DEVAR Inc.

RESISTANCE TRANSMITTER
RTD (SINGLE/DUAL) POTENTIOMETER
Mini-Pak MODEL 18-212A

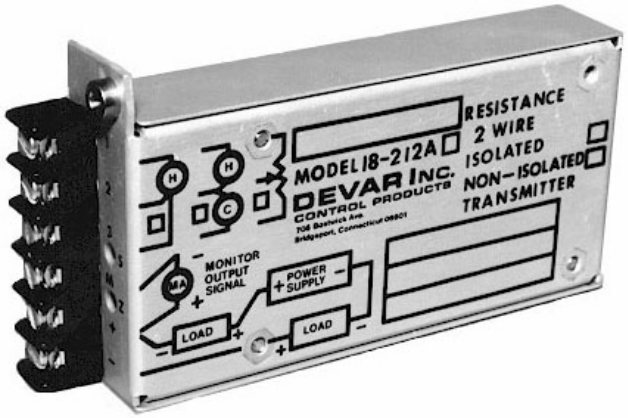
*** ISOLATED OR NON-ISOLATED**

*** PT 100, COPPER, NICKEL RTD OR UP TO 10,000 OHM SLIDEWIRE INPUT**

*** FULLY RFI PROTECTED**

*** INTRINSICALLY SAFE**

FM
APPROVED



GENERAL DESCRIPTION

Where space and cost are determining factors, the Mini-Pak™ transmitter line is the logical choice. This highly accurate (0.1%) fully RFI protected unit accepts inputs from two or three wire RTDs, 0 to 10K Ohm variable resistors or differential resistance hookups. These signals are then converted to an output current, proportional to the input signal. This current output is fully compatible with applications for recording, controlling or interfacing with process computers.

The Mini-Pak two wire transmitter may be mounted in an area where power is not available. It provides an output current of 4 to 20 mA proportional to the input signal. Its output signal loop is designed to connect with only two copper wire leads that carry the power to operate the transmitter from a power supply, and also the output current. The output current, proportional to the input signal, is then used for recording, computing or controlling.

The unit has reverse supply polarity protection and is designed to operate with a wide range of supply voltages (12 to 44 VDC). An important feature allows monitoring of the output during calibration without disconnecting the output wiring. By placing a meter between the (+) output terminal and the terminal marked "M" the current output may be observed directly.

The 18-212A receives signals from single RTD, dual RTD, or a potentiometer and provides an output current of 4 to 20 mA proportional to the input resistance. The output current can be programmed to go upscale or downscale when any RTD circuit opens. The instrument also provides a three segment linearizing circuit. This circuit linearizes the output current with respect to the sensed temperature of the RTD to assure proper digital readout.

The 18-212A is available in isolated (-I) or non-isolated (-N) versions. In the isolated version, the input is electronically isolated from the current output and power supply via magnetic coupling.

SPECIFICATIONS

18-212A-N NON-ISOLATED
18-212A-I INPUT/OUTPUT ISOLATED

Power Requirements:
12-44 VDC at power terminals
Thermal Zero Shift:
< 0.01%/°F of span (span > 10 mV)
< 0.02%/°F of span (span = 5 to10 mV)
(mV span = R × Sensor Current)*

INPUT SPECIFICATIONS
Sensor: RTD Platinum, Copper or Nickel
2 or 3 wire or variable resistor
up to 10,000 Ohms

Range: R	Sensor Current*
5 - 20 Ohms	2.0 mA
21 - 70 Ohms	1.0 mA
71 - 200 Ohms	0.2 mA
201 - 1000 Ohms	0.1 mA
1000 - 10000 Ohms	0.02 mA

Adjustment:
Span and Zero (Cermet Pot.) Nominal ±20%
Break Protection: up or downscale

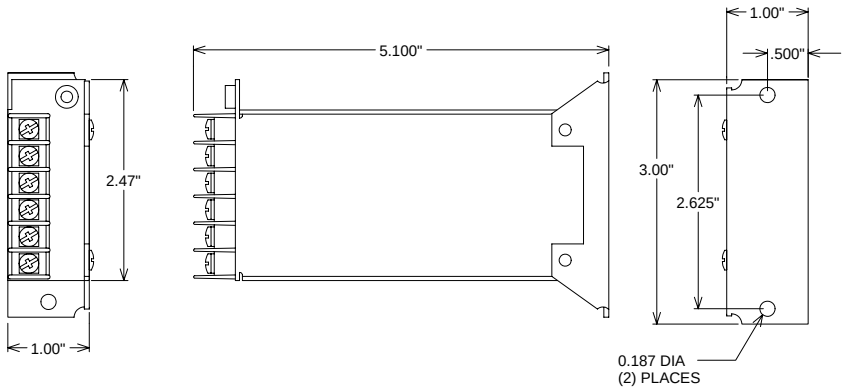
OUTPUT SPECIFICATIONS
Current Outputs: 4 to 20 mA or 10 to 50 mA
Output Load: (Determined by V supply)
4 to 20 mA, 600 Ohms @ 24 VDC
R_L (Max) = (V supply - 12)/0.02
Supply Voltage Effect on Output Current
0.01% (Span) per Volt (Max.)
Load Resistance Effect:
0.05% per 300 Ohm change
Linearized Circuit:
Output Current Proportional to Temp.
Input with Linearity to ±0.1% full scale
Plus 4:1 improvement of RTD curve

