



TSH202B

Compact humidity and temperature sensor

Short description

TSH202B is a compact humidity and temperature 1-wire sensor that offers reliable and accurate data collection. 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, vehicles, greenhouses, etc.

Technical parameters

Parameter	Value	Units	Remark	Value	Units	Remark
Operating Range	10 to 90*	%RH	non-condensing	-20 to +60*	°C	
Tolerance typ.	±3.0	%RH	20 to 80 %RH	±0.4	°C	-10 to +60°C
Tolerance max.	±5.0	%RH	10 to 90 %RH	±1.0	°C	-20 to +60°C
Long term drift typ.	±0.25**	%RH/year	20 to 80 %RH	±0.05**	°C/year	-10 to +60°C
Resolution	0.1	%RH		0.1	°C	
Power supply/consumption	4.0 to 5.5	VDC		5	mA	
Dimensions	62 x 28 x 16	mm				
Communication	1-Wire					
Cable length	1	m				

* 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.

** Higher drift values might occur due to contaminant environments with vaporized solvents, out-gassing tapes, adhesives, packaging materials, etc.

Usage

Can be used with following **TERACOM** controllers

- TCW241
- TCW122B-CM
- TCW122B-WD
- TCW220
- TCG120-4

Pinout

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

Status indicator

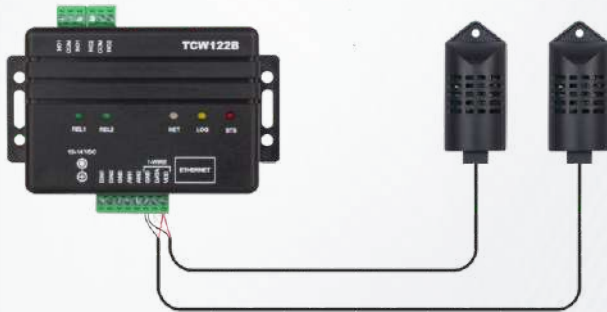
The status of the device is shown by single LED, located on the front panel:

- 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

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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>