

GE Infrastructure Sensing

Applications

This rugged, intrinsically safe, portable moisture analyzer measures moisture in gases and non-aqueous liquids. It is used in conjunction with MIS, TF and M Series moisture probes for industries 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 GE Panametrics moisture probes
- Lightweight hand-held sample system
- Convenient carrying bag to store hygrometer and all accessories



PM880 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), ppm_v, ppm_w, 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.

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, an MIS probe electronics module, an operating manual, a battery pack, a battery charger, and probe cables. The carrying bag is safe for transporting the PM880 and accessories into hazardous areas.

GE Panametrics has joined other GE high-technology sensing businesses under a new name —

GE Infrastructure Sensing

imagination at work 

Specifications

Overall

Channels

Single channel

Dimensions

- Size: 9.4 × 5.5 × 1.5 in.
(238 × 138 × 38 mm)
- Weight, electronics: 2.5 lb (1.13 kg)
- Weight, sample system: 4 lb (1.8 kg)

Enclosure

NEMA 4X IP67

Electronics

Internal Battery

Rechargeable. PM880 batteries can be installed or removed in hazardous areas. Batteries must be recharged in general purpose areas only.

Battery Life

15 to 24 hours depending on type of probe (battery life reduced when operating below 0°C)

Battery Charger

- Switchable input: 115 to 230 VAC, 50/60 Hz
- Requires approximately 3 hours for full battery recharge

Memory

FLASH memory

Operating Temperature

14° to 122°F (–10° to 50°C)

Note: To ensure maximum battery life, GE Infrastructure Sensing does not recommend storing at temperatures exceeding 95°F (35°C) for longer than one month.

Keypad

25-key, rubberized, tactile membrane

Display

240 × 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

- Standard: 10 ft (3 m)
- Optional: Consult GE Infrastructure Sensing for other lengths

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 Cl I, Div 1, Gr A,B,C,D,

Type 6 (pending)

European Compliance

Complies with EMC Directive 89/336/EEC

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 and stop times.

Display Functions

Displays measurements and logged data in alphanumeric or graphic format. Language options: Dutch, English, French, German, Italian, Portuguese, Russian, Castilian Spanish, Latin-American Spanish, Swedish.

Display Units

- Moisture: DP temperature, ppm_v, ppm_w, % RH, lb/MMSCF, and others
- Temperature: °F, °C, and °K
- Pressure: psig, bar, kPa (gauge), kg/cm² (gauge), and others

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



PM880 Accessories

- ① Portable, infrared, thermal printer and battery charger
- ② Zippered, soft carrying case
- ③ Flexible, braided–stainless steel hose
- ④ MIS probe electronics module
- ⑤ TF moisture probe
- ⑥ M Series moisture probe with probe cable
- ⑦ Portable sample system
- ⑧ PC infrared adapter
- ⑨ PM880 battery and charger



Moisture Measurement

Compatibility

Compatible with all GE 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

GE Panametrics moisture sensors are computer calibrated to NIST-traceable moisture concentrations.

Dew/Frost Point Temperature

Overall Calibration Range Capability

–110° to 60°C

Calibration Range Options

- Standard: 20° to –80°C with data to –110°C
- Ultralow: –50° to –110°C
- Extended high: 60° to –80°C with data to –110°C

Accuracy

- $\pm 2^\circ\text{C}$ from 60° to –65°C
- $\pm 3^\circ\text{C}$ from –65° to –110°C

Repeatability

- $\pm 0.5^\circ\text{C}$ from 60° to –65°C
- $\pm 1^\circ\text{C}$ from –65° to –110°C

Operating Pressure

5 μ of Hg to 5,000 psig (345 bar) limited by pressure sensor—see pressure measurement specifications

Temperature Measurement

Optional thermistor available for all GE Panametrics moisture probes

Range

–30° to 70°C (–22° to 158°F)

Accuracy

$\pm 0.5^\circ\text{C}$ at –30°C

Pressure Measurement

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

Ranges

- 30 to 300 psig (3 to 21 bar)
- 50 to 500 psig (4 to 35 bar)
- 100 to 1000 psig (7 to 69 bar)
- 300 to 3000 psig (21 to 207 bar)
- 500 to 5000 psig (35 to 345 bar)

Accuracy

$\pm 1\%$ at full scale

Proof Pressure

3 times span of available range up to maximum 7500 psig (518 bar)

Sample System

Specifications for SS880A standard sample system, comprising 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 SS

Operating Pressure

Configurations available for 300; 500; 1,000; 2,000; or 3,000 psig (21, 35, 69, 207, or 345 bar), dependent on pressure gauge)

Maximum Pressure Rating

- Standard: 3,000 psig (207 bar)
- Optional: 5,000 psig (345 bar)

Other Options

- Inlet pressure regulator, 0 to 500 psig (1 to 345 bar) outlet
- Armored flowmeter, 1.3 to 13 SCFH
- 10-ft (3-m), flexible, Teflon®-lined, braided–stainless steel hose with 1/8-inch tube connections. Not recommended for dew point temperatures below –103°F (–75°C).

Optional Accessories

- Infrared adapter connects to serial port of desktop or laptop PCs to add infrared capability
- Portable, infrared, thermal printer with rechargeable battery and 120- to 240-VAC battery charger. Printer dimensions: 6.3 × 6.5 × 2.3 in. (160 × 164 × 59 mm). Weight: 13 oz (370 g). Print width: 4 in. (104 mm).

