Wind and Weather

A Passion for Precision

por la precisión · passione per la precisione · a passion for precision · passion pour la précision · pasión po

www.lufft.com

Lufft

Smart

Weather Sensors

Wind & Weather

The UMB (Universal Measurement Bus) system is a new technology for recording environmental data. But why?

Hydrology, meteorology, weather conditions on the roads, agricultural meteorology, energy applications, renewable energy, high speed trains, air quality measurements – These various **applications** all have the same demands at their core:

- **high precision**
- **durability**
- **maintenance-free**
- **innovative**

However, the technical **requirements** can be very different:

- **solar operation**
- **connected to mains**
- **operation in all imaginable conditions –** including extreme conditions

Last but not least, the **transducers** needed by our clients are very different:

- **compact build**
- **stand alone sensors**
- **a combination** of stand-alone with built in transducers
- **ability to connect own transducer**

In order to fulfil these many different needs and desires, Lufft has committed itself to UMB technology.

The catalogue of UMB sensors includes different series of intelligent weather probes for temperature, relative air humidity, precipitation, air pressure, wind, solar radiation and further data.
Our **titan range** was developed for use in the most extreme conditions. Various series meet professional meteorological requirements, starting with **our professional series** which meets all WMO criteria, whereas the weather sensors in our **gold and platinum series** are ideal for even higher levels of precision.

All UMB sensors use a standard electric connector system, meaning that installation and service tasks are made as simple as possible. Sensors not belonging to the series or existing analogue sensors can also be connected to the UMB system via an ANACON UMB module. Furthermore, a four channel UMB transformer module is currently being worked on, which would enable up to four analogue sensors to be used with the UMB system.

All UMB sensors use a standardized data interface for data retrieval. Currently, there are various options for this including SDI12, ASCII, Modbus und UMB. If the data retrieval unit is integrated in the Lufft Smart Sensor WSxx, the other WSxx probes can be added with basic parametrization.

The probes' channel based data retrieval provides a multitude of calculable values in metric and US customary units. This means that a converter function is not necessary in the interface. With the aid of free configuration software (UMB-Config-Tool), sensors can be configured, systems tested and firmware updated.

Furthermore, Lufft offers a range of software packages for data retrieval from weather stations (COLLECTOR) all the way up to packages for web visualisation (SmartView3).

Lufft UMB Sensor Overview

	Wind	Temperature Rel. humidity Air pressure	Temperature Rel. humidity Air pressure Precipitation	Temperature Rel. humidity Air pressure Radiance (solar radiation)
Titan				
	Ventus			WS303
Platinum				
				WS301
Gold				
	V200A	WS300	WS400	WS304
Professional				
	WS200		WS401	WS302

Temperature Rel. humidity Air pressure Wind speed Wind direction	Temperature Rel. humidity Air pressure Wind speed Wind direction Radiance (solar radiation)	Temperature Rel. humidity Air pressure Wind speed Wind direction Precipitation	2 Channel EXPANDER	Protocols
			ANACON	UMB MODBUS ASCII SDI12
	WS503			
			ANACON	UMB MODBUS ASCII SDI12
	WS501			
			ANACON	UMB MODBUS ASCII SDI12
WS500	WS504	WS600		
			ANACON	UMB MODBUS ASCII SDI12
	WS502	WS601		




Lufft's high-quality networks for measuring emissions consist of gas measurements, dust particle measurements, as well as meteorological measurements.

Precision with UMB

The WS500-UMB and WS600-UMB deliver all meteorological measured data for Lufft's high-quality measuring networks. By means of the digital interface, they can be perfectly integrated into the measured data architecture of the entire system. When it comes to road traffic meteorology ("Green ITS"), quality is playing a more and more important role: In the future, traffic guidance and air pollution will depend on each other. This can only be realized with precise measured data, especially in large cities.

Source: Dr. Holger Gerwig Umweltbundesamt Langen

Lufft WS601-UMB – Temperature, Relative Humidity, Precipitation, Air Pressure, Wind, Electronic Compass

From the WS product family of professional intelligent measurement transducers with digital interface for environmental applications.

Integrated design with ventilated radiation protection for measuring:

- Air temperature
- Relative humidity
- Precipitation
- Air pressure
- Wind direction
- Wind speed

Relative humidity is measured by means of a capacitive sensor element; a precision NTC measuring element is used to measure air temperature.

Precipitation is measured by a tipping spoon and tipping bucket processes. The flexible tipping bucket allows a 0.2mm or a 0.5mm resolution of the rainfall.

Optionally, the WS601-UMB can be equipped with a leaf wetness sensor in addition.

Ultrasonic sensor technology is used to take wind measurements.

Measurement output can be accessed by the following protocolls:
UMB-Binary, UMB-ASCII, SDI-12, MODBUS

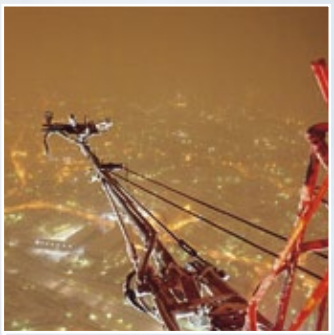
One external temperature sensor is connectable.

Lufft WS601-UMB Compact Weather Station			Order No.
WS601-UMB			**8376.U01**
Technical Data	Dimensions	Ø approx. 164 mm, height approx. 445 mm	
	Weight	approx. 1.7 kg	
Temperature	Principle	NTC	
	Measuring range	–50 … 60 °C	
	Accuracy	±0.2 °C (–20 °C … +50 °C), otherwise ±0.5 °C (>–30 °C)	
Relative humidity	Principle	Capacitive	
	Measuring range	0 … 100 % RH	
	Accuracy	±2 % RH	
Precipitation	Resolution	0.2mm / 0.5 mm	
	Accuracy	±2 %	
Air pressure	Principle	MEMS capacitive	
	Measuring range	300 … 1200 hPa	
	Accuracy	+/- 0.5 hPa (0...+40°C)	
Wind direction	Principle	Ultrasonic	
	Measuring range	0 … 359.9 °	
	Accuracy	< 3 ° RMSE >1.0 m/s	
Wind speed	Principle	Ultrasonic	
	Measuring range	0 … 30 m/s	
	Accuracy	±0.3 m/s or 3 % RMS	
General Information	Heating	20 VA at 24 VDC	
	Protection type housing	IP66	
	Interface	RS485, 2-wire, half-duplex	
	Op. power consumption	12-24 VDC ±10%	
	Operating humidity range	0 … 100 %	
	Op. temperature range	–50 … 60 °C	
Accessories	Surge protection		**8379.USP**
	Power supply 24V/4A		**8366.USV1**
	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Digital-analog-converter DACON8-UMB		**8160.UDAC**
	Leaf wetness sensor WLW100		**8358.10**
	Temperature Sensor WT1		**8160.WT1**
	Road Surface Temperature Sensor WST1		**8160.WST1**
	Connection cable, 20m		**8370.UKAB20**

All in One

Aspirated temperature/humidity measurement

Open communication protocol:
- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analoge outputs in combination with 8160.UDAC



Luffts family of digital weather sensors for all environmental applications: best precision, solar- or mains-powered, all-in-one and stand-alone versions, open interfaces, long life cycle

Smart Sensors

WS Familiy

Lufft WS600-UMB – Temperature, Relative Humidity, Precipitation, Air Pressure, Wind, Electronic Compass

From the WS product family of professional intelligent measurement transducers with digital interface for environmental applications.

Integrated design with ventilated radiation protection for measuring:

- Air temperature
- Relative humidity
- Precipitation intensity
- Precipitation type
- Precipitation quantity
- Air pressure
- Wind direction
- Wind speed

Relative humidity is measured by means of a capacitive sensor element; a precision NTC measuring element is used to measure air temperature.

Precipitation is measured by a 24 GHz Doppler radar, which measures the drop speed of an individual drop of rain/snow.

Precipitation quantity and intensity are calculated from the correlation between drop size and speed.

The difference in drop speed determines the type of precipitation (rain/snow).

Maintenance-free measurement offers a major advantage over the common tipping spoon and tipping bucket processes.

Ultrasonic sensor technology is used to take wind measurements.

Measurement output can be accessed by the following protocolls:
UMB-Binary, UMB-ASCII, SDI-12, MODBUS

One external temperature sensor is connectable.

All in One

Aspirated temperature/humidity measurement

Maintenance-free operation

Open communication protocol:
- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analoge outputs in combination with 8160.UDAC

Lufft WS600-UMB Compact Weather Station			Order No.
WS600-UMB EU, USA, Canada			**8370.U01**
WS600-UMB UK			**8370.U02**
Technical Data	Dimensions	Ø approx. 150 mm, height approx. 343 mm	
	Weight	approx. 1.5 kg	
Temperature	Principle	NTC	
	Measuring range	–50 … 60 °C	
	Accuracy	±0.2 °C (–20 °C … +50 °C), otherwise ±0.5 °C (>–30 °C)	
Relative humidity	Principle	Capacitive	
	Measuring range	0 … 100 % RH	
	Accuracy	±2 % RH	
Precipitation quantity	Resolution	0.01 mm	
	Measuring range	Drop size 0.3 … 5 mm	
	Reproducibility	typ. > 90 %	
Precipitation type	Rain/snow		
Air pressure	Principle	MEMS capacitive	
	Measuring range	300 … 1200 hPa	
	Accuracy	+/- 0.5 hPa (0...+40°C)	
Wind direction	Principle	Ultrasonic	
	Measuring range	0 … 359.9 °	
	Accuracy	< 3 ° RMSE >1.0 m/s	
Wind speed	Principle	Ultrasonic	
	Measuring range	0 … 75 m/s	
	Accuracy	±0.3 m/s or 3 % (0 … 35 m/s) RMS of reading, whichever is greater ±5 % (> 35 m/s) RMS	
General Information	Heating	40 VA at 24 VDC	
	Protection type housing	IP66	
	Interface	RS485, 2-wire, half-duplex	
	Op. power consumption	12-24 VDC ±10%	
	Operating humidity range	0 … 100 %	
	Op. temperature range	–50 … 60 °C	
Accessories	Surge protection		**8379.USP**
	Power supply 24V/4A		**8366.USV1**
	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Digital-analog-converter DACON8-UMB		**8160.UDAC**
	Temperature Sensor WT1		**8160.WT1**
	Road Surface Temperature Sensor WST1		**8160.WST1**
	Connection cable, 20m		**8370.UKAB20**

Lufft WS504-UMB – Tiltable Pyranometer, Wind, Temperature, Air Pressure, Relative Humidity, Electronic Compass

From the WS product family of professional intelligent measurement transducers with digital interface for environmental applications.

