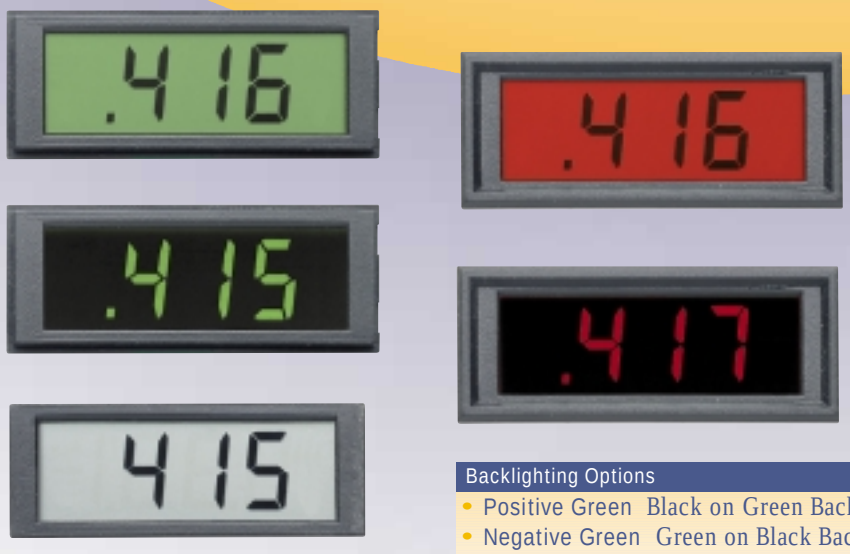
Jewell Instruments

BL Isolated Power DPM
Big Little Digital Panel Meters

MODUTEC

BEST OF CLASS



Backlighting Options

- Positive Green Black on Green Background
- Negative Green Green on Black Background
- Positive Red Black on Red Background
- Negative Red Red on Black Background
- Non-Backlit LCD Black on Grey Background

The MODUTEC BL Digital panel meter gives you all the functionality you need with none of the extras you don't need.

BL Isolated Power Series is the right choice for a variety of situations.

- Ideal for line monitoring
- Isolated DC powered for monitoring multiple choices

The BL means simplicity, easy readability, small footprint, and a low cost.

- Ultra compact form factor
- Value priced

The MODUTEC BL is easy-to-read and provides a variety of indicators — all in a compact unit.

- 3 ½ digit readout, full scale 1999 display
- ½" high digits on a high contrast LCD
- Auto-polarity (-) displayed

Applications

- ► *DC Volt and Amp*
- ► *AC Volt and Amp*
- ► *Line Frequency Monitor*
- ► *RTD and Thermocouple Temperature Inputs*

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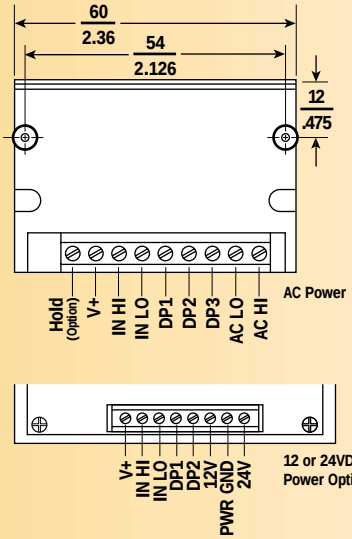
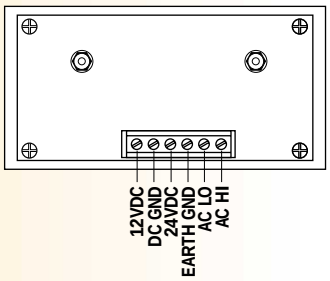
BL Isolated DC and AC Powered DPMs (mm/in)

AC and DC Inputs (AC and Isolated DC power)



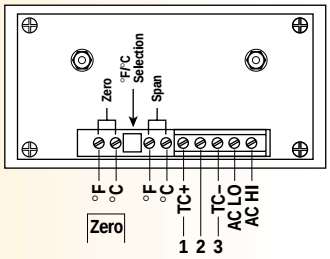
Terminal	Description
H	Hold input (Option) connect to V+ to hold displayed reading.
V+	DC voltage output to select decimal points or hold input.
IN HI, IN LO	Signal Input
DP1, DP2, DP3	Decimal point selection connect to V+ as follows: DP1 = XXX.X, DP2 = XX.XX, DP3 = X.XXX
AC Power LO, AC Power HI	AC Power Input, 115VAC or 230VAC depending on model selected
12VDC Power GND, 24VDC Power GND	12VDC power input, 24VDC power input (optional)

