

## u[sonic]

## COMPACT SENSOR LINE

Compact all-in-one design · highest precision · flexible use

Wind direction and speed are precisely determined by ultrasonic measurement. Furthermore, air temperature, relative humidity, air pressure and global radiation are measured; the dew point is calculated. The lamella shelter of the humidity temperature sensor eliminates any undesirable weather influences and ensures even more accurate measurements.

Year-round use in all climate zones

Since the sensors do not have any moving measuring elements, they require little maintenance. The intelligent heating works depending on wind speed and direction and keeps the sensors ice-free even under extreme weather conditions. The u[sonic] series easily meets the special challenges of alpine and maritime applications.



### u[sonic]

Wind direction  
and wind speed

- ✓ Serial interfaces RS485 and SDI-12 for user-configurable output signals
- ✓ Compatible with commercially available data loggers and PLC systems
- ✓ Intelligent, integrated heating
- ✓ Sensor shelter of the TH sensor for even more precise measurements
- ✓ Easy installation with only one cable connection

With high-quality Hukseflux  
'Second Class' pyranometer

### u[sonic]WS7

7 Parameters:

- Wind direction
- Wind speed
- Temperature
- Relative humidity
- Air pressure
- Global radiation
- Dew point



### u[sonic]WS6

6 Parameters:

- Wind direction
- Wind speed
- Temperature
- Relative humidity
- Air pressure
- Dew point

All weather sensors of the u[sonic] series feature high-quality aluminum housings and are extremely robust and durable.

## Application examples



Professional meteorology ·  
Wind warning



Wind turbines  
On- and Offshore



Ship weather stations · Mea-  
suring stations in river basins



Building technology ·  
Sewage treatment plants



Traffic and industrial  
meteorology



Dams and sluices

## Technical Data

| Wind direction        |                                                        | Wind speed        |                                                                   |
|-----------------------|--------------------------------------------------------|-------------------|-------------------------------------------------------------------|
| Meas. principle:      | ultrasonic                                             | Meas. principle:  | ultrasonic                                                        |
| Measuring range:      | 0...359.9°                                             | Measuring range:  | 0...65 m/s                                                        |
| Accuracy:             | < 2° (> 1 m/s) RMSE                                    | Accuracy:         | ± 0.2 m/s RMSE (v < 10 m/s);<br>± 2 % RMSE (10 m/s < v < 65 m/s)  |
| Resolution:           | 0.1°                                                   | Resolution:       | 0.1 m/s                                                           |
| Air temperature       |                                                        | Relative humidity |                                                                   |
| Meas. principle:      | digital temperature sensor                             | Meas. principle:  | capacitive, digital                                               |
| Measuring range:      | -40...+70 °C                                           | Measuring range:  | 0...100 % r.h.                                                    |
| Accuracy:             | ± 0.1 K (0...60 °C) ; ± 0.2 K (-40...0 °C)             | Accuracy:         | typ. ± 1.5 % (0...80 %) ; ± 2 % (80...100 %)                      |
| Resolution:           | 0.1 °C                                                 | Resolution:       | 0.1 % r.h.                                                        |
| Air pressure          |                                                        | Global radiation  |                                                                   |
| Meas. principle:      | piezoresistive                                         | Meas. principle:  | thermoelectric                                                    |
| Measuring range:      | 300...1100 mbar                                        | Measuring range:  | 0...2000 W/m² • Global radiation in the range of<br>285...3000 nm |
| Accuracy:             | ± 0.5 mbar                                             | Accuracy:         | Second class                                                      |
| Resolution:           | 0.1 mbar                                               | Resolution:       | 0.2 W/m²                                                          |
| Dew point temperature |                                                        |                   |                                                                   |
| Meas. principle:      | passive · calculated from air temperature and humidity |                   |                                                                   |
| Measuring range:      | -40...+70 °C                                           |                   |                                                                   |
| Resolution:           | 0.1 °C                                                 |                   |                                                                   |

| General technical data                                   |                                                                                                          |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Operating conditions:                                    | -40...+70 °C (with heating -50...+70 °C) • 0...100 % r.h.                                                |
| Response threshold:                                      | 0.1 m/s (factory adjustable for wind direction)                                                          |
| Interfaces u[sonic]:<br>Interfaces WS6 and WS7:          | RS485/RS422 • SDI-12 • Analog output: 0...20 mA • 4...20 mA • 0...5 V • 0...10 V<br>RS485/RS422 • SDI-12 |
| Protocols:                                               | NMEA 0183 (default) • SDI-12 and Modbus • further protocols on request                                   |
| Supply voltage u[sonic],<br>u[sonic]WS6 and u[sonic]WS7: | without heating: 6...60 V DC or 12...42 V AC • with heating: 24 V AC/DC                                  |
| Housing:                                                 | seawater-resistant aluminum                                                                              |
| Protection class:                                        | IP 66 • IP67                                                                                             |