VENTUS-X: Additional transducer heater for most eXtreme environmental conditions! Extremely precise and maintenance-free measurement of wind speed and wind direction even in the lowest temperature

- **Parameters measured**
  Wind speed, wind direction, virtual temperature, barometric pressure

- **Measurement technology**
  Ultrasonic

- **Product highlights**
  Ice-free operation in extreme freezing conditions due to additional transducer heater, maintenance-free measurement, suitable for extreme ambient conditions, vibration and seawater resistant, compatible interfaces

- **Interfaces**
  SDI-12, RS-485, various RS-485-protocols, analogue output

- **Article number**
  8371.UMTX

The accurate wind sensor uses the run-time differential method for determining the wind speed and wind direction. It provides output for instantaneous values, vector and scalar means, the maximum gust of wind and wind direction, the maximum/minimum values and the virtual temperature. Data output through serial or analogue interfaces provides compatibility of the Lufft Ventus for commercially available hydrometeorological dataloggers and PLC systems. An automatic heater ensures reliable operation even in very

harsh environmental conditions.

General	
Dimensions	Ø approx. 150 mm, height approx. 170 mm
Weight	Approx. 1.62 kg
Permissible ambient temperature	-40 ... 60 °C
with heating	24 VDC / 240 VA (140 VA + 100 VA)
Bus operation	Up to 32 devices
Operating voltage electronics	12 - 24 VDC / 1.2 VA, without heating
Electrical connection	8 pole plug
Housing material	Aluminium, seawater - proof
Protection type	IP68
Pole diameter	50 mm/2"
Factory certificate	Yes

Data output digital	
Interface	RS485 semi-/full duplex, isolated
Baud rate	1200 - 57600
Measurement rate instantaneous value	1 - 10 s
Measurement Avg (arithmetic, vector), Min, Max	1...10 min
Status	Heating, sensor failure

Data output analog	
Data output analog	Only semi - duplex mode
Output signal	0 ... 20 mA, 4 ... 20 mA, 0 ... 10 V, 2 ... 10 V, 2 ... 2,000 frequency (instantaneous, avg, min, max)
Load	Max. 500 Ohm
Resolution	16 bit
Jarring test	According to IEC 60945
Corrosion test	According to MIL-STD-810 Method 509.3
Ice-free test	According to MIL-STD-810F Method 521.2
HALT	Highly Accelerated Life Test
Maximum operating height	3500 m

Wind direction	
Principle	Ultrasonic
Measuring range	0 ... 359.9 °
Unit	°
Accuracy	±2° RMSE >1.0 m/s
Resolution	0.1 °

Wind speed	
Principle	Ultrasonic
Measuring range	0 ... 90 m/s

Unit	m/s
Accuracy	±0.2 m/s or ±2 % RMS of reading (whichever is greater) for 0...65 m/s - otherwise ±5 %
Resolution	0.1 m/s

Virtual temperature	
Principle	Ultrasonic
Measuring range	-50 ... 70 °C
Unit	°C
Accuracy	±2.0 °C (without heater and without sun exposure or wind > 4 m/s)
Resolution	0.1 °C

Air pressure	
Principle	MEMS capacitive
Measuring range	300 ... 1200 hPa
Unit	hPa
Accuracy	±1.5 hPa
Resolution	0.1 hPa