



Non-Backlit  
Window/Surface Mount (Actual Size)



Red Negative  
Window Mount (Actual Size)



Green Positive  
Bezel Mount (Actual Size)



### Low cost 3½ Digit LCD Display

#### Features

- Low-cost, high performance replacement for many OEM DPM's.
- Optional Red or Green backlighting.
- Mounting choices:
  - Window mount for custom OEM.
  - Surface mount with minimum space behind the panel.
  - Bezel mount using retaining clips.
  - Snap in bezel mount eliminates mounting hardware.
- Low power: choice of 180µA (9V, ±5V) or 2.4mA (+5V).
- Space saving design: only 1" (25 mm) deep.
- Occupies less than 2.5 x 1.1 inches of front panel space.
- 3½ digits with high contrast LCD display.
- Optional loop powered 4 to 20mA process inputs available.

Contact factory for many other OEM features and options not listed

#### Specifications

##### Display

- Digits: 3 ½ digits (±1999 counts)  
 Type: 0.5" (12mm) high-contrast reflective LCD  
 Backlighting: Optional Red Negative (red numbers/black background)  
 Optional Green Negative (green numbers/black background)  
 Optional Green Positive (black numbers/green background)  
 Polarity: automatic, "-" displayed  
 Decimal Points: 3 position, user-selectable  
 Overrange: three lower order digits blank for inputs >1999 & < -1999  
 Hold: Available OEM option, contact factory

##### Inputs

- Ranges: ±200.0 mV, ±2.000 V, ±20.00 VDC  
 Other ranges and special scaling available  
 Configuration: bipolar & differential  
 Protection: ±350V DC, (±100V DC on 200mV range)  
 Impedance: >10 MΩ, (>1 MΩ on 20 V range)

##### Performance

- Accuracy: ±(0.1% + 1 count) typical  
 ±(0.1% + 2 counts) maximum  
 Conversion Rate: 2.5 per second  
 Normal Mode Rejection: >30 dB @ 60 Hz  
 Common Mode Range: ±1 VDC max  
 Common Mode Rej.: >86 dB  
 Zero Adjustment: automatic  
 Warmup: 10 minutes typical  
 Temperature Coeff.: ± 100 ppm per °C typical

##### Environment

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

##### Power Supply

- 5V powered: +5 VDC (±5%) at <2.5mA  
 9V(±5V) powered: +7.2 to +12 V at 180 µA  
 Optional Backlight: +5 VDC at 100 mA

##### Mounting

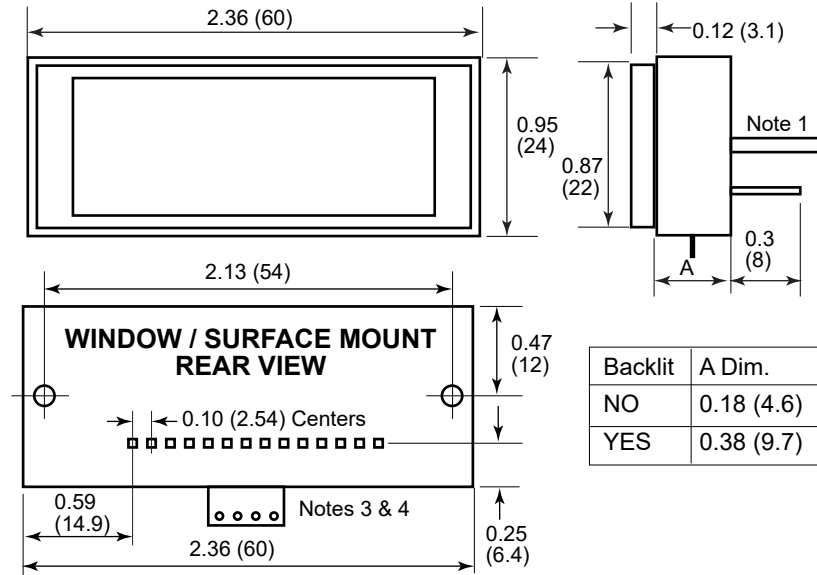
- H959W: Surface or window mount  
 H959B: Bezel mount with retaining clips  
 H959S: Snap-in Bezel mount

##### Connection

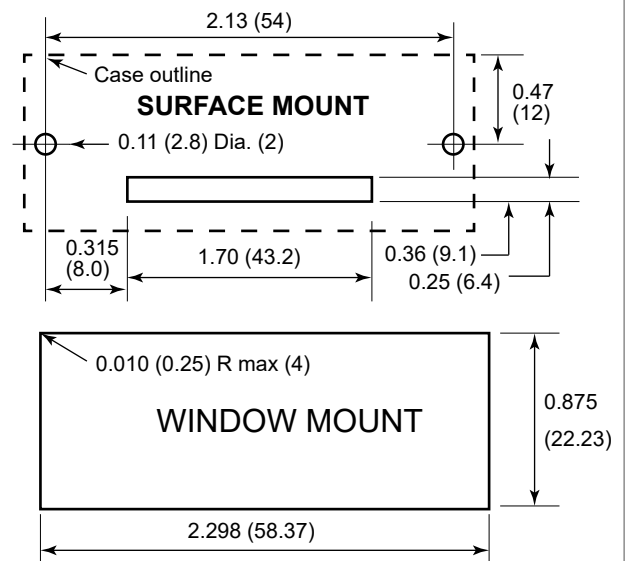
- 13 pins, 0.025" square on 0.1" centers  
 Replacement for existing units

