



APM POWER METER



Before installation, read the Safety Warnings overleaf.



CAUTION: Risk of Danger

Read complete instructions prior to installation and operation of the unit



CAUTION: Risk of electric shock

Operating Specification

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 industrial use only, by installation into electrical cabinets or display panels.

Measurement Range

Voltage (V)	L-L: 10 - 600VAC L-N: 10 - 300VAC
Current (I)	0-5A (CT only)
Power (W/VA/VAr)	0-999,999MW Dependant on CT ratio
Frequency	45 - 65 Hz

Measurement Accuracy of full scale

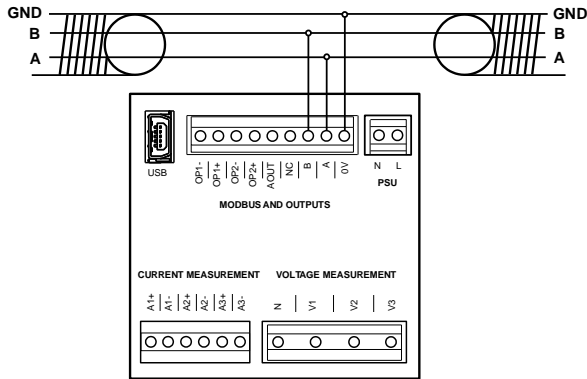
Voltage (V)	1%
Current (I)	1%
Frequency	1%
THD	5%
Power (W/VA/VAr)	1%

Specification

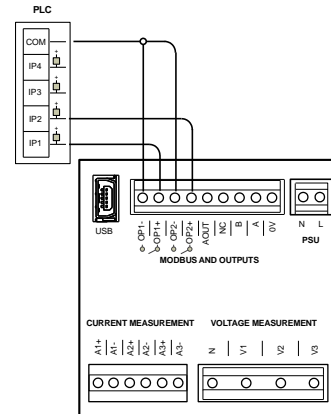
	VALUE
Environment	
Temperature - operating	-10 to +50°C
Temperature - storage	-40 to +70°C
Altitude	2000 metres
Relative Humidity (non-condensing) - Continuous	0 - 85 %
Relative Humidity (non-condensing) - Intermittent	0 - 95 %
Overtoltage category (IEC664)	II
Pollution Degree (IEC664)	2
IP rating (from the front)	IP65
NEMA Rating (from the front)	Type 4 & Type 12
Vibration	
Shock	
Power supply	
Input	100-277VAC
Max Power	2W
Supply Frequency	50-60Hz
Isolation	Reinforced
Display	
Number of digits	4 x 3
Digit height	7.5 mm
Number of bar-graph segments	20 per phase
Number of starburst message characters	6
Backlight colours	Red, Green, White
LCD	Positive or Negative
Digit update frequency	500ms
Bar-graph update frequency	500ms
Viewing angle	+/-70° Horizontal +/-70° Vertical
Open Collector Sinking Outputs	
Max voltage (open collector outputs)	24 VDC
Max current (open collector outputs)	15 mA
Analogue Output	
Output	4-20 mA
Accuracy	0.50 %
Resolution	0.02 mA
Connections	
Type	Screw Terminals
Wire type	Copper (Solid or Stranded)
Min. cable temperature rating	65°C (149°F)
Wire strip length	6.5mm to 7mm (0.26" to 0.28")
Wire gauge	0.8mm ² - 3.3mm ² (18AWG to 12AWG)
Torque	0.5-0.6Nm (4.42-5.31 lbf-in)
In the Box	
APM	
Getting started & safety guide	
Gasket	
Retaining clip	
Dimensions & Weight:	
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: 220 grams	

