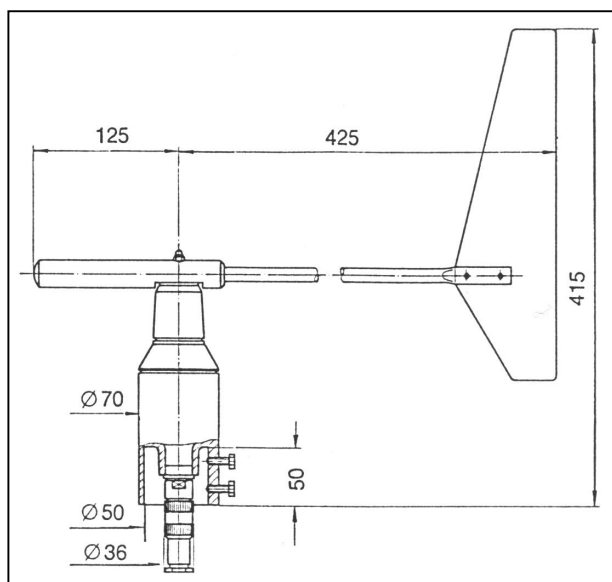


Wind Vane „classic“

Order-No: P 6220 – heatable

- Robust wind vane for highest demands
- Potentiometric wind direction transmitter
- Full Range 0 ... 360°, no north gap
- High Quality Potentiometer 0 .. 2 k Ω



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 k Ω . 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).

Mounting

Mount the transmitter on a piece of pipe with an outer diameter of 48 mm and a length of > 50 mm. The pipe must have an internal diameter of at least 36 mm as the wind vane has to be connected with a plug from below. Set the transmitter onto the pipe and fastened it with the two hexagonal screws.

Please pay attention to the proper orientation of the „N“-mark towards north.

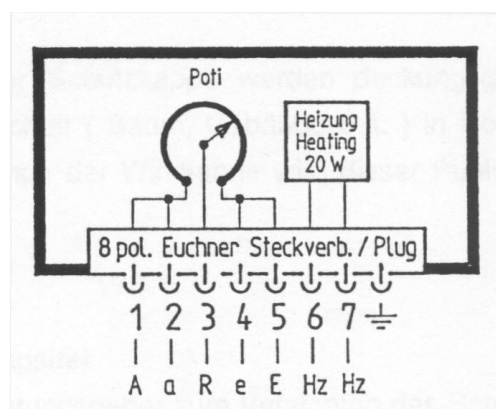
To avoid damage due to lightning, a protection rod and proper grounding of all metal parts is to be recommended.

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.

Technical Data

type	P6220
range	0 ... 360° without north gap
accuracy	± 2°
resolution	1°
damping coefficient	> 0.3
survival wind speed	max. 60 m/s
ambient temperature	-30 °C ... +70
transducer	potentiometer
<i>electrical output</i>	0 ... 2 kΩ
<i>max. power</i>	1,5 W
<i>max. voltage</i>	50 V
<i>max. current</i>	100 mA
heating	24 V AC/DC, max. 20 W
wind load at 35 m/s	ca. 10 N
connector	8-pin (Euchner SD 8)
weight sensor	1.5 kg
gross weight	approx. 4.5 kg
mast fixture	48 mm tube
exchange of bearings	recommended approx. every 24 months
manufacturer, type	Thies 4.3120.XX.012



Connection	Color of cores	Connector data logger 8-pin <plug> 12-pin	
A	white	1	G
a	brown	2	E
R	green	3	F
e	n.c.		
E	yellow	4	D
Heating 1	grey, pink, blue		
Heating 2	red, black, violet		

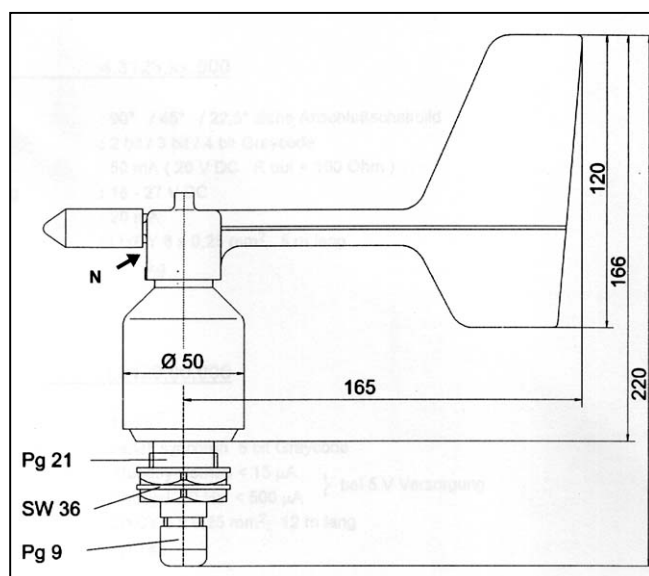
Cable type without heating cores: LiYCY 4 x 0,25 mm²

Cable type with heating cores: LiYCY 10 x 0,25 mm²

Wind Vane „compact“

Order-No: P 6240 – heatable
P 6245 – not heatable

- Potentiometric wind direction transmitter
- Full Range 0 ... 360°, no north gap
- High Quality Potentiometer 0 .. 2 k Ω



Mounting

The sensor can easily be screwed on a piece of steel tube (outer diameter 35 mm, wall thickness 5mm) with an inner thread for PG21 or mounted to a traverse with a drill of 29 mm. The sensor cable is located weather protected in the inner tube. Please pay attention to the proper orientation of the „N“-mark towards north.

