METEOROLOGY
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Precipitation sensor with 400cm² funnel area

Description

The sensor is made up of a funnel collector and a couple of calibrated collecting containers (tipping buckets). The calibrated collector area and the geometry of the collector prevents the rain from splashing in and out, according to WMO recommendations.

Every time a bucket is filled, the instrument outputs an electrical signal that can be sent to an automatic data acquisition system. If precipitation is in a solid form, snow or hail, the instrument can measure the amount of water obtained from their melting.

The body is made up of an anodized aluminium cylinder and it is painted of white to obtain the maximum reflection of incoming solar radiation. The electromechanical system that reads the collected rain is placed inside. The collecting funnel is made up of anodized aluminium with a calibrated circular area of 400 cm² .

The bucket assembly is calibrated in the way that when a container is filled with an equivalent precipitation of 0.2mm, the equilibrium changes, this causes the tipping.

The shape of each container allows its fast and complete emptying when it's in its lowest position: thus, while the bucket that is receiving water starts filling, the other is empty and ready to be filled to the following tipping.

In the lower part of the collecting funnel a filter is placed to prevent that debris enter in to rain gauge.

The optional heating system is designed to have a fast melting of solid precipitation, avoiding anyway the production of too much heat that can cause the evaporation of a part of the liquid.

Rain gauge 400cm²

Rain gauge — typical application

Technical specifications may be varied without prior notice

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Technical features

Sensor Type	Anodized aluminum tipping bucket with double reed switch
Collector Area	400cm²
Measuring Range	0 … 300mm/h
Accuracy	<1% @ rain intensity of 30mm/h <2% in the measuring range 20 … 40mm/h <3% in the measuring range 10 … 50mm/h ≤ 2% on measuring range with software module, integrated on the MeteoDAS® datalogger or on third party datalogger, for the error compensation depending on the intensity of rain.
Resolution	0,2mm
Non-stability	<1% / year
Levelling	Level on the bucket assembly
Electrical Output	Double contact 3 wires (on request single contact NC or NO) 1 pulse is equivalent to 0.2mm of rain
Heater (optional)	Standard version: 24Vac - 60W with temperature control circuit (trigger threshold between 4 and 6°C) Optional: 12 or 24Vdc (to be defined in order)
Operating Range	0…+70°C; -30…+70°C (with heater system)
Dimensions	H 480mm - D230 mm
Weight	3,5 g
Maintenance	Scheduled clearing (suggested every 6 months)
Calibration	Calibration of the bucket assembly suggested every 2 years

Ordering code

Rain gauge with double contact output	**FAK001AC**
Rain gauge mod FAK001AC with integrated heating system	**FAK005AC**
Rain gauge with single contact output (N.C.)	**FAK001BA**
Rain gauge with single contact output (N.O.)	**FAK001CA**
Rain gauge mod FAK001BA with integrated heating system	**FAK005CA**
Rain gauge mod FAK001CA with integrated heating system	**FAK005DA**
External board to convert the contact of the pluviometer into 4-20mA electrical output	**EAA310BA**

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