

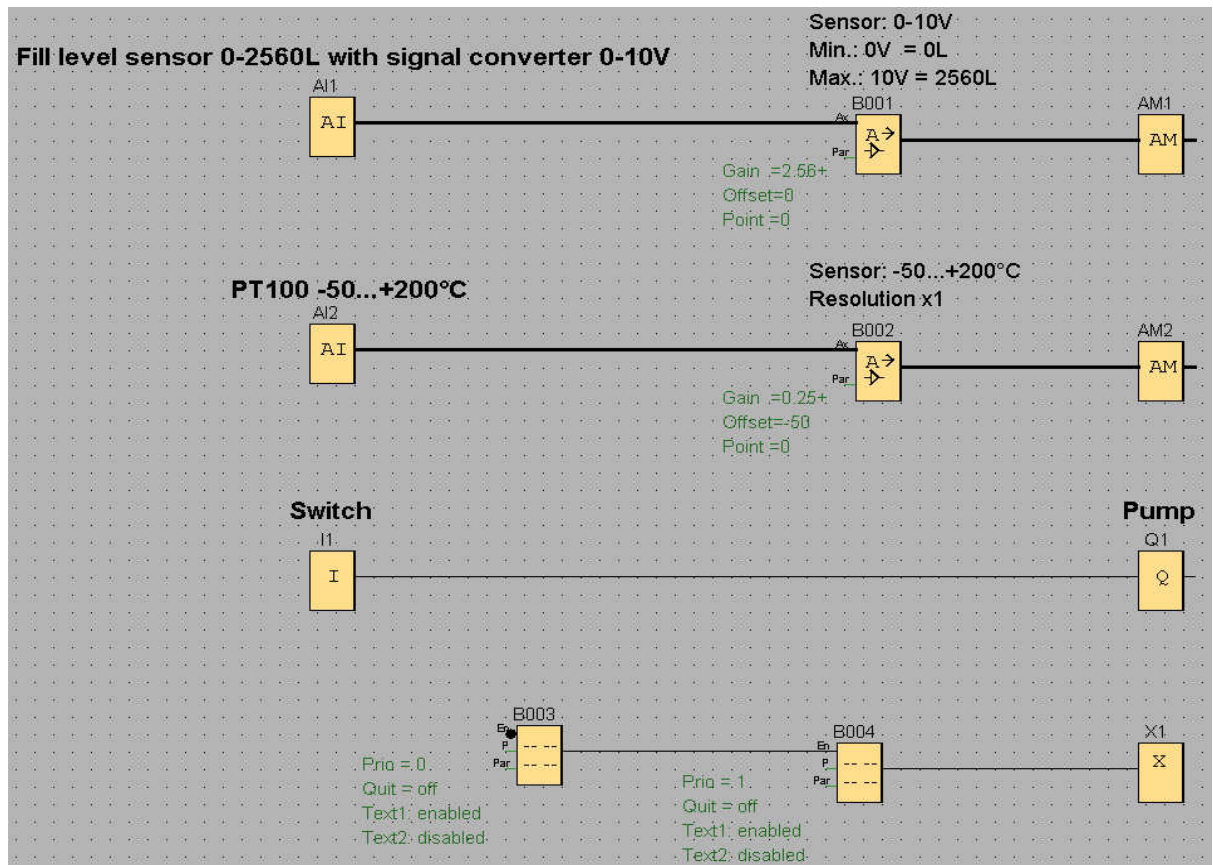
Connecting an HMI to LOGO! ..0BA7 (WinCC flexible)

Problem

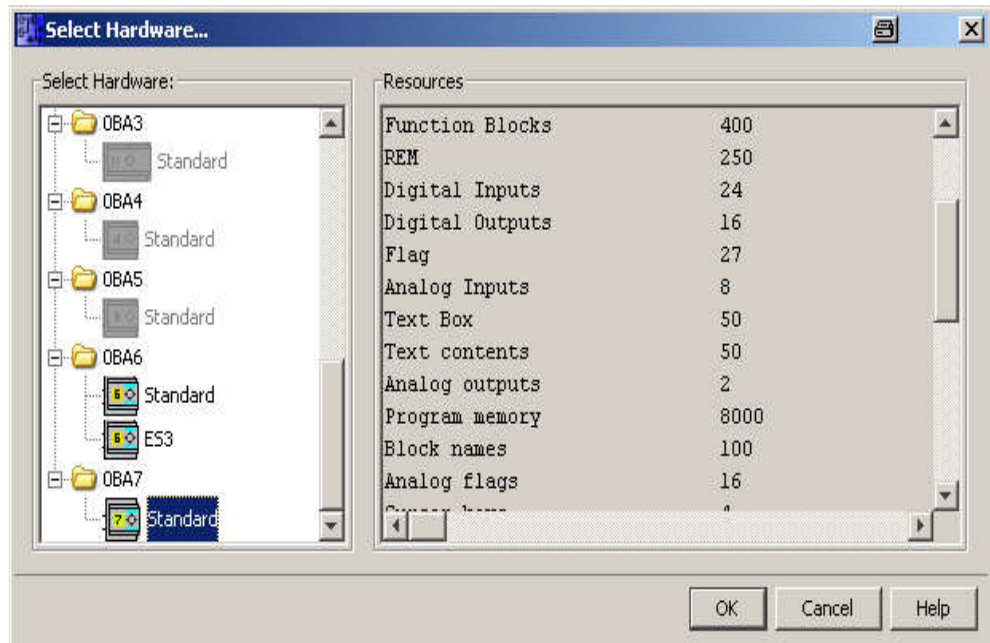
A program which is used to monitor a fill level, a temperature and addresses a pump that is currently executed in LOGO! ..0BA6, is now to be executed in LOGO! ..0BA7, and the actual values of the fill level and the temperature are also to be displayed on a touch panel. It should also be possible to enable/disable the pump using the touch panel. The status of the pump (ON/OFF) should also be displayed on the panel.