Wiring Diagrams

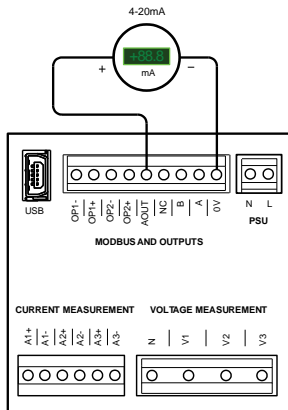
MODBUS CONNECTIONS



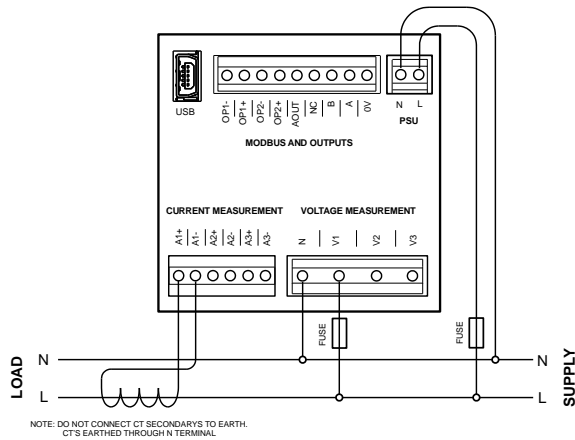
DIGITAL OUTPUT CONNECTIONS



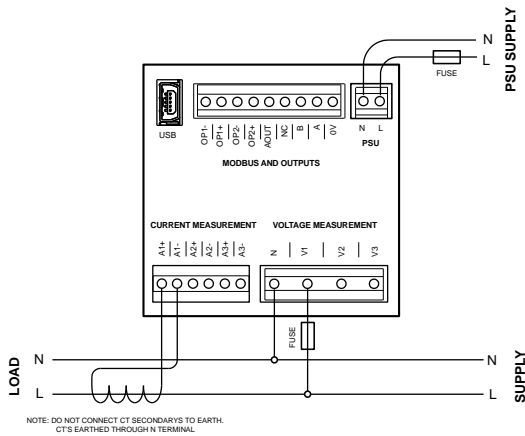
ANALOG OUTPUT CONNECTIONS



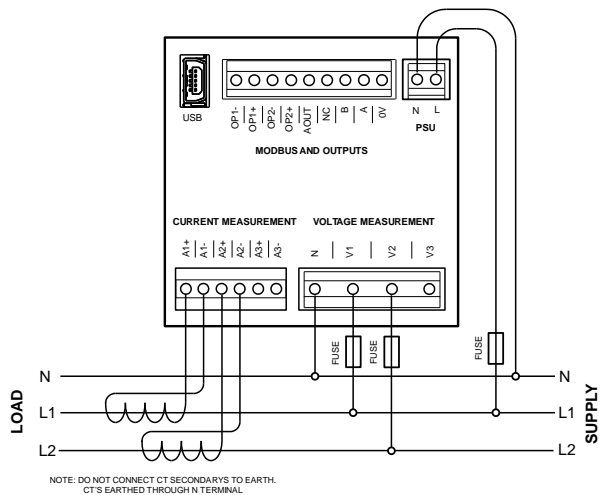
SINGLE PHASE POWER METER CONNECTIONS - LINE POWER



