trumeter
innovation by design

APM
POWER METER

c UL us LISTED
MEASURING AND TESTING EQUIPMENT
E469787

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.

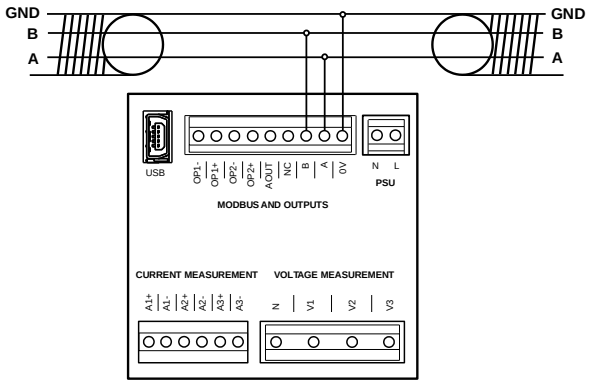
Measurement Range	
Voltage (V)	L-L: 10 - 600VAC L-N: 10 - 300VAC
Current (I)	0–5A (CT only)
Power (W/VA/VAr)	0-999,999MW Dependant on CT ratio
Frequency	45 – 65 Hz
Measurement Accuracy of full scale	
Voltage (V)	1%
Current (I)	1%
Frequency	1%
THD	5%
Power (W/VA/Var)	1%

Specification

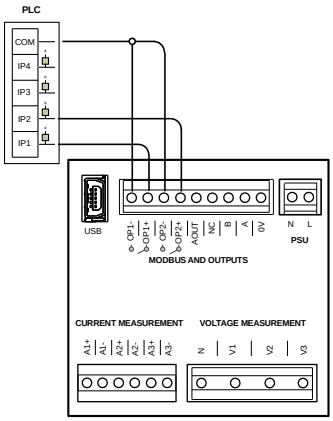
	VALUE
Environment	
Temperature - operating	***–10 to +50°C***
Temperature - storage	***–40 to +70°C***
Altitude	***2000 metres***
Relative Humidity (non-condensing) - Continuous	***0 – 85 %***
Relative Humidity (non-condensing) - Intermittent	***0 – 95 %***
Overvoltage category (IEC664)	***II***
Pollution 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	***0.8mm² - 3.3mm²*** *(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

