Laser Precipitation Monitor

The acquisition comprises the types of precipitation, intensity and the spectrum. All measuring values are available for the user via an RS-485/422 interface. In addition, the instrument is equipped with two further digital outputs (opto-couplers), which output, for example, pulses and state of precipitation. The optical components are equipped with an integrated heating.

- Precipitation intensity
- Precipitation type
- Laser device monitor
- Standard messages

Technical data

Precipitation specifications

Measurement principle	laser beam
Particle size	0.16 to 8 mm
Particle speed	0.2 to 20 m/s
Intensity	< 0.005 to > 250 mm/h
Accuracy with quantity measurement	< 15 % @ rain 0.5 to 20 mm/h < 30 % @ snow
Precipitation types	drizzle (also freezing) rain (also freezing) hail snow snow grains / ice needles soft hail / ice grains
Accuracy	comparing with synoptic observation drizzle > 97 % rain > 99 % hail > 95 % snow > 99 % snow grains > 60 %

Sensors

Laser diode	786 nm, max. 0.5 mW
Laser class	1M (EN 60825-1: 1994 A2: 2001)

Data output digital

Interface	RS-485 / 422, potential isolation and 2 impulse outputs, potential isolation
Baud rate	1200 to 115200 Baud
Output type	ASCII, Synop, Metar @ RS-485 / 422 frequency @ impulse outputs
Resolution intensity	0.001 mm/h @ RS-485 / 422
Resolution quantity	0.001 mm @ RS-485 / 422 0.1 mm, 0.01 mm, 0.005 mm @ impulse outputs

General specifications

Ambient temperature	-40 °C to +70 °C
Protection	IP 65
Dimension	Ø 270 x 170 x 540 mm
Weight	4.8 kg

Power supply in versions (as per 5.4110.00.xxx)

Product number 5.4110.00.000	24 V AC/DC or 22 to 30 V DC, < 750 mA
Product number 5.4110.00.100	115 V AC, 15 W
Product number 5.4110.00.200	230 V AC, 15 W
Product number 5.4110.00.300	24 V DC, 600 mA

Accessories

Instrument support	for the vibration-reduced operation of the LPM on an available concrete foundation, provided by the customer
Wind protection element	serves as optional accessory for uninterrupted acquisition even in case of wind