House Control with Master-Slave Communication

LOGO! 8
Set 9

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Table of Contents

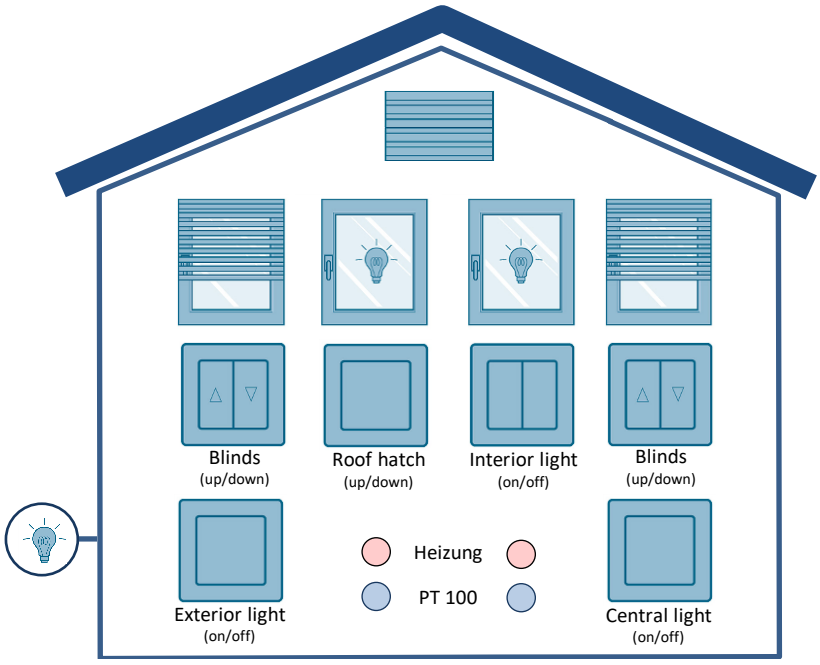
1 Task

Introduction

In residential house, the following functions shall be controlled manually or automatically:

- Blinds and Roof hatch (up/down)
- Interior and exterior lighting (on/off)
- Heater
- Garden watering

Figure 1-1



It shall be possible with a selector button to preset for each function whether it is controlled automatically or manually.

If automatic control is set, the blinds shall open or close automatically and the garden watering is to be activated or deactivated depending on time and day. Simultaneously, the roof hatches shall open or close and the heating shall switch on or off depending on the temperature.

If the maintenance mode is set for the blinds, manual or automatic closing shall be blocked.

The status of each of the house functions shall be displayed on the spot and in addition with a mobile device (tablet or smartphone).

At the same time it shall be possible to control the house functions with the mobile device.

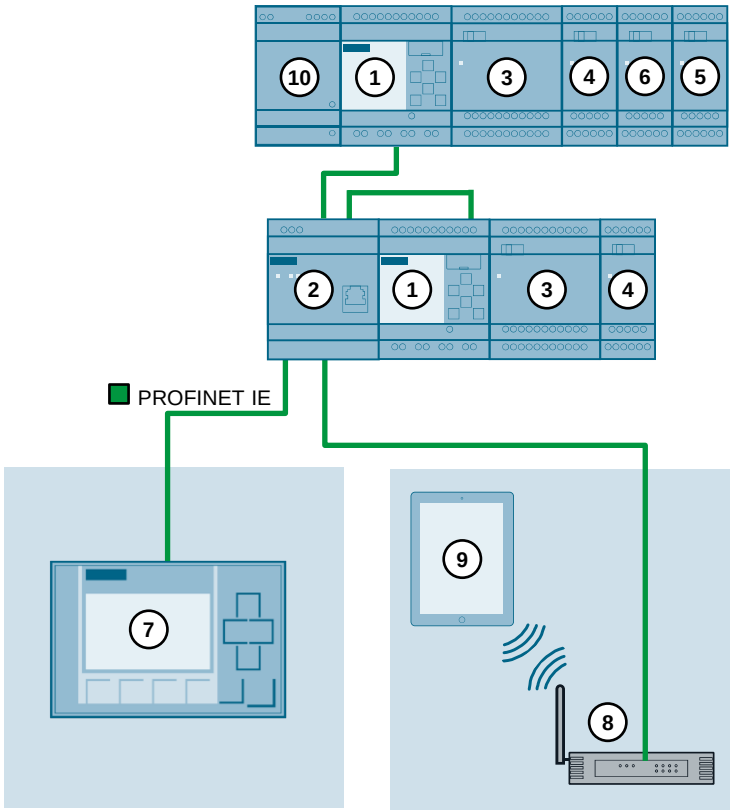
2 Solution

2.1 Overview

Schematic layout

The figure below shows an overview of the important components of the solution:

Figure 2-1



In the automation solution, one LOGO! 8 (1) is used as master and one as slave. Both LOGO! modules communicate via a Compact Switch module (2).

Additional extension modules were deployed for each LOGO! module.
This makes it possible to add further inputs and outputs of the house control at any time via DM16 24R (3) or DM8 24R (4) expansion modules.
The LOGO! expansion module AM2 AQ (5) is used to add two analog outputs to the house control.

One PT100 and one PT1000 temperature sensor respectively is connected to the RTD expansion module (6). The temperature sensors enable controlling the room temperature in different areas of the building.

The blinds and the roof hatch can be opened and closed manually with pushbuttons.

In addition, the exterior and the interior lighting can be switched on and off via buttons.

There is a central OFF button which can be used to switch off all lights in the house and the exterior light.

For each light button in the house, a panic function is configured so when pressing for longer than 3 seconds, all lights in the house and the outside light are switched on for a certain amount of time. The panic function is deactivated after a certain time period using a time delay. It is also possible to deactivate the panic function manually by pressing the button again for 3 seconds.

The LOGO! TDE (7) or the LOGO! controller (1) can be used to predefine manual or automatic control of blinds, the roof hatch and the garden watering. Additionally the blinds and the lights can be controlled centrally, the maintenance mode for the blinds can be set, the garden watering can be activated or deactivated manually and the setpoint value for the room temperature can be changed.

A WLAN Access Point (8) is connected to the Compact Switch module (2).
This enables to control the blinds, lights and roof hatch and to display their current status with a tablet (9), smartphone or PC using the integrated web server of the LOGO! 8.

A LOGO! power supply (10) with 24V is used in the automation solution.

A circuit breaker provides the necessary protection. Additionally, the power supply for a individual line of the distributor box can be switched off with miniature circuit breakers.

Advantages

- Clear control and monitoring of a house control on the spot or via WLAN with a mobile device (smartphone, tablet)
- Configurable automatic function for the control of the house functions
- Times and days for blind control in automatic mode can be adapted individually
- Comprehensive protection of the blinds during maintenance work
- Excellent energy efficiency by monitoring the heating depending on the room temperature and the given setpoint
- Central control of house functions with the LOGO! TDE, LOGO! Display and the integrated webserver of the LOGO!.
- Configurable presence simulation when absent through automatic opening and closing of blinds via a random generator
- Simultaneous switching off and on of all lights with panic function integrated in each light button
- Control of several areas and functionalities of a house control via still unassigned inputs and outputs

2.2 Hardware and software components

2.2.1 Components used

The application example was created with the following components:

Hardware components

Table 2-1

No.	Component	Qty	Article number	Note
1.	LOGO! 12/24RCE	2	6ED1052-1MD08-0BA0	
2.	LOGO! CSM12/24 COMPACT SWITCH MODULE	1	6GK7177-1MA20-0AA0	If you would like to integrate additional Ethernet interfaces in the network (e.g. for connect your PC simultaneously), we recommend using a second LOGO! CSM 12/24 in the application example.
3.	LOGO! DM16 24R	2	6ED1055-1NB10-0BA2	
4.	LOGO! DM 8 24R	2	6ED1055-1HB00-0BA2	
5.	LOGO! AM2 AQ	1	6ED1055-1MM00-0BA2	
6.	LOGO! AM2 RTD	1	6ED1055-1MD00-0BA2	
7.	LOGO! TDE	1	6ED1055-4MH08-0BA0	
8.	WLAN Access Point	1	Available from specialist retailers	Technical specifications: • Standard IEEE 802.11 • WLAN speed up to 150Mbps
9.	Tablet PC	1	Available from specialist retailers	
10.	LOGO! POWER 24V/2.5 A	1	6EP3332-6SB00-0AY0	
11.	PT100 temperature sensors	1	Available in specialized electronics shops	PT100 or PT1000 temperature sensors can be used
12.	PT1000 temperature sensors	1		
13.	DELTA BUTTON APPLIC. UP 1 MAKE CONTACT	5	5TD2120	
14.	I-SYST. TWS, ROCKER OFF/WE FOR BUTTON	5	5TG6201	
15.	DELTA BUTTON APPLIC. UP DOUBLE BUTTON, 2 MAKE CONTACTs	2	5TD2111	
16.	I-SYST. TWS, ROCKER BLINDS BUTTON	2	5TG6214	
17.	DELTA LINE TWS, FRAME 1F 80	6	5TG2551-0	
18.	Miniature circuit breaker	2	5SY41066	
19.	Miniature circuit breaker	1	5SY45066	
20.	Circuit breaker	1	5SV33126	

Software components

Table 2-2

Component	Qty	Article number	Note
LOGO! Soft Comfort V8	1	6ED1058-0BA08-0YA1	Update V8.2 (Download)
LOGO! Web Editor	1		(Download)

Example files and projects

The following list includes all files and projects that are used in this example.

