Power and Simplicity

XR450
Pocket Logger™

For pricing or any further information, please contact Omni Instruments Ltd.

**Measurement and data acquisition solutions**

Contact Details:
Tel: +44 1382 443000
Email: info@omni.uk.com

Website: www.omniinstruments.co.uk

Mailing Address: Unit 1, 14 Nobel Road,
Wester Gourdie Industrial Estate,
Dundee, DD2 4UH.

A pocket-size Data Logger
with Sensors for:

- **Temperature**
- **Relative Humidity**
- **Pressure**
- **AC Current**
- **Light and more!**

Also records:

- **Process Signals**
- **Contact Closures**

No Signal Conditioning or External Power Required!
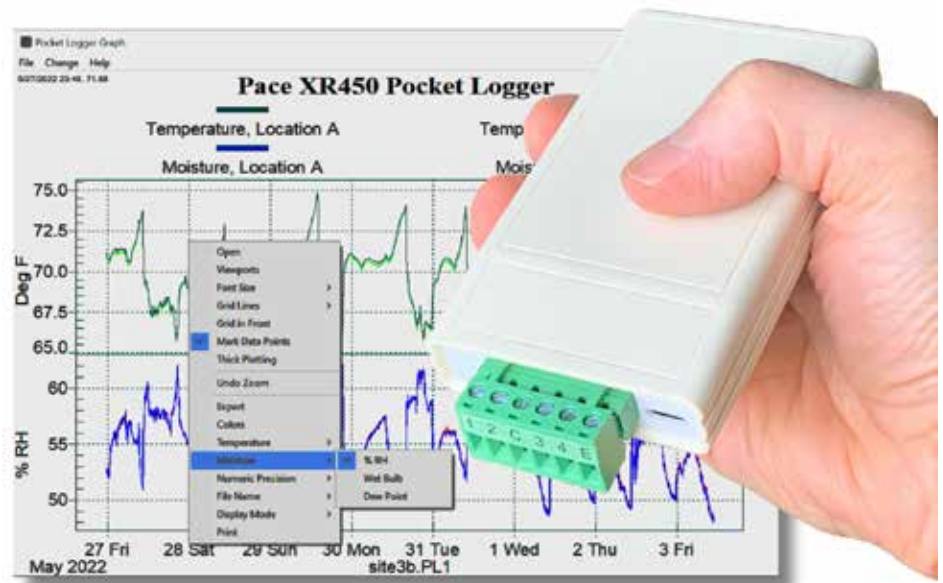
Free Software: **www.pace-sci.com/software-xr450.htm#Download**

NIST Traceable Certificate of Validation Included.

Four channels

The XR450 Pocket Logger™ is a button-less, four channel recorder designed for easy setup and trouble-free operation.

Universal inputs

Connect any PACE sensor directly to any Pocket Logger input; you can mix and match sensors in any combination.

Proven Reliability

Proudly manufactured in the USA, the Pocket Logger's reliability has been proven by years of tough field use. Accuracy specifications are maintained without user adjustment. An NIST trace-able Certificate of Validation is included with each unit.

Simplicity

With no power cord to run, and weighing only 6 ounces, you can mount a Pocket Logger anywhere. Unlike strip-chart recorders, there is no paper or ink, and no buttons - so no one can tamper with your data. In the field, your recorded data is easily transferred to a portable PC. Or carry the logger back to your office - in your pocket!

Powerful Software

A Pocket Logger's data is quickly trans-ferred to a computer running Pocket Log-ger Software®. The software runs on any Windows PC and may be freely down-loaded from our website! For advanced users, a command line interface enables the Pocket Logger to communicate with other programs.

Flexibility

Many third-party sensors are compatible with the XR450, including sensors with resistive output signals (example: 10 kohm linear position sensor), or sensors with a signal output within the range of 0-5VDC. If a third-party sensor requires power other than 5VDC at a maximum of 30 ma, an external Power Supply is required to power the sensor.

Features

- Simple to use.
- Accepts over 60 direct-connect sensors.
- High accuracy: ±0.25% at 12 bits.
- Battery life of 2-3 years with any mix of sensors.
- User-replaceable battery.
- Real time 'Strip Chart' display mode.

Easy To Use!

Quick Setup

Select a sample rate, start and run mode, and sensor scaling. Descriptive labels for each sensor and the logging session may also be entered. Setups may be saved for later use.

On-line documentation

Questions about sensor wiring and scaling are quickly answered using the context sensitive help.