Changes in the LOGO! program

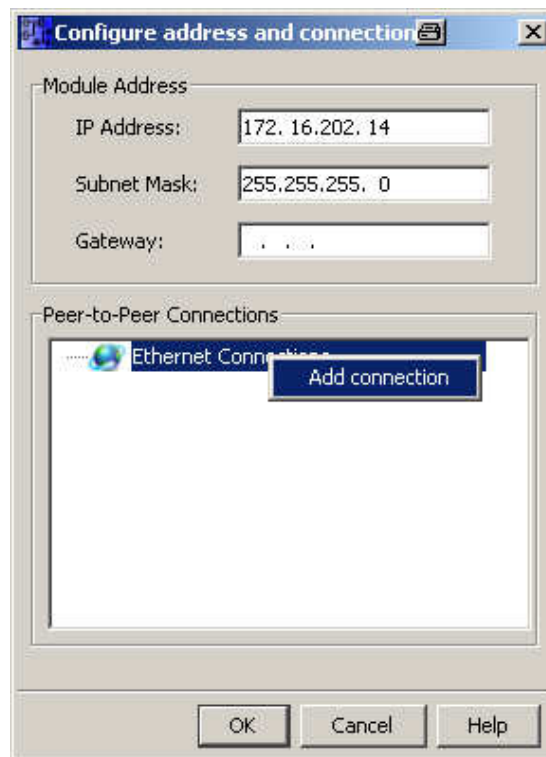
Open the LOGO! ..0BA6 program with LOGO!Soft Comfort V7.



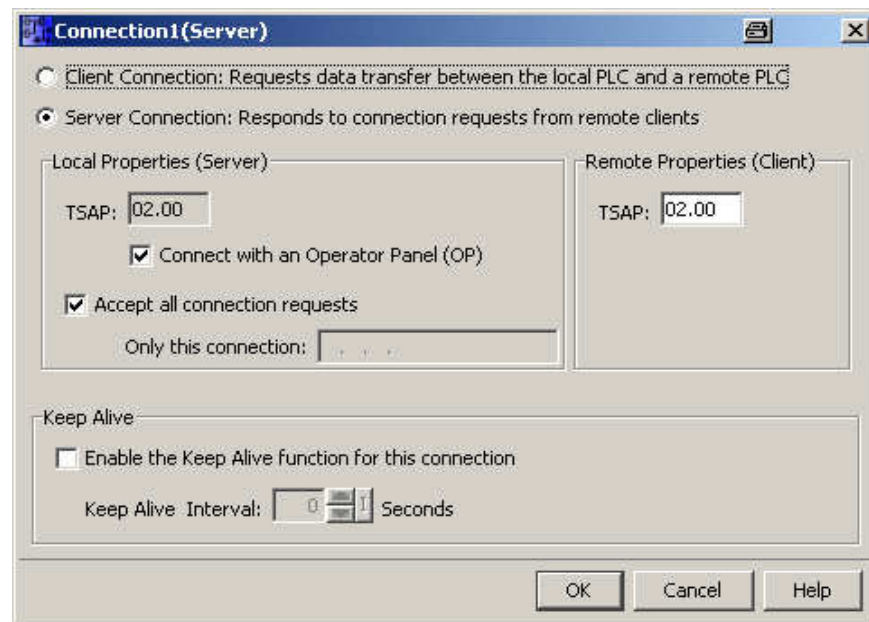
In the device selection ("Tools; Device selection") set the LOGO! ..0BA7 basic device.



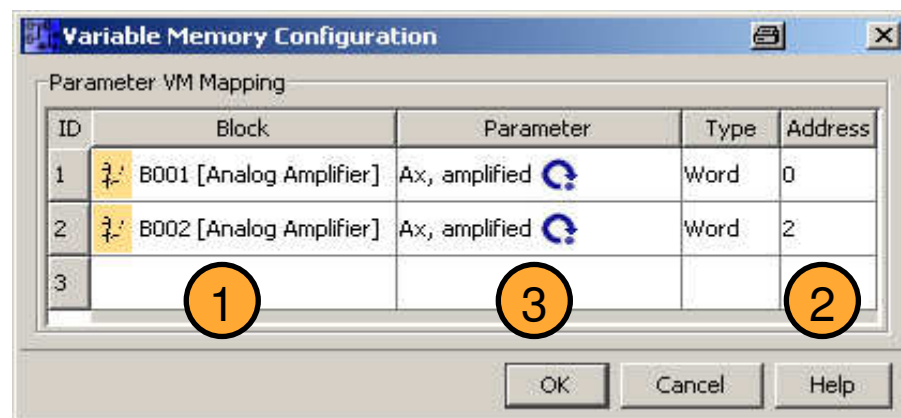
Configure an Ethernet connection between LOGO! ..0BA7 and the touch panel. Click on "Tools; Ethernet Connections...", assign the IP address as well as the subnet mask for the basic device; create a new connection with a right-click on the Ethernet connections under Peer-to-Peer connections.



