

## Diagnostics Evaluation with LOGO! 8 and Touch Panel

### Approach

With the new LOGO! 8 the diagnostic functions were expanded. The following diagnostic types are available:

- Ethernet connection error
- Expansion module has changed
- SD card read/write error
- No SD card present
- SD card full

### Settings in the LOGO! program

Open the already existing “Diagnostics\_LOGO!\_8\_HMI” program with LOGO!Soft Comfort V8 or create a new diagram. A network input with the respective diagnostic type has to be inserted in the program for any diagnostic information that is to be read out.

**Diagnoseauswertung mit LOGO! 8 und HMI**

VM-Adresse im Variablenspeicher:  
VM address in Variable Memory:

**V984.0**

**Ethernet-Verbindungsfehler**  
Ethernet link error

**Erweiterungsmodul hat sich geändert**  
Expansion module has changed

**Schreibfehler SD-Karte**  
SD card read/write error

**SD-Card vorhanden**  
No SD card present

**Parameter**

Read value from

- ☐ Local variable memory (VM)
- ☐ Remote device
- ☒ Diagnostic

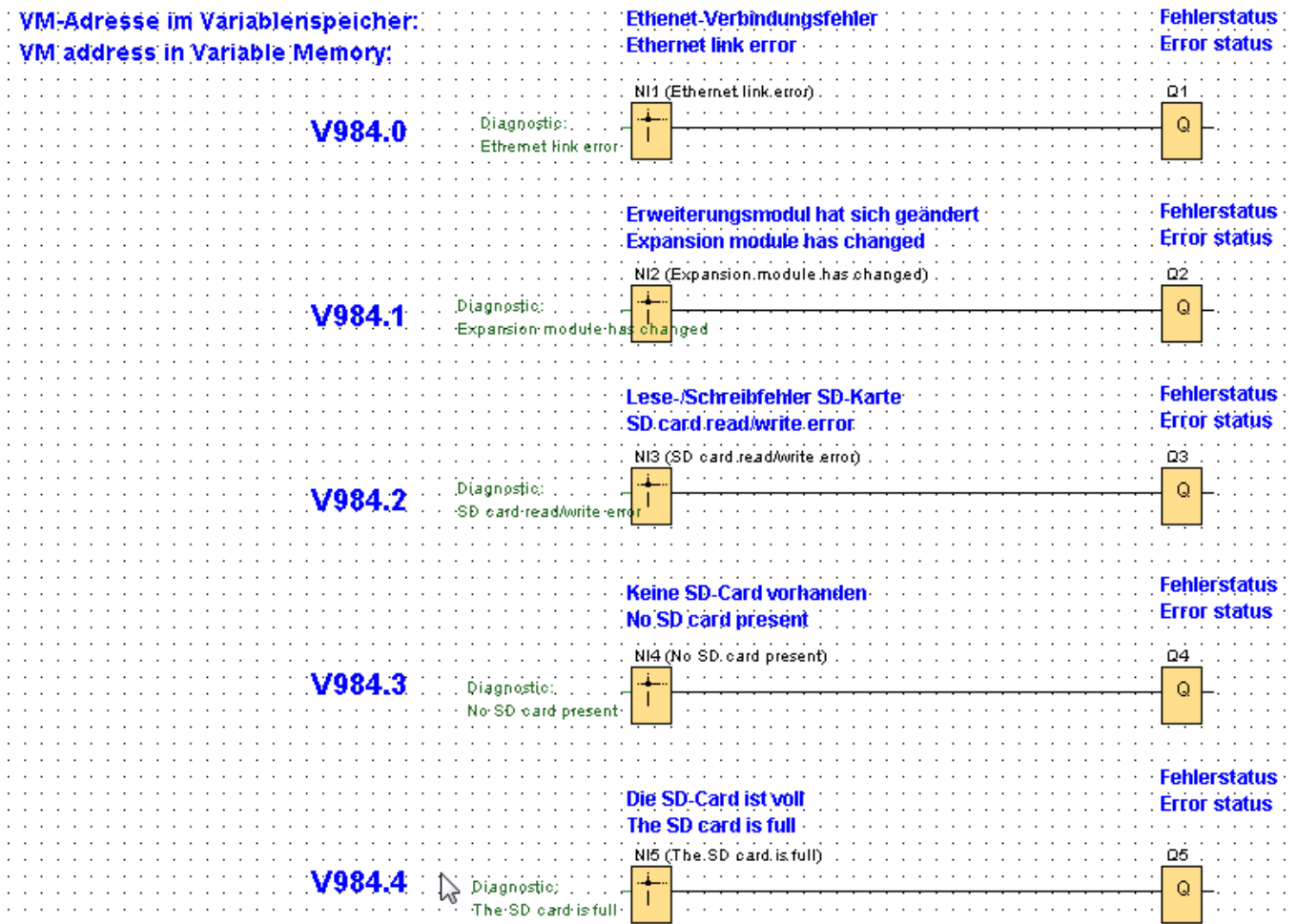
**Diagnostics**

Diagnostic type: Ethernet link error

- Ethernet link error
- Expansion module has changed
- SD card read/write error
- No SD card present
- The SD card is full

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If an error is read out for the selected diagnostic type, the network input bit is set to value 1. In the example, the network inputs were connected with the outputs which were set when the respective error occurred.

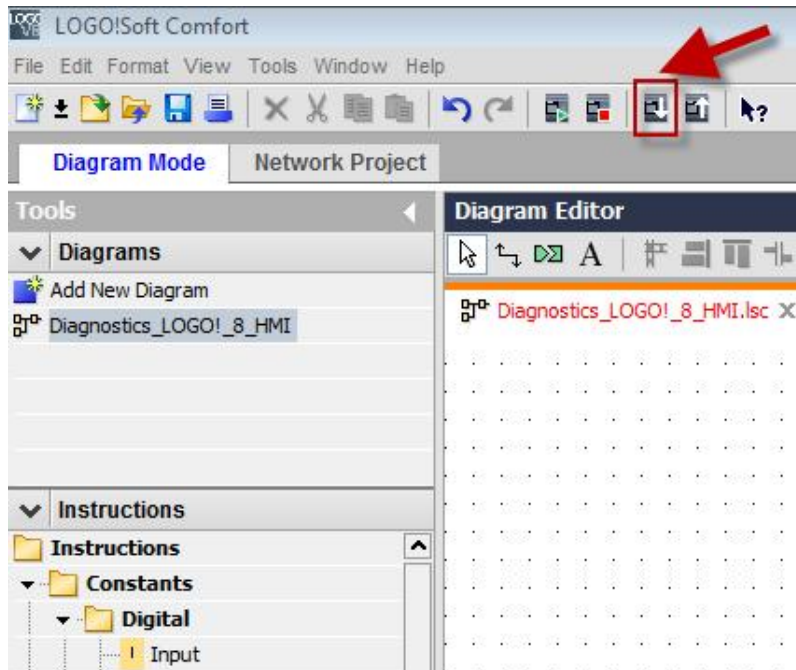


In the variable memory of the LOGO! 8 the VM address 984 is reserved as diagnostic bit array. The individual bits are assigned as follows in the byte of the VM address 984:

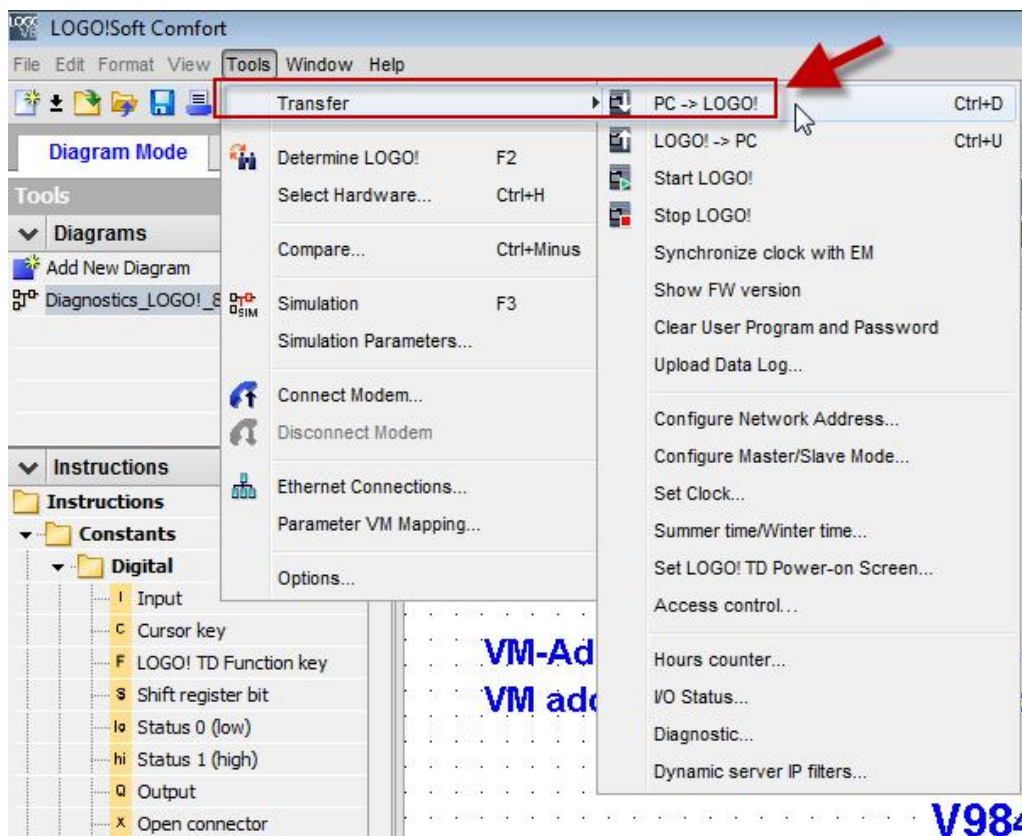
VM address	Assigned for diagnostic type	Area
V984.0	Ethernet connection error	1 bit
V984.1	Expansion module has changed	1 bit
V984.2	SD card read/write error	1 bit
V984.3	No SD card present	1 bit
V984.4	SD card full	1 bit

## Downloading LOGO! program

Now you can download the program for the diagnostics evaluation into your LOGO! controller. Click the “Download” button or click Ctrl+D.

