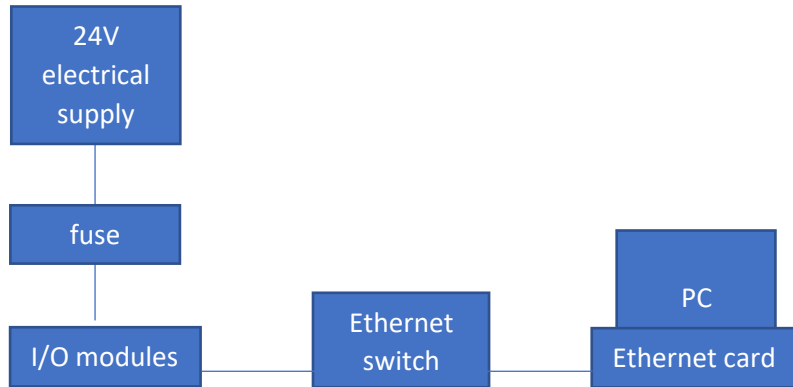


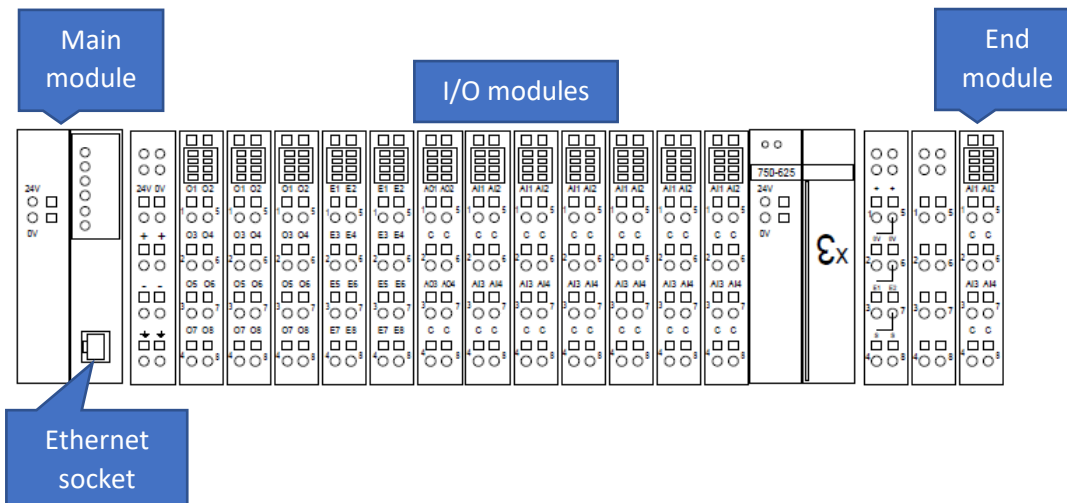


## Wago and Beckhoff electronic modules troubleshooting

Electronic I/O modules are usually located inside the electrical cabinet of Microplan test benches. An example of configuration is shown in the following schematic (ethernet switch is not always installed, while the rest of components are surely present).



Looking closer to I/O modules, their layout will look similar to the following:



It rarely happens that the ethernet communication between the PC of the test bench and the electronic acquisition modules (Wago or Beckhoff) is interrupted. In such event the following instruction might help.

**Caution:**  
 Qualified personnel are required to conduct the work that is described and recognize potential hazards.

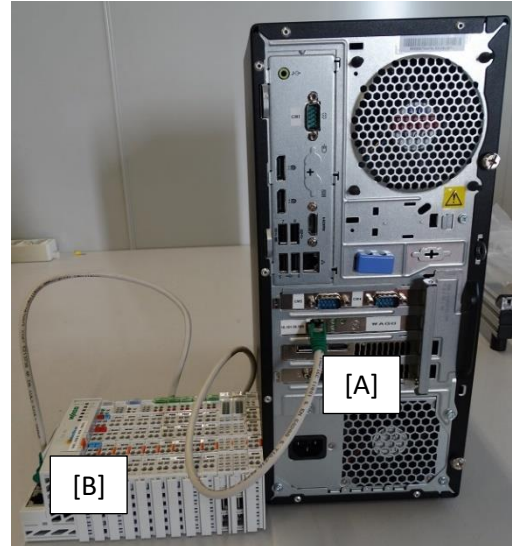


Possible problem	Possible solution
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**Ethernet cable not inserted correctly**

- ensure the ethernet cable is correctly inserted in both ends:
  - [A] the PC backside (usually labelled Wago or Beckhoff)
  - and [B] the ethernet socket fitted within Wago or Beckhoff main module

