



# 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 (°C or °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.

### Application

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

## Features

- Hand-held portable design
- Intrinsically safe
- IP67 rated
- Large graphic display
- Internal data logger
- IrDA® communication with PC
- 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 hosing, 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

1. Zippered soft carrying case
2. Flexible Stainless Steel Braided Hose
3. MISP2 moisture probe
4. TF moisture probe
5. M Series moisture probe with probe cable
6. Portable sample system
7. PC infrared adapter
8. PM880 battery and charger



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

| Overall                       |                                                                                                                                                                                                                                                                   |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Channels                      | Single channel                                                                                                                                                                                                                                                    |
| Dimensions                    | <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>                                                                      |
| Enclosure                     | Type 4X, IP67                                                                                                                                                                                                                                                     |
| Electronics                   |                                                                                                                                                                                                                                                                   |
| Internal battery              | Rechargeable. PM880 batteries can be installed or removed in hazardous areas. Batteries must be recharged in non-hazardous areas only.                                                                                                                            |
| Battery life                  | 15 to 24 hours depending on type of probe; battery life reduced when operating below 32°F (0°C)                                                                                                                                                                   |
| Battery charger               | <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>                                                                                                |
| Memory                        | FLASH memory                                                                                                                                                                                                                                                      |
| Operating temperature         | 14 to 122°F (–10 to 50°C)<br><i>To ensure maximum battery life, Panametrics does not recommend storage at temperatures exceeding 95°F (35°C) for longer than one month.</i>                                                                                       |
| Keypad                        | 25-key, rubberized, tactile membrane                                                                                                                                                                                                                              |
| Display                       | 240 x 200 pixel, graphic backlit LCD display                                                                                                                                                                                                                      |
| Printer/terminal output       | Infrared communication port                                                                                                                                                                                                                                       |
| Cables                        | Cable type dependent on probe type: M Series, TF Series, or Moisture Image Series. LEMO®-to-bayonet connector                                                                                                                                                     |
| Cable length                  | <ul style="list-style-type: none"> <li>Standard: 10 ft (3 m)</li> <li>Optional: Consult Panametrics for other lengths</li> </ul>                                                                                                                                  |
| Hazardous area classification | 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 I, Groups A, B, C & D, Type 6 |
| European compliance           | EMC Directive 2004/108/EC, EN61326-1:2013, Class A, Table 2, Industrial Environment                                                                                                                                                                               |
| Operational                   |                                                                                                                                                                                                                                                                   |
| Site parameter programming    | Menu-driven, graphic, operator interface uses keypad and soft-function keys. Online help functions. Memory storage for saving site parameters.                                                                                                                    |
| Data logging                  | Memory capacity to log over 100,000 moisture data points. Programmable keypad for log units, update times, and start/stop times.                                                                                                                                  |
| Display functions             | Displays measurements and logged data in alphanumeric or graphic format.                                                                                                                                                                                          |
| Display units                 | <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                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Compatibility                                                                                                                                                                                                                                 | Compatible with all Panametrics aluminum oxide moisture probes: M Series, TF Series, and Moisture Image Series. Each probe type requires a different type of I/O cable.                                                                                                                                                                                 |
| Calibration                                                                                                                                                                                                                                   | Panametrics moisture sensors are computer-calibrated to National Institute of Standards and Technology (NIST) traceable moisture concentrations.                                                                                                                                                                                                        |
| Dew/frost point temperature                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                         |
| Calibration ranges (dew/frost point)                                                                                                                                                                                                          | Standard: 50 to –112°F (+10 to –80°C) with data from +68 to –166°F (+20 to –110°C)                                                                                                                                                                                                                                                                      |
| Accuracy (dew/frost point)                                                                                                                                                                                                                    | <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>                                                                                                                                                                                                                      |
| Repeatability (dew/frost point)                                                                                                                                                                                                               | <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>                                                                                                                                                                                                                  |
| Operating pressure                                                                                                                                                                                                                            | 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                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                         |
| Range                                                                                                                                                                                                                                         | –22 to 158°F (–30 to 70°C)                                                                                                                                                                                                                                                                                                                              |
| Accuracy                                                                                                                                                                                                                                      | ±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                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                         |
| Ranges                                                                                                                                                                                                                                        | <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>                                                                                                        |
| Accuracy                                                                                                                                                                                                                                      | ±1% at full scale                                                                                                                                                                                                                                                                                                                                       |
| Proof pressure                                                                                                                                                                                                                                | 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. |                                                                                                                                                                                                                                                                                                                                                         |
| Wetted parts                                                                                                                                                                                                                                  | 316 stainless steel                                                                                                                                                                                                                                                                                                                                     |
| Operating pressure                                                                                                                                                                                                                            | Configurations available for 300, 500, 1000, 2000, or 3000 psig (21, 35, 69, 137, 207 bar), dependent on pressure gauge                                                                                                                                                                                                                                 |
| Maximum pressure rating                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>Standard: 3000 psig (207 bar)</li> <li>Optional: 5000 psig (345 bar)</li> </ul>                                                                                                                                                                                                                                  |
| Other options                                                                                                                                                                                                                                 | <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> </ul> |