SIEMENS

Clock Synchronization of LOGO! 8 and HMI

Approach

For the connection of a LOGO! 8 with one or several touch panels, you can now also read out the time and date of the LOGO! 8 and display it on the touch panel. In addition, it is also possible to change the time and date via the touch panel.

Settings in the LOGO! program

For the present example, the LSC program can be used from the “Communication of two HMI with LOGO! 8” example in “New examples for LOGO! 8” on the LOGO! homepage (www.siemens.en/logo).

The time of the LOGO! 8 can also be synchronized with several touch panels at the same time.

Note:

For clock synchronization of a LOGO! 8 with one or several touch panels you can additionally also connect a LOGO! TDE to the LOGO! basic module. The change of date and time can then also be seen on the LOGO! TDE. Please note that an IP address has to be directly assigned on the device for the LOGO! TDE.

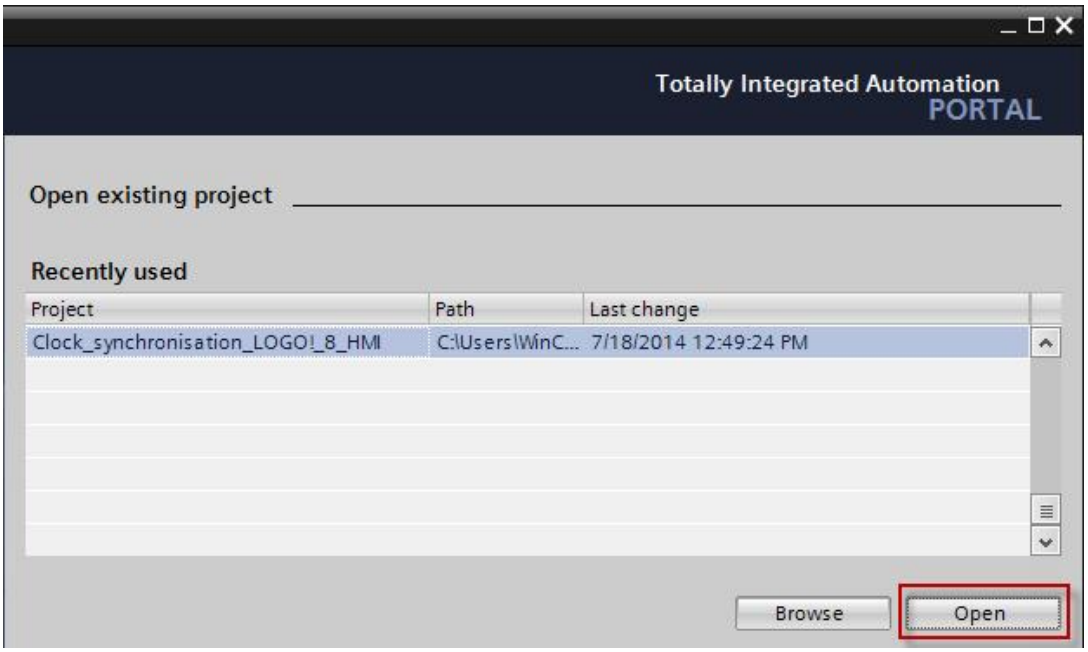
Settings and configuration in WinCC Basic V13

Configuring device and specifying connection settings

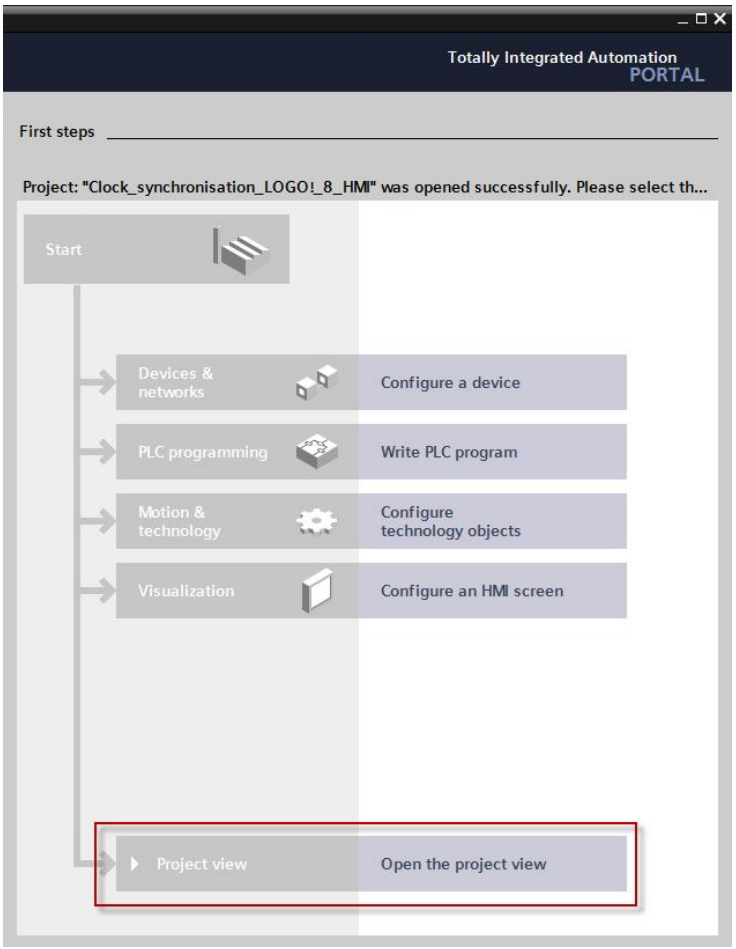
In this project a HMI KTP700 PN has already been inserted and configured as device In addition, the connection settings between the touch panel and the LOGO! 8 have already been specified.

For more information on how to configure a touch panel for the connection to LOGO! 8 and how to specify the connection settings, please refer to the example “Communication of two HMI with LOGO! 8” in “New examples for LOGO! 8” on the LOGO! homepage (www.siemens.en/logo).

Start WinCC Basic V13 and click “Browse”. Select the “Clock_synchronisation_LOGO!_8_HMI” project and then click “Open”.



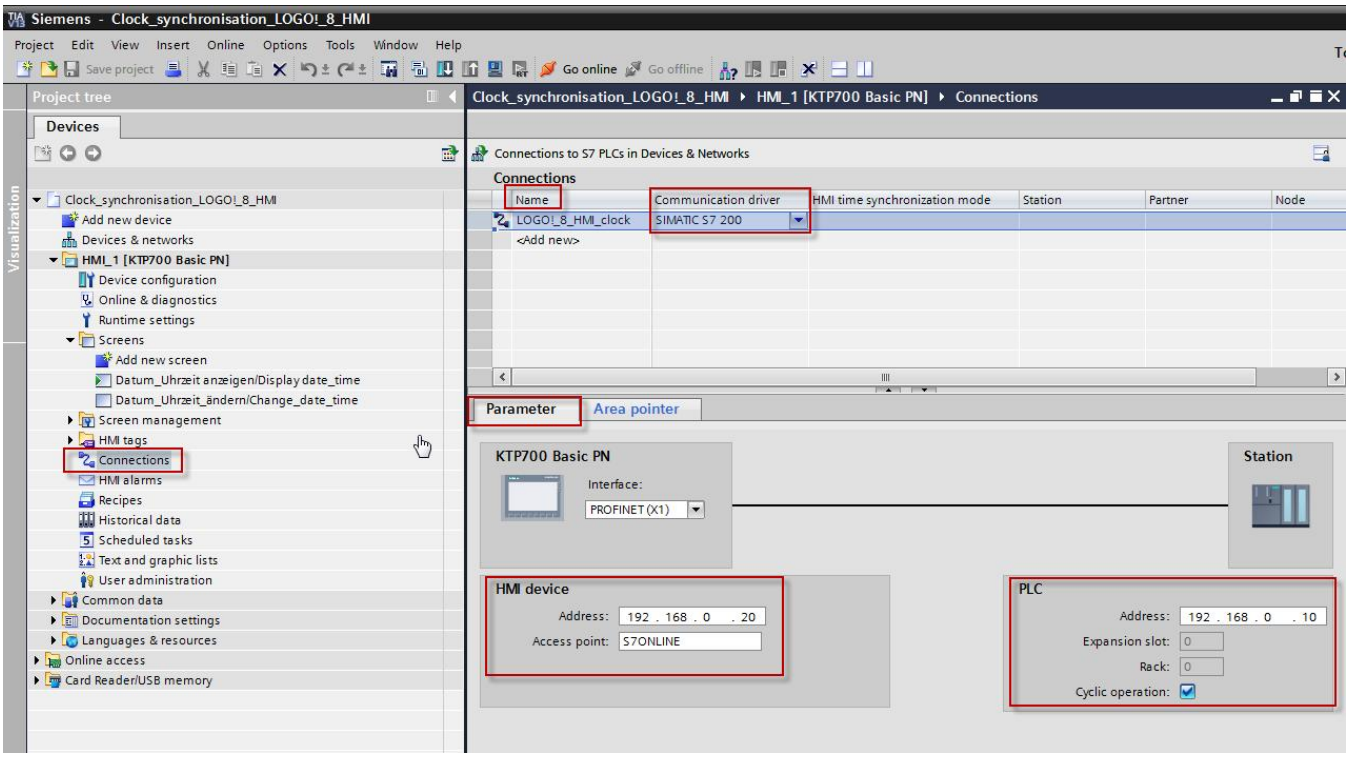
Click “Project view”, to get to the project view.



