Operating Instructions (14565-24 V)
Wind direction sensor ECONOMY

Installation

First the wind direction sensor (14565-24V) has to be assembled. The vane can only be installed in one way, thus an 180° error cannot happen.

Now the cable with the soldered plug connector is pulled through the pipe and fastened to the sensor. Then the sensor (14565-24V) is plugged on top of the pipe and fixed with the 4 mm allen key provided. For exact positioning to north a dot can be found on the sensor body and on the shaft of the wind vane. It is recommended to tap the vane to the body in north position, and then to fix the sensor with the nose of the wind vane to north. Finally the tap has to be removed.

For positioning the sensor to north (or south) find a point in the surroundings and use the sword of the vane for sighting this point.

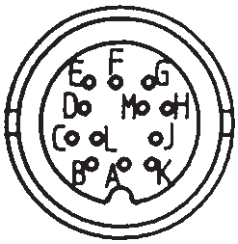
Electric Wiring

For connection a 12-pole plug connector is used. We recommend shielded 10 x AWG 24 C UL sw cable with 0.22 mm² cross section. The length of the cable should not exceed 100 m.

In case the sensor is connected with the power supply (14962) and an electric indicator (8535), an appropriate 2-pole cable between indicator and power supply is sufficient.

Plug connector pinning 14565

F: + output 0...20 mA
E: - output 0...20 mA resp.
- output 4...20 mA
D: + output 4...20 mA
C: ---
L: output U_1 0...10 V_{DC}
B: output $U_{2:}$ 0...10 V_{DC}
A: output $U_{3:}$ 0...10 V_{DC}
K: ---
J: + 10...30 V_{DC} power supply
H: - 10...30 V_{DC} power supply
M: - 24 V_{DC} power supply heating
G: + 24 V_{DC} power supply heating



Measuring Principle

The wind vane of the wind direction sensor (14565) is linked to a disk with black and white sectors in 8 tracks. In this way a GRAY code is generated. For stable operation the sectors are divided in such a way that from measuring point to measuring point only one sector changes (GRAY-EXCESS-CODE).

8 tracks and 144 sectors are equal to a resolution of 2.5 degrees. The position of the wind vane (of the disk) is scanned by infrared LEDs and photo-transistors.

Calculation of the wind direction

The resolution of the measuring system is 2.5°. For the 1st current output (0...20 mA) the wind direction calculated to

Angle [deg] = I_1[mA] / 20[mA] x 360 [deg]

Accordingly for the 2nd current output (4...20 mA):

Angle [deg] = (I_2[mA] - 4[mA]) / 16[mA] x 360 [deg]

Ader core	AWG-Farbcode		AWG color code		Pin-Nr.
1	schwarz	sw	black	blk	F
2	braun	br	brown	brn	E
3	rot	rt	red	red	D
					C
4	orange	or	orange	ora	L
5	gelb	ge	yellow	yel	B
6	grün	gn	green	grn	A
					K
7	blau	bl	blue	blu	J
8	violett	vi	violet	vio	H
9	grau	gr	gray	gry	M
10	weiß	ws	white	wht	G

