

## Instruction for Use

021552/11/07

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# ***Wind Transmitter***

***Output: Reed contact***

**4.3712.xx.00x**



### **ADOLF THIES GmbH & Co. KG**

Hauptstraße 76

Box 3536 + 3541

Phone ++551 79001-0

[www.thiesclima.com](http://www.thiesclima.com)

37083 Göttingen Germany

37025 Göttingen

Fax ++551 79001-65

[info@thiesclima.com](mailto:info@thiesclima.com)

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## **1 Models**

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<b>Order-No.</b>	<b>Measuring range</b>	<b>Electrical Output</b>	<b>Heating</b>
4.3712.10.000	0,5...50 m/s	Reed contact 0... 23,7 Hz	w/o
4.3712.10.001	0,5...50 m/s	Reed contact 0... 47,4 Hz	w/o
4.3712.22.000	0,5...50 m/s	Reed contact 0... 23,7 Hz	24V / 20W
4.3712.22.001	0,5...50 m/s	Reed contact 0... 47,4 Hz	24V / 20W

## 2 Application

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The wind transmitter is designed for the acquisition of the horizontal wind direction. The measuring value is output as frequency which is proportional to the wind speed. The measuring data available are ideally adapted to the supply in display instruments, recording instruments, datalogger, as well as process control systems.

For winter operation, the instrument is equipped with an electronically regulated heating system in order to guarantee a smooth running of the ball bearings and to avoid ice-formation at the shaft and slot.

Power supply unit, Order no. 9.3388.00.000 provides the transmitter and the heating system with current.

It is advisable to attach Lightning rod, Order no. 4.3100.99.000 in areas with considerable lightning activity.

## 3 Construction and Mode of Operation

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The cup star is set into rotation by the wind. An axis, running in friction bearings, is fixed at the cup star, and leads one / two magnets through a Reed-contact. The pulses thus produced are available as output signals.

The outer parts of the instrument are made of corrosion-resistant anodised aluminium. Labyrinth gaskets and O-rings protect the sensitive parts inside the instrument against humidity and dust.

The instrument is mounted onto a mast tube; the electrical plug-connection is located in the transmitter shaft.

The following parts are included in delivery:

- 1 Case
- 1 Cup star
- 1 Connection plug

## 4 Recommendation Site Selection / Standard Installation

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According to international regulations, the surface wind should be measured at a height of 10 m above flat, open terrain, in order to achieve comparable values. An open terrain is defined as terrain where the distance between the wind-measuring instrument and the next obstacle is at least ten times the height of this obstacle (see VDI 3786, Part 2). If the regulation cannot be adhered to, the measuring instrument should be installed at a height at which the measurement values are not influenced by any local obstacles. In any case, the measuring instruments are to be installed at a height of 6 to 10 m above the mean height of the buildings or trees in the vicinity. If it is necessary to install the instrument on a roof, it should be installed in the centre of the roof in order to avoid any preferential directions.

## 5 Installation

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**Attention:**

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

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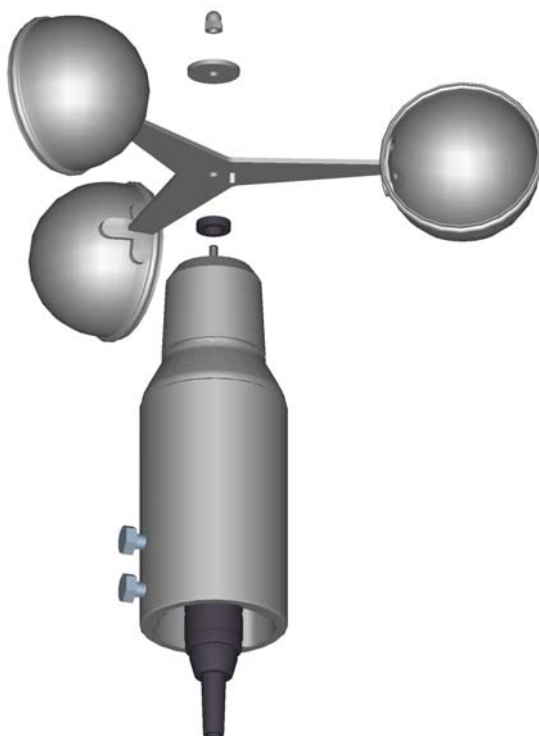
**Remark:**

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

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### 5.1 Mounting of the cup star

Unscrew the cap nut (SW 8) from the wind velocity sensor case and remove the disk. Keep the rubber sealing washer in the protection cap. Set the cup star into position in such a way that the dowel pin in the cup star catches in the nut of the protective cap. Replace the disk and re-screw the cap nut. Hold the transmitter on the protective cap not on the cup.