Reading out of date/time of the LOGO! 8 via global area pointer in HMI

Enabling and configuring global area pointer

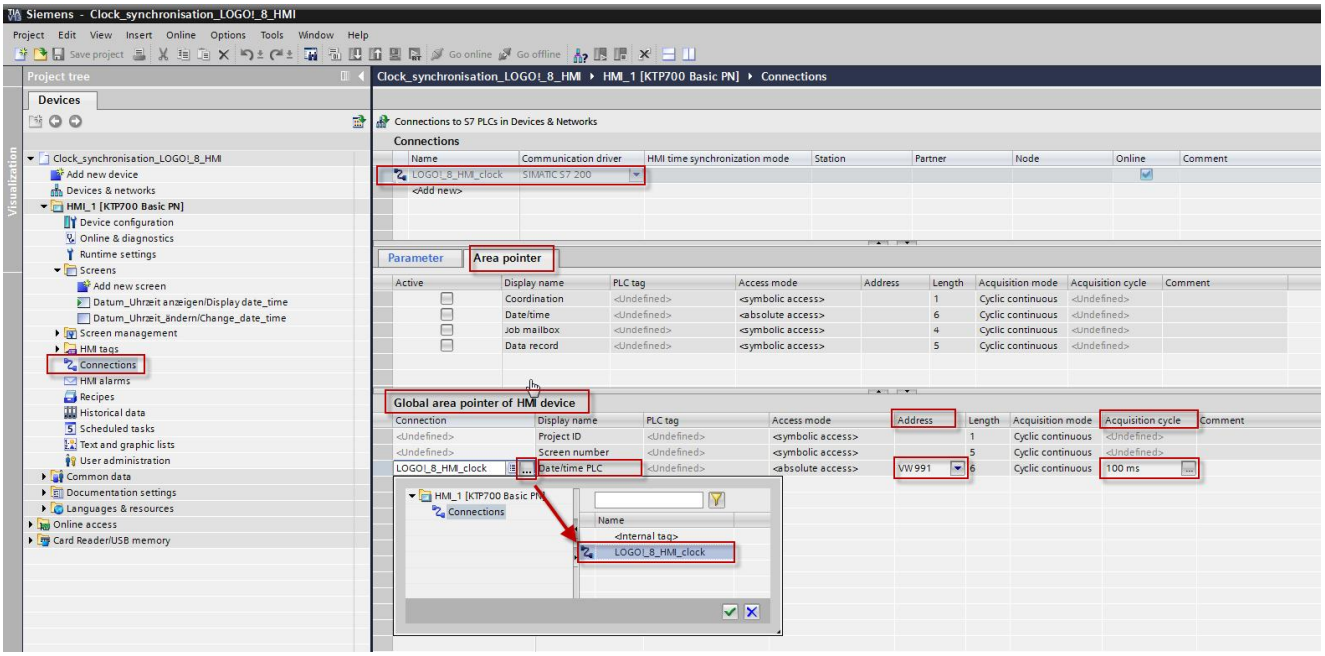
Double click “Connections” in the project navigation. Select your “S7-200” connection as communication driver, since the clock synchronization with the LOGO! 8 is only supported via global area pointer. In the “Name” item field, you can also specify a name for your connection. In the “Parameter” tab, make sure that an IP address is assigned in “Controller” for your LOGO! 8 and in the “Operator panel” for your touch panel. In addition, make sure that “S7ONLINE” is entered as the access point and that the “Cyclic operation” checkbox is enabled.



Then click the “Area pointer” tab in connections. Select the “Date/time PLC” area pointer of your connection to the LOGO! 8 in the “Global area pointer of HMI device” and enter “VW991” for the area pointer in “Address”. Make sure that 100ms is selected in “Acquisition cycle” because otherwise deviations to the current time of the LOGO! 8 might occur due to the communication rate.

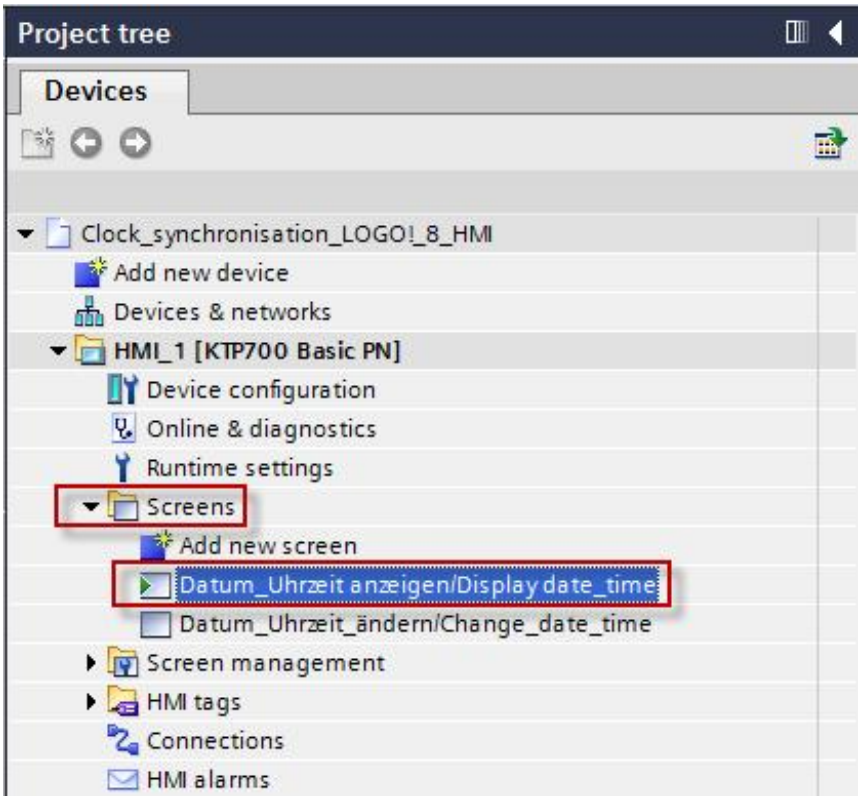
Note:

A defined area in the variable memory of a LOGO! 8 is reserved for the clock synchronization with a touch panel via the global area pointer. The LOGO! basic module can exchange date and time information with the SIEMENS SIMATIC S7-compatible devices and HMI devices via the VM addresses 991 to 1002.