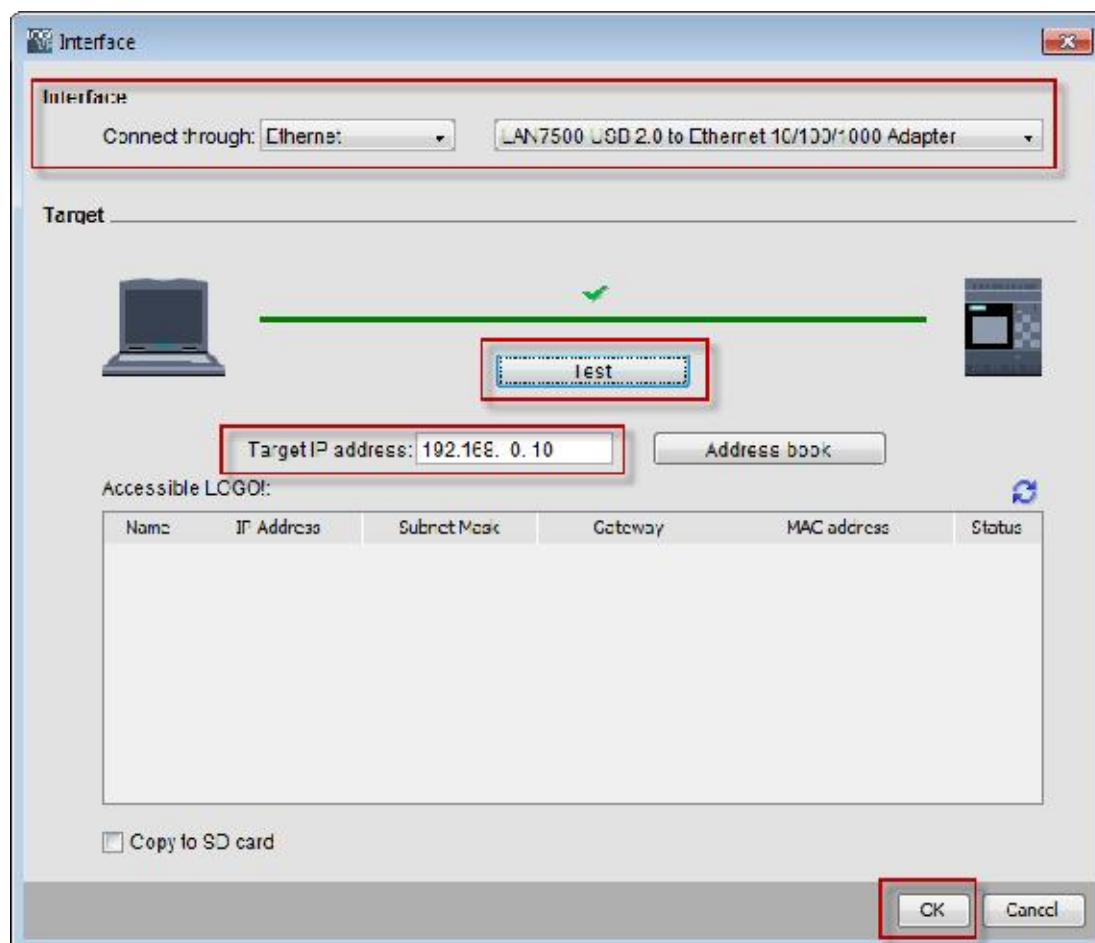


Alternatively, you can also navigate in the menu to “Tools > Transfer > PC -> LOGO!”.

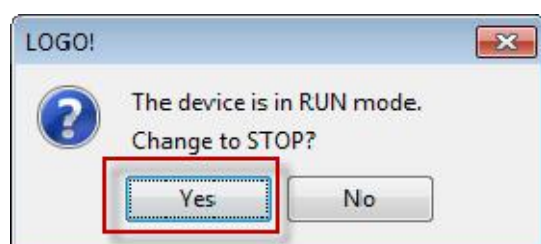


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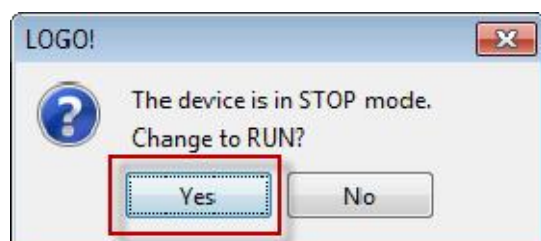
Select the interface for your connection to LOGO! and enter the IP address of your LOGO!. Click “Test” in order to check whether the connection is successful. If the connection is successful click “OK” in order to load the program into the device.



Click “Yes” to set the LOGO! to STOP before the download.



After the successful completion of the download click “Yes” in order to set the LOGO! back to RUN.



