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# Library for Basic Processes (LBP) – Operation

STEP 7 Basic / Professional V16, WinCC Comfort /  
Professional V16, WinCC V7.5 SP1, WinCC Open  
Architecture 3.16

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# Table of Contents

<b>Legal information .....</b>	<b>2</b>
<b>1      Introduction .....</b>	<b>4</b>
1.1      Overview.....	4
1.2      Hardware and Software Requirements .....	5
<b>2      Operation of the HMI Faceplates.....</b>	<b>6</b>
2.1      WinCC Runtime Professional /WinCC V7/ WinCC Open Architecture .....	6
2.1.1      Cross-Block Operations .....	6
2.1.2      Block-Specific Operations .....	13
2.2      Comfort Panels/WinCC Runtime Advanced.....	74
2.2.1      Cross-Block Operations .....	74
2.2.2      Block-Specific Operations .....	82
<b>3      Operating the Demo Project .....</b>	<b>140</b>
3.1      Navigation .....	140
3.2      Operating the Simulation Controls .....	141
3.3      Demo 1 .....	142
3.4      Demo 2 .....	143
3.5      Icons .....	144
<b>4      Appendix .....</b>	<b>145</b>
4.1      Service and support .....	145
4.2      Links and Literature.....	146
4.3      Change documentation .....	146

# 1 Introduction

## 1.1 Overview

The Library for Basic Processes (LBP) assists you in the visualization of various functions.

Advantages of the library:

- Uniform design
- Less engineering work

Many projects have the same elements which have to be visualized. These include motors, analog values and valves, for example. You can find the following blocks in the library:

Table 1-1

Block	Brief description
LBP_Aggr8	Control of up to 8 Aggregates
LBP_AnaAvg	Average calculation with plausibility check
LBP_AnaRead	Analog value processing
LBP_ClctVal	Group display
LBP_CntrA	Integrating counter
LBP_CntrD	Difference counter
LBP_CntrP	Pulse counter
LBP_CtrlPID	Continuous PID controller
LBP_CtrlStp	Step controller
LBP_Intlk8	Interlock for up to 8 signals
LBP_Msg8	Message block for 8 messages
LBP_Mtr	Simple motor
LBP_MtrDS	Motor with 2 speeds and directions of rotation
LBP_MtrF	Speed-controlled motor
LBP_OpAna	Switching of analog values
LBP_OpDig	Switching of a digital signal
LBP_Polygon	Conversion of values over 8 interpolation points
LBP_Select	Selection of values
LBP_SetCrv	Time-dependent set point curve
LBP_TimeSw	Time switch
LBP_Vlv	Simple valve
LBP_VlvA	Analog controlled valve
LBP_3wVlv	Three-way valve

### Innovations with V2.0

You obtain a fundamentally revised library with V2.0.

Aims of the revision:

- Performance improvement
- Improvement of usability during configuration
- Improvement for more intuitive operation
- Sustainable programming and configuration of the library

## 1.2 Hardware and Software Requirements

### Requirements for this library

In order to use the functionality of the library described here, the following hardware and software requirements must be met.

#### Hardware

All blocks (FB, FC, DB, etc.) in the library can be used universally with the following controllers:

- S7-1200 and S7-1200 F product family
- S7-1500 and S7-1500 F product family
- Simulation with S7-PLCSIM (as of V14)
- Comfort Panels

When using WinCC Professional, WinCC V7 or WinCC Open Architecture a computer is required.

#### Software

- STEP 7 (TIA Portal) Basic or Professional V15

At least one of the following WinCC versions is required:

- WinCC Professional and Runtime Professional V15
- WinCC Comfort/Advanced V15 and Comfort Panels
- WinCC Advanced V15 and WinCC Runtime Advanced V15
- WinCC V7.5 Update 3 or higher
- WinCC Open Architecture 3.16

## 2 Operation of the HMI Faceplates

### 2.1 WinCC Runtime Professional /WinCC V7/ WinCC Open Architecture

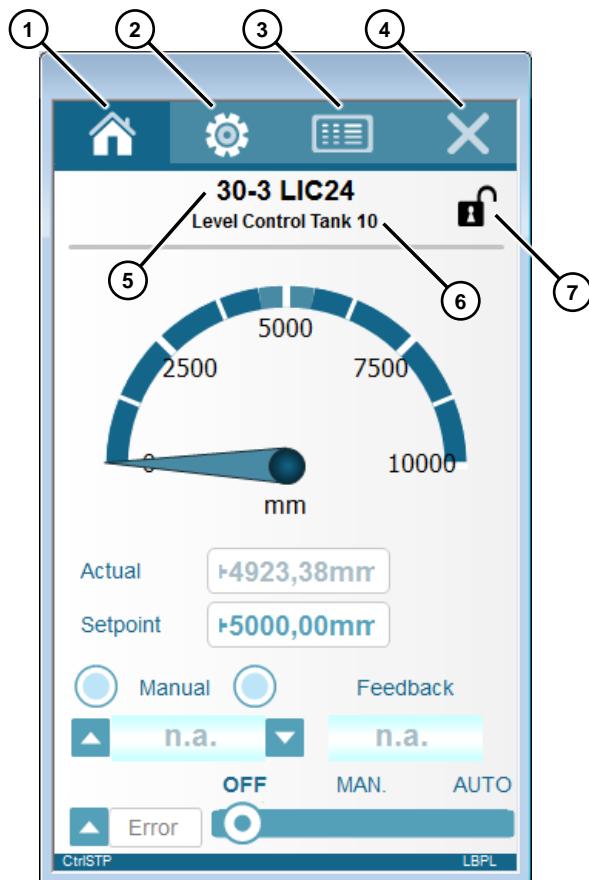
The following is a description of how to use the pop-ups. Many operation possibilities are similar. For this reason, the chapter is divided into cross-block operations and block-specific operations.

#### 2.1.1 Cross-Block Operations

##### 2.1.1.1 Navigation and Header

The navigation and the header have the same structure in all blocks and function as follows:

Figure 2-1



1. Open the “Home” Screen (Start Screen of the pop-up)  
The Home Screens of the individual blocks differ greatly. For this reason, there is a corresponding description for each block [2.1.2 Block-Specific Operations](#).
2. Open the settings  
You can find more information about the operation of the settings under [2.1.1.2 Operating the Settings Screens](#).

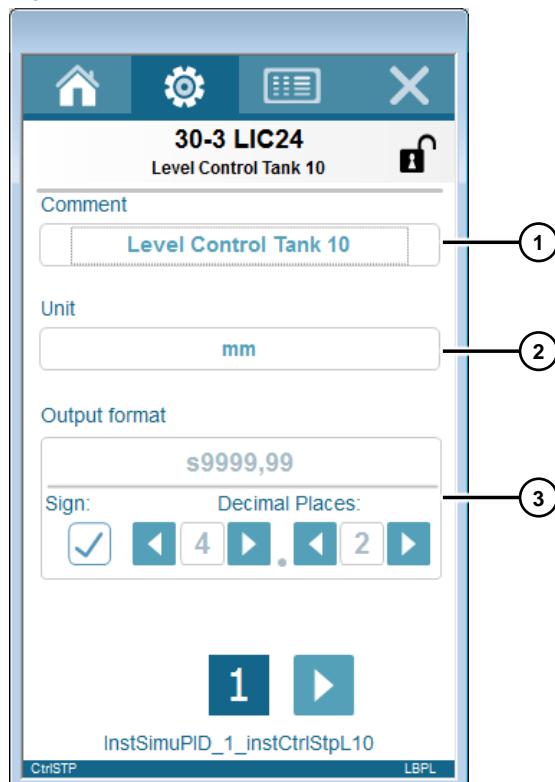
3. Open the message window  
You can find more information on message windows under [2.1.1.3 Operating the Message Window](#).
4. Close the pop-up window
5. "identName"; this is connected to the STEP 7 block in the PLC program and must be unique for each block.
6. Comment  
This can be adapted on the settings page. See [2.1.1.2 Operating the Settings Screens](#).
7. Open the screen to lock operation for others  
You can find more information on this under [2.1.1.4 Operating the Locking System](#).

### 2.1.1.2 Operating the Settings Screens

The following section describes setting elements that appear in several blocks and have similar or identical functionality.

#### Comment/Unit/Output Format

Figure 2-2

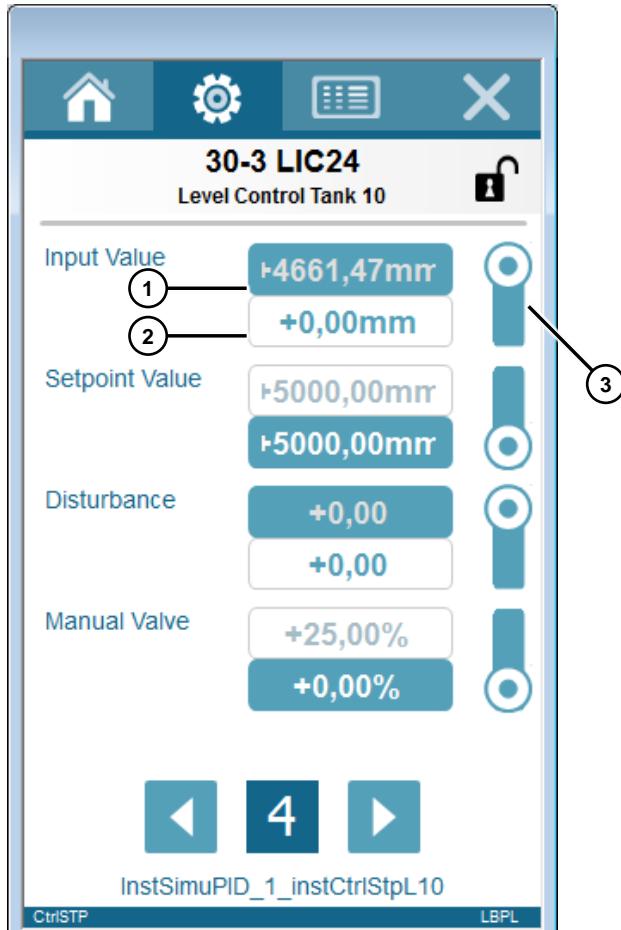


1. Comment  
The text to be displayed under the identification name or heading is entered in the comment field.
2. Unit  
The unit entered here is automatically added to the process value in most input/output fields after input.
3. Output format  
The format set here is used for all input fields.  
The check box determines whether the sign is to be displayed. With the arrow

buttons in front of the dot, the number of places in front of the decimal point can be defined, and with the arrow buttons after the dot, the number of places after the decimal point.

### Overwriting Values

Figure 2-3



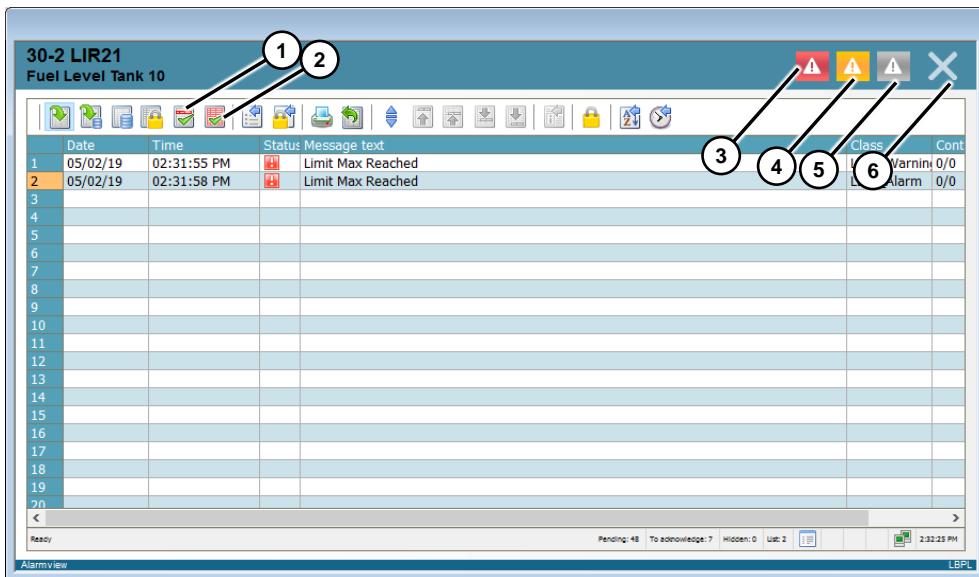
1. PLC value  
This is an output value. Usually, a tag is connected here that transmits the value that was connected in the program to the input of the STEP 7 block.
2. HMI value  
This is an input and output field. A tag is connected here which can be used instead of the PLC value and written to via the HMI system.
3. Switches  
The switch is a display and operator control. It determines whether the PLC value or the HMI value is to be activated. Its position is determined by a bit from the "settingsHMI.overwrite" tag. You can find the bit assignment of the overwrite tag for the individual blocks in Chapter 5.2.7, "Script for Switching Operability and Colors" in the document "Library for Basic Processes: Implementation".

#### 2.1.1.3 Operating the Message Window

In the message window, the active alarms are filtered according to the text of the "identName" tag. Therefore, only the alarms for the associated STEP 7 block are displayed in the message window.

## 2 Operation of the HMI Faceplates

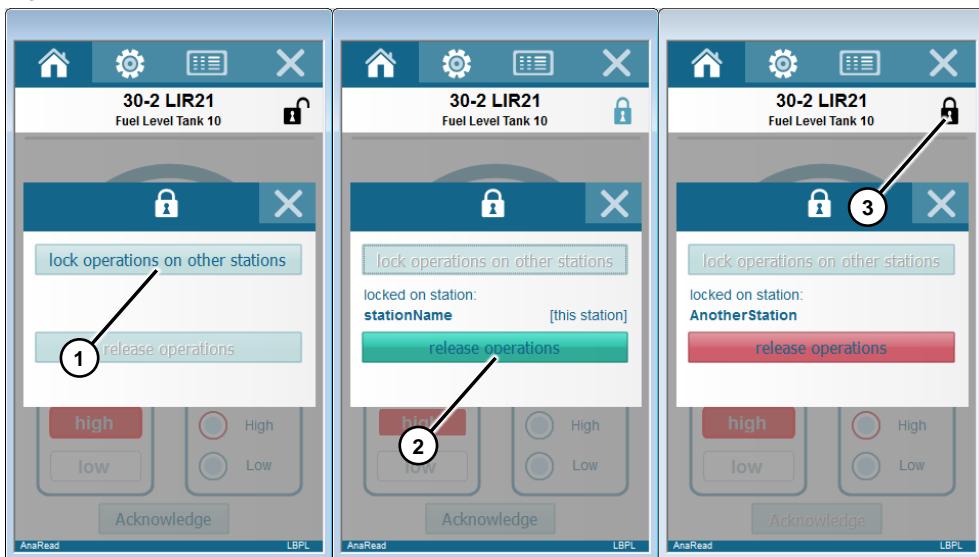
Figure 2-4



1. Acknowledge the selected alarm.
2. Acknowledge all alarms.
3. Hide the alarms.
4. Hide the warnings.
5. Hide the information messages.
6. Close the window.

### 2.1.1.4 Operating the Locking System

Figure 2-5



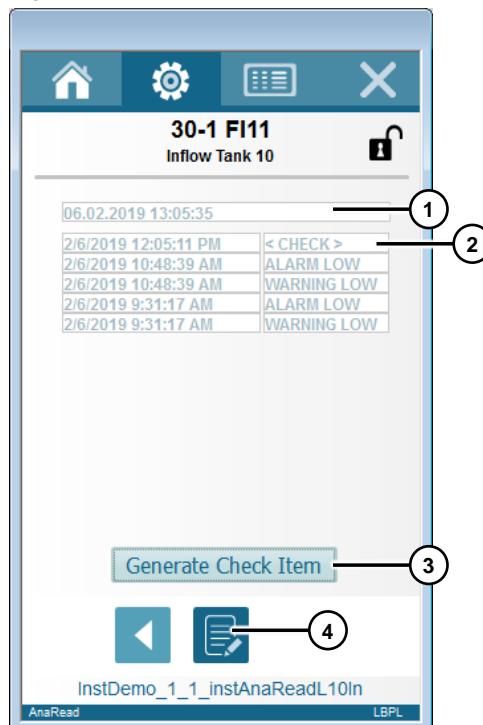
1. No one is currently logged on in the figure here. For this reason, operation from any HMI station is currently permitted.  
If the “lock operations on other stations” button is pressed, operation is only permitted for this station.
2. The HMI station is logged on in the figure here. To enable the operation again for all stations, press the “release operations” button.

## 2 Operation of the HMI Faceplates

3. Another HMI station is currently logged on in this figure. The “release operations” button can only be pressed by the administrator and enables operation for all.  
The padlock can be seen from every screen and is black and closed when another HMI station is logged on, blue and closed when your own HMI station is logged on, and black and open when no one is currently logged on.

### 2.1.1.5 Operating the Logging Screen

Figure 2-6



1. Current date and time.
2. List of the last 15 entries generated by the LBP block.
3. Create a check item (See marker 2).
4. Icon for logging page.

### Cross-Block Error Codes

Table 2-1

Error code	Abbreviation	Description
1	< CHECK >	Check item
2	CMD MAN	Manual operation was activated
3	CMD AUT	Automatic operation was activated
4	CMD RESET	Block was reset
5	REPAIR OFF	Repair mode was deactivated
6	REPAIR ON	Repair mode was activated
7	LOCAL ON	Local mode was activated
8	LOCAL OFF	Local mode was deactivated
9	INTLK OFF	Interlock was released

## 2 Operation of the HMI Faceplates

Error code	Abbreviation	Description
10	INTLK ON	Interlock was activated
11	ERR TRIP	Emergency off was triggered
12	ERR EXT	External error was triggered
13	ERR TIMEOUT	Actuation has not been executed in the specified time
14	ERR PLAUS	Plausibility error
15	OFF	Was switched off
16	ON	Was switched on
17	NO RELEASE	Switch-on command but no switch-on release
18	RELEASE OFF	Switch-on release Off
19	RELEASE ON	Switch-on release On
20	WAIT SPEED	Waiting time for speed changeover is running
21	WAIT DIRECTION	Waiting time for change of rotation direction is running
22	ON2	Second speed is activated
23	ON1R	Speed 1 active in reverse mode
24	ON2R	Speed 2 active in reverse mode
25	CLOSE	Was closed
26	OPEN	Was opened
27	ERR HIGH	Measurement error in high range (peripheral measuring range not observed)
28	ERR LOW	Measurement error in low range (peripheral measuring range not observed)
29	ALARM HIGH	Alarm limit high violated
30	WARNING HIGH	High warning threshold violated
31	WARNING LOW	Low warning threshold
32	ALARM LOW	Alarm limit low violated
33	CMD OFF	Switch-off command
34	CMD OPTI	Should be initially optimized
35	CMD OPTA	Should be re-optimized
36	ERR INP	Input value lies outside the process value limits
37	ERR PER	Error at "Input_PER" input of the "PID_Compact" block called in the BPL block
38	ERR NOPT	Error during the re-optimization
39	ERR EOPT	Initial optimization/initialization could not be started
40	ERR SOPT	The set point was changed during an optimization
41	ERR ENOPT	An initial optimization/initialization was started during the re-optimization
42	ERR FEOPT	Error during initial optimization/initialization
43	ERR FNP	Error during re-optimization
44	ERR UWPI	Incorrect value for "Input". Check tag format
45	ERR AWF	Calculation of the initial value failed. PID parameters have to be checked
46	ERR ATZF	Sampling time error has occurred. The block was not called within the sampling time of the cyclic interrupt OB.
47	ERR UWSP	Incorrect value as set point. Check tag format
48	ERR UWM	Incorrect value as manual value ("ManualValue"). Check tag

## 2 Operation of the HMI Faceplates

Error code	Abbreviation	Description
		format
49	ERR UWSO	Incorrect value for "SubstituteOutput". Check tag format
50	ERR UWD	Incorrect value for "Disturbance". Check tag format.
51	MOD OFF	Was deactivated
52	MOD OPTI	Was optimized
53	MOD OPTA	Was re-optimized
54	MOD AUT	Was in automatic mode
55	MOD MAN	Was in manual operation

### 2.1.1.6 User handling

Table 2-2

User group	Authorization	Operator input options
LBP Administrator	Authorization_101 – LBP Operator Authorization_102 – LBP Engineer Authorization_104 – LBP Administrator	Administrators are allowed to operate everything.
LBP Engineer	Authorization_101 – LBP Operator Authorization_102 – LBP Engineer	Engineers are allowed to operate everything except changing the station names or depriving other users the exclusive operation possibility
LBP Operator	Authorization_101 – LBP Operator	Operators are only authorized to operate the Home Screens

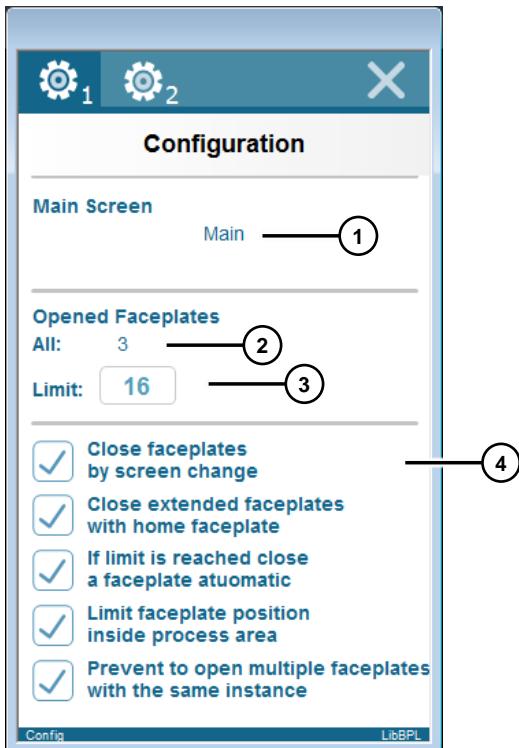
**Note**

It is also possible to configure your own user groups with the respective permissions.

## 2.1.2 Block-Specific Operations

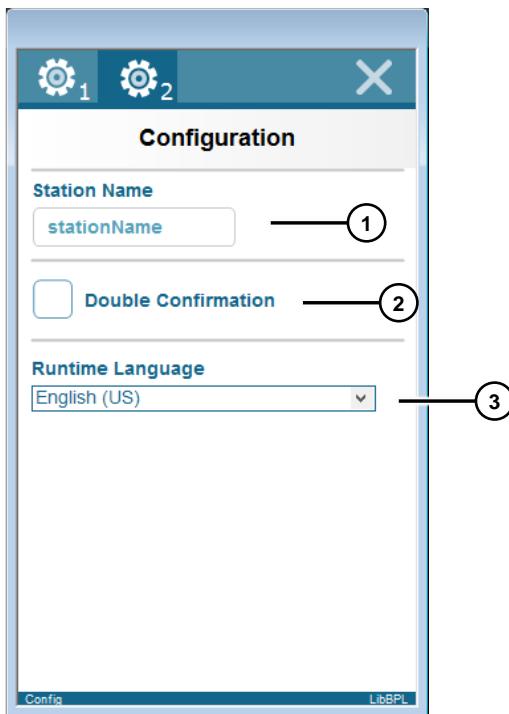
### 2.1.2.1 Operating the General Settings

Figure 2-7



1. Screen name in which the empty faceplates are stored.
2. Number of currently open faceplates.
3. Maximum number of open faceplates. This number must not exceed the number of faceplates stored in the Start Screen.
4. Settings for Screenhandling  
You can find more information in Chapter 3.1.4, “Function of the “Screenhandling” Script” in the “Library for Basic Processes: Implementation”.

Figure 2-8

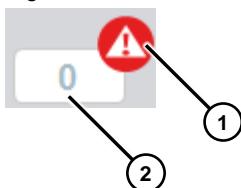


1. Station name of this station (this can only be changed by the administrator).
2. "Double Confirmation"  
If the check mark is set, a question will appear for important setting options as to whether you really want to adapt the settings.
3. Determination of the operating language.

### 2.1.2.2 LBP\_Aggr8 – Control of up to 8 Aggregates

#### Icon

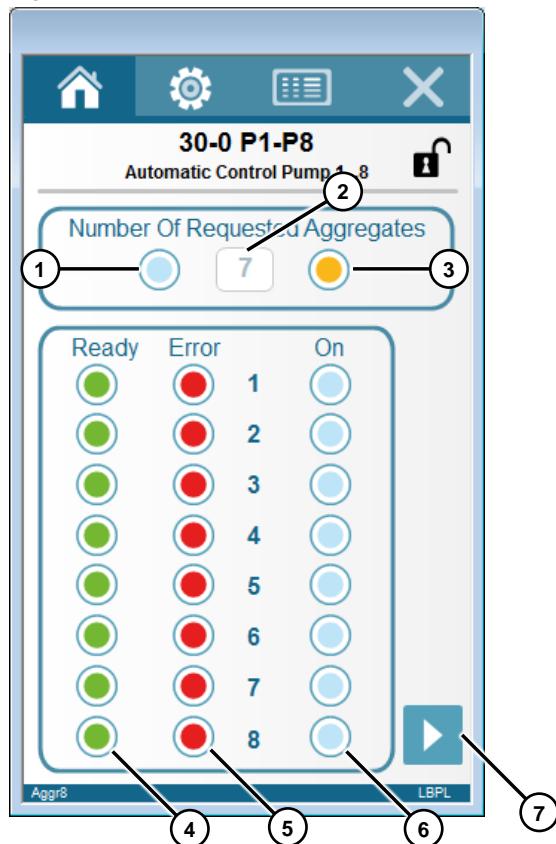
Figure 2-9



1. Indicates whether warnings (yellow symbol) or alarms (red symbol) are currently active. If these messages have not yet been acknowledged, they pulsate.
2. Indicates which Aggregate will be started next.

### Home Screens

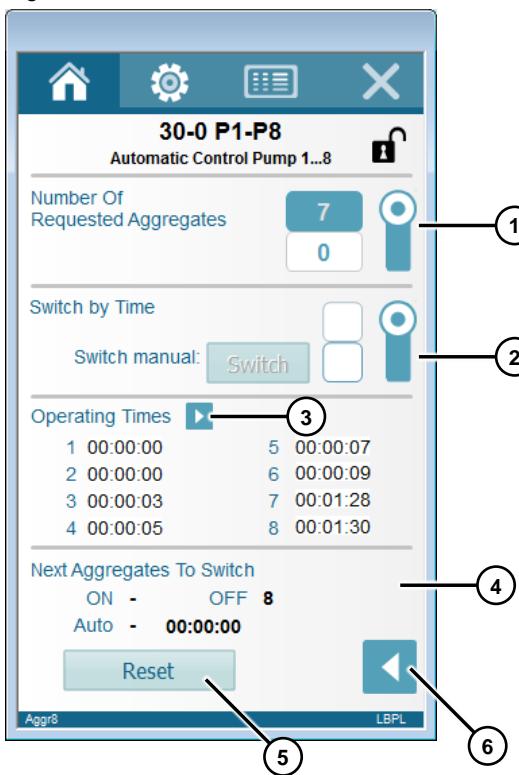
Figure 2-10



1. This light is green when the Aggregates are currently starting up or shutting down.
2. Number of requested Aggregates.
3. This light is orange if no further Aggregates can be operated, although more are requested.
4. The lights indicate whether the respective Aggregate is ready to be switched on.
5. The lights indicate whether there is an error on the respective Aggregate so that it cannot be switched on. (Example: interlock)
6. The lights indicate whether the respective Aggregate is switched on.
7. Switch to the second Home Screen.

## 2 Operation of the HMI Faceplates

Figure 2-11



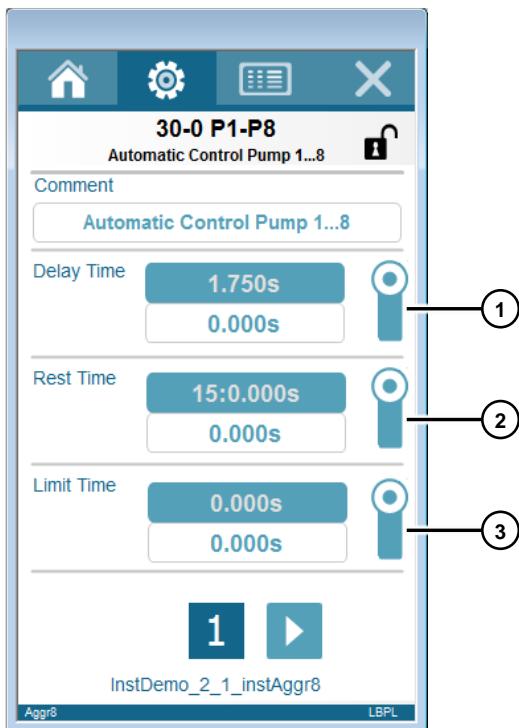
1. Number of requested Aggregates  
You can find more information about the operation under 2.1.1.2 Operating the Settings Screens.
2. The check boxes indicate whether the switchover should take place over time. The switch indicates whether the PLC value (upper check box) or the HMI value (lower check box) is to be processed.  
If further Aggregates are available and the HMI value is selected, it is also possible to switch manually via the "Switch" button.
3. The current operating times of the individual Aggregates are displayed here at a glance. If you press the arrow button (3), you can also view the cycle times and remaining run times.
4. Next to "ON" is the number of the Aggregate which will be switched on next. Next to "OFF" is the number of the Aggregate which will be switched off next. Next to "Auto" is the remaining running time until the next Aggregate is switched on/off.
5. Reset the errors on the Aggregates.
6. Switch to the first Home Screen.

### Settings

This section assumes that you have already read Chapter [2.1.1.2 Operating the Settings Screens](#).

## 2 Operation of the HMI Faceplates

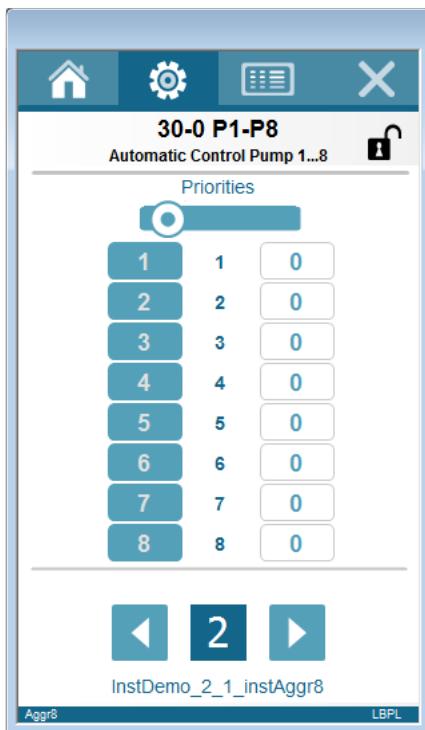
Figure 2-12



1. Delay Time – Waiting time (time after which the command “switch on” is given and an Aggregate is switched on.)
2. Rest Time – Waiting time/Cooling time (time after switching off an Aggregate until the Aggregate is ready to switch on again.)
3. Limit Time – Maximum runtime of the Aggregates

## 2 Operation of the HMI Faceplates

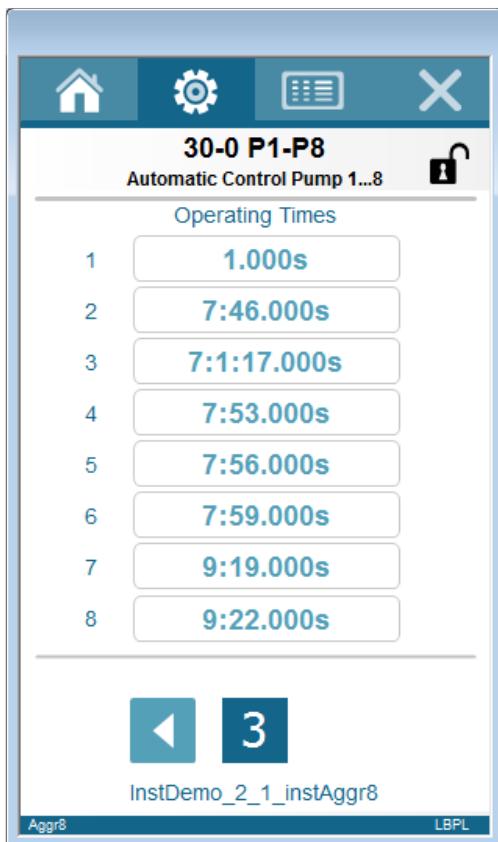
Figure 2-13



The PLC values are on the left. The HMI values are on the right.

The priority with which the Aggregates are to be started is determined here. The Aggregate with the highest priority is started first.

Figure 2-14

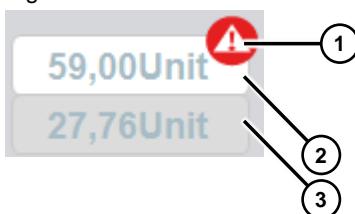


The current operating times of the Aggregates are displayed here. The values can also be overwritten. This is necessary, for example, if an Aggregate has been replaced.

### 2.1.2.3 LBP\_AnaAvg – Average Calculation with Plausibility Check

#### Icon

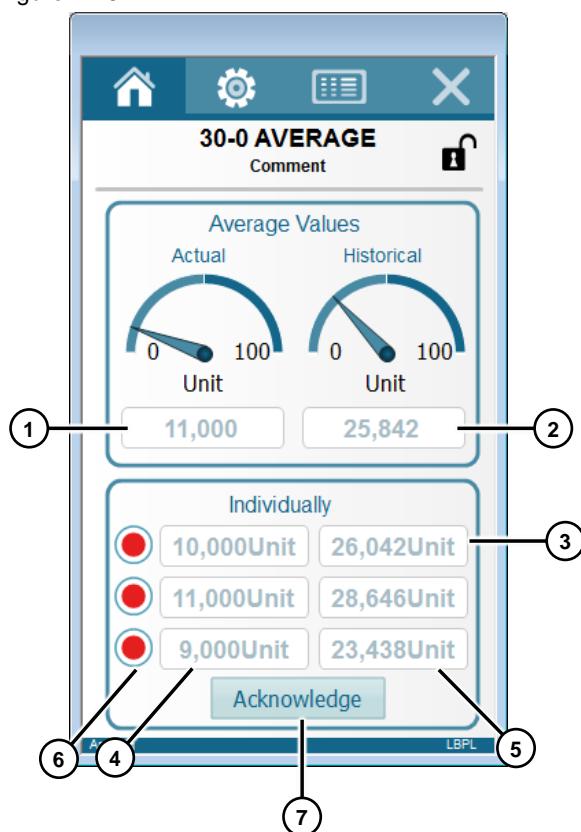
Figure 2-15



1. The warning triangle indicates whether errors are currently pending (deviation of a value from the historical value is too high).
2. Current average.
3. Average of the current average measured over a specific time, also called "historical average".

### Home Screen

Figure 2-16



1. Current average.
2. Average of the current average measured over a specific time.
3. The table shows the individual values from which the average is calculated. The first row shows the first value.
4. The first column shows the actual value.
5. The second column shows the average from the actual value measured over a specific time.
6. The light turns red if the actual value deviates too far from the average from the second column.
7. The errors are acknowledged via the “Acknowledge” button.

## 2 Operation of the HMI Faceplates

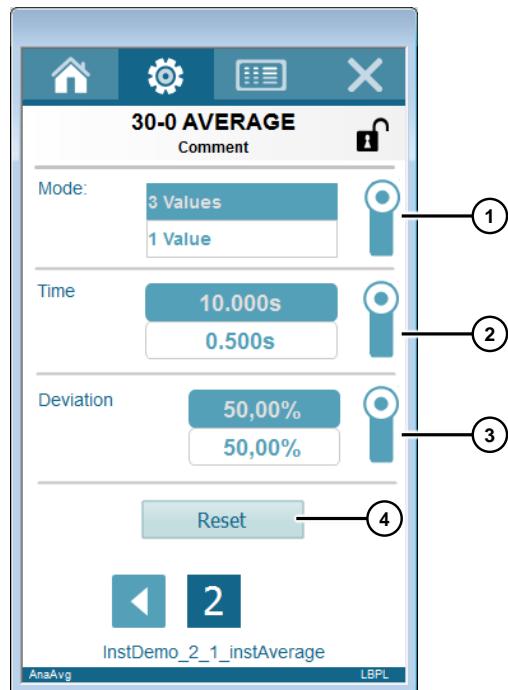
### Settings

Figure 2-17



1. Start of the measuring range.
2. End of the measuring range.

Figure 2-18



## 2 Operation of the HMI Faceplates

### 1. Mode

Table 2-3

Mode	Description
Off	No average is formed.
1 Value	Only the first value and its historical average are displayed.
2 Values	The average of value 1 and value 2 is displayed, as are the historical averages of the individual values.
3 Values	The average of all 3 values, the corresponding historical value and the individual values are displayed.

2. Time over which the historical averages are calculated.
3. Deviation (between the current and historical value) from which an error is generated.
4. Reset the block

### 2.1.2.4 LBP\_AnaRead – Analog Value Processing

#### Icon

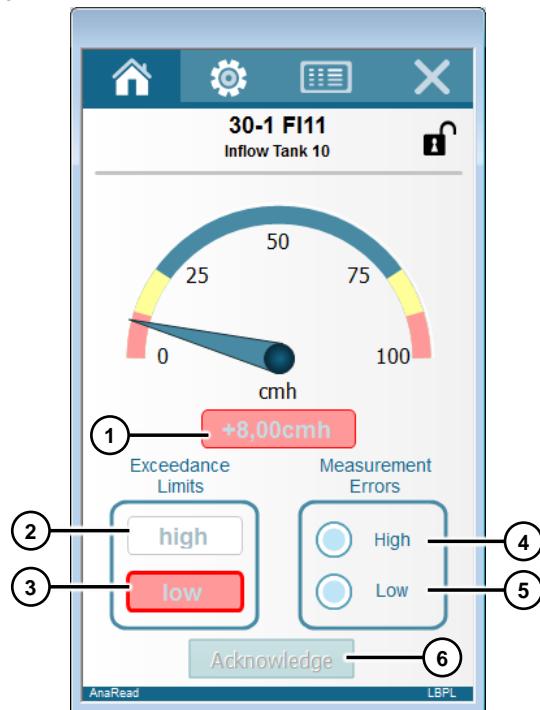
Figure 2-19



1. The warning triangle indicates whether a warning or error is pending.
2. Current analog value

#### Home Screen

Figure 2-20

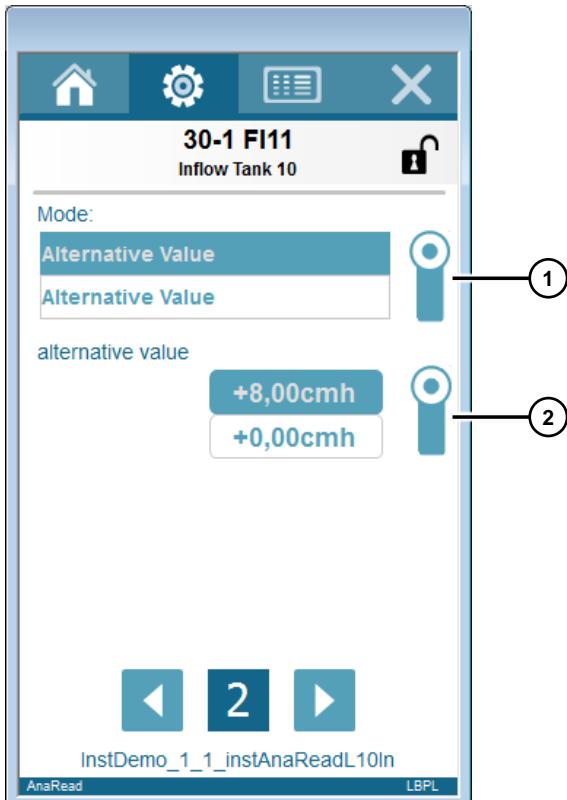


## 2 Operation of the HMI Faceplates

1. Current analog value
2. Indicates whether the high limit for warning or alarm has been exceeded  
Warning: orange  
Alarm: red
3. Indicates whether the value has fallen below the low limit for warning or alarm.
4. Measurement error in high range (digit overflow)
5. Measurement error in the low range (digit undershooting or wire break)

### Settings

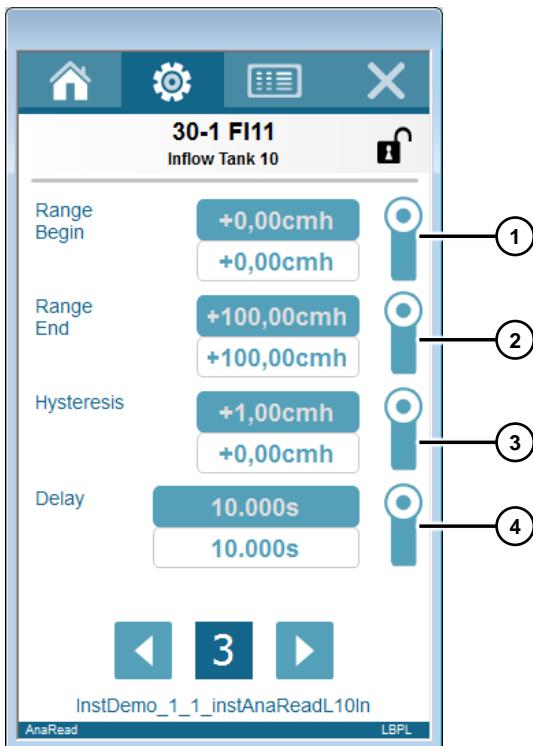
Figure 2-21



1. Mode
  - Alternative value (alternative value is further processed)
  - I/O value unipolar (input value lies between 0 and 27648 and is transferred to the specified measuring range)
  - I/O value bipolar (input value lies between -27648 and +27648 and is transferred to the specified measuring range)
  - Factor 0.1 (input value is multiplied by 0.1)
  - Factor 0.01 (input value is multiplied by 0.01).
  - Factor 1 (input value is multiplied by 1)
  - Factor 10 (input value is multiplied by 10)
  - Factor 100 (input value is multiplied by 100).
2. Alternative value (applies to the first mode)

## 2 Operation of the HMI Faceplates

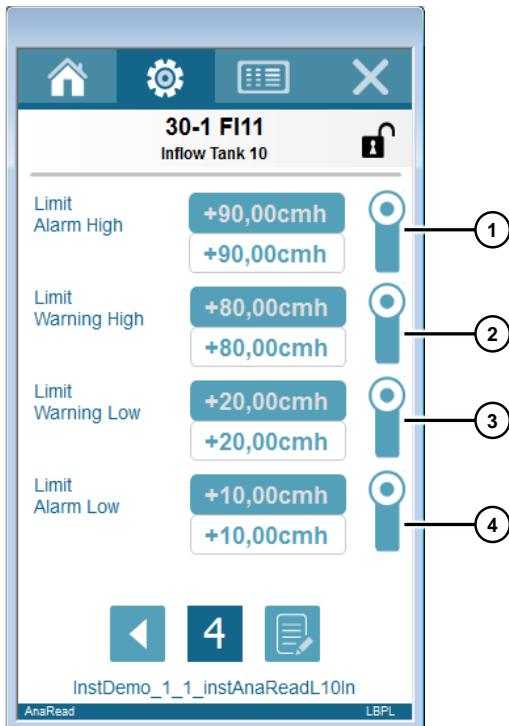
Figure 2-22



1. Start of the measuring range
2. End of the measuring range
3. Value for the absolute hysteresis: Limit alarms/warnings are only reset when the measured value differs from the limit value plus/minus the hysteresis.
4. Tolerance time before an error is generated if a limit violation occurs.

