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Thies CLIMA

Instruction for Use

021075/06/09

Wind Transmitter compact

4.3519.xx.140 ... 961

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1 Models

Order - No.	Electrical Output	Measuring range	Heating power	Connection
4.3519.00.140	0...20 mA	0...50 m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm²
4.3519.00.141	4...20 mA	0...50 m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm²
4.3519.00.161	0...10 V	0…50 m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm²
4.3519.00.167	0...2 V	0…50 m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm²
4.3519.00.173	0...5 V	0…50 m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm²
4.3519.00.361	0...10 V	0…3 m/s max. 13,8 V @ >3m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm²
4.3519.00.441	4...20 mA	0…40 m/s	20 W	3 m PUR -Cable 6 x 0,25 mm²
4.3519.00.641	4...20 mA	0…60 m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm²
4.3519.00.740	0…20 mA	0…50 m/s	20 W	7 pol. Plug
4.3519.00.741	4...20 mA	0…50 m/s	20 W	7 pol. Plug
4.3519.00.761	0...10 V	0...50 m/s	20 W	7 pol. Plug
4.3519.00.961	0...10 V	0…15 m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm²
4.3519.01.140	0...20 mA	0…50 m/s	20 W	1,5 -3 m Spiral cable LiYY 6x0,14 mm²
4.3519.02.141	4...20 mA	0…50 m/s	10 W	2 m Cable 6 x 0,56 mm²
4.3519.04.441	4...20 mA	0…40 m/s	20 W	0,95 m PUR- Cable 6 x 0,25 mm²
4.3519.05.141	4...20 mA	0…50 m/s	20 W	15 m Cable LiYCY 6 x 0,25 mm²
4.3519.05.641	4...20 mA	0…60 m/s	20 W	15 m Cable LiYCY 6 x 0,25 mm²
4.3519.10.441	4...20 mA	0…40 m/s	Ohne Heizung	12 m Cable LiYCY 6 x 0,25 mm²
4.3519.20.141	4...20 mA	0...50 m/s	10 W	12 m Cable LiYCY 6 x 0,25 mm²
4.3519.39.141	4...20 mA	0…50 m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm² with cable lug at the shield
4.3519.40.140	0...20 mA	0...50 m/s	60 W	12 m Cable LiYCY 6 x 0,25 mm²
4.3519.40.141	4...20 mA	0...50 m/s	60 W	12 m Cable LiYCY 6 x 0,25 mm²
4.3519.40.161	0...10 V	0…50 m/s	60 W	12 m Cable LiYCY 6 x 0,25 mm²
4.3519.40.167	0...2 V	0…50 m/s	60 W	12 m Cable LiYCY 6 x 0,25 mm²
4.3519.40.173	0...5 V	0…50 m/s	60 W	12 m Cable LiYCY 6 x 0,25 mm²
4.3519.40.740	0…20 mA	0…50 m/s	60 W	7 pol. Plug
4.3519.40.741	4...20 mA	0…50 m/s	60 W	7 pol. Plug
4.3519.40.761	0...10 V	0...50 m/s	60 W	7 pol. Plug

2 Application

The wind transmitter detects the horizontal wind speed. The measured values are available at the output as analogue voltage or current signal to control for instance wind power plant..

An electronically-regulated heating system has been installed in some models (see chapter 1) for winter time use, in order to prevent the ball-bearing and the external rotation parts from freezing. Power for the heating system could be provided for instance by our **Power Supply Unit,** order - no. **9.3388.00.000**.

Thanks to the 60-Watt-heating as well as to the optimized regulating characteristic, model no. 4.3519.**40**.xxx is especially suited for the extremely difficult application in high mountains or at other critical sites, where icing is to be expected.

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 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

Attention:

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

Remark:

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

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).

5.2 Electrical Mounting

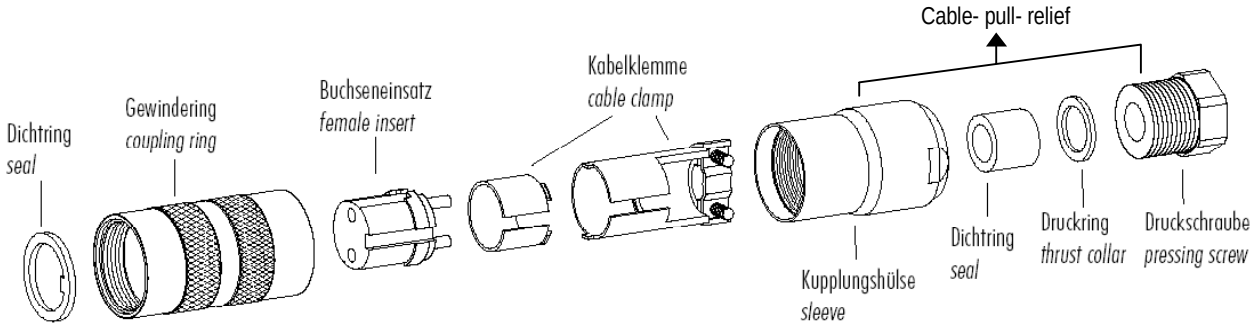
For electrical connection please refer to the connecting diagram.