Table 2-3

Component	Note
64143308_LOGO!8_Set9_Master_Slave_CODE_v22.ZIP	This zip-file contains • The LOGO! Soft Comfort V8 project for the master LOGO! • A LOGO! Web project for the user defined webserver
64143308_LOGO!8_Set9_Master_Slave_DOC_v22_en.pdf	This document.

2.3 House functions

2.3.1 Blinds

Inputs and outputs

Table 2-4

No.	Hardware	LOGO! module	Program inputs/outputs
1.	Blinds button left up (make contact)	Master I1	I1
2.	Blinds button left down (make contact)	Master I2	I2
3.	Blinds button right up (make contact)	Master I3	I3
4.	Blinds button right down (make contact)	Master I4	I4
5.	Blinds motor left up	Master Q1	Q1
6.	Blinds motor left down	Master Q2	Q2
7.	Blinds motor right up	Master Q3	Q3
8.	Blinds motor right down	Master Q4	Q4

Function description

In the LOGO! program, the blinds are controlled with wiping relays.
The runtime for the blinds until the top or bottom end stop was defined as 40 seconds. This value was also calculated as the pulse duration of the wiping relays. The blind drives have normally automatic end position detection for stopping the drives.

CAUTION	**Risk of damage of the blind drive** This version of Set 9 (different than sets 9, 10 and 11 based on LOGO! 7) is based on LOGO! 8 and requires the use of modern blind drives with integrated end position switch. **If this requirement is not observed, the blind drives can be damaged.** In case you want to use blind drives without integrated end position switches, you must modify the LOGO! program.

 **WARNING**	**Risk of property damage or personal injury.** In **"maintenance mode",** the blinds move up automatically. In **"automatic mode"**, the blinds move up and down automatically. When operating the blinds, make sure there are no body parts or other objects in the way.

Note

The preset maximal blind runtime of 40 seconds until the end stop (in LOGO! program) is only an example and can possibly be greater than the real runtime of the blinds.

Check the exact runtime until end stop of the blinds you use. If necessary, adapt the wiping relay pulse width in the LOGO! program (see Chapter 3.7).

For each blind, a 0.5 seconds pause for the direction change was programmed for protecting the motor against direct rerouting.

Independent of the operating mode, the blinds have been programmed to open or close completely. A change of direction during travel is possible by activating the other direction.

The LOGO! TDE or the LOGO! display can be used to predefine manual or automatic control of the blinds.

In manual mode, the blinds can be controlled with buttons or with the cursor keys over the LOGO! controller and the LOGO! TDE. In addition, the blinds can be controlled with a tablet, smartphone or PC with the F-keys over the integrated webserver of LOGO! 8.

With LOGO! function block "Astronomical clock" the blinds are, in automatic mode, moved up at sunrise and moved down at sunset during the week. On the weekend, the blinds are moved up at 08:00 a.m. and down at 08:00 p.m. A random generator can delay the time of automatic opening and closing up to 30 minutes. Even though the house is empty, this makes it seem that somebody is in the house.

Manual operation of the blinds is still possible in automatic mode.

In maintenance mode, all blinds move up. Closing the blinds is only possible after the maintenance mode has been deactivated. Maintenance mode can just be activated in manual mode. The upward movement of the blinds can be stopped anytime by pressing the button for the opposite direction.

The function blocks for the automatic control of the blinds can be called up in parameter assignment mode with the respective block name using the LOGO! display or LOGO! TDE. This enables modification of individual parameters like days of the week and times to open/close the blinds.

Note More information on how to modify parameters with the LOGO! display or LOGO! TDE is available in the LOGO! manual in Chapter "Configuring LOGO!".

Table 2-5

No.	Function	Function block	Block name in the program
1.	Moving blinds up/down on weekends	Weekly timer	weekend
2.	Moving blinds up/down Monday to Friday	Weekly timer	weekday
3.	Moving blinds up/down at sunrise / sunset	Astronomical clock	astro clock
4.	Time delay for automatic opening/closing of the blinds	Random generator	random

2.3.2 Roof hatch

Inputs and outputs

Table 2-6

No.	Hardware	LOGO! module	Program inputs/outputs
1.	Roof hatch button (make contact)	Master DM16 I1	I9
2.	Roof end switch open (break contact)	Master DM16 I2	I10
3.	Roof end switch close (break contract)	Master DM16 I3	I11
4.	Roof hatch motor up	Master DM16 Q1	Q5
5.	Roof hatch motor down	Master DM16 Q2	Q6

Function description

For the roof hatch, a 0.5 seconds pause for the direction change was programmed for protecting the motor against direct rerouting.

The LOGO! TDE or the LOGO! display can be used to predefine manual or automatic control of the roof hatch.

In manual mode, the roof hatch can be controlled on the spot with a button. In addition in manual mode the roof hatch can be controlled remotely over a tablet, smartphone or PC with the F1 function key over the integrated webserver of LOGO! 8.

In automatic mode, the roof hatch is controlled with the PT100 (see Table 2-8) depending on the temperature.

The function block for the temperature-dependent control of the roof hatch can be called up in parameter assignment mode with the respective block name using the LOGO! display or LOGO! TDE. This enables setting the temperature threshold values for opening and closing the roof hatch individually.

Table 2-7

No.	Function	Function block	Block name in the program
1.	Temperature-dependent control of the roof hatch	Analog threshold trigger	auto roof (B105)

2.3.3 Heating

Inputs and outputs

Table 2-8

No.	Hardware	LOGO! module	Program inputs/outputs
1.	PT100 temperature sensor	Master RTD A1	AI3
2.	PT1000 temperature sensor	Master RTD A2	AI4
3.	Heating room 1 on/off	Master DM8 Q1	Q14
4.	Heating room 2 on/off	Master DM8 Q2	Q13

Function description

With the LOGO! display and LOGO! TDE it is possible to set a setpoint value for each room.

If the room temperature reaches the setpoint value, the heating is switched off.

If the room temperature falls 1° below the setpoint value, the heating is switched on again.

Table 2-9

No.	Function	Function block	Block name in the program
1.	Temperature-dependent on/off heating 1	Analog Comparator	heater 1
2.	Temperature-dependent on/off heating 2	Analog Comparator	heater 2

Note In the LOGO! basic device (master), the standard setting for two analog inputs are used so the RTD expansion module has the inputs AI3 and AI4.

2.3.4 Garden watering

Function description

The LOGO! TDE or the LOGO! display can be used to predefine manual or automatic control of the garden watering.

In manual mode, the garden watering can be controlled with the cursor keys over the LOGO! controller and the LOGO! TDE.

In automatic mode, the garden watering is switched on for 10 minutes in the morning at 09:00 a.m. and in the evening at 08:00 p.m. every day.

The function blocks for the automatic control for garden watering can be called up in parameter assignment mode with the respective block name using the LOGO! display or LOGO! TDE. If required, parameters like days and times for garden watering can be adjusted.

Table 2-10

No.	Function	Function block	Block name in the program
1.	Daily, automatic garden watering	Weekly timer	watering

2.3.5 Interior and exterior lighting

Inputs and outputs

Table 2-11

No.	Hardware	LOGO! module	Program inputs/outputs
1.	Button light on/off room 1 (integrated panic button)	Slave I1	NI1 (network input 1)
2.	Button light on/off room 2 (integrated panic button)	Slave I2	NI2 (network input 2)
3.	Button exterior lighting on/off (integrated panic button)	Slave I3	NI3 (network input 3)
4.	Central off button (integrated panic button)	Slave I4	NI4 (Network input 4)
5.	Lighting room 1	Slave Q1	NQ1 (Network output 1)
6.	Lighting room 2	Slave Q2	NQ2 (network output 2)
7.	Exterior lighting	Slave Q3	NQ3 (network output 3)

Note Signals pending at the inputs of a slave LOGO! should normally be pending for 0.5 seconds so the signals can be transferred safely.

Function description

In manual mode, the lights can be controlled with buttons or with the cursor keys over the LOGO! controller and the LOGO! TDE. In addition, the lights can be controlled with a tablet, smartphone or PC with the F-keys over the integrated webserver of LOGO! 8.

The panic mode is activated when one of the light buttons is pressed for at least 3 seconds. All lights are switched on.

The panic mode is deactivated when one of the light buttons is pressed for at least 3 seconds again. All lights are switched off.

The panic mode is automatically deactivated with a time delay of 30 minutes.

