

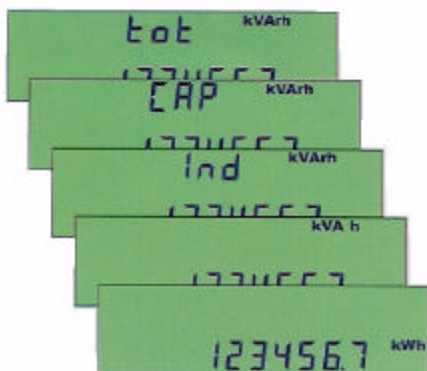
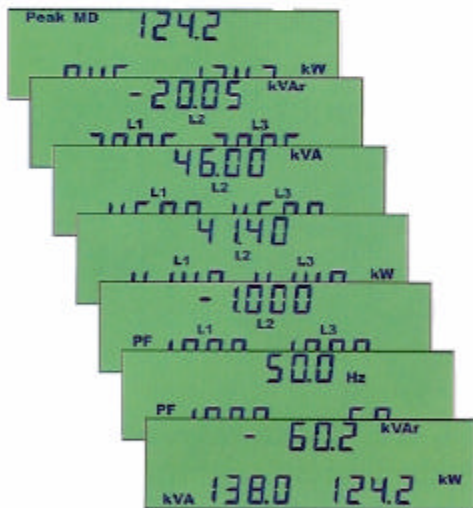
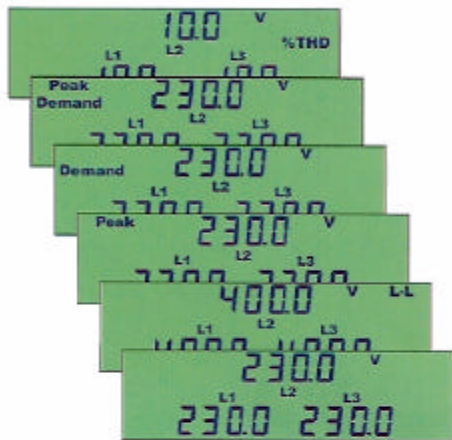
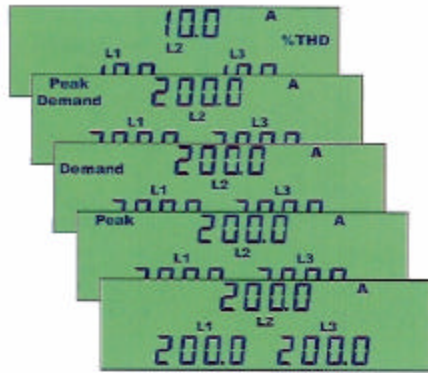
# MultiRail Rail RTU

## Power Meters with Communication



- **One Meter Measures ALL your values**  
Economically replaces Ammeters, Voltmeters, Switches, PF & kW Indicators, kWh Meters etc.
- **Fast Communications**  
RS485 MODBUS<sup>®</sup> protocol allows typically 10 meters to be read every second
- **Cost Effective & Easy to Use**  
Rail RTU for system use—Displays just address and baud rate.  
MultiRail adds a backlit LCD display of all parameters
- **Safe to Use**  
Fully Isolated Current Inputs for Complete User & Installation Safety
- **Small in Size yet great in Performance**  
Just 6 units wide. Measures every single cycle up to the 20<sup>th</sup> harmonics
- **Simple to Install**  
Software Detection/Correction of Wiring Error

# The MultiRail & Rail RTU Provide Something for Everybody



## For the Consultant

Simplify Specification. The *MultiRail* & *Rail RTU* cover 99% of all panel requirements.

Need a Display The *MultiRail*

Back of Panel only The *Rail RTU*

## For the Engineer

Provides Peace of Mind. The *MultiRail* & *Rail RTU* use the latest technology—offering accurate high speed continuous measurement irrespective of harmonics and waveform interruptions.

Simplifies switchboard design. The *MultiRail* & *Rail RTU* combine all measurement functions & switches into a single attractive unit

## For the Buyer

Save Time and Money. Available with or without display providing a cost effective solution for all power measurement & metering requirements, complimented by a full range of associated products.

## For the Installer

Speed Installation. The *MultiRail* & *Rail RTU* have large rising cage terminals, accepting cables up to 4mm Sq. and simple installation in a standard enclosure.