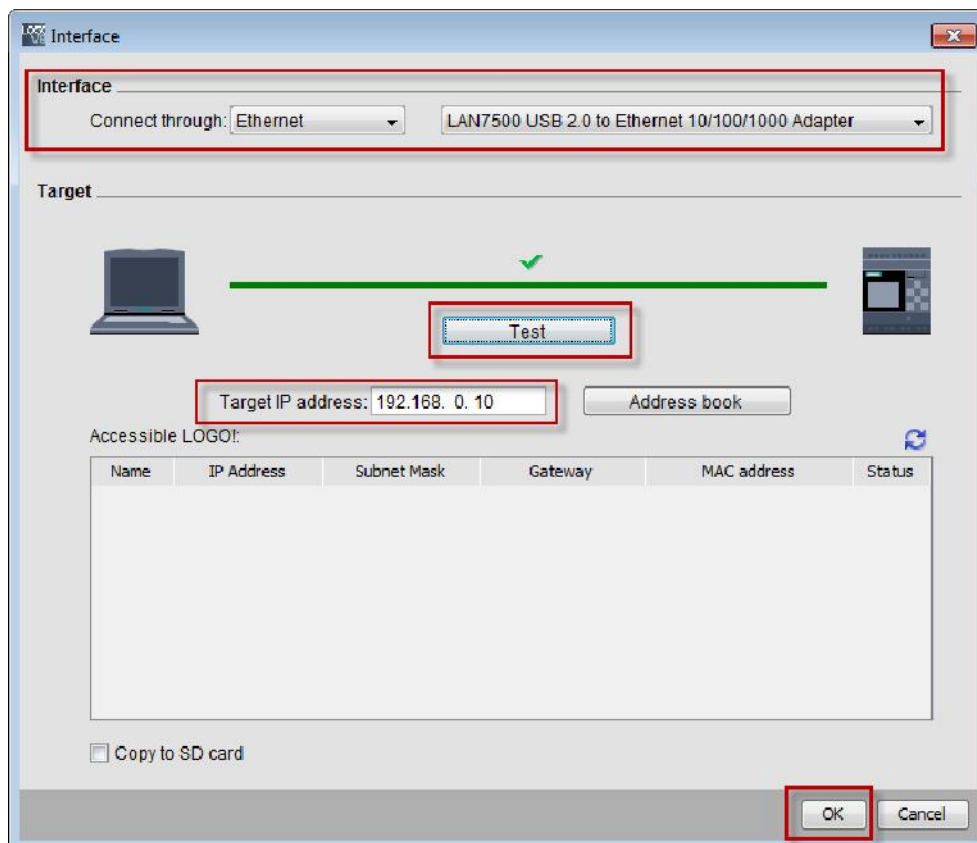


## Testing LOGO! program

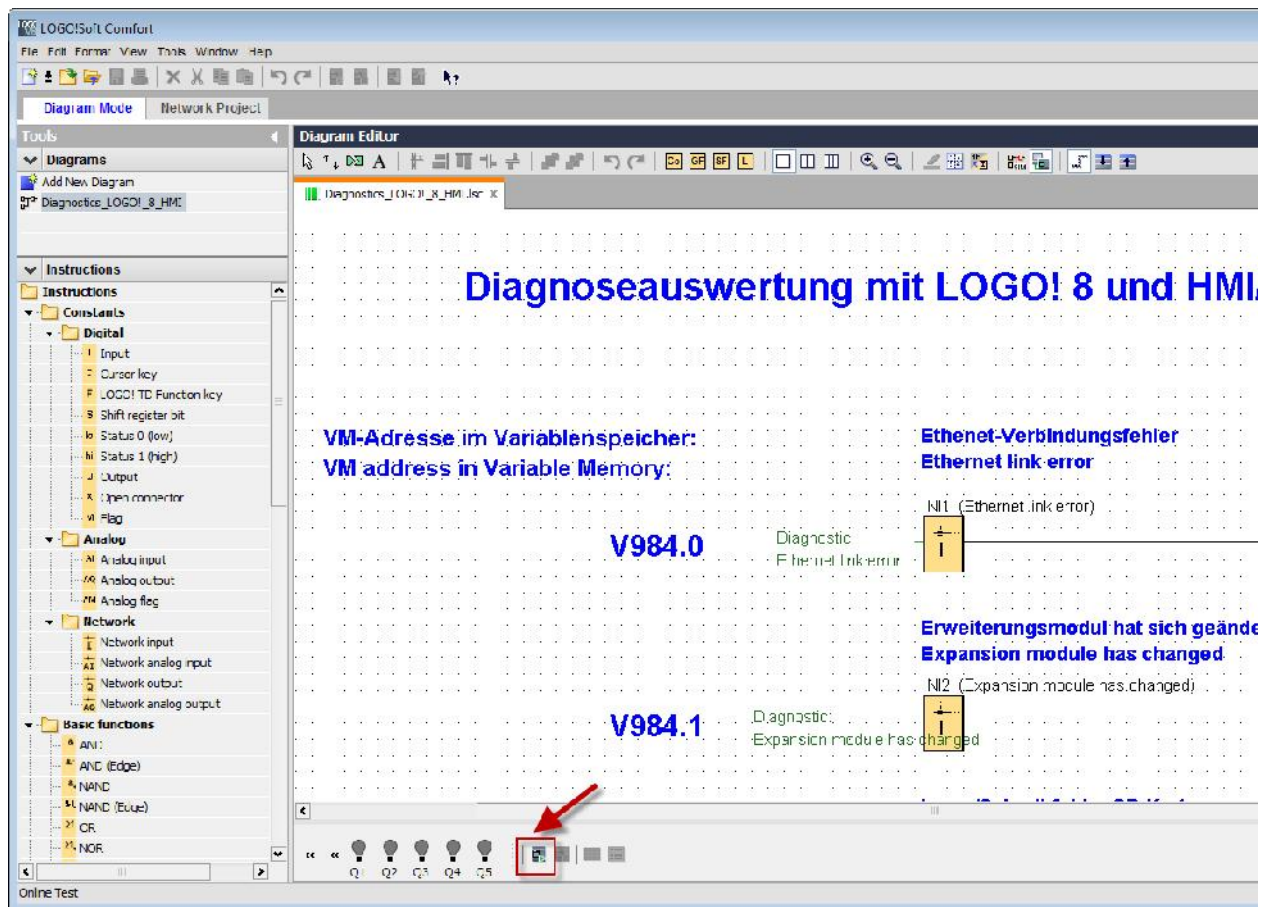
After the successful loading of the program into the LOGO! controller, click the icon for “Online test” in the “Tools” toolbar.



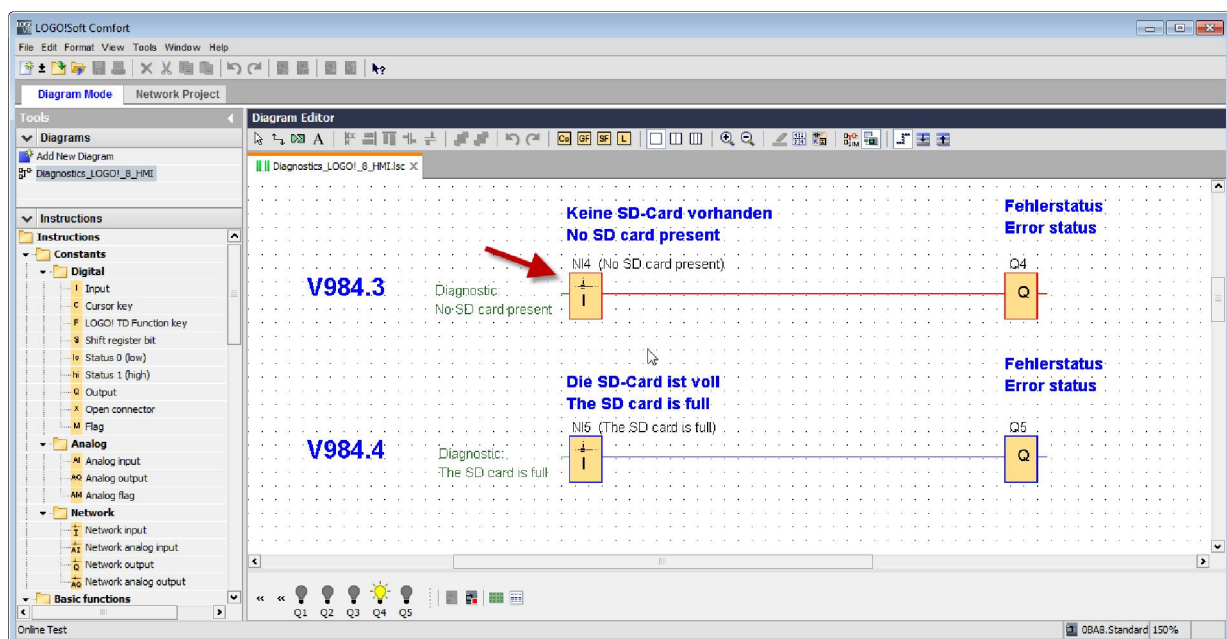
Check the IP address of your LOGO! and click “Test”. If the connection is successful, click “OK” to start the online test.



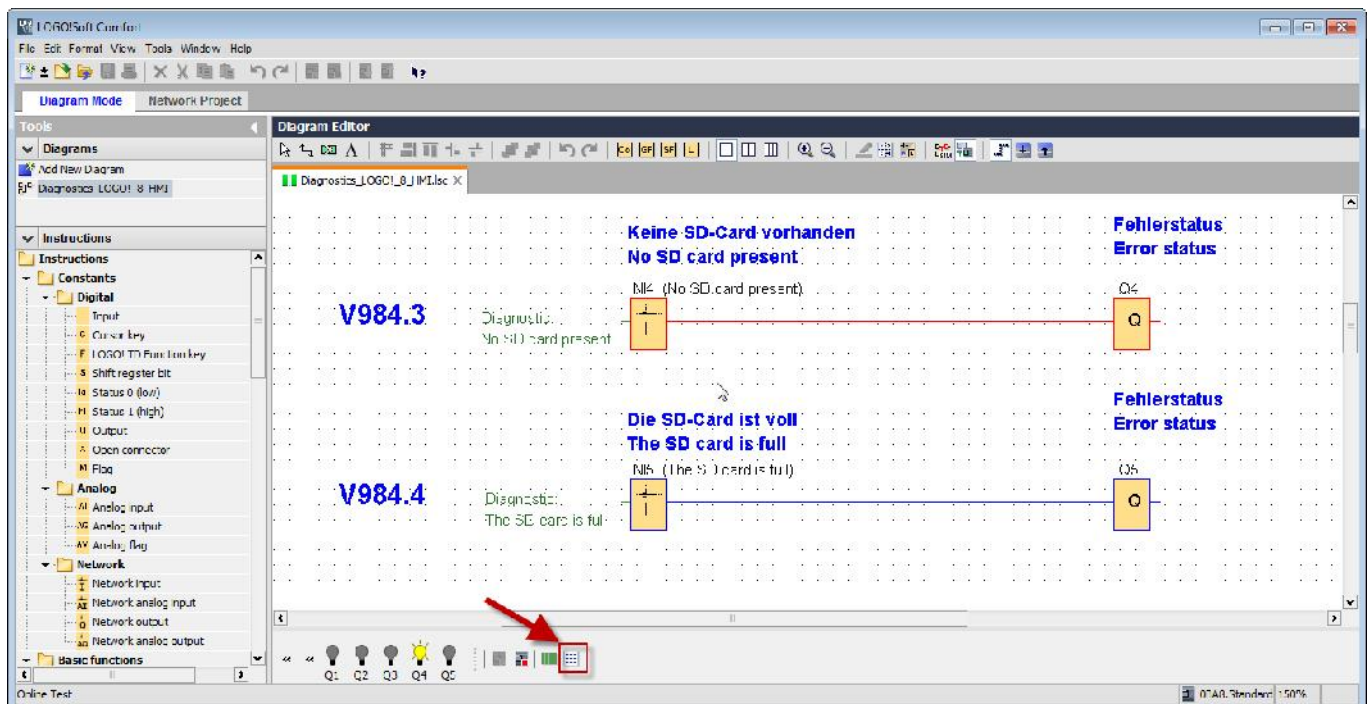
If LOGO! is in STOP mode, click the “Start” button to start the LOGO!