Free lifetime updates

Pocket Logger Software is compatible with the XR450 Pocket Logger and all earlier models, including our first loggers which shipped thitry years ago! The software is periodically updated with new capabilities. Updated software is posted on our website, available for free download.
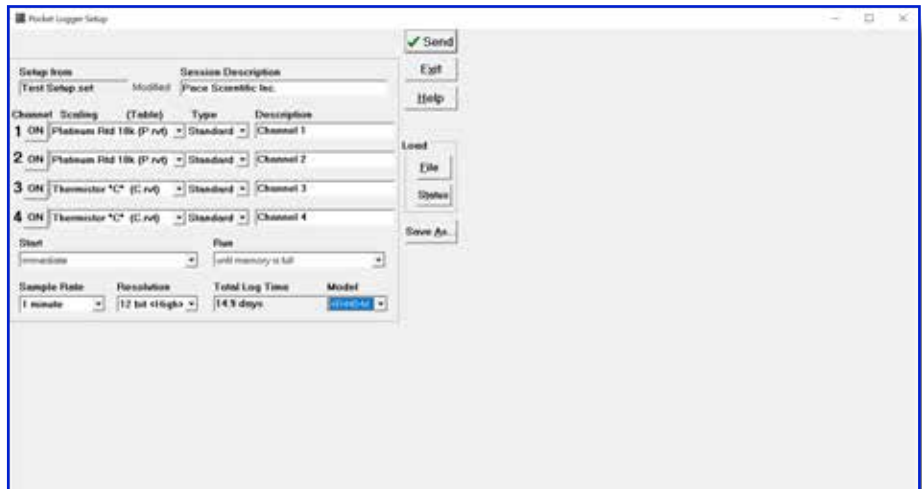
Presentation quality graphs

An easy to read graph is instantly available whenever you transfer data from the Pocket Logger or view data in Real Time. Existing data files are quickly selected and displayed.

Graph components easily changed include:
- Data traces (combine, separate, or hide).
- Time scale (zoom).
- Moisture scale (relative humidity, dew point, or wet bulb).
- Temperature scale (deg C / deg F).
- Trace thickness.
- Color of any graph component.
- Font size.

Export data

All or any portion of your logged data may be quickly exported to Excel or other programs.
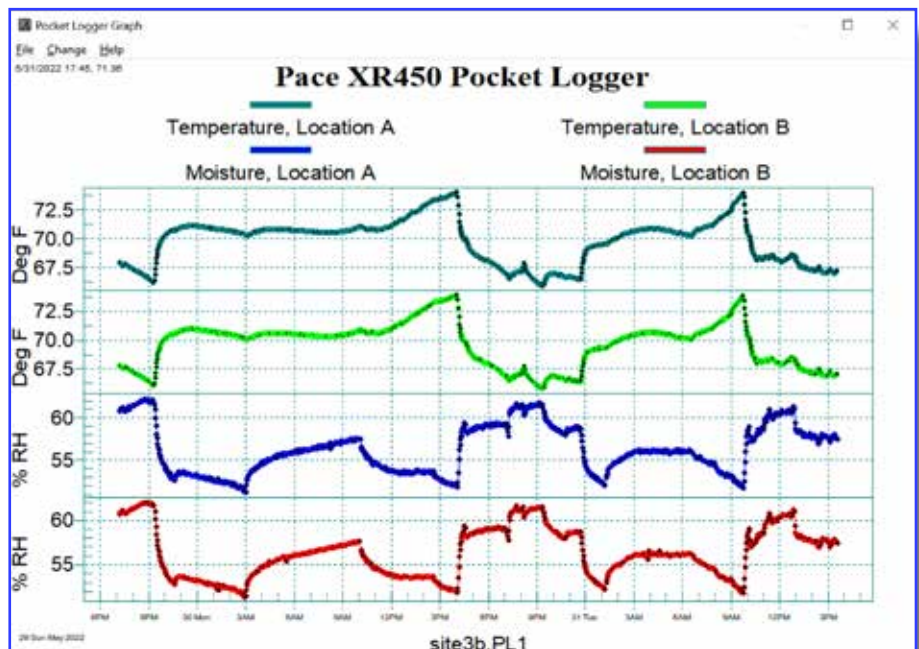
PT9xx Temperature Probes

Pace PT9xx Series Temperature Probes connect to any Pocket Logger input channel and contain a precision 30k ohm thermistor. Using 24 AWG copper wire, leads may be extended to over 100 FT (30 meters) with no degradation in accuracy. Accuracy specifications on page 15.

Common Features

- **Accuracy ±0.15°C from 0°C to 40°C**
- **Extend leads with ordinary copper wire**
- **±0.1°C interchangeability**

Size Comparison - PT9xx Series

PT916

Closed end 1/8 inch (3.175 mm) diameter stainless steel tube. Available in three lengths: 4, 6 and 12 inch (101, 152 and 304 mm). Teflon insulated 24 gage leads. Inserts into a Pete's Plug or CF916 fitting (below). Suitable for HVAC and general temperature applications.

Continuous temperature:	-50 to 75°C (-58 to 167°F)
Intermittent maximum:	302°F (150°C)
Lead length:	3 feet (0.9m)
Interchangeability:	±0.1°C from 0 to 70°C (32 to 158°F)

CF916-1/8

Optional bored-through stainless steel fitting for PT916 probe. 1/8 NPT male threads. Also compatible with PT450 Thermocouple Probe.

PT960

Rugged stainless steel probe, 6 mm (0.236") diameter and 50 mm (approx 2 inch) length with 6.1 meter (20 ft) cable. TPE jacketed cable with a diameter of 3.3 mm (0.13"), a round cross section and 24 gage, polypropylene insulated leads. Suitable for immersion, HVAC, and soil burial applications. Probe's cable is not recommended for immersion in fuels (fuel splashing on cable is OK).

