

# STRAIN-GAGE/MICROVOLTS DPM METER RELAY

With Excitation for 300-5KΩ Bridges  
3½ Digits LCD or LED

**MODEL**  
**6060**

**Features:**

- Wide Zero & Span Adjustment
- Backlight Option
- Low Power Consumption (LCD Version)
- .5" LCD or .6" LED Display
- 5VDC Powered (optional 120/240 VAC)



SNAP RING



CONDUIT



EXPLOSION PROOF

**DESCRIPTION:** Available with either LED or LCD display and has 3 different housing options. It consists of an SMT display board containing the A/D and display and an internal signal conditioner to interface with most strain-gages or microvolt producing transducers. The "conditioned" input ( $\approx 100\mu\text{V/LSD}$ ) to the A/D is also available as an output to drive external instruments such as recorders, PLC, etc. (not buffered).

**EXCITATION:** A powerful and 90%+ efficient DC-DC converter and ref. OPamp is used to provide the highly stable ( $\pm 0.05\%$ ) excitation to the external bridge capable of powering bridges as low as  $300\Omega$  or as high  $5000\Omega$  impedance (others on request), the output amplifier is chopper stabilized for greater noise rejection.

**POWER:** Since the A/D section consumes only 1mW for LCD or 200mW for LED version at 5VDC and additional power needed for the S-G is determined by its impedance, the total power required is as low as 15mW (LCD &  $5000\Omega$  S-G) or as high as 300mW (LED &  $300\Omega$  S-G). Easily powered by battery systems for crane/portable applications.

**CONNECTIONS:** Simple and secure with our screw terminal connector.

**CALIBRATION:** All units are shipped calibrated for customer's specifications according to S-G impedance (ohms) and sensitivity. To recalibrate the 6060 series, apply power, remove the filter, adjust the "zero" potentiometer, apply "Full Scale" (pressure/weight/signal) and adjust the span pot. for desired reading. Replace filter.

**ALARM RELAY (for positive signals only):** A S.P.D.T Relay & LED will turn on when the signal exceeds the limit set. To set the limit simply apply the signal to desired value on the display and adjust the pot on the rear until the LED turns on. Contact's rating: 100mA @ 28VDC/120VAC maximum resistive load.

**BACKLIGHT (LCD Only):** Requires 20mA at 5VDC. Segments are black and background is illuminated.

**HOUSING:** All 6000 series available in "Snap Ring" case (U.L. approved ABS Polycarbonate 94VO rated), "Conduit" for those harsh environments or "Explosion Proof" case that meets Class I, Div. 1 & 2 Groups B, C, D; Class I Div. 1 & 2 Groups E, F, G; Class III, NEMA 3, 4, 7, 9 & 12; FM, CSA, Cenelec and Beseefa!

**SPECIFICATIONS AT 25°C**

Accuracy and Linearity .....	$\pm 0.05 \pm 1$ Digit
Maximum Input, at Pin 3 .....	$\pm 3\text{VDC}$
Drift vs. Temperature .....	$(\pm 1\text{LSB}/^\circ\text{C}) \pm 0.05\%/\text{C}$
Samples/Second .....	4 Nominal
Input Bias Current .....	5pA
Input Impedance .....	1000 Meg. Nominal
Operating/Storage Temp .....	$-10^\circ$ to $+60^\circ\text{C}/-20^\circ$ to $+70^\circ\text{C}$
Power Requirements LCD Type .....	1mA at 5VDC
Power Requirements LED Type .....	160mA at 5VDC
Power Requirements Backlight .....	20mA at 5VDC
Display Type LED Version .....	0.6" High Red
Display Type LCD Version .....	0.5" High Reflective
LCD MTBF .....	80,000 Hours
LED MTBF .....	100,000 Hours

**NOTE: Transmissive is used when backlight option is ordered. Black segments over an illuminated background.**

Minimum Input Range F.S. ....	$\pm 10\text{mV}$
Zero Adjustment Range .....	$\pm 50\%$ of F.S.
Gain (Span) Adjustment .....	$\pm 25\%$ of F.S.
Noise Rejection (NMR) .....	95dB, 50/60Hz
CMV (+5 to GND) .....	$\pm 3\text{VDC}$

