EMV 1125

Single Hole Mounting Meter

EMV 1125 is an easy to mount LCD digital panel meter. The user need only drill a single 5.5mm / $^{7}/_{32}$" hole in the panel. The module is fitted to the panel by locating its screw threaded stud through the hole, fitting the washer and tightening the nut provided. The module's 10 connecting wires pass through the hollow stud into the target application, where they can be easily soldered into place. The module features 200mV full scale input, auto-zero and auto-polarity. A separate screw terminal adaptor board (T/BLK-4) simplifies connection and calibration. A rubber seal is included, providing splashproof protection for the unit when fitted to the meter during installation.

- Single Hole Mounting
- 200mV Full Scale Reading
- 12.5mm / 0.5" LCD Digit Height
- Auto-zero, Auto-polarity
- 10 Wire Connections
- Low Battery Warning
- Screw Terminal Board (T/BLK-4)
- Splashproof



Shown Actual Size

Easy Mounting Voltmeter with T/BLK-4				Stock Number EMV 1125
Specification	**Min.**	**Typ.**	**Max.**	**Unit**
Accuracy (overall error)*		0.05	0.1	% (±1 count)
Linearity			±1	count
Displayed reading	-1999		1999	
Resolution		0.1		mV d.c.
Sample rate		3		sample/sec
Operating temperature range	0		50	°C
Temperature stability		100		ppm/°C
Supply voltage	7.5	9	15	V d.c.
Supply current		150		µA

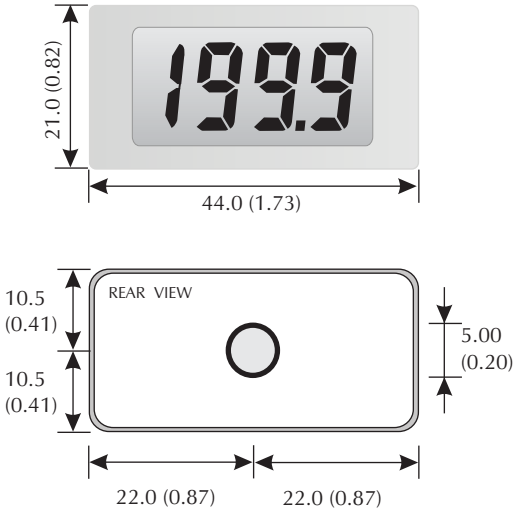
* To ensure maximum accuracy, re-calibrate periodically.

Unless otherwise noted, specifications apply at TA=25°C, V_{supply}=9Vd.c. (f_{clock}=48kHz) and are tested with the module configured for fully floating input mode.

SAFETY

To comply with the Low Voltage Directive (LVD 93/68/EEC), input voltages to the module's pins must not exceed 60Vd.c. If voltages to the measuring inputs do exceed 60Vd.c., then fit scaling resistors externally to the module. The user must ensure that the incorporation of the meter into the user's equipment conforms to the relevant sections of BS EN 61010 (Safety Requirements for Electrical Equipment for Measuring, Control and Laboratory Use).

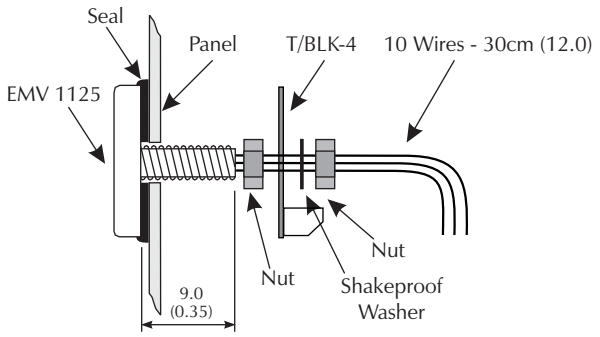
DIMENSIONS All dimensions in mm (inches)



Module thickness 5.5mm (0.22)

FITTING THE EMV 1125

Drill a 5.5mm / $^{7}/_{32}$" hole in the panel. Fit seal to the rear of the module. Fit the module to the panel by passing its screw threaded stud and the wires through the hole, fitting the washer and tightening the nut provided. Take care not to trap any of the connecting wires. Do not to overtighten the nut as this may damage the meter.



If T/BLK-4 is not fitted, then do not fit the first nut.

