

RH-Plus MR 2350

Relative Humidity Analyzer

The RH-Plus MR 2350 is a moisture analyzer designed to operate with the General Eastern MDR3 Relative Humidity Probe. The unit offers an optional input that can be used for pressure compensation, an external temperature probe, or any other sensor this input can be configured to accept 0 to 5 VDC and 4 to 20mA.

The standard product comes with one current output (0-20 mA or 4-20 mA), a system alarm relay, and 3 adjustable relays, all with single-pole double-throw 2.5A contacts, selectable failsafe mode, and adjustable hysteresis. One or two additional current outputs are available.

The Model MR2350 is available in both wall mount or panel mount configurations. When used with the MDR3 Humidity Probe, the system is capable of providing relative humidity readings in the range of 0-100% RH over a temperature range of -15°C to +85°C. When used with approved Zener Barriers the Model MR 2350 is approved as intrinsically safe for use in hazardous areas by Cenelec and FM.



Ordering Information: See page 9

Features:

- Optional pressure or temperature compensation
- One or three current outputs
- Three adjustable relay outputs plus system alarm
- User-configurable for a wide variety of applications
- Two Line LCD

MR 2350 Analyzer Specifications

Electronics:	State of the art micro-controller providing utmost flexibility to meet application needs
Standard Inputs:	2 (moisture and temperature)
Optional Input:	For pressure transducer providing live pressure compensation or other sensor. Signals: 0/1 to 5V, 0/4 to 20mA loop powered, or 4 to 20 mA. If live measurement is not available, pressure compensation can be achieved by entering a constant pressure value in matrix location V3HO
Moisture Probe:	Interconnects with MDR3xx probe
User Interface:	Five push-buttons, easy configuration using a matrix
Display:	Alpha-Numeric LCD, displays measured value with units of measure, matrix location and programming instructions, error indication with error code if malfunction occurs; user selectable scanning feature alternating the display every 5 seconds through active channels (3 max)
EMI/RDI/ESD Protection:	Full compliance with EN 61326-1
Units of Measure: (Moisture)	rh%, dew point °C, °F, g/m ³ , g/kg, Tw °C, °F (Wet Bulb Temperature, vapor pressure in hPa, mmHg, process pressure calculated dew point °C, °F, rh% calculated from separate temperature value (needs temperature measurement using the optional input)
Units of Measure: (Pressure)	For optional input used with a pressure transducer: bara, barg, psia, psig, hPaa, hPag
Measurement Ranges:	User Programmable
Analog Outputs:	3, each configurable to any input, 0/4 to 20 mA, load resistance <500 Ohms, 0/1 to 5V, 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:	4 relays (SPDT dry contacts rated at 250V AC, 2.5 A, PAC = 300VA, cos phi > 0.7, P DC 100W, 100 VDC). 1 relay is system alarm. 3 relays are configurable to any input failsafe mode: energized/de-energized selectable, programmable hysteresis, high/low alarm selectable
Serial Output:	RS 485, sends measured values continuously
Serial Communication:	RS 485, needs GEI communication software for setup or diagnostics
Program:	Non-volatile memory
Data :	EEPROM
Cable Entry:	Metic cable glands M12, 2XM16, M20
Oper./Storage Temp:	-10°C to 50°C (14°F to 122°F)
Supply Power:	85 to 275 VAC, optional 18 to 36 VDC
Enclosures:	Wall mount, IP54, NEMA 12, separate connection compartment, panel mount
Weight:	1 kg (2.2 lbs)

MDR3 Probe Specifications

Sensing Element:	Silicon-based polymer, capacitance principle, IC electronic
RH Range:	0 to 100%
RH Accuracy:	±2% in the range of 0 to 90%; 90 to 100% ±3%
DP Range:	5°F to 185°F (-15°C to +85°C)
DP Accuracy:	Better than ±1.8°F (±1°C) if T > 86°F (30°C) and RH > 40% or T < 86°F (30°C) and RH > 30%
Repeatability:	Better than 0.5% RH
Hysteresis	Less than ±0.9%
Standard Oper. Temp.:	5°F to 185°F (-15°C to +85°C)
Temp. Accuracy:	±0.9°F (±0.5°C)
Max. Oper. Pressure:	250 psig
Signal Transmission:	Moisture and temperature converted to frequencies, allowing up to 1000 ft. of standard four-wire cable (shielded to maintain EMI/RFI/SD resistance)
Probe Cable Connector:	17 ft. 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" diameter, 8.9" long
Standard Probe Mounting:	0.5" tube x 0.5" MNPT, 0.75" MNPT, G 12, 3/4" x 16 "O" ring compression fitting or ANSI flange
Sensor Guard:	Rugged, removable easy-to-clean, 100 micron sintered 316L stainless steel filter; additional hydrophobic filter on sensot element allowing penetration of water vapor but not water droplets
Weight:	0.5 1lb
Approval:	CENELEC, (EEx ia) IIC T4, 203°F (95°C), FM Class 1, Div. 1 groups A-D using Zener barrier kit IS 20 ST from General Eastern or equivalent