anders
electronics

DPM8901 Temperature Meter CE

features

- CE approved and marked
- °C or °F LED display indicator
- E, J, K, R, T type thermocouple input
- Accuracy 1 or 0.1 degrees.
- 4 digit BCD set upper limit alarm
- On-Off control alarm output relay
- Alarm output LED indicator and manual reset

The DPM8901 is a high accuracy and versatile mains powered temperature meter. This microprocessor based design provides many benefits over the earlier model 8900 which it replaces. Resolution for some thermocouple types can be selected as either 1°C or 0.1°C via a DIP switch. Similarly, E, J, K, R and T thermocouples can be set with DIP switches. Utilisation of a precision cold junction compensation I.C. allows accurate measurement over the ambient operating temperature range of the meter.

Additional features include thermocouple error linearisation and a one point upper limit alarm setting with relay output . The meter is housed in a standard 1/8 DIN size case.

Over range and thermocouple disconnected is indicated by "-- -- -- --" in the display.

This digital meter can be easily set up by the user to cover most applications using the following instructions .
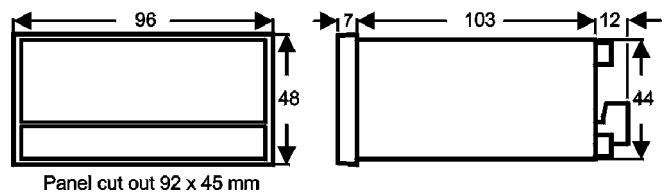
STEP BY STEP INSTRUCTIONS	
1	Remove instrument from its protective plastic bag and clip off front cover and note position of components as indicated in fig. 1 overleaf.
2	With reference to Figures 1 and 2 overleaf, set D4 on switch S5 to indicate °C or °F as required.
3	If alarm is required, set upper limit alarm temperature by setting DIP switches D1, D2, D3 on S5 down to off position and adjust BCD switches S1 to S4 until the LED display indicates the required alarm temperature. For a negative alarm temperature set S1 to position 5. If alarm not required set S1 to S4 until the LED display indicates 4999.
4	Now set the DIP switches on S5 to suit the thermocouple type and accuracy required as shown in figure 2.
5	Make connection to the meter with reference to the Terminal Definition table.
6	The instrument is pre-calibrated in the factory and requires no further adjustment. The calibration potentiometers R27, R29, R31 should not be moved.
7	The instrument may now be tested.
8	Once satisfied with the operation, **turn off the auxiliary a.c. power supply** and unplug the green safety terminals from the rear of the meter.
9	Clip the front cover back on and insert the meter into the panel cut-out. "Snap" the mounting clips into the side of the case (refer to installation diagram) and tighten the fixing screws until secure in the panel - do not over tighten!
10	Reconnect the terminals as per the Terminal Definition table. The meter is now ready for use.

— DPM8000 series —
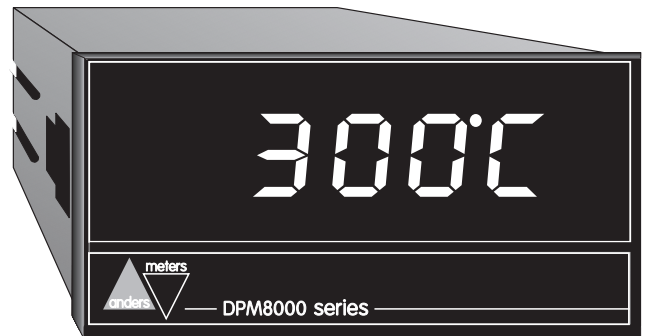
OPERATING SPECIFICATION

Line voltage	115/230 V +10%, -20%
Line frequency	50/60 Hz
Accuracy	+/- 1% of f.s.d +/- 1 digit
Temperature coefficient	100 PPM/C
Operating temperature	2 to 45°C
Storage temperature	-10 to 60°C
Humidity	below 85% RH
Power consumption	3.5 VA
CMRR	80dB
Hysteresis	3 or 0.3°C (depends on resolution)
Relay life	1,000,000 operations
Relay contact rating Resistive load	250V AC / 2A 115V AC / 3A 30V AC / 3A