Integrated design with ventilated radiation protection for measuring:

- Air temperature
- Relative humidity
- Air pressure
- Wind direction
- Wind speed
- Solar Radiation

Relative humidity is measured by means of a capacitive sensor element; a precision NTC measuring element is used to measure air temperature.

Ultrasonic sensor technology is used to take wind measurements.

Measurement output can be accessed by the following protocolls:
UMB-Binary, UMB-ASCII, SDI-12, MODBUS .

One external temperature or rain sensor is connectable.

Lufft WS504-UMB Compact Weather Station			Order No.
WS504-UMB			**8375.U12**
Technical Data	Dimensions	Ø approx. 150mm, height 377mm	
	Weight	approx. 1.5kg	
Temperature	Principle	NTC	
	Measuring range	–50…60°C	
	Accuracy	±0.2°C (–20°C…+50°C), otherwise ±0.5°C (>–30°C)	
Relative humidity	Principle	Capacitive	
	Measuring range	0…100% RH	
	Accuracy	±2% RH	
Radiation	Response time (95%)	<1s	
	Spectral range	300 to 1100nm	
	Measuring range	1400W/m²	
Air pressure	Principle	MEMS capacitive	
	Measuring range	300…1200hPa	
	Accuracy	±0.5 hPa (0 … +40°C)	
Wind direction	Principle	Ultrasonic	
	Measuring range	0…359.9°	
	Accuracy	< 3° RMSE >1.0m/s	
Wind speed	Principle	Ultrasonic	
	Measuring range	0…75m/s	
	Accuracy	±0.3m/s or 3% (0…35m/s) RMS of reading, whichever is greater ±5% (>35m/s) RMS	
General Information	Heating	20VA at 24VDC	
	Protection type housing	IP66	
	Interface	RS485, 2-wire, half-duplex	
	Operating power consumption	12-24 VDC ±10%	
	Operating humidity range	0…100%	
	Operating temperature range	–50…60°C	
Accessories	Surge protection		**8379.USP**
	Power supply 24V/4A		**8366.USV1**
	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Digital-analog-converter DACON8-UMB		**8160.UDAC**
	Temperature Sensor WT1		**8160.WT1**
	Road Surface Temperature Sensor WST1		**8160.WST1**
	Rain Sensor WTB100		**8353.10**
	Connection cable, 20m		**8370.UKAB20**

All in One

Aspirated temperature/humidity measurement

Open communication protocol:
- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analoge outputs in combination with 8160.UDAC

Third-Party-Rain gauge sensors are compatible: 0.1 mm, 0.2 mm, 0.5 mm, 1mm heated and unheated.

Lufft WS503-UMB – Tiltable Pyranometer, Wind, Temperature, Air Pressure, Relative Humidity, Electronic Compass

From the WS product family of professional intelligent measurement transducers with digital interface for environmental applications.

Integrated design with ventilated radiation protection for measuring:

- Air temperature
- Relative humidity
- Air pressure
- Wind direction
- Wind speed
- Solar Radiation

Relative humidity is measured by means of a capacitive sensor element; a precision NTC measuring element is used to measure air temperature.

The world renowned technology of Kipp+Zonen CMP3 is integrated.

Ultrasonic sensor technology is used to take wind measurements.

Measurement output can be accessed by the following protocolls:
UMB-Binary, UMB-ASCII, SDI-12, MODBUS.

One external temperature or rain sensor is connectable.

Lufft WS503-UMB Compact Weather Station			Order No.
WS503-UMB			**8375.U11**
Technical Data	Dimensions	Ø approx. 150 mm, height 392 mm	
	Weight	approx. 1.5 kg	
Temperature	Principle	NTC	
	Measuring range	–50 … 60 °C	
	Accuracy	±0.2 °C (–20 °C … +50 °C), otherwise ±0.5 °C (>–30 °C)	
Relative humidity	Principle	Capacitive	
	Measuring range	0 … 100 % RH	
	Accuracy	±2 % RH	
Radiation	Response time (95%)	< 18s	
	Non-stability (change/year)	< 1%	
	Non-linearity (0 to 1,000 W/m²)	< 1%	
	Directional error (at 80° with 1,000 W/m²)	< 20W/m²	
	Temperature dependence of sensitivity	< 5% (–10 bis +40 ° C)	
	Tilt error (at 1000 W/m²)	< 1 %	
	Spectral range (50% points)	300 to 2,800 nm	
	Measuring range	1400 W/m²	
	Altitude	0…60°	
	Azimuth	-10° … +10°	
Air pressure	Principle	MEMS capacitive	
	Measuring range	300 … 1200 hPa	
	Accuracy	±0.5 hPa (0 … +40°C)	
Wind direction	Principle	Ultrasonic	
	Measuring range	0 … 359.9 °	
	Accuracy	< 3 ° RMSE >1.0 m/s	
Wind speed	Principle	Ultrasonic	
	Measuring range	0 … 75 m/s	
	Accuracy	±0.3 m/s or 3 % (0 … 35 m/s) RMS of reading, whichever is greater ±5 % (>35 m/s) RMS	
General Information	Heating	20 VA at 24 VDC	
	Protection type housing	IP66	
	Interface	RS485, 2-wire, half-duplex	
	Operating power consumption	12-24 VDC ±10%	
	Operating humidity range	0 … 100 %	
	Operating temperature range	–50 … 60 °C	
Accessories	Surge protection		**8379.USP**
	Power supply 24V/4A		**8366.USV1**
	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Digital-analog-converter DACON8-UMB		**8160.UDAC**
	Temperature Sensor WT1		**8160.WT1**
	Road Surface Temperature Sensor WST1		**8160.WST1**
	Connection cable, 20m		**8370.UKAB20**
	Rain Sensor WTB100		**8353.10**

KIPP & ZONEN SINCE 1830

Tiltable Pyranometer

Ultrasonic wind sensor

Aspirated temperature/humidity measurement

Open communication protocol:
- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analoge outputs in combination with 8160.UDAC

Third-Party-Rain gauge sensors are compatible: 0.1 mm, 0.2 mm, 0.5 mm, 1mm heated and unheated.

Lufft WS502-UMB – Temperature, Relative Humidity, Radiation, Air Pressure, Wind, Electronic Compass

From the WS product family of professional intelligent measurement transducers with digital interface for environmental applications.

Integrated design with ventilated radiation protection for measuring:

- Air temperature
- Relative humidity
- Air pressure
- Wind direction
- Wind speed
- Solar Radiation

Relative humidity is measured by means of a capacitive sensor element; a precision NTC measuring element is used to measure air temperature.

Ultrasonic sensor technology is used to take wind measurements.

Measurement output can be accessed by the following protocolls:
UMB-Binary, UMB-ASCII, SDI-12, MODBUS

One external temperature or rain sensor is connectable.

Lufft WS502-UMB Compact Weather Station			Order No.
WS502-UMB			**8375.U10**
Technical Data	Dimensions	Ø approx. 150mm, height 317mm	
	Weight	approx. 1.5kg	
Temperature	Principle	NTC	
	Measuring range	–50…60°C	
	Accuracy	±0.2°C (–20°C…+50°C), otherwise ±0.5°C (>–30°C)	
Relative humidity	Principle	Capacitive	
	Measuring range	0…100% RH	
	Accuracy	±2% RH	
Radiation	Response time (95%)	<1s	
	Spectral range	300 to 1100nm	
	Measuring range	1400W/m²	
Air pressure	Principle	MEMS capacitive	
	Measuring range	300…1200hPa	
	Accuracy	+/- 0.5 hPa (0...+40°C)	
Wind direction	Principle	Ultrasonic	
	Measuring range	0…359.9°	
	Accuracy	< 3° RMSE >1.0m/s	
Wind speed	Principle	Ultrasonic	
	Measuring range	0…75m/s	
	Accuracy	±0.3m/s or 3% (0…35m/s) RMS of reading, whichever is greater ±5% (>35m/s) RMS	
General Information	Heating	20VA at 24VDC	
	Protection type housing	IP66	
	Interface	RS485, 2-wire, half-duplex	
	Operating power consumption	12-24 VDC ±10%	
	Operating humidity range	0…100%	
	Operating temperature range	–50…60°C	
Accessories	Surge protection		**8379.USP**
	Power supply 24V/4A		**8366.USV1**
	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Digital-analog-converter DACON8-UMB		**8160.UDAC**
	Temperature Sensor WT1		**8160.WT1**
	Road Surface Temperature Sensor WST1		**8160.WST1**
	Rain Sensor WTB100		**8353.10**
	Connection cable, 20m		**8370.UKAB20**

All in One

Aspirated temperature/humidity measurement

Open communication protocol:
- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analoge outputs in combination with 8160.UDAC

Third-Party-Rain gauge sensors are compatible: 0.1 mm, 0.2 mm, 0.5 mm, 1mm heated and unheated.

Lufft WS501-UMB – Temperature, Relative Humidity, Radiation, Air Pressure, Wind, Electronic Compass

From the WS product family of professional intelligent measurement transducers with digital interface for environmental applications.

Integrated design with ventilated radiation protection for measuring:

- Air temperature
- Relative humidity
- Air pressure
- Wind direction
- Wind speed
- Solar Radiation

Relative humidity is measured by means of a capacitive sensor element; a precision NTC measuring element is used to measure air temperature.

The world renowned technology of Kipp+Zonen CMP3 is integrated.

Ultrasonic sensor technology is used to take wind measurements.

Measurement output can be accessed by the following protocolls:
UMB-Binary, UMB-ASCII, SDI-12, MODBUS

One external temperature or rain sensor is connectable.