Open the properties of the connection and configure it as seen in the following figure.



To specify which data are to be made available to the HMI, open "Tools; Parameter VM Mapping..." and create a variable table.



Notes:



1

Information from the LOGO! program

2

HMI address

3

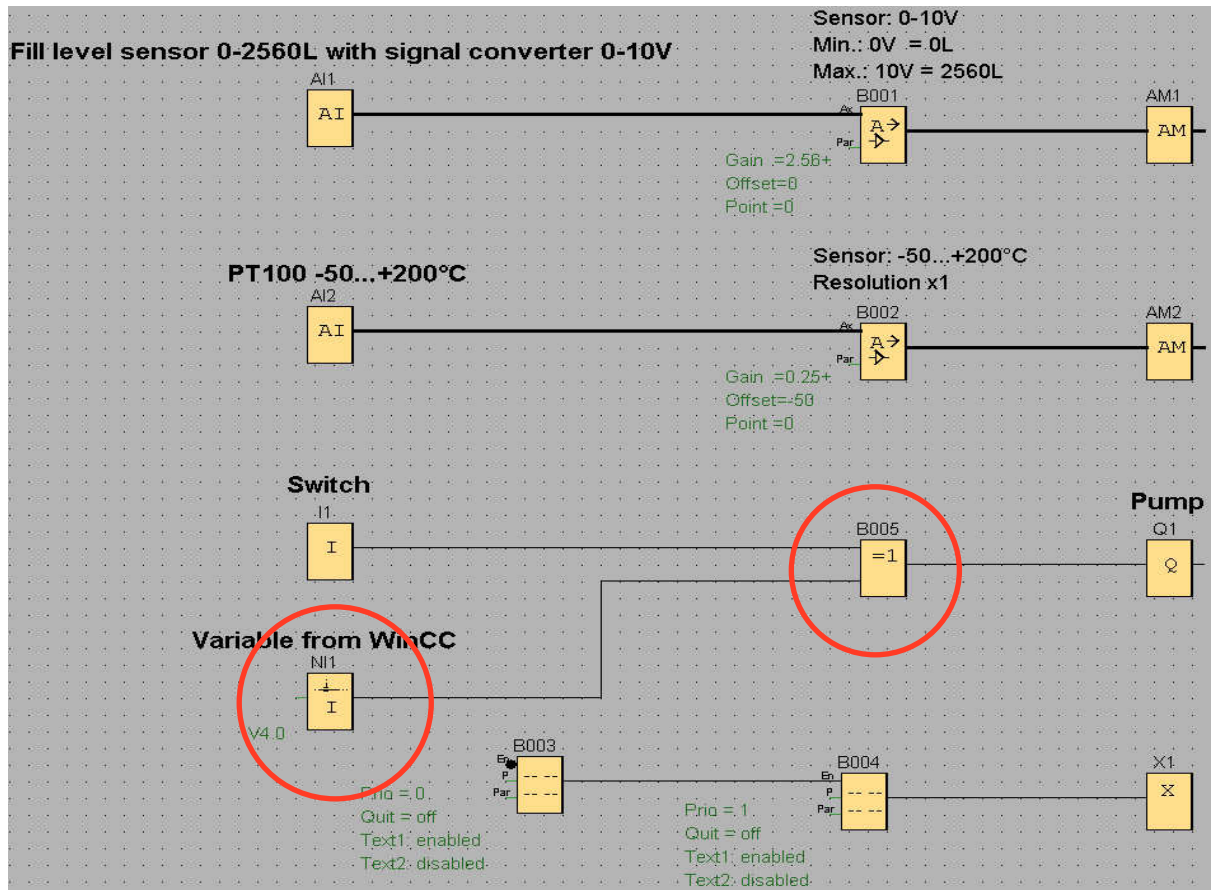
Parameter to be transferred



is a value of a function (e.g. the amplified value of an analog amplifier)



is a parameter of a function (e.g. the delay time of an on-delay)



