



TST103 Digital temperature sensor



Short description

TST103 is a digital temperature sensor with a 1-Wire interface. The device doesn't need external power supply, it is powered through the interface.

The temperature sensor integrates a band-gap temperature sensor element plus signals processing and provides a fully calibrated digital output. The temperature sensors are factory-calibrated. The calibration data is stored in the non-volatile memory. This ensures fully interchangeable of the sensors without any extra efforts. The temperature sensor is delivered with one meter cable with RJ11 connectors. A 19" rack mount kit can be ordered separately.

Applications

- Server room and data centers temperature monitoring and logging.
- Temperature monitoring and logging for food and drug storages.
- Environmental quality monitoring and assessment.
- Temperature monitoring for facilities, vineyards, greenhouses, etc.

Technical parameters

Parameter	Value	Units	Remark
Operating Range	-40 to 85	°C	
Accuracy (max)	±0.5	°C	-10 to +85°C
Accuracy (max)	±2	°C	-40 to +85°C
Resolution	0.1	°C	
Supply voltage	3 to 5.5	VDC	From 1-Wire interface
Max consumption	2	mA	From 1-Wire interface
Ingress protection	IP20		
Dimensions	85 x 35.1 x 23.5 mm		
Connectors	Two RJ-11 in parallel		

Usage

Can be used with following TERACOM controllers

- TCW241
- TCW210-TH
- TCW122B-CM
- TCW220
- TCG120
- TCW122B-WD



Pinout



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Pin	Description	Corresponding UTP wires color
1	1-Wire GND	Brown/White Tracer
2	1-Wire GND	Green/White Tracer
3	1-Wire Data	Green
4	1-Wire GND	Orange/White Tracer
5	1-Wire +VDD	Orange
6	1-Wire +VDD	Brown

Status indicator

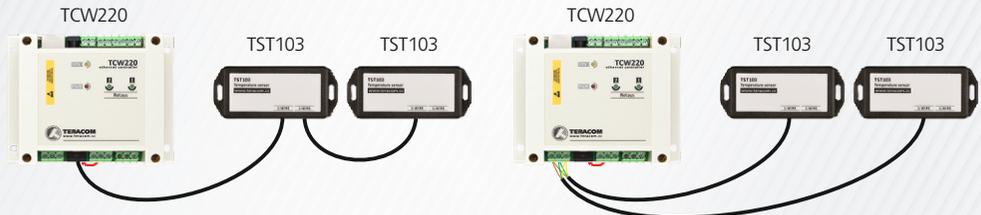
The status of the device is shown by single LED, located on the front panel:

- If the LED blinks on period of 1 second, sensors works properly;
- If the LED blinks on period of 3 seconds, there isn't communication with the controller;
- If LED doesn't blink, there isn't power supply.

Installation

It is strongly recommended to use only UTP/FTP cables. It is strongly recommended to use daisy-chained (linear) topology for multiple sensors and keep total cable length up to 30 meters.

„Star“ topology can be used only as a last resort for up to 4 sensors and total cable length up to 10 meters.



The location and the mounting position of sensors has a direct effect on the accuracy of monitoring the room temperature. The tips below will ensure good measuring results:

- Sensor shall be installed about 1.2-1.4 m above the floor, away from heating and cooling sources;
- Sensor should not be installed next to windows to avoid solar radiation;
- Sensors shall be installed in a place with sufficient air circulation;
- Sensors shall be wall mounted (vent holes up/down) – this will ensure air circulation around the sensing element.

1-Wire Bus

1-Wire is a registered trademark of Maxim Integrated Products, Inc. We strongly recommend read Maxim's 1-Wire tips at <http://www.maxim-ic.com/app-notes/index.mvp/id/148>.