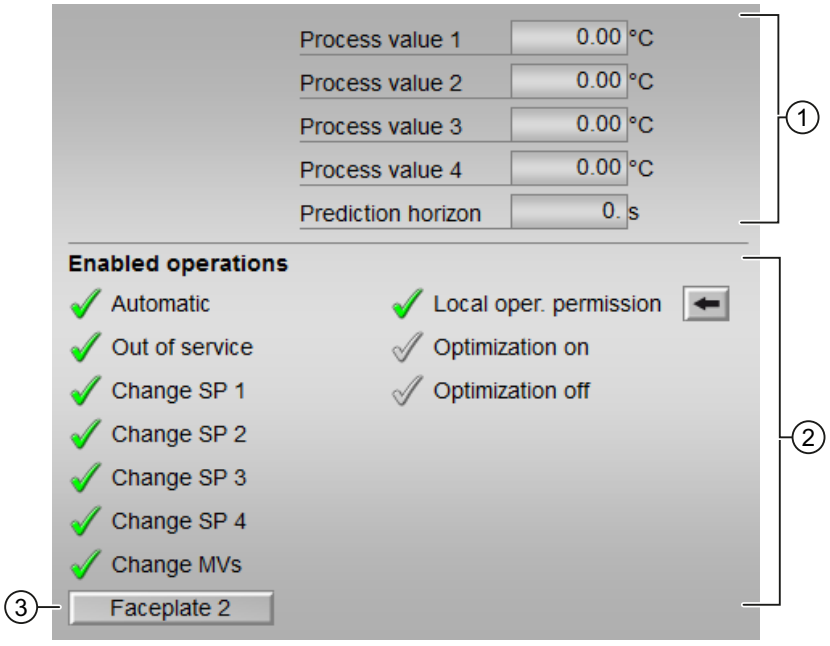
These triangles show the `SP_HiLim` and `SP_LoLim` setpoint limits configured in the ES.

(20) Static operating point optimization

Activate the optimization using the button at bottom right. Activation means that the optimized setpoints SP1Out...SP4Out are actually used instead of the SP1...SP4 setpoints specified in the faceplate for the closed-loop control. (The actual calculation of the optimum setpoints depends on this, and is only performed if one of the input variables for the optimization has changed.) The current value the economic performance criterion J appears in the display field below.

9.5.3 ModPreCon Preview

Preview for ModPreCon



The ModPreCon preview provides you the information on the following:

(1) Process value

(2) Enabled operation

(3) Navigation button for switching to the standard view of any faceplate

(1) Process value

This area displays the real process values (`PVx`) and the prediction horizon.

In the object properties (I/Os `PVxOut` > Identifier) of the block in CFC, you can specify the text to be displayed for these parameters.

Prediction horizon

The prediction horizon specifies how far the controller looks into the future of its calculation.

(2) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons enabled for operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

The following enabled operations for parameters are shown here:

Actions	Description
"Automatic"	You can switch to "automatic mode".
"Out of service":	You can switch to "Out of service" operating mode.
"Local operating permission"	Use the ← button to switch to the standard view of the OpStations block.
"Change SP1"	You can change the setpoint 1
"Change SP2"	You can change the setpoint 2
"Change SP3"	You can change the setpoint 3
"Change SP4"	You can change the setpoint 4
"Change MVs"	You can change the manipulated variables

Note

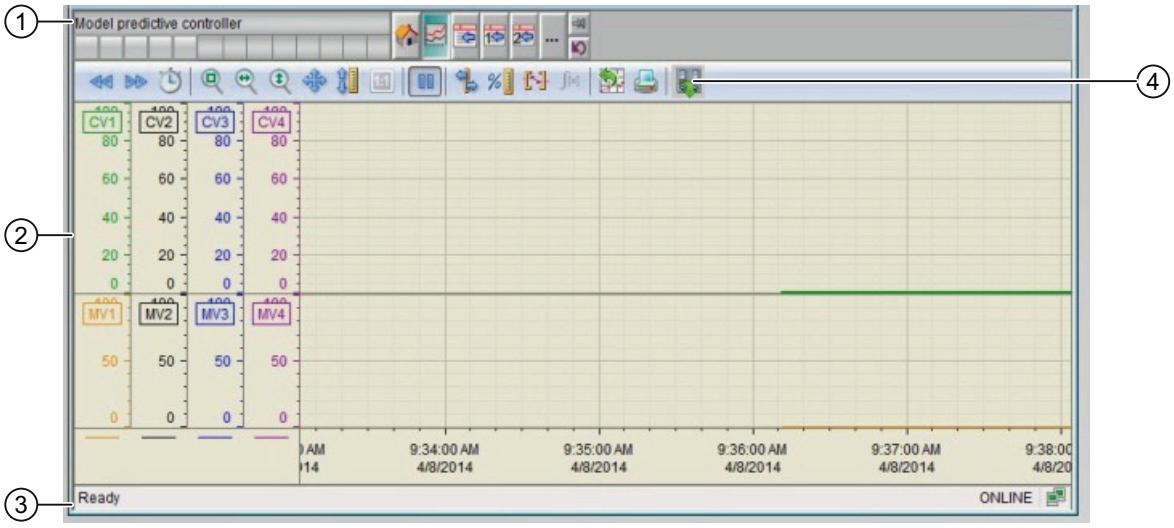
The OS operator must always be able to switch to "manual mode". That is why the switch to "manual mode" is not shown here in the faceplate.

(3) Navigation button for switching to the standard view of any faceplate

Use this navigation button to open the standard view of a block configured in the Engineering System (ES). The visibility of this navigation button depends on the configuration in the ES.

9.5.4 ModPreCon Trend view

Trend view of ModPreCon



(1) Toolbar

(2) Display area for trends

(3) Status bar

(4) Button for switching between archive tags and online tags. The status bar shows if the trend view is working with online data or archive data.

The Export button is only visible and operable with the "Higher-level process control" operating permission.

For additional information about the trend view, refer to the *WinCC Information System* Online Help.

The trend view is divided into two screen halves.

The upper screen half shows all controlled variables with their associated setpoints. The setpoint is shown in the same color as the associated process value to allow the assignment to be identified straight away. Setpoints are dashed lines, process values are bold lines. If a controlled variable is exactly on the setpoint, it hides the setpoint.

The lower screen half shows all manipulated variables.

Both screen halves use the same color sequence for the individual channels. The sequence starts at channel 1 with green (standard color for the process value with the PID controller) and then goes through the color spectrum from top to bottom as far as gray and black. Each channel has its own y-axis in the corresponding color.

9.5.5 ModPreCon Parameter view

ModPreCon parameter view

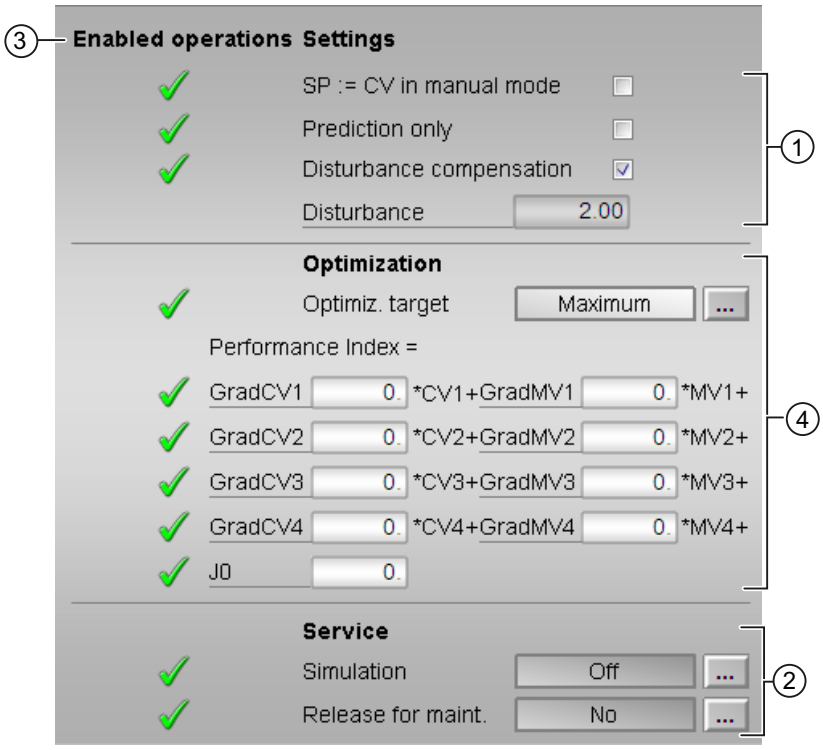


Figure 9-1 MPC10x10 Parameter

The parameter view provides information on the following:

(1) Settings

(2) Service

(3) Enabled operation

(4) Optimization

(1) Settings

You can activate the following functions for the controller in this area:

- "SP := PV in manual mode": ☑Bumpless switchover from "manual mode" to "automatic mode"
- "Prediction only" activate this special "operating mode" by selecting the check box. The controller then only listens in on the process and indicates what it would like to do in the next sampling step without actively intervening in the process
- "Disturbance compensation": ☑Select disturbance feedforward
- "Disturbance variable"

You cannot change the disturbance variable, it can only be displayed.

In the object properties (I/Os `DV1` > Identifier) of the block in CFC, you can specify the text to be displayed for this parameter.

(2) Service

You can select the following functions in this area:

- "Simulation"
- "Release for maintenance"

(3) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

(4) Optimization

This area provides information on the following:

Direction of the optimization (minimize or maximize)

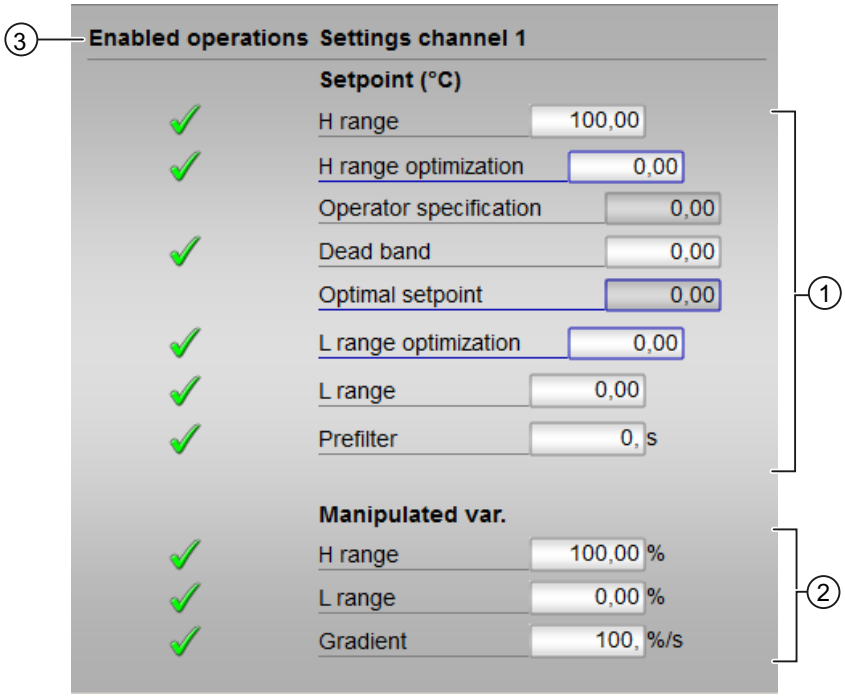
By default, the optimizer seeks to maximize the performance function, in the assumption that it is dealing with economic yield. If you want to search a minimum, however, because you are dealing with costs or consumption values, click this button.

Specification of performance criterion for the operating point optimization

The performance criterion consists of a weighted sum of all manipulated and controlled variables. For each manipulated variable and controlled variable, enter the appropriate weighting factor, i.e. the coefficient of the gradient vector. Zero means that the value of the corresponding manipulated variable or controlled variable no direct influence on the economic yield. If the controller has less than four manipulated variables or controlled variables, the irrelevant variables are hidden automatically.

9.5.6 ModPreCon Parameter view channel 1 to 4

ModPreCon parameter view channel 1 to 4



The layout of the parameter view for channels 1 to 4 is always identical. It provides information in the following areas:

(1) Displaying and changing the limit parameters for the setpoint

(2) Displaying and changing the limit parameters for the manipulated variable

(3) Enabled operation

(1) Displaying and changing the limit parameters for the setpoint

You can change the following parameters for the setpoint in this area:

- "H range": High limit for setpoint operation
- "H range optimization": High limit for optimizing the setpoint
- "Operator input": Display of the setpoint entered in the standard view, cannot be operated here.
- "Dead band": Dead band (Page 56), Error signal generation and dead band section
- "Optimal setpoint": Calculated by the optimization, cannot be operated
- "L range optimization": Low limit for optimizing the setpoint

- "L range": Low limit for setpoint operation
- "Prefilter": ModPreCon functions

(2) Displaying and changing the limit parameters for the manipulated variable

You can change the following parameters for the manipulated variable in this area:

- "H range": Upper limit of the manipulated variable for automatic mode
- "L range": Low limit of manipulated variable for automatic mode
- "Gradient limit": Maximum (absolute) change in the manipulated variable per sampling step

(3) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

9.6 PID controller blocks

9.6.1 PID controller block views

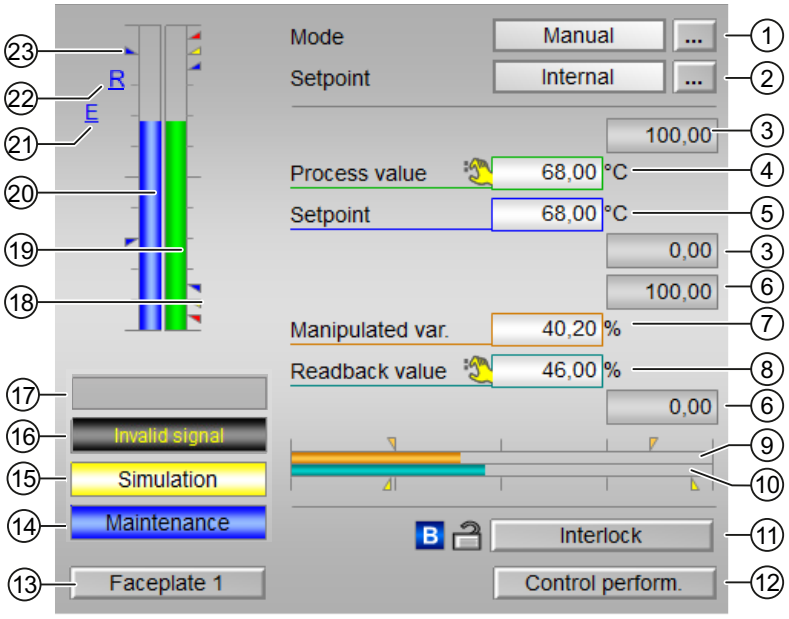
PIDConL views

The PID controller blocks views provides information on the following:

- PIDConL, PIDConS, PIDConR Standard view (Page 352)
- Alarm view (Page 450)
- Limit view of PID controllers (Page 360)
- Trend view (Page 456)
- Ramp view (Page 457)
- Parameter view of PID controllers (Page 437)
- PIDConL, PIDConS, PIDConR Preview (Page 358)
- Memo view (Page 453)
- Batch view (Page 452)

9.6.2 PIDConL, PIDConS and PIDConR Standard view

Standard view of PIDConL, PIDConS and PIDConR



The PIDConL Standard view consists of the following areas:

(1) Displaying and switching the operating mode

(2) Displaying and switching the setpoint

(3) High and low scale range for the process value

(4) Displaying the process value including signal status

(5) Displaying and changing the setpoint, including signal status

(6) High and low scale range for the setpoint

(7) Displaying and changing the manipulated variable and its signal status

(8) Displaying the position feedback, including signal status

(9) Bar graph for the manipulated variable

(10) Bar graph for position feedback

(11) Operator control and display area for interlock functions of the block

(12) Navigation button for the standard view of the "ConPerMon" block

(13) Navigation button for switching to the standard view of any faceplate

(14), (15), (16), and (17) Display area for block states

(18) Limit display

(19) Bar graph for the process value

(20) Bar graph for the setpoint

(21) Display of external setpoint

(22) Display for the target setpoint of the setpoint ramp

(23) Limit display for the setpoint

(1) Displaying and switching the operating mode

The following operating modes are available within the PIDConL block:

1. Manual mode
2. Automatic mode
3. Program mode
4. Out of service mode

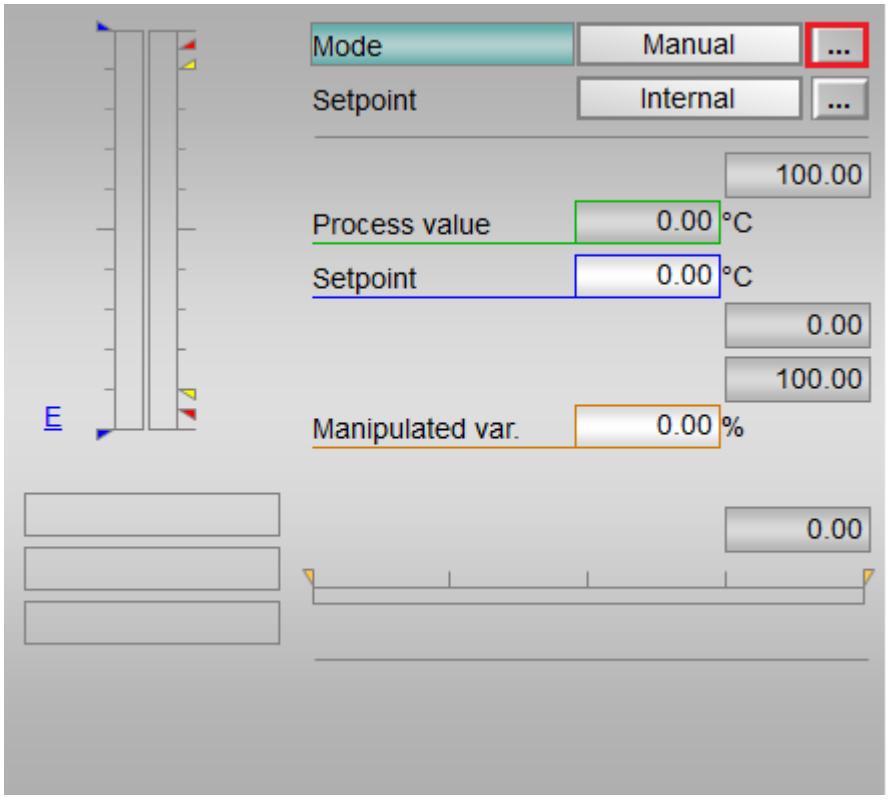
1. Manual mode**:** In manual mode, the control settings for the device are made manually by the operator. In this mode, the operator can set the setpoint value and manipulated variable (output signal). The manipulated variable can be analog or binary. It is used to activate a final controlling element with continuous action input.
   In this mode, the operator is able to switch the setpoint to the following types:
   - Internal
   - External
2. Automatic mode: The control settings for the controller are made automatically as calculated by the block algorithm.

3. Program mode**:** In this mode, it allows the operator to specify the setpoint or manipulated variable from a remote location.
   There are two types of program mode:
   - Program mode driven by setpoint (in automatic mode only)
   - Program mode driven by manipulated variable (in manual mode only)
4. Out of service mode: The prerequisite for switching to this mode is that the block is in manual mode. This mode is available to all blocks that have an operating mode switchover and a direct connection to the process (with a connection to a process tag, for example). This operating mode is intended for purposes of maintenance and servicing. All of the block's functions are disabled. No incoming or outgoing messages are generated or received. The only function still possible is an operating mode switchover.

Switching operating modes

Follow these steps to set the controller to a particular mode or to switch between different operating modes:

1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.

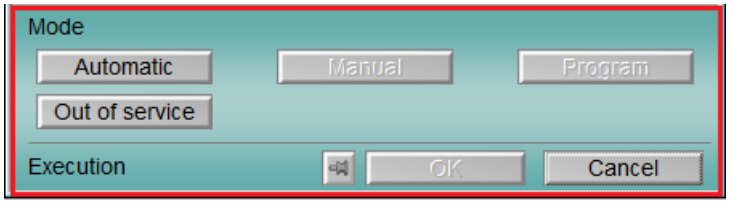


Note

The operating window is opened as an extension of the faceplate.

3. In the operating window, select the respective button for the desired operating mode.

4. If an acknowledgement is required, click OK.



5. The controller will be set to the selected operating mode.

(2) Displaying and switching the setpoint

The PIDConL block allows setpoints to be specified. This specification is carried out by means of a program or by means of the faceplate (operator).

The block supports the following setpoint types:

- Internal
- External

Follow the steps mentioned below to switch to a particular setpoint type:

1. Ensure the faceplate containing the respective block is open.
2. Select [...] and choose the setpoint type.
   The operating window is displayed as an extension of the faceplate.
3. To confirm execution, select OK.
   The setpoint type changes to the respective type you have selected.

(3) High and low scale range for the process value

These values provide information on the display range for the process value bar graph.

(4) Display of the process value including signal status

This area shows the current process value with the corresponding signal status.

(5) Displaying and changing the setpoint including signal status

This area shows the current setpoint with the corresponding signal status.

Follow the steps mentioned below to add or change the setpoint value:

1. Ensure the appropriate mode is selected within the faceplate.
2. Click the setpoint input box, the bottom portion of faceplate expands that lists the options for changing setpoint value.
3. To confirm execution, select **OK**.
   The setpoint value will be reflected in the setpoint input box in the faceplate window.

Note

In external setpoint type, the operator will not be able to modify the setpoint value in manual or automatic mode.
Refer to the "Changing values" for more information on changing the setpoint value.

(6) High and low scale range for the setpoint

This area is already set and cannot be changed.

(7) Displaying and changing the manipulated variable including signal status

This area shows the current manipulated variable with the corresponding signal status.

Follow the steps mentioned below to add or change the manipulated variable value:

1. Ensure the appropriate mode is selected within the faceplate.
2. Click the manipulated variable input box, the bottom portion of faceplate expands, listing the options for changing manipulated variable value.
3. To confirm execution, select **OK**.
   The manipulated variable value will be reflected in the manipulated variable input box in the faceplate window.

Note

Refer to the "Changing values" for more information on changing the manipulated value.

(8) Display of the position feedback including signal status

This display is only visible when the corresponding block input is connected.

This area shows the current feedback of the manipulated variable with the corresponding signal status.

(9) Bar graph for the manipulated variable

This area shows the current manipulated variable in the form of a bar graph.

(10) Bar graph for position feedback

This display is only visible when the corresponding block input is connected.

This area shows the current position feedback in the form of a bar graph.

(11) Operator control and display area for interlock functions of the block (not with PIDConS)

This display is only visible when the corresponding block input is connected. You can use this button to control the interlock functions of the block.

The following is displayed in addition to the buttons:

- Interlock status
- Signal status
- Bypass information

(12) Navigation button for the standard view of the ConPerMon block

Use this navigation button to open the standard view of theConPerMonblock.

(13) Navigation button for switching to the standard view of any faceplate

Use this navigation button to open the standard view of a block.

(14), (15), (16), and (17) Display area for block states

This area provides additional information on the operating state of the block (from high to low according to priority):

- Invalid signal
- Optimizing
- Tracking
- Forced tracking
- Load SP
- SP ramp active

(18) Limit display

These colored triangles indicate the configured limits in the respective bar graph:

- Red: Alarm
- Yellow: Warning
- Blue: Tolerance

(19) Bar graph for the process value

This area shows the current process value in the form of a bar graph.

(20) Bar graph for the setpoint

This area shows the current setpoint in the form of a bar graph.

(21) Display of external setpoint

This display [E] is only visible when you have selected "Internal" setpoint specification. It shows the external setpoint that would apply if you were to change the setpoint specification to "external".

(22) Display for the target setpoint of the setpoint ramp

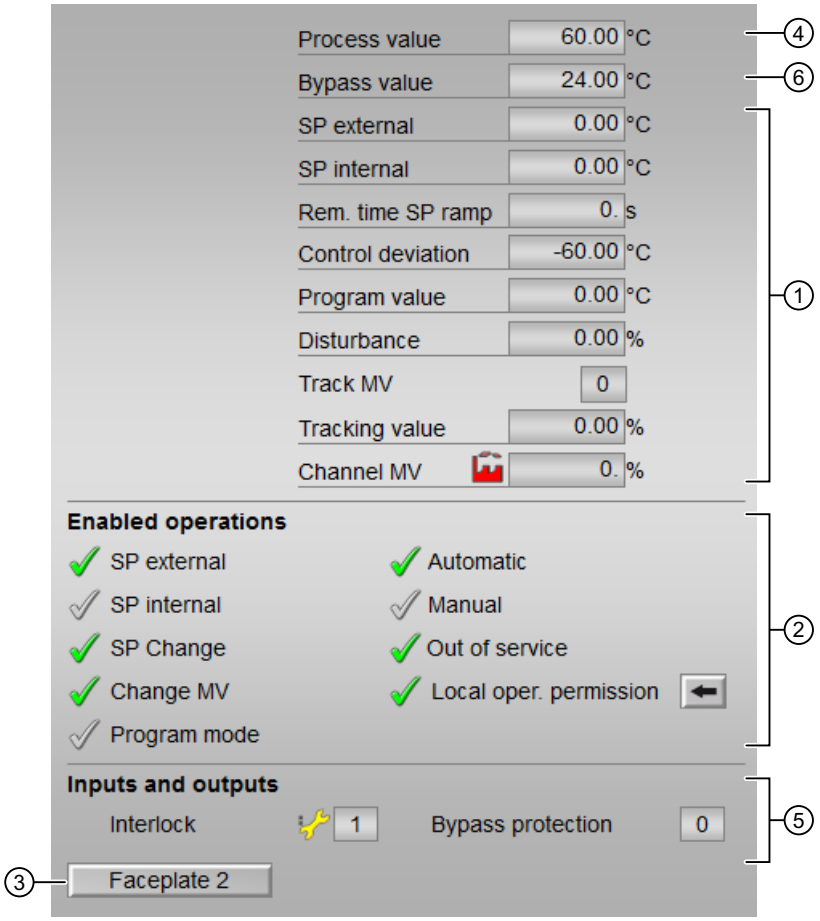
This display [R] shows the target setpoint and is only visible if you have enabled ramp generation in the Ramp view

(23) Limit display for the setpoint

These triangles show the setpoint limits.

