control solutions
TERACOM

TSH202v3
1-Wire humidity and temperature sensor

Short description

TSH202v3 is humidity and temperature sensors with a 1-Wire interface. The device integrates basic elements plus signals processing, and provides 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.

Applications

- Server room and data centers monitoring.
- Environmental quality monitoring and assessment.
- Humidity and temperature monitoring in building management systems.
- Humidity and temperature monitoring for mobile operator facilities, vineyards, greenhouses, etc.

Technical parameters

Parameter	Value	Units	Remark	Value	Units	Remark
Operating Range	10 to 90*	%RH	non-condensing	−20 to + 60*	°C	
Tolerance typical	±3.0	%RH	20 to 80 %RH	±0.4	°C	-10 to + 60°C
Tolerance maximal	±5.0	%RH	10 to 90 %RH	±1.0	°C	-20 to + 60°C
Resolution	0.1	%RH		0.1	°C	
Power supply	4.0 to 5.5	VDC				
Consumption	5	mA				
Ingress protection	IP00					
Head's dimensions	45 x 16 x 10 mm					
Communication	1-Wire					
Cable length	1 meter					

* 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
- TCW122B-CM
- TCW122B-WD
- TCW112-WD
- TCW220
- TCG120
- TCW112-CM

Pinout

Signals	Cable colors	
VDD (+ 4.0 to + 5.5V)	Yellow	Red
Data	Green	White
GND (Ground)	Brown	Black

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 TCWxxx controller;
- If LED doesn't blink, there isn't power supply.

Wiring example

Ethernet controller TCW122B-CM TSH202v3

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.