Temperature range:	-40 to 100°C (-40 to 212°F)
Lead length:	20 feet (6.1m)
Interchangeability:	±0.1°C from 0 to 70°C (32 to 158°F)

PT907

Closed end mylar tube 0.127" x 0.375" length. Parallel bonded 24 gage wire with PVC insulation, 4FT length. Not rated for immersion.

Temperature range:	-50 to 105°C (-58 to 221°F)
Lead length:	4 feet (1.2m)
Interchangeability:	±0.1°C from 20 to 45°C (68 to113°F)

Other Temperature Sensors and Probes

- **Platinum High Temperature Sensors - see page 11**

    PT520: -40 to 260°C (-40 to 500°F)

- **Type J Thermcouple Probe**

    PT450: Requires Mvt Module - see page 10

    Description: 6" x 1/8" dia. Stainless Steel sheath

    with 10 FT Teflon-Insulated Cable.

Relative Humidity & Temperature Probe

Uses two Pocket Logger channels. A total of two RH & Temp. Probes may be connected to one Pocket Logger. *Relative Humidity data is easily converted to Wet Bulb or Dew Point with a mouse click.*
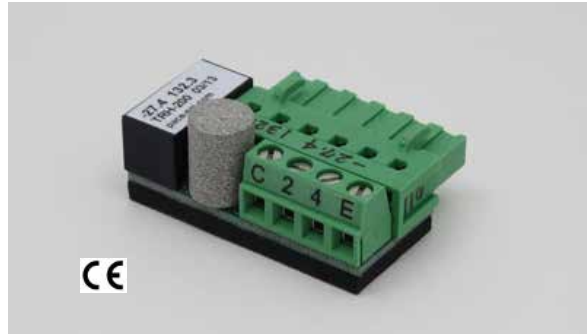
- • **High Accuracy**
- • **Long Term Stability**

Operating Temperature:	-40 to 85°C (-40 to 185°F)
Humidity Range:	0-95% R.H.
Accuracy:	±3% RH from 0 to 95% RH
Stability:	±1% RH typical at 50% RH in 5 years
Repeatability:	±0.5% RH
Physical:	Rugged housing with sintered SS filter.
Size:	0.5" dia x 2.5" long (13mm x 64mm)
Temperature accuracy:	See Specifications, page 15
Interchangeability:	±0.1°C from 0 to 70°C (32 to 158°F)
Part No:	Three lead lengths are available
TRH-100	12" (0.3 meter) leads
TRH-100-10FT	10 ft (3 meter) shielded cable
TRH-100-20FT	20 ft (6 meter) shielded cable

Relative Humidity & Temperature Module

Plugs into Pocket Logger, replacing the detachable terminal block. Uses two channels, one for temperature, and one for humidity / wet bulb / dew point. Same specifications as probe on left except for tem-

perature and humidity range (see below). Two channels are available for other PACE sensors, 0-5 vdc or resistive signals.

Operating Temp:	-40 to 60°C (-40 to 140°F)
Humidity Range:	0-90% R.H.
Size:	Adds 0.36" (9 mm) to Pocket Logger's length
Part No:	TRH-200

Humidity, Light & Temperature Module

Same as module above, but includes built-in light sensor for logging light levels. Channel 4 is available for a PACE sensor, 0-5vdc or resistive signal.

Operating Temp:	-30 to 60°C (-22 to 140°C)
Humidity Range:	0-90% R.H.
Size:	Adds 0.36" (9 mm) to Pocket Logger's length.
Part No:	TRH-300 For details see:

Pressure Sensors

- **Connect to any Pocket Logger input**
- **Pace Pressure Sensors require**
  no external power!

Series P350

- **Ultra-Low Pressure Range ± 0.1 inch H2O**

For indoor air applications including Lab/Clean Room Pressurization, Filter Differential Pressure and Fan Static Pressure.

Pressure ranges:	Ranges listed below
Total error band:	±2% of span over compensated tempersature range.
Compensated range:	5 to 45°C
Operating temperature:	-20 to 60°C
Pressure media:	Dry air or non-ionic (inert) gas.
Physical:	Molded thermoplastic housing, three color-coded 16" (0.3 m) leads
Pressure Ports:	Two ports accept 3/32" I.D.tubing or 2.4 mm I.D. tubing. Accepts 1/8" I.D. tubing or 3.2 mm tubing with included adapters.
Proof pressure:	7.5 psi
Weight:	1.3 oz. (37 grams)
Overall size, P350:	0.88" x 1.58" x 3.79" (22 x 40 x 97 mm)
Part Numbers:	P350-D-0.1-inch (± 0.1 inch H2O)
	P350-D-0.5-inch (±0.5 inch H2O)
	P350-D-1-inch (±1 inch H2O)

Series P400

- **High Accuracy - For Dry Air or Inert Gases**
- **Differential/Gage or Absolute Pressure**
- **Waterproof, Epoxy Encapsulated Housing**