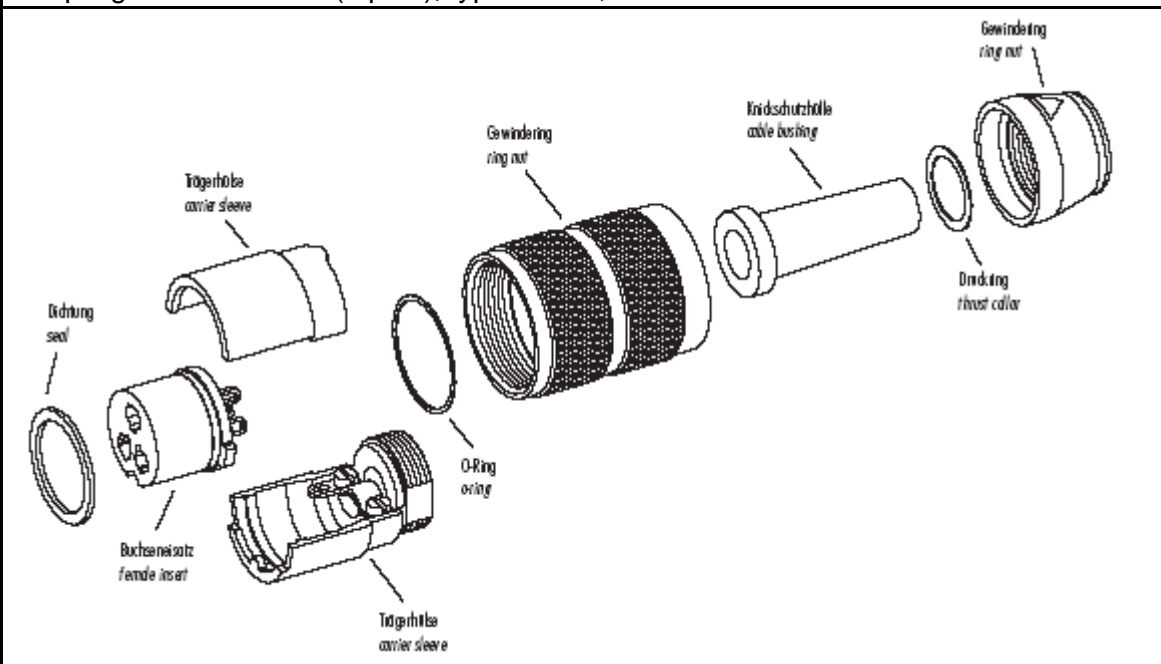
## 5.2 Electric Mounting

A shielded cable with a diameter of 5..8 mm and a core section of 0,5...0,75 mm<sup>2</sup> must be soldered on to the enclosed plug.

- The number of required cores, and the PIN assignment is stated in the connection diagram (chapter 8)..

Cable recommendation	
Type/ No. of cores /Diameter	Cable diameter
LIYCY 4 x 0,75 mm <sup>2</sup>	ca. 7 mm

Coupling socket 201041 (5 pole), type Binder, series 691



1. Removing Coupling socket
2. Stringing coupling socket on cable
3. Cutting cable sheath and shield 20 mm
4. Putting uncovered shield backwards onto the cable sheath
5. Stripping uncovered cable cores 5 mm
6. Pushing shrink hose over cable cores
7. Soldering stripped cable cores onto the solder flag, pushing shrink hose over the soldering afterwards, and shrinking it.
8. Fastening cable in the carrier sleeve by means of the clamp.
9. Mount coupling socket

### 5.3 Mechanical Mounting

Mount the transmitter to a short piece of pipe of R 1½" (Ø 48 mm) and a length of 50 mm. The short piece of pipe must have an internal diameter of at least 36 mm as the wind transmitter must be connected electrically with a plug from below. Once the electrical connection has been carried out, set the wind transmitter onto the short piece and fasten it to the shaft with the two hexagonal screws.

## 6 Maintenance

If properly installed, the instrument requires no maintenance. Heavy pollution can lead to blockage of the slot between the rotating and the stable parts of the transmitter. Thus it is advisable to remove the accumulated dirt from the instrument.

**Remark:**

*Please use only original packing for transporting the instrument.*

## 7 Connecting Diagram

<p>Order- No.</p> <p>4.3712.10.000*</p> <p>4.3712.10.001*</p> <p>4.3712.22.000</p> <p>4.3712.22.001</p>	<p style="text-align: center;">4.3712.22.000 / 001 5 pol. Plug</p> <p style="text-align: center;">Hz Hz</p> <p style="text-align: center;">1 2 3 4 5</p> <p style="text-align: center;">Hz Hz</p> <p style="text-align: center;">Erth</p> <p style="text-align: center;">Contact max 24 V 0,4 A 10 W</p> <p style="text-align: center;">Heating 20 W 24 V AC/DC</p>	<p>View on the soldered side of the coupling socket</p>
<p><b>Attention:</b></p> <p>*Without heating, Pin 4 and 5 not connected</p>		