**EXCITATION**

Output .....	5VDC $\pm 5\%$
Temp. Stability .....	$+0.05\%/\text{C}$
Load Stability .....	$\pm 0.05\%$ of setting (300-5KΩ)
Max. Output .....	40mADC
Input Current at 5VDC .....	60mADC at 5VDC

**Note: NO DECIMAL POINT AVAILABLE ON LCD VERSION.**

**TERMINAL**

**DESCRIPTION**

1	1XX.X Decimal Point. Connect to terminal 6 to illuminate (LED only)
2	+ Signal Output $\approx 100\mu\text{V/LSD}$
3	+ Signal Input (+S)
4	+ 5VDC Power Input
5	- Excitation (-E)
6	Ground (+5V return)
7	- Signal Input (S)
8	1X.XX Decimal Point. Connect to terminal 6 to illuminate (LED only)
9	+ Excitation (+E)
10	1.XXX Decimal Point. Connect to terminal 6 to illuminate (LED only)

**NOTE: Connect a 100μF/10V Electrolytic or Greater between 4(+) and 6(-) as close to the meter as possible.**

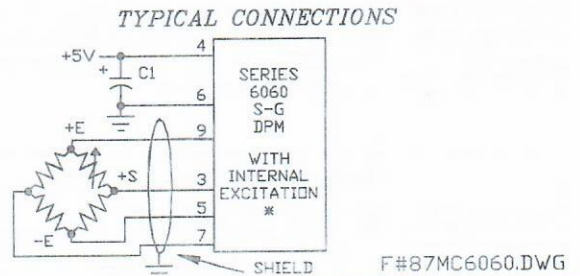
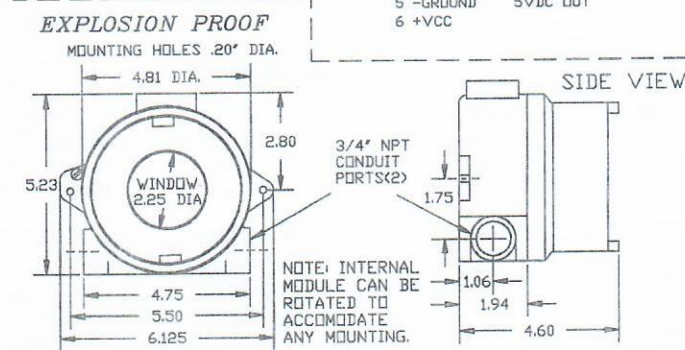
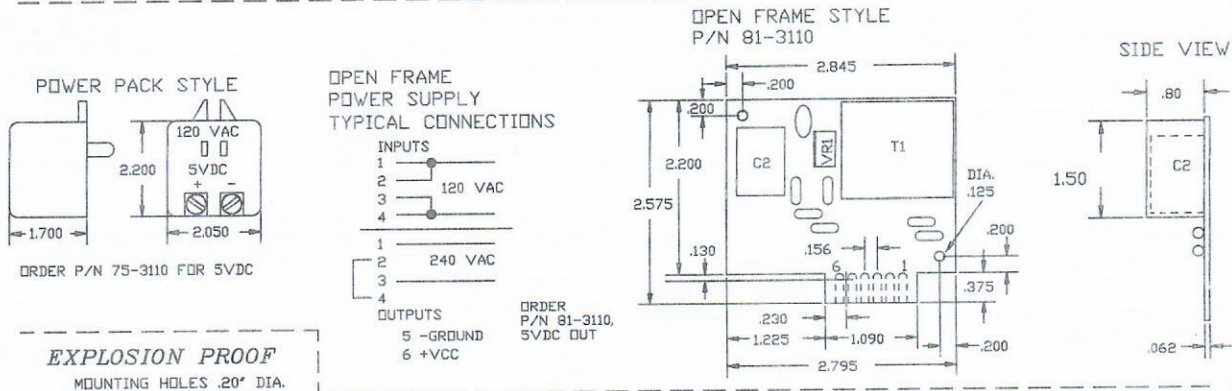
