WS600-UMB
with precipitation sensor

WS502-UMB
with solar radiation sensor

All meteorological Sensors

Under One Roof

WS700 - the first smart weather sensor from the Lufft WS product family, that comes with a combined measurement of precipitation and solar radiation.

Lufft WS700-UMB – Temperature, Relative Humidity, Precipitation, Solar 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
- Precipitation intensity
- Precipitation type
- Precipitation quantity
- 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 WS700-UMB Smart Weather Sensor			Order No.
WS700-UMB			**8380.U01**
Technical Data	Dimensions	Ø approx. 150 mm, height 317 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		
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)	
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 voltage	4...32 VDC	
	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**
	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

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 Smart Weather Sensor			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	4...32 VDC	
	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

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 Smart Weather Sensor			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	4...32 VDC	
	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 WS510-UMB – Solar Radiation, 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:

- Solar radiation
- Wind direction
- Wind speed
- 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.

The world renowned technology of Kipp+Zonen CMP10 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 WS510-UMB Smart Weather Sensor			Order No.
WS510-UMB			**8375.U13**
WS310-UMB without wind sensor			**8374.U13**
Technical data	Dimensions	Ø approx. 150 mm, height 392mm	
	Weight	Approx. 1.5 kg	
Temperature	Principle	NTC	
	Measuring range	–40 … 80 °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	Spectral range (50% points)	285 to 2,800 nm	
	Measuring range	4000 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	-40 … 80 °C	
	Response time	< 5 s	
	Zero offset A	< 7 W/m²	
	Zero offset B	< 2 W/m²	
	Directional error (at 1000 W/m²)	< 0,2%	
	Temperature dependence of sensitivity	< 1% (-10 °C...40 °C)	
Accessories	see WS family members		

Lufft WS310-UMB 8374.U13
Solar Radiation, Temperature, Air pressure, Relative humidity, Electronic compass

WS310 Technical Data as WS510 without wind sensor

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 Smart Weather Sensor			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	
	Accuracy	5%	
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	4...32 VDC	
	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: 0.1mm, 0.2mm, 0.5mm, 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 Smart Weather Sensor			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…+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	4...32 VDC	
	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: 0.1mm, 0.2mm, 0.5mm, 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 Smart Weather Sensor			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	
	Accuracy	5%	
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	4...32 VDC	
	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: 0.1mm, 0.2mm, 0.5mm, 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 Smart Weather Sensor			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… +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	4...32 VDC	
	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: 0.1mm, 0.2mm, 0.5mm, 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 Smart Weather Sensor			Order No.
WS500-UMB			**8373.U01**
Technical Data	Dimensions	Ø approx. 150mm, height approx. 87mm	
	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	4...32 VDC	
	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: 0.1mm, 0.2mm, 0.5mm, 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 Smart Weather Sensor			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	4...32 VDC	
	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 Smart Weather Sensor			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	4...32 VDC	
	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 Smart Weather Sensor			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	
	Accuracy	5%	
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	4...32 VDC	
	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: 0.1mm, 0.2mm, 0.5mm, 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.

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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: 0.1mm, 0.2mm, 0.5mm, 1mm heated and unheated.

Lufft WS303-UMB Smart Weather Sensor			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…+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	4...32 VDC	
	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 Smart Weather Sensor			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	
	Accuracy	5%	
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	4...32 VDC	
	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: 0.1mm, 0.2mm, 0.5mm, 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 Smart Weather Sensor			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	4...32 VDC	
	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: 0.1mm, 0.2mm, 0.5mm, 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 Smart Weather Sensor			Order No.
WS300-UMB			**8372.U01**
Technical Data	Dimensions	Ø approx. 150 mm, height approx. 223 mm	
	Weight	Approx. 1 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	4...32 VDC	
	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: 0.1mm, 0.2mm, 0.5mm, 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 Smart Weather Sensor			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	4...32 VDC	
	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: 0.1mm, 0.2mm, 0.5mm, 1mm heated and unheated.

The DGN-Precipitation Sensor is 100% UMB compatible

DGN measures double accurate!
Latest weighing technology combined with a self-emptying monolithic manufatured precision tipping bucket allows the DGN a high resolution and high precision at a very small construction volume. The DGN is ideal to setup new measurement network as well as addition to an existing measurement network with tipping bucket or weighing precipitation sensors.

- outstanding cost-benefit ratio
- high resolution and accuracy
- compact and robust construction (weight only 2.5 kg)
- all-metal housing, weatherproof and durable
- comparability of the measured data to data of the sensors with tipping bucket and weighing technology

Lufft Precipitation Sensor			Order No.
Double gravimetric precipitation sensor unheated ***Double gravimetric precipitation sensor*** heated (+2°C funnel surface temperature)			**8353.14DGN** **8353.14HDGN**
Technical Data	Measuring principle	Double gravimetric, weighing + precission tipping bucket	
	Operating temperature	0...70°C (unheated) -40…70°C (heated) (1)	
	Collecting area	200cm²	
	Amount measuring range	Without limitation (0.05…∞ mm)	
	Amount resolution	0.001mm	
	Amount accuracy	1% at 1mm/min	
	Intensity range	0…20mm/min resp. 0…1200mm/h	
	Intensity resolution	0.001mm/min resp. 0.001mm/h	
	Intensity accuracy	± 0.1mm/min resp. ± 6mm/h	
	Standards	WMO-No. 8 / VDI 3786 Bl. 7 / EN 61000-2, -4 / EN 61000-4-2, -3, -4, -5, -6, -11 / NAMUR NE-21	
	Prot. class weighing cell	IP67	
	Current consumption	≤ 50mA at 24 V DC	
	Supply voltage	9.8...32V DC / sensor 24V DC 140W / heating	
	Heating power	80W (funnel) / 60W (outlet/tipping buck.)	
	Signal outputs	· UMB-protocol · SDI-12 / RS-485 (SDI-12 protocol, ASCII protocol, TALKER protocol) · 2 Pulse-Outputs for linearised, bounce-free output signal · Status-Output (confi gurable, e.g. rain yes/no or heating on/off) · Analogue output	
Accessories	Cable 10m		**8353.KAB**

(1) no icing, no snowdrift

Classical meteorology and hydrology

- measuring networks of water suppliers
- lysimeter systems
- sewage plants
- Weather services
- airports
- traffic meteorology
- UMB Compatibility-Test Lambrecht 1518H DGN

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**