



THEODOR FRIEDRICHS

Precise in all conditions

WIND SPEED & WIND DIRECTION



GROUP 4

WIND

MADE IN GERMANY



EASY BEST FIT

For Your Weather Applications.



Highest Precision

Compact Design

Temperature

Rel. Humidity

Air Pressure



THEODOR FRIEDRICHS & Co.
Meteorologische Geräte und Systeme GmbH

TH-FRIEDRICHS.DE





► THE NEW 2D ULTRASONIC ANEMOMETER METEO VERSION

Theodor Friedrichs & Co. and MESA Systemtechnik are proud to present the new Meteo Version 2D Ultrasonic Anemometer. Experts in Airflow Simulation, Transducer Technology, Hardware Design and Software Development have combined their latest knowledge to create an outstanding product.

We developed a high precision 2D Ultrasonic Anemometer which is designed to meet the demands of today's customer applications.

► TECHNICAL DATA



WIND SPEED

RANGE 0..75 m/s, 0..100 m/s

ACCURACY (for 0..75 m/s) $v \leq 5 \text{ m/s}$: $\pm 0.1 \text{ m/s}$
(rms, mean over 360°);
 $v > 5 \text{ m/s}$: $\pm 1.5 \%$ of measurement
value (rms, mean over 360°)

RESOLUTION 0.1 m/s or 0.01 m/s

STARTING THRESHOLD 0.1 m/s

WIND DIRECTION

RANGE 0..359°

ACCURACY $\pm 0.3^\circ \text{ RMS}$ (at $v > 5 \text{ m/s}$), $\pm 0.5^\circ \text{ absolute}$

RESOLUTION 1° or 0.1°

METEO PARAMETERS

AIR PRESSURE 300..1100 hPa

AIR HUMIDITY 0..100 % rH

AIR TEMPERATURE -55..+80 °C

AIR DENSITY 0.4..1.5 kg/m³ (calculated)

DEW POINT TEMPERATURE °C (calculated)

DATA OUTPUT

SERIAL INTERFACE RS422 full duplex / RS485 half duplex
(1200..115200 Baud),
CAN/CANopen (10 kbit/s..1 Mbit/s)

ANALOGUE OUTPUT 0/4..20 mA or 0/2..10 V (16Bit)

PROTOCOLS ASCII / MODBUS / NMEA

POWER SUPPLY 9..36 V DC / 100 mA; 24V DC
(+15%, -50%) with add. body heating

DIMENSIONS

SIZE Ø 220x221 mm

HOUSING MATERIAL Stainless Steel V4A,

WEIGHT 1.4 kg

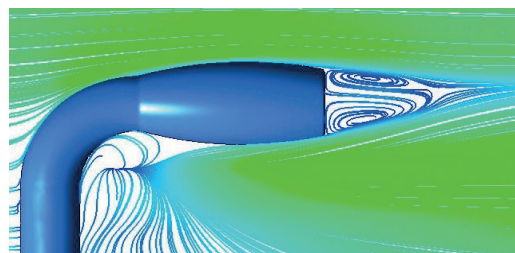
ENVIRONMENTAL

HOUSING IP67

OPERATING TEMP -55..+70 °C (with add. body heating)

► OPTIMIZED DESIGN

The hardware design of the 4310 is made by our experts with the latest Air-Flow-Simulation Software. By reducing the turbulences to a Minimum, the accuracy is increased to a Maximum.



► CERTIFICATES

- EMC Test
- Wind Speed Accuracy Tests
- Blowing Sand Test based on AECPT 300, method 313
- Temperature Test
- Altitude Test
- Dust Test IP6X according to DIN EN 60529
- Water Test IPX7 according to DIN EN 60529
- Solar Irradiation according to DIN EN 60068-2-5
- Vibration Tests
- Mechanical Shock according to IEC 60068-2-27
- Bump Test according to IEC 60068-2-29
- Drop Tests
- Icing Tests

► PLEASE CONTACT US:

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