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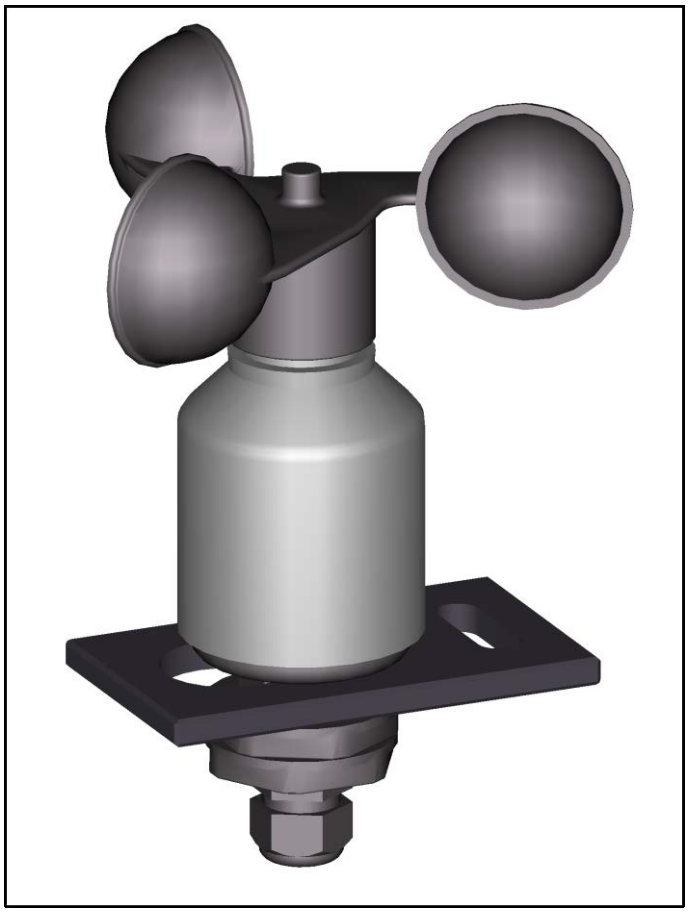
Instruction for Use
021194/02/07

Wind Transmitter - compact

4.3518.03.000
4.3519.03.000



ADOLF THIES GmbH & Co. KG
Hauptstraße 76 37083 Göttingen Germany
Box 3536 + 3541 37025 Göttingen
Phone +49 551 79001-0 Fax +49 551 79001-65
www.thiesclima.com info@thiesclima.com

Safety Instructions

- Before operating with or at the device/product, read through the operating instructions.
  This manual contains instructions which should be followed on mounting, start-up, and operation.
  A non-observance might cause:
  - failure of important functions
  - endangerment of persons by electrical or mechanical effect
  - damage to objects
- Mounting, electrical connection and wiring of the device/product must be carried out only by a qualified technician who is familiar with and observes the engineering regulations, provisions and standards applicable in each case.
- Repairs and maintenance may only be carried out by trained staff or **Adolf Thies GmbH & Co. KG**. Only components and spare parts supplied and/or recommended by **Adolf Thies GmbH & Co. KG** should be used for repairs.
- Electrical devices/products must be mounted and wired only in a voltage-free state.
- **Adolf Thies GmbH & Co KG** guarantees proper functioning of the device/products provided that no modifications have been made to the mechanics, electronics or software, and that the following points are observed:
- All information, warnings and instructions for use included in these operating instructions must be taken into account and observed as this is essential to ensure trouble-free operation and a safe condition of the measuring system / device / product.
- The device / product is designed for a specific application as described in these operating instructions.
- The device / product should be operated with the accessories and consumables supplied and/or recommended by **Adolf Thies GmbH & Co KG** .
- Recommendation: As it is possible that each measuring system / device / product may,under certain conditions, and in rare cases, may also output erroneous measuring values, it is recommended using redundant systems with plausibility checks for **security-relevant applications**.

Environment

- As a longstanding manufacturer of sensors Adolf Thies GmbH & Co KG is committed to the objectives of environmental protection and is therefore willing to take back all supplied products governed by the provisions of "*ElektroG*" (German Electrical and Electronic Equipment Act) and to perform environmentally compatible disposal and recycling. We are prepared to take back all Thies products concerned free of charge if returned to Thies by our customers carriage-paid.
- Make sure you retain packaging for storage or transport of products. Should packaging however no longer be required, please arrange for recycling as the packaging materials are designed to be recycled.

