DIO-M-R2 | DIN RAIL MOUNTED DIGITAL I/O MODULE

Modbus register map

MODBUS REGISTER MAP

INPUT REGISTERS

		Data type	Description	Raw data	Values
1	DI1	unsigned integer	Digital input 1 status, this register duplicate the 'Read Discrete Inputs' command	0—1	0 = Low 1 = High
2	DI2	unsigned integer	Digital input 2 status, this register duplicate the 'Read Discrete Inputs' command	0—1	0 = Low 1 = High
3	DI3	unsigned integer	Digital input 3 status, this register duplicate the 'Read Discrete Inputs' command	0—1	0 = Low 1 = High
4	DI4	unsigned integer	Digital input 4 status, this register duplicate the 'Read Discrete Inputs' command	0—1	0 = Low 1 = High
5—10			Reserved, return 0		
11	Relay 1 status	unsigned integer	Register showing the status of the Relay 1, this register duplicate the 'Read Coils' command	0—1	0 = Relay Off 1 = Relay On
12	Relay 2 status	unsigned integer	Register showing the status of the Relay 2, this register duplicate the 'Read Coils' command	0—1	0 = Relay Off 1 = Relay On
13—15			Reserved, return 0		
16	DI1 - Tacho status	unsigned integer	Register showing is there tacho signal, if the speed drops below 60rpm, the register is set	0—1	0 = Motor running 1 = Motor stopped (below 60 RPM)
17	DI2 - Tacho status		Register showing is there tacho signal, if the speed drops below 60rpm, the register is set		0 = Motor running 1 = Motor stopped (below 60 RPM)
18	DI3 - Tacho status	unsigned integer	Register showing is there tacho signal, if the speed drops below 60rpm, the register is set	0—1	0 = Motor running 1 = Motor stopped (below 60 RPM)
19	DI4 - Tacho status	unsigned integer	Register showing is there tacho signal, if the speed drops below 60rpm, the register is set	0—1	0 = Motor running 1 = Motor stopped (below 60 RPM)

INPUT REGISTERS

		Data type	Description	Raw data	Values
20			Reserved, returns 0		
21	DI1 - RPM	unsigned integer	Tacho speed in rpm	0—60.000	1.000 = 1.000 rpm
22	DI2 - RPM		Tacho speed in rpm	0—60.000	1.000 = 1.000 rpm
23	DI3 - RPM	unsigned integer	Tacho speed in rpm	0—60.000	1.000 = 1.000 rpm
24	DI2 - RPM	unsigned integer	Tacho speed in rpm	0—60.000	1.000 = 1.000 rpm
25			Reserved, returns 0		
26	DI1 - Hz	unsigned integer	Tacho speed in Hz	0—10.000	1.000 = 100 Hz
27	DI2 - Hz	unsigned integer	Tacho speed in Hz	0—10.000	1.000 = 100 Hz
28	DI3 - Hz	unsigned integer	Tacho speed in Hz	0—10.000	1.000 = 100 Hz
29	DI4 - Hz	unsigned integer	Tacho speed in Hz	0—10.000	1.000 = 100 Hz
30			Reserved, returns 0		
31	PWM - %	unsigned integer	PWM in %	0—1.000	100 = 10 %

INPUT REGISTERS

		Data type	Description	Raw data	Values
32	PWM - %	unsigned integer	PWM in %	0—1.000	100 = 10 %
33	PWM - %	unsigned integer	PWM in %	0—1.000	100 = 10 %
34	PWM - %	unsigned integer	PWM in %	0—1.000	100 = 10 %
35—40			Reserved, return 0		

Note: The input registers can be read via the Modbus command: "Read input registers".

HOLDING REGISTERS

		Data type	Description	Raw data	Values	Factory default values
1	Device slave address	unsigned integer	Modbus device address	1—247		1
2	Modbus baud rate	unsigned integer	Modbus communication baud rate	0—6	0 = 4.800 3 = 38.400 6 = 230.400 1 = 9.600 4 = 57.600 2 = 19.200 5 = 115.200	2
3	Modbus parity	unsigned integer	Parity check mode	0—2	0 = 8N1 1 = 8E1 2 = 8O1	1
4	Device type	unsigned integer	Device type. Read only	2407	2407 = DIO-M-R2	
5	HW version	unsigned integer	Hardware version of the device. Read only	XXXX	0x0100 = HW version 1.0	
6	FW version	unsigned integer	Firmware version of the device. Read only	XXXX	0x0110= FW version 1.1	
7			Reserved, returns 0			
8	Modbus safety timeout	unsigned integer	After time with no Modbus communication, the DIO set all outputs to 0	0—60	0 = no timeout 1 = 1 minute 2 = 2 minutes...	0
9	Modbus network resistor termination (NBT)	unsigned integer	Set device as end device of the line / or not by connecting NRT	0—1	0 = NBT disconnected 1 = NBT connected	0
10	Modbus registers reset	unsigned integer	Resets Modbus Holding registers to default values. When finished this register is automatically reset to '0'	0—1	0 = Idle 1 = Reset Modbus Registers	0
11—15			Reserved, return 0			
16	Relay 1 status control	unsigned integer	Register showing/changing the status of the Relay 1, this register duplicate the read/write coils commands	0—1	0 = Relay Off 1 = Relay On	no default value

HOLDING REGISTERS

		Data type	Description	Raw data	Values	Factory default values
17	Relay 2 status control	unsigned integer	Register showing/changing the status of the Relay 2, this register duplicate the read/write coils commands	0—1	0 = Relay Off 1 = Relay On	no default value
18—25			Reserved, return 0			
26	Tie Relay 1 to Digital Inputs	unsigned integer	Register allowing standalone work of the DIO module. It ties relay output to one of the digital inputs	0—16	0 = Direct Modbus control 1 = Relay tied to DI1 2 = Relay tied to DI2 3 = Relay tied to DI3 4 = Relay tied to DI4 5 = Relay tied to DI1 inverse 6 = Relay tied to DI2 inverse 7 = Relay tied to DI3 inverse 8 = Relay tied to DI4 inverse 9 = Relay tied to DI1 tacho status 10 = Relay tied to DI2 tacho status 11 = Relay tied to DI3 tacho status 12 = Relay tied to DI4 tacho status 13 = Relay tied to DI1 tacho status inverse 14 = Relay tied to DI2 tacho status inverse 15 = Relay tied to DI3 tacho status inverse 16 = Relay tied to DI4 tacho status inverse	0
27	Tie Relay 2 to Digital Inputs	unsigned integer	Register allowing standalone work of the DIO module. It ties relay output to one of the digital inputs	0—16		
28—30			Reserved, return 0			

Note: The holding registers can be managed via the following Modbus commands: “Read Holding Registers”, “Write Single Register” or “Write Multiple Registers”.

The free Sentera configuration and monitoring software 3SModbus can be downloaded via: https://www.sentera.eu/en/3SMCenter

DISCRETE INPUTS

	Data type	Description
1	bit	Discrete input 1
2	bit	Discrete input 2
3	bit	Discrete input 3
4	bit	Discrete input 4

Note: The Discrete input registers can be read via the Modbus command: “Read input registers”.

COILS

	Data type	Description
1	bit	Relay 1
2	bit	Relay 2

Note: The Coils can be managed via the following Modbus commands: “Read Coils”, “Write Single Coil” or “Write Multiple Coils”.