

Eastron

Energy Measurement device



Catalogo

Importatore e Centro Assistenza:

Ceam control Equipment srl

Via Val D'Orme 291 - 50053 Empoli Firenze Italy

Web. www.ceamgroup.com - www.sensorstore.it

Email: info@ceamgroup.it

Piva. It013107450482



CEAM® Control Equipment

www.ceamgroup.com



ISO9001:2015 MID

COMPANY INTRODUCTION

EASTRON Electronics, partner di CEAM Control Equipment è una delle più avanzate aziende tecnologiche asiatiche, specializzata nella ricerca e sviluppo di dispositivi e Smart Meter per l'energia elettrica con eccellenti prestazioni in termini di affidabilità e precisione.

La produzione prevede moduli industriali Power Meter e Energy Meter, singoli e trifase in varie soluzioni, ciechi e anche dotati di display locale, in particolare moduli adatti al montaggio Din Rail e anche da pannello dotati di porta di comunicazione seriale Rs485 con protocollo Modbus e di una vasta gamma di accessori, come trasformatori amperometrici, o gateway di rete Lan/Intranet/Internet come il modello CEAM D9019 dotato di web server a bordo.

Tutti prodotti perfettamente compatibili con la potentissima piattaforma di monitoraggio web CEAM CWS, che oltre e permettere la realizzazione di sistemi di supervisione e controllo distribuito su scala locale

La qualità è il primo nostro valore condiviso, EASTRON e CEAM seguono rigorosamente le norme ISO9001:2008 sia per la progettazione che la produzione ed il management.

EASTRON ha ottenuto anche la conformità MID (Measuring Instrument Directive) D dall'ente certificatore SGS.

Ed i prodotti hanno superato l'European MID B - CE - ROHS 2.0 Authentication and complied con i più restrittivi standard IEC - EN - G/B Standard

E possiamo essere considerati uno dei migliori fornitori di questo tipo di strumenti di altissima qualità a prezzi molto competitivi e grazie anche a CEAM Control Equipment in Italia siamo in grado di offrire un eccellente servizio di assistenza post vendita reale.

Infine teniamo a sottolineare che siamo costantemente impegnati per produrre componenti, sistemi e nuove tecnologie che a loro volta servono per ricavare informazioni affidabili e tempestive, real time che oggi sono il vero valore per il moderno management d'impresa, tutti i nostri prodotti sono costantemente aggiornati e migliorati per garantire sempre migliori prestazioni e facilità di utilizzo.

LA NOSTRA MISSIONE:

Creare valore per i nostri clienti , con il nostro lavoro ed il nostro ingegno ma soprattutto con la forza della squadra con tutti i nostri partner strategici come CEAM Control Equipment con i quali vengono condivisi tutti i valori di etica, serietà, qualità e dedizione.



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What's MID?

The Measuring Instruments Directive (2014/32/EC) is a directive by the European Union, which seeks to harmonise many aspects of legal metrology across all member states of the EU. Its most prominent tenet is that all kinds of meters which receive a MID approval may be used in all countries across the EU.

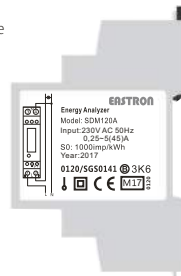
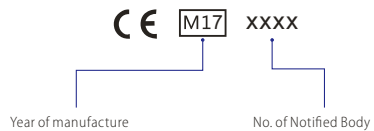
Which measuring instruments MID covers?

- > The MID covers these measuring instruments:
 - gas meters
 - meters for liquids other than water
 - meters for liquids other than water - ancillary equipment
 - material measures of length
 - continuous totalising weighing machines
 - electrical energy meters
 - Taximeters
 - measuring systems for liquids other than water Directive
 - automatic checkweighing and weight grading machines
 - hot-water meters Partial repeal
 - cold-water meters, as concerns clean water meters

Measuring instruments that comply with the MID bear:

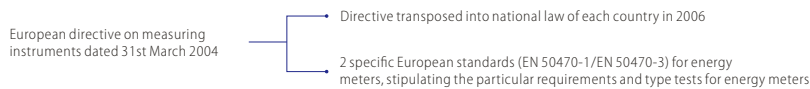
The measuring instruments that comply with the MID bear the marks:

- > the CE mark
- > a capital letter "M" and the last two digits of the year of its affixing, surrounded by a rectangle
- > the identification number of the notified body involved in conformity assessment



Regulatory Context

The Measuring Instruments Directive was published on 30 April 2004 in the Official Journal of the EU, but not applied until after 30 Oct 2006 and there is a 10-year transition period. National implementations of the new legislation are currently in the works. The MID directive is updated by 2014/32/EU.



MID becomes the ONLY accepted European Legislation from 2016!

Conditions of application

In the European Union, the use of MID-certificated meters on "Private" electrical networks has been mandatory in the context of active energy billing based on consumption reading by index differences. Typical examples include; camping sites, holiday rentals, students accommodation, office building, shopping centers, marinas, exhibition halls, electric vehicle recharging station, etc.

As the MID is applicable to all European Union Member States, certification of ammeter by a Notified Body (NB) means that no other testing by a national legal metrological service is required. So a MID certificated Eastron meter can be used as an active energy billing meter in all European Union countries.

The Directive also imposes product certification according to the EN50470-1/-3 standards, as well as design certification (Module B) and manufacturing process certification (Module D) by a Notified Body. In order to ensure product traceability and guarantee its metrological value, thus to protect consumers.

Certificates MID B + D we have:

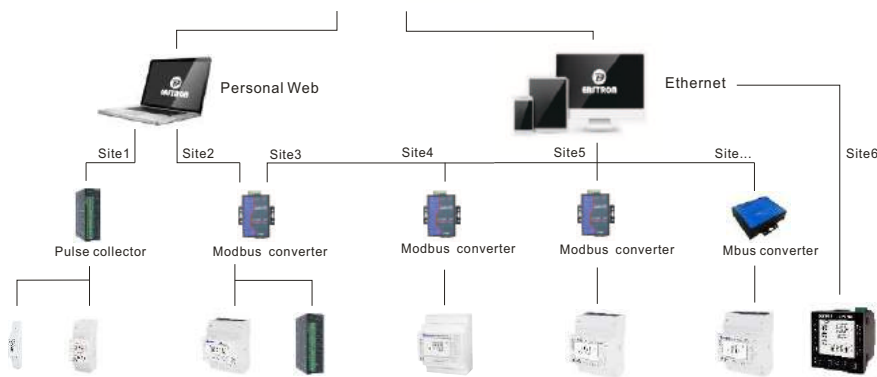


Which products of us are MID approved by SGS.

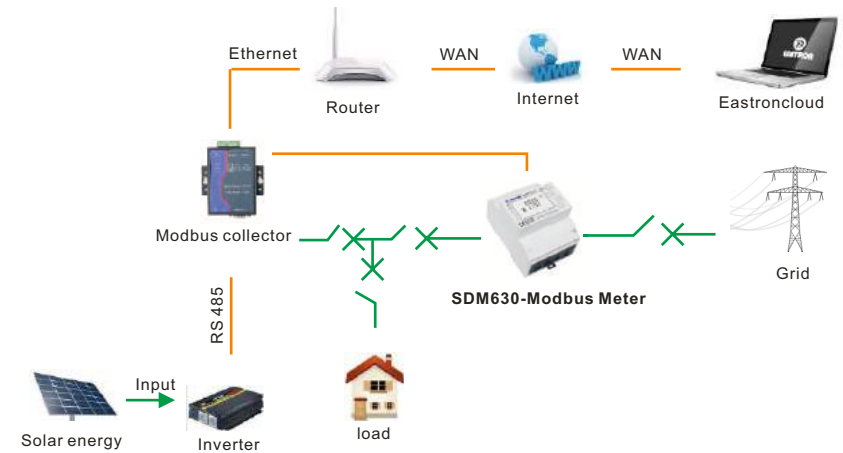
Till present, Eastron has the MID approved models cover these items:

			1. SDM120 Series	SGS0141
			2. SDM220 Series	SGS0172
			3. SDM230 Series	SGS0206
			4. SDM630MCT series	SGS0142
			5. SDM630 100A series	SGS0151
			6. SDM72 Series	SGS0213

Eastron Energy Management System



Bi-directional Energy Measurement Solution



Description

In many residential and commercial buildings, the need to control and measure the energy consumption of single users is becoming more important for an accurate cost allocation. The accurate measurement of energy consumption is the first step in the collection and analysis of the information required for effective energy management. Information about the quality of the power used can improve on-site efficiency and facilitate troubleshooting in the case of any problem to the electrical installation.

Eastron Energy Monitoring and Management system (EEMM system) provides all important electrical information so that operators can check power consumption records, identify consumption trends and take corrective action. By analyzing the energy consumption profile, operators can also aggregate loads and negotiate more favorable tariffs with utility companies. Alarm thresholds can be set to warn if preset limits are reached, so that corrective action can be taken. Real-time power consumption monitoring allows energy managers to anticipate overloads and avoid circuit breaks.



Description

To lower the carbon emission and bring a greener world, PV solar panels are widely used and getting more and more important and prevalent. The energy generated by PV solar panel is either used by the owners, or uploaded to the Public grid. To know how much energy produced and used become important to the PV solar panel users. EASTRON PV Bi-directional Energy Measurement Solution for PV solar is developed to enable users monitoring and controlling the "Import" and "Export" energy happens.



TCP Gateway



EST485-P32/16
--Pulse Collector

- 16/32 Pulse inputs
- RS485 Modbus RTU output
- DIN Rail mounted
- 24VDC/220VAC power supply IP20
- Max. count: 4294967296



ESP-2
--Modbus RTU to Modbus TCP converter

- Modbus RTU to Modbus TCP converter
- 9~24V DC power supply
- RJ45 Ethernet port 10/100M
- Serial port: RS485/232
- Max. 4 serial port
- 1200~115200bps
- Max. 32 spot on one Bus line



ESP-5
--M-bus to TCP converter

- 12V DC power supply
- RJ45 Ethernet port 10/100M
- M-bus load: 100mA / 200mA / 300mA
- 300~9600bps

Energy Meter



SDM120-Modbus
--Single phase 45A

- Single phase
- 1 module
- Multi function
- RS485 Modbus RTU
- Up to 45A direct connection
- MID available



SDM230-Modbus
--Single phase 100A

- Single phase
- 2 module
- Multi function
- RS485 Modbus RTU
- Up to 100A direct connection
- MID available



SDM630-Modbus
--Three phase 100A

- Three phase
- 4 module
- Multi function
- RS485 Modbus RTU
- Up to 100A direct connection
- MID available

SDM120 SERIES

> Single Phase



Model	Specifications	Description	Size
SDM120A	230V,0.25~5(45)A,50/60Hz	Energy(kWh), Pulse output	1 Module
SDM120D/DB	230V / 110V, 0.25~5(45)A,50/60Hz	Energy(kWh), Pulse output	1 Module
SDM120Modbus	230V / 110V, 0.25~5(45)A,50/60Hz	Multifunction, RS485 Modbus,Pulse outputs	1 Module
SDM120CT-Modbus	230V / 110V, 100mV CT, 50/60Hz	Multifunction, RS485 Modbus,Pulse outputs	1 Module
SDM120Mbus	230V,0.25~5(45)A,50/60Hz	Multifunction, Mbus,Pulse outputs	1 Module
SDM120CT-Mbus	230V / 110V, 100mV CT, 50/60Hz	Multifunction, Mbus,Pulse outputs	1 Module

SDM220 SERIES

> Single Phase



Model	Specifications	Description	Size
SDM220Modbus	230V/110V,0.25~5(100)A,50/60Hz	Multifunction, RS485 Modbus, Pulse outputs	2 Modules
SDM220Mbus	230V,0.25~5(100)A,50/60Hz	Multifunction, Mbus, Pulse outputs	2 Modules
SDM220MT	230V/110V,0.25~5(100)A,50/60Hz	4 tariffs, Multifunction, RS485 Modbus, Pulse outputs	2 Modules
SDM220Pulse	230V/110V,0.25~5(100)A,50/60Hz	Multifunction, Pulse outputs	2 Modules
SDM220Standard	230V,0.25~5(100)A,50/60Hz	Import/ Export kWh, RS485 Modbus, Pulse outputs	2 Modules

