

RH-Plus MR2350

Relative Humidity Analyzer

Features

- Optional analog input for pressure compensation or other 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 RH-Plus MR2350 is a moisture analyzer designed to operate with the GE MDR3 relative humidity probe. 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 form the user interface for data display, unit selection, output ranges, alarm setpoints and special functions.



The RH-Plus MR2350 is available in both wall mount and panel mount configurations. When used with the MDR3 humidity probe, the system is capable of providing relative humidity readings in the range of 0 to 100% over a temperature range of 5°F to 185°F (-15°C to 85°C). When configured with approved zener barriers, the model MDR3xx probe is approved as intrinsically safe for use in hazardous (classified) locations.



RH-Plus MR2350

Specifications

Standard Inputs

Two (moisture and temperature) from MDR3 probe

Optional Input

For pressure transducer providing live pressure compensation or from other analyzer. Signals: 0/1 to 5 V, 0/4 to 20 mA loop powered, or 4 to 20 mA.

Moisture Probe

Interconnects with MDR3xx probe

User Interface

Five push buttons, easy configuration using programming matrix

Display

Alphanumeric LCD, displays measured value with units of measure, matrix location and programming instruction, error indication with error code if malfunction occurs; user selectable scanning feature alternating the display every five seconds through active channels (three max)

European Compliance

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

Units Of Measure (Moisture)

RH%, dew point °C, °F, g/m³, g/kg, Tw °C, °F (wet bulb temperature, vapor pressure in hPa, mmHg, process pressure calculated dew point °C, °F, RH% calculated from different temperature value (requires temperature measurement using the optional input)

Units of Measure (Temperature)

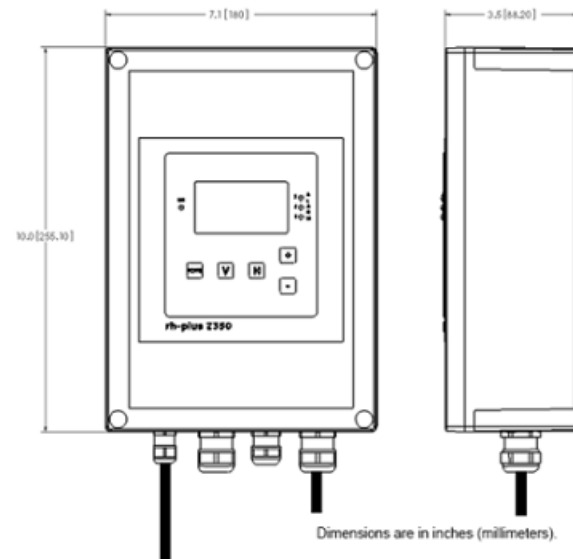
°F, °C

Units of Measure (Pressure)

For optional input used with a pressure transducer: bara, barg, psia, psig, hPaa, hPag

Analog Outputs

Three, each configurable to any input, 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



RH-Plus MR2350 dimensions

Digital Outputs

Four relays (SPDT dry contacts rated at 250 VAC, 2.5 A, PAC = 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

RH485, update rate once per second

Program

Non-volatile memory

Data

EEPROM

Cable Entry

Metric cable gland M12, 2x M16, M20

Operational/Storage Temperature

14°F to 122°F (-10°C to 50°C)

Supply Power

90 to 240 VAC, optional 18 to 36 VDC

Power Consumption

- 5.8 VA for line powered units
- 2.2 W for DC powered units

Enclosures

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

Weight

2.2 lb (1 kg)

MDR3 Humidity Probe

Sensing Element

Silicon-based polymer, capacitance principle, IC electronics

RH Range

0 to 100%

RH Accuracy

±2% in the range of 0 to 90%, ±3% in the range of 90 to 100%

Dew Point Range

5°F to 185°F (-15°C to 85°C)

Dew Point Accuracy

Better than ±1.8°F (±1°C) for dew points > 32°F (0°C) at 77°F (25°C)

Standard Operating Temperature

5°F to 185°F (-15°C to 85°C)

Temperature Accuracy

±0.9°F (±0.5°C)

Maximum Operating Pressure

250 psig (17.2 bar)

Signal Transmission

Moisture and temperature converted to frequencies, allowing up to 1000 ft (305 m) of standard four-wire shielded cable

Probe Cable Connector

17 ft (5 m) cable permanently attached, or junction box with screw terminals

Sensor Electronics

Integrated circuitry with a platinum RTD temperature sensor

Probe Tube

316 stainless steel, 0.5 in diameter, 8.9 in long

Standard Probe

Mounting

0.5 in tube x 0.5 in NPT, 0.75 in NPT, G 12, 3/4 in x 16 O-ring compression fitting or flange

Sensor Guard

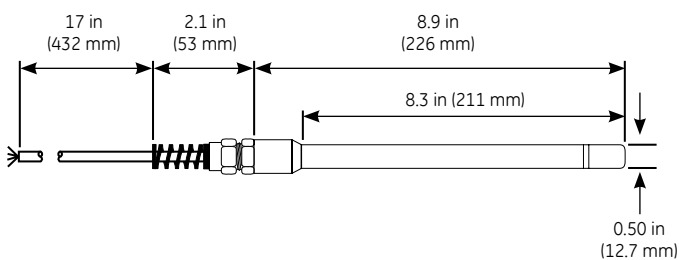
Rugged, removable easy-to-clean, 100 micron sintered 316L stainless steel filter: additional hydrophobic filter on sensor element allowing penetration of water vapor, but not water droplets

Weight

1 lb (0.5 kg)

Approval

ATEX II 1G, (EEx ia) IIC T4, 203°F (90°C), ATEX II 1D 212°F (100°C), Class I, Division 1, Groups A,B,C&D using zener barrier kit IS 20 ST from GE or equivalent



MDR3 probe dimensions

RH-Plus MR2350 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

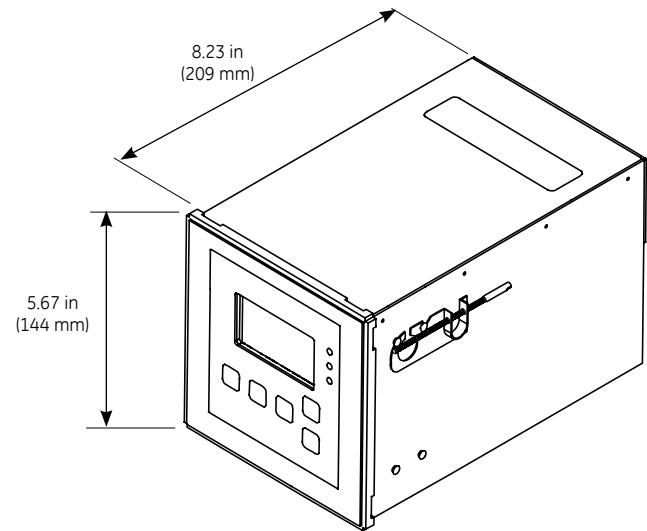
Same configuration as the wall mount unit, wired in the rear

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



RH-Plus MR2350 panel mount enclosure dimensions



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920-070C