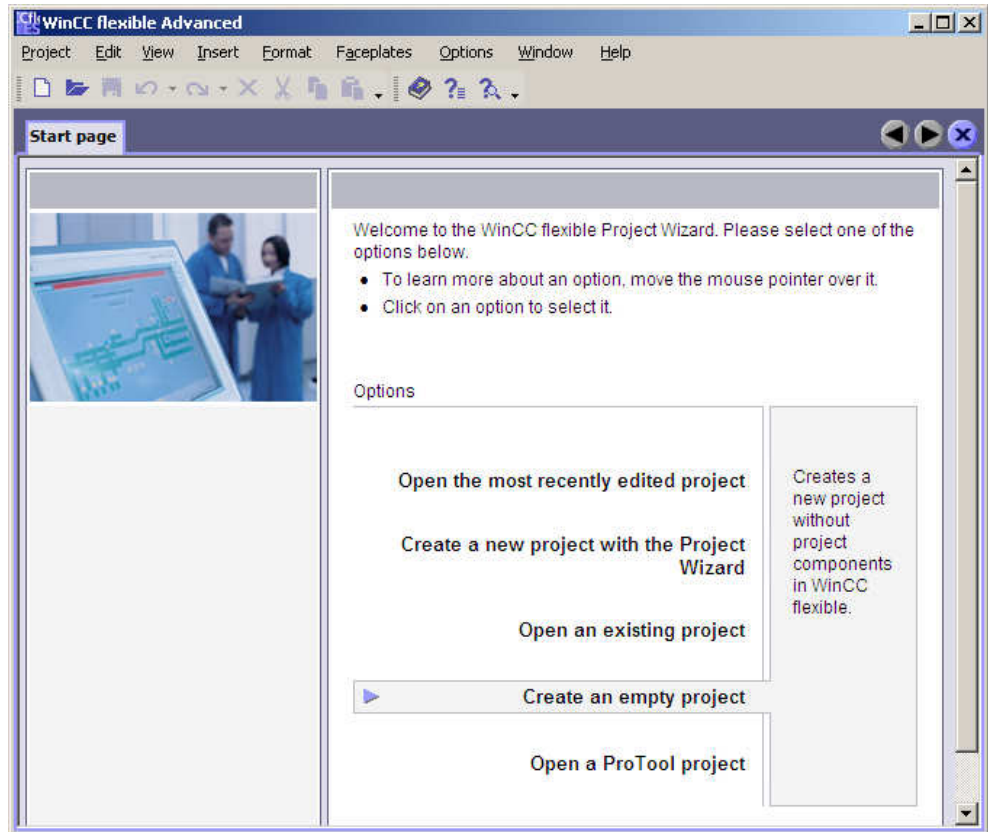
A network input and an XOR have also been added in the program to implement a two-way circuit to turn the pump on and off. The variable V4.0 was set in the properties of the network input because the variable byte 4 is the next free byte in the LOGO! variable memory.

Finally download the program with the configuration into the basic device.

Settings and configuration in WinCC flexible

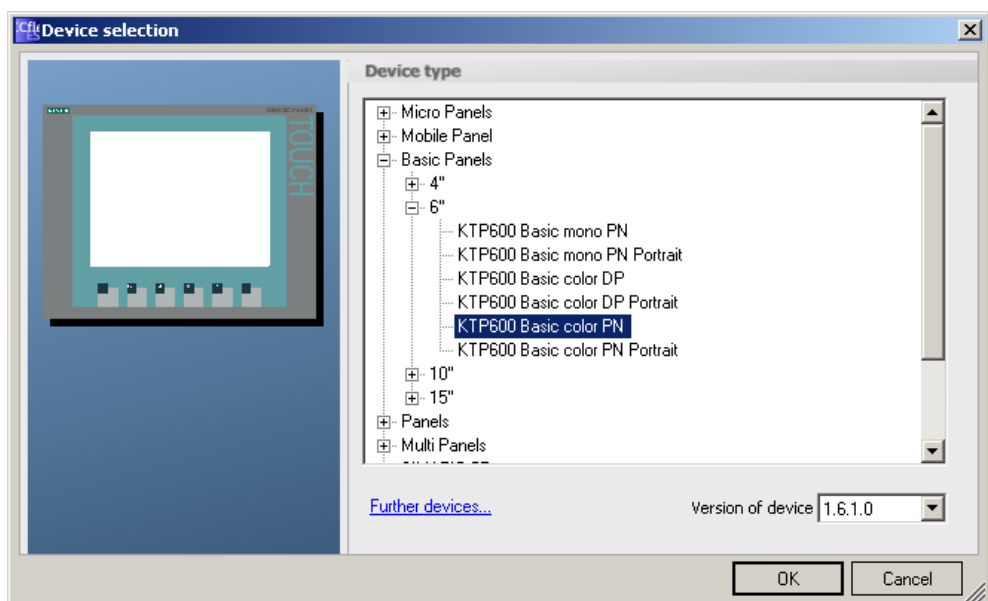
Creating a new project

Open WinCC flexible and create a new project.



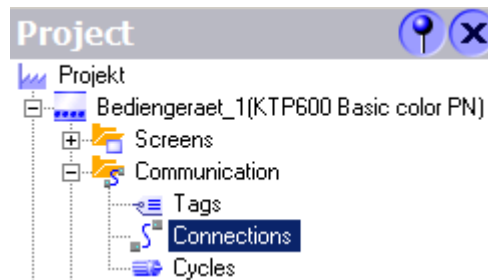
Inserting a new device

Then configure a new device. A KTP600 Basic color PN is used in the example.

