

DRR-CT2-1P



SINGLE PHASE CURRENT TRANSFORMER CONNECTED AC ENERGY METER

KEY FEATURES

- CT Connected Meter
- Programmable CT ratios
- Two Buttons
(for easy navigation)
- Dual Tariff
- MID Approved
- LCD & Backlit Display
- Impulse LED
- Din rail mounted

OPTIONAL FEATURES

- Remote Communication
- Tariff Input
- Pulse Outputs

APPLICATIONS

- Internal Energy billing/ monitoring/auditing
- Sub-metering
- Genset, Test Benches & Laboratories

RELEVANT STANDARDS AND TEST REPORTS

Accuracy Standard :

- EN50470-3 : 2022
- IEC62053-21

IP for water & dust:

- IEC 60529

Plastic Flammability Standard:

- UL 94

Safety Standard:

- 62052-31: 2015

TE Connectivity's Crompton Instruments Single Phase CT Connected Energy Meter is designed for residential, commercial, and light industrial applications requiring reliable electrical energy metering.

Powered by advanced microcontroller technology, the meter is suitable for measuring and monitoring electrical parameters in single-phase, two-wire networks. It supports external current transformer (CT) connections with 1 A or 5 A nominal current input, offering flexibility for various installation environments.

The meter features tariff counters selectable via MODBUS, MBUS, or tariff input, enabling customized energy tracking. A bright, intuitive LCD display, along with pulse outputs and an impulse LED, provides clear and responsive energy monitoring.

Designed for bidirectional measurement of Active, Reactive, and Apparent Energy, the meter also accurately captures key electrical parameters including Voltage, Current, Frequency, Active Power, Reactive Power, Apparent Power, and Power Factor in single-phase networks. These values are accessible both locally on the display and remotely via MODBUS or MBUS communication.

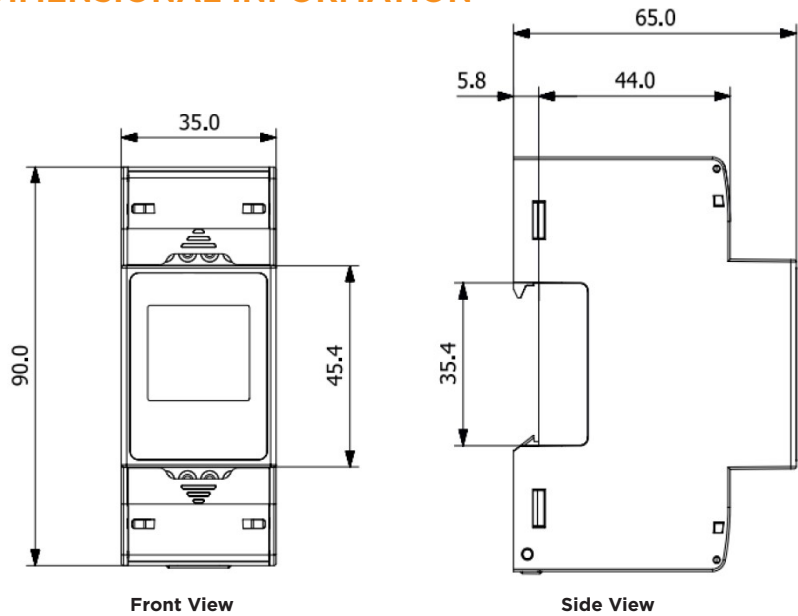
Demand parameters for Active Power (Import/Export), Reactive Power (Import/Export), Apparent Power, and Current are calculated based on a configurable demand integration time, allowing for tailored energy analysis.

The meter includes built-in support for MODBUS RTU and MBUS protocols for seamless remote monitoring. Its standard DIN rail mount housing ensures quick and secure installation.

