

Device Instruction

MFCT is a temperature controller with the possibility of reading two type of PT sensors (PT100 and PT1000) and has 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.

Article Codes

Model	Supported Sensor	Output
MFCT_11	PT100/PT1000	1x Relay Output 1x Analog Output
MFCT_01	PT100/PT1000	No Relay Output 1x Analog Output
MFCT_10	PT100/PT1000	1x Relay Output No Analog Output

Specification

- Power Supply: 12-35VDC
- Supported RDT sensors: PT100 and PT1000
- Temperature measuring range: -20 to 100 °C
- 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, 25 0VAC
	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 (0-2 °C)
- Software available to modify and reading Modbus values

Enclosure

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

Compliance norms & standards

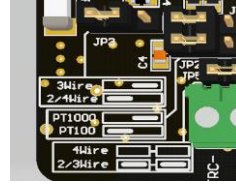
- EMC directive 2014/30/EU:
- Low Voltage Directive 2014/35/EU
- CE conformity

Intended area to use

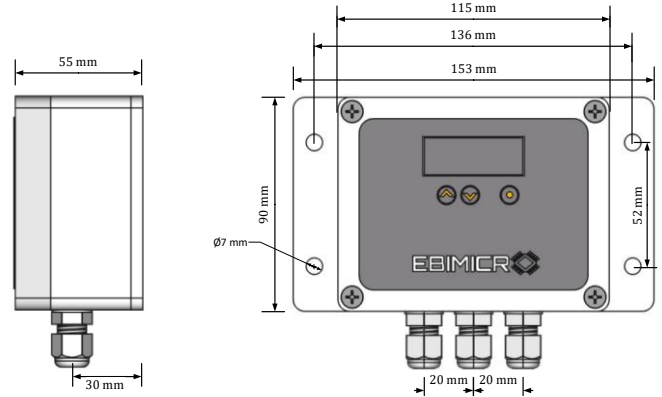
- Industry
- Home
- Office
- Lab

Hardware settings (for the type of connected sensor):

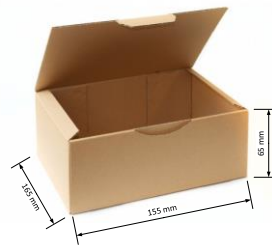
Set the jumpers for the type of connected sensor accordingly.