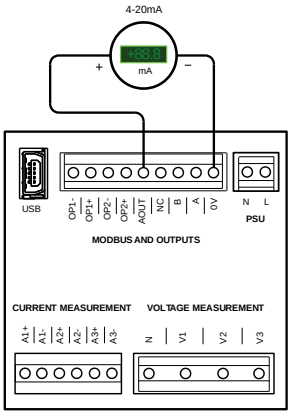
MODBUS CONNECTIONS



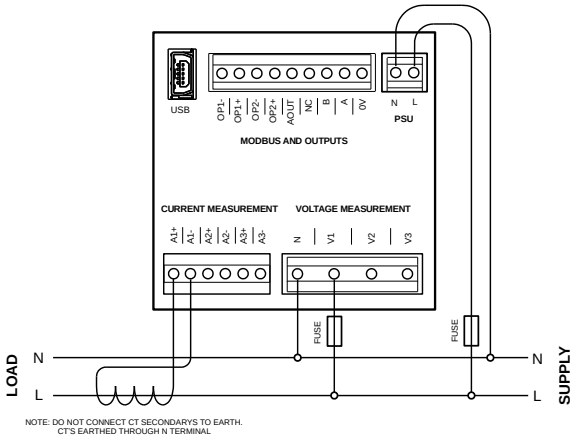
DIGITAL OUTPUT CONNECTIONS



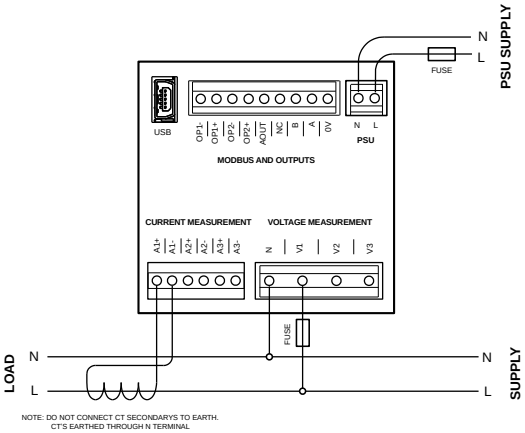
ANALOG OUTPUT CONNECTIONS



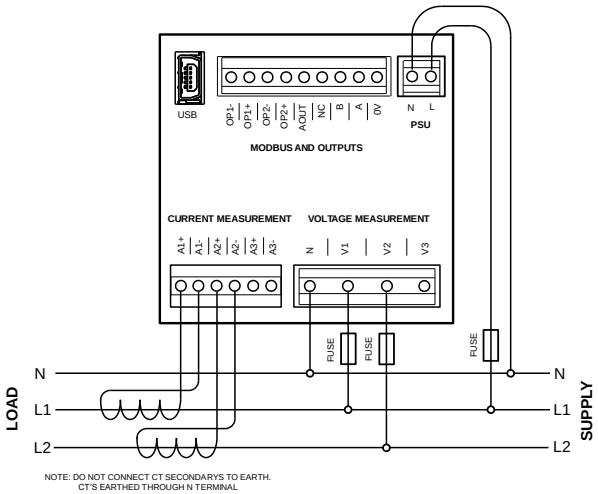
SINGLE PHASE POWER METER CONNECTIONS - LINE POWER



