

# Seizing Every Breeze

**Thies**  
**CLIMA**



Maximizing Wind Energy Efficiency  
Pitch and Yaw Control



Capture the full potential of wind with the Ultrasonic 2D Compact. This anemometer, based on best practice point-to-point measuring principle provides precise measurements of horizontal wind velocity components, wind direction, and acoustic-virtual temperature. The ice resistance and exceptionally low failure rates are evidence of the high reliability and durability of this product. The Ultrasonic Compact 2D contributes to optimizing Pitch and Yaw Control, enhancing the performance and efficiency of your wind turbine. Rely on our proven technology to activate the full potential of your wind energy system.

THE WORLD OF WEATHER DATA

# Wind Energy Efficiency

Ultrasonic 2D Compact | Ultrasonic 2D Compact Plus



## Key Criteria

- 24K instruments worldwide
- Range: 0-75 m/s
- Operating Temp.: -50...80 °C
- Measuring speed: 1000Hz
- Output rate: 100 Hz
- Ice free acc. MIL-STD-810G
- Wind Direction:  $\pm 2^\circ$  WS  $> 1$  m/s
- Wind Speed:  $\pm 0.2$  m/s rms ( $< 5$  m/s)  $\pm 2\%$  rms (5 m/s ... 60 m/s)
- Acoustic-Virtual Temp.:  $\pm 2$  K
- Air Pressure (option):  $\pm 0.25$ hPa @ 700 to 1050hPa

## Product Line

- Ultrasonic 2D Compact  
Output:  
- Seriell RS485/RS422, ASCII/MODBUS RTU  
- Analog Volt/Amp
- Ultrasonic 2D Compact Profinet  
Output: PROFINet / PROFIsave  
Ethernet TCP/IP-Schnittstelle
- Ultrasonic 2D Compact Plus  
Output seriell:  
RS485/RS422, ASCII/MODBUS RTU

## Version Ultrasonic 2D Compact Plus

- Enhanced ice resistance: Reliability in icy conditions, compliant with the strong standard MIL-STD 810G, METHOD 521.3.
- Interference-Free operation even in environments with strong electromagnetic disturbances.
- Integrated air pressure (optional): precise real-time air pressure monitoring.
- Adaptive ultrasonic level control: the ultrasonic sensors are dynamically controlled depending on the environmental situation, so that optimum signal performance is guaranteed at all times. This maximizes the service life and ensures 100% measurement quality even under the most adverse conditions.
- Enhanced self-diagnostic: Predictive maintenance for optimizing performance and minimizing downtime.
- Platform-based for versatility: Easy ordering, efficient inventory management, volume-based pricing, standardization, cost savings, and streamlined processes.

## Version Profinet

PROFINET/PROFISAFE connectivity and control for efficient communication with other systems. Web server and Ethernet TCP/IP for easy integration and access via a web interface, remote diagnostics and remote upgrades via REST API.

## Advantages

### Point-to-point principle versus reflector based anemometer:

- Highest accuracy due to the open-frame design
- No reflector means no influence from false reflections (water, dirt, insects etc.)
- Proven and reliable principle based on patented Thies CLIMA transducers
- Insensitive to micro-turbulence due to large detection range ( $\varnothing 135$ mm)
- Heating only when it matters – no cozy place for insect nests
- Fixed precision throughout lifetime: no re-calibration and precision adjustment
- No irritation by insects