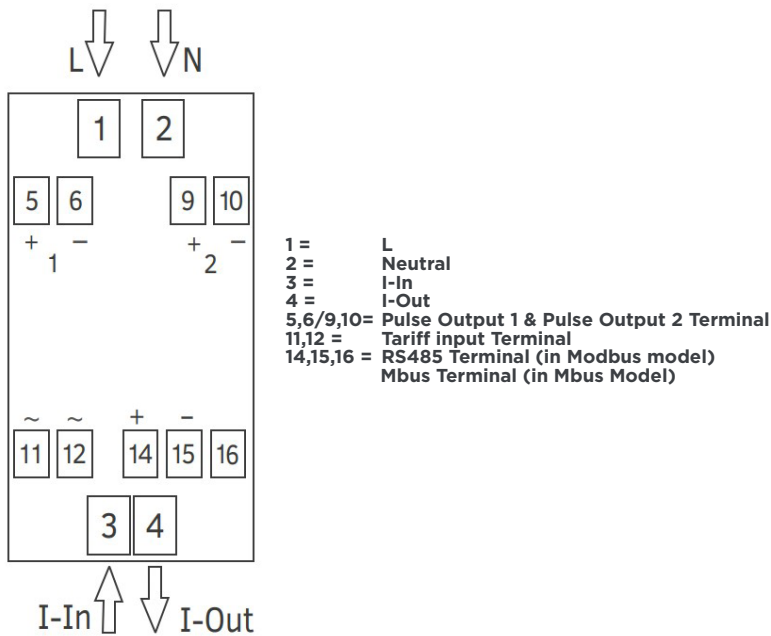
PART NUMBERS

Product selection	
Product	Description
DRR-CT2-1P-PLS-01	Single Phase, 1/5A CT Connected,1xDI, 2xSO
DRR-CT2-1P-MOD-01	Single Phase, 1/5A CT Connected,1xDI, 2xSO, 1xModbus
DRR-CT2-1P-MBUS-01	Single Phase, 1/5A CT Connected, 1xDI,2xSO, 1xMBus

DIMENSIONAL INFORMATION



WIRING DIAGRAMS



Wiring Guideines	
Current / Voltage Wire Size	1 - 2.5 mm² (use with insulated pin type lug)
Current/Voltage Tightening Torque	0.4 Nm
RS485,MBUS,SO,Tariff Input Wire Size	1 to 2.5 mm² (Solid/Stranded with pin type lug)
RS485,MBUS,SO,Tariff Input Tightening Torque	0.4 Nm

Technical Specifications		
Input		
Reference Voltage (U_n)	230 VLN	
Operating Voltage Range	184 - 276 VLN	
Power consumption in Voltage Circuit	< 2 W (7 VA)	
Current Measurement Parameters	1A	5A
Starting Current ($I_{st} = 0.04 \cdot I_{tr}$)	2 mA	10 mA
Minimum Current ($I_{min} = 0.5 \cdot I_{tr}$)	10 mA	50 mA
Transitional Current (I_{tr})	50 mA	250 mA
Nominal Current ($I_n = 20 \cdot I_{tr}$)	1 A	5 A
Maximum Current for 1A ($I_{max} = 120 \cdot I_{tr}$) for 5A ($I_{max} = 24 \cdot I_{tr}$)	6 A	6 A
Operating Current Range	10mA-1A (6A)	50mA-5A (6A)
Short time Over-current	$20 \cdot I_{max}$ for 0.5 seconds	
Power consumption in Current Circuit	<0.03 VA	
Frequency	50Hz	
Auxiliary Supply		
Type	Self Powered	
Reference Conditions for Accuracy		
Reference Temperature	23°C ± 2°C	
Input Voltage	$U_n \pm 1\%$	
Input Waveform	Sinusoidal (distortion factor <2%)	
Input Frequency	50 Hz ± 0.3%	
Accuracy		
Active Energy (Import/Export)	Class B as per EN50470-3:2022 Class 1 as per IEC 62053-21	
Reactive Energy (Import/Export)	+/- 2%	
Apparent Energy	± 1.0 %	
Voltage	± 0.5% of of range max	
Current	± 0.5% of Nominal value	
Frequency	± 0.2% of Mid frequency	
Active Power	± 1% of range max	
Reactive Power	± 1% of range max	
Apparent Power	± 1% of range max	
Power Factor	±1% of unity	
Pulse Outputs		
SO1 & SO2	Passive Opto-isolated	
Contact Range	5-27V DC, 27 mA DC (max)	
Pulse Duration	60, 100 and 200 millisecond	
Pulse Rate	1, 10, 100, 1000 pulse per kWh/kVAh/kVAh	
Communication Interface (MODBUS)		
Protocol	RS485 MODBUS	
Baudrate	2.4 /4.8 / 9.6 /19.2/38.4 kbit	
Data Width	8	
Parity- Stop Bits	None -1 / None -2/ Even -1 / Odd -1	
Response Time	<200 milliseconds @ 9.6 kbps Baudrate (<1000 milliseconds for 2.4/4.8 Kbit Baudrate)	
Communication Interface (MBUS)		
Protocol	EN13757-3 MBUS	
Baudrate	0.3/ 0.6/ 1.2/ 2.4/ 4.8/ 9.6 kbps	
Data Width	8	
Parity- Stop Bits	Even-1	
Address	1....250	