SDM230 SERIES

> Single Phase



Model	Specifications	Description	Size
SDM230A	230V,0.5~10(100)A,50/60Hz	Energy(kWh), Pulse output	2 Modules
SDM230D	230V/110V,0.5~10(100)A,50/60Hz	Energy(kWh), Pulse output	2 Modules
SDM230DR	230V/110V,0.5~10(100)A,50/60Hz	Energy(kWh) and Power(W),Energy Resettable, Pulse output	2 Modules
SDM230Bi	230V/110V,0.5~10(100)A, 50/60Hz	Import /Export kWh,Power(W),Energy Resettable,Pulse outputs	2 Modules
SDM230Modbus	230V/110V,0.5~10(100)A,50/60Hz	Multifunction, RS485 Modbus,Pulse outputs	2 Modules
SDM230Mbus	230V,0.5~10(100)A,50/60Hz	Multifunction, Mbus,Pulse outputs	2 Modules
SDM230Pulse	230V,0.5~10(100)A,50/60Hz	Multifunction, Pulse outputs	2 Modules
SDM230Standard	230V,0.5~10(100)A,50/60Hz	Import / Export kWh, RS485 Modbus,Pulse outputs	2 Modules
SDM230-2T	230V,0.5~10(100),50/60Hz	2 tariffs, Multifunction, RS485 Modbus,Pulse output	2 Modules

SDM320 SERIES

> Single Phase



Model	Specifications	Description	Size
SDM320D	230V,0.5~10(100)A,50/60Hz	Energy(kWh), Pulse output	4 Modules
SDM320E	110V/220V,0.5~10(100)A,50/60Hz	Energy(kWh), Pulse output	4 Modules
SDM320M	230V,0.5~10(100)A,50/60Hz	Multifunction, RS485 Modbus,Pulse outputs	4 Modules

SDM72 SERIES

> Three Phase



Model	Specifications	Description	Size
SDM72D	3X230(400)V,0.5~10(100)A,50/60Hz 3X127(230)V,0.5~10(100)A,50/60Hz	Energy(kWh), Pulse output	4 Modules
SDM72DR	3X230(400)V,0.5~10(100)A,50/60Hz	Energy(kWh) and Power(KW),Energy Resettable, Pulse output	4 Modules
SDM72Bi	3X230(400)V,0.5~10(100)A,50/60Hz	Import / Export kWh,Power, Energy Resettable,Pulse outputs	4 Modules

SDM72 CT SERIES

> Three Phase



Model	Specifications	Description	Size
SDM72CT-D	3X230/400V,0.25~5(6)A,50/60Hz	Energy(kWh), Pulse output	4 Modules
SDM72CT-DR	3X230/400V,0.25~5(6)A,50/60Hz	Energy(kWh) and Power(W),Energy Resettable, Pulse output	4 Modules
SDM72CT-Bi	3X230/400V,0.25~5(6)A,50/60Hz	Import / Export kWh,Power(W),Energy Resettable,Pulse outputs	4 Modules

SDM630 100A SERIES

> Three Phase



Model	Specifications	Description	Size
SDM630Modbus	3X230/400V,0.5~10(100)A,50/60Hz	Multifunction, RS485 Modbus,Pulse outputs	4 Modules
SDM630Mbus	3X230/400V,0.5~10(100)A,50/60Hz	Multifunction, Mbus,Pulse outputs	4 Modules
SDM630MT	3X230/400V,0.5~10(100)A,50/60Hz	4 tariffs, Multifunction, RS485 Modbus,Pulse outputs	4 Modules
SDM630Pulse	3X230/400V,0.5~10(100)A,50/60Hz	Multifunction, Pulse outputs	4 Modules
SDM630Standard	3X230/400V,0.5~10(100)A,50/60Hz	Import /Export kWh, RS485 Modbus,Pulse outputs	4 Modules

SDM630 MCT SERIES

> Three Phase



Model	Specifications	Description	Size
SDM630MCT	3X230/400V,1A or 5A,50/60Hz	Multifunction, RS485 Modbus, Pulse outputs	4 Modules
SDM630MCT-Mbus	3X230/400V,1A or 5A,50/60Hz	Multifunction, Mbus, Pulse outputs	4 Modules
SDM630MCT-2T	3X230/400V,1A or 5A,50/60Hz	2 Tariffs, Multifunction, Mbus, Pulse outputs	4 Modules
SDM630MV CT	3X230/400V,333mV CT,50/60Hz	Multifunction, RS485 Modbus, Pulse outputs	4 Modules
SDM630MCT-RJ	3X230(400)V,100mA or 333mV CT,50/60Hz	Plug-in Solution,Multifunction, RS485 Modbus, Pulse outputs	4 Modules
SDM630MCT-2L	3X230(400)V,100mA or 333mV CT,50/60Hz	Dual load, Multifunction, RS485 Modbus	4 Modules

SDM630 2C SERIES

> Three Phase



Model	Specifications	Description	Size
SDM630 CT-2C	3X230(400)V,1A or 5A,50/60Hz	Dual load Multifunction, RS485 Modbus,Pulse outputs	6 Modules
SDM630MV-2C	3X230(400)V,333mV CT,50/60Hz	Dual load Multifunction, RS485 Modbus,Pulse outputs	6 Modules

SDM530 SERIES

> Three Phase



Model	Specifications	Description	Size
SDM530D	3X230(400)V,0.5~10(100)A,50/60Hz 3X127(230)V,0.5~10(100)A,50/60Hz	Energy(kWh), Pulse output	7 Modules
SDM530D-2T	3X230(400)V,0.5~10(100)A,50/60Hz	2 tariffs,Energy(kWh), Pulse output	7 Modules
SDM530Modbus	3X230(400)V,0.5~10(100)A,50/60Hz	Multifunction, RS485 Modbus, Pulse outputs	7 Modules
SDM530Mbus	3X230(400)V,0.5~10(100)A,50/60Hz	Multifunction, Mbus, Pulse outputs	7 Modules
SDM530MT	3X230(400)V,0.5~10(100)A,50/60Hz	4 tariffs, Multifunction, RS485 Modbus, Pulse outputs	7 Modules
SDM530CT-Modbus	3X230(400)V,5A,50/60Hz	Multifunction, RS485 Modbus, Pulse outputs	7 Modules
SDM530CT-Mbus	3X230(400)V,5A,50/60Hz	Multifunction, Mbus, Pulse outputs	7 Modules
SDM530CT-MT	3X230(400)V,5A,50/60Hz	4 tariffs, Multifunction, RS485 Modbus, Pulse outputs	7 Modules

SMART X96 SERIES

> Three Phase



Model	Power Supply	Measurement	Size
Smart X96-1	3x230(400)V AC, 100mA CT, 50/60Hz	Multifunction, 2~63rd IHD, RS485 Modbus, Pulse output	96x96
Smart X96-5	3x230(400)V AC, SA CT, 50/60Hz	Multifunction, 2~63rd IHD, RS485 Modbus, Pulse output	96x96

SMART X835 SERIES

> Three Phase



Model	Power Supply	Measurement	Size
SMART X835P	3x230(400)V AC, SA CT, 50/60Hz	Multifunction, Pulse output	96x96
Smart X835B	3x230(400)V AC, SA CT, 50/60Hz	Multifunction, 2~63rd IHD, RS485 Modbus, Pulse output	96x96
Smart X835-A0	3x230(400)V AC, SA CT, 50/60Hz	Multifunction, 2~63rd IHD, RS485 Modbus, Analog Output	96x96
Smart X835 D10	3x230(400)V AC, SA CT, 50/60Hz	Multifunction, 2~63rd IHD, RS485 Modbus, Pulse output, D18DO	96x96

SMART Connect X835 SERIES

> Three Phase



Model	Power Supply	Measurement	Size
Smart Connect X835 CT	3x230(400)V AC, SA CT, 50/60Hz	Multifunction, RS485 Modbus, Pulse outputs, 31st THD	96x96
Smart Connect X835 MV	3x230(400)V AC, 333mV CT, 50/60Hz	Multifunction, RS485 Modbus, Pulse outputs, 31st THD	96x96

SMART X72 SERIES

> Three Phase



Model	Power Supply	Measurement	Size
Smart X72 CT	3x230(400)V AC, SA CT, 50/60Hz	Multifunction, RS485 Modbus, Pulse outputs, 31st THD	72x72
Smart X72 MV	3x230(400)V AC, 333mV CT, 50/60Hz	Multifunction, RS485 Modbus, Pulse outputs, 31st THD	72x72

SMART X302 SERIES

> Three Phase



Model	Power Supply	Measurement	Size
SMART X302A	85-265V AC/DC, 50/60Hz	Current (A) 0~9999A	72x72, 96x96
SMART X302V	85-265V AC/DC, 50/60Hz	Voltage (V) 0-500V AC	72x72, 96x96
SMART X302Hz	85-265V AC/DC, 50/60Hz	Frequency (Hz) 0~65Hz	72x72, 96x96
SMART X302W	85-265V AC/DC, 50/60Hz	Power (W) 0~9999W	72x72, 96x96

SMART X203 SERIES

> Single Phase



Model	Power Supply	Measurement	Size
SMART X203A	85-265V AC/DC, 50/60Hz	Current (A) 0~9999A	72x72, 96x96
SMART X203V	85-265V AC/DC, 50/60Hz	Voltage (V) 0-500V AC	72x72, 96x96
SMART X203Hz	85-265V AC/DC, 50/60Hz	Frequency (Hz) 0~65Hz	72x72, 96x96
SMART X203W	85-265V AC/DC, 50/60Hz	Power (W) 0~9999W	72x72, 96x96

ESCT-RJ SERIES

> 3-in-1



Model	Primary Current	Secondary Output	Accuracy
ESCT-RJ335	60~250A	333mV / 100mV / 100mA	0.5 / 1
ESCT-RJ345	250~630A	333mV / 100mV / 100mA	0.5 / 1

ESCT-SC SERIES

> 3-in-1



Model	Primary Current	Secondary Current	Accuracy
ESCT-SC325	60,100,125,150,200A	5A / 1A	0.5 / 1
ESCT-SC335	60,100,125,200,250A	5A / 1A	0.5 / 1
ESCT-SC345	250,300,400,500,600,630A	5A / 1A	0.5 / 1

ESCT-C SERIES

> 3-in-1



Model	Primary Current	Secondary Current	Accuracy
ESCT-C325	60,100,125,150,200A	5A / 1A	0.5 / 1
ESCT-C335	60,100,125,200,250A	5A / 1A	0.5 / 1
ESCT-C345	250,300,400,500,600,630A	5A / 1A	0.5 / 1

ESCT-B SERIES

> Split Core



Model	Primary Current	Secondary Current	Accuracy
ESCT-B23	100,200,250,300,400A	5A / 1A	0.5 / 1
ESCT-B58	250,300,400,500,600,750,800,1000A	5A / 1A	0.5 / 1
ESCT-B88	200,300,400,500,600,750,800,1000A	5A / 1A	0.5 / 1
ESCT-B812	500,600,750,800,1000,1200,1250,1500A	5A / 1A	0.5 / 1
ESCT-B816	1000,1500,2000,3000,4000,5000A	5A / 1A	0.5 / 1

ESCT-T SERIES

> Split Core



Model	Primary Current	Secondary Current	Accuracy
ESCT-T24	100,150,200,250,300A	5A / 1A	0.5 / 1
ESCT-T36	100,150,200,300,400,500,600A	5A / 1A	0.5 / 1

