

rain[e] Precipitation Sensors



High-resolution rainfall measurement in a compact design

OVERVIEW



rain[e]

Standard device with 200 cm² collection surface (WMO-compliant)



rain[e]LP

Low-power model with minimal energy consumption



rain[e]400

Larger collection surface of 400 cm² with compact design



rain[e]one Modbus

Cost-effective version with Modbus RTU interface

BENEFITS



Industry-leading resolution and **accuracy of 0.001 mm/m²** in a compact design



Unique, continuously self-emptying collection system prevents overflow and incorrect measurements



Environmentally friendly design provides full functionality all year without antifreeze



Compatible with a wide range of data loggers for easy set up or expansion of your rainfall network



rain[e]H3

Meets the high requirements of the German Weather Service (DWD)

| | rain[e] unheated | rain[e] heated | rain[e]LP unheated | rain[e]400 heated | rain[e]400 heated | rain[e]one Modbus unheated | rain[e]one Modbus heated | rain[e]H3 Ethernet heated |
|---------------------------------------|---|---|---|--|---|--|---|--|
| ID | 00.15184.000000 | 00.15184.400000 | 00.15184.010000 | 00.15184.004000 | 00.15184.404000 | 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, solid, mixed |
| Measuring 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*) | -40...+70 °C*) |
| Storage temperature | -40...+70 °C | | | | | | | |
| Collection surface | 200 cm² | | | 400 cm² | | 200 cm² | | |
| Measuring range (amount) | unlimited (0.005...∞ mm) | | | unlimited (0.0025...∞ mm) | | unlimited (0.0025...∞ mm) | | unlimited (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 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...10 mm/min resp. 0...600 mm/h | | 0...20 mm/min resp. 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-, ASCII-, TALKER protocol, Modbus RTU); 2 pulse outputs for linearized, bounce-free output signal; status output (configurable, e.g. rain yes/no or heating on/off); analog output 0/4...20 mA (0...2.5/5 V) | SDI-12 • 1 pulse output for linearized, bounce-free output signal | SDI-12 • RS-485 (SDI-12-, ASCII-, TALKER protocol, Modbus RTU); 2 pulse outputs for linearized, bounce-free output signal; status output (configurable, e.g. rain yes/no or heating on/off); analog output 0/4...20 mA (0...2.5/5 V) | RS-485 (Modbus RTU) • 1 pulse output for linearized, bounce-free output signal | SDI-12 • RS-485 (SDI-12-, ASCII-, TALKER protocol, Modbus RTU); 2 pulse outputs for linearized, bounce-free output signal; status output (configurable, e.g. rain yes/no or heating on/off); analog output 0/4...20 mA (0...2.5/5 V) | SDI-12 • RS-485 (SDI-12-, ASCII-, TALKER protocol, Modbus RTU); 2 pulse outputs for linearized, bounce-free output signal; status output (configurable, e.g. rain yes/no or heating on/off); analog 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 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) |
| Mountable on | 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 • NAMURNE-21 | | | | | | | |
| PIP code | IP67 | | | | | | | |
| Power 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. 12.5 mA at 12 V | typ. 6.9 mA at 12 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. 12.5 mA at 12 V | max. 45 mA at 24 V power supply and analog output • typ. 6.5 mA at 24 V power supply and pulse output • typ. 12.5 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 VDC | | 9.8...12 VDC | 9.8...32 VDC | | | | |
| Heating data | | | | | | | | |
| Heating | none | electronically controlled, 2 heating circuits | none | none | electronically controlled, 2 heating circuits | none | electronically controlled, 2 heating circuits | electronically controlled, 3 heating circuits: ring, funnel and drain heating |
| Target temperature | none | +2 °C funnel surface temperature | none | none | +2 °C funnel surface temperature | none | +2 °C funnel surface temperature | +2 °C funnel surface temperature |
| Accuracy | none | ±1 °C | none | none | ±1 °C | none | ±1 °C | ±1 °C |
| Heating power | none | 80 W (funnel) 60 W (discharge/ collection vessel) | none | none | 150 W (funnel) • 60 W (discharge/ collection vessel) | none | 80 W (funnel) • 60 W (discharge/ collection vessel) | 70 W (funnel) • (discharge/ collection vessel) • 70 W (ring heating) |
| Supply voltage | none | 24 VDC / 140 W | none | none | 24 VDC / 210 W | none | 24 VDC / 140 W | 24 VDC / 200 W |

*) No icing or snow drifting