trumeter
innovation by design

APM
Temperature Meter

LISTED
MEASURING AND TESTING EQUIPMENT
E469787

CAUTION: Risk of Danger
Read complete instructions prior to installation and operation of the unit

CAUTION: Risk of electric shock

Before installation, read the Safety Warnings overleaf.

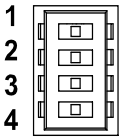
Intended Use

Intended Use: The APM has been specifically designed for engineers requiring an effective way to monitor and display data. The APM accepts a range of electrical inputs (depending on the model) and displays the data on its integrated multi-format display. The APM has been designed for installation into electrical cabinets or display panels. Output models include two independent outputs that can be configured by the user to be either digital set-point outputs or 4-20mA monitor outputs.

Operating Specification

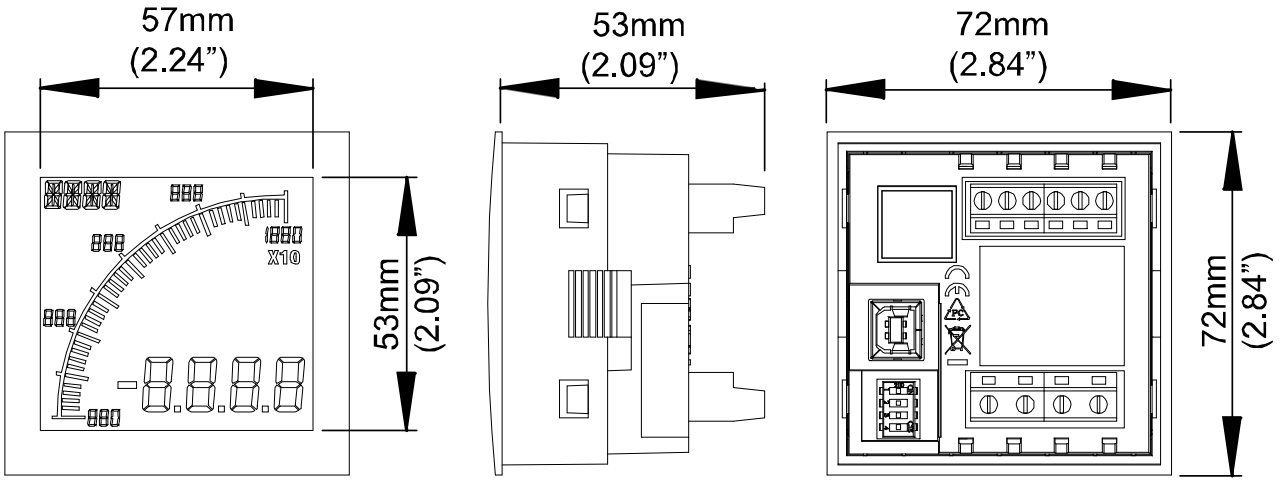
Use the DIP switches to set the Temperature Meter bar graph range and annunciators to standard values. Use the software application to configure custom settings.
The switch positions are shown in the table where:
0 = OFF and 1 = ON.

Thermocouple Types	B, C, E, J, K, N, R, S, T
Accuracy	0.25% plus Thermocouple Accuracy



The DIP switches are on the back of the unit.

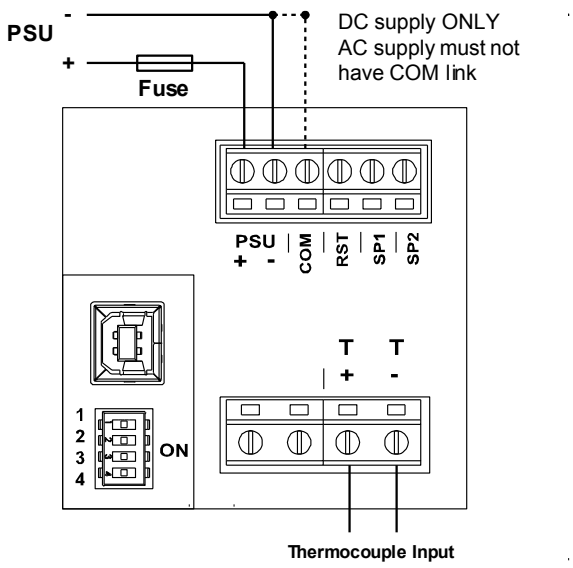
Size



Size of the cutout in the panel:
68 x 68mm (2.68in) +0.7 -0mm

Wiring Diagrams

Thermocouple Input



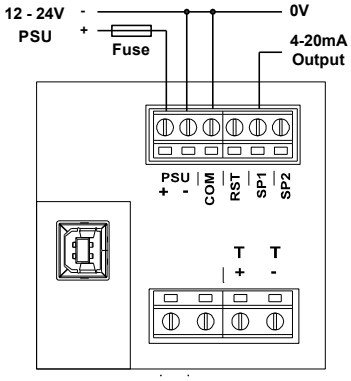
DIP Switches

DIP switch settings:-

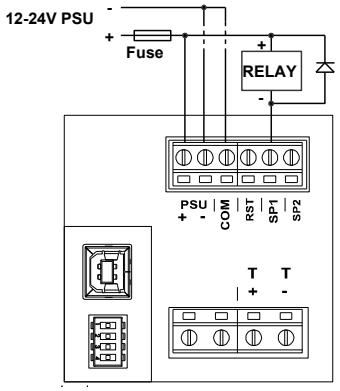
Switch	Type	Thermocouple		Units	Display Scale		
1234		Min	Max		Min	Max	X10
0000	Custom						
1000	B	250	1820	ºC	0	200	X10
0100	E	-200	1000	ºC	0	1000	
1100	J	-210	1200	ºC	0	1200	
0010	K	-200	1372	ºC	0	140	X10
1010	N	-200	1300	ºC	0	140	X10
0110	R	-50	1768	ºC	0	200	X10
1110	S	-50	1768	ºC	0	200	X10
0001	T	-200	400	ºC	0	400	
1001	B	482	3308	ºF	0	400	X10
0101	E	-328	1832	ºF	0	200	X10
1101	J	-346	2192	ºF	0	220	X10
0011	K	-328	2502	ºF	0	260	X10
1011	N	-328	2372	ºF	0	240	X10
0111	R	-58	3214	ºF	0	320	X10
1111	S	-58	3214	ºF	0	320	X10

