

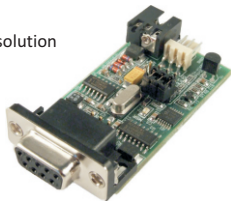
Digital temperature sensor TM

Thermometer for Mikrotik RouterBOARDS

Digital thermometer TM allows you to easily measure one or two different temperatures and transmit it to Mikrotik Routerboard via serial port. Data is being transmitted automatically and directly in degrees Celsius or in Fahrenheit. Temperature range is -55°C to 125°C . You can also watch one contact status instead of the second temperature. Contact status is sent with the temperature.

Features

- Designed to be connected to Mikrotik routerboard
- Measures one or two temperatures from -55°C to 125°C , 0.1°C resolution
- Direct output in $^{\circ}\text{C}$ or $^{\circ}\text{F}$
- Connected through RS232 port (D-Sub 9 or pins)
- Powered from port or an external PSU
- One contact input
(connects instead of the second temperature sensor)



Examples of use

- Measuring of the outside temperature and reporting to a WEB site od blog.
- Access point electronics temperature measurement.
- Watching of chassis or cabinet opening.

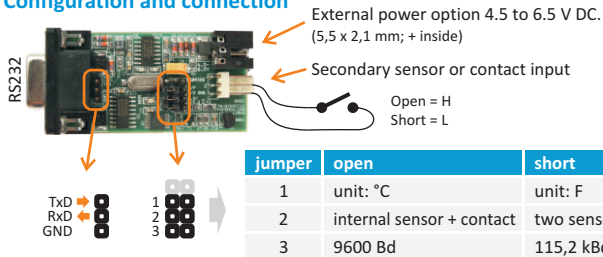
Technical parameters

Measured temperature range	-55°C to $+125^{\circ}\text{C}$
Accuracy	$\pm 0.5^{\circ}\text{C}$ in range -10°C až $+85^{\circ}\text{C}$, otherwise $\pm 2^{\circ}\text{C}$
Resolution	0.1°C
Electronics' operating temperature	-20 to $+70^{\circ}\text{C}$
Communication	ASCII, described below
Measurement speed	First measurement within 10 sec, then 1x per 10s $\pm 2\%$
Communication line	RS232 (TxD, RxD for power)
Communication parameters	9600 Bd or 115.2kBd; 8 bit; 1 stopbit; no parity
Power Voltage	only from port or 4.5 to 6.5 V DC
Power connector	jack 5.5 x 2.1 mm, positive pole inside
Current consumption	1 mA
Dimension	31 x 68 x 16 mm

Indicators

Indicator flashes shortly when one temperature is measured, two short flashes for two temperatures. Indicator keeps flashing constantly if an error is detected on the sensor. Long flash indicates contact input status change.

Configuration and connection



Change in settings will apply only after power reset or RS232 reconnection (depending on how the unit is powered).

Communication protocol

Data packet format depends on the settings:

Format for **two sensors** (first temperature is the temperature from the onboard sensor):

`<sign><temperature><decimal_point><decimal_part_of_temperature><C_or_F>;`

`<sign><temperature><decimal_point><decimal_part_of_temperature><C_or_F>;<Enter>`

Example: `+025.5C;-010.0C;`

On Error: `+024.2C;!Error!;`

Format for **one sensor and contact**:

`<sign><temperature><decimal_point><decimal_part_of_temperature><C_or_F>;`

`<H_or_L>;<Enter>`

Example: `+025.7C;H;`

On Error: `!Error!;H;`

- `<Enter>` means two characters: 0x0A a 0x0D

- C or F is sent depending on what units are set

Measuring temperatures from multiple places

If you need to measure temperature on more distant locations, we recommend using very similar sensors TQS3. More information on www.papouch.com

Thermometers for USB and Ethernet

If for any reason you need a different interface for measuring temperature, you can use one of our different thermometers like TME (Ethernet thermometer) or TMU (USB thermometer).

More information on www.papouch.com

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