## 2 Operation of the HMI Faceplates

Figure 2-23



1. Alarm high limit
2. Warning high limit
3. Warning low limit
4. Alarm low limit

### 2.1.2.5 CntrA/D/P – Integrating Counter/Difference Counter/Pulse Counter

#### Icon

Figure 2-24

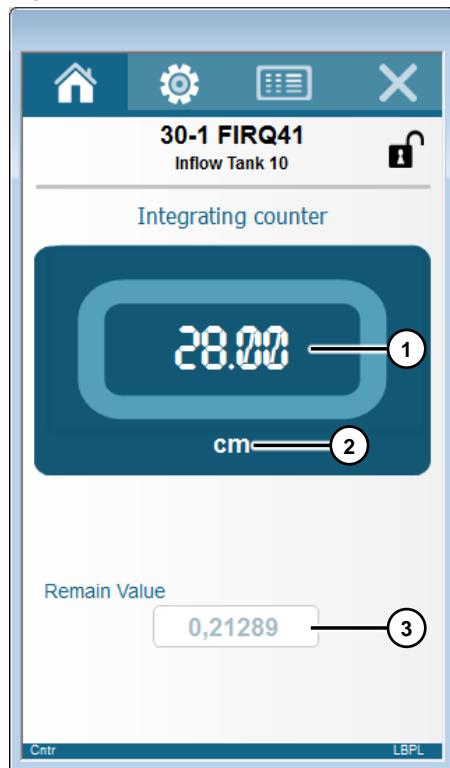


1. Current counter value

## 2 Operation of the HMI Faceplates

### Home Screen

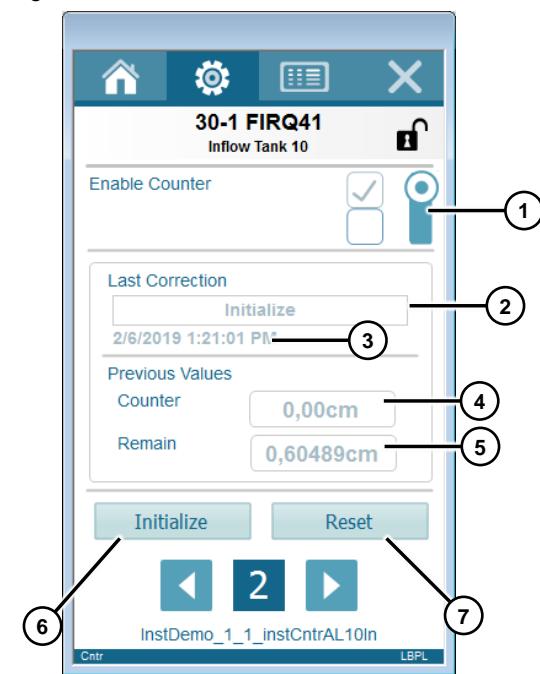
Figure 2-25



1. Current counter value
2. Unit of the counter value
3. Remaining value

### Settings

Figure 2-26



## 2 Operation of the HMI Faceplates

1. Counter is enabled
2. Last correction (in the example, initialization)
3. Timestamp of the last correction
4. Previous counter value
5. Previous remaining value
6. Initialize the counter (reset the internal values)
7. Reset counter value

Figure 2-27



1. LBP\_CntrA – Integrating counter
2. LBP\_CntrD – Difference Counter
3. LBP\_CntrP – Pulse counter
4. Counter value
5. Remaining value
6. Scale factor (multiplier of counter input)
7. Time cycle for integration (with LBP\_CntrA)
8. Overflow value of the counter connected to “indCounter” input

### 2.1.2.6 LBP\_CtrlPID – Continuous PID Controller

#### Icon

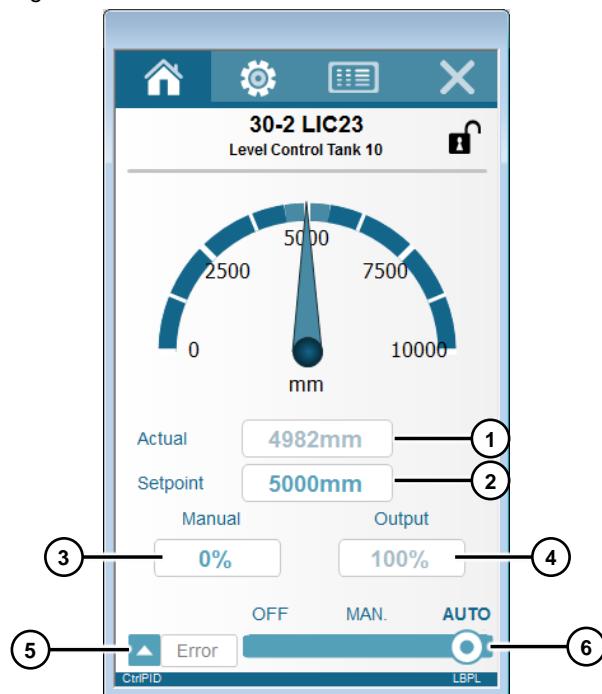
Figure 2-28



1. Operating mode display (M = Manual operation, A = Automatic operation)
2. Error display
3. In manual or automatic operation → Current input value  
In the switched-off state → “OFF”

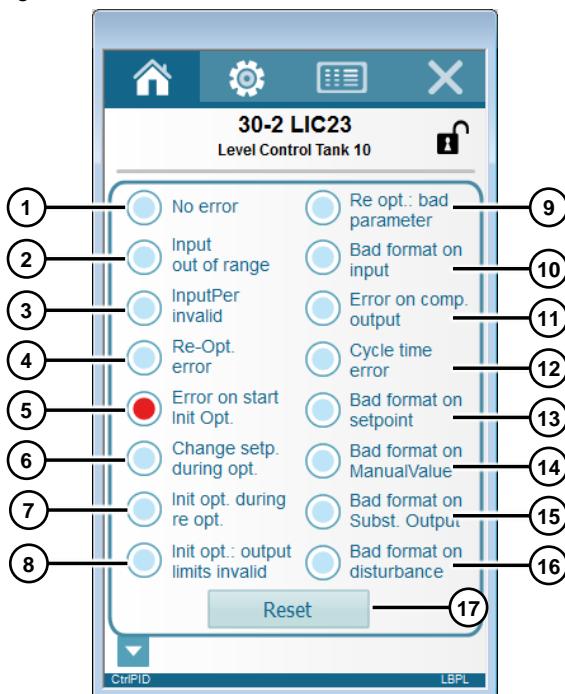
### Home Screen

Figure 2-29



1. Actual value
2. Set point
3. Manual value – This value is used as output value in manual operation
4. Output value
5. Open the error overview
6. Switch for selecting the mode:  
OFF – Switched off  
MAN – Manual operation  
AUTO – Automatic operation

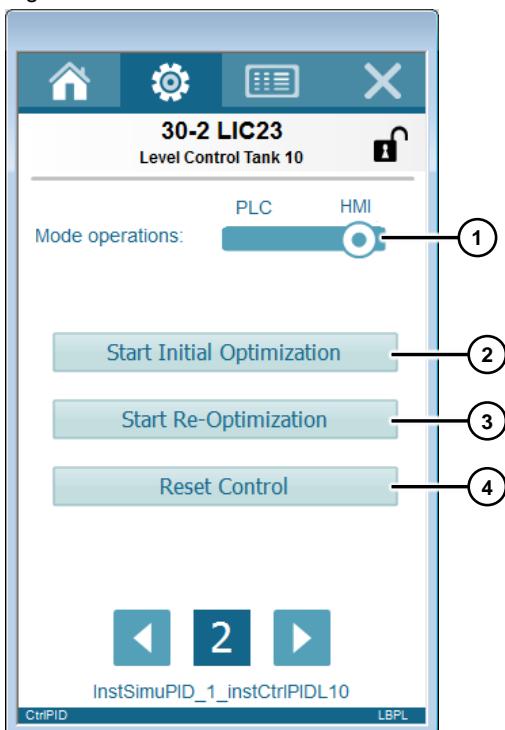
Figure 2-30



1. Light turns green if no error is pending.
2. Light turns red if the input is outside the specified range.
3. Light turns red if the value of parameter "Input\_PER" in the BPL block of the "PID\_Compact" system function is invalid. Check whether there is an error at the analog input.
4. Light turns red if an error has occurred during re-optimization.
5. Light turns red if initial optimization could not be started.
6. Light turns red if the set point changed during optimization.
7. Light turns red if initial optimization was activated during re-optimization. That is not allowed.
8. Light turns red if an error occurred during initial optimization. The output value limits are not correctly configured or the actual value does not react as expected.
9. Light turns red if an error has led to an invalid parameter during re-optimization.
10. The light turns red if an invalid parameter is connected to the input. The value has no valid number format.
11. Light turns red if the calculation of the output value has failed. Check the PID parameters.
12. Light turns red if a sampling time error has occurred. The block was not called within the sampling time of the cyclic interrupt OB.
13. Light turns red if an invalid value is connected to the "Setpoint" parameter. The value has no valid number format.
14. The light turns red if an invalid value is connected to the manual value ("ManualValue"). The value has no valid number format.
15. Light turns red if the value of "SubstituteOutput" is invalid.
16. Light turns red if the value of "Disturbance" parameter is invalid. The value has no valid number format.
17. Reset errors

### Settings

Figure 2-31



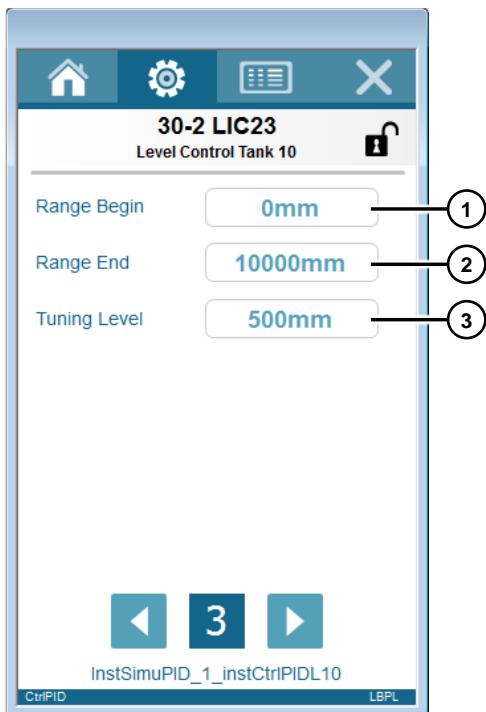
1. Only if the “Mode operations” switch is set to “HMI” can the mode be determined on the Home Screen via the HMI.
2. Activation of initial optimization
3. Activation of re-optimization
4. Reset controller

**Note**

The self-optimization options can cause problems if PLC Sim/PLC SimAdvanced is used (e.g. Cycle Time error).

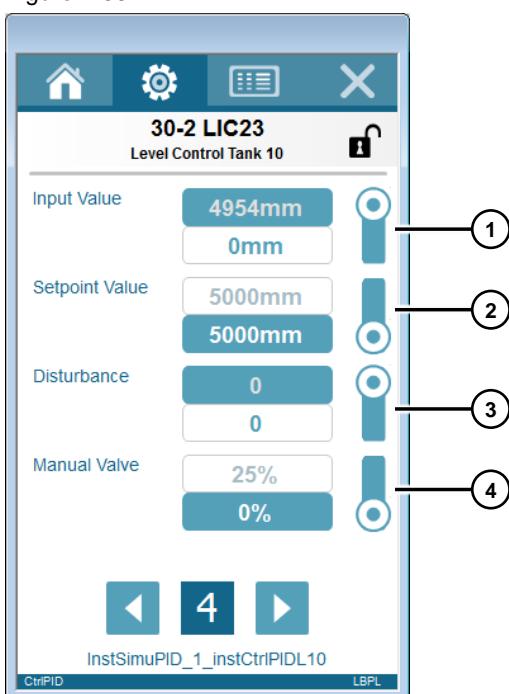
## 2 Operation of the HMI Faceplates

Figure 2-32



1. Start of control range
2. End of control range
3. Permissible fluctuation of the set point during optimization. Optimization is only aborted with the following:  
Setpoint > CurrentSetpoint + CancelTuningLevel  
or  
Setpoint < CurrentSet point – CancelTuningLevel

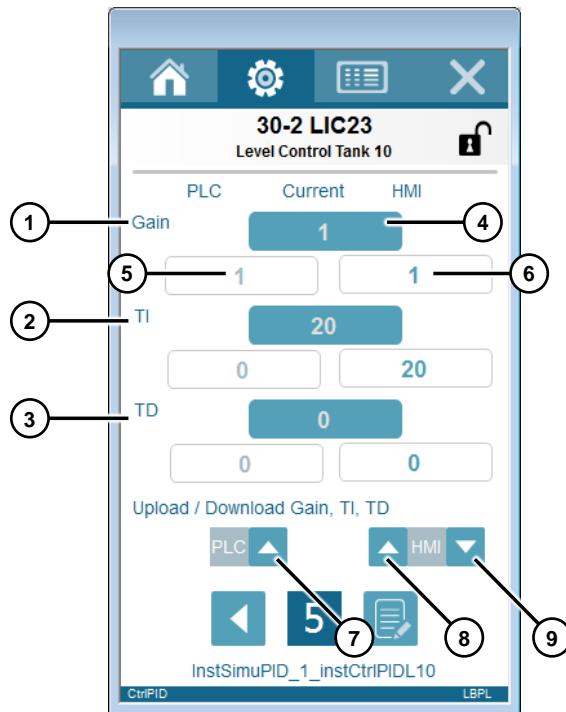
Figure 2-33



## 2 Operation of the HMI Faceplates

1. Input value
2. Set point
3. Disturbance tag
4. Manual value – This value is used as the output value in manual operation.

Figure 2-34



1. Gain – Proportional gain
2. TI – Integration time [s]
3. TD – Differentiation time [s]
4. The averages are always the actual values
5. The left values are the PLC values
6. The right values are the HMI values
7. This button is used to transfer the PLC values to the actual values.
8. This button is used to transfer the HMI values to the actual values.
9. This button is used to transfer the actual values to the HMI values.

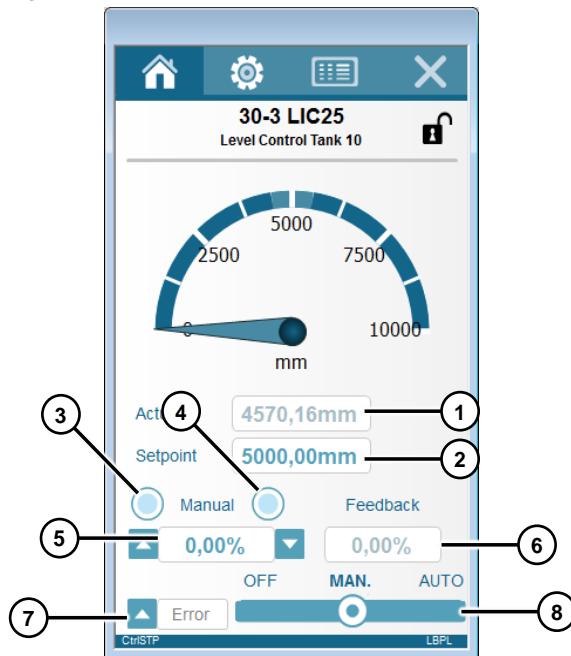
### 2.1.2.7 LBP\_CtrlStp – Step Controller

#### Icon

The symbol has the same form as the symbol of the PID controller (see [2.1.2.6 LBP\\_CtrlPID – Continuous PID Controller](#)).

### Home Screen

Figure 2-35



1. Current value
2. Set point
3. Light “green”: Increasing  
Light “orange”: Position is at top stop
4. Light “green”: Decreasing  
Light “orange”: Position is at the bottom stop
5. Manual value  
Up arrow button → Use the PLC values for KP, TN and TV,  
Down arrow button → Use the HMI values for KP, TN and TV.
6. Position feedback
7. Open the error display (error turns red when an error is pending)

You can find the error display in [Figure 2-30](#).

### Settings

See settings of CtrlPID on page [30](#).

#### 2.1.2.8 LBP\_Intlk8 – Interlock for up to 8 Signals

##### Icon

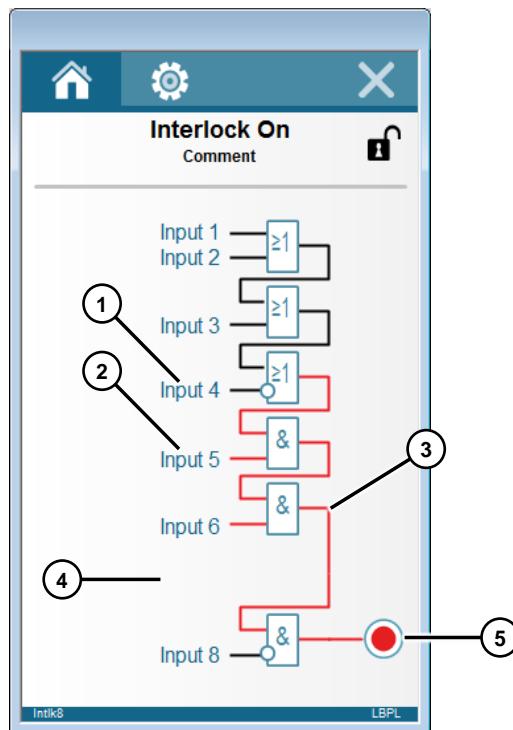
Figure 2-36



Light indicates whether the interlock is active.

### Home Screen

Figure 2-37

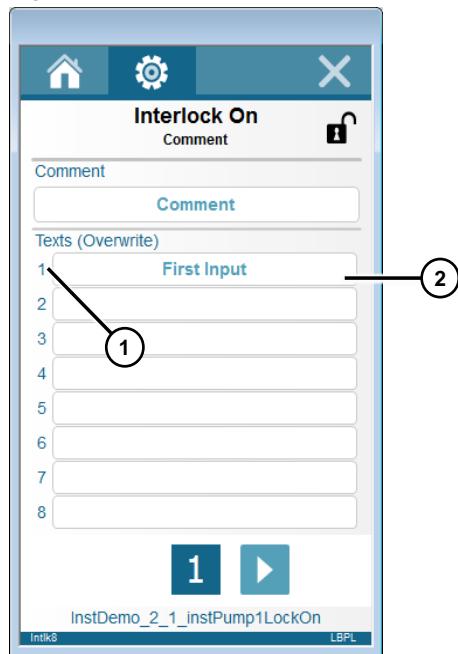


1. Input is not active ("false")  
The color of the line after "Input X" indicates whether "true" or "false" is present at the input (in the graphic, "true" is highlighted in red and "false" is black).
2. Input is active ("true")
3. Result is active ("true")
4. "Input 7" is deactivated
5. The end result is "true"

**Note** The colors and logical operations can be set.

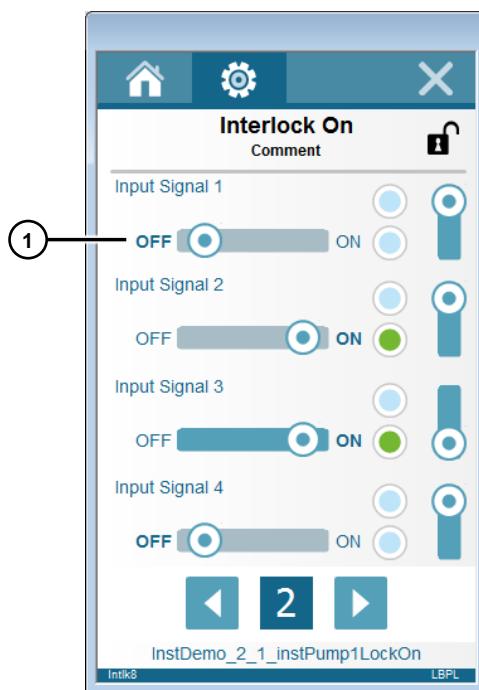
## Settings

Figure 2-38



1. Number of the input
2. Name of the input  
If a text is entered here, it is displayed on the Home Screen from this moment on. If nothing is specified here, the name defined in the STEP 7 program is displayed.

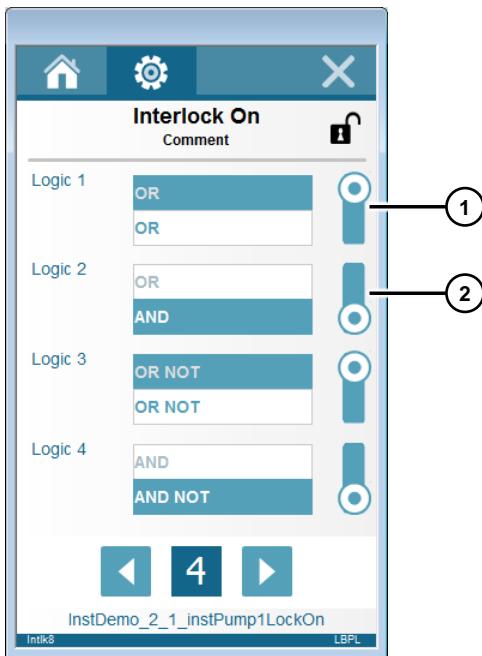
Figure 2-39



1. The switch determines whether the HMI value for signal 1 is "true" or "false".

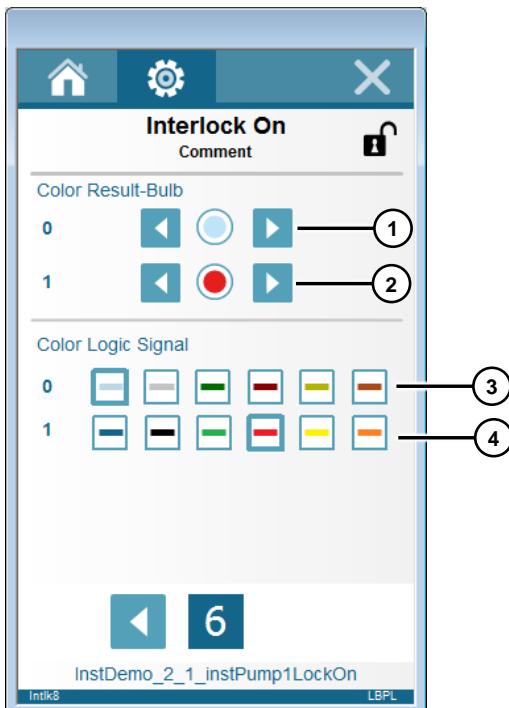
## 2 Operation of the HMI Faceplates

Figure 2-40



1. Logical operation between input 1 and input 2.
2. Logical operation between the result of the previous Operation and input 3. etc.

Figure 2-41



1. Change the color of the result light for the result "false" (colors: light blue, green, yellow, red).
2. Change the color of the result light for the result "true" (colors: light blue, green, yellow, red).

3. Change the color of the connecting lines between the operations on the Home Screen when the “false” signal is transmitted.
4. Change the color of the connecting lines between operations on the Home Screen when the “true” signal is transmitted.

### 2.1.2.9 LBP\_Msg8 – Message Block for 8 Messages

#### Icon

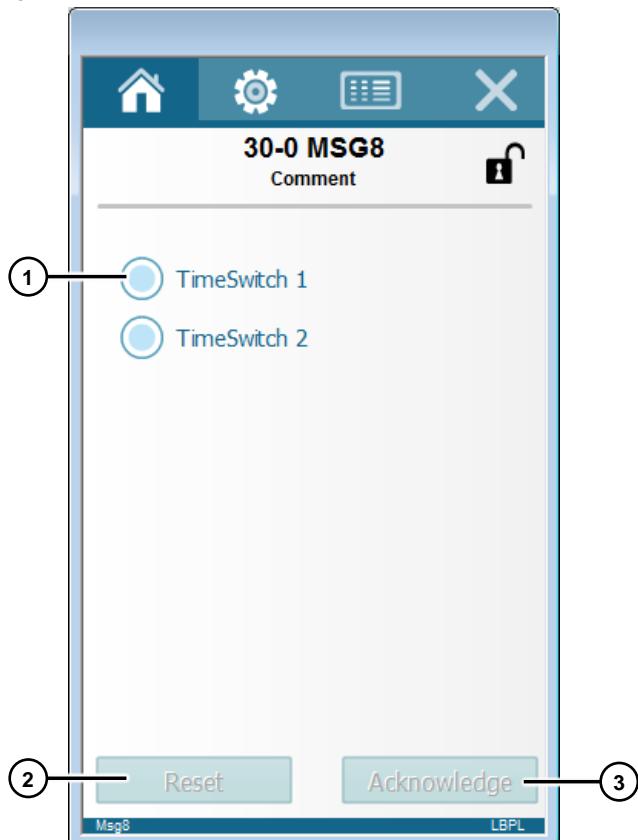
Figure 2-42



The symbol indicates whether warnings (yellow) or errors (red) are pending.

#### Home Screen

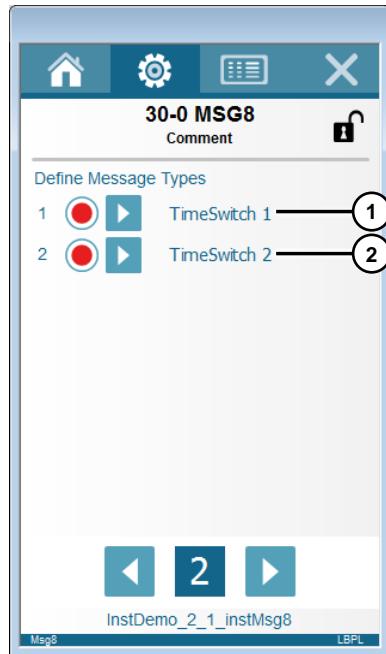
Figure 2-43



1. The light is red or yellow in the activated state and light blue in the inactive state.  
Of the 8 messages, only the interconnected ones are displayed (in this case 2).
2. Reset the messages
3. Confirm the messages

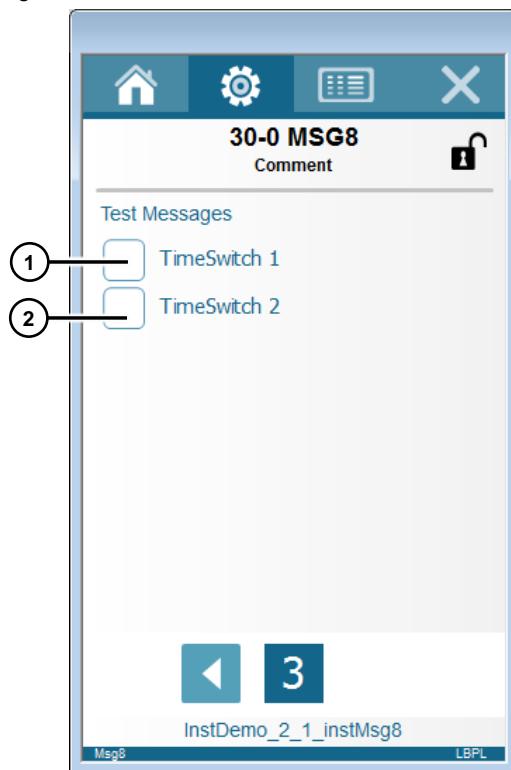
### Settings

Figure 2-44



1. Definition of the alarm type of the first message (Error – red, Warning – yellow).  
The alarm system always outputs error messages, but the light color is influenced by this setting.
2. Definition of the alarm type of the second message.  
If all 8 messages are used, there are 8 setting options here.

Figure 2-45



1. Activate message 1 to test it.
2. Activate message 2 to test it.

If all 8 messages are used, there are 8 setting options here.

### 2.1.2.10 LBP\_Mtr – Simple Motor

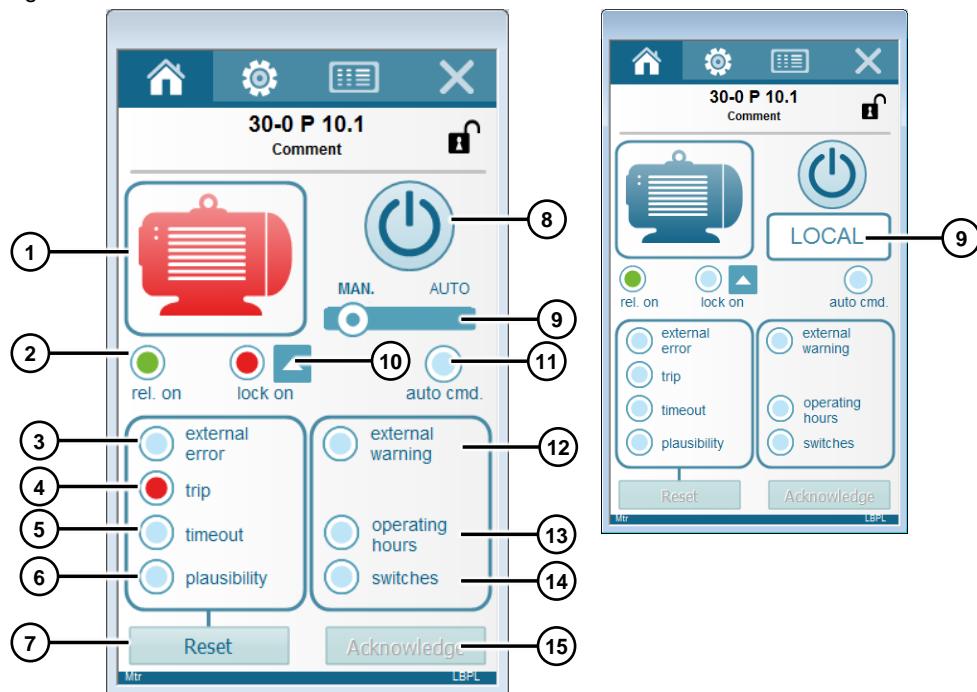
<https://support.industry.siemens.com/cs/ww/en/view/109749508> Figure 2-46



1. Motor symbol:  
blue – off  
green – switched on  
gray – undefined status
2. Mode display:  
M – Manual operation  
A – Automatic operation  
L – Local operation
3. Status display:  
Red warning triangle – Error pending (pulsing means error not acknowledged)  
Yellow warning triangle – Error pending (pulsing means warning not acknowledged)  
wrench – Repair mode active
4. When the padlock is displayed, the interlock is active.

### Home Screen

Figure 2-47

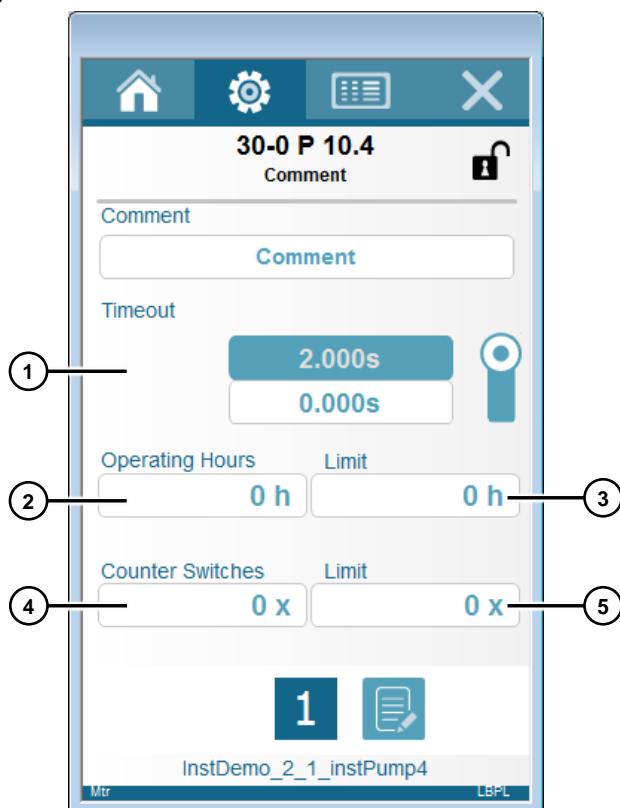


1. Motor symbol:  
red – error active  
yellow – warning active  
green – motor is switched on  
blue – motor switched off or not defined
2. Start enable:  
green light – enabled  
red light – not enabled
3. Light turns red if an external error is pending.  
If an arrow button is displayed next to the text, the associated "LBP\_Msg8" (message block) can be opened via this arrow button.
4. Light turns red if the emergency stop is active.
5. Light turns red if no feedback has been received after the monitoring time has elapsed.
6. Light turns red if values are not plausible.
7. Reset errors from the box above.
8. On and off button for the motor.  
Stroke of the "Power" symbol is green, circle is blue – Motor starting up  
"Power" symbol is green – Motor is switched on  
Stroke of the "Power" symbol is blue, circle is green – Motor is shutting down  
"Power" symbol is blue – Motor is switched off  
"Power" symbol is gray – Status is not defined
9. Switch for switching from manual to automatic operation and vice versa.  
In local operation or in case of a repair, it is overlaid with the text "LOCAL" or "REPAIR".
10. The light indicates whether the interlock is active.  
The corresponding "LBP\_Intlk8" (interlock block) can be opened via the arrow button.

11. The light turns green when the automatic command "On" is active ("cmdAutOn" input). The operator can use this information to determine the status of the motor when switching from manual to automatic operation.
12. Light turns yellow when an external warning is pending.  
If an arrow button is displayed next to the text, the associated "LBP\_Msg8" (message block) can be opened via this arrow button.
13. Maximum operating hours reached
14. Maximum number of switching operations reached
15. Acknowledgment of error

### Settings

Figure 2-48



1. Sett the monitoring time (time after which it is checked whether an activation has also occurred)
2. Current operating hours
3. Maximum number of operating hours
4. Current number of switching operations
5. Maximum number of switching operations

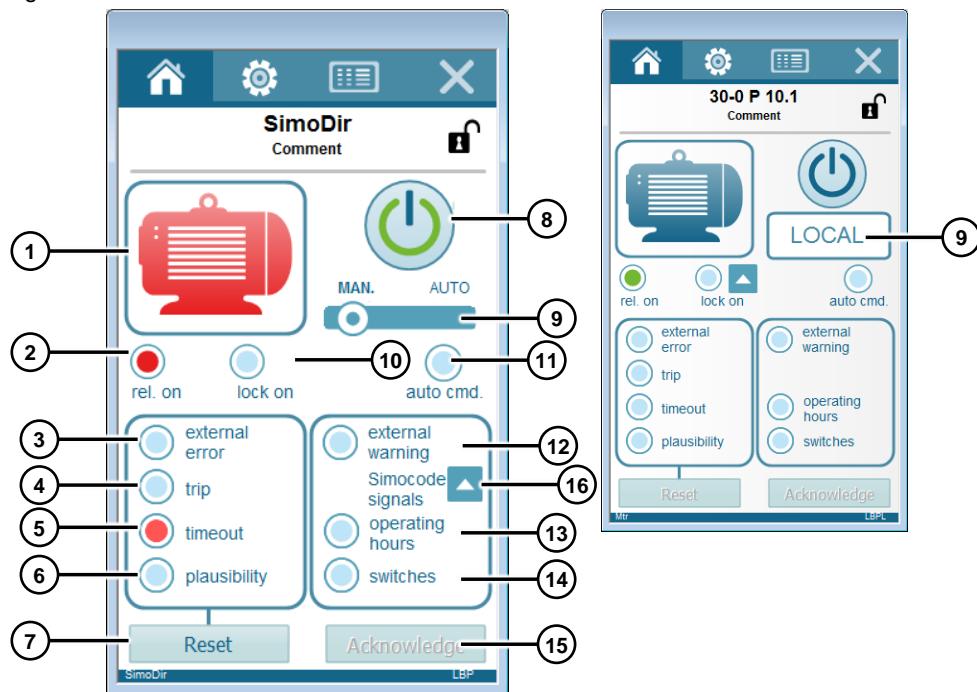
#### 2.1.2.11 LBP\_SimoDir – Simple Motor Controlled via a SIMOCODE

##### Icon

The SimoDir symbol corresponds to the symbol of the Mtr. block  
See Fehler! Verweisquelle konnte nicht gefunden werden.

### Home Screen

Figure 2-49



1. Motor symbol:  
red – error active  
yellow – warning active  
green – motor is switched on  
blue – motor switched off or not defined
2. Start enable:  
green light – enabled  
red light – not enabled
3. Light turns red if an external error is pending.  
If an arrow button is displayed next to the text, the associated “LBP\_Msg8” (message block) can be opened via this arrow button.
4. Light turns red if the emergency stop is active.
5. Light turns red if no feedback has been received after the monitoring time has elapsed.
6. Light turns red if values are not plausible.
7. Reset errors from the box above.
8. On and off button for the motor.  
Stroke of the “Power” symbol is green, circle is blue – Motor starting up  
“Power” symbol is green – Motor is switched on  
Stroke of the “Power” symbol is blue, circle is green – Motor is shutting down  
“Power” symbol is blue – Motor is switched off  
“Power” symbol is gray – Status is not defined
9. Switch for switching from manual to automatic operation and vice versa.  
In local operation or in case of a repair, it is overlaid with the text “LOCAL” or “REPAIR”.
10. The light indicates whether the interlock is active.  
The corresponding “LBP\_Intlk8” (interlock block) can be opened via the arrow button.
11. Light turns red if the interlock is active.
12. Light turns red if the emergency stop is active.
13. Light turns red if the emergency stop is active.
14. Light turns red if the emergency stop is active.
15. Light turns red if the emergency stop is active.
16. Light turns red if the emergency stop is active.