Lufft WS501-UMB Compact Weather Station			Order No.
WS501-UMB			**8375.U01**
Technical Data	Dimensions	Ø approx. 150 mm, height 332 mm	
	Weight	approx. 1.5 kg	
Temperature	Principle	NTC	
	Measuring range	–50 … 60 °C	
	Accuracy	±0.2 °C (–20 °C … +50 °C), otherwise ±0.5 °C (> –30 °C)	
Relative humidity	Principle	Capacitive	
	Measuring range	0 … 100 % RH	
	Accuracy	±2 % RH	
Radiation	Response time (95%)	< 18s	
	Non-stability (change/year)	< 1%	
	Non-linearity (0 to 1,000 W/m²)	< 1%	
	Directional error (at 80° with 1,000 W/m²)	< 20W/m²	
	Temperature dependence of sensitivity	< 5 % (–10 to +40 °C)	
	Tilt error (at 1000 W/m²)	< 1%	
	Spectral range (50% points)	300 to 2,800 nm	
	Measuring range	1400 W/m²	
Air pressure	Principle	MEMS capacitive	
	Measuring range	300 … 1200 hPa	
	Accuracy	+/- 0.5 hPa (0...+40°C)	
Wind direction	Principle	Ultrasonic	
	Measuring range	0 … 359.9 °	
	Accuracy	< 3 ° RMSE >1.0 m/s	
Wind speed	Principle	Ultrasonic	
	Measuring range	0 … 75 m/s	
	Accuracy	±0.3 m/s or 3 % (0 … 35 m/s) RMS of reading, whichever is greater ±5 % (> 35 m/s) RMS	
General Information	Heating	20 VA at 24 VDC	
	Protection type housing	IP66	
	Interface	RS485, 2-wire, half-duplex	
	Operating power consumption	12-24 VDC ±10%	
	Operating humidity range	0 … 100 %	
	Operating temperature range	–50 … 60 °C	
Accessories	Surge protection		**8379.USP**
	Power supply 24V/4A		**8366.USV1**
	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Digital-analog-converter DACON8-UMB		**8160.UDAC**
	Temperature Sensor WT1		**8160.WT1**
	Road Surface Temperature Sensor WST1		**8160.WST1**
	Connection cable, 20m		**8370.UKAB20**
	Rain Sensor WTB100		**8353.10**

KIPP & ZONEN SINCE 1830

All in One

Aspirated temperature/humidity measurement

Open communication protocol:
- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analoge outputs in combination with 8160.UDAC

Third-Party-Rain gauge sensors are compatible: 0.1 mm, 0.2 mm, 0.5 mm, 1mm heated and unheated.

Lufft WS500-UMB – Temperature, Air Pressure, Relative Humidity, Wind, Electronic Compass

From the WS product family of professional intelligent measurement transducers with digital interface for environmental applications.

Integrated design with ventilated radiation protection for measuring:

- Air temperature
- Relative humidity
- Air pressure
- Wind direction
- Wind speed

Relative humidity is measured by means of a capacitive sensor element; a precision NTC measuring element is used to measure air temperature.

Ultrasonic sensor technology is used to take wind measurements.

Measurement output can be accessed by the following protocolls:
UMB-Binary, UMB-ASCII, SDI-12, MODBUS

One external temperature or rain sensor is connectable.

Lufft WS500-UMB Compact Weather Station			Order No.
WS500-UMB			**8373.U01**
Technical Data	Dimensions	Ø approx. 150 mm, height approx 287 mm	
	Weight	approx. 1.2 kg	
Temperature	Principle	NTC	
	Measuring range	-50 … 60 °C	
	Accuracy	±0.2 °C (–20 °C … +50 °C), otherwise ±0.5 °C (> -30 °C)	
Relative humidity	Principle	Capacitive	
	Measuring range	0 … 100 % RH	
	Accuracy	±2 % RH	
Air pressure	Principle	MEMS Capacitive	
	Measuring range	300 … 1200 hPa	
	Accuracy	+/- 0.5 hPa (0...+40°C)	
Wind direction	Principle	Ultrasonic	
	Measuring range	0 … 359.9 °	
	Accuracy	< 3 ° RMSE >1.0 m/s	
Wind speed	Principle	Ultrasonic	
	Measuring range	0 … 75 m/s	
	Accuracy	±0.3 m/s or 3 % (0 … 35 m/s) RMS of reading, whichever is greater ±5 % (>35 m/s) RMS	
General Information	Heating	20 VA at 24 VDC	
	Protection type housing	IP66	
	Interface	RS485, 2-wire, half-duplex	
	Op. power consumption	12-24 VDC ±10%	
	Operating humidity range	0 … 100 %	
	Op. temperature range	–50 … 60 °C	
Accessories	Surge protection		**8379.USP**
	Power supply 24V/4A		**8366.USV1**
	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Traverse for R2S-UMB + WS500-UMB		**8367.TRAV**
	Digital-analog-converter DACON8-UMB		**8160.UDAC**
	Temperature Sensor WT1		**8160.WT1**
	Road Surface Temperature Sensor WST1		**8160.WST1**
	Rain Sensor WTB100		**8353.10**
	Connection cablel, 20m		**8370.UKAB20**

Ultrasonic wind sensor

Aspirated temperature/humidity measurement

Open communication protocol:
- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analoge outputs in combination with 8160.UDAC

Third-Party-Rain gauge sensors are compatible: 0.1 mm, 0.2 mm, 0.5 mm, 1mm heated and unheated.

Lufft WS401-UMB – Temperature, Relative Humidity, Precipitation, Air Pressure

From the WS product family of professional intelligent measurement transducers with digital interface for environmental applications.

Integrated design with ventilated radiation protection for measuring:

- Air temperature
- Relative humidity
- Precipitation
- Air pressure

Relative humidity is measured by means of a capacitive sensor element; a precision NTC measuring element is used to measure air temperature.

Optionally, the WS401-UMB can be equipped with a leaf wetness sensor in addition.

Precipitation is measured by tipping spoon and tipping bucket processes. The flexible tipping bucket allows a 0.2mm or a 0.5mm resolution of the rainfall.

Measurement output can be accessed by the following protocolls:
UMB-Binary, UMB-ASCII, SDI-12, MODBUS

One external temperature sensor is connectable.

Lufft WS401-UMB Compact Weather Station			Order No.
WS401-UMB			**8377.U01**
Technical Data	Dimensions	Ø approx. 150 mm, height approx. 380 mm	
	Weight	approx. 1.5 kg	
Temperature	Principle	NTC	
	Measuring range	–50 … 60 °C	
	Accuracy	±0.2 °C (–20 °C … +50 °C), otherwise ±0.5 °C (> -30 °C)	
Relative humidity	Principle	Capacitive	
	Measuring range	0 … 100 % RH	
	Accuracy	±2 % RH	
Precipitation	Resolution	0.2 mm / 0.5mm	
	Accuracy	±2 %	
Air pressure	Principle	MEMS Capacitive	
	Measuring range	300 … 1200 hPa	
	Accuracy	+/- 0.5 hPa (0...+40°C)	
General Information	Protection type housing	IP66	
	Interface	RS485, 2-wire, half-duplex	
	Op. power consumption	12-24 VDC ±10% <4VA (without heating)	
	Operating humidity range	0 … 100 %	
	Op. temperature range	–50 … 60 °C	
Accessories	Surge protection		**8379.USP**
	Power supply 24 V/4 A		**8366.USV1**
	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Digital-analog-converter DACON8-UMB		**8160.UDAC**
	Leaf wetness sensor WLW100		**8358.10**
	Temperature Sensor WT1		**8160.WT1**
	Road Surface Temperature Sensor WST1		**8160.WST1**
	Connection cable, 20m		**8370.UKAB20**

Aspirated temperature/humidity measurement

Open communication protocol:
- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analoge outputs in combination with 8160.UDAC

Lufft WS400-UMB – Temperature, Relative Humidity, Precipitation, Air Pressure

From the WS product family of professional intelligent measurement transducers with digital interface for environmental applications.

Integrated design with ventilated radiation protection for measuring:

- Air temperature
- Relative humidity
- Precipitation intensity
- Precipitation type
- Precipitation quantity
- Air pressure

Relative humidity is measured by means of a capacitive sensor element; a precision NTC measuring element is used to measure air temperature.

Precipitation is measured by a 24 GHz Doppler radar, which measures the drop speed of an individual drop of rain/snow.

Precipitation quantity and intensity are calculated from the correlation between drop size and speed.

The difference in drop speed determines the type of precipitation (rain/snow). Maintenance-free measurement offers a major advantage over the common tipping spoon and tipping bucket processes.

Measurement output can be accessed by the following protocolls:
UMB-Binary, UMB-ASCII, SDI-12, MODBUS

One external temperature sensor is connectable.

Lufft WS400-UMB Compact Weather Station			Order No.
WS400-UMB EU, USA, Canada			**8369.U01**
WS400-UMB UK			**8369.U02**
Technical Data	Dimensions	Ø approx. 150 mm, height approx. 280 mm	
	Weight	approx. 1.3 kg	
Temperature	Principle	NTC	
	Measuring range	–50 … 60 °C	
	Accuracy	±0.2 °C (–20 °C … +50 °C), otherwise ±0.5 °C (> -30 °C)	
Relative humidity	Principle	Capacitive	
	Measuring range	0 … 100 % RH	
	Accuracy	±2 % RH	
Precipitation quantity	Resolution	0.01 mm	
	Measuring range	Measuring range drop size 0.3 … 5 mm	
	Reproducibility	typ. > 90 %	
Precipitation type	Rain/snow		
Air pressure	Principle	MEMS Capacitive	
	Measuring range	300 … 1200 hPa	
	Accuracy	+/- 0.5 hPa (0...+40°C)	
General Information	Heating	20 VA at 24 VDC	
	Protection type housing	IP66	
	Interface	RS485, 2-wire, half-duplex	
	Op. power consumption	12-24 VDC ±10%	
	Operating humidity range	0 … 100 %	
	Op. temperature range	–50 … 60 °C	
Accessories	Surge protection		**8379.USP**
	Power supply 24 V/4 A		**8366.USV1**
	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Digital-analog-converter DACON8-UMB		**8160.UDAC**
	Temperature Sensor WT1		**8160.WT1**
	Road Surface Temperature Sensor WST1		**8160.WST1**
	Connection cable, 20m		**8370.UKAB20**

Aspirated temperature/humidity measurement

Maintenance-free operation

Open communication protocol:
- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analoge outputs in combination with 8160.UDAC

Lufft WS304-UMB – Tiltable Pyranometer, Temperature, Air Pressure, Relative Humidity

From the WS product family of professional intelligent measurement transducers with digital interface for environmental applications.

Integrated design with ventilated radiation protection for measuring:

- Air temperature
- Relative humidity
- Air pressure
- Solar Radiation

Relative humidity is measured by means of a capacitive sensor element; a precision NTC measuring element is used to measure air temperature.

Measurement output can be accessed by the following protocolls:
UMB-Binary, UMB-ASCII, SDI-12, MODBUS .

One external temperature or rain sensor is connectable.

