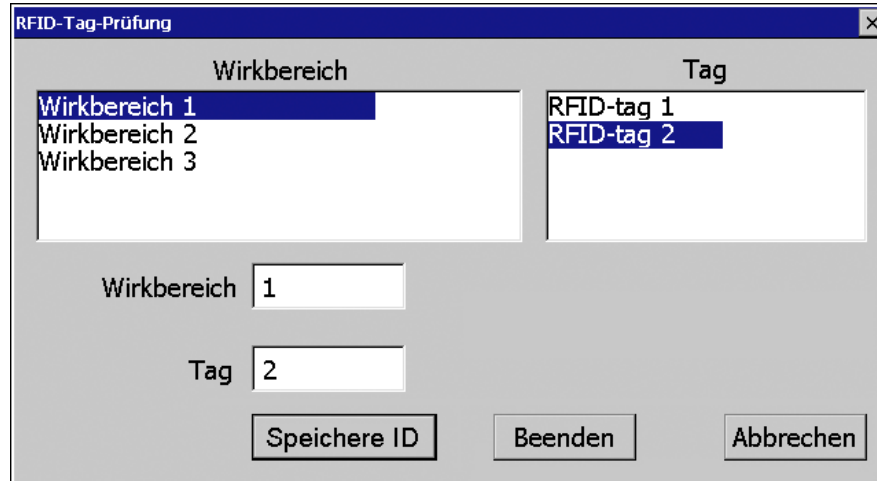


3. Press the "RFID Config" icon.

The following dialog appears:



4. Select the effective range ID in the "Effective range" selection box and the ID of the defective RFID tag in the "Tag" selection box.
5. Bring the HMI device into the effective range of the RFID tag.
6. Press "Save ID".

The HMI device transmits the ID to the RFID tag. The new RFID tag has the ID of the previously used RFID tags.

7. Click "Exit" to close the dialog.
8. Close the Control Panel and start the project.
9. Log the HMI device onto a machine to check the new RFID tag.
  - When the logon is successful, you can continue working in the project.
  - If logon is not possible close the dialog and repeat steps 2 to 8.

## 9.5 Diagnostics

Use the diagnostics function to determine the following:

- Does signal acquisition function without errors on the HMI device?
- Does the safety-related module of the HMI device work properly?

### **Diagnostic function of the HMI device in STEP 7**

The HMI device provides diagnostics conforming to PROFINET IO standard IEC 61784-1, Ed1, CP 3/3 for standard application.

The diagnostics function cannot be parameterized. The diagnostics are always enabled and information is provided automatically by the HMI device in STEP 7 in the event of an error. The diagnostic function also passes the "Communication error" message, if at all possible, for the safety-related component.

The communication between the HMI device as an input and output device, and the F-CPU and IO controller is disrupted. This situation can be caused, for example, by an incorrect PROFIsafe address or the lack of a wireless network.

### **Reading diagnostics information**

Open the module diagnostics in STEP 7 to determine the cause of the error. For additional information, refer to the online help for STEP 7.

You also have the option of reading the diagnostic information using SFB 52 or SFB 54 in the standard user program. For additional information, refer to the "System and Standard Functions" reference manual.

### Diagnostic information for internal errors

All LEDs of the LED display go out when an internal error of the HMI device causes a failure. When a project is running on the HMI device, the following occurs:

- The project is closed.
- The following error code message is displayed on the HMI device:



### Procedure

Proceed as follows:

1. Record the error number – see Error Code.
2. Switch off the HMI device.
3. Restart the HMI device.

Contact Technical Support (<http://support.automation.siemens.com>) if the error persists. Based on the error code, Technical Support can come to a conclusion about the type of internal error.

### Error code for discrepancy errors

The following table lists the error codes for discrepancy errors. You may be able to find a remedy for a discrepancy error yourself, depending on the situation. The first six digits of the error code are decisive for the correct identification of the error.

Error code	Error type	Remedy
000 008	Discrepancy error at the EMERGENCY STOP button	Release the EMERGENCY STOP button.


# 10

## Fail-safe operation

### 10.1 Organizational measures

The HMI device should only be operated in the system with a battery or in the charging station.

You must adhere to the organizational measures described in this section to ensure fail-safe operation of the HMI device.

 <b>WARNING</b>
<b>EMERGENCY STOP button out of service when HMI device is removed</b>
If the HMI device is not integrated in the safety program of the F-CPU, the EMERGENCY STOP button will be out of service.
To avoid confusion between HMI devices with enabled and disabled EMERGENCY STOP buttons, only one integrated HMI device should be freely accessible.
If an HMI device is not integrated and not in use, store the HMI device in a location with protected access.

### Handling the HMI device during operation

<b>CAUTION</b>
<b>Shutdown or global rampdown may occur with an empty main rechargeable battery</b>
An integrated HMI device with an empty main rechargeable battery triggers a communication error. This error results in the following reaction of the F-CPU:
<ul style="list-style-type: none"> <li>• When the HMI device is logged onto a machine – shutdown</li> <li>• When the HMI device is not logged onto a machine – global rampdown</li> </ul>
Check the charge of the main rechargeable battery at brief intervals using the "BAT" LED.

#### Note

It is prohibited to leave the effective range without an HMI device while the HMI device is logged onto the effective range.

Log the HMI device off from the effective range or remove it from the HMI device.

Pay attention to the LED display of the HMI device – see section "LED display (Page 103)".

## 10.2 Integrating the HMI device

During fail-safe operation, a safety program runs in the F-CPU. The HMI device is integrated into this safety program. The HMI device and F-CPU communicate via PROFINET IO.

When there is a project for a safety program on the HMI device, it is automatically integrated following the start of the project. The "SAFE" LED lights up to indicate that integration is complete.

The EMERGENCY STOP button is enabled as soon as the HMI device is integrated.

### Requirement

- WLAN
- PROFIsafe safety-related bus profile, as of V2.0
- The plant has been accepted.
- The loader is displayed on the HMI device.

### Procedure

Proceed as follows:

1. Start the project.

PROFIsafe communication is established. While the connection is being established, the "Establishing secure connection" dialog is displayed with the following symbol.



The HMI device is integrated in the safety program of the F-CPU.

The "SAFE" LED lights up.

The "Test enabling switch" dialog is displayed with the following symbol.



2. Fully press down both enabling buttons.

The project start screen appears.


### See also

Terms for fail-safe operation (Page 38)

## 10.3 Operating the transponder system in a fail-safe mode

### 10.3.1 Switch-off behavior

The shutdown reaction of the plant will vary according to cause and effect.

 <b>DANGER</b>
<p><b>Triggering shutdown</b></p> <p>The shutdown response described in the next sections is only triggered in the plant if the F CPU has been programmed accordingly.</p> <p>Program the F CPU accordingly.</p>

The following types of shutdown may occur depending on the operating state of the plant.

- EMERGENCY STOP
- Global rampdown
- Local rampdown
- Shutdown

The following table shows the shutdown reaction depending on the operating state and the cause:

Operating state		Cause of the shutdown			
		EMERGENCY STOP button pressed	Communication error	Timeout <sup>1)</sup>	
HMI not integrated		---	---	---	
HMI integrated	HMI device logged on at the effective range	HMI device is in the effective range	EMERGENCY STOP	Shutdown	---
		HMI device < 30 s outside of the effective range	EMERGENCY STOP	Shutdown	---
		HMI device > 30 s outside of the effective range	EMERGENCY STOP	Shutdown	Local rampdown
	HMI device is logged off from the effective range	EMERGENCY STOP	Global rampdown	---	

- 1) The HMI device is logged onto the effective range and the operator leaves the effective range with the HMI device for longer than 30 seconds.

#### See also

Terms for fail-safe operation (Page 38)

### 10.3.2 Determine the current effective range and current zone

The determination of the current effective range and the current zone occurs through a distance verification between the HMI device and the transponder. The distance verification requires that both devices are located in the wireless range of the other and the HMI device is logged onto the project.

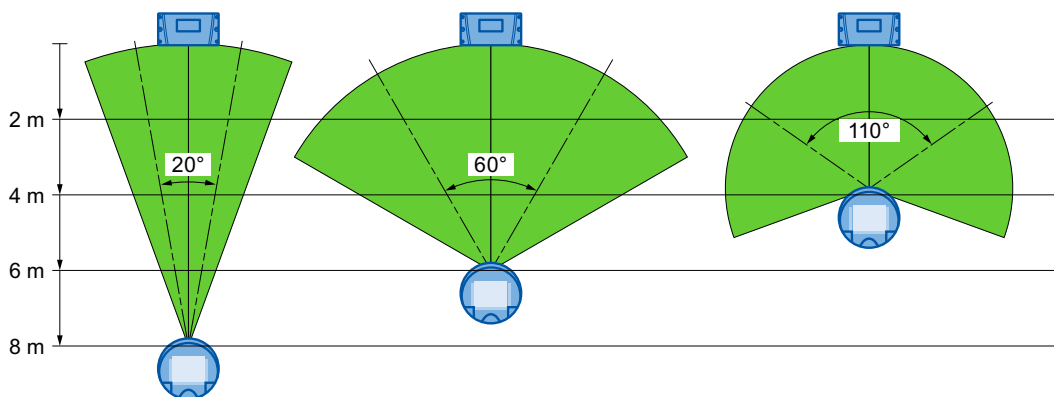
The result of the distance verification is evaluated in the HMI device and displayed with the "effective range quality" object within the project.

#### Aligning the HMI device to the transponder

You must align the HMI device to the transponder to enable them to recognize one another.

The further away the HMI device is from the transponder, the more accurately it must be aligned to the transponder. The moving of the HMI device is only possible in a small angle. The closer the HMI device is to the transponder, the greater the moving angle can be.

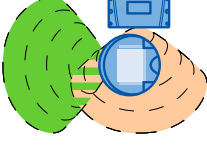
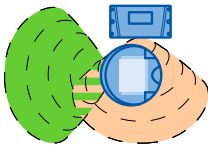
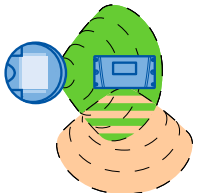
The figure below shows an example of the possible angle of movement in relation to the distance from the transponder.



With a distance of 8 m, the angle of movement is about 20°. At a distance of 4 m, the permissible angle of movement is about 110°.

### Determine the current effective range and current zone

The table below shows when a logon is feasible.

Alignment			
HMI device in transponder's wireless range	Yes	Yes	No
Transponder in HMI device's wireless area	Yes	No	Yes
<b>Logon</b>	<b>Successful</b>	Not supported	Not supported

The current effective range or the current zone is determined as follows:

- The HMI device transmits with a running project.
- If a transponder recognizes the wireless range of an HMI device, the transponder ID will be sent to the HMI device.
- The HMI device evaluates the ID and signal strength.  
Through this, the HMI device determines the current effective range and its quality.

### See also

Dividing plant into effective ranges (Page 59)

### 10.3.3 Logging onto a machine

As soon as you are in an effective range with the HMI device, you can log the HMI device onto the respective machine. After successfully logging on, operating the machine in fail-safe mode within the effective range is possible.



**Behavior in the effective range following successful logging on**

<p><b>CAUTION</b></p> <p><b>Local rampdown possible</b></p> <p>If you leave the effective range without logging off, or the HMI device no longer recognizes the transponder, the dialog will be displayed after 5 s: "Effective range left without logging off". If you do not return to the effective range within 25 seconds, the HMI devices initiates a local rampdown and begins logging off from the effective range. After confirming the logoff, the HMI device will be removed. The effective range is open for logging on for other HMI devices.</p> <p>Return to the effective range in good time. Always align the HMI device so that it is possible to measure the distance between the HMI device and the transponder.</p> <p><b>Shutdown possible</b></p> <p>If the HMI device is in a state where it is constantly ready for operation, the main rechargeable battery will lose its charge. A discharged main rechargeable battery causes communication failure. The F CPU initiates a shutdown.</p> <p>Never leave the effective range without the HMI device, as long as the HMI device is logged on in the effective range. If you do not need the HMI device:</p> <ul style="list-style-type: none"> <li>• Log the HMI device off from the effective range.</li> <li>• Turn off the HMI device or place it in the charging station.</li> </ul>
--

Note the displays of the HMI device LEDs; in particular, the "RNG" and "BAT" LEDs.

**Requirements**

- The HMI device is integrated and the "SAFE" LED is illuminated.
- The "Effective range name" operating element is displayed.



**Procedure**

Proceed as follows:

1. Touch the "Effective range name" operating element.

The "Effective range logon" dialog opens with the following symbol.

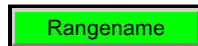


2. Enter the ID of the effective range.
3. Enter the ID of the effective range.
4. Confirm your entries.

The dialog closes.

## Result

- If the ID entered matches the ID configured for the effective range, the HMI device is logged onto the effective range.
- No other HMI device can log onto this effective range.  
The "RNG" LED lights up.
- You can use the enabling buttons to operate the machine in the effective range.
- The "Effective range name" operating element is displayed.

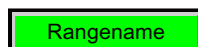


## 10.3.4 Logging off the machine

Before leaving the effective range or closing the project, you must log off the HMI device from the effective range.

## Requirement

- The HMI device is logged onto the effective range.  
The "RNG" LED lights up.
- The "Effective range name" operating element is configured and displayed.



