DPM 2

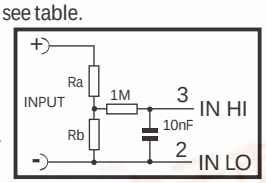
3½ Digit Subminiature LCD Module

The DPM 2 uses the latest miniaturisation techniques to produce a very compact meter. The snap-in integral bezel makes installation easy. For single rail use, the DPM 2S features a built in negative rail generator, enabling the meter to measure a signal referenced to its own power supply 0V.

- 8.25mm (0.32“) Digit Height
- Programmable Decimal Points
- Auto-zero
- Auto-polarity
- 200mV d.c. Full Scale Reading (F.S.R.)

SCALING

A potential divider may be used to alter the full scale reading (F.S.R.) of the meter - see table.



NOTES

The meter will have to be re-calibrated by adjusting the calibration potentiometer at the rear of the module.

Required F.S.R.	Ra	Rb
2V	910k	100k
20V	1M	10k
200V	1M	1k
2kV Note	10M	1k
200µA	0R	1k
2mA	0R	100R
20mA	0R	10R
200mA	0R	1R

NOTE

Ensure that Ra is rated for high voltage use.

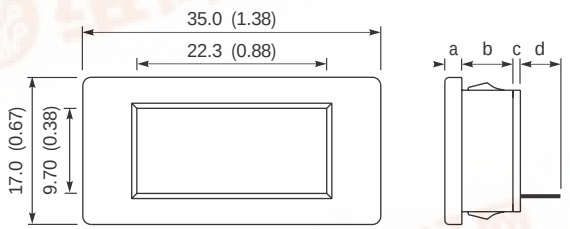
Standard Meter Single Rail Version					Stock Number DPM 2 DPM 2S
Specification		Min.	Typ.	Max.	Unit
Accuracy (overall error) *			0.1		% (±1 count)
Linearity				±1	count
Sample rate			3		samples/sec
Operating temperature range		0		50	°C
Temperature stability	DPM 2		200		ppm/°C
	DPM 2S		100		
Supply voltage	DPM 2	7	9	14	V
	DPM 2S	3	5	7	
Supply current	DPM 2		150		µA
	DPM 2S		250		
Input leakage current (Vin = 0V)			1	10	pA

* To ensure maximum accuracy, re-calibrate periodically.

CONNECTOR SOURCING GUIDE

METHOD	SUPPLIED WITH PRODUCT

DIMENSIONS All dimensions in mm (inches)

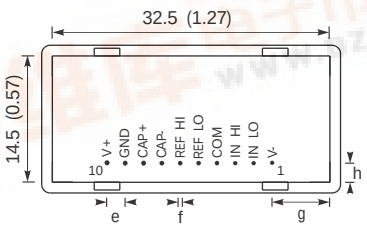


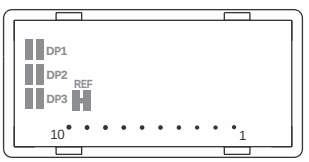
a. 2.00 (0.08)
b. 6.00 (0.23)
c. 1.60 (0.06) max
d. 6.00 (0.23)
e. 2.00 (0.08)
f. 0.50 (0.02)
g. 7.26 (0.28)
h. 1.76 (0.07)

Panel cut-out
33.0 x 15.0 (1.30 x 0.60)

Panel thickness
1.0 to 2.5 (0.04 to 0.1)

ON BOARD SOLDER LINKS





PANEL FITTING

Locate the meter by passing it through the front of the panel cut-out and gently push until the rear of the bezel is flush with the panel (DO NOT PUSH ON THE LCD). The snap-in lugs will now automatically hold the meter firmly in position.

MARTEL ELECTRONICS

P.O. Box 897, Windham, NH 03087
(603) 893-0886 (800) 821-0023 FAX (603) 898-6820

PIN FUNCTIONS

1. V- DPM 2 - negative power supply connection.
   DPM2S - C2 negative connection.
2. IN LO Negative measuring input.] Analogue inputs must be no closer than 1V to either the positive or negative supply.
3. IN HI Positive measuring input.] The negative supply of the DPM 2S is generated internally and mirrors the positive supply voltage.
4. COM Ground for analogue section of A/D converter, it is actively held at 2.8V below V + and must not be allowed to sink excessive current (>100µA) by, for instance, connecting to a higher voltage.
5. REF LO Negative input for reference voltage.
6. REF HI Positive input for reference voltage (connected via Link REF to internal reference).
7. CAP-] Charge pump capacitor connections (DPM 2S only).
8. CAP +]
9. GND DPM 2 - no connection.
   DPM 2S - 0V power supply connection.
10. V + Positive power supply connection.

ON BOARD LINKS

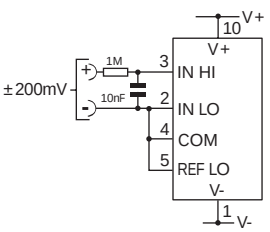
On board links can be made with a solder link to implement features.
DP1 Make to turn on DP1 (199.9).
DP2 Make to turn on DP2 (19.99).
DP3 Make to turn on DP3 (1.999).
REF Factory made - Connects internal reference to REF HI. It should only be cut if an external reference is used.

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).

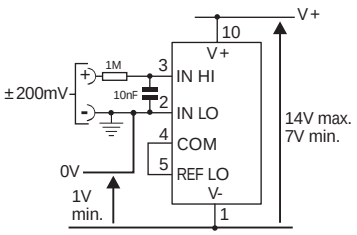
VARIOUS OPERATING MODES

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).
Do not connect more than one meter to the same power supply if the meters cannot use the same signal ground. Input filter should be as close as possible to the meter.
Taking any input beyond the power supply rails will damage the meter.



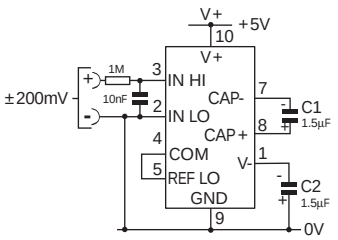
Check Link REF is SHORTED.

Measuring a floating voltage source of 200mV full scale (DPM 2).



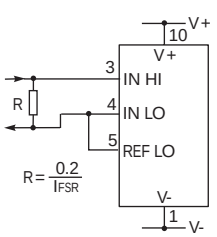
Check Link REF is SHORTED.

Split supply operation (DPM 2).



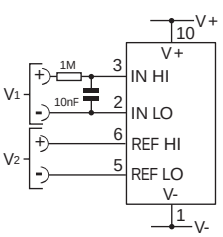
Check Link REF is SHORTED.

Measuring a single ended input referenced to supply (DPM 2S).



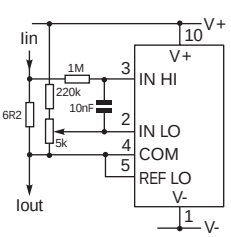
Check Link REF is SHORTED.

Measuring current. Supply MUST be isolated. (DPM 2)



Check Link REF is OPEN.

Measuring the ratio of two voltages.
Reading = 1000 V_1/V_2
50mV < V_2 < 200mV
V_1 < 2V_2. (DPM 2)



Check Link REF is SHORTED.

Measuring 4-20mA to read 0-999.
Supply MUST be isolated. (DPM 2)