N.B.: for some configurations there might be an ethernet switch between the PC and the I/O modules, in such case the ethernet cable must connect first the PC to the switch and then the switch to the I/O modules



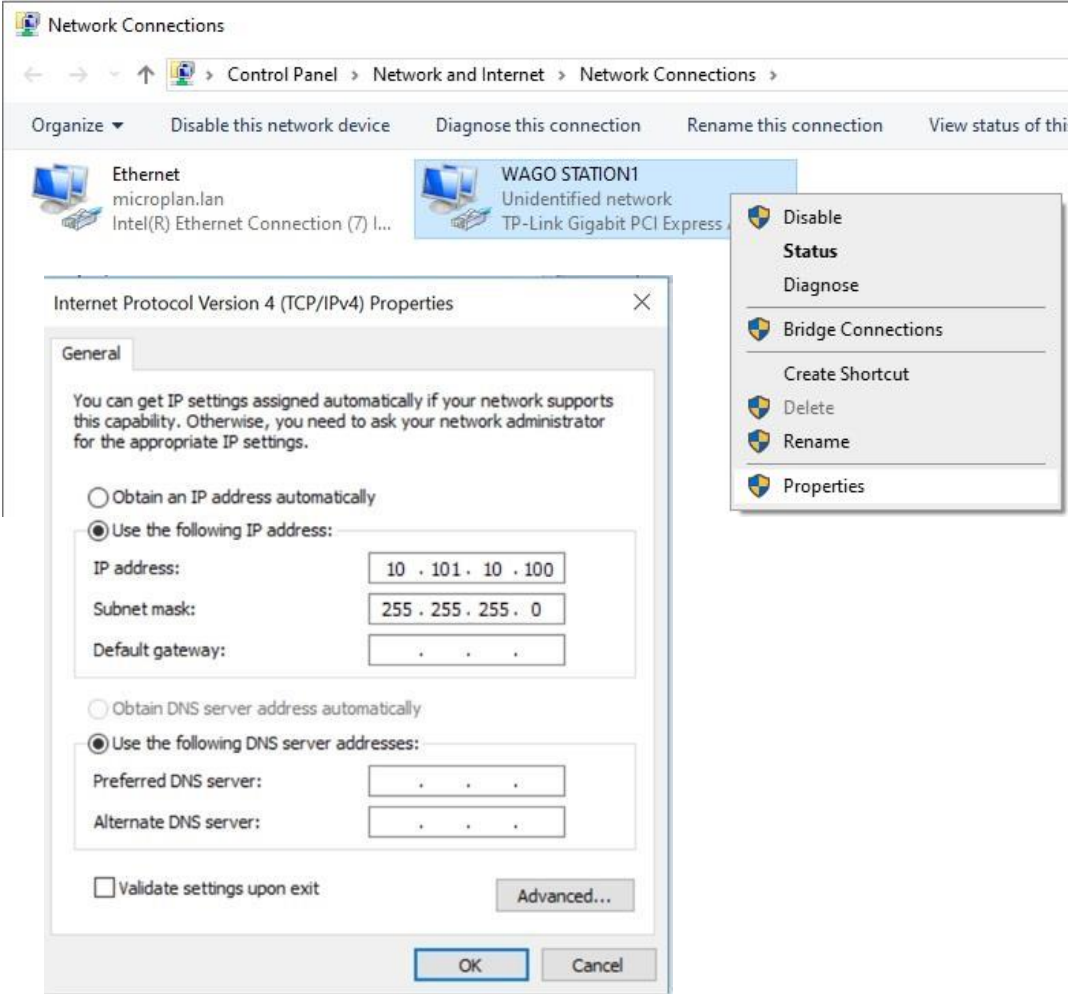
**Wrong IP address**

- open a DOS window and ping ([read more](#)) the I/O modules address (for example 192.168.100.101). The correct address to ping is the one printed on the label stuck on Wago or Beckhoff main module (see following picture)

```
C:\Windows>ping 10.101.10.101
```