ESCT-TU SERIES

> Split Core



Model	Primary Current	Secondary Current	Accuracy
ESCT-TU10	5,10,20,50,75 A	333mV / 100mV / 100mA	0.5 / 1
ESCT-TU16	5,10,50,100,150 A	333mV / 100mV / 100mA	0.5 / 1
ESCT-TU24	10,50,100,250,300A	333mV / 100mV / 100mA	0.5 / 1
ESCT-TU36	20,100,250,400,600 A	333mV / 100mV / 100mA	0.5 / 1

ESCT-U SERIES

> Split Core



Model	Primary Current	Secondary Current	Accuracy
ESCT-U75	5,10,50,75,100,125,150,200 A	333mV	0.5 / 1
ESCT-U125	50,100,125,200,250,400,600,630A	333mV	0.5 / 1
ESCT-U200	100,250,400,630,800,1000,2000A	333mV	0.5 / 1
ESCT-U250	200,250,400,630,1500,2500,3000A	333mV	0.5 / 1
ESCT-U300	400,800,1000,1500,2500,3000,5000A	333mV	0.5 / 1

ESCT-RC SERIES

> Rogowski Coil



Model	Primary Current	Secondary Output	Accuracy
ESCT-RC60	100A	333mV / 100mV	0.5 / 1
ESCT-RC76	200A	333mV / 100mV	0.5 / 1
ESCT-RC90	400A	333mV / 100mV	0.5 / 1
ESCT-RC100	800A	333mV / 100mV	0.5 / 1
ESCT-RC150	1000A	333mV / 100mV	0.5 / 1
ESCT-RC160	1200A	333mV / 100mV	0.5 / 1
ESCT-RC190	3000A	333mV / 100mV	0.5 / 1
ESCT-RC200	5000A	333mV / 100mV	0.5 / 1
ESCT-RC300	6000A	333mV / 100mV	0.5 / 1

ESCT-ABO SERIES

> Solid Core



Model	Primary Current	Secondary Output	Accuracy
ESCT-AB030	50,60,75,80,100,150,200,250,300A	5A	0.5S / 0.5
ESCT-AB040	75,80,100,150,200,250,300,400,500A	5A	0.5S / 0.5
ESCT-AB060	200,250,300,400,500,600,750,800,1000A	5A	0.5S / 0.5
ESCT-AB0100	800,1000,1200,1500,1600,2000,2500,3000A	5A	0.5S / 0.5

ESCT-DM SERIES

> Solid Core



Model	Primary Current	Secondary Output	Accuracy
ESCT-DM20/30	50,60,75,80,100,125,150,200,250,300 A	5A	1
ESCT-DM20/35	50,60,75,80,100,125,150,200,250,300 A	5A	1

ESRD TMS SERIES

> Digital multifunction time relay



Model	Specifications	Description	Size
ESRD-TMS1	AC/DC 24-240V,50/60Hz	1C/O+1NO contacts, 0s-99h59min59sec, Backlit, LCD display	2 Module
ESRD-TMS2	AC/DC 24-240V,50/60Hz	1C/O+1NO contacts, 0-9999s, 0-9999min., Backlit, LCD display	2 Module

ESRD TPA SERIES

> Single channel astronomical time switch



Model	Specifications	Description	Size
ESRD-TPA1	AC220-240V,50/60Hz	Single Channel,40 programs, LCD display, Holiday mode, Automatic	2 Module

ESRD TPW SERIES

> Digital weekly time switch



Model	Specifications	Description	Size
ESRD-TPW1	AC220-240V,50/60Hz	Single Channel,40 programs, LCD display, Holiday mode, Automatic	2 Module
ESRD-TPW2	AC/DC24-264V,50/60Hz	Double Channel,100 programs, Backlit, LCD, Holiday mode, Automatic	2 Module

ESRD ST SERIES

> Twilight switch



Model	Specifications	Description	Size
ESRD-ST1	230V,50/60Hz, 1NO	Fixed watching on and off delay, LED indication	2 Module

ESRSTM SERIES

> Multifunction time relay



Model	Specifications	Description	Size
ESRS-TM11	AC 220V,50/60Hz	10 operating modes,10 time ranges, LED indication	1 Module
ESRS-TM12	A1-A2:AC220V; A3-A2: AC / DC24V,50/60Hz	10 operating modes,10 time ranges, LED indication	1 Module
ESRS-TM14	AC/DC 12-240V,50/60Hz	10 operating modes,10 time ranges, LED indication	1 Module
ESRS-TM23	AC/DC 24-240V,50/60Hz	10 operating modes,10 time ranges, LED indication	1 Module

ESRSTSL SERIES

> Staircase light timer



Model	Specifications	Description	Size
ESRS-TSL	230V,50/60Hz	3 operation modes, 3 wire or 4 wire connection	1 Module



SDM120 Modbus / Mbus

SINGLE PHASE MULTI-FUNCTION ENERGY METER

- 45A direct load
- One module 17.5mm wide
- Measuring kWh, W, V, A, PF, Hz, dmd.etc.
- Bi-directional measurement
- 2 Pulse outputs
- RS485 Modbus or M-bus communication



Introduction

SDM120 Modbus/Mbus are advanced single phase energy monitoring solution with built-in configuration push button and LCD data displaying, particularly indicated for energy and other parameters metering and for cost allocation. Housing for DIN-rail mounting, IP51 protection degree, direct connection up to max 45A. Moreover the meter can be provided with a pulses output proportional to the active energy being measured and a RS485 output/ M-bus output port for remote monitoring. It is an ideal choice as a sub-meter for AMR system or SCADA system.

This series has been assessed and certified as meeting the requirements of EC Directive 2004/22/EC. The EC Type Examination Certificate Number is 0120/SGS0141.

Specification	
Nominal voltage(Un)	120V or 230V ac
Operational voltage	80%~120% of Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2μS
Basic current (Ib)	5A
Maximum rated current (Imax)	45A
Operational current range	0.4% Ib-Imax
Over current withstand	30 Imax for 0.01s
Operational frequency range	50 / 60Hz
Internal power consumption	≤ 2W/10VA
Pulse output	1000imp/kWh
Display	LCD with backlight
Max reading	999999 kWh

Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C ~ +55°C
Storage temperature	-40°C ~ +70°C
Reference temperature	23°C± 2°C
International standard	IEC 62053-21 / EN50470-1/3
Accuracy class	Class1/Class B
Installation category	CAT II
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Protection against penetration of dust and water	IP51 (indoor)
Insulating encased meter of protective class	II
Altitude	up to 2000m
Electrostatic discharges	8kV contact / 15kV air gap
Electromagnetic HF fields	IEC 61000-4-3
Electrical fast transients	4kV
Surge	4kV
Radiated & conducted emissions	EN 55022

Accuracy	
Voltage, Current	0.5%
Frequency	0.2% of mid-frequency
Power factor	1% of unity (0.01)
Active power, Apparent power	± 1% of range maximum
Reactive power	± 1% of range maximum
Reactive energy (Varh)	Class 2
Active energy (Wh)	Class 1

Modbus	
Bus type	RS485(semi-duplex)
Protocol	Modbus RTU
Baud rate	1200/2400/4800/9600bps
Address range	1-247
Max. Bus loading	64pcs
Communication distance	1000M
Parity	EVEN/ODD/NONE
Data bit	8
Stop bit	1

M-bus	
Bus type	M-bus
Protocol	EN13757-3
Baud rate	300/600/1200/2400/4800/9600
Parity	NONE/EVEN/ODD
Stop bits	1 or 2
Primary Address	1 to 250
Secondary Address	00 00 00 01 to 99 99 99 99

Pulse output	
Pulse outputs	2
Pulse output type	Passive
Pulse Output 1	Configurable
Pulse width	200/100(default)/60ms
Pulse output 2	1000imp/kWh



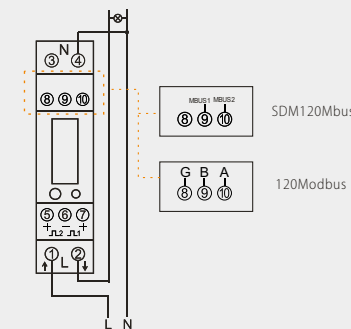
SDM120Modbus

Single phase 2 wire, 120V or 230V AC, 0.25~5(45)A, 50/60Hz, backlit LCD display, 2 Pulse outputs, RS485 Modbus communication. Measures active energy (kWh), reactive energy (kVarh), active power (W), reactive power (Var), apparent power (VA), voltage (V), current (A), power factor, demand and frequency etc.

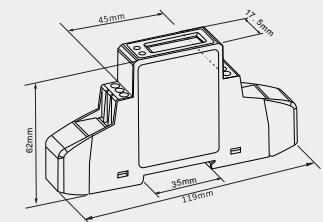
SDM120Mbus

Single phase 2 wire, 120V or 230V AC, 0.25~5(45)A, 50/60Hz, backlit LCD display, 2 Pulse outputs, M-bus EN13757-3 communication. Measures active energy (kWh), reactive energy (kVarh), active power (W), reactive power (Var), apparent power (VA), voltage (V), current (A), power factor, demand and frequency etc.

Wiring diagram



Dimensions



Height 119mm
Width 17.5mm
Depth 62mm



SDM120CT Modbus / Mbus

SINGLE PHASE MULTI-FUNCTION ENERGY METER

- CT operated
- One module 17.5mm wide
- Measuring kWh, W, V, A, PF, Hz, dmd. etc.
- Bi-directional measurement
- 2 Pulse outputs
- RS485 Modbus or M-bus communication

Introduction

SDM120 CT series is CT operated type single phase multi-function energy meter. The meter is compactly designed in one module din rail enclosure. LCD display is provided to show the energy and other important electric parameters measured. Moreover the meter can provide with pulse outputs proportional to the energy being measured and a RS485 output/ M-bus output port for remote monitoring. CT ratio can be set, which enables this meter to measure big current load.

This series has been assessed and certified as meeting the requirements of EC Directive 2004/22/EC. The EC Type Examination Certificate Number is 0120/SGS0141.



SDM120CT-Modbus

Single phase 2 wire, 120V or 230V AC, CT operated, 50/60Hz. Backlighted LCD display, 2 Pulse outputs, RS485 Modbus communication. Measures active energy (kWh), reactive energy (kVarh), active power (W), reactive power (Var), apparent power (VA), voltage (V), current (A), power factor, demand and frequency etc.

SDM120CT-Mbus

Single phase 2 wire, 120V or 230V AC, CT operated, 50/60Hz. Backlighted LCD display, 2 Pulse outputs, M-bus EN13757-3 communication. Measures active energy (kWh), reactive energy (kVarh), active power (W), reactive power (Var), apparent power (VA), voltage (V), current (A), power factor, demand and frequency etc.