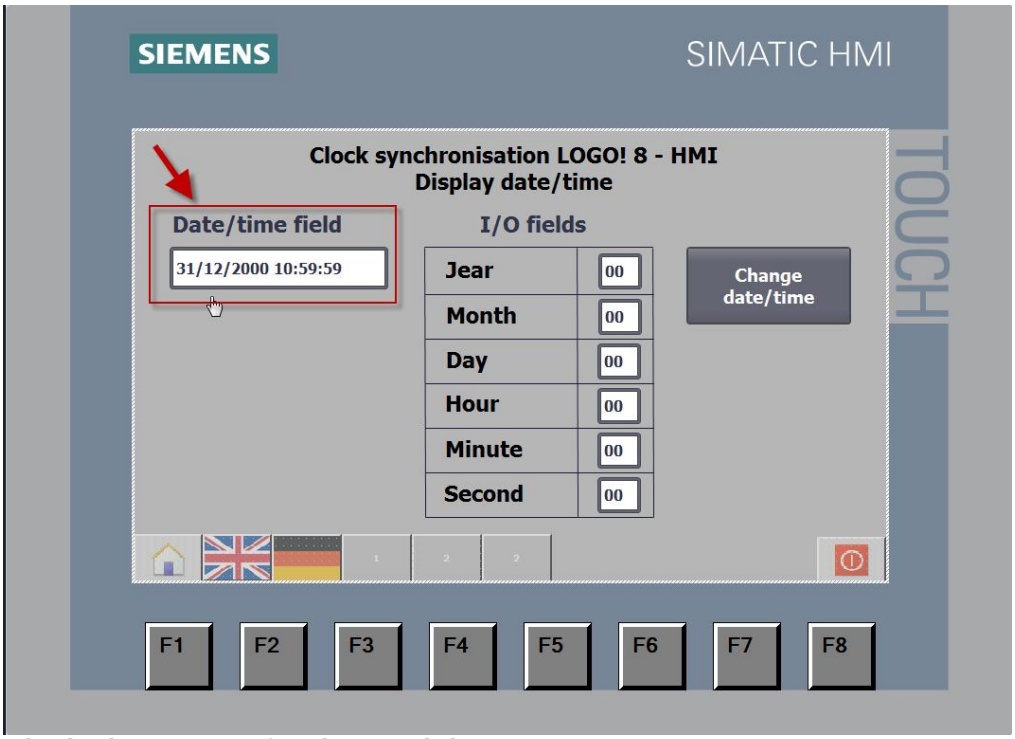


Configuring screen

Double click the “Screen” folder in the project navigation of the touch panel. In the example, a screen for the display of date/time and a screen for changing date/time has already been created. Open the screen for the date/time display by double clicking it.

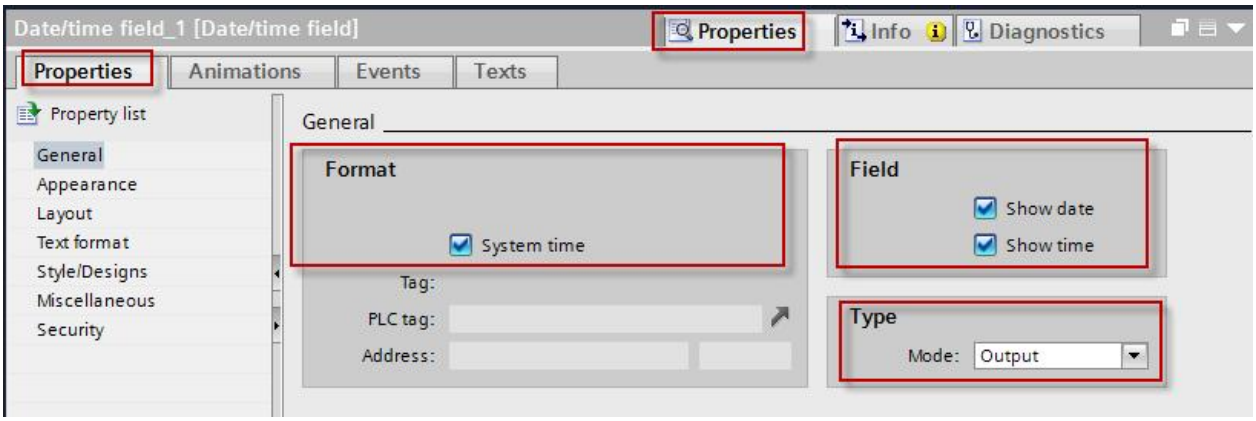


The date and time information of the LOGO! 8 is read out via the “Date/time PLC” global area pointer and is output in the date/time field.



Displaying screen for date and time

Make sure that the settings in the properties of the data/time field are selected as in the displayed below in the screen:



Properties of date/time field

Notes:

Further information for creating screens in WinCC and how to create templates that are valid for all screens in the project, can be found in the example “Communication of two HMI with LOGO! 8” in “New examples for LOGO! 8” on the LOGO! homepage (www.siemens.en/logo).

If the language is changed in the HMI project, the output format of the date/time field will adjust itself to the date/time format of the respective country.

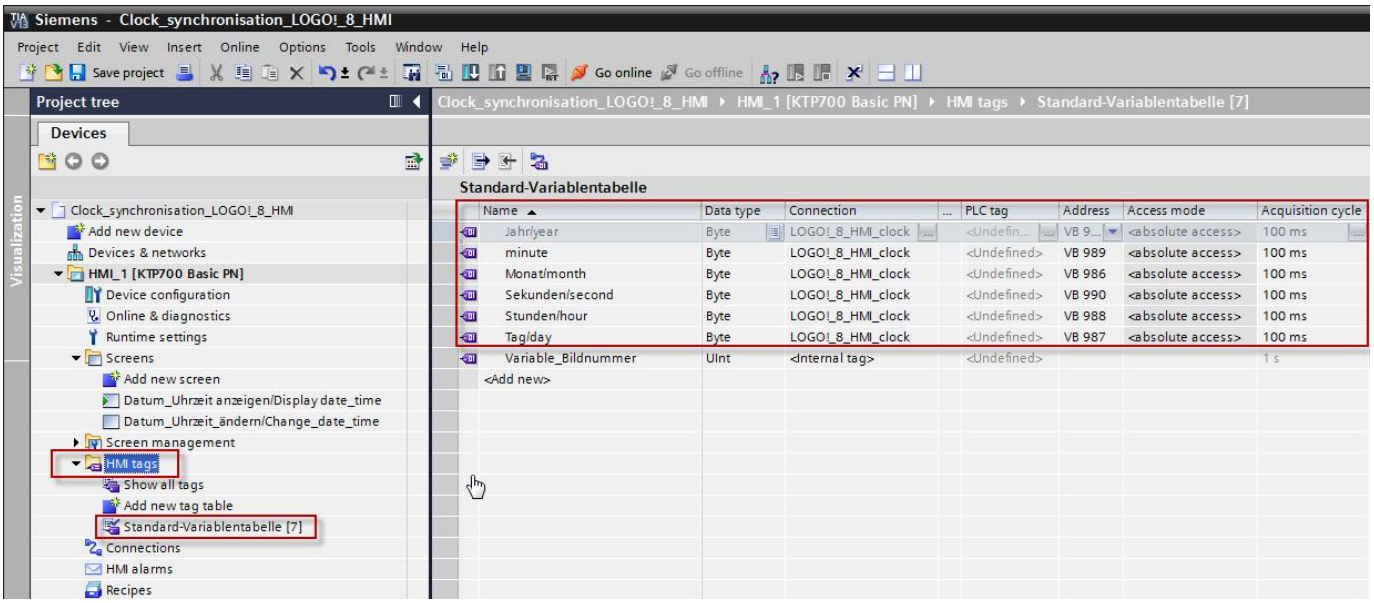
Reading out date/time of the LOGO! 8 via I/O fields in HMI

When reading out date/time of the LOGO! 8 via I/O fields in HMI, the access is different than with the global area pointers via the variable memory VM 985-990 of the LOGO! 8. For each byte of the date and time information, an individual I/O field has to be configured in HMI. In the variable memory of the LOGO! 8 the VM address 985-990 are assigned as follows:

VM address	Assigned for	Area
985	“Year” of real-time clock (RTC)	1 byte
986	“Month” of real-time clock (RTC)	1 byte
987	“Day” of real-time clock (RTC)	1 byte
988	“Hour” of real-time clock (RTC)	1 byte
989	“Minute” of real-time clock (RTC)	1 byte
990	“Second” of real-time clock (RTC)	1 byte

Creating tags

Double click the “HMI tags” folder in the project navigation. Add a tag from the VM 985-990 variable memory of the LOGO! 8 for each byte of the date and time information. Make sure that your connection to the LOGO! 8 is selected in “Connection” for each tag and that 100ms is specified in “Acquisition cycle”, otherwise there might be deviations to the current time of the LOGO! 8 due to the communication rate.