9.6.3 PIDConL, PIDConS and PIDConR Preview

Preview of PIDConL, PIDConS and PIDConR



The PIDConL, PIDConS and PIDConR preview consists of the following areas:

(1) Preview area

(2) Enable operations

(3) Navigation button

(4) Process value

(5) Inputs and outputs

(6) Bypass value

(1) Preview area

This area provides a preview for the following values:

Values	Description
SP external	Currently applicable external setpoint
SP internal	Currently applicable internal setpoint
Rem. time SP ramp	Remaining time to reach the ramp target value (not with PIDConS).
Control deviation	Current control deviation
Program value	Default value for program mode
Disturbance value	Additive value for feedforward control
Track MV	Track manipulated variable (value is 1)
Tracking value	Effective manipulated variable for "Track manipulated variable"
Channel MV	Display of the manipulated variable by the output channel block

(2) Enable operations

This area shows all operations for which special operator permissions are assigned.

The icons for enabled operation are described below:

- Green check mark: The operator can control this parameter.
- Gray check mark: The operator cannot control this parameter at this time, due to the process.
- Red cross: The operator cannot control this parameter due to the configured AS operator permissions.

The following enabled operations are shown here:

Signals	Description
SP external	You can feedforward the external setpoint.
SP internal	You can feedforward the internal setpoint.
Change SP	You can change the setpoint.
Change MV	You can change the manipulated variable.
Program mode	You can switch to program mode. (not with PIDConS)

Signals	Description
Automatic	You can switch to automatic mode.
Manual	You can switch to manual mode.
Out of service	You can switch to out of service operating mode.
Local operator permission	Use the ← button to switch to a standard view of the "OpStations" block.

(3) Navigation button

Use this navigation button to open the standard view of a block.

(4) Process value

This area displays the real process value (PV).

(5) Inputs and outputs

Interlock

This display is only visible when the corresponding block input is connected.

- "Interlock" (not with PIDConS): This display is only visible when the corresponding block input is connected.
  - 0 = Interlocking without reset is active; you can operate the block without reset once the interlocking condition has disappeared
  - 1 = "Good" state
- "Interlock deact." (not with PIDConS):
  - 0 = Bypass disabled
  - 1 = Bypassing interlock in "local mode" and in "simulation"

(6) Bypass value

This area displays the bypass value.

9.6.4 Limit view of PID controllers

Limit view of PID controllers

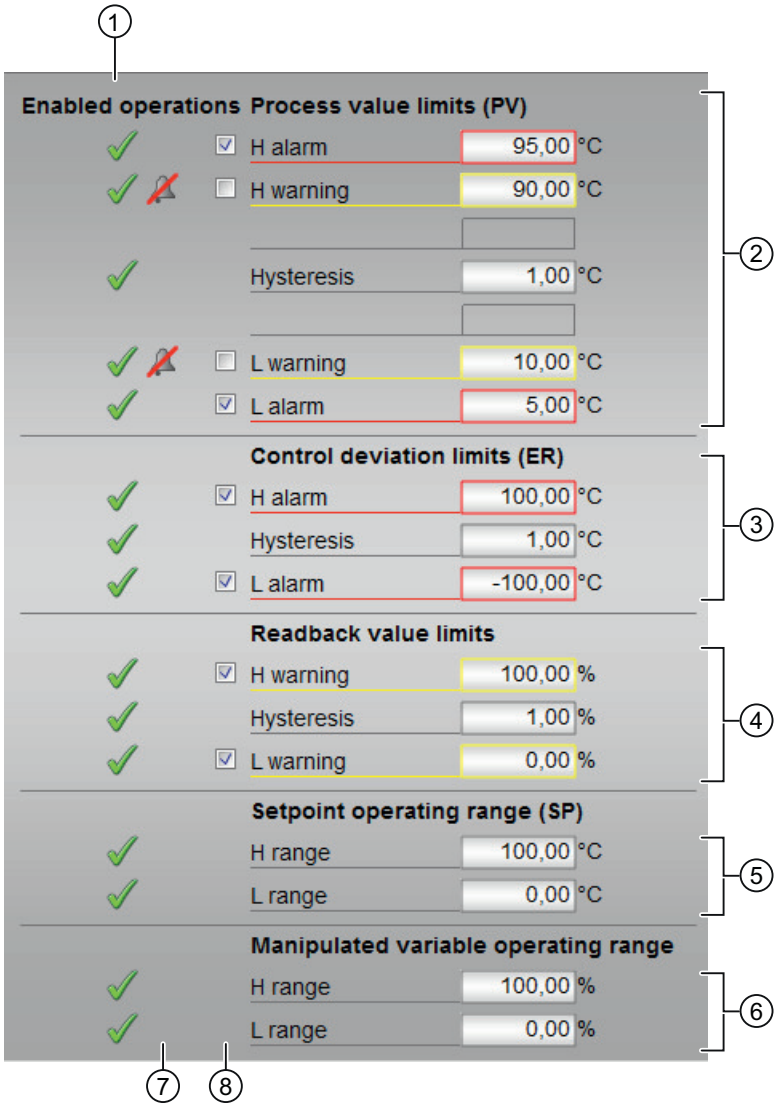
Several values are set in this view by default:

- Process value limits
- Error signal limits
- Readback value limits
- Setpoint operation range

The toolbars of the faceplate and the block icon indicate when the limits are reached or violated.

Note

The symbols displayed are not valid for user-configured message classes.



The limit view consists of the following:

(1) "Enabled operation"

(2) "Process value limits (PV)"

(3) "Error signal limits (ER)" (not with PIDConS)

(4) "Readback value limits (RBK)" (not with PIDConS)

(5) Setpoint operation range (SP)

(6) Manipulated variable operating range

(7) "Message suppression / delay"

(8) Suppress messages

(1) "Enabled operation"

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

(2) "Process value limits (PV)"

In this area, you can enter the limits for the process value.

You can change the following limits:

- "H alarm": Alarm high
- "H warning": Warning high
- "H tolerance": Tolerance high (not with PIDConS)
- "Hysteresis"
- "L tolerance": Tolerance low (not with PIDConS)
- "L warning": Warning low
- "L alarm": Alarm low

(3) "Error signal limits (ER)" (not with PIDConS)

In this area, you can enter the limits for the control deviation.

You can change the following limits:

- "H alarm": Alarm high
- "Hysteresis"
- "L alarm": Alarm low

(4) "Readback value limits (RBK)" (not with PIDConS)

In this area, you can enter the limits for the readback value.

You can change the following limits:

- "H warning": Warning high
- "Hysteresis"
- "L warning": Warning low

(5) Setpoint operation range (SP)

In this area, you can enter the limits for the setpoint operation range.

You can change the following limits:

- "H range": Range limit high
- "L range": Range limit low

(6) Manipulated variable operating range

In this area, you can enter the limits for the manipulated variable operation range.

You can change the following limits:

- "H range": Range limit high
- "L range": Range limit low

(7) "Message suppression / delay"

Message suppression indicates whether or not the suppression of the associated message inthe AS block is activated with the xx_MsgEn parameter. The output of messages is not suppressed when the block is installed (all xx_MsgEn parameters are preset to 1). Messages can only be output if limit monitoring of the additional analog value has been enabled.

(8) Suppress messages

You can enable / disable messages by setting the check mark.

9.7 PIDStepL - Step controller

9.7.1 PIDStepL views

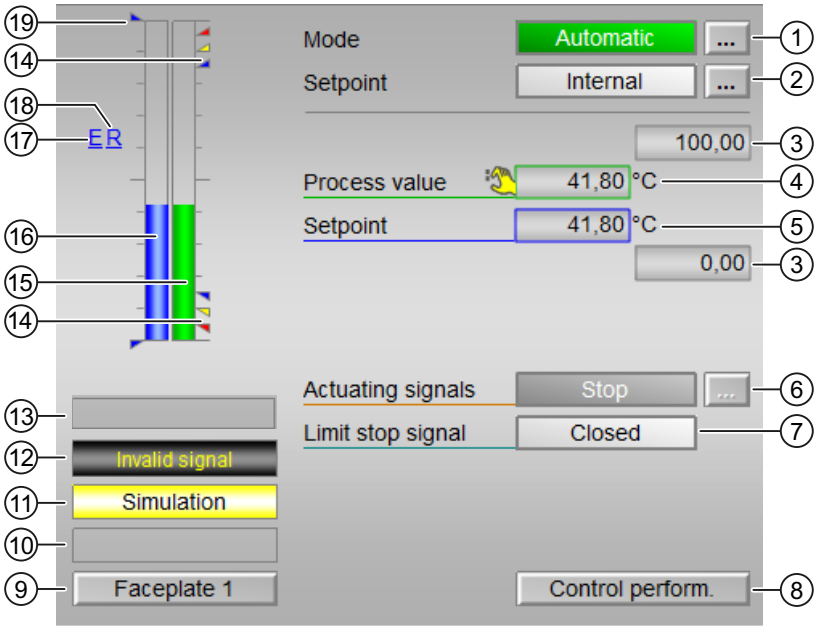
PIDStepL views

The PIDStepL views provides information on the following:

- PIDStepL standard view without position feedback (Page 365)
- PIDStepL standard view with position feedback (Page 370)
- Alarm view (Page 450)
- Limit view of PID controllers (Page 440)
- Trend view (Page 456)
- Ramp view (Page 457)
- Parameter view of PID controllers (Page 437)
- PIDStepL Preview (Page 373)
- Memo view (Page 453)
- Batch view (Page 452)

9.7.2 PIDStepL Standard view without position feedback

PIDStepL Standard view without position feedback



The PIDStepL Standard view without position feedback provides information on the following:

(1) Displaying and switching the operating mode

(2) Displaying and switching the setpoint

(3) High and low scale range for the process value

(4) Display of the process value including signal status

(5) Displaying and changing the setpoint including signal status

(6) Displaying and changing manipulated variables

(7) Displaying the feedback

(8) Navigation button for switching to the standard view of the ConPerMon block

(9) Navigation button for switching to the standard view of any faceplate

(10), (11), (12), and (13) Display area for block states

(14) Limit display

(15) Bar graph for the process value

(16) Bar graph for the setpoint

(17) Display of external setpoint

(18) Display for the target setpoint of the setpoint ramp

(19) Displaying the limits

(1) Displaying and switching the operating mode

This area provides information on the current valid operating mode. The following operating modes can be shown here:

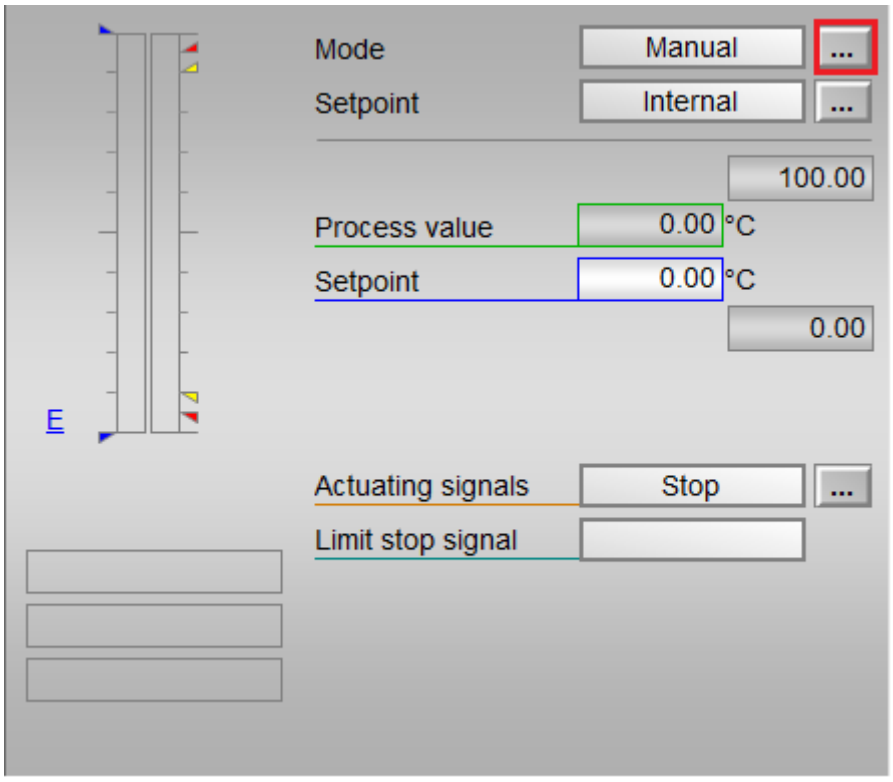
1. Manual mode
2. Automatic mode
3. Program mode for controllers
4. Out of service

1. Manual mode: In manual mode, the control settings for the device are made manually by the operator. The operator can change the manipulated variable (output signal). The manipulated variable can be analog or binary.
2. Automatic mode: In automatic mode, control of the device is performed automatically by the program.
3. Program mode for controllers: The interface of primary controller functions provides controller functions which run on an external PC as an OPC client, the option of using the control from the controller function block and specifying the setpoint or manipulated variable from a remote location.
4. Out of service mode: This operating mode is available to all devices that have an operating mode switchover and a direct connection to the process. This mode is intended for purposes of maintenance and servicing (replacing the device, for example). All functions of the device are disabled in this operating mode. Incoming or outgoing messages are not received or generated in this case. Only one operating mode switchover is possible in this operating mode.

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

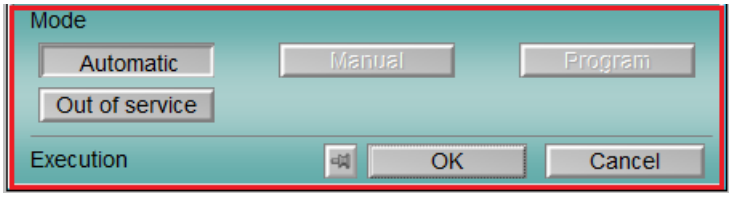
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.
4. If acknowledgement is required, click "OK".



5. The motor will be switched to the selected operating mode.

(2) Displaying and switching the setpoint

This area shows how to specify the setpoint. The setpoint can specified as follows:

1. Internal
2. External

(3) High and low scale range for the process value

These values provide information on the display range for the bar graph of the process value.

(4) Display of the process value including signal status

This area shows the current process value with the corresponding signal status.

(5) Displaying and changing the setpoint including signal status

This area shows the current setpoint with the corresponding signal status.

(6) Displaying and changing manipulated variables

This area shows you the currently valid manipulated variable. The following manipulated variables can be selected:

- "Open"
- "Stop"
- "Close"

(7) Displaying the feedback

The following feedback can be displayed:

- "Open"
- "Closed"

(8) Navigation button for switching to the standard view of the ConPerMon block

Use this navigation button to reach the standard view of the ConPerMon block.

(9) Navigation button for switching to the standard view of any faceplate

Use this navigation button to reach the standard view of a configured block.

(10), (11), (12), and (13) Display area for block states

This area provides additional information on the operating state of the block (from high to low according to priority):

- "Maintenance"
- "Simulation"
- "Invalid signal"
- "Optimization"
- "Tracking"
- "Forced tracking"
- "SP ramp active"

(14) Limit display

These colored triangles show you the configured limits in the respective bar graph.

(15) Bar graph for the process value

This area shows the current process value in the form of a bar graph.

(16) Bar graph for the setpoint

This area shows the current setpoint in the form of a bar graph.

(17) Display of external setpoint

This display [E] is only visible when you have selected "Internal" setpoint specification. It shows the external setpoint that would apply if you were to change the setpoint specification to "external".

(18) Display for the target setpoint of the setpoint ramp

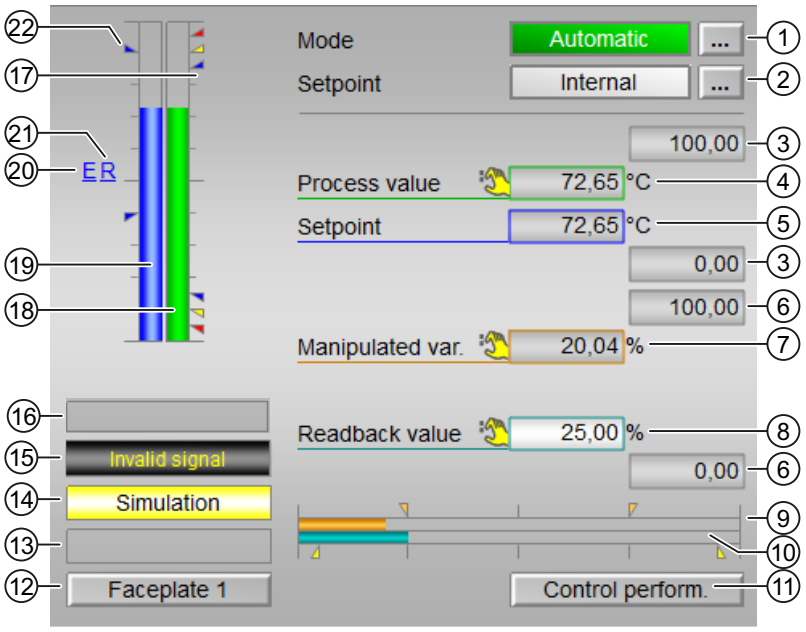
This display [R] shows you the target setpoint and is only visible if you have enabled ramp generation in the Ramp view

(19) Displaying the limits

These triangles show configured setpoint limits.

9.7.3 PIDStepL Standard view with position feedback

PIDStepL Standard view with position feedback



The PIDStepL Standard view with position feedback provides information on the following:

(1) Displaying and switching the operating mode

(2) Displaying and switching the setpoint

(3) High and low scale range for the process value

(4) Display of the process value including signal status

(5) Displaying and changing the setpoint including signal status

(6) High and low limits of the manipulated variable

(7) Displaying and changing manipulated variables

(8) Displaying the feedback

(9) Bar graph for the manipulated variable

(10) Bar graph for the readback value

(11) Navigation button for switching to the standard view of the ConPerMon block

(12) Navigation button for switching to the standard view of any faceplate

(13), (14), (15), and (16) Display area for block states

(17) Limit display

(18) Bar graph for the process value

(19) Display of external setpoint

(20) Display for the target setpoint of the setpoint ramp

(21) Bar graph for the setpoint

(22) Displaying the limits

(1) Displaying and switching the operating mode

This area provides information on the current valid operating mode. For more information, refer to PIDStepL Standard view without position feedback (Page 365)

(2) Displaying and switching the setpoint

This area shows how to specify the setpoint. For more information, refer to PIDStepL Standard view without position feedback (Page 365)

(3) High and low scale range for the process value

These values provide information on the display range for the bar graph of the process value.

(4) Display of the process value including signal status

This area shows the current process value with the corresponding signal status.

(5) Displaying and changing the setpoint including signal status

This area shows the current setpoint with the corresponding signal status.

(6) High and low limits of the manipulated variable

You can only display and change a manipulated variable in "manual mode".

(7) Displaying and changing manipulated variables

You can only display and change a manipulated variable in "manual mode".

(8) Displaying the feedback

This display is only visible when the corresponding block input is interconnected.

The following feedback can be displayed:

- "Open"
- "Closed"

(9) Bar graph for the manipulated variable

The bar graph for the manipulated variable is only available in manual mode.

(10) Bar graph for the readback value

This display is only visible when the corresponding block input is interconnected. The bar graph for the readback value is only available in manual mode.

(11) Button for switching to the standard view of the ConPerMon block

Use this button for the standard view of the ConPerMon block.

(12) Button for switching to the standard view of any faceplate

Use this button for the standard view of a configured block.

(13), (14), (15), and (16) Display area for block states

This area provides additional information on the operating state of the block (from high to low according to priority):

- "Maintenance"
- "Simulation"
- "Invalid signal"
- "Optimization"
- "Tracking"
- "Forced tracking"
- "SP ramp active"

(17) Limit display

These colored triangles show you the configured limits in the respective bar graph.

(18) Bar graph for the process value

This area shows the current process value in the form of a bar graph.

(19) Display of external setpoint

This display [E] is only visible when you have selected "Internal" setpoint specification. It shows the external setpoint that would apply if you were to change the setpoint specification to "external".

(20) Display for the target setpoint of the setpoint ramp

This display [R] shows the target setpoint and is only visible if you have enabled ramp generation in the Ramp view.

(21) Bar graph for the setpoint

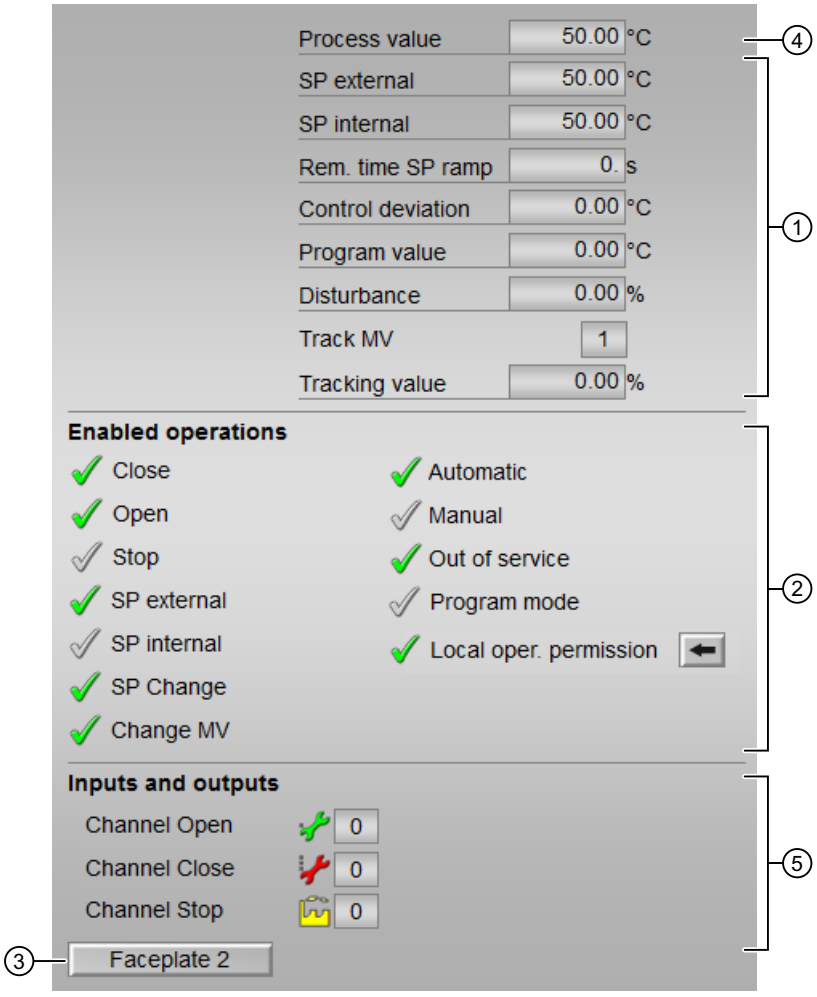
This area shows the current setpoint in the form of a bar graph.

(22) Displaying the limits

These triangles show the configured setpoint limits.

9.7.4 PIDStepL Preview

Preview of PIDStepL



(1) Preview area

(2) Enable operations

(3) Navigation button for switching to the standard view of any faceplate

(4) Process value

(5) Display of the current control signal

(1) Preview area

This area shows you a preview for the following values:

- "SP external": currently applicable external setpoint
- "SP internal": currently applicable internal setpoint
- "Rem. time SP ramp": Remaining time to reach the ramp target value.
- "Error signal": Current control deviation
- "Program value": specified value for program mode
- "Disturbance variable": additive value for feedforward control
- "Track MV": Track manipulated variable (value is 1)
- "Tracking value": effective manipulated variable for "Track manipulated variable"

(2) Enable operations

Icons for enabled operation:

Green check mark: the OS operator can control this parameter

Gray check mark: the OS operator cannot control this parameter at this time due to the process

Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions

The following enabled operations are shown here:

Actions	Descriptions
"Close"	You can select the manipulated variable "Close". If text is configured for this command, it is also displayed in brackets.
"Open"	You can select the manipulated variable "Open". If text is configured for this command, it is also displayed in brackets.
"Stop"	You can select the manipulated variable "Stop". If text is configured for this command, it is also displayed in brackets.
"SP external"	You can feedforward the external setpoint.
"SP internal"	You can feedforward the internal setpoint.
"Change SP"	You can change the setpoint.
"Change MV"	You can change the manipulated variable.
"Program mode"	You can switch to "program mode".
"Automatic"	You can switch to "automatic mode".
"Manual"	You can switch to "manual mode".

Actions	Descriptions
"Out of service"	You can switch to "Out of service" operating mode.
"Local operator permission"	Use the ← button to switch to the standard view of the OpStations block.

(3) Navigation button for switching to the standard view of any faceplate

Use this navigation button to open the standard view of a block configured in the engineering system.