## Procedure

Proceed as follows:

1. Touch the "Effective range name" operator control.

The "Effective range logoff" dialog opens with the following symbol.



2. Confirm by clicking "OK".
  - The "RNG" LED goes out.
  - The HMI device is no longer logged onto the effective range.
  - The "Effective range name" operating element is displayed.



or



- An HMI device can log on to this effective range again.

### 10.3.5 Activating and deactivating "Override" mode

#### Introduction

The effective range functionality of the HMI device can be extended with the "Override" mode.

"Override" mode can be used in the following cases:

- If a protection zone is available instead of an effective range.

An existing safety system from your system, for example, a protective gate, can be integrated into the safety system for the "override" mode.

- If parts should be operated with enabling buttons, which are not in the wireless range of a transponder.

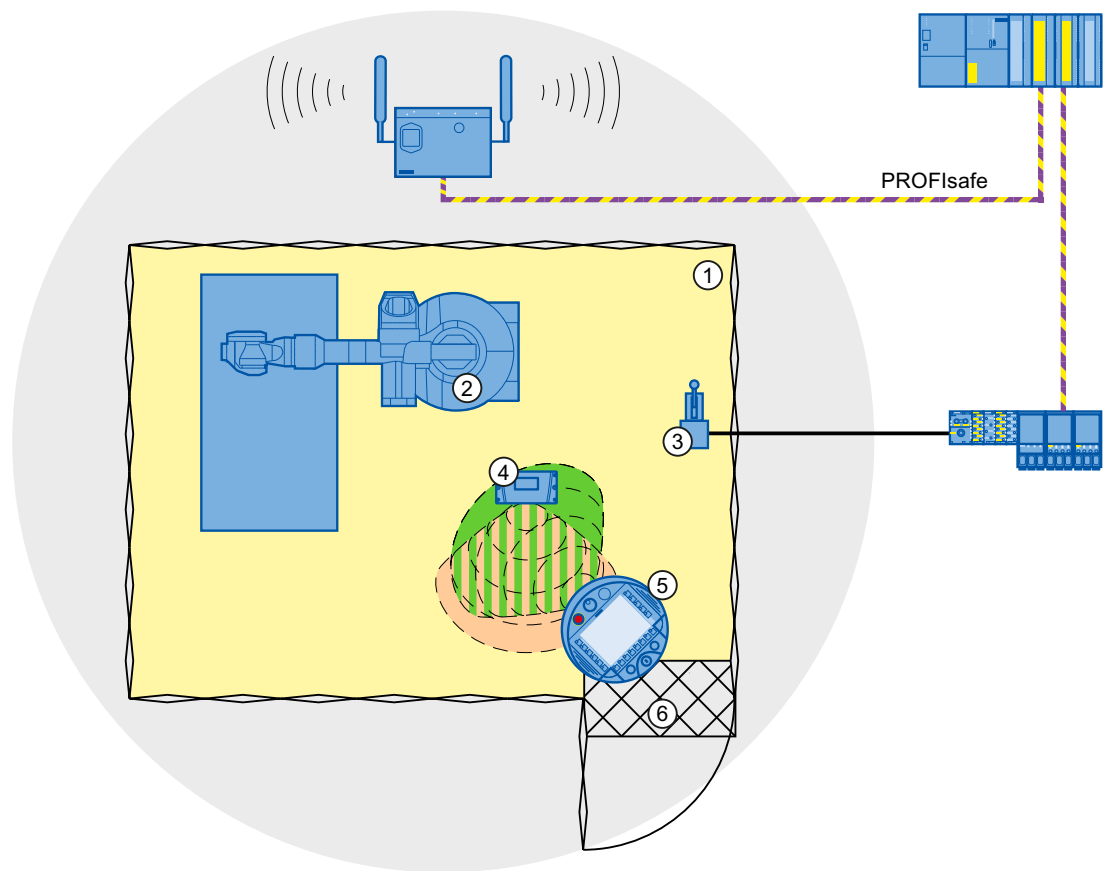
This cannot occur within a robot cell. In this case, a protection zone must be set up.

 <b>WARNING</b>
--

<b>"Override" mode</b>
------------------------

If the "override" mode is used outside of a protection zone, this may result in death.
--

Only use the "Override" mode in a protection zone, which excludes access for unauthorized individuals.
--



- ① Protection zone
- ② Plant
- ③ Switch for activating "Override" mode (override switch)
- ④ Transponder
- ⑤ HMI device
- ⑥ Access monitoring

The switch for activating "Override" mode must be inside the protective zone and in an effective range.

---

**Note**

The safety system from the protection zone must be integrated into the system so that the enabled mode "Override" is automatically disabled upon leaving the protection zone.

You must reactivate the override switch when you return to the protection zone. The "Override" mode will then be reactivated.

---

*Fail-safe operation*

*10.3 Operating the transponder system in a fail-safe mode*

---

**Requirement – activating "Override" mode**

- The system has a protection zone.
- The HMI device is integrated.  
The "SAFE" LED lights up.
- The HMI device is logged on to the same effective range in which the override switch is located.  
The "RNG" LED lights up.

**Procedure**

Proceed as follows:

1. Enter the protection zone.

The assigned safety system is activated.

2. Activate the override switch.

"Override" mode is active. The "Effective range quality" screen object is displayed entirely in green.



The effective range of the transponder is not evaluated. The operation with the HMI device only occurs in the entire protection zone as if you were in an effective range.

Another HMI device cannot log on to the respective effective range.

---

**Note**

You can log on again to this effective range under the following circumstances:

- You have deactivated "Override" mode using the override switch.
  - You have logged the HMI device off from the effective range.  
The "RNG" LED is off.
- 

**Requirement – deactivating "Override" mode**

- "Override" mode is activated.

**Procedure**

Proceed as follows:


1. Activate the override switch.

"Override" mode is deactivated. The HMI device is logged on in the effective range.

## 10.4 RFID tag system run in a fail-safe manner

### 10.4.1 Switch-off behavior

The shutdown reaction of the plant will vary according to cause and effect.

 <b>DANGER</b>
<p><b>Shutdown</b></p> <p>The shutdown response described in the next sections is only triggered in the plant if the F-CPU has been programmed accordingly.</p> <p>Programming the F-CPU accordingly.</p>

The following types of shutdown may occur depending on the operating state of the plant:

- EMERGENCY STOP
- Global rampdown
- Local rampdown
- Shutdown

The following table shows the shutdown reaction depending on the operating state and the cause:

Operating state			Cause of the shutdown	
			EMERGENCY STOP button pressed	Communication error
HMI not integrated			-	-
HMI integrated	HMI device is logged onto a machine	HMI device is in the protection zone	EMERGENCY STOP	Shutdown
		HMI device is outside the protection zone	EMERGENCY STOP	Shutdown
	HMI device is logged off from the machine		EMERGENCY STOP	Global rampdown

#### See also

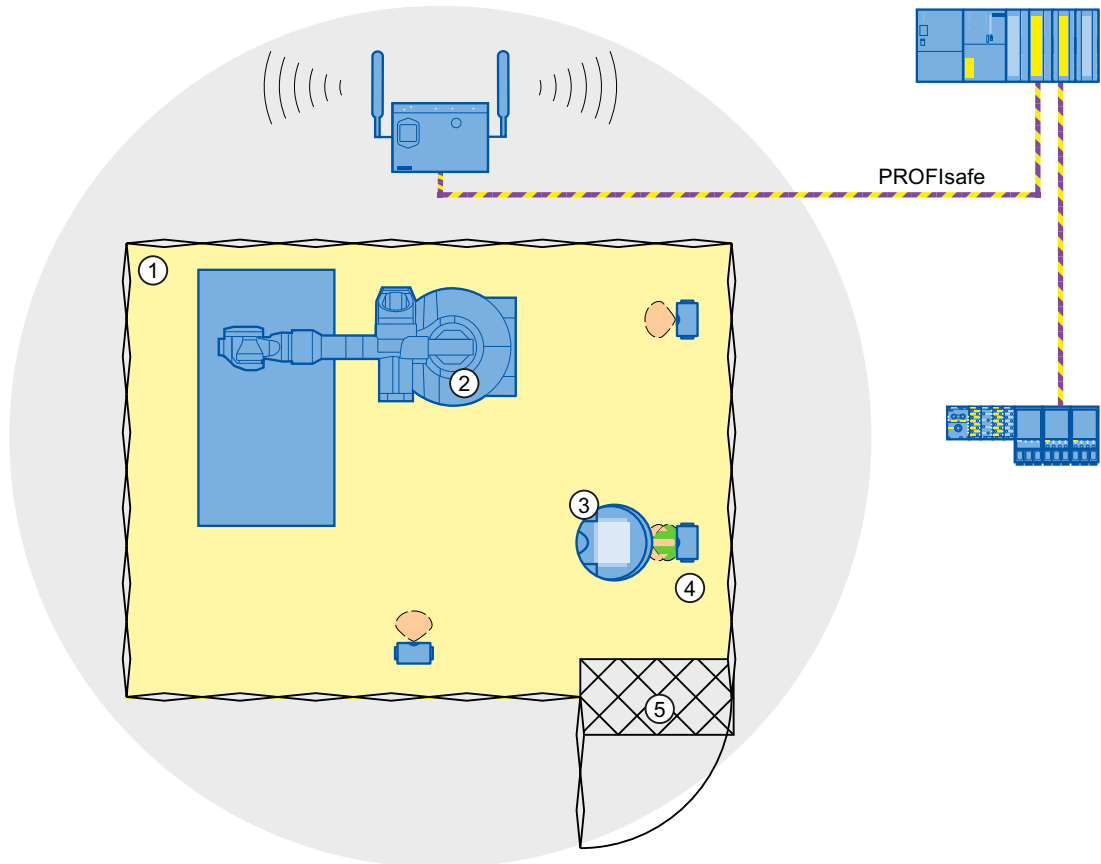
Terms for fail-safe operation (Page 38)

Fail-safe operation

10.4 RFID tag system run in a fail-safe manner

10.4.2 Logging onto a machine

The following figure shows the logon of an HMI device to a machine within a protection zone.



- ① Protection zone
- ② Machine
- ③ HMI device
- ④ RFID tag 1
- ⑤ Access monitoring

Requirement

- The HMI device is connected through WLAN
- RFID tags are accepted
- The HMI device is integrated

**Procedure - logging onto the protection zone**




Proceed as follows:

1. Switch to the screen that contains the "Effective range name (RFID)" button labeled "Scan".



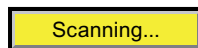
2. Bring the HMI device into the effective range of the RFID tag to which you want to log on, for example, "RFID Tag 1".

The table below shows when a logon on the effective range of the RFID tag is successful.

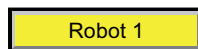
Alignment			
Logon	<b>Possible</b>	Not supported	Not supported

3. Press the button labeled "Scan".

During the scan operation, the button is yellow and displays the text "Scanning..."



The HMI device reads the ID of the effective range from the RFID tag. After the data transfer, the name of the effective range will be briefly displayed on the "Effective range name (RFID)" operator control, for example, "Robot 1".



The "Effective range logon" dialog is then displayed with the following symbol.



**Note**

As soon as the "Effective range logon" dialog is displayed, you can remove the HMI device from the effective range of the RFID tag.

4. Enter the ID of the effective range in the text box.

The ID of the effective range is located on the label of the RFID tag.



*Fail-safe operation*

*10.4 RFID tag system run in a fail-safe manner*

5. Confirm the entry with "OK".

The dialog box closes.

<b>NOTICE</b>
A message appears if the ID of the effective range is incorrect. This dialog must be acknowledged. Repeat the logon to the effective range with a valid ID.

The "Confirmation of logon" dialog is displayed with the following symbol.



6. Confirm the logon to the RFID tag with the enabling button.

The successful logon is indicated by the "RNG" LED on the HMI device.

**Result**

You are logged onto the machine and the machine can operate within the protection zone in fail-safe mode. The "Effective range name (RFID)" operator control is shown in green and labeled with the name of the effective range. The following figure shows the "Effective range name (RFID)" object after logon to an effective range with the name "Robot 1".



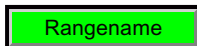
**10.4.3 Logging off the machine**

You do not need to stand directly in front of the RFID tag to log off the machine you are operating in fail-safe mode.

**Procedure**

Proceed as follows:

1. Press the "Effective range name (RFID)" operator control.



The "Effective range logoff" dialog is displayed with the following symbol.



2. Confirm the logoff from the machine with the "OK" button.

The "RNG" LED goes out when the logoff is successfully completed.

## Result

- The HMI device is logged off the machine.
- The "Effective range name (RFID)" operator control is shown in white and labeled "Scan".



## 10.4.4 Replacing an RFID tag

If it is not possible to log onto an effective range, the HMI device or RFID tag may be defective. This section describes the configuration work carried out after replacement of a defective RFID tag.

## Requirement

- The defective RFID tag has been replaced.
- The ID of the defective RFID tag is available.
- The project, in which the RFID tag has failed, is still on the HMI device.