SINGLE PHASE POWER METER CONNECTIONS - LOCAL POWER

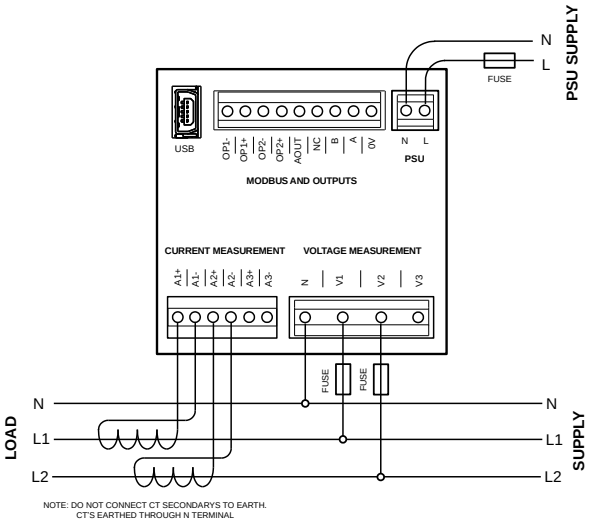


SPLIT PHASE POWER METER CONNECTIONS - LINE POWER



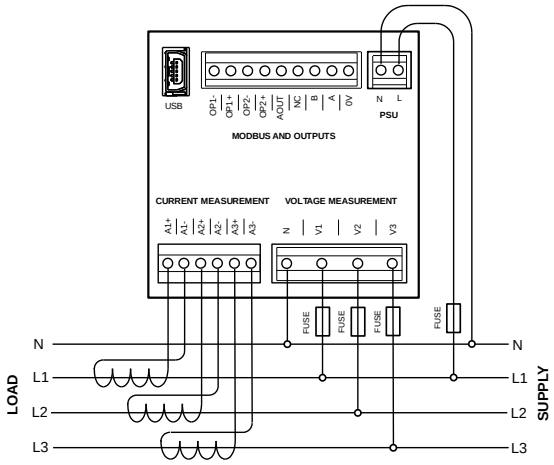
Wiring Diagrams

SPLIT PHASE POWER METER CONNECTIONS - LOCAL POWER



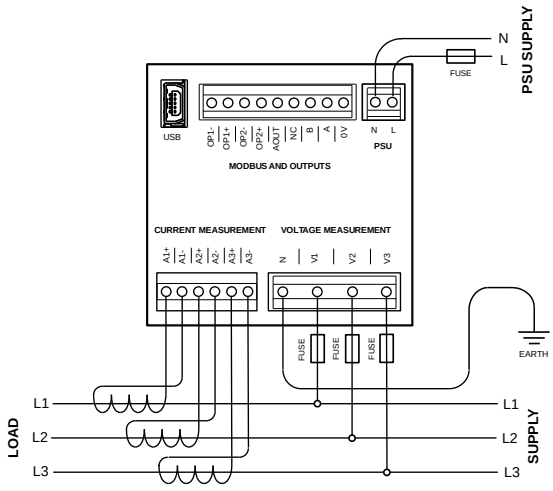
NOTE: DO NOT CONNECT CT SECONDARYS TO EARTH.
CT'S EARTHED THROUGH N TERMINAL

THREE PHASE AND NEUTRAL POWER METER CONNECTIONS - LINE POWER



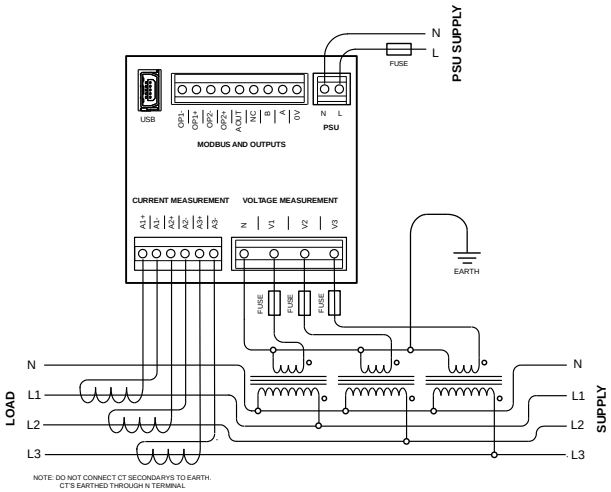
NOTE: DO NOT CONNECT CT SECONDARYS TO EARTH.
CT'S EARTHED THROUGH N TERMINAL

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



NOTE: DO NOT CONNECT CT SECONDARYS TO EARTH.
CT'S EARTHED THROUGH N TERMINAL

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



NOTE: DO NOT CONNECT CT SECONDARYS TO EARTH.
CT'S EARTHED THROUGH N TERMINAL

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

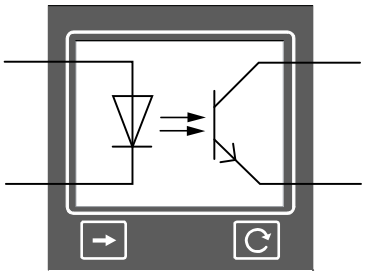
- Install this product in accordance with local regulations, codes and instructions.
- An external fuse must be fitted in-line with the PSU. Recommended fuse: 0.5A/300V with a breaking capacity of 35A or greater.
- All conductors carrying hazardous voltage must have external switching or disconnect mechanisms 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.

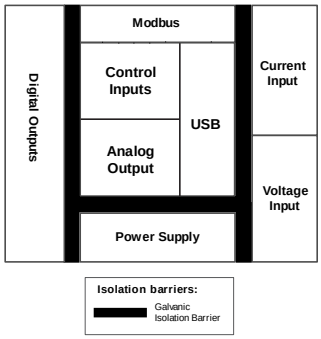
MAINTENANCE

- 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.

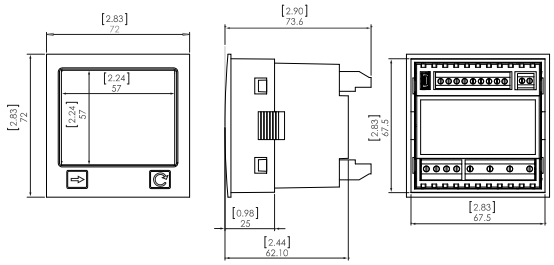
Control Outputs



Isolation



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.