TST300
Temperature sensor

Short description

TST300 is a high accuracy temperature sensor with an RS-485 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 sensor is delivered with one meter standard patch cable with RJ45 connectors. A 19" rack mount kit can be ordered separately.

Applications

- Server room and data centers temperature monitoring and logging.
- High precision temperature monitoring and logging for food and drug storages.
- Environmental quality monitoring and assessment.
- Temperature monitoring in building management systems.

Technical parameters

Parameter	Value	Units	Remark
Operating Range	−40 to 85	°C	
Accuracy (max)	±0.13	°C	20 to 70°C
Accuracy (max)	±0.25	°C	-40 to 85°C
Resolution	0.1	°C	
Supply voltage	4 to 5.5	VDC	From RS-485 interface
Max consumption	2	mA	From RS-485 interface
Ingress protection	IP20		
Head's dimensions	85 x 35.1 x 23.5 mm		
Connectors	Two RJ-45 in parallel		

Usage

Can be used with following TERACOM controllers

- TCW210-TH

Pinout

8   1   8   1

Pin	Description	Corresponding UTP wires color
1	not connected (most left)	Orange/White Tracer
2	not connected	Orange
3	not connected	Green/White Tracer
4	Line B-	Blue
5	Line A +	Blue/White Tracer
6	not connected	Green
7	+ VDD	Brown/White Tracer
8	GND	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

A daisy-chained (linear) topology for multiple sensors should be used.

UTP/FTP cables with RJ-45 connectors are used for interconnection. The popular ANSI/TIA/EIA T568B wiring is used. Standard patch LAN cables are recommended.

Total cable length up to 30 m is recommended, although the RS-485 interface works over much longer distance.

The last sensor in the chain should have a terminator installed on the free RJ45 socket.

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Installation tips

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;
• Sensor shall be installed far away from heating and cooling sources
• Sensor should not be installed next to windows to avoid solar radiation;
• Sensors shall be wall mounted with vent holes up/down to ensure air circulation.

RS-485 Bus

RS-485 is a standard for serial communications systems defined by Telecommunications Industry Association (TIA) and Electronic Industries Alliance (EIA).