

BL Flat Packs Big Little Digital Panel Meters

MODUTEC

**BEST OF
CLASS**



BL-176



BL-177

Backlighting Options

- 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. That means simplicity, easy readability, small footprint, and a low cost.

- Ultra compact form factor with optional flat back design on BL-176 or BL-177
- Value priced
- Low power consumption

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
- "LO-BAT" indication on 9VDC power units

Ease of assembly is one of the BL's most valuable benefits.

- 13 pin connection or solder pad connections
- Easy to install bezel mount, order 00-907062-002 for bezel kit

The BL offers a variety of flexible features to meet your unique applications needs.

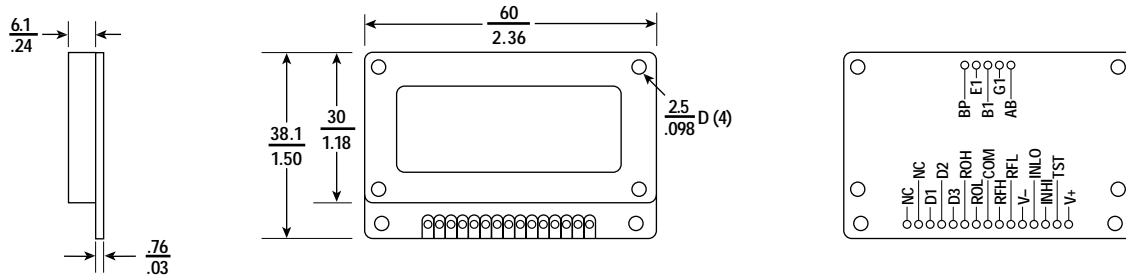
- User selectable decimal points
- Choice of $\pm 200\text{mV}$, $\pm 2\text{V}$ or $\pm 20\text{V}$ input
- Choice of 9VDC, +5VDC; or $\pm 5\text{VDC}$ power

Applications

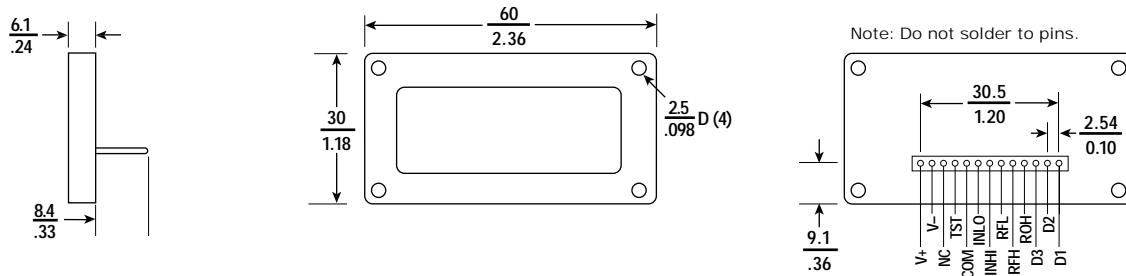
- ▶ Telecommunications
- ▶ Water Purification
- ▶ Sewage Treatment
- ▶ Flow
- ▶ Process
- ▶ Desalinization
- ▶ DC Amps
- ▶ DC Volts

BL Series Bezel, Window and Surface Mount Dimensional Drawings (mm/in)

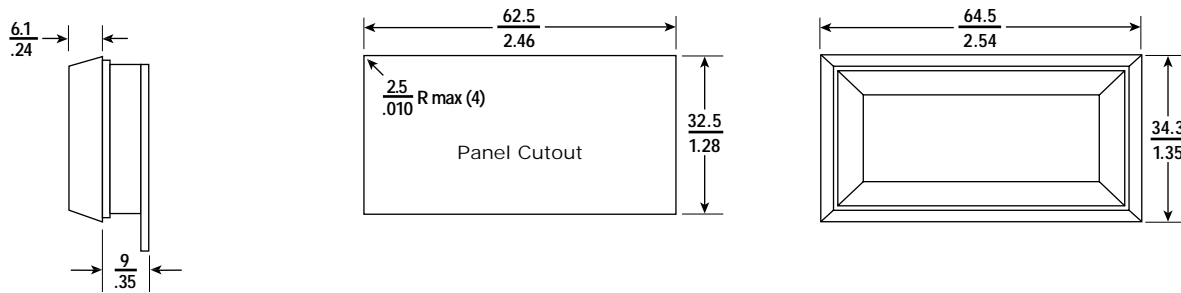
BL-176



BL-177



Bezel Mounting (BL-176 and BL-177)



How to Order

B L - 1 7

a	b	c
6	1	0 2

Terminals
a 6 = Solder Pads
7 = 13 Pins

DPM Power
b 1 = 9VDC
2 = +5v and -5VDC
3 = +5VDC

Input
c 01 = 200mVDC
02 = 2VDC
03 = 20VDC

Example: BL-176102 is a 9VDC (battery powered) with solder pads, and a 2VDC input.

Female Connector for BL-177 order: 00-939033-091

BL Series Specifications

Display

Digits: 3 ½ digits, 7 segments Non-Backlit LCD (1999)

Digit Height: 0.5" (12.7 mm)

Polarity: Automatic (-) displayed

Decimal Point: Three positions, external selection

Overload: Three lower digits blank for readings greater than 1999 counts

Low Battery: "Low Bat" annunciator for <7.2V (9V power only)

Performance

Accuracy: ±(0.1% rdg + 2 count) with + 5 and ± 5V power

±(0.1% rdg + 1 count) with 9V power

Conversion Rate: 2.5 per second

Common Mode Voltage Range: ±1V maximum

Common Mode Rejection: > 86 db

Zero Adjust: Automatic

Tempco: 100 PPM/°C typical

Standard Analog Inputs

Full Scale Range: Choice ±200mV, ±2V, or ±20V. Special Ranges and engineering units available

Configuration: True differential input and references

Ratiometric Operation: -176, -177

Protection: 250V DC or 150V RMS continuous 300V intermittent maximum

Bias Current: 1 pA typical, 10 pA maximum

BL Series Specifications (continued)

Standard Power Options

9V Battery: 9V isolated, 7.2-12V at 150 uA
+5V and -5VDC: $\pm 5V \pm 5\%$ at 100 uA
+5V: 5V $\pm 5\%$ at 3 mA

Connectors

13 connector pins, 0.025" square	BL-177
15 solder pads	Series BL-176

Environment

Operating²: 0°C to +50°C
Storage: -20°C to 70°C

² Extended operating ranges available. Please consult factory.

Connector Pin Designations

V+, V-	Positive & negative connections for power supply
NC:	Not Connected
TST:	Return for +5V power
COM:	Internal reference voltage return. Input common for 9V units
IN HI, IN LO:	Signal inputs
RFL, RFH:	Differential reference inputs
ROH, ROL:	On board reference terminals. ROL on BL-176 only
D1, D2, D3:	Decimal point selection: Connect to V+ as follows: D1=X.XXX D2=XX.XX D3=XXX.X
BP, E1, B1, G1, AB:	Can be used for underrange and overrange signal for external auto ranging on the BL-176

Accessories and Options:

- Female connector for BL-100, -130, 177, -300, -330, -400, 430, -500, -530, -600, -630 series: Order 939099-091
- For display hold function add suffix "-H" to catalog number
- For coated board and solid front cover add suffix "-MI" to catalog number
- For special OEM requirements, other input ranges, wider operating temperature, or other features, contact factory.