6 Plug mounting

Applies only to instruments with connection „plug“.

Coupling socket, Typ:Binder, Serial 423, EMC with cable clamp

Cable connection: without cable shield



1. Stringing parts on cable acc. to plan given above.
2. Stripping cable sheath 20 mm
3. Cutting uncovered shield 20 mm
4. Stripping wire 5mm.
5. Soldering wire to the insert
6. Positioning shield in cable clamp.
7. Screwing-on cable clamp.
8. Assembling remaining parts acc. to upper plan.
9. Tightening pull-relief of cable by screw-wrench (SW16 und 17).

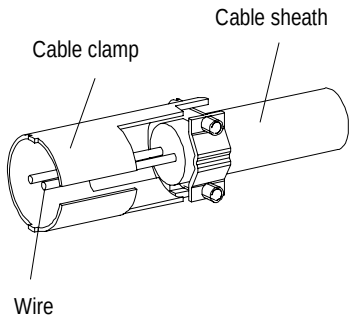


Figure 1: plug mounting

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

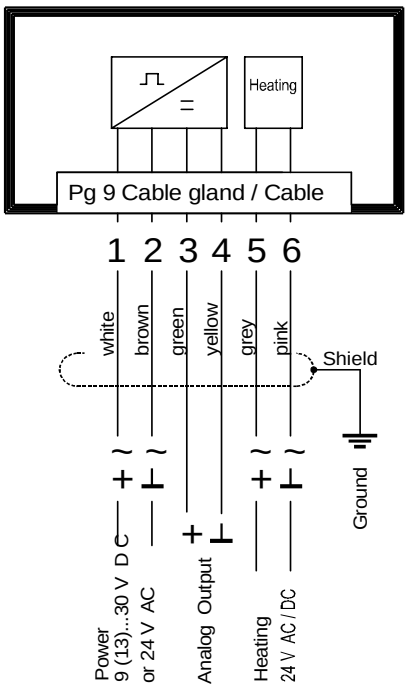
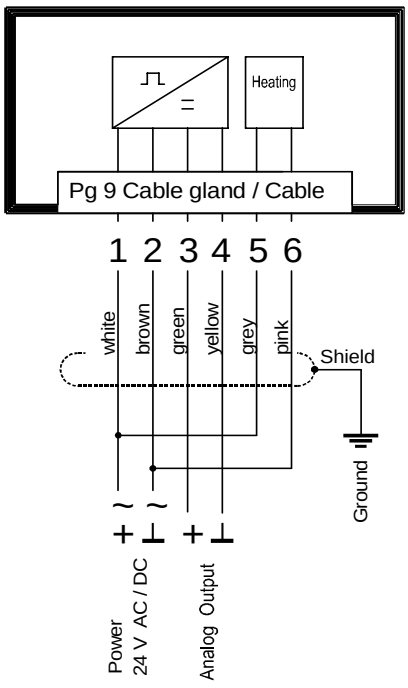
Order – No.	Separate Voltage Supply	Shared Voltage Supply
4.3519.00.140 4.3519.00.141 4.3519.00.161* 4.3519.00.167 4.3519.00.173 4.3519.00.361* 4.3519.00.441 4.3519.00.641 4.3519.00.961* 4.3519.01.140 4.3519.02.141 4.3519.04.441 4.3519.05.141 4.3519.05.641 4.3519.10.441 4.3519.20.141 4.3519.39.141 4.3519.40.140 4.3519.40.141 4.3519.40.161* 4.3519.40.167 4.3519.40.173		
	Order-No 4.3519.**10**.441 (Instrument without heating) Pin 5 and 6 not connected	

