



# PM880

## Panametrics portable hygrometer

The PM880 hygrometer is a complete, intrinsically safe, portable system with options and accessories to meet all industrial moisture measurement needs.

This hygrometer is small, lightweight, and easy-to-use. The large LCD displays moisture readings in dew point ( $^{\circ}\text{C}$  or  $^{\circ}\text{F}$ ), ppmv, ppmw, lb/MMSCF (natural gas) and a variety of other unit options. Data can be viewed in alphanumeric or graphic formats. A rechargeable battery pack and battery charger make this the ideal go-anywhere moisture analyzer.

## Features

- Hand-held portable design
- Intrinsically safe
- IP67 rated
- Large graphic display
- Internal data logger
- IrDA® communication with PC (Optional)
- Stores up to 60 log/site files
- Simple programming via graphic user interface
- Compatible with all Panametrics moisture probes
- Lightweight hand-held sample system
- Convenient carrying bag to store hygrometer and all accessories

The PM880 comes in a soft carrying case with zippered compartments, a handle and a shoulder strap. The case accommodates the PM880, a sample system, flexible hoses, probes with protective covers, a Moisture Image Series probe electronics module, an operating manual, a battery pack, a battery charger and probe cables.

Training for the PM880 is available on-site, in the factory or online. Panametrics offers extended warranties and service agreements for the PM880 as well as a range of services including NIST-traceable calibration, field calibration, rentals and moisture surveys.

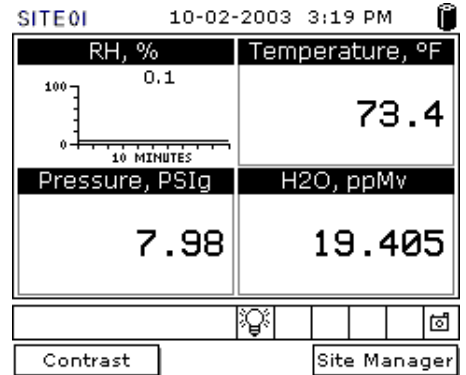
## PM880 accessories

### Included

1. Zippered soft carrying case
2. MISP2 moisture probe with probe cable or M Series moisture probe with probe cable
3. Portable sample system
4. PM880 battery and charger

### Optional

5. Flexible Stainless Steel Braided Hose
6. PC infrared adapter



The PM880's large LCD displays moisture readings in dew point (°C or °F), ppmv, ppmw, lb/MMSCF (natural gas) and a variety of other unit options in graphic or alphanumeric

## Applications

This rugged, intrinsically safe, portable hygrometer measures moisture in gases and non-aqueous liquids. It is used in conjunction with Moisture Image® Series (MIS), TF and M Series moisture probes for applications including:


- Natural gas
- Chemical and petrochemical gases
- Non-aqueous liquid applications
- Air separation plants
- Tanker preparation and filling
- Industrial gases
- Gas cylinder preparation and filling
- Shipboard applications
- SF6 circuit breakers
- Furnace gases/heat treating
- General plant/facility maintenance

# Technical Specifications

## Overall

<b>Channels</b>	Single channel
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>• Size: 9.4 x 5.5 x 1.5 in. (238 x 138 x 38 mm)</li> <li>• Weight, electronics: 2.5 lb (1.13 kg)</li> <li>• Weight, sample system: 4 lb (1.8 kg)</li> </ul>
<b>Enclosure</b>	Type 4X, IP67

## Electronics

<b>Internal battery</b>	Rechargeable. PM880 batteries can be installed or removed in hazardous areas. Batteries must be recharged in non-hazardous areas only.
<b>Battery life</b>	15 to 24 hours depending on type of probe; battery life reduced when operating below 32°F (0°C)
<b>Battery charger</b>	<ul style="list-style-type: none"> <li>• Switchable input: 115 or 230 VAC, 50/60 Hz</li> <li>• Requires approximately three hours for full battery recharge</li> </ul>
<b>Memory</b>	FLASH memory
<b>Operating temperature</b>	14 to 122°F (-10 to 50°C) To ensure maximum battery life, Panametrics does not recommend storage at temperatures exceeding 95°F (35°C) for longer than one month.
<b>Keypad</b>	25-key, rubberized, tactile membrane
<b>Display</b>	240 x 200 pixel, graphic backlit LCD display
<b>Printer/terminal output</b>	Infrared communication port
<b>Cables</b>	Cable type dependent on probe type: M Series, or Moisture Image Series. LEMO®-to-bayonet connector
<b>Cable length</b>	<ul style="list-style-type: none"> <li>• Standard: 10 ft (3 m)</li> <li>• Optional: Consult Panametrics for other lengths</li> </ul>
<b>Hazardous area classification</b>	Intrinsic-safety certification: Baseefa (2001) Ltd.  II 1 G EEx ia IIC T3 (-20°C ≤ Ta ≤ +50°C) Baseefa02ATEX0191; and CSA C US Class I, Division 1, Groups A, B, C & D, Type 6
<b>European compliance</b>	EMC Directive 2004/108/EC, EN61326-1:2013, Class A, Table 2, Industrial Environment