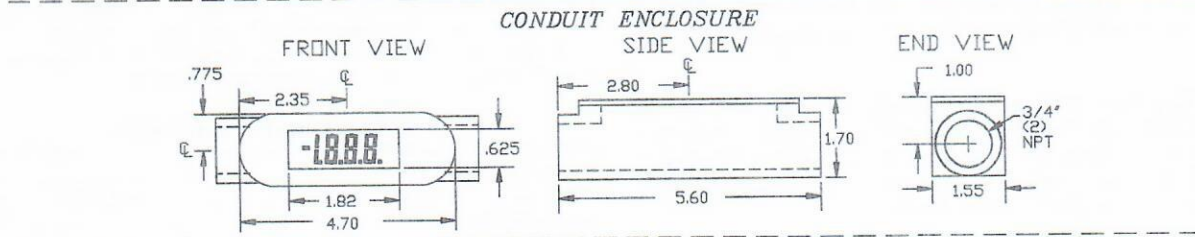
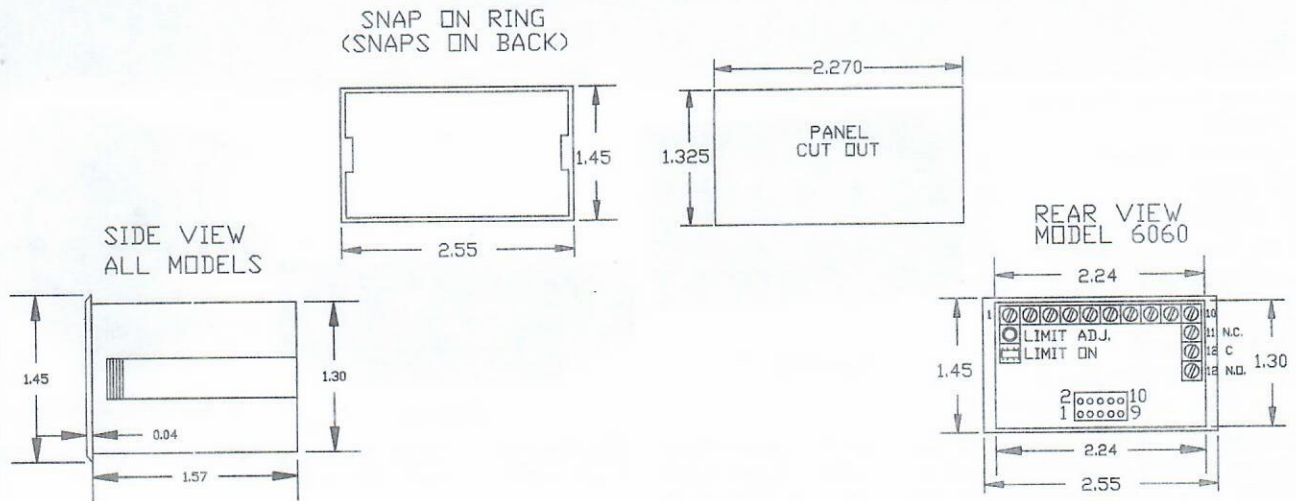
**ORDERING INFORMATION (1/1/97)**

MODEL <b>6</b> <b>0</b> <b>6</b> [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	EXCITATION
DISPLAY TYPE	0 ..... No Excitation
0 ..... L.E.D.	1 ..... Excitation
1 ..... L.C.D.	ALARM
INPUT RANGE	2 ..... No Alarm
0 ..... 20mV	3 ..... Alarm
1 ..... 300Ω/2mV/V	HOUSING
2 ..... 350Ω/2mV/V	0 ..... Snap Ring
3 ..... 3500Ω/2mV/V	2 ..... Conduit
X ..... Custom (specify)	3 ..... Explosion Proof
BACKLIGHT (LCD Only)	POWER INPUT (1)
0 ..... No Backlight	0 ..... 5VDC
1 ..... Red Backlight	1 ..... Open Frame 120/240VAC
2 ..... Green Backlight	2 ..... Power Pack 120VAC
	3 ..... 7-15VDC

(1) See mechanical info. on back page.

STRAIN-GAGE/ $\mu\text{VDC}$

# SERIES 6060 MECHANICAL & TYPICAL CONNECTIONS



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