Figure 2: Connecting Diagram for Models with fixed Connecting Cable

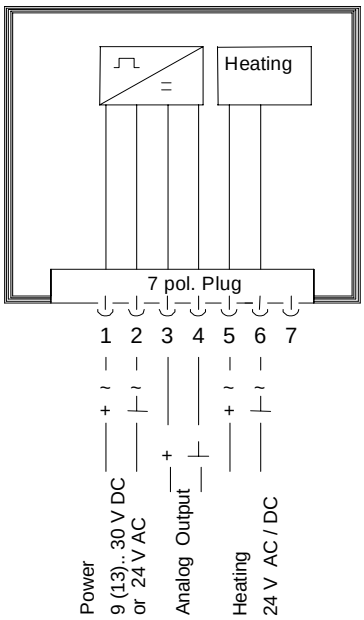
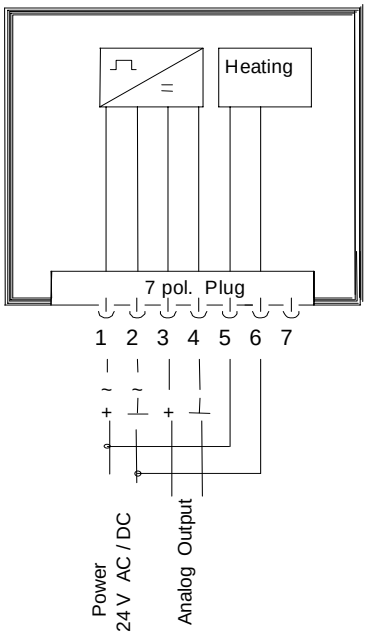
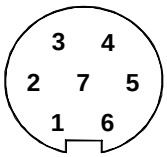
Order – No.	Separate Voltage Supply	Shared Voltage Supply	
4.3519.00.740 4.3519.00.741 4.3519.00.761* 4.3519.40.740 4.3519.40.741 4.3519.40.761*			View on the soldered joint of the counter plug 

Figure 3: Connecting Diagram for Models with Connector

9 Technical Data

Measuring range	See model
Resolution	0,1 m/s
Starting velocity	0,5 m/s
Accuracy	± 0,5 m/s or ± 3% of measuring value
Measuring principle	Opto-electronic (slotted disc)
Electrical output	See model
Load for current output (mA) for current output (V)	 max. 500 Ohm (for operating voltage > 15 V DC) min. 1 KΩ
Electrical supply for electronics *für 0 -10 V output	9 … 30 V DC oder 24 V AC/DC, max. 50 mA 13 … 30 V DC oder 24 V AC/DC, max. 50 mA
Electrical supply for heating 4.3519.00/01/02/04/05/20/39.xxx 4.3519.20.xxx 4.3519.40.xxx	 24 V DC/AC, max. 20 W 24 V DC/AC, max. 10 W 24 V DC/AC, max. 60 W
Operating voltage heating *	-40°C...70°C
Survival speed	maximally 80 m /s, 30 minutes
Connection	See model
Dimensions	See dimensional drawing
Montage	For ex. onto mast tube with receptacle thread Pg 21 or boring Ø 29 mm
Protection	IP 55
Weight	0,40 – 0,75 kg depending on model
Material Housing Cup star Bottom	 Aluminium (AlMgSi1) Synthetic, with carbon-fibre (PC-GF10) Synthetic (POM H2320)

* For wind transmitters without heating the stated ambient temperature is possible only in ice-free conditions.

