

DPM 970

Digital AC Voltmeter Module

A 3 1/2 digit LCD panel meter, featuring 19mm (0.75") digit height and LED backlighting, the DPM 970 is a true RMS voltage and current meter with 500V a.c. (2kV[Ⓢ]) and 2mA full scale readings as standard. By changing the value of scaling resistors or adding a shunt, this module will measure most a.c. voltages and currents. The DPM 970 features digital hold function which freezes the last displayed reading. Calibration is achieved via two multi-turn potentiometers for offset and scale. Connection to the meter is via screw terminals. The module is housed in a robust carrier which can be bolted in place or panel mounted using the bezel, window and clips provided.

- 19mm (0.75") Digit Height
- Screw Terminal Connections
- Digital Hold
- 500V a.c. (2kV[Ⓢ]) Full Scale Reading
- Measures Voltage and Current
- LED Backlighting



SCALING

To change the full scale reading (F.S.R) of the meter, use the resistor values and PL10 configuration as detailed in the table below. To ensure that the meter reads "000" with zero input voltage/current, short circuit ACV and COM and adjust the ZERO potentiometer. The meter will need recalibration by adjusting the CAL potentiometer.

Option 1 = Make PL10 pins 2 & 3

Option 2 = Make PL10 pins 1 & 2

Required F.S.R		RA1	RA2	RB1	PL10
200mV	①	0R	0R	Not Fitted	Option 1
2V	①	390k	220k	330k	Option 2
20V	①	680k	390k	39k	Option 2
200V	①	560k	560k	3k9	Option 2
2kV (factory default)	① ②	560k	560k	390R	Option 2
2mA	③	-	-	100R	Option 1
20mA	③	-	-	10R	Option 1
200mA	③	-	-	1R	Option 1
2A	③ ④	-	-	0R1	Option 1
20A	③ ④	-	-	0R01	Option 1

NOTES

- ① Use inputs ACV and COM for measuring voltage.
- ② For measuring voltages above 500V_{RMS}, external scaling resistor must be used.
- ③ Use inputs ACI and COM for measuring current.
- ④ When measuring in excess of 200mA use an external scaling resistor fitted between the terminals of ACI and COM. We recommend the use of a current transformer when measuring in excess of 10 Amps.

Consult the current transformer manufacturer's data for connections and recommendations. Other scaling factors can be achieved via the correct selection of scaling resistor values.

Standard Meter				Stock Number DPM 970
Specification	Min.	Typ.	Max.	Unit
Accuracy (overall error) *		0.5	1.5	% (±2 count)
Full scale reading **	0		1999	V _{RMS}
Resolution		1		V _{RMS}
Sample rate		3		samples/sec
Operating temperature range	0		50	°C
Temperature stability		200		ppm/°C
Frequency range (input voltage)	15		15k	Hz
Input impedance (2kV range)		1		MΩ
DC Supply voltage	7.5	9	14	V d.c.
Supply current (Backlighting off)		1.5		mA d.c.
Supply current (Backlighting on) @ 5Vd.c.		50		mA d.c.

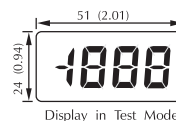
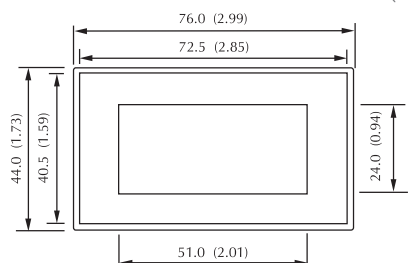
* To ensure maximum accuracy, re-calibrate periodically.

** Maximum safe input voltage across the ACV and COM terminals is 500V_{RMS}.

If voltages to be measured exceed 500V_{RMS}, then fit scaling resistors externally to the module.

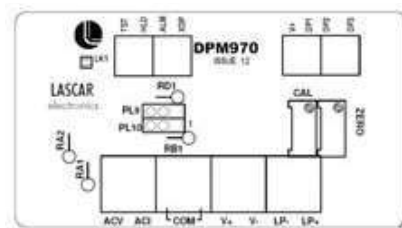
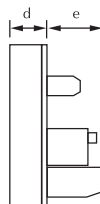
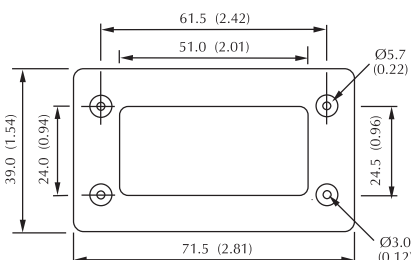
DIMENSIONS All dimensions in mm (inches)

Panel cut-out 72 x 40 (2.83 x 1.57)
Maximum panel thickness 3mm (0.12).



- a. 1.0 (0.04)
- b. 2.0 (0.08)
- c. 6.5 (0.26)
- d. 11.5 (0.45)
- e. 12.5 (0.49)*

*typical depth of tallest component behind PCB, this dimension is for guidance only.



Specifications liable to change without prior warning

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Issue 12

06/2010

S.L.

Applies to DPM 970/12

