

























## 1.4 Electrical Installation for Ultrasonic Anemometer with Screwed Cable Gland

The ultrasonic anemometer is equipped with a fix-connected cable by means of a screwed cable gland. The cable end is open. The core ends are marked by means of pin numbers on cable marking rings.


### 1.4.1 Cable Pin Assignment (Examples of function)

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**Remark:**

*For exact allocation of function please refer to supplement "Factory Settings"  
The pins 1 – 6 (incl.) are galvanically isolated from the supply voltage and from housing.*

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<ul style="list-style-type: none"> <li><b>Cable assignment:</b> <b>Analogue outputs, serial interface halve-duplex</b></li> </ul>			
Pin	Colour Code	Assignment	Function
1	white	WG	Analogue output wind velocity
2	green	TXD- / RXD-	Serial interface
3	black 1	ADIO	Heating control
4	brown	WR	Analogue output wind direction
5	yellow	TXD+ / RXD+	Serial interface
6	black 2	AGND	Ground for analogue output and serial interface
7	black 3	AC/DC	Supply, reverse-polarity protected
8	black 4	AC/DC	Supply, reverse-polarity protected
	green / yellow	shield	

## 2 Maintenance

As the instrument does not have moving parts, i.e. is not subject to wear during operation, only minimal servicing is required. Given that the sensor surfaces are normally kept clean by rain, it will only be necessary to occasionally remove residues from the sensor surfaces in regions with very little rain. Cleaning can be carried out as required using non-aggressive cleaning agents in water and a soft cloth during routine checks.

### **Attention:**

***During storage, installation, de-installation, transport or maintenance of the anemometer it must be ensured that no water gets into the shaft and connector or cable gland of the anemometer.***

## 3 Warranty

Damage caused by improper handling or external influences, e.g. lightning, do not fall under the warranty provisions. The warranty entitlement expires if the instrument is opened.

### **Important:**

***The ultrasonic anemometer must be returned in the original packaging as the warranty entitlement otherwise expires with mechanical damage, e.g. deformation of measuring arms.***