Documentation

- © Copyright **Adolf Thies GmbH & Co KG**, Göttingen / Germany
- Although these operating instruction has been drawn up with due care, **Adolf Thies GmbH & Co KG** can accept no liability whatsoever for any technical and typographical errors or omissions in this document that might remain.
- We can accept no liability whatsoever for any losses arising from the information contained in this document.
- Subject to modification in terms of content.
- The device / product should not be passed on without the/these operating instructions.

Contents

Figure

1 Models

Order - No.	Elect. Output	Meas. range	Heating power	Connection
4.3518.03.000	2 ... 573 Hz	0,5 ... 50 m/s	20 W	5 m cable LiYCY 5 x 0.25 mm²
4.3519.03.000	2 ... 630 Hz	0,5 ... 50 m/s	20 W	12 m cable LiYCY 5 x 0.25 mm²

Lieferumfang:
- Wind Transmitter
- Counter Support
- Instruction

2 Range of Application

The wind transmitter detects the horizontal wind speed. The measured values are available at the output as frequency, proportional to the wind speed, 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.

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, proportional to the wind speed, available as output signal.
The outer parts of the instrument are made of corrosion-resistant materials. Labyrinth gaskets protect the parts inside the instrument against precipitations.

4 Preparation for Use

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.

Attention:

The device may only be supplied with a power supply of the "Class , 2, limited power".

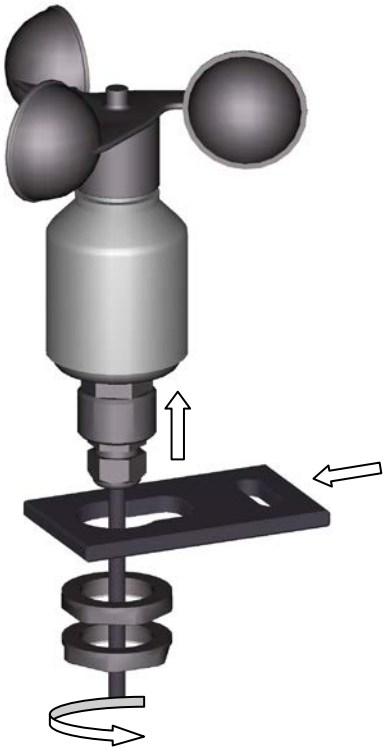
5.1 Mechanical Mounting

4.3518.03.000
4.3519.03.000

Mounting can be carried out, for ex. on a traverse with a bore hole of ∅ 29 mm. In doing so, the counter bracket shall be put above the hexagon of the sensor in a way, so that it cannot turn out of position. Both parts are put together into one bore hole, and are screwed tight by means of the counter nuts. Thereby, an additional screw can be mounted through the slot of the counter bracket in order to prevent the sensor from turning our of position.

The connecting cable or the connector is guided through the boring, and the wind transmitter is fixed with a hexagon nut (WO 36).

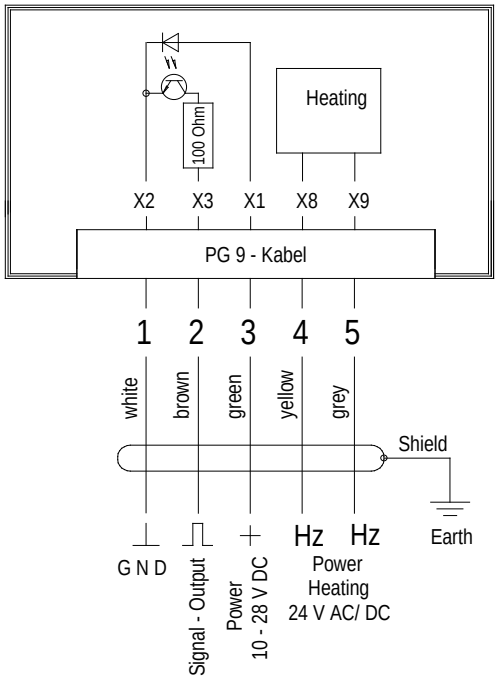
Caution: ***The Hexagon nuts must be tightened to 6 Nm.***