Specification	
Nominal voltage(Un)	120V or 230V ac
Operational voltage	80%~120% of Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2μs
Primary current	5~9999A
Secondary input	100mV or 100mA
Over current withstand	20 I _{max} for 0.01s
Operational frequency range	50 or 60Hz
Internal power consumption	≤ 2W/10VA
Pulse output 1	configurable
Pulse output 2	1000imp/kWh
Display	LCD with backlight
Max reading	999999 kWh

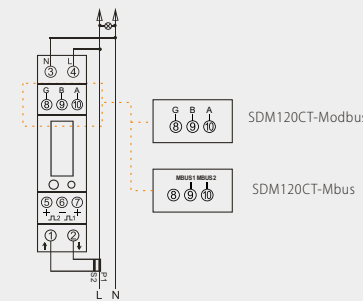
Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C - +55°C
Storage temperature	-40°C - +70°C
Reference temperature	23°C ± 2°C
International standard	IEC 62053-21 / EN50470-1/3
Accuracy class	Class 1/Class B
Installation category	CAT II
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Protection against penetration of dust and water	IP51 (indoor)
Insulating encased meter of protective class	II
Altitude	up to 2000m
Electrostatic discharges	8kV contact / 15kV air gap
Electromagnetic HF fields	IEC 61000-4-3
Electrical fast transients	4kV
Surge	4kV
Radiated & conducted emissions	EN 55022

Accuracy	
Voltage, Current	0.5%
Frequency	0.2% of mid-frequency
Power factor	1% of unity (0.01)
Active power, Apparent power	± 1% of range maximum
Reactive power	± 1% of range maximum
Reactive energy(Varh)	Class 2
Active energy (Wh)	Class 1

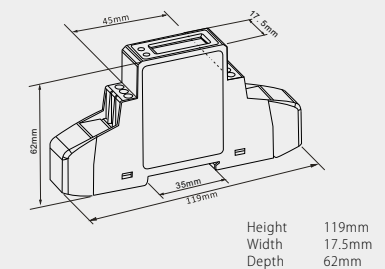
Modbus	
Bus type	RS485(semi-duplex)
Protocol	Modbus RTU
Baud rate	1200/2400/4800/9600bps
Address range	1-247
Max. Bus loading	64pcs
Communication distance	1000M
Parity	EVEN/ODD/NONE
Data bit	8
Stop bit	1

M-bus	
Bus type	M-bus
Protocol	EN13757-3
Baud rate	300/600/1200/2400/4800/9600
Parity	NONE/EVEN/ODD
Stop bits	1 or 2
Primary Address	1 to 250
Secondary Address	00 00 00 01 to 99 99 99 99

Wiring diagram



Dimensions





SDM220 Modbus / Mbus / MT / Std / Pulse

SINGLE PHASE MULTI-FUNCTION ENERGY METER

- 100A direct load
- 2 Module 36mm wide
- Multi-measurement:kWh,kVarh,W,Var,VA,PF,HZ,dmd,V,A,etc.
- Bi-directional measurement
- 2 Pulse outputs
- RS485 Modbus or M-bus communication
- Multi-tariffs



Introduction

SDM220 series is an advanced digital single phase multi-function energy meter, which measures up to 100A direct load. The unit measures active energy, reactive energy, current, voltage, power, power factor, frequency, demand, etc. Bi-directional measurement makes this unit an ideal choice for Solar PV measurement. A remote communication port is provided, RS485 Modbus RTU or M-bus EN13757-3 and Communication parameters are password protected in setup mode. User can check data and set up the meter via the buttons on the front panel.

This Series has been assessed and certified as meeting the requirements of EC Directive 2004/22/EC. The EC Type Examination Certificate Number is 0120/SGS0172.



SDM220Mbus

Single phase 2 wire, 230V AC, 0.25~5(100)A, 50/60Hz. Backlighted LCD display, 2 Pulse outputs, M-bus, Multi-tariffs Measures kWh, kVarh, W, Var, VA, V, A, PF, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

SDM220MT

Single phase 2 wire, 230V AC, 0.25~5(100)A, 50/60Hz. Backlighted LCD display, 2 Pulse outputs, RS485 Modbus communication, Multi-tariffs .Measures kWh, kVarh, W, Var, VA, V, A, PF, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

SDM220Std

Single phase 2 wire, 230V AC, 0.25~5(100)A, 50/60Hz. Backlighted LCD display, 2 Pulse outputs, RS485 Modbus communication. Measures total kWh, Imp_kWh, Exp_kWh etc.

SDM220Pulse

Single phase 2 wire, 230V AC, 0.25~5(100)A, 50/60Hz. Backlighted LCD display, 2 Pulse outputs .Measures kWh, kVarh, W, Var, VA, V, A, PF, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

Specification	
Nominal voltage(Un)	230Vac
Operational voltage	80%~120% of Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2μS
Basic current (Ib)	5A
Maximum rated current (Imax)	100A
Operational current range	0.4% Ib-Imax
Over current withstand	30 Imax for 0.01s
Operational frequency range	50 or 60Hz
Internal power consumption	≤ 2W/10VA
Pulse output 1	configurable
Pulse output 2	1000imp/kWh
Max reading	99999.99 kWh

Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C - +55°C
Storage temperature	-40°C - +70°C
Reference temperature	23°C± 2°C
International standard	IEC 62053-21 / EN50470-1/3
Accuracy class	Class1/Class B
Installation category	CAT II
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Protection against penetration of dust and water	IP51 (indoor)
Insulating encased meter of protective class	II

Multi-tariff	
time clock accuracy	< 1s/day
Tariff	4
Time segments	10

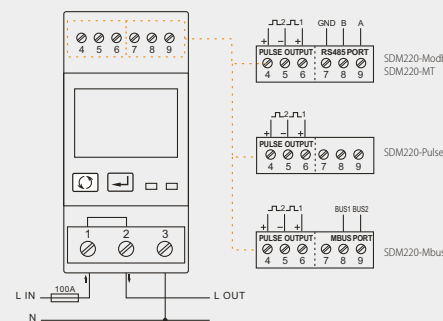
Accuracy	
Voltage, Current	0.5%
Frequency	0.2% of mid-frequency
Power factor	1% of unity (0.01)
Active power, Apparent power	± 1% of range maximum
Reactive power	± 1% of range maximum
Reactive energy(Varh)	Class 2
Active energy (Wh)	Class 1

Modbus	
Bus type	RS485(semi-duplex)
Protocol	Modbus RTU
Baud rate	1200/2400/4800/9600bps
Address range	1-247
Max. Bus loading	64pcs
Communication distance	1000M
Parity	EVEN/ODD/NONE
Data bit	8
Stop bit	1

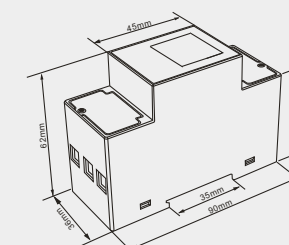
M-bus	
Bus type	M-bus
Protocol	EN13757-3
Baud rate	300/600/1200/2400/4800/9600
Parity	NONE/EVEN/ODD
Stop bits	1 or 2
Primary Address	1 to 250
Secondary Address	00 00 00 01 to 99 99 99 99

Pulse Output	
Pulse outputs	2
Pulse output type	Passive
Pulse Output 1	Configurable
Pulse width	200/100(default)/60ms
Pulse output 2	1000imp/kWh

Wiring diagram



Dimensions



Height 90mm
Width 36mm
Depth 62mm



SDM 230 Modbus / Mbus / 2T / Std / Pulse

SINGLE PHASE MULTI-FUNCTION ENERGY METER

- 100A direct load
- 2 Module 36mm wide
- Multi-measurement:kWh,kVarh,W,Var,VA,PF,HZ,dmd,V,A,etc.
- Bi-directional measurement
- 2 Pulse outputs
- RS485 Modbus or M-bus communication
- 2 Tariffs available



Introduction

SDM230 series is an advanced digital single phase multi-function energy meter, which measures up to 100A direct load. The unit measures active energy, reactive energy, current, voltage, power, power factor, frequency, demand, etc. Bi-directional measurement makes this unit an ideal choice for Solar PV measurement. A remote communication port is provided, RS485 Modbus RTU or M-bus EN13757-3 and Communication parameters are password protected in setup mode. User can check data and set up the meter via the buttons on the front panel. SDM230-2T can measure energy from two different power supplies.

This Series has been assessed and certified as meeting the requirements of EC Directive 2004/22/EC. The EC Type Examination Certificate Number is 0120/SGS0206.

Specification	
Nominal voltage(Un)	120V or 230V ac
Operational voltage	80%~120% of Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2µS
Basic current (Ib)	5A
Maximum rated current (Imax)	100A
Operational current range	0.4%Ib-Imax
Over current withstand	30 Imax for 0.01s
Operational frequency range	50 or 60Hz
Internal power consumption	≤ 2W/10VA
Pulse output 1	1000imp/kWh
Pulse output 2	1000imp/kWh(only for SDM230DR/BI)
Max reading	999999.9 kWh

Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C - +55°C
Storage temperature	-40°C - +70°C
Reference temperature	23°C± 2°C
International standard	IEC 62053-21 / EN50470-1/3
Accuracy class	Class 1/Class B
Installation category	CAT II
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Protection against penetration of dust and water	IP51 (indoor)
Insulating encased meter of protective class	II
Electrostatic discharges	8kV contact / 15kV air gap
Electromagnetic HF fields	IEC 61000-4-3
Electrical fast transients	4kV
Surge	4kV
Radiated & conducted emissions	EN 55022

Accuracy	
Voltage,Current	0.5%
Frequency	0.2% of mid-frequency
Power factor	1% of unity (0.01)
Active power, Apparent power	± 1% of range maximum
Reactive power	± 1% of range maximum
Reactive energy(Varh)	Class 2
Active energy (Wh)	Class 1

Modbus	
Bus type	RS485(semi-duplex)
Protocol	Modbus RTU
Baud rate	1200/2400/4800/9600bps
Address range	1-247
Max. Bus loading	64pcs
Communication distance	1000M
Parity	EVEN/ODD/NONE
Data bit	8
Stop bit	1

M-bus	
Bus type	M-bus
Protocol	EN13757-3
Baud rate	300/600/1200/2400/4800/9600
Parity	NONE/EVEN/ODD
Stop bits	1 or 2
Primary Address	1 to 250
Secondary Address	00 00 00 01 to 99 99 99 99

Pulse Output	
Pulse outputs	2
Pulse output type	Passive
Pulse Output 1	Configurable
Pulse width	200/100(default)/60ms
Pulse output 2	1000imp/kWh



SDM230Modbus

Single phase 2 wire, 230V AC, 0.5~10(100)A, 50/60Hz. Backlighted LCD display, 2 Pulse outputs, RS485 Modbus communication. Measures kWh, kVarh, W, Var, VA, V, A, PF, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

SDM230Mbus

Single phase 2 wire, 230V AC, 0.5~10(100)A, 50/60Hz. Backlighted LCD display, 2 Pulse outputs, M-bus EN13757-3 communication. Measures kWh, kVarh, W, Var, VA, V, A, PF, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

SDM230-2T

Single phase 2 wire, 230V AC, 0.5~10(100)A, 50/60Hz. Backlighted LCD display, 2 Pulse outputs, RS485 Modbus communication, Multi-tariffs. Measures kWh, kVarh, W, Var, VA, V, A, PF, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

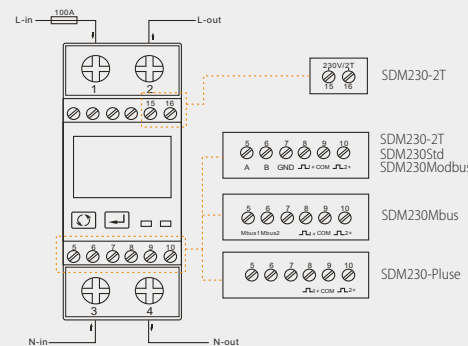
SDM230Std

Single phase 2 wire, 230V AC, 0.5~10(100)A, 50/60Hz. Backlighted LCD display, 2 Pulse outputs, RS485 Modbus communication. Measures total kWh, Imp_kWh, Exp_kWh etc.

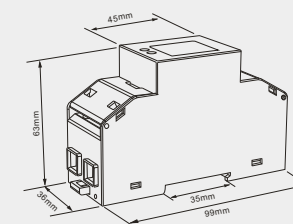
SDM230Pulse

Single phase 2 wire, 230V AC, 0.5~10(100)A, 50/60Hz. Backlighted LCD display, 2 Pulse outputs. Measures kWh, kVarh, W, Var, VA, V, A, PF, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

Wiring diagram



Dimensions



Height 99mm
Width 36mm
Depth 63mm

SDM530 Modbus / Mbus / MT

THREE PHASE 4 WIRE MULTI-FUNCTION ENERGY METER



- 100A direct load
- 7 Module wide
- Multi-measurement:kWh,kVarh,W,Var,VA,PF,HZ,dmd,V,A,etc.
- Bi-directional measurement
- 2 Pulse outputs
- RS485 Modbus or M-bus communication
- Multi-tariffs

Introduction

The SDM530 100A series measure and display the characteristics of three phase four wires(3p4w) supplies, including voltage, frequency, current, power, active and reactive energy, imported or exported. Energy is measured in terms of kWh, kVarh. Maximum demand current can be measured over preset periods of up to 60 minutes. In order to measure energy, the unit requires voltage and current inputs in addition to the supply required to power the product.