## Operational

<b>Site parameter programming</b>	Menu-driven, graphic, operator interface uses keypad and soft-function keys. Online help functions. Memory storage for saving site parameters.
<b>Data logging</b>	Memory capacity to log over 100,000 moisture data points. Programmable keypad for log units, update times, and start/stop times.
<b>Display functions</b>	Displays measurements and logged data in alphanumeric or graphic format.
<b>Display units</b>	<ul style="list-style-type: none"> <li>• Moisture: DP temperature, ppmv, ppmw, % RH, lb/MMSCF and others</li> <li>• Temperature: °F, °C and °K</li> <li>• Pressure: psig, bar, kPa (gauge), kg/cm<sup>2</sup> (gauge) and others</li> </ul>

## Moisture measurement

<b>Compatibility</b>	Compatible with all Panametrics aluminum oxide moisture probes: M Series, and Moisture Image Series. Each probe type requires a different type of I/O cable.
<b>Calibration</b>	Panametrics moisture sensors are computer-calibrated to National Institute of Standards and Technology (NIST) traceable moisture concentrations.

## Dew/frost point temperature

<b>Calibration ranges (dew/frost point)</b>	Standard: 50 to -112°F (+10 to -80°C) with data from +68 to -166°F (+20 to -110°C)
<b>Accuracy (dew/frost point)</b>	<ul style="list-style-type: none"> <li>• ±3.6°F (±2°C) above -148°F (-100°C)</li> <li>• ±5.4°F (±3°C) below -148°F (-100°C)</li> </ul>
<b>Repeatability (dew/frost point)</b>	<ul style="list-style-type: none"> <li>• ±0.4°F (±0.2°C) above -148°F (-100°C)</li> <li>• ±0.9°F (±0.5°C) below -148°F (-100°C)</li> </ul>
<b>Operating pressure</b>	5 μ of Hg to 5000 psig (345 bar) limited by pressure sensor (see pressure measurement specifications)

## Temperature measurement

Optional thermistor available for all Panametrics moisture probes

<b>Range</b>	-22 to 158°F (-30 to 70°C)
<b>Accuracy</b>	±0.9°F (±0.5°C) at -22°F (-30°C)

## Pressure measurement

Optional pressure sensor available for TF Series and Moisture Image Series moisture probes

<b>Ranges</b>	<ul style="list-style-type: none"><li>• 30 to 300 psig (3 to 21 bar)</li><li>• 50 to 500 psig (4 to 35 bar)</li><li>• 100 to 1000 psig (7 to 69 bar)</li><li>• 300 to 3000 psig (21 to 207 bar)</li><li>• 500 to 5000 psig (35 to 345 bar)</li></ul>
<b>Accuracy</b>	±1% at full scale
<b>Proof pressure</b>	Three times span of available range up to maximum 7500 psig (518 bar)

## Sample system

The SS880A standard sample system comprises an inlet needle valve, a built-in coalescing filter and sample cell with a bypass needle valve and venting tube, a pressure gauge (various ranges), and an outlet needle valve with venting tube.

<b>Wetted parts</b>	316 stainless steel
<b>Operating pressure</b>	Configurations available for 300, 500, 1000, 2000, or 3000 psig (21, 35, 69, 137, 207 bar), dependent on pressure gauge
<b>Maximum pressure rating</b>	<ul style="list-style-type: none"><li>• Standard: 3000 psig (207 bar)</li><li>• Optional: 5000 psig (345 bar)</li></ul>
<b>Other options</b>	<ul style="list-style-type: none"><li>• Inlet pressure regulator, 0 to 500 psig (1 to 345 bar) outlet</li><li>• Armored flowmeter, 1.3 to 13 SCFH</li><li>• 10-ft (3-m), flexible, polytetrafluoroethylene-lined, braided-stainless steel hose with 1/4-inch tube connections. Not recommended for dew point temperatures below -103°F (-75°C).</li><li>• IrDAR communication with PC</li></ul>

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