

DIO-M-R2

Digital I/O module, 4 digital inputs and 2 relay outputs



DIO-M-R2 is an input/output module for Modbus RTU networks featuring 4 digital inputs, 2 relay outputs and Modbus RTU communication. This module makes it possible to control or connect devices without Modbus RTU communication to the Modbus RTU network.

Key features

- 5 VDC output (to be used in combination with dry contacts for the digital inputs)
- Modbus RTU communication and 24 VDC power supply via RJ45 connector (PoM connection)
- The digital inputs feature tacho functionality to detect fan speed
- DIN rail mountable
- LED indicator integrated in the RJ45 socket
- Bootloader for updating the firmware via Modbus RTU communication
- 2 C/O relay outputs
- In stand-alone mode the relays will follow the digital inputs

Technical specifications

Supply voltage	24 VDC (Power over Modbus)	
4 digital inputs	Operating range	0–45 VDC
	Logic level	1,6 VDC
	Input resistance	100 kΩ
Tacho input functionality	Measurement range	0–1.000 Hz (0–60.000 rpm)
2 relay outputs	Maximum switching power	60 W, 125 VA (0,5 A at 250 VAC)
	Maximum switching voltage	220 VDC / 250 VAC
	Maximum switching current	2 A
	Maximum load current	2 A
5 VDC output	≤100 mA (combined with the digital outputs)	
Protection class	IP30	
Ambient conditions	Temperature	-10–60 °C
	Relative humidity	5–85 % rH, non-condensing
Enclosure	ABS plastic, colour: grey (RAL7035)	

Area of use

- Convert Modbus RTU registers into relay outputs or digital inputs into Modbus RTU registers
- Create a gateway between Sentera Modbus RTU network and external devices

Standards

- Low Voltage Directive 2014/35/EU
 - EN 60529:1991 Degrees of protection provided by enclosures (IP Code). Amendment AC:1993 to EN 60529
- EMC directive 2014/30/EU:
 - EN 61000-6-1:2007 Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments
 - EN 61000-6-3:2007 Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments. Amendments A1:2011 and AC:2012 to EN 61000-6-3
 - EN 61000-6-2:2005 Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments. Amendment AC:2005 to EN 61000-6-2
- WEEE Directive 2012/19/EC
- RoHS Directive 2011/65/EC

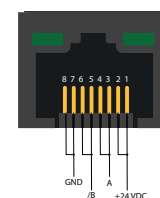


Wiring and connections

RJ45 socket - 24 VDC PoM - 60 mA max

Pin 1	Supply voltage, 24 VDC
Pin 2	Supply voltage, 24 VDC
Pin 3	Modbus RTU communication, signal A
Pin 4	Modbus RTU communication, signal A
Pin 5	Modbus RTU communication, signal /B
Pin 6	Modbus RTU communication, signal /B
Pin 7	Ground, supply voltage
Pin 8	Ground, supply voltage

RJ45 socket



Digital inputs

DI1	Digital input 1, 0–45 VDC
GND	Digital input, ground
DI2	Digital input 2, 0–45 VDC
5VDC	5 VDC supply (max. 100 mA) to be used in combination with dry contacts for the digital inputs (enable the digital input by connecting the 5 VDC to it)
DI3	Digital input 3, 0–45 VDC
GND	Digital input, ground
DI4	Digital input 4, 0–45 VDC

Relay outputs

NO1	Normally open contact 1
COM1	Common contact 1
NC1	Normally closed contact 1
NO2	Normally open contact 2
COM2	Common contact 2
NC2	Normally closed contact 2

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Fixing and dimensions

Bottom view	Top view
Front view	Side view
<p>35 mm</p> <p>94 mm</p> <p>66 mm</p>	<p>94 mm</p>

Settings and indications

1 - RJ45 socket		Modbus RTU communication and 24 VDC
2 - Green LED on the left		Power on indication
3 - Green LED on the right		Active Modbus RTU communication
4 - Locking clip		At the bottom of the device; used to lock it to the DIN rail

Operational diagram(s)

Digital input

1,6–45 VDC

0 VDC

Time

Tied mode

Holding register 16

1

0

Time

Modbus Mode

Packaging

Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
DIO-M-R2	Unit (1 pc.)	96	94	40	0,076 kg	0,097 kg
	Box (20 pcs.)	325	210	155	1,52 kg	2,2 kg

Modbus registers

The Sensistant Modbus configurator allows you to easily monitor and/or configure Modbus parameters.

The parameters of the unit can be monitored / configured through the 3SMODBUS software platform. You can download it from the following link:

<https://www.sentera.eu/en/3SMCenter>

For more information about the Modbus registers, please refer to the product Modbus Register Map.

Global trade item numbers (GTIN)

Packaging	DIO-M-R2
Unit	05401003000786
Box	05401003500262