SDM530 100A series support max.100A direct connection, save the cost and avoid the trouble to connect external CTs, giving the unit a cost-effective and easy operation. Built-in interfaces provides pulse and RS485 Modbus RTU outputs/ Mbus Port. All the configuration are password protected.

Specification	
Nominal voltage(Un)	3x230/400V ac
Operational voltage	80%~120% of Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2μs
Basic current (Ib)	10A
Operational current range	0.4% Ib-I _{max}
Over current withstand	30 I _{max} for 0.01s
Operational frequency range	50 or 60Hz
Power consumption per phase	≤ 2W/10VA
Display	LCD
Max reading	999999.99 kWh/kVarh

Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C ~ +55°C
Storage temperature	-40°C ~ +70°C
Reference temperature	23°C± 2°C
International standard	IEC 62053-21 / EN50470-1/3
Accuracy class	Class1/Class B
Installation category	CAT III
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Protection against penetration of dust and water	IP51(indoor)
Insulating encased meter of protective class	II
Electrostatic discharges	8kV contact / 15kV air gap
Electromagnetic HF fields	IEC 61000-4-3
Electrical fast transients	4kV

Multi-tariff	
time clock accuracy	< 1s/day
Tariff	4
Time segments	10

Accuracy	
Voltage,Current	0.5%
Frequency	0.2% of mid-frequency
Power factor	1% of unity (0.01)
Active power , Apparent power	±1% of range maximum
Reactive power	±1% of range maximum
Reactive energy(Varh)	Class 2
Active energy (Wh)	Class 1

Modbus	
Bus type	RS485(semi-duplex)
Protocol	Modbus RTU
Baud rate	1200/2400/4800/9600bps
Address range	1-247
Max. Bus loading	64pcs
Communication distance	1000M
Parity	EVEN/ODD/NONE
Data bit	8
Stop bit	1

M-bus	
Bus type	M-bus
Protocol	EN13757-3
Baud rate	300/600/1200/2400/4800/9600
Parity	NONE/EVEN/ODD
Stop bits	1 or 2
Primary Address	1 to 250
Secondary Address	00 00 00 01 to 99 99 99 99

Pulse Output	
Pulse outputs	2
Pulse output type	Passive
Pulse Output 1	Configurable
Pulse width	200/100(default)/60ms
Pulse output 2	400imp/kWh



SDM530Modbus

Three phase 4 wire, 3x230(400)V, 0.5~10(100)A, 50/60Hz, backlighted LCD display, 2 pulse outputs, RS485 Modbus RTU. Measures kWh, kVarh, W, Var, VA, V, A, PF, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

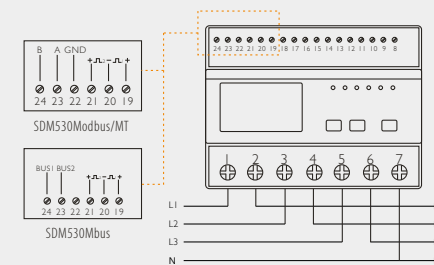
SDM530Mbus

Three phase 4 wire, 3x230(400)V, 0.5~10(100)A, 50/60Hz, backlighted LCD display, 2 pulse outputs, M-Bus EN13757-3 Communication. Measures kWh, kVarh, W, Var, VA, V, A, PF, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

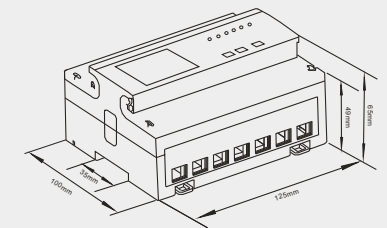
SDM530MT

Three phase 4 wire, 3x230(400)V, 0.5~10(100)A, 50/60Hz, backlighted LCD display, 2 pulse outputs, RS485 Modbus RTU, RTC and Multi-tariffs. Measures kWh, kVarh, W, Var, VA, V, A, PF, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

Wiring diagram



Dimensions



Height 100mm
Width 125mm
Depth 65mm

SDM530CT Modbus / Mbus / MT

THREE PHASE FOUR WIRE MULTI-FUNCTION ENERGY METER



- 5A CT operated
- 7 Module wide
- Multi-measurement: kWh, kVarh, W, Var, VA, PF, Hz, dmd, V, A, etc.
- Bi-directional measurement
- 2 Pulse outputs
- RS485 Modbus or M-bus communication
- Multi-tariffs

Introduction

The SDM530 CT series measure and display the characteristics of three phase four wires(3p4w) supplies, including voltage, frequency, current, power, active and reactive energy, imported or exported. Energy is measured in terms of kWh, kVarh. Maximum demand current can be measured over preset periods of up to 60 minutes. In order to measure energy, the unit requires voltage and current inputs in addition to the supply required to power the product.

SDM530CT series can be configured to work with a wide range of CTs, giving the unit a wide range of operation. Built-in interfaces provides pulse and RS485 Modbus or Mbus. Configuration is password protected.



SDM530CT-Modbus

Three phase 4 wire, 3x230(400)V, 0.25~5(6)A, 50/60Hz, backlit LCD display, 2 pulse outputs, RS485 Modbus RTU. Measures kWh, kVarh, W, Var, VA, V, A, PF, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

SDM530CT-Mbus

Three phase 4 wire, 3x230(400)V, 0.25~5(6)A, 50/60Hz, backlit LCD display, 2 pulse outputs, M-Bus EN13757-3 Communication. Measures kWh, kVarh, W, Var, VA, V, A, PF, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

SDM530CT-MT

Three phase 4 wire, 3x230(400)V, 0.25~5(6)A, 50/60Hz, backlit LCD display, 2 pulse outputs, RS485 Modbus RTU, Multi-tariffs. Measures kWh, kVarh, W, Var, VA, V, A, PF, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

Specification	
Nominal voltage(Un)	3x230/400 V ac
Operational voltage	80%~120% of Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2μs
Basic current (Ib)	5A
Operational current range	0.4% Ib-Imax
Over current withstand	20 Imax for 0.01s
Operational frequency range	50 or 60Hz
Power consumption per phase	≤ 2W/10VA
Display	LCD
Max reading	999999.99 kWh/kVarh

Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C ~ +55°C
Storage temperature	-40°C ~ +70°C
Reference temperature	23°C± 2°C
International standard	IEC 62053-21 / ENS0470-1/3
Accuracy class	Class1/Class B
Installation category	CAT III
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Protection against penetration of dust and water	IP51 (indoor)
Insulating encased meter of protective class	II
Electrostatic discharges	8kV contact / 15kV air gap
Electromagnetic HF fields	IEC 61000-4-3
Electrical fast transients	4kV

Multi-tariff	
time clock accuracy	< 1s/day
Tariff	4
Time segments	10

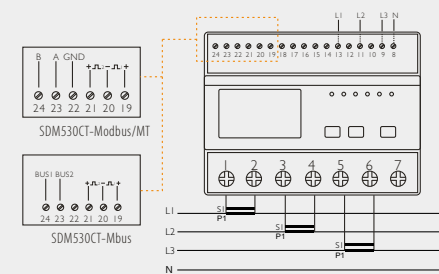
Accuracy	
Voltage, Current	0.5%
Frequency	0.2% of mid-frequency
Power factor	1% of unity (0.01)
Active power, Apparent power	±1% of range maximum
Reactive power	±1% of range maximum
Reactive energy (Varh)	Class 2
Active energy (Wh)	Class 1

Modbus	
Bus type	RS485(semi-duplex)
Protocol	Modbus RTU
Baud rate	1200/2400/4800/9600bps
Address range	1-247
Max. Bus loading	64pcs
Communication distance	1000M
Parity	EVEN/ODD/NONE
Data bit	8
Stop bit	1

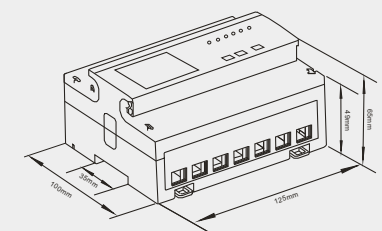
M-bus	
Bus type	M-bus
Protocol	EN13757-3
Baud rate	300/600/1200/2400/4800/9600
Parity	NONE/EVEN/ODD
Stop bits	1 or 2
Primary Address	1 to 250
Secondary Address	00 00 00 01 to 99 99 99 99

Pulse Output	
Pulse outputs	2
Pulse output type	Passive
Pulse Output 1	Configurable
Pulse width	200/100(default)/60ms
Pulse output 2	1000imp/kWh

Wiring diagram



Dimensions



Height 100mm
Width 125mm
Depth 65mm



SDM630 Modbus / Mbus / MT / Std / Pulse

THREE PHASE MULTI-FUNCTION POWER ANALYZER

- 100A direct load
- Work with 3P4W / 3P3W / 1P2W
- 4 Module wide
- Measures kWh, kVarh, W, Var, VA, PF, Hz, dmd, V, A, THD, etc.
- Bi-directional measurement
- 2 Pulse outputs
- RS485 Modbus or M-bus communication
- Multi-tariffs available



Introduction

The SDM630 100A series is a three phase multifunction DIN rail meter. It can measure and display the characteristic of 1p2w, 3p3w and 3p4w supplies, including voltage, current, power, active and reactive energy imported or exported. Energy is measured in terms of kWh, kVarh. Max demand current can be measured over preset periods of up to 60 minutes. The SDM630 100A series has wonderful industrial design, big size LCD and touch buttons. All electronic parameters can be set with the button and the configuration is password protected. It can directly connect to 100A max. Saving the cost to install external CT. Built-in interfaces provides pulse and RS485 Modbus RTU outputs.

SDM630 Series have been assessed and certified as meeting the requirements of EC Directive 2004/22/EC. The instrument traceable number is 0120/SGS0151

Specification	
Nominal voltage(Un)	3x230/400V ac
Operational voltage	80%~120% of Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2μs
Basic current (Ib)	10A
Operational current range	0.4% Ib-Imax
Over current withstand	30 Imax for 0.01s
Operational frequency range	50 or 60Hz
Power consumption per phase	≤ 2W/10VA
Display	LCD
Max reading	999999.99 kWh/kVarh

Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C ~ +55°C
Storage temperature	-40°C ~ +70°C
Reference temperature	23°C± 2°C
International standard	IEC 62053-21 / EN50470-1/3
Accuracy class	Class1/Class B
Installation category	CAT III
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Protection against penetration of dust and water	IP51(indoor)
Insulating encased meter of protective class	II
Electrostatic discharges	8kV contact / 15kV air gap
Electromagnetic HF fields	IEC 61000-4-3
Electrical fast transients	4kV

Multi-tariff	
time clock accuracy	< 1s/day
Tariff	4
Time segments	10

Accuracy	
Voltage, Current	0.5%
Frequency	0.2% of mid-frequency
Power factor	1% of unity (0.01)
Active power, Apparent power	±1% of range maximum
Reactive power	±1% of range maximum
Reactive energy (Varh)	Class 2
Active energy (Wh)	Class 1

Modbus	
Bus type	RS485(semi-duplex)
Protocol	Modbus RTU
Baud rate	2400/4800/9600/19200/38400bps
Address range	1-247
Max. Bus loading	64pcs
Communication distance	1000M
Parity	EVEN/ODD/NONE
Data bit	8
Stop bit	1

M-bus	
Bus type	M-bus
Protocol	EN13757-3
Baud rate	300/600/1200/2400/4800/9600
Parity	NONE/EVEN/ODD
Stop bits	1 or 2
Primary Address	1 to 250
Secondary Address	00 00 00 01 to 99 99 99 99

Pulse Output	
Pulse outputs	2
Pulse output type	Passive
Pulse Output 1	Configurable
Pulse width	200/100(default)/60ms
Pulse output 2	400imp/kWh



SDM630Modbus 3PH-4W, 3PH-3W, 1PH-2W, 3x230(400)V, 0.5~10(100)A, 50/60Hz, backlighted LCD display, 2 pulse outputs, RS485 Modbus RTU. Measures kWh, kVarh, W, Var, VA, V, A, PF, THD, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

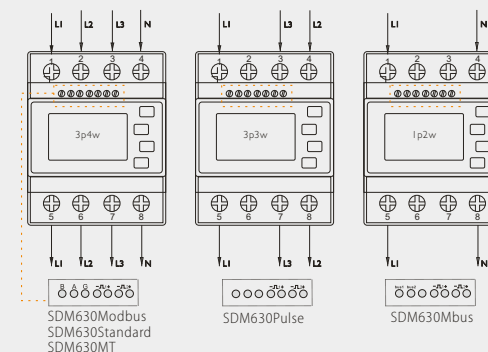
SDM630M-Bus 3PH-4W, 3PH-3W, 1PH-2W, 3x230(400)V, 0.5~10(100)A, 50/60Hz, backlighted LCD display, 2 pulse outputs, M-Bus EN13757-3 communication. Measures kWh, kVarh, W, Var, VA, V, A, PF, THD, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

SDM630MT 3PH-4W, 3PH-3W, 1PH-2W, 3x230(400)V, 0.5~10(100)A, 50/60Hz, backlighted LCD display, 2 pulse outputs, RS485 Modbus RTU, multi-tariffs. Measures kWh, kVarh, W, Var, VA, V, A, PF, THD, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

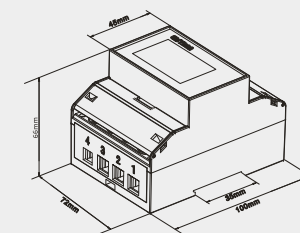
SDM630Std 3PH-4W, 3PH-3W, 1PH-2W, 3x230(400)V, 0.5~10(100)A, 50/60Hz, backlighted LCD display, 2 pulse outputs, RS485 Modbus RTU. Measures kWh, kVarh, Imp_kWh, Exp_kWh etc.

