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Thies CLIMA

Instruction for Use

021382/08/06

Wind Transmitter compact

4.3521.00.741

ADOLF THIES GmbH & Co. KG

Hauptstraße 76 37083 Göttingen Germany
Box 3536 + 3541 37025 Göttingen
Phone ++551 79001-0 Fax ++551 79001-65
www.thiesclima.com info@thiesclima.com

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1 Models

Order-No.	Meas. range	Electr. Output 1	Electr. Output 2	Heating power	Connection
4.3521.00.741	0 ... 50 m/s	2 ... 573 Hz	4 ... 20 mA	20 W	8 pol. Stecker

2 Application

The wind transmitter detects the horizontal wind speed. There are **two output signals** available:

- signal 1: pulse output
- signal 2: analogue output

For winter time use the wind direction transmitter is equipped with an electronically regulated heating, which guarantees the smooth-running of the ball bearing, and prevents ice forming in the space between the external rotation parts.

Remark:

When using fastening adapters (angle, traverses, etc.) please take a possible effect by turbulences into consideration.

3 Mode of Operation

The cup star (in ball bearing) is set into rotation by the wind. An opto-electronic speed scanning produces a frequency, which is available as output signal. In addition, this frequency is transformed into an analogue signal by an integrated measuring transformer.
The outer parts of the instrument are made of corrosion-resistant materials. Labyrinth gaskets protect the parts inside the instrument against precipitations.

4 Recommendation Site Selection / Standard Installation

In general wind measurement instruments should be able to detect the wind conditions of a large area. In order to obtain comparable values when determining the surface wind, measurements should be taken at a height of 10 meters over an even area with no obstacles. An area with no obstacles means that the distance between the wind direction transmitter and an obstacle should be at least 10 times the height of the obstacle (s. VDI 3786). If it is not possible to fulfil this condition then the wind direction transmitter should be set up a height where local obstacles do not influence the measured values to any significant extent (approx. 6-10 m above the obstacle). The wind direction transmitter should be set up in the centre of flat roofs and not on the edge in order to avoid any preferential directions.

5 Installation

5.1 Mechanical Mounting :

The mounting of the wind transmitter could be done for example on a central mast tube with a Pg 21-boring thread, or on hangers or the like with a boring of ∅ 29 mm. In doing so please pay attention to possible obstacles which might effect the air flow and the measuring value. The connecting cable or the connector is guided through the boring, and the wind transmitter is fixed with a hexagon nut (WO 36).

Attention:
Storing, mounting and operation under weather conditions is permissible only in vertical position, as otherwise water can get into the instrument.

5.2 Electrical Mounting:

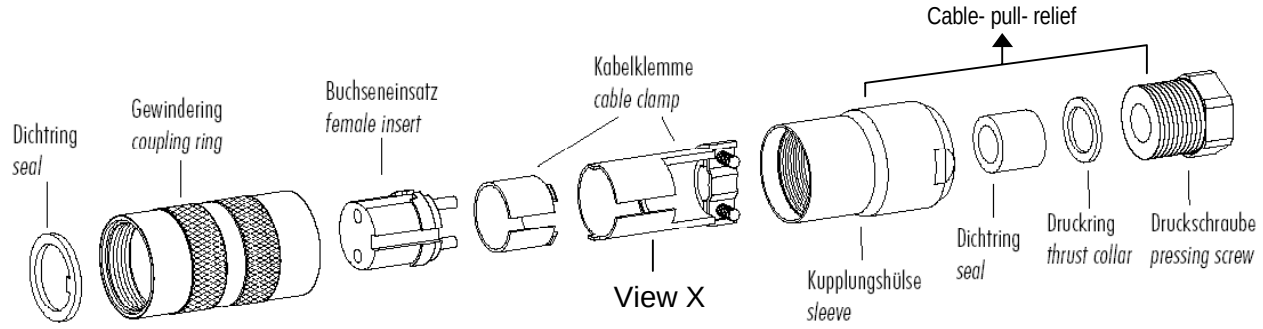
Solder a shielded cable with diameter 7-8 mm and a core cross-section of 0,5...0,75 mm² to the enclosed coupling socket.

- The number of necessary wires is given in the connection diagram (chapter 8).

Cable recommendation	
Type/ No. of cores /Diameter	Cable diameter
LIYCY 4 x 0,75 mm²	ca. 7 mm
LIYCY 5 x 0,50 mm²	ca. 7 mm
LIYCY 6 x 0,75 mm²	ca. 7,7 mm
LIYCY 7 x 0,50 mm²	ca. 7,5 mm
LIYCY 8 x 0,50 mm²	ca. 8 mm

6 Plug mounting

Coupling socket 507550 (Binder, Serial 423), EMC with cable clamp



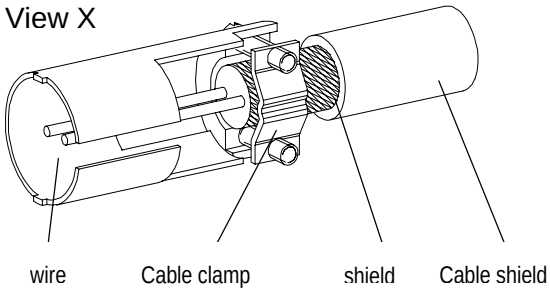
1. Stringing parts on cable acc. to plan given above.
2. Stripping cable sheath 20 mm
   Cutting uncovered shield 15 mm
   Stripping wire 5mm.

