



Combined Temperature / Humidity Sensor in Shelter

GROUP 3	HUMIDITY
NO.	3033.0000
VERSION / DATE / NAME	01 / 10.2016 / KI



3033.0000 / 3033.1000 / 3033.2000



3033.0200 / 3033.1200 / 3033.2200

DESCRIPTION

The transmitter type 3033 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.

Additional information and versions can be found in 'ordering code' at page 3.

Special versions on request.

TECHNICAL DATA

Material of probe:	ABS-plastic
Cable:	Versions 3033.0000, 3033.1000 and 3033.2000: 12-p. connector with LiY(C)Y, 8 x 0.25 mm ² , length 5 m Versions 3033.0200, 3033.1200 and 3033.2200: 8-p. connector for LiY(C)Y, 8 x 0.25 mm ² , length 5 m
Cable, fan:	Versions 3033.1000 and 3033.2000: LiYY, 2 x 0.14 mm ² , length 5 m
Power consumption:	Version 3033.0000: approx. 3.0 mA at 12 VDC
Fan:	Versions 3033.1000 and 3033.1200: 12 VDC, approx. 70 mA Versions 3033.2000 and 3033.2200: 24 VDC, approx. 33 mA

Technical data are subject to change!



Combined Temperature / Humidity Sensor in Shelter

GROUP 3	HUMIDITY
NO.	3033.0000
VERSION / DATE	01 / 10.2016

HUMIDITY SENSOR

	Capacitive element
Meas. range:	0...100 % rH
Meas. accuracy:	10...90 % rH at 23 °C: ±1.5 % <10 % rH >90 % rH: ±2 %
Temp. influence TK (at 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:	T90: <1.5 min.

TEMPERATURE SENSOR

Output:	Measuring resistance Pt 100, 4 line
Meas. range:	-40 ...+60 °C
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 (at 23 °C) : (activated output)	<0.005 K/K

GENERAL

Compliances:	WMO Guide No. 8/7th ed.
Power supply:	5...30 V DC; <4 mA (without electrical ventilation)
Operating temperature range:	-40...+75 °C
min. wind speed at sensor head:	0.5 m/s

Protection, probe:	IP30
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 120 mm, height approx. 192 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)

Technical data are subject to change!



Combined Temperature / Humidity Sensor in Shelter

GROUP 3	HUMIDITY
NO.	3033.0000
VERSION / DATE	01 / 10.2016

ORDERING CODE

Temperature/humidity sensor, in shelter, incl. 5 m connection cable	3033.0000
Temperature/humidity sensor, in shelter, with measuring converter 4...20 mA incl. 5 m connection cable	3033.0200
Temperature/humidity sensor, in shelter, electrically aspirated 12 VDC incl. 5 m connection cable	3033.1000
Temperature/humidity sensor, in shelter, electrically aspirated 12 VDC with measuring converter 4...20 mA, incl. 5 m connection cable	3033.1200
Temperature/humidity sensor, in shelter, electrically aspirated 24 VDC incl. 5 m connection cable	3033.2000
Temperature/humidity sensor, in shelter, electrically aspirated 24 VDC with measuring converter 4...20 mA, incl. 5 m connection cable	3033.2200

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 installation position of the sensor must be ensured in accordance with the photo on page 1. However, it should be mounted in such a way that no water can get into it.

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.

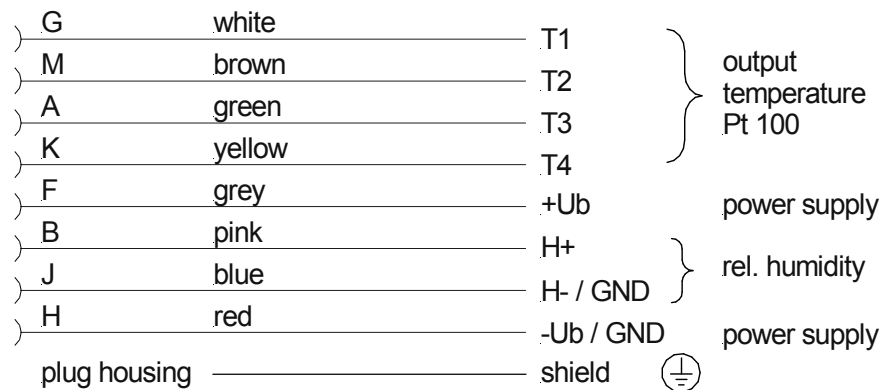


Combined Temperature / Humidity Sensor in Shelter

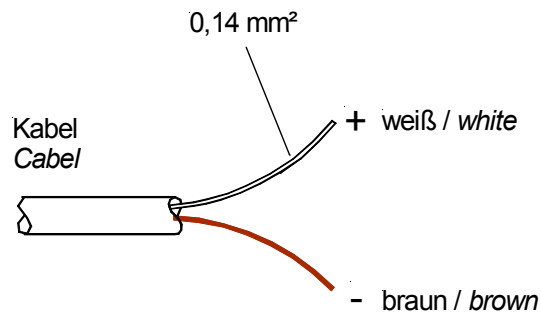
GROUP 3	HUMIDITY
NO.	3033.0000
VERSION / DATE	01 / 10.2016

