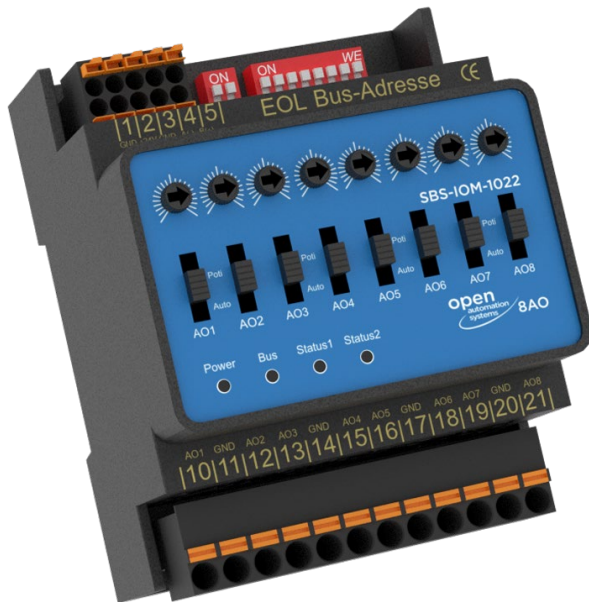


## OAS-SBS-IOMR-1022

**Analog outputs: 8 analog outputs: 8 AO module (0..10V), 8 x Auto-Hand Poti**



The analog output module **OAS-SBS-IOMR-1022** 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 possibility of manually overriding the analog outputs by means of the switches and potentiometers can be disabled by using the settings in a register ('Setting the mask for manual override of the AOs'). This can be defined for each AO separately.

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.

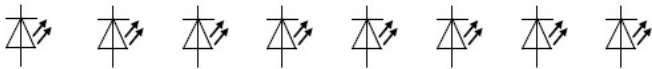
Also changes in the values of the potentiometers can be seen from a register. That register shows which potentiometer has been moved since the last time this register has been read. The corresponding analog value then can be polled specifically. Doing so, the bus cycle time may be reduced significantly.

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.

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-1022							Output voltage AOs 0..10 V DC							
GND		24V AC/DC		GND for AOs										
AO No. 1-8							1	2	3	4	5	6	7	8
Terminal:							10	12	13	15	16	18	19	21
GND for AOs														
Terminal:									11	14	17	20		
Power supply														
Terminal:							1	2						

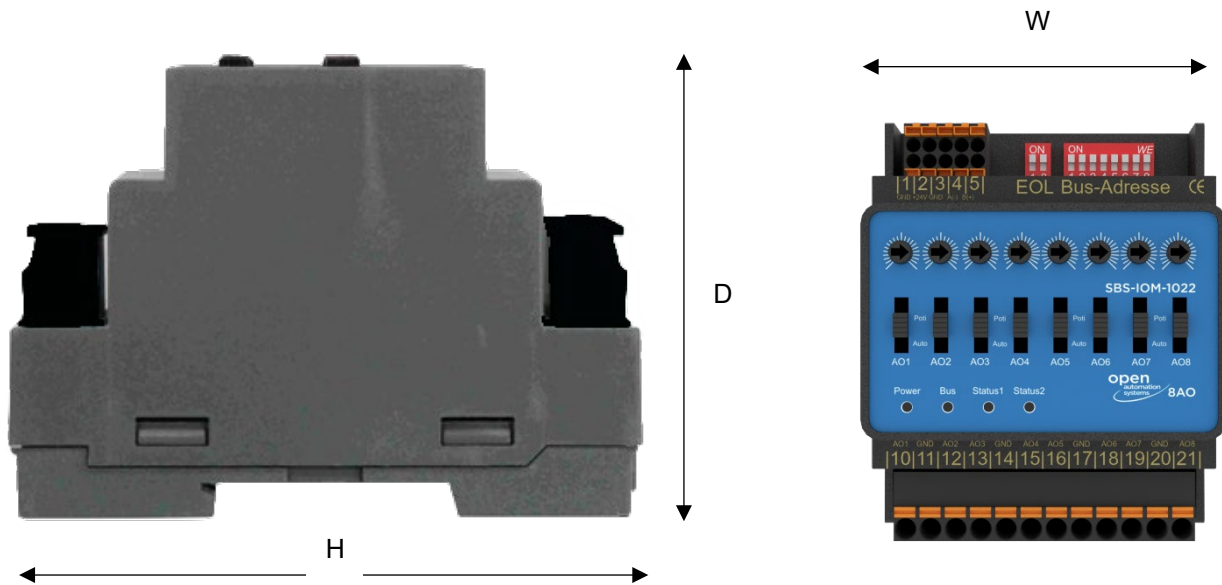
Bus connection	Terminal No.
I-GND	3
Net A (-) aka /D	4
Net B (+) aka D	5

## Important technical data

<b>Power supply:</b>	24 V AC or DC, connection via terminals
<b>Capacity of the outputs</b>	10 mA each (short circuit proof)
<b>Resolution AO</b>	10 Bit
<b>Linearity error</b>	< +/- 2%
<b>Supply voltage</b>	24 V DC, ± 10%
<b>Current consumption</b>	max. 120 mA (DC), 160 mA (AC) with all analog outputs loaded
<b>Power dissipation</b>	max. 1.8 W (DC), 3.9 W (AC) with all analog outputs loaded
<b>Counting pulse</b> (only digital inputs)	duration min. 10ms, only for DC signals
<b>Max. counter value</b> (digital inputs)	65,535 (= $2^{16}-1$ )
<b>Bus interface</b>	RS485
<b>Supported baud rates</b> (Autobauding)	9.600 Baud, 19.200 Baud, 38.400 Baud, 57.600 Baud
<b>Bus cycle time</b>	individually depending on the baud rate and the number of data points that will be addressed
<b>Memory</b>	µPC internally
<b>Max. number of write cycles</b>	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.
<b>Protocol</b>	MODBus rtu (RS485)
<b>Serial port parameter setting</b>	8-N-1
<b>Inputs and outputs</b>	see corresponding documentation of the respective modules
<b>Environmental conditions</b>	
<b>Operating temperature</b>	0...50°C
<b>Transport and storage temperature</b>	0...70°C
<b>Relative humidity</b>	10...90%, non-condensing
<b>Protection class</b>	IP 20
<b>Dimensions</b>	(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
<b>SBS-IOMR-1022</b>	<b>92</b>	<b>72</b>	<b>70</b>						<b>158</b>

Wiring diagrams