Pressure ranges:	Listed below
Combined repeatability, linearity and hysteresis:	±0.25%
Total error band:	±1%, of F.S. (except ±2 inch model: ±2% of F.S.) over compensated tempersature range.
Operating temperature:	Psi models: -25 to 90°C Inch H2O model: -10 to 85°C
Compensated range:	Psi models: -20 to 85°C Inch H2O model: 0 to 60°C
Pressure media:	Dry air or non-ionic (inert) gas.
Physical:	Molded thermoplastic housing, three color-coded 12" (0.3 m) leads, ports accept 3/32" or 3 mm I.D. tubing, or 1/8" I.D. tubing w/ included adapters.
Common mode pressure:	150 psi
Weight:	0.3 oz. (8 grams)
Overall size:	0.9" x 0.6" x 0.75" (23 x 15 x 19 mm)
Part Numbers:	P400-D-2-inch (±2 inch H2O)
	P400-D-1-psi (±1 psi ±27.7 inch H2O)
	P400-D-15-psi (±15 psi)
	P400-D-30-psi (±30 psi)
	P400-A-15-psia (±15 psi Absolute)

Series P450

- **High Accuracy - For Dry Air or Inert Gases**
- **Gage Pressure (Single Port)**

Pressure ranges:	Listed below
Combined repeatability, linearity and hysteresis:	±0.25%
Total error band:	±1%, of F.S. (except ±2 inch model: ±2% of F.S.) over compensated tempersature range.
Operating temperature:	Psi models: -25 to 80°C Inch H2O models: -10 to 80°C
Compensated range:	Psi models: -10 to 80°C Inch H2O model: 0 to 60°C
Pressure media:	Dry air or non-ionic (inert) gas.
Physical:	Molded thermoplastic housing, three color-coded 12" (0.3 m) leads, port accepts 3/32" or 3 mm I.D. tubing, or 1/8" I.D. tubing using included adapter.
Common mode pressure:	N/A
Weight:	0.6 oz. (17 grams)
Overall size:	2.03" x 1.39" x 0.6" (52 x 35 x 20 mm)

Part Numbers:		
	P450-G-5-inch	(0 - 5 inch H2O)
	P450-G-1-psi	(0 - 1 psi alt: 0 - 27.7 in. H2O)
	P450-G-30-psi	(0 - 30 psi)

Barometric Pressure Sensor

- **Connect to any Pocket Logger input**
- **Pressure Media: Moist or Dry Air**
- **Pressure Range: 150 to 1300 millibar**
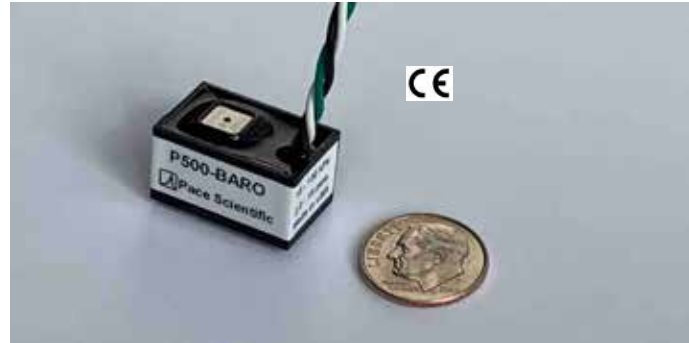
Total error band (0-85°C):	±1.5% of Span
Operating temp. range:	-40 to 93°C (-40 to 200°F)
Size:	0.9 x 0.6 x 0.6" (23 x 15 x 15 mm)
Part No:	P500-BARO
Optional Mounting Base:	MB-4500

Readings may be scaled to read in any unit of pressure; see

Power Limitation: A maximum of three P500-BARO may be powered from one XR450 Pocket Logger.

Series P600

- **High Accuracy - For Dry Air or Inert Gases**

Total error band:	±1.5% of span from 0 to 60°C
Operating temp. range:	-40°C to 70°C (-4°F to 158°F)
Overall size:	1.89 x 1.03 x 0.98" high (48 x 26 x 25 mm high)

Part Numbers:		
	P600-D-5-inch	(±5 inch H2O)
	P600-D-5-inch	(±10 inch H2O)
	P450-D-1-psi	(±1 psi ±27.7 inch H2O)

Series P1600

For Compressed Air, Hot and Cold Water, Gas, Oil, Refrigerant, Steam and similar applications.

Total Error Band:	±1.0% of Span: -20 to 85°C (-4 to 185°F)
	±1.5% of Span: -40 to -20°C (-40 to -4°F
	±1.5% of Span: 85 to 125°C (185 to 257°F)
Pressure Port:	1/4" NPT Male, 304 SS material
Operating Temperature:	-40°C to 125°C (-40 to 257°F)
Physical:	NEMA 4X housing.
Overall Size:	1.15" dia. x 2.7" (29 mm x 69 mm)
Cable Length:	10 ft (3 meter) cable

Part Numbers (range):		
	P1600-30	(0-30 psig)
	P1600-50	(0-50 psig)
	P1600-100	(0-100 psig)
	P1600-200	(0-200 psig)
	P1600-500	(0-500 psig)
	P1600-1000	(0-1000 psig)
	P1600-1500	(0-1500 psig)
	P1600-2000	(0-2000 psig)
	P1600-3000	(0-3000 psig)
	P1600-5000	(0-5000 psig)
	P1600-7500	(0-7500 psig)
	P1600-10000	(0-10,000 psig)
	P1600-14500	(0-14,500 psig)
	P1600-20000	(0-20,000 psig)
	P1600-vac-30	(vacuum-30 psig)
	P1600-vac-150	(vacuum-150 psig)
	P1600-vac-300	(vacuum-300 psig)

Series P1650

For Compressed Air, Hot and Cold Water, Gas, Oil, Refrigerant, Steam and similar applications.