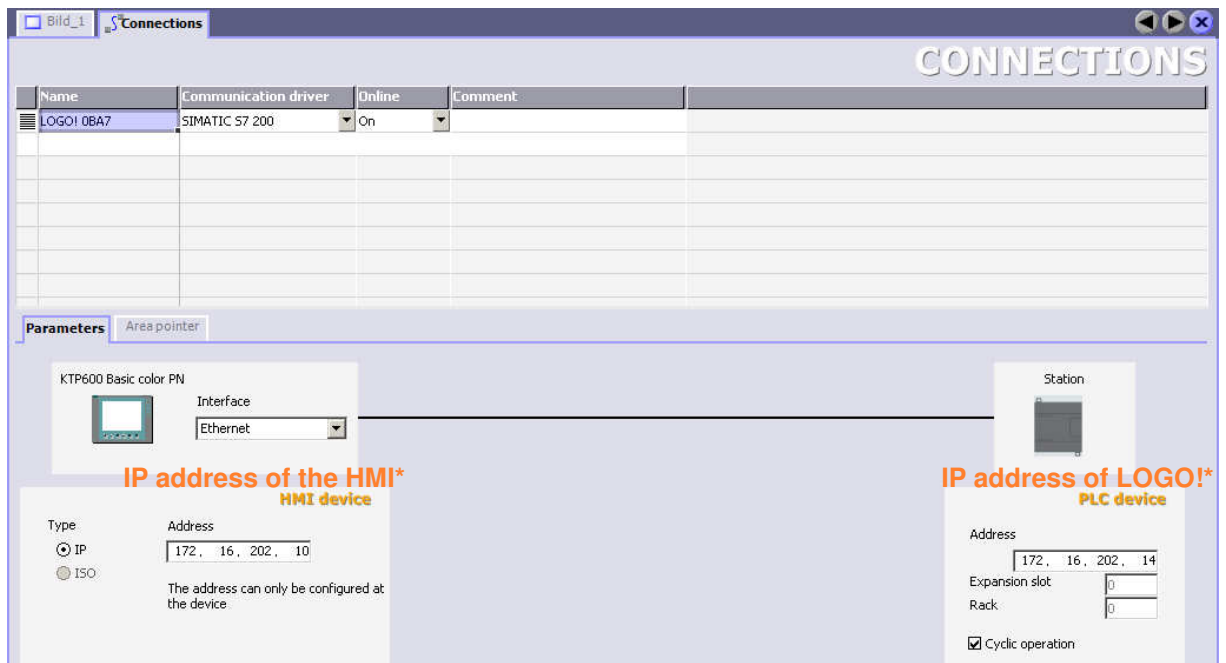


Creating a connection

Create a new connection now. Select the menu item "Connections" in the Project navigation to do so.



Add a new connection with a double-click in an empty row. Assign a name to the connection, enter the IP addresses of the HMI device and the controller and select the communication driver.



Note:

For communication with LOGO! ..0BA7, you must select the communication driver "SIMATIC S7 200".

* The IP addresses must be set before directly on the devices.

Creating tags

Next open the folder "Tags" in the Project navigation. You can now add HMI tags in the "Tag table" and specify their properties.

Name	Connection	Data type	Address	Array elements	Acquisition cycle	Comment
T_Fill level	LOGO! 0BA7	Int	VW 0	1	100 ms	
T_Pump_ON/OFF	LOGO! 0BA7	Bool	V 4.0	1	100 ms	
T_Pump_Status	LOGO! 0BA7	Bool	Q 0.0	1	100 ms	
T_Temperature	LOGO! 0BA7	Int	VW 2	1	100 ms	



Notes:

The following table shows you to which data the HMI has read and write access:

	Read	Write
Inputs (I)	X	-
Outputs (Q)	X	X
Flags (M)	X	-
Variables (V)	X	X

It is theoretically possible to write inputs and bit memories. But this does not make a lot of sense, because LOGO! overwrites them in each cycle.

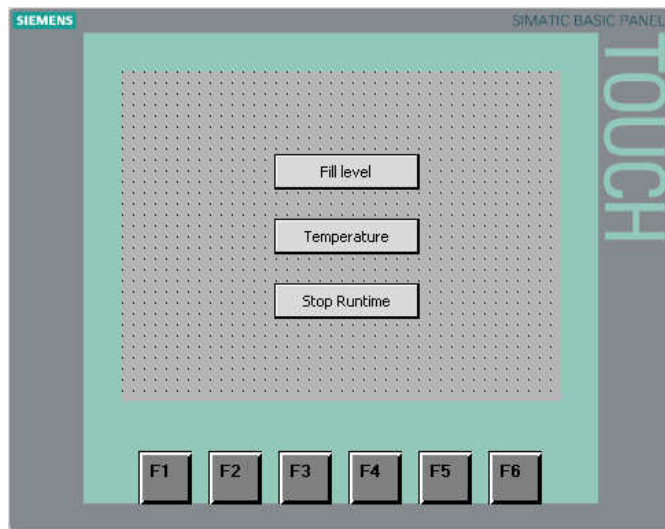
Inputs, outputs and bit memories can be configured in WinCC flexible with the following addresses:

