



The digital output module romod 4 DO-R is a Local Override/Indication Device (LO/ID) which is used to control four lighting circuits, or other digital actuators. By means of the integrated push buttons, it provides the ability of manual override of the DOs which are usually controlled via Modbus commands. The relay outputs provide the normally open contact of each relay and will be contacted via terminals. They are implemented using bistable relays. For each DO there are two LEDs present for indicating the status. The left LED signalizes whether the output is controlled via Modbus commands or whether it is manually overridden by the push button, whereas the right LED indicates the output's state (ON or OFF). Changing between the modes 'Automatic' and 'Manual' is done by holding down the push button. The time required for this can be set together for all four channels. If a button is pressed for a too short time, the left LED ('Automatic') flashes orange for one single time shortly after releasing the button. There is a register available that shows whether and which push button has been pressed since the last time this register has been read. When reading this register, all bits will be reset to zero. The current state of the push buttons and the outputs as well can also be read out via registers. Furthermore, via a register there can be configured whether the outputs shall start in automatic mode or manually overridden (OFF). In addition, a delay time can be defined, which must elapse between the switching of two outputs at least. Thus, the system perturbations resulting from the switching operations can be reduced. All digital 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. Regarding the system configuration (addressing, maximum number of modules connected to a Modbus Master interface, installation, connection to the bus etc.), please follow the instructions in the chapter Configuration.

romod 4 DO-R		Ausgangsspannung an den DO potentialfrei							
		GND	24V AC/DC	nicht belegt	nicht belegt				
DO Nr. 1-4					DO 1	DO 2	DO 3	DO 4	
Klemme:					10	11	12	13	14 15 16 17
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:  
typically 14 mA (DC), 40 mA (AC)

Power dissipation  
max. 0.4 W (DC), 1.0 W (AC)

Specifications DO's:  
Relay outputs (NO contact), max. 250 VAC

Characteristics (Resistive Load):  
Initial contact resistance 100mOhm (at 1A / 6 VDC)  
minimum switching current 100mA (at min. 5 VDC)  
Rated load 16 A at 250 VAC  
Max. switching voltage 277 VAC  
Max. switching capacity 4432 VA (AC)  
Endurance 25'000 ops (Rated Load)  
Inductive loads should be avoided or be suppressed at the source

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