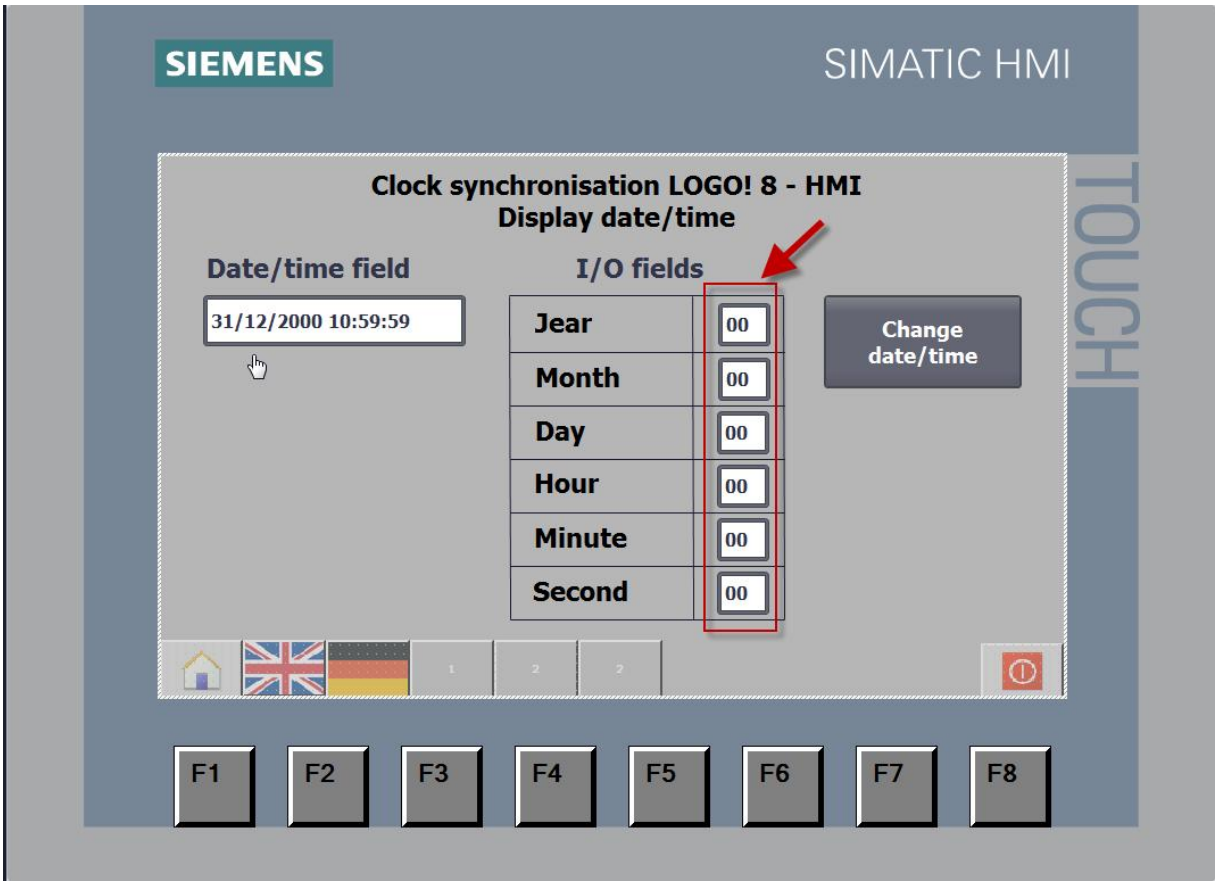


Note:

For the clock synchronization of a LOGO! 8 with a touch panel via I/O fields, you can also select the “LOGO” communication driver for your connection in the HMI project in the project navigation in “Connections”.

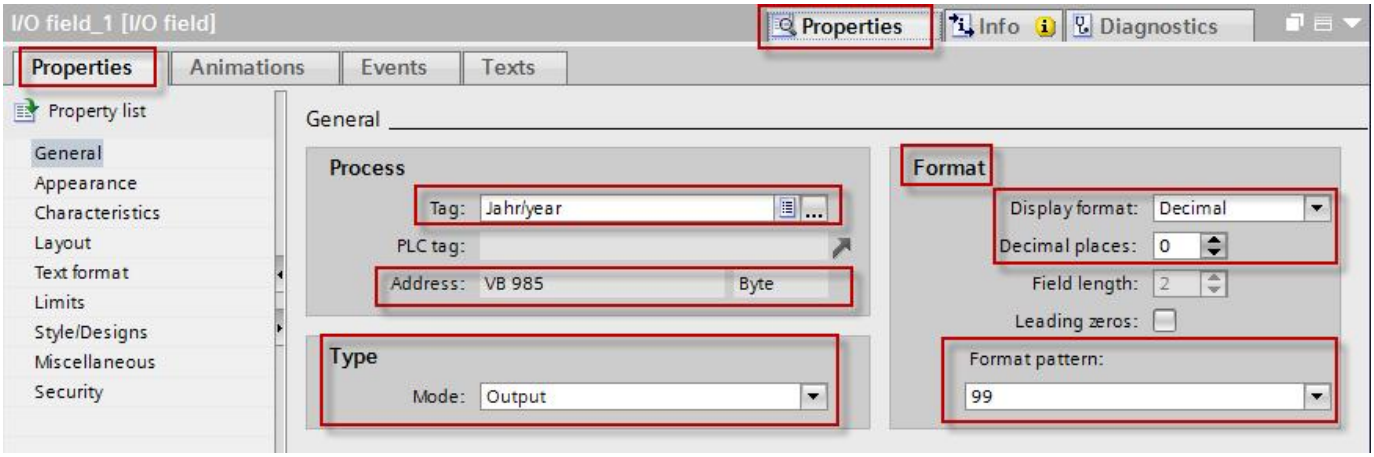
Configuring screen

Open the screen for the date/time display. In addition to the date/time field, add an I/O field in the screen from the VM 985-990 variable memory of the LOGO! 8 for each byte of the date and time information.



