EN

Device Instruction

MFCTH is a temperature and humidity controller with the possibility of reading different type of sensors and different outputs depending on article code. The device supports Modbus RTU communication and can work in the range voltage of 12-35VDC. The reading values will be displayed on the screen of device and limited Modbus settings can be applied using buttons. An application is available (free to download) for end user to read/ write Modbus registers and also monitor temperature and humidity. In case if required the device can read Multi Sensors (up to 8).

Article Codes

Model	Supported Sensor	Output
MFCTH_22	SHT20/30	2x Relay Output 2x Analog Output
MFCTH_02	SHT20/30	No Relay Output 2x Analog Output
MFCTH_20	SHT20/30	2x Relay Output No Analog Output

Specification

- Power Supply: 12-35VDC
- Temperature measuring range: -20 to 100 °C
- Humidity measuring range: 0 to 100%
- Error detection: sensor breakage, sensor short circuit
- Operating temperature range: -10 to 60 °C
- Relay Output (according to article code)

Contact Ratings	Maximum Switching Power	60W, 125 VA
	Maximum Switching Voltage	220VDC,250VAC
	Maximum Switching Current	2 A
	Maximum Carrying Current	2 A

- Analog Output (according to article code)
  - PWM
  - 0-10V
  - 0-20mA
  - 4-20mA
- Modbus RTU (RS485)
- Button Input
- LED Display
- PID control (configurable)
- Editable Hysteresis (Temp: 0-2 °C, Rh: 0-10 %)
- Software available to modify and reading Modbus values

Enclosure

- ABS plastic
- Protection class: IP64
- Dimension: 115x90x55 mm

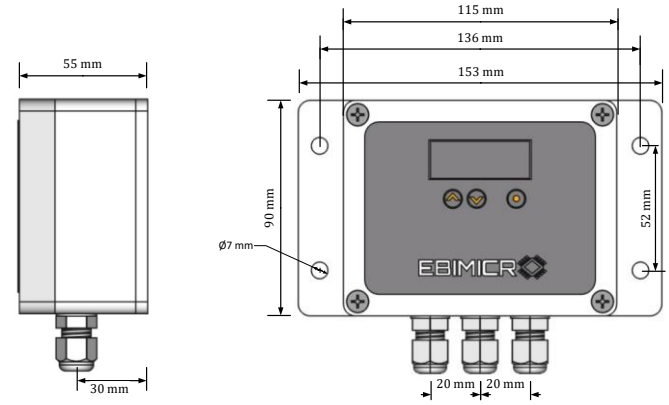
Compliance norms & standards

- EMC directive 2014/30/EU:
- Low Voltage Directive 2014/35/EU
- CE conformity

Intended area to use

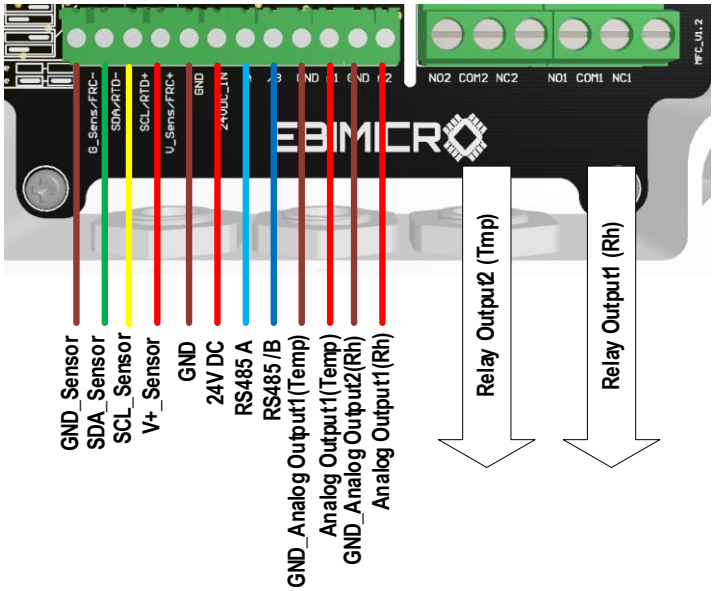
- Industry
- Home
- Office
- Lab

Mounting Installation



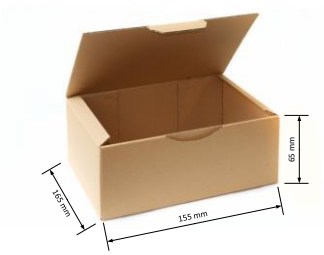
Wiring Diagram

Follow the wiring diagram printed on the PCB board.