Lufft WS304-UMB Compact Weather Station			Order No.
WS304-UMB			**8374.U12**
Technical Data	Dimensions	Ø approx. 150 mm, height 377 mm	
	Weight	approx. 1.5 kg	
Temperature	Principle	NTC	
	Measuring range	–50 … 60 °C	
	Accuracy	±0.2 °C (–20 °C … +50 °C), otherwise ±0.5 °C (>–30 °C)	
Relative humidity	Principle	Capacitive	
	Measuring range	0 … 100 % RH	
	Accuracy	±2 % RH	
Radiation	Response time (95%)	< 1s	
	Spectral range	300 to 1100 nm	
	Measuring range	1400 W/m²	
Air pressure	Principle	MEMS capacitive	
	Measuring range	300 … 1200 hPa	
	Accuracy	±0.5 hPa (0 … +40°C)	
General Information	Heating	20 VA at 24 VDC	
	Protection type housing	IP66	
	Interface	RS485, 2-wire, half-duplex	
	Operating power consumption	12-24 VDC ±10%	
	Operating humidity range	0 … 100 %	
	Operating temperature range	–50 … 60 °C	
Accessories	Surge protection		**8379.USP**
	Power supply 24V/4A		**8366.USV1**
	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Digital-analog-converter DACON8-UMB		**8160.UDAC**
	Temperature Sensor WT1		**8160.WT1**
	Road Surface Temperature Sensor WST1		**8160.WST1**
	Rain Sensor WTB100		**8353.10**
	Connection cable, 20m		**8370.UKAB20**

All in One

Aspirated temperature/humidity measurement

Open communication protocol:
- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analoge outputs in combination with 8160.UDAC

Third-Party-Rain gauge sensors are compatible: 0.1 mm, 0.2 mm, 0.5 mm, 1mm heated and unheated.

Lufft WS303-UMB – Tiltable Pyranometer, Temperature, Air Pressure, Relative Humidity

From the WS product family of professional intelligent measurement transducers with digital interface for environmental applications.

Integrated design with ventilated radiation protection for measuring:

- Air temperature
- Relative humidity
- Air pressure
- Solar Radiation

Relative humidity is measured by means of a capacitive sensor element; a precision NTC measuring element is used to measure air temperature.

The world renowned technology of Kipp+Zonen CMP3 is integrated.

Measurement output can be accessed by the following protocolls:
UMB-Binary, UMB-ASCII, SDI-12, MODBUS.

One external temperature or rain sensor is connectable.

KIPP & ZONEN
SINCE 1830

Tiltable Pyranometer

Ultrasonic wind sensor

Aspirated temperature/humidity measurement

Open communication protocol:
- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analoge outputs in combination with 8160.UDAC

Third-Party-Rain gauge sensors are compatible: 0.1 mm, 0.2 mm, 0.5 mm, 1mm heated and unheated.

Lufft WS303-UMB Compact Weather Station			Order No.
WS303-UMB			**8374.U11**
Technical Data	Dimensions	Ø approx. 150 mm, height 392 mm	
	Weight	approx. 1.5 kg	
Temperature	Principle	NTC	
	Measuring range	–50 … 60 °C	
	Accuracy	±0.2 °C (–20 °C … +50 °C), otherwise ±0.5 °C (>–30 °C)	
Relative humidity	Principle	Capacitive	
	Measuring range	0 … 100 % RH	
	Accuracy	±2 % RH	
Radiation	Response time (95%)	< 18s	
	Non-stability (change/year)	< 1%	
	Non-linearity (0 to 1,000 W/m²)	< 1%	
	Directional error (at 80° with 1,000 W/m²)	< 20W/m²	
	Temperature dependence of sensitivity	< 5% (–10 bis +40 ° C)	
	Tilt error (at 1000 W/m²)	< 1 %	
	Spectral range (50% points)	300 to 2,800 nm	
	Measuring range	1400 W/m²	
	Altitude	0…60°	
	Azimuth	-10° … +10°	
Air pressure	Principle	MEMS capacitive	
	Measuring range	300 … 1200 hPa	
	Accuracy	±0.5 hPa (0 … +40°C)	
General Information	Heating	20 VA at 24 VDC	
	Protection type housing	IP66	
	Interface	RS485, 2-wire, half-duplex	
	Operating power consumption	12-24 VDC ±10%	
	Operating humidity range	0 … 100 %	
	Operating temperature range	–50 … 60 °C	
Accessories	Surge protection		**8379.USP**
	Power supply 24V/4A		**8366.USV1**
	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Digital-analog-converter DACON8-UMB		**8160.UDAC**
	Temperature Sensor WT1		**8160.WT1**
	Road Surface Temperature Sensor WST1		**8160.WST1**
	Rain Sensor WTB100		**8353.10**
	Connection cable, 20m		**8370.UKAB20**

Lufft WS302-UMB – Temperature, Relative Humidity, Radiation, Air Pressure

From the WS product family of professional intelligent measurement transducers with digital interface for environmental applications.

Integrated design with ventilated radiation protection for measuring:

- Air temperature
- Relative humidity
- Solar radiation
- Air pressure

Relative humidity is measured by means of a capacitive sensor element; a precision NTC measuring element is used to measure air temperature.

Measurement output can be accessed by the following protocolls:
UMB-Binary, UMB-ASCII, SDI-12, MODBUS

One external temperature or rain sensor is connectable.

Lufft WS302-UMB Compact Weather Station			Order No.
WS302-UMB			**8374.U10**
Technical Data	Dimensions	Ø approx. 150 mm, height 253 mm	
	Weight	approx. 1.3 kg	
Temperature	Principle	NTC	
	Measuring range	–50 … 60 °C	
	Accuracy	±0.2 °C (–20 °C … +50 °C), otherwise ±0.5 °C (> -30 °C)	
Relative humidity	Principle	Capacitive	
	Measuring range	0 … 100 % RH	
	Accuracy	±2 % RH	
Radiation	Response time (95%)	< 1s	
	Spectral range	300 to 1100 nm	
	Measuring range	1400 W/ m²	
Air pressure	Principle	MEMS Capacitive	
	Measuring range	300 … 1200 hPa	
	Accuracy	+/- 0.5 hPa (0...+40°C)	
General Information	Protection type housing	IP66	
	Interface	RS485, 2-wire, half-duplex	
	Op. power consumption	12-24 VDC ±10%	
	Operating humidity range	0 … 100 %	
	Op. temperature range	–50 … 60 °C	
Accessories	Surge protection		**8379.USP**
	Power supply 24 V/4 A		**8366.USV1**
	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Digital-analog-converter DACON8-UMB		**8160.UDAC**
	Temperature Sensor WT1		**8160.WT1**
	Road Surface Temperature Sensor WST1		**8160.WST1**
	Rain Sensor WTB100		**8353.10**
	Connection cable, 20m		**8370.UKAB20**

Aspirated temperature/humidity measurement

Open communication protocol:
- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analoge outputs in combination with 8160.UDAC

Third-Party-Rain gauge sensors are compatible: 0.1 mm, 0.2 mm, 0.5 mm, 1mm heated and unheated.

Lufft WS301-UMB – Temperature, Relative Humidity, Radiation, Air Pressure

From the WS product family of professional intelligent measurement transducers with digital interface for environmental applications.

Integrated design with ventilated radiation protection for measuring:

- Air temperature
- Relative humidity
- Solar radiation
- Air pressure

Relative humidity is measured by means of a capacitive sensor element; a precision NTC measuring element is used to measure air temperature.

The world renowned technology of Kipp+Zonen CMP3 is integrated.

Measurement output can be accessed by the following protocolls:
UMB-Binary, UMB-ASCII, SDI-12, MODBUS

One external temperature or rain sensor is connectable.

Lufft WS301-UMB Compact Weather Station			Order No.
WS301-UMB			**8374.U01**
Technical Data	Dimensions	Ø approx. 150 mm, height 268 mm	
	Weight	approx. 1.3 kg	
Temperature	Principle	NTC	
	Measuring range	–50 … 60 °C	
	Accuracy	±0.2 °C (–20 °C … +50 °C), otherwise ±0.5 °C (> -30 °C)	
Relative humidity	Principle	Capacitive	
	Measuring range	0 … 100 % RH	
	Accuracy	±2 % RH	
Radiation	Response time (95%)	< 18s	
	Non-stability (change/year)	< 1%	
	Non-linearity (0 to 1,000 W/m²)	< 1%	
	Directional error (at 80 ° with 1,000 W/m²)	< 20W/m²	
	Temperature dependent of sensitivity	< 5% (–10 bis +40 ° C)	
	Tilt error (at 1000 W/m²)	< 1%	
	Spectral range (50% points)	300 to 2,800 nm	
	Measuring range	2000W/m²	
Air pressure	Principle	MEMS Capacitive	
	Measuring range	300 … 1200 hPa	
	Accuracy	±0.5 hPa (0 … +40°C)	
General Information	Protection type housing	IP66	
	Interface	RS485, 2-wire, half-duplex	
	Op. power consumption	12-24 VDC ±10%	
	Operating humidity range	0 … 100 %	
	Op. temperature range	–50 … 60 °C	
Accessories	Surge protection		**8379.USP**
	Power supply 24 V/4 A		**8366.USV1**
	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Digital-analog-converter DACON8-UMB		**8160.UDAC**
	Temperature Sensor WT1		**8160.WT1**
	Road Surface Temperature Sensor WST1		**8160.WST1**
	Rain Sensor WTB100		**8353.10**
	Connection cable, 20m		**8370.UKAB20**

KIPP & ZONEN
SINCE 1830

Aspirated temperature/humidity measurement

Open communication protocol:
- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analoge outputs in combination with 8160.UDAC

Third-Party-Rain gauge sensors are compatible: 0.1 mm, 0.2 mm, 0.5 mm, 1mm heated and unheated.

Lufft WS300-UMB – Temperature, Air Pressure, Relative Humidity

From the WS product family of professional intelligent measurement transducers with digital interface for environmental applications.

Integrated design with ventilated radiation protection for measuring:

- Air temperature
- Relative humidity
- Air pressure

Relative humidity is measured by means of a capacitive sensor element;
a precision NTC measuring element is used to measure air temperature.

Measurement output can be accessed by the following protocolls:
UMB-Binary, UMB-ASCII, SDI-12, MODBUS

One external temperature or rain sensor is connectable.