   Cable mounting 1
   Putting shrink hose or insolating tape between wire and shield.

   Cable mounting 2
   If cable diameter permits, put the shield backward on the cable sheath.
3. Soldering wire to the insert, positioning shield in cable clamp.
4. Screwing-on cable clamp.
5. Assembling remaining parts acc. to upper plan.
6. Tightening pull-relief of cable by screw-wrench (SW16 und 17).

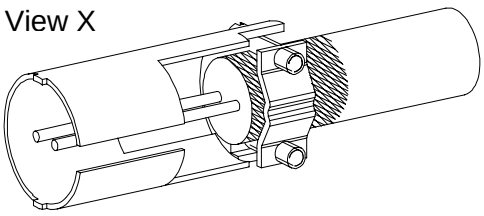
Cable mounting 1

View X



Cable mounting 2

View X

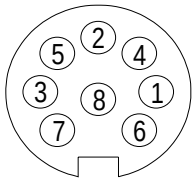


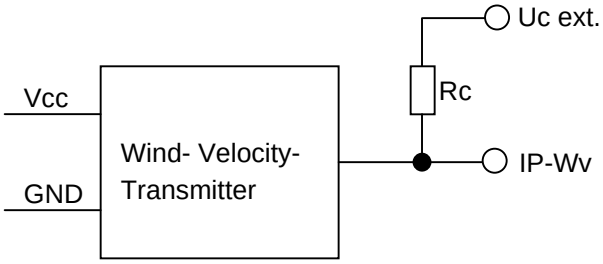
7 Maintenance

After proper mounting the instrument works maintenance free.

Heavy pollution can clog up the slit between the rotating and the stationary parts of the wind transmitter. This slit must be kept clean.

8 Connecting Diagram

Pin-No.	Function	Remark	View on the soldered joint of the counter plug
1	Vcc Supply voltage	9...30V DC (24V AC)	
2	Vcc ground	GND 24V AC)	
3	Analogue output (current WG)	4...20mA	
4	Ground (analogue)	AGND	
5	Supply voltage heating	24V AC / DC	
6	Supply voltage heating	24V AC / DC	
7	Pulse-output WS	pulse	
8	Ground (pulse)	GND	



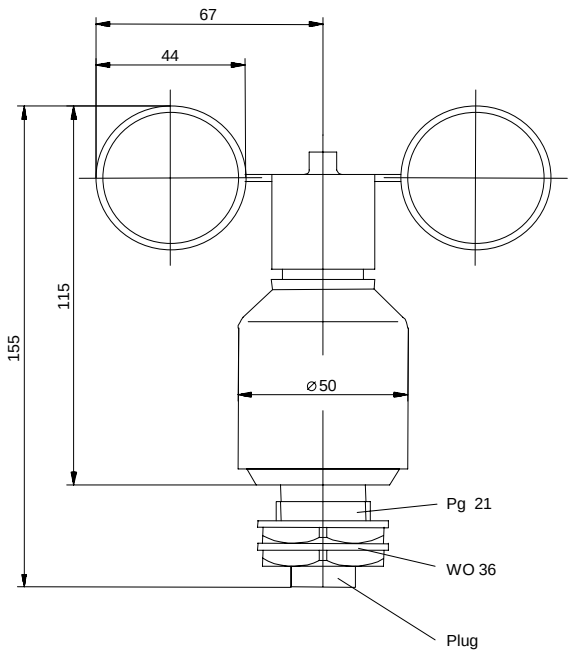
Connecting diagram: Pulse output

9 Technical Data

Measuring Range	0 ... 50 m/s
Resolution	0,1 m/s
Responsiveness	0,5 m/s
Accuracy	± 0,5 m/s or ± 3 % of measuring value
Resolution	10 pulses / revolution
Measuring principle	opto-electronic

Output 1	
Pulse output	2 … 573 Hz **(Open collector sink)**
Characteristic	V [m/s] = 0,08669 • f [Hz] + 0,32 (0,5 m/s = 2 Hz ; 50 m/s = 573 Hz)
U**c** max	30V
I**c** max	30mA
*R**c**	Rc = Uc / Ic max (Rc = collector resistance) *with the dimensioning of Rc, Uc_{max} and Ic_{max} must not be exeeded.
Output 2	
Analogue output	4...20mA (0....50m/s)
Accuracy	± 0,5% of final value
Load	≤ 500 Ohm (Vcc ≥ 15V)
General	
Operating voltage (Vcc)	9...30 V DC or 24 V AC
Current consumption max	50mA
Operating voltage heating	24 V DC/AC, max. 20 W
Ambient temperature	- 40 °C ... + 70 °C
Survival speed	maximally 80 m/s, 30 minutes
Connection	8 – pole plug connector (Binder)
Dimensions	See dimensional drawing
Mounting	For example onto mast tube with boring thread Pg 21 or boring ∅ 29 mm
Protection	IP 55
Weight	0.4 kg
EMC	EN61000-6-2 EN61000-6-3

10 Dimension diagram



11 Accessories

Other accessories such as cables, power supply units, masts as well as additional mast- or system-constructions on request.

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