Hoogkamerstraat 188
9140, Temse
Oost-Vlaanderen, Belgium
https://ebimicro.com

Package Dimensions

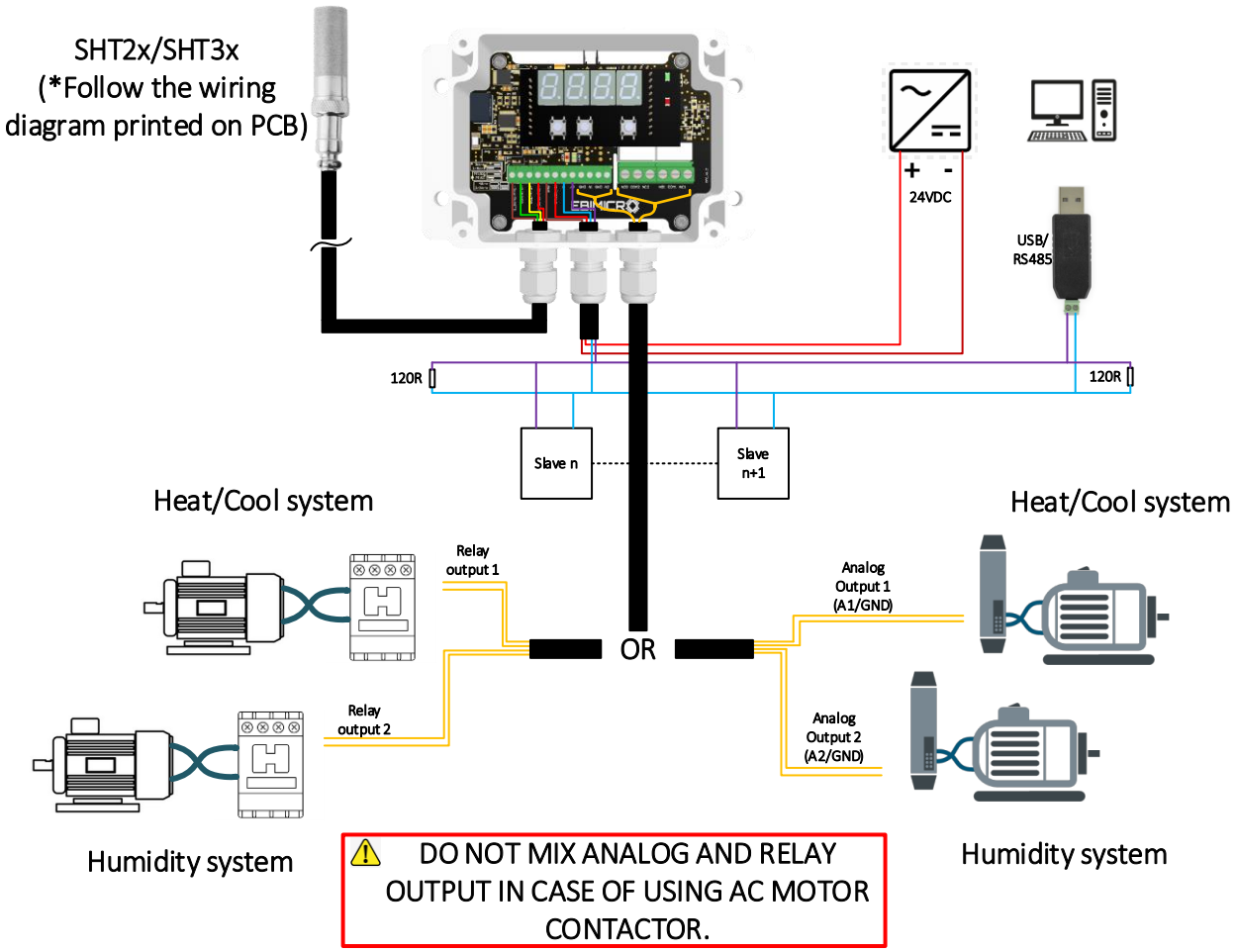


Content of package

SHTXX Mash protected Sensor

