



control solutions

TERACOM

TSH206v3 Humidity and temperature sensor



Short description

TSH206v3 is humidity and temperature sensor with a 1-Wire interface.

The device integrates basic elements plus signals processing and provide a fully calibrated digital output. A unique capacitive element is used for measuring relative humidity while the temperature is measured by a band gap sensor. Both sensors are seamlessly coupled to a 12-bit analog to digital converter. This results in superior signal quality and fast response time.

The 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 monitoring.
- Humidity and temperature monitoring for facilities, vineyards, greenhouses, etc.
- Environmental quality monitoring and assessment.
- Humidity and temperature monitoring in building management systems.

Technical parameters

Parameter	Value	Units	Remark	Value	Units	Remark
Operating Range	10 to 90*	%RH	non-condensing	-20 to +60*	°C	
Accuracy (max)	±3.0	%RH	20 to 80 %RH	±0.4	°C	-10 to +60°C
Accuracy (max)	±5.0	%RH	10 to 90 %RH	±1.0	°C	-20 to +60°C
Resolution	0.1	%RH		0.1	°C	
Supply voltage (+VDD)	4 to 5.5	VDC	From 1-Wire bus			
Max consumption	5	mA	From 1-Wire bus			
Ingress protection	IP20					
Head's dimensions	85 x 35.1 x 23.5 mm					
Connectors	Two RJ-11 in parallel					

* Recommended operating range is 20% to 80% RH (non-condensing) over -10°C to +60°C. Prolonged operation beyond these ranges may result in a shift of sensor reading, with slow recovery time.

Usage

Can be used with following TERACOM controllers

- TCW241

- TCW210-TH

- TCW220

- TCG140

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Pinout



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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

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.



Installation tips

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

- Sensor shall be installed about 1.2-1.4 m above the floor;
- 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 with vent holes up/down to ensure air circulation.

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>.