Lufft WS300-UMB Compact Weather Station			Order No.
WS300-UMB			**8372.U01**
Technical Data	Dimensions	Ø approx. 150 mm, height approx. 223 mm	
	Weight	approx. 1.0 kg	
Temperature	Principle	NTC	
	Measuring range	–50 … 60 °C	
	Accuracy	±0.2 °C (–20 °C … +50 °C), otherwise ±0.5 °C (>–30 °C)	
Relative humidity	Principle	Capacitive	
	Measuring range	0 … 100 % RH	
	Accuracy	±2 % RH	
Air pressure	Principle	MEMS Capacitive	
	Measuring range	300 … 1200 hPa	
	Accuracy	±0.5 hPa (0 … +40°C)	
General Information	Interface	RS485, 2-wire, half-duplex	
	Protection type housing	IP66	
	Op. power consumption	12-24 VDC ±10%	
	Operating humidity range	0 … 100 %	
	Op. temperature range	–50 … 60 °C	
Accessories	Surge protection		**8379.USP**
	Power supply 24 V/4 A		**8366.USV1**
	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Digital-analog-converter DACON8-UMB		**8160.UDAC**
	Temperature Sensor WT1		**8160.WT1**
	Road Surface Temperature Sensor WST1		**8160.WST1**
	Rain Sensor WTB100		**8353.10**
	Connection cable, 20m		**8370.UKAB20**

Aspirated temperature/humidity measurement

Open communication protocol:
- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analoge outputs in combination with 8160.UDAC

Third-Party-Rain gauge sensors are compatible: 0.1 mm, 0.2 mm, 0.5 mm, 1mm heated and unheated.

Lufft WS200-UMB – Ultrasonic Wind Sensor, Electronic Compass

From the WS product family of professional intelligent measurement transducers with digital interface for environmental applications.

Integrated design for measuring:

- Wind direction
- Wind speed

Ultrasonic sensor technology is used to take wind measurements.

Measurement output can be accessed by the following protocolls:
UMB-Binary, UMB-ASCII, SDI-12, MODBUS

One external temperature or rain sensor is connectable.

Lufft WS200-UMB Compact Weather Station			Order No.
WS200-UMB			**8371.U01**
Technical Data	Dimensions	Ø approx. 150 mm, height approx. 194mm	
	Weight	approx. 0.8 kg	
Wind direction	Principle	Ultrasonic	
	Measuring range	0 … 359.9 °	
	Accuracy	< 3 ° RMSE >1.0 m/s	
Wind speed	Principle	Ultrasonic	
	Measuring range	0 … 75 m/s	
	Accuracy	±0.3 m/s or 3 % (0 … 35 m/s) RMS of reading, whichever is greater ±5 % (> 35 m/s) RMS	
General Information	Heating	20 VA at 24 VDC	
	Protection type housing	IP66	
	Interface	RS485, 2-wire, half-duplex	
	Op. power consumption	12-24 VDC ±10%	
	Operating humidity range	0 … 100 %	
	Op. temperature range	–50 … 60 °C	
Accessories	Surge protection		**8379.USP**
	Power supply 24 V/4 A		**8366.USV1**
	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Digital-analog-converter DACON8-UMB		**8160.UDAC**
	Temperature Sensor WT1		**8160.WT1**
	Road Surface Temperature Sensor WST1		**8160.WST1**
	Rain Sensor WTB100		**8353.10**
	Connection cable, 20m		**8370.UKAB20**

Ultrasonic wind measurement

Open communication protocol:
- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analoge outputs in combination with 8160.UDAC

Third-Party-Rain gauge sensors are compatible: 0.1 mm, 0.2 mm, 0.5 mm, 1mm heated and unheated.

Lufft WTB100 External Rain Gauge

Lufft WTB100 Rain Gauge			Order No.
Rain gauge 0.2 mm unheated ***Rain Gauge with bounce-free reed contact (normally closed)***			**8353.10**
Technical Data	Dimensions	Ø165 mm, height 285 mm	
	Connection type	Open cable ends	
	Collecting area	200 cm^2	
	Resolution	0.2 mm and 0.5 mm (tipping bucket), adjustment by reduction ring	
	Weight	930 g	
	Mounting type	On mast, Ø 60-76 mm	
	Accuracy	± 2%	

Lufft Rain Gauge			Order No.
Rain gauge 0.1 mm unheated			**8353.13**
Rain gauge 0.1 mm heated			**8353.13H**
Technical Data	Dimensions	Ø 190 mm, Height 292 mm	
	Connection type	Open cable ends	
	Collecting area	200 cm^2	
	Resolution	0.1 mm (tipping bucket)	
	Weight	approx. 4 kg	
	Mounting type	On mast, Ø 60 mm	
	Operating temp. range, rain gauge unheated	0 … 70 °C	
	Operating temp. range, rain gauge heated	–30 … 70 °C	
	Heating	42 V/AC, 170 VA	
Accessories	Power supply for heated probe 8353.13H		**8353.SV1**
	Stand, height 1 m for 8353.13		**8353.FUS2**
	Stand, height 1 m for 8353.13H		**8353.FUS3**

Lufft Rain Gauge			Order No.
Rain gauge 0.1 mm unheated			**8353.12**
Rain gauge 0.1 mm heated			**8353.12H**
Technical Data	Dimensions	Ø 190 mm, height 292 mm	
	Connection type	Open cable ends	
	Collecting area	200 cm^2	
	Resolution	0.1 mm (tipping bucket)	
	Weight	approx. 3 kg	
	Mounting type	On mast, Ø 60 mm	
	Operating temp. range, rain gauge unheated	0 … 70 °C	
	Operating temp. range, rain gauge heated	–20 … 70 °C	
	Heating	24 VDC 150 W	
Accessories	Power supply for heated probe 8353.12H		**8366.USV2**
	Stand, height 1 m for 8353.12		**8353.FUS2**
	Stand, height 1 m for 8353.12H		**8353.FUS3**

A Passion for Precision

Ventus

VENTUS ultrasonic cold weather anemometer was tested under MIL standard-810F method 521.2 proving success in ice free operation. Ventus is corrosion tested for seawater and vibration resistance. It gives the best accuracy with maintenance-free operation.

HALT test	
Vibration 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*

Now UL-certified
Underwriters Laboratories Inc.

Safety tested
Production monitored
TÜV SÜD NRTL
C US

Lufft VENTUS-UMB– Ultrasonic Wind Sensor Metal Housing, 240 W-Heater

Extremely precise and maintenance-free measurement of wind velocity and wind direction, as well as calculation of acoustic virtual temperature.

Belongs to Lufft's WS family of professional intelligent sensors with digital and analog interfaces.

The ultrasonic wind sensor is designed without mechanical parts – traditionally known as "cups and vane".

The digital or analog output delivers instantaneous, average, min or max value with flexible measuring rate. The VENTUS is heated in case of critical ambient conditions. Made for cold climates!

Recommended for:

- Wind turbines
- Marine/ships
- Meteorology
- Building automation

The following outputs/protocols are available:

- NMEA
- UMB-ASCII
- UMB-Binary
- MODBUS (ASCII, RTU)
- SDI-12
- 4 … 20 mA, 0...10V, 0…20 mA, 2…10V frequency (analog)

Lufft VENTUS-UMB Wind Sensor			Order No.
VENTUS-UMB for wind energy applications			**8371.UMT**
Technical Data	Dimensions	Ø approx. 150 mm, height approx. 170 mm	
	Weight	approx. 1.62 kg	
Wind direction	Principle	Ultrasonic	
	Measuring range	0 … 359.9 °	
	Resolution	0.1 °	
	Accuracy	<2 ° RMSE >1.0 m/s	
	Start-up threshold	0.1 m/s	
	Measuring rate	60 partial measurements/ 15 measurements per second	
	Measurement output rate	1-10 seconds adjustable – default 10 s	
Wind speed	Principle	Ultrasonic	
	Measuring range	0 … 75 m/s	
	Resolution	0.1 m/s	
	Accuracy	±0.2 m/s or ± 2 % RMS of reading, whichever is greater	
	Start-up threshold	0.1 m/s	
	Measuring rate	60 partial measurements/ 15 measurements per second	
	Measurement output rate	1-10 seconds adjustable – default 10 s	
	Unit	m/s; km/h; mph; kts	
Virtual temperature	Principle	Ultrasonic	
	Measuring range	–50 … +70 °C	
	Resolution	0.1 °C	
	Accuracy	± 2.0 °C (without heater and without sun exposure or wind > 4m/s)	
	Measuring rate	60 partial measurements/ 15 measurements per second	
	Measurement output rate	1-10 seconds adjustable – default 10 s	
Air pressure	Principle	MEMS Capacitive	
	Measuring range	300 … 1200 hPa	
	Accuracy	±1.5 hPa	
Data output digital	Interface	RS485 semi-/full duplex, isolated	
	Baudrate	1200 - 57600	
	Meas. rate instant. value	1-10 s	
	Measuring rate Avg (arithmetic, vector)	1-10 min	
	Status	Heating, sensor failure	
Data output analog	Only semi-duplex mode		
	Output signal	0 …20 mA, 4 …20 mA, 0 …10V, 2 …10V, 2 …2,000 Hz only output 1 (instantaneous, avg, min, max)	
	Load	max. 500 Ohm	
	Resolution	16 Bit	
General Information	Operating temperature	-40 … +60 ° C (with heating) -20 … +60 ° C (without heating)	
	Bus operation	Up to 32 devices	
	Operating voltage electronics	24 VDC ±10 % or 24 VDC/1.2 VA without heating 12 VDC	
	with heating	24 VDC, max. 240 VA (140 W + 100 W)	
	Connection	8-pole plug	
	Housing material	Aluminum, seawater-proof	
	Protection	IP66	
	Pole diameter	50 mm/2"	
	Factory certificate	yes	
Accessories	Surge protection		**8379.USP-V**
	Power supply 24 V/10 A		**8366.USV2**
	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Connection cable, 15 m incl. connector		**8371.UK015**
	Connection cable, 50 m incl. connector		**8371.UK050**
	Connector		**8371.UST1**

Maintenance-free

Measuring

Lufft V200A-UMB – Ultrasonic Wind Sensor Plastic Housing, 20 W-Heater

Extremely precise and maintenance-free measurement of wind velocity and wind direction as well as calculation of acoustic virtual temperature.

Belongs to Lufft's WS family of professional intelligent sensors with digital and analog interfaces.

The ultrasonic wind sensor is designed without mechanical parts – traditionally known as "cups and vane".

The digital or analog output delivers instantaneous, average, min or max value with flexible measuring rate. The V200A is heated to remove frost and ice formation from the sensor.