DIMENSIONS

Panel cut out 92 x 45 mm

INSTALLATION DIAGRAM

DPM8901 Rev. 5 10/03
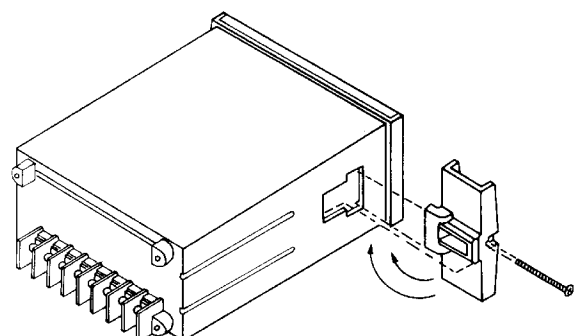
FIG. 1 8901 FRONT VIEW (COVER REMOVED)

Meter Reset

R29

S1 S2 S3 S4   S5
Alarm point setting   Function
switches   Switch

Alarm LED

R31 R27
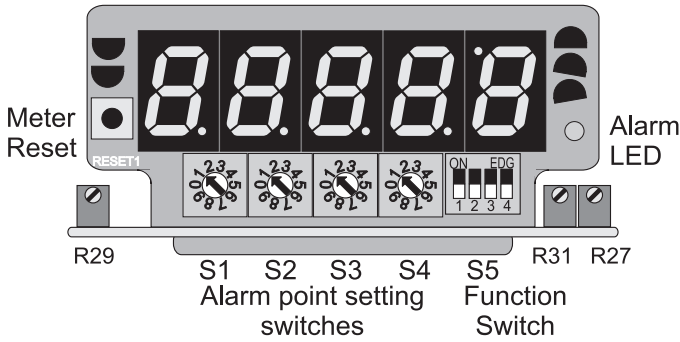
TERMINAL DEFINITIONS (8901)

TERMINAL	SYMBOL	DESCRIPTION
1	TC HI	Sense input HI
2	TC LO	Sense input LO
3	CJ HI	Cold junction input high
4	CJ LO	Cold junction input high
5	REL	Alarm relay output
6	REL	Alarm relay output
7	230V	
8	115V	AC power source
9	0V	

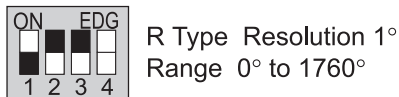## FIG. 2 SWITCH SETTING TABLE

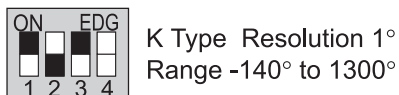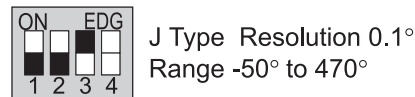### S5   Black = switch position
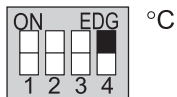
 °C
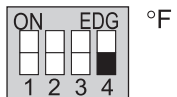
 °F

 T Type Resolution 0.1°
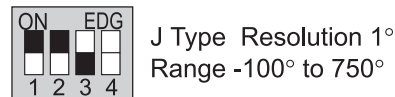Range -50° to 400°

 R Type Resolution 1°
Range 0° to 1760°

 K Type Resolution 1°
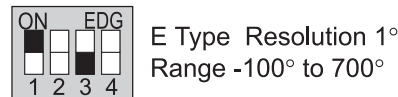Range -140° to 1300°

 J Type Resolution 0.1°
Range -50° to 470°

 J Type Resolution 1°
Range -100° to 750°

 E Type Resolution 0.1°
Range -40° to 400°

 E Type Resolution 1°
Range -100° to 700°

 Displays alarm
setpoint value

Alarm temperature settings - 1° resolution setting

Use switches S1 to S4 to set the alarm trip value. To disable the alarm trip function, set the alarm trip value beyond the maximum display range e.g 4999. Setting switch S1 to position 5 allows the setting of negative alarm trip values up to -999

S1: X 1000 (Set S1=5 for "-" temperature)
S2 : X 100
S3: X 10
S4: X 1

Alarm temperature settings - 0.1° resolution setting

Use switches S1 to S4 to set the alarm trip value. To disable the alarm trip function, set the alarm trip value beyond the maximum display range e.g 499.9. Setting switch S1 to position 5 allows the setting of negative alarm trip values up to -99.9

S1: X 100.0 (Set S1=5 for "-" temperature)
S2 : X 10.0
S3: X 1.0
S4: X 0.1

R27, R29, R31 Calibration Potentiometers

Potentiometers R27, R29, R31 are for calibrating the meter. However, the meter comes pre-calibrated from the factory and should not be adjusted.

Reset Push button.

Resets the module.

LED Alarm output indicator

When the displayed temperature goes 1 degree above that set by alarm switches, the Red LED comes on and the relay contact closes. When the temperature drops 2 degrees below alarm setting the LED goes out and the contacts open.