SMART MULTISENSOR
MODEL PTHR-4000 / PTH-4000 / TH-4000

Independent Barometric Pressure, Temperature, Relative Humidity and Solar Radiation sensors plus Dew Point (calculated)

Industry's most compact, lowest-power, lowest-cost multisensor for professional Meteorological and Earth Sciences applications, integrating:

Air Temperature (dry bulb temp.)	Range	-40ºC to +60ºC (software configurable -40ºC to +85ºC)
	Accuracy	±0.1ºC @ 23ºC ± 5ºC
	Resolution	0.01ºC
	Time Constant	4 sec.
	Stability	0.1ºC/year
	Technology	PT-100 IEC751 Class A (optional Class B)
Relative Humidity (%RH)	Range	0% to 100% RH
	Accuracy	±0.8 % RH @ 23ºC ± 5ºC
	Resolution	0.1%
	Time Constant	10 sec.
	Stability	1%/year
Wet-bulb temp. (calculated)	Range	-80ºC to +100ºC
	Resolution	0.01ºC
Dew Point temp. (calculated)	Range	-80ºC to +100ºC
	Resolution	0.01ºC
Atmospheric pressure at site	Range	260 to 1260 hPa
	Resolution	±0.01 hPa
	Accuracy	±0.1 hPa typ (k=1) @ 25ºC in the range 800 – 1100 hPa
	Technology	Piezoresistive (MEMS)
	Stability	0.1 hPa/year
Atmospheric pressure at sea level (calculated)	Range	260 to 1260 hPa
	Resolution	±0.01 hPa

Models PTH-4000 and TH-4000 (mounted inside a Radiation Shield)
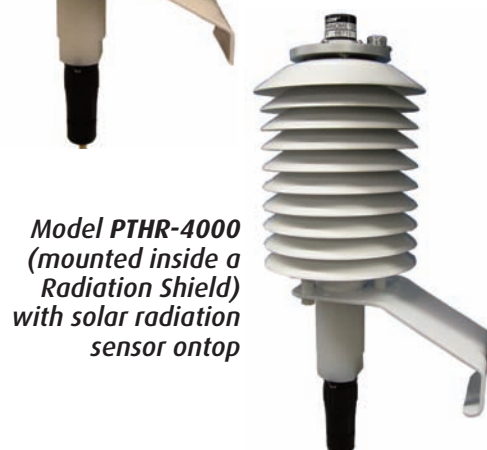
Model PTHR-4000 (mounted inside a Radiation Shield) with solar radiation sensor ontop

Global Solar Radiation (only model PTHR-4000)	
Sensitivity	Typically 75 µA per 1000 W/m²
Linearity	Maximum deviation of 1% up to 3000 W/m²
Stability	< ±2% change over a 1 year period
Range	0 to 3000 W/m²
Resolution	1 W/m²
Response time	Less than 1 µs
Temp. dependence	0.15% per °C maximum
Cosine correction	Cosine corrected up to 82° angle of incidence
Azimuth	< ±1% error over 360° at 45° elevation
Tilt	No error induced from orientation
Operating temp.	-40 to 65°C
Relative humidity	0 to 95% RH, non-condensing

All the models TH-4000, PTH-4000 and PTHR-4000 have direct connection to METEODATA/HYDRODATA series dataloggers (dataloggers with integrated comms GSM/GPRS/3G, line, radio or satellite)

TECHNICAL SPECIFICATIONS

- **Selectable serial communication interface:**
  - RS-232 (three wires)
  - RS-485 (two wires)
  - SDI-12

- **Configuration interface:**
  - Standard PC serial port (no case opening or soldering required)
  - Internal USB port

- **Power consumption:**
  - Ultra-low power consumption
  - 43 mW typ. @ 12V

- **12V Power supply:**
  - Wide range from 3.7V to 30V
  - Inverse voltage protection
  - Undervoltage brownout protection
  - Overvoltage / overcurrent protection with IEC/EN 61000-4-5 compliant varistor plus matched resettable polyfuse.

- **Compact form factor** using similar case and connector as GEONICA legacy temperature/relative humidity sensor.

- **Warming period:**
  - Pressure: 200 ms
  - All parameters: 2 sec.

- **Factory quality control**, ready to use

- **Chip replaceable at site** for Temperature and Relative Humidity sensor.

- **Non-volatile memory** to store configuration parameters such as altitude above sea level, serial port settings, RS485 bus ID and calibration coefficients.

- **Firmware Update and Configuration in the field,** guided and throught the serial port.

- **Sampling rate:**
  - 1 Hz (it can be customized for specific client needs)

- **Operating / storage temperature:**
  - -40ºC to +85ºC

- **Degree of protection:**
  - IP66

- **Physical characteristics:**
  - <u>Dimensions</u>
  - PTH-4000/TH-4000
    - Internal housing: 235.4mm x 40mm ø
    - Radiation shield: 270mm x 130mmø
  - PTHR-4000 (Radiation shield included):
    - 306mm x 130mmø
  - <u>Weight</u> (Radiation shield included)
  - PTH-4000/TH-4000: 815g
  - PTHR-4000: 950 g

AVAILABLE MODELS

MULTISENSOR MODEL	AIR TEMPERATURE	RELATIVE HUMIDITY	WET BULB TEMPERATURE	DEW POINT	ATMOSPHERIC PRESSURE	ATM. PRESSURE (SEA LEVEL)	SOLAR RADIATION
PTHR-4000	X	X	X	X	X	X	X
PTH-4000	X	X	X	X	X	X	
TH-4000	X	X	X	X			

APPLICABLE STANDARDS

- **Designed and manufactured in Spain** by GEONICA following strict ISO9001 quality standards.

- **Meteorological**:
  - WMO Nº8
  - UNE 500520/30/50

- **EMI/ESD**: in accordance with IEC/EN 61326.

- **Safety**: in accordance with IEC/EN 61010.

- **EC directives**:
  - 2006/95/EC
  - 2004/108/EC
  - 2002/95/EC
  - 2004/22/EC

CE