Recommended for:

- Meteorology
- Building automation

The following outputs/protocols are available:

- NMEA
- UMB-ASCII
- UMB-Binary
- MODBUS (ASCII, RTU)
- SDI-12
- 4…20 mA, 0...10V, 0…20mA, 2…10V frequency (analog)

Lufft V200A-UMB Ultrasonic Wind Sensor			Order No.
V200A-UMB			**8371.UA01**
Technical Data	Dimensions	Ø approx. 150 mm, height approx. 170 mm	
	Weight	approx. 0.8 kg	
Wind direction	Principle	Ultrasonic	
	Measuring range	0…359.9 °	
	Resolution	0.1 ° (standard)	
	Accuracy	< 3 ° RMSE >1.0 m/s	
	Start-up Threshold	0.3 m/s	
	Measuring rate	60 partial measurements/ 15 measurements per second	
	Measurement output rate	1-10 seconds adjustable – default 10 s	
Wind speed	Principle	Ultrasonic	
	Measuring range	0…75 m/s	
	Resolution	0.1 m/s	
	Accuracy	±0.3 m/s or 3 % (0…35 m/s) RMS of reading, whichever is greater ±5 % (>35 m/s) RMS	
	Start-up threshold	0.3 m/s	
	Measuring rate	60 partial measurements/ 15 measurements per second	
	Measurement output rate	1-10 seconds adjustable – default 10 s	
	Unit	m/s; km/h; mph; kts	
Virtual temperature	Principle	Ultrasonic	
	Measuring range	–50 °C…+70 °C	
	Resolution	0.1 °K	
	Accuracy	± 2.0 K (without heater and without sun exposure or wind >4ms)	
	Measuring rate	60 partial measurements/ 15 measurements per second	
	Measurement output rate	1-10 seconds adjustable – default 10 s	
Air pressure	Principle	MEMS Capacitive	
	Measuring range	300…1200 hPa	
	Accuracy	+/- 0.5h Pa (0…+40°C)	
Data output digital	Interface	RS485 semi-/full duplex, isolated	
	Baudrate	1200 - 57600	
	Meas. rate instant. value	1-10 s	
	Measuring rate Avg (arithmetic, vector), Min, Max	1-10 min	
	Status	Heating, sensor failure	
Data output analog	Only semi-duplex mode		
	Output signal	0…20 mA, 4…20 mA, 0…10V, 2…10V, 2…2,000 Hz only output 1 (instantaneous, avg, min, max)	
	Load	max. 500 Ohm	
	Resolution	16 Bit	
General Information	Operating temperature	–40…+60 °C (with heating)	
	Bus operation	Up to 32 devices	
	Operating voltage electronics	24 VDC ±10 % or 24 VDC/1,2 VA without heating: 12 VDC	
	with heating	24 VDC, max. 20 VA	
	Connection	8-pole plug	
	Housing material	Plastic	
	Protection	IP66	
	Pole diameter	50 mm/2"	
	Factory certificate	yes	
Accessories	Surge protection		**8379.USP-V**
	Power supply 24 V/4 A		**8366.USV1**
	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Connection cable, 15 m incl. connector		**8371.UK015**
	Connection cable, 50 m incl. connector		**8371.UK050**
	Connector		**8371.UST1**

Wind Sensor BASIC

The Wind Sensors without heating offer:
- wearfree data acquisition
- robust housing
- dimensionally stable blade wind vane
- fail-safe cup
- double precision bearing

Wind Sensor BASIC			Order Nr.
The slender, flow-optimized external geometry ensures certain and precise measurement. For highest stability under load and safe long-term use we rely on robust materials, such as the anodised aluminium housing. The compact sensors with their simple mounting principles additionally provide a high degree of flexibility. Without heating.			
Technical data	***Wind Sensor BASIC***		
Wind direction	Dimensions	Blade wind fane L 232 mm / H 260 mm	**8368.100**
	Weight	approx. 0.95 kg	
	Principle	magnetic	
	Measuring range	0…360 °	
	Resolution	3 °	
	Accuracy	+/-5 °	
	Starting value	0.7 m/s	
	Outputs	0…5 V	
	Supply voltage	24 VDC (6…28 VDC)	
	current consumption	15 mA at 12 V / 18 mA t 28 V	
Wind speed	Dimensions	3-armed cup-Ø 95 mm / H 180 mm	**8368.110**
	Weight	approx. 0.9 kg	
	Principle	magnetic	
	Measuring range	0.7…50 m/s	
	Resolution	0.26 m/s	
	Accuracy	+/-2 % FS	
	Starting value	0.7 m/s	
	Outputs	0…192 Hz	
	Supply voltage	24 VDC (4.7…28 VDC)	
	current consumption	max. 8 mA | <4 mA at 5 V	
Temperature-measuring range	-30… +70 °C under non-icing environmental conditions		
Housing	sea water resistant aluminium, anodized, IP53 for boreswith Ø 30 mm at max. 10 mm material thickness incl. 5 m fixed cable		
Accessories	Mast adapter Ø 50 mm		**8368.Z100**
	Traverse		**8368.Z101**

Wind Sensors BASIC are recommended for use in:
building services
environmental measurements
wind power plants
stadiums
industrial meteorology
solar plants
controlling of jalousies

Further information about our products can be found on our website www.lufft.de

Wind Sensor INDUSTRY

Wind Sensor INDUSTRY			Order No.
The wind sensors impress with high accuracy, simplest mounting methods and ultimately robust, seawater-proof materials.			
Technical Data	***Wind Sensor INDUSTRY***		
Wind direction	Dimensions	Blade wind fane, L 232 mm, H 307 mm dimensionally stable, plastic	
	Weight	approx. 0.35 kg	
	Measuring range	0…360°	
	Resolution	2°	
	Accuracy	+/-2°	
	Starting value	< 0.7 m/s	
	Outputs	0(4)…20 mA / max. load 600 Ohm	
Wind speed	Dimensions	3-armed cup-Ø 95 mm / H 230 mm	
	Weight	approx. 0.25 kg	
	Measuring range	0.7…50 m/s	
	Resolution	< 0.02 m/s	
	Accuracy	+/-2 % FS	
	Starting value	< 0.7 m/s	
	Outputs	0(4)…20 mA = 0…50 m/s, max. load 600 Ohm	
General Information	Measuring principle	Hall Sensor Array	
	Range of application	temperatures -30…+70 °C heated, wind speed 0…60 m/s	
	Supply voltage	24 (20…28) VDC, max. 800 mA electr. controlled heating, 18 W	
	Housing	Aluminium, anodized, IP53, Ø 32 mm	
	Bore	Ø 30 mm for mounting at traverse	
Included in delivery	cable with plug 12 m, ready-made		
Varieties	**(Sensors with fixed cable or without heating on request)**		
	Wind direction	0…20 mA – output	**8368.200**
	Wind speed	0…20 mA – output	**8368.210**
	Wind direction	4…20 mA – output	**8368.220**
	Wind speed	4…20 mA – output	**8368.230**
	Wind direction	0…10 VDC output = 0…360 °C	**8368.240**
	Wind speed	0…10 VDC output = 0…50 m/s	**8368.250**

The optimal heating of the sensor head and minimum powerdemand of the system are made possible by thermal decoupling of the housing shaft.

- precision, tradition and future reliability
- large operative measuring and temperature range
- simplest mast mounting
- very good starting values through magnetic, contactless measuring principle
- optimal heating concept

Wind Sensors INDUSTRY are recommended for use in:

wind power plants
building services
wind warning devices on cranes
industrial applications
in all climatic zones
environmental measurements

Further information about our products can be found on our website www.lufft.de

Wind Sensor PROFESSIONAL

The titan in the catagory „professional wind sensors“ meets the challenge of highest reliability over a very large measuring range.

- Precision, tradition and future reliability
- Large measuring range of 75 m/s!
- Very low starting value of 0.3 m/s through magnetic, contactless measuring principle
- Optimal heating concept at the 4…20 mA version

Wind Sensor PROFESSIONAL			Order No.
Two optimized versions are available with regard to power supply and signal output. The design is not only aerodynamically optimized but also effectuates extremely good deep-seaworthiness through the special surface treatment.			
Technical Data	***Wind Sensor PROFESSIONAL***		
Wind direction	Dimensions	Blade wind vane, L 240 mm, H 310 mm	**8368.300**
	Weight	approx. 0.4 kg	
	Principle	Magnetical Positioning Encor System	
	Measuring range	0…360 °	
	Resolution	< 1°	
	Accuracy	± 1°	
	Outputs	4…20 mA analogue	
	Starting valuee	≤ 0.3 m/s	
	Measuring element	Blade wind vane, dimensionally stable, aluminium	
Wind speed	Dimensions	3-armed cup CB, Ø 215 mm	**8368.310**
	Weight	approx. 0.35 kg	
	Principle	Magnetical Positioning Encor System	
	Measuring range	0.3…75 m/s	
	Resolution	< 0.1 m/s	
	Accuracy	± 0.3 m/s ≤10 m/s ± 1 % FS…50 m/s	
	Outputs	4…20 mA analogue	
	Starting valuee	< 0.3 m/s	
	Measuring element	3-armed cup, dimensionally stable, aluminium	
Range of application	Temperatures -40…+70 °C, heated, max. gusts of 100 m/s		
Supply voltage	24 VDC (20…28 VDC), max 800 mA, electr. controlled heated		
Housing	Seawater resistant aluminium, surface (special anodised oxidised Al, black, IP 65		
Measuring element	in upright position, Ø 32 mm, bore Ø 30 mm for mounting at mast or traverses		
Included in delivery	Cable 12 m, plug connection, 4 pin, polarity protection ready-made		
Accessories	Mast adapter Ø 50 mm		**8368.Z100**
	Traverse, for mast Ø 30-80 mm lenght 825 mm		**8368.Z101**
	Traverse, for mast top 50 mm, lenght 600 mm		**8368.Z102**
	Lightning rod		**8368.Z103**

Wind Sensors PROFESSIONAL are recommended for use in:

Offshore
wind power plants
meteorology
wind warning systems
power plants
airports
military and civil ships

Further information about our products can be found on our website www.lufft.de

Wind Sensor PROFESSIONAL-IX

Dual bearings, coupled with the use of a special alloy, allow a large range of measurements to be taken in a wide variety of temperatures. The frictionless measuring technique delivers precise and reliable measurements without wear and tear. Simple mounting allows the device to be used with a high degree of flexibility.