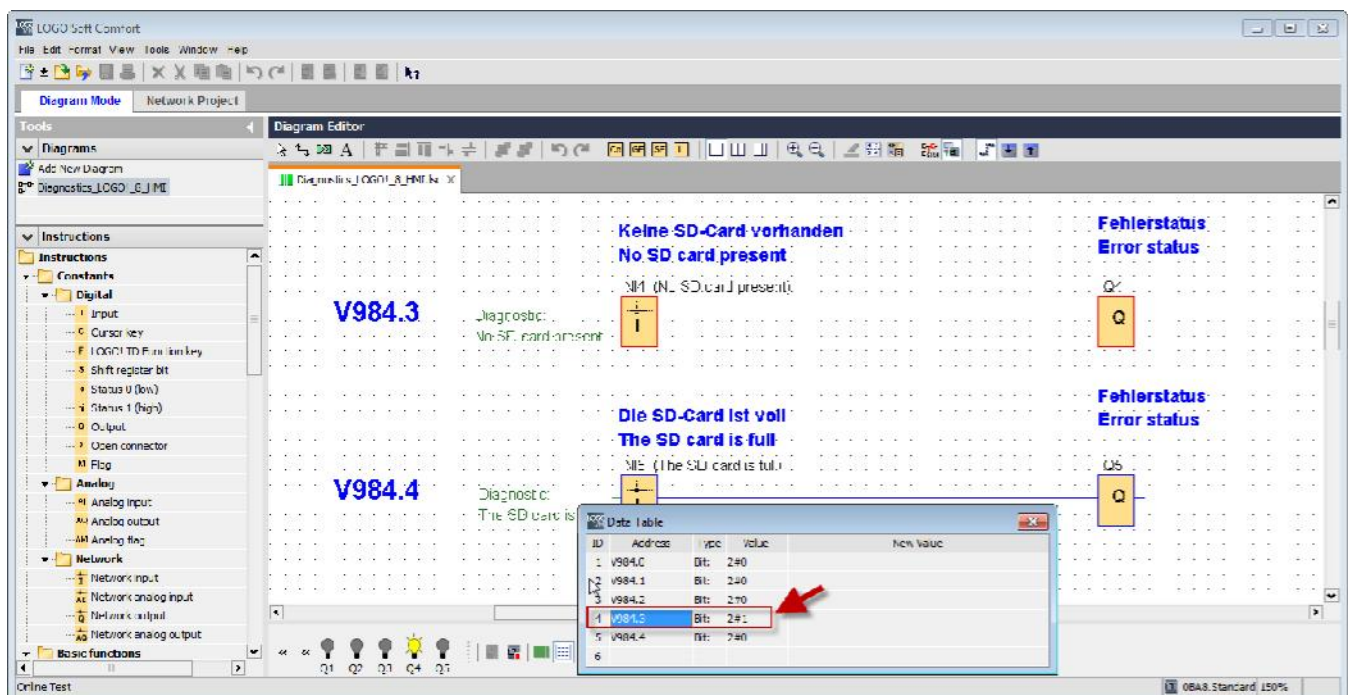
The network input for the “No SD card present” diagnostic type is set. Based on the diagnostic information it can be detected that no micro SD card is inserted in the LOGO! controller.



Click the icon for data table, where you can monitor and change the VM values.

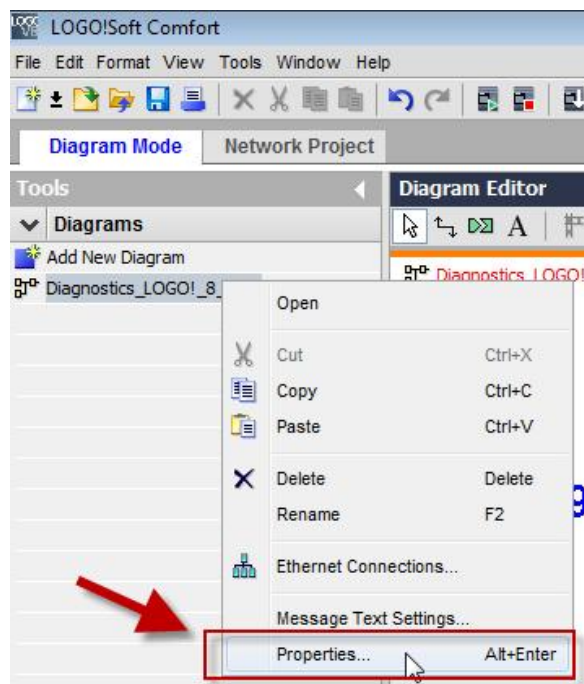


Enter the addresses of the individual bits of the VM address 984 in the first 5 lines. The bit V984.3 for the "No SD card present" diagnostic type is set.

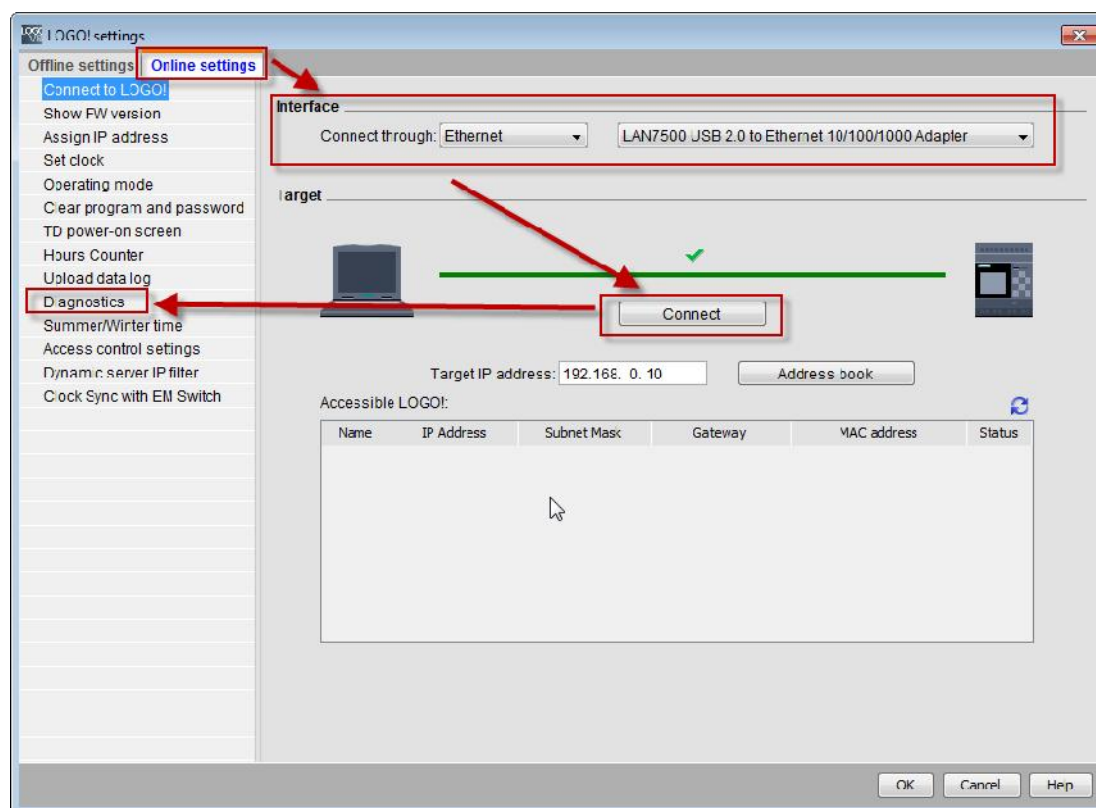




You can also call the error information via the “Online settings”. Navigate to the diagram in the diagram tree and right click the context menu to open it. Select the “Properties...” item.