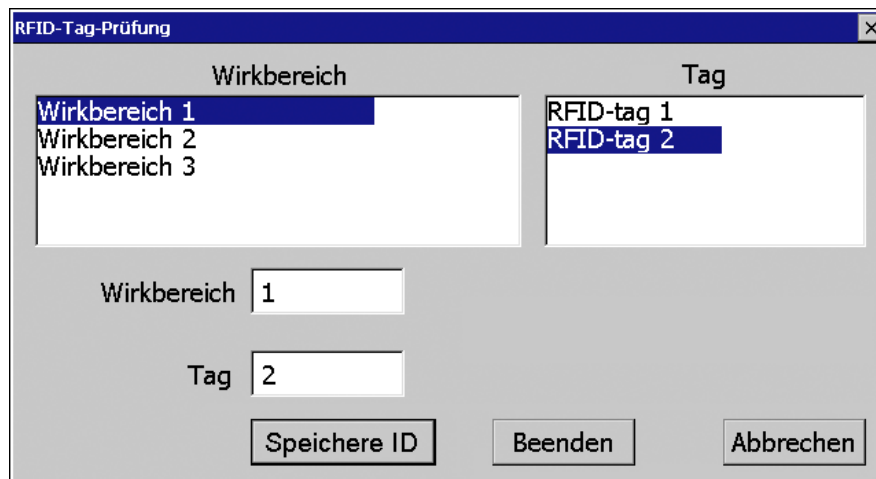
## Procedure



Proceed as follows:

1. Switch on the HMI device.
2. Open the Control Panel.
3. Press the "RFID Config" icon.

The following dialog appears:



4. Select the effective range ID in the "Effective range" selection box and the ID of the defective RFID tag in the "Tag" selection box.
5. Bring the HMI device into the effective range of the RFID tag.

6. Press "Save ID".

The HMI device transmits the ID to the RFID tag. The new RFID tag has the ID of the previously used RFID tags.

7. Click "Exit" to close the dialog.
8. Close the Control Panel and start the project.
9. Log the HMI device onto a machine to check the new RFID tag.
  - When the logon is successful, you can continue working in the project.
  - If logon is not possible close the dialog and repeat steps 2 to 8.

**See also**


Installing an RFID tag (Page 82)

Logging onto a machine (Page 264)

## 10.5 Removing the HMI device

You have the following options for removing the HMI device:

- Close the project.
- Press and hold the "ON/OFF" button for at least 4 seconds.

 <b>WARNING</b>
<p><b>EMERGENCY STOP button out of service when HMI device is removed</b></p> <p>If the HMI device is not integrated in the safety program of the F-CPU, the EMERGENCY STOP button will be out of service.</p> <p>To avoid confusion between HMI devices with enabled and disabled EMERGENCY STOP buttons, only one integrated HMI device should be freely accessible.</p> <p>If an HMI device is not integrated and not in use, store the HMI device in a location with protected access.</p>

**Requirement**

- The project must be started.
- The HMI device is integrated into the safety program of the F-CPU.
- The HMI device is not logged onto a machine.

## Procedure

Proceed as follows:

1. Close all open dialogs.
2. Close the project using the operator control designed for this purpose or press the "ON/OFF" button for more than 4 seconds.

The "Start removal" dialog is displayed with the following symbol.



3. Use the "Yes" button to confirm the removal.

The "Confirm removal" dialog opens with the following symbol.



4. Press an enabling button within 60 seconds.

### NOTICE

#### Global rampdown

A global rampdown will occur, if you do not confirm the "Confirm removal" dialog within 60 seconds with the enabling button.

Press an enabling button within 60 seconds.

The "Confirm removal" dialog closes.

- The "SAFE" LED on the HMI device goes out.
- PROFIsafe communication is terminated.
- The HMI device has been successfully removed from the safety program of the F-CPU.
- The project is closed.
- If you have pressed the ON/OFF" button during step 1, the HMI device switches off.

## See also

Terms for fail-safe operation (Page 38)

*Fail-safe operation*

*10.5 Removing the HMI device*

---

## Operating a project

### 11.1 Starting the project

In the following chapters, the operating and display elements that can be configured in WinCC flexible and their importance and meaning are explained.

---

#### Note

Some operations with the project may require in-depth knowledge about the specific plant on the part of the operator. Proceed with caution, for example, when you use jog mode. Refer to your plant documentation for additional information.

---

#### Requirement

In order to switch on the HMI device and start the project, the following requirements must be met:

- The main rechargeable battery is charged and inserted in the HMI device.  
If a main battery is not available, place the HMI device into the charging station.
- The project has been transferred to the HMI device.
- The radio signal from the WLAN is sufficiently strong.
- If effective ranges are configured in the project, you will need to perform an acceptance test when the project is started for the first time. See section "Commissioning the plant (Page 241)".
- SSIDs for up to 3 WLAN networks can be stored in the project.

The SSIDs stored in the project must be set in the HMI device. If one of the 3 WLAN networks is available when the HMI device is started, the HMI device connects automatically.

#### Procedure

---

#### Note

If you want to use the HMI device in fail-safe mode, the conditions for fail-safe mode must be fulfilled. See section "Fail-safe operation (Page 253)".

---

Proceed as follows:

1. Press the "ON/OFF" button.

The HMI device performs the following tasks:

- The HMI device starts.
- The "PWR" LED lights up.
- The "BAT" LED shows the remaining charge of the main rechargeable battery.
- The WLAN connection is established.
- The WLAN connection is established as follows:

The "COM" LED will flash as long as the WLAN connection is established. The configured sequence of SSIDs determines the order in which the HMI device will attempt to connect to the WLAN networks.

If the HMI device cannot establish a connection with any of the 3 configured WLAN networks, the HMI device will attempt to connect to other WLAN networks.

For this to happen, connection to other WLAN networks must be authorized in the project.

Once the HMI device has established the WLAN connection, the "COM" LED lights up.

The HMI device is integrated.

If the HMI device is unable to establish a connection to a WLAN network, "Not Connected" is displayed in the status line of the dialog box.

The project cannot be started. Contact the network administrator.

2. Applies to the initial project start:

Perform the acceptance test of the plant.

3. Start the project.

The following is performed at the start:

- The HMI device is integrated.
- The emergency stop button becomes active.
- The HMI device displays the start screen of the project.

## Result

You can operate the plant on the HMI device in fail-safe operation.

## 11.2 Operator input options

### Introduction

Some operations with the project may require in-depth knowledge about the specific plant on the part of the operator. Proceed with caution, for example, when you use jog mode. More detailed information is available in your plant documentation.

#### CAUTION

##### Unintentional action

If you press several operator controls at once, you may trigger an unintentional action.

Do not carry out several operations simultaneously.

- When using the touch screen:  
Always touch only one operating element on the screen
- When using an external keyboard:  
Do not press more than two keys simultaneously

### Operator input options

Once the project is transferred to the HMI device, you can operate and monitor active processes during the process control phase. You have the following operating options:

- Touch screen

The operating elements shown in the project images are touch-sensitive. Touch objects are operated in the same way as mechanical keys. You trigger an operator control by pressing it with your finger. To double-click them, touch an operating element twice in succession.

#### Note

Observe the notes about the operation in chapter "Overview (Page 101)".

- External input device

The use of external input devices is recommended for the commissioning phase. The following external input devices can be connected through the USB port:

- Keyboard

You can use an external keyboard to operate a project in exactly the same way as with the screen keyboard.

#### Note

The function keys of the external keyboard are disabled.

- Mouse

You can use an external mouse to operate a project in exactly the same way as with the touch screen of the HMI device.



### Feedback from an operator control

The HMI device provides optical feedback as soon as it detects that an operating elements has been selected. The operating element receives the focus and is selected. This selection is independent of any communication with the PLC. Therefore this selection does not indicate whether the relevant action is actually executed or not.

The selection of an operator control can deviate from the standard. More detailed information is available in your plant documentation.

The type of optical operation feedback depends on the operator control:

- Buttons

The HMI device outputs different views of the "Pressed" and "Unpressed" states, provided the configuration engineer has configured a 3D effect:

- "Pressed" state



- "Not pressed" state



The configuration engineer determines the appearance of a marked field, for example, line width and color for the focus.

- Invisible button

By default, invisible buttons are not displayed as pressed when they are touched. No optical operation feedback is provided in this case.

The configuration engineer may, however, configure invisible buttons so that their outline appears as lines when touched. This outline remains visible until you select another operating element.

- I/O field

When you select an I/O field, the content of the I/O field is displayed against a colored background. With touch operation, a screen keyboard is displayed for the entering of values.

## 11.3 Direct keys

A direct key on the HMI device is a direct way to set a bit in the I/O area of the controller. A direct key enables an operation with a fast response time. Fast response time is essential, for example, for jogging mode.

### NOTICE

#### Leaving the WLAN

Note that leaving the WLAN area will cause the PROFINET IO device to fail and therefore result in a PLC stop.

Determine suitable programming measures in the PLC, in order to prevent a PLC stop. Refer to your plant documentation for additional information.

#### Direct key immediately effective

If you trigger an operator control with direct key functionality in an active project, the corresponding function is always executed, regardless of the screen display at the time. Exception: Function keys are inactive, while a safety-related message is displayed.

Avoid pressing a direct key unintentionally.

### Note

A direct key is enabled when both of the following conditions are satisfied:

- The HMI device is in the WLAN with sufficient radio signal.
- The HMI device is in "Offline" mode.

The following objects can be configured as a direct key:

- Buttons
- Function keys
- Screen number
- Handwheel
- Illuminated pushbutton
- Key-operated switch

### Note

Direct keys result in additional power load on the HMI device.

Additional information is available in the "WinCC flexible, Communication" system manual.

## 11.4 Setting the project language

The HMI device supports multilingual projects. You must have configured a corresponding operator control which lets you change the language setting on the HMI device during runtime.

The project always starts with the language set in the previous session.

### Requirement

- The required language for the project must be available on the HMI device
- The language switching function must be logically linked to a configured operator control such as a button

### Selecting a language

You can change project languages at any time. Language-specific objects are immediately output to the screen in the new language when you switch languages.

The following options are available for switching the language:

- A configured operator control switches from one language to the next in a list
- A configured operator control directly sets the desired language

More detailed information is available in your plant documentation.

## 11.5 Operating the screen keyboard in the project

If you do not use an external keyboard, use the screen keyboard to enter numeric and alphanumeric characters. As soon as you touch a text box, a numeric or alphanumeric screen keyboard is displayed, depending on the type of the text box.

### Display methods for the screen keyboard

You can change the type of display for the screen keyboard and move its position on the screen.

- Numerical screen keyboard



- Alphanumerical screen keyboard



The alphanumerical screen keyboard has the following levels.

- Normal level
- Shift level  
The shift level includes uppercase letters.
- Special character level

---

#### Note

The ' character (button between ";" and "\") appears only when followed by a space. If the ' character is followed by a letter, then the result will be an accent, such as "á".

---

- Reduced screen keyboard




---

#### Note



When the screen keyboard is open, PLC job 51, "Select screen" has no function.

The screen keyboard display is independent of the configured project language. Language switching in the project has no influence on the alphanumerical screen keyboard. This means you cannot enter Cyrillic or Asian characters.

---


### Procedure for moving the screen keyboard

Proceed as follows:



1. Touch the  symbol and move the screen keyboard on the touch screen.
2. When the desired position is reached, release the icon .

### Procedure for adjusting the size of the screen keyboard









#### Note

The  icon only appears on the screen keyboard if in the "Siemens HMI InputPanel" dialog you have selected the "Show Resize button" check box.





Proceed as follows:

1. Touch the  symbol and drag the screen keyboard to the appropriate size.
2. When the size you want is reached, release contact with the  icon.

### Changing the display of the screen keyboard

Key	Function
 Num	Switching between the numerical and alphanumeric keyboard
 ↑	Switching between the normal level and Shift level of the alphanumeric screen keyboard
 Alt Gr	Switchover to special characters
 	Switching from full display to reduced display
 	Switching from reduced display to full display
 X	Closing of reduced display of the screen keyboard

## Entering data

Key	Function
	Delete character left of cursor
	Delete character right of cursor
	Confirm entry and close the screen keyboard
	Cancel input

### Note


#### Data input - numerical text box

- Hexadecimal values  
When you enter a value in hexadecimal format, the alphanumerical screen keyboard opens.
- Decimal places  
The configuration engineer can define the number of decimal places for a numerical text box. The number of decimal places is checked when you enter a value in this type of I/O field.
  - Decimal places in excess of the limit are ignored.
  - Empty decimal places are filled with "0".
- Limits  
A tag can be configured with limits. If you enter a value outside these limits, it will be rejected.  
If an alarm view is configured, a system event is triggered and the original value is displayed again.

#### Data input – date and time

When entering the date and time, note that their format is determined by the configured project language.

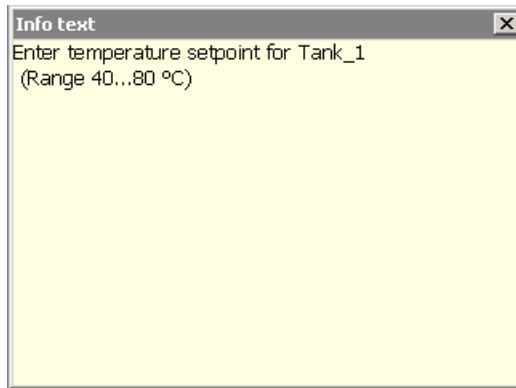
## Opening the Windows CE taskbar


You open the Windows CE taskbar with the  key.