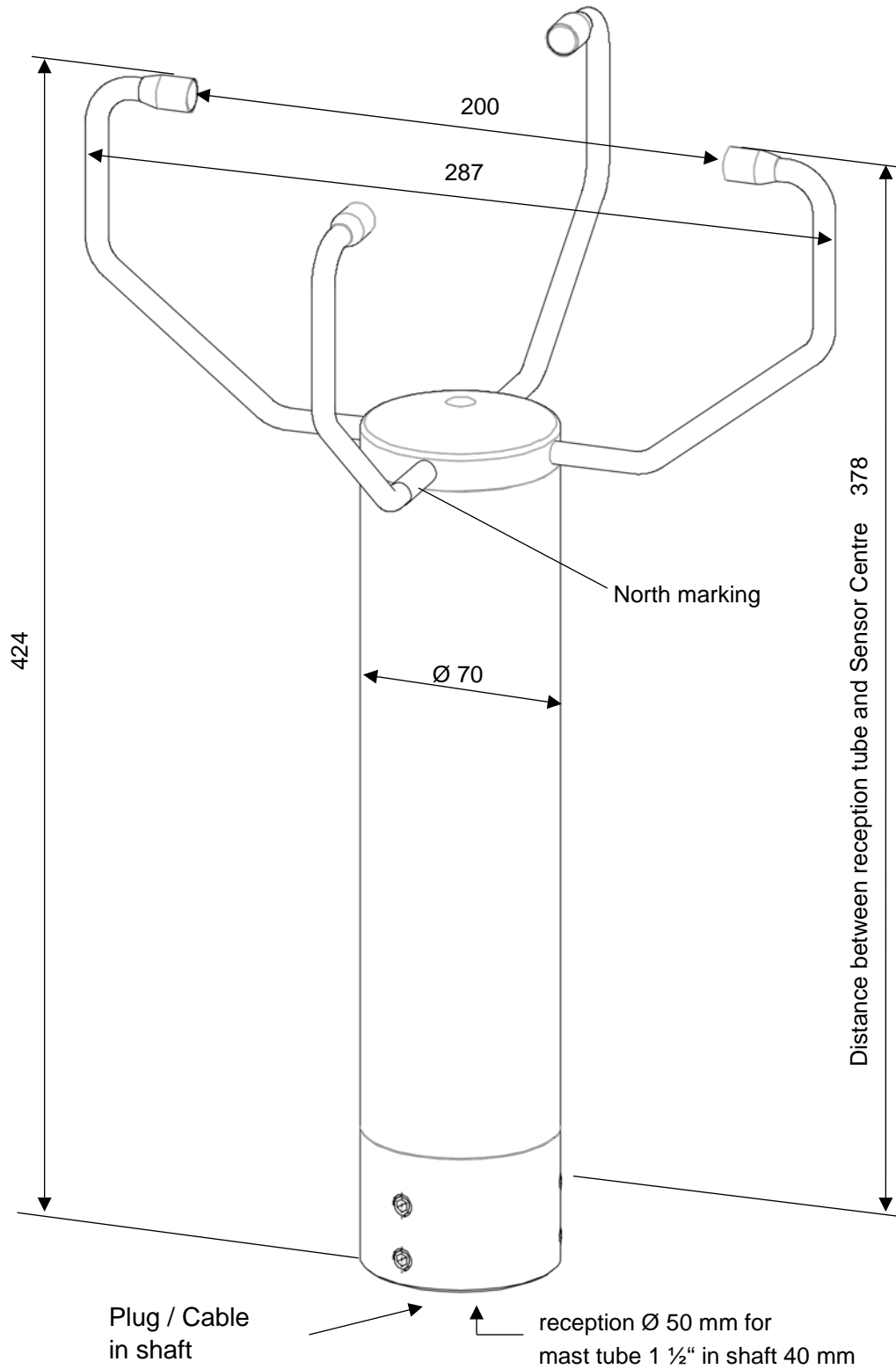
## 4 Technical data

<b>Wind velocity</b>	Measuring range	0.01 ... 85m/s (Starting threshold: 0,01m/s) Scaling of analog output freely selectable.	
	Accuracy	<= 5m/s:	±0,1m/s (rms, mean over 360°)
>5m/s:		±2% of meas. value (rms, mean over 360°)	
	Resolution	0.1m/s:	In the telegrams: No. 1 to 5, 7 to 9, 11 to 13
		0.01m/s:	in the user-defined telegrams: (Nr. 6)
<b>Wind direction</b>	Measuring range	0 ... 360° (0 ... 540 °, 0 ... 720 ° for analogue output, adjustable)	
	Accuracy	± 1.0°	
	Resolution	1°:	In the telegrams: No. 1 to 5, 7 to 9, 11 to 13
<1°:		in the user-defined telegrams: (No. 6)	
<b>Virtual temperature</b>	Measuring range	-50 .... + 70°C	

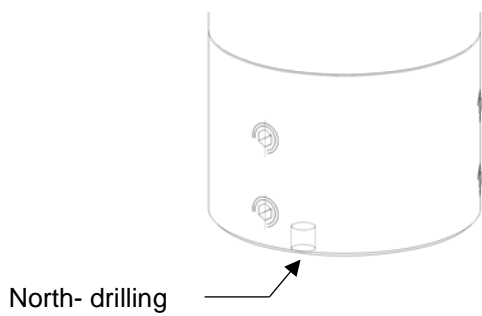
	Accuracy	±0.5K to 35m/s
	Resolution	0.1K (in the telegrams No. 1 to 5, 07 to 9, 11 to 013)
<b>Data output digital</b>	Interface	RS 485 / RS 422
	Baud rate	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800, 921600 adjustable
	Output	Instantaneous values, wind velocity / direction and acoustic-virtual temp. Sliding mean values 0.5sec..100min freely selectable Standard deviation for wind velocity /direction and acoustic-virtual temp. Predefined data telegrams or user-defined data telegram.
	Output rate	1 per 1msec to 1 per 60 seconds adjustable in msec steps
	Status identification	Heating, failure of measurement path , ΔT path temperatures
<b>Data output analogue</b>	Electr. output	0 ...+20mA / 0 ... +10V or 4 ... +20mA / 2 ... +10V Wind velocity, wind direction and virt. temperature
		Burden on current output maximum 500Ω
		Burden on voltage output minimum 4000Ω
	Output	Instantaneous values Sliding mean values 0.5sec..100min freely selectable
	Output rate	Updating rate 7.5 up to 256msec adjustable
	Resolution	16bit
<b>Analogue inputs</b>	Number	Up to three analog inputs possible (3 x standard, 2 x add. configurable after consulting manufacturer)
	Resolution	16bit
	Sampling rate	0.1 ... 100Hz per channel
	Input range	0 to + 10,0V
	Data processing	Output of measured values in user-specific telegram
	Accuracy	±1,0% of meas. value in the range -40 ... +70°C
	Linearity integral Effective noise free bits	INL: typ. < 6 LSB Typ. 14bit* *with DC-supply for avoiding dynamic crosstalk in the connecting line
<b>General</b>	Internal measuring rate	Up to 400 measurements per second at +20 °C
	Bus mode	Bus mode with up to 99 instruments possible
	Program update	Program update possible in bus mode
Ambient condition	Temperature	Operating temperature -50 ... + 80°C heated -30 ... + 80°C unheated Storing -50 ... + 80°C Measuring operation possible with heating down to -75°C
	Rel. humidity	0 ... 100% r.h.
Operating voltage	Supply electronics - w/o heating operation	U: 8 ...78VDC or 12 ...55VAC, 45 ...65Hz P: typ. 1.5VA , max. 2.5VA
(with 4.382x.0x.xxx)	Supply: electronics + heating - with heating operation of US-arms	U: 24VAC/DC ±15%, 45 ... 65Hz P: typ. 80VA , max. 90 VA @ 24V
(with 4.382x.3x.xxx)	Supply: electronics + heating	U: 24VAC/DC ±15%, 45 ... 65Hz P: typ. 85VA , max. 90 VA @ 24V

