

# PowerRail 300 kWh & kW Meter



- **Standard DIN Rail Format**
- **Installation Aids – ‘Right First Time’**
  - kW Display*
  - Configuration Display (CT, VT & Pulse setting)*
  - Pulse Test Facility*
- **Accuracy better than Class 1**
- **Isolated Pulse Output**
- **Dual Tariff Option**
- **Designed & Made in the UK with a 5 year Warranty**

**PowerRail 300** - a DIN Rail mounting Electronic kWh Meter specifically designed for switchboard applications. Easy to install and convenient to use. Equally suitable for both 3 wire and 4 wire 3 $\phi$  unbalanced loads (optionally for single phase or balanced 3 $\phi$  systems), these Meters have been designed to measure accurately irrespective of the type of load - ideal for a motor, a heater, or a modern electronically controlled load.

#### Safe to Use

With fully isolated current inputs, installation safety is assured. Current input isolation allows these meters to be directly connected under certain conditions and provides versatility of connection. Installation in conjunction with other instrumentation can be carried out safely, without affecting accuracy.

#### Easy to Install

The **PowerRail 300** is fitted with large Rising Cage terminals - allowing connection to cables from 0.25mm<sup>2</sup> to 4.0mm<sup>2</sup>

#### Easy to Configure

**PowerRail 300** Meters are configured from the front panel to suit installations using Current and/or Voltage Transformers, with decimal point and legend being automatically set to provide optimum resolution.

#### Easy to Commission — Right First Time

**Configuration:** CT, VT & Pulse configuration can be displayed at the touch of a button. Links at the rear of the meter can be removed to disable Configuration.

**Wiring:** With kW displayed at the push of a button, installations can be quickly and simply tested - connections confirmed & the load measured. To remove the possibility of reading errors, the display reverts to kWh after 60 seconds.

**Pulse Output:** With its **Pulse Test** facility, pulses can be generated - without any load - to test all downstream equipment.

#### Easy to Use

The **PowerRail 300** can be read from any angle. The bold LCD display overcomes small character size, poor visibility and short life associated with electromechanical counters and provides the necessary legends (Wh, kWh, MWh) to simplify reading. The programmable isolated pulse output provides an interface to a remote data collection system or BEMs.

#### Fully Supported

Comprehensive operating instructions - supplied with every **PowerRail 300** - include full information on installation. These include connection schematics and configuration details for virtually all CT ratios. Full technical support is readily available from your local Distributor or from Technical Sales at ND Metering Solutions.

#### Universality of Connections

For maximum convenience all **PowerRail 300** Meters can be powered from the measurement voltage. Where supplies may be subject to unusually wide variations, the Meters may be powered from a separate auxiliary supply. Standard Meters are suitable for both 3 wire and 4 wire 3 $\phi$  unbalanced loads, and can be used on single phase.

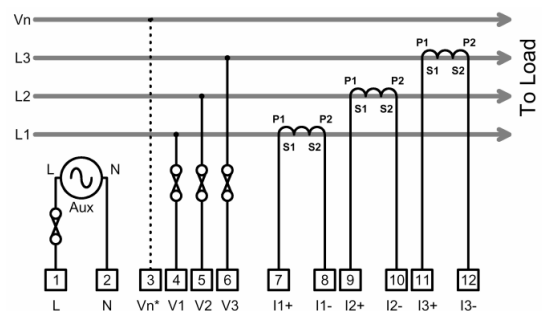
#### Accurate Real World Measurement

A precision measurement system maintains full accuracy in the presence of harmonics and randomly and/or periodically interrupted waveforms - as commonly found on modern electronically controlled loads.