Lower Pressure Ranges compared to the P1600 Series

Total Error Band:	±1.5% of Span: -20 to 85°C (-4 to 185°F)
	±2% of Span: -40 to -20°C (-40 to -4°F
	±2% of Span: 85 to 125°C (185 to 257°F)
Pressure Port:	1/4" NPT Male, 316 SS material
Operating Temperature:	-40°C to 125°C (-40 to 257°F)
Physical:	NEMA 4X housing.
Overall Size:	1.15" dia. x 2.7" (29 mm x 69 mm)
Cable Length:	10 ft (3 meter) cable

Part Numbers (range):		
	P1650-5	(0-5 psig)
	P1650-15	(0-15 psig)
	P1650-vac-0	(vacuum-0 psig)
	P1650-vac-15	(vacuum-15 psig)
	P1650-15-A	(0-15 psia)
	P1650-30-A	(0-30 psia)

AC Current Sensors

- **Connect to any Pocket Logger input**
- **Self powered**
- **Monitor AC motors or any AC load**
- **Accurate to 1% of full scale**
- **Split Core design - easy to install**

Input Current:	AC current, single phase 50/400Hz, load power factor 0.5 to 1.0 lead or lag.
Accuracy*:	±1% of reading from 10% to 100% of full scale. ±3% of reading at 5% of full scale.

* see website for Accuracy specs for SC10A, SC20A and SC50A

Temperature effect:	±0.05% from -20 to 55°C (-4 to 131°F).
Response Time:	250 ms. (input from 10% to 90% of F. S.)
Ripple:	0.5%
Voltage Rating:	600 VAC. Tested with full wave 10 kV impulse for 60 seconds.
Overload:	1.6x full scale (continuous).
Surge:	3x full scale.
Output cable:	8 ft signal cable (2.4meter)
Size:	1.25" thick. Other dimensions below.

Part No.	Range	Window	Length	Width
SC10A	0-10 amp ac	0.5" square	2.6"	2.3"
SC20A	0-20 amp ac	0.5" square	2.6"	2.3"
SC50A	0-50 amp ac	0.5" square	2.6"	2.3"
SC100A	0-100 amp ac	0.5" square	2.6"	2.3"
SC200A	0-200 amp ac	1.0" square	3.3"	3.0"
SC500A	0-500 amp ac	2.0" square	4.1"	4.0"
SC1000A	0-1000 amp ac	4.0" square	6.1"	6.0"
SC1500A	0-1500 amp ac	2.5" square	5.4"	4.7"

AC Voltage Sensors

- **Connect to any Pocket Logger input**
- **Self Powered**
- **Rugged DIN mount case**
- **Use SV300 model for 24 / 120/ 240 vac circuits**
- **Use SV600 model for 120 / 240 / 480 vac circuits**

|	
AC Voltage range:	0-300, 0-600
Frequency Range:	SV300: 48 to 400 Hz
	SV600: 48 to 65 Hz
Voltage Overload:	Full scale rating
Response:	400 milliseconds
Accuracy:	±0.5% of F.S. (Includes effects of linearity from 10% to 100% F.S.)
Temperature effect:	(-20°C to 65°C): ±1.0%
Output Ripple:	Less than 1% full scale
Output:	0 to 5vdc linear
Weight:	SV300: 4 oz.,
	SV600: 10 oz.
Dielectric Test	(input/output isolation): 1500 VAC
Burden:	2.0 VA
Size:	1.5"H x 3.5"W x 2"D

External potential transformer included with SV600; External transformer size: 1.6"H x 2.8"W x 1.5"D.

Part No:	SV300	(0-300 VAC)
	SV600	(0-600 VAC)

IMPORTANT - AC Voltage Sensors must be mounted and wired in a box, panel or suitable enclosure.

Thermocouple / Millivolt Modules
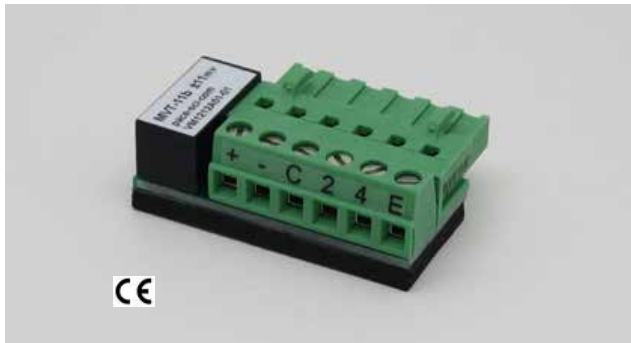
Four millivolt plug-in modules are available, each with a different millivolt range. Three of the modules (Mvt-11b, Mvt-22b, Mvt-50u) also accept a Thermocouple (Type J, K, N, R, S, T, B, C or E). A built-in, precision thermistor provides ambient temperature readings and for thermocouples, cold junction compensation.

A millivolt module configures a Pocket Logger as follows: Channel 1: Ambient temperature. Channel 3: Millivolt signal (or thermocouple). Channels 2 and 4: 'Standard' channels for any Pace sensors, or 0-5 vdc or resistive signals.