## 2 Operation of the HMI Faceplates

11. The light turns green when the automatic command "On" is active ("cmdAutOn" input). The operator can use this information to determine the status of the motor when switching from manual to automatic operation.
12. Light turns yellow when an external warning is pending.  
If an arrow button is displayed next to the text, the associated "LBP\_Msg8" (message block) can be opened via this arrow button.
13. Maximum operating hours reached
14. Maximum number of switching operations reached
15. Acknowledgment of error
16. Opening the SIMOCODE signals

Figure 2-50



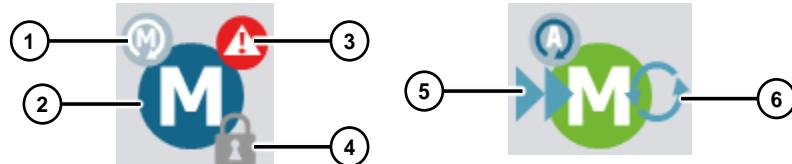
## Settings

**The SimoDir settings correspond to the settings of the Mtr. block**  
**See Settings**

### 2.1.2.12 LBP\_MtrDS – Motor with 2 Speeds and Directions of Rotation

#### Icon

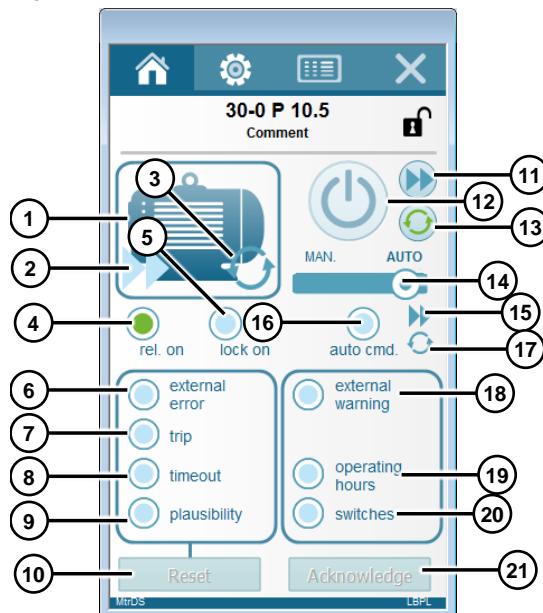
Figure 2-51



1. Mode display:  
M – Manual operation  
A – Automatic operation  
L – Local operation
2. Motor symbol:  
blue – off  
green – switched on  
gray – undefined status
3. Status display:  
Red warning triangle – Error pending (pulsing means error not acknowledged)  
Yellow warning triangle – Error pending (pulsing means warning not acknowledged)  
wrench – Repair mode active
4. When the padlock is displayed, the interlock is active.
5. Motor runs at speed 2
6. Motor runs in reverse

#### Home Screen

Figure 2-52



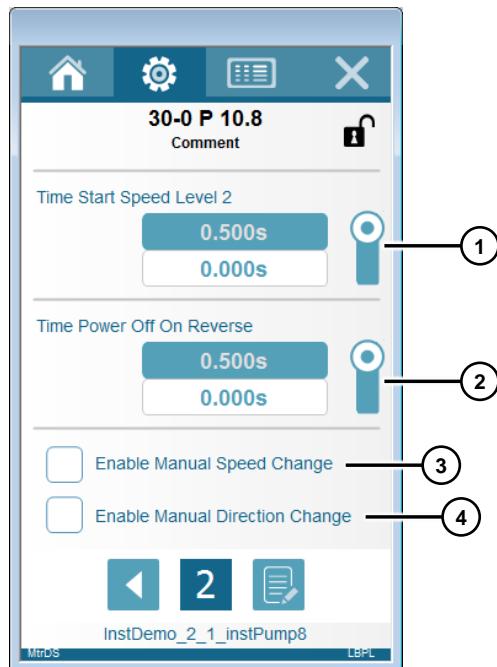
1. Motor symbol:  
red – error active  
yellow – warning active  
green – motor is switched on  
blue – motor switched off or not defined

2. Symbol 2nd speed level:  
light blue – 2nd speed level is not active  
dark blue – 2nd speed level is active
3. Symbol for reverse direction of rotation:  
light blue – reverse direction of rotation is not active  
dark blue – reverse direction of rotation is active
4. Start enable:  
green light – enabled  
red light – not enabled
5. The light indicates whether the interlock is active.  
The corresponding “LBP\_Intlk8” (interlock block) can be opened via the arrow button. This is only displayed if there is a corresponding “LBP\_Intlk8”.
6. Light turns red if an external error is pending.  
If an arrow button is displayed next to the text, the associated “LBP\_Msg8” (message block) can be opened via this arrow button.
7. Light turns red if the emergency stop is active.
8. Light turns red if no feedback has been received after the monitoring time has elapsed.
9. Light turns red if values are not plausible.
10. Reset errors from the box above.
11. Switch for activating the 2nd speed level in manual operation. This is only displayed if it is stored in the settings.
12. On and off button for the motor:  
Stroke of the “Power” symbol is green, circle is blue – Motor starting up  
“Power” symbol is green – Motor is switched on  
Stroke of the “Power” symbol is blue, circle is green – Motor is shutting down  
“Power” symbol is blue – Motor is switched off  
“Power” symbol is gray – Status is not defined
13. Switch for activating reverse direction of rotation in manual operation. This is only displayed if it is stored in the settings.
14. Switch for switching from manual to automatic operation and vice versa.  
In local operation or in case of a repair, it is overlaid with the text “LOCAL” or “REPAIR”.
15. This symbol indicates whether the 2nd speed level is activated as soon as the automatic mode is activated.  
light blue – 2nd speed level is not active  
dark blue – 2nd speed level is not active
16. The light turns green when the automatic command “On” is active (“cmdAutOn” input). The operator can use this information to determine the status of the motor when switching from manual to automatic operation.
17. This symbol indicates whether the reverse direction of rotation is activated as soon as automatic mode is selected.  
light blue – reverse direction of rotation is not active  
dark blue – reverse direction of rotation is not active
18. Light turns yellow when an external warning is pending.  
If an arrow button is displayed next to the text, the associated “LBP\_Msg8” (message block) can be opened via this arrow button.
19. Maximum operating hours reached
20. Maximum number of switching operations reached
21. Acknowledgment of error

### Settings

For the first setting page, see LBP\_Mtr – Settings, page [41](#).

Figure 2-53



1. Time after which the second speed level is to be switched to
2. Switch-off time for a change of direction of rotation
3. Displays the button to switch to the second speed level on the Home Screen.
4. Displays the button to reverse the direction of rotation on the Home Screen.

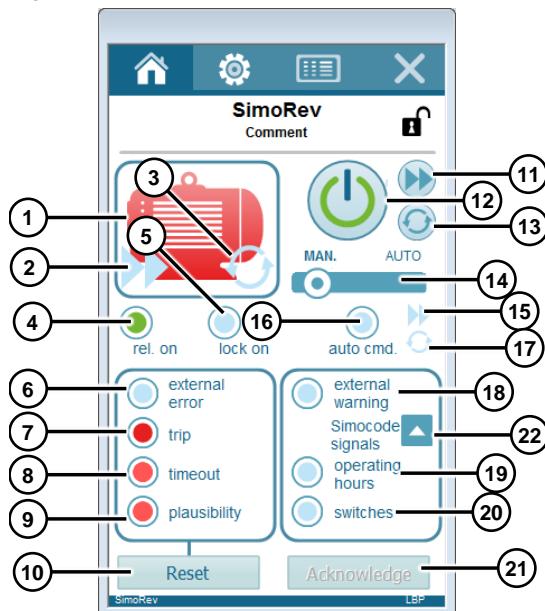
#### 2.1.2.13 LBP\_SimoRev – Motor Controlled by a SIMOCODE with Two Speeds and Directions of Rotation

##### Icon

The SimoRev symbol corresponds to the symbol of the MtrDS. block  
See Settings

### Home Screen

Figure 2-54



5. Motor symbol:  
red – error active  
yellow – warning active  
green – motor is switched on  
blue – motor switched off or not defined
6. Symbol 2nd speed level:  
light blue – 2nd speed level is not active  
dark blue – 2nd speed level is active
7. Symbol for reverse direction of rotation:  
light blue – reverse direction of rotation is not active  
dark blue – reverse direction of rotation is active
8. Start enable:  
green light – enabled  
red light – not enabled
9. The light indicates whether the interlock is active.  
The corresponding "LBP\_Intlk8" (interlock block) can be opened via the arrow button. This is only displayed if there is a corresponding "LBP\_Intlk8".
10. Light turns red if an external error is pending.  
If an arrow button is displayed next to the text, the associated "LBP\_Msg8" (message block) can be opened via this arrow button.
11. Light turns red if the emergency stop is active.
12. Light turns red if no feedback has been received after the monitoring time has elapsed.
13. Light turns red if values are not plausible.
14. Reset errors from the box above.
15. Switch for activating the 2nd speed level in manual operation. This is only displayed if it is stored in the settings.
16. On and off button for the motor:  
Stroke of the "Power" symbol is green, circle is blue – Motor starting up  
"Power" symbol is green – Motor is switched on  
Stroke of the "Power" symbol is blue, circle is green – Motor is shutting down

## 2 Operation of the HMI Faceplates

---

“Power” symbol is blue – Motor is switched off  
“Power” symbol is gray – Status is not defined

17. Switch for activating reverse direction of rotation in manual operation. This is only displayed if it is stored in the settings.
18. Switch for switching from manual to automatic operation and vice versa.  
In local operation or in case of a repair, it is overlaid with the text “LOCAL” or “REPAIR”.
19. This symbol indicates whether the 2nd speed level is activated as soon as the automatic mode is activated.  
light blue – 2nd speed level is not active  
dark blue – 2nd speed level is not active
20. The light turns green when the automatic command “On” is active (“cmdAutOn” input). The operator can use this information to determine the status of the motor when switching from manual to automatic operation.
21. This symbol indicates whether the reverse direction of rotation is activated as soon as automatic mode is selected.  
light blue – reverse direction of rotation is not active  
dark blue – reverse direction of rotation is not active
22. Light turns yellow when an external warning is pending.  
If an arrow button is displayed next to the text, the associated “LBP\_Msg8” (message block) can be opened via this arrow button.
23. Maximum operating hours reached
24. Maximum number of switching operations reached
25. Acknowledgment of error
26. Opening the SIMOCODE signals

Figure 2-55



## Settings

The SimoRev settings correspond to the settings of the MtrDS. block  
See [Settings](#)

### 2.1.2.14 LBP\_MtrF – Speed-Controlled Motor

#### Icon

Figure 2-56



1. Motor symbol:  
blue – off  
green – switched on  
gray – undefined status
2. Mode display:  
M – Manual operation  
A – Automatic operation  
L – Local operation
3. Motor speed
4. Status display:  
Red warning triangle – Error pending (pulsing means error not acknowledged)  
Yellow warning triangle – Error pending (pulsing means warning not acknowledged)

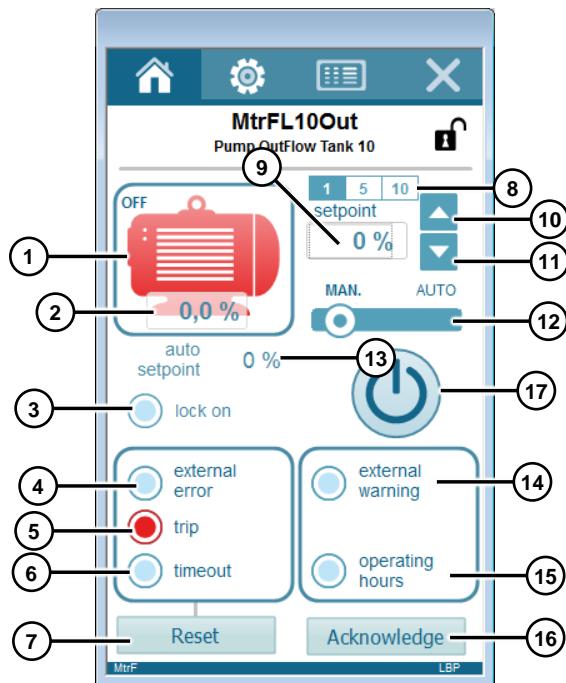
acknowledged)

wrench – Repair mode active

5. When the padlock is displayed, the interlock is active.

### Home Screen

Figure 2-57

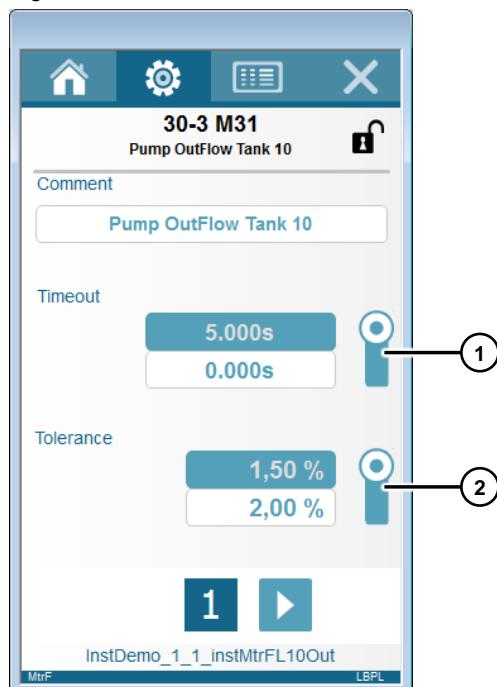


1. Motor symbol:  
red – error active  
yellow – warning active  
green – motor is switched on  
blue – motor switched off or not defined
2. Current velocity
3. The light indicates whether the interlock is active.  
The corresponding “LBP\_Intlk8” (interlock block) can be opened via the arrow button.
4. Light turns red if an external error is pending.  
If an arrow button is displayed next to the text, the associated “LBP\_Msg8” (message block) can be opened via this arrow button.
5. Light turns red if the emergency stop is active.
6. Light turns red if no feedback has been received after the monitoring time has elapsed.
7. Reset errors from the box above.
8. Specify the increment in which to increase or decrease the speed.
9. Velocity set point
10. Button for incrementing the speed set point
11. Button for decrementing the speed set point
12. Switch for switching from manual to automatic operation and vice versa.  
In local operation or in case of a repair, it is overlaid with the text “LOCAL” or “REPAIR”.

13. Set point that is activated when the automatic mode is activated.
14. Light turns yellow when an external warning is pending.  
If an arrow button is displayed next to the text, the associated “LBP\_Msg8” (message block) can be opened via this arrow button.
15. Maximum operating hours reached
16. Acknowledgment of error
17. On and off button for the motor.  
Stroke of the “Power” symbol is green, circle is blue – Motor starting up  
“Power” symbol is green – Motor is switched on  
Stroke of the “Power” symbol is blue, circle is green – Motor is shutting down  
“Power” symbol is blue – Motor is switched off  
“Power” symbol is gray – Status is not defined

### Settings

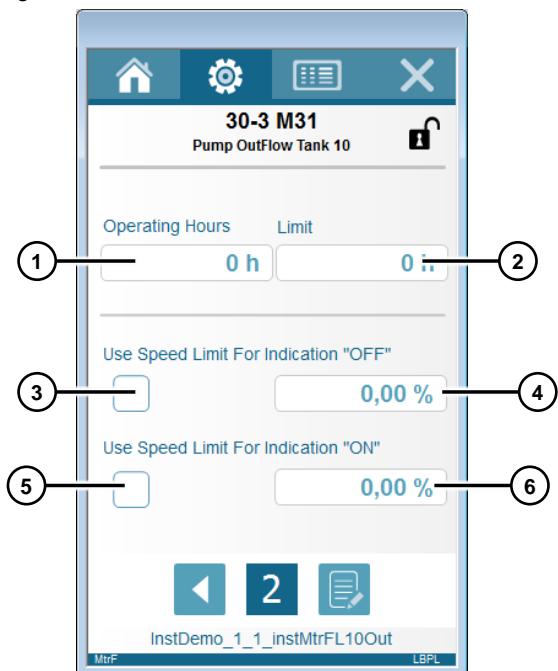
Figure 2-58



1. Setting the monitoring time (time after which it is checked whether an activation has also occurred).
2. Tolerance – Defines the permissible fluctuations of the current analog value. If the tolerance is exceeded or fallen below, the motor is assumed to be starting up or shutting down.

## 2 Operation of the HMI Faceplates

Figure 2-59



1. Current operating hours
2. Maximum operating hours
3. Check box to activate the limit above which the motor is considered to be switched off.  
If the limit is not activated, the symbol does not indicate a status.
4. Limit for switched off.
5. Check box to activate the limit at which the motor is considered to be switched on.  
If the limit is not activated, the symbol does not indicate a status.
6. Limit for switched on

### 2.1.2.15 LBP\_Sina – Via a G120 Speed-Controlled Motor

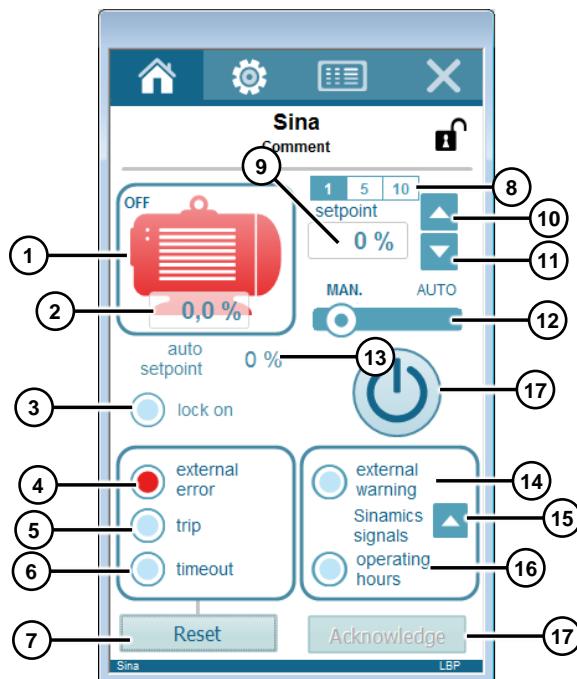
#### Icon

The Sina symbol corresponds to the symbol of the MtrF. block

See [Icon](#)

### Home Screen

Figure 2-60



1. Motor symbol:  
red – error active  
yellow – warning active  
green – motor is switched on  
blue – motor switched off or not defined
2. Current velocity
3. The light indicates whether the interlock is active.  
The corresponding “LBP\_Intlk8” (interlock block) can be opened via the arrow button.
4. Light turns red if an external error is pending.  
If an arrow button is displayed next to the text, the associated “LBP\_Msg8” (message block) can be opened via this arrow button.
5. Light turns red if the emergency stop is active.
6. Light turns red if no feedback has been received after the monitoring time has elapsed.
7. Reset errors from the box above.
8. Specify the increment in which to increase or decrease the speed.
9. Velocity set point
10. Button for incrementing the speed set point
11. Button for decrementing the speed set point
12. Switch for switching from manual to automatic operation and vice versa.  
In local operation or in case of a repair, it is overlaid with the text “LOCAL” or “REPAIR”.
13. Set point that is activated when the automatic mode is activated.
14. Light turns yellow when an external warning is pending.  
If an arrow button is displayed next to the text, the associated “LBP\_Msg8” (message block) can be opened via this arrow button.
15. Maximum operating hours reached

## 2 Operation of the HMI Faceplates

### 16. Opening the SINAMICS signals

Figure 2-61



### 17. Acknowledgment of error

### 18. On and off button for the motor.

Stroke of the “Power” symbol is green, circle is blue – Motor starting up  
“Power” symbol is green – Motor is switched on  
Stroke of the “Power” symbol is blue, circle is green – Motor is shutting down  
“Power” symbol is blue – Motor is switched off  
“Power” symbol is gray – Status is not defined

## Settings

The Sina settings correspond to the settings of the MtrF. block

See [Settings](#)

### 2.1.2.16 LBP\_OpAna – Switching Analog Values

#### Icon

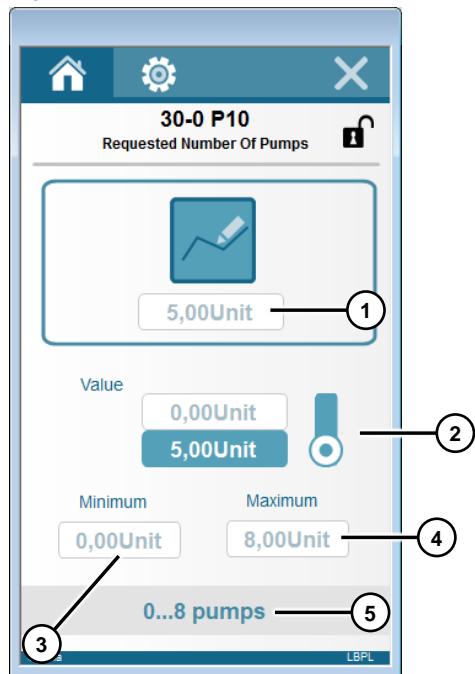
Figure 2-62



Display of the current analog value

### Home Screen

Figure 2-63

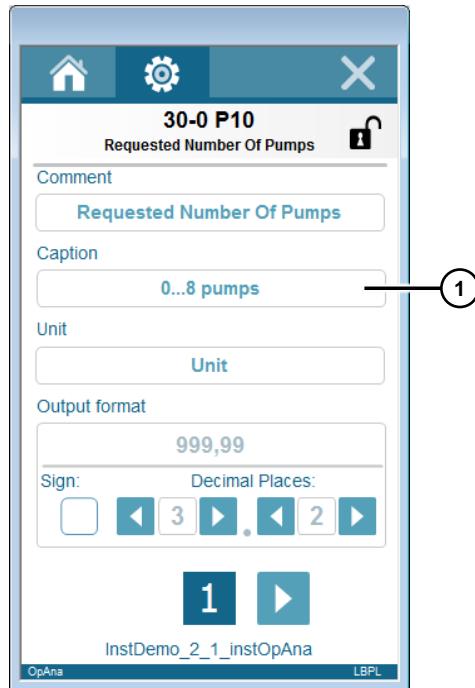


1. Current analog value
2. Input value at STEP 7 block (high value),  
HMI value (lower value),  
Button to activate the HMI or PLC value
3. Minimum of the analog value
4. Maximum of the analog value
5. Name of the LBP\_OpAna ("Caption", can be defined in the settings)

## 2 Operation of the HMI Faceplates

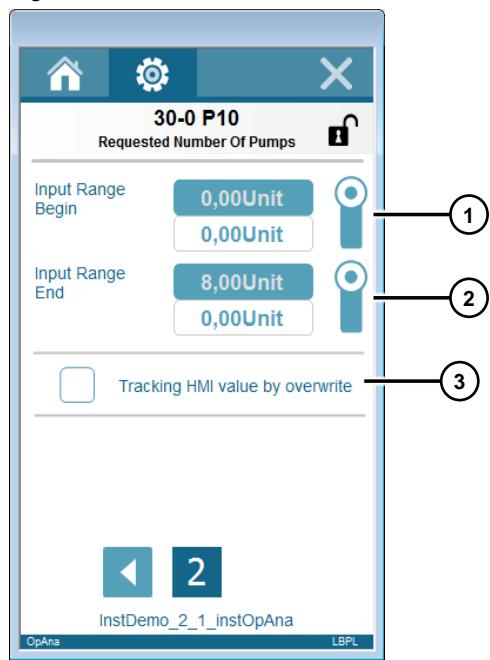
### Settings

Figure 2-64



1. Block identifier (displayed at the bottom of the Home Screen)

Figure 2-65



1. Start of the measuring range
2. End of the measuring range
3. Track HMI value. If the value is "true", when the HMI value is activated (on the Home Screen), the PLC value is transferred once to the HMI value.

### 2.1.2.17 LBP\_OpDig – Switching a Digital Signal

#### Icon

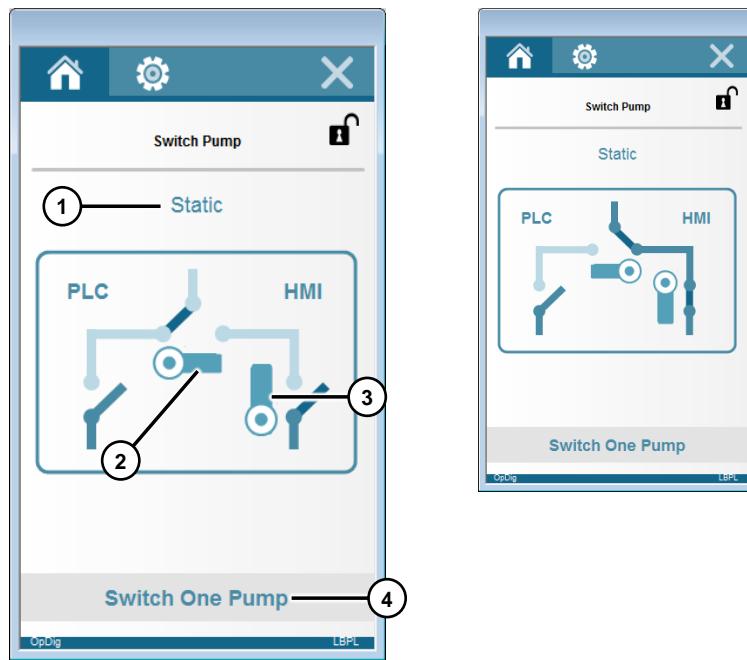
Figure 2-66



The light indicates whether the digital output value is “true” (green) or “false” (light blue).

#### Home Screen

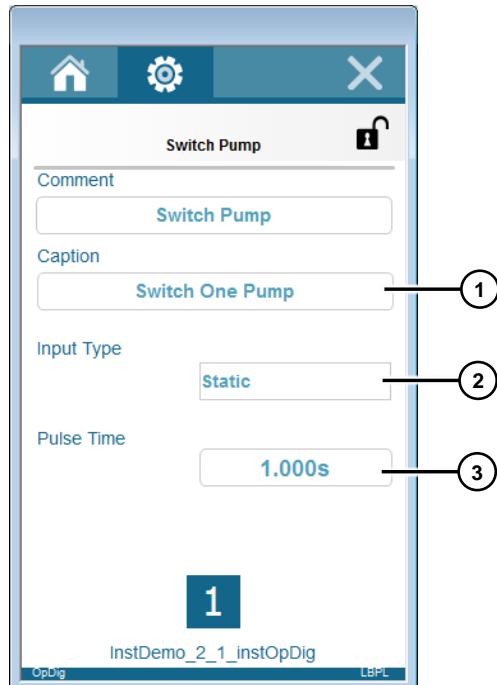
Figure 2-67



1. Type of input value (static, rising edge, falling edge)
2. The switch indicates whether the PLC value (left NC contact) or the HMI value (right NC contact) is to be switched to active.
3. The switch indicates whether the HMI value is true or false.
4. Name of the block (“caption”)

### Settings

Figure 2-68



1. Name of the block ("caption")
2. Type of input signal (static/rising edge/falling edge)

#### 2.1.2.18 LBP\_Polygon – Conversion of Values Over 8 Interpolation Points

##### Icon

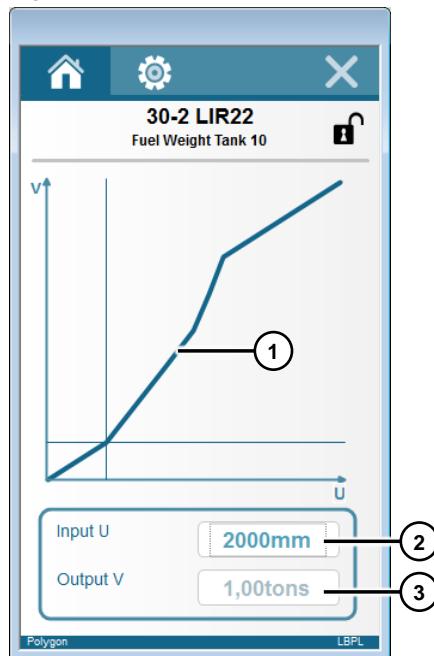
Figure 2-69



Current output value of the block

## Home Screen

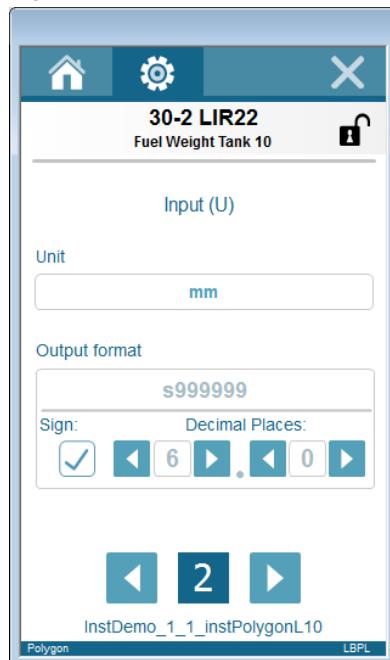
Figure 2-70



1. Graph formed from 8 coordinates. The cross-hairs represent the current conversion point.
2. Current input value
3. Current output value

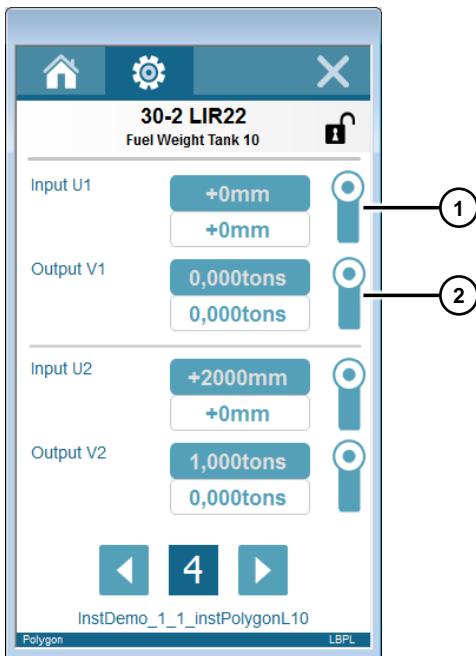
## Settings

Figure 2-71



The settings of the unit and number format of the input are set here.  
This page is followed by a page for the same settings for the output.

Figure 2-72



On these pages, the 8 coordinates from which the graph is formed are set.

1. Input value 1
  2. Output value 1
- etc.

### 2.1.2.19 LBP\_Select – Selection of Values

#### Icon

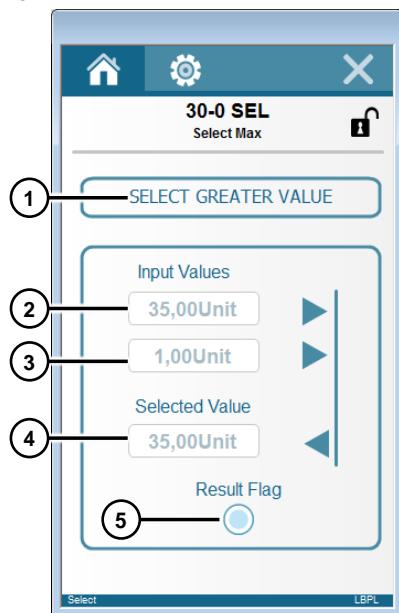
Figure 2-73



Currently selected value

## Home Screen

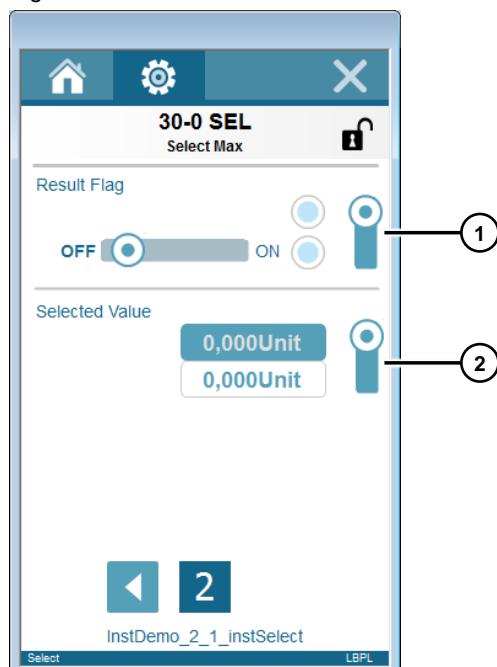
Figure 2-74



1. Display of the mode (selection of the lesser value/selection via switch/selection of the greater value)
2. First value
3. Second value
4. Selected value
5. The light turns green when the first value is the selected value.

## Settings

Figure 2-75



1. Result bit
2. Selected value

### 2.1.2.20 LBP\_SetCrv – Time-Dependent Set Point Curve

#### Icon

Figure 2-76

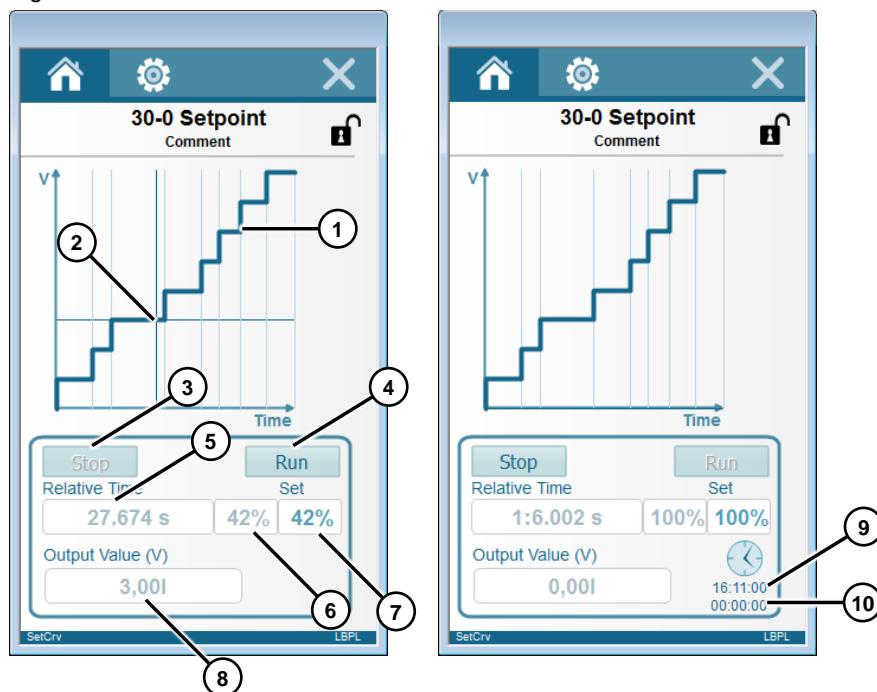


The value is the output value of the “LBP\_SetCrv” function.

The fill level of the rectangle in the background shows the percentage of the set point curve that has already run.

#### Home Screen

Figure 2-77

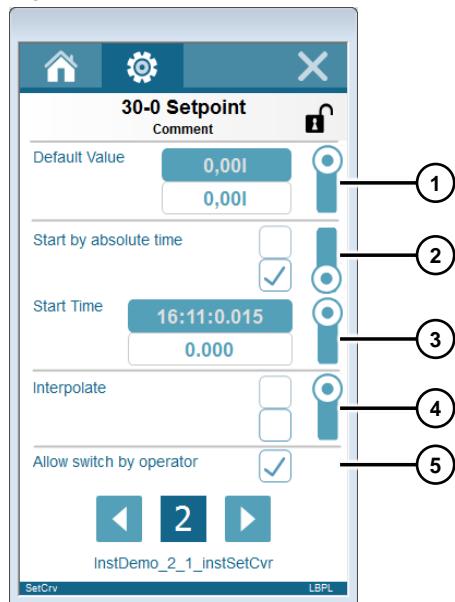


1. Set point curve
2. The cross-hairs indicate which value is currently being output.
3. The “Stop” button can be pressed to stop the set point curve.
4. The “Run” button can be pressed to (continue to) run the set point curve.
5. The time indicates how long the set point curve has run.  
Together with the output value (8), the time determines the position of the cross-hairs.
6. The percentage value indicates the percentage of the set point curve that has already run.
7. The percentage value indicates what percentage of the set point curve has already run. If the check mark for “Allow switch by operator” is set in the setting pages, this value can also be overwritten.
8. Output value
9. If time control is activated, the start time is displayed here.
10. If time control is activated, the remaining run time is displayed here.

## 2 Operation of the HMI Faceplates

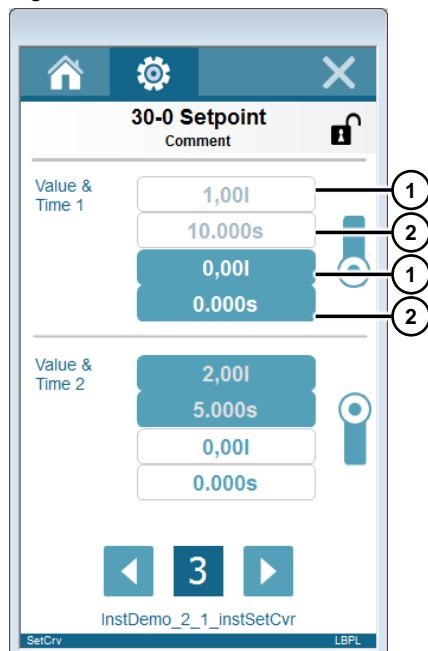
### Settings

Figure 2-78



1. Default value, which is output if the set point curve is not completed.
2. Activation of the control via time
3. Definition of the start time
4. If the check mark is set, the graph is interpolated
5. Activate the operation by the operator. This means that the Home Screen can be operated.

Figure 2-79



The graph is formed on the basis of 8 interpolation points. They can be set here.

1. The V value of the first interpolation point
2. The time value of the first interpolation point

### 2.1.2.21 LBP\_TimeSw – Time Switch

#### Icon

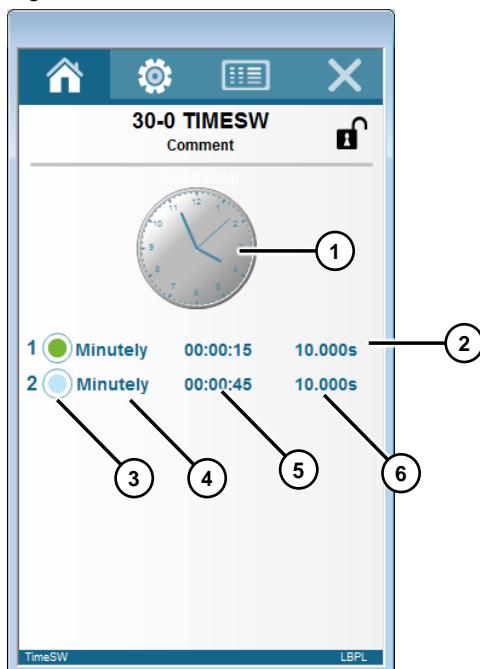
Figure 2-80



The light is green when one of the time switches is active.

#### Home Screen

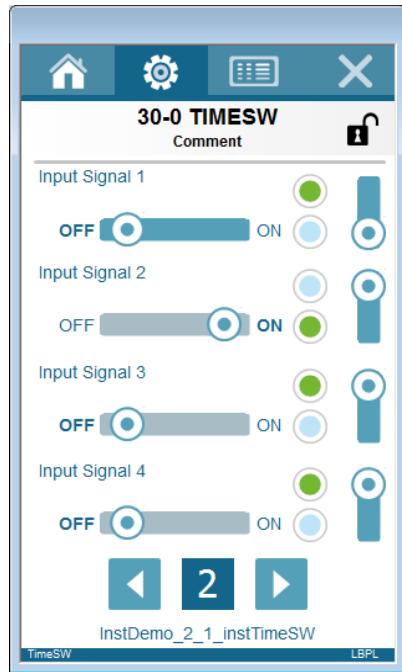
Figure 2-81



1. The clock shows the current time.
2. There are up to 8 time switches which are listed below each other.
3. The light indicates whether the time switch is active.
4. Mode (minutely, hourly, daily, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday)
5. Start time
6. Time duration

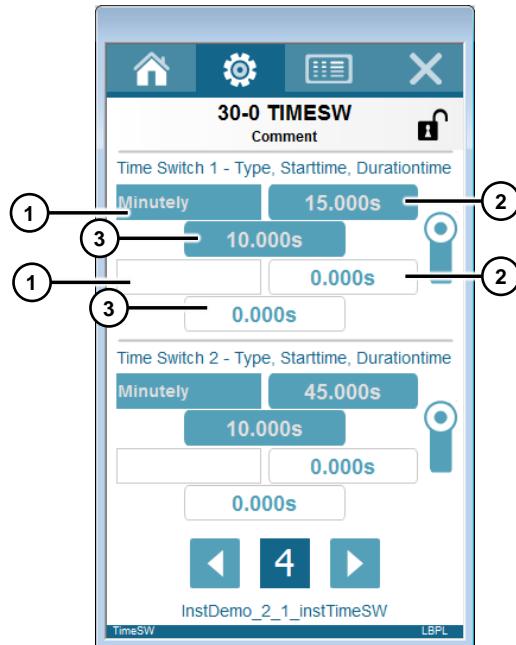
## Settings

Figure 2-82



The input signal is set on these pages.