#### Dual Tariff Option

The **PowerRail 300** is optionally available with 2 registers for Dual Tariff applications. Tariff changeover is effected by an external signal.

| OUTLINE SPECIFICATION       |   |
|-----------------------------|---|
| <b>INPUTS</b>               |   |
| <b>System</b>               | 3 Phase 3 or 4 Wire Unbalanced Load<br>3 Phase Balanced & Single Phase to order   |
| <b>Voltage</b>              | 400/230V. 3 Phase 3 or 4 Wire<br>110/63V & 208/120V optional. Others to order.  |
| <b>Current</b>              | 5A from external CTs. 1A optional. Fully isolated   |
| <b>Measurement</b>          | <b>Voltage</b> 50% to 120%  |
| <b>Range</b>                | <b>Current</b> 0.2% to 120%   |
| <b>Frequency</b>            | <b>Fundamental</b> 45 to 65Hz   |
| <b>Range</b>                | <b>Harmonics</b> Up to 30th harmonic at 50Hz  |
| <b>Burden</b>               | <b>Voltage</b> <0.1VA per phase   |
|                             | <b>Current</b> <0.1VA per phase   |
| <b>Overload</b>             | <b>Voltage</b> x4 for 1 hour  |
|                             | <b>Current</b> x40 for 0.5 second max   |
| <b>DISPLAY</b>              |   |
| <b>Type</b>                 | Custom, Supertwist, LCD   |
| <b>Data Retention</b>       | 10 years min. Stores kWh & Meter set-up   |
| <b>Format</b>               | 8 x 6.66mm high digits with DPs & 3.2mm legends   |
| <b>Scaling</b>              | Direct reading. User programmable CT & VT<br>CT Primary programmable from 10A to 25kA<br>VT primary programmable from 11V to 55kV |
| <b>Legends</b>              | Wh, kWh, MWh etc. depending on user settings  |
| <b>AUXILIARY SUPPLY</b>     |   |
| <b>Standard</b>             | 230V 50/60 Hz $\pm$ 15%   |
| <b>Options</b>              | 110V 50/60 Hz $\pm$ 15%   |
| <b>Load</b>                 | 2VA max.  |
| <b>Overload</b>             | x1.2 continuous   |
| <b>ACCURACY</b>             |   |
| <b>kWh</b>                  | Better than Class 1 per EN 61036 & EN 62053-21<br>Better than Class 1 per BS 8431   |
| <b>kW</b>                   | Better than $\pm$ 1% reading; Class 1 BS 8431   |
| <b>PULSE OUTPUT</b>         |   |
| <b>Function</b>             | 1 Pulse per unit of energy  |
| <b>Scaling</b>              | Settable between 1 & 1000 counts of kWh register  |
| <b>Pulse Period</b>         | 0.1 sec. default; Settable between 0.1 and 20 sec   |
| <b>Rise &amp; Fall Time</b> | < 2.0ms   |
| <b>Type</b>                 | N/O Volt free contact. Optically isolated BiFET   |
| <b>Contacts</b>             | 100mA ac/dc max., 100V ac/dc max.   |
| <b>Isolation</b>            | 2.5kV 50Hz 1 minute   |
| <b>GENERAL</b>              |   |
| <b>Tariff Change</b>        | <b>Normal</b> $V_{in} < 35V$ ac or dc   |
| <b>Signal</b><br>(Option)   | <b>Alternate</b> $60V < V_{in} < 300V$ ac or dc<br>Isolated at 2.5kV from all other inputs & outputs                              |
| <b>Temperature</b>          | <b>Operating</b> -10°C to +65°C   |
|                             | <b>Storage</b> -25°C to +70°C   |
| <b>Humidity</b>             | < 75% non-condensing  |
| <b>Environment</b>          | IP54 standard, IP65 optional  |
| <b>MECHANICAL</b>           |   |
| <b>Terminals</b>            | Rising Cage. 4mm <sup>2</sup> (12 AWG) cable max.   |
| <b>Enclosure</b>            | DIN 42880 6 Modules   |
| <b>Material</b>             | Noryl with fire protection to UL94-V-O. Self extinguishing  |
| <b>Dimensions</b>           | 106mm x 90mm x 58mm (6 modules wide)  |
| <b>Weight</b>               | ~ 325 gms   |
| <b>SAFETY</b>               |   |
| <b>Conforms to</b>          | EN 61010-1 Installation Category III  |



Typical Connection