

# ULTRASONIC ANEMOMETER 2D

Measurement of  
Wind direction and  
Wind velocity

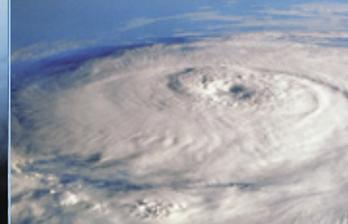
- highest precision
- maintenance free
- with heating
- digital /analogue in- and outputs

**Thies**  
**CLIMA**



Especially designed for  
use in the fields of

- meteorology
- climatology
- traffic control
- aviation
- alpine application
- flow measuring



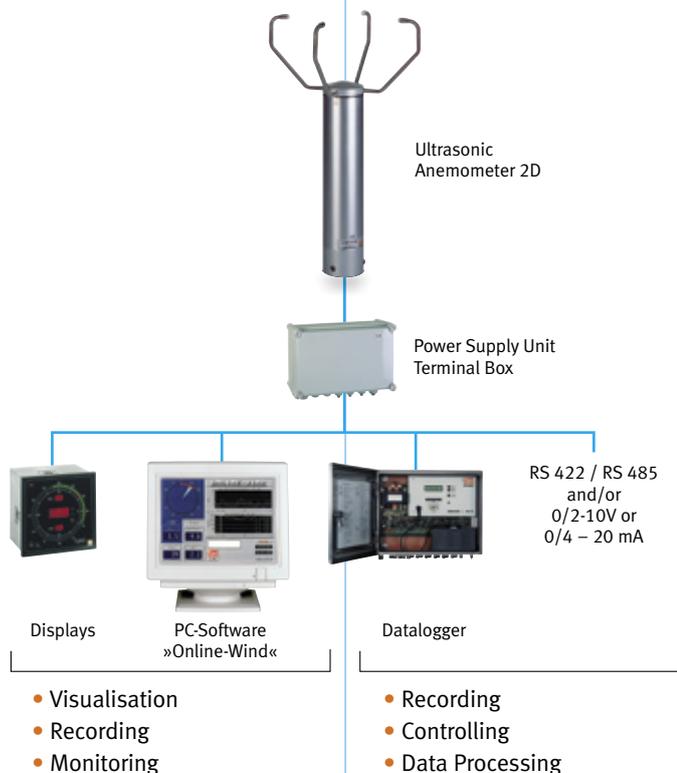
## Ultrasonic Anemometer 2D

The Ultrasonic-Anemometer detects the horizontal component of the wind speed and wind direction. The anemometer is free from wear and maintenance, and needs no further calibration. For winter operation the instrument is equipped with a heating. An alternative model with additional heating elements guarantees a reliable operation even under extreme or harsh climatic conditions. The electronics of the instrument is based on the latest DSP (digital signal processor) technology.

The measuring principle allows an inertia-free measurement of the running variable dimensions with ultimate

precision. The data output for wind direction, wind speed and virtual temperature can be effected as instantaneous or gliding mean value (VDI 3786 sheet 2), alternatively as analogue or digital signal. The averaging procedure can be set alternatively in vectorial or scalar form. Another feature is to use the analogue channels as signal input, for example for external sensors for temperature and rel. humidity.

The digital interface (RS422/485) with an integrated command interpreter allows the access to all data, and status information as well as the individual parameterisation of a user-specific output data telegram.



### Technical Data:

#### Wind speed

Measuring range 0 - 75 m/s  
Resolution < 0,1 / 0,01 m/s  
Accuracy +/- 0,1 m/s rms (0 ... 5m/s)  
+/- 2,0 % rms of m.v. (>5m/s)

#### Wind direction

Measuring range 0 -360° / 0 - 540° / 0 - 720°  
Resolution 1°  
Accuracy +/- 1°

#### Virtual temperature

Measuring range -50 ... +70 °C  
Resolution 0,1 K  
Accuracy +/- 0,5 K

#### Data output digital

Baud rate RS 422 / RS 485 FD/HD  
1200 - 921600  
Dataformat NMEA V183, or selectable  
instantaneous values  
gliding mean values  
0,5 sec ... 100 min  
Output rate 1/ms up to 60 seconds  
selectable

#### Analogue outputs

Electrical output wind direction, wind speed  
and virtual temperature  
Resolution 0/2 - 10V or 0/4 - 20 mA  
16 Bit  
instantaneous values  
gliding mean values  
0,5 sec ... 100 min  
Refresh rate 1...100 ms  
Analogue inputs 3 inputs 0 - 10 V  
Resolution 16 Bit  
Sampling rate 100 ms / channel  
Output of data in the user-specific data telegram.  
When analogue inputs are in operation, no analogue output is possible.

#### General

Internal meas. rate 1500  
measurements /second at 25 °C  
Bus operation up to 99 instruments  
Firmware can be uploaded  
Temperature range -50°C ... +70°C  
Operat. voltage 24 V AC/DC 1,5 VA typ. 80 VA  
Heating to be switched on/off by software  
Protection IP 65  
Housing V4A stainless steel  
Mounting on mast tube 1,5“



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