SDM630Pulse 3PH-4W, 3PH-3W, 1PH-2W, 3x230(400)V, 0.5~10(100)A, 50/60Hz, backlighted LCD display, 2 pulse outputs. Measures kWh, kVarh, W, Var, VA, V, A, PF, THD, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

Wiring diagram



Dimensions



Height 100mm
Width 72mm
Depth 66mm



SDM630MCT Modbus/Mbus/2T/MV

THREE PHASE MULTI-FUNCTION POWER ANALYZER

- CT & PT operated
- Work with 3P4W / 3P3W / 1P2W
- 4 Module wide
- Measures kWh, kVarh, W, Var, VA, PF, Hz, dmd, V, A, THD, etc.
- Bi-directional measurement
- 2 Pulse outputs
- RS485 Modbus or M-bus communication
- 2 Tariffs available



Introduction

The SDM630MCT Series is a three phase multifunction DIN rail meter. It can measure and display the characteristic of 1p2w, 3p3w and 3p4w supplies, including voltage, current, power, active and reactive energy imported or exported. Energy is measured in terms of kWh, kVarh. Max demand current can be measured over preset periods of up to 60 minutes. In order to measure energy, the unit requires voltage and current inputs in addition to the supply required to power the meter. The required current inputs are obtained via current transformers. This meter can be configurable to work with a wide range of CTs, giving the unit a wide range of operation. Build-in interface provides pulse and RS485 Modbus RTU outputs. And the configuration is password protected.

SDM630 CT Series have been assessed and certified as meeting the requirements of EC Directive 2014/32/EU. The instrument traceable number is 0120/SGS0142



SDM630MCT

3PH-4W, 3PH-3W, 1PH-2W, 3x230(400)V, 1A or 5A CT input, 50/60Hz, backlit LCD display, 2 pulse outputs, RS485 Modbus RTU. Measures kWh, kVarh, W, Var, VA, V, A, PF, THD, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

SDM630MCT-Mbus

3PH-4W, 3PH-3W, 1PH-2W, 3x230(400)V, 1A or 5A CT input, 50/60Hz, backlit LCD display, 2 pulse outputs, M-Bus EN13757-3. Measures kWh, kVarh, W, Var, VA, V, A, PF, THD, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

SDM630MCT-2T

3PH-4W, 3PH-3W, 1PH-2W, 3x230(400)V, 1A or 5A CT input, 50/60Hz, backlit LCD display, 2 pulse outputs, RS485 Modbus RTU, 2 Tariffs. Measures kWh, kVarh, W, Var, VA, V, A, PF, THD, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

SDM630MCT-MV

3PH-4W, 3PH-3W, 1PH-2W, 3x230(400)V, 333mV CT input, 50/60Hz, backlit LCD display, 2 pulse outputs, RS485 Modbus RTU. Measures kWh, kVarh, W, Var, VA, V, A, PF, THD, Hz, Max.DMD, Imp_kWh, Exp_kWh etc.

Specification	
Nominal voltage(Un)	3x230/400V ac
Operational voltage	60% – 120% of Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2μs
Rated current (Ib)	5A CT or 333mV CT input
Operational current range	0.4% Ib-Imax
Over current withstand	20 I _{max} for 0.01s
Operational frequency range	50 or 60Hz
Power consumption per phase	≤ 2W/10VA
Pulse output 1	Configurable
Pulse output 2	3200 imp/kWh
Display	LCD
Max reading	9999999.9 kWh/kVarh

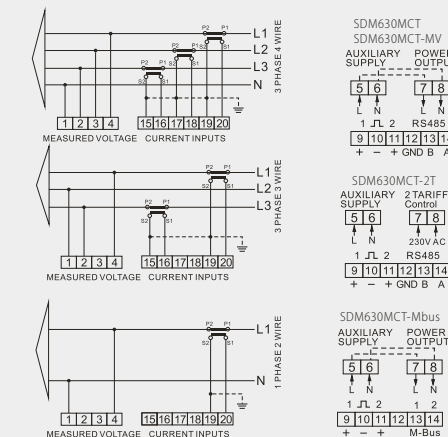
Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C – +55°C
Storage temperature	-40°C – +70°C
Reference temperature	23°C ± 2°C
International standard	IEC 62053-21 / EN50470-1/3
Accuracy class	Class1/Class B
Installation category	CAT III
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Protection against penetration of dust and water	IP51 (indoor)
Insulating encased meter of protective class	II
Electrostatic discharges	8kV contact / 15kV air gap
Radiated & conducted emissions	EN 55022

Accuracy	
Voltage, Current	0.5%
Frequency	0.2% of mid-frequency
Power factor	1% of unity (0.01)
Active power, Apparent power	± 1% of range maximum
Reactive power	± 1% of range maximum
Reactive energy (Varh)	Class 2
Active energy (Wh)	Class 1

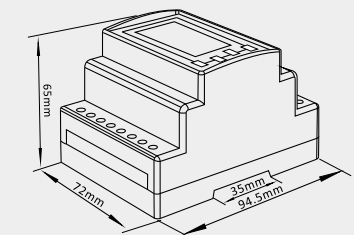
Modbus	
Bus type	RS485(semi-duplex)
Protocol	Modbus RTU
Baud rate	2400/4800/9600/19200/38400bps
Address range	1-247
Max. Bus loading	64pcs
Communication distance	1000M
Parity	EVEN/ODD/NONE
Data bit	8
Stop bit	1

M-bus	
Bus type	M-bus
Protocol	EN13757-3
Baud rate	300/600/1200/2400/4800/9600
Parity	NONE/EVEN/ODD
Stop bits	1 or 2
Primary Address	1 to 250
Secondary Address	00 00 00 01 to 99 99 99 99

Wiring diagram



Dimensions



Height 94.5mm
Width 72mm
Depth 65mm



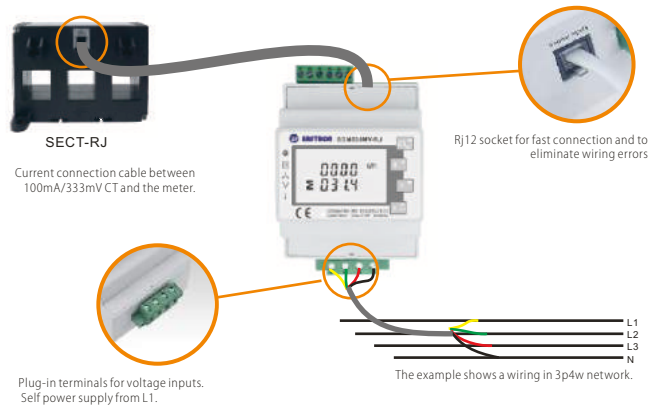
SDM630MCT-RJ

THREE PHASE 4 WIRE ENERGY METER

- CT operated
- Plug-in connection
- RJ12 100mA/333mV current input
- Multi-parameter measured
- THD of voltage and current
- RS485 Modbus RTU and Pulse outputs

Introduction

The SDM630MCT-RJ is a three phase 4 wire multi-function energy meter. It measures and displays the characteristic of 3p4w network, including voltage, current, power, active and reactive energy imported and exported, THD, power demand, frequency, power factor etc. The meter use plug-in terminals for both voltage input and current input. With 3-in-1 Current Transformer (ESCT-RJ), the meter provides an easy, quick and error-free connection solution. Equipped with RS485 communication port and 2 pulse outputs, the meter is an ideal product for sub-metering in low voltage application.



Specification	
Nominal voltage(Un)	3x230/400 V ac
Operational voltage	60%~120% of Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2μs
Rated current (Ib)	100mA or 333mV CT input
Operational current range	0.4% Ib-Imax
Over current withstand	20 Imax for 0.01s
Operational frequency range	50 or 60Hz
Power consumption per phase	≤ 2W/10VA
Pulse output 1	Configurable
Pulse output 2	3200 imp/kWh
Display	LCD
Max reading	9999999.9 kWh/kVarh

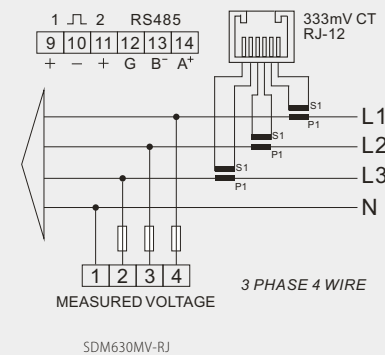
Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C ~ +55°C
Storage temperature	-40°C ~ +70°C
Reference temperature	23°C± 2°C
International standard	IEC 62053-21 / EN50470-1/3
Accuracy class	Class1/Class B
Installation category	CAT III
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Protection against penetration of dust and water	IP51 (indoor)
Insulating encased meter of protective class	II
Electrostatic discharges	8kV contact / 15kV air gap
Radiated & conducted emissions	EN 55022

Accuracy	
Voltage, Current	0.5%
Frequency	0.2% of mid-frequency
Power factor	1% of unity (0.01)
Active power, Apparent power	± 1% of range maximum
Reactive power	± 1% of range maximum
Reactive energy (Varh)	Class 2
Active energy (Wh)	Class 1

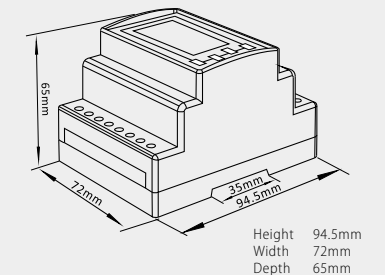
Modbus	
Bus type	RS485(semi-duplex)
Protocol	Modbus RTU
Baud rate	2400/4800/9600/19200/38400bps
Address range	1-247
Max. Bus loading	64pcs
Communication distance	1000M
Parity	EVEN/ODD/NONE
Data bit	8
Stop bit	1

M-bus (Optional)	
Bus type	M-bus
Protocol	EN13757-3
Baud rate	300/600/1200/2400/4800/9600
Parity	NONE/EVEN/ODD
Stop bits	1 or 2
Primary Address	1 to 250
Secondary Address	00 00 00 01 to 99 99 99 99

Wiring diagram



Dimensions





SDM630-2C

DUAL LOAD MULTI-FUNCTION ENERGY METER

- 2 Meters in 1
- Easy and error free connection
- 5A / 333mV CT input
- Multi-parameter measured
- RS485 Modbus RTU
- 2 Pulse outputs

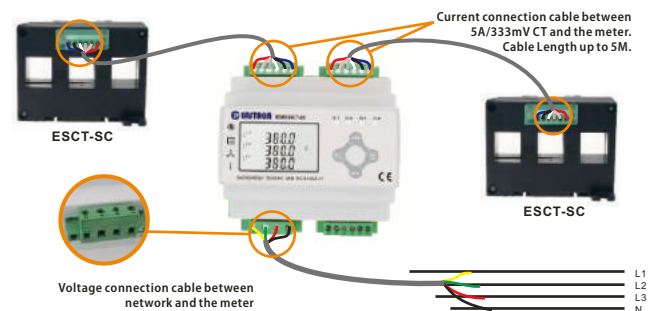
Introduction

The SDM630-2C is a dual load three phase 4 wire multi-function energy meter for measuring energy consumption in split load applications such as Power and lighting loads. The meter measures 2 three phase circuits separately and display the parameters including voltage, current, power, power factor, frequency, demand, active energy, reactive energy etc.