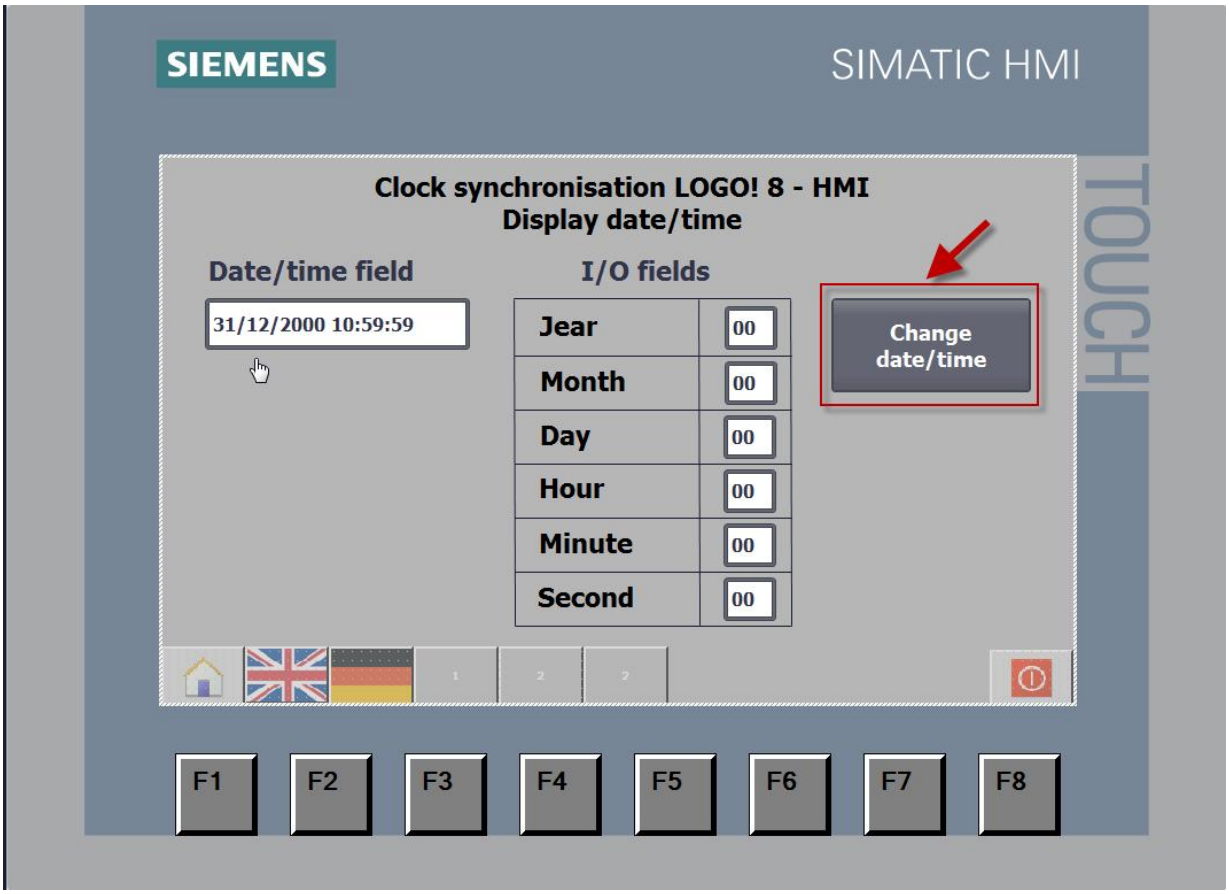
Displaying screen for date and time

Make sure that the correct tag is selected with the respective data and time information (e.g. the year tag) in “Properties” for each I/O field. In addition, make sure that the mode of the I/O field is set to “Output” in “Type” and that the settings are selected as in the following screen:

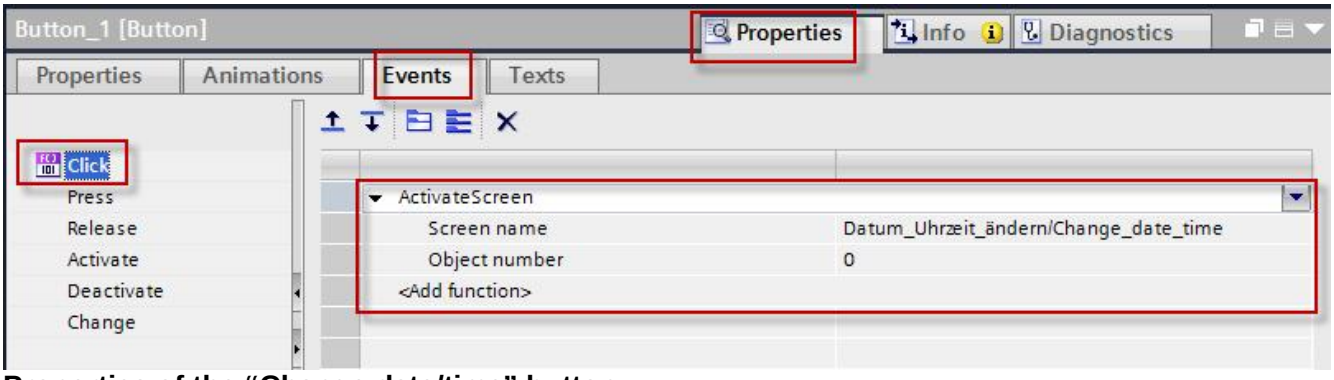


Properties of an I/O field

In addition, create a button for switching the screen to change date/time.
Assign a button to the event.



Displaying screen for date and time



Properties of the “Change date/time” button

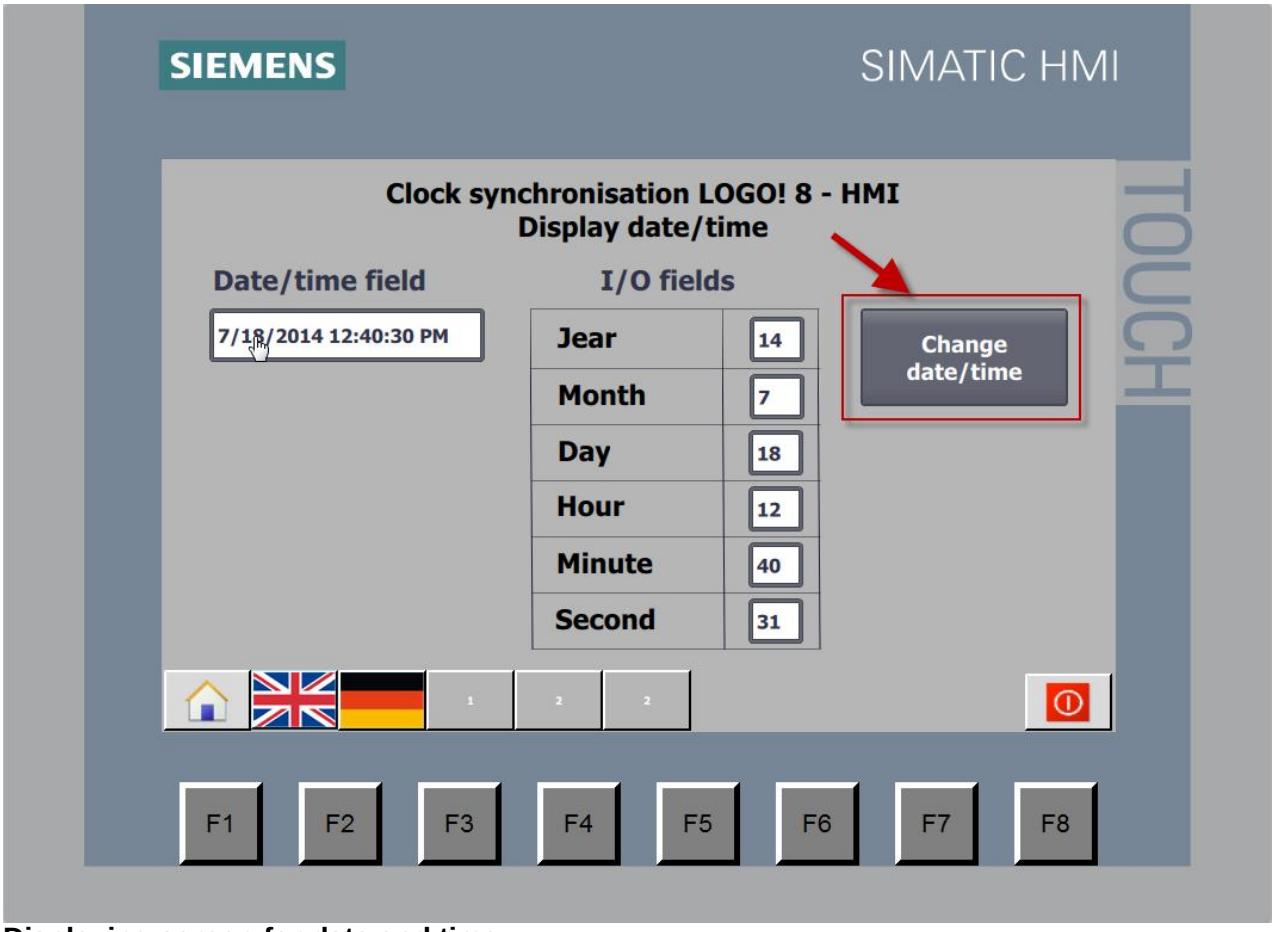
Changing date/time of the LOGO! 8 via I/O fields in HMI

Notes:

The date/time of the LOGO! 8 cannot be changed via a touch panel with the “Global area pointers”.