CONNECTION PLAN

VERSIONS 3033.0000 AND 3033.1000



CONNECTION FOR FAN



Versions 3033.1000 and 3033.1200:
12 VDC for fan

Versions 3033.2000 and 3033.2200:
24 VDC for fan

Technical data are subject to change!



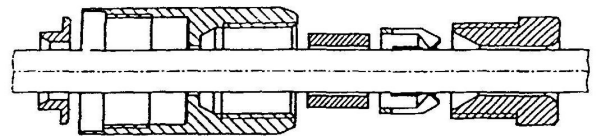
**Combined
Temperature / Humidity Sensor in Shelter**

GROUP 3	HUMIDITY
NO.	3033.0000
VERSION / DATE	01 / 10.2016

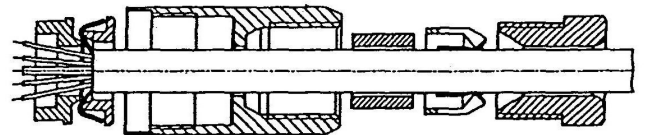
CONNECTION PLAN

VERSION 3033.0000, CONNECTION CABLE PLUGGABLE, WITHOUT MEASURING CONVERTER

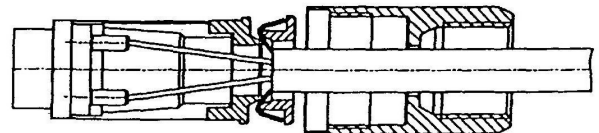
HANDLING INSTRUCTION, CONNECTOR



Teile auffädeln
stringing parts



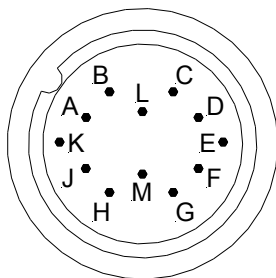
Abisolieren Schirm aufweiten,
Schirmklemmring montieren.
Stripping, widening of shield,
assembling shield clamping ring.



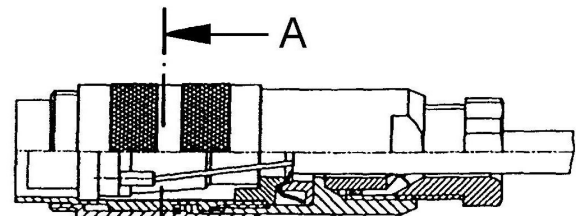
Litze anlöten, Distanzhülse überschnappen,
überstehenden Schirm abschneiden.
Soldering wire, tripping distance bush,
cutting off projecting shield.

SECTION A-A

magnified



View on the solder termination side



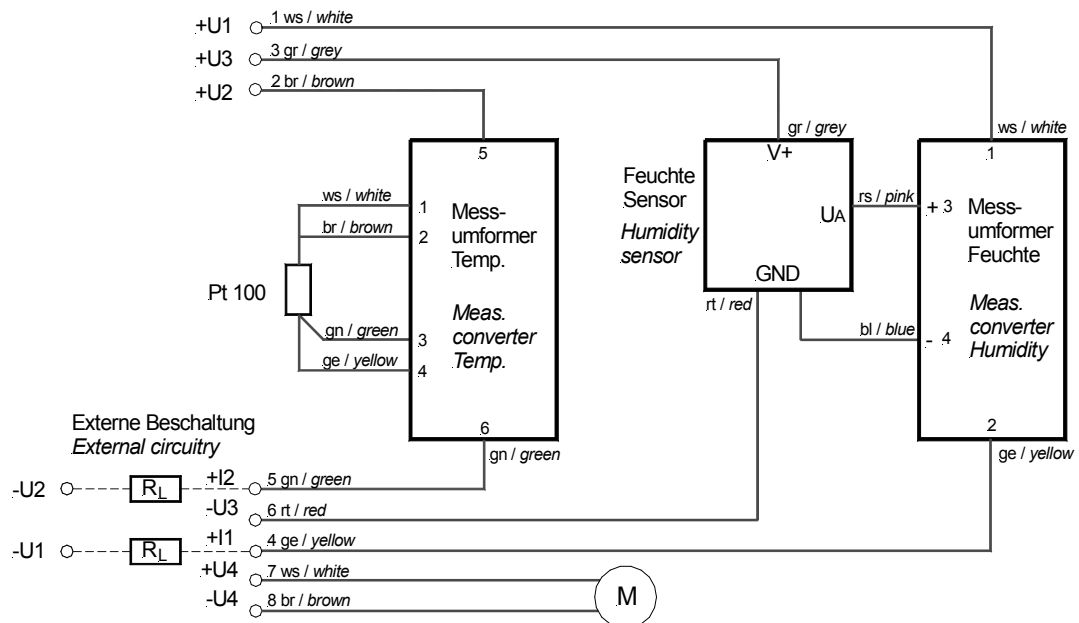
• Übrige Teile gemäß Darstellung montieren.
Assembling remaining parts according to plan.

