

HygroGuard MMY2650

General Eastern Trace Moisture Analyzer

Features

- Optional analog input for pressure compensation or analog transmitter (voltage or current)
- One, two or three analog outputs; 0/4 to 20 mA or 0/1 to 5 VDC
- Three configurable relay outputs plus system alarm relay
- Two line LCD and five push button user interface
- RS485 serial output
- Full complement of pre-programmed moisture measurement units

The HygroGuard MMY2650 is a moisture analyzer designed to operate with the GE DY5 or DY55 planar gold aluminum oxide dew point sensor. The unit offers an optional input that can be used for pressure compensation, an external temperature probe, or other analog transmitter. The standard product comes with one current output (0/4 to 20 mA), a system alarm relay, and three adjustable relays, all with single-pole double-throw 2.5 A contacts, selectable failsafe mode, and adjustable hysteresis. One or two additional analog outputs are



available. A display and five push buttons from the user interface for data display, unit selection, output ranges, alarm setpoints and special functions.

The HygroGuard MMY2650 is available in both wall mount and panel mount configurations. When used with the DY5 dew point probe, the system is capable of providing dew point readings in the range of -112°F to 68°F (-80°C to 20°C) dew point over a temperature range of -4°F to 140°F (-20°C to 60°C). When configured with approved Zener Barriers the model DY5xx probe is approved as intrinsically safe for use in hazardous (classified) locations.



MMY2650 Specifications

Standard Inputs

Two (moisture and temperature) from DY5 probe, connects up to two DY55 probes.

Optional Input

For pressure transducer providing live pressure compensation or monitoring one other analog transmitter. Signals: 0/1 to 5 V, 0/4 to 20 mA loop powered, or 4 to 20 mA/source.

Moisture Probe

Interconnects with DY5 probe (US) or DY55 (European) probe

User Interface

Five push-buttons, easy configuration using a matrix

Display

Alphanumeric LCD displays measured value with units of measure, matrix location programming instructions, error indication and error codes; user selectable scanning feature alternating the display every five seconds through active channels (three maximum)

European Compliance

Complies with EMC directive 2004/108/EC and LVD 2006/95/EC

Units Of Measure (Moisture)

Dew point °C, °F, ppmv (requires pressure measurement or programmed constant), lb/MMSCF, g/m³, g/kg, vapor pressure in hPa, or mmHg, %RH, process pressure calculated dew point °C, °F (needs pressure measurement using the optional input for live calculation or pressure constant)

Units of Measure (DewPoint)

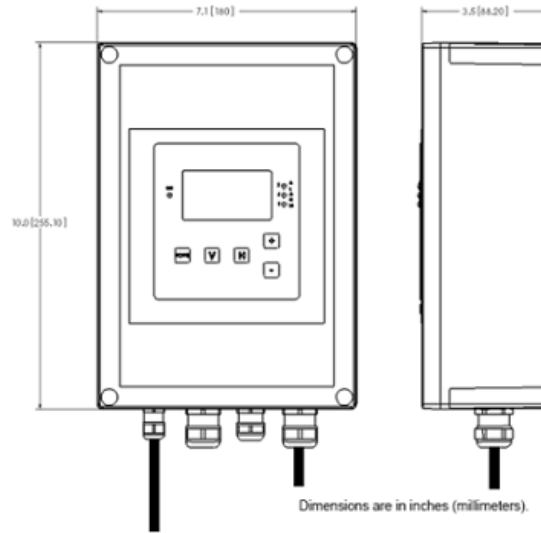
°F, °C, instrument range -202°F to 86°F (-130°C to 30°C)

Units of Measure (Pressure)

Optional input used with a pressure transducer to selected unit; bara, barg, psia, psig, hPaa, hPag

Analog Outputs

Three, assigned to input 1, 2 and 3, 0/4 to 20 mA, load resistance <500 ohms, 0/1 to 5 V, source resistance 249 ohms, user selectable range, user selectable condition in case of error to 110%, -10% or hold at last measured value