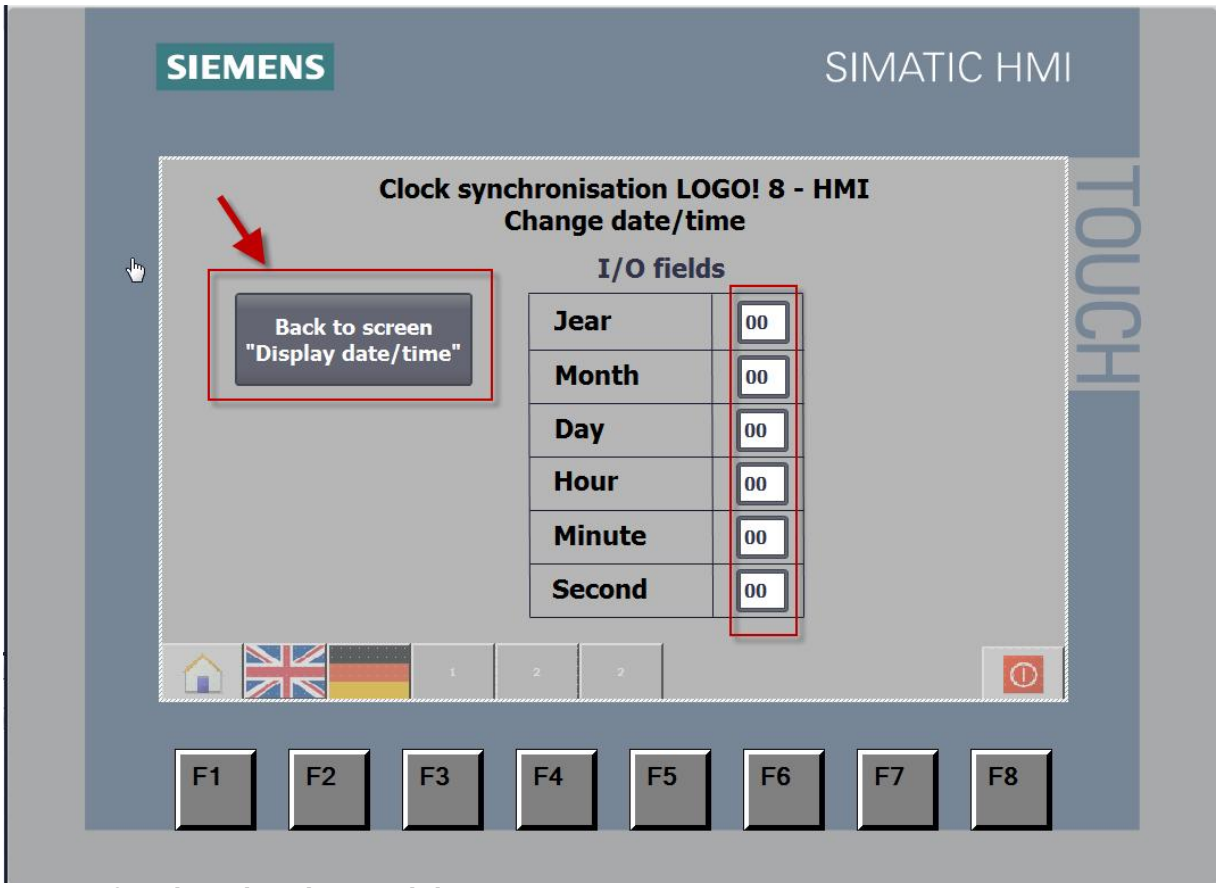
If more than one touch panel is connected with the LOGO! 8, you can change the time and the date of the LOGO! 8 via I/O fields.

Open the screen for changing the date/time.



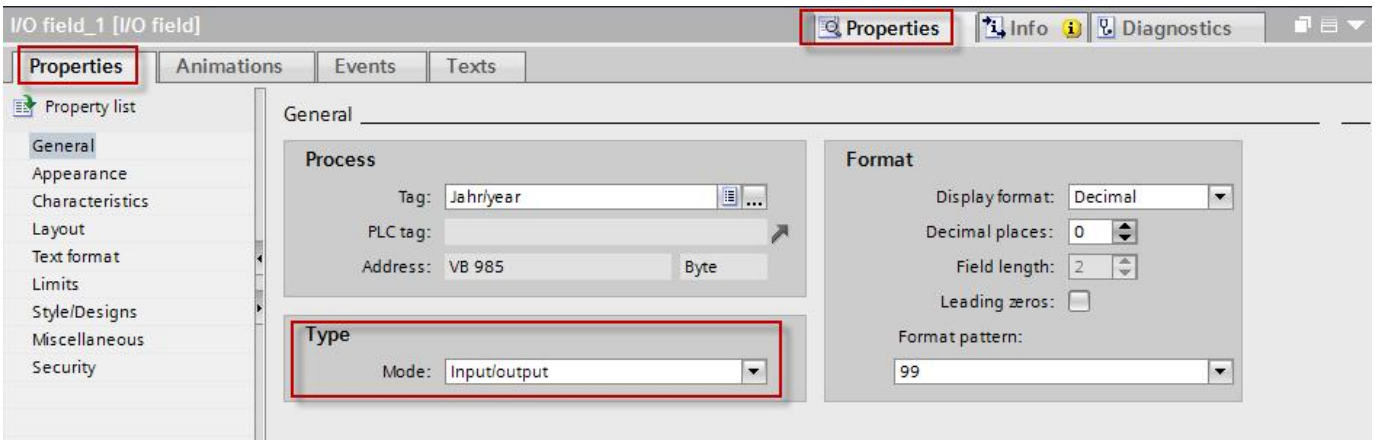
Displaying screen for date and time

Also add an I/O field in the screen for each byte of the date/time information from the VM 985-990 variable memory of the LOGO! 8 as shown here in the screen for the display of date/time.
In addition, create a button to get back to the screen for the date/time display.



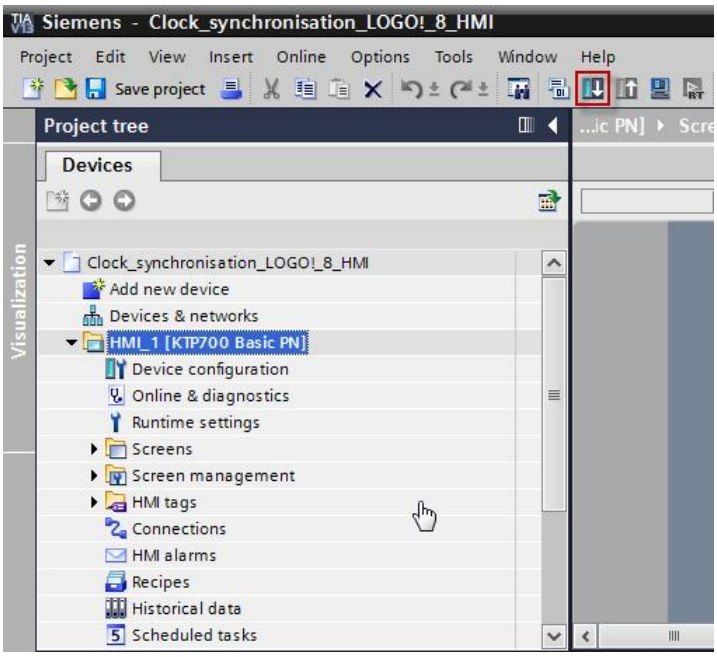
Screen for changing date and time

The “Mode” of each I/O field is set to “Input /output”, unlike the screen for displaying the date/time, so that the changing of time and date is also possible.

