

HygroTwin™ 2850

Trace Moisture, Relative Humidity, Pressure and Oxygen Analyzer



The HygroTwin™ 2850 Analyzer System combines powerful features and maximum flexibility for accurate moisture analysis in a variety of process control applications. The instrument incorporates two input channels for moisture, two input channels for temperature, and two additional inputs for trace oxygen, pressure, or other sensors.

The HygroTwin 2850 uses interchangeable probes to measure dew point temperatures in gases and non-conductive liquids from -110°C to +20°C (-166°F to +68°F) or 1 ppb_v to +20°C (68°F), relative humidity from 0-100% or dew point range from <-15°C to +85°C (<5°F to +185°F). The analyzer receives the moisture and temperature frequency signals from the probes and calculates the engineering units from a calibration table in the probes' memory. Thirty-one individual units of measure may be selected to indicate dew point, concentration, water vapor pressure, mixing ratio, absolute humidity, relative humidity, oxygen concentration and temperature. The HygroTwin can calculate change in moisture between two measurement points and express it in terms of absolute humidity or concentration units in lbs/MMSCF. This is useful in monitoring drying processes.

Features

- Accepts two humidity inputs
- Operates with trace moisture and relative humidity probes, ranging from -110°C to +85°C (-166°F to +185°F)
- Wide selection of engineering units with simple set-up and automatic reprogramming
- Analog and digital outputs to interface with external control devices
- In-line or bypass mounting, with one or two point continuous or multi-point spot checking capability

Dimensional Drawing
&Ordering Information:
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Analyzer Specifications

Electronics: Continuous, self-checking, microprocessor controlled, updating measured value every 2 seconds

Accuracy: ±0.2%

Instrument Range: -130°C to +100°C (-202°F to +212°F) dew point, 1 ppb_v to 10⁶ ppb_v, 0 to 45,000 lbs/MMSCF, 7x10⁻⁸ to 760 mmHg g, 0 to 100%

Inputs: 2 each moisture, 2 each temperature, both accepting the probe frequency signals of 0 to 10,000 Hz typical, 2 each optional inputs, accepting 0 to 10,000 Hz, 1 to 5 VDC, or 4 to 20mA

Outputs: 4 each isolated, linear analog 4 to 20 mA into 500 ohms load, 0/1 to 5 V, load >10 kohms, user-assigned channel, unit, and span; 4 each alarm relays, SPDT, rating 250 VAC, 2.5A, user-assigned channel, unit, and set point; 1 each RS-232-C port, baud rate 110, 300, 1200, 2400, 4800, 9600, data bits 7 or 8, parity odd, even, or none; 2 each power supply for optional sensor 12/24 VDC, 50 mA

Cable Connections: NASA-approved push-in terminals

Program: Non-volatile memory

Data: EEPROM

EMI/RFI/ESD Resistance: Exceeds IEC 801.2, ANSI C63; IEC 801.4, ANSI/IEEE C62.41; and IEC 801.5, ANSI/IEEE C62.41 standards

Moisture Units: Dew Point (°C or °F); Relative Humidity (%); Concentration (ppm_v, ppbv, vol %, mol %, lb/MMSCF; Concentration (liquid) (ppm_w) · ppm_w; Concentration (gas) · ppm_w; Mixing Ratio (g/kg, lb/lb, gr/lb); Absolute Humidity (gr/ft³, g/m³); Vapor Pressure (mmHg, mbar); Difference Process Temp. and Dew Point (change in °C, change in °F); Difference A&B in Mixing Ratio (g/kg, gr/lb); Difference A&B in Absolute Humidity (g/m³, gr/cf); Temperature Units (°C, °F)

Eng. Units: Independently assignable to display, outputs, and alarms

Optional Input Units: Pressure with correction (P in psig, inches of water column, bar, or Torr); Oxygen (OX in ppm_v or % by volume)

Instrument Set-up: By 3 push-buttons and 4 programming levels: units, constants, and calibration data; outputs, alarms, and hardware set-up; RS-232C, time and date, and listing of calibration tables; special functions.

Display: 2 line, 80 character back lit LCD displays moisture, temperature, and additional inputs simultaneously

Operating & Storage Temp: 0° to 50°C (32°F to 122°F)

Power: 115 VAC, 50/60 Hz, 25 Watts°; 220 VAC, 12 VDC, 48 VDC, 24 VDC, optional; +15/-10 10% for 115 VAC

Battery Power: For Model 2850-6 12 VDC, 5 to 6 hour operation, built-in recharger (optional)

Weight:

19" Rack Mount:	3.15 kg (7 lbs)	Model 2850-3
Panel Mount:	2.7 kg (6 lbs)	Model 2850-4
NEMA 4x:	5.85 kg (13 lbs)	Model 2850-5
Portable/Bench Top:	5.4 kg (12 lbs), 14 lbs with battery	Model 2850-6
NEMA 3/4/7/9:	44.1 kg (98 lbs)	Model 2850-7

Enclosures:

	Height	Width	Depth
19" Rack Mount	5.25"	19"	11"
Panel Mount	5.25"	10"	11"
Panel Cutout	4.75"	8.625"	
NEMA 4X	13.3"	11.3"	5.6"
Portable/Bench Top	5.75"	11.5"	13.5"
NEMA 3/4/7/9, Cl. 1, Div. 1&2, Gr. B, C, D	18"	18"	7"

Probes: Relative Humidity (Silicon-based polymer capacitive) and Trace Moisture Probes (Gold/Aluminum Oxide Capacitance) avail.