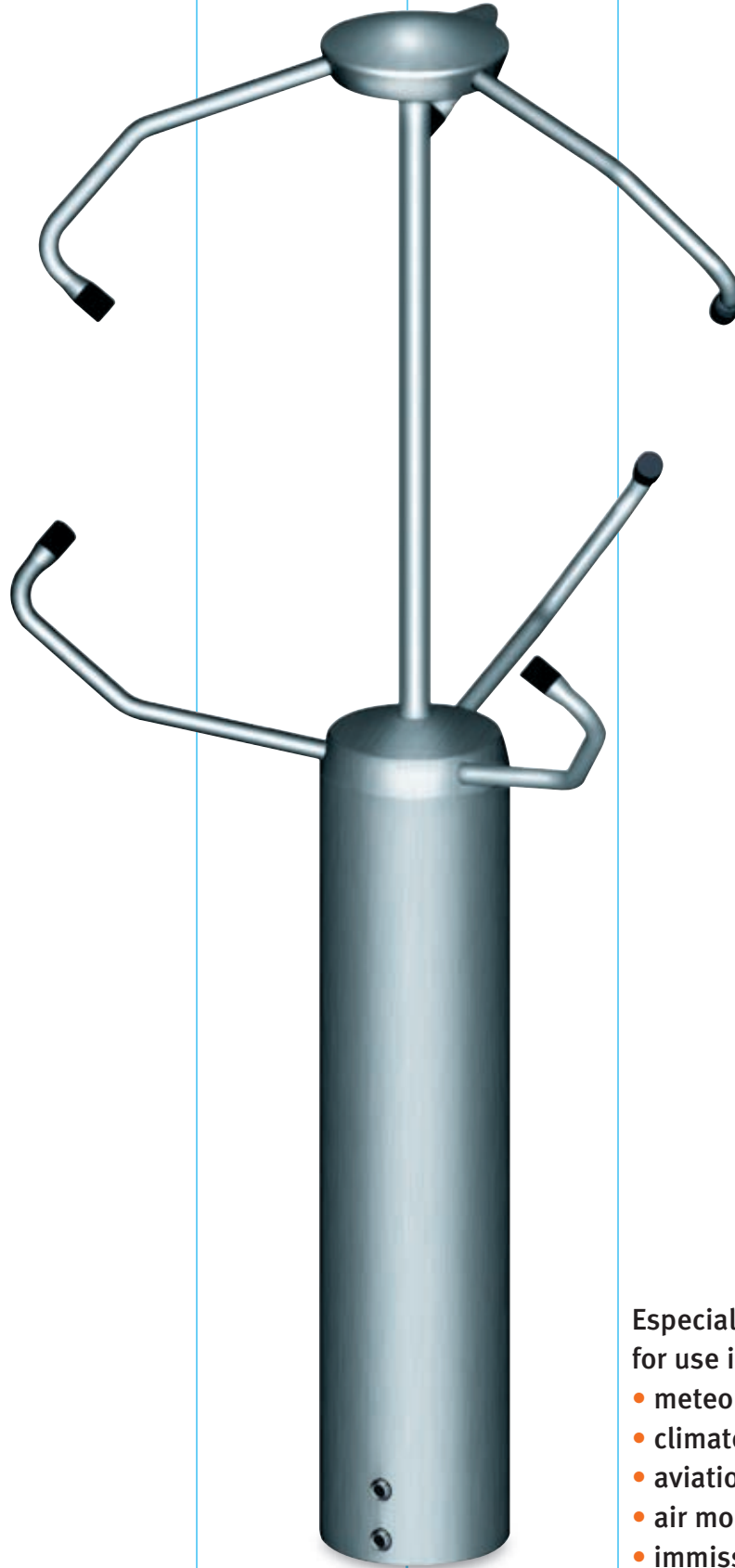


# ULTRASONIC ANEMOMETER 3D

Measurement of Wind direction and Windspeed in 3 dimensions X, Y, Z

- highest precision
- real time measurement
- maintenance free/heated
- digital/analogue in- and outputs

