

Ultrasonic Anemometer 2D



Description

Sensor for the inertia-free measurement of the horizontal wind speed and wind direction, and of the sonic temperature. As the sensor contains no moving parts, it is maintenance-free.

Two opposite pairs of ultrasonic transducers measure the horizontal components of the wind vector. A built-in processing unit converts the raw signals into analog signals. A serial RS422 port allows the direct connection to a PC or an industrial controller.

A built-in electronical heating prevents the sensor from getting blocked by icing.

Technical Data

Sensor

Sensing element.....	Ultrasonic transducers
Data processing	Microprocessor

Outputs

Analog	0..65 m/s	= 0/2..10 V or 0/4..20 mA
	0..360°	= 0/2..10 V or 0/4..20 mA
Digital	RS422, 1200..19200 baud	

Resolution

Wind speed	0.1 m/s
Wind direction	1°
Sonic temperature.....	0.1 °C

Accuracy

Wind speed	0.5 m/s ± 0.1 m/s
	> 5 m/s ± (2% of reading ± 0.1 m/s)
Wind direction	± 1°
Sonic temperature.....	± 0.5 °C
Starting threshold	0.1 m/s

Internal sampling rate 400 Hz at 25 °C

Output Rate

Analog signals 100 ms
 Digital 100 ms..25 s, user selectable

Power Supply

Supply voltage 12..24 VAC/DC \pm 10%
 Power consumption 3 W

Heating

Heating power Max. 70 W, electronically controlled
 Supply voltage 24 VAC/DC \pm 15%
 Current consumption Max. 3 A

Casing

Material Anodized aluminium / stainless steel
 Protection class IP 65
 Dimensions 300 x 300 x 500 mm
 Weight 2.5 kg
 Mounting The sensor mounts on a standard 1 1/2 inches pipe with \varnothing 49 mm outside diameter and > \varnothing 35 mm inside diameter

Electrical Connection

Connector (at the sensor) 16 pin circular connector

Environmental Conditions

Operating temperature -40..+70 °C
 Relative humidity 0..100%
 Maximum wind speed 65 m/s



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