SINGLE PHASE POWER METER CONNECTIONS - LOCAL POWER

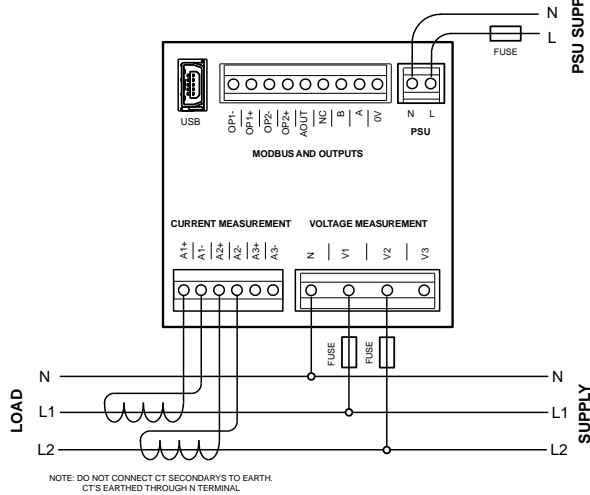


SPLIT PHASE POWER METER CONNECTIONS - LINE POWER

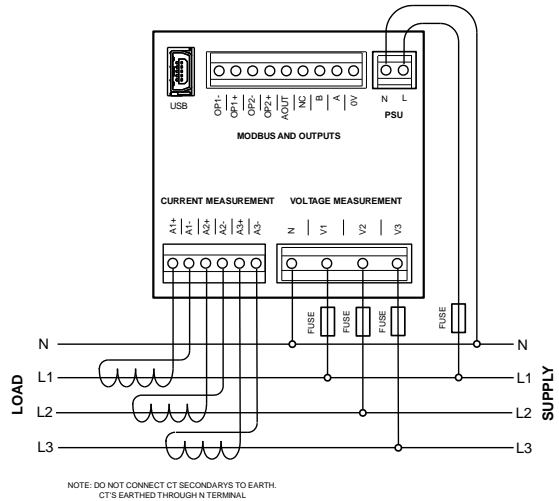


Wiring Diagrams

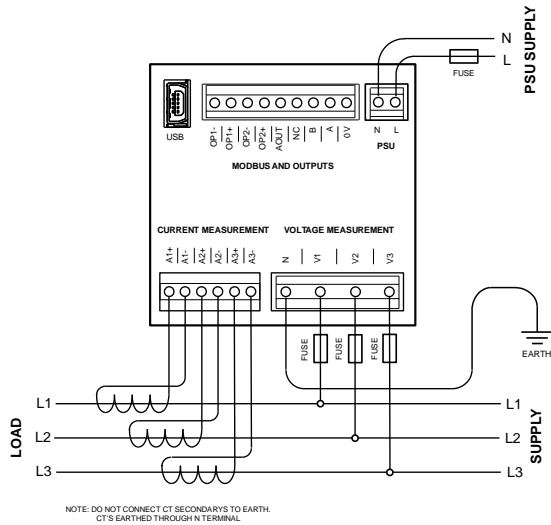
SPLIT PHASE POWER METER CONNECTIONS - LOCAL POWER



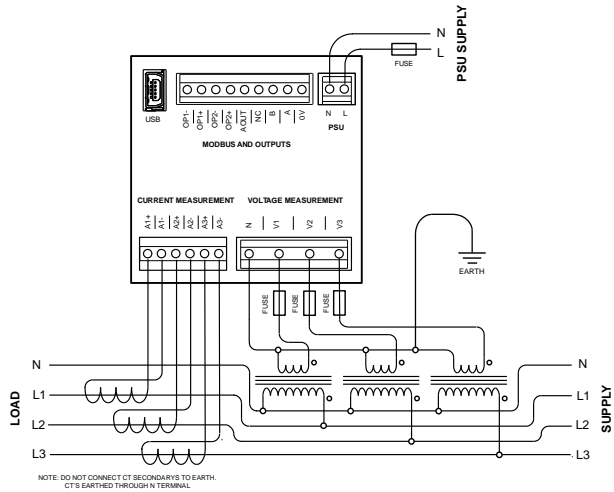
THREE PHASE AND NEUTRAL POWER METER CONNECTIONS - LINE POWER



THREE PHASE (NO NEUTRAL) POWER METER CONNECTIONS - LOCAL POWER



THREE PHASE POWER METER CONNECTIONS with PT AND CT - LOCAL POWER



EN: 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.
- An external fuse must be fitted in-line with the PSU. Recommended fuse: 0.5A/300V 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.
- Observe maximum allowable voltages. USB, Modbus and output must be limited energy and insulated from voltage and current inputs by double/reinforced insulation according to IEC 61010-1:2010.
- All current transformers must be certified to IEC 61010-1:2010
- To reduce risk of electric shock always disconnect the power circuit being monitored before installing or servicing current transformers.
- If this device is used outside it must be installed in an IP65 rated enclosure.



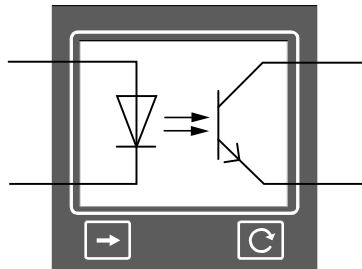
Failure to install or operate the unit in accordance with the above requirements may impair the electrical safety of the unit. Voltage measurements: An external UL recognized or listed overcurrent protection device (fuse or circuit breaker) must be fitted in-line with the voltage lead. Recommended fuse: 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.



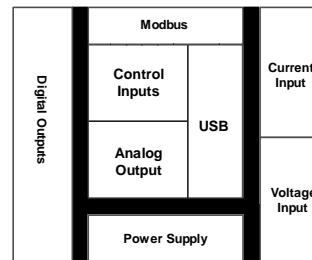
MAINTENANCE

- 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.

Control Outputs

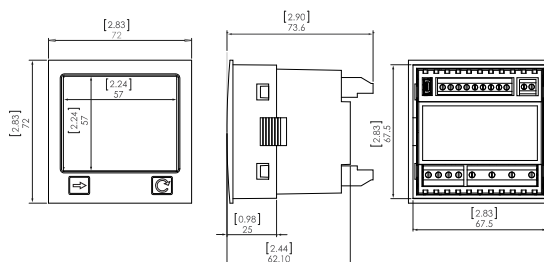


Isolation



Isolation barriers:
Galvanic Isolation Barrier

Size



68 x 68mm (2.68in) +0.7 -0mm

Size of the cutout in the panel:

Front Panel Buttons



Change Parameter:
Press to move between parameters



Auto Scroll Parameters:
Press to automatically switch parameters every 3 seconds

Software

You need the software to configure the setpoints and outputs.