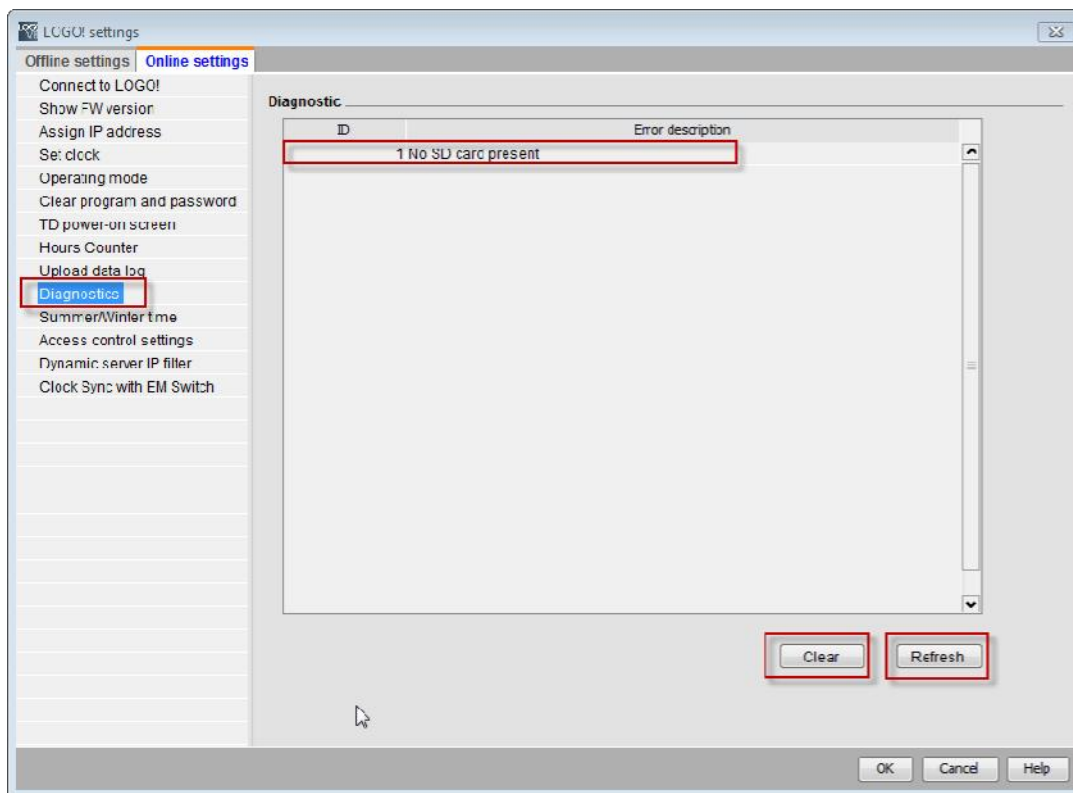


Select the online settings item. Make sure that the correct interface for your LOGO! is selected and click “Connect”. As soon as the connection to your LOGO! has been successful, you can select the “Diagnostics” item.

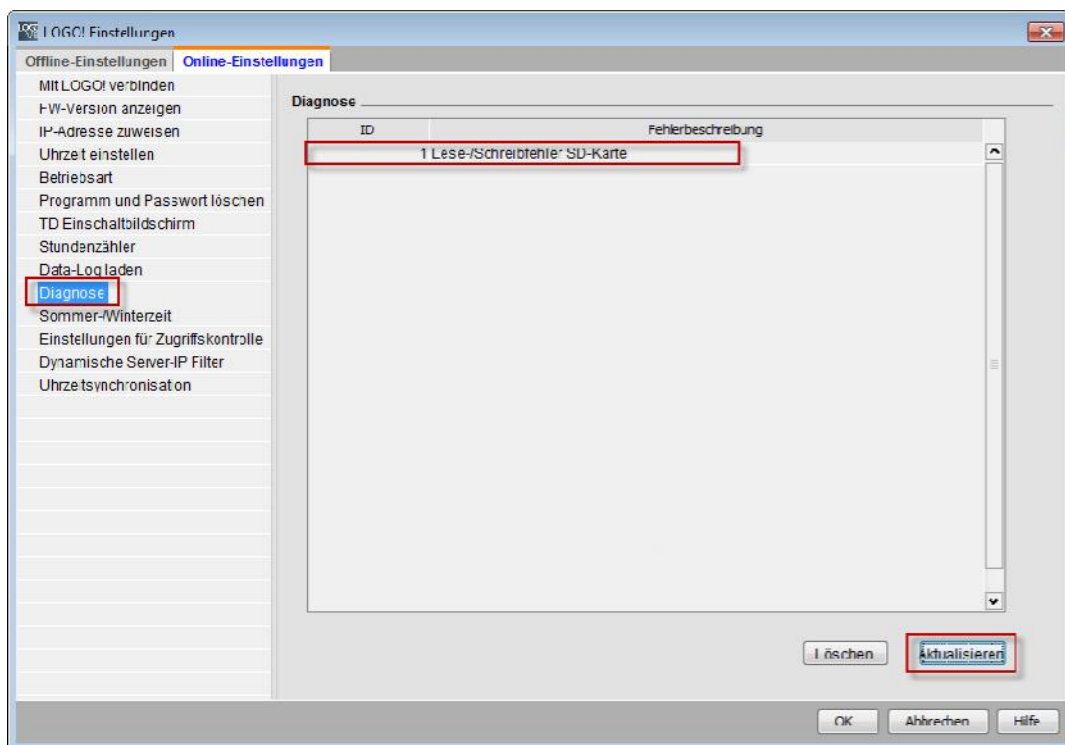




Depending on what error information is present in the LOGO!, the respective diagnostic type is displayed. By clicking “Delete” you can delete all selected error information. By clicking “Refresh”, you call the latest error information of the LOGO! controller.

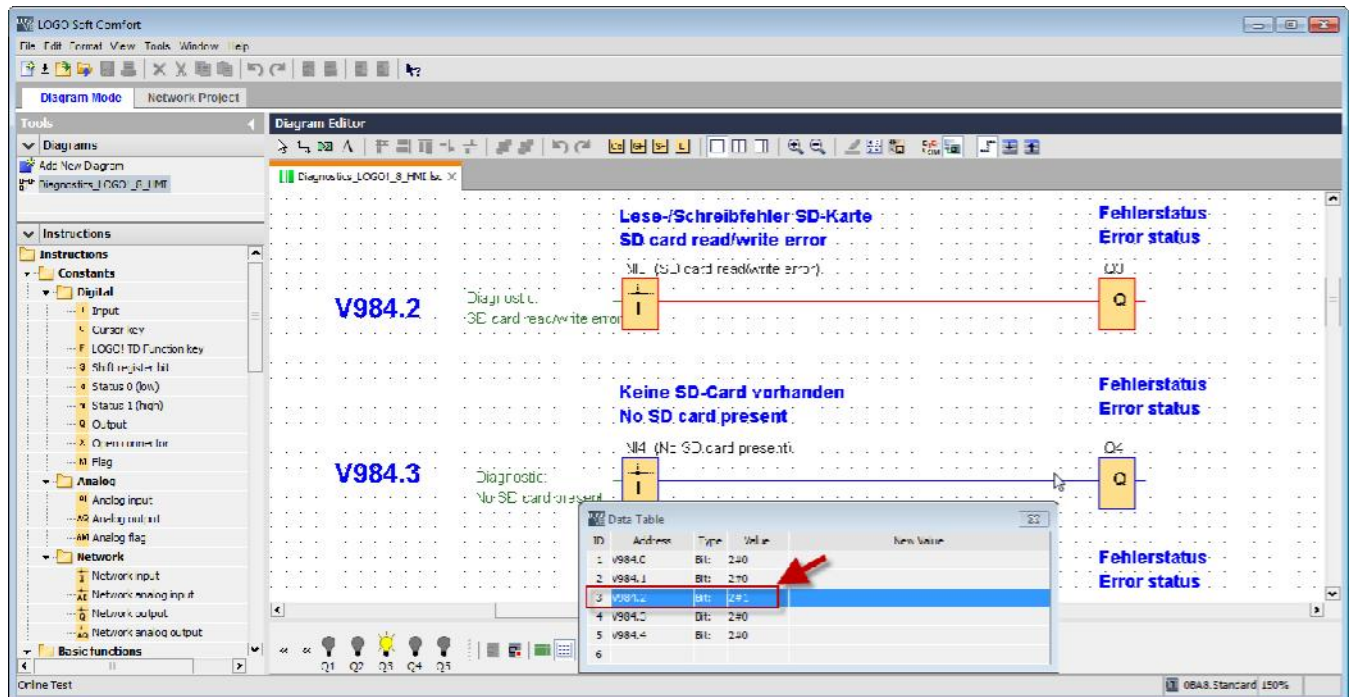


For example, a micro SD card is inserted in the LOGO! and “Refresh” is clicked.



The “No SD card present” error message is no longer displayed. However, since the micro SD card does not include an invalid file, a new error message “SD card read/write error” is displayed.

In the LOGO! program and in the data table it can now be seen that the bit V984.2 is set for the “SD card read/write error” diagnostic type.



