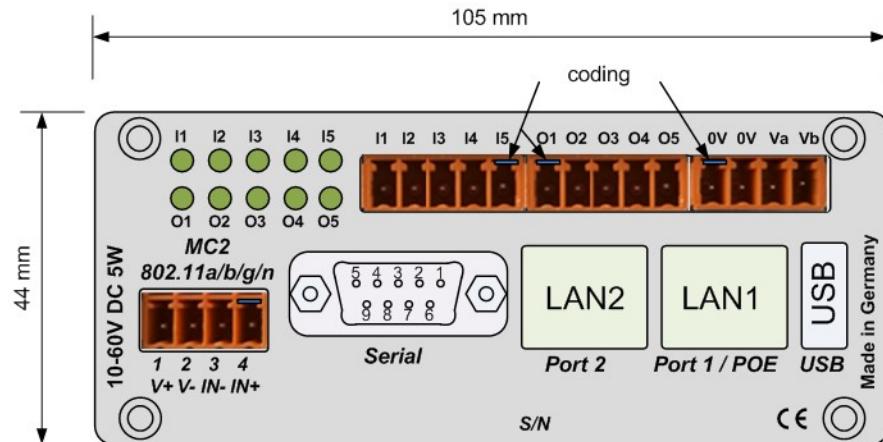


MC2 with IO - extension

The model MC2-5IO is a MC2, which is extended by an IO module with an additional board. This offers additional 5 digital inputs and 5 digital outputs.

Connections of the IO extension

The rear panel of the MC2-5IO has these connections:



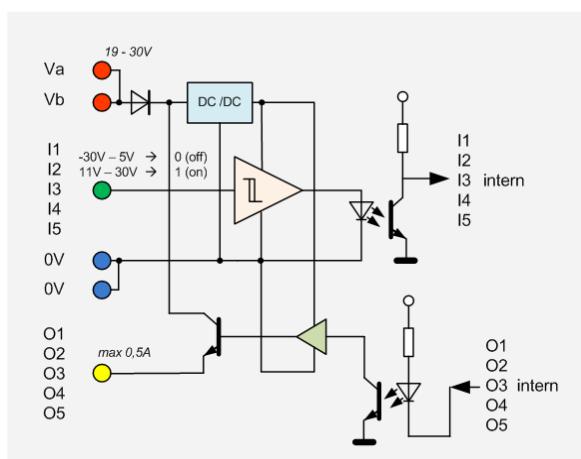
Connections and LEDs on the MC2-5IO

The power supply of the MC2-5IO is provided by a 4-pin header via the contacts V+ and V-. An additional digital input can also be connected via this connector (IN-, IN+).

The other interfaces (Serial, LAN2, LAN1 and USB) are arranged as on the standard version of the MC2.

The 5 inputs and outputs of the IO expansion are connected via 3 additional pin headers (2 x 5-pole, 1 x 4-pole).

The wiring of these inputs and outputs is as follows:



Input and output circuitry

The outputs are short-circuit proof. The connection for the supply voltage has reverse polarity protection.

The states at the inputs and outputs are indicated by the LEDs I1-I5 (inputs) and O1-O5 (outputs).

Specifications	
Voltage (Vab)	19 - 30V
Digital input I1-I5	5 x input switched by optocoupler -30 - +5V --> state 0 +11 - 30V --> state 1
Digital output O1-O5	5 x output switched via optocoupler ON --> Vab @ 0,5A (short circuit proof) OFF --> high impedance

Control of the IO extension

The inputs and outputs of the IO extension are controlled or queried with simple ASCII character commands.

A command string is always sent from a controlling device (PLC, computer) to the MC2 and starts with an upper case letter.

The MC2 sends status responses that start with a lower case letter.

The following commands are defined

<LF> = Linefeed = '\n' oder 0x0a

Command	Set	Function
O	O<O1><O2><O3><O4><O5><LF> Response of the MC2 (only in case of a change) Oxxxxx<LF> xxxxx = new state of the outputs	Setting the outputs 1-5 Ox = '0' --> switch off Ox = '1' --> switch on Ox = 'X' --> Leave state Example: „O0111X\n“ switch O1 off O2-4 on O5 leave state.
Q	Q<LF> Reply from MC2: oxxxxx<LF> ixxxxx<LF>	Query = query the inputs and outputs
RI	RI<I1><I2><I3><I4><I5><LF>	This allows a device to register to receive a status message when an input is changed.
RO	RO<O1><O2><O3><O4><O5><LF>	This allows a device to register to receive a status message when an output is changed.

Several commands are also allowed in one command line:

e.g.: "O01XXX\nQ\n"

Sets O1 = 0 and O2 = 1 and queries the state of the inputs and outputs.

<p>MC2 Wireless LAN Client</p> <p>Home Device Configuration Statistics Support</p> <p>Multi IO Enable <input checked="" type="checkbox"/> Check this box to enable Multi IO function.</p> <p>Local Ports</p> <p>UDP Port <input type="text" value="4001"/> Local-UDP-Port for the server.</p> <p>TCP Port <input type="text" value="0"/> Local-TCP-Port for the server.</p> <p>Remote Network</p> <p>Remote Protocol <input type="button" value="UDP"/> Select protocol for server.</p> <p>Remote IP <input type="text" value="0.0.0.0"/> Type the IP address the LAN client to speed up detection. If detection by DHCP is enabled DHCP Replies will be used for detection.</p> <p>Remote Port <input type="text" value="0"/> Local-Port for the server.</p> <p>Invert In/Out <input type="checkbox"/> Check this box to enable inversion of I/O text to directly control an other device for 1:1 I/O forwarding.</p> <p>LED</p> <p>Active Color <input type="button" value="Red"/> Select led color for active level.</p> <p>Inactive Color <input type="button" value="Off"/> Select led color for inactive level.</p> <p>Brightness <input type="button" value="Low"/> Select led brightness.</p> <p>Other options</p> <p>Keep Values <input type="checkbox"/> Check this box to keep old output values through reboot.</p> <p>Debounce</p> <p>Input 1 <input type="text" value="100"/></p> <p>Input 2 <input type="text" value="100"/></p> <p>Input 3 <input type="text" value="100"/></p> <p>Input 4 <input type="text" value="100"/></p> <p>Input 5 <input type="text" value="100"/></p> <p>Debug</p> <p>Debug Level: <input type="button" value="Maximum"/></p>	<p>Setting of the multi-IO extension:</p> <p>Default: Protocol: UDP Port: freely selectable (here 4001)</p> <p>LED's: The states of the inputs and outputs are indicated by 3 colored LEDs. In the Config you can set the colors that are displayed when "on" or "off". The parameter "Brightness" influences the brightness of the LEDs.</p> <p>With the parameter "Keep Values" you can define that the output states of the 5 ports are kept during and after a reset.</p> <p>Debounce sets a value in ms for debouncing the inputs. 0 = no debouncing</p> <p>Debug defines how "intensively" messages about the processes in the Multi-IO module in the log file are documented.</p>
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