Vaisala WINDCAP® Ultrasonic Wind Sensor WMT700 Series is a robust and reliable ultrasonic anemometer. It measures surface wind, which is one of the key parameters for meteorology and aviation. The WMT700 Series meets the updated - WMO-No.8 guide, 7th edition - and ICAO requirements.

**Accurate and Maintenance-free**

The WMT700 series has a durable full steel structure with welded arms, clear north indication, and one-point, quick bayonet-style mounting. It has no moving parts, and it is resistant to contamination and corrosion. It measures accurately and produces reliable data in demanding wind conditions and climates without periodic or on-demand maintenance. Self-diagnostics and validation of measurement are standard features. The 60-min. average is available for polar coordinates and vectors.

**Measurement Based on Ultrasound**

The WMT700 series uses ultrasound to determine horizontal wind speed and direction. The measurement is based on transit time, the time it takes for the ultrasound to travel from one transducer to another, depending on the wind speed. The transit time is measured in both directions for a pair of transducer heads. Using two measurements for each of the three ultrasonic paths at 60° angles to each other, the WMT700 computes the wind speed and direction.

The wind measurement is calculated in a way that completely eliminates the effects of altitude, temperature and humidity.

**Standard and Heated Models**

The sensor operates with a power supply of 9 ... 36 VDC. For the heated model, an additional heating power supply of 24 ... 36 VDC is required. Thermostatically controlled heaters in the transducer heads and arms of the heated model prevent build-up of freezing rain or snow. Also, sensor body heating is available. In addition, accessories are available for mounting and connecting the WMT700. To minimize interference from birds, a bird prevention kit is available.

**Features/Benefits**

- WMO and ICAO compliant
- Data output rate 0.25 s
- Self-diagnostics and validation
- Bird cage
- Stainless steel structure
- Maintenance-free
- Three-transducer layout provides accurate data
- Data format outputs: polar coordinates and vectors
- Fully compensates effects of temperature, humidity and pressure
- Measurement range up to 75 m/s
- Heating up to 250 W
- Max. 3600-second average
- IP66 and IP67
- Robust EMC design
- Can be mounted upside down
- Large transducers provide high ultrasound power
- Wind gust calculated according to the WMO guidelines
- US National Weather Service and the FAA rely on Vaisala WINDCAP® technology
## Technical Data

### Wind Speed

- **Measurement range**
  - 701: 0 ... 40 m/s
  - 702: 0 ... 65 m/s
  - 703: 0 ... 75 m/s
- **Accuracy**: ±0.1 m/s or 2% of reading, whichever is greater
- **Starting threshold**: 0.01 m/s
- **Resolution**: 0.01 m/s
- **Response time**: 250 ms

### Wind Direction

- **Measurement range**: 0 ... 360°
- **Accuracy**: ±0.2°
- **Starting threshold**: 0.1 m/s
- **Resolution**: 0.01°
- **Response time**: 250 ms

### Outputs

- **Communication interface**
  - *data* communication: RS485, RS422, RS232, SDI-12
  - *service* communication: RS485
- **analog output wind speed**: voltage, current, frequency
- **analog output wind direction**: voltage, current, potentiometer
- **Communication profile**: WMT70, ASCII, NMEA Standard and Extended, SDI-12, ASOS, MES 12, customized
- **Baud rate**: 300, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
- **Available averages**: max. 3600 s
- **Readout up-date interval**: max. 4 Hz
- **Units**
  - digital outputs: m/s, knots, mph, km/h
  - analog outputs: V, mA
  - frequency outputs: Hz (push-pull, pull-down, pull-up)
- **Operating mode**: automatic or poll mode
- **Virtual temperature**: degrees Celsius

### General

- **Heating**
  - 0 W or 30 W or 150 W or 250 W
- **Temperature**
  - operating: -10 ... +60 °C or -40 ... +60 °C or -55 ... +70 °C
  - storage: -60 ... +80 °C
- **Operating voltage**: 9 ... 36 VDC, max. 40 VDC
- **Heating voltage**: 24 ... 36 VDC, max. 40VDC
- **Heating power supply requirement for transducers**: 40 W
- **transducers and arms**: 200 W
- **transducers, arm and body**: 350 W
- **IP class**: IP66 and IP67

### Material

- body, arms: stainless steel AISI316
- transducer heads: silicone
- mounting kit: stainless steel AISI316
- connector housing surface: nickel plated brass

### Dimensions

- **height**: 348 mm
- **width**: 250 mm
- **depth**: 285 mm
- **Weight**: 1.8 kg

### Approvals

- CE, CE-TICK

### Test Standards

- **Wind**: ISO16622; MEASNET
- **EMC**: IEC61000-4-2 ... 6; CISPR22
- **Environmental**: IEC60068-2-1,2,6/34,30,31,67,78; IEC60529; VDA 621-415
- **Maritime**: DNV; Lloyd’s requirements, IEC60945

### Accessories

- **Verifier**: WMT70Verifier
- **Bird cage**: WMT70BirdKit
- **Bird perch**: WS425BirdPerch
- **Cable tightener tool**: 237888SP
- **Junction Box with Cable 2 m (connected)**: ASM210719SP
- **Cable 2 m (connector and open leads)**: 227567SP
- **Cable 10 m (connector and open leads)**: 227568SP
- **Cable 15 m (connector and open leads)**: 228260SP
- **MAWS cable 10 m**: 227565SP
- **AWS520 cable 10 m, shield connected to PE pin**: 229807SP
- **AWS520 cable 10 m, shield not connected to PE pin**: 227566SP
- **Adapter cable for WS425 serial**: 227569SP
- **Adapter cable for WS425 analog frequency output**: 227570SP
- **Adapter cable for WS425 analog voltage output**: 227571SP
- **Adapter for FIX70**: 228869
- **Fix70 (suitable also for inverted mounting)**: WMT70FixSP
- **Mounting adapter 60 mm POM**: WMT700FIX60-POM
- **Mounting adapter 60 mm RST**: WMT700FIX60-RST
- **Adapter for FIX30/FIX60**: 228777
- **FIX30**: WS425Fix30
- **FIX60**: WS425Fix60

### Scanning Code

Scan the code for more information

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**Vaisala**

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