The meter connect with 3-in-1 CT via wiring looms for plug-in connection. It is a cost-effective and space saving solution for all new power and lighting, or dual load, distribution and panel boards. ESCT-SC series current transformer provides a range of CT with primary current up to 630A.

DUAL LOAD SOLUTION

Three phase 3-in-1 Current Transformer with plug-in terminal and wiring looms for quick and error-free installation.



Specification	
Nominal voltage(Un)	3x230/400V ac
Operational voltage	80%~120% of Un
Insulation capabilities	
- AC voltage withstand	4kV for 1 minute
- Impulse voltage withstand	6kV-1.2μS
Rated current (I _r)	5A or 333mV CT input
Operational current range	0.4% I _b -I _{max}
Over current withstand	20 I _{max} for 0.01s
Operational frequency range	50 or 60Hz
Power consumption per phase	≤ 2W/10VA
Pulse output	Configurable
Display	LCD
Max reading	9999999.9 kWh/kVarh

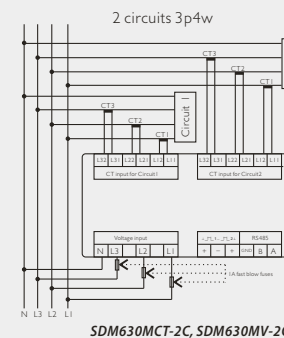
Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C ~ +55°C
Storage temperature	-40°C ~ +70°C
Reference temperature	23°C± 2°C
International standard	IEC 62053-21 / EN50470-1/3
Accuracy class	Class1/Class B
Installation category	CAT III
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Protection against penetration of dust and water	IP51 (indoor)
Insulating encased meter of protective class	II
Electrostatic discharges	8kV contact / 15kV air gap
Electromagnetic HF fields	IEC 61000-4-3
Electrical fast transients	4kV
Surge	4kV
Radiated & conducted emissions	EN 55022

Accuracy	
Voltage, Current	0.5%
Frequency	0.2% of mid-frequency
Power factor	1% of unity (0.01)
Active power, Apparent power	± 1% of range maximum
Reactive power	± 1% of range maximum
Reactive energy (Varh)	Class 2
Active energy (Wh)	Class 1

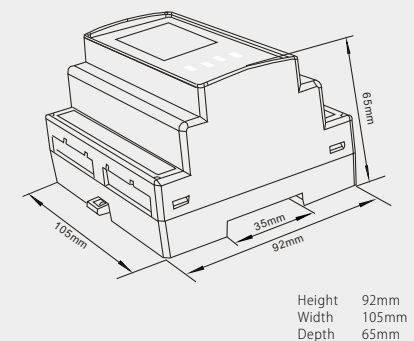
Modbus	
Bus type	RS485(semi-duplex)
Protocol	Modbus RTU
Baud rate	2400/4800/9600/19200/38400 bps
Address range	1-247
Max. Bus loading	64pcs
Communication distance	1000M
Parity	EVEN/ODD/NONE
Data bit	8
Stop bit	1

Pulse Output	
Pulse outputs	2
Pulse output type	Passive
Pulse Output 1	C1 Configurable
Pulse output 2	C2 Configurable
Pulse width	200/100(default)/60ms

Wiring diagram



Dimensions





SDM120 A / D / DB
SINGLE PHASE 2 WIRE KWH METER

- 45A MAX. direct load
- One module wide
- Active energy measured
- Pulse output
- Din rail mounted



SDM230A/D
SINGLE PHASE 2 WIRE KWH METER

- 100A MAX. direct load
- Two module wide
- Active energy measured
- Pulse output
- Din rail mounted

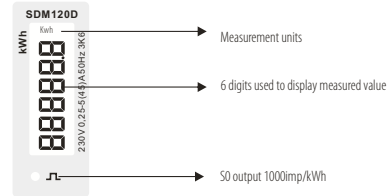
Specification	
Model	120A/120D/120DB
Display	SDM120A electromechanical register
	SDM120D LCD
	SDM120DB LCD with Backlit
Nominal voltage(Un)	120V or 230V ac
Operational voltage	80% – 120% of Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2µs
Basic current (Ib)	5A
Maximum rated current (Imax)	45A
Operational current range	0.4% Ib-Imax
Over current withstand	30 Imax for 0.01s
Operational frequency range	50 / 60Hz
Internal power consumption	≤ 2W/10VA
Pulse output	1000imp/kWh
Max reading	99999.9 kWh

Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C - +55°C
Storage temperature	-40°C - +70°C
Reference temperature	23°C ± 2°C
International standard	IEC 62053-21 / EN50470-1/3
Accuracy class	Class1/Class B
Installation category	CAT II
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Protection against penetration of dust and water	IP51 (indoor)
Insulating encased meter of protective class	II
Electrostatic discharges	8KV contact / 15KV air gap
Electromagnetic HF fields	IEC 61000-4-3
Electrical fast transients	4kV
Surge	4kV
Radiated & conducted emissions	EN 55022

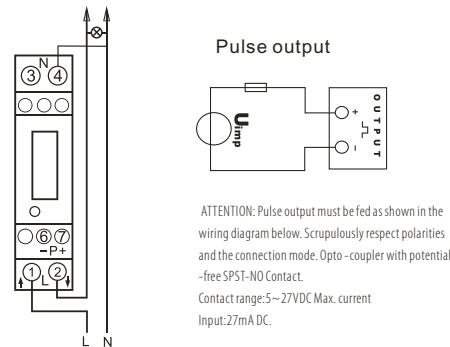


The SDM120 A/D/DB series provides a uni-direction (anti-reverse) measurement model. It would only counts the forward energy, and not counts the reverse energy. it is widely used in solar generation energy measurement.

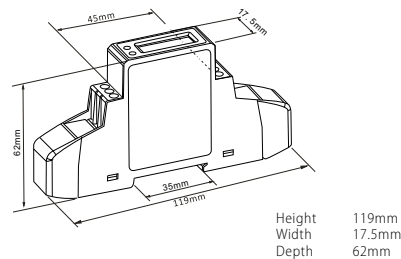
► Description



► Wiring diagrams



► Dimensions

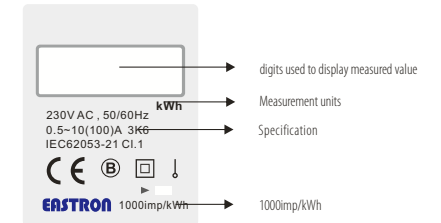


Specification	
Model	SDM230A / SDM230D
Display	SDM230A electromechanical register
	SDM230D LCD
Nominal voltage(Un)	120V or 230V ac
Operational voltage	80% – 120% of Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2µs
Basic current (Ib)	10A
Maximum rated current (Imax)	100A
Operational current range	0.4% Ib-Imax
Over current withstand	30 Imax for 0.01s
Operational frequency range	50 or 60Hz
Internal power consumption	≤ 2W/10VA
Pulse output	1000imp/kWh
Max reading	99999.9 kWh (SDM230A) 99999.9 kWh (SDM230D)

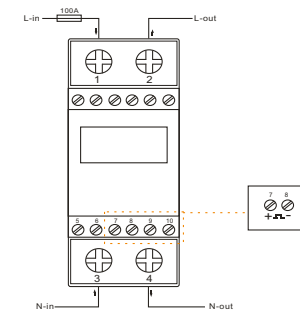
Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C - +55°C
Storage temperature	-40°C - +70°C
Reference temperature	23°C ± 2°C
International standard	IEC 62053-21 / EN50470-1/3
Accuracy class	Class1/Class B
Installation category	CAT II
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Protection against penetration of dust and water	IP51 (indoor)
Insulating encased meter of protective class	II
Altitude	up to 2000m
Electrostatic discharges	8KV contact / 15KV air gap
Electromagnetic HF fields	IEC 61000-4-3
Electrical fast transients	4kV
Surge	4kV
Radiated & conducted emissions	EN 55022

Mechanics	
Din rail dimensions	99x36x63 (WxHxD) DIN 43880
Mounting DIN rail	35mm
Sealing	IP51 (indoor)
Material	self-extinguishing UL94V-0

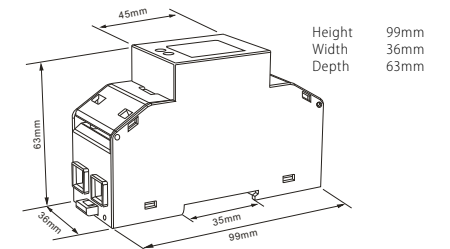
► Description



► Wiring diagrams



► Dimensions





SDM 230DR/BI
SINGLE PHASE 2 WIRE KWH METER

- 100A MAX. direct load
- Active energy + power measured
- Resettable energy
- Pulse output
- Din rail mounted

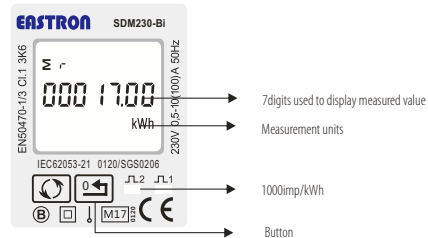


SDM320D
SINGLE PHASE 3 WIRE KWH METER

- 100A MAX. direct load
- 4 Module wide
- Active energy measured
- Pulse output
- IEC62053-21 Class 1

Specification	
Model	SDM 230DR / SDM230BI
Display	LCD with Backlit
Nominal voltage(Un)	120V or 230V ac
Operational voltage	80%~120% of Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2μs
Basic current (Ib)	10A
Maximum rated current (I _{max})	100A
Operational current range	0.4% Ib-I _{max}
Over current withstand	30 I _{max} for 0.01s
Operational frequency range	50 or 60Hz
Internal power consumption	≤ 2W/10VA
Pulse output 1	1000imp/kWh
Pulse output 2	1000imp/kWh
Max reading	999999.9 kWh

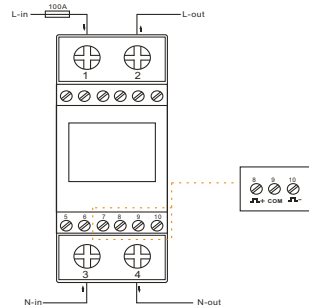
► Description Buttons



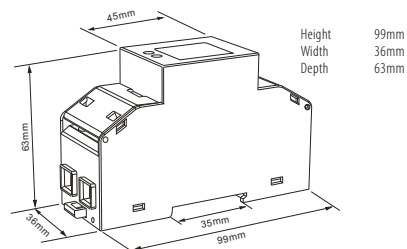
There are two buttons on the front panel of SDM230DR and SDM230BI:

- This button is used to scroll the information pages.
- This button is used to reset the partial energy information.