Frequency Input



Terminal	Description
AC LO, AC HI, Earth GND	Signal input and power, 115VAC or 230VAC depending on model selected.
12VDC Power GND, 24VDC Power GND	12VDC power input, 24VDC power input (optional)

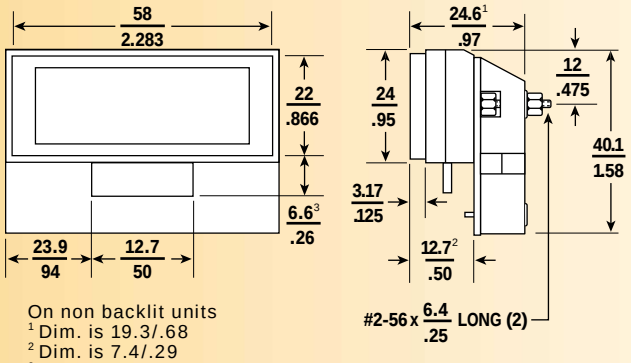
Temperature Inputs



Terminal	Description
TC+, TC–	Thermocouple Inputs
AC Power Low, AC Power HI	AC Power Input, 115VAC or 230VAC depending on model selected
1, 2, 3	RTD inputs

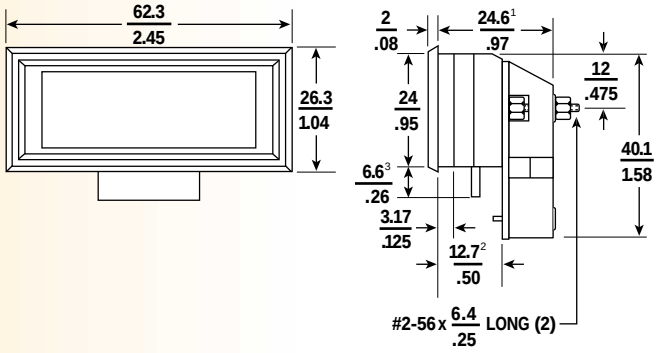
BL Isolated DC/AC Powered DPMs — Dimensional Drawings

Window Mount

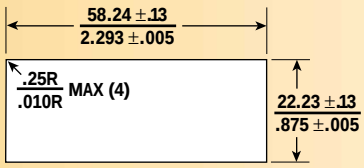


On non backlit units
[1] Dim. is 19.3/.68
[2] Dim. is 7.4/.29
[3] Isolated DC powered DPM's only.

Bezel Mount

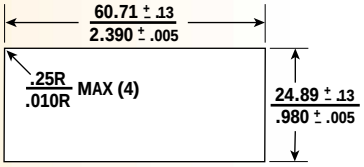


Window Mount Cutout



3.16/.125 Max. Panel Thickness

Bezel Mount Cutout



3.16/.125 Max. Panel Thickness

BL Isolated DC and AC Specifications

Performance

Conversion Rate: 2.5 per second
Normal Mode Rejection: ≥40db 50Hz-60Hz
Common Mode Rejection: ≥100db 50Hz-60Hz (except isolated DC powered which is ≥80db 50Hz-60hz)
Zero Adjust: Automatic
Tempco: ±200 PPM/°C typical (except thermocouple inputs which are .1°/degree)
Warmup: 10 Minutes

Power Options

115V +10%, -15%	50Hz to 400Hz at 2VA
230V +10%, -15%	50Hz to 400Hz at 2VA
10 to 15VDC or 20 to 32VDC	150mA (including backlighting)

Environment

Operating: -4°F to 140°F (-20°C to +60°C)
Storage: -22°F to 158°F (-30°C to 70°C)

Weight

2 oz.

FCC Compliance

Complies with the class B Limits of FCC rules and regulations part 15,sub-part J for conducted and radiated emissions.