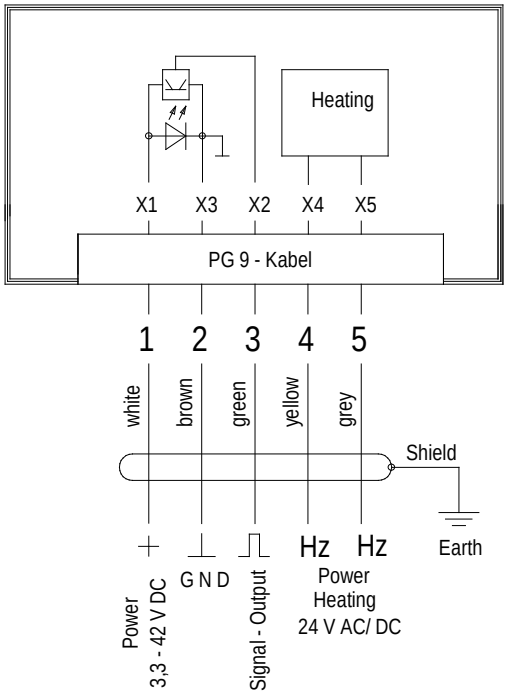


5.2 Electrical Mounting

For electrical connection please refer to the connecting diagram.

5.2.1 Connecting Diagram

Bestell – Nr. 4.3518.03.000	

Bestell – Nr. 4.3519.03.000	

6 Technische Daten

	Windtransmitter 4.3518… open collector sink	**Windtransmitter 4.3519… low power**
Measuring Range	0,5...50 m/s	0,5...50 m/s
Starting velocity	0,5 m/s	0,5 m/s
Accuracy	± 0.5 m/s or ± 3 % of measuring value	± 0.5 m/s or ± 3 % of measuring value
Delay distance	<3,5 m (DIN ISO17713-1)	<3,5 m (DIN ISO17713-1)
Measuring principle	opto-electronic (slotted disc)	opto-electronic (slotted disc)
Electrical output: Pulse form Resolution Characteristic	2...573 Hz rectangle 10 pulses / revolution 0,5 m/s = 2 Hz ; 50 m/s = 573 Hz V [m/s] = 0,08669 • f [Hz] + 0,32 (see Diagram 1)	2...630 Hz rectangle 11 pulses / revolution 0,5 m/s = 2 Hz ; 50 m/s = 630 Hz V [m/s] = 0,07881 • f [Hz] + 0,32 (see Diagram 2)
Amplitude	U_{max} ≤ 30 V	= V_{cc}, max. 15V
Signal output load	max. 100 mA	R > 1KΩ (output with 220Ω in seria) C < 200nF (corresponds to<1Km of instr.cable)
Electrical supply for Electronics (V_{cc} Current consumption	U: 10 - 28 V DC I : 20 mA	U: 3,3...42 V DC I : < 1 mA
Electrical supply for heating 4.351x.**00**.xx0	U: 24 V AC/DC,45...65Hz P: max. 20 W I : 0,83 A	U: 24 V AC/DC,45...65Hz P: max. 20 W I: 0,83 A
4.3519.**40**.000	----------	U. 24 V AC/DC,45...65Hz P: max. 60W I : 2,5 A
Ambient temperature	- 40 °C...+ 70 °C	- 40 °C...+ 70 °C
Survival speed	maximally 80 m/s, 30 minutes	maximally 80 m/s, 30 minutes
Connection	See model	See model
Dimensions	See dimensional drawing	See dimensional drawing
Mounting	For ex. Onto a mast tube with boring thread Pg 21 or boring ∅ 29 mm	For ex. Onto a mast tube with boring thread Pg 21 or boring ∅ 29 mm
Protection	IP 55	IP 55
Weight	0.40 – 0.75 kg depending on model	0.40 – 0.75 kg depending on model
Material Housing Cupstar Bottom	 Aluminium (AlMgSi1) Synthetic, with fibre glass (PC-GF10) Synthetic (POM H2320)	 Aluminium (AlMgSi1) Synthetic, with fibre glass (PC-GF10) Synthetic (POM H2320)