Figure 2-83



1. Set the time switch type
2. Set the start time
3. Set the runtime

### 2.1.2.22 LBP\_Vlv – Simple Valve

#### Icon

Figure 2-84

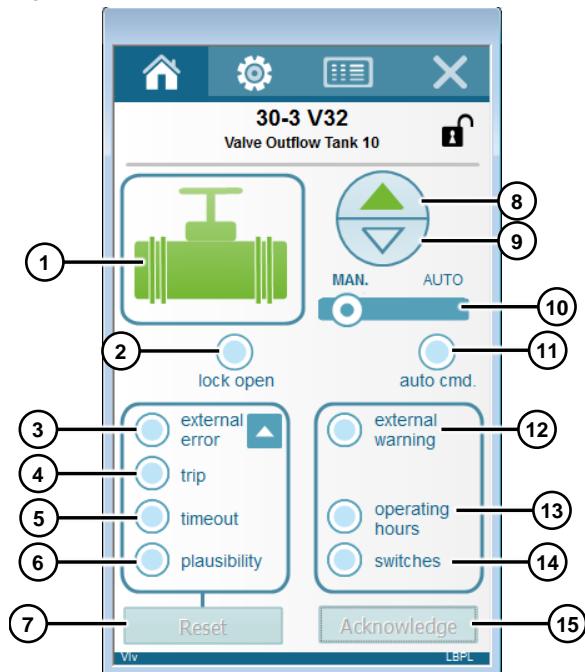


The valve is available in vertical and horizontal orientation.

1. Mode display:  
M – Manual operation  
A – Automatic operation  
L – Local operation
2. Valve symbol:  
green – open  
blue – closed  
green to blue – opening  
blue to green – closing  
gray – status is not defined
3. Status display:  
Red warning triangle – Error pending (pulsing means error not acknowledged)  
Yellow warning triangle – Error pending (pulsing means warning not acknowledged)  
wrench – Repair mode active
4. When the padlock is displayed, the interlock is active.

#### Home Screen

Figure 2-85



1. Valve symbol:  
red – error active  
yellow – warning active

green – valve is opened

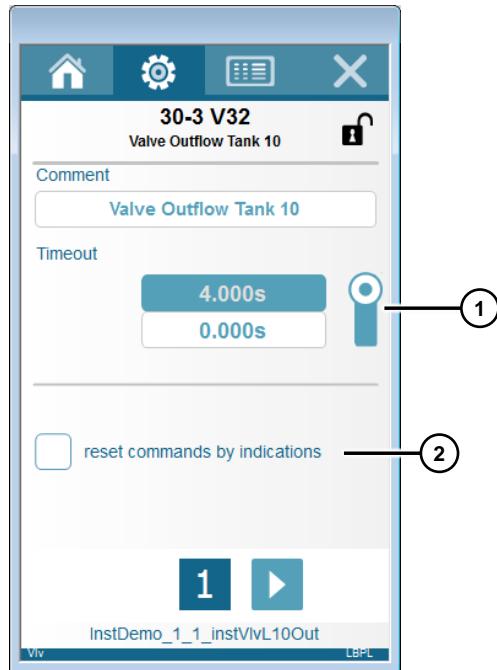
blue – valve is closed or not defined

2. The light indicates whether the interlock is active.  
If an arrow button is displayed to the right of the light, the corresponding “LBP\_Intlk8” (interlock block) can be opened via this arrow button
3. Light turns red if an external error is pending.  
If an arrow button is displayed next to the text, the associated “LBP\_Msg8” (message block) can be opened via this arrow button.
4. Light turns red if the emergency stop is active.
5. Light turns red if no feedback has been received after the monitoring time has elapsed.
6. Light turns red if values are not plausible.
7. Reset errors from the box above.
8. Button for opening the valve:  
Triangle has a green frame – Valve opening  
Triangle has a green fill – Valve is open
9. Button for closing the valve:  
Triangle has a green frame – Valve closing  
Triangle has a green fill – Valve closed
10. Switch for switching from manual to automatic operation and vice versa.  
In local operation or in case of a repair, it is overlaid with the text “LOCAL” or “REPAIR”.
11. The light turns green when the automatic command “Open” is active (“cmdAutOpen” input). The operator can use this information to determine the state of the valve when switching from manual to automatic operation.
12. Light turns yellow when an external warning is pending.  
If an arrow button is displayed next to the text, the associated “LBP\_Msg8” (message block) can be opened via this arrow button
13. Maximum operating hours reached
14. Maximum number of switching operations reached
15. Acknowledgment of error

## 2 Operation of the HMI Faceplates

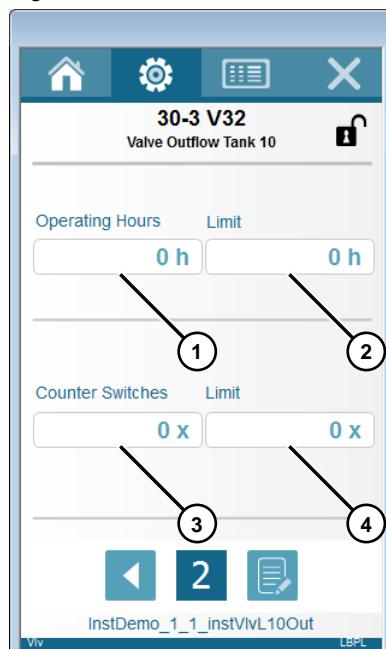
### Settings

Figure 2-86



1. Set the monitoring time (time after which it is checked whether an activation has also occurred).
2. The button can be used to specify whether the control commands of the valve are to be reset from the corresponding end positions (open/closed).

Figure 2-87



1. Current operating hours
2. Maximum number of operating hours
3. Current number of switching operations
4. Maximum number of switching operations

### 2.1.2.23 LBP\_VlvA – Analog Controlled Valve

#### Icon

Figure 2-88

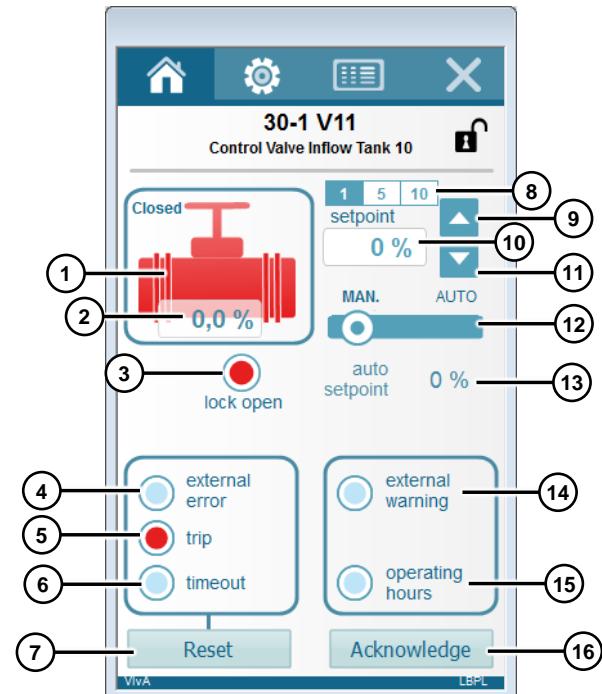


The valve is available in vertical and horizontal orientation.

1. Mode display:  
M – Manual operation  
A – Automatic operation  
L – Local operation
2. Valve symbol:  
green – open  
blue – closed  
green to blue – opening  
blue to green – closing  
gray – status is not defined
3. Analog value that determines the degree of opening of the valve.
4. Status display:  
Red warning triangle – Error pending (pulsing means error not acknowledged)  
Yellow warning triangle – Error pending (pulsing means warning not acknowledged)  
wrench – Repair mode active
5. When the padlock is displayed, the interlock is active.

#### Home Screen

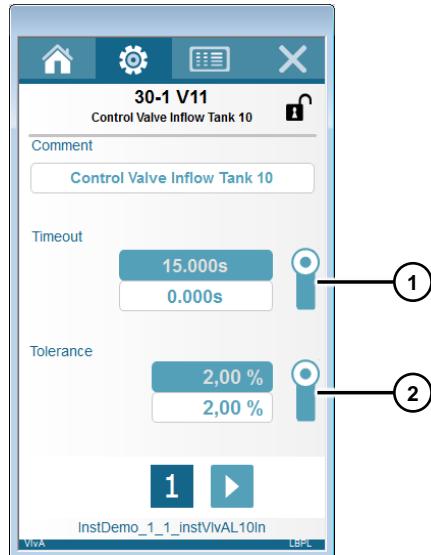
Figure 2-89



1. Valve symbol:  
red – error active  
yellow – warning active  
green – Valve is open  
blue – valve closed or not defined
2. Current velocity
3. The light indicates whether the interlock is active.  
If an arrow button is displayed next to the text, the corresponding “LBP\_Intlk8” (interlock block) can be opened via this arrow button.
4. Light turns red if an external error is pending.  
If an arrow button is displayed next to the text, the associated “LBP\_Msg8” (message block) can be opened via this arrow button.
5. Light turns red if the emergency stop is active.
6. Light turns red if no feedback has been received after the monitoring time has elapsed.
7. Reset errors from the box above.
8. Specifies the increment by which the speed is to be increased or reduced.
9. Button for decrementing the speed set point.
10. Velocity set point
11. Button for decrementing the speed set point.
12. Switch for switching from manual to automatic operation and vice versa.  
In local operation or in case of a repair, it is overlaid with the text “LOCAL” or “REPAIR”.
13. Set point value which is activated when the automatic mode is activated.
14. Light turns yellow when an external warning is pending.  
If an arrow button is displayed next to the text, the associated “LBP\_Msg8” (message block) can be opened via this arrow button
15. Maximum operating hours reached
16. Acknowledgment of error

### Settings

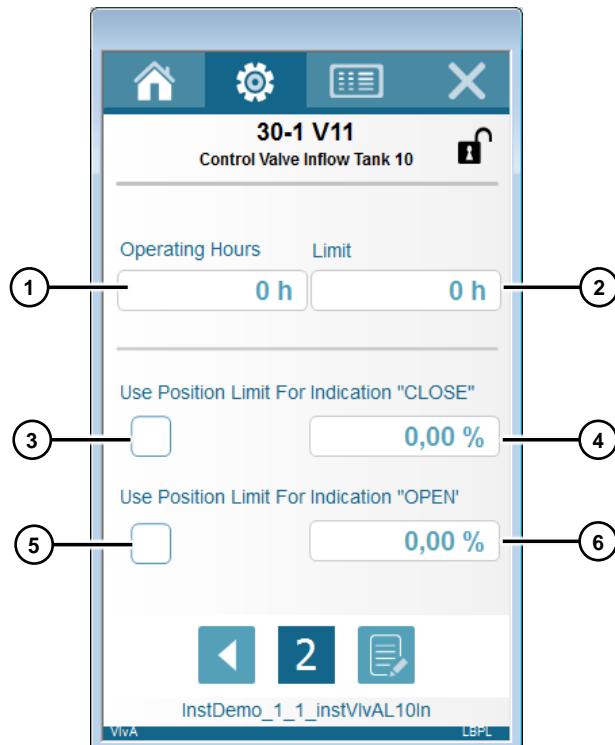
Figure 2-90



## 2 Operation of the HMI Faceplates

1. Set the monitoring time (time after which there is a check as to whether an activation has also occurred).
2. Tolerance – Defines the permissible fluctuations of the current analog value. If the tolerance is exceeded or not reached, it is assumed that the valve is opening or closing.

Figure 2-91

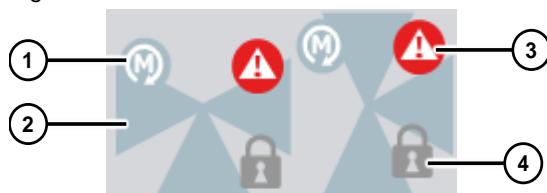


1. Current operating hours
2. Maximum number of operating hours
3. Check box to activate the limit above which the valve is considered closed. If the limit is not activated, the symbol does not indicate a status.
4. Limit for "Closed"
5. Check box to activate the limit above which the valve is considered to be open. If the limit is not activated, the symbol does not indicate a status.
6. Limit for "Open"

### 2.1.2.24 LBP\_3wVlv – Three-Way Valve

#### Icon

Figure 2-92



The valve is available in vertical and horizontal orientation.

## 2 Operation of the HMI Faceplates

1. Mode display:  
M – Manual operation  
A – Automatic operation  
L – Local operation
2. Valve symbol.

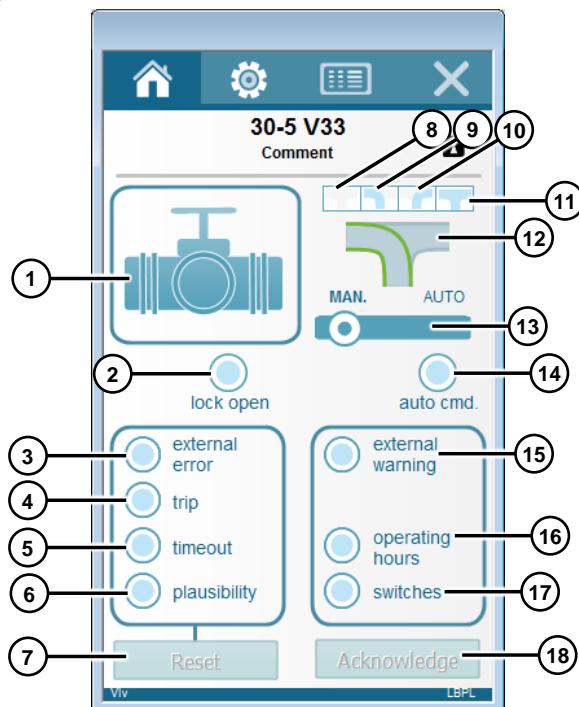
Table 2-4

Graphics	
	Valve is fully open
	Valve opening
	Position 1 is active
	Position 1 is being activated
	Position 2 is active
	Position 2 is being activated
	Valve is closed
	Valve closed

3. Status display:  
 Red warning triangle – Error pending (pulsing means error not acknowledged)  
 Yellow warning triangle – Error pending (pulsing means warning not acknowledged)  
 wrench – Repair mode active
4. When the padlock is displayed, the interlock is active.

### Home Screen

Figure 2-93



1. Valve symbol:  
 red – error active  
 yellow – warning active  
 green – Valve is switched on  
 blue – Valve switched off or not defined
2. The light indicates whether the interlock is active.  
 If an arrow button is displayed next to the text, the corresponding "LBP\_Intlk8" (interlock block) can be opened via this arrow button.
3. Light turns red if an external error is pending.  
 If an arrow button is displayed next to the text, the associated "LBP\_Msg8" (message block) can be opened via this arrow button.
4. Lights turns red if the emergency stop is active, lights turns red if there is no feedback after the monitoring time has elapsed.
5. Light turns red if no feedback has been received after the monitoring time has elapsed.
6. Light turns red if values are not plausible
7. Reset errors from the box above
8. Button for closing the valve
9. Button for activating Position 1

10. Button for activating Position 2
11. Button to fully open the valve
12. Indicates which position is being activated or is active
13. Switch for switching from manual to automatic operation and vice versa.  
In local operation or in case of a repair, it is overlaid with the text "LOCAL" or "REPAIR".
14. The light turns green when the valve is being opened or position 1, 2 or 3 is being activated when switching to automatic operation.
15. Light turns yellow when an external warning is pending.  
If an arrow button is displayed next to the text, the associated "LBP\_Msg8" (message block) can be opened via this arrow button.
16. Maximum operating hours reached
17. Maximum number of switching operations reached
18. Acknowledgment of the error messages

### Settings

See LBP\_Vlv settings, page [68](#).

## 2.2 Comfort Panels/WinCC Runtime Advanced

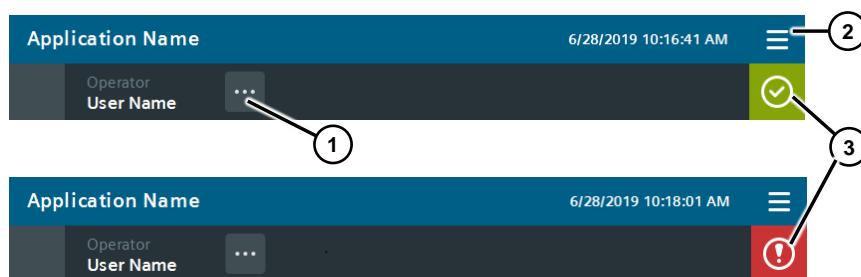
The following describes how to operate the functions. Many operation possibilities are similar. For this reason, the chapter is divided into cross-block operations and block-specific operations.

### 2.2.1 Cross-Block Operations

#### 2.2.1.1 Header

The header is structured everywhere as follows:

Figure 2-94

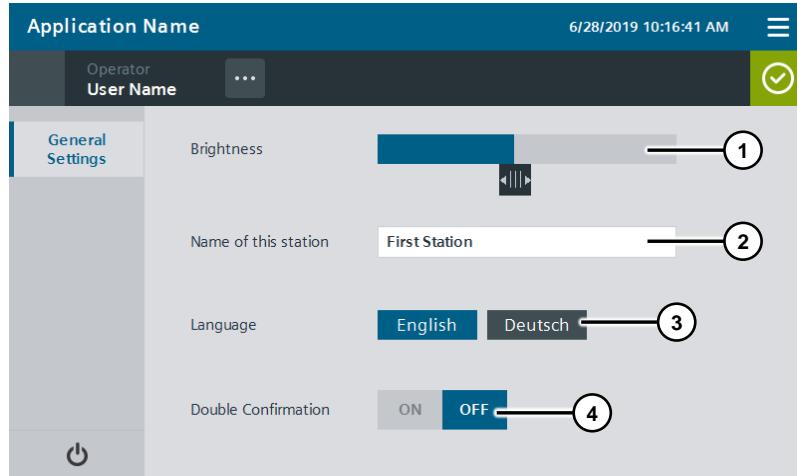


1. User login:  
You can find more information on this under [2.1.1.4, Operating the Locking System](#).
2. Open navigation:  
Contains settings for general operation.
3. Diagnostic overview.

## 2 Operation of the HMI Faceplates

### 2.2.1.2 Operating the General Settings

Figure 2-95

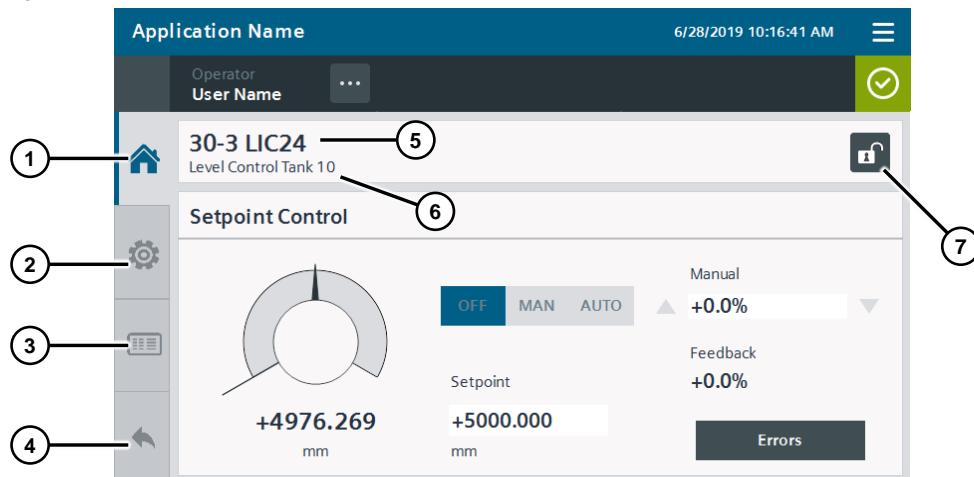


1. Screen brightness
2. Station name, must be unique, can only be changed by the administrator
3. Language
4. Double Confirmation, operation confirmation for all process-relevant inputs

### 2.2.1.3 Navigation

The navigation is structured the same in all blocks and works as follows:

Figure 2-96



1. Open the Home Screen (Start Screen of the module):  
The Home Screens of the individual blocks differ greatly. For this reason, there is a corresponding description for each block [2.1.2 Block-Specific Operations](#).
2. Open the settings:  
You can find more information about the operation of the settings under [2.1.1.2 Operating the Settings Screens](#).
3. Open the message window:  
You can find more information on message windows under [2.1.1.3 Operating the Message Window](#).

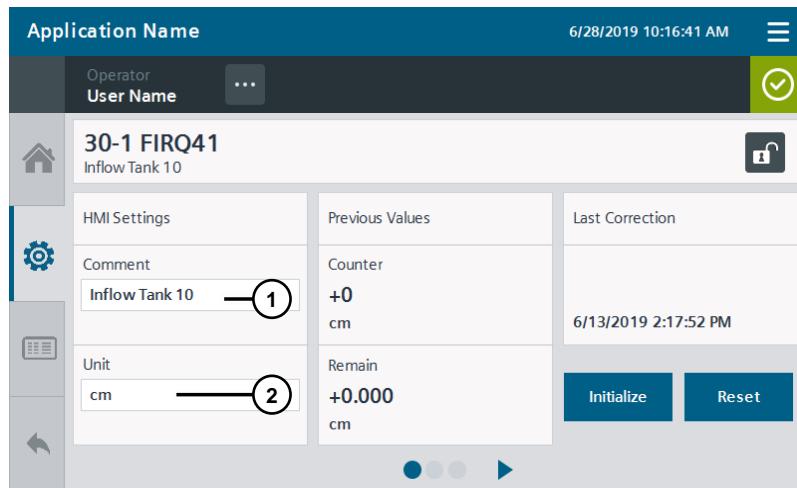
4. Close the window
5. “identName”. This is connected to the STEP 7 block in the PLC program and must be unique for each block.
6. Comment:  
This can be adjusted on the settings page. See [2.1.1.2 Operating the Settings Screens](#).
7. Open the screen to lock operation for others.  
You can find more information on this under [2.1.1.4 Operating the Locking System](#).

### 2.2.1.4 Operating the Settings Screens

The following section describes setting elements that appear in several blocks and have similar or identical functionality.

#### Comment/Unit

Figure 2-97

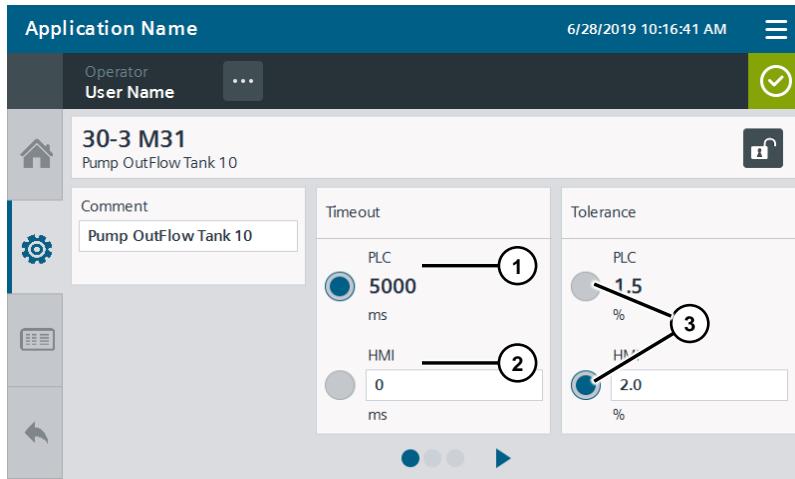


1. Comment:  
The text to be displayed under the identification name is stored in the comment field.
2. Unit:  
The unit stored here is automatically added to most input/output fields.

## 2 Operation of the HMI Faceplates

### Overwriting Values

Figure 2-98



1. PLC value:

This is an output value. Usually, a tag is connected here that transmits the value that was connected in the program to the input of the STEP 7 block.

2. HMI value:

This is an input and output field. A tag is connected here which can be used instead of the PLC value and written to via the HMI system.

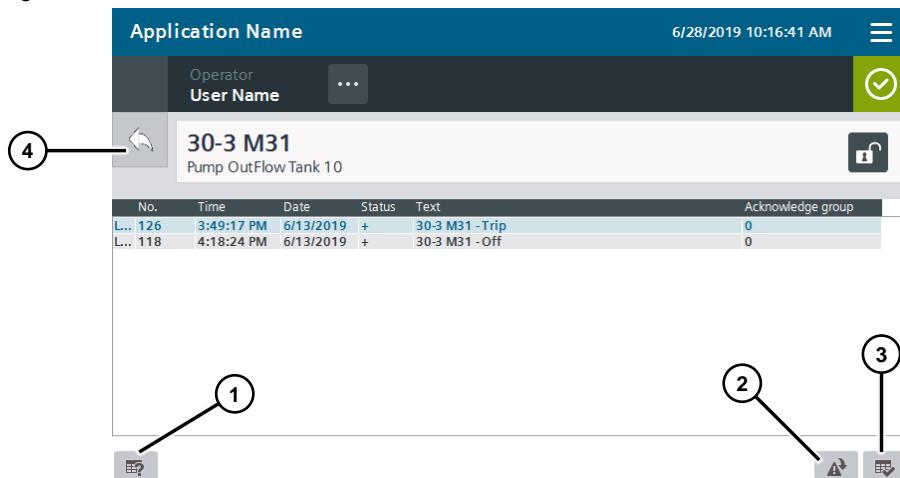
3. Radio buttons:

The radio buttons are a display and operator control. They determine whether the PLC value or the HMI value is to be activated. Its position is determined by a bit from the "settingsHMI.overwrite" tag. The bit assignment of the "overwrite" tag for the individual blocks can be read in Chapter 5.2.7 "Script for Switching Operability and Colors" in the document "Library for Basic Processes – Implementation".

### 2.2.1.5 Operating the Message Window

In the message window, the active alarms are filtered according to the content of the "identName" tag. Therefore, only the alarms for the associated STEP 7 block are displayed in the message window.

Figure 2-99



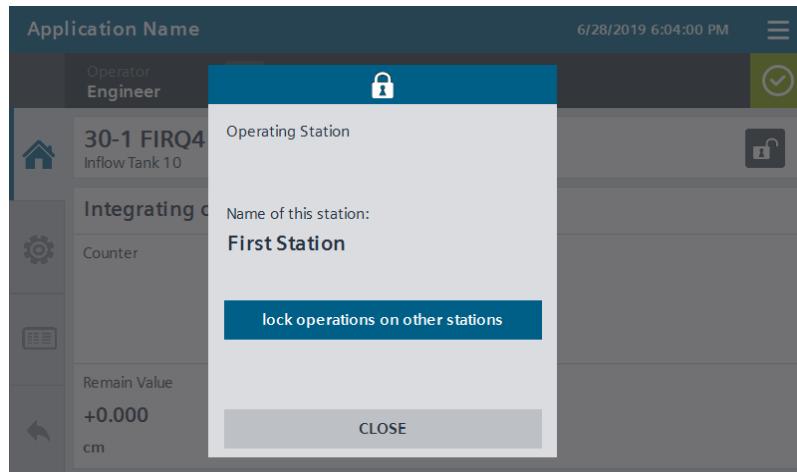
1. Info text, displays the tooltip of a message

## 2 Operation of the HMI Faceplates

2. Loop in Alarm
3. Acknowledges a message
4. Closes the window and returns to the previous screen

### 2.2.1.6 Operating the Locking System

Figure 2-100

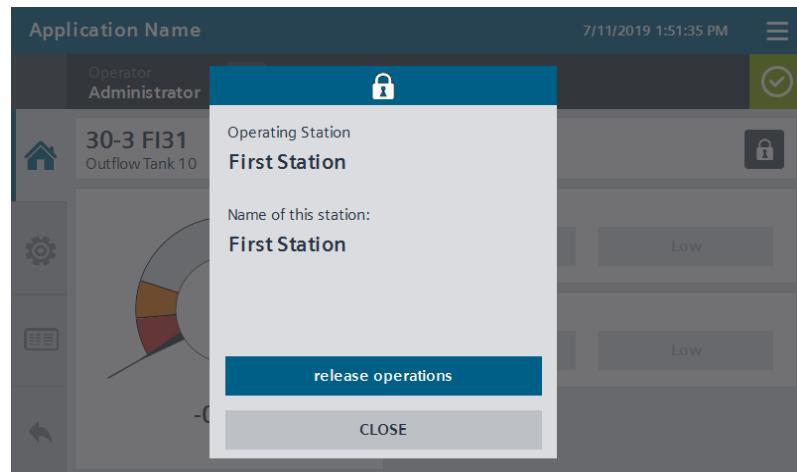


No one is currently logged on in the figure here. For this reason, operation from any HMI station is currently permitted.

If you press the “lock operations on other stations” button, operation will only be permitted for this station.

The open padlock in the symbol on the right indicates the operability.

Figure 2-101



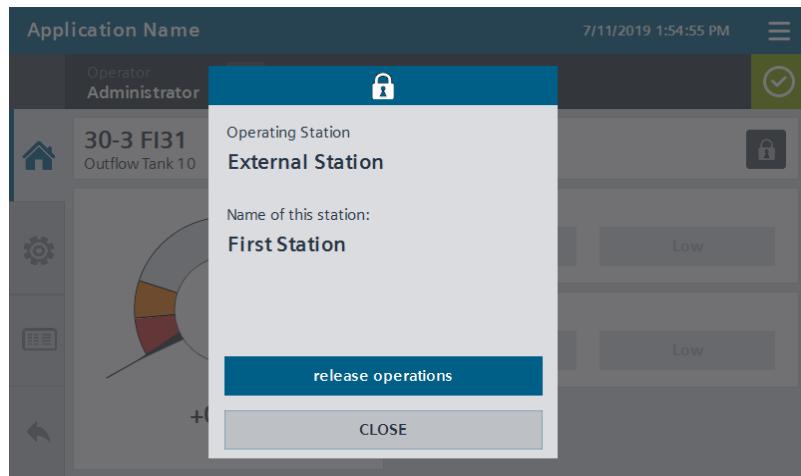
The HMI station is logged on in the figure here. The name of the station operating is displayed at the top.

The padlock in the symbol on the right is closed.

To release operation for all stations again, press the “release operations” button.

## 2 Operation of the HMI Faceplates

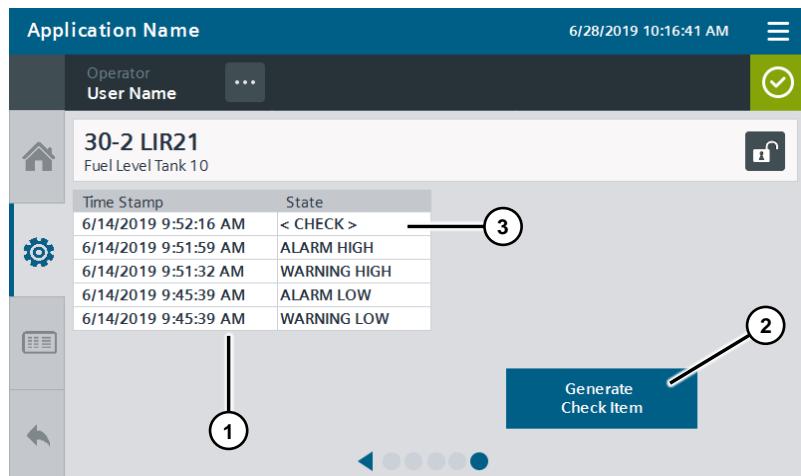
Figure 2-102



In the screen shown, another HMI station is currently logged on. The “release operations” button can only be pressed by the administrator. The administrator can release operation for all stations.

### 2.2.1.7 Operating the Logging Screen

Figure 2-103



1. List of the last 15 entries generated by the BPL block
2. Button for generating a check item
3. Check item

### Cross-Block Error Codes

The error codes are the same as in the Professional chapter. See [2.1.1.5 Operating the Logging Screen](#).

### 2.2.1.8 User handling

The user groups and permissions correspond to those in the Professional chapter.

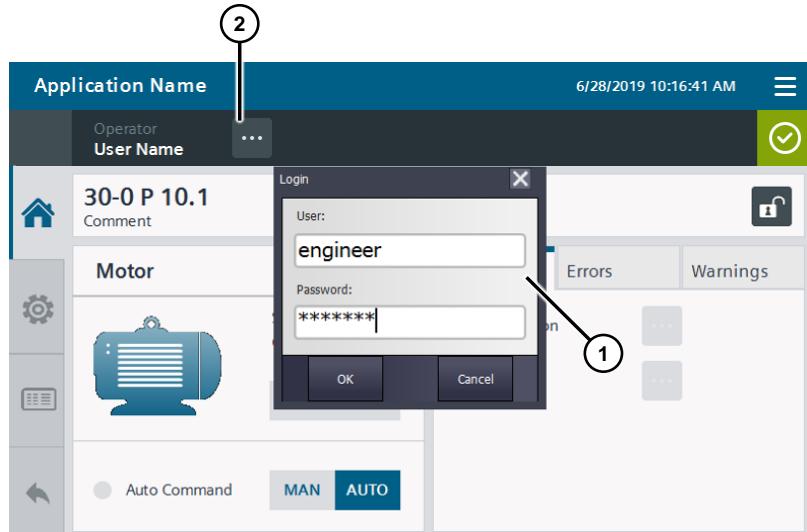
## 2 Operation of the HMI Faceplates

Table 2-5

User group	Authorization	Operator input options
LBP Administrator	Authorization_101 – LBP Operator Authorization_102 – LBP Engineer Authorization_104 – LBP Administrator	Administrators are allowed to operate everything.
LBP Engineer	Authorization_101 – LBP Operator Authorization_102 – LBP Engineer	Engineers are allowed to operate everything except changing the station names or depriving other users the exclusive operation possibility.
LBP Operator	Authorization_101 – LBP Operator	Operators are only authorized to operate the Home Screens.

**Note** It is also possible to configure your own user groups with the respective permissions.

Figure 2-104



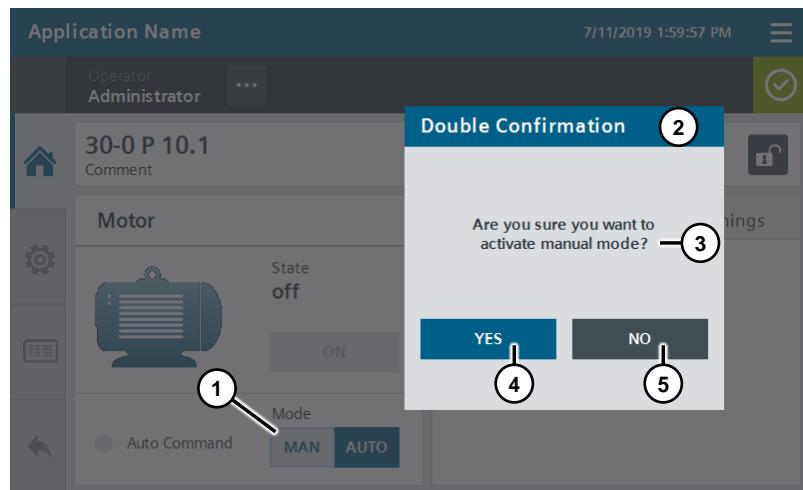
1. The logon window for the user opens as soon as an attempt is made to perform an operation for which there is no appropriate permission.
2. Logon can also be activated by pressing the key in the operator field in the header.

### 2.2.1.9 Double Confirmation

Double confirmation is activated as described in [2.2.1.4 Operating the Settings Screens](#). It is then in effect for all process-relevant entries made on the main screens.

## 2 Operation of the HMI Faceplates

Figure 2-105



After each entry (1), a pop-up (2) is displayed in which the current entry is displayed and questioned (3).

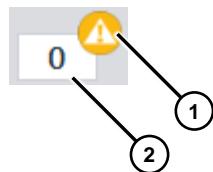
The action is only executed after confirmation with "YES" (4). With "NO" (5) the entry is canceled and has no effect on the process.

## 2.2.2 Block-Specific Operations

### 2.2.2.1 LBP\_Aggr8 – Control of up to 8 Aggregates

#### Icon

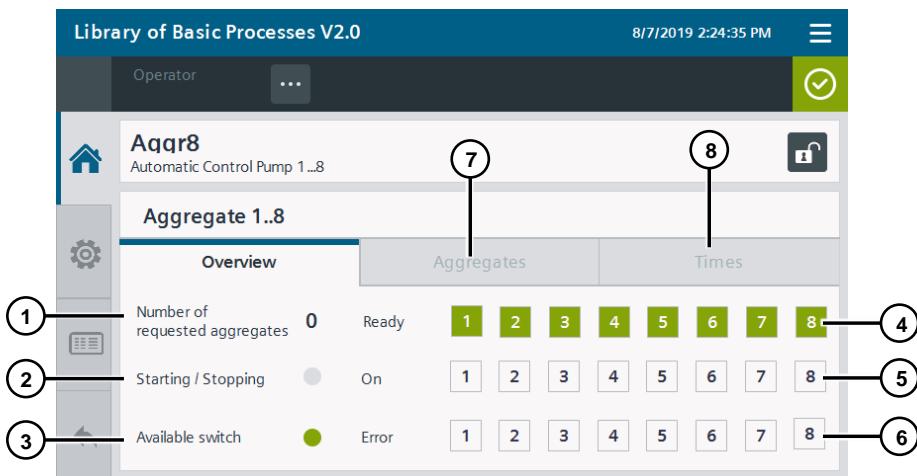
Figure 2-106



1. Indicates whether warnings (yellow symbol) or alarms (red symbol) are currently active.
2. Indicates which Aggregate will be started next.

#### Home Screens

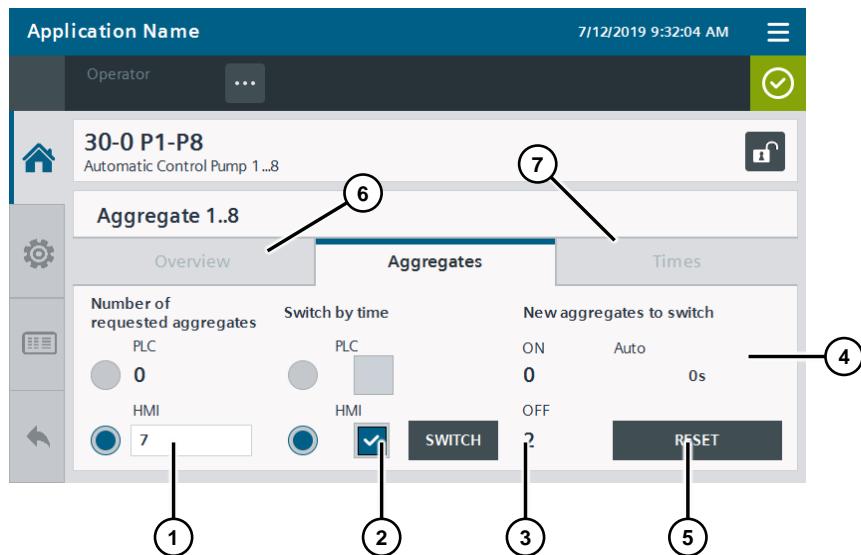
Figure 2-107



1. Number of requested Aggregates
2. This field is green if Aggregates are currently starting up or shutting down.
3. This field is orange if no more Aggregates can be controlled although more are requested.
4. These fields indicate whether the respective Aggregate is ready to be switched on.
5. These fields indicate whether the respective Aggregate is switched on.
6. These fields indicate whether there is an error at the respective Aggregate, so that it cannot be switched on (example: interlock).
7. Open the “Aggregates” tab
8. Open the “Times” tab

## 2 Operation of the HMI Faceplates

Figure 2-108



1. Number of requested Aggregates:  
Switchable between HMI and PLC,  
You can find more information about the operation under [2.1.1.2 Operating the Settings Screens](#).
2. The check boxes indicate whether the switchover should take place over time.  
The switch indicates whether the PLC value (upper check box) or the HMI value (lower check box) is to be processed.  
If further Aggregates are available and the HMI value is selected, it is also possible to switch manually via the "Switch" button.
3. Under "ON" is the number of the Aggregate which will be switched on next.  
Under "OFF" is the number of the Aggregate which will be switched off next.
4. Under "Auto" is the remaining run time until the next Aggregate is switched on/off.
5. Reset the errors on the Aggregates
6. Open the "Overview" tab
7. Open the "Times" tab

Figure 2-109

	1	0.000s	5	0.000s
Operating Times	1	0.000s	5	0.000s
Cycle Times	2	0.000s	6	0.000s
Rest Times	3	0.000s	7	0.000s
	4	0.000s	8	0.000s

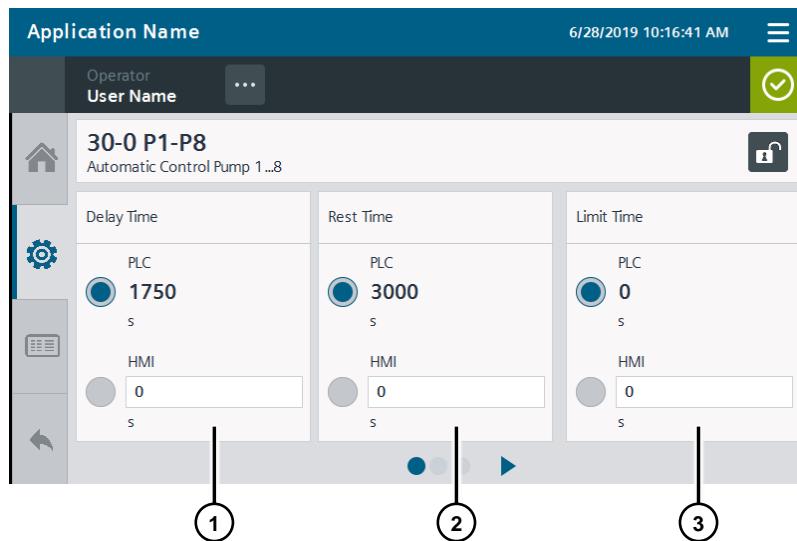
## 2 Operation of the HMI Faceplates

1. The operating times of the individual Aggregates are currently displayed here. The selected function key is highlighted in blue.
2. After pressing the button, the respective cycle times are displayed.
3. After pressing the button, the respective remaining run times are displayed.
4. Open the “Overview” tab.
5. Open the “Aggregates” tab.