	- with heating operation of US-arms and US-converter	
(with 4.382x.4x.xxx)	Supply: electronics + heating - with heating operation of US-arms US-converter and housing	U: 48 VAC/DC $\pm 15\%$ , 45 ... 65Hz P: typ. 280VA , max. 310VA @ 48V
(with 4.3820.34.317)	Supply: electronics + heating - with heating operation of US-arms and US-converter	U: 2 x 24VAC/DC $\pm 15\%$ , 45 ... 65Hz P: typ. 85VA , max. 90VA @ 24V separated in 1 x max. 10VA and 1x max. 80VA
(with 4.382x.34.398)	Supply: electronics + heating - with heating operation of US-arms US-converter and housing	U: 2 x 24VAC/DC $\pm 15\%$ , 45 ... 65Hz P: typ. 240VA @ 24V
Icing resistance	- w/o transducer heating	acc. to THIES STD 012001
Icing resistance	- with transducer heating	acc. to THIES STD 012002
	Housing material	Stainless steel (V4A)
	Installation type	Mast tube $\varnothing$ 50mm (see dimension drawing)
	Connection type	8-pole plug connection in shaft or with connected cable
	Protection	IP 67 (in case of conventional mounting and screwed and converted coupling socket (if necessary), see chapter „Preparation for operation“)
	Weight	2.5kg

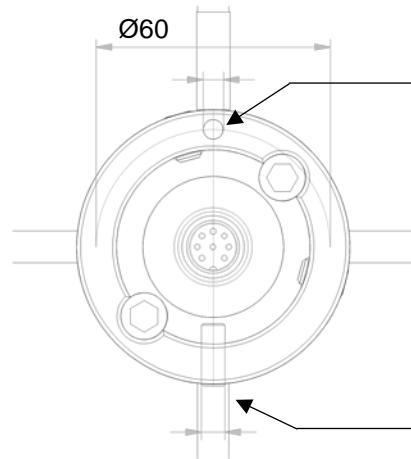
## 5 Dimension Drawing







North- drilling



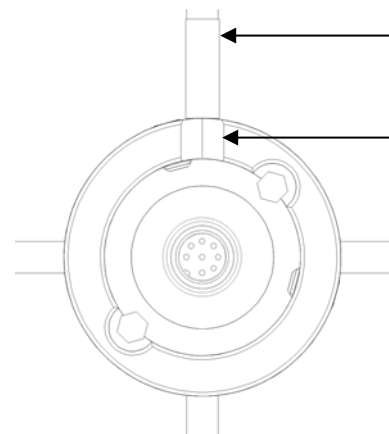
North-drilling  
 $\text{Ø} 5,1 +0,1$   
8mm deep

South-drilling  
 $\text{Ø} 6; 10\text{mm}$   
bottom-up

Bottom views



North- notch



North- marking

North-notch  
11mm wide  
 $60^\circ$  9,5 deep

Bottom views

## 6 More Information / Documents as download

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Further information can be found in the short instructions for use. These document and also the instruction for use are available for download under the following links.

Short instruction for use

[https://www.thiesclima.com/db/dnl/4.382x.xx.xxx\\_US-Anemometer-2D\\_e\\_short.pdf](https://www.thiesclima.com/db/dnl/4.382x.xx.xxx_US-Anemometer-2D_e_short.pdf)

Instruction for use

[https://www.thiesclima.com/db/dnl/4.382x.xx.xxx\\_US-Anemometer-2D\\_e.pdf](https://www.thiesclima.com/db/dnl/4.382x.xx.xxx_US-Anemometer-2D_e.pdf)

**Please contact us for your system requirements.  
We advise you gladly.**

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