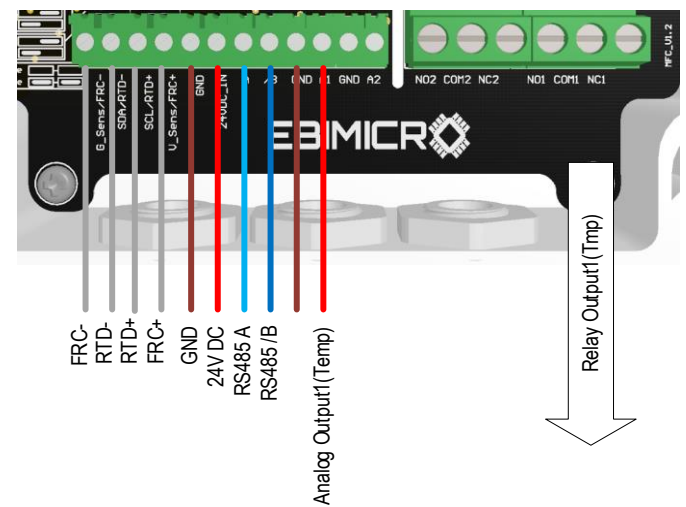
Mounting Installation



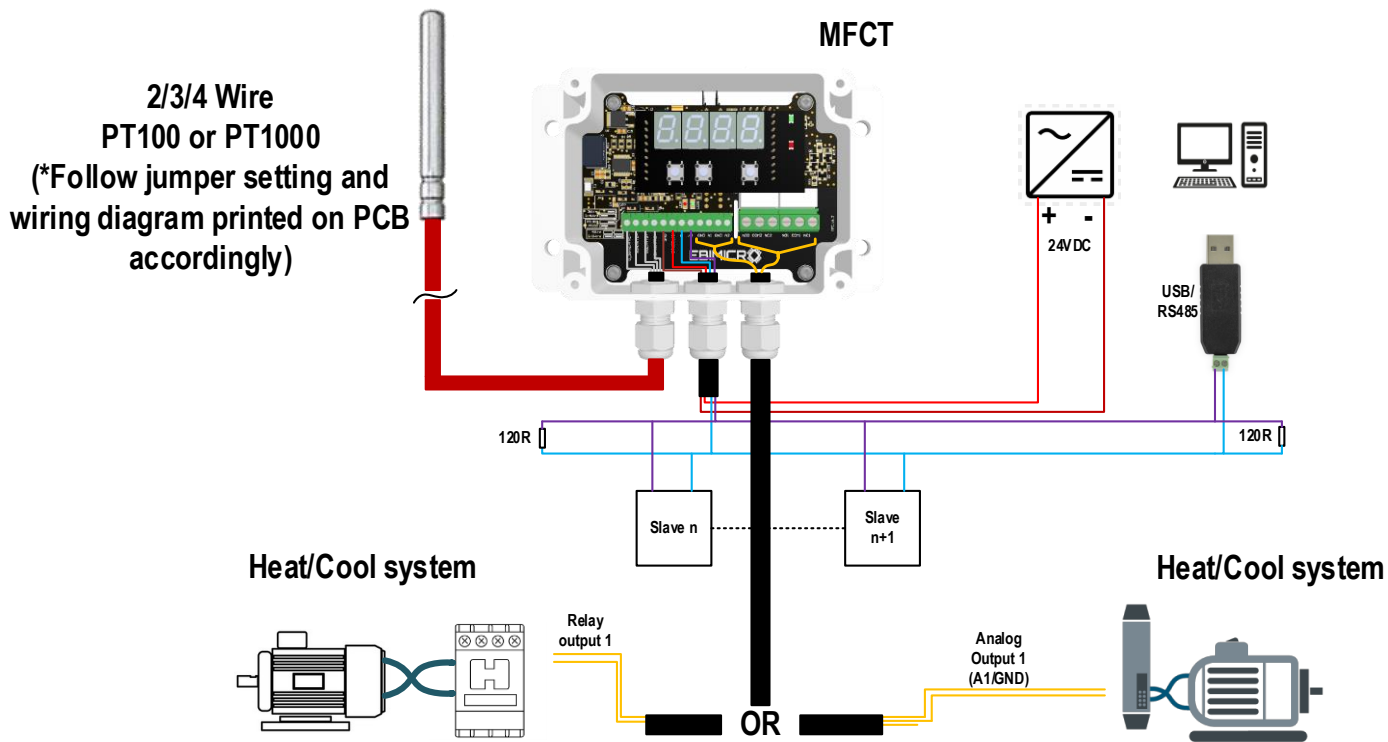
Package Dimensions



Wiring Diagram



General Wiring Diagram Overview

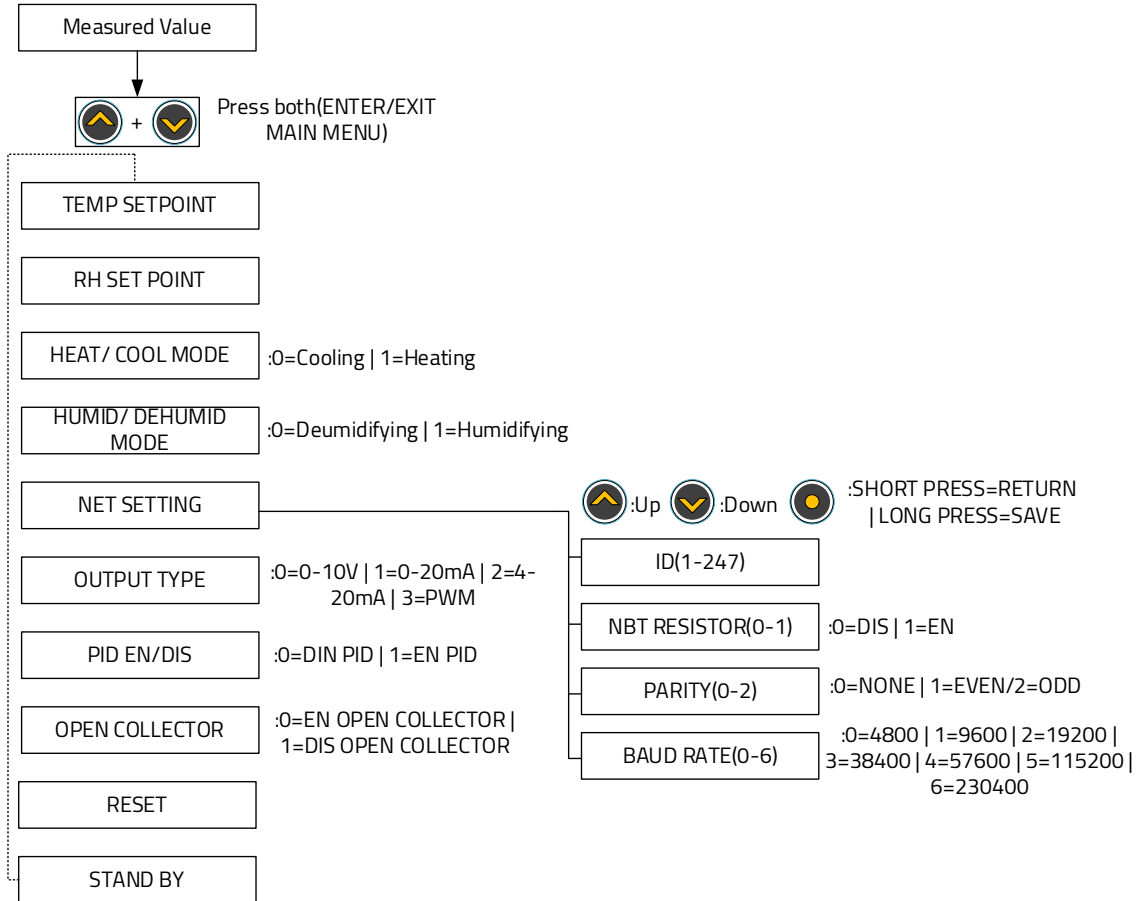


⚠ DO NOT MIX ANALOG AND RELAY OUTPUT IN CASE OF USING AC MOTOR CONTACTOR.



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

Menu Structure



Modbus Register List

Input Registers

Register address	Description	Data type	range	Default Value
30017	Temperature Level	Signed int	-200 to 1000	
30020	Analog Output 1	Unsigned int	0-100	
30024	Sensor Type	Unsigned int	0-3	

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(0-2 °C)	1(0.1 °C)
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	Override Mode	Unsigned int	0-1	0 (not overwriting)
40014	Override 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)
40025	Temp Setpoint	signed int	-200 to 1000	250(25.0 °C)
40027	Cool / Heat Mode	Unsigned int	0-1	0(Heat)
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

*Not used for this device.



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