## For the Commissioning Engineer

Tolerant of wiring errors. The *MultiRail* & *Rail RTU* feature “Auto-Commissioning”, thus ensuring that a reverse CT connection will not cause reading errors. Per phase kW and PF measurement allows a cross-phase connection error to be quickly and easily detected.

Simplify installation checking. The *MultiRail* & *Rail RTU* can be tested at minimal loads—made possible by the full 4 digit resolution .

## For the End-User

Offer a high confidence level. *MultiRail* & *Rail RTU* performance and accuracy is fully specified—on and, ifs, buts or maybes.

Offer maximum usability. The *MultiRail* with a custom backlit LCD display are fully visible under all conditions an from all angles. Clear display legends ensure unambiguous readings with no multipliers required.

## Parameters

- Phase Amps
- Peak Amps
- Amp Demand
- Peak Demands
- Current % Harmonic Distortion
- Neutral Current

- Phase Volts
- Peak Phase Volts
- Line Volts
- Voltage Demand
- Peak Voltage Demands
- Voltage % Harmonic Distortion

- Per Phase PF
- Per Phase kW
- Per Phase kvar
- Per Phase kVA
- 3Ø PF
- 3Ø kW
- 3Ø kvar
- 3Ø kVA
- Frequency

- kW Demand
- Peak kW Demand

- Import kWh
- Capacitive kvarh
- Inductive kvarh
- Total kvarh
- Import kVAh

## Brief Specification

### Inputs

System	3Ø 3 or 4 wire unbalanced load
Voltage	230/400V, 480/277V, 208/120V Standard 110/63V Optional
Measurement Range	20% to 120%
Current	5A from external CT's 1A optional Fully Isolated 2.5kV
Measurement Range	0.5% to 120%
Operating Frequency	45 to 65Hz
Harmonics	Up to 20th harmonics
Input Loading Voltage	Less than 0.1VA per phase
Input Loading Current	Less than 0.1VA per phase
Overload Voltage	x2 for 2 seconds max.
Overload Current	x40 for 1 second max.

### Auxiliary Supply

Standard	115VAC ±15% 45-65Hz
Optional	230VAC ±15% 45-65Hz

### General

Enclosure	Noryl UL94-V0
Dimensions	106x90x58mm (4.17x3.54x2.28") DIN 43880, 6 modules wide
Weight	0.4kg / 0.88Lb
Terminals	Rising Cage, 4mm Sq. max cable
Display	Custom backlit supertwist LCD 3 sets 7mm (0.28:) digit + 2.5mm (0.10") legends
MultiRail	2½ digit 7.6mm (0.30") red LED 3 Comms diagnostic LED's
Rail RTU	
Environmental	
Temperature	-10°C to +65°C (14°F to 149°F) Operating
Humidity	<75% RH non-condensing
Programming	
CT Primary	5A to 5.000A
PT Primary	60V to 60.000V
Pulse Outputs 2	
Function	#1 Wh #2 Total varh
Pulse Length	100ms (up to 25sec. via Modbus)
Isolation	2.500V (50V #1 to #2)
Scaling	User programmable