Technical Specifications	
Impulse LED :	
Impulse Rate	1000 pulse per kWh
Display Ranges :	
Active Energy	0.01-99999.99 kWh (& Autoranging further)
Reactive Energy	0.01-99999.99 kVARh & Autoranging further)
Apparent Energy	0.01-99999.99 kVAh & Autoranging further)
Active Power	0-3000 KW
Reactive Power	0-3000 KVAR
Apparent Power	0-3000 KVA
Tariff Input :	
0 V	Low
230 V	High
Installation:	
Installation	Indoor
Enclosure	IP51 (front side) & IP20 (terminal side) (IEC 60529: 2001)
Housing	2 Module DIN 43880
Dimensions	35 mm X 90 mm X 65 mm
Weight	250 gm
Mounting	35 mm DIN Rail
Safety :	
Safety Standard	According to 62052-31:2015
EMC Standard	IEC61326 (IEC)
Installation Category	III
Protective Class	II
Pollution Degree	2
AC Voltage Test	4 kV AC for 1 minute
Impulse Voltage Withstand	6.0 kV (1.2 microsecond waveform)
Housing flame Resistance	Flammability Class V-0 acc. to UL 94, Self Extinguishing, Non Dripping, free of Halogen
Environmental Conditions :	
Mechanical Environment	M1
Electromagnetic Environment	E2
Operating Temperature	-25°C to +55°C
Storage/Transport Temperature	-40°C to +70°C
Relative Humidity	0... 90% (Non Condensing)
Altitude	<2000 m max

Technical Specifications		
Sr No.	Parameters	1 Phase 2 Wire
1	Import Active Energy	✓
2	Export Active Energy	✓
3	Total Active Energy	✓
4	Import Reactive Energy	✓
5	Export Reactive Energy	✓
6	Total Reactive Energy	✓
7	Apparent Energy	✓
8	Tariff 1 Import Active Energy	✓
9	Tariff 1 Export Active Energy	✓
10	Tariff 1 Total Active Energy	✓
11	Tariff 1 Import Reactive Energy	✓
12	Tariff 1 Export Reactive Energy	✓
13	Tariff 1 Total Reactive Energy	✓
14	Tariff 1 Apparent Energy	✓
15	Tariff 2 Import Active Energy	✓
16	Tariff 2 Export Active Energy	✓
17	Tariff 2 Total Active Energy	✓
18	Tariff 2 Import Reactive Energy	✓
19	Tariff 2 Export Reactive Energy	✓
20	Tariff 2 Total Reactive Energy	✓
21	Tariff 2 Apparent Energy	✓
22	Partial Import Active Energy	✓
23	Partial Export Active Energy	✓
24	Partial Total Active Energy	✓
25	Partial Import Reactive Energy	✓
26	Partial Export Reactive Energy	✓
27	Partial Total Reactive Energy	✓
28	Partial Apparent Energy	✓
29	Max Import kVA Demand	✓
30	Max Current Demand	✓
31	Max Export kVA Demand	✓
32	Max Import kW Demand	✓
33	Max Export kW Demand	✓
34	Max Import kVAR Demand	✓
35	Max Export kVAR Demand	✓
36	Voltage	✓
37	Current	✓
38	Frequency	✓
39	Active Power	✓
40	Reactive Power	✓
41	Apparent Power	✓
42	Power Factor	✓
43	Number of Interruptions	✓

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