(4) Process value

This area displays the real process value (PV).

(5) Display of the current control signal

This area shows the most important parameters for this block with the current selection

- "Channel Open": Signal from the output channel block for "Open"
- "Channel Close": Signal from the output channel block for "Close"
- "Channel Stop": Signal from the output channel block for "Stop"

9.8 Ratio - Ratio controlling

9.8.1 Ratio views

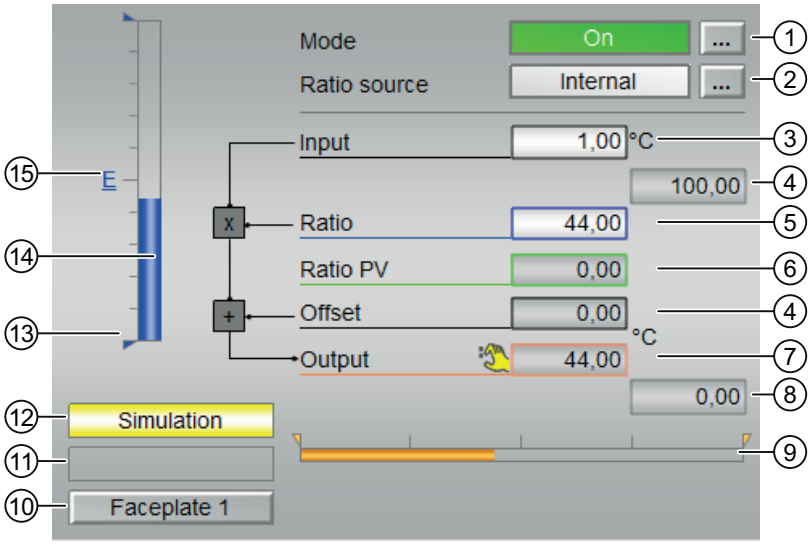
Ratio views

The Ratio views provides information on the following:

- Ratio Standard view (Page 376)
- Ratio Parameter view (Page 379)
- Ratio Preview (Page 380)
- Memo view (Page 453)
- Trend view (Page 456)

9.8.2 Ratio Standard view

Standard view of Ratio



(1) Displaying and switching the operating mode

(2) Displaying and switching the ratio source

(3) Displaying the input value

(4) High and low scale range for the ratio

(5) Displaying and switching the default ratio

(6) Displaying the ratio PV

(7) Display of the `Offset`

(8) Displaying the output value

(9) Bar graph for the output

(10) Displaying the limit

(11) Block states

(12) Display area for block states

(13) Display of the limits for the ratio

(14) Bar graph for the default ratio

(15) Display of external setpoint

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. The following operating modes can be shown here:

- On
- Out of service

(2) Displaying and switching the ratio source

This area shows you the currently valid signal source for the ratio setpoint. The following signal sources can be shown here:

- "External"
- "Internal"

(3) Displaying the input value

The faceplate is a schematic representation of the function of the Ratio block as a signal flow chart:

Output = Input · Ratio + `Offset`

The input is typically the flow setpoint or actual value of the primary component of a ratio controller.

(4) High and low scale range for the ratio

The scale range is based on the bar graph for the ratio specification.

(5) Displaying and switching the default ratio

This area shows you the currently valid specification for the ratio.

The ratio source **(2)** needs to be set to "internal" in order to change this value.

(6) Displaying the ratio PV

This area shows you the current ratio actual value with the corresponding signal status, that is, the ratio of the actually measured PV from the active controller. The task of the ratio controller is to set the flow of all components so that the actual ratio approximates the specified ratio as closely as possible.

(7) Display of the Offset

This area shows the current Offset.

(8) Displaying the output value

This area shows the current output value, which typically serves as the setpoint for the flow of the secondary component.

(9) Bar graph for the output

This display graphically represents the output value with the limits set in the Engineering System (ES) (orange triangles, output parameters OutHiLmOut and OutLoLmOut).

(10) Displaying the limit

This status display is based on the limit of the output value Out.

(11) Display area for block states

This area shows if the output value has violated the range limits:

- "Output ≥ HL"
- "Output ≤ LL"

You can set the range limits in the parameter view (Page 379) of the block.

(12) Display area for block states

This area provides additional information on the operating state of the block:

- Simulation

(13) Display of the limits for the ratio

This blue triangle shows the configured range limits for the ratio.

(14) Bar graph for the default ratio

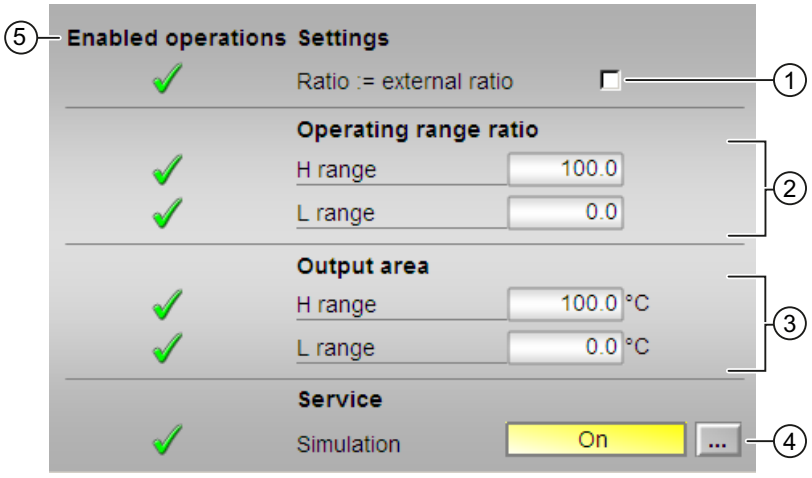
This area shows you the currently valid specification for the ratio in the form of a bar graph.

(15) Display of external setpoint

This display [E] is only visible when you have selected "Internal" setpoint specification. It shows the external setpoint that would apply if you were to change the setpoint specification to "external".

9.8.3 Ratio Parameter view

Parameter view of Ratio



(1) Settings Ratio := external ratio

(2) Operating range ratio

(3) Range for output value

(4) Service

(5) Enabled operations

(1) Settings Ratio := external ratio

When the check box is selected ☑, the ratio is bumplessly switched from external to internal. The internal ratio value is tracked to the external one.

(2) Operating range ratio

This is where you specify the operating range for the ratio. The range is indicated by a blue triangle in the standard view of the bar graph.

(3) Range for output value

This is where you specify the operating range for the output value.

(4) Service

You can select the following functions in this area:

- "Simulation"

(5) Enabled operations

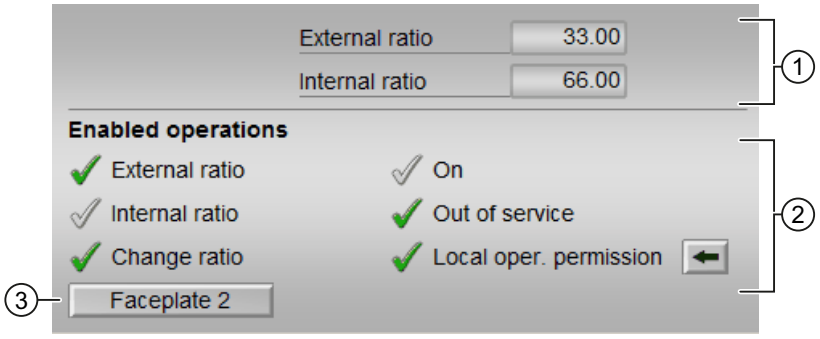
This area shows all operations for which special operator control permissions are assigned. They depend on the configuration in the engineering system (ES) that applies to this block.

Symbols for enabled operations:

- **Green check mark**: the OS operator can control this parameter
- **Gray check mark**: the OS operator cannot control this parameter at this time due to the process
- **Red cross**: the OS operator cannot control this parameter due to the configured AS operator control permissions.

9.8.4 Ratio Preview

Preview of Ratio



(1) Preview area

(2) Enabled Operations

(3) Navigation button for switching to the standard view of any faceplate

(1) Preview area

This area shows you a preview for the following values:

- "External ratio": currently applicable external ratio
- "Internal ratio": currently applicable internal ratio

(2) Enabled operations for parameters

This area shows all operations for which special operating permissions are assigned.

Icons for enabled operations:

- **Green check mark**: the OS operator can control this parameter
- **Gray check mark**: the OS operator cannot control this parameter at this time due to the process
- **Red cross**: the OS operator cannot control this parameter at all due to the configured AS operating permissions.

The following enabled operations are shown here:

- "Ratio external": You can change the external ratio.
- "Ratio internal": You can change the internal ratio.
- "Change ratio": You can change the ratio.
- "On": You can switch to "On" operating mode.
- "Out of service": You can switch to "Out of service" operating mode.
- "Local operating permission": Use the ← button to switch to the standard view of the OpStations block.

(3) Navigation button for switching to the standard view of any faceplate

Use this navigation button to reach the standard view of a block configured.

9.9 MPC10x10 - Large predictive controller

9.9.1 MPC10x10 views

MPC10x10 views

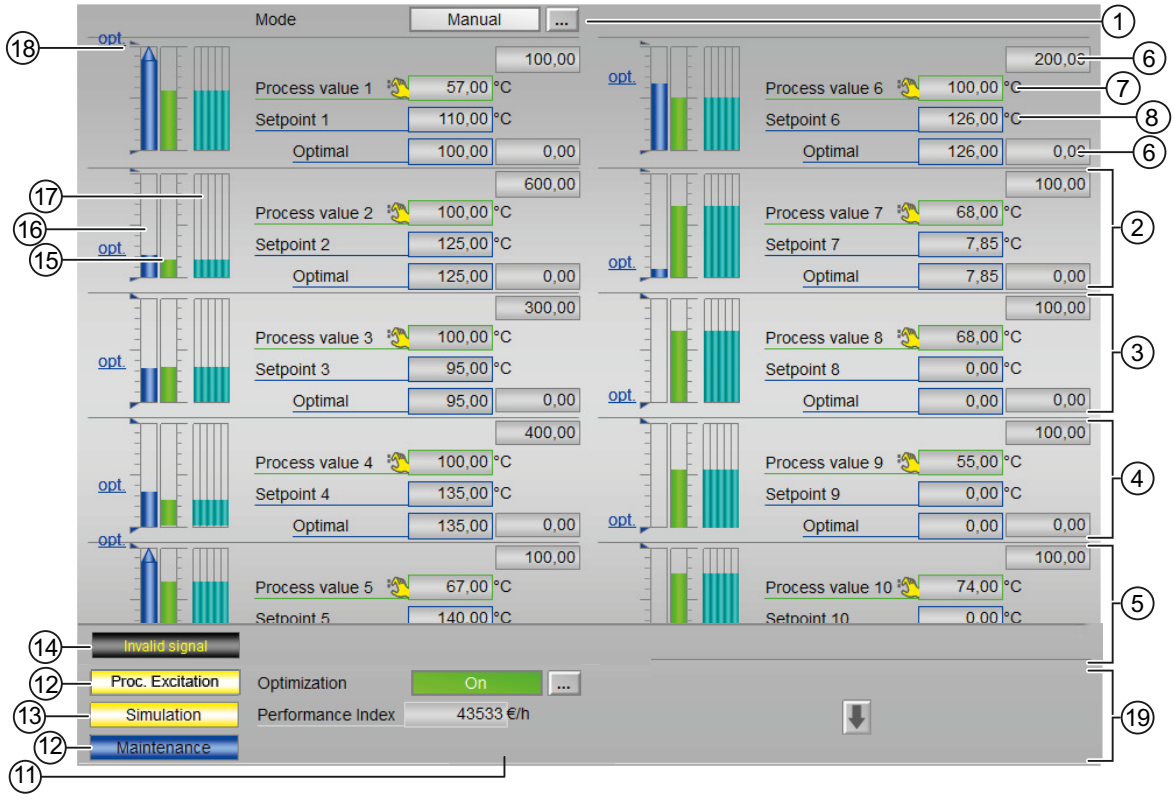
The MPC10x10 block provides the following views:

- MPC10x10 Standard view (Page 383)
- MPC10x10 Parameter view (Page 388)
- MPC10x10 CV Parameter view (Page 390)
- MPC10x10 MV Parameter view (Page 391)
- MPC10x10 Preview (Page 392)
- MPC10x10 Trend view (Page 394)
- Trend view (Page 456)
- Memo view (Page 453)
- Batch view (Page 452)

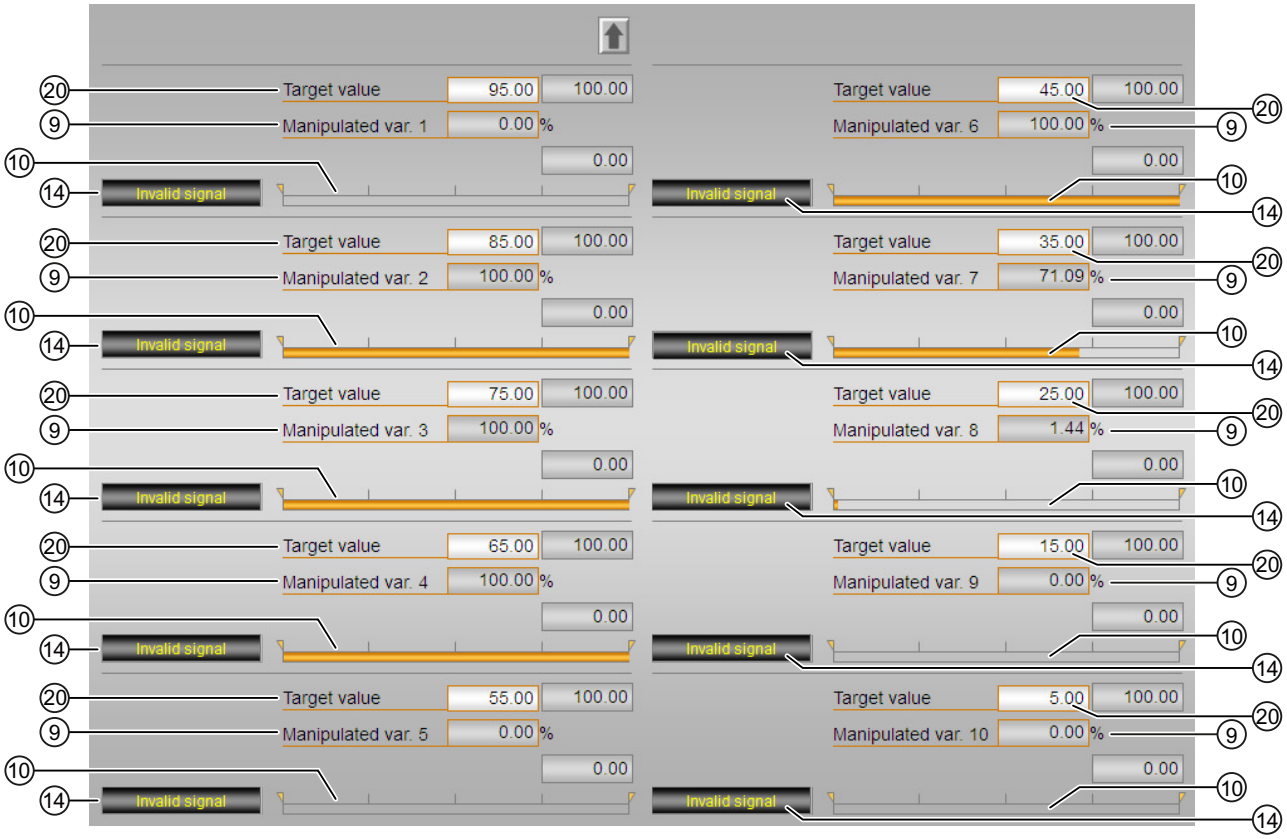
9.9.2 MPC10x10 Standard view

Standard view of MPC10x10

Upper half of the screen (controlled variables)



Lower screen half (manipulated variables)



(1) Displaying and switching the operating mode

(2)(3)(4) and (5) Displaying and switching for values for channels 1 to 10

(6) High and low scale range for the process value

(7) Displaying and changing the process value including signal status

(8) Displaying and changing the setpoint including signal status

(9) Displaying and changing the manipulated variable including signal status

(10) Bar graph for the manipulated variable with limit display

(11) Navigation button for switching to the standard view of any faceplate

(12), (13), (14), and (15) Display area for block states

(16) Display for states of the manipulated channel

(17) Bar graph for the process value 1

(18) Bar graph for the setpoint 1

(19) Prediction of free movement

(20) Displaying the limits

(21) Static operating point optimization

(22) Displaying and changing the target value for the manipulated variable

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode.

1. Manual mode
2. Automatic mode
3. Out of service mode

(2), (3), (4) and (5) Displaying and switching for values for channels 1 to 10

This area always has the same layout for channels 1 to 10.

(6) High and low scale range for the process value

These values provide information on the display range for the bar graph of the process value.

(7) Displaying and changing the process value including signal status

This area shows the current process value with the corresponding signal status.

The process value is normally displayed and cannot be operated. Process values in the faceplate can only be changed within the context of internal block simulation.

In the object properties (I/Os PVx_Out > Identifier) of the block in CFC, you can specify the text to be displayed for these parameters.

(8) Displaying and changing the setpoint including signal status

This area shows the current setpoint with the corresponding signal status.

(11) Navigation button for switching to the standard view of any faceplate

Use this navigation button to open the standard view of a block configured in the engineering system.

(12), (13), (14), (15) Display area for block states

This area provides additional information on the operating state of the block:

- "Maintenance"
- "Process excitation"
- "Simulation"
- "Invalid signal"
- "Tracking on"

(16) Bar graph for the process value 1

There is a bar graph for the process value for every channel 1 to 10.

This area shows the current setpoint in the form of a bar graph.

(17) Bar graph for the setpoint 1

There is a bar graph for the setpoint for every channel 1 to 10.
This area shows the current setpoint in the form of a bar graph.

(18) Prediction of free movement

This area shows you the prediction of free movement in the form of a bar graph. For each channel from 1 to 10, there is a bar graph for the prediction of free movement, that is, for the future behavior of the process within the overall prediction horizon, under the assumption that all manipulated variables are frozen at their current values.

This is why the prediction of free movement is only displayed in manual mode or in automatic mode with active tracking function.

The value range of the bar graph matches the value range of the respective setpoint and current value bar.

(19) Displaying the limits

These triangles show the setpoint limits configured in the engineering system (ES).

(20) Steady state operating point optimization

Activate the optimization using the button at bottom right. Activation means that the optimized setpoints are actually used instead of the setpoints specified in the faceplate for the closed-loop control. (The actual calculation of the optimum setpoints is not depending on this, and is only performed if one of the input variables for the optimization has changed.) The current value the economic performance index J appears in the display field below.

When optimization is enabled, the optimum setpoints are displayed on the setpoint bar as small, horizontal lines and highlighted with the abbreviation "opt.". The numerical values of the optimum setpoints are then displayed left of the input fields for the setpoints.

Lower screen half (manipulated variables)

(9) Displaying and changing the manipulated variable including signal status

This area shows the current manipulated variable with the corresponding signal status. Refer to the Changing values section for information on changing the manipulated variable. You can only make a change in manual mode.

In the object properties (I/Os MVx > Identifier) of the block in CFC, you can specify the text to be displayed for these parameters.

(10) Bar graph for the manipulated variable with limit display

This area shows the current manipulated variable in the form of a bar graph. The visible area in the bar graph depends on the configuration in the Engineering System (ES):

- Limits: MVxHiLim and MVxLoLim
- Display area: MVxManHiLim and MVxManLoLim

(21) Display for states of the manipulated channel

There is a display for the state of the manipulated channel for channels 1 to 10: the status display only appears if the respective channel is tracked:

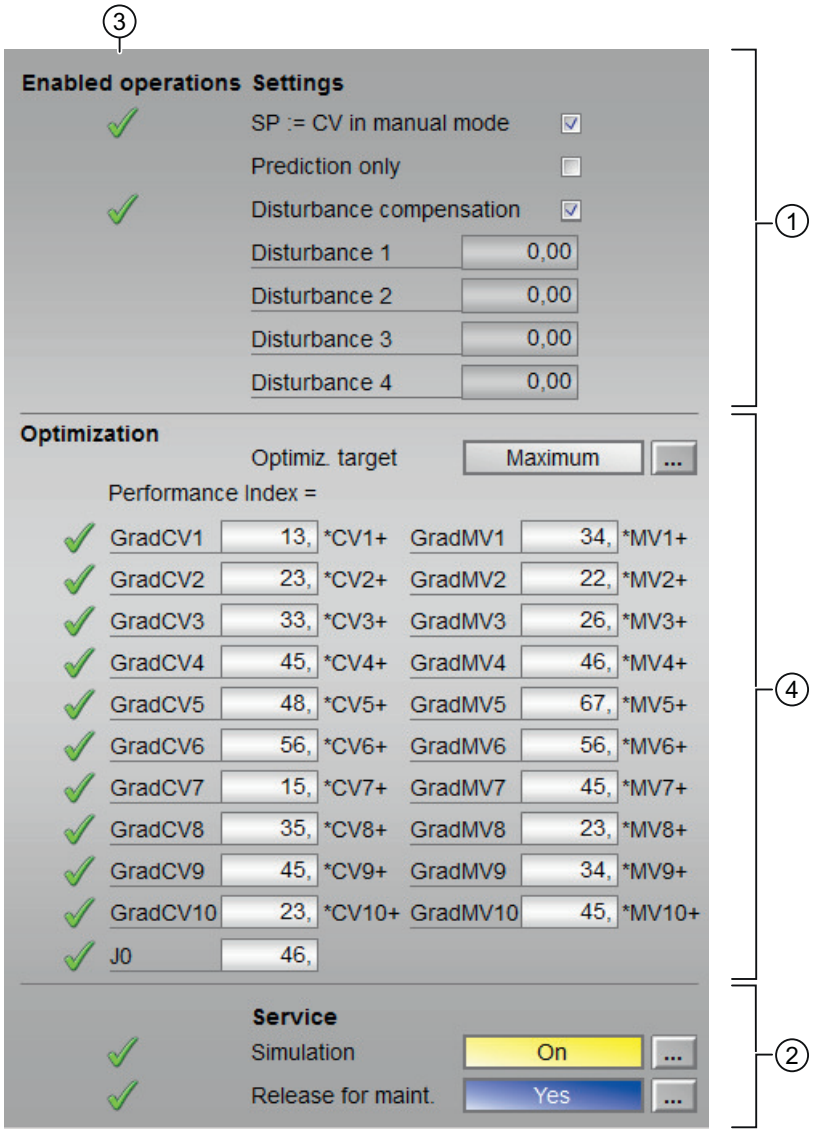
- "Tracking"

(22) Displaying and changing the target value for the manipulated variable

This area shows the current target value for the manipulated variable. Refer to the section Changing values for more information on changing the target value. You can make a change only in the "Automatic" mode and also only if OptimAct = 0. This field is not displayed in "Manual" mode.

9.9.3 MPC10x10 Parameter view

Parameter view of MPC10x10



(1) Settings

(2) Service

(3) Enabled operation

(4) Optimization

(1) Settings

You can activate the following functions for the controller in this area:

- "SP := CV in manual mode": ☑ Bumpless switchover from "manual mode" to "automatic mode"
- "Prediction only" activate this special "operating mode" by selecting the check box. The controller then only listens to the process and indicates what it would like to do in the next sampling step (i.e. which manipulated variables it would output in the next sampling step) without actively intervening in the process
- "Disturbance compensation": ☑ Select feedforward disturbance compensation
- "Disturbance" DV1...DV4 depending on the number of configured measurable disturbances

You cannot change the disturbance values, they can only be displayed.

In the object properties (I/Os DVx > Identifier) of the block in CFC, you can specify the text to be displayed for this parameter.

(2) Service

You can select the following functions in this area:

- "Simulation"
- "Release for maintenance"

(3) Enabled operation

This area shows all operations for which special operator permissions are assigned. They depend on the configuration in the engineering system (ES) that applies to this block.

Icons for enabled operation:

- **Green check mark**: the OS operator can control this parameter
- **Gray check mark**: the OS operator cannot control this parameter at this time due to the process
- **Red cross**: the OS operator cannot control this parameter due to the configured AS operator permissions.

(4) Optimization

Direction of the optimization (minimize or maximize)

By default, the optimizer seeks to maximize the performance function, in the assumption that it is dealing with economic yield. If you want to search a minimum, however, because you are dealing with costs or consumption values, click this button.

Specification of performance index for the operating point optimization

The performance index consists of a weighted sum of all manipulated and controlled variables. For each manipulated variable and controlled variable, enter the appropriate weighting factor, i.e. the coefficient of the gradient vector. Zero means that the value of the corresponding manipulated variable or controlled variable has no direct influence on the economic yield. If the controller has less than 10 manipulated variables or controlled variables, the irrelevant variables are hidden automatically.

J0 is the part of the performance index which does not depend on the controlled and manipulated variables of the MPC, e.g. fixed costs or costs calculated otherwise. Although this part of costs cannot be influenced during controller internal optimization, including it in the summation allows realistic numerical values to be displayed for the total costs.

