

GE Infrastructure Sensing

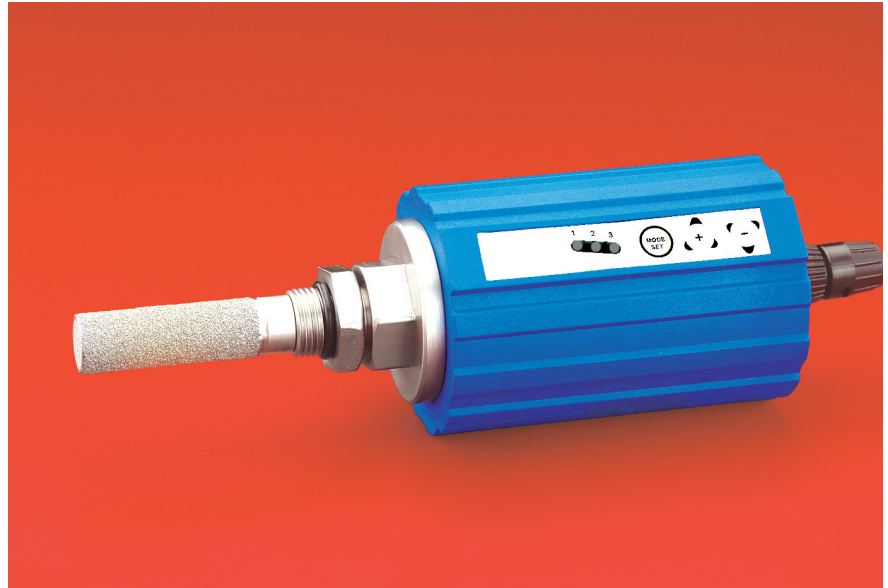
Applications

This rugged dew point transmitter is a low-cost solution for many applications including:

- Refrigerative air dryers
- Furnace/oven applications
- High dew-point gases

Features

- Microprocessor-based, all-digital technology for reliable operation
- Ideal for dryer manufacturers and OEM industrial applications
- Direct insertion into system at 300-psig (21.7-bar) maximum pressure
- Two-wire, loop-powered, 4- to 20-mA transmitter
- NIST-traceable factory calibration
- Uses GE Panametrics MiniCap 2 sensor
- Measurement range of -20° to 60°C (-4° to 140°F) dew/frost point



CMX 1 Loop-Powered Dew Point Transmitter

Top Performance at an Economical Price

The CMX 1 is a rugged, two-wire, loop-powered dew point transmitter with a linearized 4- to 20-mA output. It uses the top-performing MiniCap 2 sensor and a thermistor to measure relative humidity and temperature. The CMX 1's microprocessor calculates the dew/frost point temperature from these two inputs.

The economically priced CMX 1 is intended for OEM gas dryer applications that do not require the superior performance and wide range capability of GE Panametrics aluminum oxide sensor-based hygrometers. The MiniCap 2 humidity sensor gives the CMX 1 fast response and excellent


long-term stability over the range of -20° to 60°C (-10° to 140°F) dew/frost point temperature.

The MiniCap 2 Sensor

The GE Panametrics MiniCap 2 is a thin-film polymer capacitive type relative humidity sensor. State-of-the-art semiconductor technology is employed in the sensor's manufacture. The dielectric constant of the polymer thin film changes with atmospheric relative humidity, resulting in linear capacitance changes as a function of relative humidity. The sensor is immune to most reagent vapors and recovers quickly from condensation, making it an excellent choice for low-cost gas dryer monitoring.

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

GE Infrastructure Sensing

imagination at work 

Specifications

Electronics

European Compliance

Complies with EMC Directive 89/336/EEC and PED 97/23/EC for DN<25

Dew/Frost Point Range

-20° to 60°C (-10° to 140°F)

Accuracy

- ±2% relative humidity
- ±0.5°C temperature
- ±5°C dew/frost point at 20°C ambient temperature and -20°C frost point (see graph)

Repeatability

±0.5°C over the dew/frost point range

Response Time

Readings are updated every 15 seconds

Supply Voltage

External 8 to 28 VDC required

Analog Output

4 to 20 mA

Output Resolution

12 bits

Output Load

Maximum load in $\Omega = 40 \times (\text{PSV} - 8)$, where PSV = power supply voltage