## Displaying infotext

The configuration engineer uses infotext to provide additional information and operating instructions. There may be infotext for HMI screens and operator controls in the project.

The infotext for an I/O field may contain, for example, information on the value to be entered.



The screen keyboard appears on the HMI device touch screen when you touch an operator control that requires input. If an infotext was configured for the current operator control, call up the infotext with the  button. If no infotext is available for the current operator control, the infotext for the current HMI screen will be displayed.

---

### Note

If an infotext was configured for the current control object as well as the current HMI screen, you can switch between both infotexts by touching the infotext window.

---

Close the infotext window with the  button.

Depending on the project, infotext can also be called by an operator control configured for this purpose. For additional information, refer to the online help of WinCC flexible.




## 11.6 Device-specific displays

### 11.6.1 Showing the battery charge

The "Battery" object indicates the remaining charge of the main rechargeable battery.

Charge the main rechargeable battery in time or replace it. Read the information provided in section "Replacing and charging the main rechargeable battery (Page 89)".

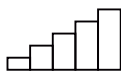
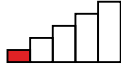
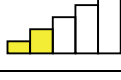



The amount of charge for the main rechargeable battery is shown by the "Battery" object as follows:

Icon	Color	Meaning	Charge level
	Green	The main rechargeable battery is sufficiently charged.	> 20 %
	Yellow	The charge is low. The main rechargeable battery must be charged or replaced.	6% to 20 %
	Red	The charge is very low. The main rechargeable battery must be charged or replaced.	< 6 %

## 11.6.2 Displaying WLAN quality

The "WLAN quality" object indicates the signal strength of the wireless network at the location of the HMI device. The HMI device measures the signal strength and depicts it with the "WLAN quality" object.

The signal strength of wireless network is indicated by the "WLAN quality" object as follows:

Icon	Meaning	Signal strength
	No wireless connection	No signal
	Very poor wireless connection	≤ 20%
	Poor wireless connection	≤ 40% > 20%
	Wireless connection OK	≤ 60% > 40%
	Good wireless connection	≤ 80% > 60%
	Very good wireless connection	> 80%







### 11.6.3 Display "effective range name" object

The "effective range label" object exists exclusively for the Mobile Panel 277F IWLAN V2 HMI device. The "effective range name" object indicates the following:

- Name of the effective range in which the HMI device is located.
- Logon status

The effective range is displayed by the "effective range label" object as follows:



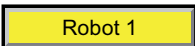

Symbol	Meaning	Logon
	The HMI device is within the effective range shown. The HMI device is not logged onto the effective range. The enabling button is <b>not</b> enabled.	It is possible to log onto the effective range.
	The HMI device is within the effective range shown and is logged onto the effective range. Using the enabling buttons, safe operation in the effective range is possible.	The HMI device is logged on in the effective range.
	The HMI device is within the effective range shown. The enabling button is <b>not</b> enabled	Logon to the effective range is rejected because a different HMI device is already logged on. The following applies when using the "Override" mode: You cannot log onto an effective range as long as override switch is activated – even when no other HMI device is logged on in the effective range.
	The HMI device is outside all of the effective ranges. The enabling button is <b>not</b> enabled.	It is not possible to log onto the effective range. You can only log on within the effective range.

#### 11.6.4 Displaying the "Effective range name (RFID)" object

The "Effective range name (RFID)" object is only available for an HMI device of the RFID tag system. The "Effective range name (RFID)" object displays the following information:

- Logon status
- "Scan", "Scanning..." or name of the effective range associated with the machine on which the HMI device is logged on

The "Effective range name (RFID)" object can show the following operating states:

Icon	Operating state	Logon
	The HMI device is not logged onto a machine. The enabling button is <b>not</b> enabled.	It is not possible to log onto a machine. To log onto a machine, the user must press the operator control and search for effective ranges.
	The user has pressed the operator control to search for effective ranges. The HMI device searches for an effective range. The enabling button is <b>not</b> enabled.	Logon can only take place when the HMI device has detected an effective range.
	The HMI device has detected the effective range, "Robot 1".	The logon to the machine associated with the "Robot 1" effective range is possible.
	The user is logged onto the machine associated with the "Robot 1" effective range. The enabling button is enabled.	–





#### 11.6.5 Display "effective range quality" object

The "effective range quality" object shows if the HMI device is in the center of the effective range or at the edge of the effective range. In contrast to the "WLAN quality" object, the signal strength is not decisive. The HMI device calculates the effective range quality on the basis of the distance between it and the assigned transponders.

The "Effective range quality" is then also updated if the HMI device is not logged onto the effective range.

The "Effective range name" object indicates which effective range this concerns.

The effective range quality is displayed by the "effective range quality" object as follows:



Icon	Meaning	Quality
	The HMI device is located in the center of the effective range.	>15 %
	The HMI device is at the border of an effective range.	1% to 15%
	The HMI device is not within the effective range.	0 %
	"Override" mode is active. The distance of the HMI device to the transponders is not evaluated. See section "Determine the current effective range and current zone (Page 256)".	–

Additional information is available in the "Planning the installation location of transponders (Page 67)" section.

### 11.6.6 Display "zone name" object

The "Zone name" object shows the names of the zone in which the HMI device is currently located.




The zone is displayed by the "zone label" object as follows:

Icon	Meaning
	The HMI device is within the indicated zone.
	The HMI device is not inside any zone.

### 11.6.7 Display "zone quality" object

The "zone quality" object shows if the HMI device is in the center of the zone or at the edge of the zone. Unlike with "WLAN quality", the HMI device does not measure signal strength. The HMI device calculates the quality of the wireless signal from the distance between it and the assigned transponders.

The "Zone name" object indicates which zone this concerns.

Icon	Meaning	Quality
	The HMI device is within a zone.	> 15 %
	The HMI device is at the limits of a zone.	1% to 15%
	The HMI device is not within any zone.	0 %

## 11.7 Project security

### 11.7.1 Overview

#### Design of the security system

The configuration engineer can protect the operation of a project by implementing a security system. The security system is based on authorizations, user groups and users.

If operator controls protected by a password are pressed, the HMI device first requests that you log on. A logon screen is displayed in which you enter your user name and password. After logging on, you can press the operator controls for which you have the necessary authorizations.

The logon dialog can be set up by the configuration engineer via an individual operator control. Similarly, an operator control can be configured for logoff. After logging off, objects with password protection can no longer be operated – you need to log on again.

Refer to your plant documentation for additional information.

#### Central user administration using SIMATIC Logon

Users, user groups and authorizations can be stored on a central server.

If user administration cannot contact the server, an error message is displayed. If this is the case, you can only log on locally. More detailed information is available in your plant documentation.

The operation of SIMATIC Logon differs as follows:

- The simple user display is not supported
- Users cannot be deleted
- You cannot change your logout time
- When changing the password, you must enter it twice for security reasons
- The domain name is also indicated in the "User" field

#### User groups and authorizations

Project-specific user groups are created by the configuration engineer. The "Administrators" and "PLC User" groups are included in all projects by default. User groups are assigned authorizations. Authorization required for an operation is specifically defined for each individual object and function in the project.

#### Users and passwords

Each user is assigned to exactly one user group.

The following persons are allowed to create users and assign them passwords:

- The configuration engineer during configuration
- The administrator on the HMI device
- A user with user management authorization on the HMI device

Irrespective of the user group, each user is allowed to change his own password.

### Logoff times

A logoff time is specified in the system for each user. If the time between any two user actions, such as entering a value or changing screens, exceeds this logoff time, the user is automatically logged off. The user must then log on again to continue to operate objects assigned password protection.

### Backup and restore

---

**Note**

Backup and restore is not available to central user administration with SIMATIC Logon.

---

The user data is encrypted and saved on the HMI device to protect it from loss due to power failure.

The users, passwords, group assignments and logoff times set up on the HMI device can be backed up and restored. This prevents you having to enter all of the data again on another HMI device.

**NOTICE**

The currently valid user data is overwritten in the following cases:

- Depending on the transfer settings, when the project is transferred again
- Upon restore of a backed-up project
- Upon import of the user administration via an operator control.

More detailed information is available in your plant documentation.

The retransferred or restored user data and passwords are valid with immediate effect.

### Number of characters for user, password and user view

	Number of characters
Length of user name, maximum	40
Length of password, minimum	3
Length of password, maximum	24
Entries in user view, maximum	50

## 11.7.2 User View

The user view is used to show user accounts configured on the HMI device.

- If you are an administrator or a user with administrator rights, you can see all user accounts configured on the HMI device in the user view.
- If you are a user without user management rights, you can only see your personal user account.

The authorizations of a user after logging on depends on the user group to which the user belongs.

More detailed information is available in your plant documentation.

A simple or extended user view can be configured in the project. The two user views offer the same functions. The presentation of information differs.

### Simple user view

If you are not logged onto the HMI device, the only entry contained in the simple user view is "<ENTER>".

If you are logged onto the HMI device, the simple user view only displays the user name and user group.

Admin	Group (9)
PLC User	Group (1)
User 1	Group (1)
<New user>	

### Extended user view

The extended user view displays information about the users.

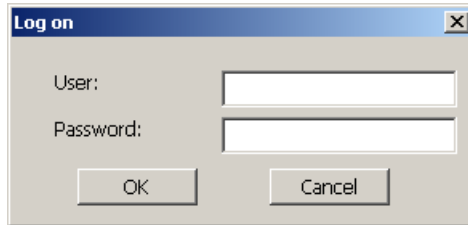
User	Password	Group	Logoff time
Admin	*****	Group (9)	5
PLC User	*****	Group (1)	5
User 1	*****	Group (1)	5

The extended user view contains the following columns:

- Users
- Password
- Group
- Logoff time

### 11.7.3 User logon

Use the logon dialog of the HMI device to log onto the security system. Enter your user name and password in the logon dialog.



The logon dialog opens in the following cases:

- You press an operator control with password protection
- You press an operator control that was configured for displaying the logon dialog
- Select the "<ENTER>" entry in the simple user view
- Select a blank entry in the extended user view
- The logon dialog will be automatically displayed when the project is started, depending on the configuration

More detailed information is available in your plant documentation.

#### Requirement

- The logon dialog is open.

#### Procedure

Proceed as follows:

1. Enter the user name and password.

Touch the corresponding text box. The alphanumerical screen keyboard is displayed.

---

#### Note

The user name is not case-sensitive.

The password is case-sensitive.

---

2. Select "OK" to confirm logon.

#### Result

After successful logon to the security system, you can execute password-protected functions on the HMI device for which you have authorizations.

If you enter a wrong password, an error message is displayed when an alarm window has been configured.

## 11.7.4 User logoff

### Requirement

- You have logged into the security system of the HMI device.

### Procedure

You have the following options for logging off:

- Press an operator control that is configured for logging off the security system.
- If you do not operate a project and exceed the logoff time, your user account will be locked.

Your user account will be automatically logged off if you enter an incorrect password.

### Result

You are no longer logged onto the project. In order to use an operator control in the security system, you need to log on again.

## 11.7.5 Creating users

You create a user with both the simple and enhanced user display.

### Requirement

- A configured screen with user display is shown.
- You have user management authorization or you are the administrator.

---

#### Note

The following characters are prohibited in passwords:

- Blank
  - Special characters \* ? . % / \ ' "
-



### Procedure – Creating a user in the simple user view

Proceed as follows:

1. Touch the "<New User>" entry in the user view.

The following dialog appears:

2. Enter the desired user name and password.

Touch the corresponding text box. The alphanumerical screen keyboard is displayed.

3. Touch the "OK" button.

The following dialog appears:

4. Assign the user to a group.

In order to do so, open the "Group" drop down list box by means of the button. Select and to scroll in the drop down list box.

5. Touch the required entry in the drop down list box.

The selected entry is then accepted as input.

6. Touch the text box "Logoff time".

The screen keyboard is displayed.

7. Enter a value between 0 and 60 for the logoff time in minutes.

The value 0 stands for "no automatic logoff."

8. Touch the "OK" button to confirm your entries.

### Procedure – Creating a user in the extended user view

Proceed as follows:

1. Double-click the desired field in the blank line of the user view.

The screen keyboard is displayed.

2. Enter the respective user data in the field:

- Assign the user to one of the groups from the drop down list box.
- Enter a value between 0 and 60 for the logoff time in minutes.

The value 0 stands for "no automatic logoff."

## Result

The new user is created.

## 11.7.6 Changing user data

You have opened a screen with a user view. The data you are allowed to change depends on your authorization:

### Requirement

- You are an administrator or a user with user management authorization.  
In these cases you are allowed to change the data for all the users on the HMI device in the user view:
  - User name
  - Group assignment
  - Password
  - Logoff time
- You are a user without user management authorization.  
In this case you are only allowed to change your personal user data:
  - Password
  - Logoff time, if configured

---

#### Note

You can only change the logoff time and password for the "Admin" user.

You can only change the logoff time for the "PLC\_User". This user is used for logging on via the PLC

---

### Procedure

The procedure applies to simple and extended user view alike.

Proceed as follows:

1. In the user view, touch the user whose user data you want to change
2. When entering the data, use exactly the same procedure as for creating a user

## Result

The user data for the user is changed.

### 11.7.7 Deleting users

#### Requirement

- You have opened a screen with a user view.
- You are an administrator or you have permission for user management.