9.9.4 MPC10x10 CV Parameter view

CV parameter view for MPC10x10

The CV parameter view is a table which contains a row for each control channel:

Channel setpoint	H range	H range optimiz.	Operator specific	Optimal setpoint	L range optimiz.	L range	Dead band	Unit	Prefilter [s]
1	100,00	0,00	110,00	100,00	0,00	0,00	0,00	°C	0,00
2	600,00	0,00	125,00	125,00	0,00	0,00	0,00	°C	0,00
3	300,00	0,00	95,00	95,00	0,00	0,00	0,00	°C	0,00
4	400,00	0,00	135,00	135,00	0,00	0,00	0,00	°C	0,00
5	100,00	0,00	140,00	100,00	0,00	0,00	0,00	°C	0,00
6	200,00	0,00	126,00	126,00	0,00	0,00	0,00	°C	0,00
7	100,00	0,00	7,85	7,85	0,00	0,00	0,00	°C	0,00
8	100,00	0,00	0,00	0,00	0,00	0,00	0,00	°C	0,00
9	100,00	0,00	0,00	0,00	0,00	0,00	0,00	°C	0,00
10	100,00	0,00	0,00	0,00	0,00	0,00	0,00	°C	0,00

(1) Displaying and changing the limit parameters for the setpoint

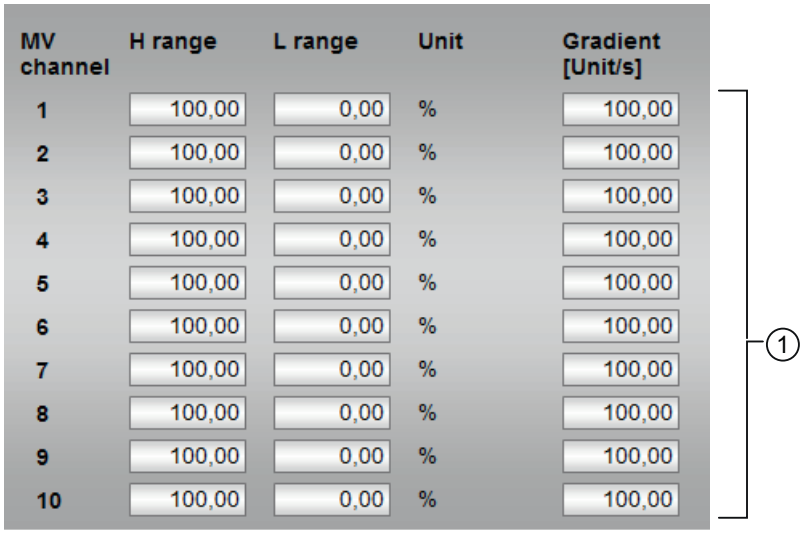
(1) Displaying and changing the limit parameters for the setpoint

You can change the setpoint parameters for the relevant control channel in each row:

- "H range": High limit for setpoint operation
- "H range optimization": High limit for optimizing the setpoint
- "Operator specification": Display of the setpoint specified in the standard view, cannot be operated here.
- "Dead band": Error signal generation and dead band, Error signal generation and dead band section
- "Optimal setpoint": Calculated by the optimization, cannot be operated
- "L range optimization": Low limit for optimizing the setpoint
- "L range": Low limit for setpoint operation
- "Prefilter": TimeTrig functions

9.9.5 MPC10x10 MV Parameter view

MV parameter view for MPC10x10



(1) Displaying and changing the limit parameters for the manipulated variable

(1) Displaying and changing the limit parameters for the manipulated variable

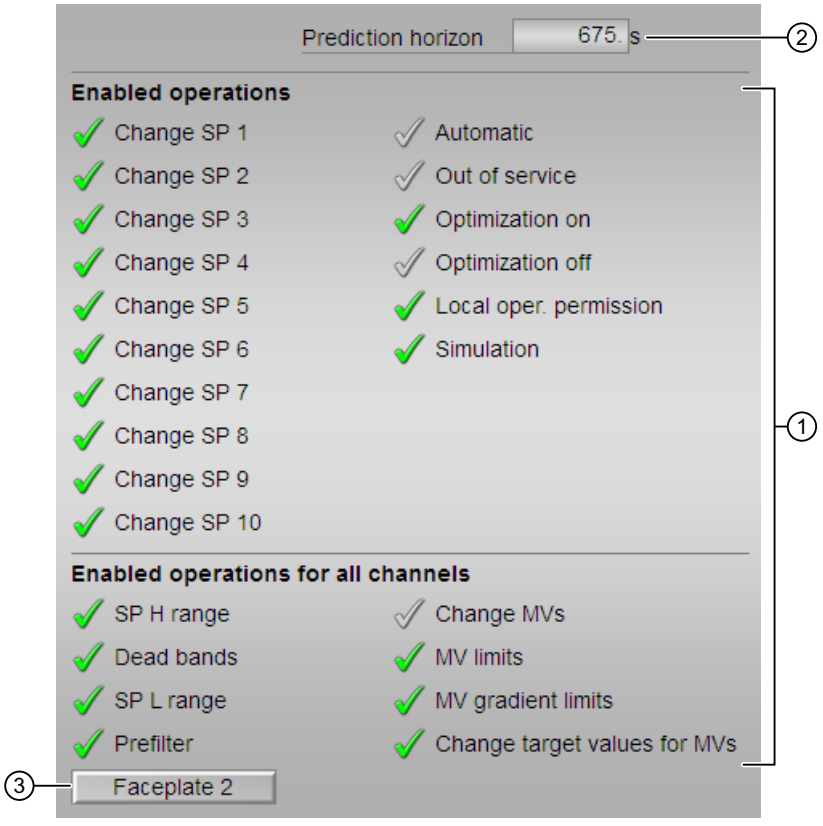
You can change the following parameters for the manipulated variable in this area:

- "H range": Upper limit of the manipulated variable for automatic mode
- "L range": Low limit of manipulated variable for automatic mode
- "Gradient limit": Maximum (absolute) change in the manipulated variable per second

The enabled operations for the setpoint parameters are displayed in the preview.

9.9.6 MPC10x10 Preview

Preview for MPC10x10



(1) Enabled operations

(2) Prediction horizon

(3) Navigation button for switching to the standard view of any faceplate

(1) Enabled operations

This area shows all operations for which special operator permissions are assigned.

The lower screen half shows operator permissions which apply to all manipulated and control channels.

The upper screen half shows operator permissions which are not channel-based on the left, and channel-specific operator permissions for the individual setpoints on the right.

Icons for enabled operation:

- **Green check mark**: the OS operator can control this parameter
- **Gray check mark**: the OS operator cannot control this parameter at this time due to the process
- **Red cross**: the OS operator cannot control this parameter due to the configured AS operator permissions.

The following enabled operations for parameters are shown here:

Parameter	Description
"Automatic"	You can switch to "automatic mode".
"Out of service"	You can switch to "Out of service" operating mode.
"Optimization on"	You can switch on the optimization.
"Optimization off"	You can switch off the optimization.
"Local operator permission":	Use the ← button to switch to the standard view of the OpStations block.
"Change SP1..10"	You can change the setpoint 1..10
"Change MVs":	You can change the manipulated variables

Note

The OS operator must always be able to switch to "manual mode". For this reason, there is no special operator permission for switching to "manual mode" in the faceplate.

The following operator permissions apply to all manipulated channels.

- "Change MVs": You can change the manipulated variables in manual mode
- "MV limits": You can change the high and low limits for all manipulated variables.
- "MV gradient limits": You can change the gradient limits for all manipulated variables.
  The following operator permissions apply to all control channels.
  - "SP high limits": You can change the high limits for all setpoints.
  - "Dead bands": You can change the dead bands for all controlled variables.
  - "SP low limits": You can change the low limits for all setpoints.
  - "Prefilter": You can change the time constants of the prefilter for all setpoints.
- "Change target values for MVs": You can change the target values for all manipulated variables.

(2) Prediction horizon

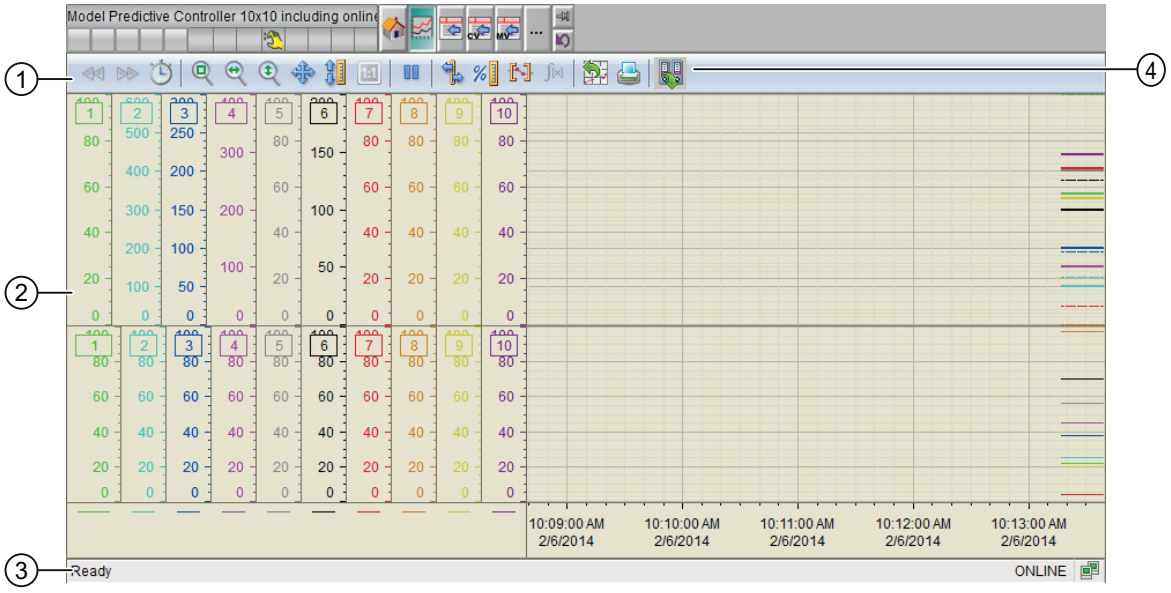
The prediction horizon specifies how far the controller looks into the future in its calculations.

(3) Navigation button for switching to the standard view of any faceplate

Use this navigation button to open the standard view of a block configured. The visibility of this navigation button depends on the configuration in the Engineering System (ES).

9.9.7 MPC10x10 Trend view

MPC10x10 trend view



(1) Toolbar

(2) Display area for trends

(3) Status bar

(4) Button for switching between archive tags and online tags.

The status bar shows if the trend view is working with online data or archive data.

The Export button is only visible and operable with the "Higher-level process control" operating permission.

For additional information about the trend view, refer to the *WinCC Information System* Online Help.

The trend view is divided into two screen halves.

The upper screen half shows all controlled variables with their associated setpoints. The setpoint is shown in the same color as the associated process value to allow the assignment to be identified straight away. Setpoints are dashed lines, process values are bold lines. If a controlled variable is exactly on the setpoint, it hides the setpoint.

The lower screen half shows all manipulated variables.

Both screen halves use the same color sequence for the individual channels. The sequence starts at channel 1 with green (standard color for the process value with the PID controller) and then goes through the color spectrum from top to bottom as far as gray and black. From channel 7 (red), the rest of the spectrum is run through from top to bottom. Each channel has its own y-axis in the corresponding color.

9.10 KalFilt - Status estimator

9.10.1 KalFit views

KalFit views

The KalFit block provides the following views:

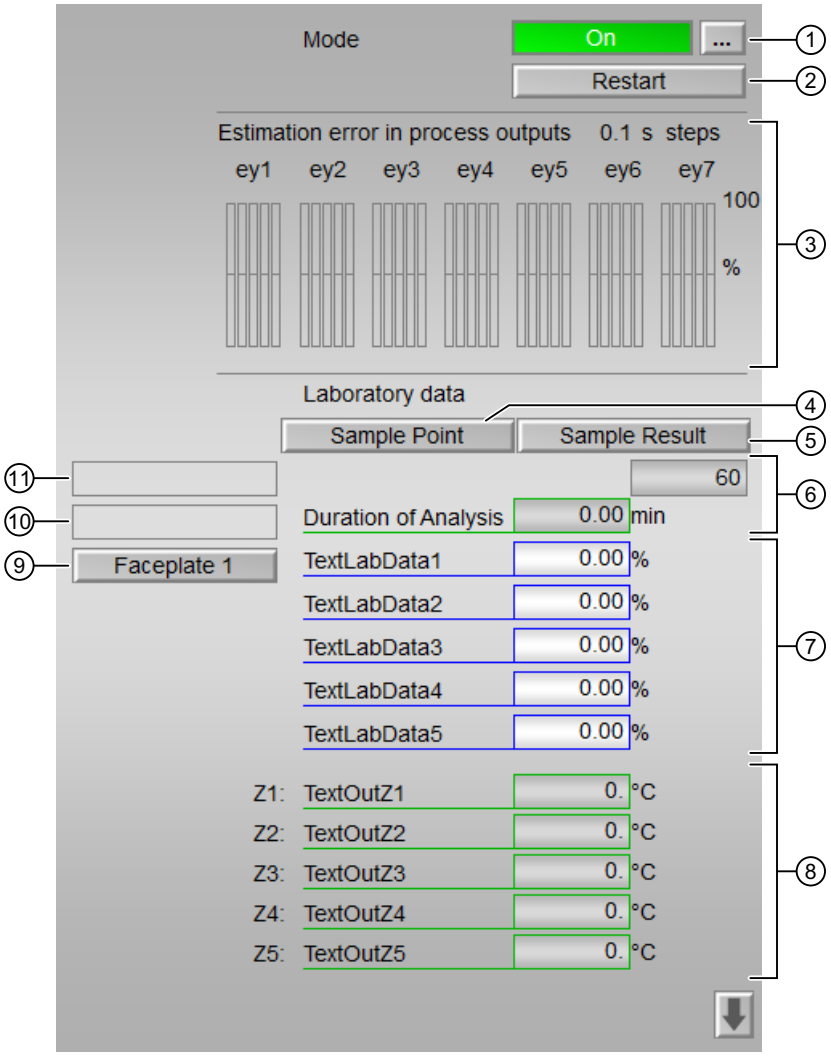
- KalFilt Standard view (Page 395)
- KalFilt Parameter view (Page 401)
- KalFilt Parameter view 2 (Page 402)
- KalFilt Preview (Page 400)
- KalFilt Measurement view (Page 403)
- KalFilt Trend view (Page 404)
- Batch view (Page 452)
- Memo view (Page 453)

9.10.2 KalFilt Standard view

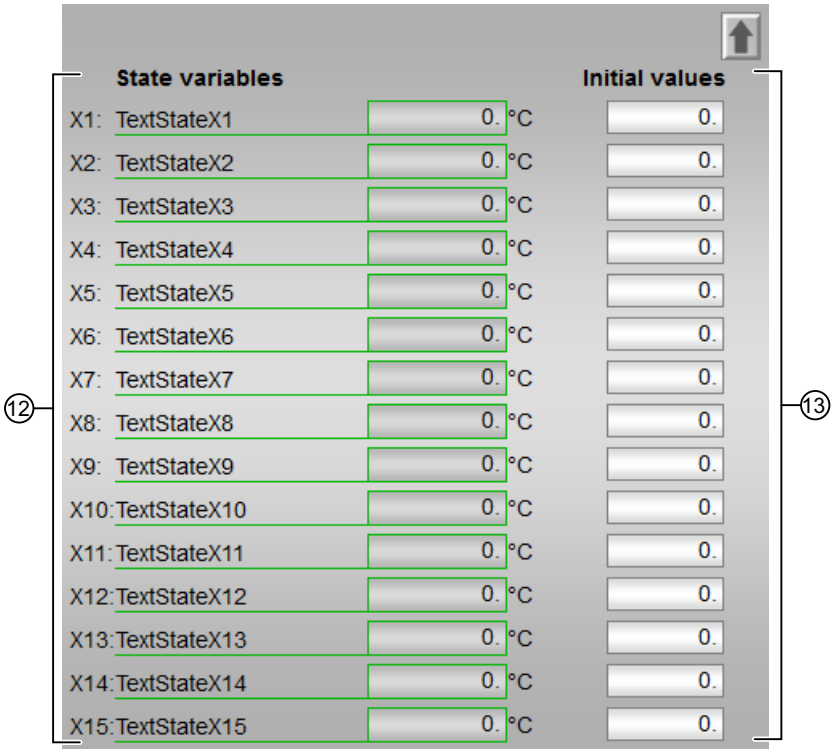
Standard view of KalFilt

The standard view has two views, view 1 and view 2. You can change between the two views with the arrow keys.

View 1


Mode
On
...
Restart
Estimation error in process outputs
0.1 s steps
ey1
ey2
ey3
ey4
ey5
ey6
ey7
100
%
Laboratory data
Sample Point
Sample Result
60
Duration of Analysis
0.00
min
TextLabData1
0.00
%
TextLabData2
0.00
%
TextLabData3
0.00
%
TextLabData4
0.00
%
TextLabData5
0.00
%
Z1:
TextOutZ1
0.
°C
Z2:
TextOutZ2
0.
°C
Z3:
TextOutZ3
0.
°C
Z4:
TextOutZ4
0.
°C
Z5:
TextOutZ5
0.
°C
Faceplate 1
1
2
3
4
5
6
7
8
9
10
11

View 2



(1) Displaying and switching the operating mode

(2) Restarting the block

(3) Display of the estimation error in process outputs

(4) Sample point

(5) Sample result

(6) Duration of analysis

(7) Laboratory results

(8) Additional output variables

(9) Navigation button for switching to the standard view of any faceplate

(10) and (11) Display area for block states

(12) State variables

(13) Initial values

(1) Displaying and switching the operating mode

This area provides information on the currently valid operating mode. The following operating mode can be shown here:

- On mode
- Out of service mode

(2) Restarting the block

Click "Restart" to restart the Kalman filter block.

The initial values specified at the block inputs (X1Start...X15Start) can be set with Reset.

(3) Display of the estimation error in process outputs

This displays the estimation error in the process data at the current time. The display is based on the particular value range and is calculated for 5 consecutive sampling tasks in the recent past.

(4) Sample point

Click the "Sample Result" button to confirm the entered value of laboratory result in the Kalman filter block faceplate.

(5) Sample result

This area provides the time for maximum duration for a laboratory measurement.

(6) Duration of analysis

This area shows the elapsed time since the sampling time. If the duration is greater than the monitoring time the results of the laboratory measurements cannot be used.

(7) Laboratory results

You can enter the laboratory results (Yni_Int) directly in the "TextLabDatai" fields. Once they are all fully entered, the entry must be confirmed with the "Sample Result" button. The counter stops and the laboratory data are considered in the calculations of the Kalman filter. If a sample is extracted but no meaningful result can be given, a new sample extraction can be started in the faceplate.

(8) Additional output variables

If you have output parameters which cannot be measured and are calculated from a posteriori state estimates, you can define and enter the algorithm of maximal 5 additional output parameters in the Kalman Configurator.

(9) Navigation button for switching to the standard view of any faceplate

Use this navigation button to open the standard view of a block configured in the engineering system (ES).

The visibility of this navigation button depends on the configuration in the engineering system (ES).

(10) and (11) Display area for block states

This area provides additional information on the operating state of the block:

- "Simulation"
- "Sample extracted"
- "Lab results included"
- "Error in lab results"
- "Time out in analysis"
- "Lab results limited"

(12) State variables

This area shows the current values of the estimated state variables.

(13) Initial values

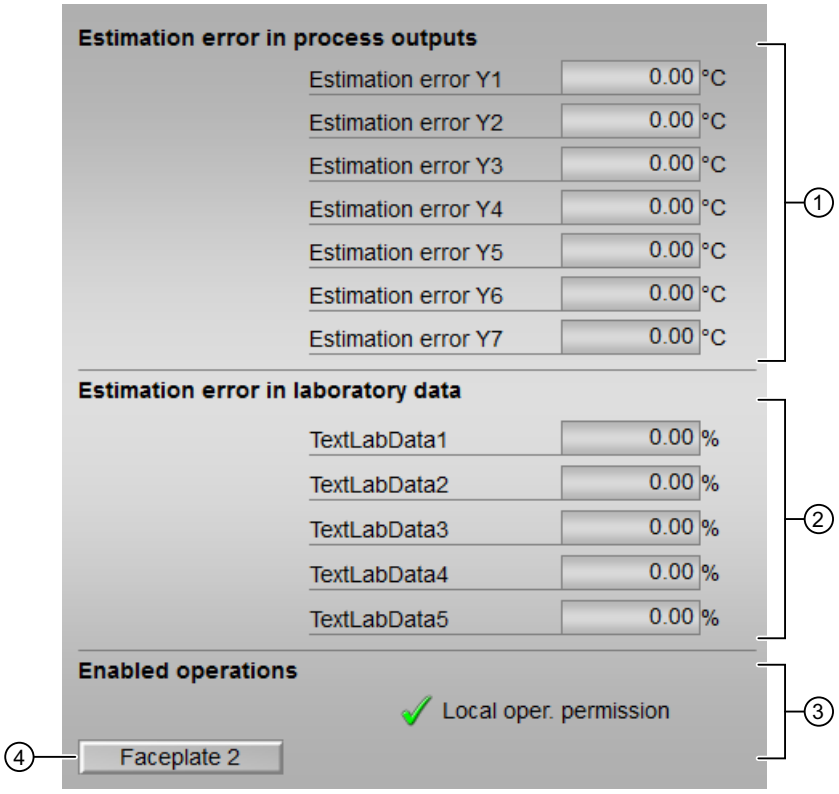
You can specify intial values for the state variables which are used for `Reset`.

See also

KalFilt Parameter view (Page 401)

9.10.3 KalFilt Preview

Preview of Kalfilt



(1) Estimation error in process variables

(2) Estimation error in laboratory data

(3) Enable operations

(4) Navigation button for switching to the standard view of any faceplate

(1) Estimation error in process variables

This area shows the estimation error of the output variable. The values of the estimation error are shown as physical unit in preview and as percentage in the standard view (Page 395).

(2) Estimation error in laboratory data

The area shows the estimation error of the laboratory results. The values of the estimation error are shown as physical unit in preview and as percentage in the standard view (Page 395).

(3) Enable operations

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

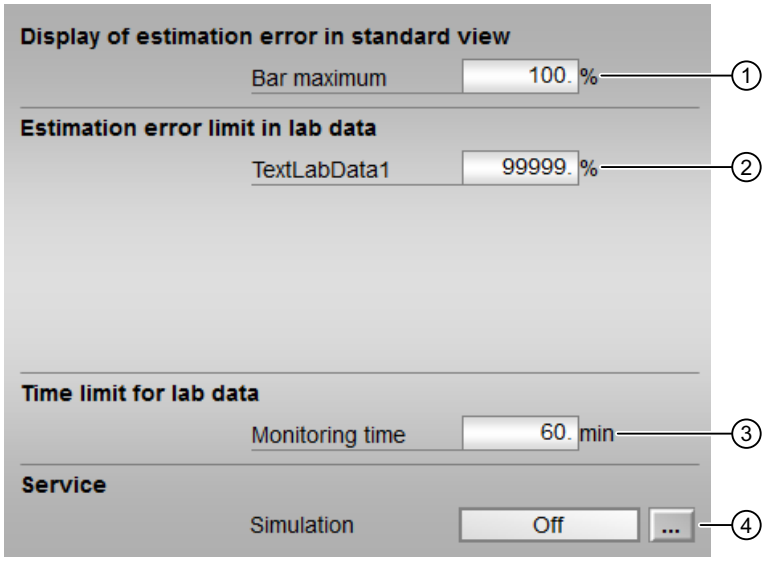
- **Green check mark**: the OS operator can control this parameter
- **Gray check mark**: the OS operator cannot control this parameter at this time due to the process
- **Red cross**: the OS operator cannot control this parameter due to the configured AS operator permissions

(4) Navigation button for switching to the standard view of any faceplate

Use this navigation button to open the standard view of another function block,

9.10.4 KalFilt Parameter view

Parameter view of KalFilt



(1) Display of estimation error in standard view

(2) Estimation error limits in lab data

(3) Duration limits in lab data

(4) Service

(1) Display of estimation error in standard view

You can set the scale of the bar diagram in the "Bar maximum" (EYPScale) field. The bar diagram is displayed in the KalFit Standard view (Page 395).

(2) Estimation error limits in lab data

You can change the maximum permissible deviation of the laboratory data from the estimated variable in the "Text LabData1" field (EYniLim).

If the actual error is above this value, the lab results are regarded as implausible and not used for the Kalman filter.

(3) Duration limits in lab data

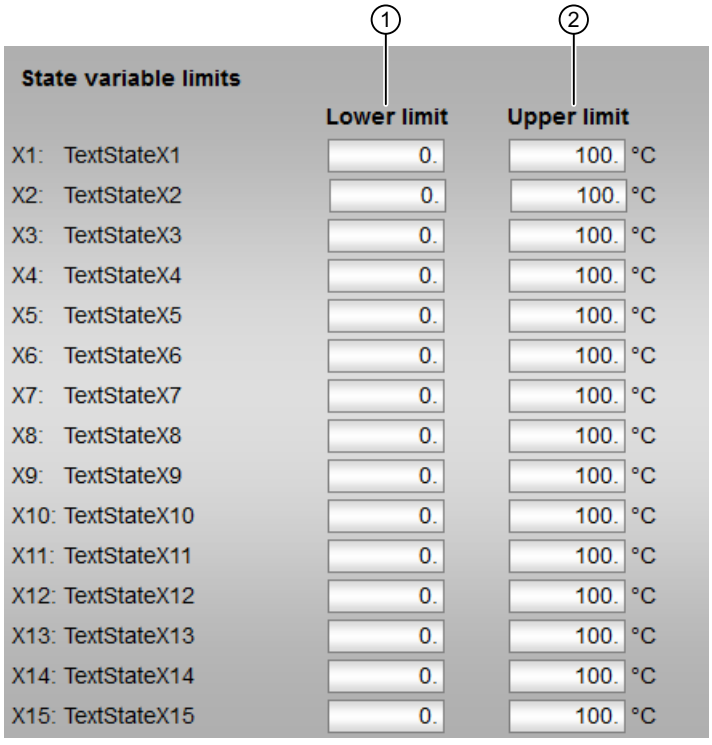
You can adjust the maximum duration for a laboratory measurement in the "Monitoring time" field.