Cable

Standard twisted pair, 20 to 24 AWG

Sample Connection

3/4-in. 16 straight male thread with Viton® O-ring

Operating Temperature

-40° to 60°C (-40° to 140°F)

Warm-Up Time

Meets specified accuracy in 3 minutes

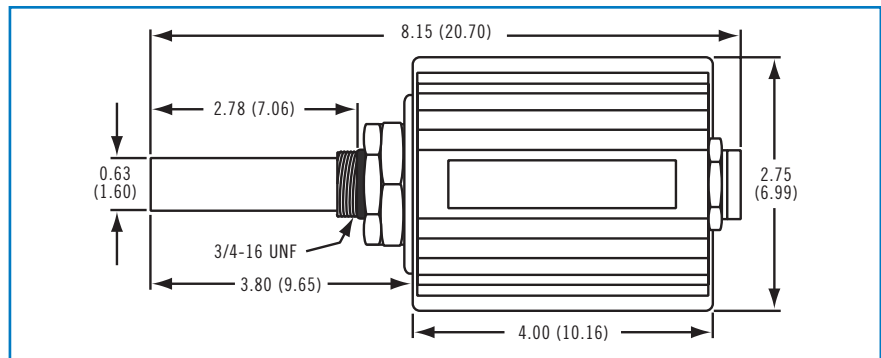
Enclosure

Weatherproof

Dimensions

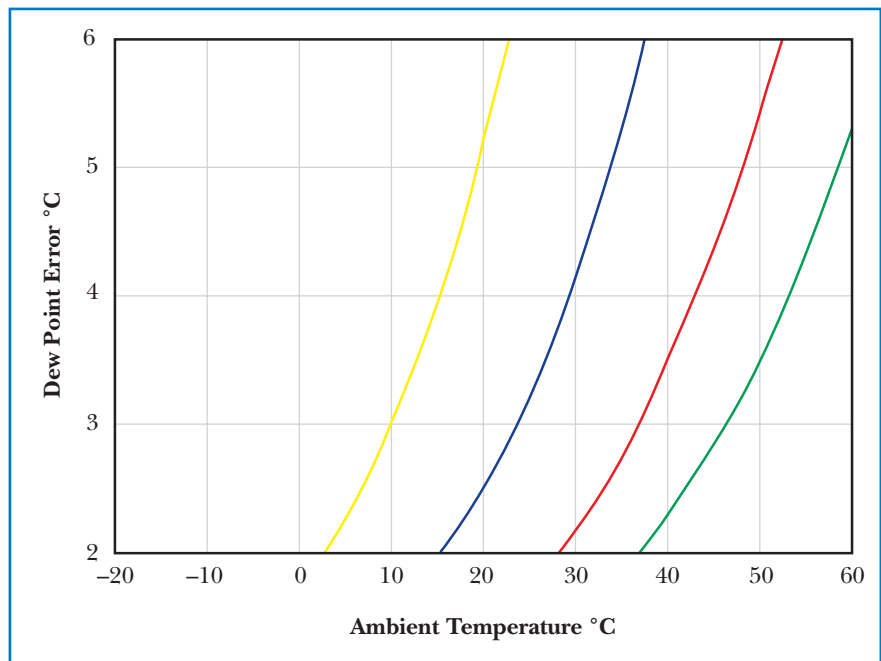
- Overall: 8.00 × 2.75 in. (20.32 × 6.99 cm)
- Electronics: 4.00 × 2.75 in. (10.16 × 6.99 cm)
- Sensor: 2.70 × 0.63 in (6.86 × 1.60 cm)
- Weight: 2.0 lb (0.91 kg)

CMX 1 Dimensions



CMX 1 transmitter dimensions in inches (mm)

CMX 1 Accuracy



Moisture Sensor

Sensor Type

- Capacitive thin-film RH sensor
- Thermistor temperature sensor

Calibration

Each transmitter is individually computer-calibrated against known moisture concentrations, traceable to NIST

Calibration Interval

MiniCap 2 sensor recalibration is recommended typically at one year intervals, depending on application

Calibration Data

Factory programmed, stored on EEPROM

Operating Pressure (Sensors Only)

300-psig (21-bar) maximum