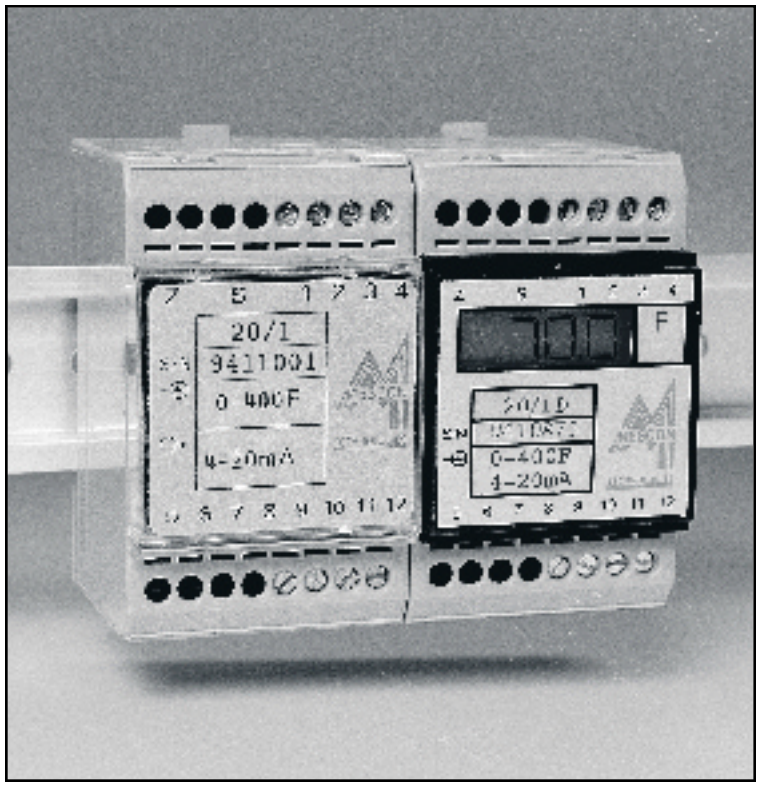
Pt-100 RTD Temperature Transmitters
Precision, Isolated, Universal
Model 20/1



FEATURES:

- **2-wire transmitter system**
- **User selectable input types, 2 or 3 wire RTD's**
- **Eliminates ground loop errors**
- **Over 1000 Volts Isolation**
- **Differential measurement mode**
- **Wide ranging ZERO and SPAN**
- **Output TEST terminals**
- **DIN rail mounting**

AVAILABLE OPTIONS:

- **3-1/2 digit backlit LCD indicator**
- **4-wire Pt-100 sensors**
- **Other Pt, Ni, NiFe, Cu RTD sensors**
- **NEMA 4X or NEMA 7 enclosure**

The model 20/1 is a precision, loop powered 2-wire transmitter with galvanic isolation between its input and the current-loop output signal. It provides the necessary circuitry for amplification and linearization of signals from RTD sensors. The input circuit can accept 2 or 3 wire RTD's for either a direct or a differential temperature measurement. An optional LCD indicator is available to indicate actual temperature in °C or °F.

The 20/1 can be easily ranged without requiring special tools or board modifications. The transmitter is a member of Mescon's family of advanced Universal Input transmitters, which may be readily reconfigured to accept other popular inputs such as Thermocouples, DC mV/mA/Volt and Potentiometers.

A TEST terminal provides a 40-200 mV signal which is proportional to the 4-20mA output. Applying a DVM to the TEST terminals allows monitoring and verification of the output without interrupting or disconnecting the current loop.

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SPECIFICATIONS:

Input.....**Pt-100, 2-wire, 3-wire, differential**

Output.....**4-20mA, 2-wire, limiting @ <28 mA**

Input Span.....**10°C (18°F) min. to 800°C (1440°F) max.**

Calibration accuracy.....**±0.1% of span, BSLF, referred to sensor's actual temperature (including linearity)**

Lead wire compensation.....**Automatic, for 3-wire sensors**

Burnout detection.....**Upscale, Standard**

Temperature stability.....**Better than ±0.02% of span/°F**

Isolation.....**>1000 VDC or peak AC**

Maximum Load.....**$R_{max} = (V_{supply} - 10V) \div 20mA$**

C.M.R.R......**>120 db, DC to 60 Hz**

Output ripple.....**<0.01% of span (to 5KHz)**

Adjustments.....**> ±25% for both ZERO and SPAN**

Power supply range.....**10 - 50 VDC, polarity protected**

Operating Temp......**-20°C to 70°C, (0°F to 160°F)**

Mounting.....**DIN rail (35mm) or panel with adapter**

Humidity.....**0 to 95% RH, non-condensing**

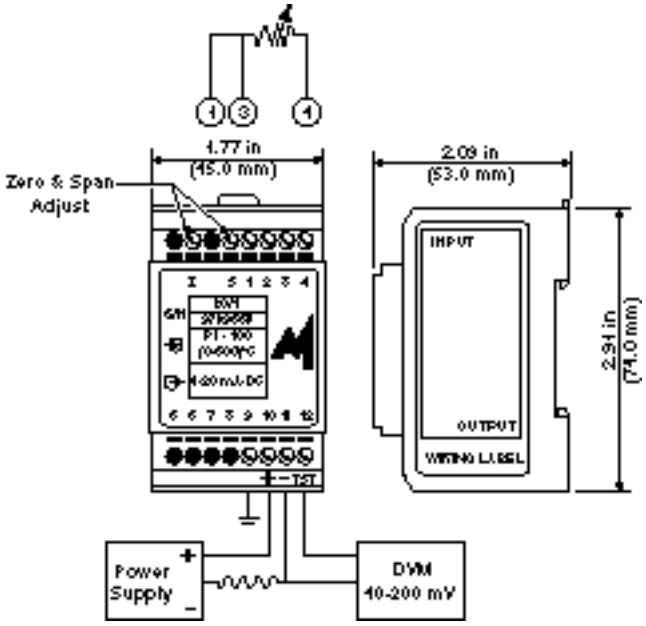
All specifications are subject to change without notice.

ORDERING INFORMATION

20/1 D-X- (XX-XXX) X

- Model
- D for Optional Display
- 2, 3, or D for Sensor Type
- Input Range
- Units: °F or °C

Please request our ordering and calibration diskette describing the rest of Mescon's products.



Wiring Instructions:

1. Connect the RTD sensor leads to input terminals 1, 3, and 4 according to the wiring diagram.
2. Connect the positive supply lead to terminal 10 (+V).
3. Connect the negative supply lead to terminal 11 (-V).
4. Connect the system ground to terminal 9.
5. Turn the power on and observe input/output parameters

Note: To monitor the output without breaking the current loop, connect a digital voltmeter between terminal 12 (TesT) and terminal 11 (-V). An internal 10.0 ohm resistor in series with the current loop provides a 40-200mV signal for the 4-20mA current output.

Calibration and Adjustments:

It is assumed that the unit undergoing calibration has been properly ranged at the factory or workshop.

1. Connect an RTD simulator to the 20/1 input terminals according to the wiring diagram.
2. Complete the output loop using a power supply and a precision digital current indicator. Turn the power on.
3. Set the input to the desired minimum signal and adjust the ZERO pot until the current indicator reads 4.00mA.
4. Set the input to the desired maximum signal and adjust the SPAN pot until the current indicator reads 20.00mA.
5. Repeat steps 3 & 4 until no further adjustment is needed.

Note: If the unit can not be calibrated to the desired range, it should be returned to the workshop for proper ranging.

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