(4) Service

You can enable and disable simulation of the block using the "Simulation" button.

9.10.5 KalFilt Parameter view 2

Parameter view 2 of KalFilt



(1) Lower limit of state variables

(2) Upper limit of state variables

(1) Lower limit of state variables

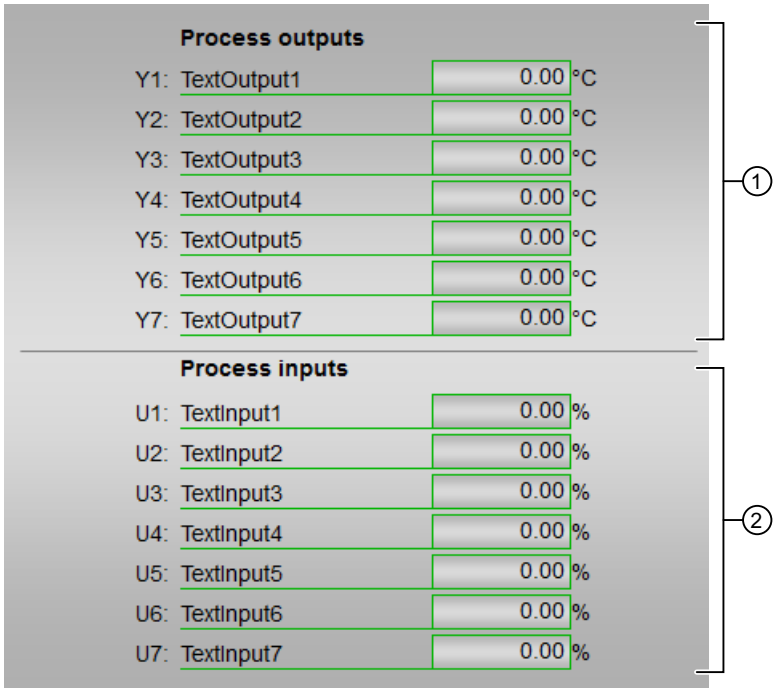
You can specify lower limit of the state variables.

(2) Upper limit of state variables

You can specify upper limit of the state variables.

9.10.6 KalFilt Measurement view

Measurement view of KalFilt



(1) Process outputs

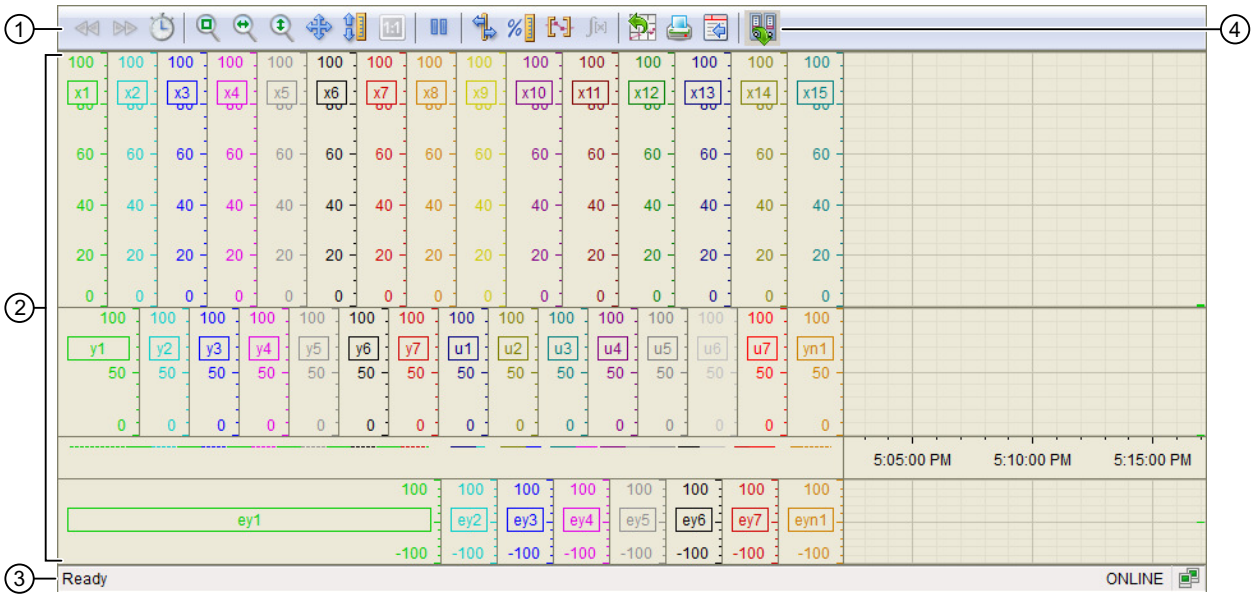
This area displays current values of the process outputs.

(2) Process inputs

This area displays current values of the process inputs.

9.10.7 KalFilt Trend view

Trend view of KalFilt



(1) Toolbar

(2) Display area for trends

(3) Status bar

(4) Button for switching between archive tags and online tags. The status bar shows if the trend view is working with online data or archive data.

For additional information about the trend view, refer to the *WinCC Information System* Online Help.

The trend view is divided into three areas. The top area shows the state variables, the middle area shows the input and output variables, and the lower area shows the estimation error.

Timers

10

10.1 TimeTrig - Calculations with the date formats DT and TIME

10.1.1 TimeTrig views

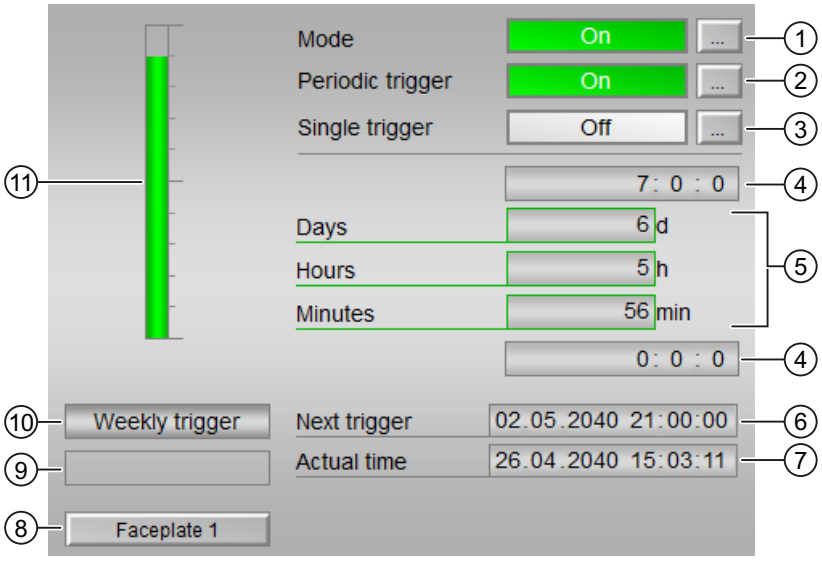
TimeTrig views

The TimeTrig views provides information on the following:

- TimeTrig Standard view (Page 405)
- TimeTrig Parameter view (Page 411)
- TimeTrig Preview (Page 409)
- Memo view (Page 453)

10.1.2 TimeTrig Standard view

Standard view of TimeTrig



The TimeTrig provides the information on the following:

(1) Displaying and switching the operating mode

(2) Enabling and disabling the period trigger

(3) Enabling and disabling the single trigger

(4) High and low scale range for the count value

(5) Display of the count value

(6) Display of the time point of the next trigger

(7) Displaying of the actual time of day

(8) Navigation button for switching to the standard view of any faceplate

(9) Display area for block states

(10) Displaying of the actual trigger operating mode

(11)Graphic display of the current count value

(1) Displaying and switching the operating mode

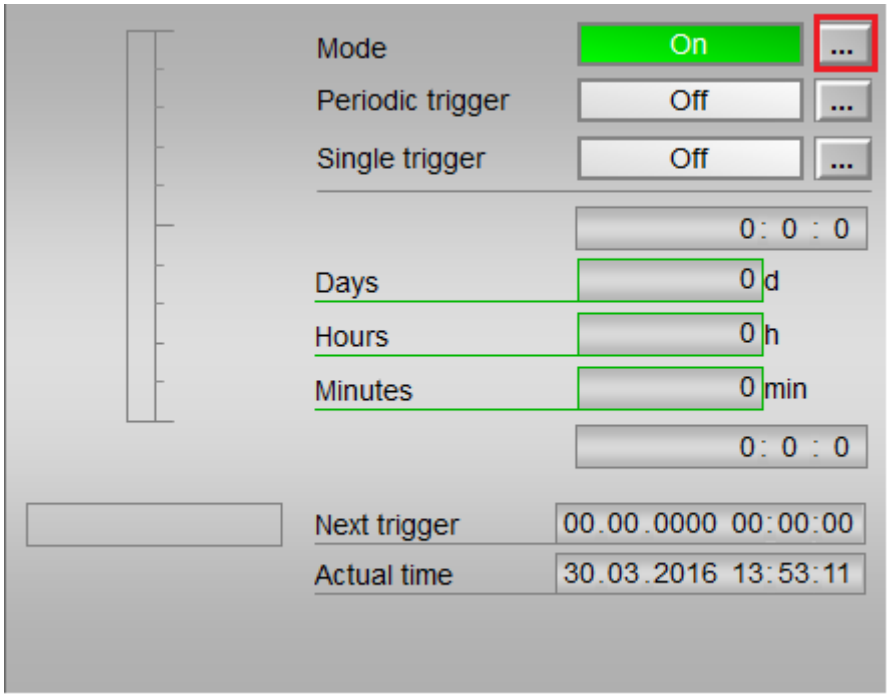
This area provides information on the currently valid operating mode. The following operating modes can be shown here:

1. On mode
2. Out of service mode

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

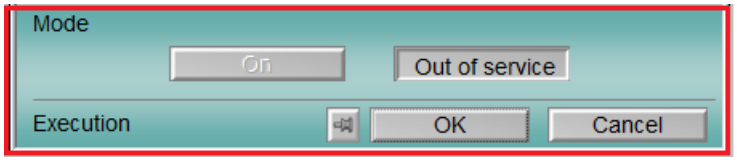
1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.



Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.
4. If acknowledgement is required, click "OK".



5. The Timer block will be switched to the selected operating mode.

(2) Enabling and disabling the period trigger

This area provides the default operating mode of the trigger. The following operating modes can be displayed and set here:

- "On"
- "Off"

(3) Enabling and disabling the single trigger

This area shows the default operating mode of the trigger. The following operating modes can be displayed and set here:

- "On"
- "Off"

(4) High and low scale range for the count value

This value provides information on the display range for the bar graph (above) of the count value.

(5) Display of the count value

The following counts are shown here: The amount of time until the next trigger is shown here.

- "Days"
- "Hours"
- "Minutes"

(6) Display of the time point of the next trigger

This area shows the time of the next trigger.

(7) Displaying of the actual time of day

This area shows the actual time of day.

(8) Navigation button for switching to the standard view of any faceplate

Use this navigation button to open the standard view of a configured block in the engineering system.

(9) Display area for block states

This area provides additional information on the operating state of the block:

- "Invalid signal"

(10) Displaying of the actual trigger operating mode

This area shows the following information:

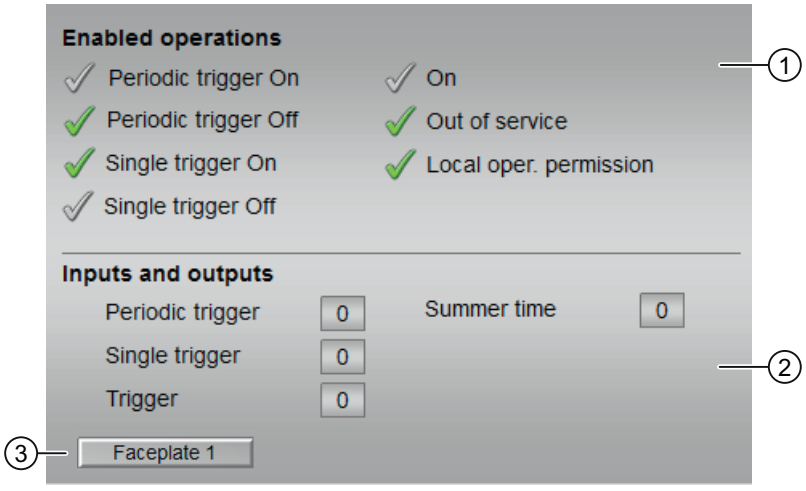
- "Daily trigger"
- "Weekly trigger"
- "Monthly trigger"
- "Single trigger"

(11) Graphic display of the current count value

This area shows you the current count in form of a bar graph.

10.1.3 TimeTrig Preview

Preview of TimeTrig



The preview of TimeTrig provides the information on the following:

(1) Enable operations

(2) Display of current operating signals

(3) Navigation button for switching to the standard view of any faceplate

(1) Enable operations

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions

The following enabled operations are shown here:

Actions	Descriptions
"Periodic trigger on"	You can enable the periodic trigger.
"Periodic trigger off"	You can disable the periodic trigger.
"Single trigger on"	You can enable the single trigger.

Actions	Descriptions
"Single trigger off"	You can disable the single trigger.
"On"	You can operate the trigger.
"Out of service"	You can switch to "Out of service" operating mode.
"Local operator permission"	Use the ← button to switch to the standard view of the "OpStations" block.

(2) Display of current operating signals

This area shows the most important parameters for this block with the current selection.

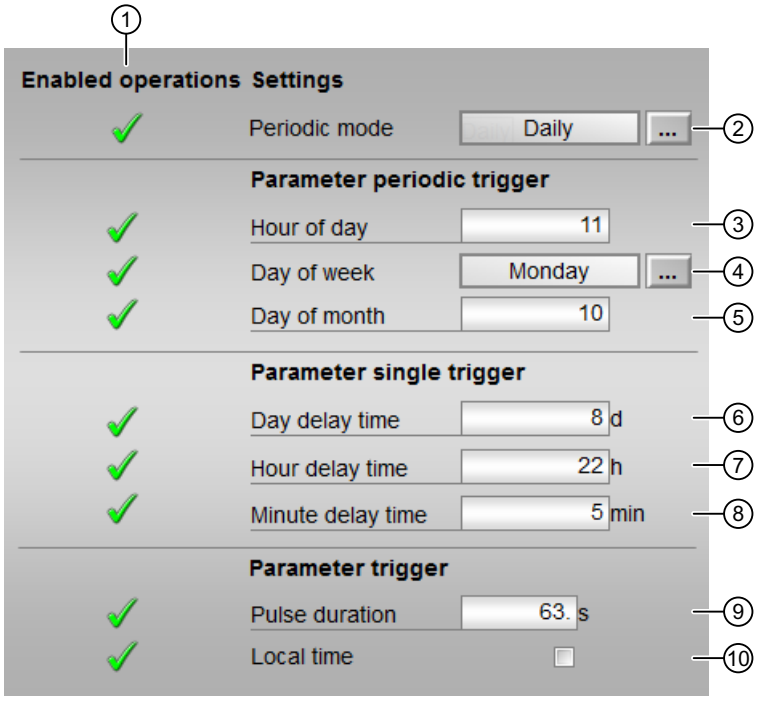
Parameter	Description
"Periodic trigger"	0 = Periodic trigger is enabled
	1 = Periodic trigger is disabled
"Single trigger"	0 = Single trigger is disabled
	1 = Single trigger is enabled
"Trigger"	0 = Output trigger signal is disabled
	1 = Output trigger signal is enabled
"Daylight saving time":	0 = Daylight saving time is disabled
	1 = Daylight saving time is enabled

(3) Navigation button for switching to the standard view of any faceplate

Use this navigation button to open the standard view of a block configured in the engineering system.

10.1.4 TimeTrig Parameter view

TimeTrig parameter view



The TimeTrig parameter view provides the information on the following:

(1) Enabled operation

(2) Periodic operating mode

(3), (4) and (5) parameters for the periodic trigger

(6), (7) and (8) parameters for single triggers

(9) and (10) parameters for the trigger

(1) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions

(2) Periodic operating mode

You can change the operating mode of the periodic trigger:

- "Daily": The trigger is activated once a day.
- "Weekly": The trigger is activated once a week.
- "Monthly": The trigger is activated once a month.

(3), (4) and (5) parameters for the periodic trigger

Enter the relevant parameters for the periodic mode:

- "Time": relevant for daily, weekly and monthly trigger
- "Weekday": relevant for weekly and monthly trigger
- "Day of the month": Relevant for monthly trigger. If the day of a month is greater than the last day, the last day is used.

(6), (7) and (8) parameters for single triggers

Enter the parameters for the single trigger:

- "Delay time day"
- "Delay time hour"
- "Delay time minute"

(9) and (10) parameters for the trigger

- "Pulse duration": Enter the duration of the trigger signal.
- "Local time": Activate local time by selecting the check box (☑.

Analog logic blocks

11

11.1 SelA16In - Output of 16 analog values

11.1.1 SelA16in views

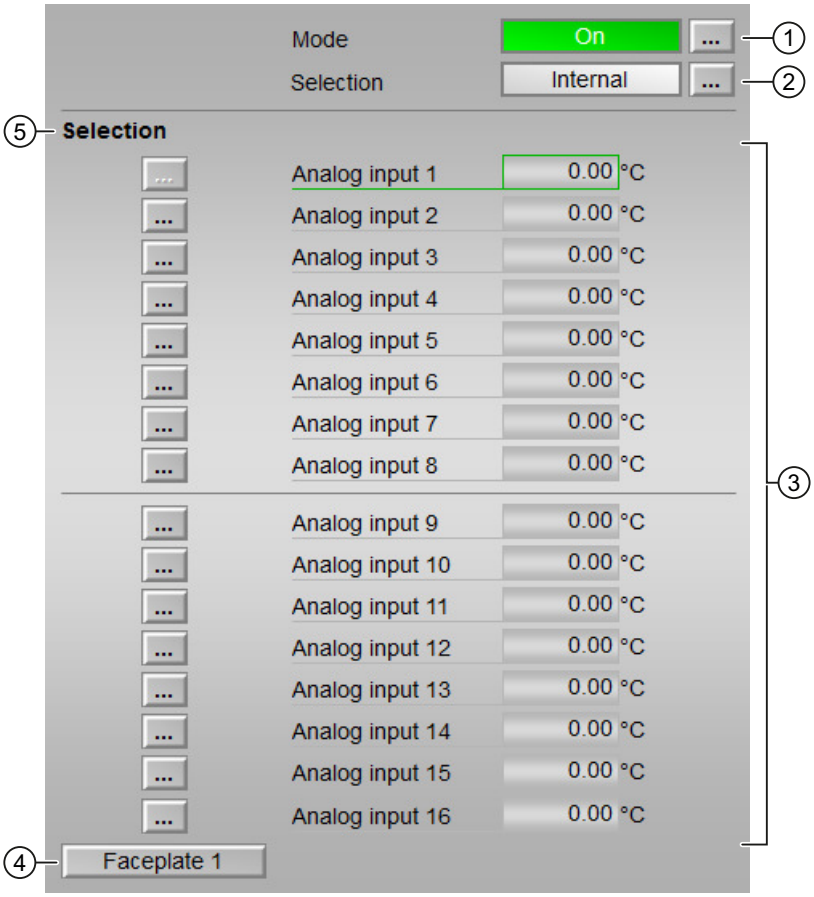
SelA16in views

The SelA16in views provides information on the following:

- SelA16In Standard view (Page 414)
- SelA16in Preview (Page 417)
- Memo view (Page 453)

11.1.2 SelA16In Standard view

Standard view of SelA16In



The SelA16In standard view provides information on the following:

(1) Displaying and switching the operating mode

(2) Displaying and switching the selection

(3) Display of Analog inputs

(4) Navigation button for switching to the standard view of any faceplate

(5) Selection of Analog inputs

(1) Displaying and switching the operating mode

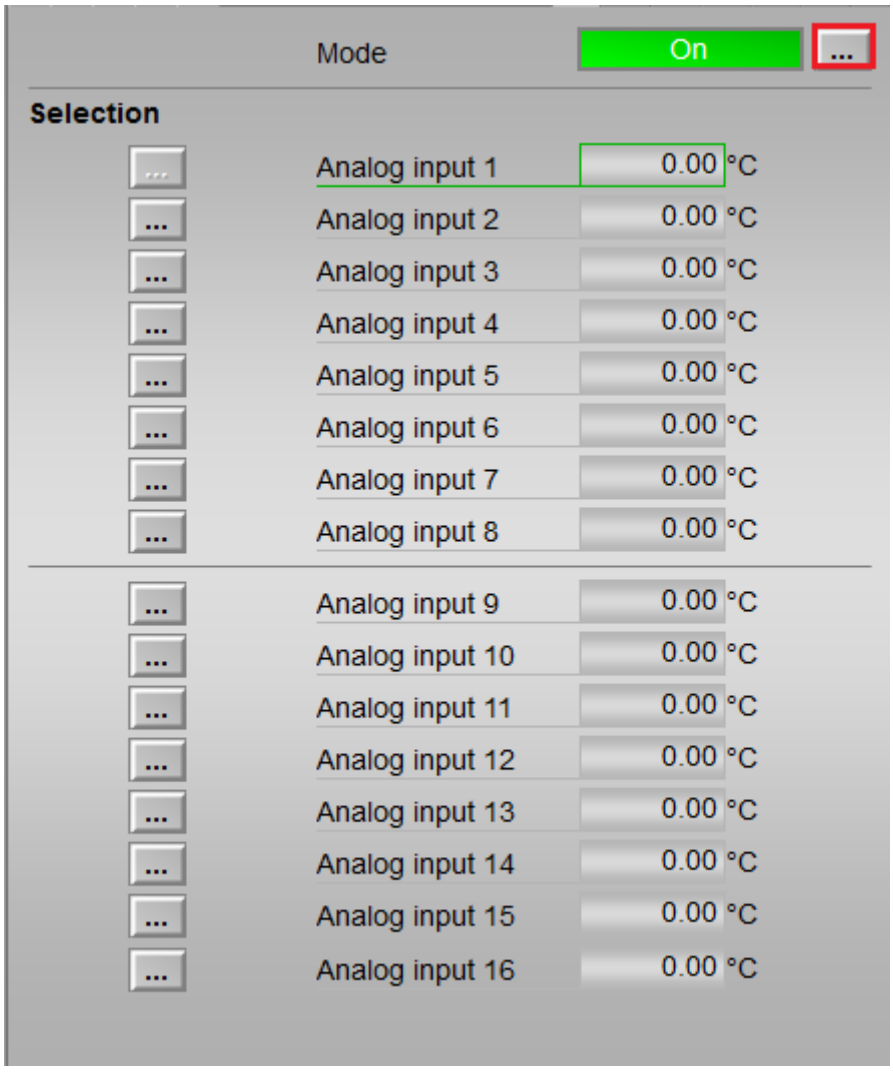
This area provides information on the currently valid operating mode. The following operating modes can be shown here:

1. On
2. Out of service

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.

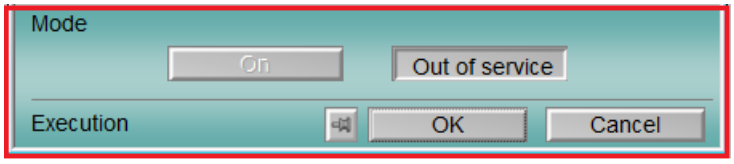


Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.

4. If acknowledgement is required, click "OK".



5. The block will be switched to the selected operating mode.

(2) Displaying and switching the selection

This area provides information on the current selection. The following selection can be made:

- External: Selecting values externally (program)
- Internal: Selecting values internally (operator)

(3) Display of Analog Inputs

This area shows you the analog values connected in the ES for this block.

(4) Navigation button for switching to the standard view of any faceplate

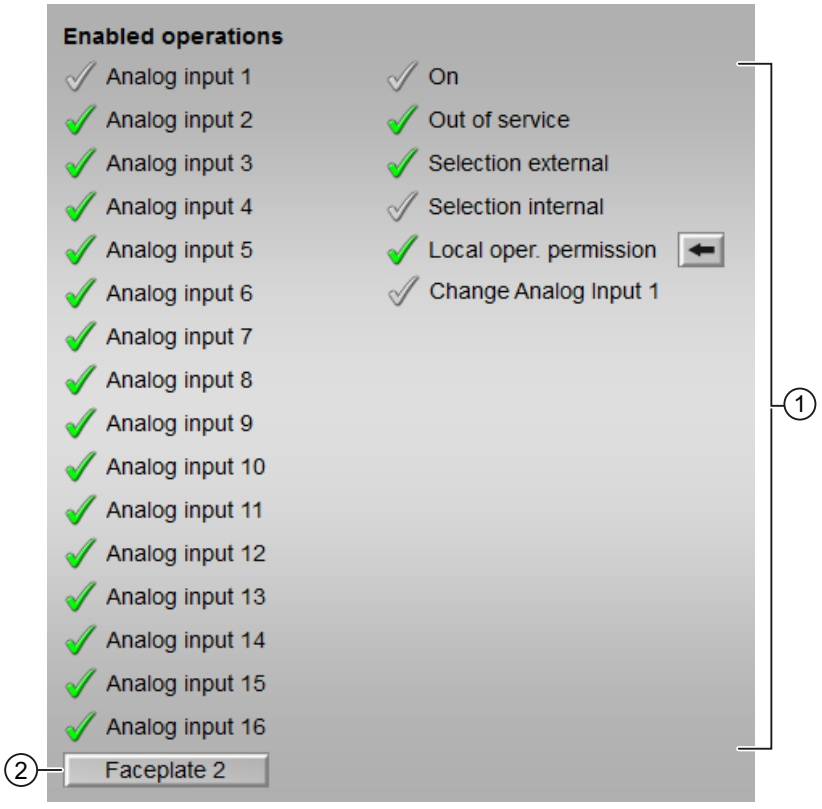
Use this navigation button to reach the standard view of a configured block.

