

- Robust wind vane for highest demands
- Potentiometric wind direction sensor
- High quality potentiometer 0 ... 2 kΩ
- Full Range 0 ... 360°, no North gap



Measurement principle

With the help of a potentiometer the physical property is converted into an analogue resistor output signal. At zero the transducer has to pass the „north transition“ between the margins of zero and 2 kΩ. Wind direction signal conditioning and data processing in all Ammonit data acquisition systems carefully pays attention to this speciality. The wind vane is equipped with an electronically regulated heating system in order to prevent ice from the bearings. To use this heating the connection cable must have additional cores and you should provide a sufficient power supply (mains connection).

Heating

The surface temperature of housing neck is > 0 °C at 20 m/s up to -10 °C air temperature. At 10 m/s up to -20 °C the Thies icing standard 012002 on the housing neck is applied. The heating is regulated with a temperature sensor.

Mounting

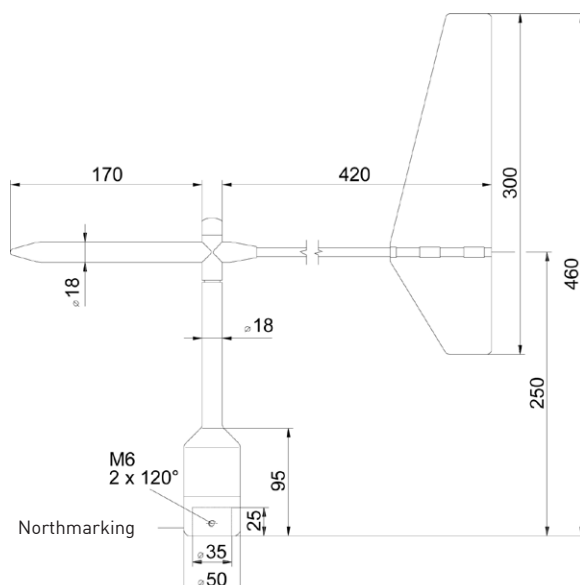
Mount the transmitter onto a pipe socket of R1" (Ø 33,5 mm) and a length of at least 25 mm. The pipe socket must have an internal diameter of at least 25 mm. The wind transmitter will be connected electrically with a plug from below. After connection the wind transmitter is put onto the pipe socket, and is fixed at the mast or hanger by means of 2 threaded pins (female hexagon 3 mm).

To avoid damage due to lightning, a protection rod and proper grounding of all metal parts is to be recommended.

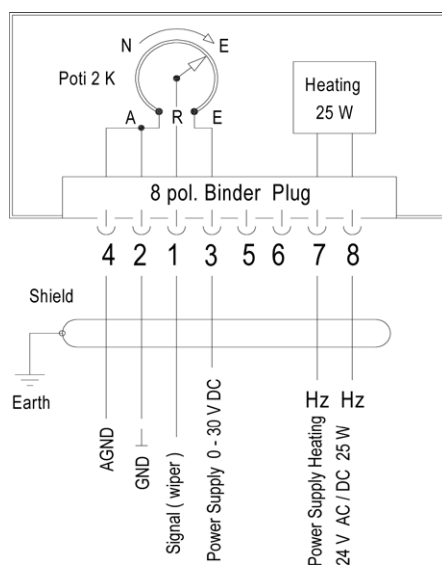
Maintenance

When mounted properly, the wind vane operates almost maintenance-free. Dust or dirt may clog the space between the rotating parts and the shaft. Therefore you should check for plausibility of measurement results at regular terms and clean the device if necessary. In true long-term operation (years) the bearings may be subject to wear and tear showing delayed start-up behaviour or even stand-still of the vane. Should such a defect occur we would recommend that you return the instrument for repairs.

Dimensional Drawing



Characteristic	Description / Value
Measuring range	0 ... 360 ° without north gap
Measuring accuracy	±1°
Survival speed	90 m/s to 0.5 h (without damages)
Ambient temperature	-50 ... +80°C (all occuring conditions of relative humidity incl. dew moistening)
Measuring principle	Potentiometer 2 kΩ
Linearity	0.25% (1°)
Starting threshold	< 0.5 m/s at 10° amplitude
Delay distance	< 1 m (acc. to ASTM D 53666 – 96)
Damping ratio	D > 0.25 (acc. to ASTM D 53666 – 96)
Quality factor	K > 1
Electr. supply Potentiometer	Voltage U _s : 0 ... 30 V DC Important: The supply voltage of the potentiometer must show a current limitation of max. 20 mA. An additional protective resistance is strongly recommended. Resistor R _v : 1.2 ... 1.5 kΩ @ Supply Voltage: 12 ... 15V
Heating	24 V AC/DC (galvanic separation from casing) Power consumption: 25 W
Connection	8-pole plug
Mast fixture	Mounting onto mast 1", e.g. DIN 2441 1½ " with separate adapter (optional)
Weight	approx. 1.3 kg
Protection	IP 55 (DIN 40050)
EMC	EN 61000-6-2:2001 (immunity) EN 55022:2001, Class B (interfering transmission)
Exchange of bearings	Recommended approx. every 24 months
Manufacturer	Thies / 4.3150.00.212
Accessories	Module M83501 (5V external supply POT)



Sensor	Plug Pin No.	Ammonit Cable Wire Colour	Meteo-40 Analog	Supply Sensor
Supply Voltage	3	white	Ax	Sense
Ground	4	blue	Bx	
Wind Direction Data	1	brown	Ax+1	
Ground	4	pink	Bx+1	
Supply	3	red		12 ... 15V / 20mA Rv: 1.2...1.5kΩ
Ground	2	black		Main Ground
Heating	7	orange, orange		24V AC/DC
	8	purple, purple		

Cable type without heating: LiYCY 6 x 0.25mm²
 Cable type with heating wires: LiYCY 10 x 0.25mm²

Connect the shield logger-sided to Ground (GND)

Last Modification: 12 October 2012