When mounting the sensor please note that you never turn the sensor at the aluminium tube because this can be opened. To fix and to loosen the lock nut the sensor must be hold with a screw spanner (SW 22) above the thread!

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.

Measurement principle

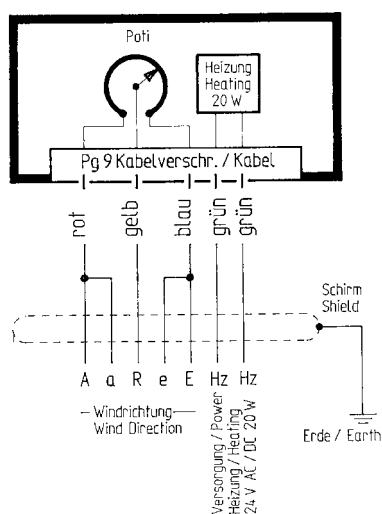
With the help of a potentiometer the physical property is converted into an analogue resistor output signal.

At zero the transducer has to pass the „north transition“ between the margins of zero and 2 k Ω . Wind direction signal conditioning and data processing in all Ammonit data acquisition systems carefully pays attention to this speciality.

The wind vane can be 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).

Technical Data

type	P6240 / P6245
Range	0 ... 360° without north gap
Accuracy	± 2°
Resolution	1°
damping coefficient	> 0.3
survival wind speed	max. 60 m/s
ambient temperature	-30 °C ... +70
transducer	resistor
<i>electrical output</i>	0 ... 2 kΩ
<i>max. power</i>	1,5 W
<i>max. voltage</i>	50 V
<i>max. current</i>	100 mA
weight sensor	0.55 kg
gross weight	approx. 1.55 kg
mast fixture	mast tube with PG 21 or drill: diameter 29 mm
exchange of bearings	recommended approx. every 24 months
manufacturer, type	Thies 4.3129.X0.012



Connection	Ammonit Cable color of cores	Connector data logger 8-pin <plug> 12-pin	
A	white	1	G
a	brown	2	E
R	green	3	F
e	n.c.		
E	yellow	4	D
Heating 1	grey, pink		
Heating 2	blue, red		

Cable type without heating cores: LiYCY 4 x 0,25 mm²

Cable type with heating cores: LiYCY 8 x 0,25 mm²

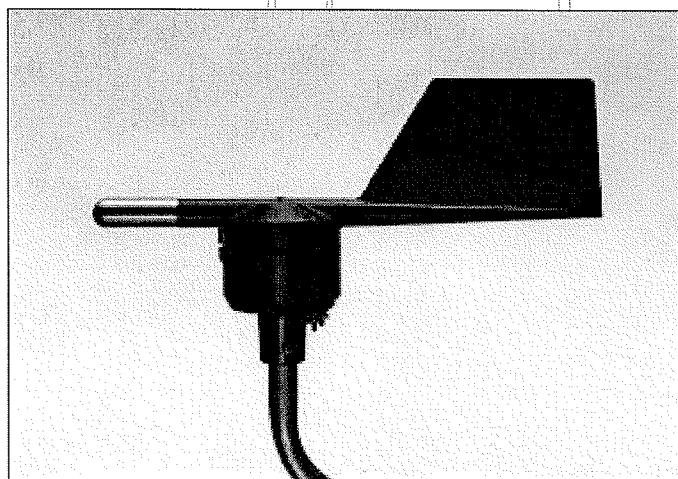
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200 SERIES WIND VANE

Wind Direction Sensor



MEASURING THE WIND'S ENERGY



■ The 200 Series Wind Direction Vane is a professional quality sensor, originally designed for use in some of the world's largest wind power plants. Its unique qualities make it ideal for use in many other applications in environmental testing and meteorology. ■ Although moderately priced, these sensors offer a level of quality and reliability often found only at a very high premium. The thermoplastic and stainless steel components resist corrosion, and contribute to a high strength-to-weight ratio. ■ As with all NRG Systems products, the 200 Series Vane is elegantly engineered, employing a minimum number of parts while maximizing functional performance. ■ The vane is directly connected to a precision conductive plastic potentiometer located in the main body. An analog voltage output directly proportional to the wind direction is produced when a constant DC excitation voltage is applied to the potentiometer. Several different yaw vane configurations are available for wind turbine control. ■ Field proven, the #200 is the wind industry de facto standard.