10 Dimension diagram

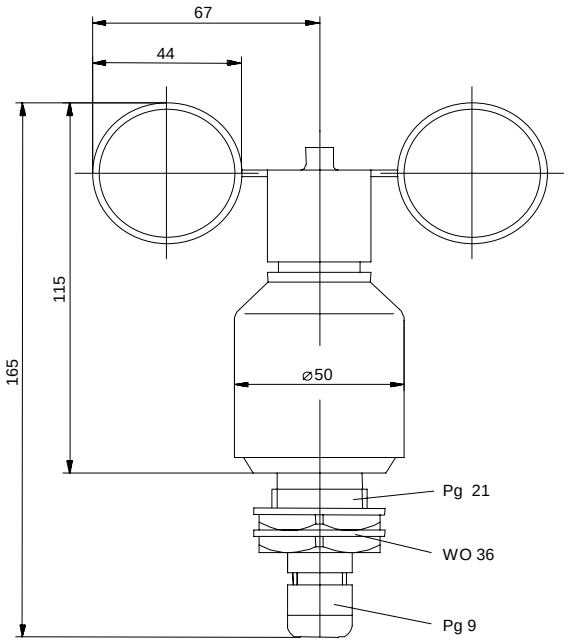


Figure 4: Dimensional Drawing Model cable gland

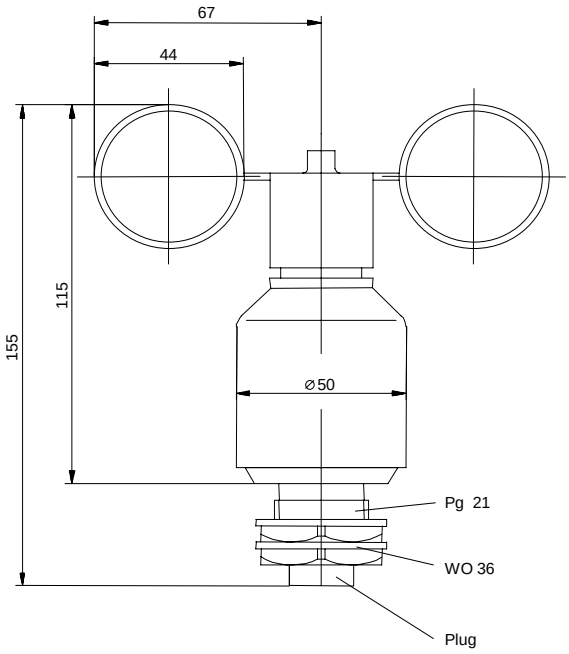


Figure 5: Dimensional Drawing Model plug

11 Accessories

For the wind transmitter the following accessories are available:

Traverse For mounting the wind transmitter and wind direction transmitter *compact* jointly onto a mast.	4.3171.30.000 4.3171.31.000	Clamping range: Ø 48 ... 102 mm Clamping range: Ø 116 ... 200 mm Sensor distance: 0,8 m Material: Aluminium

Traverse, short For mounting the wind transmitter *compact* onto a mast.	4.3171.40.000 4.3171.41.000	Clamping range: Ø 48 ... 102 mm Clamping range: Ø 116 ... 200 mm Length: 0,4 m Material: Aluminium

Lightning Rod For mounting onto the a/m traverse	506351	Length: 0,56 m Material: stainless steel

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

12 EC-Declaration of Conformity

Document-No.: **001221** Month: 06 Year: 09

Manufacturer: **A D O L F T H I E S G m b H & C o. K G**

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Description of Product: **Wind Transmitter – compact analog**

Article No.	**4.3519.00.140**	**4.3519.00.141**	**4.3519.00.161**	**4.3519.00.167**
4.3519.00.173	**4.3519.00.361**	**4.3519.00.441**	**4.3519.00.641**	**4.3519.00.740**
4.3519.00.741	**4.3519.00.761**	**4.3519.00.961**	**4.3519.01.140**	**4.3519.02.141**
4.3519.02.441	**4.3519.03.141**	**4.3519.04.441**	**4.3519.05.141**	**4.3519.05.641**
4.3519.06.441	**4.3519.09.141**	**4.3519.10.441**	**4.3519.20.141**	**4.3519.39.141**
4.3519.40.140	**4.3519.40.141**	**4.3519.40.161**	**4.3519.40.167**	**4.3519.40.173**
4.3519.40.740	**4.3519.40.741**	**4.3519.40.761**	**4.3519.53.141**	**4.3519.83.141**

specified technical data in the document: 021072/06/09; 021190/06/07; 021455/06/07; 021533/02/08

The indicated products correspond to the essential requirement of the following European Directives and Regulations:

2004/108/EC	DIRECTIVE 2004/108/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC
2006/95/EC	DIRECTIVE 2006/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits
552/2004/EC	Regulation (EC) No 552/2004 of the European Parliament and the Council of 10 March 2004 on the interoperability of the European Air Traffic Management network (the interoperability Regulation)

The indicated products comply with the regulations of the directives. This is proved by the compliance with the following standards:

Reference number	Specification
IEC 61000-6-2: 2005	Electromagnetic compatibility Immunity for industrial environment
IEC 61000-6-3: 2006	Electromagnetic compatibility Emission standard for residential, commercial and light industrial environments
IEC 61010-1: 2001	Safety requirements for electrical equipment for measurement, control and laboratory use. Part 1: General requirements

Place: Göttingen Date: 15.06.2009

Legally binding signature: issuer:

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Wolfgang Behrens, General Manager

.....
Joachim Beinhorn, Development Manager

This declaration certificates the compliance with the mentioned directives, however does not include any warranty of characteristics.
Please pay attention to the security advises of the provided instructions for use.

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