DC Inputs	Accuracy	Input Resistance	Overload Protection
200mVDC & 2VDC	±(.1% +1 count) typical ±(.2% +1 count) max.	≥ 100 Meg Ohms	200V continuous 300V intermittent
20VDC & 200VDC	±(.1% +1 count) typical ±(.2% +1 count) max.	1 Meg Ohm	350V continuous 500V intermittent
DC Current	±(.1% +1 count) typical ±(.2% +1 count) max.	200mV drop full scale	3 times f.s. current

AC Inputs	Accuracy	Input Resistance	Overload Protection
AC Voltage	±(.5% +1 count)	1 Meg Ohm	350V continuous 500V intermittent
5AAC Current	±(.5% +1 count)	Current transformer	3 times f.s. current
50AAC Current	±(.5% +5 counts)	Current transformer	3 times f.s. current

Frequency Inputs	Accuracy	Distortion
40.0 to 199.9Hz	±.2Hz (40 to 70Hz) ±.5Hz (above 70Hz)	≤ .1 Hz for up to 20% third harmonic distortion
40 to 440Hz	±1Hz	≤ .1 Hz for up to 20% third harmonic distortion

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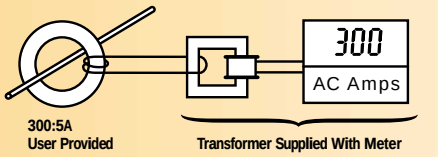
Connection for High Current Measurement



How to Order

BL- a b 3 c d - e f

a	Display	**1 = Non Backlit** **3 = Positive Green Backlit** **4 = Negative Green Backlit** **5 = Negative Red Backlit** **6 = Positive Red Backlit**
b	Mounting	**0 = Window Mount** **3 = Bezel Mount**
c	DPM Power (Backlit and DPM power must be the same.)	**4 = 115VAC** **5 = 230VAC** **7 = 12 or 24VDC (Isolated)**
d	Input Power	**01 = 0-200mVDC** **27 = 500VAC** **02 = 0-2VDC** **28 = 80.0-130.0VAC** **03 = 0-20VDC** **29 = 80-260VAC** **04 = 0-200VDC** **30 = 250VAC** **10 = 0-200uADC** **31 = 2.000mAAC** **11 = 0-2mADC** **32 = 20.00mAAC** **12 = 0-20mADC** **33 = 200.0mAAC** **13 = 0-200mADC** **34 = 2.000AAC** **21 = 200.0mVAC** **36 = 5.0AAC** **22 = 2.000VAC** **37 = 50.0AAC[1]** **23 = 20.00VAC** **38 = 05AAC[1]** **24 = 200.0VAC** **39 = 0-50AAC[1]** Input Frequency **60 = 40-440Hz** **61 = 40.0-199.9Hz** Input Temperature[2] **70 = 100OHMS PT1 Res** **71 = 100OHMS PT.1 Res** Input Temperature (Thermocouple)[2] **80 = Type J[3]** **82 = Type T[3]** **81 = Type K[3]**
e	Backlit Power (DPM and Backlit power must be the same.)	**00 = No Backlight** **05 = 230VAC** **04 = 115VAC** **07 = 12 or 24VDC**
f	Display (For 5A current transformer inputs only)	**1 = 2000** **5 = 500** **2 = 1500** **6 = 300** **3 = 1000** **7 = 200** **4 = 600** **8 = 100**

BL Isolated DC and AC Specifications (continued)

Temperature Inputs	Accuracy	Input Characteristic	Overload Protection
Type J thermocouple			
-10°F to +1200°F (-23°C to +649°C)	±(.1% +1 count) accuracy ±1.3°C (2.8°F) conformity error	45 uV max per 100 Ohms thermocouple lead resistance	200V continuous
Type K thermocouple			
-40°F to +1500°F (-40°C to +815°C)	±(.1% +1 count) accuracy ±1.2°C (2.5°F) conformity error	45 uV max per 100 Ohms thermocouple lead resistance	200V continuous
Type T thermocouple			
-100°F to +600°F (-73°C to +315°C)	±(.1% +1 count) accuracy ±1.5°C (3.5°F) conformity error	45 uV max per 100 Ohms thermocouple lead resistance	200V continuous
100 Ω Pt. α =.00385 -200°F to +600° F (-130°C to +315°C)	±(.2% + 1 count) max	1mA RTD current	±5V
100 Ω Pt. α =.00385 -100.0°F to +200°F (-73°C to +98°C)	±(.2% + 1 count) max	1mA RTD current	±5V

[1] Rated for use with 5A or 50A external current transformer supplied with DPM. See high current connection above.

[2] Not available with 12 or 24VDC DPM Power.

[3] No Backlighting on DC Power.

Example: BL-333438-042 is a positive green backlit, bezel mounted 115VAC meter. It has input via an external 5A current transformer and scaled to read 1500 for the 5A input to the transformer.

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