

DPM 443M

4½ Digit LED Module

A high performance LED voltmeter module offering environmental protection with an integral mains supply. Fitted with high efficiency LEDs behind a red filter giving an excellent high contrast display under all lighting conditions.

- 🌀 14.2mm (0.56") Digit Height
- 🌀 Auto-zero
- 🌀 Auto-polarity
- 🌀 2V d.c. Full Scale Reading (F.S.R.)
- 🌀 Bandgap Reference
- 🌀 Multiplexed BCD Outputs
- 🌀 DIN Cased
- 🌀 Digital Hold
- 🌀 Mains Operation



SCALING

Two resistors Ra and Rb may be fitted in order to alter the full scale reading (F.S.R.) of the meter - see table.

The meter will need re-calibration.

| Required F.S.R. | | Ra | Rb |
|-----------------|------|------|------|
| 20V | Note | 910k | 100k |
| 200V | Note | 1M | 10k |
| 2kV | Note | 1M | 1k |
| 2mA | | LINK | 1k |
| 20mA | | LINK | 100R |
| 200mA | | LINK | 10R |

NOTE

Ensure that link across Ra (L5) is OPEN.

Stock Number Standard Meter

DPM 443M

| Specification | Min. | Typ. | Max. | Unit |
|----------------------------------|------|-------|------|--------------|
| Accuracy (overall error)* | | 0.005 | 0.01 | % (±1 count) |
| Linearity | | | ±1 | count |
| Sample rate | | 2.5 | | samples/sec |
| Operating temperature range | 0 | | 50 | °C |
| Temperature stability | | 15 | | ppm/°C |
| Input leakage current (Vin = 0V) | | 1 | 10 | pA |
| Warm-up time | | 10 | | minutes |
| Supply Voltage | Min. | Typ. | Max. | Unit |
| AC (primaries in parallel) | 100 | | 120 | V |
| AC (primaries in series) | 220 | | 240 | V |

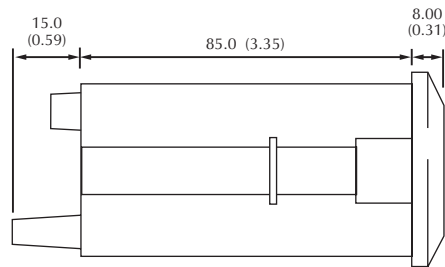
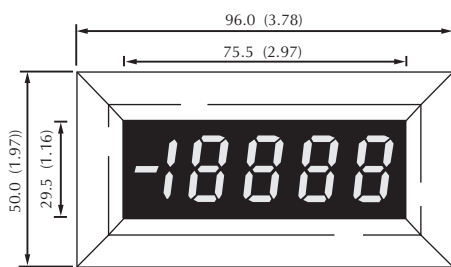
*To ensure maximum accuracy, re-calibrate periodically

CONNECTOR SOURCING GUIDE

METHOD

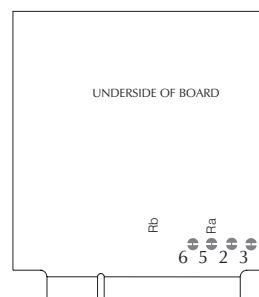
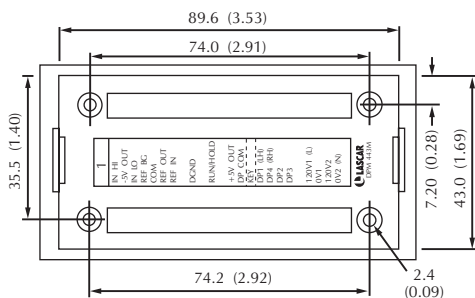
LASCAR EC 24 DS

DIMENSIONS All dimensions in mm (inches)



Viewing area showing display in TEST mode.

Panel cutout
92.0 x 45.0 (3.62 x 1.77)



SCALING RESISTORS
ON TOPSIDE OF BOARD

ON-BOARD SOLDER LINKS

PIN FUNCTIONS

1. IN HI Positive measuring input.
2. -5V Internally generated negative supply, can be used for external circuitry up to 10mA.
3. IN LO Negative measuring input.
4. REF BG Output of bandgap reference (2.5V nom).
5. COM The ground for the analogue section of the converter, internally connected to 0V.
6. REF OUT Positive output from internal reference, connected via link 3 to REF IN.
7. REF IN Positive input for reference voltage.
9. 0V Digital ground.
11. RUN/HOLD Leave floating or take to V+ for normal free run operation. Take to 0V to hold last displayed reading.
13. +15V Internally generated positive supply. Can be used for powering additional logic up to 10mA max. load.
14. DP COM Connect this pin to required decimal point.
15. KEY Polarising slot for edge connector.
16. DP1 1.9999
17. DP4 1999.9
18. DP2 19.999
19. DP3 199.99
21. 120V₁ Line input for mains supply.
22. 0V₁ Other end of primary winding connected to pin 21.
23. 120V₂ Other end of primary winding connected to pin 24.
24. 0V₂ Neutral input for mains supply.

CAUTION:
 REMOVE FROM MAINS SUPPLY BEFORE
 ATTEMPTING TO ALTER THE METER'S
 CONFIGURATION.

Connection For Mains Operation

For 100-120V operation connect pin 21 to pin 23, and pin 22 to pin 24.

For 220-240V operation connect pin 22 to pin 23.

Note - In both modes of operation mains input is always across pins 21 (LIVE) and pin 24 (NEUTRAL) 50 - 60 Hz.

SK2 Dii Socket

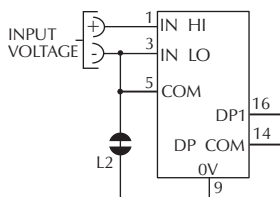
1. STROBE Negative going output pulse to aid transfer of BCD data to external devices. During each measurement cycle a strobe pulse occurs once in the centre of each digit drive pulse.
- 6,7,8,9,10 D1-D5. DIGIT DRIVES. Each digit drive is a positive going signal that lasts for 200 clock pulses.
- 22,17,18,21 B1, B2, B4, B8. Binary coded decimal bits are positive logic signals that go on simultaneously with the digit driver signal.

SAFETY

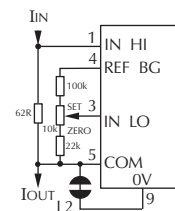
To comply with the Low Voltage Directive (LVD 93/68/EEC), input voltages to the module's pins must not exceed 60Vdc. If voltages to the measuring inputs do exceed 60Vdc, then fit scaling resistors externally to the module. The user must ensure that the incorporation of the DPM into the user's equipment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

VARIOUS OPERATING MODES

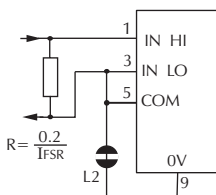
ON-BOARD LINKS: In order to quickly and easily change operating modes for different applications the meter has several on-board links. They are designed to be easily opened (cut) or shorted (soldered). Taking any input beyond the power supply rails will damage the meter.



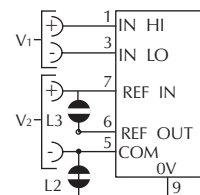
Measuring a voltage source of 2V full scale.



Measuring 4-20mA to read 0-9999.



Measuring current.



Check link 3 is OPEN

Measuring the ratio of two voltages
 Reading = 10000 V₁/V₂
 2 > V₂ > 0.5V