7 Dimensional Drawing

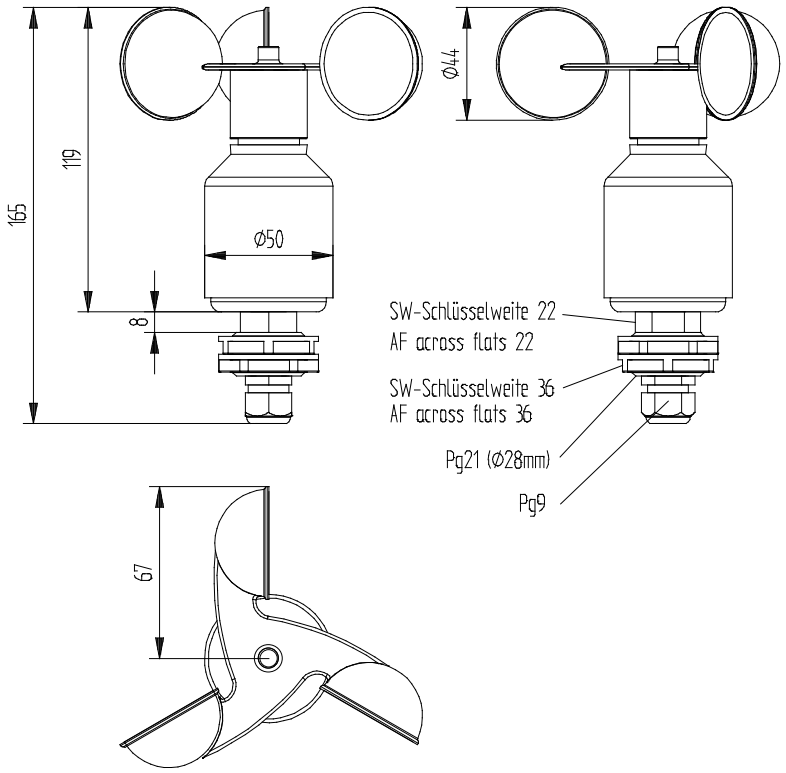


Figure 1: Wind Transmitter

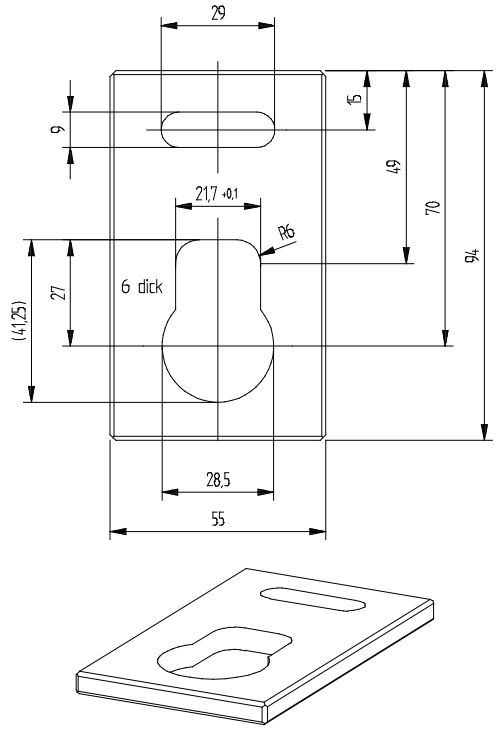


Figure 2: Counter Support

8 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.

Cleaning
For the cleaning of the device should use a damp cloth without chemical cleaning agents are used

9 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.

10 EC-Declaration of Conformity

Document-No.: **001227** Month: 06 Year: 08

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

Hauptstr. 76
D-37083 Göttingen
Tel.: (0551) 79001-0
Fax: (0551) 79001-65
email: Info@ThiesClima.com

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

Article No.				
	4.3518.00.000	**4.3518.00.120**	**4.3518.00.150**	**4.3518.00.700**
	4.3518.03.000	**4.3518.10.110**	**4.3519.00.000**	**4.3519.00.001**
	4.3519.00.150	**4.3519.00.200**	**4.3519.00.700**	**4.3519.00.701**
	4.3519.03.000	**4.3519.10.000**	**4.3519.10.200**	**4.3520.00.000**
	4.3520.00.120	**4.3520.10.000**	**4.3520.10.120**	**4.3520.10.300**
	4.3520.10.500			

specified technical data in the document: **021093/02/08; 021192/02/07; 021393/06/04**

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: 25.06.2008

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.

ADOLF THIES GmbH & Co. KG
Hauptstraße 76 37083 Göttingen Germany
P.O. Box 3536 + 3541 37025 Göttingen
Phone +49 551 79001-0 Fax +49 551 79001-65
www.thiesclima.com info@thiesclima.com