Table 2-12

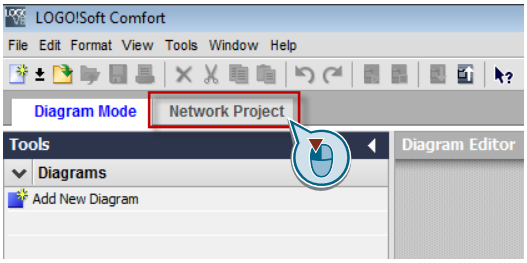
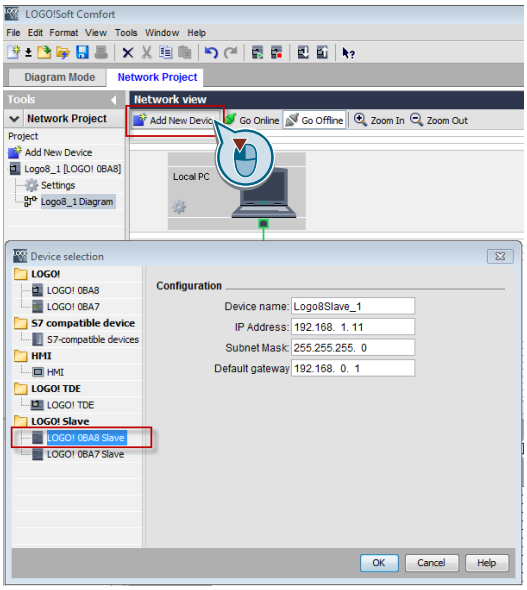
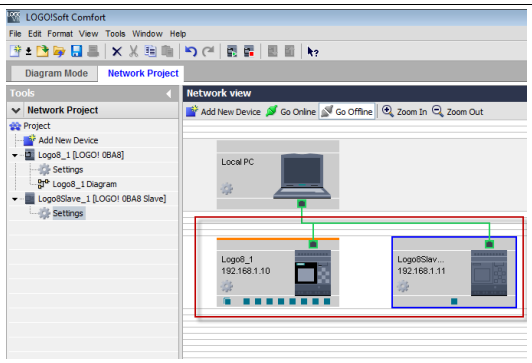
No.	Function	Function block	Block name in the program
1.	Switching lighting in room 1	Pulse relay	Light room 1
2.	Switching lighting in room 2	Pulse relay	Light room 1
3.	Switching the exterior lighting	Pulse relay	Outside light

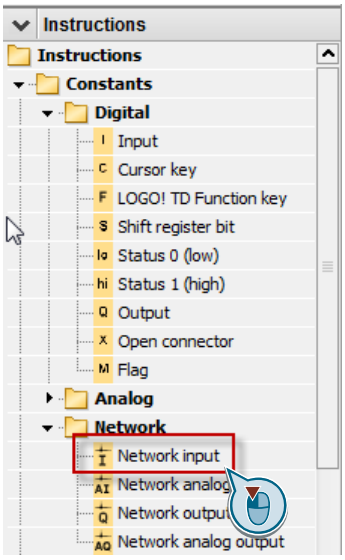
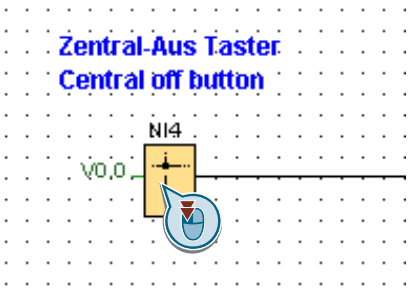
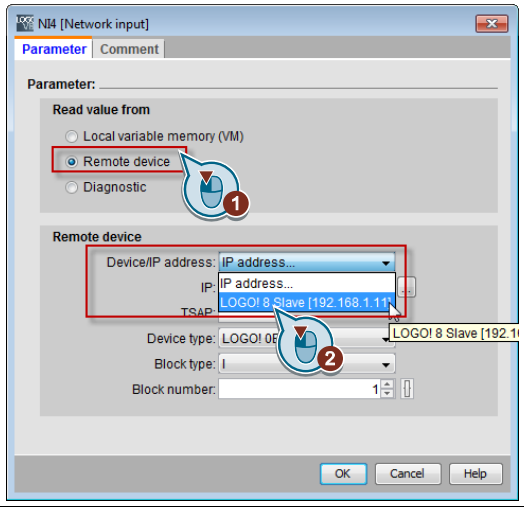
2.4 Reading inputs from a slave LOGO! and controlling outputs of a slave LOGO!

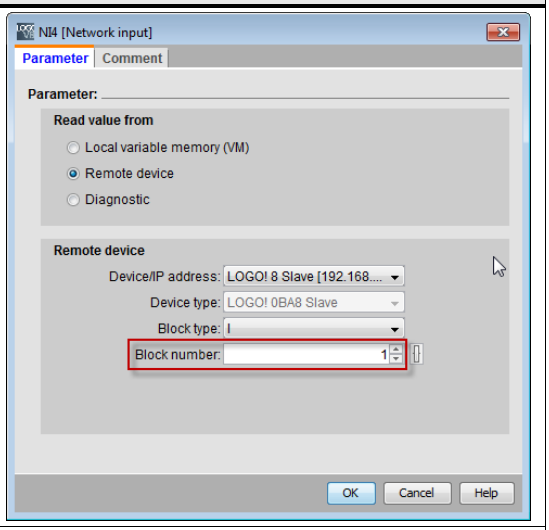
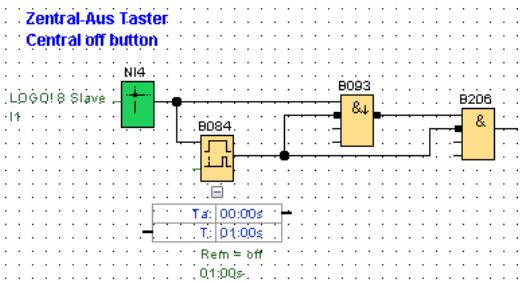
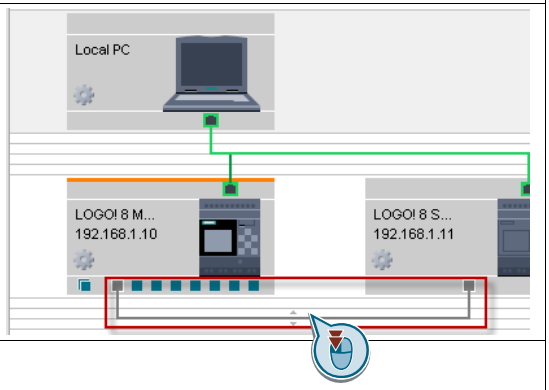
When the master/slave mode is set, you can read inputs from a slave LOGO! and control outputs of a slave LOGO!.

The table below describes the LOGO! program settings for this:

Table 2-13

No.	Action/response	LOGO! Soft Comfort V8
1.	Start LOGO! Soft Comfort V8.	
2.	Click in the Mode bar on "Network Project" to open the project mode.	
3.	Click on "Add new device". The subsequent window enables you to add devices you want to use to the network (in this example a master and a slave LOGO!).	
4.	The "Network view" gives you an overview of the devices used in your network (in this case a master and a slave LOGO!).	
5.	Now, go to the diagram in the "diagram editor".	

No.	Action/response	LOGO! Soft Comfort V8
6.	If you want to use the input of the slave LOGO! in the program, select a digital "Network input" from the "Instructions tree" and add it to your switching program.	
7.	Then double click on the digital "Network input" in the program to open its block properties.	
8.	Perform the following steps in the block properties: 1. Select the "Remote device" item. 2. The slave LOGO! that you have already added to the network view before now automatically appears under "Device/IP address". Select it.	

No.	Action/response	LOGO! Soft Comfort V8
9.	Then you need to define which slave LOGO! input you want to read.	
10.	The digital network input is displayed in green, which means that LOGO!-Soft Comfort V8 has automatically created an Ethernet connection and a data transfer mechanism between the master and the slave LOGO!. **Note:** If the digital network input is displayed in red, the communication between master and slave LOGO! is not available anymore.	
11.	A connecting line has automatically been created between master and slave LOGO!, which means that both devices are communicating with each other. **Note:** Double-click on the connecting line to open the connection settings with information on Ethernet connection and data transfer.	
12.	Repeat the steps from this table to specify data transfer for additional inputs and outputs of the slave LOGO!.	

3 Installation and Commissioning

This chapter describes the steps necessary to start up the example with the code from the download and the hardware list.

3.1 Installing the hardware

3.1.1 LOGO! 8 and TDE

Please note the respective setup guidelines for LOGO! 8 and LOGO! TDE. Further information is available in the LOGO! manual in chapter "LOGO! installation and wiring".

3.1.2 WLAN Access Point

Connect the WLAN Access Point to the network with your LOGO! devices via Ethernet, e.g. via LOGO! CSM. Further information is available in the manual of the WLAN Access Point.

Note

Make sure that your WLAN Access Point and the LOGO! have the same basis address. For example:

IP address master LOGO!: 192.168.1.10
IP address WLAN: 192.168.1.xxx

3.2 Installing the software

Note

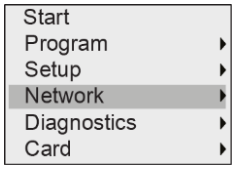
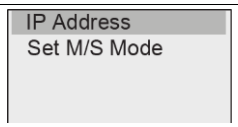
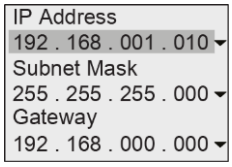
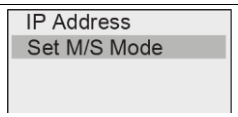
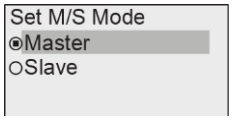
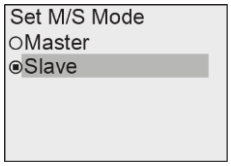
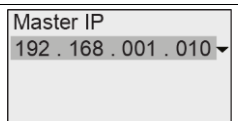
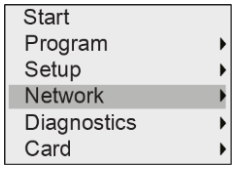
It is assumed that the necessary LOGO! Soft Comfort V8 software has been installed on your PC and that you are familiar with the basic handling of this software.

