

Combined Temperature/ Humidity Sensor in shelter



3032.0000 / 3032.1000



3032.0200 / 3032.1200

Description

The transmitter type 3032 is designed for measurement of relative humidity and temperature. Sensing is accomplished by capacitive measuring element for humidity and a platinum resistor Pt 100 for temperature measurement. Both sensors are located at the tip of a probe and protected by a membrane filter. The probe is mounted at the base plate by means of a special socket. There the probe is fixed with a fixation screw. The base plate provides 2 holes, 30 mm distance, for M8 screws for fastening.

The unit is protected by a radiation protection shelter, made of a special white plastic material. Following versions are further available:
Version with electrical ventilation, to obtain exact measuring values even with total calm.
Version with measuring converter which is placed in a housing underneath the sensor. Data output is 4...20 mA each.

Technical Data

Material of probe:	ABS-plastic
Cable:	12-p. connector with LiY(C)Y, 8 x 0.25 mm ² , length 5 m, (Versions 3032.0000 and .1000 only) 8-p. connector for LiY(C)Y, 8 x 0.25 mm ² , length 5 m, (Versions 3032.0200 and .1200 only)
Cable, fan:	LiYY, 2 x 0.25 mm ² , length 5 m (3032.1000 only)
Power consumption:	approx. 3.0 mA at 12 V DC (Versions 3032.0000)
Fan:	12 V DC, approx. 70 mA (Versions 3032.1000 and 3032.1200 only)

Humidity sensor

	Capacitive element
Meas. range:	0...100 % rH
Meas. accuracy: 10...90 % rH at 23 °C <10 % rH >90 % rH	±1.5 % ±2 %
Temp. influence TK (# 23 °C):	<0.05 % rH/K
Calibrating accuracy:	±1 % rH
max. annual drift:	1 % rH / year
Time constant:	0.7 s
output:	0...1 V corresp. 0...100 % rH
impedance:	> 10 kΩ
Response time: T63: T90:	typical 10 s approx. 20 s

Temperature sensor

Output	Measuring resistance Pt 100, 4 line Pt 100, according to DIN 60751 B, 1/3 tolerance
Meas. element (acc. DIN IEC 751):	Pt 100 1/3-DIN class B
Accuracy at 23 °C (activated output):	±0.2 K
Temp. influence TK (# 23 °C) (activated output):	<0.005 K/K
Response time: T63: T90:	typical 4 s approx. 8 s

General

Compliances:	WMO Guide No. 8/7th ed.
Power supply:	5...30 V DC; < 4 mA (without fan and electrical ventilation)
Operating temp.:	-40...+85 °C
min. wind speed at sensor head:	0.5 m/s
Protection, probe:	IP65
Protection, connector:	IP67
Power requirement 0...10 V/0...1 V:	<3 mA
Load resistance 0...10 V/0...1 V:	≥ 10kΩ / ≥ 2kΩ
EMC according:	EN 61326-2-3
Dimensions (shelter):	Ø 130 mm, height approx. 185 mm
Weight (shelter with holder):	approx. 780 g

Measuring converter

Input:	Voltage: 0...1.0 V; meas. range: 0...100 % Pt 100, meas. range -35...+45 °C
Output:	4...20 mA; supply 10...35 V DC, load depending (500 Ω...1.9 kΩ lin.)
Max. error:	±0.25 %
Error by:	Supply voltage: <50 ppm/V Ambient temp.: <50 ppm/°C
EMV, Emission:	EN 50081-1
EMV, Noise:	EN 50082-2
Connection:	8-p. connector, IP 67 sealed (plugged)

Ordering Code

Temperature/humidity sensor, in shelter	3032.0000
Temperature/humidity sensor, in shelter, electrically aspirated	3032.1000
Temperature/humidity sensor, in shelter, connection cable pluggable, incl. measuring converter 4...20 mA	3032.0200
Temperature/humidity sensor, in shelter, connection cable pluggable, incl. measuring converter 4...20 mA, electrically aspirated	3032.1200

Calibration and Maintenance

Calibration and maintenance of the probe should be performed at regular intervals, at least once a year or more often, depending on the conditions of use and desired accuracy.

Replacing of Sensor

Loosen fixation screw. Pull sensor out of its socket and replace it by a new one. Sensor has to be touched carefully, at its plastic shaft.