### Settings

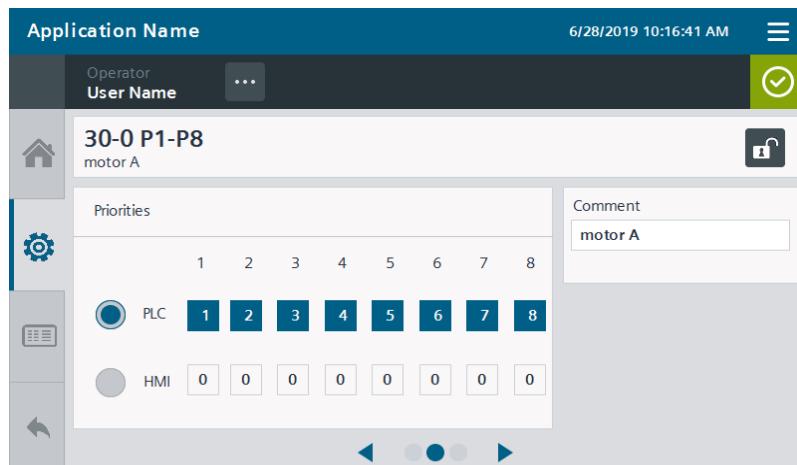
This section assumes that you have already read Chapter 2.1.1.2 Operating the Settings Screens.

Figure 2-110



1. Delay Time – Waiting time (time after which the command “switch on” was given and an Aggregate is switched on)
2. Rest Time – Waiting time/Cooling time (time after switching off an Aggregate until the Aggregate is ready to switch on again)
3. Limit Time – Maximum runtime of the Aggregates

Figure 2-111

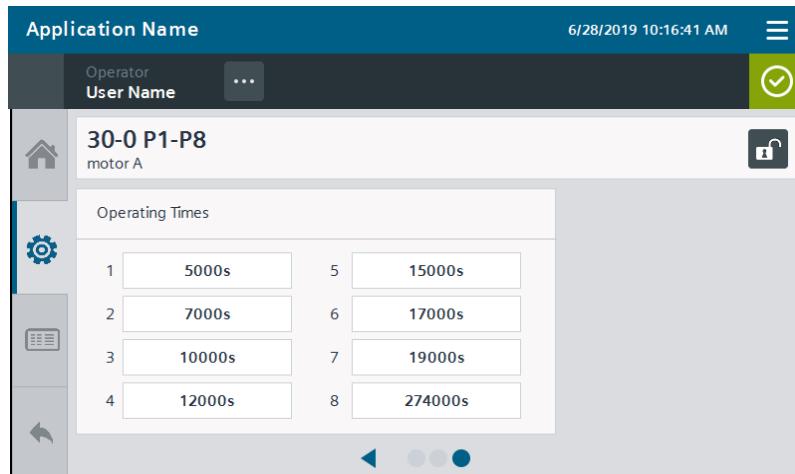


The PLC values are at the top. The HMI values are below.

## 2 Operation of the HMI Faceplates

The priority with which the Aggregates are to be started is determined here. The Aggregate with the highest priority is started first.

Figure 2-112

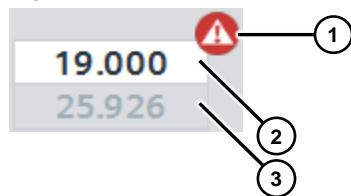


The current operating times of the Aggregates are displayed here. The values can also be overwritten. This is necessary, for example, if an Aggregate has been replaced.

### 2.2.2.2 LBP\_AnaAvg – Average Calculation with Plausibility Check

#### Icon

Figure 2-113



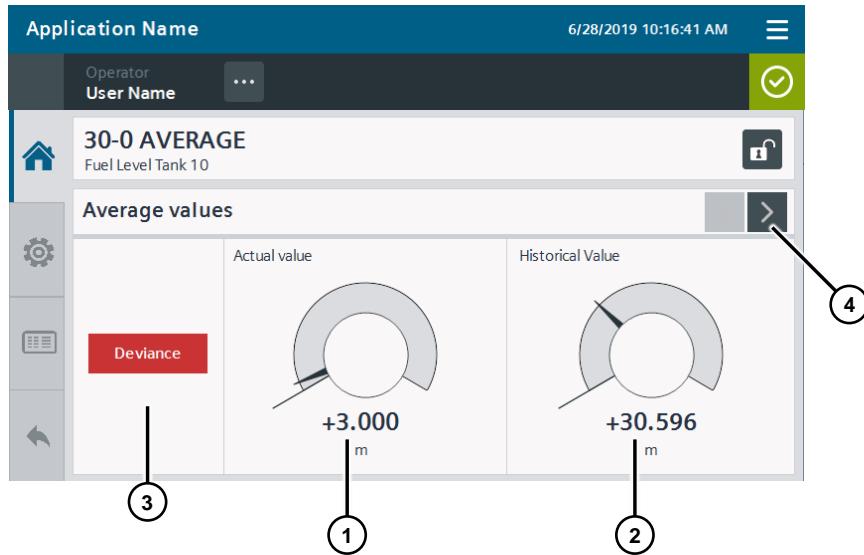
1. The warning triangle indicates whether errors are currently pending (deviation of a value from the historical value is too high).
2. Current average
3. Average of the current average measured over a specific time, also referred to as the historical average

#### Home Screen

The Home Screen consists of two parts: Averages and individual values.

## 2 Operation of the HMI Faceplates

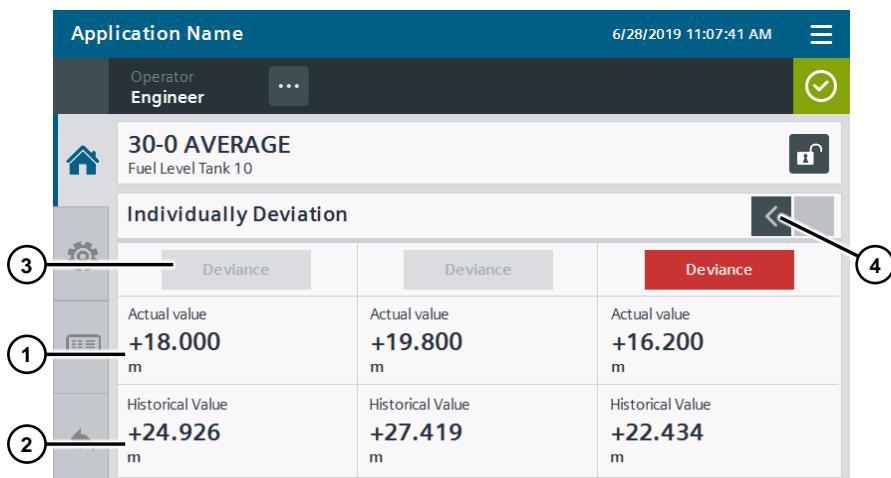
Figure 2-114



Averages screen:

1. Current average
2. Average of the current average measured over a specific period of time
3. The display field turns red if the actual value deviates too far from the average in the second column.
4. Switch to the second Home Screen

Figure 2-115



Individual values screen:

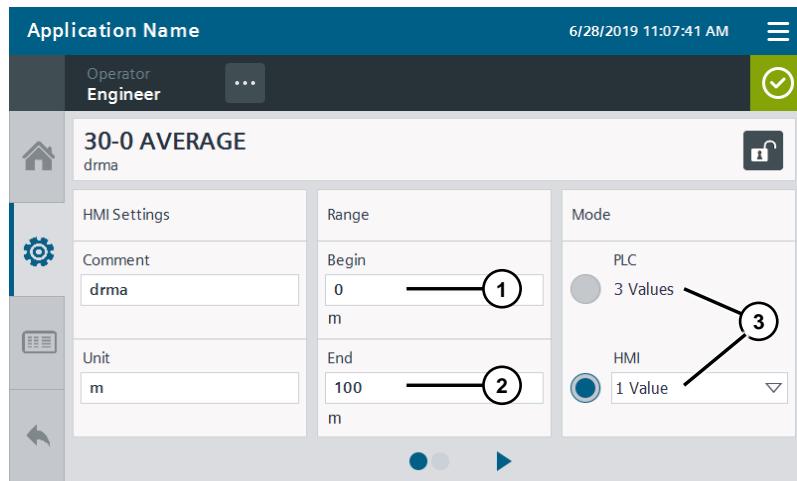
There is one column for each individual value, the structure is the same for all:

1. Current value
2. Average over a specific period of time
3. The display field turns red if the current value deviates too far from the average.
4. Switch to the first Home Screen

## 2 Operation of the HMI Faceplates

### Settings

Figure 2-116

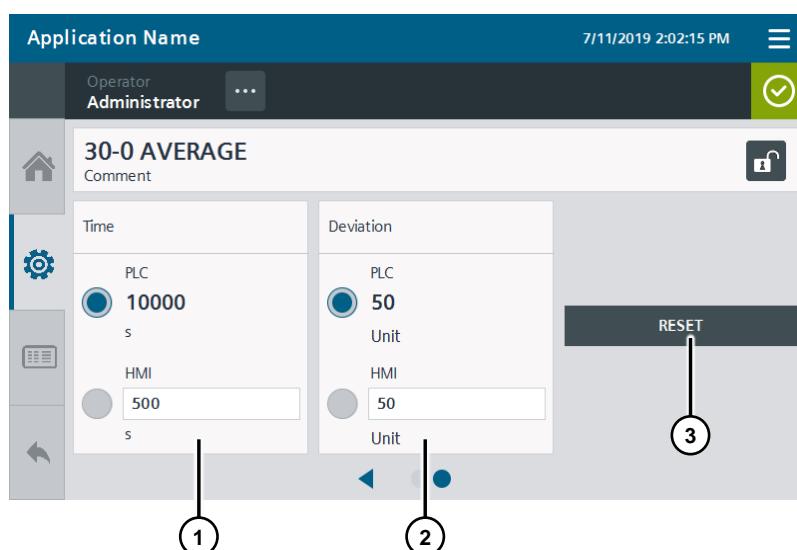


1. Start of the measuring range
2. End of the measuring range
3. Mode

Table 2-6

Mode	Description
Off	No average is formed.
1 Value	Only the first value is displayed and its historical average.
2 Values	The average of value 1 and value 2 is displayed, as are the historical averages of the individual values.
3 Values	The system displays the average from all 3 values, the corresponding historical value, and the individual values.

Figure 2-117

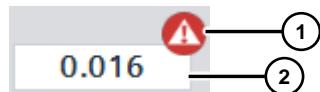


1. Time over which the historical averages are calculated
2. Deviation (between the current and historical value) from which an error is generated
3. Reset the block

### 2.2.2.3 LBP\_AnaRead – Analog Value Processing

#### Icon

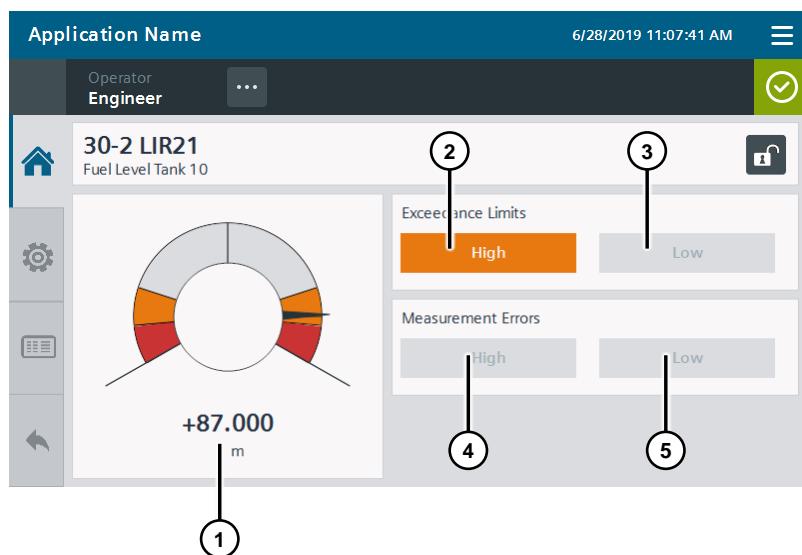
Figure 2-118



1. The warning triangle indicates whether a warning or an error is pending.
2. Current analog value

#### Home Screen

Figure 2-119

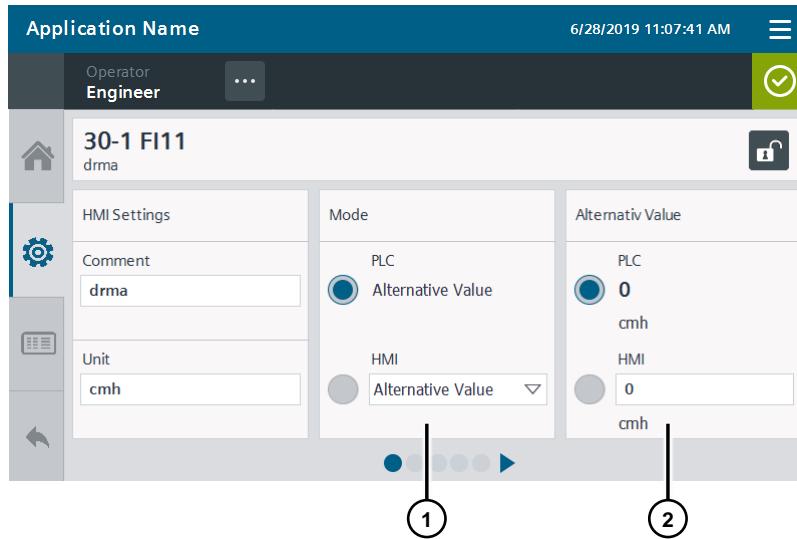


1. Current analog value
2. Indicates whether the high limit for a warning or alarm has been violated:  
Warning: orange  
Alarm: red
3. Indicates whether the low limit for a warning or alarm has been violated
4. Measurement error in high range (digit overflow)
5. Measurement error in the low range (digit undershooting or wire break)

## 2 Operation of the HMI Faceplates

### Settings

Figure 2-120

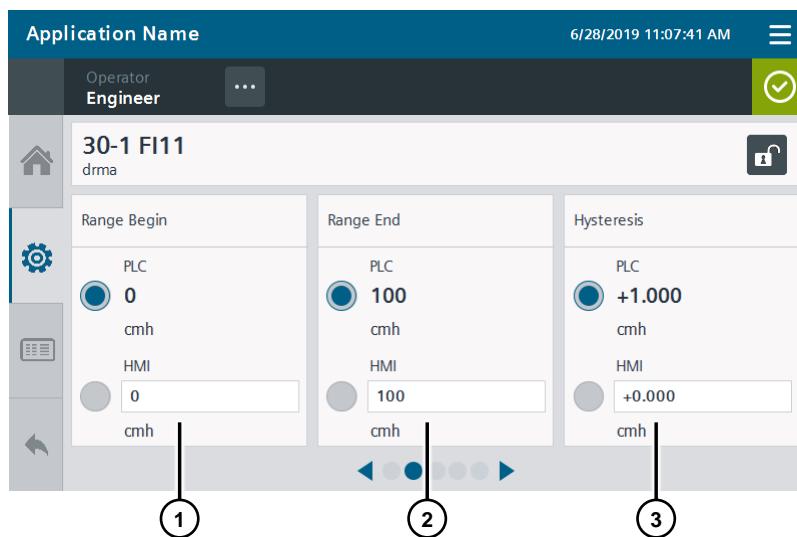


1. Mode:

- Alternative value (alternative value is further processed)
- I/O value unipolar (input value lies between 0 and 27648 and is transferred to the specified measuring range)
- I/O value bipolar (input value lies between -27648 and +27648 and is transferred to the specified measuring range)
- Factor 0.1 (input value is multiplied by 0.1)
- Factor 0.01 (input value is multiplied by 0.01)
- Factor 1 (input value is multiplied by 1)
- Factor 10 (input value is multiplied by 10)
- Factor 100 (input value is multiplied by 100)

2. Alternative value (applies to the first mode)

Figure 2-121



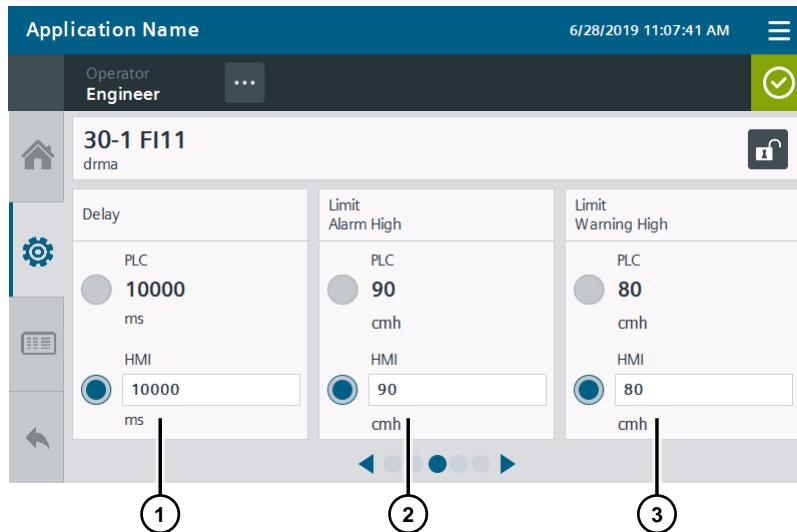
1. Start of the measuring range

2. End of the measuring range

## 2 Operation of the HMI Faceplates

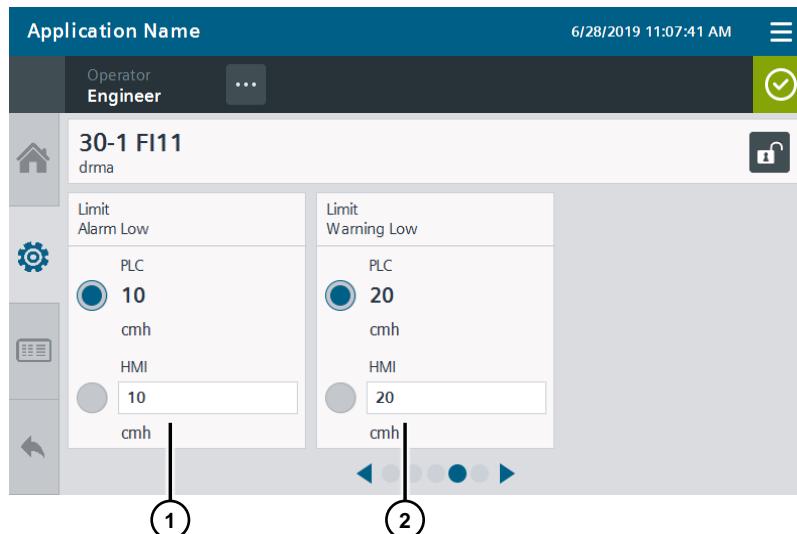
3. Value for the absolute hysteresis: Limit alarms/warnings are only reset when the measured value differs from the limit value plus/minus the hysteresis.

Figure 2-122



1. Tolerance time before an error is generated if a limit violation occurs.
2. Alarm high limit
3. Warning high limit

Figure 2-123



1. Warning low limit
2. Alarm low limit

### 2.2.2.4 CntrA/D/P – Integrating Counter/Difference Counter/Pulse Counter

#### Icon

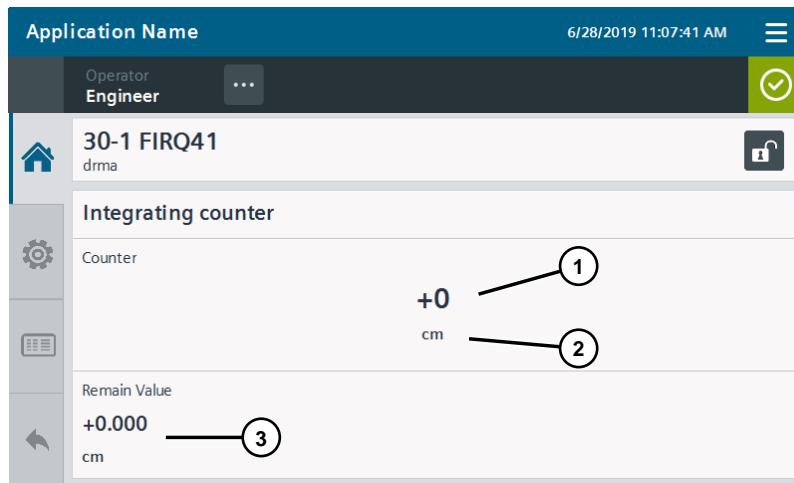
Figure 2-124



1. Current counter value

#### Home Screen

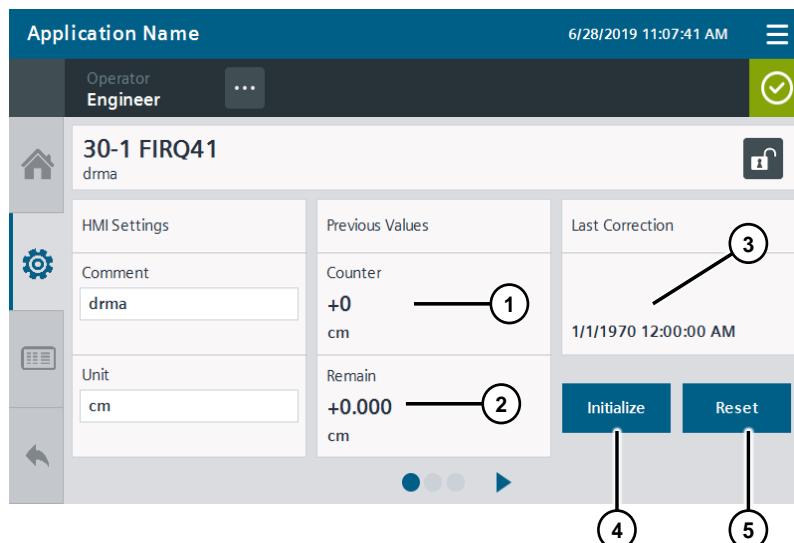
Figure 2-125



1. Current counter value
2. Unit of the counter value
3. Remaining value

#### Settings

Figure 2-126

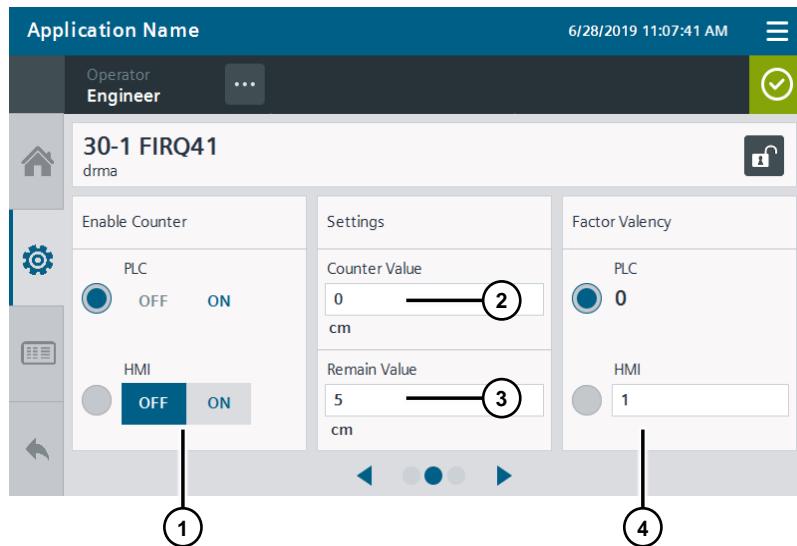


1. Previous counter value
2. Previous remaining value
3. Timestamp of the last correction
4. Initialize the counter (reset the internal values)

## 2 Operation of the HMI Faceplates

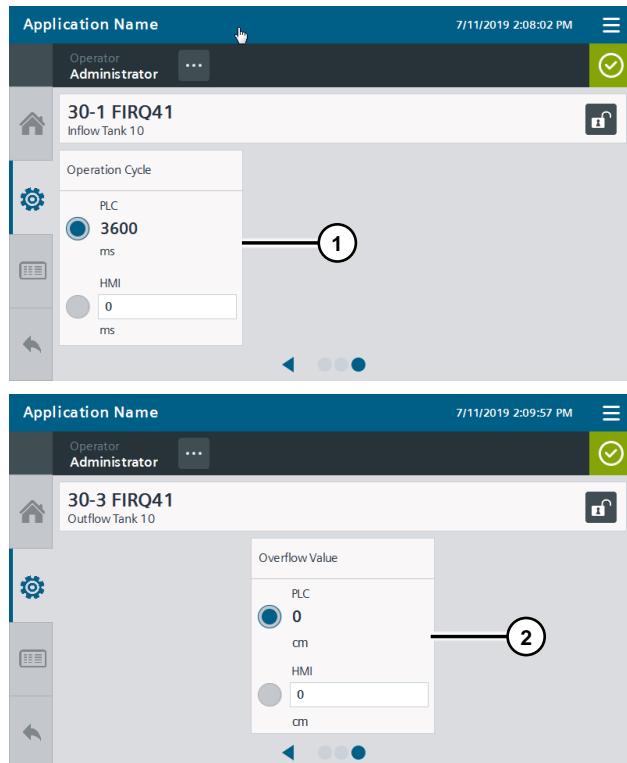
### 5. Reset counter value

Figure 2-127



1. Enable counter
2. Counter value
3. Remaining value
4. Scale factor (multiplier of counter input)

Figure 2-128



1. Time cycle for integration (only for LBP\_CntrA – integrating counter displayed)
2. Overflow value of the counter connected to “indCounter” input (only shown for “LBP\_CntrD” Difference Counter)

**Note** These setting options are not available for “LBP\_CntrP” (pulse counter).

### 2.2.2.5 LBP\_CtrlPID – Continuous PID Controller

#### Icon

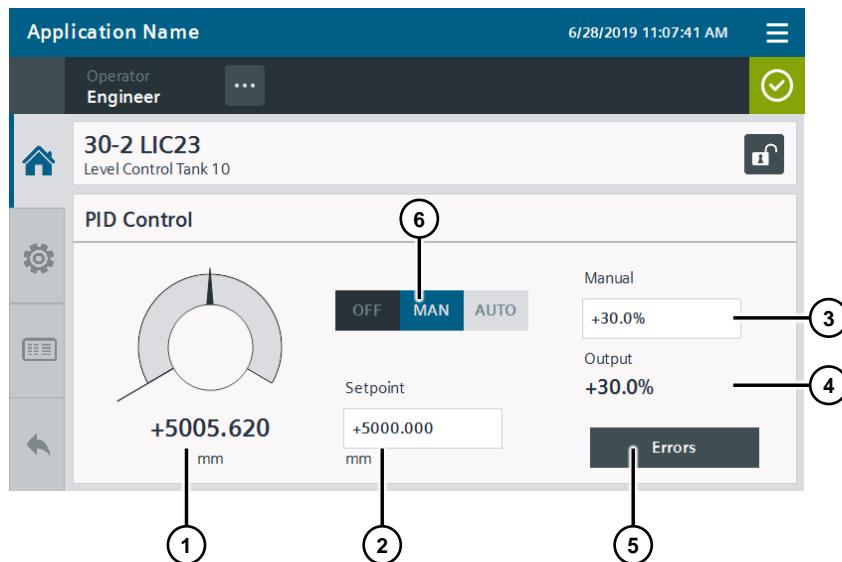
Figure 2-129



1. Operating mode display (M = Manual operation, A = Automatic operation)
2. Error display
3. In manual or automatic operation → Current input value  
In the switched-off state → “OFF”

#### Home Screen

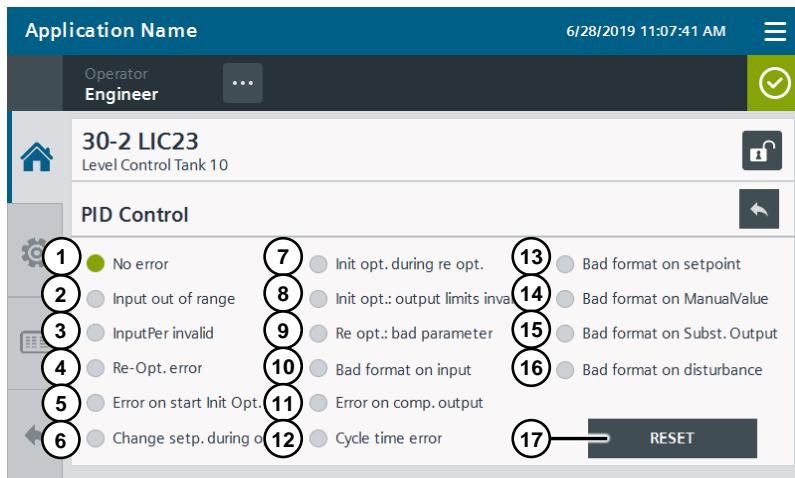
Figure 2-130



1. Actual value
2. Set point
3. Manual value – This value is used as output value in manual operation
4. Output value
5. Open the error overview
6. Switch for selecting the operating mode:  
OFF – Switched off  
MAN – Manual operation  
AUTO – Automatic operation

## 2 Operation of the HMI Faceplates

Figure 2-131, Error overview

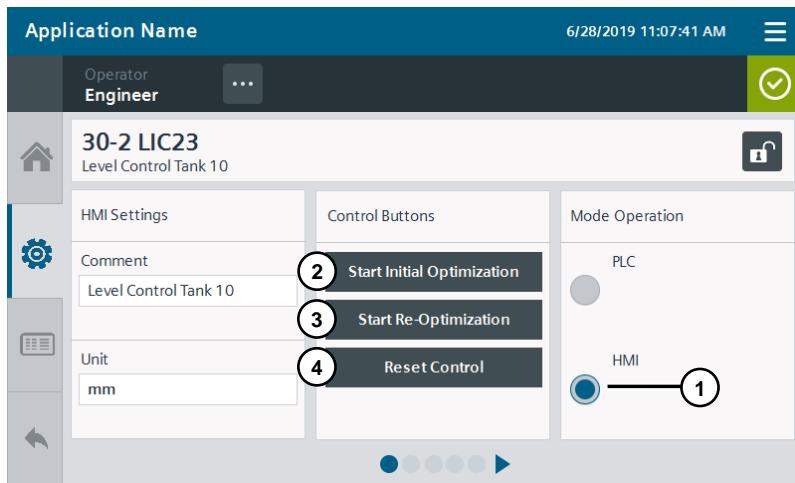


1. Light turns green if no error is pending.
2. Light turns red if the input is outside the specified range.
3. Light turns red if the value of parameter "Input\_PER" in the BPL block of the "PID\_Compact" system function is invalid. Check whether there is an error at the analog input.
4. Light turns red if an error has occurred during re-optimization.
5. Light turns red if initial optimization could not be started.
6. Light turns red if the set point changed during optimization.
7. Light turns red if initial optimization was activated during re-optimization. That is not allowed.
8. Light turns red if an error occurred during initial optimization. The output value limits are not correctly configured or the actual value does not react as expected.
9. Light turns red if an error has led to an invalid parameter during re-optimization.
10. The light turns red if an invalid parameter is connected to the input → Value has no valid number format.
11. Light turns red if the calculation of the output value has failed. Check the PID parameters.
12. Light turns red if a sampling time error has occurred. The block was not called within the sampling time of the cyclic interrupt OB.
13. Light turns red if an invalid value is connected to the "Setpoint" parameter. → Value has no valid number format.
14. The light turns red if an invalid value is connected to the manual value ("ManualValue") → Value has no valid number format.
15. Light turns red if the value of "SubstituteOutput" is invalid.
16. Light turns red if the value of "Disturbance" parameter is invalid. → Value has no valid number format.
17. Reset the error.

## 2 Operation of the HMI Faceplates

### Settings

Figure 2-132

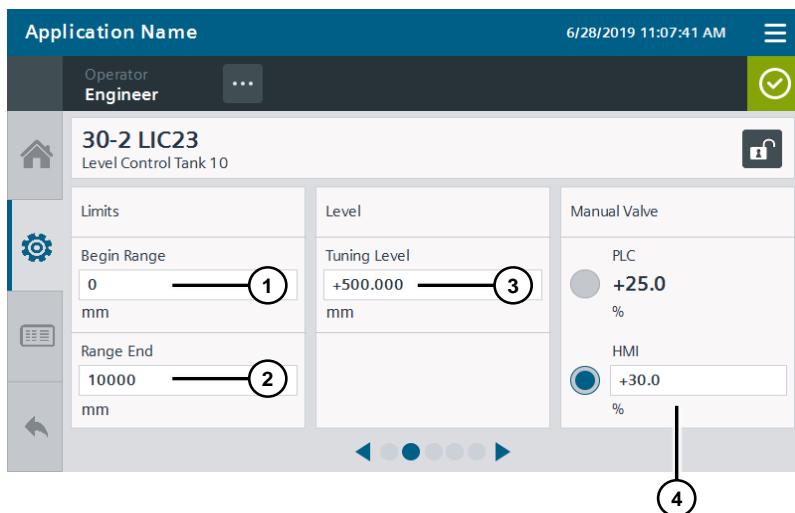


1. The mode can only be determined on the Home Screen via the HMI if Mode Operation is set to "HMI".
2. Activation of initial optimization
3. Activation of re-optimization
4. Reset controller

**Note**

The self-optimization options can cause problems if PLC Sim/PLC SimAdvanced is used (e.g. Cycle Time error).

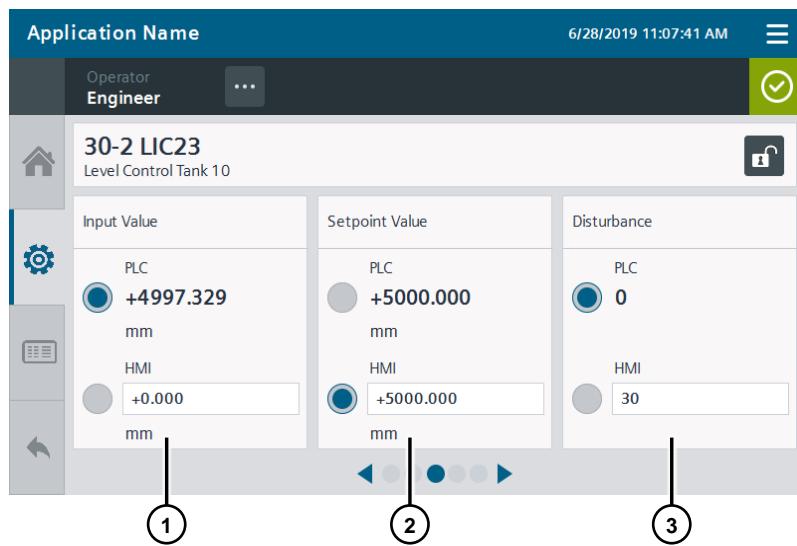
Figure 2-133



1. Start of control range
2. End of control range
3. Permissible fluctuation of the set point during optimization. Optimization is only aborted with the following:  
Setpoint > CurrentSetpoint + CancelTuningLevel  
or  
Setpoint < CurrentSet point – CancelTuningLevel
4. Manual value – This value is used as the output value in manual operation.

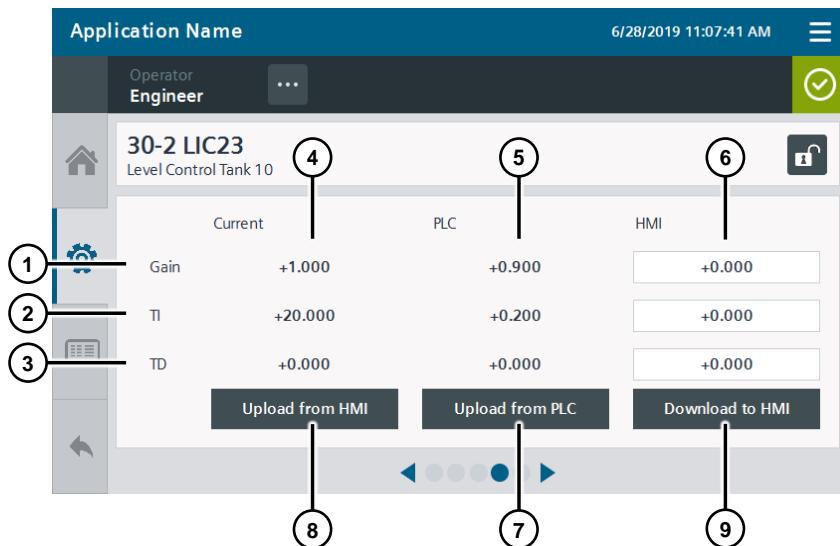
## 2 Operation of the HMI Faceplates

Figure 2-134



1. Input value
2. Set point
3. Disturbance tag

Figure 2-135



1. Gain – Proportional gain.
2. TI – Integration time (s)
3. TD – Differentiation time (s)
4. Actual values
5. PLC values
6. HMI values
7. This button is used to transfer the PLC values to the actual values.
8. This button is used to transfer the HMI values to the actual values.
9. This button is used to transfer the actual values to the HMI values.

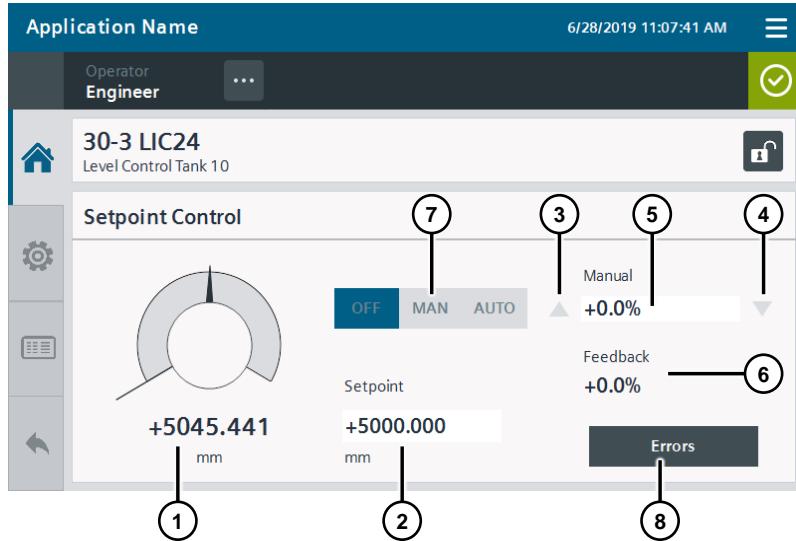
### 2.2.2.6 LBP\_CtrlStp – Step Controller

#### Icon

The symbol has the same form as the symbol of the PID controller (see [2.1.2.6 LBP\\_CtrlPID – Continuous PID Controller](#)).