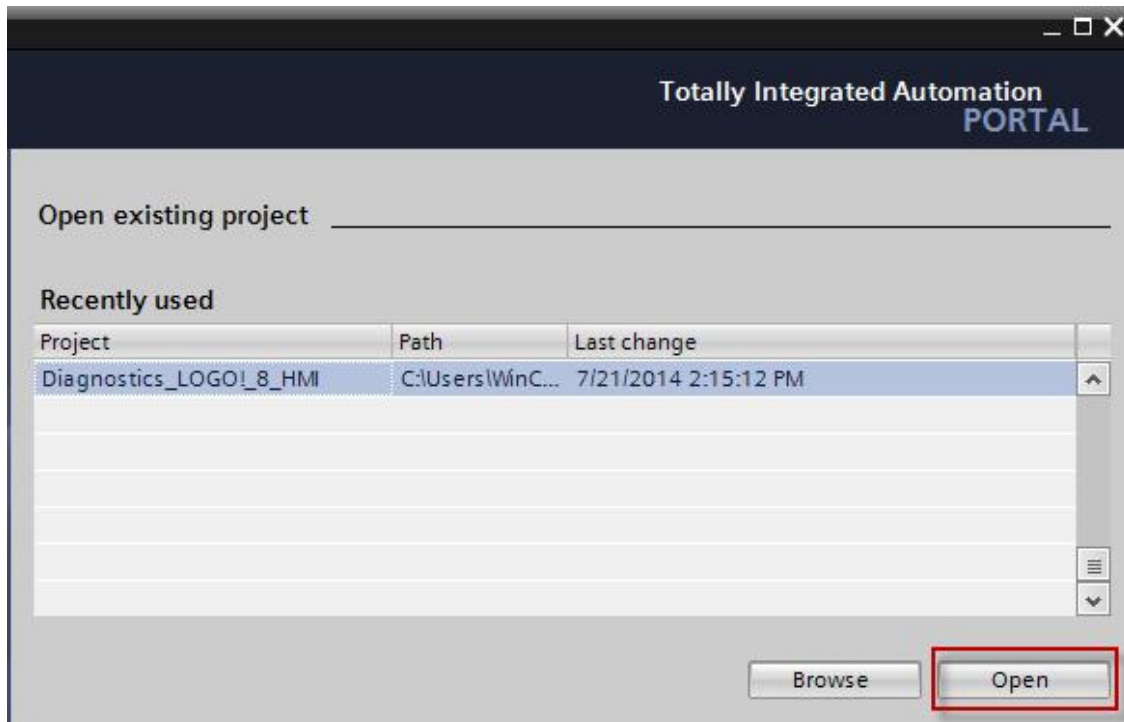
## Settings and configuration in WinCC Basic V13

### Configuring device and specifying connection settings

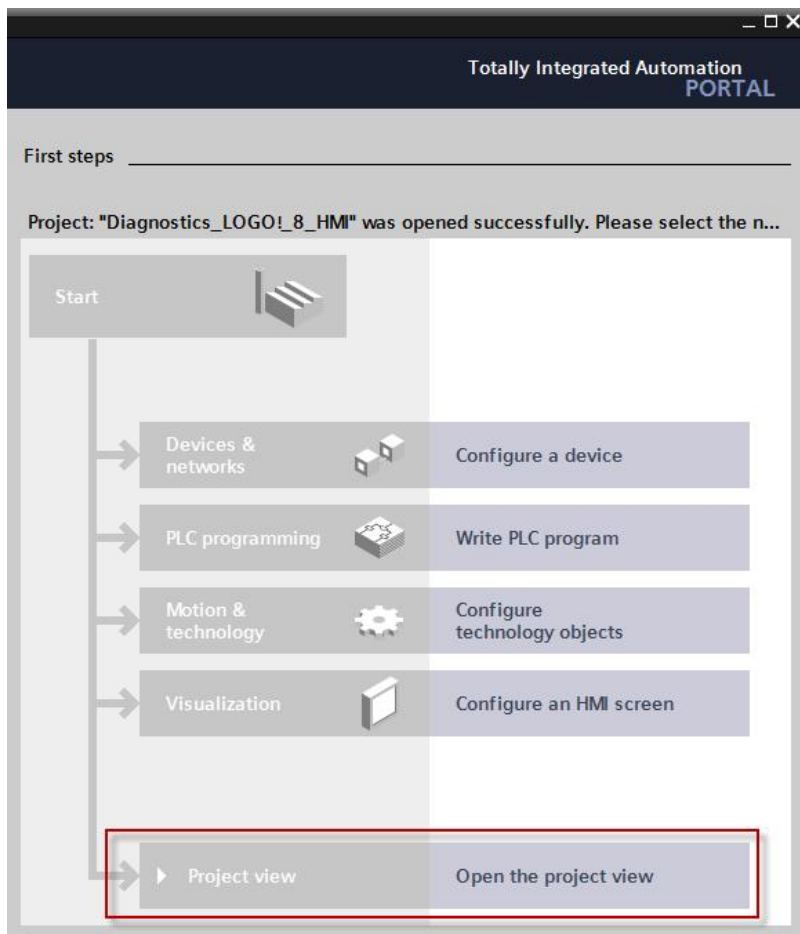
In this project a HMI KTP700 PN has already been inserted and configured as device. The connection settings between the touch panel and the LOGO! 8 have additionally been already specified.

More information on how to configure a touch panel for the connection to LOGO! 8 and how to specify the connection settings, 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.de/logo](http://www.siemens.de/logo)).

Start WinCC Basic V13 and click “Browse”. Select the “Diagnostics\_LOGO!\_8\_HMI” project and then click “Open”.

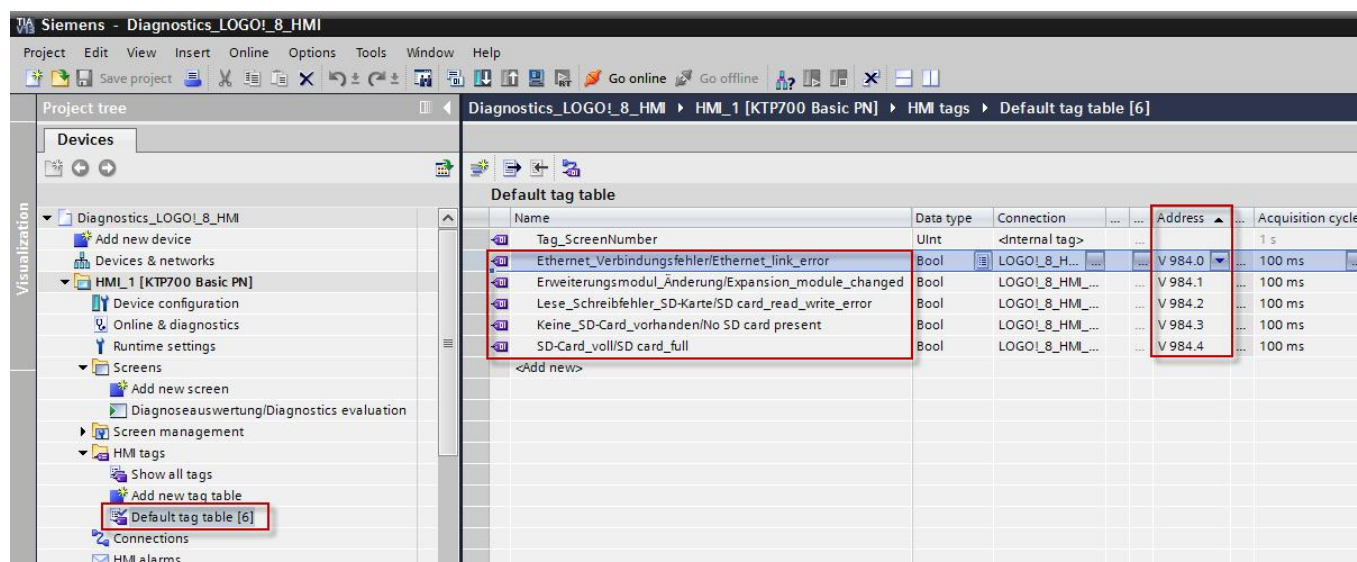


Click "Project view", to get to the project view.



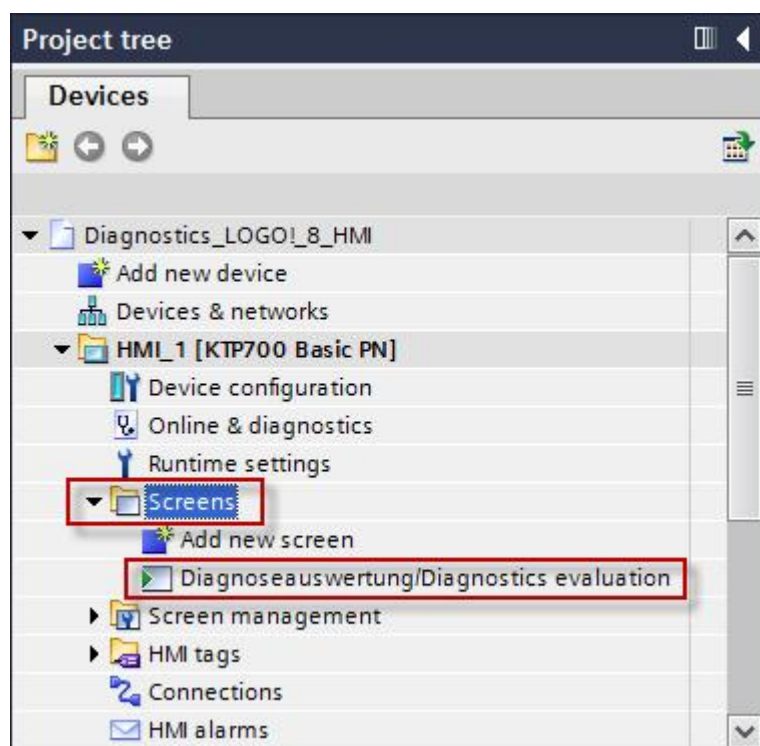
## Creating tags

Double click the “HMI tags” folder in the project navigation. Add a tag for each diagnostic bit of the VM address 984 from the variable memory of the LOGO! 8 so that a tag is configured for each diagnostic type. Make sure that your connection to the LOGO! 8 is selected in “Connection” for each tag and specified in “Acquisition cycle” 100ms.