Digital Outputs

Four relays (SPDT dry contacts rated at 250 VAC, 2.5 A, PCAC = 300 VA, cos phi > 0.7, PDC 100 W, 100 VDC). One relay is system alarm. Three relays are configurable to any input; failsafe mode: energized/de-energized selectable. programmable hysteresis; high/low alarm selectable

Serial Output

RS485, streaming data, update rate once per second

Program

Non-volatile memory

Data

EEPROM

Operating/Storage Temperature

14°F to 122°F (-10°C to 50°C)

Supply Voltage

90 to 240 VAC, optional 18 to 36 VDC

Power Consumption

5.8 VA for line voltage units, 2.2 W for DC powered units

Enclosures

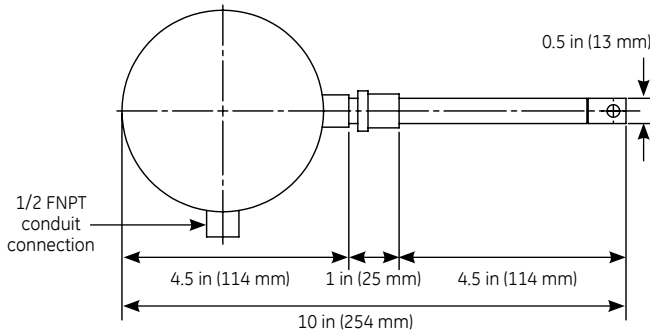
Wall Mount: Type 12, Type 4X, Type 7, and Panel Mount.

Cable Entry

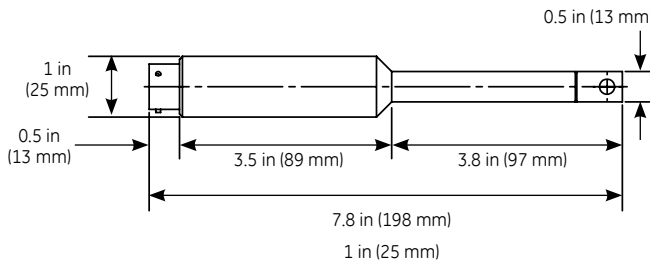
Metric cable gland M12, 2x M16, M20

Weight

2.2 lb (1 kg)



DY502 probe dimensions



DY507 probe dimensions

DY5xx (US) Moisture Probe

Sensor

Planar gold/aluminum oxide capacitance

Calibration Range

-112°F to 68°F (-80°C to 20°C)

Recommended Recalibration Cycle

Six to 12 months depending on the application

Accuracy

±3.6°F (±2°C) in the standard calibration range at 77°F (25°C)

Calibration Data

Stored in EEPROM of analyzer DewPro MMY2650

Standard Operating Temperature

-4°F to 140°F (-20°C to 60°C)

Maximum Relative Humidity

50% at dew point > 32°F (0°C)

Temperature Sensor

Zener device, range -94°F to 158°F (-70°C to 70°C)

Signal Transmission

Frequency, generated by probe electronics

Operating Pressure

0 to 1750 psig (0 to 120 bar, 12 MPa)

Recommended Flow Rate

1 to 5 SCFH (in a bypass mode)

Gas Flow Velocity

- 165 ft/s (50.0 m/s) at 14.7 psig (1 bar)
- 16.5 ft/s (5.0 m/s) at 145 psig (10 bar)
- 1.65 ft/s (0.5 m/s) at 1450 psig (100 bar)

Probe Tube

1/2 in (12.7 mm) diameter, 316 stainless steel

Mounting Adapter

1/2 in tube x 1/2 in NPTM, 316 stainless steel compression fitting standard, others available

