



# CROMPTON INSTRUMENTS

## DRS-100-3P – DIRECT CONNECT 100A THREE PHASE ENERGY METER

The DRS range of MID APPROVED, direct connected energy meters represents a multi-function range of kWh meters in the Crompton Instruments portfolio.

The DRS-100-3P, energy meter is an accurate and cost effective solution for measurement and display of importing and exporting energy parameters for three phase networks. Its easy programming, mounting and user-friendly navigation make the DRS-100-3P an ideal choice for customers who require reliable energy measurement.

The product features a DIN-rail enclosure and backlit LCD display.

The DRS-100-3P has two communication interfaces

- Modbus™ RTU protocol
- Two pulsed outputs

### Product Codes

Description	Part number
MID energy meter Three phase DIN-rail mounted 100A direct connect Modbus + 2 pulsed outputs	DRS-100-3P-MOD-01

### Features

- MID D certified
- Class B (kWh) to EC 2004/22/EC
- Direct connect to 100A
- DIN-rail enclosure DIN 43880
- Import / export kWh
- Modbus™ RTU protocol
- Two pulsed output

### Benefits

- Cost effective
- Simple navigation
- Tamper-proof

### Approvals

- IEC 50470-1
- IEC 50470-3
- IEC 62053-21
- IEC 62052-11
- IEC 61010-1
- IEC 60068



# DRS-100-3P – DIRECT CONNECT 100A THREE PHASE ENERGY METER

## Specifications

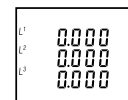
Input	
Nominal input voltage	63.5-276V AC L-N (173-500V L-L) 600V MAX
Max. continuous input overload voltage	120% of nominal
Max. short duration input voltage	2 x nominal voltage for 1 second
Nominal input voltage burden	< 0.2VA per phase
Nominal input current	0.5-10 (100A)
Nom. Input current burden	< 0.5 VA
Max. continuous input overload current	120% of nominal
Max. short duration input current	20 x nominal current for (300 msec)
Auxiliary	
Operating range	Self powered
Supply burden	< 10 VA
Accuracy	
Voltage (V)	+/- 0.5% of range maximum
Current (A)	+/- 0.5% of range maximum
Frequency (Hz)	+/- 0.2% of mid-frequency
Power factor (PF)	+/- 1% of unity (0.01)
Active power (W)	+/- 1.0% of range maximum
Reactive power (VAr)	+/- 1.0% of range maximum
Apparent power (VA)	+/- 1.0% of range maximum
Active energy (kWh)	+/- 1.0% of range maximum to IEC 62053-21
Reactive energy (kVArh)	+/- 1.0% of range maximum to IEC 62053-24
THD	1% to 31st harmonic
Response Time	1 sec, typical, to >99% of final reading at 50Hz
Measured Range	
Voltage (V)	5 – 120% of nominal (Min 100V – self powered)
Current (A)	5 – 120% of nominal
Frequency (Hz)	44 – 66 Hz +/- 2%
Power (W, VAr, VA)	5 – 144% of nominal (bi-directional)
Energy	8 digit, upto 9999999.9 kWh / kVArh
Power factor	4 quadrant
THD	0 – 40% upto 31st harmonic
Input Waveform	Sinusoidal (distortion factor < 0.05)
Environment	
Operating temperature	-25°C to +55°C
Storage temperature	-40°C to +70°C
Relative humidity	0 to 95%, non-condensing
Shock	30g in 3 planes
Vibration	10Hz to 50Hz, IEC 60068-2-6, 2g
Dielectric voltage	4kV between circuits and measured inputs
Altitude	3000m
Warm-up	1 minute
Magnetic field of external origin	Terrestrial flux
Outputs	
Pulsed output relay (configurable)	Opto-coupled, potential-free SPST-NO contact
Contact rating current	2-27mA at 27V DC
Contact rating voltage	5-27V DC
Pulse width	60 / 100 / 200 ms
Pulse rate	0.01 / 0.1 / 1 / 10 / 100 kWh / kVArh Default: 1 pulse per Wh/VArh
Pulsed output relay (non-configurable)	3200IMP/kWh
Communications	Modbus RTU (RS485)
Type	2-wire half duplex
Baud rate	2400, 4800, 9600, 19.2 K, 38.4 K
Address	1 to 247
Parity	None (default) / Odd / Even
Stop bits	1 (default) / 2
Enclosure	
Enclosure style	DIN-rail to DIN 43880
Dimensions	100x72x66mm (LxWxH)
Protection rating	Front IP51
Material	Self extinguishing UL 94 V-O
Weight	340 g
Cable size	2.5mm <sup>2</sup> – 25mm <sup>2</sup> stranded cable. AWG 12 – 4.

### Voltage and Current

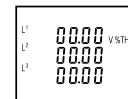
Each successive press of the  button selects a new parameter.



