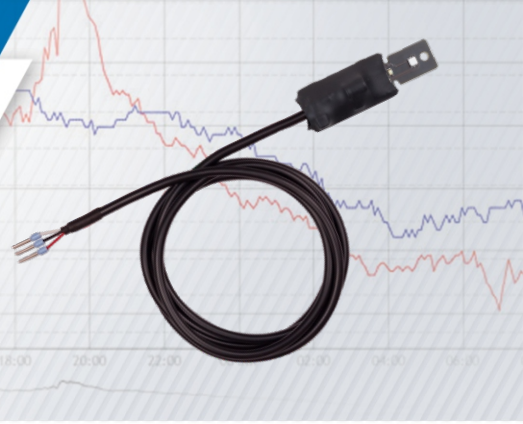
control solutions
TERACOM

TSH202v4.x

1-Wire humidity and temperature sensor



Short description

TSH202v4.x is a humidity and temperature sensor with a 1-Wire interface. The device integrates sensing elements and signal processing and provides a fully calibrated digital output.

A capacitive sensing element is used for measuring relative humidity, while temperature is measured by a band-gap sensor.

Both sensors are coupled to a 12-bit analog-to-digital converter. This results in high signal quality and fast response time.

Applications

- Server room and data center 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, 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	
Ingress protection	IP00					
Dimensions	45 x 16 x 10	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 readings, with slow recovery time.

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

TSH202 - 1-Wire humidity sensor

Usage

Can be used with the following TERACOM controllers

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

Pinout

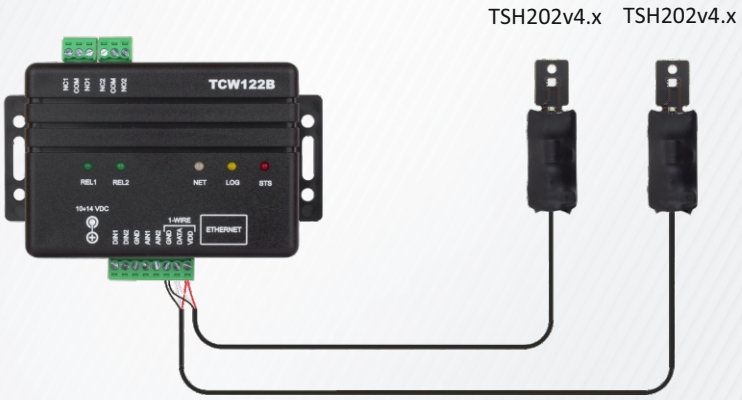
Signals	Cable colors	
VDD (+4.0 to +5.5 V)	Yellow	Red
Data	Green	White
GND (Ground)	Brown	Black

Status indicator

The device status is indicated by a single LED located on the front panel:

- If the LED blinks once per second, the sensor operates normally;
- If the LED blinks once every 3 seconds, there is no communication with the controller;
- If the LED does not blink, there is no power supply.

Wiring example



1-Wire Bus

1-Wire is a registered trademark of Maxim Integrated Products, Inc., now part of Analog Devices. We recommend reading the 1-Wire guidelines at https://www.teracomsystems.com/wp-content/uploads/1-wire/guidelines-for-reliable-long-line-1-wire-networks.pdf