I	Address	Q	Address	M	Address
I1	I0.0	Q1	Q0.0	M1	M0.0
I2	I0.1	Q2	Q0.1	M2	M0.1
I3	I0.2	Q3	Q0.2	M3	M0.2
I4	I0.3	Q4	Q0.3	M4	M0.3
I5	I0.4	Q5	Q0.4	M5	M0.4
I6	I0.5	Q6	Q0.5	M6	M0.5
I7	I0.6	Q7	Q0.6	M7	M0.6
I8	I0.7	Q8	Q0.7	M8	M0.7
I9	I1.0	Q9	Q1.0	M9	F1.0
I10	I1.1	Q10	Q1.1	M10	F1.1
I11	I1.2	Q11	Q1.2	M11	M1.2
I12	I1.3	Q12	Q1.3	M12	M1.3
I13	I1.4	Q13	Q1.4	M13	M1.4
I14	I1.5	Q14	Q1.5	M14	M1.5
I15	I1.6	Q15	Q1.6	M15	M1.6
I16	I1.7	Q16	Q1.7	M16	M1.7
I17	I2.0			M17	M2.0
I18	I2.1			M18	M2.1
I19	I2.2			M19	M2.2
I20	I2.3			M20	M2.3
I21	I2.4			M21	M2.4
I22	I2.5			M22	M2.5
I23	I2.6			M23	M2.6
I24	I2.7			M24	M2.7
				M25	M3.0
				M26	M3.1
				M27	M3.2

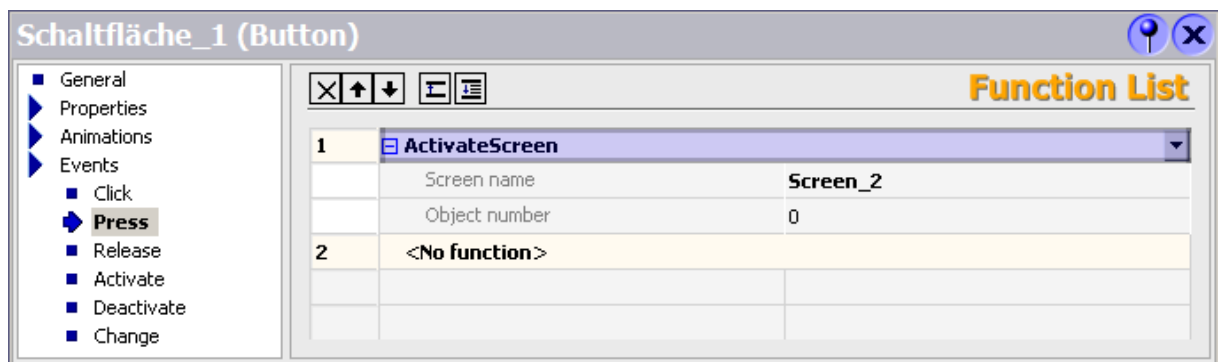
Configuring screens

To configure screens, open the "Screens" folder in the Project navigation. The root screen is automatically generated when you create the project as "Screen_1". Three screens (start screen, fill level and temperature) are created in the example. Add two more screens with a double-click.

Open "Screen_1" and create three buttons in it. One for switching to "Screen_2", the other for switching to "Screen_3". Configure the third button to exit Runtime. To assign an event to a button, select the "Events" window under "Properties".

