

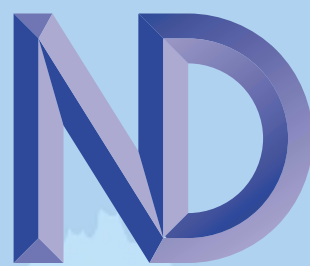
BRIEF SPECIFICATION

Inputs		
System	3ø 3 or 4 wire unbalanced load	
Voltage	230/400 Volt standard	
Optional Measurement Range	63/110, 120/208, & 277/480 Volt 20% to 120%	
Current	5 Amp from external CTs	
Optional	1 Amp Fully isolated 2.5kV	
Measurement Range	0.5% to 120%	
Operating Frequency	45Hz to 65Hz	
Harmonics	Up to the 20 th harmonic	
Input Loading		
Voltage	Less than 0.1VA per phase	
Current	Less than 0.1VA per phase	
Overload		
Voltage	x2 for 2 seconds max.	
Current	x40 for 1 second max.	
Accuracy		
	per phase	3ø
Current	±0.2%FS	N/A
5% to 120%FS	±1% Reading	
Voltage LN	±0.2%FS	N/A
5% to 120%FS	±1% Reading	
Voltage LL	±0.3%FS	N/A
5% 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%FS	±2% Reading	±2% Reading
PF	0.2°	0.2°
Frequency	±0.05Hz	
Neutral Current	N/A ±0.6%FS	
5% to 120%FS	±2% Reading	
Wh Register	N/A	Class 1 EN 61036
VAh Register	N/A	Class 2
varh Register	N/A	Class 2 IEC 1268
Auxiliary Supply		
Standard	230V ±15% 45 to 65Hz	
Optional	115V. Other values to order	
General		
Enclosures	Noryl UL94-V0	
Dimensions	106x90x58mm DIN 43880, 6 modules wide	
Weight	400 gms approx	
Terminals	Rising Cage, 4mm ² max. cable	
Display		
MultiRail	Custom backlit supertwist LCD	
	3 sets 7mm digits + 2.5mm legends	
RailRTU	2½ digit 7.6mm red LED	
	3 Comms diagnostic leads	
Environmental		
Temperature	-10°C to +65°C Operating	
Humidity	<75%RH non-condensing	
Programming		
CT Primary	5 Amp TO 6000 Amp	
VT Primary	60V to 60,000V	
Pulse Outputs		
Function	N°1 Wh. N°2 Total varh	
Pulse Length	100ms (up to 25sec. via MODBUS)	
Isolation	2500V (50V N°1 to N°2)	
Scaling	User programmable	
Communications		
Protocol	MODBUS® RTU	
Baud Rate	4800, 9600 or 19,200	
Address Range	Rail RTU 1-199, MultiRail 1-247	
Bus Loading	1/8 unit (247 meters per bus)	
Latency	Command reply delay, 200ms max. 90% of replies within 100ms	

NOTE All accuracies specified ±1 digit.

Northern Design (Electronics) Ltd

228 Bolton Road, Bradford, West Yorkshire, BD3 0QW. England
Telephone: +44 (0) 1274 729 533 Fax: +44 (0) 1274 721 074
e-mail: sales@ndmeter.co.uk
www.ndmeter.co.uk



MultiRail Rail RTU

Power Meters with Communications



◆ One Meter Measures ALL values

Power parameters & Harmonic Distortion

◆ Fast Communications

RS485 MODBUS® protocol allows typically 10 meters to be read every second

◆ Cost Effective & Easy to Use

Rail RTU for system use - Displays just address & baud rate
MultiRail adds a backlit LCD display of all parameters

◆ Safe to Use

Fully isolated Current inputs for complete user & installation safety

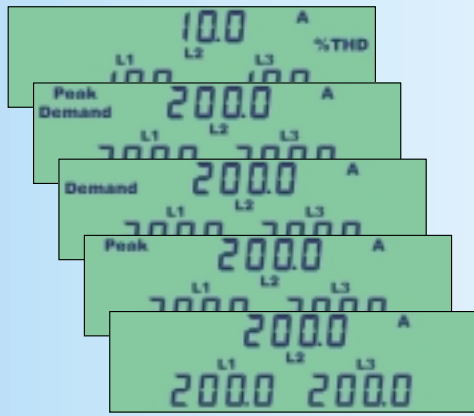
◆ Small in size yet great in performance

Just 6 units wide. Measures every single cycle up to the 20th harmonic

◆ Simple to Install

Software detection/correction of wiring errors

The *MultiRail* & *Rail RTU* Provide Something for Everybody



For the Consultant

Simplifies specification. The *MultiRail* & *Rail RTU* cover 99% of all LV 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.

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

For the Buyer

Saves time & money. Available with or without display providing a cost effective solution for all power measurement & metering requirements, complemented by a full range of associated products.

For the Fitter

Speeds installation. The *MultiRail* & *Rail RTU* have large rising cage terminals, accepting cables up to 4mm², 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 & PF measurement allow a cross phase connection error to be quickly & easily detected.

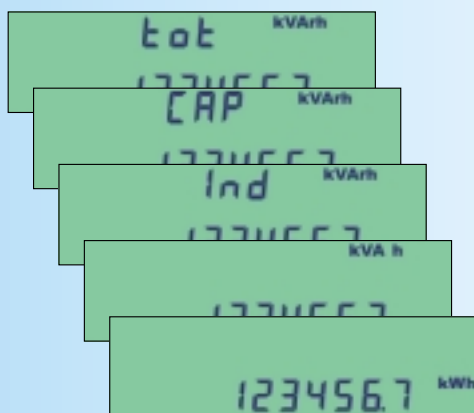
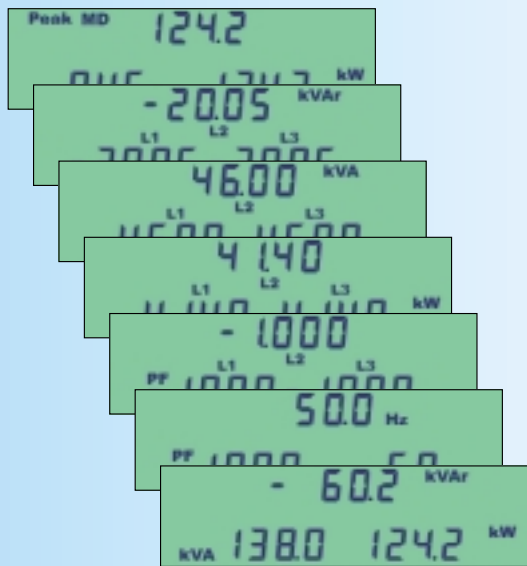
Simplifies installation checking. The *MultiRail* & *Rail RTU* can be tested at minimal loads - made possible by full 4 digit resolution.

Easy System installation. The *Rail RTU* displays addresses & baud rate for instant checking.

For the End-User

Offers a high confidence level. The *MultiRail* & *Rail RTU* performance & accuracy is fully specified - no buts or maybe's.

Offers maximum usability. The *MultiRail*, with its custom backlit LCD is fully visible under all conditions & from all angles. Clear display legends ensure unambiguous readings with no multipliers required.



Parameters

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

- ◆ Phase Volts
- ◆ Peak Phase Volts
- ◆ Line Volts
- ◆ Voltage Demands
- ◆ 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