(5) Selection of Analog inputs

You can select the required analog input by clicking on the [...] button.

11.1.3 SelA16In Preview

Preview of SelA16In



The SelA16In preview provides information on the following:

(1) Enabled operations

(2) Navigation button for switching to the standard view of any faceplate

(1) Enabled operations

This area shows all operations for which special operator control permissions are assigned.

Symbols for enabled operations:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator control permissions

The following enabled operations are shown here:

Parameter	Description
Analog input 1 to 16:	You can switch to this analog input.
"On":	You can switch to "On" operating mode.
"Out of service"	You can switch to "Out of service" operating mode.
"Selection external"	You can select values externally (program).
"Selection internal"	You can select values internally (operator).
"Local operating permission":	Use the ← button to switch to the standard view of the OpStations block.
"Change analog input 1"	You can change the value of analog input 1.

(2) Navigation button for switching to the standard view of any faceplate

Use this navigation button to reach the standard view of a block configured in the engineering system.

11.2 SelAn16L - Large version of SelA16In

11.2.1 SelAn16L Views

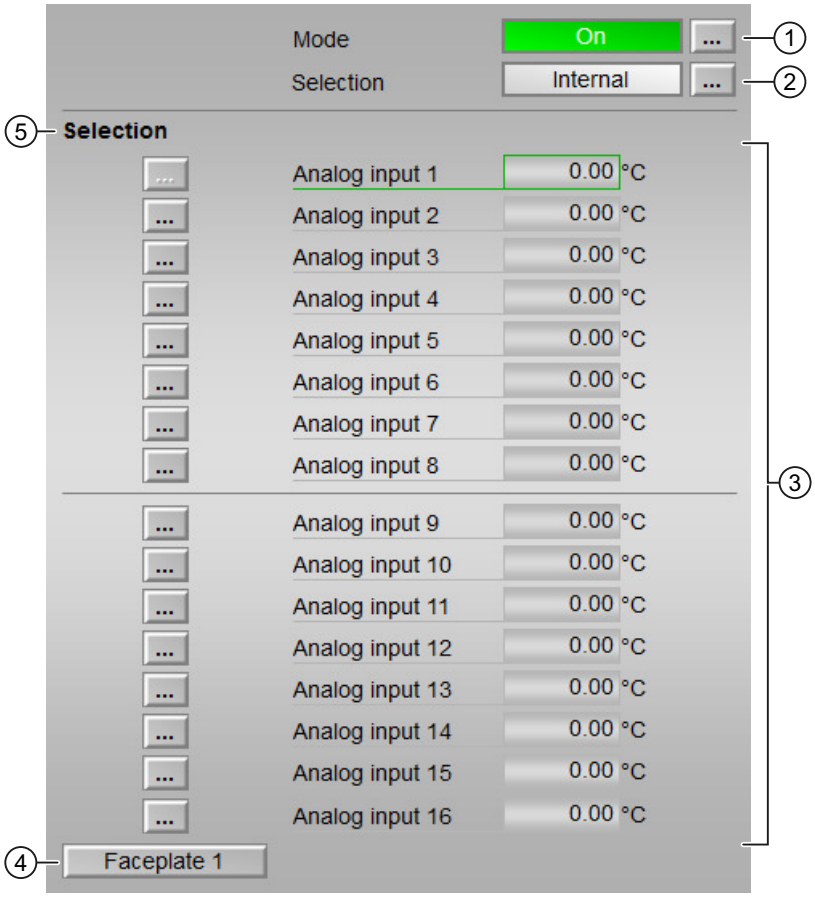
SelAn16L Views

The SelAn16L views provides information on the following:

- SelAn16L Standard View (Page 420)
- SelAn16L Preview (Page 423)
- Memo view (Page 453)
- Batch view (Page 452)

11.2.2 SelAn16L Standard View

SelAn16L Standard View



The SelAn16L standard view provides information on the following:

(1) Displaying and switching the operating mode

(2) Displaying and switching the selection

(3) Display of analog inputs

(4) Navigation button for switching to the standard view of any faceplate

(5) Selection of analog inputs

(1) Displaying and switching the operating mode

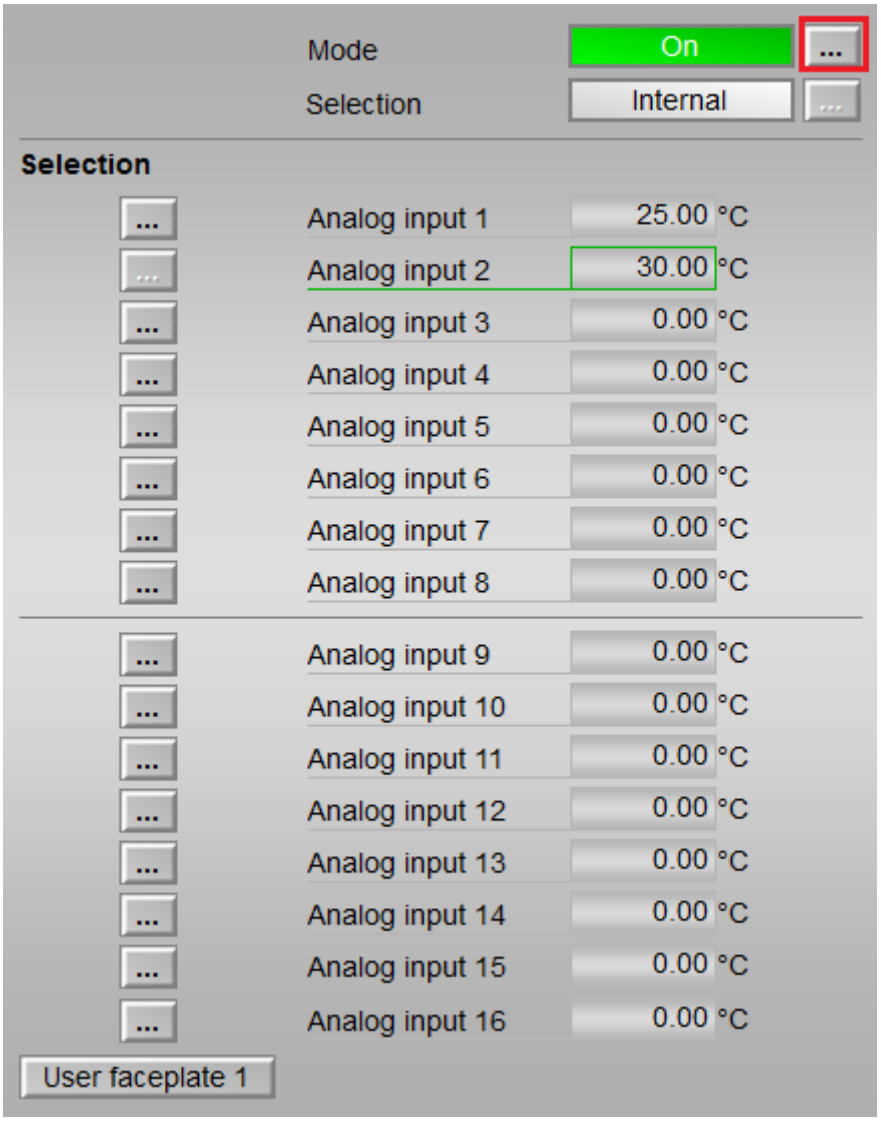
This area provides information on the currently valid operating mode. The following operating modes can be shown here:

1. On
2. Out of service

Switching operating modes

Follow these steps to set the motor to a particular mode or to switch between the different operating modes:

1. Ensure the faceplate containing the respective block is open.
2. Click on the [...] button to open the operating window.

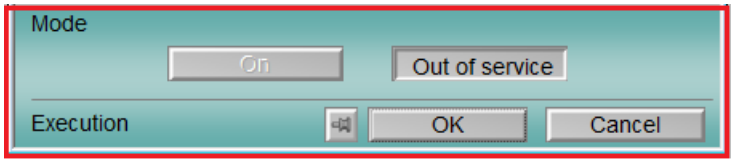


Note

The operating window is opened as an extension of the faceplate.

3. Select the respective button for the desired operating mode.

4. If acknowledgement is required, click "OK".



5. The block will be switched to the selected operating mode.

(2) Displaying and switching the selection

This area provides information on the current selection. The following selection can be made:

- External: Selecting values externally (program)
- Internal: Selecting values internally (operator)

(3) Display of analog inputs

This area shows you the analog values connected in the ES for this block.

(4) Navigation button for switching to the standard view of any faceplate

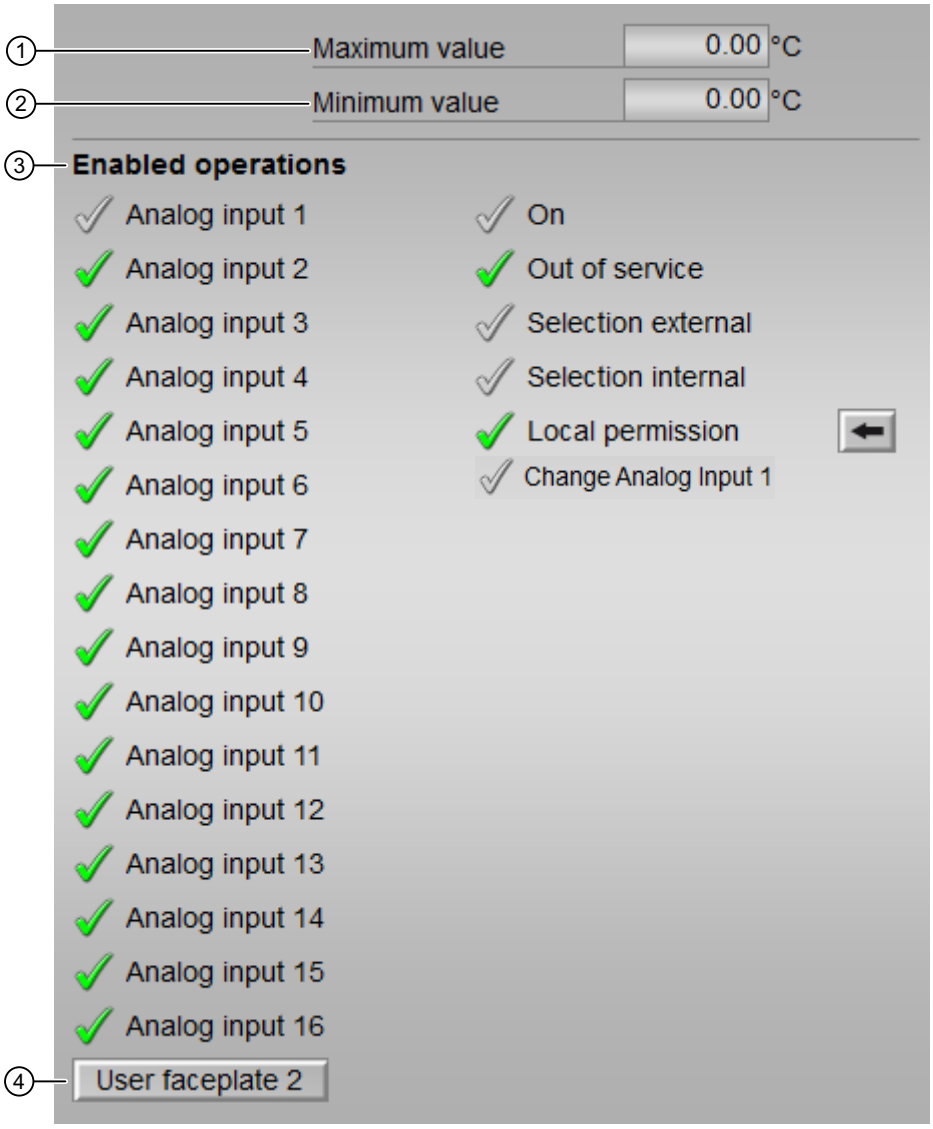
Use this navigation button to reach the standard view of a configured block.

(5) Selection of analog inputs

You can select the required analog input by clicking on the [...] button.

11.2.3 SelAn16L Preview

Preview of SelAn16L



The SelA16In preview provides information on the following:

(1) Maximum value

(2) Minimum value

(3) Enabled operations

(4) Navigation button for switching to the standard view of any faceplate

(1) Maximum value

This field shows the maximum value out of the 16 analog inputs.

(2) Minimum value

This field shows the minimum value out of the 16 analog inputs.

(3) Enabled operations

This area shows all operations for which special operator control permissions are assigned.

Symbols for enabled operations:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator control permissions

The following enabled operations are shown here:

Parameter	Description
Analog input 1 to 16	You can switch to this analog input.
"On"	You can switch to "On" operating mode.
"Out of service"	You can switch to "Out of service" operating mode.
"Selection external"	You can select values externally.
"Selection internal"	You can select values internally
"Local operating permission"	Use the ← button to switch to the standard view of the OpStations block.
"Change analog input 1"	You can change the value of analog input 1.

(4) Navigation button for switching to the standard view of any faceplate

Use this navigation button to reach the standard view of a block configured in the engineering system.

Functions of faceplates

12

12.1 APL Operator Trend Control (AOTC)

Opening the AOTC window

Press and hold the Ctrl key and left-click the value on the block icon to open the AOTC window. The first value is added to the trend window and the detailed information is displayed in the first row of the overview area.

Adding values to the AOTC window

To add values to the AOTC window, press and hold the Ctrl key and left-click the value on the block icon. The value is added to the trend window. You can add up to 8 values in the AOTC window.

If the value is an archived value, the value is displayed from the archive. If the value is not archived, it is displayed as an online value. The default time range for the time axis is 1 minute.

Note

For the Web Navigator, when a new value is added, the trend window always displays only the online value. You can switch to display the archived values through the buttons "Monday", "Tuesday", and so on.

For information on adding additional values to the AOTC window, refer to **(10) Adding additional values**.

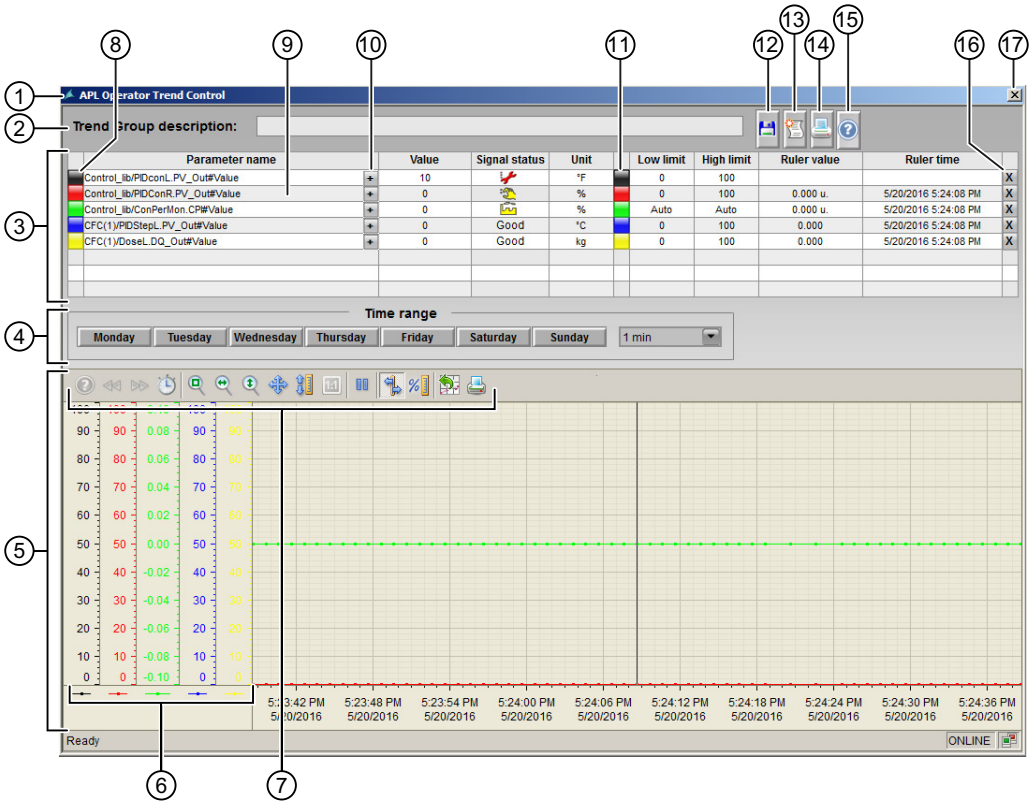
Adding digital values to the AOTC window

To add digital values to the AOTC window, press and hold the Ctrl key and left-click the value on the block icon. You can add digital values from the following blocks:

Family	Blocks
Drives	MotL, MotRevL, MotSpdCL, MotSpdL, MotS, VlvL, VlvS, Vlv2WayL, VlvAnL, VlvMotL, VlvPosL
Operate	OpDi01, OpTrig, OpDi03
Monitor	MonDiL, MonDiS, MonDi08

For information on adding additional values to the AOTC window, refer to **(10) Adding additional values**.

The AOTC window



1. Title
2. Trend group description
3. Tag row
4. Time range selection
5. WinCC online trend control
6. Value axis
7. Toolbar of the trend window
8. Enabling/disabling a trend
9. Opening a faceplate
10. Adding additional values
11. Enabling/disabling a value axis
12. Saving a trend group
13. Opening separate message window
14. Printing screenshot of the AOTC window
15. Help button
16. Deleting a trend
17. Closing the AOTC window

(1) Title

The title displays the name of the AOTC. If the trend group is not saved, the default title "APL Operator Trend Control" is displayed. If a saved trend group is opened, title displays the group name.

(2) Trend group description

This field displays the description of the trend group if it is saved with a description otherwise it is empty.

(3) Tag row

The tag row displays the following information about the trend added.

- Button to enable/disable the trend:
  Click this button to enable or disable the trend. For more information, refer to the description of **(8) Enabling/disabling a trend**.
- "Parameter name":
  This field displays the name of the trend.
- Button to add additional values:
  Click this button to add additional values to the corresponding parameter. For more information, refer to the description of **(10) Adding additional values**.
- "Value":
  This field displays the current value of the trend.
- "Signal status":
  This field displays the signal status of the trend. The corresponding icon is displayed in case the quality is not good (0x80). In case of good quality (0x80), the text "Good" is displayed.
- "Unit":
  This field displays the unit of the trend.
- Button to enable/disable the value axis:
  Click this button to enable or disable the value axis. For more information, refer to the description of **(11) Enabling/disabling a value axis**.
- "Low limit":
  This field displays the low limit of the trend.
- "High limit":
  This field displays the high limit of the trend.
- "Ruler value":
  This field displays the ruler value of the trend where the ruler intersects with the trend in the trend window.
- "Ruler time":
  This field displays the ruler time of the trend where the ruler intersects with the trend in the trend window.
- Button to delete the trend:
  Click this button to delete the trend. For more information, refer to the description of **(15) Deleting a trend**.

(4) Time range selection

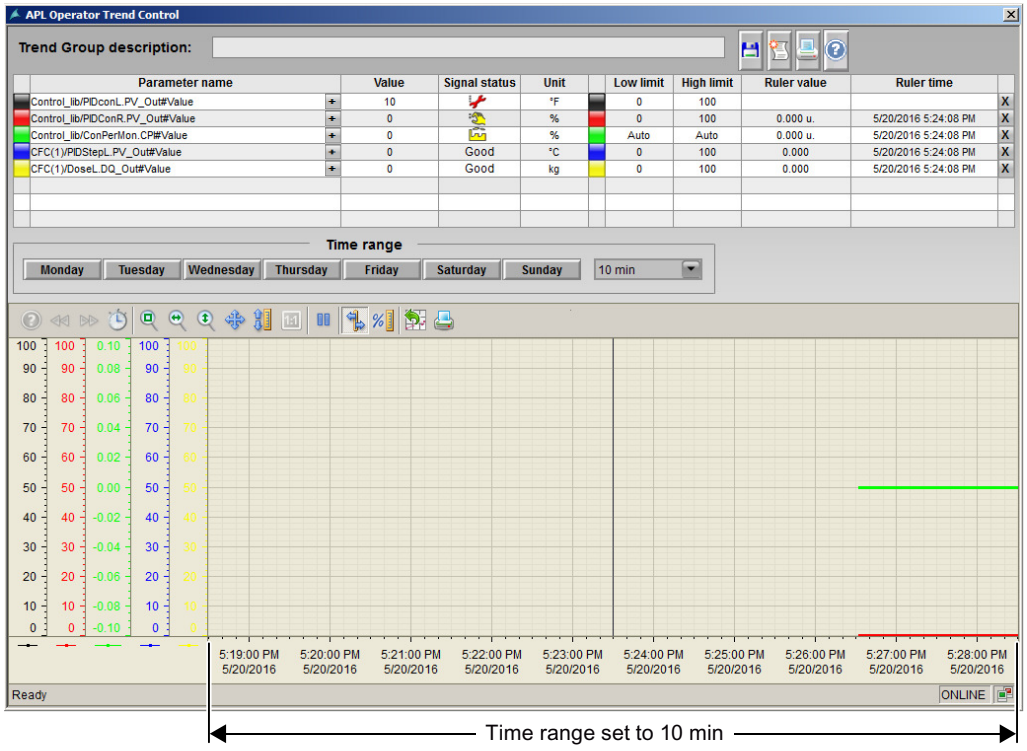
This area provides the option to select the time range based on the weekdays for the archived view and fixed time frame for the online view. Press the buttons named "Monday" to "Sunday" to switch to the archive view for that day. For example, if you press "Monday", the trend window displays the archived values on last Monday. The time range is 24 hours. If the value is not archived, no value will be displayed.

Press the "Start/stop" button from the trend toolbar to switch back to the online view.

Use the drop-down list in the time range selection area to change the time range of the time axis. The following preconfigured time ranges are available:

- Hour/minute based
  - 1 min
  - 2 min
  - 5 min
  - 10 min
  - 15 min
  - 30 min
  - 1 h
  - 2 h
  - 3 h
  - 5 h
  - 12 h
  - 24 h

The following figure shows the AOTC window when the time range is selected to "10 min" from the drop-down list in "Time range" section:



(5) WinCC online trend control

The trend window displays the trend control with trends added. Each trend added to the AOTC window will appear in different colors.

The following colors have been defined default for the 8 trends.

1. Black
2. Red
3. Green
4. Blue
5. Yellow
6. Turkish
7. Pink
8. Orange

(6) Value axis

Each trend is shown in a separate value axis, therefore there can be maximum of 8 value axis. The value axis appears in the same color as the corresponding trend.

(7) Toolbar of the trend window

Use these button to operate the trend window.

For more information, refer to *WinCC Information System* Online Help.

(8) Enabling/disabling a trend

Press these buttons to disabled or enabled trends.

If a trend is enabled, the corresponding button will be displayed in the same color as the value trend.

If a trend is disabled, the corresponding button will be displayed in Grey color.

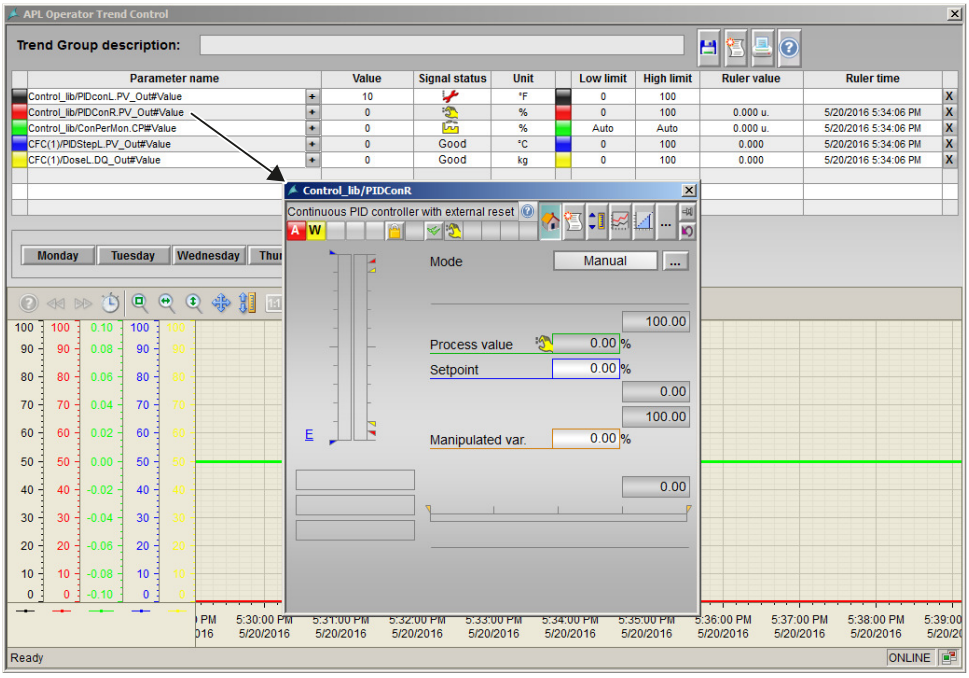
By default the trend added to the AOTC is enabled, therefore the corresponding button is visible and appears in the the same color as the value trend.

