

Trace moisture analyser *hygrotec MMY 150*

**Enhanced system featuring
standardised probe output**



Applications

- Economical measurement and control of dewpoint in specialty gases, dry air, or gas from adsorption dryers, for example:
 - conveying air
 - purging air
 - instrument air
 - carbon dioxide...and many more applications!

Features

- dewpoint or ppm_v display
- output 0/4 to 20 mA, 0/2 to 10V
- three alarms
- interference-free PFM signal transmission
- standardised probe output signal
- compact 7 pitch (35 mm) module
- programmable using Endress+Hauser matrix

Benefits

- flexibility for various moisture measurement applications
- control and optimisation of gas supply
- protection from leaks in process systems and from measurement uncertainties
- dependability and signal integrity
- connection of any probe and analyser without reprogramming
- mounts in standard 19" rack systems, panel housings, or Monorack enclosures
- simple user configuration of outputs and alarms
- inexpensive multichannel capability

Endress+Hauser

Nothing beats know-how



System Description

The trace moisture analyser system consists of the Hygrotec MMY 150 transmitter and the DY 55 probe. The MMY 150 provides state-of-the-art, market proven electronics. The planar aluminum oxide moisture probe DY 55 monitors the moisture content of the process gas and transmits its measurement data via a two wire cable. Utilizing pulse frequency modulation (PFM) technology and a standardised signal, the MMY 150 is resistant to EMI/RFI interference in accordance with CE mark requirements. Both the input

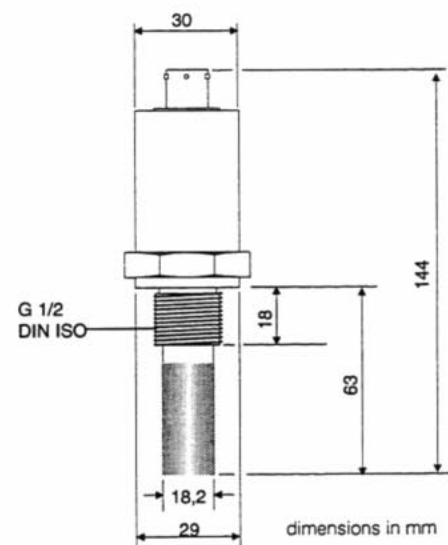
and the output of the MMY 150 are isolated, eliminating ground-loop effects. The Hygrotec MMY 150's self-diagnostics program protects the measurement from undesired events or measurement uncertainties.

The Hygrotec MMY 150 analyser is constructed as a 7 pitch (35 mm) compact module, fitting international standards of 19" rack systems. The module, powered by 24 V DC, fits into the Endress+Hauser Monorack wall mount enclosure (see cover photo) or other panel or wall mount enclosures.

DY 55 Moisture Probe

The DY 55 features the new planar aluminum oxide sensor that has faster response speed, improved corrosion resistance, longer calibration stability, and reduced temperature coefficient. The capacitance of the sensor is related to the moisture content of its environment. The probe electronics convert the capacitance into a standardised PFM signal and transmit it to the MMY 150. Using a standardised signal, the DY 55 can connect to any MMY 150 transmitter without the need for entering calibration data. Probe and transmitter match automatically.

The DY 55 probe is preferably mounted in a bypass system to prevent contamination and to ensure that temperature or flow rate do not exceed the probe's specifications. The probe can be mounted in-line as long as it is possible to remove the probe for routine service.

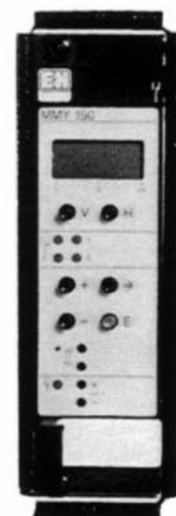


DY 55 Moisture Probe

MMY 150 Analyser

The Hygrotec MMY 150 is a stand-alone single-channel analyser measuring the moisture value in dewpoint temperature over the range -100 °C to +20 °C. The MMY 150 indicates with a four digit LCD display and analogue bar graph. The MMY 150 controls the process with one current output, one voltage output, two alarm relays, and one system alarm relay. Six push-buttons and the MMY 150's matrix programming structure make setting of parameters simple.

