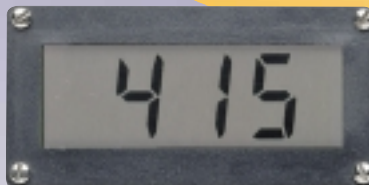


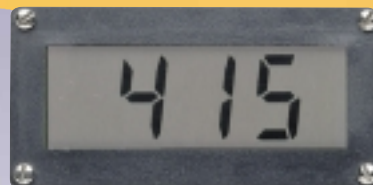
## BL Flat Packs Big Little Digital Panel Meters

MODUTECH

**BEST OF  
CLASS**



BL-176



BL-177

### Backlighting Options

- Non-Backlit LCD Black on Grey Background

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

- 3  $\frac{1}{2}$  digit readout, full scale 1999 display
- $\frac{1}{2}$ " 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.*

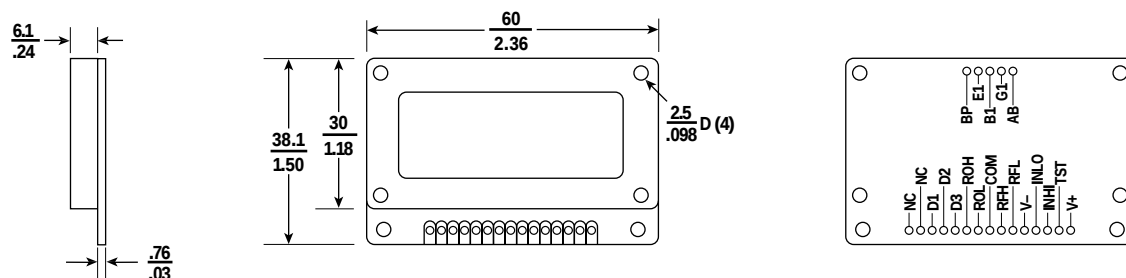
- User selectable decimal points
- Choice of  $\pm 200\text{mV}$ ,  $\pm 2\text{V}$  or  $\pm 20\text{V}$  input
- Choice of 9VDC, +5VDC; or  $\pm 5\text{VDC}$  power

### Applications

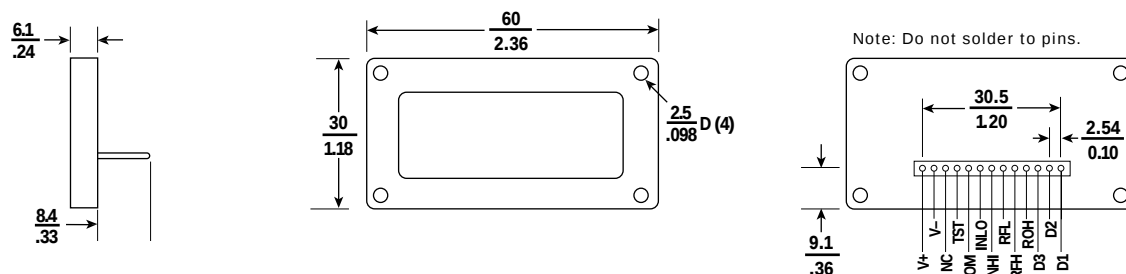
- ▶ Telecommunications
- ▶ Water Purification
- ▶ Sewage Treatment
- ▶ Flow
- ▶ Process
- ▶ Desalinization
- ▶ DC Amps
- ▶ DC Volts

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

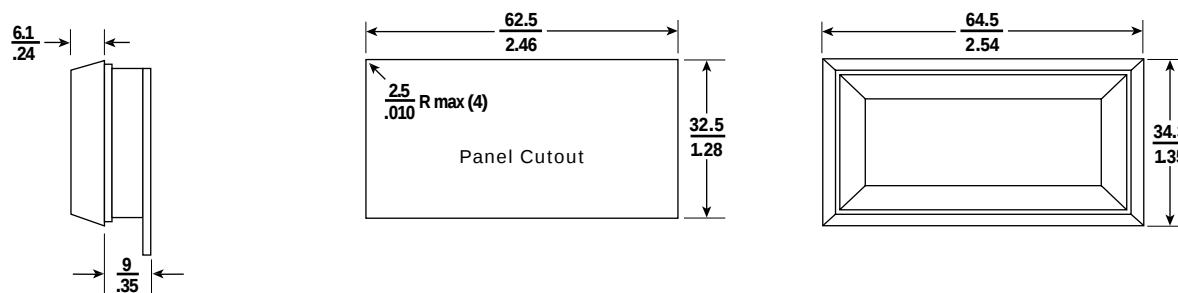
BL-176



BL-177



Bezel Mounting (BL-176 and BL-177)



## How to Order

B L - 1 7 

|   |   |     |
|---|---|-----|
| a | b | c   |
| 6 | 1 | 0 2 |

### Terminals

6 = Solder Pads  
7 = 13 Pins

### DPM Power

1 = 9VDC  
2 = +5v and -5VDC  
3 = +5VDC

### Input

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

|                                         |               |
|-----------------------------------------|---------------|
| <b>13 connector pins, 0.025" square</b> | BL-177        |
| <b>15 solder pads</b>                   | Series BL-176 |

### Environment

**Operating<sup>2</sup>:** 0°C to +50°C  
**Storage:** -20°C to 70°C

<sup>2</sup> Extended operating ranges available. Please consult factory.

### Connector Pin Designations

|                            |                                                                                         |
|----------------------------|-----------------------------------------------------------------------------------------|
| <b>V+, V-</b>              | Positive & negative connections for power supply                                        |
| <b>NC:</b>                 | Not Connected                                                                           |
| <b>TST:</b>                | Return for +5V power                                                                    |
| <b>COM:</b>                | Internal reference voltage return. Input common for 9V units                            |
| <b>IN HI, IN LO:</b>       | Signal inputs                                                                           |
| <b>RFL, RFH:</b>           | Differential reference inputs                                                           |
| <b>ROH, ROL:</b>           | On board reference terminals. ROL on BL-176 only                                        |
| <b>D1, D2, D3:</b>         | Decimal point selection: Connect to V+ as follows:<br>D1=X.XXX<br>D2=XX.XX<br>D3=XXX.X  |
| <b>BP, E1, B1, G1, AB:</b> | 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.

# AMEYA360

Components Supply Platform

Authorized Distribution Brand :



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