- able to take a wide range of measurements in a wide variety of temperatures, all year round
- excellent start up speeds due to frictionless measuring technique
- internal heating system offers optimal protection against extreme conditions
- high resilience and durability

Wind Sensor PROFESSIONAL-IX			Order No.
Robust sensor for reliable measurement of wind direction and wind speed at extremely low temperatures			
Technical Data	***Wind Sensor PROFESSIONAL-IX***		
Wind direction	Dimensions	Blade wind vane L 195 mm, H 295 mm	
	Weight	approx. 0.8 kg	
	Principle	Hall Sensor Array contact-free	
	Measuring range	0…360 °	
	Resolution	< 1 °	
	Accuracy	± 1 °	
	Outputs	0/4…20 mA	
	Starting valuee	< 0.4 m/s	
	Power supply	Sensor, 24 (20…28) VDC Heating, 24 VDC, 125 W	
Wind speed	Dimensions	3-armed cup Ø 218 mm H 241 mm	
	Weight	approx. 0.8 kg	
	Principle	Hall Sensor Array contact-free	
	Measuring range	0.4…50 m/s	
	Resolution	< 0.1 m/s	
	Accuracy	± 2% FS at 50 m/s	
	Outputs	0…500 Hz, 0/4…20 mA	
	Starting valuee	< 0.4 m/s	
	Messelement	3-armed cup, dimensionally stable, aluminium	
	Power supply	Sensor, 24 (20…28) VDC Heating, 24 VDC, 125 W	
Varieties	Wind direction	4…20mA	**8368.400**
		0…20mA	**8368.410**
	Wind speed	4…20mA	**8368.450**
		0…20mA	**8368.460**

NON-ICING wind sensor with 125 W Heating
Cold Climate Standard
polar stations
wind power plants
ascents supports
environmental applications
winter sports grounds
wind warning systems for cranes

Further information about our products can be found on our website www.lufft.de

WS600-UMB

WS400-UMB

Sensors

of the Highest Quality

It is difficult to believe that rain density can be measured, that a sensor can record the speed of precipitation and the size of the rain drops. In such cases, high-tech sensors can be extremely precise and meticulous in detail. When it is a matter of traffic safety, then Lufft Measuring Technology knows no excuses!

Lufft R2S-UMB – Precipitation Sensor (Present Weather Detector)

The drop speed is captured with a 24-GHz-Doppler radar.

The precipitation quantity and intensity is calculated from the correlation between drop size and speed.

The type of precipitation (rain, snow, sleet, freezing rain, hail) is detected from the difference in drop speed.

The measurement data is available for further processing in the form of a standard protocol (Lufft UMB protocol).

Lufft R2S-UMB Precipitation Sensor			Order No.
R2S-UMB EU, USA, Canada			**8367.U01**
R2S-UMB UK			**8367.U02**
Technical Data	Resolution liquid precipitation	0.01 … 0.1 … 1.0 mm/m²	
	Power supply	20 … 28 VDC	
	Power consumption without heating	2 VA	
	Heating power	30 VA	
	Op. temperature range	-40...+60°C	
	Op. humidity range	0 … 100 %	
	Protection	IP66	
	Interface	RS485 semiduplex wire, UMB protocol, pulse and frequency interface	
	Cable length	10 m	
	Measuring range hail	5.1 … approx. 30 mm	
	Type of precipitation	Rain, snow, sleet, freezing rain, hail	
Precipitation	Principle	Doppler-Radar	
	Reproducibility	typ. > 90 %	
	Measuring range drop size	0.3 … 5 mm	
Accessories	UMB Interface converter ISOCON-UMB		**8160.UISO**
	Power supply 24 V/4 A		**8366.USV1**
	Protection shield for R2S-UMB		**8367.SCHIRM**
	Traverse for R2S-UMB + WS500-UMB		**8367.TRAV1**
	Surge protection		**8379.USP**
	Digital-analog-converter DACON8-UMB		**8160.UDAC**
	Connection cable, 20m		**8370.UKAB20**

Maintenance-free
Fast response time
Present weather detector
Resolution 0.01 mm

Added Value

Smart Sensors from Lufft offer an additional input to connect external sensors. The WSxx master sensor serves as the "UMB converter" of these external measurements.

Whether you need an additional temperature measurement, a tipping bucket or a leaf wetness sensor: "all-in-one sensor solutions" for agrometeorological and meteorological applications or for PV monitoring.

Lufft WT1 – Temperature Sensor

Lufft WT1 - Temperature Sensor			Bestell-Nr.
WT1 - Temperature Sensor			**8160.WT1**
Technical Data	Dimensions	Ø 30mm, Höhe 8mm	
	Weight (incl. cable)	approx. 300 g	
	Measuring range	–40 … +80 °C	
	Resolution	0,25°C	
	Accuracy	±1 °C	
	Protection type	IP68	
	Op. temperature range	–40 … +80 °C	
	Cable length	10m	

Each sensor of the WS family has an extra input channel to connect a remote temperature sensor.

The temperature sensor measures the surface temperature, eg. the surface temperature of a solar module.
This remote temperature sensor can be combined with any sensor of the WS family.
A typical application is to combination with WS301-UMB or WS501-UMB as a reference sensor how efficient a solar system works.

Lufft WLW100 - Leaf Wetness Sensor

Lufft WLW100 - Leaf Wetness Sensor			Bestell-Nr.
WLW100 - Leaf Wetness Sensor			**8358.10**
Technical Data	Dimensions	112mm x 58mm x 1mm	
	Weight (incl. cable)	approx. 150 g	
	Measuring range	0...1500mV	
	Principle	Capacitive	
	Op. temperature range	–20 … +50 °C	
	Cable length	5m	

The WS601-UMB and WS401-UMB has an extra input channel to connect a remote leaf wetness sensor.

The leaf wetness sensor measures, whether a leaf is dry or wet.
This remote sensor can be combined with the WS601-UMB and WS401-UMB.
The WS601-UMB and WS401-UMB with external leaf wetness sensor has all sensor informations for professional agricultural weather applications.

Lufft Snow Depth Sensor / Fold-Over mast / LCOM

Lufft Snow Depth Sensor			Bestell-Nr.
A compact laser sensor for determining snow depths			**8365.10**
Technical Data	Dimensions	302mm x 130mm x 234mm	
	Weight	approx. 3.3kg	
	Snow depth	0...15m (0...50ft)	
	Accuracy	< ±5mm	
	Progr. measuring interval	10...600s	
	Time to measure	0.16...6s	
	Distance range	0.1...15m	
	Data interfaces Interfaces modes RS232 analog	RS232, analog output 2.4...38,4kBaud, 8N1 Format 4...20mA	
	Power consumption	0.5...1W (without heating) <12W (with heating,@-40°C)	
	Power supply	10...30VDC (without heating) 15...24VDC (with heating)	
	Laser classification	Class 2 (EN 60825-1:2007)	
	International protection	IP65	
	Temperature range	-40...+50°C	
	Relative humidity	0...100%	
	Heating activity	<0°C programmable	

Fold-Over mast, hot-dip galvanized			Order No.
Fold-Over mast			**8357.450**
Technical data	Dimensions	Length 450cm	
Accessories	Metal box, small, for 8357.450 Dimensions 120 mm height x 360 mm wide x 80 mm deep		**8357.CAS1**
	Cabinet, large Dimensions 600 mm height x 400 mm wide x 210 mm deep		**8357.CAS2**
	Cabinet UMB, for Lufft pole 8357.450 8357.CAS3 (incl. mounting rails, wiring channel, plug socket, connecting terminal, protective switch, bag for connection diagram) Dimensions 600 mm high x 400 mm wide x 210 mm deep		**8357.CAS3**
	Cabinet UMB for other poles (incl. mounting rails, wiring channel, plug socket, connecting terminal, protective switch, bag for connection diagram) Dimensions 600 mm high x 400 mm wide x 210 mm deep		**8160.CAS4**
	Lockable tilt device		**8357.450V**
	4 fixed anchor dowel pins		**8357.450D**
	Switch for door contact		**8160.UDC**
	Fault current protective switch		**8160.UFI**
	Arresting cable		**8357.450UAC**
	Cables between sensors and weather case are “non-visible”		

LCOM Lufft Communicator			Order No.
LCOM			**8511.EAK**
Operating Conditions	Power supply	20 … 28 VDC	
	Power consumption	10 VA	
	Ambient temperature	–30 °C … 60 °C	
	Relative humidity	< 90 % RH	
	Protection	IP20	
	Dimensions	230 mm x 130 mm x 50 mm	
	USB Interface	USB2.0B	
	GPRS modem interface	RS232 on Wago Cage Clamp	
	Party line modem interface	RS232 on Wago Cage Clamp	
	UMB bus interface	RS485 on Wago Cage Clamp	
	Display size	7 inch	
	Display resolution	800 x 480 pixel	
Storage conditions	Ambient temperature	–30 °C … 60 °C	
	Relative humidity	< 95 % RH	
Accessories	Power supply 24 V/4 A		**8366.USV1**
	GPRS Modem		**8510.GPRS**
	Night vision camera, 3 Mega pixel		**9983.10**
	Night vision camera, VGA		**9983.20**

Inspection certificate
DIN EN 10204/3.1

ZERTIFIZIERT
DIN ISO 9001
NR 70100 222
CERTIFIED

Lufft

Compact Weather Station

Model Type	**WS600-UMB**
Serial Number	**006 0911 0813 025**

This is to certify, that this Lufft product has been tested according to the TQM of the G. LUFFT Mess- und Regeltechnik GmbH manual in accordance with DIN EN ISO 9001. Ordering specifications are complied with. Execution of instruments / systems as well as testing of accuracy was carried out following LUFFT quality assurance procedures. Quality inspection was successfully passed.