## 8 Technical Data

### **Remark:**

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

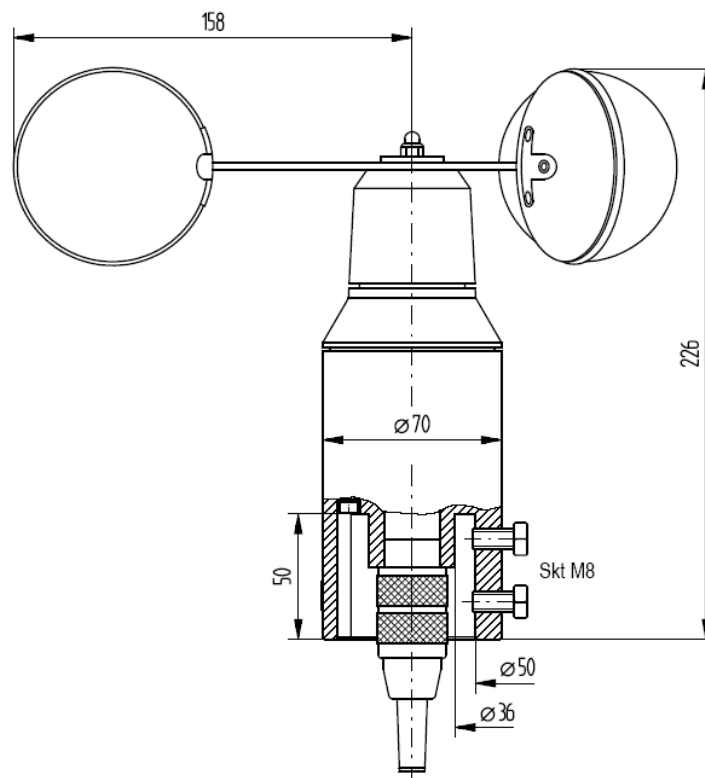
Order-No.	4.3712.10.000	4.3712.22.000
Measuring range	0,5 ... 50 m/s	0,5 ... 50 m/s
Starting velocity	0,5 m/s	0,5 m/s
Max. load	60 m/s	60 m/s
Accuracy	± 0,3 m/s resp. 3 % of measuring value	± 0,3 m/s resp. 3 % of measuring value
Electrical output		
Reed contact	23,7 Hz @ 50m/s)	23,7 Hz @ 50m/s)
Reed contact -load	24 V DC / 0,4 A	24 V DC / 0,4 A
Resolution	2,2 m wind run	2,2 m wind run
Windlast bei 35 m/s	ca. 10N	ca. 10N
Distance constant	5 m	5 m
Ambient temperature	-35... +80°C	-35... +80°C
Heizung	Not applicable	24 V AC/DC, 20 W; electronically regulated
Connection	5 pole plug connection	5 pole plug connection
Mounting	onto mast tube 1½", e.g. DIN 2441	onto mast tube 1½", e.g. DIN 2441
Protection	IP 55	IP 55
Weight	1 kg	1 kg

Order-No.	4.3712.10.001	4.3712.22.001
Measuring range	0,5 ... 50 m/s	0,5 ... 50 m/s
Starting velocity	0,5 m/s	0,5 m/s
Max. load	60 m/s	60 m/s
Accuracy	± 0,3 m/s resp. 3 % of measuring value	± 0,3 m/s resp. 3 % of measuring value
Electrical output		
Reed contact	47,4 Hz @ 50m/s)	47,4 Hz @ 50m/s)
Reed contact -load	24 V DC / 0,4 A	24 V DC / 0,4 A
Resolution	1,1 m wind run	1,1 m wind run
Windlast bei 35 m/s	ca. 10N	ca. 10N
Distance constant	5 m	5 m
Ambient temperature	-35... +80°C	-35...+80°C
Heizung	Not applicable	24 V AC/DC, 20 W; electronically regulated
Connection	5 pole plug connection	5 pole plug connection
Mounting	onto mast tube 1½", e.g. DIN 2441	onto mast tube 1½", e.g. DIN 2441
Protection	IP 55	IP 55
Weight	1 kg	1 kg

Measuring range [ m/s ]	4.3712.xx.000 [ Hz ]	4.3712.xx.001 [ Hz ]
0,5	0,2	0,3
1,0	0,4	0,8
5,0	2,3	4,6
10,0	4,7	9,3
15,0	7,0	14,1
20,0	9,4	18,8
25,0	11,8	23,6
30,0	14,2	28,3
35,0	16,6	33,1
40,0	18,9	37,9
45,0	21,3	42,6
50,0	23,7	47,4

Table 1: Electrical output

## 9 Dimensional Drawing



# 10 EC-Declaration of Conformity

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Month: 06 Year: 08

Manufacturer: **ADOLF THIES GmbH & Co. KG**

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

Description of Product: **Wind Transmitter classic**

Article No.                    **4.3712.10.000**                    **4.3712.10.001**                    **4.3712.22.000**                    **4.3712.22.001**

specified technical data in the document: **021551/11/07**

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: 30.06.2008

Legally binding signature:

issuer:

.....  
Wolfgang Behrens, General Manager

.....  
Joachim Beinhorn, Development Manager

This declaration certifies 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 ++551 79001-0      Fax ++551 79001-65  
[www.thiesclima.com](http://www.thiesclima.com)      [info@thiesclima.com](mailto:info@thiesclima.com)



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