User information

Installation

The sensors are to be attached in a position representative for the climate measurement. The position the sensor is mounted in (horizontal, vertical) does not matter. However, it should be mounted in such a way that no water can get into it. Please note the maximum permissible ambient temperature when installing the sensor. The sensors always have to be installed in such a way that the plugs are not exposed to an increased ambient temperature either (>85 °C).

In a clean environment, the sensor is maintenance-free.

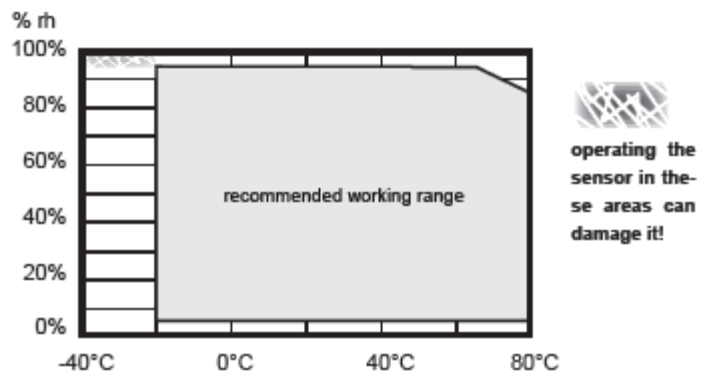
Dust and other solid particles do not damage the humidity sensor element, however, if there is an accumulation of dust on it, the dynamic behaviour could be impaired.

If it should become necessary to clean it, the filter can carefully be unscrewed and rinsed. Loose dirt can also be removed from the measuring element by blowing it off or rinsing it carefully with distilled water.

Dew formation and splashes do not damage the sensor, although corrupted measurement readings are recorded until all the moisture on and directly around the sensor element has dried up.

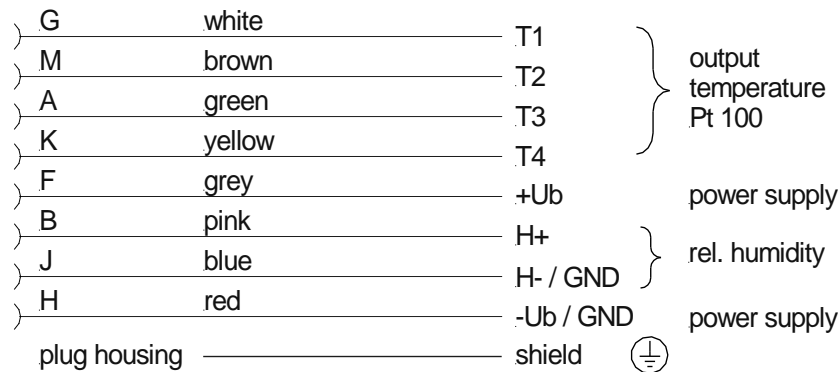
Damaging Influences

Agents that are corrosive and contain solvents, depending upon the type and concentration of the agent, can result in faulty measurements and cause the measuring element to break down. Substances deposited on the sensor are damaging as they form a water-repellent film (this applies to all humidity sensors with hygroscopic measuring elements); e.g. resin aerosols, lacquer aerosols, smoke deposits etc.

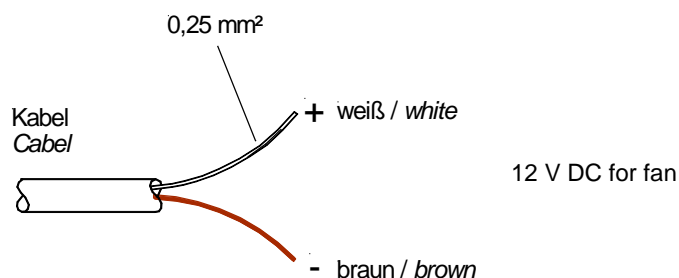


Connection plan

Versions 3032.0000 and 3032.1000



Connection for fan

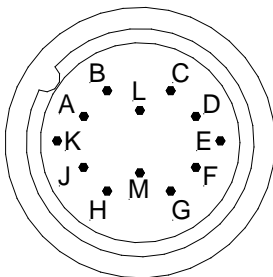


Connection plan

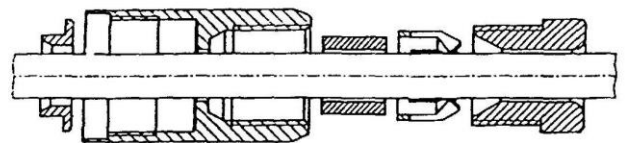
Version 3032.0000, connection cable pluggable, without measuring converter