Measurements

	Reference Value	*Actual Value*	*Status*
Relative Humidity	54,5%	54,3%	✓
Temperature	5,99 °C	5,75 °C	✓
Air Pressure	979,6 hPa	981,0 hPa	✓

Precipitation

	Reference Value	*Actual Value*	*Status*
Drop Size Small	0,115 mm	0,116 mm	✓
Drop Size Medium	0,670 mm	0,674 mm	✓
Drop Size Large	2,730 mm	2,716 mm	✓

Wind Direction and Speed

Angular Deviation

	2,0 m/s	5,0 m/s	10,0 m/s	20,0 m/s	50,0 m/s	*Status*
RMSE	1,3°	1,0°	0,9°	0,8°	0,7°	✓

Wind Speed

	2,0 m/s	5,0 m/s	10,0 m/s	20,0 m/s	50,0 m/s	*Status*
RMS	2,0 m/s	5,0 m/s	10,0 m/s	20,1 m/s	50,3 m/s	✓

Date	Inspector	Quality Management
18042011	i. A. Martin Wyrambik	i. A. Helmut Hager

G. LUFFT Mess- und Regeltechnik GmbH
Gutenbergstrasse 20
70736 Fellbach
Germany

Phone: +49-711-51822-0
Fax: +49-711-51822-41
E-Mail: info@lufft.de

Managing Director
Dipl.-Wirtsch.-Ing. Klaus Hirzel
Dipl.-Ing. Axel Schmitz-Hübsch

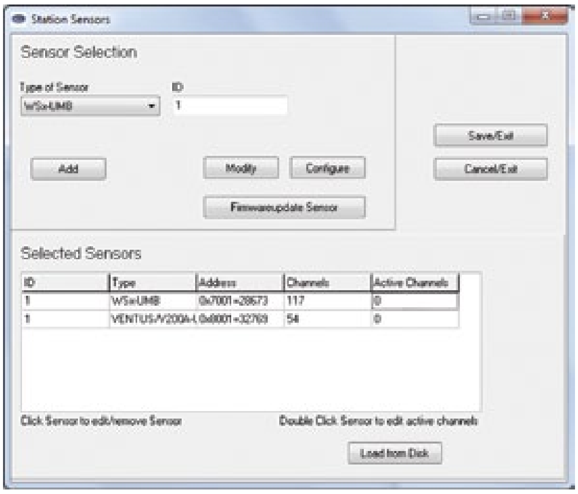
Lufft UMB Configuration Software

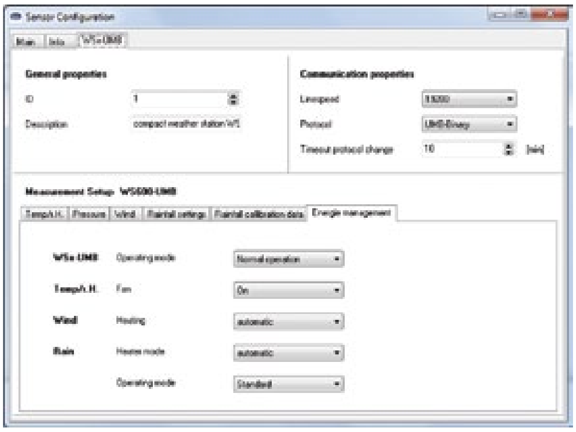
A Lufft intelligent weather sensor gives you a choice of various settings. The config tool allows you to choose the correct ones, such as:

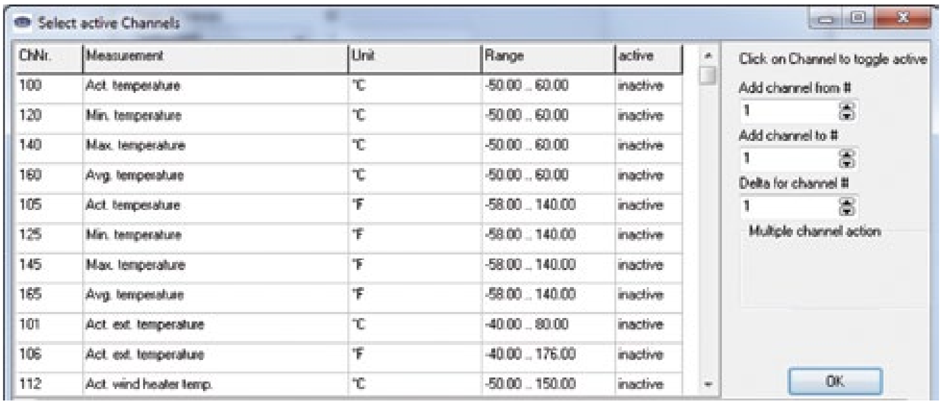
Choosing the data channels needed for your purpose. As well as raw data, these could include calculated values such as the dew point. The data can be shown in either metric or US customary units.

Recording the data in a text document during test runs. This form of protocol and archiving with date stamp can also be useful for field testing

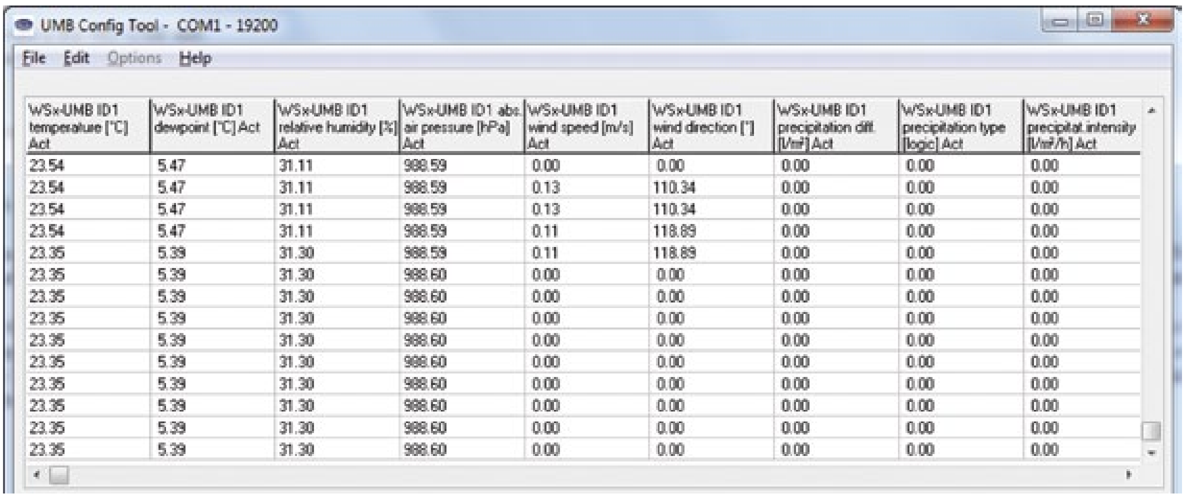
Loading the most recent firmware in the intelligent probe. Continual improvements and function enhancements can therefore simply be installed during maintenance. Should you prefer not to alter the setting yourself, a local Lufft Partner is available to aid in the correct configation of your intelligent measuring device.







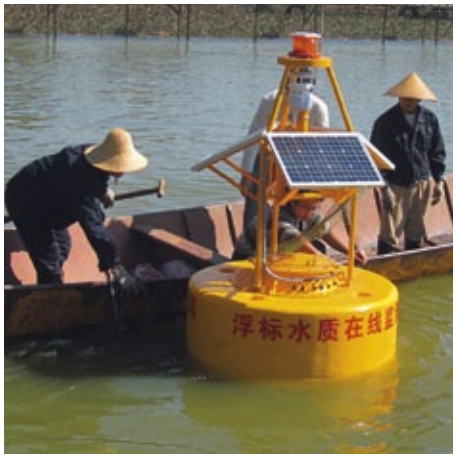
ChNr.	Measurement	Unit	Range	active
100	Act. temperature	°C	-50.00 .. 60.00	inactive
120	Min. temperature	°C	-50.00 .. 60.00	inactive
140	Max. temperature	°C	-50.00 .. 60.00	inactive
160	Avg. temperature	°C	-50.00 .. 60.00	inactive
105	Act. temperature	°F	-58.00 .. 140.00	inactive
125	Min. temperature	°F	-58.00 .. 140.00	inactive
145	Max. temperature	°F	-58.00 .. 140.00	inactive
165	Avg. temperature	°F	-58.00 .. 140.00	inactive
101	Act. ext. temperature	°C	-40.00 .. 80.00	inactive
106	Act. ext. temperature	°F	-40.00 .. 176.00	inactive
112	Act. wind heater temp.	°C	-50.00 .. 150.00	inactive



WSx-UMB ID1 temperature [°C] Act	WSx-UMB ID1 dewpoint [°C] Act	WSx-UMB ID1 relative humidity [%] Act	WSx-UMB ID1 abs. air pressure [hPa] Act	WSx-UMB ID1 wind speed [m/s] Act	WSx-UMB ID1 wind direction [°] Act	WSx-UMB ID1 precipitation diff. [l/m²] Act	WSx-UMB ID1 precipitation type [logic] Act	WSx-UMB ID1 precipitat. intensity [l/m²/h] Act
23.54	5.47	31.11	988.59	0.00	0.00	0.00	0.00	0.00
23.54	5.47	31.11	988.59	0.13	110.34	0.00	0.00	0.00
23.54	5.47	31.11	988.59	0.13	110.34	0.00	0.00	0.00
23.54	5.47	31.11	988.59	0.11	118.89	0.00	0.00	0.00
23.35	5.39	31.30	988.59	0.11	118.89	0.00	0.00	0.00
23.35	5.39	31.30	988.60	0.00	0.00	0.00	0.00	0.00
23.35	5.39	31.30	988.60	0.00	0.00	0.00	0.00	0.00
23.35	5.39	31.30	988.60	0.00	0.00	0.00	0.00	0.00
23.35	5.39	31.30	988.60	0.00	0.00	0.00	0.00	0.00
23.35	5.39	31.30	988.60	0.00	0.00	0.00	0.00	0.00
23.35	5.39	31.30	988.60	0.00	0.00	0.00	0.00	0.00
23.35	5.39	31.30	988.60	0.00	0.00	0.00	0.00	0.00
23.35	5.39	31.30	988.60	0.00	0.00	0.00	0.00	0.00
23.35	5.39	31.30	988.60	0.00	0.00	0.00	0.00	0.00

Intelligent Weather Sensor Applications Worldwide













G. LUFFT
Mess- und Regeltechnik GmbH

Germany:

Gutenbergstraße 20
70736 Fellbach
Postfach 4252
70719 Fellbach
Tel: +49 (0)711 - 51 822 - 0
Fax: +49 (0)711 - 51 822 - 41
E-mail: info@lufft.de
www.lufft.de

North America:

Lufft USA, Inc.
820 E Mason St #A
Santa Barbara, CA 93103
Tel.: +01 919 556 0818
Fax: +01 805 845 4275
E-Mail: sales@lufftusainc.com
www.lufft.com

China:

Shanghai Office:
Lufft (Shanghai)
Measurement & Control
Technology Co., Ltd.
Room 507 & 509, Building No.3,
Shanghai Yinshi Science and Business Park,
No. 2568 Gudai Road,
Minhang District,
201199 Shanghai, CHINA
Tel: +86 21 5437 0890
Fax: +86 21 5437 0910
E-Mail: china@lufft.com
www.lufft.cn

Beijing Office:
B501 Jiatai International Mansion
No. 41 East 4th Ring Road,
Chaoyang District,
100025 Beijing, CHINA
Tel: +86 10 65202779
Fax: +86 10 65202789
E-Mail: china@lufft.com
www.lufft.cn

lufft

Subject to technical modifications · Wind 01_2014

a passion for precision · passion pour la précision · pasión