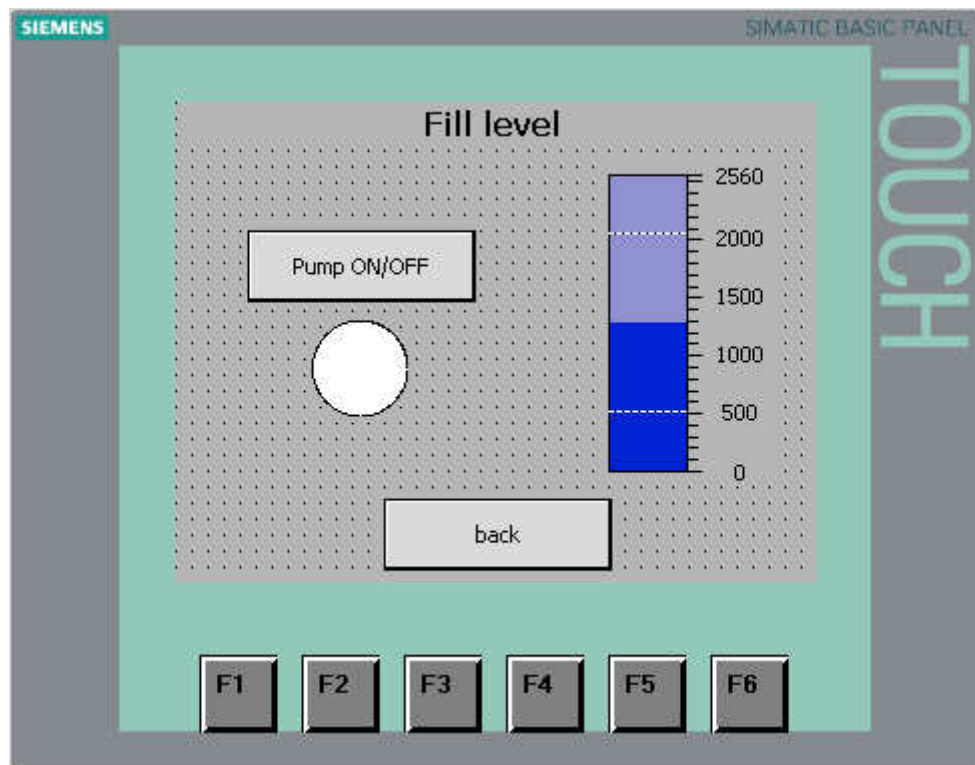


Root screen with three buttons

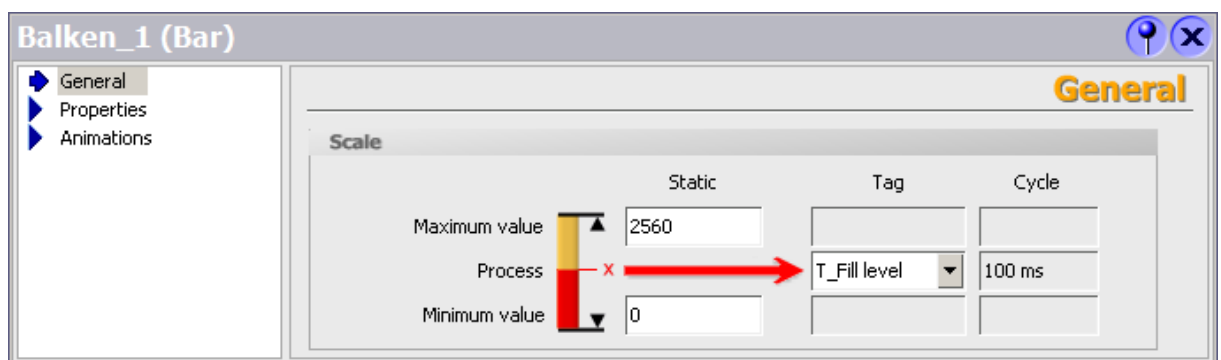


Properties of a button

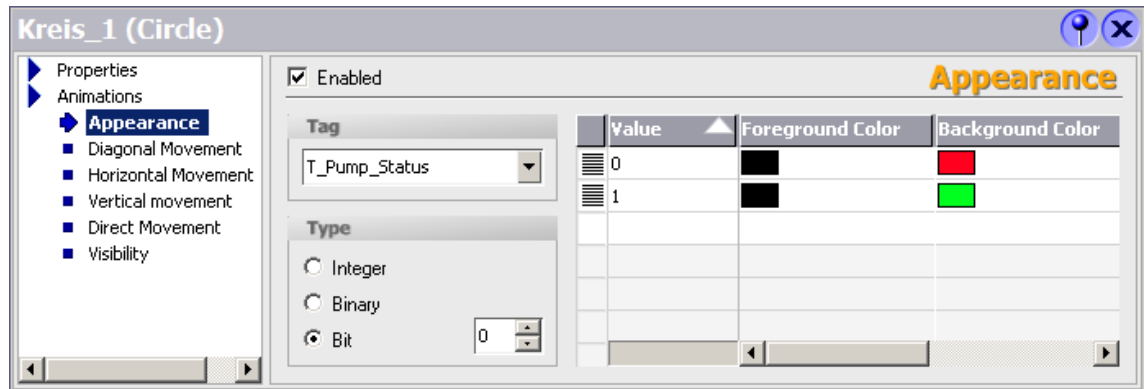
Now open "Screen_2". This screen displays the fill level and the pump status and is also used to control the pump. That is why you enter a bar and two buttons as well as a circle into the screen. The bar is linked to the "Fill level" tag in the properties and the scale is adapted for reading the values. Button 1 is to be used to switch to the root screen. Configure this step in the properties of the button under "Events". The circle is used to show the status of the pump. The pump can be enabled/disabled with button 2.



