

# 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

VDD (+ 4.0 to + 5.5V)

Data

GND (Ground)

### Cable colors

Yellow Red

Green White

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>.