3.3 Commissioning

Note Changes of the IP address or the master-slave mode are only possible in "STOP" mode.

3.3.1 Assigning IP addresses to LOGO! devices and setting the master/slave mode

Table 3-1

No.	Action/response	LOGO! display
1.	First, configure the master LOGO!. Go to the "Network" item via the LOGO! display using the cursor keys C1▲ or C2▼ on the LOGO! 8 and press OK.	
2.	Select "IP address".	
3.	Press the OK button of the LOGO! controller and use the cursor keys C1▲, C2▼, C3 ◄ and C4 ► to enter your master LOGO!'s IP address (here: 192.168.1.10). Confirm with the OK button.	
4.	Press the ESC key to return to the previous menu item and select "Set M/S mode".	
5.	For configuring the master LOGO!, select "Master".	
6.	Repeat steps 1-5 for the configuration of the slave LOGO!, with the following differences: • IP address, here: 192.168.1.11 • "Set M/S Mode" -> "Slave"	
7.	Enter the IP address of the master LOGO! you want to connect to the slave LOGO! and press the OK button.	
8.	The LOGO! controller will automatically reboot and then display the main menu. The master/slave configuration is now complete.	

3.3.2 Assigning an IP address to LOGO! TDE

For LOGO! TDE, one IP address and one subnet mask each must be assigned so it is located in the same subnet as the master and slave LOGO!.

Information on how to assign an IP address to the LOGO! TDE can be found in the LOGO! manual in Chapter "LOGO! TDE settings menu".

Note

Please observe that you need to change to "administrator" access level for certain settings for the LOGO! controller and the LOGO! TDE. When changing to the "administrator" access level, you need to enter a valid password. For the LOGO! controller and the LOGO! TDE the password "LOGO" is set by default.

Further information is available in the LOGO! Manual in Chapter "Configuring menu access protection in LOGO!".

3.3.3 Selecting LOGO! with the LOGO! TDE

To be able to operate the application example with the LOGO! TDE, the master LOGO! must be selected according to its IP address in the LOGO! TDE.

More information on how to select a LOGO! with the LOGO! TDE menu can be found in the LOGO! manual in Chapter "LOGO! selection menu".

3.3.4 PC

Please ensure that the IP address of the network connection of your PC (or USB Ethernet adapter) used for connecting to LOGO! 8 is located in the same subnet as the master and slave LOGO! and LOGO! TDE.

An instruction on how to change the IP address of a network card is available, for example, on the internet in the Microsoft Knowledge Base under "Change TCP/IP settings".

The table Table 3-2 shows an example of how to assign IP addresses so they are located in the same subnet.

3.3.5 IP addresses and subnet masks

Table 3-2

No.	Device	IP address	Subnet mask
1.	Master LOGO!	192.168.1.10	255.255.255.0
2.	Slave LOGO!	192.168.1.11	255.255.255.0
3.	LOGO! TDE	192.168.1.14	255.255.255.0
4.	Network card or USB Ethernet Adapter for network connection to PC	192.168.1.12	255.255.255.0

Note The respective setup guidelines for LOGO! must generally be followed.

CAUTION

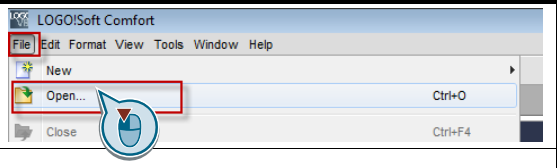
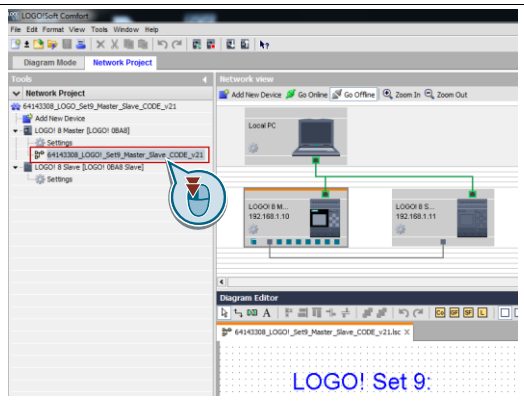
In this application example, all LOGO! signals are designed for 24V technology.

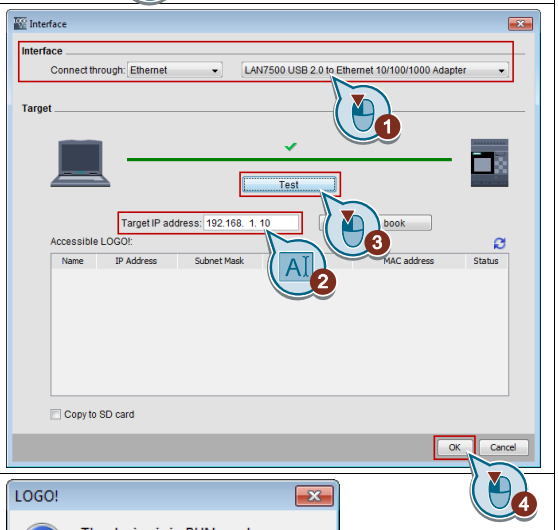
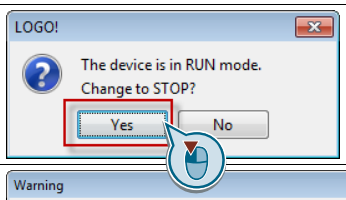
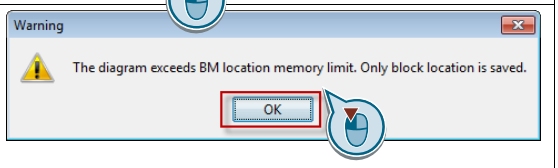
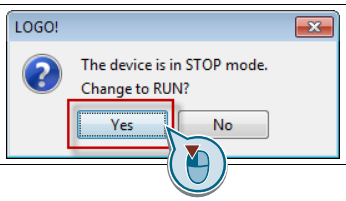
If a combination of 230V and 24V is required, a 230V basic device must be used. Between a 230V basic device and a 24V expansion module, an analog module for potential separation must be used.

3.4 Downloading a program into LOGO! 8

Together with this application example a completed LOGO! program for LOGO! 8 is offered for download. The table below contains a description on how to load the completed LOGO! program into LOGO! 8. Start LOGO! Soft Comfort V8 and make the following settings:

Table 3-3

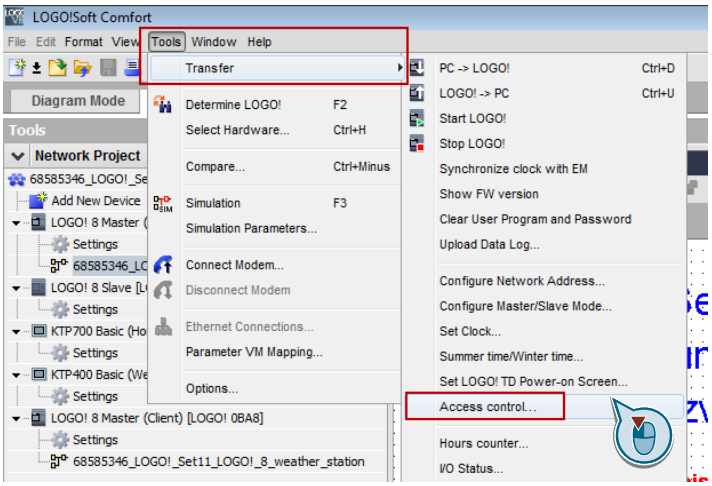
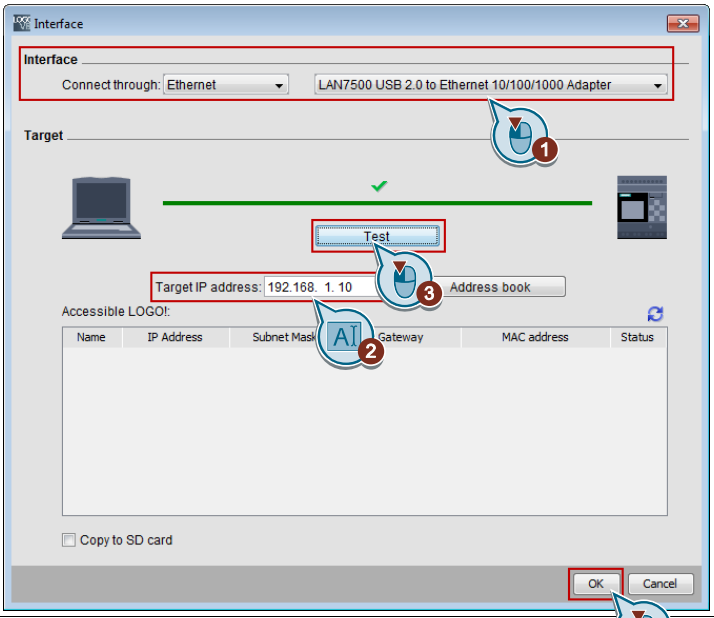
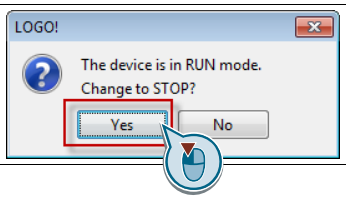
No.	Action/response	LOGO! Soft Comfort V8
1.	Navigate to "File > Open" and select the downloaded LOGO! program "64143308_LOGO_Set9_ Master_Slave_CODE_v21.lnp".	
2.	The "Network view" with the master and slave LOGO! opens.	
3.	Double-click on the program title to open the diagram.	

