

# DAYTRONIC

QUALITY, TRUSTED PRODUCTS SINCE 1954



## PANEL METER

STRAIN GAGE METER

[2000 SERIES]



### 2170, 2170X STRAIN GAGE METERS

These Digital Panel Meter (DPM) models serve as high-sensitivity monitors and controllers for use with load cells, strain gages, and other microvolt input signals where high accuracy and stability are required. The Model **2170** uses standard six-wire connection to load cells, where the sense lines are separate from the excitation lines.\* By eliminating effects due to variations in lead resistance, this configuration allows long cable runs in outdoor environments with temperature extremes.

The "X" version (Model **2170X**) allows custom scaling, as specified by the user at the time of order (specify minimum input value, minimum displayed reading, maximum input value, and maximum displayed reading).

When used directly as a DC microvoltmeter, either of these instruments can provide sensitivity down to 20 mV fullscale with 1  $\mu$ V resolution. With a digital multiplier of five, 99,999 counts\*\* can be displayed with a sensitivity of 0.2  $\mu$ V per count.\*\*\* When used as a load cell meter, the **2170** or **2170X** allows scaling for direct readout in pounds, kilograms, PSI, or other desired engineering units. Scaling can be via front-panel push buttons or computer commands.\*\* Zero may be set from -99,999 to +99,999, and range (i.e., span) may be scaled from 0 to  $\pm$ 99,999. Digital scaling and calibration eliminate zero and span drift associated with potentiometers in non-microcomputer based meters.

\* Standard four-wire cabling, where the excitation and sense lines are tied together, can also be accommodated.

\*\* Selectable fixed zero or active least significant digit.

\*\*\* In this case, a moving average filter with a time constant of 1.2 sec or greater should be selected.

2000 Series options applying to the DC voltage meter include:

- **Isolated Relay Outputs: Dual 10-Amp Contact Relays or Dual Solid-State Relays**
- **Isolated Analog Output: Isolated 0-20 mA and 0-10 mV**
- **RS232 or RS485 Interface: Communication via 4 or 6 conductor phone cable RJ-11**
- **Low AC/DC Power: 9-32 VDC, 8-28 VAC**

# PANEL METER

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## SPECIFICATIONS

### DC Microvoltmeter Inputs:

Input Range (mV)	Resolution
±20.000	1.0 $\mu$ V
±50.000	2.5 $\mu$ V
±100.00	5.0 $\mu$ V
±250.00	12.5 $\mu$ V
±500.00	25 $\mu$ V

### Load Cell Inputs:

Full-Scale Input (mV)	Zero Adjust	Span Adjust
±20.000	-99,999 to +99,999	0 to ±99,999
±50.000	-99,999 to +99,999	0 to ±99,999
±100.00	-99,999 to +99,999	0 to ±99,999
±250.00	-99,999 to +99,999	0 to ±99,999
±500.00	-99,999 to +99,999	0 to ±99,999

**Error (at 25° C, for all ranges):** 0.01% of full scale  $\pm$  1 count

**Span Temperature Coefficient:**  $\pm$ 0.0015% of reading/ $^{\circ}$ C

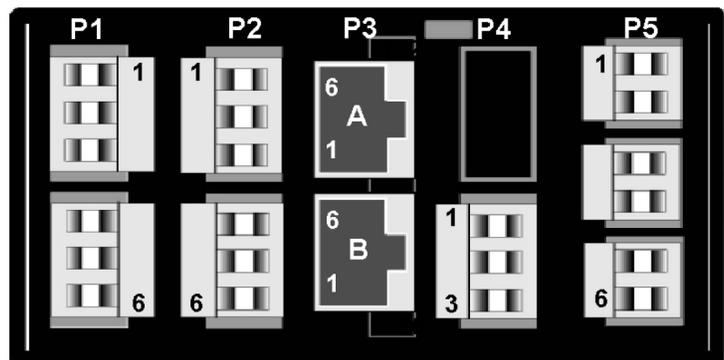
**Zero Temperature Coefficient:**  $\pm$ 0.1  $\mu$ V/ $^{\circ}$ C

**Normal-Mode Rejection at 50/60 Hz:** 90 dB with minimum digital filtering

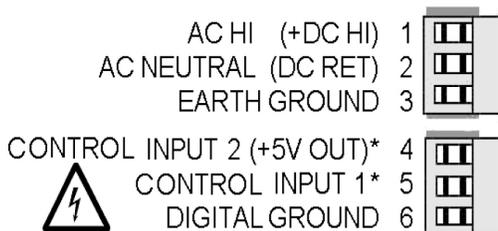
**Common-Mode Rejection from DC to 60 Hz:** 130 dB

## CONNECTORS

Connectors for signal and power are U/L rated screw-clamp terminal blocks that plug into mating jacks on the printed circuit board. Communication connectors are a single RJ11 plug for RS232, dual RJ11 plugs for RS485, dual RJ45 plugs for RS485 Modbus, and a 30-pin, mass termination connector for parallel BCD.



### P1 - POWER AND DIGITAL CONTROLS



### STRAIN GAUGE

