

RAIN GAUGE

1027 TP200-ET



Collecting area 200 cm²

High accuracy even with heavy rainfalls

Automatic correction system on the amount of rainfall measurement (optional)

Available on heated version

Description

TP200 is a tipping bucket rain gauge with a collecting area of 200 cm². It is extremely precise, very performant and suitable also for environments where heavy rainfalls easily occur (monsoon or tropical rains).

The tipping bucket consists of a v-shaped element, particularly designed to minimize friction and facilitate the oscillating action of the bucket, ensuring high standards of accuracy. The body is made of aluminium alloy and painted with a special anti-UV paint which ensures long-lasting quality and resistance to the weather events.

The TP200 can be supplied in three different versions: TP200-N with impulse/reed contact output, TP200-E and TP200-12, both equipped with a specific signal conditioning electronics that reduces measurement uncertainties at high intensities of precipitation (both for intensity and amount values). TP200-E version equipped with electronic correction can give on a single connector the reed contact output (rainfall amount), the current output (intensity) and the Modbus serial output (both intensity and amount). The TP200-12 version gives both corrected rainfall intensity and amount through the SDI-12 output. TP200-N is also available on heated version, powered at 24V (alternating or direct current). In every version, the sensor is supplied with power and signal cable (12m).



Main features

- **Collecting area 200 cm²**
- **Can measure up to 500 mm/h (more than 40 tips per minute)**
- **High accuracy even at heavy rainfalls**
- **Automatic correction system on the amount of rainfall measurement (optional)**
- **Protection against overvoltages**
- **Available with heating system**

Technical Specifications*

Measurement performance			
Collecting area	200 cm ²		
Conversion constant	0.2 mm/impulse		
Amount resolution	0.2 mm		
Intensity resolution (TP200-E)	0.1 mm/h		
Amount range	0 ÷ ∞ mm		
Intensity range (TP200-E)	0 ÷ 500 mm/h		
Sensor uncertainty (TP200-N)	±2% @ 10 ÷ 70 mm/h ±5% @ 70 ÷ 150 mm/h ±7% @ 150 ÷ 200 mm/h ±10% @ 200 ÷ 300 mm/h Uncertainty: < 3% (0 - 500 mm/hr) by datalogger correction		
Sensor uncertainty (TP200-E)	±2% @ < 300 mm/h		
Intensity uncertainty (TP200-E)	±2% @ < 300 mm/h		
Lifetime reed switch	>1 millions operations		
Operating conditions			
Temperature	0°C ÷ +70°C		
Temperature (heated version)	-20°C ÷ +70°C		
Rainfall intensity	0 ÷ 500 mm/h		
Outputs			
Reed contact	0.2 mm/impulse		
RS485-Modbus	Raw amount [mm], Adjusted intensity [mm/h], Adjusted amount [mm]		
SDI-12	Adjusted intensity [mm/h], Adjusted amount [mm]		
Tension	0 ÷ 2 V ↔ 0 ÷ 500 mm/h		
Current	4 ÷ 20 mA ↔ 0 ÷ 500 mm/h		
Power supply and Consumption (-E and -12 versions)			
Voltage supply	7 ÷ 30 Vdc		
Heating system voltage supply	12 ÷ 24 V [DC o AC]		
Consumption (mA)	Min	Typical	Max
RS485-Modbus / SDI - 12 / 0 ÷ 2 V	-	1	3
4 ÷ 20 mA	5	-	25
Heating system power	90 W @ 24 Vdc		
Mechanical specifications			
Protective body	Aluminium alloy, stainless steel screws		
Weight	2.2 kg		
Dimensions	Ø = 165 mm; Height: = 345 mm		
Electrical connections	IP67 / 7 pole male connector		
Finishing touch	RAL 9003 thermosetting polyester powder varnishing		
Ordering codes			
Reed contact output	PSM-t027a-TP200-N		
Heated version, Reed contact output	PSM-t028a-TP200R-N		
Version with electronic correction. Available outputs: reed contact, current (or voltage), RS485-Modbus	PSM-t027q-TP200-E		
Version with electronic correction. Available outputs: current (or voltage), SDI-12	PSM-t027r-TP200-12		

*Changes on technical performances can be applied upon request of specific calibration