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WIRE CONNECTIONS (EMV 1125) and SCREW TERMINAL FUNCTIONS (T.BLK-4)

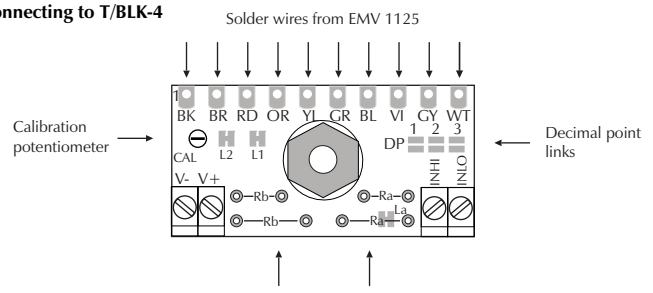
0.	Black (BK)	V-	Negative power supply connection.
1.	Brown (BR)	COM	The ground for the analogue section of the A/D converter, held actively at 2.8V (nom.) below V+. COM must not be allowed to sink excessive current (>100µA) by connecting it directly to a higher voltage.
2.	Red (RD)	V+	Positive power supply connection.
3.	Orange (OR)	Vref	Connection for calibration circuit (see diagram below).
4.	Yellow (YL)	IN HI	Positive measuring differential input.] IN HI and IN LO must be no closer than 1V to either the positive or negative supply.
5.	Green (GR)	IN LO	Negative measuring differential input.] (On T/BLK-4, IN LO is connected to COM via normally-closed Link L2.)
6.	Blue (BL)	DP COM	Common connection for decimal points DP1, DP2 and DP3, see below.
7.	Violet (VI)	DP1	199.9
8.	Grey (GY)	DP2	19.99] Connect to DP COM to display required decimal point.
9.	White (WT)	DP3	1.999] (or make appropriate solder link on T/BLK-4)

SCALING and CALIBRATION

A calibration circuit and two resistors (Ra and Rb) may be added on the EMV 1125 or T/BLK-4 board (cut Link La if fitting Ra) to alter the full scale reading of the meter - see table. Note that the meter will have to be (re-)calibrated by adjusting the potentiometer.

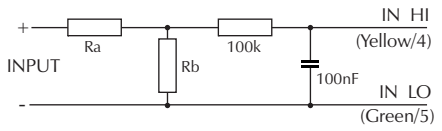
Required F.S.R.	Ra	Rb	CAL
200mV	N/A	N/A	Adjust
2V	910k	100k	Adjust
20V	1M	10k	Adjust
200µA	0R	1k	Adjust
2mA	0R	100R	Adjust
20mA	0R	10R	Adjust
200mA	0R	1R	Adjust

Connecting to T/BLK-4



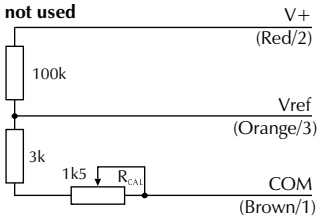
Note: There are two locations for each scaling resistor (Ra and Rb) to allow for different types. It is only necessary to fit a resistor in one of these locations.

Adding an input filter and scaling resistors when T/BLK-4 is not used



Note: To reduce noise on the meter's input, fit the input filter components (1M and 10nF) shown above. The input filter is fitted as standard on T/BLK-4.

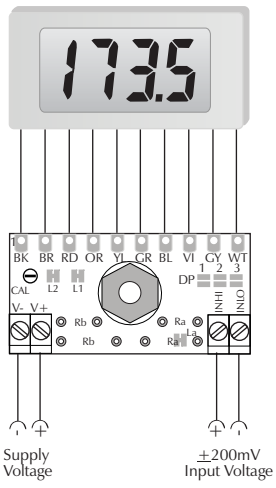
Adding a calibration circuit when T/BLK-4 is not used



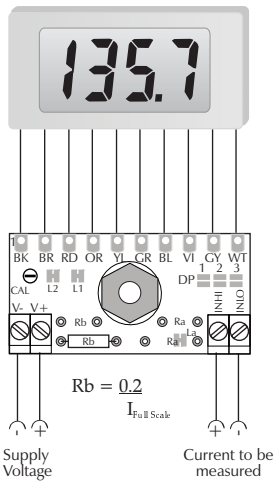
Note: The calibration circuit must always be fitted, even when scaling resistors are not fitted. This circuit is fitted as standard on T/BLK-4.

APPLICATIONS

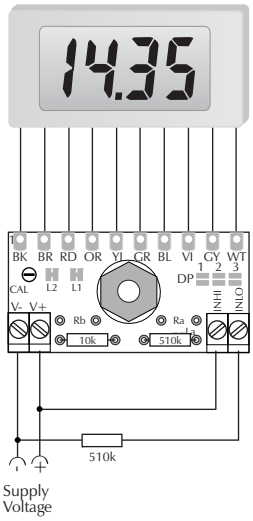
Do not connect more than one meter to the same power supply if the meters cannot use the same signal ground. Taking any input beyond the power supply rails will damage the meter. Keep leads short to ensure noise-free operation.



Measuring a floating voltage source of 200mV full scale.
Add Ra and Rb and cut Link La to increase the measurement range.



Measuring current.
Recalibrate the module.
The current to be measured must be isolated from the module's power supply.



Measuring a supply voltage.
(min. 7.5V, max. 15V)
Cut Links La and L2.
Recalibrate the module.