LAMBRECHT meteo

rain[e] is a new kind of precipitation sensor: Highest resolution combined with a very compact design.

The unique, continuously self-emptying collecting system enables the measurement of each single drop with the high resolution of 0.001 mm/m² and prevents incorrect measurements, which can occur with other weighing systems.

The rain[e] series is compatible with a wide range of data loggers and ideal for setting up measurement networks.

rain[e]

- Standard device with 200 cm² collecting surface (WMO compliant)
- Best connectivity due to multiple interfaces
- DAkkS proof of non-impact of the measurement sensor by wind and solar radiation

rain[e]LP

- Low Power (LP) version with minimal energy consumption
- Ideal choice for solar or battery powered applications
- For agricultural monitoring networks, traffic meteorology, measuring networks of water utilities, sewage treatment plants

rain[e]400

- Larger collecting surface: 400 cm²
- Compact and robust design at a very low weight
- Easy installation and maintenance
- Environment-friendly as all rain[e] sensors, because it is free of anti-freeze agents

rain[e] Modbus

- The Modbus RTU interface simplifies sensor installation and integration into networks.
- Weatherproof and durable, like all rain[e] sensors with all-metal housing
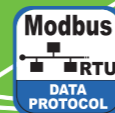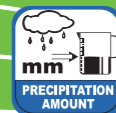- Collecting surface: 200 cm²

rain[e]one

- Cost-effective sensor in first-class, proven quality
- Same features as in the premium class of the rain[e] series
- Slight differences in technical data (quantity and intensity of all precipitation)

rain[e]one Modbus

- Cost-effective sensor with Modbus RTU interface
- First-class equipment as in the premium class of the rain[e] series
- Slight differences in technical data (quantity and intensity of all precipitation)

rain[e]H3 Ethernet

- Meets the high requirements of the German Weather Service (DWD), and is installed at all stations of the DWD with automatic precipitation measurement.
- With electronically controlled ring, funnel and drain heating

WEIGHING TIPPING BUCKET · PRECIPITATION EVENTS · PRECIPITATION AMOUNT mm · RAIN INTENSITY · HIGH RESOLUTION · SDI-12 DIGITAL OUTPUT · Modbus RTU DATA PROTOCOL