#### Procedure

---

##### Note

The "Admin" and "PLC\_User" users exist by default. You cannot delete these users.

---

1. Delete the entered user name.

#### Result

The affected user can no longer use the operator controls with permission.

## 11.8 Function keys

Function key assignment is defined during configuration. The configuration engineer can assign function keys globally and locally. The local assignment function takes priority over the global setting.

### Function keys with global function assignment

A globally assigned function key always triggers the same action on the HMI device or in the PLC irrespective of the screen displayed. Such an action is, for example, the enabling of an image. Exception: Function keys are inactive, while a safety-related message is displayed.

### Function keys with local function assignment

A function key with local function assignment is screen-specific and is therefore only effective within the active screen. The function assigned locally to a function key can vary from screen to screen.

The function key of a screen can be assigned one function only, either a global or local one.

The configuration engineer can assign function keys in such a way so that you can operate an operating element with a function key. This includes, for example, the alarm view, trend view, recipe view or status/PLC.

## Multi-key operation

Unwanted actions may be triggered, if the operator unintentionally actuates a key combination.

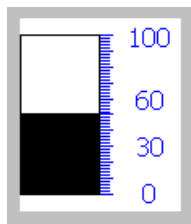
<p><b>! CAUTION</b></p> <p><b>Unintentional actions</b></p> <p>In "Online" mode, simultaneous operation of more than two keys may cause unintentional actions in the plant.</p> <p>Do not press more than two keys simultaneously</p>
---

## 11.9 Bar

The bar is a dynamic display object. The bar displays a value from the PLC as a rectangular area. A bar eases the recognition of:

- Distance of the current value from the configured limit value
- A set point value has been reached

The bar can display values such as fill levels or batch counts.

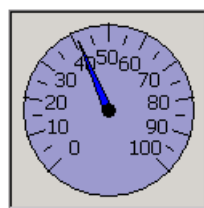


The layout of the bar depends on the configuration:

- The bar may feature a scale of values
- A configured limit can be marked through a line.
- A color envelope can signalize a limit being exceeded or not reached.

## 11.10 Gauge

The gauge is a dynamic display object. The gauge displays numerical values in analog form by means of a pointer. This enables an operator at the HMI device to see at a glance if the boiler pressure is in the normal range, for example.

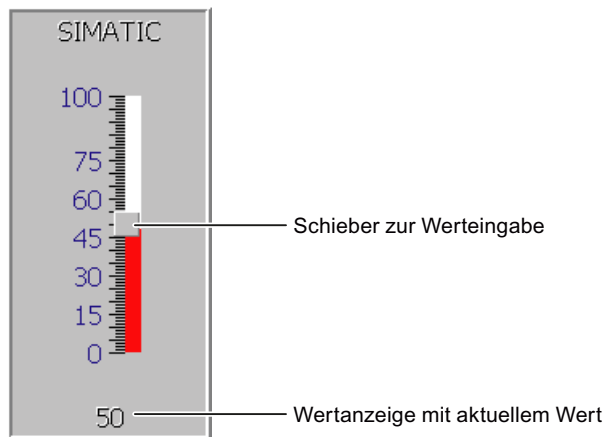


The layout of the gauge depends on the configuration:

- A trailing pointer can display the maximum value reached so far on the scale. The trailing pointer is reset when the screen is reloaded
- The label on the scale can show the measured variable, for example boiler pressure and the physical unit, for example bar

## 11.11 Operating the slider control

The slider control can be used to monitor and change process values within a defined range. The slider control can also be configured without a slider. In this case, you cannot enter a value. The slider control is then only used for displaying values.



The layout of the slider control depends on the configuration:

- The slider control can contain a label and a setting range
- The current value can be displayed in the value display below the area of the slider control

### Procedure

Proceed as follows:

1. Touch the slider.
2. Move the slider to the required value.

If the value display was configured, you can verify the entered value.

3. Release the slider.

The set value is applied.

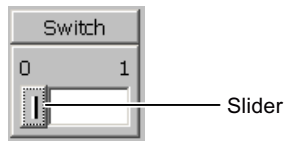
## 11.12 Operating the switch

The switch is an operating element and display object with two predefined switching states, for example "On" and "Off". Switches can signalize the state of a plant section, for example if a motor is running or not. At the same time, you can use the switch to change the state of the corresponding plant section via the HMI device, for example from "On" to "Off".

The layout of the switch depends on the configuration:



- Switch with slider

The two states are displayed by the position of the slider



- Switch with text or graphic

The switch states can be labeled with text or graphics.

Switch state 0	Switch state 1
Backward	Up
	

### Procedure - Switch with Slider

1. Move the slider to the other position or double-click the slider area

The switch changes its appearance. The associated value is switched.

### Procedure - Slider with Text or Graphic

1. Touch the switch

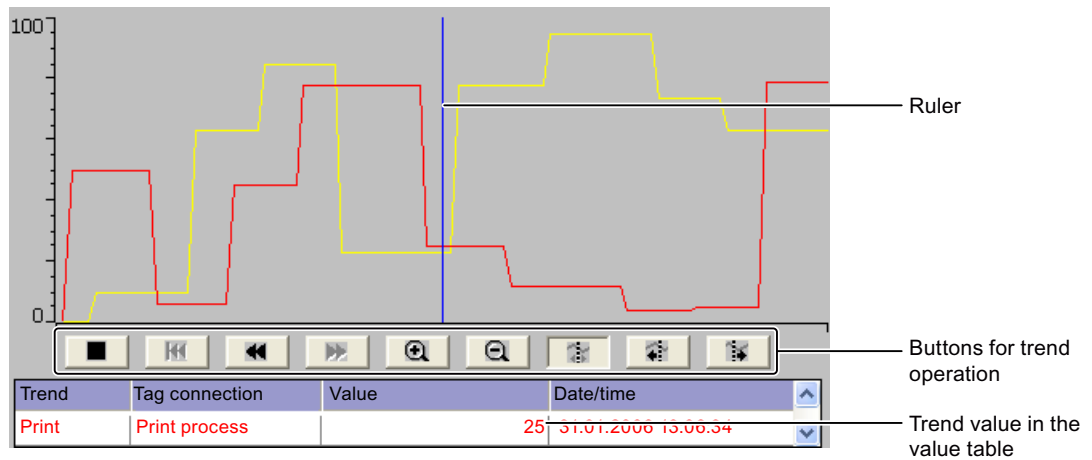
The switch changes its appearance. The associated value is switched.

## 11.13 Operating the Trend View

Trends continuously display the current process data or process data from a log. The layout and operation of the trend view depends on the configuration. The following can be configured:

- Appearance of the trend view, the axes, value ranges and labels
- Operating options of the trend view
- Limits for the trend view
- Display of a limit violation through a color change

A trend view can display several trends.



You can read the respective trend values from the value table.


















- If the ruler is displayed  
The trend value of the position of the ruler displayed in the value table.
- If the ruler is hidden  
The newest trend values are displayed in the value table.

## Operating buttons

The following elements of the trend view can be operated:

- Time interval - enlarge or reduce
- Display area - scroll forward or back
- Trend display - stop or continue
- Ruler - move
- Ruler - display or hide.

The following table shows the trend view buttons:

Button	Key combination	Function
	-	Stops or continues trend recording.
	CTRL +  + 	Enlarges the displayed time section.
	CTRL +  + 	Reduces the displayed time section.
	SHIFT + 	Scrolls one display area backward (to the left).
	SHIFT + 	Scrolls one display area forward (to the right).
	CTRL + ENTER	Scrolls back to the beginning of the trend recording. The start values of the trend recording are displayed there.
	CTRL + ALT + 	Moves the ruler backward (to the left).
	CTRL + ALT + 	Moves the ruler forward (to the right).
	-	Shows or hides the ruler.

Moreover, function keys or operating elements can be configured for the operation of the trend display. Refer to your plant documentation for additional information.

### Procedure - touch operation



Proceed as follows:

1. Touch the required button in the trend view.
2. Touch and drag the ruler.

The size of the ruler changes.

### Procedure - touch operation

Proceed as follows:

1. Open the desired button using the  key.
2. Press the  key.



## 11.14 Operating the status force

You read or write access values of the connected PLC directly with Status Force. Status force allows you to monitor or change addresses of the PLC program, etc. You don't need to connect an additional programming device or additional PC to the PLC.

### Note

Status force can only be used in combination with SIMATIC S7.

With status/control, you can:

- Change the column sequence
- Read the status values of the connected controller
- Enter values and transfer them to the controller

The layout of Status Force depends on the configuration. The figure shows the general layout of Status Force. A value can be monitored or controlled on every line.

Connection	Type	Offset	Format	Control Value
PLC_1	M	120	DEC	33
PLC_1	T	40	T	24,00
PLC_1	O	50	DEC	0
PLC_1	O	50	HEX	0A0D



The configuration engineer specifies which columns appear in Status Force. The table shows the significance of all configurable columns.

Column	Functions
"Connection"	The PLC whose address ranges must be displayed.
"Type", "DB Number", "Offset", "Bit"	The address range of the value
"Data type", "Format"	The data type of the value
"Status value"	The value read from the specified address.
"Control value"	The value to be written to the specified address.

Refer to your plant documentation for additional information.

## Operating buttons

Depending on your configuration, you can operate the trend view using the following buttons:

Buttons	Functions
	"Read" button Updates the display in the "Status value" column. This button engages when it is pressed. You cannot operate any text boxes until the button is actuated again and the refresh is stopped.
	"Write" button Applies the new value in the "Control value" column. The control value is written to the PLC.

## Procedure - changing the column sequence


Proceed as follows:

1. Touch the column header which you wish to exchange with a different column header
2. Keeping the touch screen pressed, move the column heading to the column heading you wish to exchange it with

The columns are displayed in the modified sequence.

## Procedure for reading the status value

Proceed as follows:

1. Enter the address and the desired format of a value for each line. Touch the respective columns to display the screen keyboard.
2. Press .

All values are read cyclically by the PLC and entered in the "Status value" column.

3. Touch  button.

The cyclical reading from the PLC is completed.

## Requirement - controlling values


- The "Control value" column must be available
- The "Write" button must be available

## Procedure

Proceed as follows:

1. Enter the address of a value for each line.
2. Touch the corresponding column.

The screen keyboard is displayed.

3. Enter the desired value in the "Control value" column.
4. Press .

The values from the "Control value" column are transferred once to the PLC.

## 11.15 Operating the Sm@rtClient view

The Sm@rtClient view enables you to monitor and remotely operate the current project of a remote HMI device. With the correct configuration, several equal priority HMI devices can access a remote HMI device.

---

### Note

If another HMI device accesses your HMI device via the Sm@rtClient view, this leads to an additional load on your HMI device.

---

The Sm@rtClient view can be operated as follows:

- Starting remote control
- Forcing permission
- Ending remote operation

In the Sm@rtClient view, the remote HMI is displayed with the complete layout. Depending on the configuration, you can monitor and also operate this screen. You can also operate the function keys like buttons on an HMI device with a touch screen.

On a Sm@rtClient view which is configured for monitoring mode, you can monitor the affected HMI device. You cannot access to control.

---

### Note

It is not possible to operate the direct keys of the remote HMI device from the local HMI device.

---

The available operator controls depend on the HMI devices used:

- Same type of HMI devices

You can operate the project of the remote HMI device with the operator controls of your HMI device

- Button operation from a local touchscreen

All the keys of the remote HMI device are displayed as buttons on the touch screen. You can touch them to operate them.

- Touch operation from a local HMI device using keys

You operate the buttons in the usual manner.

## Procedure - starting remote control

Proceed as follows:

1. On the HMI device change to the screen with the Sm@rtClient view.

The following options are available for establishing the connection to the remote HMI device:

- The connection is established automatically.
- The connection must be established by touching the appropriate button.

Depending on the configuration, you may be required to enter the address of the remote HMI device and a password.

### NOTICE

#### Unencrypted password transmission with http

If a password is stored in the configuration, this password can be transmitted without encrypting.

In order to transmit the password in an encrypted manner, operate Sm@rtService and Sm@rtAccess through a secured protocol, for example, vpn or https.

2. The current screen of the project running on the remote device is displayed on the screen of your HMI device.
3. You can now monitor and control this screens according to your configuration.  
Scroll bars are displayed if the screen of the remote HMI device is larger than that of the current HMI device.

## Forcing permission

If several HMI devices have access to a HMI device, only one HMI device has operating permission at any one time.

Two cases must be distinguished for this calculation:

- If another HMI device is already controlling the remote HMI device, if configured accordingly, you can force operating permission for the remote HMI device
  - You are trying to operate the remote HMI device  
A dialog box opens.
    - Enter the required password for forcing remote operation.  
You are now authorized to operate the remote HMI device
- If another HMI device is accessing your HMI device via the Sm@rtClient view, you can force local operating permission for your HMI device
  - Touch the screen of your HMI device five times consecutively  
You are given permission to operate your local HMI device

### **Procedure - ending remote control**

The steps depend on the project. Refer to your plant documentation for additional information.

In general - proceed as follows:

1. Touch a button configured for this action
2. Exit the screen containing the Sm@rtClient view
3. Touch an operating element operating position for a longer period of time.

This opens a menu.