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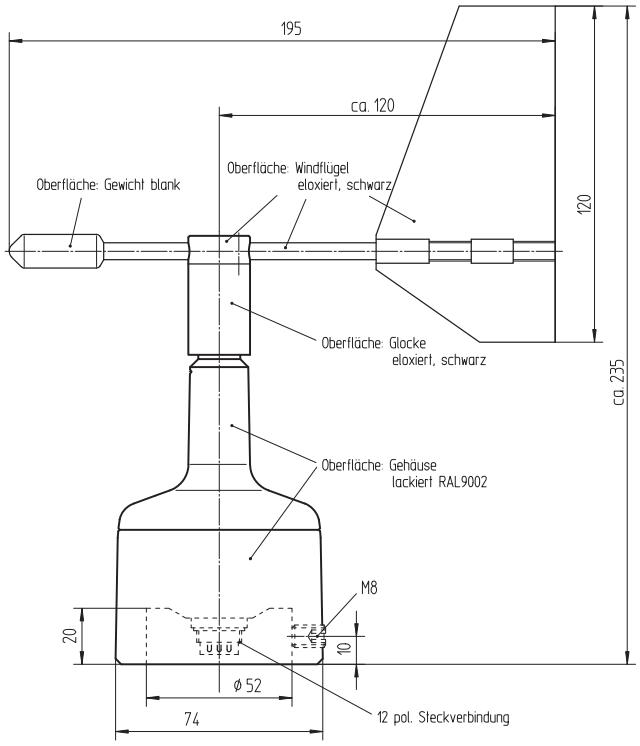
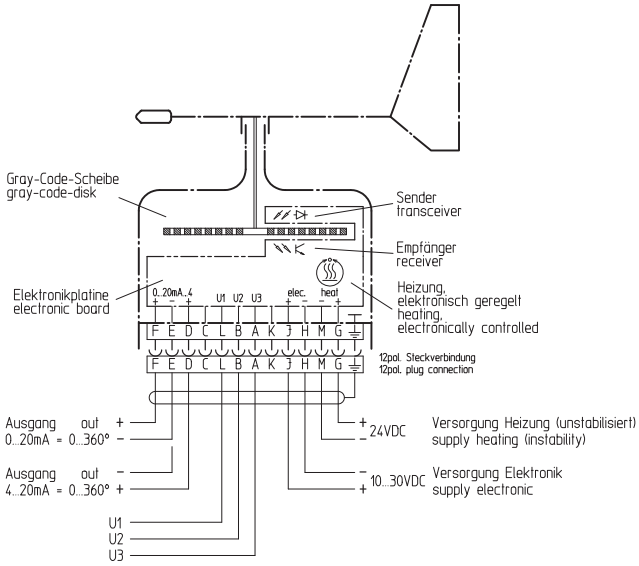
Technical Data

Id-No.	**00.14565.200 304**
Measuring range:	0...360 deg
Resolution:	2.5 deg
Outputs:	0...20 mA (max. load 500 ohms for 15V) 4...20 mA (max. load 500 ohms for 15V) 3 x 10 V_{DC} [e. g. for analog indicator (1476)]
Starting value:	< 0.7 m/s
Ranges of application:	-30...+70°C • 0...+70 °C without heating • wind speed 0...50 m/s
Power supply:	10...30 V_{DC}
Heating voltage:	24 V_{DC}, max. 600 mA
Dimensions:	see dimensional drawing • for mounting on pipe Ø 49...51 mm (1 29/32"...2")
Weight:	approx. 0.4 kg
Accessories:	
32.14565.060 000	ready-made cable, 12 m with 12-pole plug
32.14565.060 020	ready-made cable, 15 m with 12-pole plug

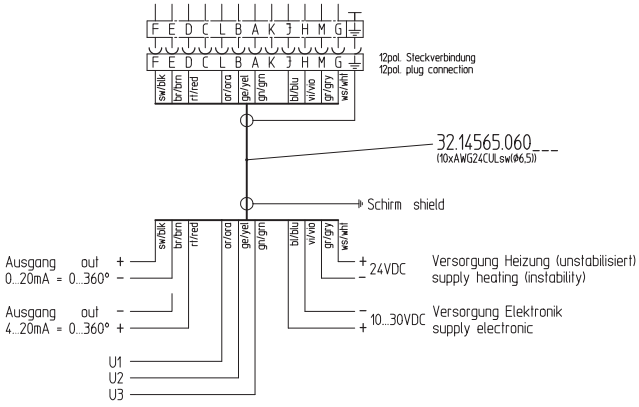
Dimensioned drawing



Connection scheme



Anschlußbild mit Anschlußkabel .....
internal circuit diagram with connecting cable .....



Trouble shooting

If the sensor is not delivering a signal, check the following:

1) Is the wind vane moving? Got the sensor frozen? For heated sensors check the voltage for heating between pin M and pin G.
2) Is the voltage between pin I and pin H correct? If not check the power supply and the cable.

If 1) and 2) are failing, return sensor to manufacturer. If only the vane is damaged, the new vane can be ordered and installed.

Quality System certified by DQS according to DIN EN ISO 9001:2008 Reg. No. 003748 QM08

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