INCHES (MM)

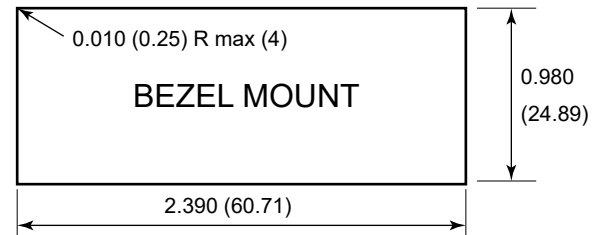
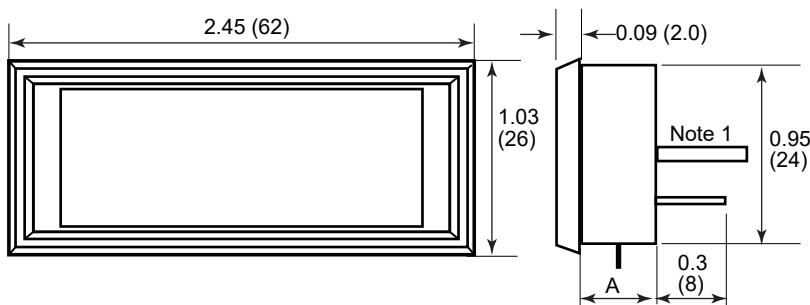
### Window/surface Mount Dimensions



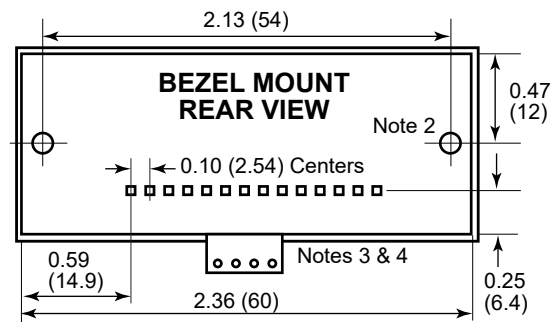
### Panel Cutouts



### Bezel Mounting



Mounting	Backlit	A Dim.
Rear Clips	NO	0.33 (8.3)
Rear Clips	YES	0.52 (13.2)
Snap-in	Both	0.44 (11.2)



**Notes:**

1. Mounting studs (2) are #2-56, length 0.5 (13) min.
2. Snap in Bezel Mount does not have mounting studs.
3. Backlight Option on 13-pin is on 0.50 (12.4) wide x 0.22 (5.4) high tab.
4. Backlight Option on 15-pin is on pins 14 & 15.



### Ordering Information

#### Miniature LCD Part Numbering

The part number will consist of a (2) characters defining the product type, followed by (4) numbers defining the backlight type input range, meter power and backlight power.

#### Window/Surface Mount:

959W \_\_\_\_\_ 13 pins with 3rd missing, Backlight on tab

969W \_\_\_\_\_ 15 pins with annunciators or backlight on pins 14 & 15

#### Bezel Mount (with side clips):

959B \_\_\_\_\_ 13 pins with 3rd pin missing, Backlight on tab

969B \_\_\_\_\_ 15 pins with annunciators or backlight on pins 14 & 15

#### Snap-In Bezel Mount:

959S \_\_\_\_\_ 13 pins with 3rd pin missing, Backlight on tab

969S \_\_\_\_\_ 15 pins with annunciators or backlight on pins 14 & 15

#### Where last (4) \_\_\_\_\_ digits in order are:

Backlight type	Input Range	Meter Power	Backlight Power
0= no backlight	0= 200mV	4= +5 VDC	0= non-backlit
2= Positive Green	1=2V	5= ±5 VDC	1= 5 VDC
4= Negative Green	2= 20V	9= 9V Battery	2= 12 VDC
6= Negative Red			3= Special

### Wiring Connections

PIN#	13-PIN	15-PIN	DESCRIPTION
1	V+	V+	POSITIVE DPM PWR SUPPLY
2	V-	V-	NEG PWR FOR 9V OR ±5V DPMS
3	NC	—	NO PIN 13-PIN DPMS ONLY
3		BP	ANNUNCIATOR AND DEC. PT. DRIVE
4	TST	TST	NEG PWR FOR +5V DPMS
5	COM	COM	ANALOG COMMON
6	INLO	INLO	NEGATIVE INPUT SIGNAL
7	INHI	INHI	POSITIVE INPUT SIGNAL
8	(CLK)	(CLK)	OPTIONAL HOLD INPUT
8	RFL	RFL	NEGATIVE REFERENCE INPUT
9	RFH	RFH	POSITIVE REFERENCE INPUT
10	ROH	ROH	INTERNAL REFERENCE OUTPUT
11	D3	D3	1XX.X DECIMAL POINT
12	D2	D2	1X.XX DECIMAL POINT
13	D1	D1	1.XXX DECIMAL POINT
14		A1	ANNUNCIATOR (NON-BACKLIT)
15		A2	ANNUNCIATOR (NON-BACKLIT)
14		(BL+)	OPT. POSITIVE BACKLIGHT PWR
15		(BL-)	OPT. NEGATIVE BACKLIGHT PWR