Outputs

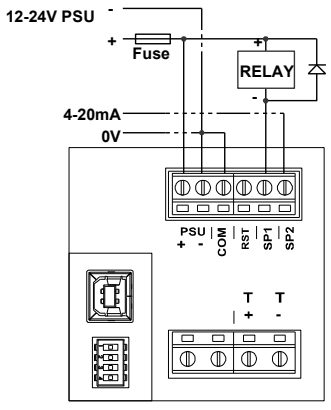
4-20 mA analogue output using setpoint 1.



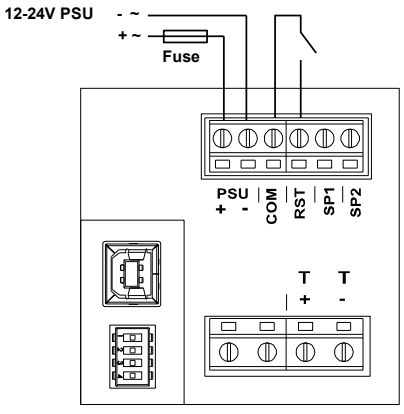
Using a diode-protected relay on setpoint 1.



Analogue Output and relay using both setpoints.



Use the Reset input with the peak hold function.



You need the software to configure the setpoints and outputs.

Safety Warnings

WARNING: INSTALLATION AND MAINTENANCE MUST BE CARRIED OUT BY SUITABLY QUALIFIED AND COMPETENT PERSONEL ONLY. HAZARDOUS VOLTAGES MAY BE PRESENT ON THE CONNECTION TERMINALS.

INSTALLATION

- Install this product in accordance with local regulations, codes and instructions.
- All fuses must be 0.5A / 250V Type F with a breaking capacity of 35A or greater.
- All conductors carrying hazardous voltage must have external switching or disconnect mechanisms fitted that provide at least 3 mm of contact separation in all poles.
- Signal cables connected to this device must not exceed 30 metres long.
- If signal cables are routed outside the building, install extra surge-protection devices.
- Power supply, current input, USB and all outputs: Observe maximum allowable voltages. All circuits connected to these connectors must be limited-energy and insulated by double/ reinforced insulation from mains voltages according to IEC 61010-1:2010

Failure to install or operate the unit in accordance with the above requirements may impair the electrical safety of the unit. Voltage measurements: An external UL recognized or listed overcurrent protection device (fuse or circuit breaker) must be fitted in-line with the voltage lead. Recommended fuse: 0.5A Type F with a breaking capacity of 35A or greater. Fuse voltage rating must be greater than the maximum voltage that will be applied to the meter.

MAINTENANCE

- Before cleaning, inspection or maintenance, isolate all power sources to the unit.
- There are no user-serviceable parts inside this unit. Never open the case.
- Inspect all external wiring connections at regular intervals. Replace any damaged wiring and tighten any loose connections.
- To clean the unit, use a dry cloth to wipe the casing.
- Take great care connecting the supply. If you connect power to the wrong terminals, it may destroy the unit.

Specification

	VALUE
Environment	
Temperature - operating	–10 to +60 deg C
Temperature - storage	–40 to +70 deg C
Altitude	2000 metres
Relative Humidity (non-condensing) - Continuous	0 – 85 %
Relative Humidity (non-condensing) - Intermittent	0 – 95 %
Pollution Degree (IEC664)	2
IP rating (from the front)	IP65
NEMA Rating (from the front)	Type 4 & Type 12
Power supply	
Input	12-24V AC/DC
Max Power	1.6W
Supply Frequency	DC & 50-400 Hz
Isolation	None
Display	
Number of digits	4
Digit height	12 mm
Number of bar-graph segments	40
Number of starburst message characters	4
Backlight colours	Red, Green, White
LCD	Positive or negative
Digit update frequency	0.08 – 21 sec
Bar-graph update frequency	0.08 – 21 sec
Viewing angle	+/-70° Horizontal +/-70° Vertical
Open Collector Outputs	
Max voltage (open collector outputs)	34 V
Max current (open collector outputs)	500 mA
Analogue Output	
Output	4-20 mA
Accuracy	0.50 %
Resolution	0.02 mA
Connections	
Thermocouple Inputs are referenced to PSU 0V. Appying additional voltages to Thermocouple Inputs will give an incorrect reading and may damage the meter.	
Type	Screw Terminals
Wire type	Solid or Stranded
Min. cable temperature rating	65 deg C (149F)
Wire strip length	6.5mm to 7mm (0.26” to 0.28”)
Wire gauge	0.8mm² - 3.3mm² (18AWG to 12AWG)
Torque	0.5-0.6Nm (4.42-5.31 lbf-in)
Certification	
CE	
cULus	
IEC 61010-1	
In the Box	
APM	
Getting started & safety guide	
Sealing gasket	
Retaining clip	
Panel Cut-out: 68 x 68 mm (2.68 in) +0.7 -0 mm (0.02 in). **Max. panel thickness**: 10 mm.	
Dimensions: Depth behind panel inside front: 55mm (2.17in) incl. external connections. **Weight:** 180 grams.	