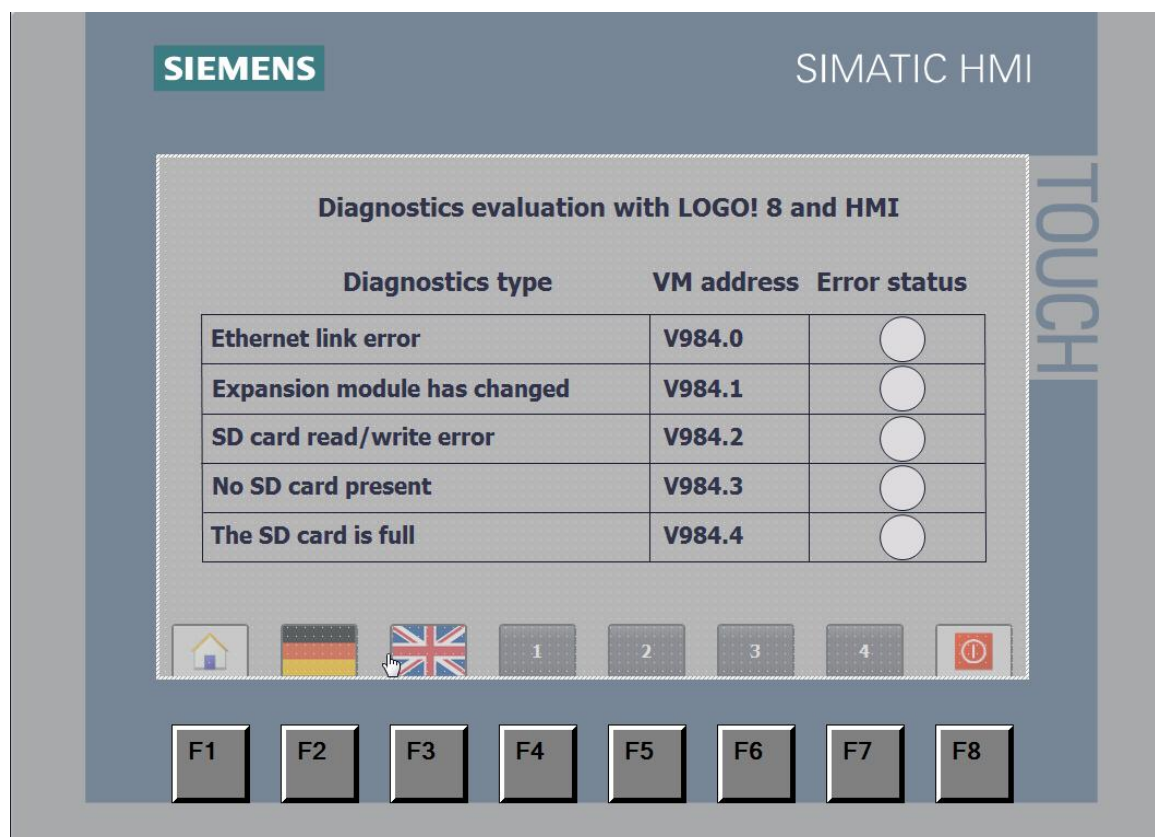
## Configuring screen

Double click the “Screen” folder in the project navigation of the touch panel. In the example, a screen for the display of the diagnostics evaluation has already been created.

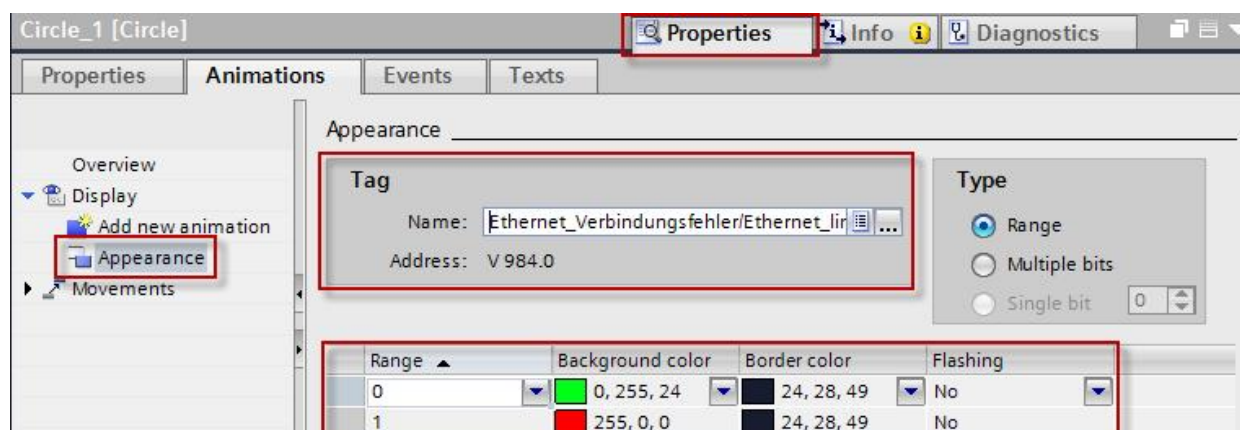




The error status for each diagnostic bit of the VM address 984 from the variable memory of the LOGO! 8 is displayed above a circle. Make sure that the properties for each circle are selected as follows and that each circle is linked with a tag for a diagnostic type:



Screen for displaying the diagnostics evaluation



Circle properties

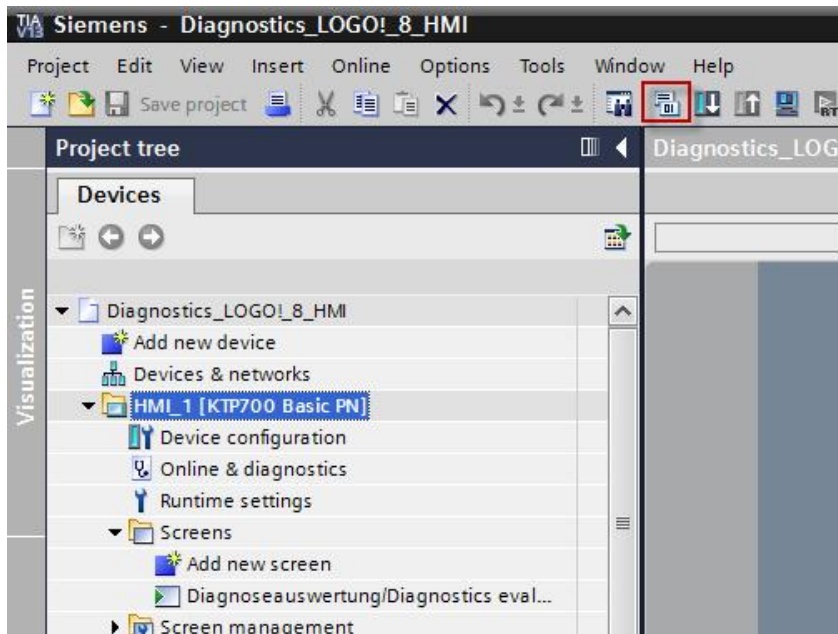


## Note:

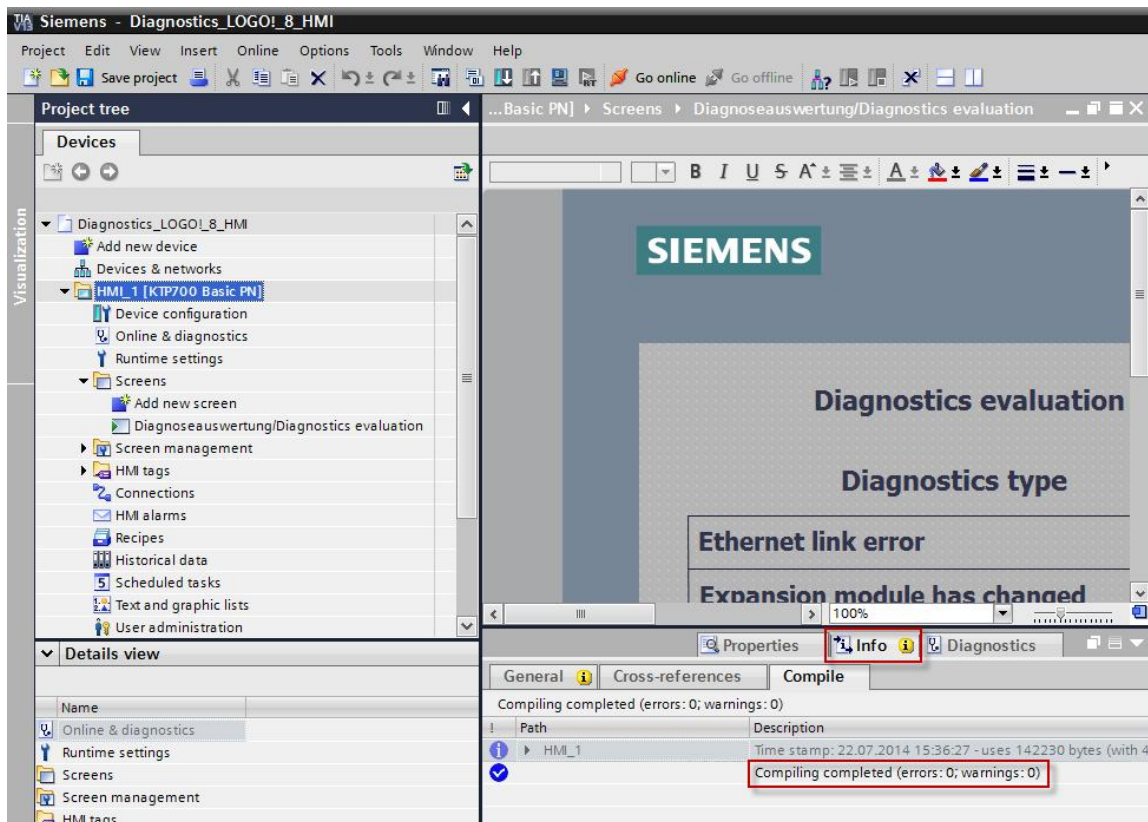
Further information for creating screens for a touch panel and how you can test your screens and settings already during the configuration, can be found in the example "Communication of two HMI with LOGO! 8" in "New examples for LOGO! 8" on the LOGO! homepage ([www.siemens.en/logo](http://www.siemens.en/logo)).