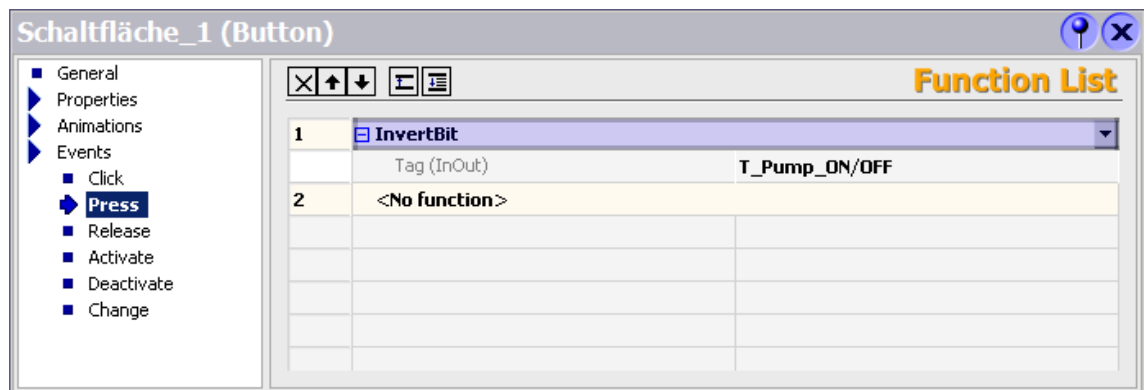
Screen 2 with a bar and a button



Properties of the bar

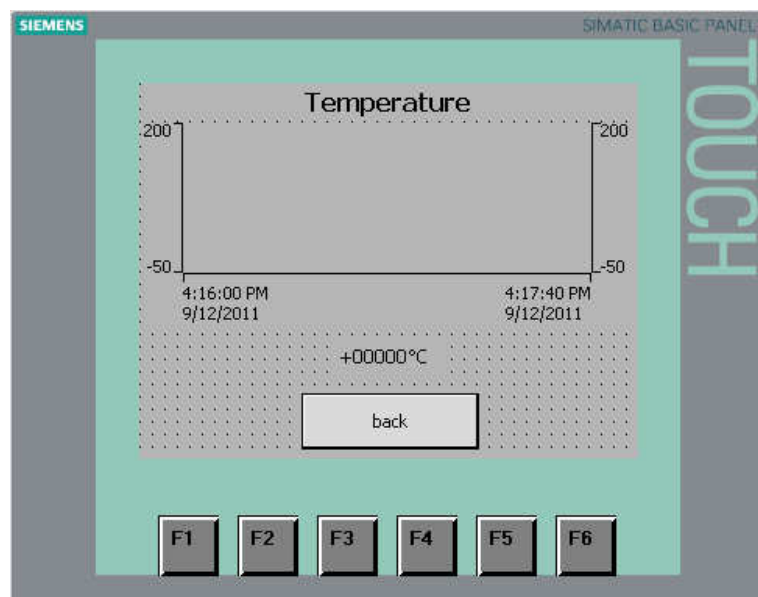


Properties of the circle

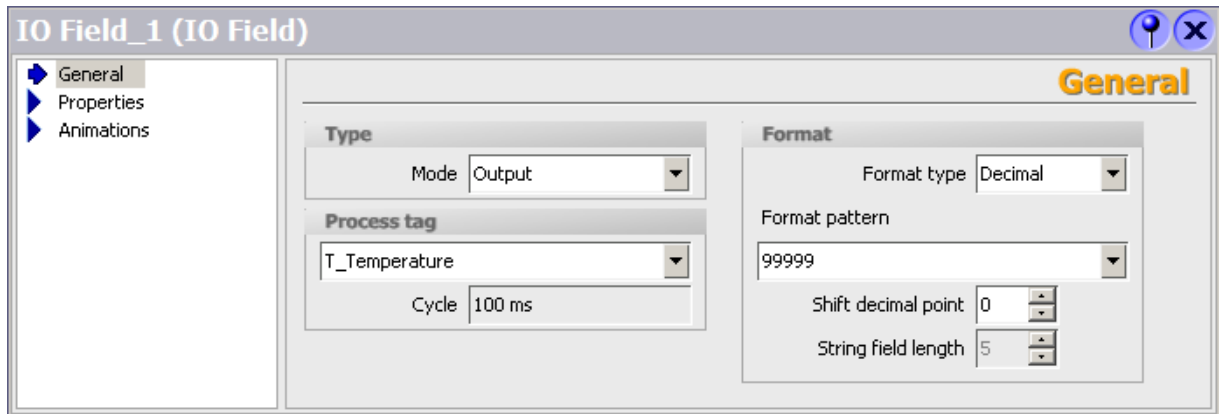


Properties of the button (Pump ON/OFF)

Now open "Screen_3". This screen displays the temperature curve as well as the current temperature. Add a trend display, an I/O field and a button to the screen. The trend view and the I/O field are linked to the "Temperature" tag and the scale of the trend is adapted for reading the values. The mode of the I/O field is set to output. The button is to be used to switch to the root screen.



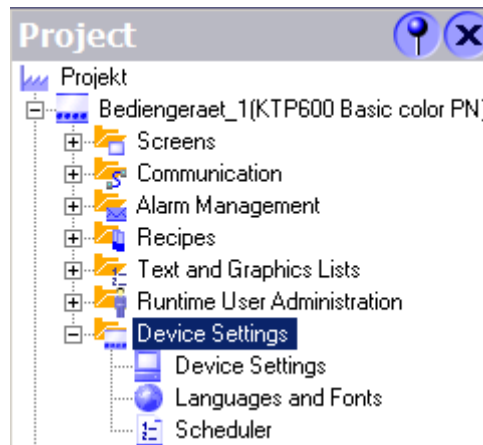
Screen 3 with a trend display, an input/output field and a button



Properties of the I/O field

Device Settings

Select the menu item "Device Settings" in the Project navigation to edit the settings of HMI device.



Here you can do the general settings as well as settings for screens, keyboard, alarms, user administration and language & font.

Testing the configuration

You can start testing your screens and settings during configuration. Click on the icon in the toolbar to start the Runtime simulation.



Note:

If the controller is connected to the PC, you can use the process values from the controller for the simulation. You must, however, set the access point **S7ONLINE** under Control Panel; Setting PG/PC interface.

You can also simulate the tags with the tag simulator. You open it with a click on the symbol below.