4. Select the "Close" menu command.

## 11.16 Error cases in the project operation

During fail-safe operation, you must be aware that the following error cases may arise:

- Leaving the HMI device logged onto the effective range

<b>CAUTION</b>
<p><b>Shutdown possible</b></p> <p>If the HMI device is in a state where it is constantly ready for operation, the main rechargeable battery will lose its charge. A discharged main rechargeable battery causes communication failure. The F CPU initiates a shutdown.</p> <p>Never leave the effective range without the HMI device, as long as the HMI device is logged on in the effective range. If you do not need the HMI device:</p> <ul style="list-style-type: none"> <li>• Log the HMI device off from the effective range.</li> <li>• Turn on the HMI device or place it in the charging station.</li> </ul>



- Internal error

If an internal error occurs on the HMI device, the "SAFE" and "RNG" LEDs go out, and the project is terminated immediately. The HMI device shows a red error display.

Safety functions are no longer available.

Contact the SIEMENS hotline.

- Communication error

If a communication error occurs on the HMI device, the "SAFE" LED goes out. Safety functions are no longer available.

- If the HMI device is logged on at the effective range:

The F CPU initiates a shutdown. The F CPU stops the section of the system that belongs to the effective range.

- If the HMI device is not logged on at the effective range.

The F CPU initiates a global rampdown.

- If communication is reestablished within 60 seconds.

The emergency stop button becomes active again. The "SAFE" LED lights up again.

Acknowledge the communication error.

If it was logged onto the effective range, the HMI device is logged off. The "RNG" LED goes out.

- If communication remains interrupted for more than 60 seconds.

The HMI device terminates the project. The "RNG" LED goes out.

## 11.17 Operate alarm view and alarm window

### 11.17.1 Overview

#### Alarms

Alarms indicate events and states on the HMI device which have occurred in the system, in the process or on the HMI device itself. A status is reported when it is received.

An alarm could trigger one of the following alarm events:

- Incoming
- Outgoing
- Acknowledge

The configuration engineer defines which alarms must be acknowledged by the user.

An alarm may contain the following information:

- Date
- Time
- Alarm text
- Location of fault
- State
- Alarm class
- Alarm number
- Alarm group
- Diagnostics capability

#### Alarm classes

Alarms are assigned to various alarm classes:

- Error

Alarms in this class must always be acknowledged. Error alarms normally indicate critical errors within the plant such as "Motor temperature too high"

- Operation

Warning alarms usually indicate states of a plant such as "Motor switched on"

- System

System alarms indicate states or events which occur on the HMI device

- SIMATIC diagnostic alarms

SIMATIC diagnostic alarms show states and events of the SIMATIC S7 or SIMOTION PLCs

- User-specific alarm classes

The properties of this alarm class must be defined in the configuration

More detailed information is available in your plant documentation.

## **Alarm groups**

The configuration engineer can group alarms into alarm groups. When you acknowledge an individual alarm of an alarm group, you acknowledge all alarms which belong to the same alarm group.

## **Alarm buffer**

The alarm events are stored in an internal buffer. The size of this alarm buffer depends on the HMI device type.

## **Alarm report**

The configuration engineer can activate alarm reporting on the project. In this case, alarm events are output directly on the connected printer.

The configuration engineer can define whether each individual alarm is logged. An alarm of this type is printed when the alarm events "Incoming" and "Outgoing" occur.

If you want to print alarms of the "System" alarm class, you have to print the contents of the associated alarm buffer. For this case the configuration engineer has to configure an operating element for printing the alarm buffer.

## **Alarm log**

Alarm events are stored in an alarm log, provided this log file is configured. The capacity of the log file is limited by the storage medium and system limits.



## 11.17.2 Recognizing pending alarms

You can recognize pending alarms that must be acknowledged by means of the alarm indicator.

The alarm indicator is a graphic symbol indicating pending alarms or alarms requiring acknowledgment, depending on the configuration. The configuration determines whether an alarm has to be acknowledged or not. This is also defined by the alarm class which an alarm belongs to.

The following image shows an alarm indicator for three pending alarms.



The alarm indicator flashes as long as alarms are pending for acknowledgment. The number displayed indicates the number of pending alarms. The configuration engineer can assign functions to be executed when the alarm indicator is operated.

Usually, the alarm indicator is only used for error alarms. More detailed information is available in your plant documentation.

## 11.17.3 Alarm view

### 11.17.3.1 Overview

Alarms are displayed in the alarm view or in the alarm window on the HMI device. The message window, in contrast to the message display, is independent of the displayed process image.

### 11.17.3.2 Displaying alarms

#### Alarm view

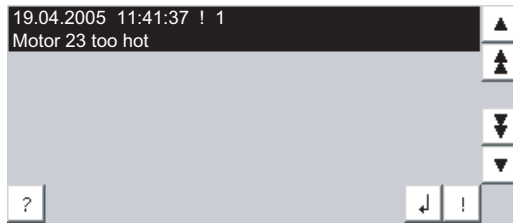
Depending on the configuration, the alarm view is displayed as follows:

- As a single line.  
Alarm numbers and alarm texts are displayed as single lines
- As simple alarm view
- As extended alarm view

For the configuration, which information is displayed for which messages are displayed for the simple and expanded message displays.

Depending on the configuration, alarms from alarm logs are also displayed in the alarm view.

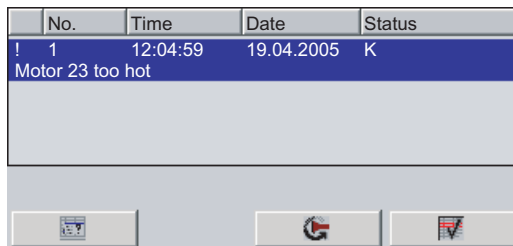
### Simple alarm view



The buttons have the following function:

Buttons	Functions
?	Display infotexts for an alarm
↓	Edit alarm
!	Acknowledge alarm
▼ ▲	Select the next or previous alarm in the list
▼ ▲	Scroll one page up or down

### Extended alarm view



The buttons have the following function:

Buttons	Functions
	Display infotexts for an alarm
	Edit alarm
	Acknowledge alarm

### Alarm class icons

In order to label the different alarm classes, icons can be configured.

Icon	Alarm class
!	Error
Without a symbol	Operation
Symbol depending on the project	User-defined alarm classes
S7	SIMATIC or SIMOTION diagnostic alarm
\$	System

Refer to your plant documentation for additional information.

### **Procedure - change column sequence in the expected alarm display**

Depending on the project, you can change the column sequence for messages on the HMI device.

Proceed as follows:

1. Touch the column header which you wish to exchange with a different column header
2. Keeping the touch screen pressed, move the column heading to the column heading you wish to exchange it with

The column sequence of the messages is changed.

### **Procedure - change sorting in the expected alarm display**

Depending on the project, you can change the sorting for messages on the HMI device.

Proceed as follows:

1. Touch the column overview that should be changed correspondingly.

The sorting of the messages is changed.

#### **11.17.3.3 Display alarm window**

The alarm window is independent of the process screen. Depending on the configuration, the alarm window opens automatically as soon as a new alarm is pending for acknowledgment. The alarm window can be configured so that it only closes after all the alarms have been acknowledged.

The layout and the operation of the alarm window are the same as for the alarm view.

Refer to your plant documentation for additional information.




#### **11.17.4 Display infotexts for an alarm**

##### **Introduction**

An alarm can be assigned an infotext.

## Procedure

Proceed as follows:

1. Touch the desired alarm in the alarm view or the alarm window.  
The alarm is selected.
  2. Touch the  button in the simple alarm view or  in the extended alarm view.  
A dialog with configured infotext is displayed.
  3. Press .
- The dialog box closes.

## 11.17.5 Acknowledge alarm

### Introduction

Depending on the project, an alarm can be acknowledged with a function key or with a button in the alarm display or in the alarm window.



More detailed information is available in your plant documentation.

### Requirement

- The alarm to be acknowledged is displayed in the alarm window or the alarm view.

### Procedure

Proceed as follows:

1. Touch the desired alarm in the alarm view or the alarm window.  
The alarm is selected.
2. Touch the  button in the simple alarm view or  in the extended alarm view.

### Result

The alarm was acknowledged. If the alarm belongs to an alarm group, all the alarms of the associated group were acknowledged.

## 11.17.6 Edit alarm

### Introduction

The configuration engineer can assign additional functions to each alarm. These functions are executed when the alarm is processed.

---

#### Note

When you edit an unacknowledged alarm, it is acknowledged automatically.

---

### Requirements

- The alarm to be edited is displayed in the alarm window or the alarm view.

### Procedure

Proceed as follows:

1. Touch the desired alarm in the alarm view or the alarm window.

The alarm is selected.

2. Touch the  button in the simple alarm view or  in the extended alarm view.

The system executes the additional functions of the alarm. Refer to your plant documentation for additional information.

## 11.18 Operating recipes

### 11.18.1 Overview

#### Introduction

Recipes are used when different variants of a product are manufactured with the same process. In this case, the product variants differ in terms of their type and quantity of the components, but not in terms of the manufacturing process sequence. The configuration engineer can store the combination of each individual product variant in a recipe.

## Field of application

Recipes can be used everywhere the same product components are used in variable combinations to create different product variants.

Examples:

- Beverage industry
- Food processing industry
- Pharmaceutical industry
- Paint industry
- Building materials industry
- Steel industry

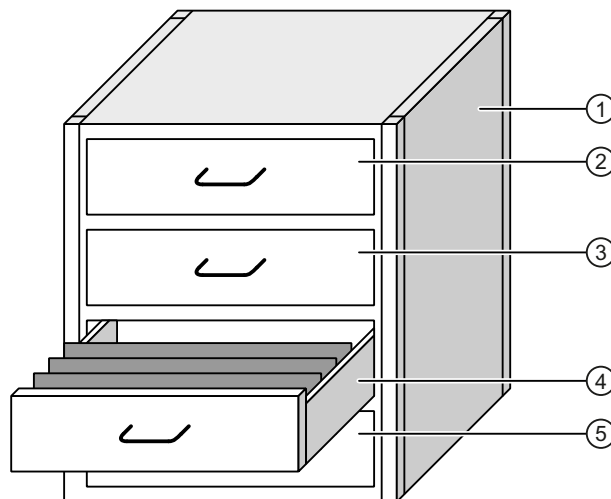
## 11.18.2 Structure of a recipe

### Recipes

The recipe collection for the production of a product family can be compared to a file cabinet. A recipe which is used to manufacture a product corresponds to a drawer in a file cabinet.

Example:

In a plant for producing fruit juice, recipes are required for different flavors. There is a recipe, for example, for the flavors orange, grape, apple and cherry.



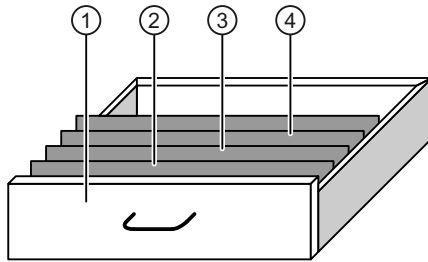
① File cabinet	Recipe collection	Recipes for a fruit juice plant
② Drawer	Recipe	Orange flavored drinks
③ Drawer	Recipe	Grape flavored drinks
④ Drawer	Recipe	Apple flavored drinks
⑤ Drawer	Recipe	Cherry flavored drinks

### Recipe data records

The drawers of the file cabinet are filled with suspension folders. The suspension folders in the drawers represent records required for manufacturing various product variants.

Example:

Product variants of the flavor apple might be a soft drink, a juice or nectar, for example.



①	Drawer	Recipe	Product variants of apple flavored drinks
②	Suspension folder	Recipe data record	Apple drink
③	Suspension folder	Recipe data record	Apple nectar
④	Suspension folder	Recipe data record	Apple juice

### Elements

In the figure showing the file cabinet, each suspension folder contains the same number of sheets. Each sheet in the suspension folder corresponds to an element of the recipe data record. All the records of a recipe contain the same elements. The records differ, however, in the value of the individual elements.

Example:

All drinks contain the same components: water, concentrate, sugar and flavoring. The records for soft drink, fruit juice or nectar differ, however, in the quantity of sugar used in production.

### 11.18.3 Recipes in the Project

#### Overview

If recipes are used in a project, the following components interact:

- Recipe view / recipe screen

On the HMI device, recipes are displayed and edited in the recipe view or in a recipe screen.

- The recipe data records from the internal memory of the HMI device are displayed and edited in the recipe view.
- The values of the recipe tags are displayed and edited in the recipe screen.

Depending on the configuration, the values displayed in the recipe view are synchronized with the values of recipe tags.

- HMI device recipe memory

Recipes are saved in the form of data records in the HMI device recipe memory.

The recipe data can also be saved in recipe tags.

- Recipe tags

The recipe tags contain recipe data. When you edit recipes in a recipe screen, the recipe values are stored in recipe tags. Depending on the configuration, the values of the recipe tags are exchanged with the PLC.

The recipe tags can be synchronized with the recipe data records so that the same values are saved in both.