Handling instruction, connector

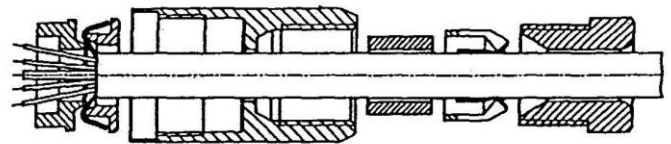
Section A-A
magnified



View on the solder termination side

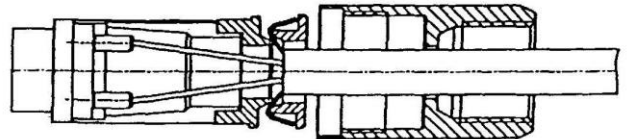


Teile auffädeln
stringing parts



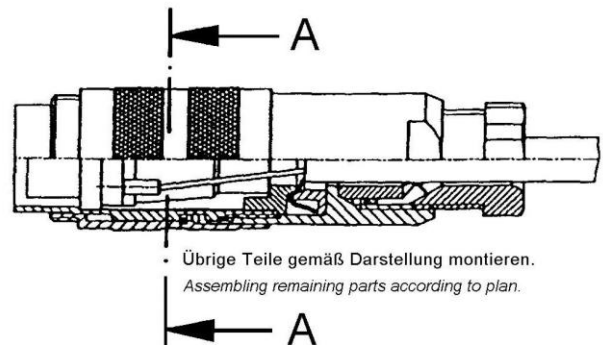
Abisolieren Schirm aufweiten,
Schirmklemmring montieren.

Stripping, widening of shield,
assembling shield clamping ring.



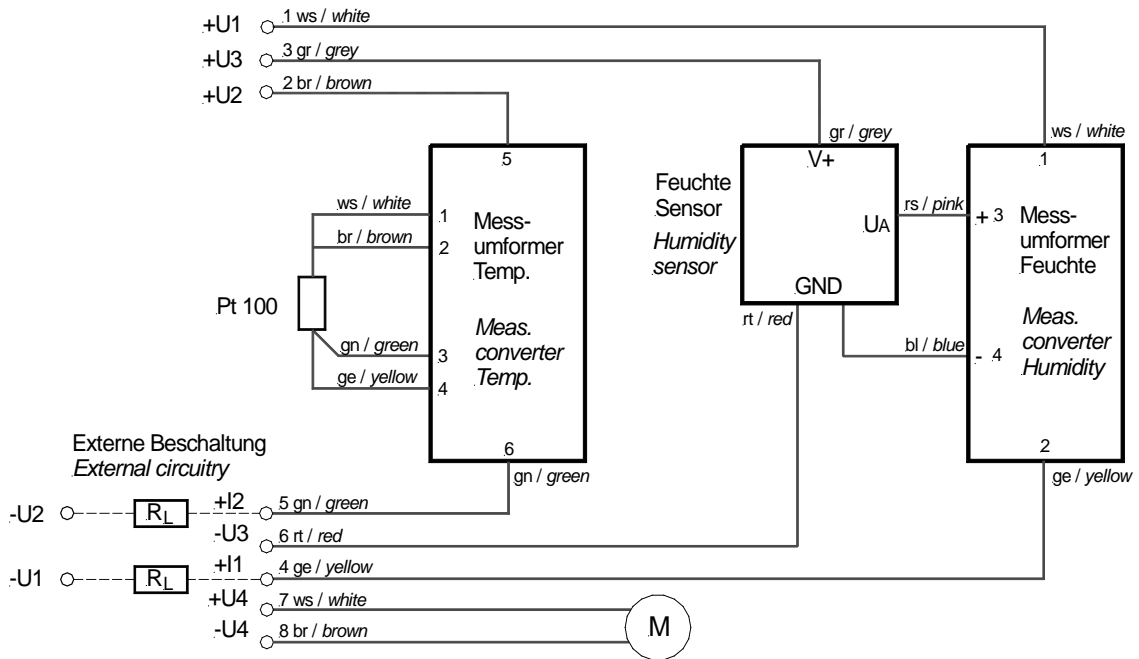
Litze anlöten, Distanzhülse überschnappen,
überstehenden Schirm abschneiden.