Cable Connection

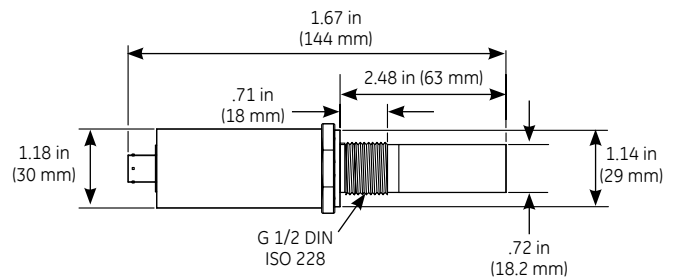
Rugged multi-pin connector; screw terminal in explosion-proof junction box with 1/2 in NPTF conduit connection

Probe Cable

Four-conductor, AWG 22, stranded, shielded to maintain EMI/RFI/ESD resistance, up to 1000 ft

Weight

1 lb (.45 kg)



DY55 probe dimensions

DY55 (European) Moisture Probe

Sensor

Planar gold/aluminum oxide, capacitance principle

Calibration Range

-112°F to 68°F (-80°C to 20°C) dew point temperature

Recommended Recalibration Cycle

Six to 12 months, depending on the application and required accuracy

Accuracy

±3.6°F (±2°C) at 77°F (25°C)

Maximum Relative Humidity

50% at dew point > 32°F (0°C)

Ambient and Storage Temperature

-76°F to 122°F (-60°C to 50°C)

Standard Operating Temperature

-4°F to 140°F (-20°C to 60°C)

Maximum Operating Pressure

5075 psig (350 bar)

Helium Leak Rate

> 10⁻⁷ mbar 1/s

Gas Flow Velocity

- 165 ft/s (50.0 m/s) at 14.7 psig (1 bar)
- 16.5 ft/s (5.0 m/s) at 145 psig (10 bar)
- 1.65 ft/s (0.5 m/s) at 1450 psig (100 bar)

Signal Transmission

Standardized pulse frequency modulation (PFM) via two-wire cable, up to 3280 ft (1000 m) length.

Probe Mounting Adapter

Stainless steel 1.4571 with G 1/2 thread (DIN/ISO 228) and O-ring seal out of fluor caoutchouc (SMK)

Rating

IP 40

Torque When Tightening

50 Nm

Wrench Width

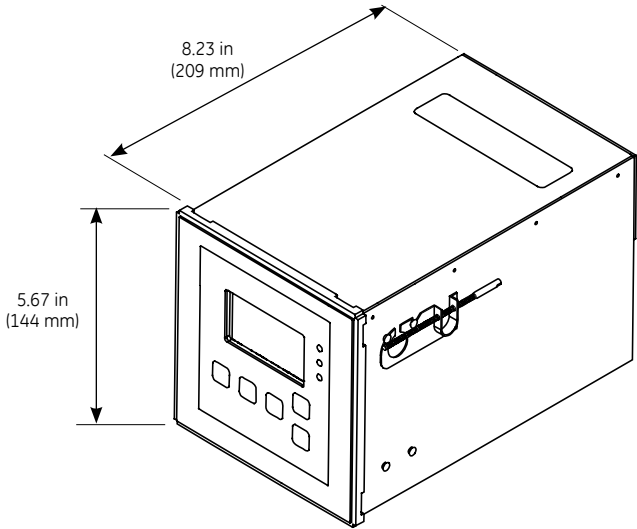
1.2 in (30 mm)

Protection

Protective cap with 10 mm filter

Weight

0.5 lb (250 g)



HygroGuard MMY2650 panel mount enclosure dimensions

MMY2650 Panel Mount Enclosure

Material

Black anodized aluminum

Dimensions

5.67 in x 5.67 in (144 mm x 144 mm)

Depth

- Maximum protrusion at the rear of the panel: 8.23 in (209 mm)
- Maximum protrusion at the front of the panel: 0.32 in (8.25 mm) with bezel
- Maximum protrusion at the front of the panel with door: 1.26 in (32 mm)

Panel Cutout

5.43 in x 5.43 in (138 mm x 138mm)

Wiring

Same configuration as the wall mount unit, wired in the rear

Mounting

Insert from front into the panel, install the clamps, tighten the clamp screws from the rear against the panel using a long screwdriver

Front Panel

Overlay with membrane buttons integrated LEDs and clear window for display



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