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.

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

For pricing or any further information, please contact Omni Instruments Ltd.

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Measurement and data acquisition solutions

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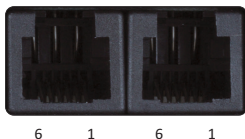
Pin	Description	Corresponding UTP wires color
1	1-Wire GND	White/Brown
2	1-Wire GND	White/Green
3	1-Wire Data	Green
4	1-Wire GND	White/Orange
5	1-Wire +VDD	Orange
6	1-Wire +VDD	Brown

6 1   6 1

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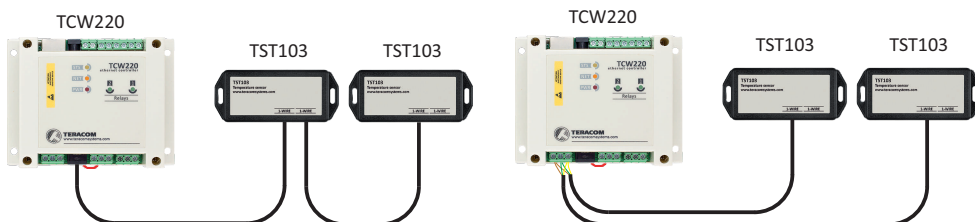
The location and the mounting position of sensors has a direct effect on the accuracy of monitoring the room temperature. The tips below will ensure good measuring results:

- 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 https://www.teracomsystems.com/wp-content/uploads/1-wire/guidelines-for-reliable-long-line-1-wire-networks.pdf

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