

# ULTRASONIC ANEMOMETER 2D »WP«

Measurement of Wind

direction and Wind velocity:

- optimum price-performance ratio
- sturdy and reliable
- high precision
- maintenance free / heated
- digital and analogue interfaces
- compatible to standard data protocols



Especially suited for:

- Wind power plants
- Offshore applications
- Cold climate
- Building automation
- Industrial measuring technique



Order-no. 4.3880.xx.xxx

**Technical Data:**

**Ultrasonic Anemometer 2D »WP«**  
The combination of best Thies quality and high technology

- patented sensors by in-house production
- thousand-fold proven technology

The Ultrasonic Anemometer WP serves for the 2-dimensional acquisition of the horizontal components of the wind velocity and wind direction.

The following measuring values are available:

- Orthogonal wind velocity vectors (X- and Y-distance)
- Scalar or vectorial wind velocity and wind direction
- Acoustic temperature

Output format:

- NMEA data protocol \*1
- ASCII Thies-format
- MODBUS RTU protocol
- Analogue data output \*2

Compared with the classic anemometer, the measuring principle allows an inertia-free measurement of quickly-changing parameters at highest precision and accuracy.

The measuring values can be delivered digitally and / or analogously.

The instrument combines the more than 20 years' experiences with ultrasonic sensors in the field of meteorological measuring technique in the Thies company.

It has been developed especially for the application in harsh environments, and is eminently suited for the use on wind power plants thanks to the compact construction and low weight.

The serial or analogue output of the data occurs optionally as instantaneous value or as moving average value with settable time frame.

If necessary, the instrument is automatically heated at critical ambient temperatures. The risk of malfunction by freezing is thus minimized. The ultrasonic transducers are heated, as well as all essential housing components.

\*1 Protocol is compatible to other producers

\*2 only in HD (half-duplex) mode.

Patented:  
EP 1 448 966 B1,  
US 7,149,151 B2

**Wind velocity**  
Measurement range  
Resolution

0 ... 75 m/s  
0.1 m/s (standard)  
0.01 m/s (settable)  
±0.2 m/s rms (@ < 5 m/s)  
±2% rms (@ 5 ... 50 m/s)

**Wind direction**  
Measurement range

1 ... 360°, 0° @ calm  
1° (standard)  
0.1° (settable)  
±2° @ WG > 2m/s < 50 m/s

Accuracy

**Acoustic Temperature**

Measurement range  
Resolution

-40 ... +70 °C  
0.1 K

**Data output digital**

Interface  
Baud rate  
Output  
Output rate  
Status identification

RS 485 / 422 FD / HD  
1200 ... 921600 bps  
Instant. values, mean values  
0.1 ... 50 Hz  
Heating, meas. distance failure  
Distance-temperature  
ASCII (Thies format)  
MODBUS RTU, NMEA WV

Protocol

**Data output analogue**

Electrical output for WV, WD  
current output  
voltage output  
Resolution

0(4) ... 20 mA  
0(2) ... 10 V  
max. load 500 Ω  
min. load 50.000 Ω  
16 Bit

**General**

Bus operation  
Operating voltage  
Electronics

up to 99 instruments  
8 ... 40V DC / 12 ... 28V AC  
0.6 W @ Analogue output off  
24 V AC/DC, 100 W  
Supply electronics and heating separated

Heating

Electrical connection

8pole plug, compatible to instrument family US2D

Housing

seawater-proof made of stainless steel and aluminium

Temperature range

-40 ... +70 °C

Protection

IP 67

Dimensions

Ø 100 x 120 mm

Mounting

on mast tube 1" resp. 1.5"

Weight

approx. 0.9 kg (for 1" mast tube)

approx. 1.1 kg

(for 1.5" mast tube)



**ADOLF THIES GMBH & CO KG**  
Meteorology – Environmental Technology  
Box 3536 + 3541  
37025 Göttingen · Germany  
Phone + 49 551 79001-0  
Fax + 49 551 79001-65  
info@thiesclima.com

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

