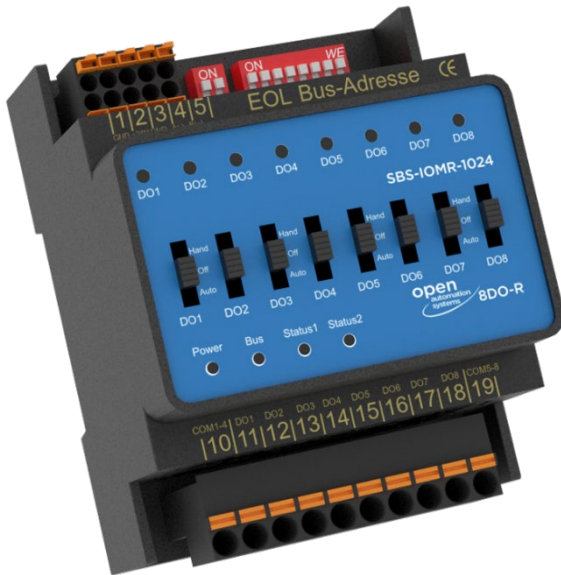# OAS-SBS-IOMR-1024

Digital outputs: 8 digital outputs 3A: 8 DO module relay outputs

The digital output module **OAS-SBS-IOMR-1024** is a Local Override/Indication Device (LO/ID) which is used to control eight 1-stage motors, or other digital actuators. By means of the integrated switches, 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. They will be contacted via terminals.

The signal that will be switched by the relay contacts also has to be connected via terminals.

The eight relay outputs are divided into two groups of four outputs. The two groups are not linked internally, so both COM-terminals must be wired.

Important: **The signals to be switched must have the same phasing.**

For each DO there is a LED present which signalizes the status of the digital outputs. Using the settings in the relevant MODBus register, for each of this LEDs the color can be defined to either red, green or orange.

Furthermore, the LEDs can be controlled via MODBus commands, provided that this option previously has been defined in a configuration register. This setting can be made individually for each LED.

The possibility of manually overriding the digital outputs by means of the switches 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.

The current positions of the switches can be read out using two registers. Doing so, one register shows the switch position "Manually ON" and the other one the switch position "Automatic".

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 OFF and back to AUTO, a change will be displayed, anyway.

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-1024	GND	24V AC/DC	COM DO 1...4	COM DO 5...8	Output voltages of DOs are potential-free (two groups)							
DO No. 1-8					1	2	3	4	5	6	7	8
Terminal:					11	12	13	14	15	16	17	18
COM for DOs												
Terminal:			10	19								
Power supply												
Terminal:	1	2										

The two COM supply terminals (10 + 19) for the DOs are NOT connected with each other internally.
Important: **The signals to be switched must have the same phasing.**

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 / 24 VDC)
Rated load	3 A at 250 VAC / 30 VDC
Max. switching voltage	277 VAC, 30 VDC
Max. switching capacity	830 VA (AC), 90 W (DC)
Endurance	1×10^5 ops (Rated Load)
Inductive loads	should be avoided as far as possible, or be suppressed at the source, respectively.
Current consumption:	typically, 85 mA (DC), 220 mA (AC) with all relay outputs activated
Power dissipation	max. 2.1 W (DC), 5.3 W (AC) with all outputs activated
Counting puls (only digital inputs)	duration min. 10 ms, 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:

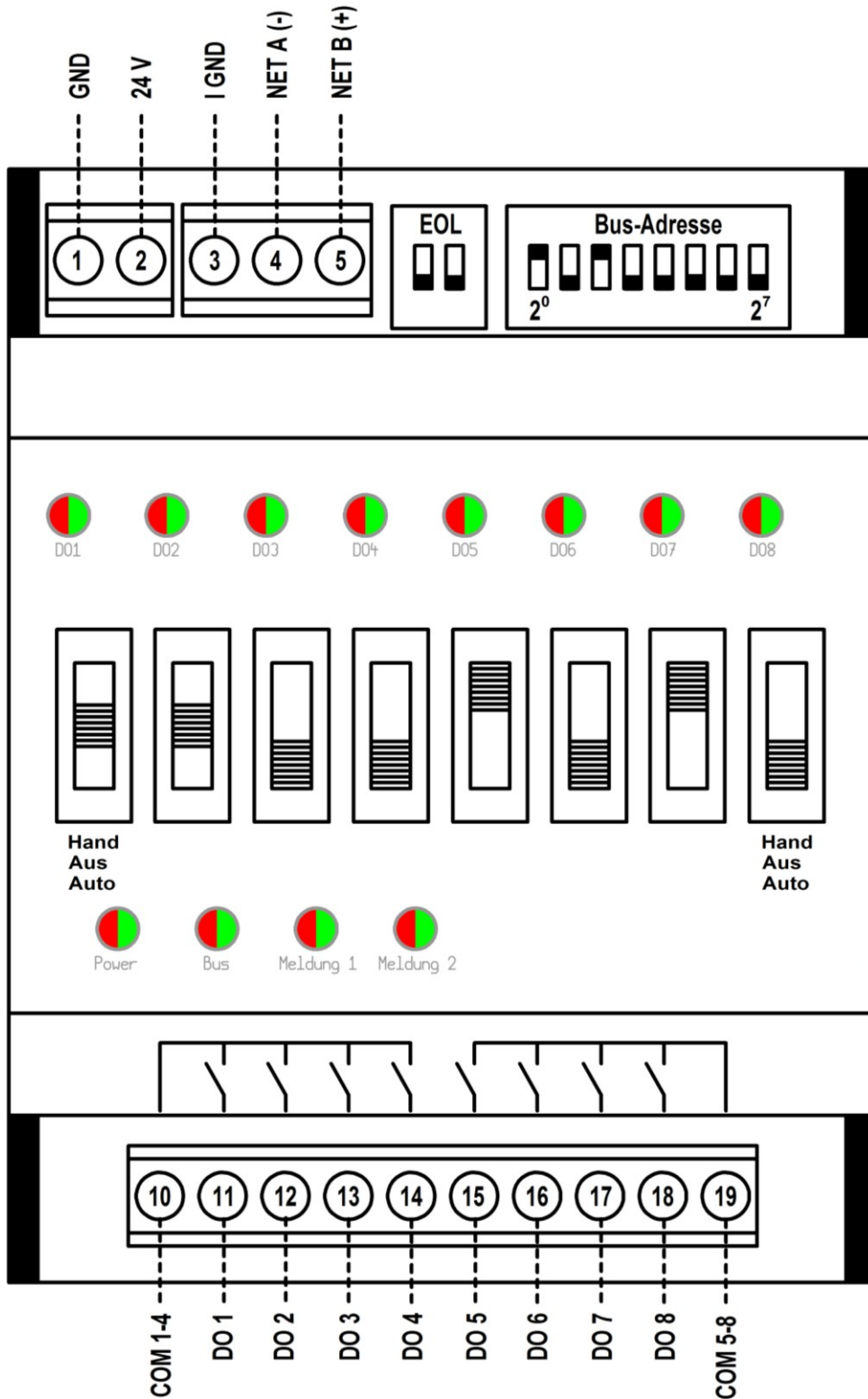|	
Operating temperature	0...50°C
Transport and storage temperature	0...70°C
Relative humidity	10...90%, non-condensing
Protection class	IP 20
Dimensions	(for exact dimensions see chapter Dimensions and weights)

Dimensions and weights

The dimensions of the modules can be seen from the following figures and the table below:
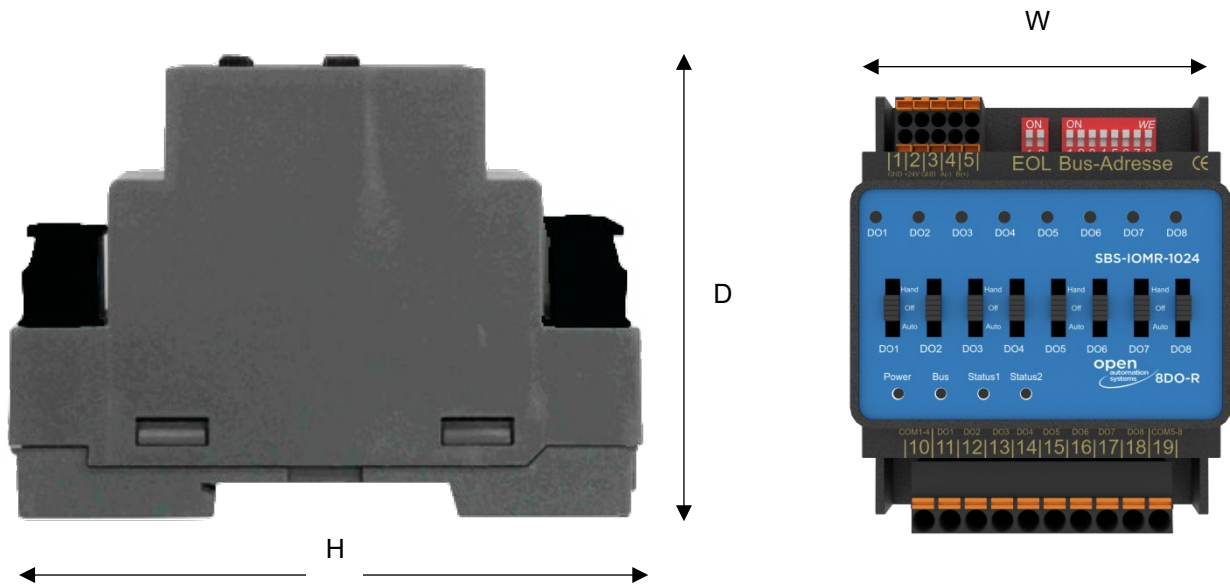
All dimensions in mm, weight in grams

Type	H	W	D						Weight
SBS-IOMR-1024	92	72	70						171

Wiring diagrams

| GND | 24 V | I GND | NET A (-) | NET B (+) |

EOL

Bus-Adresse

2^0 2^7

DO1 DO2 DO3 DO4 DO5 DO6 DO7 DO8

Hand
Aus
Auto

Hand
Aus
Auto

Power   Bus   Meldung 1   Meldung 2

COM 1-4 DO 1 DO 2 DO 3 DO 4 DO 5 DO 6 DO 7 DO 8 COM 5-8

Important:

The signals to be switched must have the same phasing.