### Communications

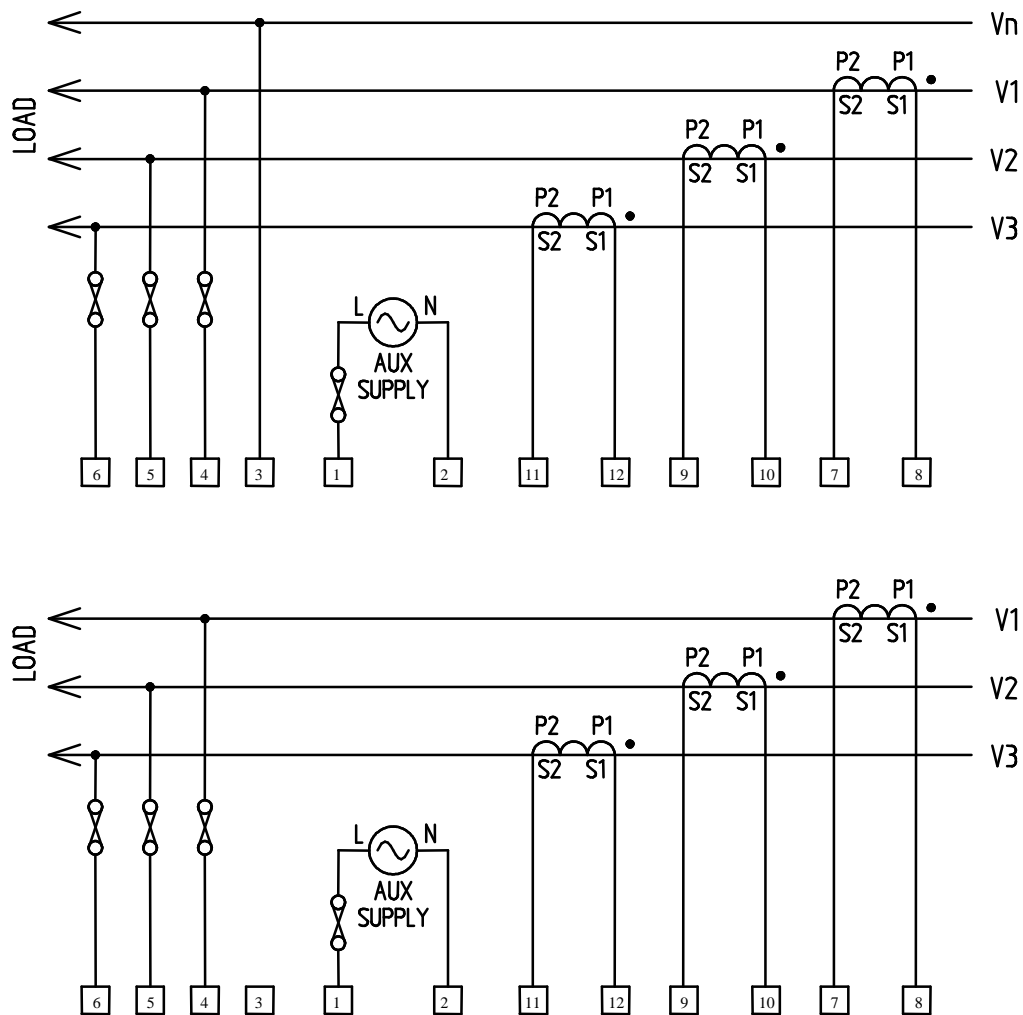
Protocol	MODBUS® RTU
Baud Rate	4.800, 9.600 or 19.200
Address Range	Rail RTU 1-199, MultiRail 1-247
Bus Loading	1/8 Unit (247 meters (810') per bus)
Latency	Command reply delay, 200ms max. 90% of replies within 100ms.

### Accuracy

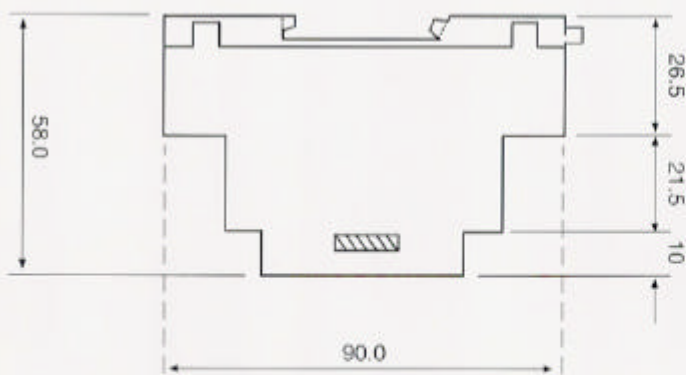
	per phase	3Ø
Current	±0.2% FS	N/A
5% to 120% FS	±1% Reading	
Voltage L-N	±0.2% FS	N/A
20% to 120% FS	±1% Reading	
Voltage L-L	±0.3% FS	N/A
20% to 120% FS	±1% Reading	
Watts	±0.4% FS	±0.6% FS
5% to 120% FS	±1% Reading	±1% Reading
VA	±0.6% FS	±1% FS
5% to 120% FS	±1.5% Reading	±1.5% Reading
var	±0.8% FS	±1.5% FS
5% to 120%	±2% Reading	±2% Reading
PF	±0.2°	±0.2°
Frequency		±0.05Hz
Neutral Current	N/A	±0.6% FS
5% to 120%		±2% Reading
Wh Register	N/A	Class 1 EN 61036
VAh Register	N/A	Class 2
varh Register	N/A	Class 2 IEC 1268

**NOTE:** All accuracies specified are ±1 digit

## Wiring Diagram



## Dimensions



All measurements are in millimeters

10mm=0.39", 21.5mm=0.85", 26.5mm=1.04", 45mm=1.77"

58mm=2.28", 62mm=2.44", 90mm=3.54", 106mm=4.17"

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