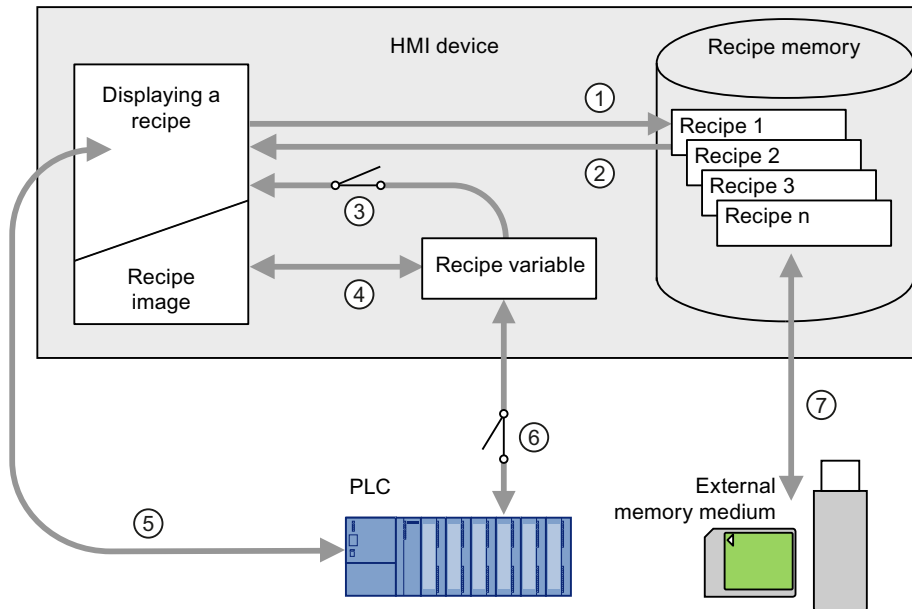
- External memory medium

The memory cards or USB sticks are external memory media for recipe data records. The recipe data records are exported from the HMI device recipe memory and are saved on the external memory medium in a \*.csv file. The records can be reimported from the external memory medium to the recipe memory.



### Data flow

The following figure shows the data flow in a project with recipes.



- ① Editing, saving or deleting a recipe data record
- ② Display recipe data record
- ③ Synchronize or do not synchronize recipe tags
- ④ Display and edit recipe tags in the recipe screen
- ⑤ Write records from the recipe view to the PLC or read records from the PLC and display them in the recipe view
- ⑥ Recipe tags are sent to the PLC online or offline
- ⑦ Export or import recipe data record to external memory medium.

## 11.18.4 Recipe displays

### Displaying recipes

You can display and edit recipes on the HMI device with a recipe view or recipe screen.

### Recipe view

A recipe view is a screen object used to manage recipe data records. The recipe view shows recipe data records in tabular form.

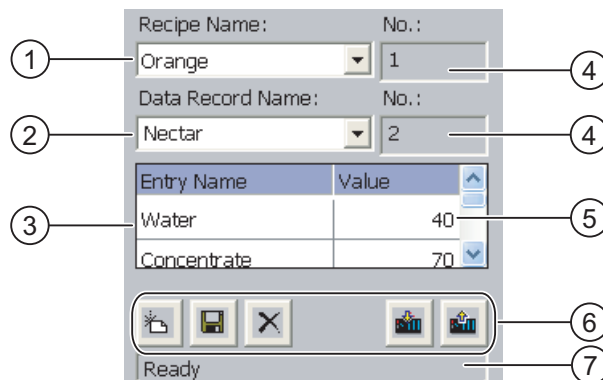
Depending on the configuration, the recipe view is displayed as follows:

- As extended recipe view
- As simple recipe view

The configuration engineer also defines which operator controls are displayed in the recipe view.

### Extended recipe view

The following figure shows an example of the extended recipe view.



- ① Selection box for the recipe
- ② Selection box for the recipe data record
- ③ Element name  
The element name designates a specific element in the recipe data record
- ④ Display field  
This show the number of the selected recipe or the selected recipe data record
- ⑤ Value of the element
- ⑥ Buttons for editing a recipe data record
- ⑦ Status bar for display of the status messages

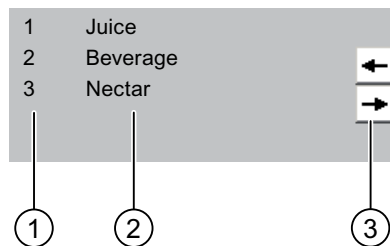
### Simple recipe view

The simple recipe view consists of three areas:

- Recipe list
- Data record list
- Element list

In the simple recipe view, each area is shown separately on the HMI device. Depending on the configuration, the simple recipe view starts with the recipe list or data record list.

The following figure shows an example of the record list.



- ① Number of the recipe data record
- ② Recipe data records
- ③ Buttons for changing the displayed list and calling the menu

### Display of values

#### NOTICE

##### Changing the recipe data record in the background

Applies to the processing of a recipe data record:

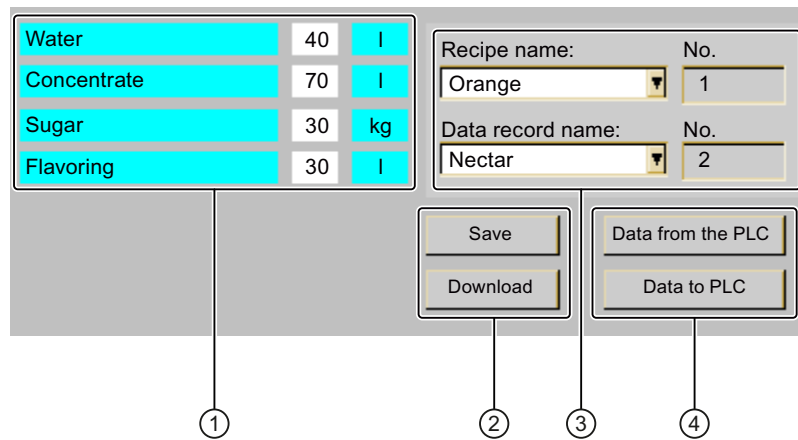
If values of the corresponding recipe data record are changed by a PLC job, the recipe view is not updated automatically.

To update the recipe view, reselect the respective recipe data record.

### Recipe screen

A recipe screen allows the correlation between the plant and the recipe data to be displayed in graphic form. The configuration engineer combines I/O fields and screen objects to form a custom input screen. The configuration engineer can distribute the I/O fields of a recipe over several recipe screens, thus allowing recipe elements to be arranged by subject. The recipe screen can be operated using buttons configured accordingly.

The following figure shows an example of the recipe screen.



- ① Element name and associated values  
The element name designates a specific element in the recipe data record
- ② Buttons for editing a recipe data record
- ③ Modified recipe view
- ④ Buttons for transferring recipe data

The values displayed or entered in the recipe screen are saved in recipe tags. The recipe values are exchanged with the PLC immediately or later via these tags.

A configured recipe view can itself be a component of a recipe screen. You must synchronize the tags in order to synchronize data between the tags of the recipe screen and the recipe data records displayed in the recipe view. Synchronization of tags is only possible in the extended recipe view.

More detailed information is available in your plant documentation.

## 11.18.5 Recipe Values in the HMI Device and the PLC

### Introduction

You can change the values of a recipe on the HMI device. The production process can be controlled by this.

Depending on the configuration, the recipe values are displayed, edited and saved in different ways:

- If you are editing recipes with a recipe view in your project, the values are saved in recipe data records.
- If you are editing recipes in a recipe screen in your project, the values are saved in recipe tags.

Differences may occur between the display values in the recipe view and the values saved in the associated tags in an ongoing project when you edit recipes with a recipe view and in a recipe screen. To prevent this, the recipe data record values must be synchronized with the values of the recipe tags.

You have however the option to perform synchronization operations at any time. Synchronization only takes place if the configuration engineer has activated the respective settings for a recipe.

---

**Note**

Recipe tags can only be synchronized in the extended recipe view.

---


### Synchronizing recipe tags

Synchronization of the recipe tags depends on the configuration:

- Automatic synchronization

The values of the recipe view are synchronized with the associated recipe tags. In this case, changes to values in the recipe view have an immediate effect on the values of the associated recipe tags. The values are only synchronized, when an operating element that is outside the recipe view is operated.

- Synchronization by the user

The values of the recipe view and the associated recipe tags are not synchronized automatically. The configuration engineer has assigned the same function to the  button or a different operating element in the recipe view. The recipe tags and the recipe view are only synchronized when you operate the buttons or the appropriate operating element.

### Recipe tags online / offline

The configuration engineer can configure a recipe so that changes to the values of the recipe tags do not have an immediate effect on the current process.

Synchronization of the recipe values between the HMI device and the PLC depends on whether the configuration engineer has selected the settings "Tags online" or the setting "Tags offline" for a recipe.

- "Tags online:"

This setting has the following effect:

- When you change recipe values in the recipe screen, these changes are applied immediately by the PLC and immediately influence the process.
- If recipe values are changed in the PLC, the changed values are displayed immediately in the recipe screen.

- "Tags offline"

With this setting, changed recipe values are not synchronized immediately between the HMI device and the PLC.

In this case, the configuration engineer must configure operating elements for transferring the values to the PLC or reading them from the PLC in a recipe screen. The recipe values are only synchronized between HMI device and PLC when you operate the appropriate operating element.

## 11.18.6 Operating the recipe view

### 11.18.6.1 Overview








#### Operating the recipe view

The recipe view can be operated as follows:

- Enter values for the recipe elements
- Create recipe data records
- Save recipe data records or save them under a new name
- Delete recipe data records
- Synchronize values of the recipe view with the associated recipe tags
- Transfer recipe data records from the PLC and to the PLC

#### Operator controls of the recipe view

The following table shows the operator controls of the recipe view.

Buttons	Functions
	Creates a new recipe data record. If a start value is configured, it is shown in the text box.
	Saves the displayed values of the recipe data record. The storage location is predefined by the project.
	The recipe data record is saved under a different name irrespective of the recipe view. A dialog box opens in which the name is entered.
	The displayed recipe data record is deleted.
	The values of the recipe view are synchronized with the associated recipe tags. The values changed during editing are written to the associated recipe tags. Subsequently all the values of the tags are read out and updated in the table.
	The recipe values from the PLC are displayed in the recipe view.
	The values of the set recipe data record displayed in the recipe view are transferred to the PLC.

#### Operating the recipe screen

You operate the recipes in a recipe screen with the operator controls provided by the configuration engineer.

More detailed information is available in your plant documentation.

## 11.18.6.2 Creating a recipe data record

### Introduction

You create a new recipe data record by modifying an existing record. You then save the modified data record under a new name.

### Requirements

- A screen with a recipe view is displayed

### Procedure

Proceed as follows:

1. Select the recipe for which you want to create a new recipe data record.

2. Touch .

A new recipe data record with the next available number is created.

If you change the new data record number to an existing data record number, the existing data record is overwritten.

3. Enter values for the elements of the data record.

The elements of the recipe data record can be assigned default values depending on the configuration.

4. Touch .

5. Enter a name for the data record.

The data record is saved under the new name.

If the recipe data record already exists, a dialog is opened. In this dialog, specify whether the existing data record is to be overwritten.

### Result


The created recipe data record is saved to the selected recipe.


### 11.18.6.3 Editing a recipe data record

#### Introduction

Edit the values of the recipe data records and save them in a recipe view.

#### Synchronization with the PLC

If you want to display the current recipe values from the PLC in the recipe view, you first have to read the current values from the PLC with .


The values changed in the recipe view only become effective when the amended data record is transferred to the PLC by means of the  button.


#### Requirements

- A screen with a recipe view is displayed

#### Procedure

Proceed as follows:

1. If the recipe view contains several recipes: Select the recipe which contains the desired recipe data record.
2. Select the recipe data record you want to change.
3. Change the data record as required.
4. Save your changes by means of the  button.

If you want to save the recipe data record under a different name, touch the  key.

5. The recipe data record is saved.

#### Result

The edited recipe data record has now been saved in the selected recipe.

### 11.18.6.4 Deleting a recipe data record

#### Introduction

You can delete all the data records of a recipe which are not required.


#### Requirements

- A screen with a recipe view is displayed



## Procedure

Proceed as follows:

1. If the recipe view contains several recipes: Select the recipe which contains the desired recipe data record.
2. Select the recipe data record you want to delete.
3. Touch .

## Result

The recipe data record is deleted.

### 11.18.6.5 Synchronizing tags

#### Introduction

The values of the recipe elements can be saved to recipe tags, depending on the configuration.

Differences may occur between the display values in the recipe view and the actual values of tags in an ongoing project. Synchronize the tags to equalize such differences.

Synchronization always includes all the variables which belong to a recipe data record.

#### NOTICE

##### Changed tag name

Tags and the value of the recipe data record cannot be assigned to each other if the tag name of the tag to be synchronized has been changed. The tags in question are not synchronized.

#### Note


Recipe tags can only be synchronized in the enhanced recipe view.

## Requirements

- A screen with a recipe view is displayed

## Procedure

Proceed as follows:

1. If the recipe view contains several recipes: Select the recipe which contains the desired recipe data record.
2. Select the recipe data record you want to synchronize.
3. Touch .

## Result

The elements of the recipe data record are synchronized with the recipe tags.  
If the values of the recipe view and the tag do not match, the more current value is accepted.

### 11.18.6.6 Reading a recipe data record from the PLC

#### Introduction

In the current project, the values which are also stored in the recipes in the HMI device can be changed directly in the plant. This is the case, for example, if a valve was opened further directly at the plant than is stored in the recipe. The values of the recipe data records saved in the HMI device possibly no longer match the values in the PLC.