Optionally, the MMY 150 can also calculate and display moisture concentration in a range of 0.01 to 9999 ppm_v. This version is also able to communicate with an external computer or configurator via the Endress+Hauser Rackbus to provide multichannel configurations or integration with other Endress+Hauser products.



Panel Mount Housing 144 x 48 x 260 mm

Specifications

Probe Specifications

Sensing element: Planar gold/aluminum oxide, capacitance principle

Calibration range: -80 °C to +20 °C dewpoint temperature

Recommended recalibration cycle: 6 to 24 months, depending on the application and required accuracy

Calibration accuracy: ±1 °C dewpoint at 20 °C ambient temperature

Repeatability: ±1 °C

Maximum relative humidity: 50% at dewpoint temperatures >0 °C

Temperature coefficient: <0.2 °C/°C

Ambient and storage temperature: -60 °C to +50 °C

Nominal operating temperature: -20 °C to +40 °C

Maximum operating pressure: 350 bar

Helium leak rate: <10⁻⁷ mbar l/s

Maximum gas velocity:
50.0 m/s at 1 bar
5.0 m/s at 10 bar
0.5 m/s at 100 bar

Signal transmission: Standardised Pulse Frequency Modulation (PFM) via two-wire cable

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: 30 mm

Protection from particles: Protective cap with 10 µm filter

Weight: 250 grams

Analyser Specifications

Electronics: Microprocessor controlled

Moisture unit: Dewpoint temperature in °C; ppm_v optional

Instrument range: -100 °C to +20 °C, standard, 0.01 to 9999 ppm_v

Display: Four character LCD with bar graph and two control fields

Signal input: Isolated, standardised PFM two-wire technology

Outputs: One current output 0/4 to 20 mA into 500Ω maximum load; one voltage output 0/2 to 10 V, minimum load 10 kΩ ; programmable range, damping, and fail-safe mode (min/max/hold); two alarm relays SPDT dry contacts rating 2.5 A, max. 250 V AC, max. 300 VA at cos φ < 0.7, max. 100 W at 100 V DC, programmable set points, fail-safe mode min (dry) or max (wet), and hysteresis; one system alarm, rating same as above, triggered by the self-diagnostics program

User interface: Six push-buttons for display manipulation and setting parameters and functions utilizing the Endress+Hauser matrix

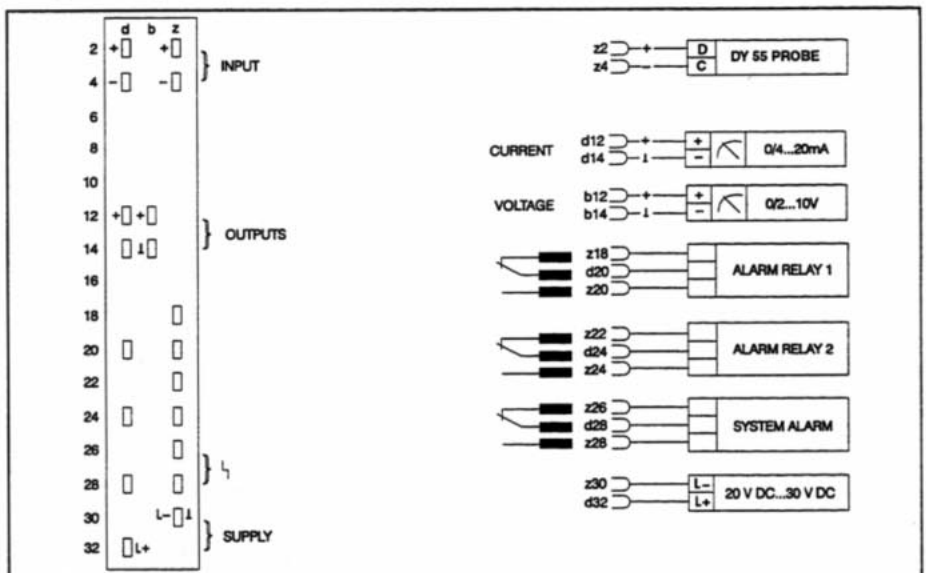
Supply power: 24 V DC, tolerance 20 to 30 V DC, max. 2 V ripple within the tolerance, max. 125 mA