## Loading the configuration

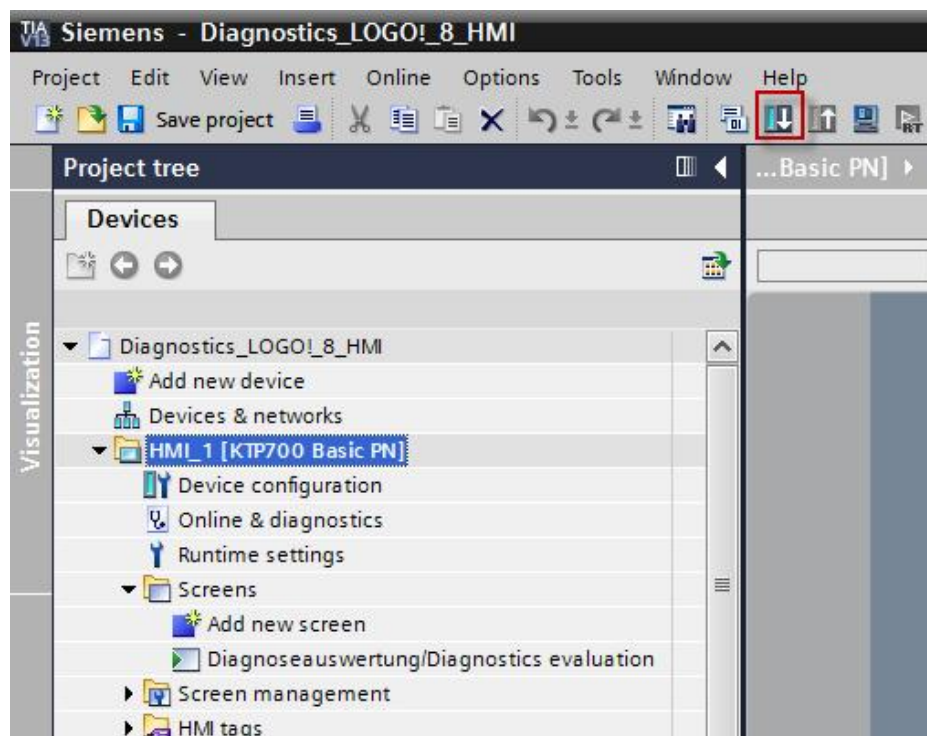
Select the device for which you want to load the configuration and click the “Compile” button.



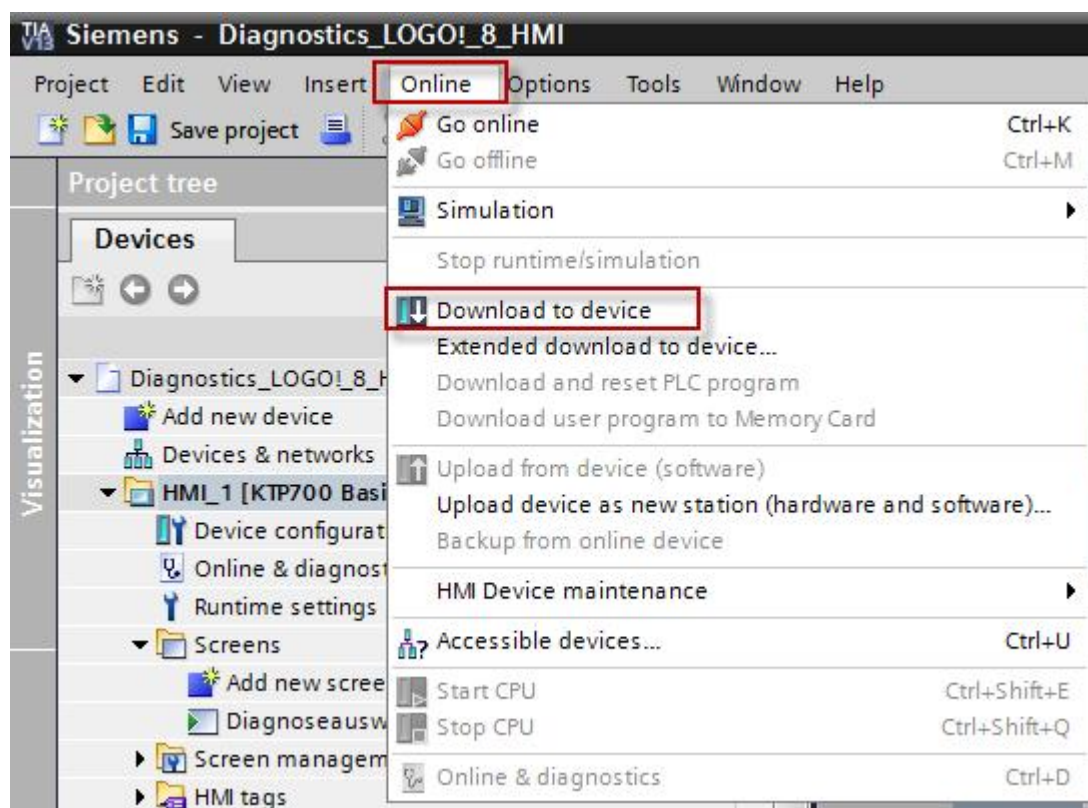
Wait until the compilation has finished and the “Info” tab displays the message “Compiling completed (errors: 0 ; warnings: 0)”.



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



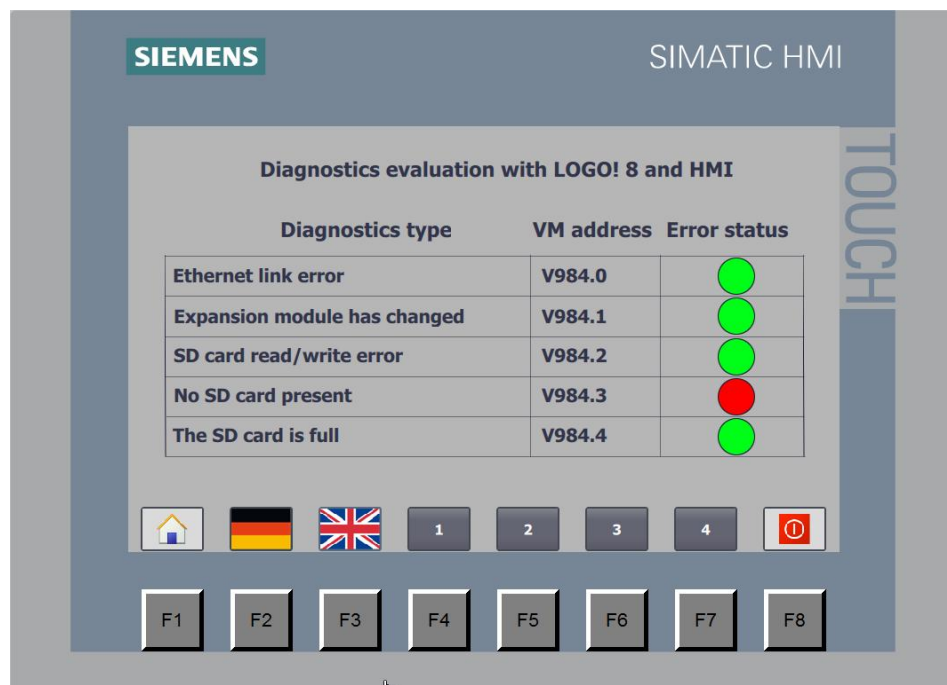
Alternatively, you can also select the “Online > Download to device” command from the menu.



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

## Testing the configuration of the touch panel

Once you have downloaded the project to the touch panel, you can operate it on the touch panel. Since there is no micro SD card in the LOGO!, the bit V984.3 is set and an error is displayed for the “No SD card present” diagnostic type.



If, for example, a micro SD card is inserted in the LOGO!, the error for the “No SD card present” diagnostic type is no longer displayed. However, since the micro SD card includes an invalid file, the bit V984.2 is now set and an error is displayed for the “SD card read/write” diagnostic type is displayed.