Operating temperature:	-40°C to 60°C (-40°F to 140°C)
Size:	Adds 0.35" (9 mm) to XR450's length, no change to XR450's height and width.
Thermistor Sensor:	±0.1°C interchangeability, 0-70°C
Millivolt input type:	Single ended, (-) terminal internally connected to dc ground.
Millivolt input impedance:	Greater than 10 Megohm.

Individual Specifications

Model:	Mvt-11b	Mvt-22b	Mvt-50u	Mvt-500u
Range:	±11 mv	±22 mv	0-50 mv	0-500mv
Resolution (12 bits):	12 µV	24 µV	12 µV	120 µV
Input Offset:	200 µV max	200 µV max	5 µV max	5 µV max
Input Offset Drift:	2 µV per °C max	2 µV per °C max	0.05 µV per °C max	0.05 µV per °C max
Thermo-couple	YES	YES	YES	NO
System Accuracy:	0.8% of F.S. max	0.8% of F.S. max	0.4% of F.S. max	0.4% of F.S. max

Thermocouple Specifications
for Mvt-11b, Mvt-22b and Mvt-50u

Maximum Temperature

Type	Mvt-11b	Mvt-22b	Mvt-50u*
J	200°C (392°F)	400°C (752°F)	760°C (1400°F)
K	270°C (518°F)	530°C (986°F)	1220°C (2228°F)
N	340°C (644°F)	630°C (1166°F)	1300°C (2372°F)
R	1030°C (1886°F)	1760°C (3200°F)	1760°C (3200°F)
S	1120°C (2048°F)	1760°C (3200°F)	1760°C (3200°F)
T	230°C (446°F)	400°C (752°F)	350°C (662°F)
B	1570°C (2858°F)	1820°C (3308°F)	1820°C (3308°F)
C	620°C (1148°F)	1210°C (2210°F)	2320°C (4208°F)
E	160°C (320°F)	310°C (590°F)	660°C (1220°F)

Resolution (12 bit mode, approximate)

Type	Mvt-11b	Mvt-22b	Mvt-50u*
J, T	0.2°C (0.4°F)	0.4°C (0.7°F)	0.2°C (0.4°F)
K, N	0.3°C (0.5°F)	0.6°C (1.1°F)	0.3°C (0.5°F)
R	0.8°C (1.4°F)	1.6°C (2.9°F)	0.8°C (1.4°F)
S, B	1.0°C (1.8°F)	2.0°C (3.6°F)	1.0°C (1.8°F)
C	0.6°C (1.1°F)	1.2°C (2.2°F)	0.6°C (1.1°F)
E	0.15°C (0.3°F)	0.3°C (0.5°F)	0.15°C (0.3°F)

Minimum Temperature

Type	Mvt-11b, Mvt-22b, Mvt-50u*	
J	-130°C (-202°F)	Minimum Temperature for Type R, S, B and C is 0°C (32°F)
K, N	-50°C (-58°F)	
T	-200°C (-328°F)	
E	-100°C (-148°F)	

*Mvt-50u Limitation:
If you use the Mvt-50u with a thermocouple, it must be set (in Pocket Logger Software) for either high or low (cold) temperature. When set for high temperatures, the lowest readable temperature is the ambient temperature of the Mvt Module. When set for low temperatures, the highest readable temperature is the ambient temperature of the Mvt Module. *The Mvt-11b and Mvt-22b do not have this limitation.*

Part Numbers: Mvt-11b, Mvt-22b, Mvt-50u, Mvt-500u (4 models)

Type J Thermocouple Probe:
Stainless Steel sheath 6" long x 1/8" dia. Includes 10 ft (3 meter) Teflon cable.
Part Number: PT450
       (accepts CF-916-1/8 Fitting - see page 4)

Input Scaling Module

- **Five DC voltage ranges available**
- **Connects directly to a Pocket Logger**
- **Many possible configurations**

A plug-in miniature input scaler and terminal block for use in place of the Pocket Logger's detachable terminal block. Enables the Pocket Logger to accept additional input ranges (see table below).

Input Type	Dash number
+/-5vdc	-5v
0-10vdc	-10v
0-20vdc	-20v
0-30vdc	-30v
0-60vdc	-60v
4-20ma	-20m
'Standard' input (for all Pace sensors, 0-5vdc and resistance.	-S

Module scaling is fixed at the factory and must be specified when ordering. A channel specified as '-S' is a 'Standard' Pocket Logger input for Pace sensors, 0-5vdc or resistive signals.

Input impedance: All vdc input ranges: 100k ohms.

**Size:**   Adds 0.36" (9 mm) to Pocket Logger's length.

Part No: ISM-x-x-x-x*

*Substitute a dash number from the table above for each channel (1-2-3-4). For example, ISM-S-S-5v-5v specifies an Input Scaling Module with 'Standard' inputs for channels 1 and 2 and +/-5vdc inputs for channels 3 and 4.

Note: In order to implement an external start/stop logging trigger, channel 1 must be a 'Standard' (-S) input.

