

EM32 SERIES

ROUND HOLE MOUNTING VOLTMETER

MARTEL METERS
ELECTRONICS

The EM32-1B-LED is a 3-1/2 digit voltmeter designed to be panel mounted in most low and medium volume applications. The meter features 8mm digit height, 3 decimal points, auto-polarity, auto-zero, 200mV full scale reading and a low current consumption. This product is designed so no soldering is required. Connection is via screw terminals, and options are selected via jumper links. The module features a round metal bezel, requiring a 32.5mm (1.28") diameter cut-out. It is secured with the nut provided. Protection from the front to IP67/NEMA4X standards is achieved by placing the rubber seal between the module and panel during assembly.

Pin Functions

0V	Negative power supply to the meter
V+	Positive power supply to the meter (+5V nom.)
IHI	Positive measuring input IHI must be no closer than 1.5V to either the positive or the internal negative supply.
ILO	Negative measuring input ILO must be no closer than 1.5V to either the positive or the internal negative supply.

NOTES:

1. Internal negative supply. This is generated from the supply voltage between V+ and 0V, and is negative with respect to 0V.

For Example: If V+ = 5V (with respect to 0V), then the allowable common mode input range is from (V+ - 1.5V) to (V- + 1.5V) or from 3.5V to -3.5V with respect to the 0V power supply connection.

Jumper Links

J1	Connects ILO to COM, when jumper link is fitted
J2	Connects ILO to 0V, when jumper link is fitted



LED Voltmeter

Module shown actual size.

Stock No.

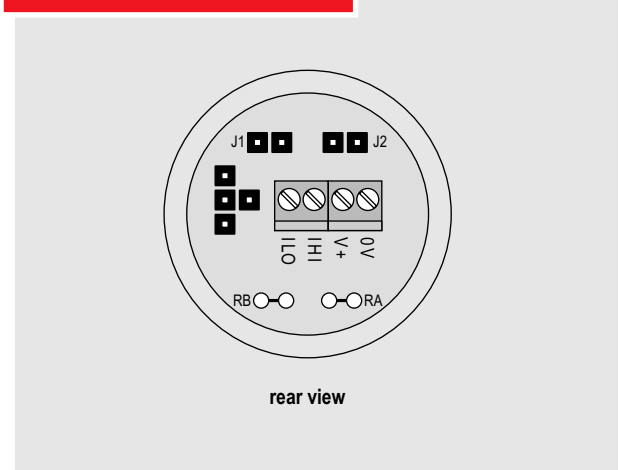
EM32-1B-LED

- 3-1/2 digit LED
- 8mm (0.31") digit height
- 50mA @ 5VDC operation
- Auto-zero, auto-polarity
- Selectable decimal points
- 200mV full scale reading
- Requires 32.5mm (1.28") diameter cut-out
- IP67/NEMA 4X protected

Typical Applications

- Panel mount instrumentation
- Process and control
- Automotive

Connection

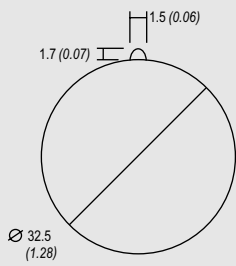


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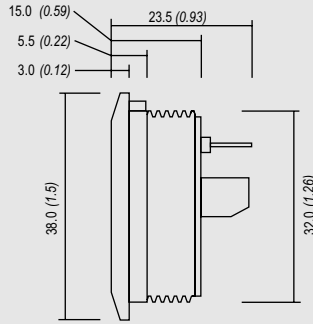
Martel Electronics, P.O. Box 770, Londonderry, NH 03053
Tel: 800-821-0023, E-mail: sales@martelmeters.com, Web: www.martelmeters.com

Mechanical Specification

All dimensions in mm (inches)



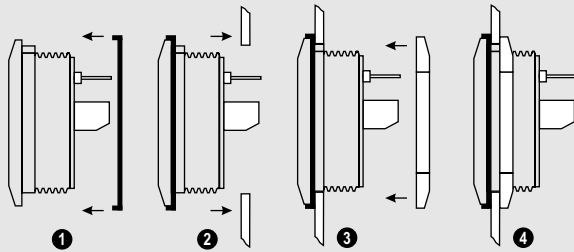
Panel cut-out



Dimensions	EM32-1B-LED	
Digit height	8.0mm	0.31"
Size (Dia. x Depth) excl. pins	38.0 x 23.5mm	1.5 x 0.93"
Specification		
Accuracy (overall error)*	0.1% (± 1 count) (typ.)	
Full scale reading	± 200 mVDC	
Linearity	± 1 count (max.)	
Sample rate	2.5 samples/sec. (typ.)	
Operating temperature range	0°C to 50°C	
Temperature stability	150ppm/°C	
Supply voltage	5VDC (typ.)	
Supply current	50mA (typ.)	
Input leakage current	1 to 10pA (max.)	

* To ensure maximum accuracy, re-calibrate periodically.

Mounting Method

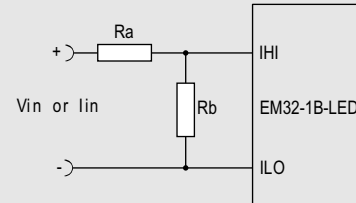


Scaling

Two resistors, Ra and Rb may be used to alter the full scale reading (FSR) of the meter (see Table). The meter will have to be recalibrated by adjusting the calibration potentiometer on the rear of the module.

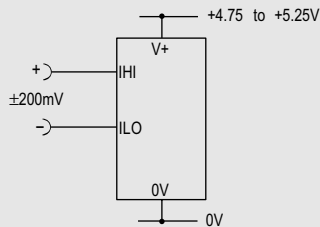
	FSR	Ra	Rb
Voltage <i>Vin</i>	2V	910k	100k
	20V	1M	10k
	200V	1M	1k
	2000V*	1M	100R
Current <i>Iin</i>	200 μ A	0R	1k
	2mA	0R	100R
	20mA	0R	10R
	200mA	0R	1R

* Ensure that Ra is rated for high voltage use.

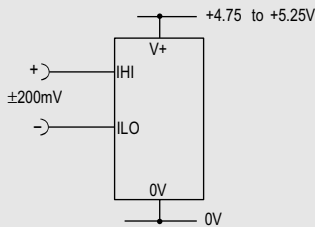


Applications

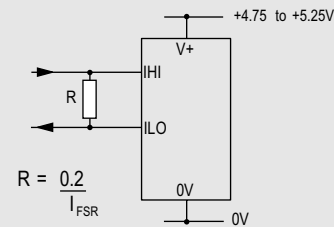
Do not connect more than one meter to the same power supply if the meters cannot use the same signal ground. Taking any input beyond the power supply rails will damage the meter.



Measuring an input voltage referenced to a floating supply, i.e. the input voltage and the meter's power supply are isolated from each other. Ensure jumper J1 is fitted. Ensure jumper J2 is not fitted.



Measuring a single ended input voltage referenced to supply, i.e. the input voltage and the meter's power supply share the same 0V rail. Ensure jumper J1 is not fitted. Ensure jumper J2 is not fitted.



$$R = \frac{0.2}{I_{FSR}}$$

Measuring current. The meter's supply is isolated from the current being measured. Ensure jumper J1 is fitted. Ensure jumper J2 is not fitted.