#### Home Screen

Figure 2-136



1. Current value
2. Set point
3. “Green” arrow button: Increasing  
“Orange” arrow button: Position is at top stop  
Event: PLC values for KP, TN, and TV are imported
4. Display “green”: Decreasing  
Display “orange”: Position is at the bottom stop  
Event: HMI values for KP, TN, and TV are input
5. Manual value
6. Position feedback
7. Switch for selecting the operating mode:  
OFF – Switched off  
MAN – Manual operation  
AUTO – Automatic operation
8. Open the error display (error turns red when an error is pending)

For the error display, see [Figure 2-30](#).

#### Settings

See settings of CtrlPID on page [30](#).

### 2.2.2.7 LBP\_Intlk8 – Interlock for up to 8 Signals

#### Icon

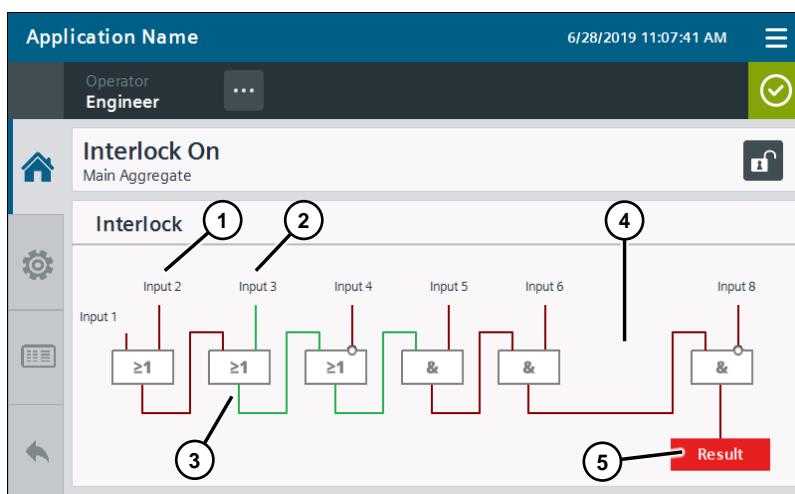
Figure 2-137



The light indicates whether the interlock is active.

#### Home Screen

Figure 2-138



1. Input is not active ("false").  
The color of the line after "Input X" indicates whether "true" or "false" is present at the input (in the graphic, "true" is highlighted in green and "false" in red).
2. Input is active ("true")
3. Result is active
4. "Input 7" is deactivated
5. The end result is "false".

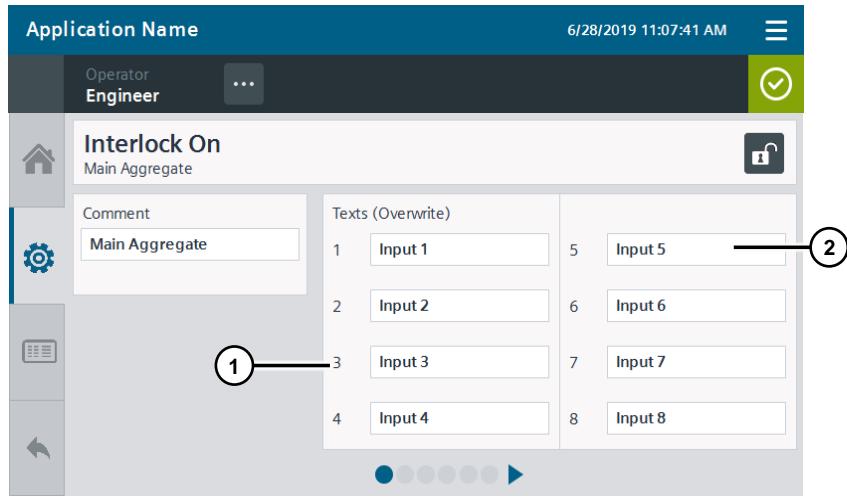
#### Note

The colors and logical operations can be set on the setting pages.

## 2 Operation of the HMI Faceplates

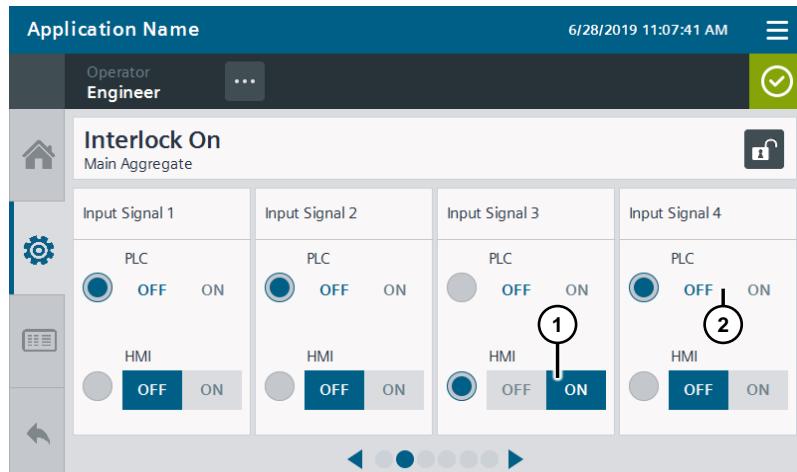
### Settings

Figure 2-139



1. Number of the input
2. Name of the input  
If a text is entered here, it is displayed on the Home Screen from this moment on. If nothing is specified here, the name defined in the STEP 7 program is displayed.

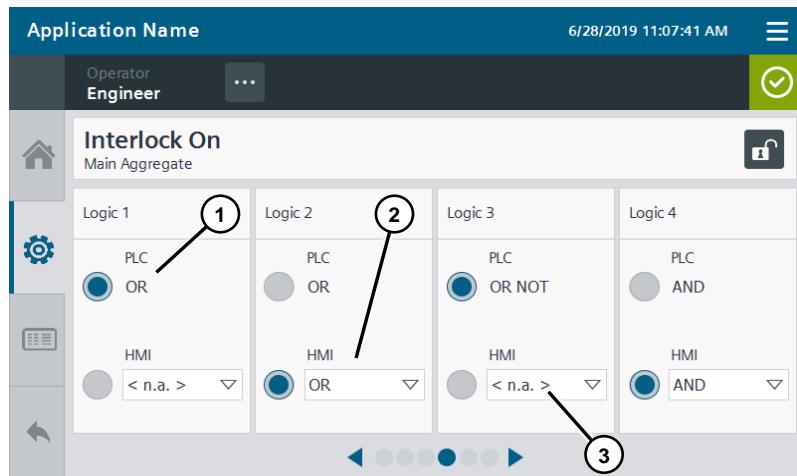
Figure 2-140



1. If HMI is preselected, the switch determines whether the value for the signal is "true" or "false" ("ON" or "OFF").
2. If PLC is preselected, the PLC signal determines the value for "true" or "false" ("ON" or "OFF").

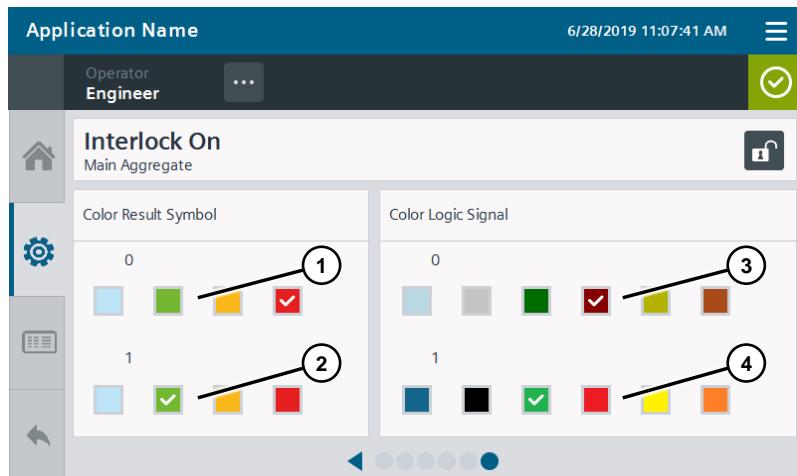
## 2 Operation of the HMI Faceplates

Figure 2-141



1. Logical operation between input 1 and input 2 if PLC is preselected.
2. Logical operation between the result of the previous operation and input 3 if HMI is preselected.
3. Logical operation can be deselected if the input is to be omitted.

Figure 2-142



1. Specifying the color of the result display for the result "false" (colors: light blue, green, yellow, red).
2. Specifying the color of the result display for the result "true" (colors: light blue, green, yellow, red).
3. Specify the color of the connecting lines between the operations on the Home Screen when the false signal is transmitted.
4. Specify the color of the connecting lines between the operations on the Home Screen when the "true" signal is transmitted.

### 2.2.2.8 LBP\_Msg8 – Message Block for 8 Messages

#### Icon

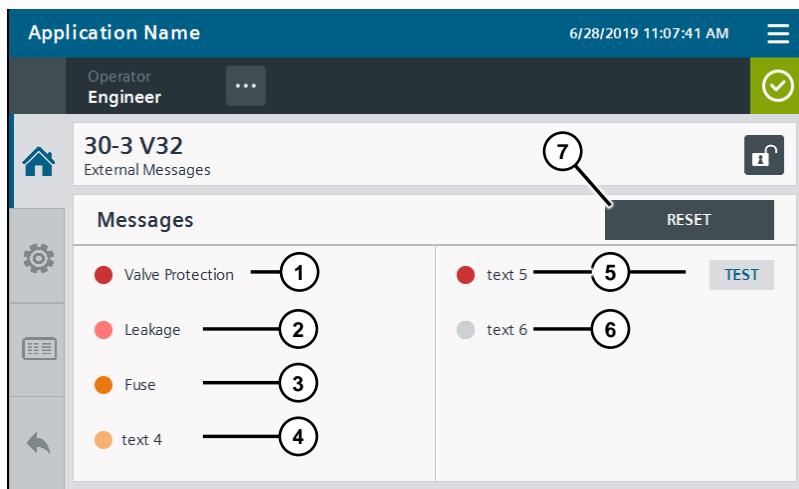
Figure 2-143



The symbol indicates whether warnings (yellow) or errors (red) are pending.

#### Home Screen

Figure 2-144

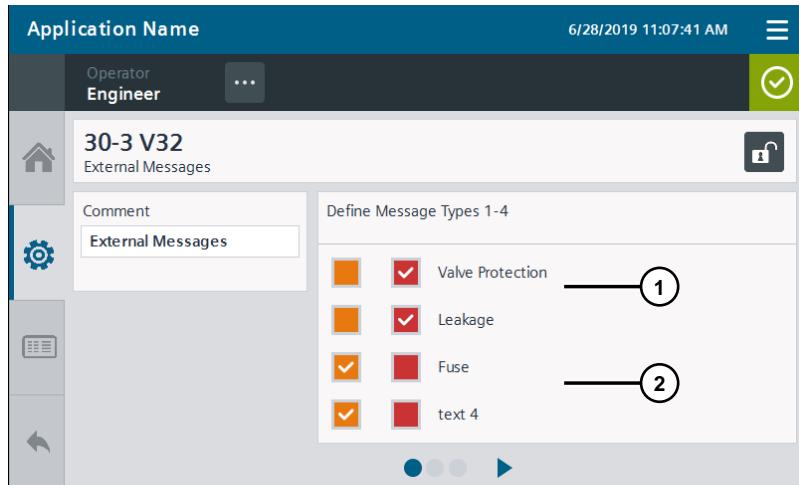


1. Error pending, symbol red
  2. Error pending, symbol light red, error can be reset
  3. Warning pending, symbol yellow
  4. Warning pending, symbol light yellow, warning resettable
  5. Message set for test
  6. Message is not active
  7. Key for resetting messages, dark key if a message can be reset
- Of the 8 messages, only the interconnected ones are displayed (in this case 6).

## 2 Operation of the HMI Faceplates

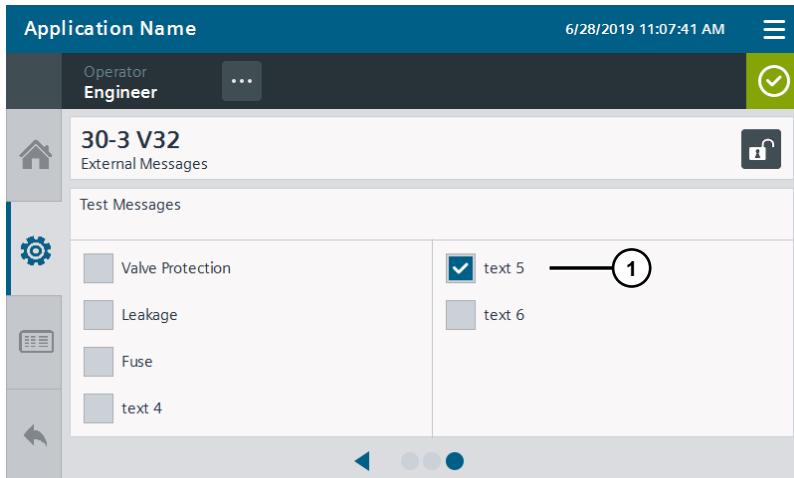
### Settings

Figure 2-145



1. Definition of the type of the 1st and 2nd message: Error – red.  
The alarm system always outputs error messages, but the symbol color is determined by this setting.
2. Definition of the type of the 3rd and 4th message: Warning – yellow.  
The setting options for the following 4 messages are on the next setting page.  
Setting options are only visible for connected messages.

Figure 2-146



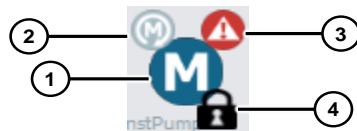
1. Message 5 activated for test.  
If all 8 messages are used, 8 setting options are available here.

## 2 Operation of the HMI Faceplates

### 2.2.2.9 LBP\_Mtr – Simple Motor

#### Icon

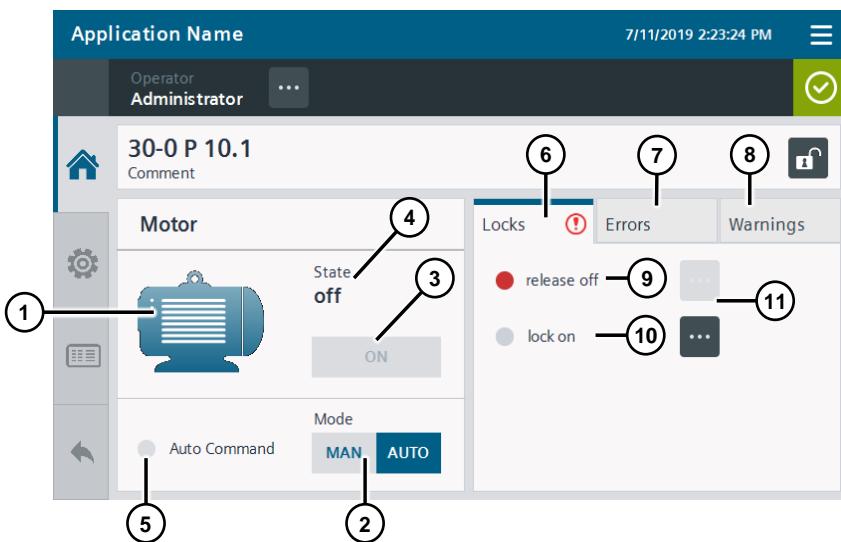
Figure 2-147



1. Motor symbol:  
blue – off  
green – switched on  
gray – undefined status
2. Mode display:  
M – Manual operation  
A – Automatic operation  
L – Local operation
3. Status display:  
Red warning triangle – Error pending (pulsing means error not acknowledged)  
Yellow warning triangle – Error pending (pulsing means warning not acknowledged)  
wrench – Repair mode active
4. When the padlock is displayed, the interlock is active.

#### Home Screen

Figure 2-148

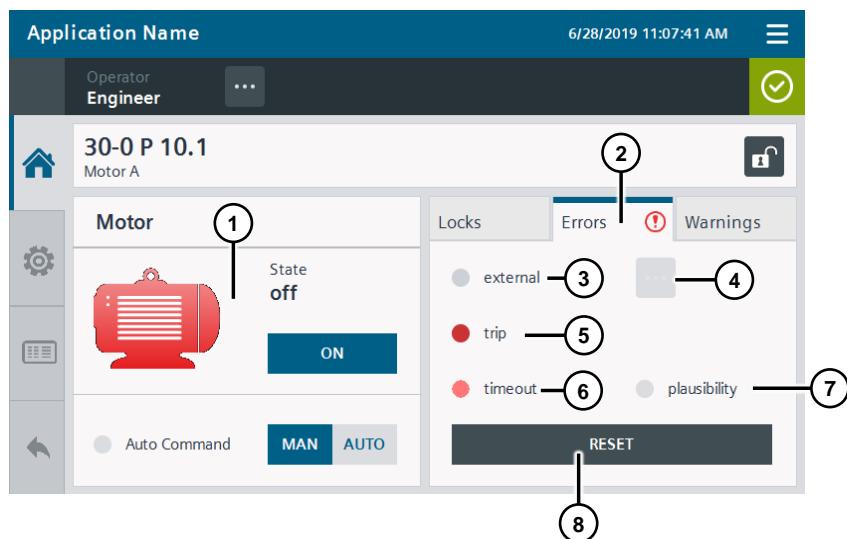


1. Motor symbol:  
red – error active  
yellow – warning active  
green – motor is switched on  
blue – motor switched off or not defined
2. Switch between manual and automatic operation:  
In local operation or in case of a repair, it is overlaid with the text “LOCAL” or “REPAIR”.
3. On and off button for the motor:  
Operation is not possible with a light gray button.

## 2 Operation of the HMI Faceplates

4. Operating mode of the motor:  
OFF, ON, RunUp, ShutDown
5. The symbol shows the pending automatic command:  
green – automatic on (“cmdAutOn” input).  
This information enables the operator to recognize the status of the motor  
when switching from manual to automatic operation.
6. “Locks” tab, selected in this case
7. “Errors” tab
8. “Warnings” tab
9. Display “Release on”:  
green – enabled  
red – not enabled
10. Display “Locks”:  
red – locked, cannot switch on.
11. If the button is dark, the corresponding “LBP\_Intlk8” (interlock block) can be  
opened via this button. This indicates the release or interlock conditions.

Figure 2-149

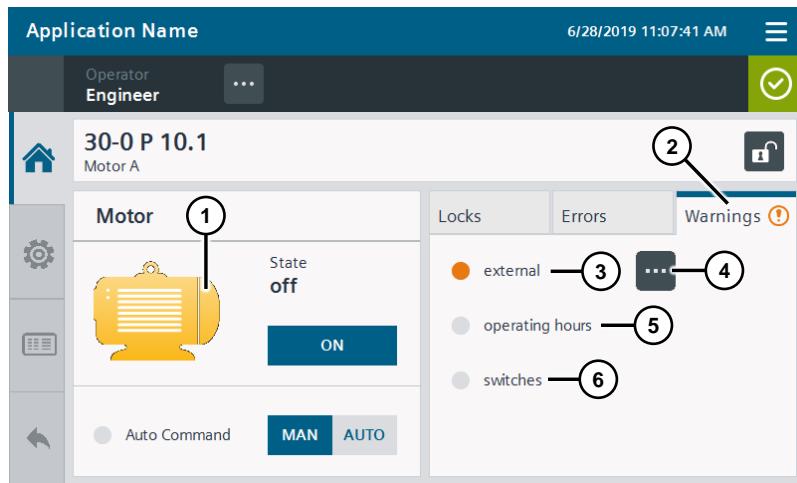


1. Motor faulty, color red, status off
2. “Errors” tab selected, the symbol on the tab shows a pending error
3. Red if an external error is pending
4. If the button is dark, it can be used to open the “LBP\_Msg8” (message block)  
associated with the external error.
5. Red when emergency stop is active
6. Red if there is no feedback after the monitoring time has elapsed.  
Light red here, because the error is no longer pending and can be reset.
7. Red, if feedback signals from the actuator are not plausible
8. Reset key for error, dark if operable

Resettable errors are displayed in light red.

## 2 Operation of the HMI Faceplates

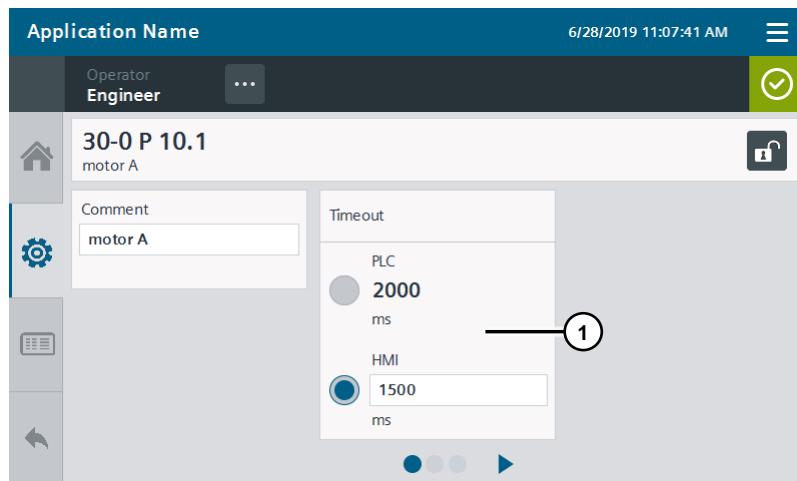
Figure 2-150



1. Motor warning is pending, color yellow
2. "Warning" tab selected, the symbol on the tab indicates an active warning
3. Yellow, if an external warning signal is pending
4. If the button is dark, the "LBP\_Msg8" (signal block) can be opened via this button. It shows the associated warning signals.
5. Yellow when maximum number of operating hours has been reached
6. Yellow when maximum number of switching operations has been reached

## Settings

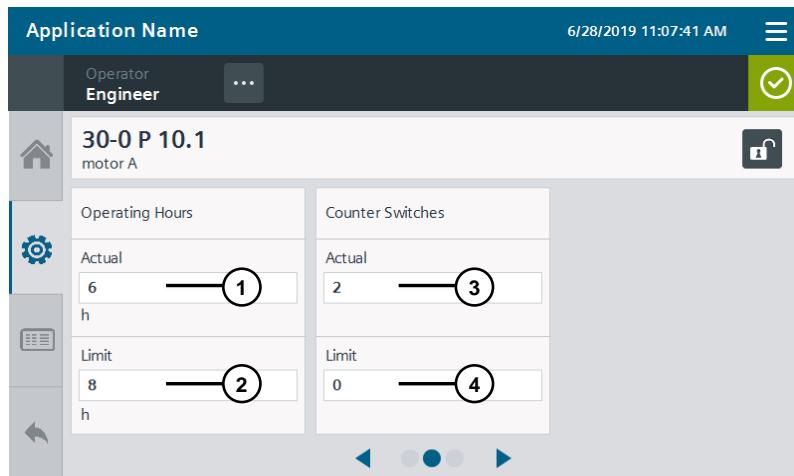
Figure 2-151



1. Set the monitoring time  
(time after which there is a check as to whether activation has occurred)

## 2 Operation of the HMI Faceplates

Figure 2-152



1. Current operating hours
2. Maximum number of operating hours up to warning
3. Current number of switching operations
4. Maximum number of switching operations up to warning

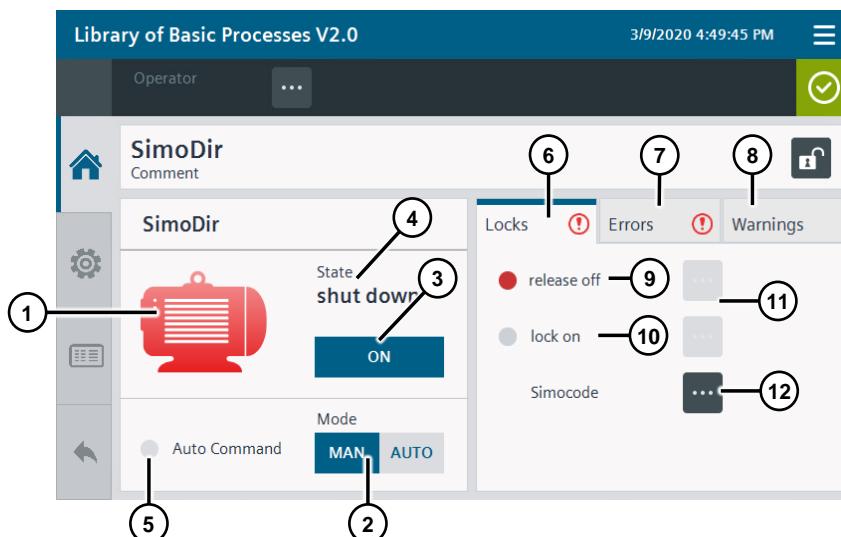
### 2.2.2.10 LBP\_SimoDir – Simple Motor Controlled via a SIMOCODE

#### Icon

The SimoDir symbol corresponds to the symbol of the Mtr. block  
See [Icon](#)

#### Home Screen

Figure 2-153

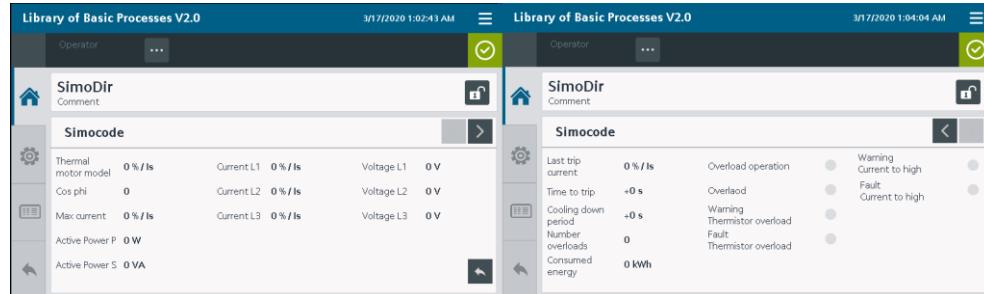


1. Motor symbol:  
red – error active  
yellow – warning active

## 2 Operation of the HMI Faceplates

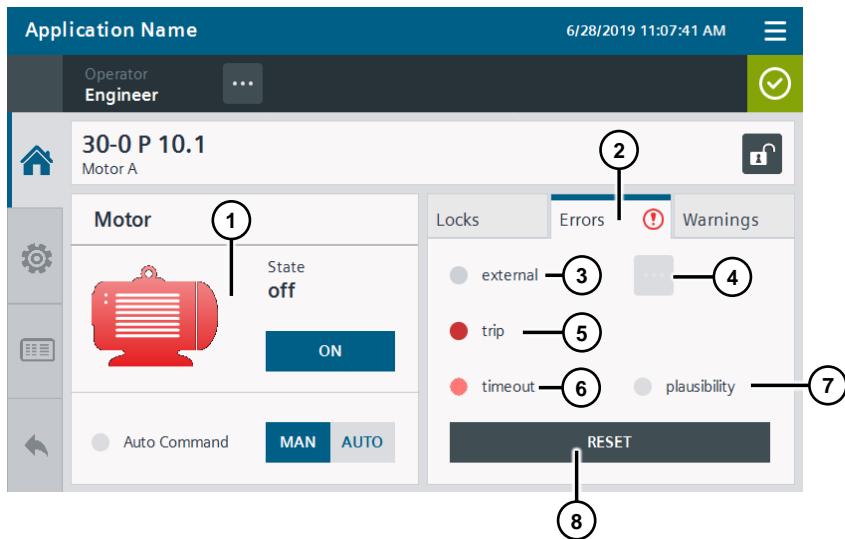
- green – motor is switched on  
blue – motor switched off or not defined
2. Switch between manual and automatic operation:  
In local operation or in case of a repair, it is overlaid with the text “LOCAL” or “REPAIR”.
  3. On and off button for the motor:  
Operation is not possible with a light gray button.
  4. Operating mode of the motor:  
OFF, ON, RunUp, ShutDown
  5. The symbol shows the pending automatic command:  
green – automatic on (“cmdAutOn” input).  
This information enables the operator to recognize the status of the motor when switching from manual to automatic operation.
  6. “Locks” tab, selected in this case
  7. “Errors” tab
  8. “Warnings” tab
  9. Display “Release on”:  
green – enabled  
red – not enabled
  10. Display “Locks”:  
red – locked, cannot switch on.
  11. If the button is dark, the corresponding “LBP\_Intlk8” (interlock block) can be opened via this button. This indicates the release or interlock conditions.
  12. Opening the SIMOCODE signals

Figure 2-154



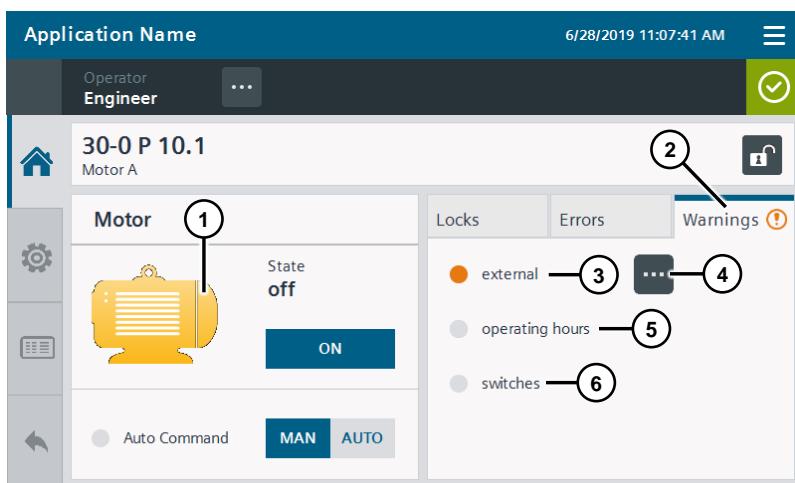
## 2 Operation of the HMI Faceplates

Figure 2-155



1. Motor faulty, color red, status off
  2. “Errors” tab selected, the symbol on the tab shows a pending error
  3. Red if an external error is pending
  4. If the button is dark, it can be used to open the “LBP\_Msg8” (message block) associated with the external error.
  5. Red when emergency stop is active
  6. Red if there is no feedback after the monitoring time has elapsed.  
Light red here, because the error is no longer pending and can be reset.
  7. Red, if feedback signals from the actuator are not plausible
  8. Reset key for error, dark if operable
- Resettable errors are displayed in light red.

Figure 2-156



1. Motor warning is pending, color yellow
2. “Warning” tab selected, the symbol on the tab indicates an active warning
3. Yellow, if an external warning signal is pending
4. If the button is dark, the “LBP\_Msg8” (signal block) can be opened via this button. It shows the associated warning signals.
5. Yellow when maximum number of operating hours has been reached

6. Yellow when maximum number of switching operations has been reached

### Settings

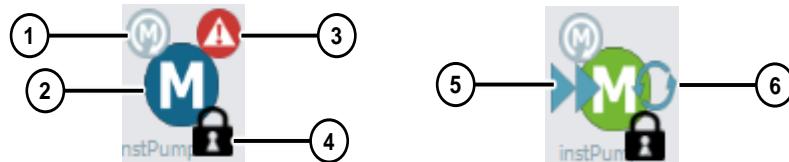
The SimoDir settings correspond to the settings of the Mtr. block

See [Settings](#)

#### 2.2.2.11 LBP\_MtrDS – Motor with 2 Speeds and Directions of Rotation

##### Icon

Figure 2-157

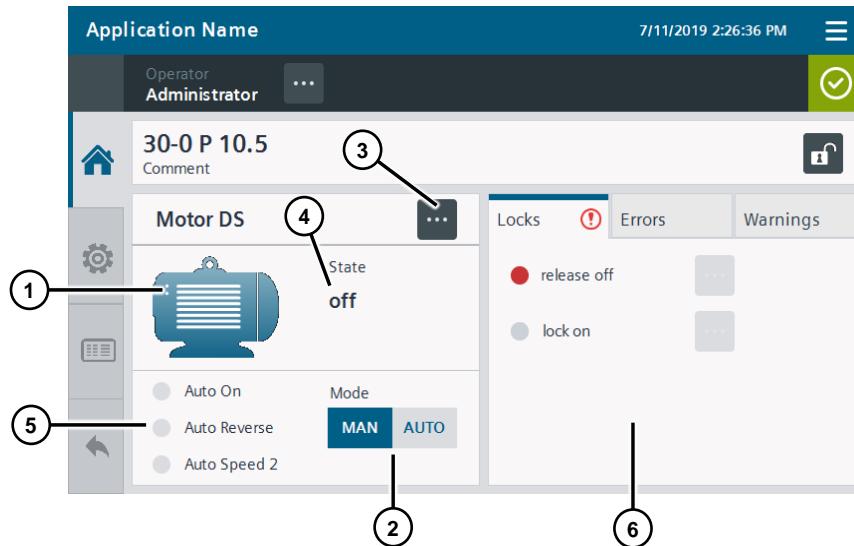


1. Mode display:  
M – Manual operation  
A – Automatic operation  
L – Local operation
2. Motor symbol:  
blue – off  
green – switched on  
gray – undefined status
3. Status display:  
Red warning triangle – Error pending (pulsing means error not acknowledged)  
Yellow warning triangle – Error pending (pulsing means warning not acknowledged)  
wrench – Repair mode active
4. When the padlock is displayed, the interlock is active.
5. Motor runs at speed 2
6. Motor runs in reverse

## 2 Operation of the HMI Faceplates

### Home Screen

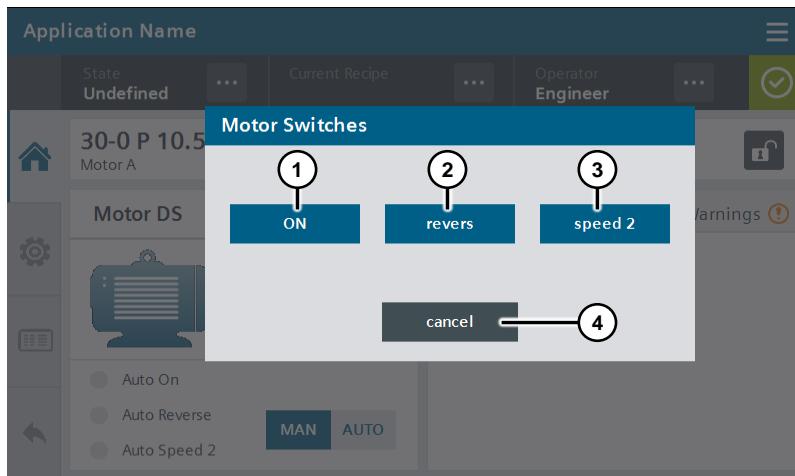
Figure 2-158



1. Motor symbol:  
red – error active  
yellow – warning active  
green – motor is switched on  
blue – motor switched off or not defined
2. Switch between manual and automatic operation.  
In local operation or in case of a repair, it is overlaid with the text “LOCAL” or “REPAIR”
3. Button for calling the operating dialog for the valve motor,  
see Figure 5-61  
Operation is not possible with a light gray button.
4. Operating status of the motor:
  - off
  - on forward
  - on backward
  - run up
  - shut down
  - speed 1
  - speed 2
5. Display symbols:
  - Auto On: The symbol is green when the automatic command “On” is active (“cmdAutOn” input). The operator can use this information to determine the status of the motor when switching from manual to automatic operation.
  - Auto Reverse: The operator can use this information to determine which direction of rotation is activated when switching from manual to automatic operation.
  - Auto Speed 2: This information allows the operator to determine which speed is activated when switching from manual to automatic operation.
6. The Locks, Errors, and Warnings tabs are the same as for the simple motor,  
see [2.2.2.9 LBP\\_Mtr – Simple Motor](#).

## 2 Operation of the HMI Faceplates

Figure 2-159 Motor operation pop-up in manual operation

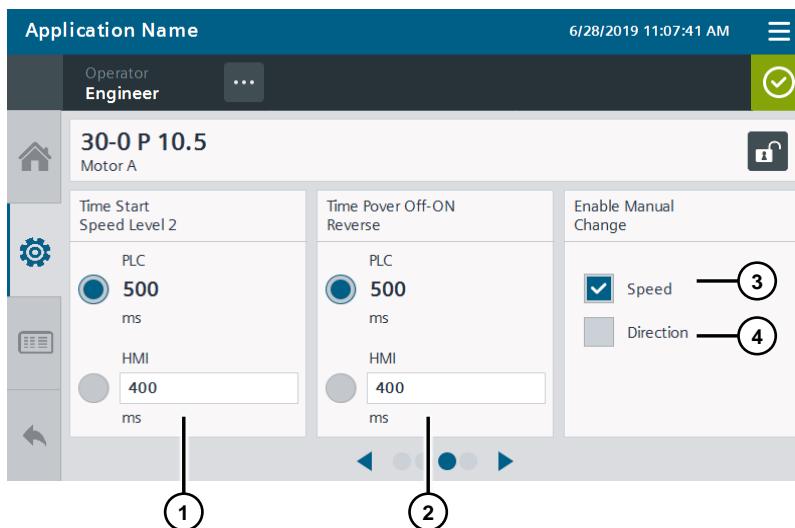


1. On and off button for the motor.  
When the motor is on, it is labeled "OFF".
2. Switch for activating reverse direction of rotation in manual operation.
3. Switch for activating the 2nd speed level in manual operation.  
It is always labeled with the selectable speed level.
4. Cancel the operation.  
The pop-up is closed without command output to the motor.

### Settings

The first two setting pages correspond to the simple motor – see starting from [Figure 2-151](#).

Figure 2-160



1. Time after which the second speed level is to be activated
2. Switch-off time for a change of direction of rotation
3. Switch-over enable for the second speed level
4. Switch-over enable for the direction of rotation

### 2.2.2.12 LBP\_SimoRev – Motor Controlled by a SIMOCODE with Two Speeds and Directions of Rotation

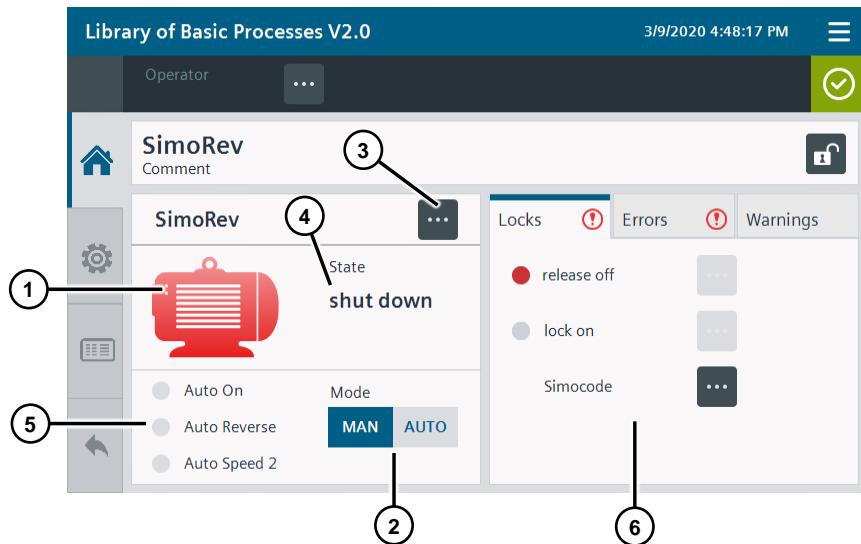
#### Icon

The SimoRev symbol corresponds to the symbol of the MtrDS. block

See [Icon](#)

#### Home Screen

Figure 2-161

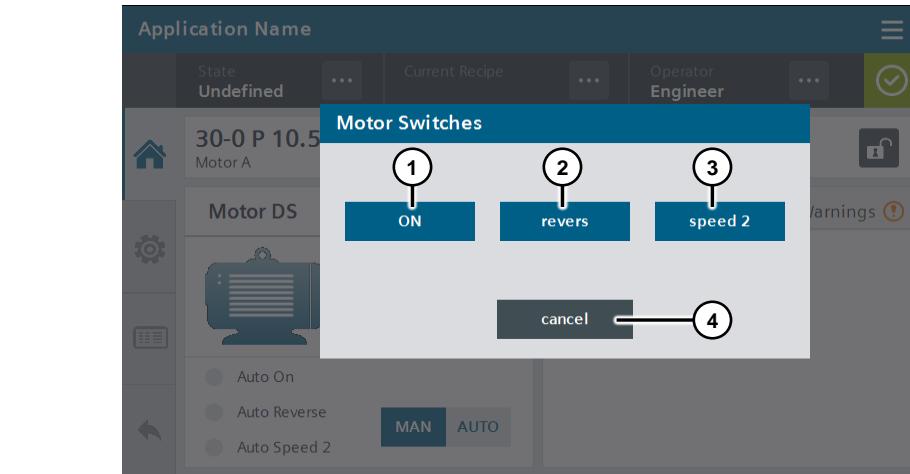


1. Motor symbol:  
red – error active  
yellow – warning active  
green – motor is switched on  
blue – motor switched off or not defined
2. Switch between manual and automatic operation.  
In local operation or in case of a repair, it is overlaid with the text “LOCAL” or “REPAIR”
3. Button for calling the operating dialog for the valve motor,  
see Figure 5-61  
Operation is not possible with a light gray button.
4. Operating status of the motor:
  - off
  - on forward
  - on backward
  - run up
  - shut down
  - speed 1
  - speed 2
5. Display symbols:
  - Auto On: The symbol is green when the automatic command “On” is active (“cmdAutOn” input). The operator can use this information to determine the status of the motor when switching from manual to automatic operation.