Soldering wire, tripping distance bush,
cutting off projecting shield.



Übrige Teile gemäß Darstellung montieren.
Assembling remaining parts according to plan.

Versions 3032.0200 and 3032.1200; connection cable pluggable, 4...20 mA



Pin configuration

ws/white	1	+ U1	supply meas. converter humidity
br/brown	2	+ U2	supply meas. converter temp.
gn/green	3	+ U3	supply humidity sensor
ge/yellow	4	+ I1	4...20 mA humidity
gr/grey	5	+ I2	4...20 mA temp.
rs/pink	6	- U3	AGND humidity sensor
bl/blue	7	+ U4	ventilation fan
rt/red	8	- U4	ventilation fan

+I1 / +I2 measured against -U1 / -U2

U1, U2 = 12...35 V DC (admissible load!).

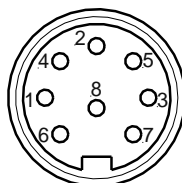
U3 = 5...24 V DC (admissible load!).

U4 = 12 V DC

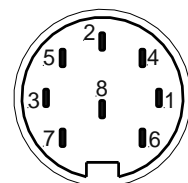
ATTENTION:

- ▶ Power supply U1, U2 must be electrically isolated from U3!
- ▶ U3 + U4 could be the same power supply, if 12 VDC is used!

Cable Connector

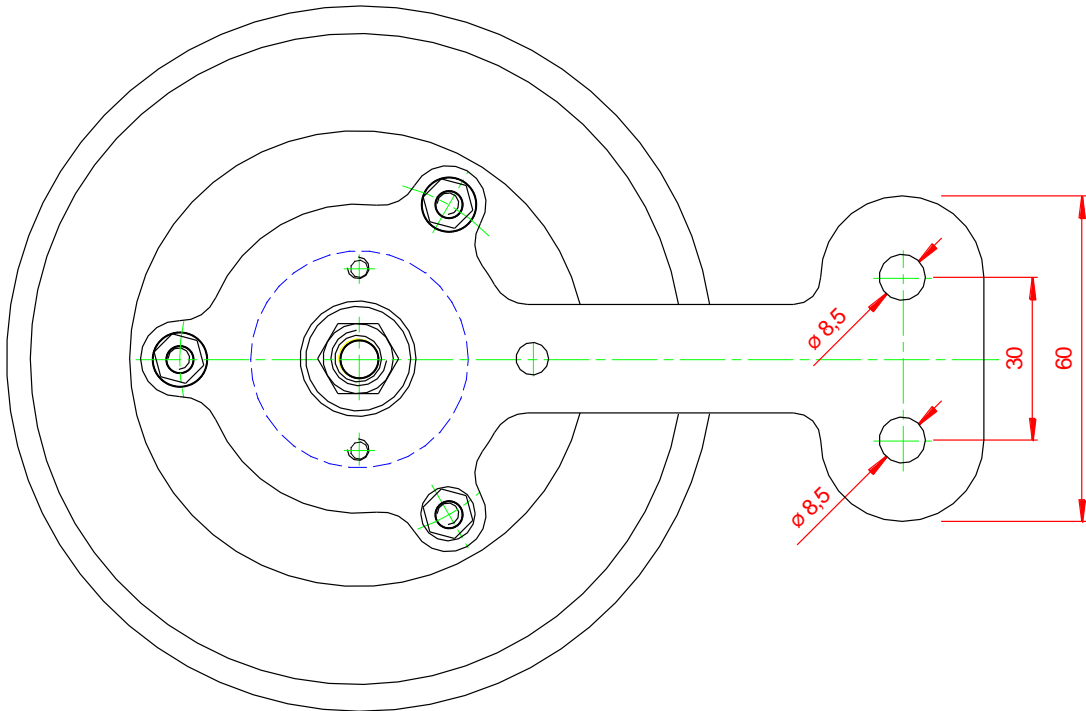


Front side, female socket



View on the solder termination side

Dimensions for installation:



Technical data are subject to change!