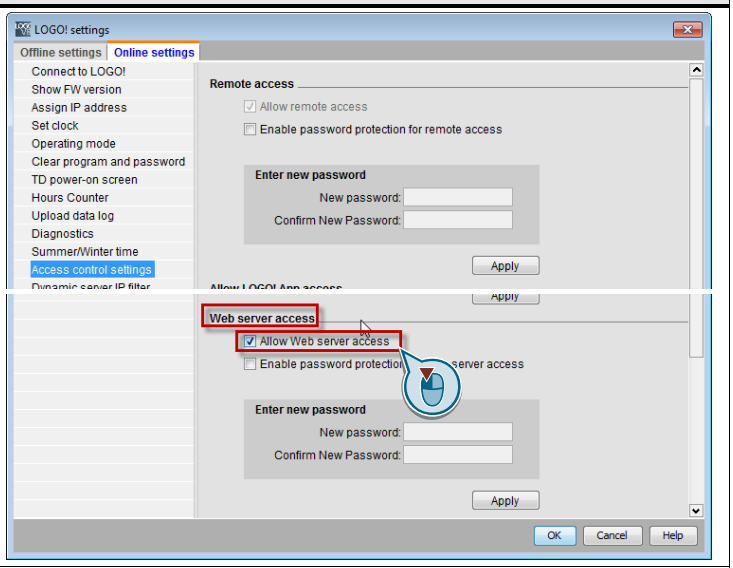
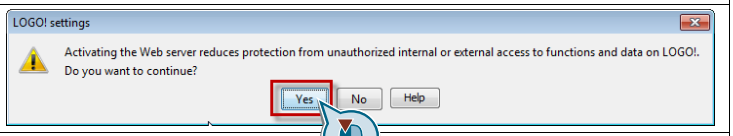
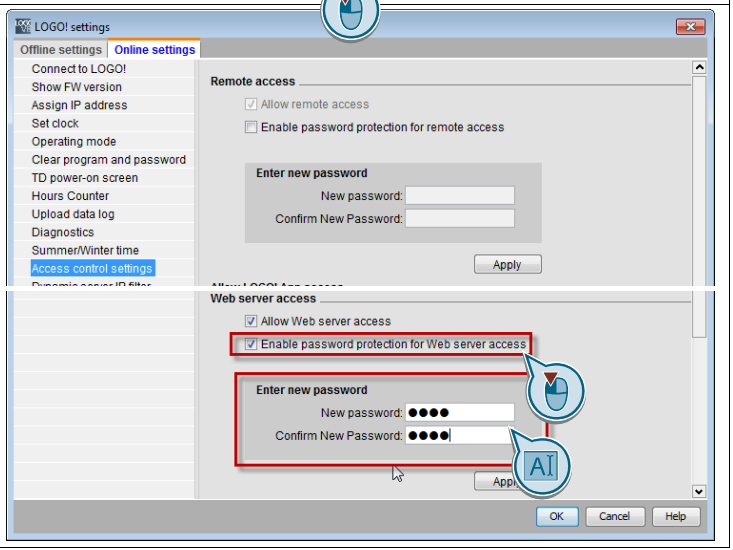
No.	Action/response	LOGO! Soft Comfort V8
4.	Click the "Download" button.	
5.	1. Select the "Interface" for your connection to LOGO!. 2. Enter the IP address of your LOGO!. 3. Click "Test" in order to check whether the connection has been established successfully. 4. If the connection was successful click "OK" to load the program into the device. **Note:** If you are asked, when loading program, for a password, enter "LOGO" (preset LOGO! password).	
6.	Click "Yes" to set the LOGO! to STOP before the download.	
7.	Acknowledge the warning message "The diagram exceeds BM location memory limit" with "OK". **Note:** The LOGO! controller has an internal layout memory of 30000 Byte. If more than 30000 Bytes are required for the graphical information, then the included information is reduced to the right positioning of the function blocks in the diagram. If then the program is transferred from the LOGO! controller to the PC, although the blocks are placed on the right position, but the connection lines are not displayed on the positions of the original program. But the diagram is technical correct and the program is executable.	
8.	After the successful completion of the download click "Yes" in order to set the LOGO! back to RUN.	

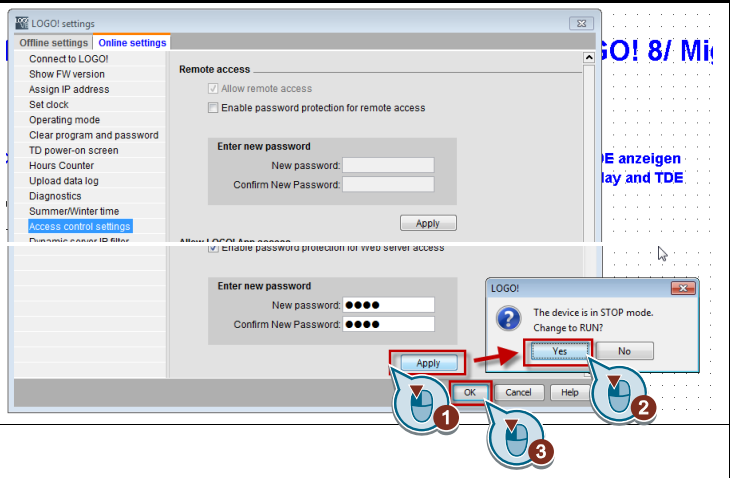
3.5 Setting web server access

To be able to operate the application example using the integrated LOGO! web server, the web server must first be enabled using the LOGO! Soft Comfort V8 menu. Start LOGO! Soft Comfort V8 and make the following settings:

Table 3-4

No.	Action/response	LOGO! Soft Comfort V8
1.	In the menu, navigate to "Tools > Transfer > Access Control".	
2.	Select the interface for your connection to LOGO! and enter the IP address of your LOGO!. Click "Test" in order to check whether the connection has been established successfully. If the connection is successful click "OK". **Note:** If **you are asked for a password**, **enter "LOGO"** (preset LOGO! password).	
3.	Click "Yes" to set the LOGO! to STOP.	

No.	Action/response	LOGO! Soft Comfort V8
4.	Navigate to the "Web server access" item and tick the box for "Allow Web server access".	
5.	Acknowledge the warning message with "Yes".	
6.	Tick "Enable password protection for Web server access" and enter a password.	

No.	Action/response	LOGO! Soft Comfort V8
7.	Click "Apply" and then click "Yes" when the message appears, in order to set the LOGO! back to RUN. Click "OK" to close the window.	
8.	The settings for web server access are now complete. Call up the web server by entering the IP address of the master LOGO! in your internet browser (tablet, smartphone or PC).	

Note

The web server can be called with the following devices and browsers:

- PCs with all compatible web browsers
- All smartphones (optimized resolution)
  All compatible web browsers
- Tablet PCs (optimized resolution)
  All compatible web browsers

3.6 User defined Webserver (LOGO! V8.2)

Since version 8.2, LOGO! 8 offers a user-defined web server.

The web project is created with the LOGO! web editor (LWE) and loaded onto a Micro-SD card.

Note

You will find instructions for project planning the LWE in the form of a video under the following link:

- https://support.industry.siemens.com/cs/ww/en/view/109757017

The LOGO! web editor is available for download at the following link:

- https://w3.siemens.com/mcms/programmable-logic-controller/en/logic-module-logo/logo-software/Pages/Default.aspx#LOGO__20Web_20Editor

Figure 3-1 displays the interface of the web editor. In addition to static picture elements, the Web Editor also offers digital buttons and analog operating elements that are linked to the switching program in the LOGO! basic device. In the figure, for example, the flag [M51] from the LOGO! Soft Comfort circuit program (1) is linked to the button in the Web editor (2).

To simulate the roller blinds, bar diagrams of the web editor were linked to a counter in the LOGO! circuit program.

