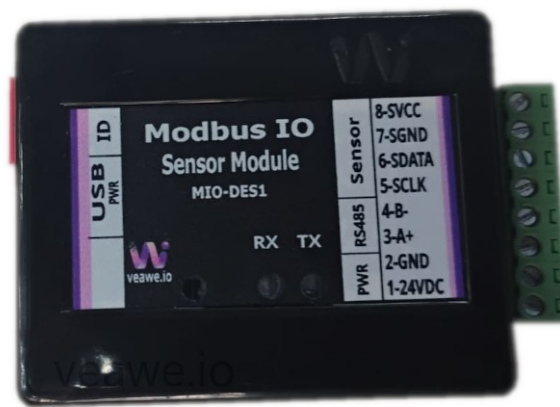




Remote IO Module / Modbus transmitter
MIO-DES1

Modbus IO module – Digital Environmental Sensor



Features

- Multiple Digital Sensors support
- Modbus RS-485 Protocol Interface.
- Convenient address selection dip switch from 1 – 15 Address
- Complete range of baud rate settings supported
- Sensor open indication, Analog values in integer and float values
- Product Dimensions 60mm x 50mm x 20mm (L x W x H)

Supported Modbus Function Codes

- 02 – Read Discrete Inputs
- 03 – Read Holding Registers
- 04 – Read Input Registers
- 06 – Write Single Register
- 16 – Write Multiple Registers

Input Registers (Read Only)

Input register DataType: Integer	Holding register DataType: Integer	DS18B20	SHT40
30001	42001	Temperature Sensor 1	Temperature -40.00 ~ 125.00 °C
30002	42002	Temperature Sensor 2	Humidity 0.00 ~ 100.00 %
30003	42003	Temperature Sensor 3	-
30004	42004	Temperature Sensor 4	-

Input register DataType: Float	Holding register DataType: Float	DS18B20	SHT40
300011	42011	Temperature Sensor 1	Temperature -40.00 ~ 125.00 °C
300013	42013	Temperature Sensor 2	Humidity 0.00 ~ 100.00 %
300015	42015	Temperature Sensor 3	-
300017	42017	Temperature Sensor 4	-

Discrete Inputs (Read Only)

10001 ~ 10004

- Channel 1 ~ 4 Sensor Status.
1 indicates Sensor Open 0 indicates Working

Holding Registers (Read/Write)

40001 - Sensor Type

Value	Sensor Type
0	DS18B20
1	SHT40

From Holding registers 42001 – 42020 Remaps the Input register to facilitate for modbus client devices not having read input register support

Configuration Setting

(40101)

- Device Address as per the address switch – (Read Only)

(400102)

(Reg.Value) – Baud Rate

0 – 300	8 – 14400
1 – 600	9 – 19200
2 – 1200	10 – 38400
3 – 1800	11 – 57600
4 – 2400	12 – 62500
5 – 4800	13 – 115200
6 – 7200	
7 – 9600	Default. 9 – 19200

(40103)

(Reg.Value) – Bits, Parity, Stop Bit

0 – 8 N 1
1 – 8 E 1
2 – 8 O 1
3 – 8 N 2
4 – 8 E 2
5 – 8 O 2
Default. 0 – 8 N 1

Default Mode Switch

Default mode is handy when the serial communication setting are forgotten.

Setting the Address switch to 00 will put the device in default mode

Address Set to 00 - Default mode ON

- Server Address – 1, Baud 19200, 8N1

Address Set to non 00 - Default mode OFF

- As per the saved configuration values from the holding registers

Note:

No parameter selection is changed just by entering the default mode. All the parameters remains same including the communication settings unless changed by the client

This mode can be used to read the present settings and/or change the settings

Sensor Open indication

If Channel 1 – 4 Sensor is not connected value is read as -99.99 and corresponding Discrete Input bit is set.

Diagnostics

S1 LED - Quick Blink Indicates a sensor connection – 1&2

S2 LED - Quick Blink Indicates a sensor connection – 3&4

Tx LED - Quick Blink Indicates Modbus connection with modbus client

Electrical Details

Input Power Supply: 5V@USB / 12V to 24 V DC

Sensor Supply Output: 3.3V

Connector Type: 3.81 mm Plugable screw terminal block

DC Input		RS485		Sensor Interface SHT40			
24V+	24V-	A+	B-	SCLK	SDATA	SGND	SVCC
1	2	3	4	5	6	7	8

DC Input		RS485		Sensor Interface DS18B20			
24V+	24V-	A+	B-	Sensor 3 & 4	Sensor 1 & 2	SGND	SVCC
1	2	3	4	5	6	7	8