When the button is pressed the first time, the corresponding trend is hidden from the trend window. The color of the button changes to Grey. The corresponding tag row in the overview area is hidden except the "Parameter name".

On pressing the button again, the corresponding trend is visible again in the trend window. The color of the button changes to the same color as the value trend. The corresponding row of values is visible again.

(9) Opening a faceplate

Click the parameter name in the tag row to open the corresponding faceplate.

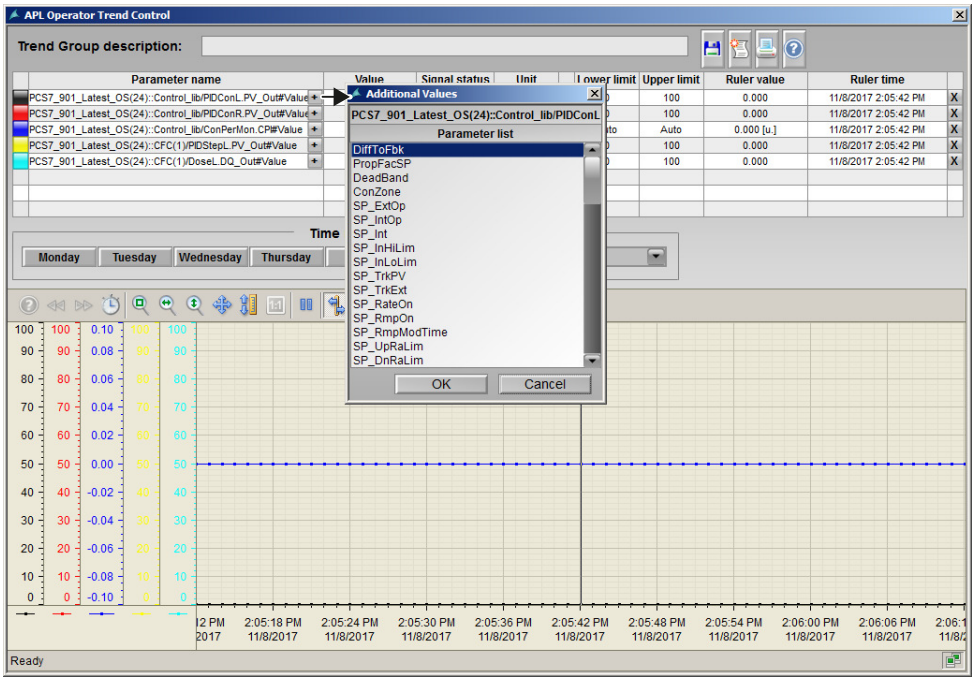


(10) Adding additional values

This button is used to configure values of a particular function block which is already configured in the parameter list of the AOTC window. This button is visible only for the parameters which are configured in the AOTC window.

Perform the following steps to configure additional values to the AOTC window:

1. Click the [+] button which is available in the right corner of a configured parameter. The "Additional Values" window opens which displays a list of parameters of the corresponding function block.



2. Select a value from the list and click OK to configure the selected value in the AOTC window.

Note

- You can select only one value at a time. Multiple selections are disabled.
- Additional value buttons are visible only if the number of trends configured is less than the maximum number of trends allowed (8 values).
- Additional value buttons will be disabled if the configured values in the AOTC reaches its maximum allowed limit.

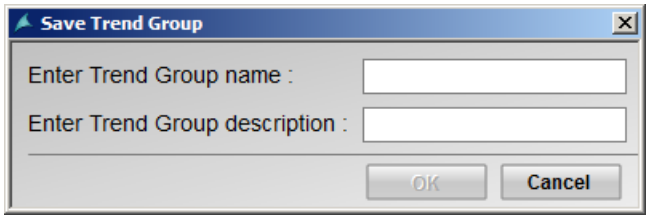
(11) Enabling/disabling a value axis

Click the button next to the I/O field of the unit to enable or disable the value axis. The value itself will stay in the Trend Control, only the value axis will be hidden from the Trend Control.

(12) Saving and Opening a trend group

Saving a Trend group

1. Click the "Save" button to save the trend group. The "Save Trend Group" window appears to save the trend group



2. Enter the following details in the "Save Trend Group" window:
   - Trend group name (maximum of 32 characters)
   - Trend group description (maximum of 64 characters)
   - Select the checkbox if you want to save the trend group as private. If the checkbox is not selected (default), the trend group will be saved as public.
     Saving trend group as private:
     Saving trend group as private allows only the originator to open the trend again. Private trends cannot be opened by other users. Public trends can be opened and modified by every operator.
3. Press the "OK" button to save the trend group.
   You can abort the operation by pressing the "Cancel" button. The dialog will close without saving the name or description.
   The "OK" button is enabled only if the trend group name is entered and the Enter key is pressed. The trend group descitption is optional.

Once the trend group is saved, further changes made in that trend group from the AOTC window will be saved automatically.

The trend group name should be different from the previously saved trend groups. You cannot save the trend group again with the same name.

The following special characters are not allowed in the trend group name:

' ' (space character), '.', ',', ';', ':', '/', '=', '\t', '\\', '"', '<', '>', '{', '}', '[', ']', '|', '?', '*'

Opening a trend group:

Click the "Trend system" standard button at the bottom of the WinCC runtime window to open a saved trend.

Opening trend groups in "Full screen display":

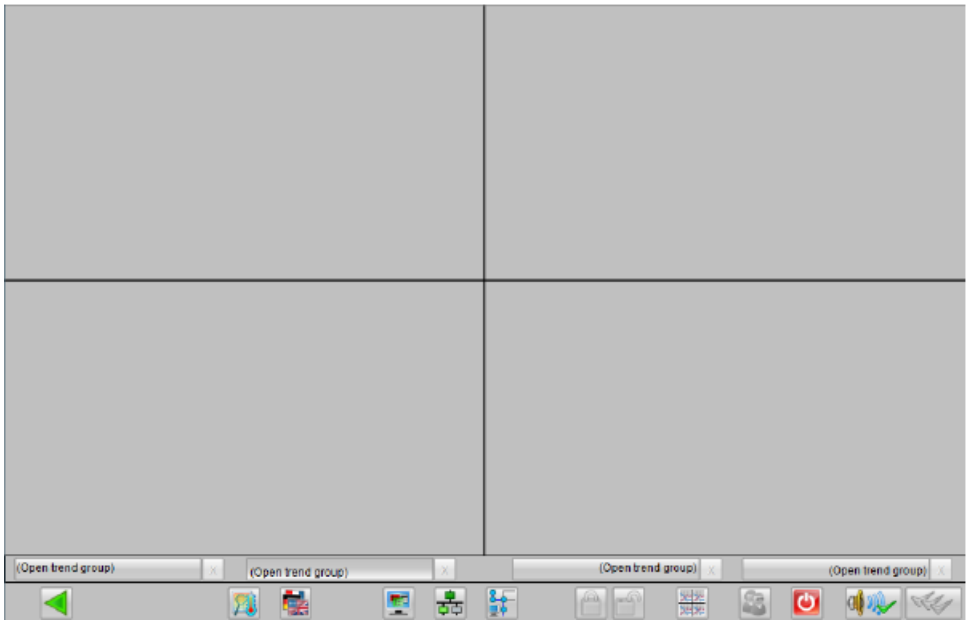
The AOTC full screen display is used to display configured trend groups on a dedicated screen. The AOTC full screen window has four quadrants which means you can display four different trend groups at a time. This window is termed as “Quad trend window” or “Full screen display”.

Perform the following steps to display the trend groups in "Full screen display":

1. Click the AOTC full screen display button at the bottom of the WinCC runtime window.

   The AOTC full screen display opens with four empty quadrants and with four buttons at the bottom to select a saved trend group for each quadrant.

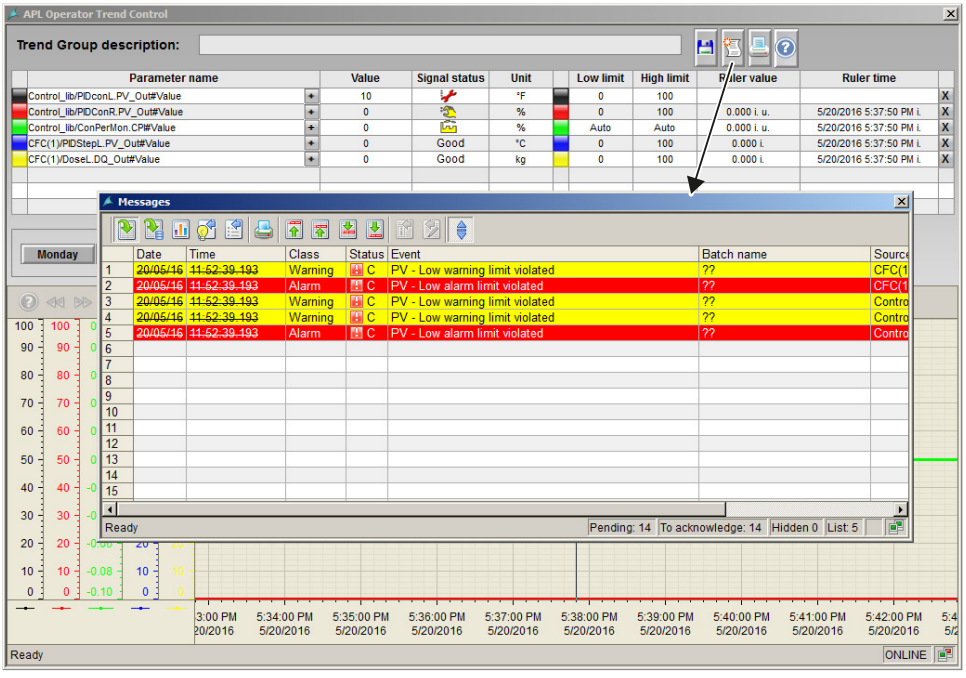
   

2. Click the "(open trend group)" button at the bottom of the AOTC full screen display for the quadrant in which you want to display a particular trend group. A window opens with a list of saved trend groups.

3. Select a trend group from the list and click "Display" to load the trend group into the corresponding quadrant.
4. Use all four buttons to load four different trend groups into the different quadrants of the full screen display.

(13) Opening separate message window

Press the "Messages" button to open a new message window which displays the messages for the selected block types corresponding to the trends added in the AOTC window..



In the online mode, only the actual messages (all active messages, acknowledged and unacknowledged) will be displayed.

If you select a time range displaying values from the archive, the message window will display all the messages within this time range.

Messages only from the enabled trend will be displayed. If a trend is enabled or disabled and the message window is open, the corresponding messages will be displayed or not displayed accordingly. Similarly if a trend is deleted, the corresponding messages will disappear from the messages window.

If two or more trends of the same block type are added to the AOTC window, and one of them is disabled, the corresponding messages will not be removed from message window. All the trends should be disabled or deleted to remove the corresponding messages from the message window.

Only one message window can be opened at a time. If one more AOTC window is opened and you want to display the messages for the values in that window, the already opened message view should be closed and opened again from the specific AOTC window.

(14) Printing screenshot of the AOTC window

Press the "Print" button to print the screenshot of the complete AOTC window. WinCC runtime (also the Web Navigator) should be in full screen mode without scroll bar. The AOTC window should be visible completely in the runtime.

(15) Help button

You will find detailed information about the AOTC window and its functionalities.

(16) Deleting a trend

Click the "X" button at the end of the row in the overview area to delete existing values.

The corresponding trend is removed from the trend window. In the overview area, the rows below the deleted row are moved up and an empty row is added at the end.

New values are added to the first empty row.

(17) Closing the AOTC window

Click the "Close" button in the title bar to close the AOTC window.

Operator permissions

The operator permissions are similar to the existing online trend function.

The following fields are enabled only if the area authorization is available:

1. Delete buttons to delete trends.
2. Save button to open the pop-up window to save the trend group.
3. Field to enter the trend group name in the pop-up window.

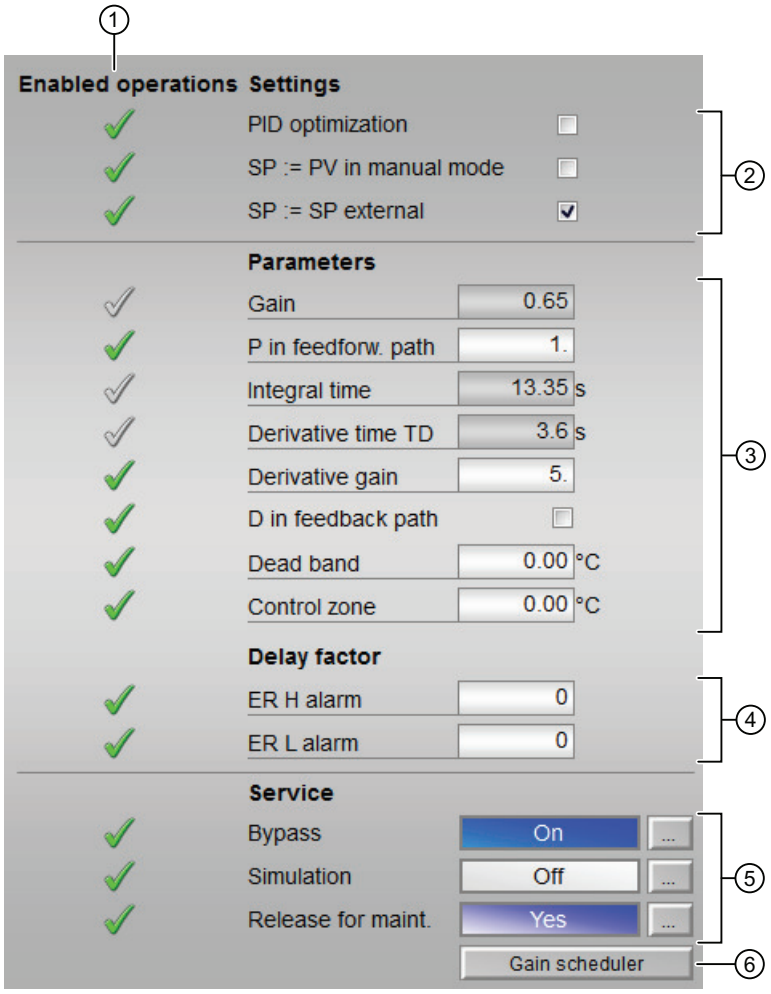
4. Field to enter the trend group description in the pop-up window.
5. The "OK" button to save the trend in the pop-up window.

Note

The functions for example, disable/enable trend, disable/enable value axis, delete trend, open message window, print AOTC screenshot, select private trend group, need no operation area or quitting function. The feature "Save Trend Group" needs an operation area where only 3 step operation is possible. It does not support 2 step operation.

12.2 Parameter view of PID controllers

Parameter view of PID controllers



The Parameter view consists of the following:

(1) "Enabled operation"

(2) "Settings"

(3) "Parameters"

(4) "Delay factor" (only for PIDConL and PIDConR)

(5) "Service"

(5) Navigation button for the GainSched block

(1) "Enabled operation"

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

(2) "Settings"

You can activate the following functions for the controller in this area:

- "PID optimization": ☑activate controller optimization
- "SP := PV in manual mode": ☑Bumpless switchover from manual mode to automatic mode
- "SP := SP external": ☑Bumpless switchover of the setpoint for setpoint switchover from "external" to "internal". The internal setpoint is tracked to the external one.
  - With the PIDConR block, this area is only visible if you have set the Feature bit Switching operator controls for external setpoint to visible to 1.

(3) "Parameters"

In this area, you change parameters and therefore influence the controller.

You can influence the following parameters:

- "Gain": Proportional gain
- "Integral time" Integral action time in [s]
- "Derivative time TD": Derivative action time in [s]
- "Derivative gain": Gain of the derivative action
   "Dead band": Width of dead band Dead band is temporarily disabled
- "Control zone": Width of the control zone (only with PIDConL block)
- "Motor actuating time": Motor actuating time [s] (for PIDStepL block only)
- "Minimum pulse duration": Minimum pulse duration [s] (for PIDStepL block only)
- "Minimum break duration": Minimum break duration [s] (for PIDStepL block only)

(4) "Delay factor" (only for PIDConL and PIDConR)

In this area you can change the delay factor.

(5) "Service"

You can select the following functions in this area:

- "Bypass" (only with PIDConL, PIDConR, and PIDStepL)
- "Simulation"
- "Release for maintenance" (with display for a maintenance request)

(6) Navigation button for the GainSched block

You can use this navigation button to reach the GainSched block.

12.3 Limit view of PID controllers

Limit view of PID controllers

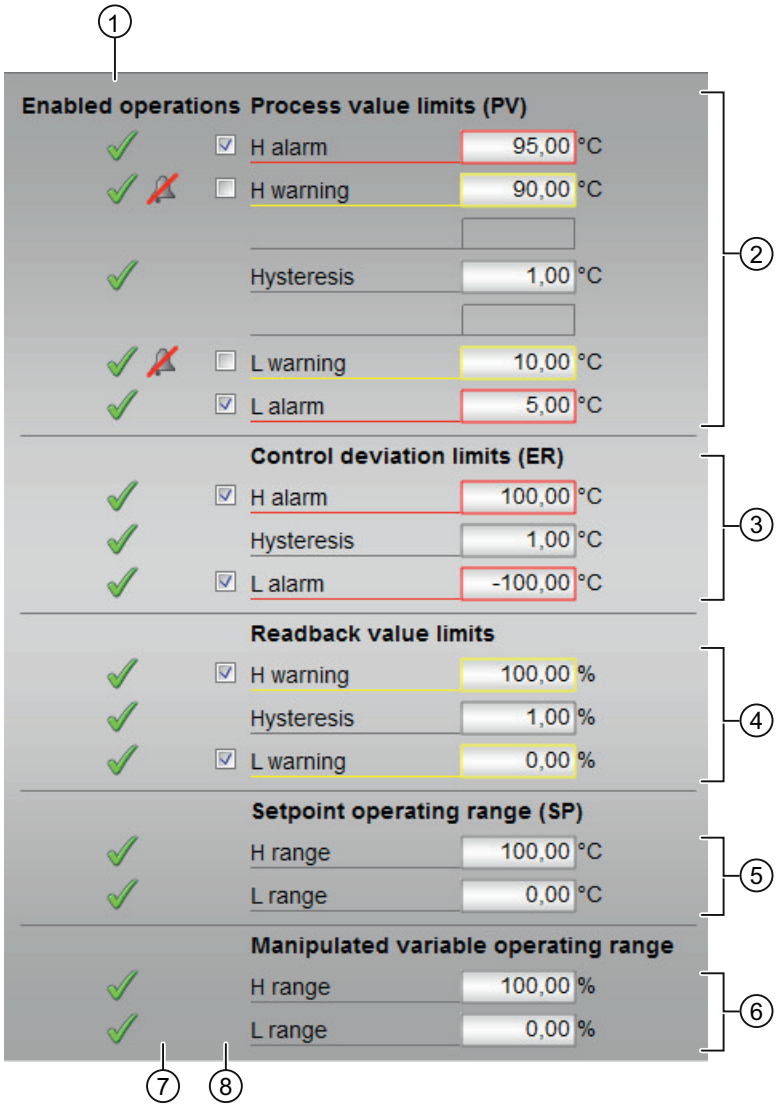
Several values are set in this view by default:

- Process value limits
- Error signal limits
- Readback value limits
- Setpoint operation range

The toolbars of the faceplate and the block icon indicate when the limits are reached or violated.

Note

The symbols displayed are not valid for user-configured message classes.



The limit view consists of the following:

(1) "Enabled operation"

(2) "Process value limits (PV)"

(3) "Error signal limits (ER)" (not with PIDConS)

(4) "Readback value limits (RBK)" (not with PIDConS)

(5) Setpoint operation range (SP)

(6) Manipulated variable operating range

(7) "Message suppression / delay"

(8) Suppress messages

(1) "Enabled operation"

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

(2) "Process value limits (PV)"

In this area, you can enter the limits for the process value.

You can change the following limits:

- "H alarm": Alarm high
- "H warning": Warning high
- "H tolerance": Tolerance high (not with PIDConS)
- "Hysteresis"
- "L tolerance": Tolerance low (not with PIDConS)
- "L warning": Warning low
- "L alarm": Alarm low

(3) "Error signal limits (ER)" (not with PIDConS)

In this area, you can enter the limits for the control deviation.

You can change the following limits:

- "H alarm": Alarm high
- "Hysteresis"
- "L alarm": Alarm low

(4) "Readback value limits (RBK)" (not with PIDConS)

In this area, you can enter the limits for the readback value.

You can change the following limits:

- "H warning": Warning high
- "Hysteresis"
- "L warning": Warning low

(5) Setpoint operation range (SP)

In this area, you can enter the limits for the setpoint operation range.

You can change the following limits:

- "H range": Range limit high
- "L range": Range limit low

(6) Manipulated variable operating range

In this area, you can enter the limits for the manipulated variable operation range.

You can change the following limits:

- "H range": Range limit high
- "L range": Range limit low

(7) "Message suppression / delay"

Message suppression indicates whether or not the suppression of the associated message inthe AS block is activated with the xx_MsgEn parameter. The output of messages is not suppressed when the block is installed (all xx_MsgEn parameters are preset to 1). Messages can only be output if limit monitoring of the additional analog value has been enabled.

(8) Suppress messages

You can enable / disable messages by setting the check mark.

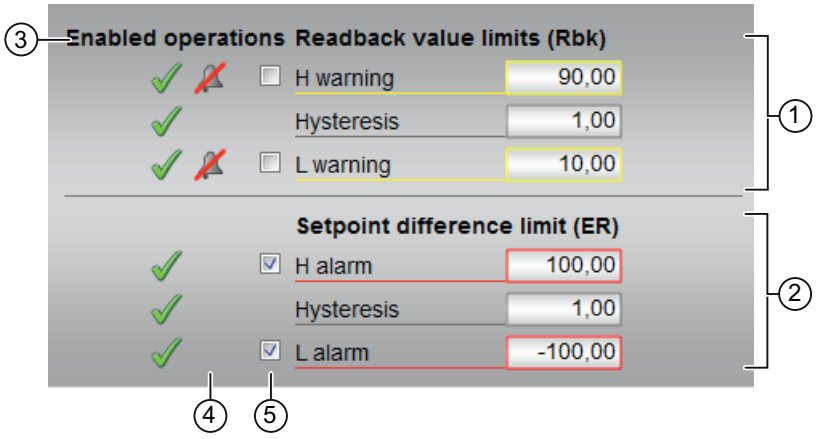
12.4 Limit view for readback values

Limit view for readback values of MotSpdCL

Several values are set in this view by default:

- Readback value limits

The toolbars of the faceplate and the block icon indicate when the limits are reached or violated.



The limit view for readback values consists of the following:

(1) Displaying and changing the limits for the readback value

(2) Displaying and changing the limits for the setpoint difference

(3) Enabled operation

(4) "Message suppression/delay"

(5) Suppress messages

(1) Displaying and changing the limits for the readback value

In this area, you can enter the limits for the readback value.

You can change the following limits:

- "H warning": Warning high
- "Hysteresis"
- "L warning": Warning low

(2) Displaying and changing the limits for the setpoint difference

In this area, you can enter the limits for the setpoint difference.

You can change the following limits:

- "H alarm": Alarm high
- "Hysteresis"
- "L alarm": Alarm low

(3) Enabled operation

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions

(4) "Message suppression/delay"

Message suppression indicates whether or not the suppression of the associated message in the AS block is activated with the xx_MsgEn parameter. The output of messages is not suppressed when the block is installed. Messages can only be output if limit monitoring of the additional analog value has been enabled.

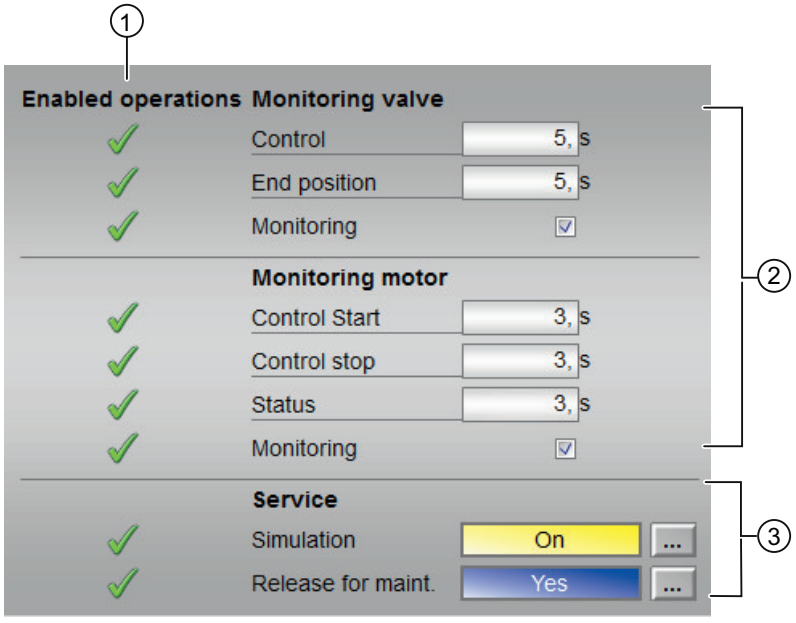
Alarm delays are also displayed in this position;

(5) Suppress messages

You can enable / disable messages by setting the check mark.

