

# DIO-M-D4 | 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			Reserved, returns 0		
6	DO1 status	unsigned integer	Register showing the status of the DO1, this register duplicate the 'Read Coils' command	0—1	0 = DO 0 (low) 1 = DO 1 (high)
7	DO2 status	unsigned integer	Register showing the status of the DO2, this register duplicate the 'Read Coils' command	0—1	0 = DO 0 (low) 1 = DO 1 (high)
8	DO3 Status	unsigned integer	Register showing the status of the DO3, this register duplicate the 'Read Coils' command	0—1	0 = DO 0 (low) 1 = DO 1 (high)
9	DO4 status	unsigned integer	Register showing the status of the DO4, this register duplicate the 'Read Coils' command	0—1	0 = DO 0 (low) 1 = DO 1 (high)
10—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	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
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)
20			Reserved, returns 0		
21	DI1 - RPM	unsigned integer	Tacho speed in rpm	0—60000	1000 = 1000 rpm
22	DI2 - RPM	unsigned integer	Tacho speed in rpm	0—60000	1000 = 1000 rpm
23	DI3 - RPM	unsigned integer	Tacho speed in rpm	0—60000	1000 = 1000 rpm
24	DI4 - RPM	unsigned integer	Tacho speed in rpm	0—60000	1000 = 1000 rpm
25			Reserved, returns 0	0—10000	1000 = 100 Hz
26	DI1 - Hz	unsigned integer	Tacho speed in Hz	0—10000	1000 = 100 Hz
27	DI3 - Hz	unsigned integer	Tacho speed in Hz	0—10000	1000 = 100 Hz
28	DI3 - Hz	unsigned integer	Tacho speed in Hz	0—10000	1000 = 100 Hz
29	DI4 - Hz	unsigned integer	Tacho speed in Hz	0—10000	1000 = 100 Hz
30			Reserved, returns 0		

INPUT REGISTERS					
		Data type	Description	Raw data	Values
31	PWM - %	unsigned integer	PWM in %	0–1000	100 = 10 %
32	PWM - %	unsigned integer	PWM in %	0–1000	100 = 10 %
33	PWM - %	unsigned integer	PWM in %	0–1000	100 = 10 %
34	PWM - %	unsigned integer	PWM in %	0–1000	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	Reserved, returns 0	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 integereger	Parity check mode	0–2	0 = 8N1 1 = 8E1 2 = 8O1	1
4	Device type	unsigned integer	Device type. Read only	2406	2406 = DIO-M-D4	
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 timeout	unsigned integer	After time with no Modbus communication, the DIO set all outputs to 0	0–60	0 = no timeout 1 = 1 minute, ...	0
9	Modbus network resistor termination (NBT)	unsigned integer	Set device as end device of the line / or not by connecting NBT	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	DO1 status control	unsigned integer	Register showing/changing the status of the DO1, this register duplicates the read/write coils commands	0–1	0 = DO 0 1 = DO 1	no default value, 0 on restart
12	DO2 status control	unsigned integer	Register showing/changing the status of the DO2, this register duplicates the read/write coils commands	0–1	0 = DO 0 1 = DO 1	no default value, 0 on restart

HOLDING REGISTERS						
		Data type	Description	Raw data	Values	Factory default values
13	DO3 status control	unsigned integer	Register showing/changing the status of the DO3, this register duplicates the read/write coils commands	0—1	0 = DO 0 1 = DO 1	no default value, 0 on restart
14	DO4 status control	unsigned integer	Register showing/changing the status of the DO4, this register duplicates the read/write coils commands	0—1	0 = DO 0 1 = DO 1	no default value, 0 on restart
15—20			Reserved, returns 0			
21	Tie DO1 to Digital Inputs	unsigned integer	Register allowing standalone work of the DIO module. It ties digital output to one of the digital inputs	0—16	0 = Normal Modbus control, 1 = DO tied to DI1, 2 = DO tied to DI2, 3 = DO tied to DI3, 4 = DO tied to DI4, 5 = DO tied to DI1 inverse, 6 = DO tied to DI2 inverse, 7 = DO tied to DI3 inverse, 8 = DO tied to DI4 inverse, 9 = DO tied to DI1 tachometer status, 10 = DO tied to DI2 tachometer status, 11 = DO tied to DI3 tachometer status, 12 = DO tied to DI4 tachometer status, 13 = DO tied to DI1 tachometer status inverse, 14 = DO tied to DI2 tachometer status inverse, 15 = DO tied to DI3 tachometer status inverse, 16 = DO tied to DI4 tachometer status inverse	0
22	Tie DO2 to Digital Inputs	unsigned integer	Register allowing standalone work of the DIO module. It ties digital output to one of the digital inputs	0—16		
23	Tie DO3 to Digital Inputs	unsigned integer	Register allowing standalone work of the DIO module. It ties digital output to one of the digital inputs	0—16		
24	Tie DO4 to Digital Inputs	unsigned integer	Register allowing standalone work of the DIO module. It ties digital output to one of the digital inputs	0—16		
18—25			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	DO1
2	bit	DO2
3	bit	DO3
4	bit	DO4

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