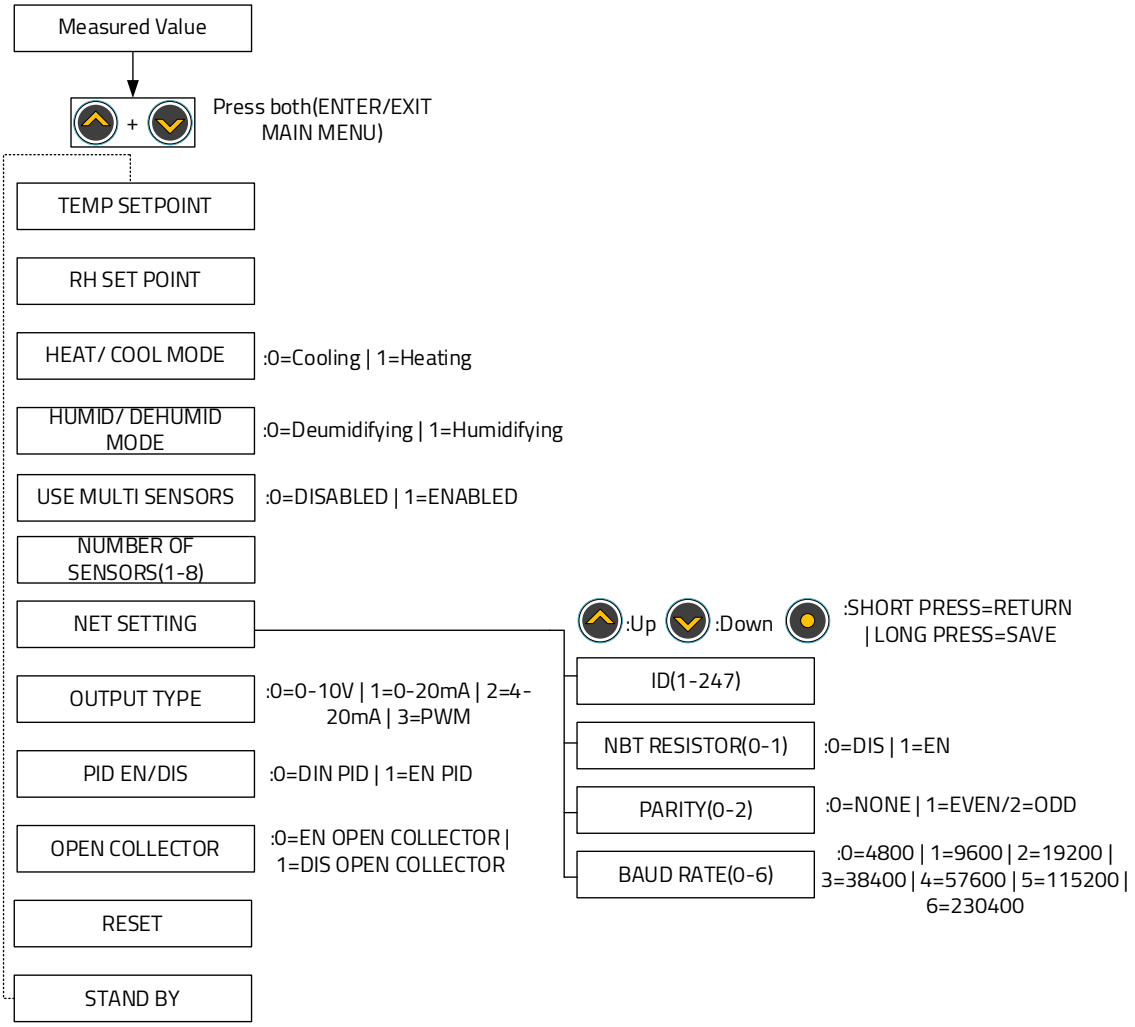
MFCTH Controller

General Wiring Diagram Overview



EBIMICRO
Hoogkamerstraat 188
9140, Temse
Oost-Vlaanderen, Belgium
https://ebimicro.com

