The analog output module romod 8 AO is a Local Override/Indication Device (LO/ID) which is used to provide eight 0-10V control signals. These may be utilized, e.g., for controlling heating valves, dampers or frequency converters etc.
By means of the integrated switches and potentiometers, it provides the ability of manual override of the AOs which are usually controlled via Modbus commands.
The analog 0-10V outputs are provided by the module via terminals. The reference potential for the analog outputs is available at the GND terminals. For two AOs there is available one GND terminal in each case. All ground pins are connected to each other internally and to the GND of the power supply, as well.

The current positions of the switches ('Auto' or 'potentiometer') can be read from a register. Likewise, the potentiometers' positions can be polled from registers.
There is a register that displays whether and which switch has been operated since the last time this register has been read. When reading this register, all bits are reset to zero. If the position of a switch has been altered several times, e.g. from AUTO to POT and back to AUTO, a change will be displayed, anyway.

Also changes in the values of the potentiometers can be seen from a register. That register shows which potentiometer has been moved since the last time this register has been read. The corresponding analog value then can be polled specifically. Doing so, the bus cycle time may be reduced significantly.

All analog outputs can be configured so that they will assume a defined state ('safe state') if the module has not received valid bus telegrams via the Modbus for a certain time. These predefined states are set separately for each output, whereas the time until activating the safe state is common for all outputs of a module.
Note: The time for triggering the 'safe state' should not be too short in order to avoid malfunctions as they can occur, e.g., when another device which is connected to the bus fails and will so cause time-outs.

romod 8 AO	GND	24V AC/DC	GND für AOs		Ausgangsspannung an den AO jeweils 0..10 VDC							
AO Nr. 1-8					1	2	3	4	5	6	7	8
Klemme:					10	12	13	15	16	18	19	21
GND für AOs												
Klemme:		11	14	17	20							
Spannungsversorgung												
Klemme:	1	2										

Modbus-Anschluss	Klemme		
I-GND	3		
A (+)		4	
B (-)			5

Power supply: 24 V AC/DC, connection via terminals

Current consumption:
max. 120 mA (DC), 160 mA (AC) with all analog outputs loaded

Power dissipation
max. 1.8 W (DC), 3.9 W (AC) with all analog outputs loaded

Specifications AO's:
Capacity of the outputs 10 mA each (short circuit proof)
Resolution 10 Bits
Linearity error < +/- 2%

Bus interface RS485

Supported baud rates
Autobauding, 9,600 Baud, 19,200 Baud, 38,400 Baud, 57,600 Baud

Bus cycle time individually depending on the baud rate and the number of data points that will be addressed

Configuration settings are stored in the internal EEPROM, max. number of write cycles up to 100,000 times (Memory uPC internally)

Protocol Modbus rtu (RS485), Serial Port Parameter Setting 8-N-1

Environmental conditions
Operating temperature 0...50°C
Transport and storage temperature 0...70°C
Relative humidity 10...90%, non-condensing

Protection class IP 20