RTD Temperature Sensors

- **PT520: Continuous temperature rating of 260°C (500°F)**
- **Connects directly to a Pocket Logger**
- **Ideal for surface temperature measurements**
- **Low mass for fast response**
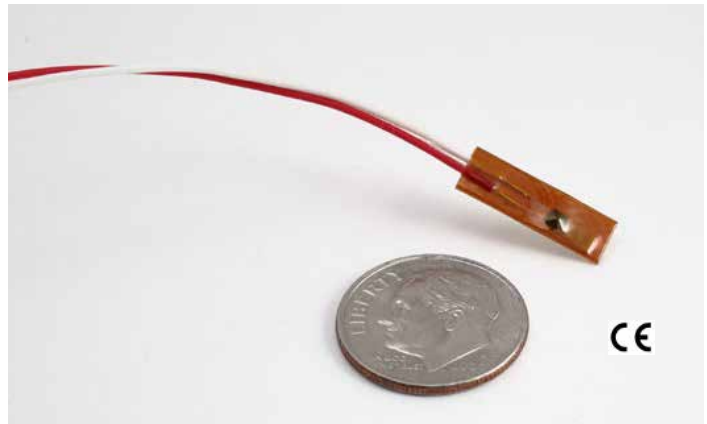
The PT510 and PT520 Temperature Sensors consists of a thin-film platinum element encased in a high temperature laminate.
The PT520 can operate at continuous temperatures of up to 260°C.
The PT510 includes an adhesive backing for easy mounting.
A maximum of four PT510 / PT520 sensors may be connected to one XR450 Pocket Logger.

NOTE: Standard 100 to 1000 ohm platinum RTDs are not compatible with the Pocket Logger.

Temperature Range:
PT520:	-50 to 260°C (-58 to 500°F).
PT510:	-50 to 200°C (-58 to 392°F).

Resistance: 10,000 ohms ±0.12% at 0°C.
Resistance Tolerance: ±0.12% at 0°C. (conforms to IEC 751 Class B).
Total System Accuracy: ±1°C at 0°C.
±1.5°C at 100°C.
±2°C at 200°C.
Resolution:[1] Better than 0.4°C over entire range.
Interchangeability: ±0.3°C at 0°C.
Leads: Teflon insulated AWG 26, 40" (1 meter) length.
Size: 0.2" x 0.6" x 0.08" max.
5mm x 15mm x 2mm max.

Part Numbers: PT510
PT520

Accelerometers

Connects directly a Pocket Logger, no external power required. If the temperature sensor and all three axis are utilized, this sensor will use all four Pocket Logger channels.

- **Triple Axis Accelerometers**
- **±3 g and ±16 g models**
- **Waterproof IP67 Protection**
- **Internal Precision Temperature Sensor**
- **Cable length 8 ft or 30 ft (2.4 or 9.1 meters)**

Sensitivity:	SA-03: ±3 g
	SA-16: ±16 g
Nonlinearity:	±0.3% of F.S.
Frequency Bandwidth:	50 Hz
Noise, X & Y outputs:	±0.1% F.S.
Noise, Z output:	SA-03: ±0.2% F.S.
	SA-16: ±0.1% F.S.
Temperature Effects:	±0.03% per deg C
Input Power, Voltage:	4 - 18 Vdc (Pace data logger supplies 5 V power).
Input Power, Current:	approx. 0.4 mA
Output Signal Range:	0 to 3.3 Vdc
Nominal 0 g output:	1.65 Vdc (X, Y, Z outputs)
Physical:	Waterproof, epoxy-potted thermoplastic housing.
IP Rating:	IP67 / NEMA 4X
Dimensions:	52 x 35 x 15 mm (2.03" x 1.39" x 0.6")

Part Number	Minimum Range	Cable Length	Temperature Sensor
SA-03	±3 g	8 ft (2.4 m)	YES
SA-03-30FT	±3 g	30 ft (9 m)	YES
SA-16	±16 g	8 ft (2.4 m)	YES
SA-16-30FT	±16 g	30 ft (9 m)	YES

Solar Radiation Sensor

Connects directly to a Pocket Logger, no external power required.

- **Suitable for meteorological, solar energy, agricultural and botanical applications.**
- **Measures solar irradiance from 360 to 1120 nanometers.**

SRS-200 Solar Radiation Sensor mouted on the SRS-LB Combination Leveling Plate and Mounting Bracket

Sensor Type	Silicon Cell Pyranometer
Operating Temp.	-40° to 70°C (-40° to 158°F)
Measurement Range	0 to 1250 Watts per Square Meter (W/m2)
Uncertainty:	Calibration Uncertainty: ±5%
Repeatability:	Measurement Repeatability: Less than 1%
Long-term Drift:	Less than 2% per year
Nonlinearity:	Less than 1%
Directional Error:	Less than ±2% at solar zenith angle of 45°
	Less than ±5% at solar zenith angle of 75°
Temp. Coefficient:	0.04 ±0.04% per °C
Resolution:	0.6 W/m2
Spectral Range:	360 to 1120 nanometers (10% points)
Response Time:	Less than 1 ms
Power requirement:	5 Vdc (0.3 ma typical current draw)
Cable Length:	5 meters (16.4 ft)
Cable Type:	3 conductor, Santoprene rubber jacket
Dimensions:	24 mm diameter, 28 mm height (0.94" diameter, 1.10" height)
Part Numbers:	SRS-200 (Solar Radiation Sensor) SRS-LB (Mtg Bracket and Leveling Plate pictured above)

Low-profile Weatherproof Case

Rugged molded case withstands all weather conditions. Features a hinged cover, quick release latch, continous rubber seal and two cable fittings. Fittings accept cable diameters up to 0.25" (6.3 mm). Available in Black only. Yellow case pictured above is no longer available.