Overview Precipitation Sensors rain[e] Series

	rain[e] unheated	rain[e] heated	rain[e]LP unheated	rain[e]400 unheated	rain[e]400 heated	rain[e] Modbus unheated	rain[e] Modbus heated	rain[e]one unheated	rain[e]one heated	rain[e]one Modbus unheated	rain[e]one Modbus heated	rain[e]H3 Ethernet heated
Id-No.	00.15184.000000	00.15184.400000	00.15184.010000	00.15184.004000	00.15184.404000	00.15184.000100	00.15184.400100	00.15184.000001	00.15184.400001	00.15184.000101	00.15184.400101	00.15184.540020
Measurable precipitation types:	liquid	liquid, solid, mixed	liquid	liquid	liquid, solid, mixed	liquid	liquid, solid, mixed	liquid	liquid, solid, mixed	liquid	liquid, solid, mixed	liquid, solid, mixed
Measurement principle:	weighing, with automatic self emptying											
Operating temperature:	0...+70 °C	-40...+70 °C *)	0...+70 °C	0...+70 °C	-40...+70 °C *)	0...+70 °C	-40...+70 °C *)	0...+70 °C	-40...+70 °C *)	0...+70 °C	-40...+70 °C *)	-40...+70 °C *)
Storage temperature:	-40...+70 °C											
Collecting area:	200 cm²			400 cm²		200 cm²						
Measuring range (amount):	without limitation (0.005...∞ mm)			without limitation (0.0025...∞ mm)		without limitation (0.005...∞ mm)		without limitation (0,0025...∞ mm)				without limitation (0.005...∞ mm)
Resolution (amount):	0.001 mm (pulse output: 0.01 mm)											0.001 mm
Accuracy (amount):	0.1 mm or 1 % at < 6 mm/min and 2 % at ≥ 6 mm/min			0.1 mm or 1 % at < 3 mm/min and 2 % at ≥ 3 mm/min		0.1 mm or 1 % at < 6 mm/min and 2 % ≥ 6 mm/min		0.1 mm or 2 %				0.1 mm or 1 % at < 6 mm/min and 2 % at ≥ 6 mm/min
Measuring range (intensity):	0...20 mm/min resp. 0...1200 mm/h			0...10 mm/min resp. 0...600 mm/h		0...20 mm/min resp. 0...1200 mm/h		0...10 mm/min resp. 0...600 mm/h				0...20 mm/min bzw. 0...1200 mm/h
Resolution (intensity):	0.001 mm/min resp. 0.001 mm/h											
Accuracy (intensity):	0.1 mm/min resp. 6 mm/h											
Signal outputs:	· SDI-12 • RS-485 (SDI-12 protocol, ASCII protocol, TALKER protocol, Modbus RTU) · 2 pulse outputs for linearised, bounce-free output signal · status output (configurable, e.g. rain yes/no or heating on/off) · analogue output 0/4...20 mA (0...2.5/5 V)		SDI-12 • 1 pulse output for linearised, bounce-free output signal	· SDI-12 • RS-485 (SDI-12 protocol, ASCII protocol, TALKER protocol, Modbus RTU) · 2 pulse outputs for linearised, bounce-free output signal · status output (configurable, e.g. rain yes/no or heating on/off) · analogue output 0/4...20 mA (0...2.5/5 V)								· SDI-12 • RS-485 (SDI-12 protocol, ASCII protocol, TALKER protocol, Modbus RTU) · 2 pulse outputs for linearised, bounce-free output signal · status output (configurable, e.g. rain yes/no or heating on/off) · analogue output 0/4...20 mA (0...2.5/5 V) · Ethernet 100 Mbits/s
Connector:	8 pole M12	8 pole M12 · 4 pole T-coded (heating)	5 pole M12 A-coded	8 pole M12	8 pole M12 · 4 pole T-coded (heating)	4 pole M12	4 pole M12 · 4 pole T-coded (heating)	8 pole M12	8 pole M12 · 4 pole T-coded (heating)	4 pole M12	4 pole M12 · 4 pole T-coded (heating)	8 pole M12 · 4 pole T-coded (heating) · 4-pole D-coded
Dimensions:	292 mm x 190 mm (H x D)			311 mm x 256 mm (H x D)		292 mm x 190 mm (H x D)						377 mm x 190 mm (H x D)
Suitable for mounting:	Ø 60 mm											
Weight:	approx. 2.5 kg			approx. 4 kg		approx. 2.5 kg						approx. 4 kg
Standards:	WMO-No. 8 • VDI 3786 Bl. 7 • EN 61000-2, -4 EN 61000-4-2, -3, -4, -5, -6, -11 • NAMUR NE-21											
Protection class load cell:	IP67											
Current consumption:	max. 45 mA at 24 V power supply and analog output • typ. 6.5 mA at 24 V power supply and pulse output • typ. 10.5 mA at 12 V		typ. 6.9 mA at 24 V power supply	max. 45 mA at 24 V power supply and analog output • typ. 6.5 mA at 24 V power supply and pulse output • typ. 10.5 mA at 12 V								max. 45 mA at 24 V power supply and analog output • typ. 12.5 mA at 12 V • max. 150 mA at 12 V power supply with Ethernet
Supply voltage:	9.8...32 V DC		9.8...12 V DC	9.8...32 V DC								
Heating:	without	electronically controlled, 2 heating circuits	without	without	electronically controlled, 2 heating circuits	without	electronically controlled, 2 heating circuits	without	electronically controlled, 2 heating circuits	without	electronically controlled, 2 heating circuits	electronically controlled, 3 heating circuits: ring, funnel and drain-line heating
Target temperature:	without	+2 °C funnel surface temperature	without	without	+2 °C funnel surface temperature	without	+2 °C funnel surface temperature	without	+2 °C funnel surface temperature	without	+2 °C funnel surface temperature	+2 °C funnel surface temperature
Accuracy:	without	± 1 °C	without	without	± 1 °C	without	± 1 °C	without	± 1 °C	without	± 1 °C	± 1 °C
Heating power:	without	80 W (funnel) · 60 W (discharge/ collecting vessel)	without	without	150 W (funnel) · 60 W (discharge/ collecting vessel)	without	80 W (funnel) · 60 W (discharge/ collecting vessel)	without	80 W (funnel) · 60 W (discharge/ collecting vessel)	without	80 W (funnel) · 60 W (discharge/ collecting vessel)	70 W (funnel) · 60 W (discharge/ collecting vessel) · 70 W (ring heating)
Supply voltage:	without	24 V DC / 140 W	without	without	24 V DC / 210 W	without	24 V DC / 140 W	without	24 V DC / 140 W	without	24 V DC / 140 W	24 V DC / 200 W