Note

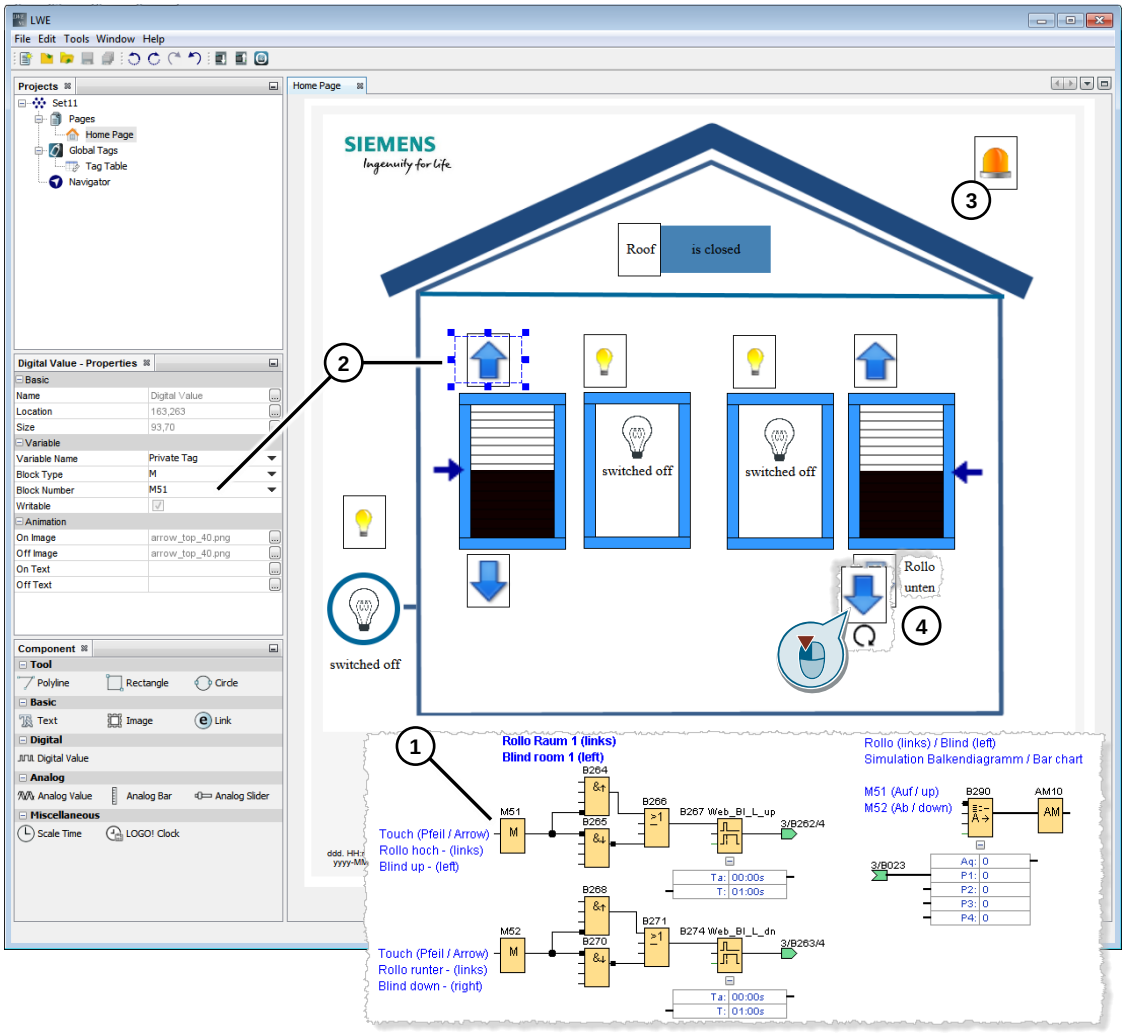
The bar charts were rotated 180° because the roller blind is white and the open window is black. A color change of the white area in the bar chart is not possible in this version of the Web Editor V1.0 .

The button for the "panic function" (3) is linked to a static image in the idle state. If the button is pressed in the web browser, the status "On" is switched to a moving alarm light. Different states are illustrated by hidden images and text elements.

If a roller blind is operated, this is indicated by a rotating arrow on the button (4). The respective text is output at the end position of the roller blind.

The individual functions of the control elements can be found in section 4.5.

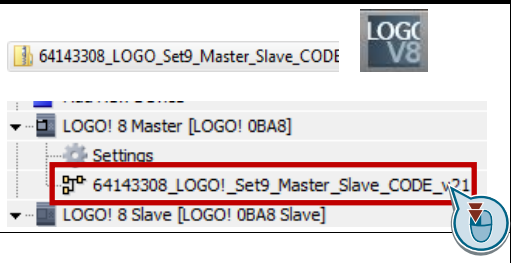
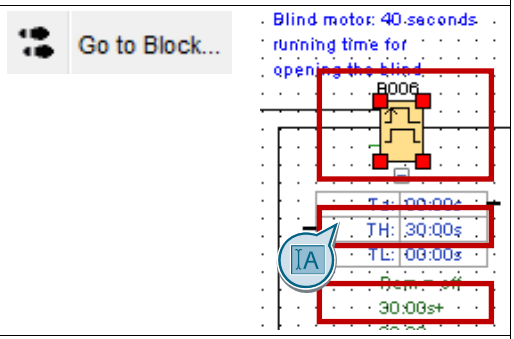
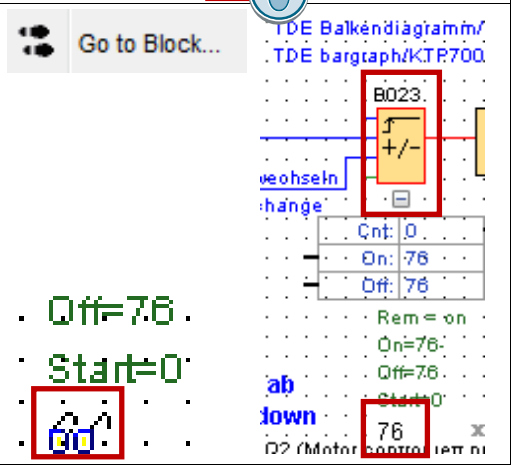
Figure 3-1

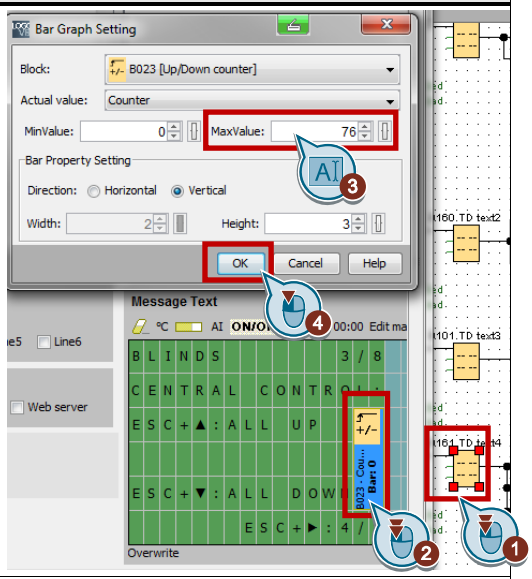


3.7 Adjust the runtime of the blinds in the LOGO! program

In the LOGO! program a blind runtime of 40 seconds until the end stop is defined. Check the exact runtime until end stop of the blinds you use. If the runtime is a different value than 40 seconds we recommend the settings of following parameters for an optimized control of the blinds and for display:

Table 3-5

No.	Action/response	KTP700 display
1.	1. Unzip and execute the LOGO! Soft Comfort V8 project from the download. 2. Open the master program by double-clicking it.	
2.	1. Move blinds up (see Table 4-2) 2. Note down the runtime.	
3.	1. Navigate in the program to the function blocks B006, B013, B010, and B030. 2. With a double click on the respective block the block properties are being opened. 3. Set in the block properties of this function blocks the values as noted down in item 2.	
4.	Activate the online test by clicking "Online test" and follow the menu navigation.	
5.	1. Go to function block B023/B068 in the master program. 2. Click the icon with the pair of glasses to monitor the value. 3. Note down the displayed value (see marker frame). 4. Deactivate the online test.	

No.	Action/response	KTP700 display
6.	1. Go to function block B161 and open the block properties with a double-click. 2. Double-click on the bar graph to get to its parameters. 3. Set the maximum value to the value you noted down in item 5. 4. Save the settings with "OK". Now the bar graph display for the LOGO! display and LOGO! TDE has been set.	
7.	Load the modified program to the master LOGO!.	

4 Operating the Application Example

The application example can be operated with the following ways:

- over buttons
- over the LOGO! controller and the LOGO! TDE with the cursor keys
- remote-controlled with a tablet, smartphone or PC with the F-keys over the integrated webserver of LOGO! 8

WARNING

Risk of property damage or personal injury.

When controlling the functions of the application example over the cursor keys or over the F-keys, be sure that you don't control in mixed operation on the HW as well as on the webserver. Decide before you begin with the operation of the application example, if you want to control either over the cursor keys on the LOGO! controller and on the LOGO! TDE or over the F-keys on the webserver.

If this requirement is not observed, property damage or personal injury may occur.

4.1 Operation with buttons

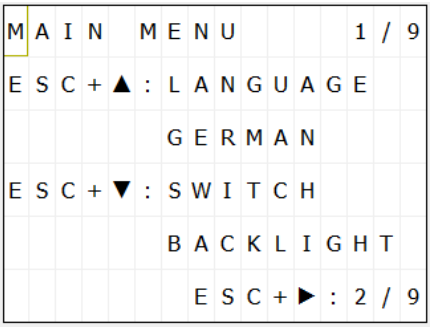
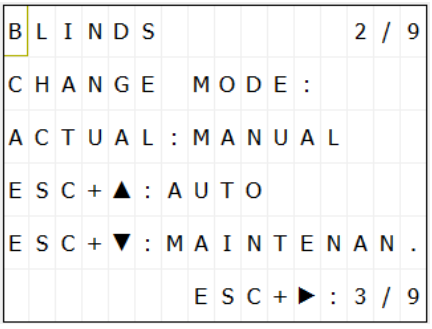
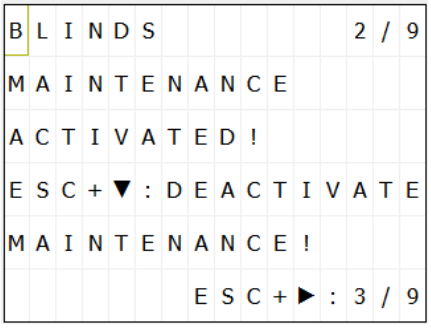
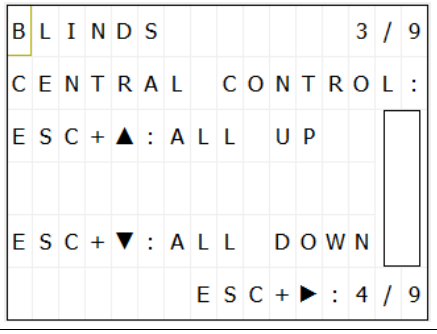
Inputs for the buttons for operating the application example have already been assigned in the LOGO! program, which means that the buttons now need to be connected to the LOGO! or the LOGO! expansion modules.

