



WDA GONIO-ANEMOMETER

Sensor for measuring the direction of the horizontal component of wind



PRODUCT DESCRIPTION

The transducer is designed to acquire the direction of the horizontal component of wind, and returns an analogue electrical output proportionate to the measured value. The acquired data are made available to display and data recording tools, dataloggers and for process control systems.

For the winter period, the device is equipped with an internal electronic heater to guarantee a regular movement of the weather vane and to prevent ice from forming on the other turning parts.

The parts outside the instrument are made of corrosion-proof materials (aluminium, plastic, stainless steel). The parts in aluminium are further protected by an anodising process. Labyrinth sealing further protects the more sensitive parts against humidity.

OPERATION

The wind direction is read by a low inertia weather vane. The axis of the weather vane moves on a set of ball bearings and is equipped with a magnet on one of the two ends. The relative angle of the weather vane is scanned by a contactless angular magnet sensor that returns a voltage depending on the relative position between magnet and sensor. From here a microcontroller calculates the direction of the wind, linearising the ratio between angle and output current. Instrument for measuring the direction of the horizontal component of wind. The simple and reliable gonio-anemometer is made up of a vertical rotation axis weather vane complete with counterweights and appropriate fins that when moved by the wind makes the wiper of a potentiometer turn.

The instrument is built to meet the reliability, sturdiness and operational safety requirements even when environmental conditions are severe, so the case is in anodised "ANTICORODAL" aluminium alloy, the rotation axis runs on low friction stainless steel precision bearings and lastly, the output is on a watertight connector that meets military standards (MIL C 5015).

MAIN FEATURES

Construction materials:

the external parts of the instrument are made up of corrosion-proof materials (aluminium, plastic, stainless steel); the aluminium parts are further protected by an anodising process. Labyrinth sealing further protects the sensitive parts against humidity.

Easy maintenance:

the benefits that our anemometric sensor offers are not limited to precision, but also include quick and easy maintenance. Following installation according to specifications, the maintenance activities consist only of a periodic check of the sensor to ensure it is clean without any deposited grime.

Sturdy and reliable construction:

lastly makes it an instrument with a long lifetime, which safeguards the customer's investment. The instrument does not drift due to aging and requires no periodic calibrations.

COMPONENTS THAT CAN BE ADDED OR BE BUILT INTO THE PRODUCT

If the instrument is installed where ice may form, a 15W heater sleeve powered at 24 VAC can be installed on the instrument case.

INSTALLATION

Generally speaking, wind reading instruments have to be able to take measurements of the wind conditions in a vast area. In order to get a good reading of the horizontal component of wind motion, the device has to be installed in an area free of obstacles for at least 10 metres.

Free area means that the transducer must be placed at least 10 times the height of the closest obstacle. If this is not possible, the sensor must be installed at a height such that the nearby obstacles do not affect the measurement of the wind direction taken.

The transducer must be placed in the centre of any vegetation at the site, and not on one side. This is to prevent privileged directions from being created in the reading.

The sensor must be secured in a perfectly horizontal position, ensured using a spirit level, to prevent water from seeping into the instrument.

ALIGNMENT WITH MAGNETIC NORTH

Turn the north marking on the rotary shaft until it is aligned with the notch in the plastic case. Select an object (a tree, a house, etc.) located exactly north of the instrument post. Align the north marked on the device with the object, then tighten the fixing screws with socket head screws to lock the transducer to the relevant support.

	ETG
Sensor type	Potentiometer
Range of measurement	0...360°
Inertia	<0,4 m/s
Accuracy	±2°
Electrical output	4-20 mA
Operative temperature	.-40° C ... +70°C
Material	Aluminium (AlMgSi1) Fibreglass-reinforced polycarbonate (case)

CERTIFICATIONS AND PROTOCOLS

Certifications	Reference Standards
Electromagnetic Compatibility	IEC 61000-6-2 (immunity) IEC 61000-6-3 (interfering transmission)
Safety requirements for electrical devices	IEC 61010-1