Menu Structure



EBIMICRO

Hoogkamerstraat 188
9140, Temse
Oost-Vlaanderen, Belgium
https://ebimicro.com

Modbus Register List

Input Registers

Register address	Description	Data type	range	Default Value
30001*	Sensor 1 Temperature	Signed int	-200 to 1000	-
30002*	Sensor 1 Relative Humidity	Signed int	0 to 100	-
30003*	Sensor 2 Temperature	Signed int	-200 to 1000	-
30004*	Sensor 2 Relative Humidity	Signed int	0 to 100	-
30005*	Sensor 3 Temperature	Signed int	-200 to 1000	-
30006*	Sensor 3 Relative Humidity	Signed int	0 to 100	-
30007*	Sensor 4 Temperature	Signed int	-200 to 1000	-
30008*	Sensor 4 Relative Humidity	Signed int	0 to 100	-
30009*	Sensor 5 Temperature	Signed int	-200 to 1000	-
30010*	Sensor 5 Relative Humidity	Signed int	0 to 100	-
30011*	Sensor 6 Temperature	Signed int	-200 to 1000	-
30012*	Sensor 6 Relative Humidity	Signed int	0 to 100	-
30013*	Sensor 7 Temperature	Signed int	-200 to 1000	-
30014*	Sensor 7 Relative Humidity	Signed int	0 to 100	-
30015*	Sensor 8 Temperature	Signed int	-200 to 1000	-
30016*	Sensor 8 Relative Humidity	Signed int	0 to 100	-
30017	Temperature Level	Signed int	-200 to 1000	-
30018	Relative Humidity level	Unsigned int	0-1000	-
30019	Dew Point	Signed int	-200 to 1000	-
30020	Analog Output 1(Temp)	Unsigned int	0-100	-
30021	Analog Output 2(RH)	Unsigned int	0-100	-
30024	Sensor Type	Unsigned int	0-3	-

***Gray colored registers are available if the Multi Sensor functionality is in use.**

Holding Registers

Register address	Description	Data type	range	Default Value
40001	Device Address	Unsigned int	1-247	1
40002	Modbus Baud Rate	Unsigned int	1-4	2
40003	Modbus Parity	Unsigned int	0-2	1
40004	Device Type	Unsigned int	-	20001 (MFTH)
40005	Hardware Ver	Unsigned int	0-1000	-
40006	Firmware Ver	Unsigned int	-	-
40007	Temperature Hysteresis	Unsigned int	0-20	1(0.1 °C)
40008	Relative Humidity Hysteresis	Unsigned int	0-10	2 %
40009	Enable Multi Sensor	Unsigned int	0-1	0
40010	Number of Sensors	Unsigned int	1-8	1
40011	Min Output Val	Unsigned int	0-100	0
40012	Max Output Val	Unsigned int	0-100	100
40013	Overwrite Mode	Unsigned int	0-1	0 (not overwriting)
40014	Overwrite Value	Unsigned int	0-100	0
40015	Output Type	Unsigned int	0-3	2(0-10 VDC)
40016	PWM Type	Unsigned int	0-1	0(12V PWM)
40017	Run/Standby	Unsigned int	0-1	0(Run)
40018	Start Output Value	Unsigned int	0-100	0
40020	NBT Resistor	Unsigned int	0-1	0 (Not Enabled)
40021**	Min Temp	signed int	-200 to 1000	0 (0 °C)
40022**	Max Temp	signed int	-200 to 1000	0 (50 °C)
40023**	Min Rh	Unsigned int	0-100	0 %
40024**	Max Rh	Unsigned int	0-100	100 %
40025	Temp Setpoint	signed int	-200 to 1000	250(25.0 °C)
40026	Rh Setpoint	Unsigned int	0-100	45 %
40027	Cool / Heat Mode	Unsigned int	0-1	0(Heat)
40028	Humid / Dehumidify Mode	Unsigned int	0-1	0(Humid)
40029	Enable PID	Unsigned int	0-1	1
40030	PID KP	Unsigned int	2000	200()
40031	PID KI	Unsigned int	5	0.5
40032	PID KD	Unsigned int	20	0.2

****Register 40021-24 are not in use for this Model.**

EBIMICRO

Hoogkamerstraat 188
9140, Temse
Oost-Vlaanderen, Belgium
https://ebimicro.com