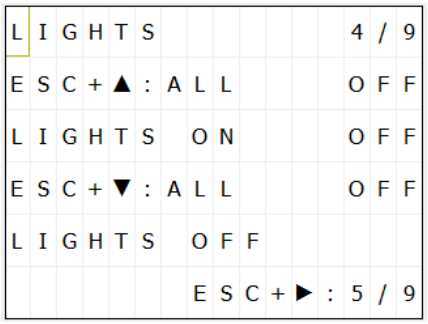
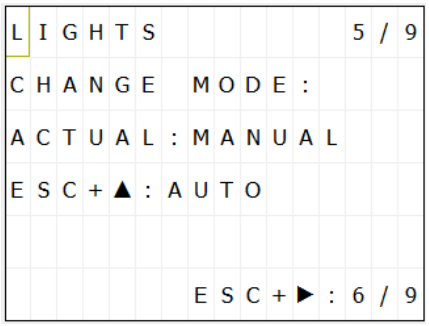
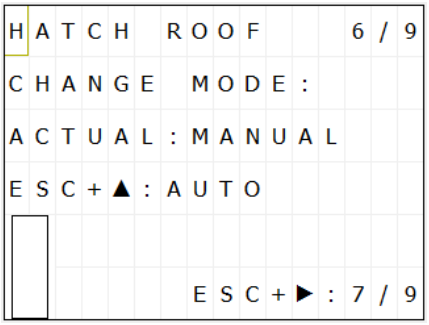
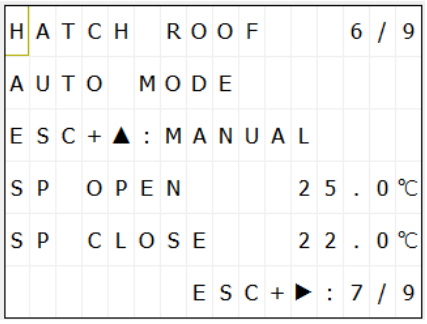
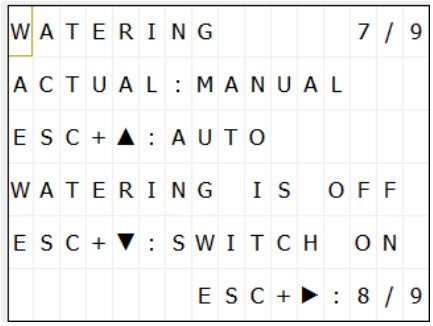
If required, you can adapt the assigned inputs and outputs to your requirements and specifications.

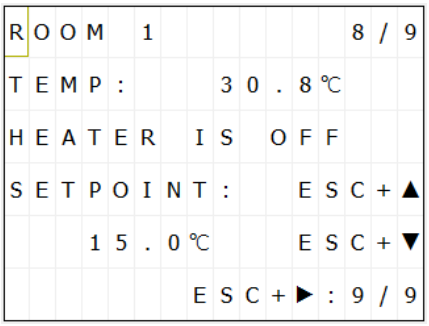
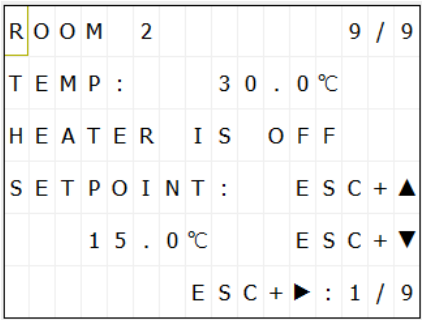
More information on functions in the application example operated with buttons can be found in Chapter 2.3.

4.2 Menu overview for the control of the house functions with the LOGO! TDE or LOGO! display

Table 4-1

No.	Description	LOGO! display and LOGO! TDE
13.	**Main menu**	
14.	**Blinds: Change mode**	
15.	**Blinds: Maintenance mode**	
16.	**Blinds: Central control**	

No.	Description	LOGO! display and LOGO! TDE
17.	**Lights: Central control**	
18.	**Lights: Change mode**	
19.	**Hatch roof: Change mode**	
20.	**Hatch roof: Auto mode**	
21.	**Watering**	

No.	Description	LOGO! display and LOGO! TDE
22.	**Room 1: Room temperature**	
23.	**Room 2: Room temperature**	

Note

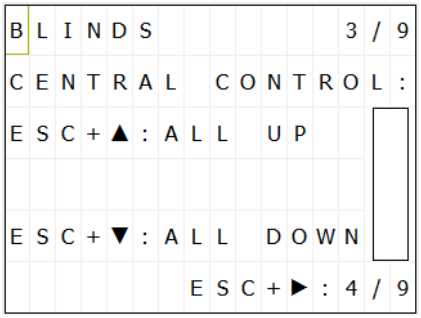
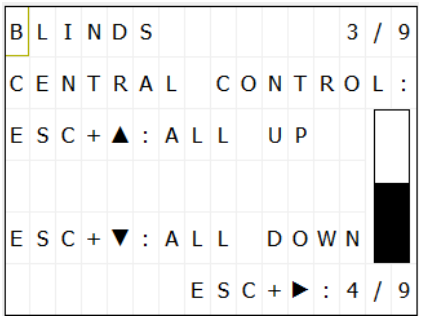
When the panic function is activated, a warning message is displayed on the LOGO! display and on the LOGO! TDE that all lights are on. At the same time the LOGO! display lights up orange.

On the webserver the display also lights up orange, as long as the panic function is activated. The warning message for the panic function is not displayed on the webserver.

As soon as the panic function is deactivated, the warning message must be acknowledged in both languages (two character sets activated) with "OK" on the LOGO! or with "ENTER" on the LOGO! TDE in order to hide it.

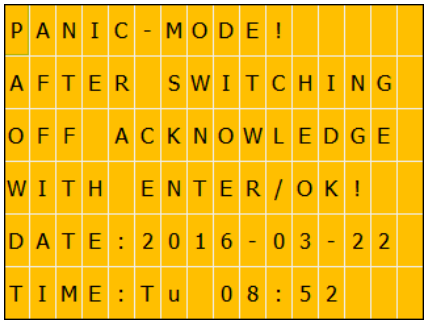
4.2.1 Operating example for use of the LOGO! display and LOGO! TDE: Central blind control

Table 4-2

No.	Action/response	LOGO! display and LOGO! TDE
1.	Use the cursor keys to go to the blind control menu.	
2.	Press ESC+ C1▲. → All blinds move up.	
3.	While the blinds travel upwards, press ESC+C2▼. → The blinds are stopped.	
4.	Now press ESC+C2▼(0.5 seconds). → The blinds now move downwards again, i.e. in reverse direction.	

4.3 Activating the panic function for the lights

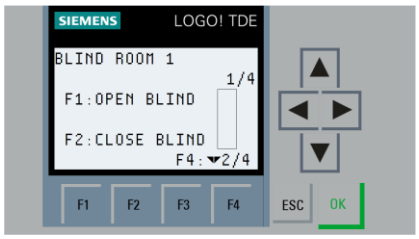
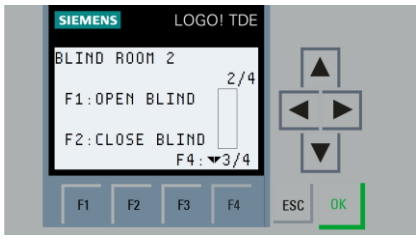
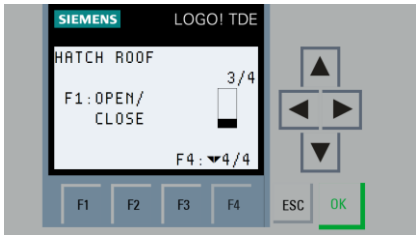
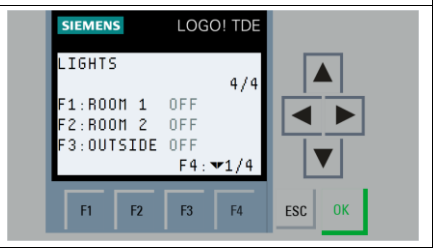
Table 4-3

No.	Action/response	LOGO! display and LOGO! TDE
1.	Press one of the light buttons in the house for more than 3 seconds. → All lights in the house and the exterior lighting are switched on. In addition, a warning message is displayed on the LOGO! display and on the LOGO! TDE.	