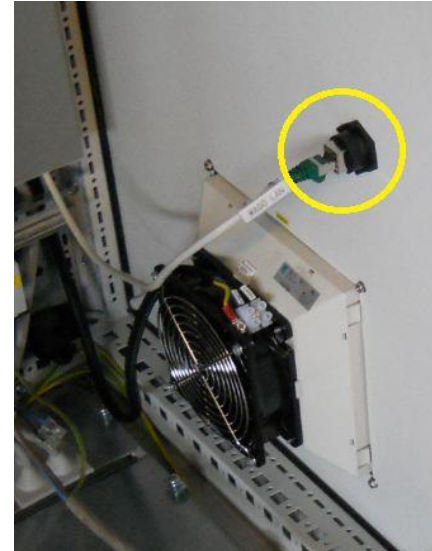
Possible problem	Possible solution
<p><b>PC ethernet card wrong settings</b></p>	<ul style="list-style-type: none"> <li>in case ping is not successful check that the IP V4 ADDRESS of the PC ethernet card is in the same subnet of the electronic module IP address (for example 10.101.10.100) and that the SUBNET MASK is 255.255.255.0</li> </ul> 
<p><b>Wrong ethernet cable</b></p>	<ul style="list-style-type: none"> <li>ensure you're using the ethernet cable that was supplied with the test bench or in any case: a "crossed" type if Wago or Beckhoff modules are directly connected to the PC, or a "normal" type ethernet cable in case an ethernet switch is installed in between</li> </ul>
<p><b>Problem with the ethernet card of the PC</b></p>	<ul style="list-style-type: none"> <li>ensure the PC ethernet card is still ok: open Windows control panel and check</li> </ul>
<p><b>IP address conflict</b></p>	<ul style="list-style-type: none"> <li>in case the test bench has been connected to the factory LAN network, temporarily remove this connection</li> </ul>



Possible problem	Possible solution
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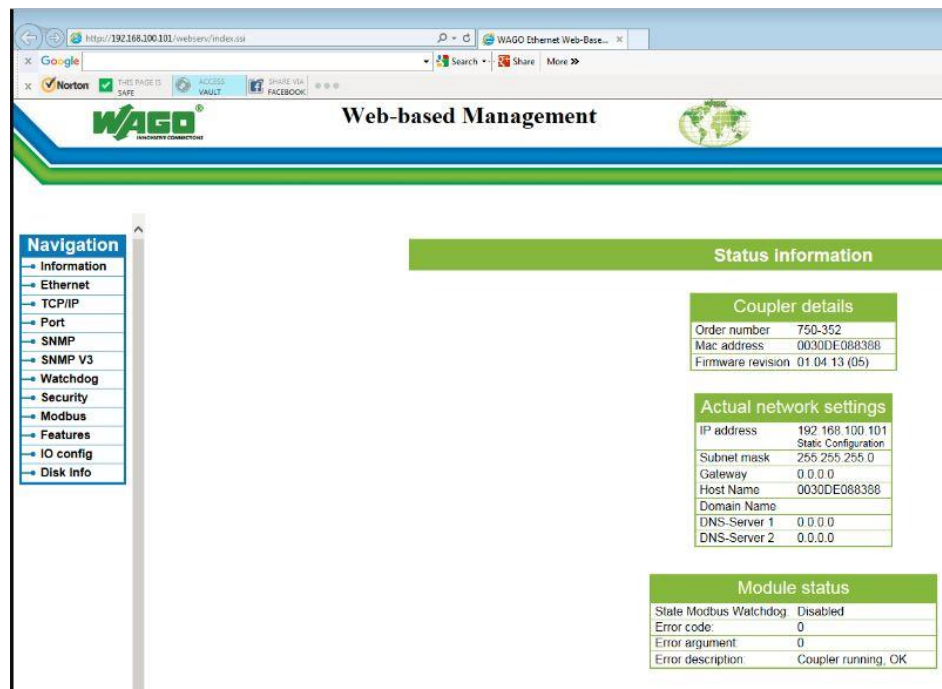
**Problem with the ethernet connector**

- when PC is outside the electric cabinet you should bypass the ethernet connector (yellow circled in the picture) - the one that passes through the wall of the electric cabinet - and connect a direct single ethernet cable, crossed type, from PC backside (usually labelled Wago or Beckhoff) and Wago or Beckhoff main module (black circled in the picture above). To do this you can use the bottom of the electric cabinet to let the ethernet cable reach outside



**Problem with Wago modules**

- Open a browser and type the Wago IP address. The correct address to write is the one labelled on Wago main module (see picture at page 2), for example 192.168.100.101.
- The following page will be displayed and in case of errors they will be listed in the last window "Modules status"





**Possible problem**

**Possible solution**

- check led status of Wago main module as follows:

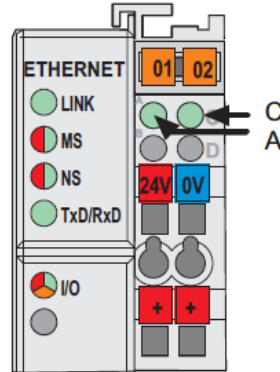
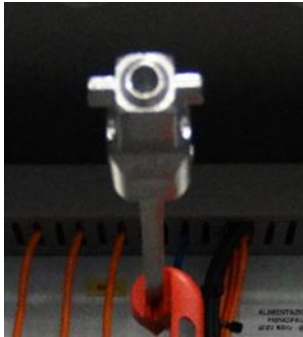




Fig. 3.1-11: Display elements 750-341

LED	Meaning	Trouble shooting
<b>LINK</b>		
green	Link to a physical network exists	
OFF	No link to a physical network	Check the fieldbus connection.
<b>MS</b>		
red / green flashing	Self test	
red	The system indicates a not remediable error	Restart the fieldbus coupler by turning the power supply off and on again. If the error still exists, please contact the I/O Support.
green flashing	The system is not yet configures	
green	Normal operation	
OFF	No system supply voltage	Check the supply voltage (24V and 0V)
<b>NS</b>		
red / green flashing	Self test	
red	The system indicates a double IP-address in the network	Use an IP address that is not used yet.
red flashing	At least one connection announced a Timeout, where the coupler functions as target.	Restart the fieldbus coupler by turning the power supply off and on again and develop a new connection.
green flashing	No connection	
green	At least one connection is developed (also connection to the Message rout applies)	
OFF	Dem System ist keine IP-Adresse zugeordnet oder es liegt keine Betriebsspannung an	Assign to the system an IP address by BootP, DHCP or the Ethernet Settings tool.
<b>TxD/RxD</b>		
green	Data exchange via ETHERNET taking place	
OFF	No data exchange via ETHERNET	



Possible problem	Possible solution
<b>Problem with Beckhoff modules</b>	<ul style="list-style-type: none"> <li>read <a href="#">Beckhoff bus coupler (BK9050) troubleshooting</a></li> </ul>
<b>PC initial booting not completed</b>	<ul style="list-style-type: none"> <li>when you turn on the test bench give enough time to the PC to complete the initial booting. If you run a program while the boot is still in progress, you may get an error on the screen (for example "Error connecting GPIB driver or device"). Restart the PC and let it complete its booting.</li> </ul>
<b>Power supply problem</b>	<ul style="list-style-type: none"> <li>Open the door of the electric cabinet (depending on the system, it might be required to: a) turn off main switch b) open the door c) use the internal lever to turn on main switch again)</li> </ul>  <ul style="list-style-type: none"> <li>Check that leds of the "Main module" and "I/O modules" are lit: if so, move to step "PC initial booting not completed"</li> </ul>  <ul style="list-style-type: none"> <li>In case leds are off, check if thermal switch that supplies power to the I/O modules is ON</li> </ul>  <ul style="list-style-type: none"> <li>In case all leds are still off, move to the following step.</li> </ul>



## Possible problem

## Possible solution

- Use a voltmeter to make sure 24VDC reaches the fuse holder (refer to the electrical diagrams of the test bench to identify the fuses).



- In case 24VDC does not reach the fuse holder, you need to investigate within the electrical components which are installed upstream (refer to the electrical diagrams of the test bench).

## Blown fuse

- In case 24VDC reaches the fuse holder, then measure 24VDC across the fuse holder



- In case the measure is not around 24VDC it means that the fuse is blown and needs to be replaced
- On the contrary if you measure 24VDC across the fuse holder it means that the fuse is ok and you need to move to next step

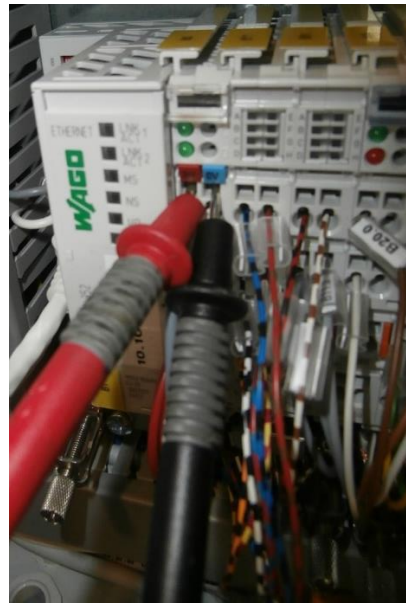


## Possible problem

## Possible solution

### Main module or Power module problem

- Use a voltmeter to measure 24VDC on the “Main module” and power module



- If you measure 24VDC the “Main module” and the power module are likely to have problems.
- Read [How to replace Wago main module \(bus-coupler\) 750-352 750-362](#)
- Read [Wago I/O slave modules replacement](#)