Digital temperature sensor

The TM digital temperature sensor makes the easy measurement of temperature possible and allows transmission of the measured data to a PC. The data are transmitted in a simple ASCII protocol, within which the temperature values are given directly in degrees Celsius (°C). The sensor is connected to a PC via a standard RS232 serial port. The accuracy of this sensor is ±0.5 °C within temperature range from –10 °C to +85 °C; the measurable range is from –55 °C to +125 °C.

Features

... The measurable range is from –55 °C to +125 °C, with a 0.1 °C resolution.
... Direct output in °C, ASCII communication, there is no need to recalculate the values
... Connection to the serial port RS232 of a PC
... No need for a power supply
... Software for Windows free of charge
... Easy to use within customer's software solutions
... (attached you can find DLL libraries, the source code, and a detailed description of communication)

Use

... Temperature measurement in living areas, warehouses, server rooms and on production premises
... Measurement of outdoor temperature
... An interesting addition to your website design

Connection

The TM sensor is connected to the serial port of a PC or another device. If the serial port has a 25-pin connector, you will have to use a 9/25-pin adapter (not included). Install the temperature sensor at the location where you wish to measure the temperature.

Technical parameters

Measurable range	–55 to +125 °C
Accuracy	±0.5 °C within range from –10 °C to +85 °C and ±2 °C outside of this range
Resolution	0,1°C
Operating temperature of electronic	–40 to +85 °C
Communication	ASCII, described below
Measurement speed	the first measurement within 1 sec, subsequently once per 10 sec ±2 %
Communication line	RS232 (simplified)
Communication parameters	9600 Bd, 8 bits, 1 stop-bit, parity – none

Description of functions

The TM temperature sensor is supplied with power from the serial port to which it is connected. As soon as the DTR signal is set on the port, the sensor measures the temperature value and sends it to the connected PC as an ASCII character string. If the DTR signal remains active, the TM sensor measures and sends the temperature value every 10 seconds. The yellow indicator on the connector is lit when the actual measurement is being taken. The standard workmanship of the sensor is mainly used for the measurement of air temperature.

Connector specification

The TM sensor is connected to a PC serial port with a CANNON 9 connector. A standard 9/25-pin adapter must be used if the PC's serial port is equipped with CANNON 25.

pin	signal
2	RxD – data from the sensor – temperature values
4	DTR – sensor power supply and control
5	GND – signal grounding

Communication protocol

The TM temperature sensor can be used with our software provided free of charge, or certain terminal (Term, Telix) or other programs. User-created software is an admissible option, the communication protocol is simple.

Input: **PC ➡ TM**	**Function**	Output: **TM ➡ PC**
DTR signal setting	Sensor activation	<sign><3 characters – integer °C> <decimal point><1 character – tenths of °C> <C><Enter> *E.g.:* +025.3C
Continuous setting of the DTR signal	The temperature values are measured and sent automatically	

Measurement of temperature at several points

If you need to measure temperature at several remote points, we recommend that you use similar sensors, all marked TQS3. If you buy at least 3 TQS3 sensors from us, we will deduct the price of the TM sensor from your payment. More information can be found at www.papouch.com/en .

Thermometers for Ethernet and USB ports

If, for whatever reason, it is impractical for you to use a thermometer connected via RS232 serial interface, we can recommend a TME (Ethernet/IP) or TMU (USB) thermometer. More information can be found at www.papouch.com/en .

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