No.	Action/response	LOGO! display and LOGO! TDE
2.	Now, press one of the light buttons in the house for more than 3 seconds again. → The panic function has now been deactivated.	
3.	Acknowledge the warning message with "OK" on the LOGO! or with "ENTER" on the LOGO! TDE. **Note** As in the LOGO! Program two character sets are activated for the message texts are enabled, messages in both character sets must be acknowledged, in order to hide them.	

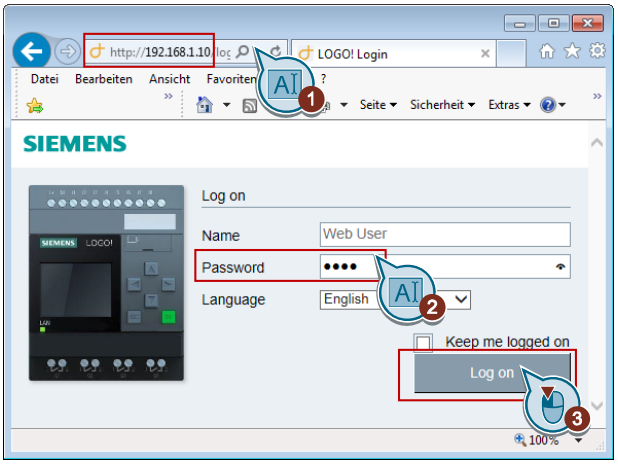
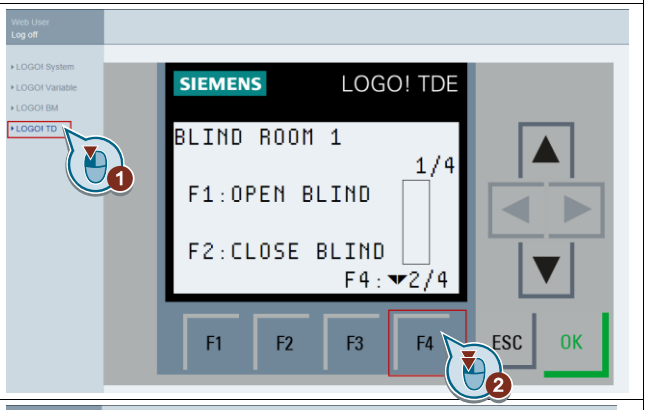
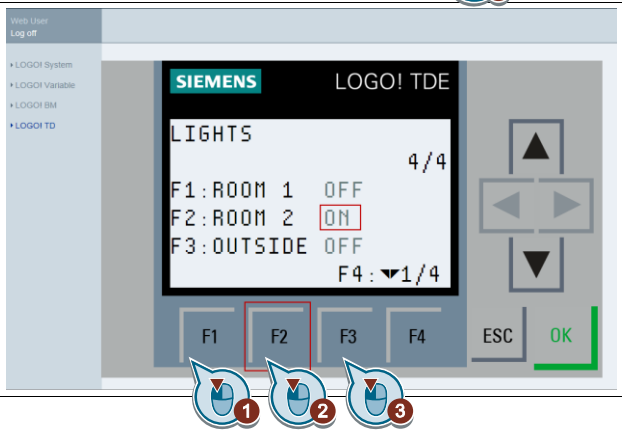
4.4 Operation using the web server (menu overview)

Table 4-4

No.	Description	Display on tablet, smartphone or PC
1.	**Blinds Room 1**	
2.	**Blinds Room 2**	
3.	**Hatch roof**	
4.	**Lights**	

4.4.1 Operating example for light control via the web server

Table 4-5

No.	Action	Web server screen (tablet, smartphone or PC)
1.	Open your internet browser (tablet, smartphone or PC) and carry out the following steps: 1. Enter the IP address of your master LOGO! (here: 192.168.1.10). 2. Enter the password that you have specified in "Tools > Transfer > Access control" in LOGO! Soft Comfort V8 (see Chapter 3-5, Table 3-4, step 6). 3. Click on the "Log On" button.	
2.	1. Click "LOGO! TDE" to open the virtual display of LOGO! TDE. The first screen in the menu for web server operation opens. 2. Press the F4 button until you get to the light operation screen.	
3.	1. Click the "F1" button to switch the light in room 1 on and off. 2. Click the "F2" button to switch the light in room 2 on and off. 3. Click the "F3" button to switch the exterior light on and off.	

4.5 Bedienung über den benutzerdefinierten Webserver

Open your internet browser with the option "to customized site".

Figure 4-1 points to the configured operating elements for the user-defined web server. In the web browser, click using the mouse, or on a touch screen, tap on the button with the function in Table 4-6.

Note After loading the circuit program, the display of the blinds is not yet synchronized with the corresponding block in the circuit program. Synchronization takes place when the end position of a roller blind is reached.

Figure 4-1

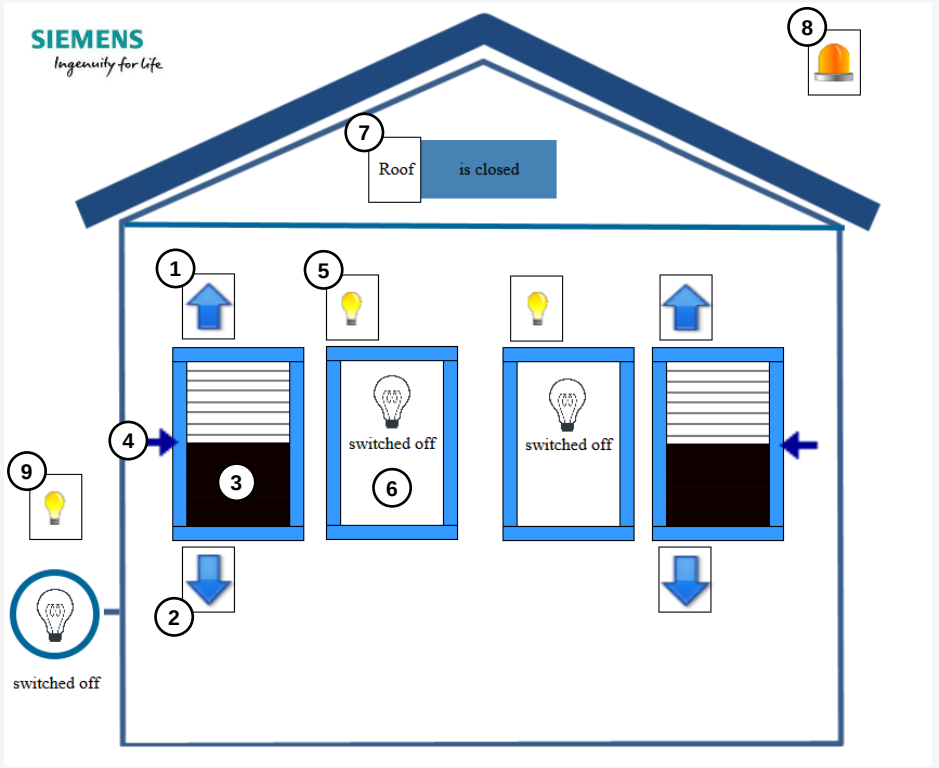


Table 4-6

Lfd. Nr.	Funktion	Bemerkung
1.	Roller blind high	Roller blind is being lifted (up to roller blind limit switch)
2.	Roller blind from	Roller blind is being lowered (up to roller blind limit switch)
3.	Roller blind	Roller blind is up (window is shown black)
4.	Roller blind stop	Roller blind can be stopped at any position
5.	Light switch	Switches the light for each room on and off
6.	Light on/off	Lamp on, displayed in yellow
7.	Roof hatch	Roof hatch is opened or closed
8.	Panic function	Switches on lights in the house and outside lighting
9.	Outside lighting	Outside lighting on, displayed in yellow

5 Appendix

5.1 Service and Support

Industry Online Support

Do you have any questions or need assistance?

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

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

Product information, manuals, downloads, FAQs, application examples and videos – all information is accessible with just a few mouse clicks:
https://support.industry.siemens.com

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

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

You will receive optimum support wherever you are with the "Siemens Industry Online Support" app. The app is available for Apple iOS, Android and Windows Phone: https://support.industry.siemens.com/cs/ww/en/sc/2067

5.2 Bibliographic references

Table 5-1

	Title
\1\	LOGO! 8 A Practical Introduction, with Circuit Solutions and Example Programs Author: Stefan Kruse Published by: Publicis ISBN: 9783895789267
\2\	LOGO!8 - MiniTrainerSchool Author: Klaus Machalek Product No.: LOGO! MTS

5.3 Internet links

Table 5-2

	Topic	Link
\1\	Siemens Industry Online Support	http://support.industry.siemens.com
\2\	Download page of the entry	https://support.industry.siemens.com/cs/ww/en/view/64143308
\3\	LOGO! 8 Manual	https://support.industry.siemens.com/cs/ww/en/view/109741041
\4\	LOGO! Software updates	http://w3.siemens.com/mcms/programmable-logic-controller/en/logic-module-logo/demo-software/Pages/Default.aspx
\5\	LOGO! Application Examples	http://w3.siemens.com/mcms/programmable-logic-controller/en/logic-module-logo/application-examples/Pages/Default.aspx

5.4 History

Table 5-3

Version	Date	Modifications
V1.0	04/2013	First version
V1.1	03/2014	Layout modified and security note amended
V2.0	01/2015	Changes in LOGO! 8
V2.1	04/2016	Complete revision of software and documentation
V2.2	09/2018	Changes in LOGO! 8 (user defined webserver)