

Weighing Rain Gauge MRW501

Basic properties:

- Weight principle of measurement
- High accuracy of measurement of liquid and solid precipitation
- Data and pulse output
- Integrated storage container enabling long-term automatic operation without operator intervention
- Tempering the space of the weighed container against dew
- Heating of the catch hole in winter operation
- Integrated data logger
- System self-diagnosis
- Acoustic and optical signaling of operational states
- Structural and software solutions to limit the influence of wind
- Simple connection using connectors
- Year-round operation
- Manual or automatic draining of the measuring vessel



Technical parameters:

Capture area	500 cm ²
Measurement principle	Weighing
Rainfall measurement range	0.05 ... ∞ mm Automatic transfer of liquid between the upper weighing and the lower storage vessel by pump. One-time continuous rainfall until draining is necessary - max. 120 mm. The natural evaporation of rainwater from the lower storage vessel is supported. The usable volume of the lower storage tank is 100 l (2000 mm of precipitation)
Max. rainfall intensity	Data output - practically unlimited within real rainfall Pulse output: 30 mm/min., or 1800 mm/h
Resolution	Working resolution 0.01 mm precipitation Output resolution 0.10 mm precipitation
Precipitation measurement accuracy	±0.1% over the whole range
Parameters	Weighing capacity: 0 – 11000 g (ml) which corresponds to 0 – 220 mm of precipitation Nonlinearity: <0.20% across the range Temperature compensation: ±0.04 mm precipitation in the whole range of working temperatures

Service port	USB or RS232 (115200,8,N,1)
Data port	RS232 or RS485 (9600-115200,8,N,1) or SDI-12 (1200,7,E,1) RS485 and SDI-12 are galvanically separated by 1.5 kV Possible extensions (on order): 1) LAN port (RJ45) with (XPORT) 2) RS 232 with galvanic isolation 3) GPRS modem for data transfer to the METEOSERVIS's server
Pulse output (independent of data output)	"Open solid-state relay" with insulation min. 1.5 kV Pulse duration 100 ms, 0-400 V, max. 150 mA DC
Communication protocols	Binary - configuration, data from data logger ASCII (Text) - output in the set interval METDATA - output in the set interval SDI-12 - version 1.3
Rain detector input	To increase the sensitivity of the rain gauge in the area of very low rainfall (below 0.1 mm/hour), it is possible to connect an external rain detector, e.g. RDM2 (input is galvanically separated). Input activation: - active level LOG1 = 5-15VDC/max 20mA - potential-free contact (I/O isolation: Min. 1.5 kV DC) - open collector (only with 12VDC power supply)
Additional measurements	Air temperature in the lower vessel Rain gauge collar temperature Indoor temperature Strain gauge temperature
Additional functions	Tempering the internal space of the weighing system Additional shell heating (optional), especially suitable for mountainous areas Shock heating of the collar and inner tube of the rain gauge Wind effect correction Discharging, blocking and resetting the device with an external button Acoustic and optical signaling of operating states Simulated output of the precipitation detector
Datalogger	Integrated datalogger with a capacity of more than 130,000 records Storage interval optional: 1.....60 min. Capacity 90.....5400 days RTC circuit backed up by an independent battery.
Power supply	Electronics, pump 12 V DC or 24 V AC/DC Heating 24-46 VAC
Power consumption	Electronics <1.2 W Pump 25 W Tempering of the internal space 115 W Shock tube heating 100 W OPTIONAL - tempering of the outer cover of the rain gauge 80 W (Tempering and shock heating of the cover do not coincide).
Operating liquids	<u>Antifreeze liquid</u> - enables year-round precipitation measurement. <u>Silicone oil</u> - increases the accuracy of measurements during long-term, low-intensity precipitation. It limits the evaporation of rainwater from the weighed container. The dilution of the liquid in the weighed container is controlled AUTOMATICALLY.
Operating temperature	-30°C...+60°C
Degree of protection	Electronics IP65 Other parts IP45
Dimensions	Diameter 600 mm Height 1000 mm
Weight	Approx. 30 kg