

# 176 and 177 Series LCD Digital Indicators

## D.C. Voltage



### Features

- » Low profile, surface mounting
- » 3 1/2 digits (reads 1999 full scale)
- » Ultra low profile design
- » Low cost
- » Model 176 has solder pad connections
- » Model 177 has 13 pin connection
- » Bezel kit option on both series

### Specification

#### Display:

Digits: 3 1/2 (1999)  
 Type: 7 segment reflective LCD  
 Height: 12.7mm  
 Polarity: Automatic (-) displayed  
 Decimal Point: 3 positions, external selection  
 Overload: Three lower order digits blank for >1999 counts  
 Low Battery: "Low Bat" annunciator for <7.2V (9V power only)

#### Standard Analogue Inputs:

Input: +200mV, +2V or +20V  
 Special ranges and engineering units available  
 Configuration: True differential input and reference  
 Ratiometric Operation: Available  
 Protection (IN HI): 250V D.C. or 150V RMS continuous  
 300V maximum intermittent  
 All other pins must be between (V-) -0.3V and (V+) +0.3V or their fault currents limited to 0.5mA

#### Bias Current:

(200mV and 2V): 1pA typically, 10 pA maximum  
 20V Differential input of 1MΩ

#### Performance:

Accuracy: - (0.1% rdg. + 2 counts) with +5V and ±5V power  
 - (0.1% rdg. + 1 count) with 9V power  
 Conversion Rate: 2.5 per second

#### Common Mode:

Voltage Range: +1V maximum  
 Rejection: >86 dB  
 Zero Adjustment: Automatic  
 Temperature Co-efficient: 100ppm/°C typical

#### Standard Power Options:

9V Battery: 9V, floating 7.2-12V at 150µA  
 +5V and -5V D.C.: +5V +5% at 150µA  
 +5V D.C.: +5V +5% at 3mA

#### Environment:

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

Extended operating ranges available. Consult Sales Centre.

### Product Code Details

#### Terminals:

1st • 6 = Solder Pads  
 7 = 13 Pins

#### Auxiliary Supply (not isolated):

2nd • 1 = 9V D.C. Battery (floating)  
 2 = +5V and -5V D.C.  
 3 = +5V

### Product Code

D.C. Voltage 200mV  
 D.C. Voltage 2V

BL17••01  
 BL17••02

D.C. Voltage 20V  
 Bezel Kit

BL17••03  
 BL176-BK

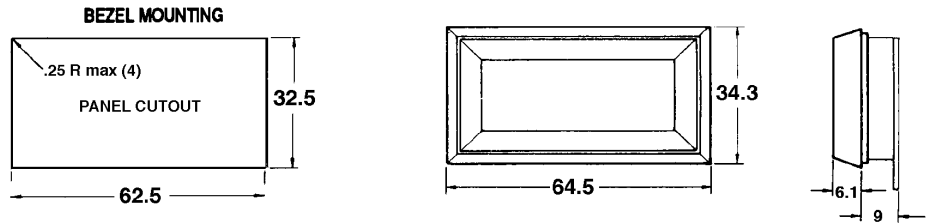
### Accessories and Options

For special OEM requirement, other input ranges, wider operating temperature, or other features - contact Sales Centre.

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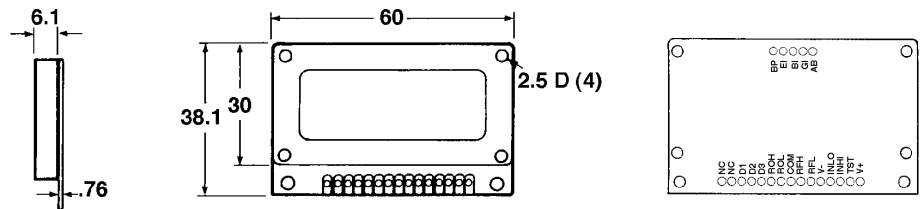
## Connections and Dimensions

### Bezel Mounting and Panel Cut Out



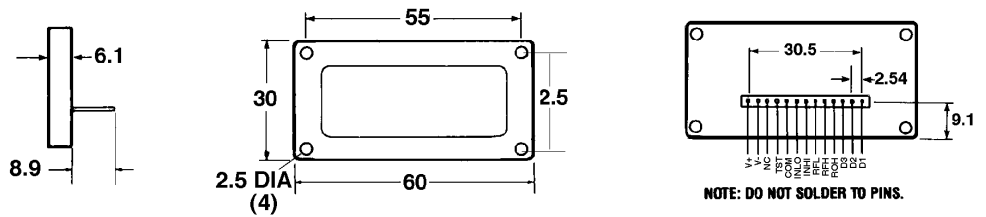
### BL 176

20 solder pads



### BL 177

13 connector pins, 0.64 mm (0.025") square.



### Connector Pinout Designations

<b>V+, V-:</b>	Positive and negative connections for power supply	<b>D1, D2, D3:</b>	Decimal point selection Connect to V+ as follows: D1 = X.XXX D2 = XX.XX D3 = XXX.X
<b>NC:</b>	Not connected	<b>BP, E1, B1, G1, AB:</b>	Can be used for under range and over range signal for external auto ranging on the 176 only.
<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 176 only.		