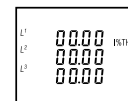
Phase to neutral voltages



Current on each phase



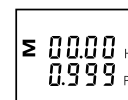
Phase to neutral voltage THD%



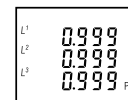
Current THD% for each phase

### Frequency and Power Factor and Demand

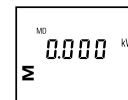
Each successive press of the  button selects a new parameter.



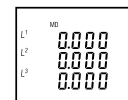
Frequency and Power Factor (total)



Power Factor of each phase




Maximum Power Demand



Maximum Current Demand

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## Power

Each successive press of the  button selects a new parameter.

L1 0.000 kW  
L2 0.000  
L3 0.000

Instantaneous Active Power in kW

L1 0.000 kVar  
L2 0.000  
L3 0.000

Instantaneous Reactive Power in kVar


L1 0.000 kVA  
L2 0.000  
L3 0.000

Instantaneous Volt-Amps in KVA

Σ 0.000 kW  
0.000 kVar  
0.000 kVA

Total kW, kVarh, kVA

## Energy Measurements

Each successive press of the  button selects a new parameter.

IMPORT 0.000 kWh  
0.314

Imported Active Energy in kWh

EXPORT 0.000 kWh  
0.000

Exported Active Energy in kWh

IMPORT 0.000 kVarh  
0.000

Imported Reactive Energy in kVarh

EXPORT 0.000 kVarh  
0.000

Exported Reactive Energy in kVarh

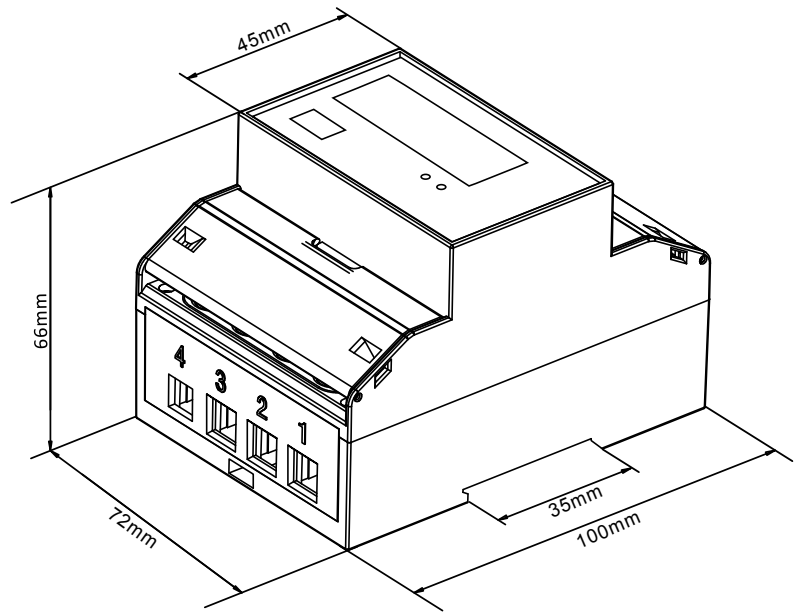
Σ 0.000 kWh  
0.314

Total Active Energy in kWh

Σ 0.000 kVarh  
0.000

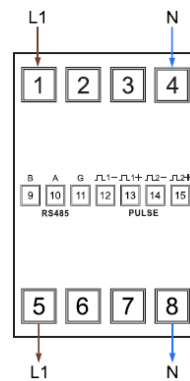
Total Reactive Energy in kVarh

## Dimensions

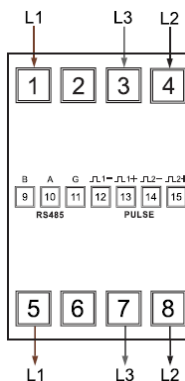


## Wiring Diagrams

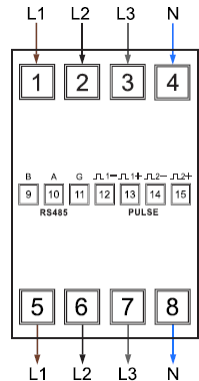
### Single Phase



### Three Phase Three Wire



### Three Phase Four Wire



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### About TE Connectivity

**TE Connectivity Ltd.** (NYSE: TEL) TE Connectivity is a \$12 billion global technology leader. Our commitment to innovation enables advancements in transportation, industrial applications, medical technology, energy, data communications, and the home. TE's unmatched breadth of connectivity and sensor solutions, proven in the harshest of environments, helps build a safer, greener, smarter and more connected world. With 75,000 people – including more than 7,000 engineers – working alongside customers in nearly 150 countries, we help ensure that EVERY CONNECTION COUNTS.

WHEREVER ELECTRICITY FLOWS, YOU'LL FIND TE ENERGY



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For more information

Call 1300 36 26 26 | [sales@colterlec.com.au](mailto:sales@colterlec.com.au) | [www.colterlec.com.au](http://www.colterlec.com.au)