Technical data are subject to change!

Combined Temperature / Humidity Sensor in Shelter

GROUP 3	HUMIDITY
NO.	3033.0000
VERSION / DATE	01 / 10.2016

VERSIONS 3033.0200, 3033.1200 AND 3033.2200; CONNECTION CABLE PLUGGABLE, 4...20 mA



PIN CONFIGURATION

ws / white	1	+U1	supply meas. converter humidity
br / brown	2	+U2	supply meas. converter temperature
gn / green	3	+U3	supply humidity sensor
ge / yellow	4	+I1	4...20 mA humidity
gr / grey	5	+I2	4...20 mA temperature
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 VDC (admissible load!).
U3	= 5...24 VDC (admissible load!).
U4	= 12 VDC (Type 3033.1000 and .1200) = 24 VDC (Type 3033.2000 and .2200)

ATTENTION:

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

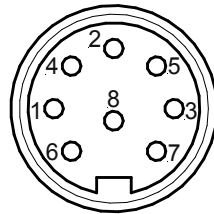
Technical data are subject to change!



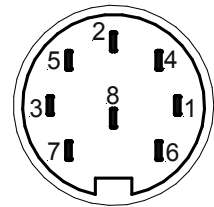
**Combined
Temperature / Humidity Sensor in Shelter**

GROUP 3	HUMIDITY
NO.	3033.0000
VERSION / DATE	01 / 10.2016

CABLE CONNECTOR

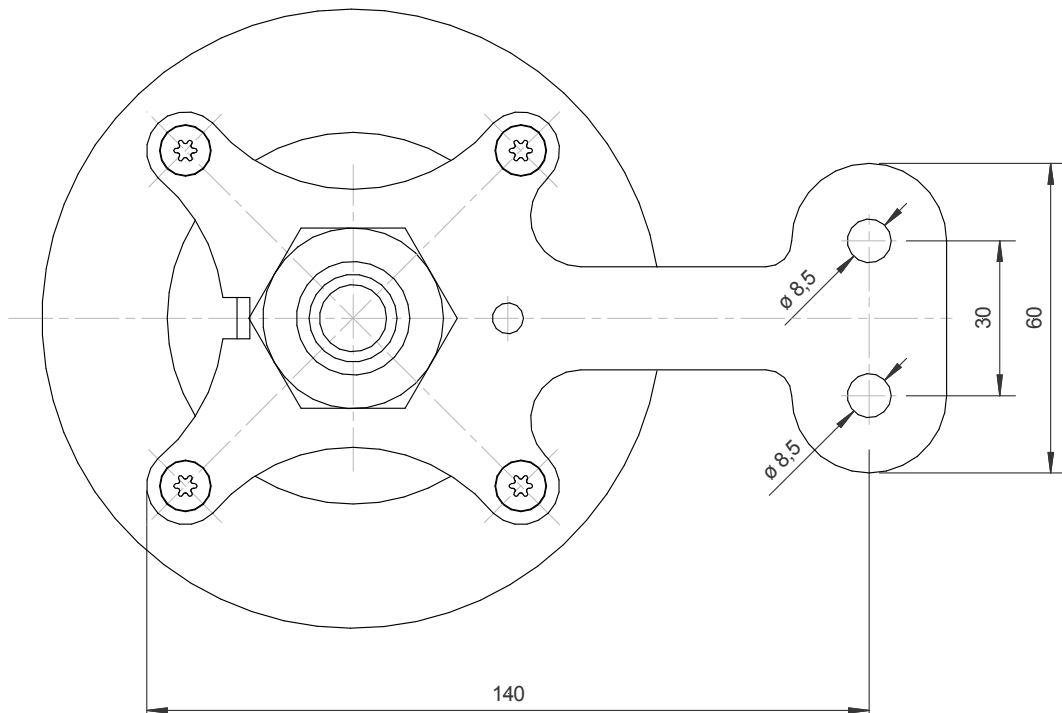


Front side, female socket



View on the solder termination side

DIMENSIONS FOR INSTALLATION



Technical data are subject to change!