GENERAL SPECIFICATIONS

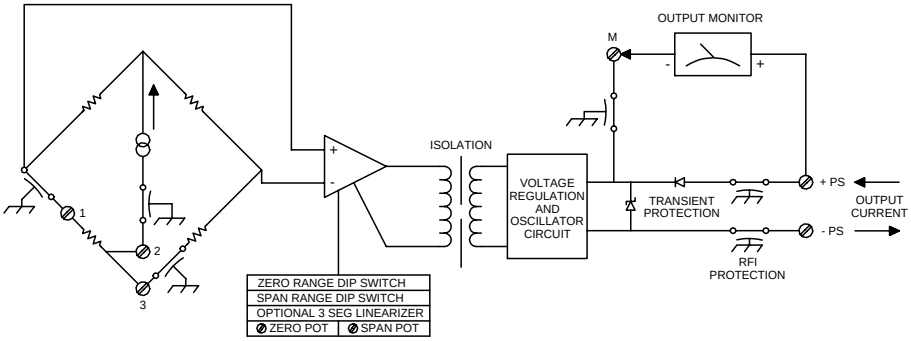
Calibrated Accuracy: ±0.1% of span (includes combined effects of Hysteresis, repeatability, and linearity; referred to mV input)
Frequency Response: 3db @ 9 Hz
Thermal Shift: < 0.01%°F of span
Ambient Temperature: (Spec. Limit)
-15°F to 185°F (-25° to 85°C)
Max. Operating Limit (-40°F to 212°F)
Electrical Classifications:
Factory Mutual Approved
Intrinsically safe Class I,
Division 1, Group A, B, C, D
Power Requirements:

OUTPUT	VDC	VMAX
4/20 mA	10V + (R LOAD × 0.02A	44V
10/50 mA	10V + (R LOAD × 0.05A	44V

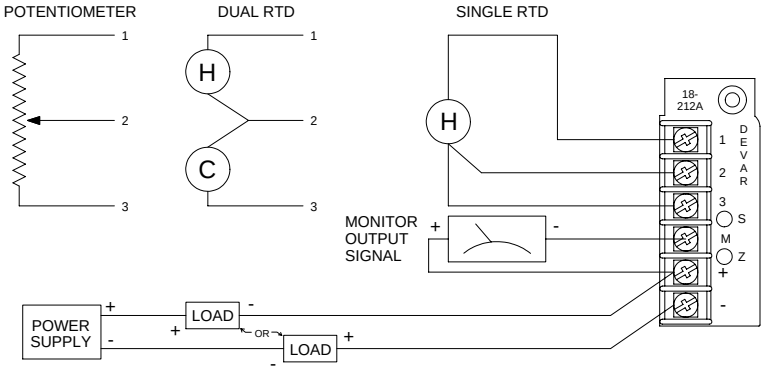
Limit Supply to 30V for Intrinsically safe operation for intrinsically safe operation
Stray Rejections:
Transverse: 30 db @ 60 Hz
Common Mode: 115 db @ 60 Hz
RFI: Negligible from 20 MHz to 500 MHz per SAMA PMC 33.1-1978, 2abc



MINI-PAK MECHANICAL DIMENSIONS



18-212A FUNCTIONAL DIAGRAM



18-212A FIELD WIRING DIAGRAM

OPTION CODES

-E80	10 to 50 mA Output	-M37I	3-1/2 Digit Indicator
-E111	Transient Protection	-M37I-1V	3-1/2 Digit 1V Drop
-L	Linearized Output	-M37I-4.5	4-1/2 Digit Indicator
-M14S	Stainless Steel Tag	-SC	Special Calibration
-M31D	DIN Rail Mount	-ST	SnapTrack, 12"
-M37A	Explosion Proof Housing	-ST4	SnapTrack, 48"

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