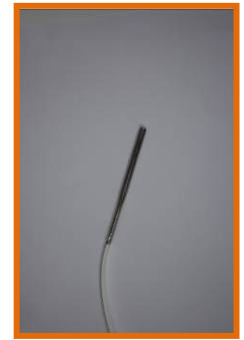


High accuracy ($\pm 0,05^{\circ}\text{C}$) sensor with platinum resistance (Pt100) for the measurement of temperature.

There is a model for each type of temperature measurement: under shelter, in the ground and actinometric index.



Applications

This sensor ensures accurate, fast and easy measurements of various meteorological and agrometeorological types of temperatures

- Air temperature under shelter
- Ground temperature at different depths (generally between 5 and 100 cm)
- Actinothermic index (at ground or at different heights above the ground, on an open site or inside vegetation)

Benefits

High accuracy

- Measurement uncertainty: $\pm 0,05^{\circ}\text{C}$
- Linearisation by standard polynomial formulas
- Removal of perturbations due to the resistance of line cable wires
- Good stability for years
- No warming effect on the sensor (ultra-low consumption and pulsed current)

Robustness

- Designed for harsh conditions: resistance entirely protected against oxidation
-

No maintenance

- Sensor delivered with calibration certificate
- Offset value marked on the cable

Technology

CES185 has been specifically designed to be mounted on Cimel's automatic weather stations, operating with Cimel's innovating custom MicroAmps technology

- The sensitive component is an accurate platinum resistance Pt100.
- This resistance is protected against oxidation inside a stainless tube filled with conductive resin
- The measurement protocol by a resistance bridge with four wires connection eliminates perturbations due to the resistance of the line wires.
- The acquisition unit supplies power in pulsed current mode in order to avoid any warming effect of the sensor.
- The acquisition unit provides automatic polynomial corrections
- The sensor is delivered after calibration. The offset value at 0°C is marked on the cable.
- The offset value must be downloaded into the acquisition unit by manual entry or remote configuration.
- For air temperature measurement , the sensor can be shielded under a mini thermal screen (CES601 see below)
- For ground measurement, the tip is laid out in a stainless steel shield tube permitting the sensor to be deep-set in the ground

Technical features

	Characteristics	Value
Measurement	Measurement method	
	Pt100 element	100 ohms at 0°C, 1/6 DIN
	Uncertainty	±0.05°C
	Measurement range	-40°C to +60°C
Power		Pulsed current to avoid warming
Environment	Temperature	From -40°C to +70°C
	Humidity	From 0 to 100% with condensation
	4 wires eliminating the resistances of	

		the lines
General	Weight	16g
	Housing	7,8cm
	MTBF	>10 years

Implementation



CES601 Mini thermal screen
to protect the CES185A sensor



CES185A mounted under the mini thermal screen on CimAWS

Options

	CES185A	CES185S	CES185I
	<i>Air temperature</i>	<i>Soil temperature</i>	<i>Actinothermic index</i>
Housing	Stainless steel top	Stainless steel top	Stainless steel shield tube
Set up	Inside a thermal screen (CES601)	In the ground at various depths	Without thermal screen at ground or at different heights above the ground, on an open site or inside vegetation
Diameter	5mm	5mm	10mm
Length	100mm	100mm	200mm
Cable standard length	3m	10m	5m
Type	4 parallel threads in a wire	4 leak-resistant rubber reinforced sheathed threads	4 leak-resistant rubber reinforced sheathed threads