Analyser module: Formatted to "Europa Card," 100 x 160 mm, fitting into Endress+Hauser RACKSYST, electrical connection via 28 pin plug DIN 41612

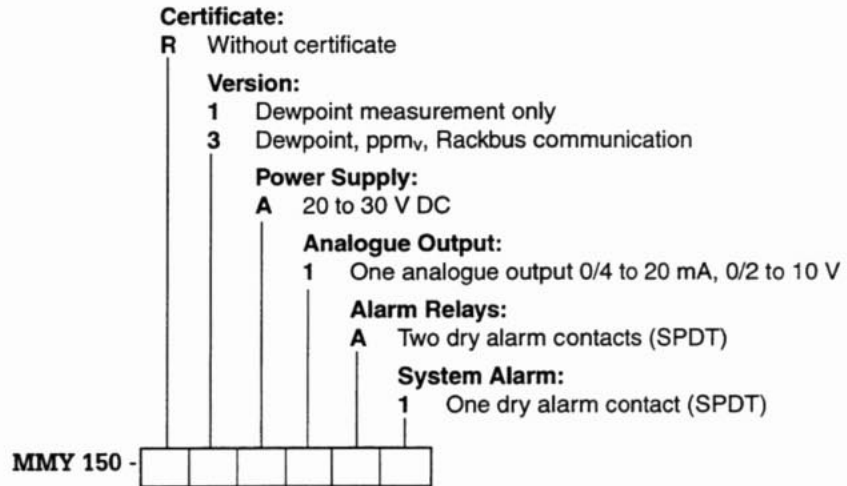
Front panel: 7 pitch (35 mm), black plastic with blue overlay

Protection: IP 20

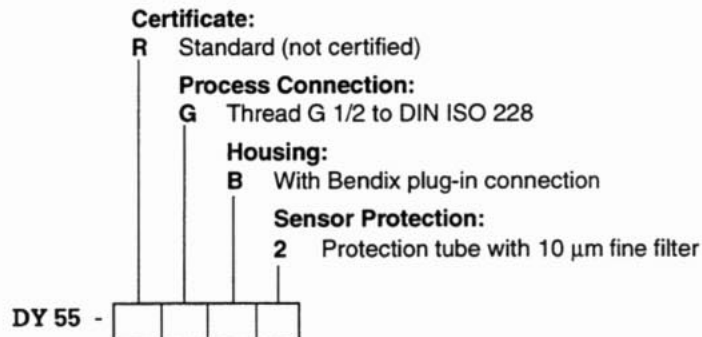
Weight: 300 grams



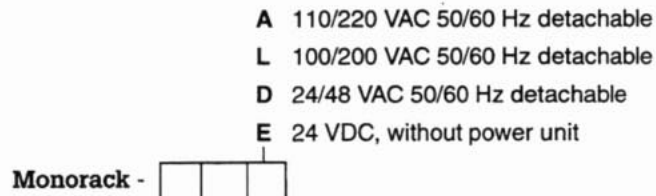
Hygrotec MMY 150



Moisture Probe DY 55



Monorack Wall-Mounted Housing



Cable

54001109 cable 5 m long
 54001110 cable longer than 5 m (specify total length)

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