To synchronize the recipe values, read the values from the PLC and display them in the recipe view.

#### Requirement

- A screen with a recipe view is displayed

#### Procedure

Proceed as follows:

1. If the recipe view contains several recipes: Select the recipe which contains the desired recipe data record.
2. Select the recipe data record to which you want to apply the values from the PLC.
3. Touch .
4. If you want to store the displayed values in the HMI device, touch the  button.

The values are read from the PLC.

## Result

The values were read from the PLC, displayed on the HMI device and saved to the selected recipe data record.

### 11.18.6.7 Transferring a recipe data record to the PLC

#### Introduction

In order for an edited recipe data record to take effect in the process, you must transfer the values to the PLC.


The display values in the recipe view are always transferred to the PLC.

## Requirements

- A screen with a recipe view is displayed

## Procedure

Proceed as follows:

1. Select the recipe which contains the desired recipe data record.
2. Select the recipe data record whose values you want to transfer to the PLC.
3. Touch .

## Result

The display values in the recipe view were transferred to the PLC and take effect in the process.

## 11.18.7 Using the simple recipe view

### 11.18.7.1 Overview

#### Introduction

The simple recipe view consists of three areas:

- Recipe list
- Data record list
- Element list

You can use the context menu to operate each of these display areas.

#### Editing recipe display

The simple recipe view can be processed as follows:

- Enter values for the recipe elements
- Create recipe data records
- Save recipe data records or save them under a new name
- Delete recipe data records
- Transfer recipe data records from the PLC and to the PLC

### Operator controls of the simple recipe view

Toggle between the display areas and the context menus to operate the simple recipe views.  
The following table shows the operation of the display area.

Operation	Functions
Touching an entry	The next lower display area opens.
←	The next higher display area opens.
→	The context menu of the display area opens.

The following table shows the operation of the context menu.

Operation	Functions
←	The menu is closed. The display area opens.
Touch the menu command	The menu command is executed.

### Context menus of the simple recipe view

- Recipe list

Menu item	Functions
New	A new recipe data record is created for the selected recipe. If a start value is configured, it is shown in the text box.
Displaying infotext	The infotext configured for the simple recipe view is displayed.
Open	The record list of the selected recipe opens.

- Data record list

Menu item	Functions
New	A new recipe data record is created for the selected recipe. If a start value is configured, it is shown in the text box.
Delete	The selected record is deleted.
Save as	The selected record is saved under a different name irrespective of the simple recipe view. A dialog box opens in which the name is entered.
Rename	The selected data record is renamed. A dialog box opens in which the name is entered.

- Element list

Menu item	Functions
Save	The selected record is saved.
To PLC	The displayed values of the selected data record are transferred from the HMI device to the PLC.
From PLC	The recipe values from the PLC are displayed on the HMI device in the recipe view.
Save as	The selected data record is saved under a new name. A dialog box opens in which the name is entered.

## Operating Menus

Touch the desired menu command. The command is executed.

## Operating the recipe screen

You operate the recipes in a recipe screen with the operator controls provided by the configuration engineer.

Refer to your plant documentation for additional information.

### 11.18.7.2 Creating a recipe data record

#### Introduction

Create a new recipe data record in the recipe list or in the record list. Then enter the values for the new record in the element list and save the record.

#### Requirement

- A screen with a simple recipe view is displayed.

#### Procedure

Proceed as follows:

1. Select the recipe for which you want to create a new recipe data record.
2. Open the recipe list menu.
3. Select the menu command "New".

Creates a new record The element list of the new record is displayed.

4. Enter values for the elements of the data record.  
The tags of the record can be assigned default values depending on the configuration.
5. Open the menu of the element list and select the command "Save".
6. Enter a name for the new record.
7. Confirm your entries.

If you change the new data record number to an existing data record number, the existing data record is overwritten.

#### Result

The created recipe data record is saved to the selected recipe.

### 11.18.7.3 Editing a recipe data record

#### Introduction

Edit the values of the recipe data records in a simple recipe view.

If you want to display the current recipe values from the PLC in the simple recipe view, you first have to read the current values from the PLC with the menu command "From PLC" in the element list.

The values changed in the recipe view only take effect in the PLC when you transfer the edited data record to the PLC with the menu command "To PLC".

#### Requirement

- A screen with a simple recipe view is displayed.

#### Procedure

Proceed as follows:

1. Select the recipe which contains the desired recipe data record.
2. Open the data record list.
3. Select the recipe data record you want to change.
4. Open the element list.
5. Change the values of the records as required.
6. Save your changes with the menu command "Save".

The recipe data record is saved.

#### Result

The edited recipe data record has now been saved in the selected recipe.

### 11.18.7.4 Deleting a recipe data record

#### Introduction

You can delete all the data records which are not required.

#### Requirement

- A screen with a simple recipe view is displayed.

## Procedure

Proceed as follows:

1. Select the recipe which contains the desired recipe data record.
2. Open the data record list.
3. Select the data record you want to delete.
4. Open the menu.
5. Select the menu command "Delete".

## Result

The data record is deleted.

### 11.18.7.5 Reading a recipe data record from the PLC

#### Introduction

The values of recipe elements are exchanged with the PLC via tags.

In the current project, the values which are also stored in the recipes in the HMI device can be changed directly in the plant. This is the case, for example, if a valve was opened further directly at the plant than is stored in the recipe. The values of the tags on the HMI device possibly no longer match the values in the PLC.

To synchronize the recipe values, read the values from the PLC and display them in the recipe view.

#### Requirement

- A screen with a simple recipe view is displayed.

#### Procedure

Proceed as follows:

1. Select the recipe which contains the desired recipe data record.
2. Select the element list of the recipe data record to which you want to apply the values from the PLC.
3. Open the menu.
4. Select the menu item "From PLC".

The values are read from the PLC.

5. If you want to save the displayed values in the HMI device, select the menu item "Save".

#### Result

The values were read from the PLC, displayed on the HMI device and saved to the selected recipe data record.

### 11.18.7.6 Transferring a recipe data record to the PLC

#### Introduction

In order for an edited recipe data record to take effect in the process, you must transfer the values to the PLC.

The display values in the recipe view are always transferred to the PLC.

#### Requirement

- A screen with a simple recipe view is displayed.

#### Procedure

Proceed as follows:

1. Select the recipe which contains the desired recipe data record.
2. Select the element list of the recipe data record whose values you want to transfer to the PLC.
3. Open the menu.
4. Select the menu item "To PLC".

#### Result

The values of the recipe data record were transferred to the PLC and take effect in the process.

### 11.18.8 Exporting a recipe data record

#### Introduction

You can export one or more recipe data records to a CSV file, depending on the configuration. After export, the values in the recipe data record can be further processed in a spreadsheet program such as MS Excel. The degree to which you can influence the export depends on the configuration:

<b>NOTICE</b>
<b>Export recipe data</b>
The USB interface is deactivated while the main battery is being changed.
During the main battery change, do not transfer any data to a USB memory stick.



## Requirement

- A screen with a recipe view is displayed
- An operating element with the function "Export record" has been configured.
- The following tags are configured equally in the recipe view and for the "Export record" operating element.
  - Recipe number
  - Data record number

## Procedure

Proceed as follows:

1. Select the recipe which contains the desired recipe data record.
2. Select the recipe data record you want to export.
3. Operate the operator control which was configured for export, for example the "Export data record" button.

The data record is exported as a CSV file to an external data medium.

Refer to your plant documentation for additional information.

## 11.18.9 Importing a recipe data record

### Introduction

You can import values from a CSV file to a recipe data record, depending on the configuration.

If the structure of the CSV file differs from the structure of the recipe, deviations are handled as follows:

- Any additional values in the CSV file will be rejected
- The system applies the configured default value to the recipe data record if the CSV file contains an insufficient number of values
- If the CSV file contains values of the wrong data type, the configured default value is set in the recipe data record

Example:

The imported CSV file contains values that were entered as floating point numbers

However, the corresponding tag expects an integer value. In this case, the system discards the imported value and uses the configured default

### Requirements

- An operating element with the function "Import data record" has been configured, for example a button
- A screen with a recipe view is displayed

## Procedure

Proceed as follows:

1. Select the recipe which contains the recipe data record to be imported.
2. Operate the operating element with the function "Import data record".

The record is imported from an external data medium as a CSV file and then displayed in the recipe view.

## 11.18.10 Examples

### 11.18.10.1 Entering a recipe data record

#### Introduction

You would like to enter production data on the HMI device without interrupting the process in the plant. For this reason, the production data should not be transferred to the PLC.

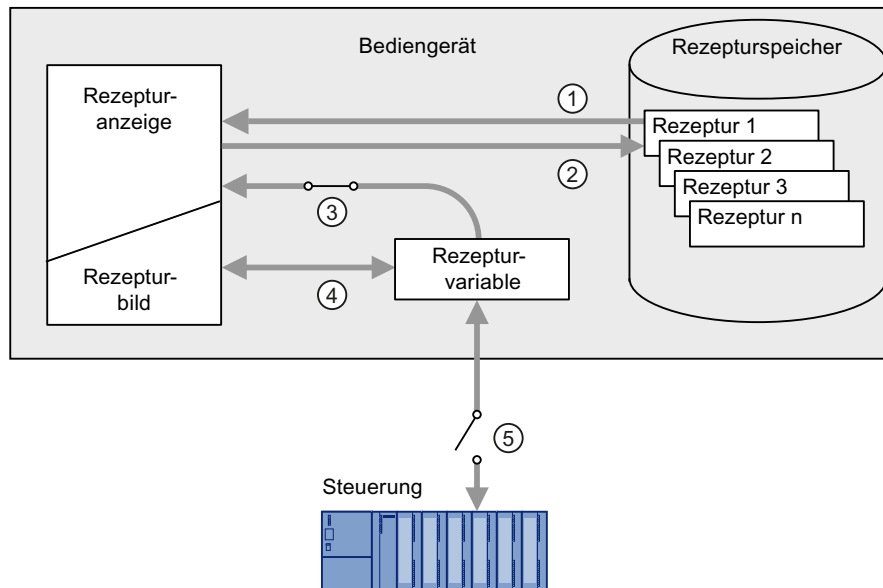
#### Procedure

Proceed as follows:

1. Call the recipe view or a recipe screen.
2. Select the desired recipe data record.
3. Enter the values of the elements.
4. Save the recipe data record.

The recipe data record is saved in the internal memory of the HMI device.

The following figure shows the data flow schematically.



- ① Display recipe data record
- ② Save recipe data record
- ③ Tags are synchronized
- ④ Display and edit recipe tags in the recipe screen
- ⑤ Tags are offline

### 11.18.10.2 Manual production sequence

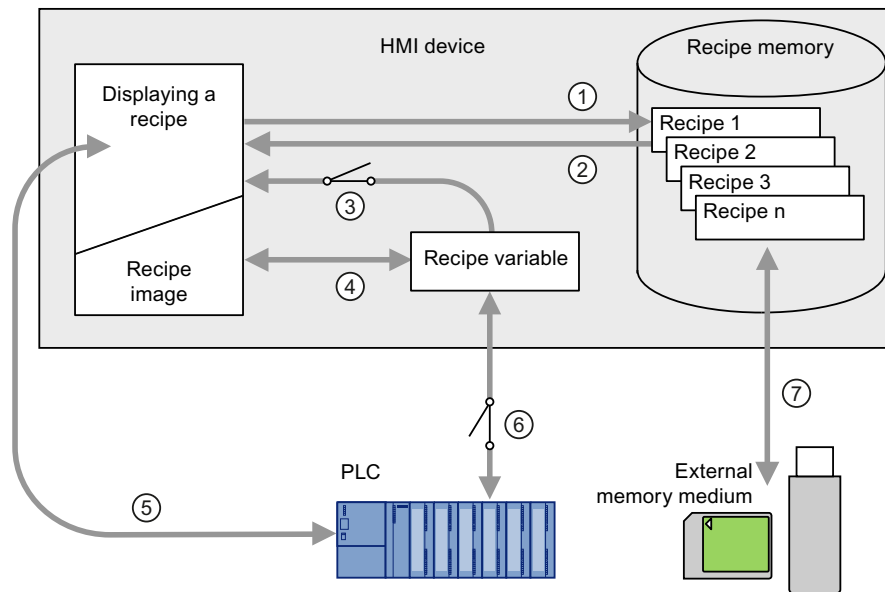
#### Introduction

You request the production data of different workpieces from the PLC and display this data on the screen of the HMI device for inspection. You want to correct the transferred production data in the recipe view or the recipe screen if necessary.

#### Procedure

A scanner connected to the PLC reads the barcode of a workpiece. The barcode names correspond to the names in the recipe data record. Based on the barcode name, the PLC can read the required recipe data record. The recipe data record is displayed for inspection on the HMI device. You can now edit and save the recipe data record. Then transfer the edited recipe data record to the PLC again.

The following figure shows the data flow schematically.



- ① The recipe data record is read from the PLC and written to the PLC again following changes
- ② Display and edit recipe tags in the recipe screen
- ③ Tags are synchronized
- ④ Recipe data records are saved in the recipe memory of the HMI device

## 11.19 Closing the project

The procedure for closing the active project is identical to the procedure for removing the HMI device.

### See also

Removing the HMI device (Page 268)

