

SMART MULTISENSOR

MODEL PTHR-4000 / PTH-4000 / TH-4000

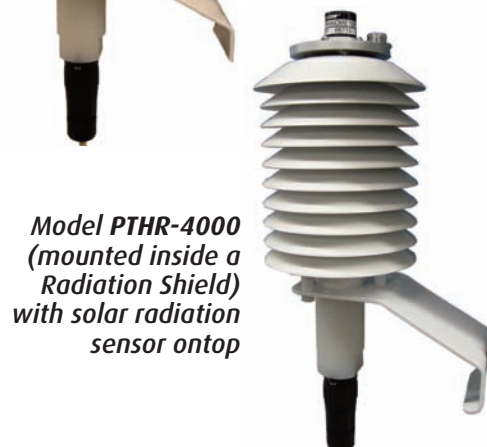
Independent Barometric Pressure, Temperature, Relative Humidity and Solar Radiation sensors plus Dew Point (calculated)

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

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



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)

Global Solar Radiation (only model PTHR-4000)	
Sensitivity	Typically 75 µA per 1000 W/m ²
Linearity	Maximum deviation of 1% up to 3000 W/m ²
Stability	< ±2% change over a 1 year period
Range	0 to 3000 W/m ²
Resolution	1 W/m ²
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

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 through the serial port.
- **Sampling rate:**
1 Hz (it can be customized for specific client needs)
- **Operating / storage temperature:**
-40°C to +85°C
- **Degree of protection:**
IP66
- **Physical characteristics:**
Dimensions
PTH-4000/TH-4000
Internal housing: 235.4mm x 40mm ø
Radiation shield: 270mm x 130mmø
PTHR-4000 (Radiation shield included):
306mm x 130mmø
Weight (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 N°8
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