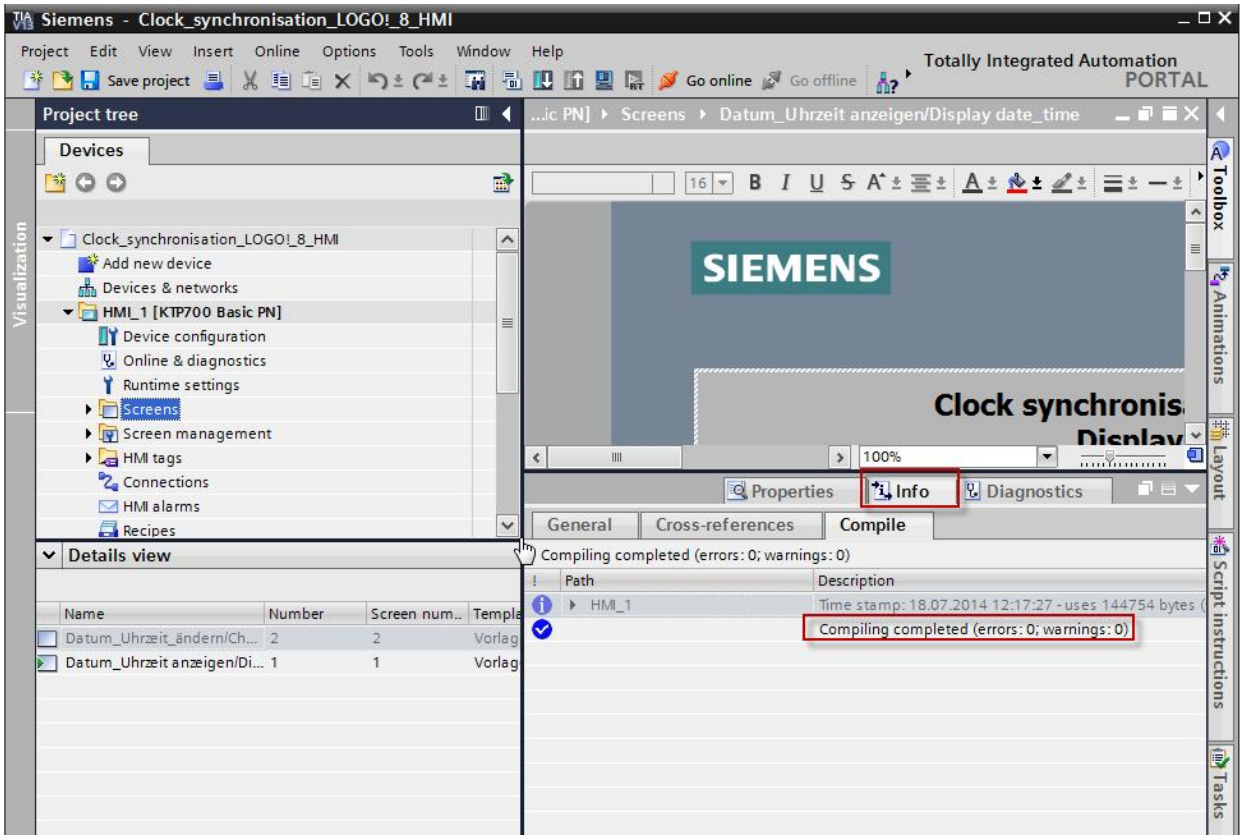


Loading the configuration

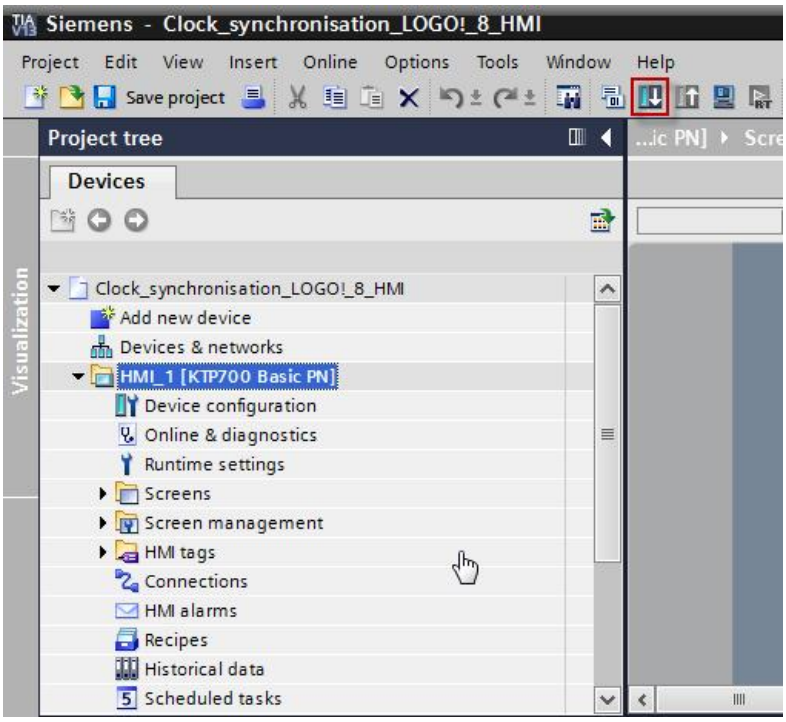
Select the device for which you want to load the configuration and click the “Compile” button.



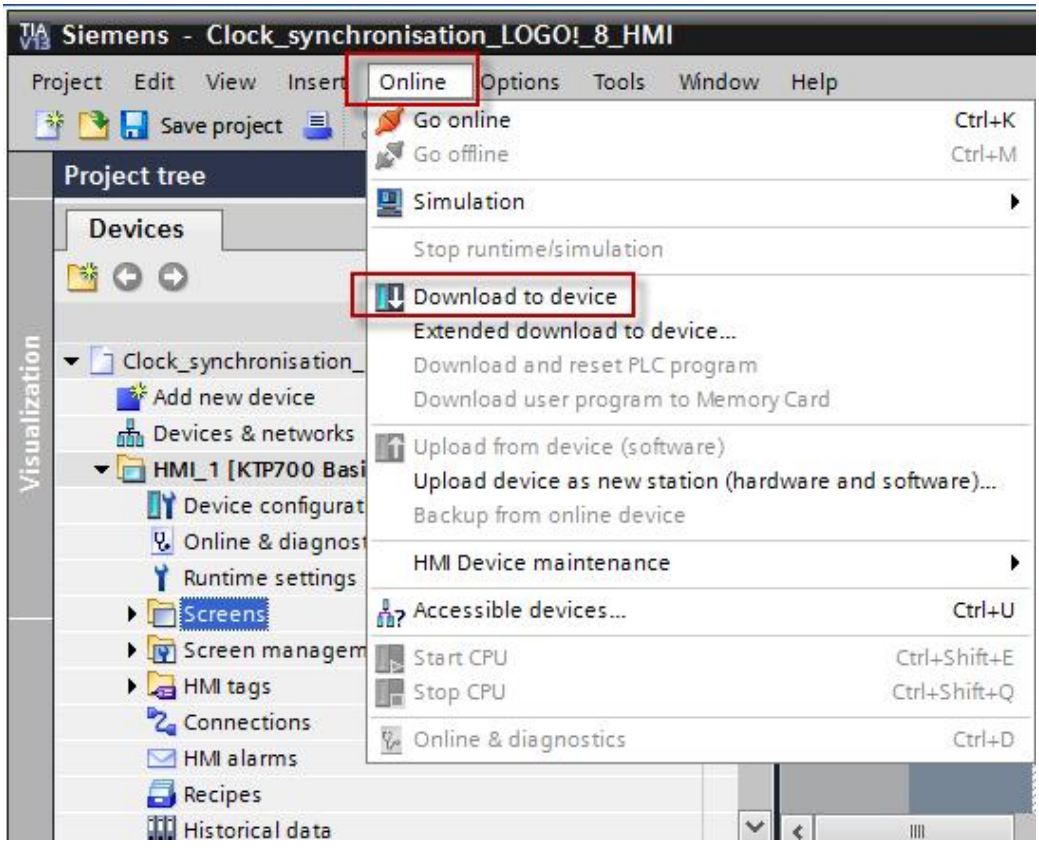
Wait until the compilation has finished and the “Info” tab displays the message “Compiling completed (errors: 0; warnings: 0)”.



Then select the device again and click the “Download to device” button.