12.5 Parameter view for motors and valves

Parameter view for motors and valves



The Parameter view consists of the following:

(1) "Enabled operation"

(2) "Monitoring"

(3) "Service"

(1) "Enabled operation"

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions.

(2) "Monitoring"

In this area, you change parameters and therefore influence the motor.

You can influence the following parameters:

- "Control": Monitoring time during startup and shutdown of the motor (dynamic)
- "Control stop": Monitoring time during shutdown of the motor (dynamic)
- "Control start": Monitoring time during startup of the motor (dynamic)
  "End position": Monitoring time during permanent operation of the motor (static)
- "Status": Monitoring time during permanent operation of the motor (static).The state is not displayed for small blocks.

Enabling "Monitoring"

You can enable monitoring by selecting the check box (☑)

(3) "Service"

You can select the following functions in this area:

- "Simulation"
- "Release for maintenance" (with display for a maintenance request)

12.6 Limit view of motors

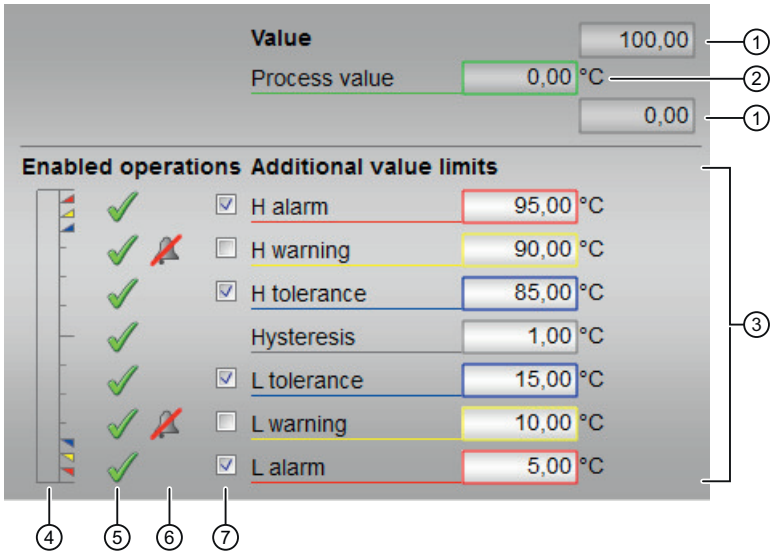
Limit view of motors

The limit view of motors is only available when an AV block has been interconnected to the motor.

The toolbars of the faceplate and the block icon indicate when the limits are reached or violated.

Note

The symbols displayed are not valid for user-configured message classes. Take into consideration the validity of terms for User-configured message classes.



The limit view consists of:

(1) High and low scale range for the additional value

(2) Display of the additional value including signal status

(3) "Limits for the additional value"

(4) Bar graph for the additional value

(5) "Enabled operation"

(6) Message suppression / delay

(7) Suppress messages

(1) High and low scale range for the additional value

These values provide information on the display range for the bar graph of the additional value.

(2) Display of the additional value including signal status

This area shows the current additional value with the corresponding signal status.

(3) "Limits for the additional value"

In this area, you can enter the limits for the additional value.

You can change the following limits:

- "H alarm": Alarm high
- "H warning": Warning high
- "H tolerance": Tolerance high
- Hysteresis
- "L tolerance": Tolerance low
- "L warning": Warning low
- "L alarm": Alarm low

(4) Bar graph for the additional value

This area shows you the current additional value in the form of a bar graph.

(5) "Enabled operation"

This area shows all operations for which special operator permissions are assigned.

Icons for enabled operation:

- Green check mark: the OS operator can control this parameter
- Gray check mark: the OS operator cannot control this parameter at this time due to the process
- Red cross: the OS operator cannot control this parameter due to the configured AS operator permissions

The colored triangles indicate the specified limits (3) for the additional value.

(6) Message suppression / delay

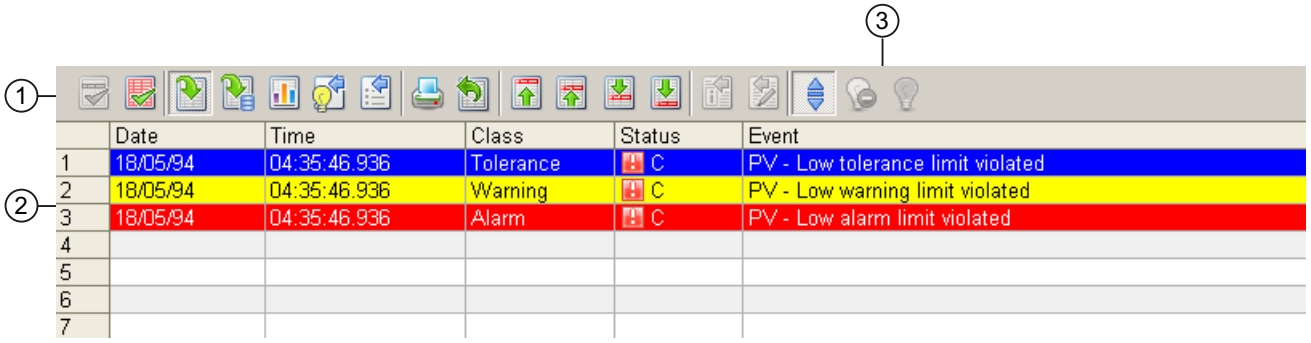
Message suppression indicates whether or not the suppression of the associated message in the AS block is activated. The output of messages is not suppressed when the block is installed. Messages can only be output if limit monitoring of the additional analog value has been enabled. Alarm delays are also displayed in this position.

(7) Suppress messages

You can enable / disable messages by setting the check mark.

12.7 Alarm view

Message view



Overview

The Alarm provides a message view which has the following:

(1) Toolbar

(2) Display area for alarms

(3) "Hide messages" button

(1) Toolbar

If the short-term archive list is selected, a new button appears in the toolbar:

You can use this button to toggle between the "History" and "Operator messages" views.

You must be registered with the "Higher process control" operating permission in order to export and hide messages.

(2) Display area for alarms

For additional information about the alarm view, refer to the*WinCC Information System* Online Help.

(3) "Hide messages" button

Messages can be displayed and/or hidden with this button. The view of this button changes accordingly

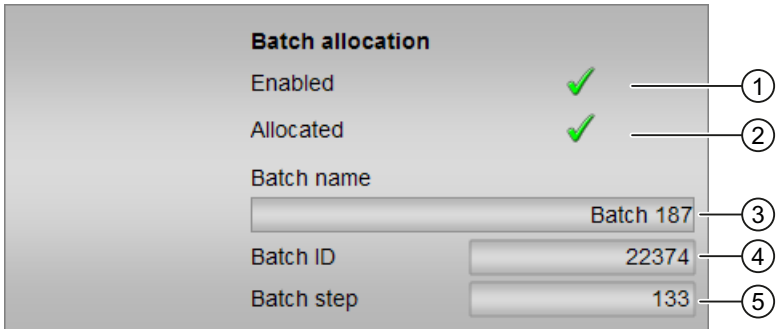
Show messages

Hide messages

Higher process controlling" operating permission is required and manual hiding must be active. You can find additional information in the manual "Process Control System PCS 7 Operator Station".

12.8 Batch view

Batch view



The Batch view consists of:

(1) "Enabled"

(2) "In use"

(3) "Batch name"

(4) "Batch ID"

(5) "Batch step"

(1) "Enabled"

This area shows you if the block is enabled for operation via SIMATIC BATCH.

(2) "In use"

This area shows if the block is currently in use by SIMATIC BATCH.

(3) "Batch name"

This area shows the name of the batch that is currently running.

(4) "Batch ID"

This area shows the identification number of the batch that is currently running

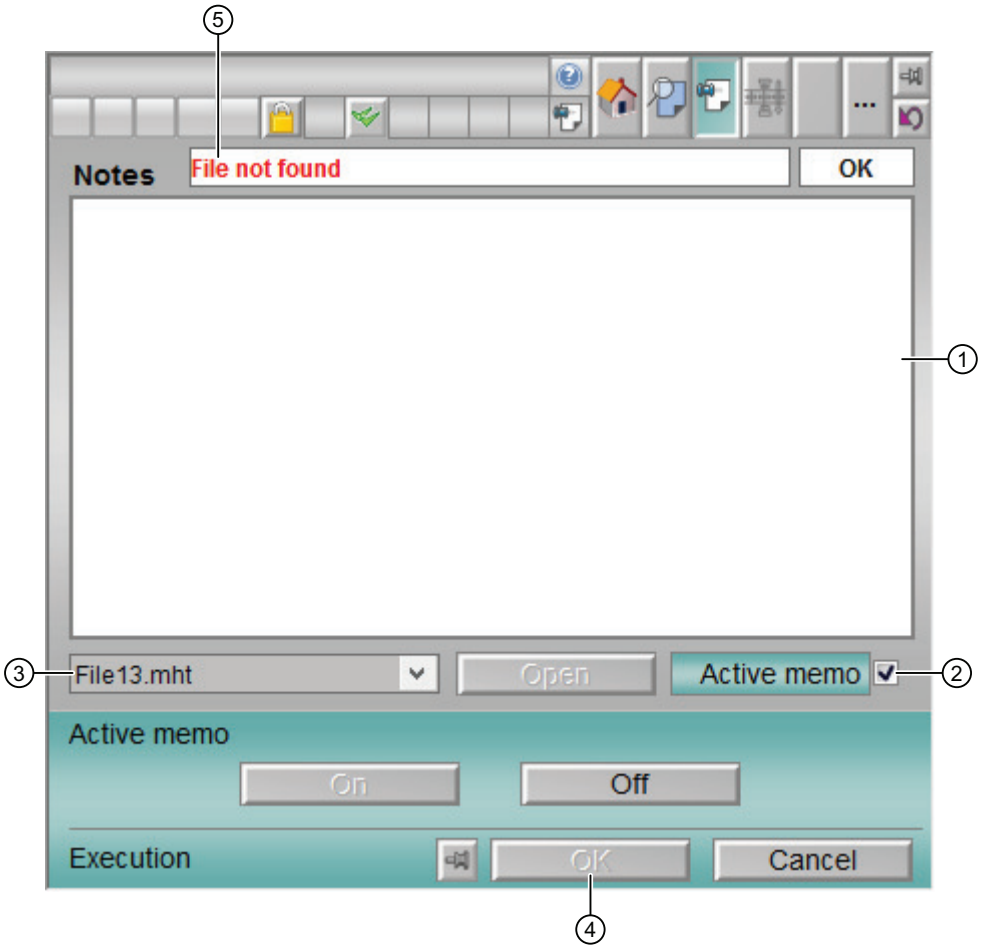
(5) "Batch step"

This area shows the step number of the batch that is currently running

12.9 Memo view

Memo view

You can leave temporary messages for other OS operators in this view. Messages are entered in the text box, and saved and activated by selecting the check box in the lower right corner of the faceplate.



(1) Text box for notes

(2) Check box for activating the note

(3) Combo box for list of files - A maximum of 3 files of (html) type are displayed here

(4) Open Button to display selected file - On clicking this button, a new window is opened which displays the file selected from combo box

(5) Diplays error message. There are four possible error conditions that display error messages:

1. File not found: If the selected file is not avaialbe in the NoteView folder.
2. File size exceeded: If the selected file is greater than allowable limit (>25 MB).

3. Invalid file format: If configured file is other than mht format.
4. File name length exceeded: If length of the file name exceeds 32 characters excluding the file extension (.MHT).

Note

- Files that are configured for NoteVew should be saved with UTF-8 encoding. This is applicable to all the intermediate files also, before they are converted to .MHT files.
- No permission levels are required for combo box and open button in the APL_Memo.PDL.

(1) Window Title: indicates the title of Window and name of the file opened as well.

(2) Indicates the loading status of the selected .MHT document

(3) NoteView display area: displays content of the selected file.

Advised maximum size of the file is <= 25 MB for a smooth operation.

Note

- This window cannot be resized but it is movable.
- This window is not supported by functionality "screen composition".

All the MHT files (NoteView documents) should be placed in the "OS project path\Gracs \NoteView". In case of a Multi project, server holds all these files and these files are not available in the client.

Error Handling

- If selected file is not found in the folder path, an error message is shown as “File not found”.
- If configured file format is other than .MHT, an error message is shown as "Invalid file format".

- If selected file is more than 25 MB and if tried to open same, an error is shown as “File size exceeds 25 MB”.
- If file name length exceeds 32 characters, an error is shown as "File name length exceeded 32 characters".

The next time the faceplate is opened or there is a process picture change, you can see in the status bar of the block icon and the faceplate that there is a new message for you.

Clearing the check box deletes the indicators in the status bars.

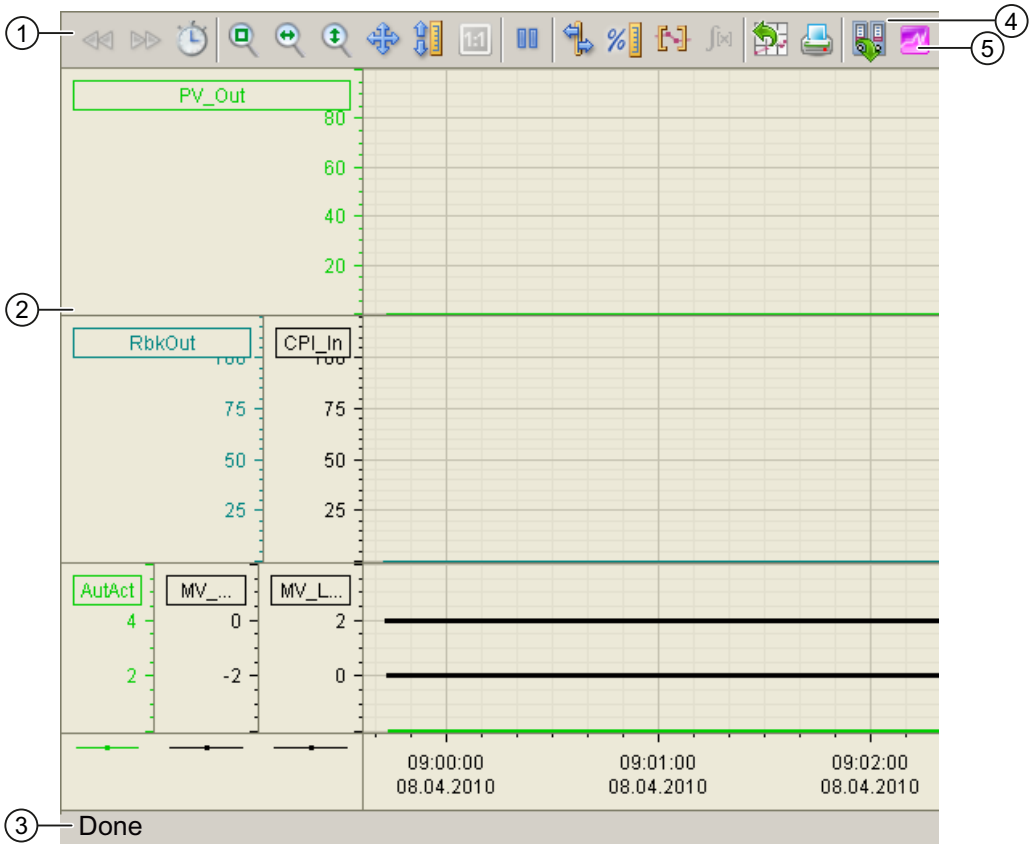
The message is not deleted automatically.

Note

The content of the memo view is cleared when you perform a full compilation and download of the OS.

12.10 Trend view

Trend view



(1) Toolbar

(2) Display area for trends

(3) Status bar

(4) Button for switching between archive tags and online tags. The status bar shows if the trend view is working with online data or archive data.

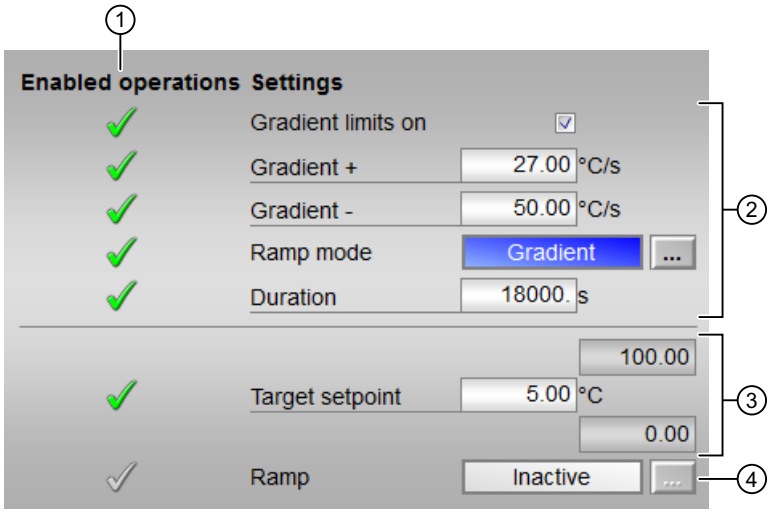
(5) Button for opening the "Scatter plot" window.

The Export button is only visible and operable with the "Higher-level process control" operating permission.

For additional information about the trend view, refer to the *WinCC Information System* OnlineHelp.

12.11 Ramp view

Ramp view



The Ramp view consists of the following options

(1) "Enabled operations"

(2) Enable "gradient limit"

(3) "Ramp function"

(4) Enable "ramp"

(1) "Enabled operations"

This area shows all operations for which special operator control permissions are assigned.

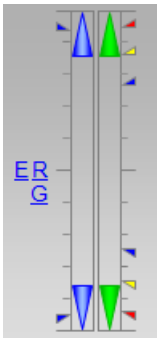
Symbols for enabled operations:

- Green check mark: the OS operator can control this parameter
- Gray check mark: The OS operator cannot control this parameter at this time due to the process
- Red cross: The OS operator cannot control this parameter due to the configured AS operator control permissions.

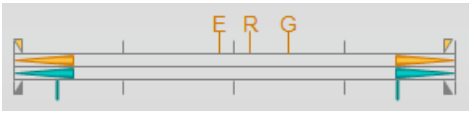
(2) Enable "gradient limit"

Use this check box to enable "gradient limit" for the setpoint. "Gradient limit" can be set separately for positive or negative setpoint changes ("Gradient +" or "Gradient -").

If there is a difference between target setpoint and currently effective setpoint, a blue "G" may be displayed at the bar in standard view of FmCont, FmTemp, PidConL, PIDConR, PIDStepL,OpAnL and MotSpdCL with parameter assignment of target setpoint for gradient limit.



If there is a difference between the target manipulated variable and the currently effectivemanipulated variable, an orange "G" may be displayed at the bar in the standard view of VlvAnL with parameter assignment of target manipulated variable for gradientlimit.



The gradient limitation includes the Ramp function.

You can set the ramp mode in the following two ways:

- Gradient
- Duration [s]

(3) "Target setpoint"

In this area, you can set the type of ramp function for the setpoint.

(4) Enable "ramp"

You can use this control to enable or disable the configured function in the ramp function for the setpoint change.

You can only enable this when the setpoint specification is set to "Internal" in the standard view of the block. The enable is only valid for one setpoint change and is subsequently disabled again.

12.12 Changing values

Overview

In the faceplate, it allows the operator to perform changes to the values and and execute commands.

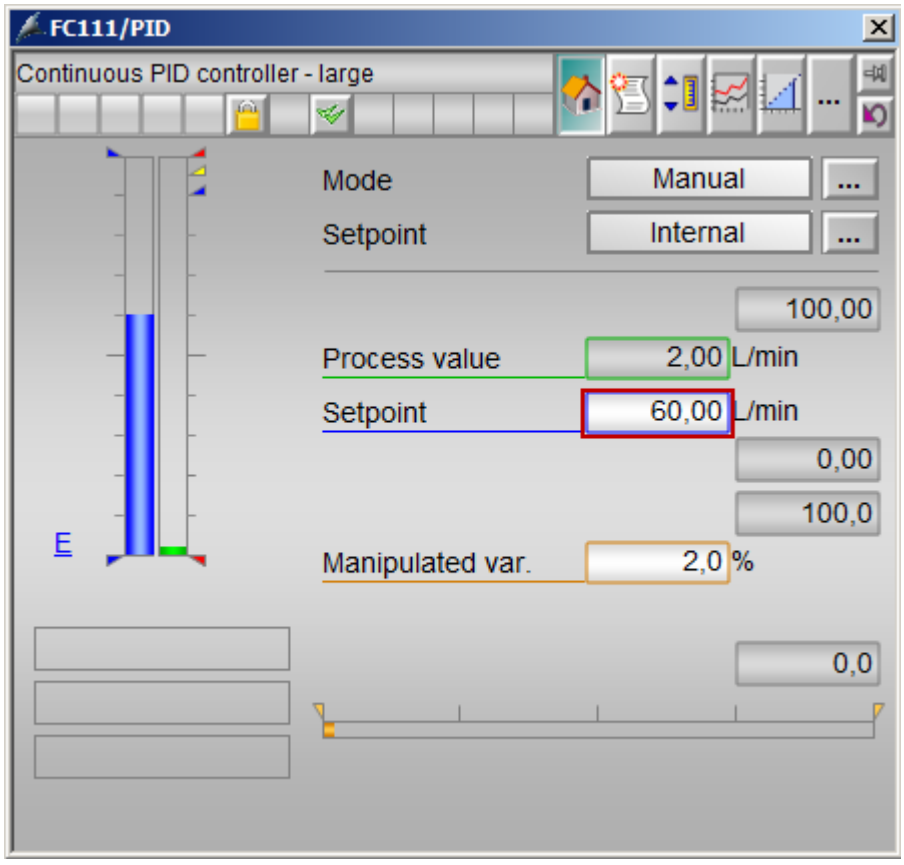
The operating window offers the following options for changing analog values:

- Input box
- Slider
- Direct control buttons

Changing analog value in input box

Follow these steps to change an analog value in the input box within the operating window:

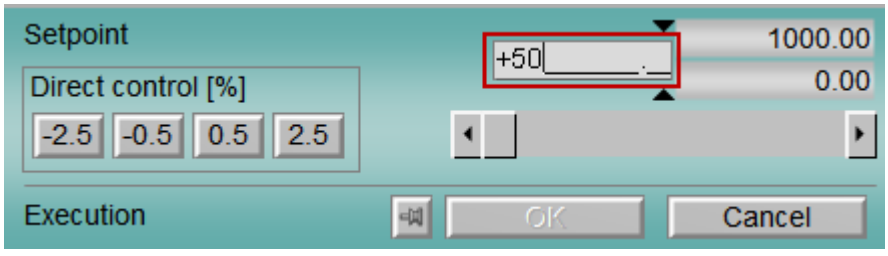
1. Open the faceplate.
2. Click the input box of the value to be changed.



Note

The operating window is opened as an extension of the faceplate.

3. Click the input box and enter the required value using the keyboard.

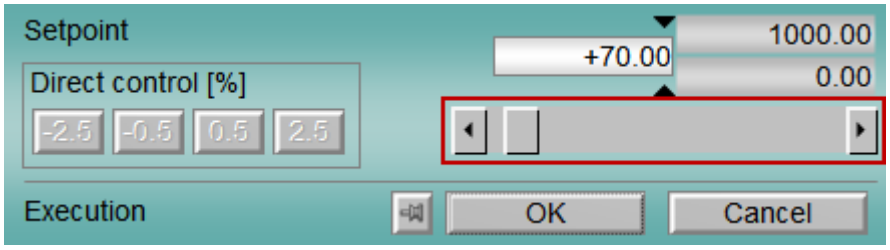


4. To confirm execution, select **OK**.
5. The setpoint value will be reflected in the setpoint input box in the faceplate window.

Changing an analog value using slider

Follow these steps to change an analog value via the slider in the operating window:

1. Click the input box for the value you wish to change.
   The operating window will open as an extension of the faceplate.
2. Move the slider until the desired value is shown in the input box.

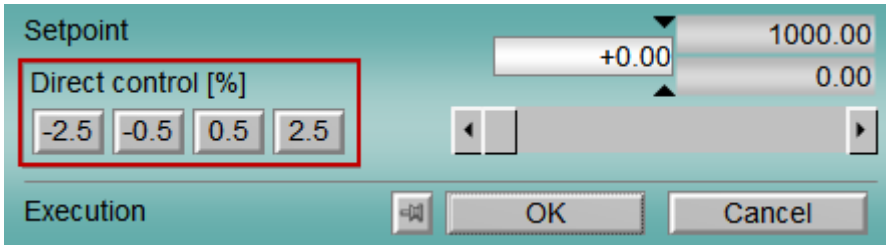


3. If acknowledgement is required for the value entered, click "OK".

Changing an analog value using buttons

To change an analog value via the buttons in the operating window, follow these steps:

1. Click the input box of the value you wish to change.
   The operating window will open as an extension of the faceplate.
2. Click the desired button.



   The value is immediately changed and applied in the input box of the operating window.
3. To confirm execution, select **OK**.
4. The setpoint value will be reflected in the setpoint input box in the faceplate window.

Multiple operation

If the operating window is not to close after the confirmation of a command, it can be "pinned". The following button is located below the operating window for this purpose:

If the operating window is not to close after the confirmation of a command, it can be "pinned". The following button is located below the operating window for this purpose:

Operating window unpinned.

When the value of a parameter is set using the "Direct control" button, the value is applied to the parameter and the "Cancel" button is disabled. Click "OK" to close the operating window.

Operating window pinned.

When the value of a parameter is applied using the "Direct control" button, the value is applied to the parameter and the "OK" button is disabled. Click "Cancel" to close the operating window.

Suppress messages

You can enable / disable messages by setting the check mark.

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