## 2 Operation of the HMI Faceplates

- Auto Reverse: The operator can use this information to determine which direction of rotation is activated when switching from manual to automatic operation.
  - Auto Speed 2: This information allows the operator to determine which speed is activated when switching from manual to automatic operation.
6. The Locks, Errors, and Warnings tabs correspond to those of the simple motor, see [2.2.2.10, LBP\\_SimoDir – Simple Motor Controlled via a SIMOCODE](#).

Figure 2-162 Motor operation pop-up in manual operation



1. On and off button for the motor.  
When the motor is on, it is labeled “OFF”.
2. Switch for activating reverse direction of rotation in manual operation.
3. Switch for activating the 2nd speed level in manual operation.  
It is always labeled with the selectable speed level.
4. Cancel the operation.  
The pop-up is closed without command output to the motor.

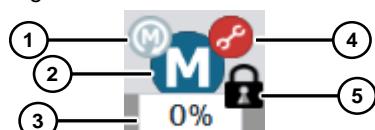
### Settings

The SimoRev settings correspond to the settings of the MtrDS. block  
See [Settings](#)

### 2.2.2.13 LBP\_MtrF – Speed-Controlled Motor

#### Icon

Figure 2-163



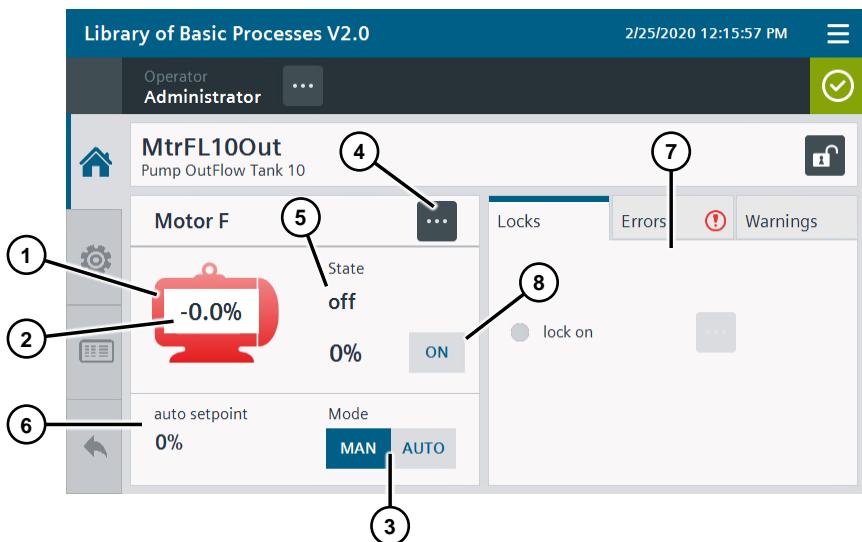
1. Motor symbol:  
blue – off  
green – switched on  
gray – undefined status
2. Mode display:  
M – Manual operation

## 2 Operation of the HMI Faceplates

- A – Automatic operation  
L – Local operation
3. Motor speed
  4. Status display:  
red warning triangle – Error pending  
yellow warning triangle – Error pending  
wrench – Repair mode active
  5. When the padlock is displayed, the interlock is active.

### Home Screen

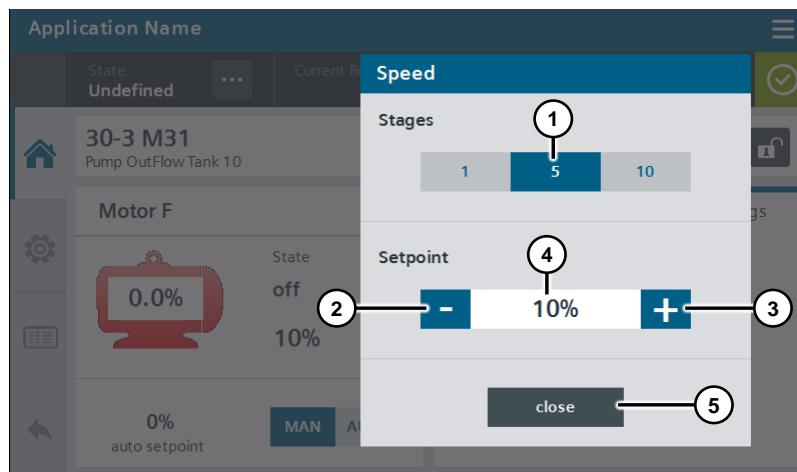
Figure 2-164



1. Motor symbol:  
red – error active  
yellow – warning active  
green – motor is switched on, speed is over the limit  
blue – motor switched off or not defined
2. Current velocity
3. Switch between manual and automatic operation.  
In local operation or in case of a repair, it is overlaid with the text "LOCAL" or "REPAIR".
4. Button for calling the operating dialog for the valve motor  
see Figure 5-65.  
Operation is not possible with a light gray button.
5. Operating status of the motor:  
"off", "on", "run up", "shut down", or "speed"
6. Display for the automatic set point.  
With this information, the operator recognizes the speed at which the motor is driven when switching from manual to automatic operation.
7. The Locks, Errors, and Warnings tabs essentially correspond to those of the simple motors (see [Figure 2-148](#) and below).
8. Button for switching the motor on/off

## 2 Operation of the HMI Faceplates

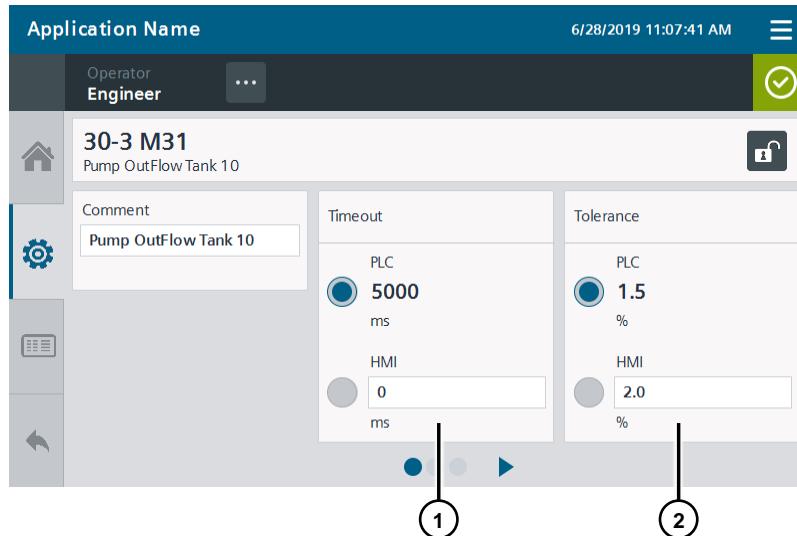
Figure 2-165 Motor operation pop-up in manual operation



1. Selection switch for the increment by which the speed is to be changed
2. Button for incrementing the speed set point by the value selected above
3. Button for decrementing the speed set point
4. Velocity set point
5. Close the pop-up

## Settings

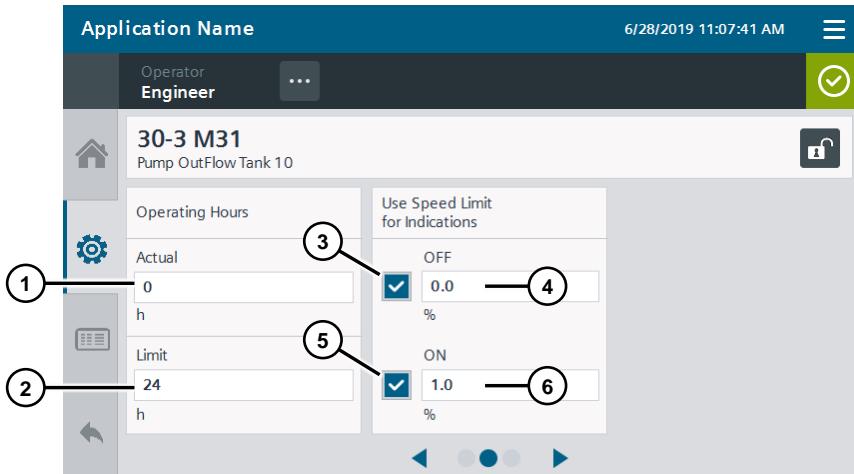
Figure 2-166



1. Set the monitoring time  
(time after which there is a check as to whether activation has occurred)
2. Tolerance:  
Defines the permissible fluctuations of the current actual value. If the tolerance is exceeded or fallen below, the motor is assumed to be starting up or shutting down.

## 2 Operation of the HMI Faceplates

Figure 2-167

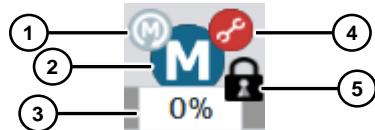


1. Current operating hours
2. Maximum number of operating hours up to warning
3. Check box to activate the limit starting from which the motor is considered to be switched off, color of the motor symbol changes to blue
4. Limit for "Switched off" status change.
5. Check box to activate the limit starting from which the motor is considered to be switched on
6. Limit for "Switched on" status change

### 2.2.2.14 LBP\_Sina – Via a G120 Speed-Controlled Motor

#### Icon

Figure 2-168

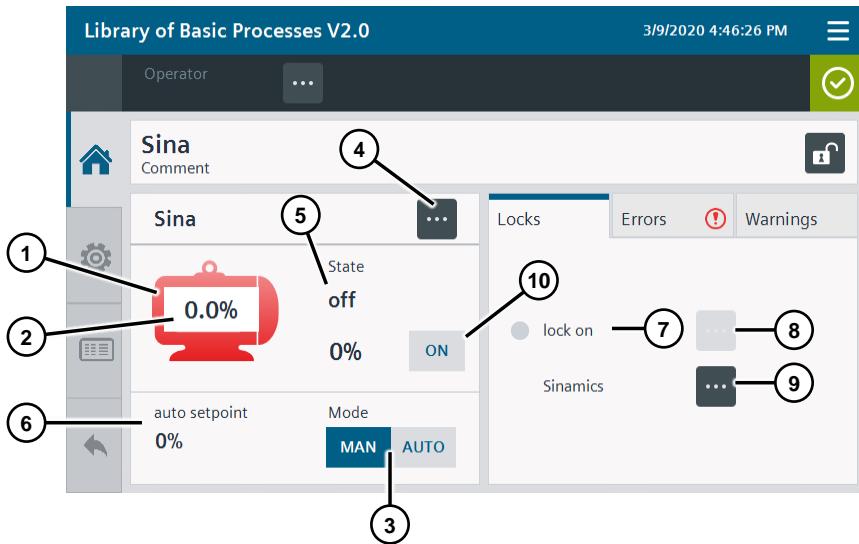


1. Motor symbol:  
blue – off  
green – switched on  
gray – undefined status
2. Mode display:  
M – Manual operation  
A – Automatic operation  
L – Local operation
3. Motor speed
4. Status display:  
red warning triangle – Error pending  
yellow warning triangle – Error pending  
wrench – Repair mode active
5. When the padlock is displayed, the interlock is active.

## 2 Operation of the HMI Faceplates

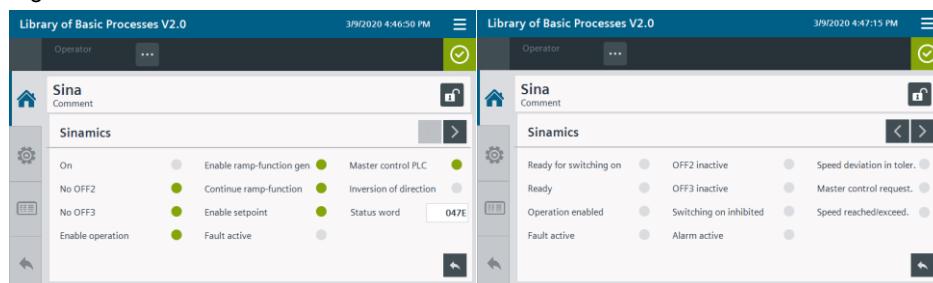
### Home Screen

Figure 2-169



1. Motor symbol:  
red – error active  
yellow – warning active  
green – motor is switched on, speed is over the limit  
blue – motor switched off or not defined
2. Current velocity
3. Switch between manual and automatic operation.  
In local operation or in case of a repair, it is overlaid with the text “LOCAL” or “REPAIR”.
4. Button for calling the operating dialog for the valve motor  
see Figure 5-65.  
Operation is not possible with a light gray button.
5. Operating status of the motor:  
“off”, “on”, “run up”, “shut down”, or “speed”
6. Display for the automatic set point.  
With this information, the operator recognizes the speed at which the motor is driven when switching from manual to automatic operation.
7. Display “Locks”:  
red – locked, cannot switch on.
8. If the button is dark, the corresponding “LBP\_Intlk8” (interlock block) can be opened via this button. This indicates the release or interlock conditions.
9. This button displays the SINAMICS signals

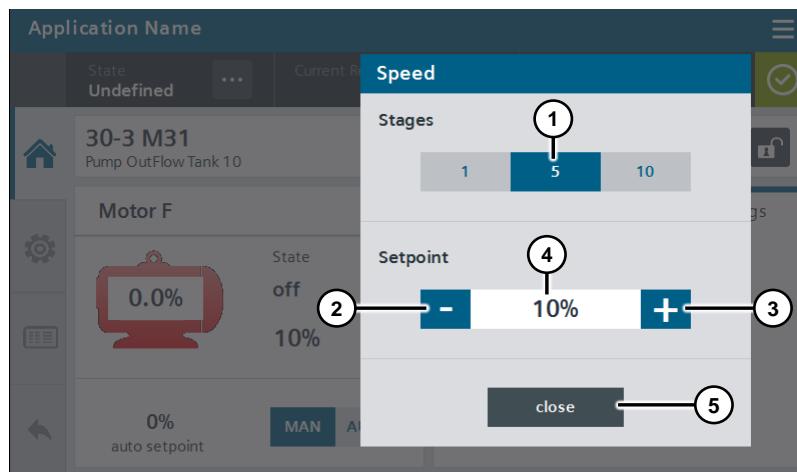
Figure 2-170



10. Button for switching the motor on/off

## 2 Operation of the HMI Faceplates

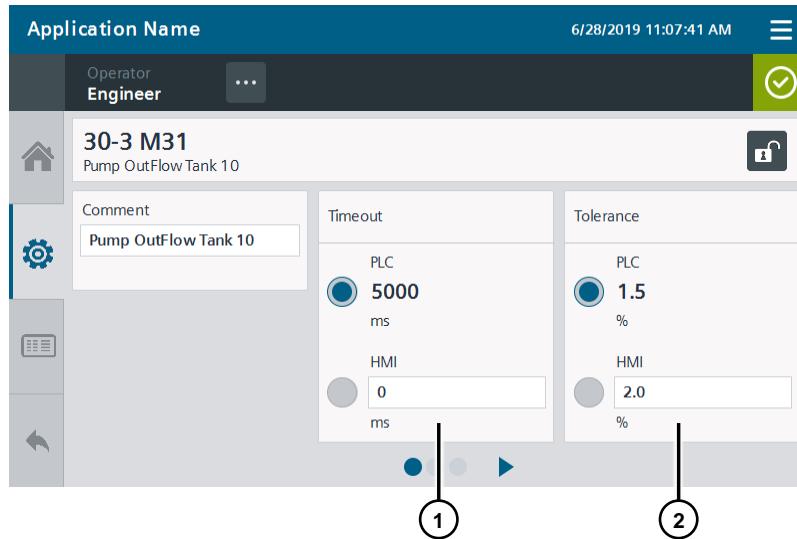
Figure 2-171 Motor operation pop-up in manual operation



1. Selection switch for the increment by which the speed is to be changed
2. Button for incrementing the speed set point by the value selected above
3. Button for decrementing the speed set point
4. Velocity set point
5. Close the pop-up

## Settings

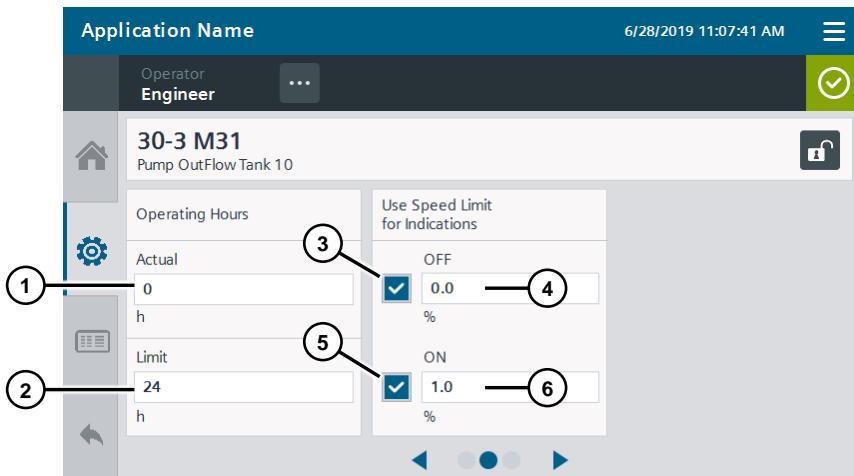
Figure 2-172



1. Set the monitoring time  
(time after which there is a check as to whether activation has occurred)
2. Tolerance:  
Defines the permissible fluctuations of the current actual value. If the tolerance is exceeded or fallen below, the motor is assumed to be starting up or shutting down.

## 2 Operation of the HMI Faceplates

Figure 2-173

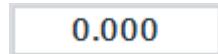


1. Current operating hours
2. Maximum number of operating hours up to warning
3. Check box to activate the limit starting from which the motor is considered to be switched off, color of the motor symbol changes to blue
4. Limit for "Switched off" status change.
5. Check box to activate the limit starting from which the motor is considered to be switched on
6. Limit for "Switched on" status change

### 2.2.2.15 LBP\_OpAna – Switching Analog Values

#### Icon

Figure 2-174

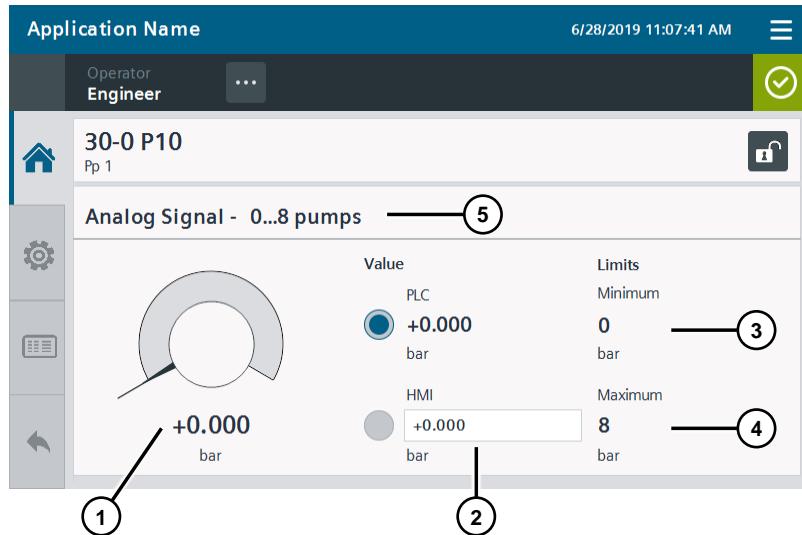


Display of the current analog value

## 2 Operation of the HMI Faceplates

### Home Screen

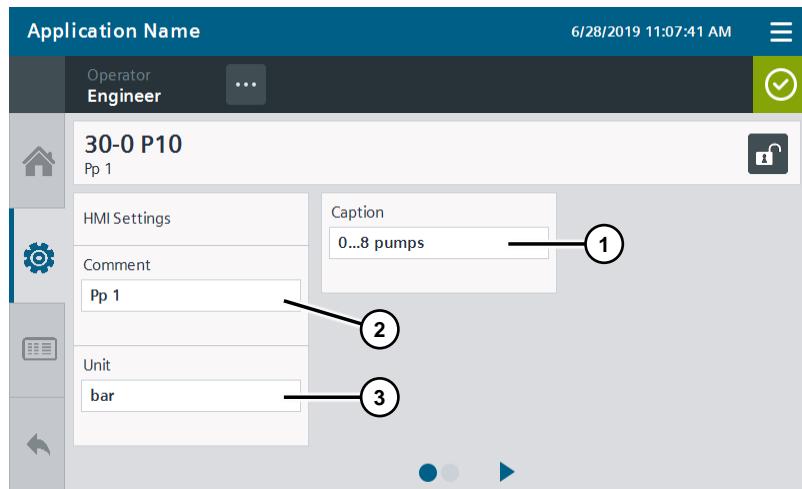
Figure 2-175



1. Current analog value
2. Input value at STEP 7 block (high value),  
HMI value (lower value),  
Button to activate the HMI or PLC value
3. Minimum of the analog value
4. Maximum of the analog value
5. Name of the LBP\_OpAna ("Caption", can be defined in the settings).

### Settings

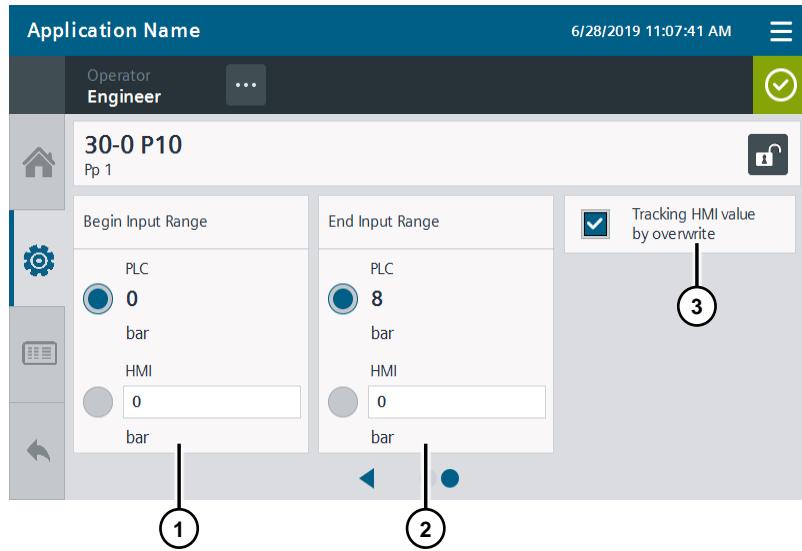
Figure 2-176



1. Block identifier (displayed on the Home Screen)
2. Comment
3. Unit

## 2 Operation of the HMI Faceplates

Figure 2-177



1. Start of the measuring range
2. End of the measuring range
3. Track HMI value (with the value “true”, the PLC value is transferred once to the HMI value if the HMI value (on the Home Screen) is activated.)

### 2.2.2.16 LBP\_OpDig – Switching a Digital Signal

#### Icon

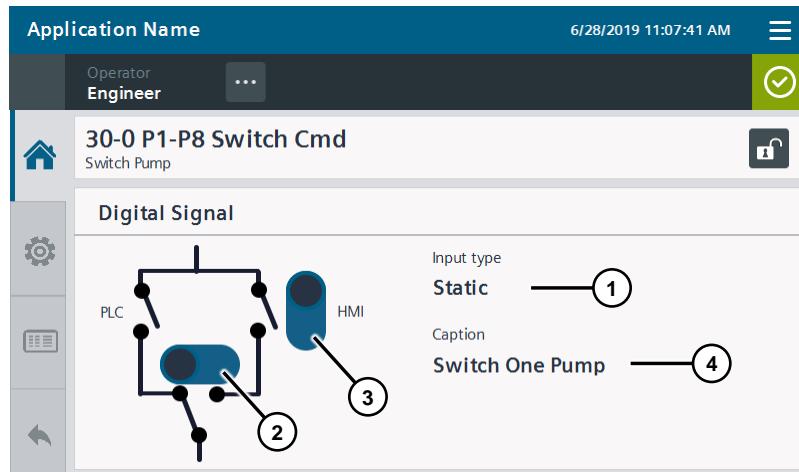
Figure 2-178



The light indicates whether the digital output value is “true” (green) or “false” (light blue).

#### Home Screen

Figure 2-179



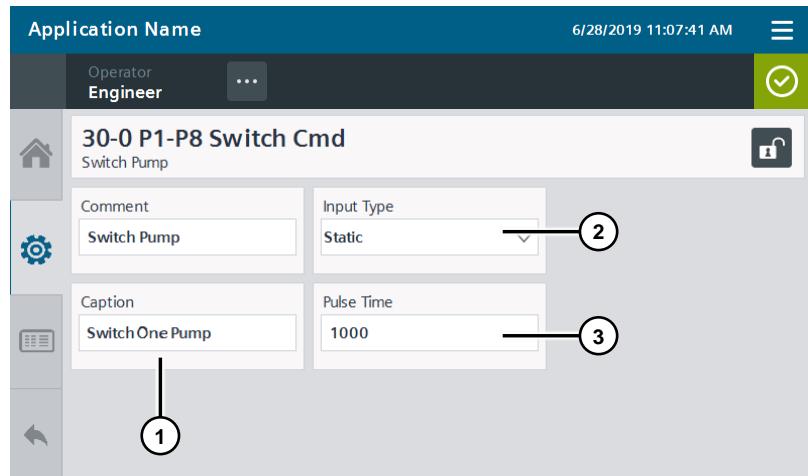
1. Type of input value

## 2 Operation of the HMI Faceplates

2. The switch indicates whether the PLC value (left NC contact) or the HMI value (right NC contact) is to be switched to active.
3. The switch indicates whether the HMI value is true or false.
4. Name of the block ("caption")

### Settings

Figure 2-180

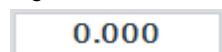


1. Name of the block ("caption")
2. Type of the input signal:
  - Static
  - Rising edge
  - Falling edge
3. Pulse Time

### 2.2.2.17 LBP\_Polygon – Conversion of Values Over 8 Interpolation Points

#### Icon

Figure 2-181

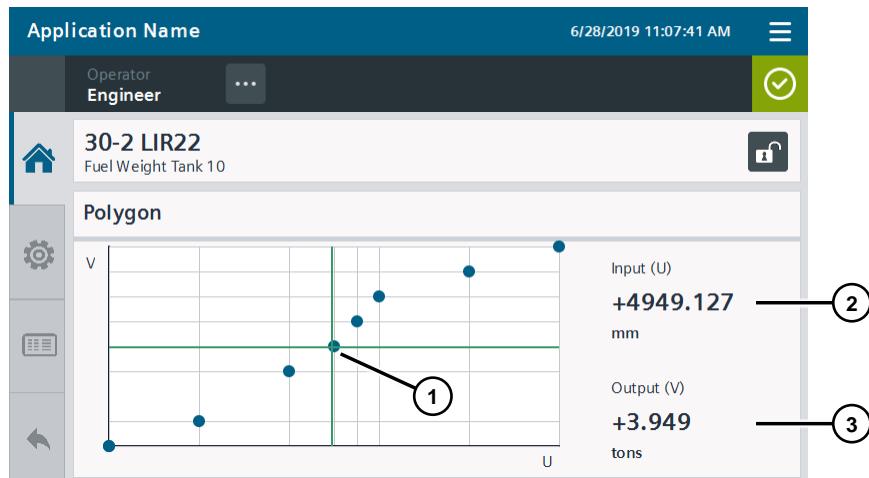


Current output value of the block

## 2 Operation of the HMI Faceplates

### Home Screen

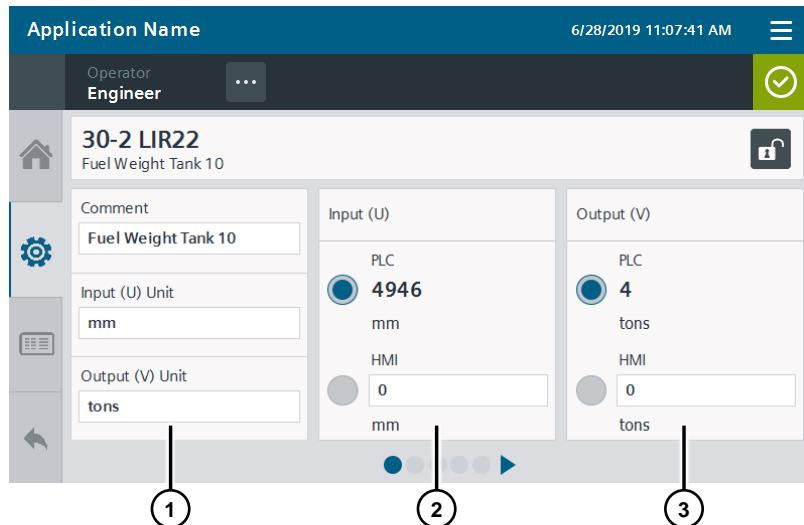
Figure 2-182



1. Graph formed from 8 coordinates.  
The cross-hairs represent the current conversion point.
2. Current input value
3. Current output value

### Settings

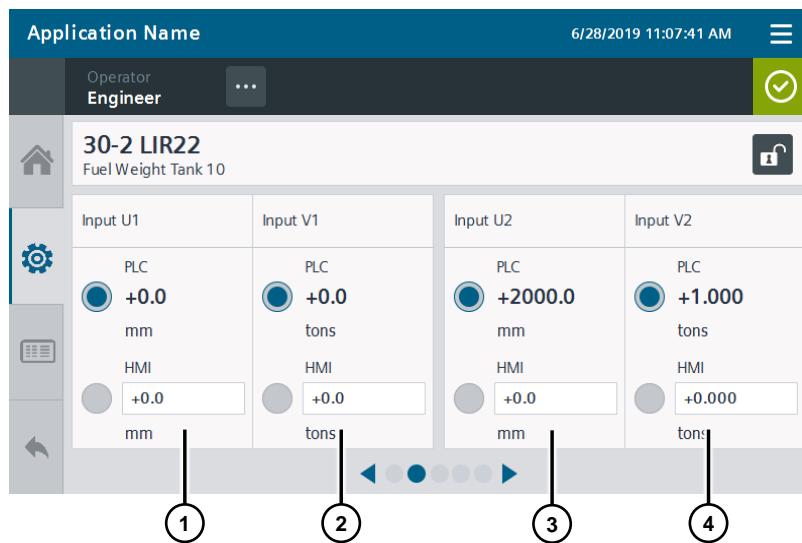
Figure 2-183



1. Settings of the unit for the input and output tag
2. Input value
3. Output value

## 2 Operation of the HMI Faceplates

Figure 2-184



On this and the following pages, the 8 coordinates from which the graph is formed are set.

1. Input value 1
2. Output value 1
3. Input value 2
4. Output value 2
- etc.

### 2.2.2.18 LBP\_Select – Selection of Values

#### Icon

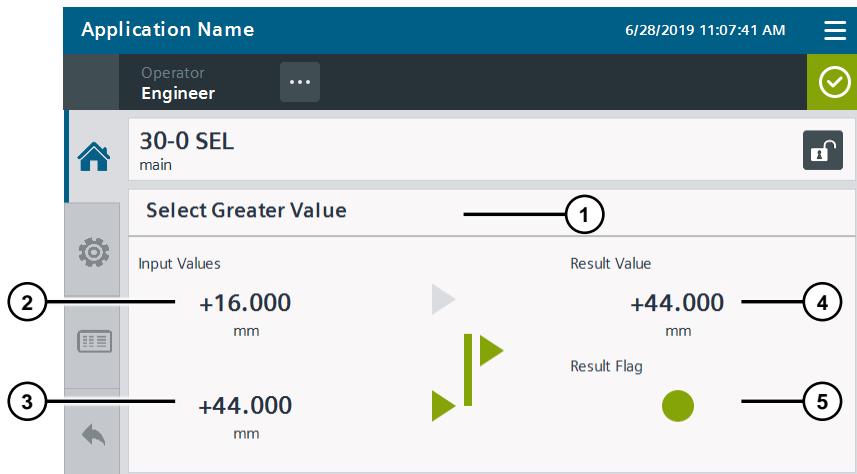
Figure 2-185

40.000

Currently selected value

#### Home Screen

Figure 2-186

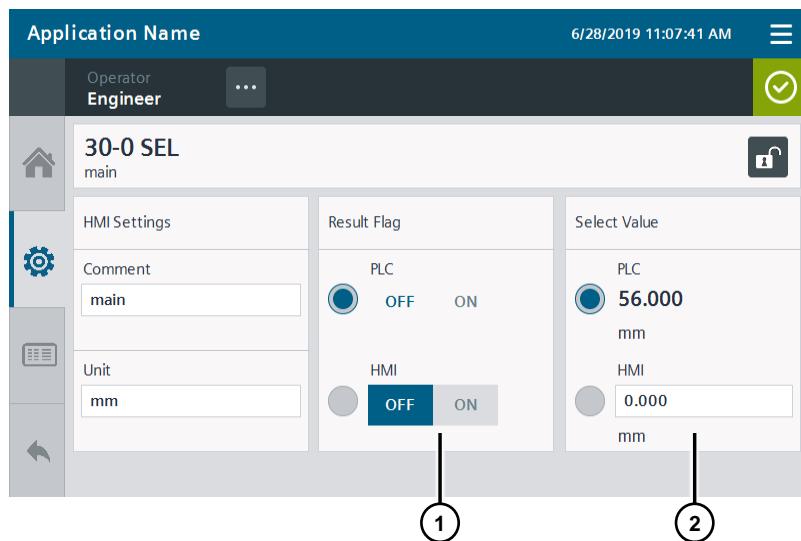


## 2 Operation of the HMI Faceplates

1. Display of the mode:
  - Selection of the lesser value
  - Selection via switch
  - Selection of the greater value
2. First value
3. Second value
4. Selected value
5. The light turns green when the first value is the selected value.

### Settings

Figure 2-187

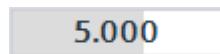


1. Result bit
2. Selected value

### 2.2.2.19 LBP\_SetCrv – Time-Dependent Set Point Curve

#### Icon

Figure 2-188

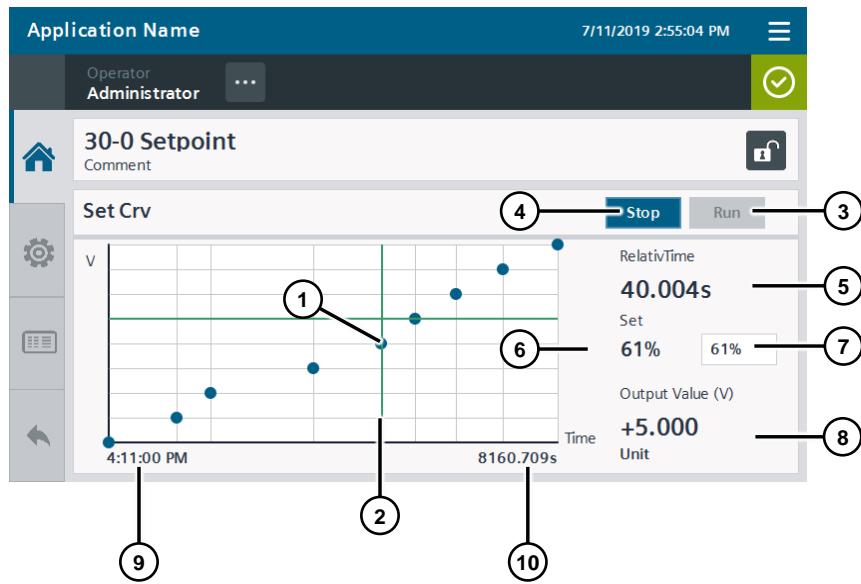


The value is the output value of the "LBP\_SetCrv" function.

The fill level of the rectangle in the background shows the percentage of the set point curve that has already elapsed.

## Home Screen

Figure 2-189

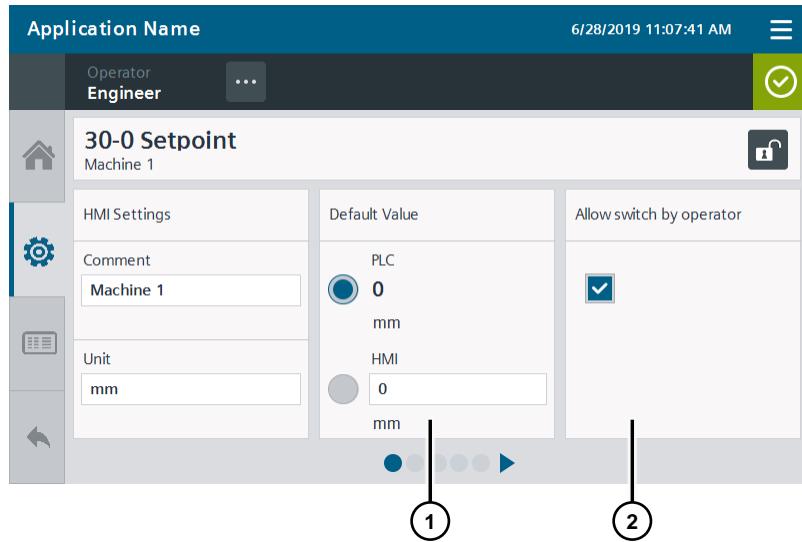


1. Set point curve
2. The cross-hairs indicate which value is currently being output.
3. The “Run” button starts the run (continuation) of the set point curve.
4. The “Stop” button interrupts the run of the set point curve.
5. The time indicates how long the set point curve has run.  
Together with the output value (8), the time determines the position of the cross-hairs.
6. The value indicates the percentage of the set point curve that has already run.
7. The percentage value indicates the percentage of the set point curve that has already run. The text field is only visible if the check mark for “Allow switch by operator” is set on the setting pages.
8. Output value
9. If time control is activated, the start time is displayed here.
10. If time control is activated, the remaining run time is displayed here.

## 2 Operation of the HMI Faceplates

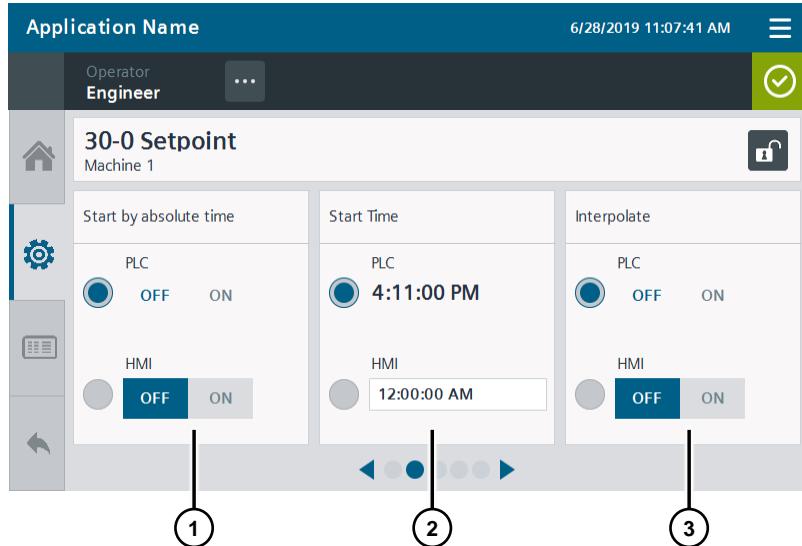
### Settings

Figure 2-190



1. Default value that is output if the set point curve is not completed.
2. Allow operation by the operator. This applies to the following functions:
  - Run
  - Stop
  - Activation of the control over time

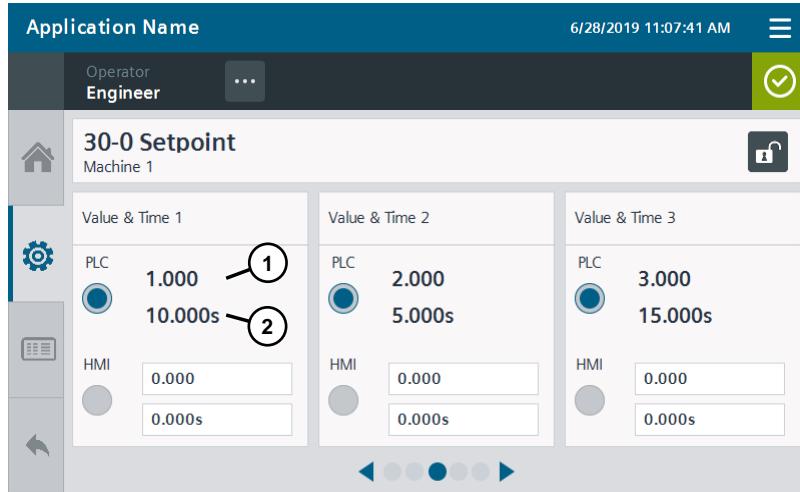
Figure 2-191



1. Activation of the control via time
2. Definition of the start time
3. Switch on the interpolation for the graph.  
The values between the points are interpolated.