NRG SYSTEMS

110 Commerce Street
Hinesburg, VT 05461 USA
(802) 482-2255
FAX (802) 482-2272
Email: sales@nrgsystems.com

200 SERIES WIND VANE

Wind Direction Sensor

APPLICATIONS

- Wind direction sensor for wind data loggers
- Yaw control on wind turbines
- Environmental monitoring instrumentation
- Meteorological studies

FEATURES

- Simple mechanical construction
- Long life, professional quality potentiometer
- No slip rings or brushes result in high reliability, low cost
- Corrosion-resistant materials
- Multiple mechanical and contact seals
- No setscrews to vibrate loose
- Very stable and smooth response to wind changes
- Fully balanced sensor vane

SPECIFICATIONS

MECHANICAL:

Range: Direction—360° mechanical, continuous rotation

Sensitivity: Approx. 1 m/s (2.2 mph)

Materials:

Direction vane and housing—black UV stabilized injection molded plastic

Balance weight—stainless steel

Terminals—three #4-40 solid brass studs with nuts

Potentiometer—stainless steel shaft in two shielded precision grade, stainless steel ball bearings, conductive plastic potentiometer element mounted in a machined aluminum housing

Hardware—all stainless steel construction

Dimensions:

Overall length—21cm (8.3")

Swept diameter—27cm (10.5")

Overall height—12cm (4.3")

Vane size—6cm high x 10cm long (2.3" x 3.8")

Main housing diameter—5cm (2")

Mounting—13mm (0.5") diameter mast with cotter pin and mast set screw

Weight: 0.1kg (0.25 lb)

Shipping Weight: 0.5kg (1 lb)

ELECTRICAL:

Range:

Direction—#200: 340° electrical (20° open); #200P: 352° electrical (8° open)

Signal:

Analog DC voltage from conductive plastic potentiometer 1K(#200), 10K(#200P); linearity 1.0%, life expectancy of 50 million revolutions (2-6 years normal operation)

Power Requirements:

Regulated potentiometer excitation of 1 to 15 VDC

#200YZ YAW CONTROL WIND VANE

The #200YZ Vane is built with standard #200 Series vane and body with an opto-interrupter type switching system. This yaw control sensor has an open collector, sinking output. Switch points are +/- 10° right or left. Also will control wind turbine yaw at 90° out of the wind.

ORDERING INFORMATION:

Wind Direction Vane—1K

Cat. No. 200

Precision Wind Direction Vane—10K

Cat. No. 200P



MEASURING THE WIND'S ENERGY

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FAX (802) 482-2272

Email: sales@nrgsystems.com



Gesellschaft f. Messtechnik mbH


Paul-Lincke-Ufer 41

10999 Berlin

Tel: 030 / 612 79 54 • Fax: 030 / 618 30 60

email: ammonit@ammonit.de

Internet: <http://www.ammonit.de>

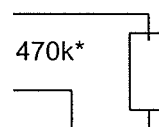
 Ammonit	Technische Dokumentation	Seite 1/ 1
Gesellschaft für Messtechnik mbH	Daten / Anschluss NRG Fahne #200P	

Technische Daten

Typ	P6260 NRG Windfahne #200P (nach Angaben des Herstellers)
Messbereich	0 ... 352° (Nordlücke 8°)
Genauigkeit	± 4°
Auflösung	1°
Wandler	Potentiometer
<i>Elektrischer Ausgang</i>	0 ... 10 k Ω
<i>max. Spannung</i>	15 VDC
Empf. Kabeltyp	LiYCY 3 x 0,25 mm ²
Masse Sensor	0,1 kg
Masse (incl. Verpackung)	ca. 0,5 kg
Hersteller, Typ	NRG Systems / USA

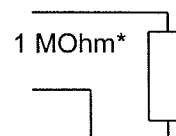
Anschluss Windcomputer „Wicom-EL“, Wicom-CM“, Wetterstationen

Windfahne	Ammonit Kabel Adernfarben	Anschluss Datenlogger 8-pol. <Buchse> 12-pol.	
Rote Markierung	braun	4	D
Mitte (Richtungssignal)	grün	3	F
Ohne Markierung	weiß	1 und 2 (brücken)	G und E (brücken)
	Schirm	8	M



Anschluss Windklassierer „Windsiter 420“

Windfahne	Ammonit Kabel Adernfarben	Anschluss Datenlogger 8-pol.
Rote Markierung	braun	4
Mitte (Richtungssignal)	grün	3
Ohne Markierung	weiß	1 und 2 (brücken)



* Damit die Signalleitung in der Nordstellung nicht offen ist empfiehlt sich der Einbau eines Widerstandes zwischen dem Richtungssignal und einem Endpunkt.