**Thies**  
**CLIMA**



Especially designed for use in fields of

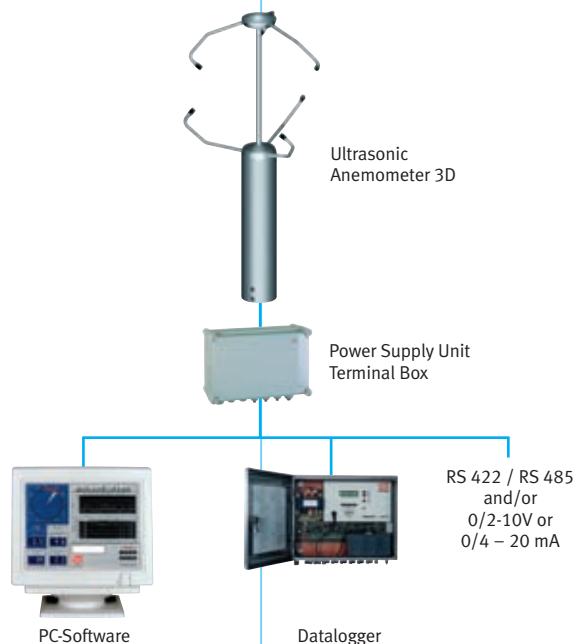
- meteorology
- climatology
- aviation
- air monitoring
- immission control



## Ultrasonic Anemometer 3D

The Ultrasonic Anemometer 3D serves for the three-dimensional measurement of the wind direction and wind speed. The anemometer is free from wear and maintenance, and needs no further calibration. For winter operation also under extreme weather conditions the instrument is equipped with a heating. In addition, the instrument calculates the acoustic virtual-temperature from the propagation times of the sound of each measurement path. Due to its maximum measurement rate, limited only by the propagation time of the sound, the instrument is especially suited for the inertia-free measurement of gusts and peak values. All calculations are carried out by a high-capacity digital

signal processor (DSP) within the propagation time of the ultrasonic signals, based on an accuracy of 32 bit. The RS485/RS422 interface allows a real-time-output of even extensive telegrams without restricting the maximum rate of measuring value acquisition. The instrument offers extensive statistic functions, such as gliding averaging, standard deviation, covariance etc., which can be selected via the digital interface. The gliding averaging can alternatively be set in vectorial or scalar form, and for each parameter equally or differently. The digital interface (RS485/422) allows the access to all data and status information of the instrument up to the writing of a user-specific output telegram.



- Visualisation
- Recording
- Monitoring

- Recording
- Controlling
- Data Processing



**ADOLF THIES GMBH & CO KG**  
 Meteorology – Environmental Technology  
 Box 3536 + 3541  
 D-37025 Göttingen  
 Phone ++ 551 7 90 01 –0  
 Fax ++ 551 7 90 01 –65  
 E-Mail info@thiesclima.com  
 www.thiesclima.com

### Technical Data:

#### Wind speed and wind direction

Measuring range:

0,01 - 65 m/s Azimuth 0° - 360°,  
 0,01 - 65 m/s Elevation 0° - 180°  
 WG +/- 0,2 m/s or 2% rms  
 WR +/- 1°  
 Wind speed = 0,01m/s angle = 1°

Accuracy:

Resolution:

#### Acoustic Virtual-Temperature

Measuring range:

-99,99 °C up to +99,99 °C  
 +/- 0,5 Kelvin in the range  
 from -40 °C to +60 °C  
 0,01 Kelvin

Accuracy:

Resolution:

#### Output of Measuring Data

Measuring rate:

1 msec up to 60 seconds,  
 settable in 1-ms-increments  
 1 ms up to 60 seconds,  
 settable in 1-ms-increments  
 RS485/RS422, FD, HD, bus mode  
 1200 up to 921600 Bps  
 3 analogue channels for output  
 of X, Y, Z vector components  
 0-10 V, 4 - 20 mA at 200 Ω load,  
 optional; 6 voltage input  
 0 - 10 V, resolution 16 Bit,  
 meas. error >0,2%.  
 ASCII Thies, NMEA 0183 Version 3,  
 user-definable, status

Output rate:

Data output digital:

Baud rates:

Analogue output:

Analogue inputs:

Output formats:

### Features

Memory:

Statistic:

for burst-measurement-mode  
 turbulence intensity, longitudinal,  
 transversal, vertical standard  
 deviation x, y, z and T (vT)  
 Co-variances: xy, xz, yz, yT, zT  
 Uploadable via serial  
 interface (RS485)

Firmware-update:

### General

Operating voltage:

12 - 24V AC/DC , power  
 consumption: 3VA, heated 70W  
 The heating can be switched  
 off, and is temperature-controlled  
 -55 °C up to +70 °C  
 IP 65  
 on mast tube 1,5"  
 V4A stainless steel und sea-water-  
 proofed anodized aluminum

Temperature range:

Protection:

Mounting:

Housing:



DIN EN ISO 9001  
 Zertifikat: 08/100/1688