OAS-SBS-IOMR-1026

Digital outputs 16A: 4 digital outputs 16A: 4 DO relay outputs each with LED and push button operation

The digital output module **OAS-SBS-IOMR-1026** 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).

The possibility of manually overriding the digital outputs by means of the push buttons can be disabled by using the settings in a register ('Setting the mask for manual override of the Dos'). This can be defined for each DO separately. 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. If, however, the channel is blocked for manual override due to the settings in the mask, this LED flashes permanently during the button is pressed.

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.

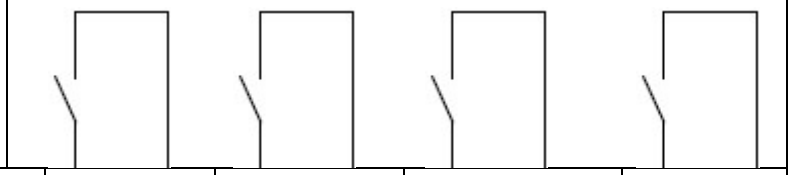
Furthermore, via a register there can be configured whether the outputs shall start in automatic mode or manually overridden (OFF). In addition, a delay time can be defined, which must elapse between the switching of two outputs at least. Thus, the system perturbations resulting from the switching operations 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**.

Overview terminal assignment

OAS-SBS-IOMR-1026	GND	24V AC/DC	not used	not used	Output voltages of DOs are potential-free 													
DO No. 1-4					DO1			DO2			DO3			DO4				
Terminal:					10		11		12		13		14		15		16	17
Power supply																		
Terminal:	1	2																

Bus connection	Terminal No.			
I-GND	3			
Net A (–) aka /D		4		
Net B (+) aka D			5	

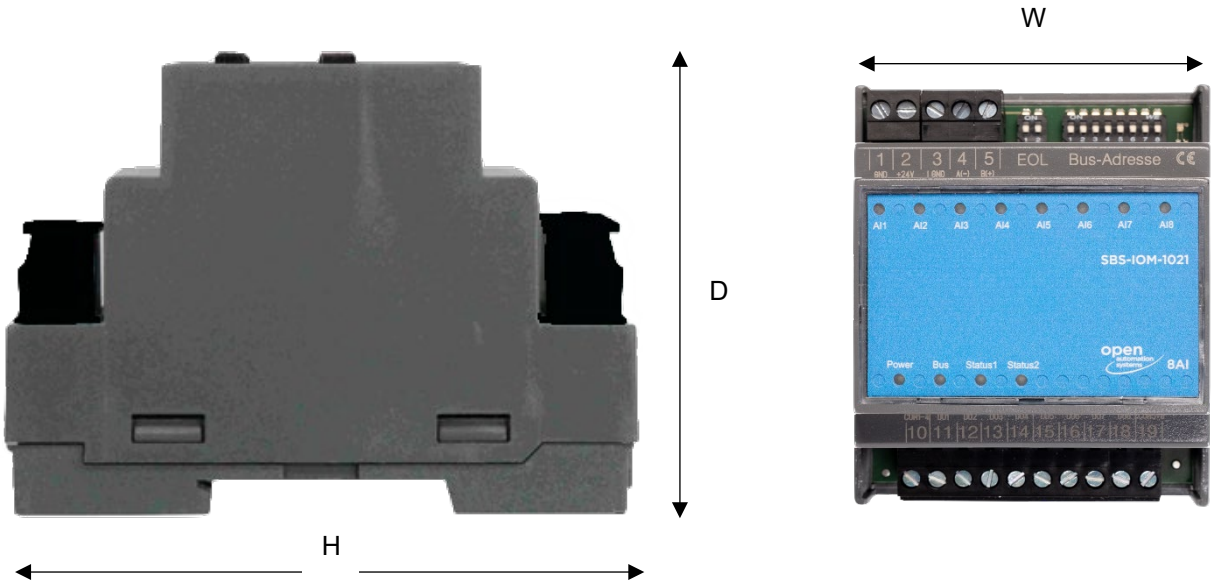
Important technical data

Power supply:	24 V AC or DC, connection via terminals
Specifications digital outputs:	Relay outputs (NO contact), max. 250 VAC)
Characteristics (Resistive Load):	
Initial contact resistance	100mΩ (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	$2.5x10^4$ ops (Rated Load)
Inductive loads	should be avoided as far as possible, or be suppressed at the source, respectively.
Current consumption	typically, 14 mA (DC), 40 mA (AC)
Power dissipation	max. 0.4 W (DC), 1.0 W (AC)
Counting pulse (only digital inputs)	duration min. 10ms, only for DC signals
Max. counter value (digital inputs)	65.535 (= 2^{16}-1)
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
Memory	µPC internally
Max. number of write cycles	Configuration settings such as setting the LED colors, inverting the inputs, or upshift and downshift times are stored in the internal EEPROM and can be overwritten up to 100,000 times.
Protocol	MODBus rtu (RS485)
Serial port parameter setting	8-N-1

Inputs and outputs	see corresponding documentation of the respective modules
Environmental conditions:	
Operating temperature	0...50°C
Transport and storage temperature	0...70°C
Relative humidity	10...90%, non-condensing
Protection class	IP 20
Dimensions	(for exact dimensions see chapter Dimensions and weights)

Dimensions and weights

The dimensions of the modules can be seen from the following figures and the table below:



All dimensions in mm, weight in grams

Type	H	W	D						Weight
SBS-IOMR-1026	**92**	**72**	**70**						171

Wiring diagrams