Overall size: 8.1" x 3.9" x 2.5" deep
Weight: 9.6 oz., 272 grams
Protection rating: NEMA 4X / IP65
Part No: EC24-BLK   (color: Black)

Compact Weatherproof Case

Rugged molded case withstands all weather conditions. Features a hinged cover, continuous neoprene o-ring seal and two quick release latches. Six cable fittings installed on side of case. Fittings accept cable diameters up to 0.25" (6.3 mm).

Overall size: 6.5" x 5" x 3.3" deep
Weight: 11 oz., 312 grams
Protection rating: NEMA 4X / IP65
Part No: EC44

Heavy-duty Weatherproof Case

Rugged molded case withstands all weather conditions. Features a hinged cover, continuous neoprene o-ring seal, quick release latches, and fold-up carrying handle. Six feed-through cable glands accept cable diameters up to 0.25" (6.3 mm). Can be padlocked for security.

Overall Size: 8.2" x 6.5" x 3.5" deep (208 x 165 x 90 mm).
Weight: 22 oz. (607 grams)
Protection rating: NEMA 4X / IP65
Part No: EC506

Cases compared

EC24:
Smallest case; 25% smaller by volume than the EC44 with a narrow profile. Only 2 cable fittings, and with the -IC option only one cable fitting is available for sensor/signal cables.

EC44:
Compact case, smaller than the EC506. Includes 6 cable fittings (same as EC506).

EC506:
Heavy-duty case, about twice as large as the EC44. Includes 6 cable fittings (same as EC44), includes folding carrying handle and accepts a padlock.

Size:	4.70" x 2.40" x .93"; (120 x 61 x 24 mm).
Weight (with battery):	6 ounces; 156 grams.
Case material:	Impact resistant ABS plastic.
Operating limits:	-40 to 60°C (-40 to 140°F). 5-90% R.H. (non-condensing).
Clock accuracy:	+/-1 min per month (-20 to 60°C).
Battery:	9 volt (user replaceable).
Battery life:	Est. 2-3 years of continuous operation; battery voltage displays on PC.
Data Retention:	Over 200 years with no power.
Data rate:	19.2 Kb/sec.
Number of channels:	Four.
Starting modes: Three:	Start after download, Start at pre-set time and date, Start on trigger.[1]
Running modes: Three:	Run continuous (memory wraps around), Stop when memory is full, Stop on trigger.[1]
Sampling modes: Two:	Single point or Average (accumulate readings every 2 secs; compute and store average value).
Sampling rates: Twenty:	From 2 secs to 12 hours. Plus 8 fast log rates from 200 Hz to 1 Hz with reduced functionality.[2]
Real time display:	Channel readings updated every 2 secs on PC; can be active while recording.
Input termination:	Removable screw-type terminal block.
Input impedance:	Greater than 5 Megohm (when sampling).
Input protection:	Over/under voltage, 40amps peak 8/20 us
Memory capacity:	86,016 readings.
Temperature accuracy:[3] (logger + probe)	±0.15°C from 0 to 40°C. *(±0.27°F from 32 to 104°F).* ±0.3°C from -25 to 85°C. *(±0.55°F from -13 to 185°F).*
Voltage input accuracy:	±0.25% of full scale.
Resolution:	0.025°C from 0 to 40°C. 0.063°C or better from -25 to 75°C. 0.125°C or better from -45 to 100°C. 0.025% of full scale.

Available Sensors

Over 60 direct-connect sensors are available for the XR450 including Temperature, Pressure, Light, Humidity/Dew Point, AC Current and AC Voltage. Sensors may be mixed and matched in any combination. See Accessories for details.

Input Ranges

Inputs auto-configure for sensor or input range selected in software and include 0-5vdc, 2 wire resistance (30k ohm midpoint), and 3 wire resistance (minimum 2k ohm). Plug-in modules are available for millivolt inputs, +/-5vdc, 0-10, 0-20, 0-30, 0-60vdc and 4-20 ma.

Warranty

The XR450 Pocket Logger is backed by a 3 year limited warranty. Accessories are backed by a 1 year limited warranty.

NOTES

[1]Triggering requires a switch, temperature probe or 2 wire resistance on channel 1. Channel 1 may be set 'OFF' while triggering to maximize memory capacity of 'ON' channels.

[2]Communication with PC is not available while Fast Logging (1-200Hz) is active.

[3]Assumes use of Pace PT9xx series temperature probes.

For pricing or any further information, please contact Omni Instruments Ltd.

omni INSTRUMENTS
Measurement and data acquisition solutions

Contact Details:
Tel: +44 1382 443000
Email: info@omni.uk.com

Website: www.omniinstruments.co.uk

Mailing Address: Unit 1, 14 Nobel Road, Wester Gourdie Industrial Estate, Dundee, DD2 4UH.