## 2 Operation of the HMI Faceplates

Figure 2-192






### 2.2.2.20 LBP\_TimeSw – Time Switch

#### Icon

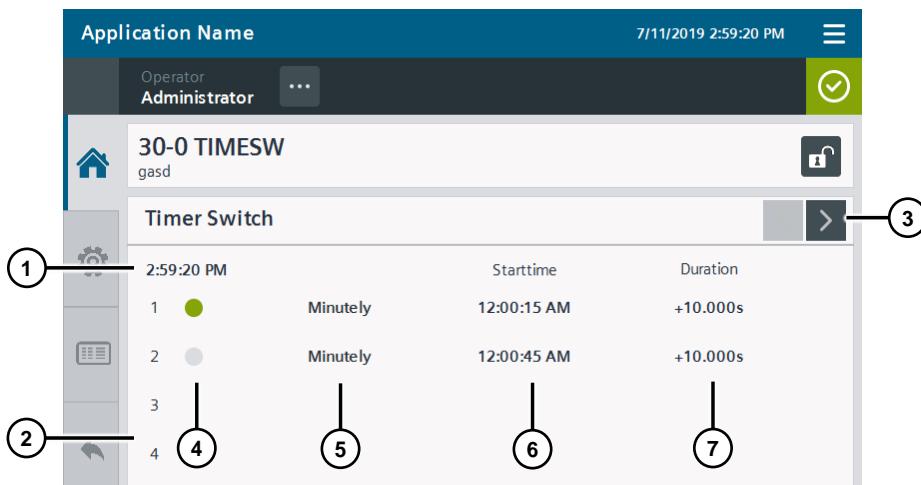
Figure 2-193



The light is green when one of the time switches is active.

#### Home Screen

Figure 2-194



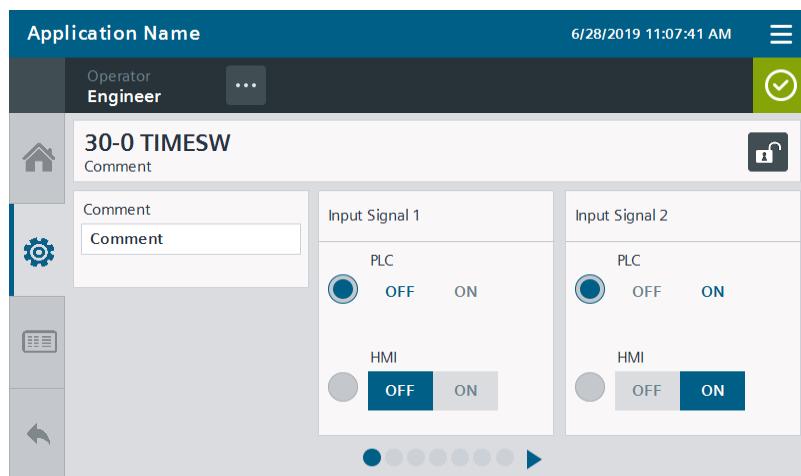
1. The clock shows the current time.

## 2 Operation of the HMI Faceplates

2. There are up to 8 time switches, which are listed below each other.
3. To display time switches 5-8, you have to switch to the 2nd page.
4. The light indicates whether the time switch is active.
5. Mode  
(minutely, hourly, daily, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday)
6. Start time
7. Time duration

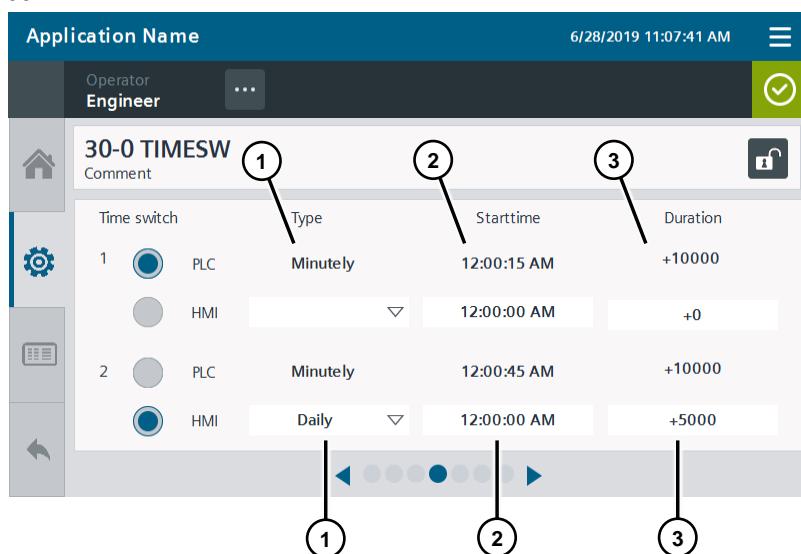
### Settings

Figure 2-195



These pages define the source of the input signal.

Figure 2-196

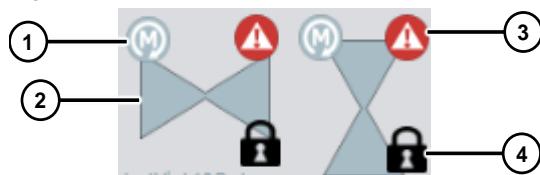


1. Display/set the time switch type
2. Display/set the start time
3. Display/set the runtime

### 2.2.2.21 LBP\_Vlv – Simple Valve

#### Icon

Figure 2-197

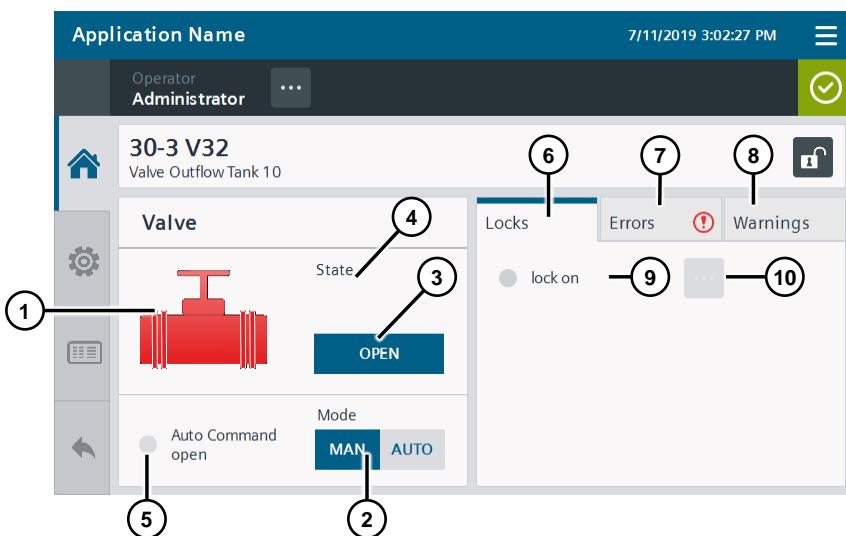


The valve is available in vertical and horizontal orientation.

1. Mode display:  
M – Manual operation  
A – Automatic operation  
L – Local operation
2. Valve symbol:  
blue – open  
white – closed  
blue to white – opening  
white to blue – closing  
gray – status is not defined
3. Status display:  
red warning triangle – Error pending  
yellow warning triangle – Error pending  
wrench – Repair mode active
4. When the padlock is displayed, the interlock is active.

#### Home Screen

Figure 2-198

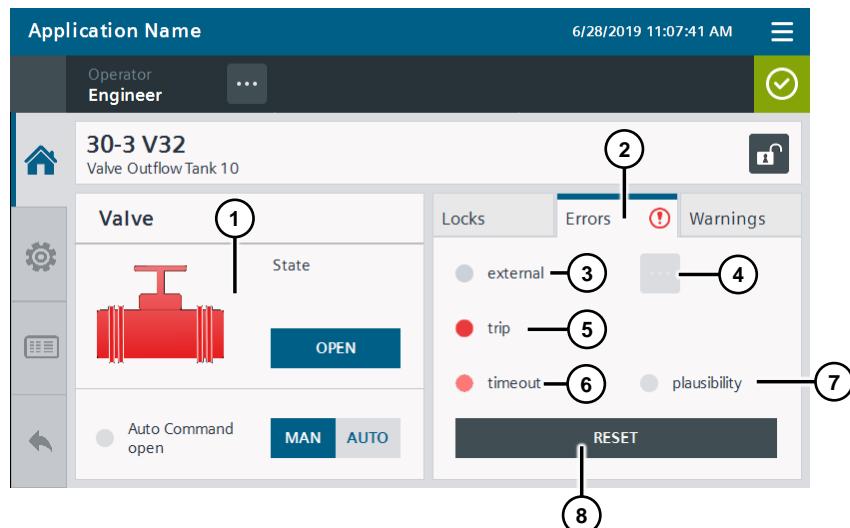


1. Valve symbol:  
red – error active  
green – Valve is open  
blue – valve is closed or not defined
2. Switch between manual and automatic operation.  
In local operation or in case of a repair, it is overlaid with the text "LOCAL" or "REPAIR".

## 2 Operation of the HMI Faceplates

3. “Open/Close” button for the valve:  
Operation is not possible with a light gray button.
4. Operating mode of the valve:  
opened, opening, closing, closed
5. The symbol shows the pending automatic command:  
green: Automatic open  
This information tells the operator which state the valve is in when switching from manual to automatic operation.
6. “Locks” tab, selected in this case
7. “Errors” tab
8. “Warnings” tab
9. Display “Locks”:  
red – locked, cannot open
10. If the button is dark, the corresponding “LBP\_Intlk8” (interlock block) can be opened via this button. This indicates the interlock conditions.

Figure 2-199

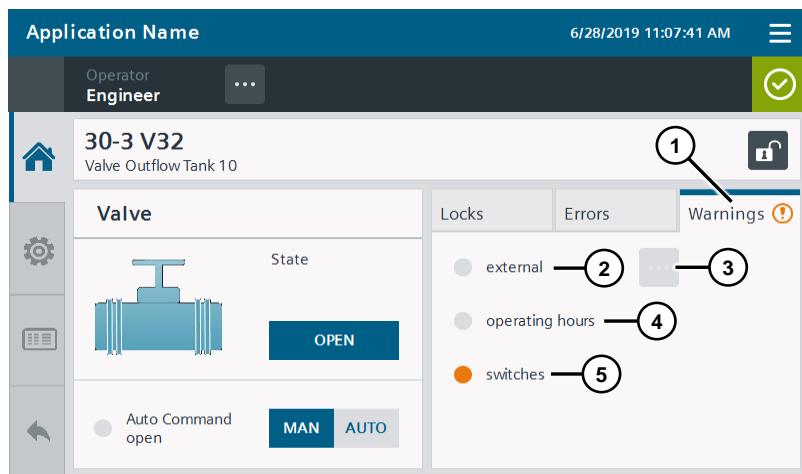


1. Valve faulty, color red
2. “Errors” tab selected, the symbol on the tab shows a pending error
3. Red if an external error is pending
4. If the button is dark, it can be used to open the “LBP\_Msg8” (message block) associated with the external error.
5. Red when emergency stop is active
6. Red if there is no feedback after the monitoring time has elapsed.  
Light red here, because the error is no longer pending and can be reset.
7. Red, if feedback signals from the valve are not plausible
8. Reset key for error, dark if operable

Resettable errors are displayed in light red.

## 2 Operation of the HMI Faceplates

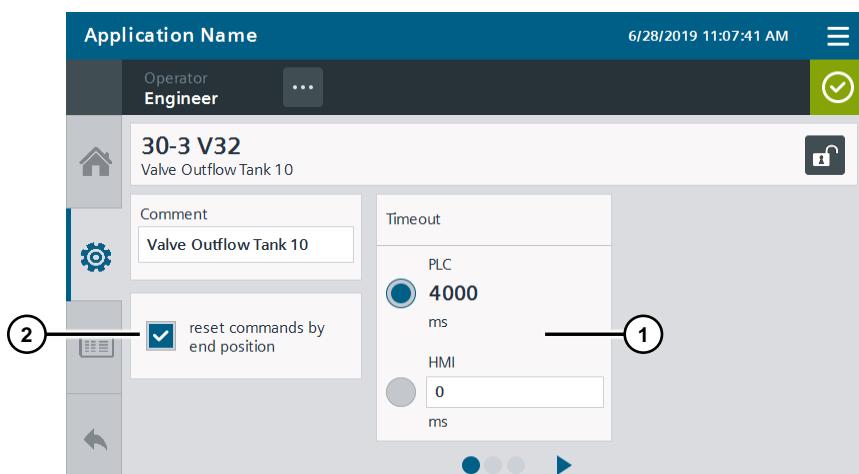
Figure 2-200



1. "Warning" tab selected, the symbol on the tab indicates an active warning
2. Yellow, if an external warning signal is pending
3. If the button is dark, the "Msg8" (signal block) can be opened via this button. It shows the associated warning signals.
4. Yellow when maximum number of operating hours is reached
5. Yellow when maximum number of switching operations is reached

## Settings

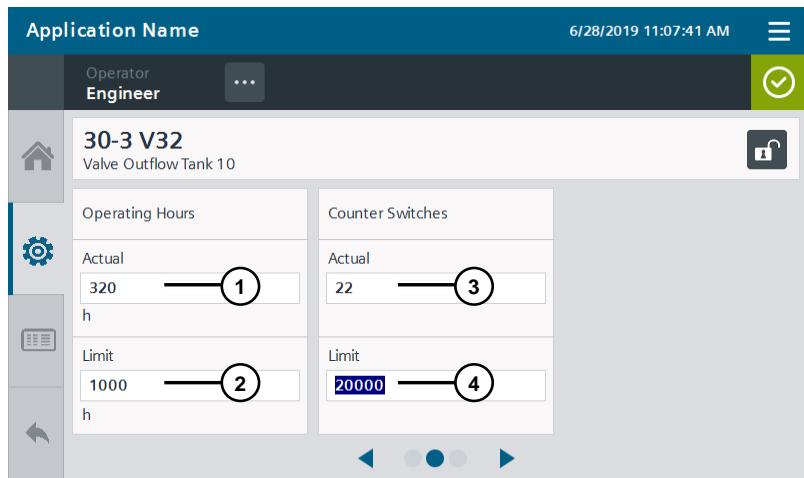
Figure 2-201



1. Set the monitoring time  
(time after which there is a check as to whether activation has occurred)
2. The button determines whether the control commands of the valve are to be reset from the corresponding end positions (open/closed).

## 2 Operation of the HMI Faceplates

Figure 2-202

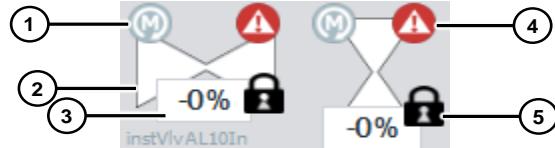


1. Current operating hours
  2. Maximum number of operating hours up to warning
  3. Current number of switching operations
  4. Maximum number of switching operations up to warning
- All values are adjustable.

### 2.2.2.22 LBP\_VlvA – Analog Controlled Valve

#### Icon

Figure 2-203



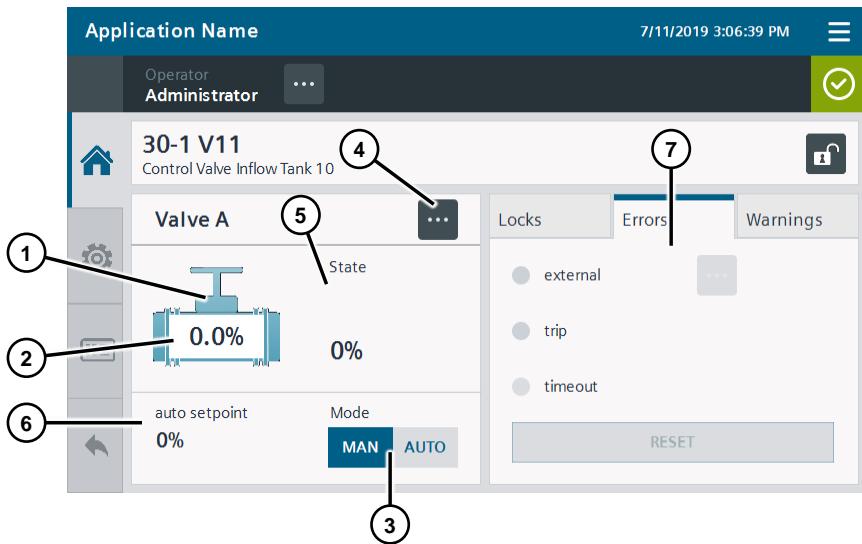
The valve is available in vertical and horizontal orientation.

1. Mode display:  
M – Manual operation  
A – Automatic operation  
L – Local operation
2. Valve symbol:  
blue – open  
white – closed  
blue to white – opening  
white to blue – closing  
gray – status is not defined
3. Analog value which determines the degree of opening of the valve
4. Status display:  
Red warning triangle – Error pending (pulsing means error not acknowledged)  
Yellow warning triangle – Error pending (pulsing means warning not acknowledged)  
wrench – Repair mode active
5. When the padlock is displayed, the interlock is active.

## 2 Operation of the HMI Faceplates

### Home Screen

Figure 2-204

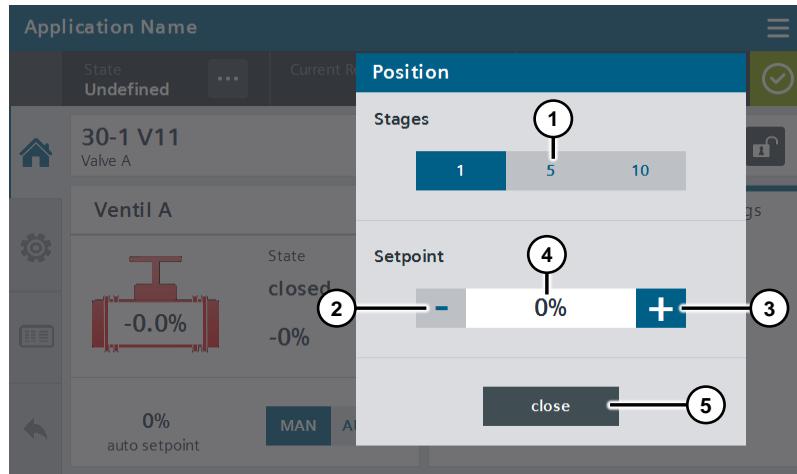


1. Valve symbol:  
red – error active  
green – valve is open, degree of opening is over the limit  
blue – valve is closed or not defined
2. Current valve opening
3. Switch between manual and automatic operation.  
In local operation or in case of a repair, it is overlaid with the text “LOCAL” or “REPAIR”.
4. Button for calling the operating dialog for the valve.  
Operation is not possible with a light gray button.  
The operating dialog is described below.
5. Operating mode of the valve:  
“opened”, “opening”, “closing”, or “closed”
6. Display for the pending automatic set point.  
With this information, the operator can see which position the valve is moving to when switching from manual to automatic operation.

The Locks, Errors and Warnings tabs essentially correspond to those of the simple valve. See [Figure 2-198](#) and below

## 2 Operation of the HMI Faceplates

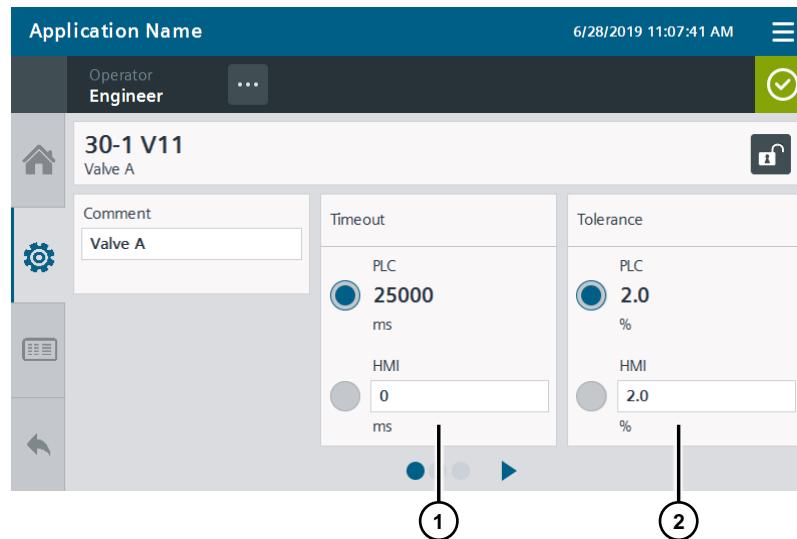
Figure 2-205 Valve operation pop-up in manual operation



1. Selection switch for the increment by which the valve opening is to be changed
2. Button for incrementing the opening set point by the value selected above
3. Button for decrementing the opening set point
4. Opening set point
5. Cancel the operation,  
the pop-up is closed without command output to the valve

### Settings

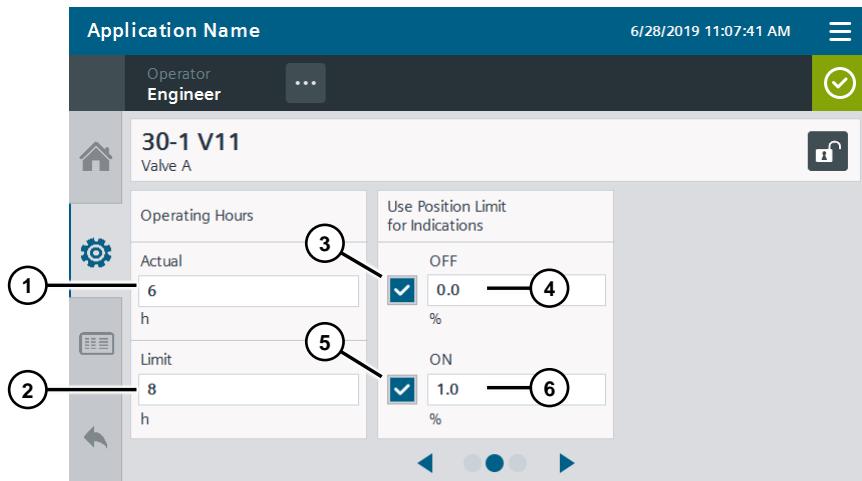
Figure 2-206



1. Set the monitoring time  
(time after which there is a check as to whether activation has occurred)
2. Tolerance:  
Defines the permissible fluctuations of the current actual value. If the tolerance is exceeded or not reached, it is assumed that the valve is opening or closing.

## 2 Operation of the HMI Faceplates

Figure 2-207



1. Current operating hours
2. Maximum number of operating hours up to warning
3. Check box to activate the limit starting from which the valve is regarded as switched off, color of valve symbol changes to blue
4. Limit for "Switched off" status change
5. Check box to activate the limit starting from which the valve is regarded as switched on, color of valve symbol changes to green
6. Limit for "Switched on" status change

### 2.2.2.23 LBP\_3wVlv – 3-Way Valve

#### Icon

Figure 2-208



The valve is available in vertical and horizontal orientation.

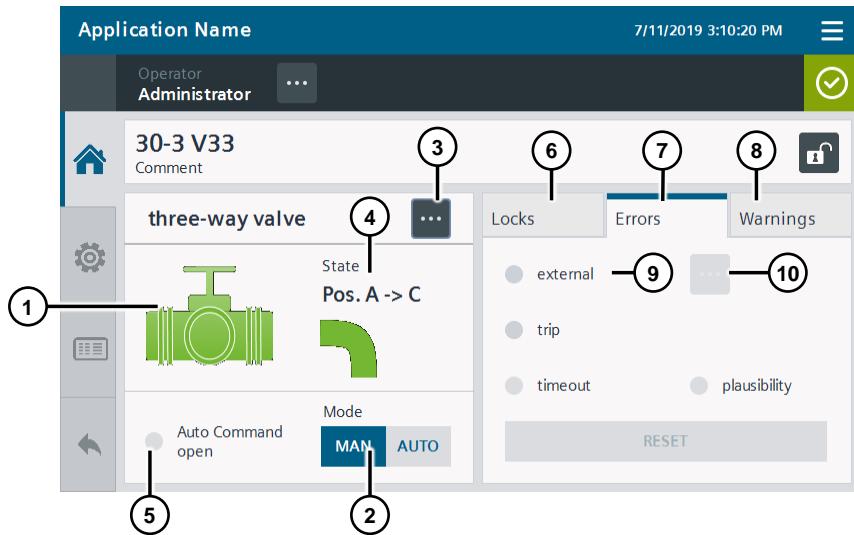
1. Mode display:  
M – Manual operation  
A – Automatic operation  
L – Local operation
2. Valve symbol.

The displays correspond to those in WinCC Professional (see [Table 2-4](#)).

## 2 Operation of the HMI Faceplates

### Home Screen

Figure 2-209



1. Valve symbol:  
red – error active  
green – Valve is open  
blue – valve is closed or not defined
2. Switch between manual and automatic operation.  
In local operation or in case of a repair, it is overlaid with the text “LOCAL” or “REPAIR”.
3. Button for calling the operating pop-up for the valve. The pop-up is described below.  
Operation is not possible with a light gray button.
4. Operating status of the valve with associated graphic:

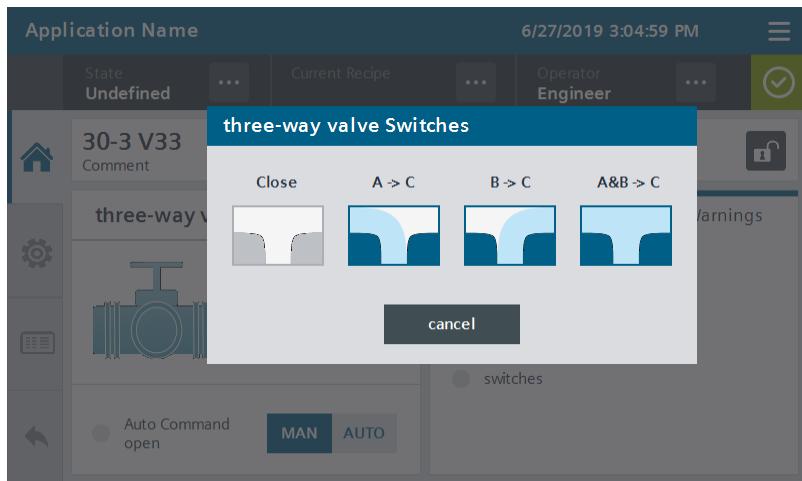
5. Table 2-7

State	
	To A->C Position 1 is being activated
	Pos. A->C Position 1 is active
	To B->C Position 2 is being activated
	Pos. B->C Position 2 is active
	To A&B->C Position 3 is being activated
	Pos. A&B->C Position 3 is active (valve is fully open)
	closing Valve closed
	closed Valve is closed

6. The symbol shows the pending automatic command:  
green: Automatic open  
This information tells the operator which state the valve is in when switching from manual to automatic operation.
7. “Locks” tab
8. “Errors” tab, selected here
9. “Warnings” tab
10. Display error:  
red - Error pending  
light red - Error can be reset
11. If the button is dark, it can be used to open the “LBP\_Msg8” (message block) associated with the external error.

## 2 Operation of the HMI Faceplates

Figure 2-210 Manual operation



The valve positions listed in Table 5-2 can be selected here.

### Settings

The two setting pages correspond to the simple valve (see [Figure 2-201](#) and below).

## 3 Operating the Demo Project

**Note** To open the TIA Portal demo projects, you also need the SIMATIC Visualization Architect V15 engineering option.

### 3.1 Navigation

Figure 3-1



1. Open the BPL settings  
Assign a name to the HMI station on the second setting page so that the LBP lock system works.
2. Button for logging on and off
3. Logoff button
4. Date and time
5. Display for pending errors or warnings
6. Open Demo1

### 3 Operating the Demo Project

7. Open Demo2
8. Open the overview screen using the icons
9. Open the message window in which all project alarms are displayed
10. Stop Runtime

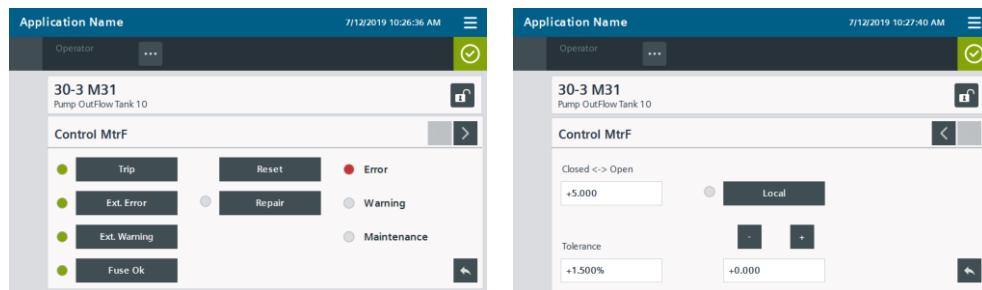
## 3.2 Operating the Simulation Controls

Figure 3-2



1. The "Sim" button is used to open the Simulation Control.
2. The "Mtr" symbol is the symbol of the block to which the Simulation Control belongs.

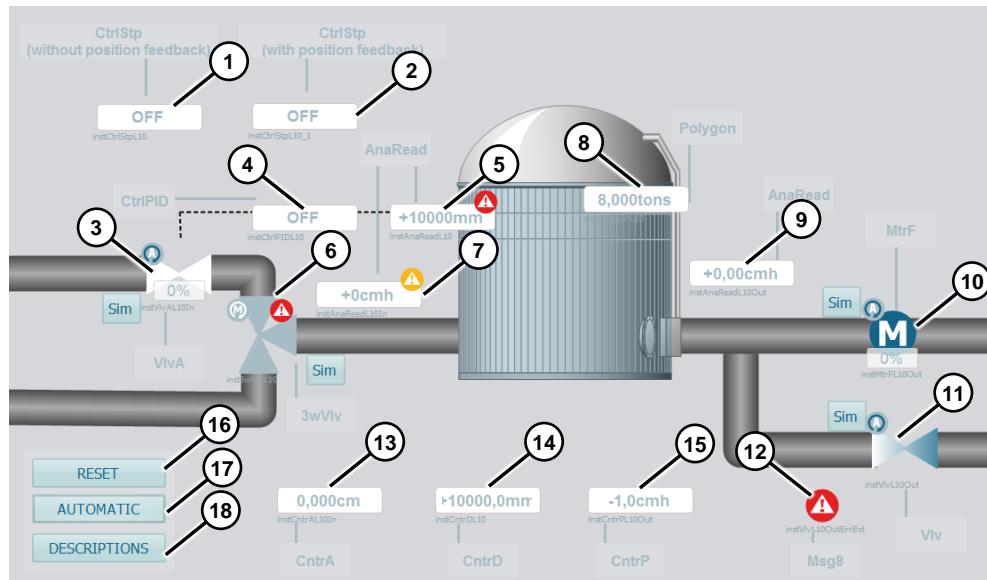
Figure 3-3



The buttons on the Simulation Controls represent the inputs on the STEP 7 blocks. You can use these Controls to simulate errors, for example.

### 3.3 Demo 1

Figure 3-4



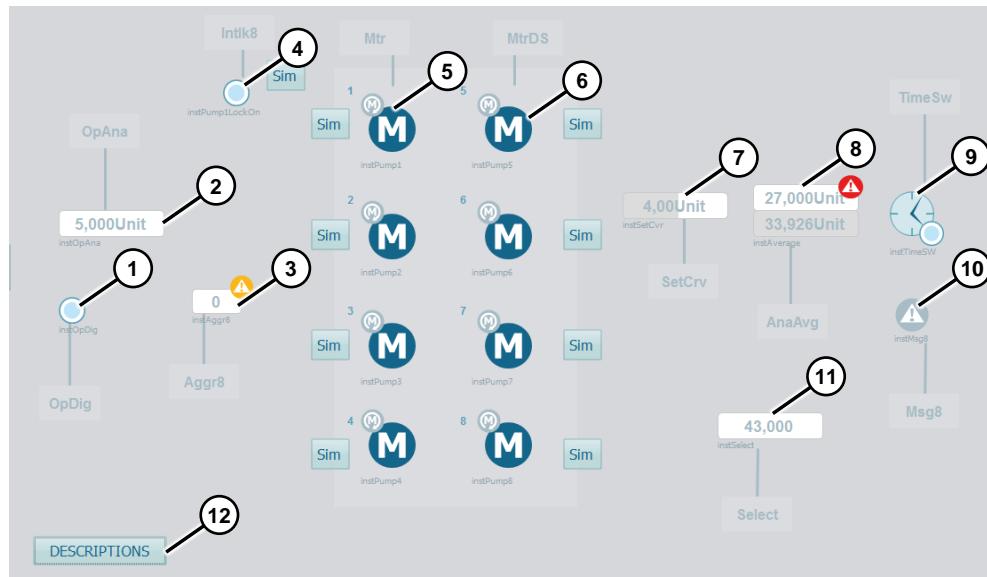
1. **LBP\_CtrlStp**  
The output value of the "AnaRead" (5) is connected to this as the input value. The block is no longer connected in the simulation.
2. **LBP\_CtrlStp**  
The output value of the "AnaRead" (5) is connected to this as the input value. In addition, the "feedbackOn" input was activated in the PLC program with this "LBP\_CtrlSTP".  
The "indPosition" parameter of the "LBP\_VlvA" valve (3) is connected to the "feedback" input.  
The block is no longer connected in the simulation.
3. **LBP\_VlvA**  
This block controls the flow into the tank.  
The position is determined by the "LBP\_CtrlPID" (4) in automatic operation.
4. **LBP\_CtrlPID**  
"CtrlPID" is controlled by the "AnaRead" (5) and determines the position of the "VlvA" (3) depending on this.
5. **LBP\_AnaRead**  
Displays the level of the tank in millimeters.
6. **LBP\_3wVlv**  
Only liquid can come out of the upper pipe in the simulation.  
The valve always directs the liquid into the tank.
7. **LBP\_AnaRead**  
Shows the flow in cubic meters per hour.
8. **LBP\_Polygon**  
It converts the value of "LBP\_AnaRead" (5), which is given in millimeters, into tons.
9. **LBP\_AnaRead**  
This indicates the flow rate in cubic meters per hour.
10. **LBP\_MtrF**  
This pumps the water out of the tank as soon as the tank has reached a certain fill level.

### 3 Operating the Demo Project

11. LBP\_Vlv  
When this valve is open, the contents of the tank flow drain immediately and are not further processed.
12. LBP\_Msg8  
This shows the external errors of the valve “LBP\_Vlv” (11).
13. LBP\_CntrA  
This counts the inflow to the tank.
14. LBP\_CntrD  
This is not included in the simulation.
15. LBP\_CntrP  
This is not included in the simulation.
16. “Reset” button  
For resetting all blocks
17. “Automatic” button  
To activate automatic operation in all blocks
18. “Descriptions” button  
To display the block labels

## 3.4 Demo 2

Figure 3-5



1. LBP\_OpDig  
Initiates a switching operation of the LBP\_Aggr8
2. LBP\_OpAna  
Determines how many Aggregates (motors) are to be controlled
3. LBP\_Aggr8  
Controls the motors
4. LBP\_Intlk8  
Can lock the motors
5. LBP\_Mtr  
Controlled via LBP\_Aggr8
6. LBP\_MtrDS  
Controlled via LBP\_Aggr8

### 3 Operating the Demo Project

7. LBP\_SetCrv  
Not included in the simulation
8. LBP\_AnaAvg  
This calculates an average value from 3 tags (these are calculated from the current seconds).  
The block is no longer included in the simulation.
9. LBP\_TimeSw  
2 time switches are activated:  
The first switches on every minute in the 15th second for 10 seconds.  
The second switches on every minute in the 45th second for 10 seconds.  
If one of the time switches is switched on, an error is triggered in "LBP\_Msg8" (10).
10. LBP\_Msg8  
Indicates an error if one of the "TimeSw" time switches (9) is activated
11. LBP\_Select  
This selects the higher value between value 1 (current seconds) and value 2 (current minutes).  
The block is no longer included in the simulation.

## 3.5 Icons

Figure 3-6



All symbols used in the demo application are displayed on this screen. If you generate your project with SiVArc, you can generate all symbols used in your project on this screen.

The generated events were not adapted in Comfort. The Comfort screens do not show any values when you click the icons for this reason.

## 4 Appendix

### 4.1 Service and support

#### Industry Online Support

Do you have any questions or need assistance?

Siemens Industry Online Support offers round the clock access to our entire service and support know-how and portfolio.

The Industry Online Support is the central address for information about our products, solutions and services.

Product information, manuals, downloads, FAQs, application examples and videos – all information is accessible with just a few mouse clicks:

<https://support.industry.siemens.com>

#### Technical Support

The Technical Support of Siemens Industry provides you fast and competent support regarding all technical queries with numerous tailor-made offers – ranging from basic support to individual support contracts. Please send queries to Technical Support via Web form:

[www.siemens.com/industry/supportrequest](http://www.siemens.com/industry/supportrequest)

#### SITRAIN – Training for Industry

We support you with our globally available training courses for industry with practical experience, innovative learning methods and a concept that's tailored to the customer's specific needs.

For more information on our offered trainings and courses, as well as their locations and dates, refer to our web page:

[www.siemens.com/sitrain](http://www.siemens.com/sitrain)

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- Plant data services
- Spare parts services
- Repair services
- On-site and maintenance services
- Retrofitting and modernization services
- Service programs and contracts

You can find detailed information on our range of services in the service catalog web page:

**Fehler! Linkreferenz ungültig.**

#### Industry Online Support app

You will receive optimum support wherever you are with the "Siemens Industry Online Support" app. The app is available for Apple iOS, Android and Windows Phone:

**Fehler! Linkreferenz ungültig.**

## 4.2 Links and Literature

Table 4-1

No.	Subject
\1\	Siemens Industry Online Support <a href="https://support.industry.siemens.com">https://support.industry.siemens.com</a>
\2\	Link to the article page of the application example <a href="https://support.industry.siemens.com/cs/ww/en/view/109749508">https://support.industry.siemens.com/cs/ww/en/view/109749508</a>
\3\	SIMATIC Visualization Architect Manual <a href="https://support.industry.siemens.com/cs/document/109755214">https://support.industry.siemens.com/cs/document/109755214</a>
\4\	How do you use multiple monitors simultaneously with WinCC (TIA Portal) Runtime Professional? <a href="https://support.industry.siemens.com/cs/document/109744837">https://support.industry.siemens.com/cs/document/109744837</a>
\5\	Programming Guide and Programming Style Guide for SIMATIC S7-1200 and S7-1500 <a href="https://support.industry.siemens.com/cs/document/81318674">https://support.industry.siemens.com/cs/document/81318674</a>

## 4.3 Change documentation

Table 4-2

Version	Date	Change
V2.0	08/2019	<p>Release for:</p> <ul style="list-style-type: none"> <li>• SIMATIC STEP 7 Basic/Professional V15</li> <li>• WinCC Comfort/Advanced V15</li> <li>• Comfort Panel</li> <li>• WinCC Runtime Advanced V15</li> <li>• WinCC Runtime Professional V15</li> <li>• WinCC V7.5</li> <li>• WinCC Open Architecture 3.16</li> </ul>
V2.2	11/2019	<p>Update for TIA Portal V15.1</p> <p>Change of the symbol color of the valves from white-blue to blue-green</p>
V2.4	04/2020	<p>Update for TIA Portal V16</p> <p>Additional functions:</p> <ul style="list-style-type: none"> <li>- SimoDir</li> <li>- SimoRev</li> <li>- Sina</li> </ul> <p>For MtrF was added an Power On/Off button</p>