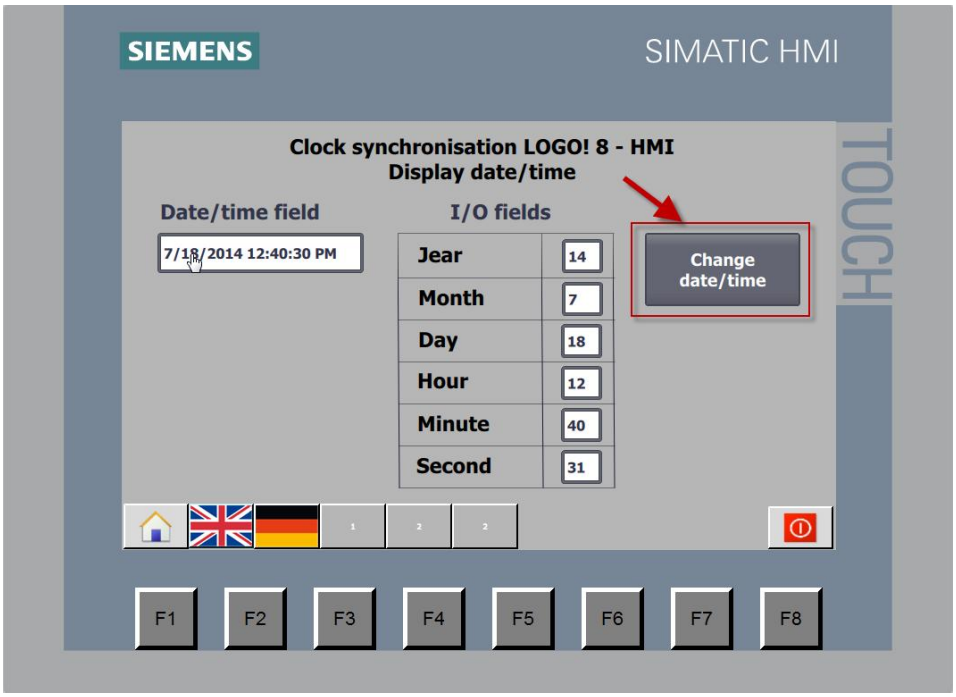
Alternatively, you can also select the “Online > Download to device” command from the menu.



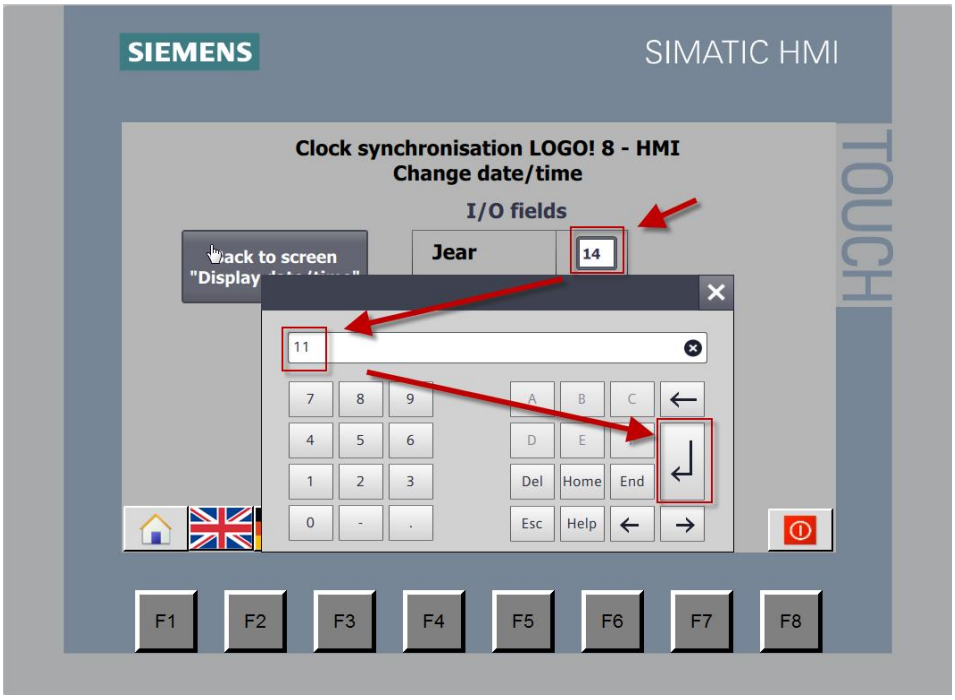
As soon as the project download has finished, the touch panel starts automatically with the project.

Testing the configuration

Once you have downloaded the project to the touch panel, you can operate it on the touch panel. Click the “Change date/time” button in order to open the screen for changing the date/time.



Then click any I/O field, e.g. the I/O field for the year. Using the on-screen keyboard, enter “11” as number for the year and confirm with the return button.

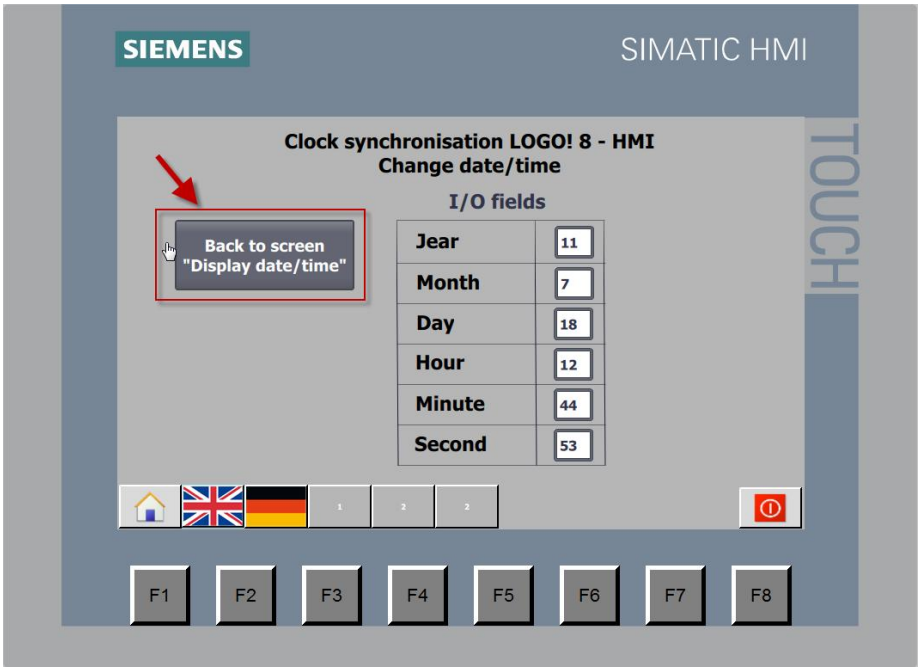


The date in the LOGO! 8 has now changed.

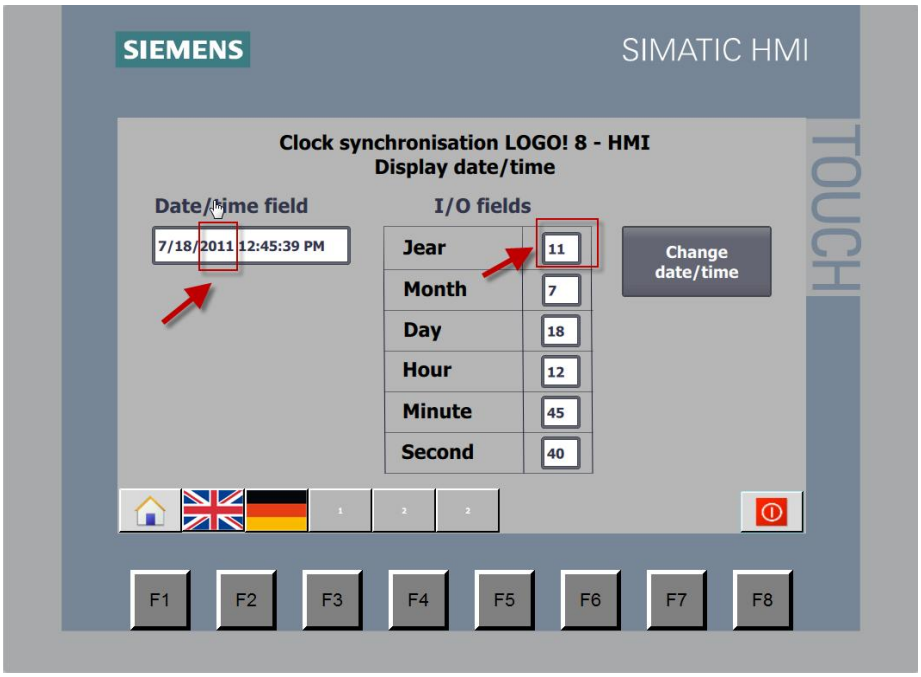
Note:

If an incorrect value is entered in one of the I/O fields for the date and time information, the value is not accepted.

Click the “Back to screen “Display date/time” button.



The change of the year can be seen in the date/time field as well as in the I/O field.



You can change other date and time information of the LOGO! 8 at any time with the same procedure.