► Wiring diagrams



► Dimensions



Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C - +55°C
Storage temperature	-40°C - +70°C
Reference temperature	23°C± 2°C
International standard	IEC 62053-21 / EN50470-1/3
Accuracy class	Class1/Class B
Installation category	CAT II
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Protection against penetration of dust and water	IP51 (indoor)
Insulating encased meter of protective class	II
Electrostatic discharges	8kV contact / 15kV air gap
Electromagnetic HF fields	IEC 61000-4-3
Electrical fast transients	4kV
Surge	4kV
Radiated & conducted emissions	EN 55022

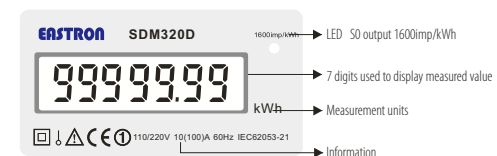
MECHANICS	
Din rail dimensions	99x36x63 (WxHxD) DIN 43880
Mounting DIN rail	35mm
Sealing	IP51 (indoor)
Material	self-extinguishing UL94V-0

Specification	
Model	SDM320D
Nominal voltage(Un)	230V ac / 110V ac
Operational voltage	80%~120% of Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2μs
Basic current (Ib)	10A
Maximum rated current (I _{max})	100A
Operational current range	0.4% Ib-I _{max}
Over current withstand	30 I _{max} for 0.01s
Operational frequency range	50 or 60Hz
Internal power consumption	≤ 2W/10VA
Pulse output	1600imp/kWh
Display	LCD
Max reading	99999.99 kWh

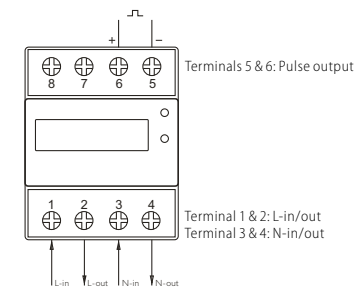
Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C - +55°C
Storage temperature	-40°C - +70°C
Reference temperature	23°C± 2°C
International standard	IEC 62053-21 / EN50470-1/3
Accuracy class	Class1/Class B
Installation category	CAT II
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Protection against penetration of dust and water	IP51 (indoor)
Insulating encased meter of protective class	II
Altitude	up to 2000m
Electrostatic discharges	8kV contact / 15kV air gap
Electromagnetic HF fields	IEC 61000-4-3
Electrical fast transients	4kV
Surge	4kV
Radiated & conducted emissions	EN 55022

MECHANICS	
Din rail dimensions	76x100x66 (WxHxD) DIN 43880
Mounting DIN rail	35mm
Sealing	IP51 (indoor)
Material	self-extinguishing UL94V-0

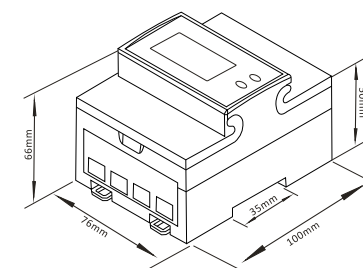
► Description



► Wiring diagrams



► Dimensions



Height 100mm
Width 76mm
Depth 66mm



SDM320E
SINGLE PHASE 3 WIRE KWH METER

- 100A MAX. direct load
- 4 Module wide
- Active energy measured
- Pulse output
- IEC62053-21 Class 1



SDM530D/D-2T
THREE PHASE 4 WIRE KWH METER

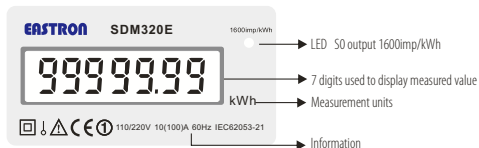
- 100A MAX. direct load
- 7 Module wide
- Active energy measured
- IEC62053-21 Class 1
- Pulse output
- 2 Tariffs available

Specification	
Model	SDM320E
Nominal voltage(Un)	110/220V ac
Operational voltage	80%~120% of Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2μs
Basic current (Ib)	10A
Maximum rated current (Imax)	100A
Operational current range	0.4% Ib-Imax
Over current withstand	30 Imax for 0.01s
Operational frequency range	50 or 60Hz
Internal power consumption	≤ 2W/10VA
Pulse output	1600imp/kWh
Display	LCD
Max reading	99999.99 kWh

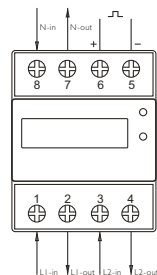
Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C ~ +55°C
Storage temperature	-40°C ~ +70°C
Reference temperature	23°C± 2°C
International standard	IEC 62053-21 / EN50470-1/3
Accuracy class	Class1/Class B
Installation category	CAT II
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Protection against penetration of dust and water	IP51 (indoor)
Insulating encased meter of protective class	II
Electrostatic discharges	8kV contact / 15kV air gap
Electromagnetic HF fields	IEC 61000-4-3
Electrical fast transients	4kV
Surge	4kV
Radiated & conducted emissions	EN 55022

Mechanics	
Din rail dimensions	76x100x66 (WxHxD) DIN 43880
Mounting DIN rail	35mm
Sealing	IP51 (indoor)
Material	self-extinguishing UL94V-0

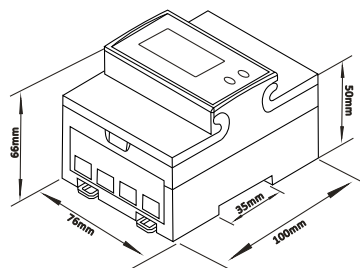
► Description



► Wiring diagrams



► Dimensions



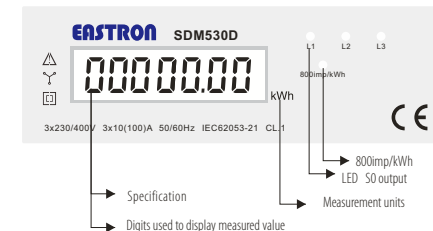
Height 100mm
Width 76mm
Depth 66mm

Specification	
Model	SDM530D / SDM530D-2T
Nominal voltage(Un)	3x230/400V ac or 3x127/220V ac
Operational voltage	80%~120% of Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2μs
Basic current (Ib)	10A
Maximum rated current (Imax)	100A
Operational current range	0.4% Ib-Imax
Over current withstand	30 Imax for 0.01s
Operational frequency range	50 or 60Hz
Power consumption per phase	≤ 2W/10VA
Pulse output	800imp/kWh
Display	LCD
Max reading	999999.9 kWh(SDM530D) 999999.99 kWh(SDM530D-2T)

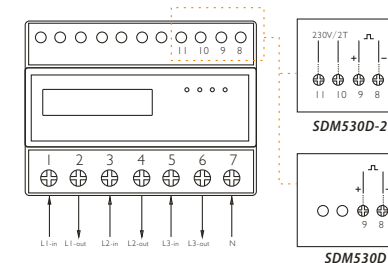
Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C ~ +55°C
Storage temperature	-40°C ~ +70°C
Reference temperature	23°C± 2°C
International standard	IEC 62053-21 / EN50470-1/3
Accuracy class	Class1/Class B
Installation category	CAT II
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Insulating encased meter of protective class	II
Electrostatic discharges	8kV contact / 15kV air gap
Electromagnetic HF fields	IEC 61000-4-3
Electrical fast transients	4kV
Surge	4kV
Radiated & conducted emissions	EN 55022

Mechanics	
Din rail dimensions	100x125x65 (WxHxD) DIN 43880
Mounting DIN rail	35mm
Sealing	IP51 (indoor)
Material	self-extinguishing UL94V-0

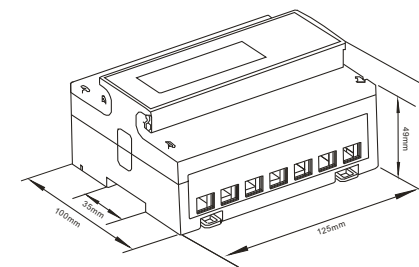
► Description



► Wiring diagrams



► Dimensions



Height 100mm
Width 125mm
Depth 65mm



SDM72D/DR/BI
THREE PHASE 4 WIRE ENERGY METER

- 100A direct load
- 4 Module wide
- Measures active energy(kWh)+ power(W)
- Bi-directional measurement
- Resetable energy
- Pulse output

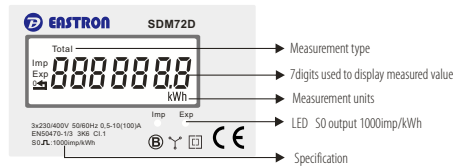


SDM72CT-D/DR/BI
THREE PHASE 4 WIRE ENERGY METER

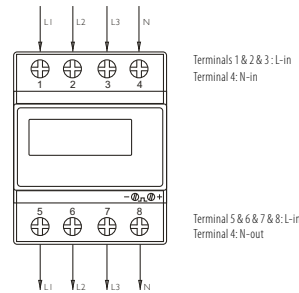
- CT operated
- 4 Module wide
- Measures active energy(kWh)+ power(W)
- Bi-directional measurement
- Resetable energy
- Pulse output

Specification	
Model	SDM72D/DR/BI
Nominal voltage(Un)	3x230/400V ac
Operational voltage	80%~120% of Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2μS
Basic current (Ib)	10A
Maximum rated current (Imax)	100A
Operational current range	0.4% Ib-Imax
Over current withstand	30 Imax for 0.01s
Operational frequency range	50 or 60Hz
Power consumption per phase	≤ 2W/10VA
Pulse output	1000imp/kWh
Display	LCD
Max reading	999999.9 kWh

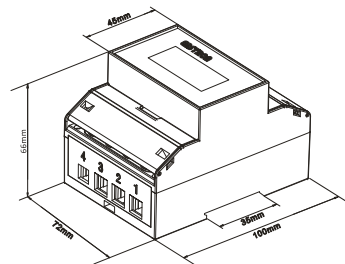
► Description



► Wiring diagrams



► Dimensions



Height 100mm
Width 72mm
Depth 66mm

Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C - +55°C
Storage temperature	-40°C - +70°C
Reference temperature	23°C± 2°C
International standard	IEC 62053-21 / ENS0470-1/3
Accuracy class	Class1/Class B
Installation category	CAT III
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Protection against penetration of dust and water	IP51 (indoor)
Insulating encased meter of protective class	II
Altitude	up to 2000m
Electrostatic discharges	8kV contact / 15kV air gap
Electromagnetic HF fields	IEC 61000-4-3
Electrical fast transients	4kV
Surge	4kV
Radiated & conducted emissions	EN 55022

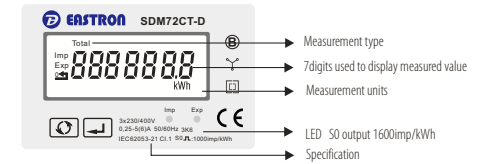
Mechanics	
Din rail dimensions	72x100x66 (WxHxD) DIN 43880
Mounting DIN rail	35mm
Sealing	IP51 (indoor)
Material	self-extinguishing UL94V-0

Specification	
Model	72CT-D/DR/BI
Nominal voltage(Un)	3x230/400V ac
Operational voltage	80%~120% of Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2μS
Basic current (Ib)	5A
Maximum rated current (Imax)	6A
Operational current range	0.4% Ib-Imax
Over current withstand	20 Imax for 0.01s
Operational frequency range	50 or 60Hz
Power consumption per phase	≤ 2W/10VA
Pulse output	1000imp/kWh
Display	LCD
Max reading	999999.9 kWh

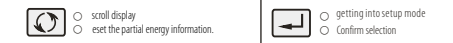
Performance criteria	
Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C - +55°C
Storage temperature	-40°C - +70°C
Reference temperature	23°C± 2°C
International standard	IEC 62053-21 / ENS0470-1/3
Accuracy class	Class1/Class B
Installation category	CAT III
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Protection against penetration of dust and water	IP51 (indoor)
Insulating encased meter of protective class	II
Electrostatic discharges	8kV contact / 15kV air gap
Electromagnetic HF fields	IEC 61000-4-3
Electrical fast transients	4kV
Surge	4kV
Radiated & conducted emissions	EN 55022

Mechanics	
Din rail dimensions	100x125x65 (WxHxD) DIN 43880
Mounting DIN rail	35mm
Material	self-extinguishing UL94V-0

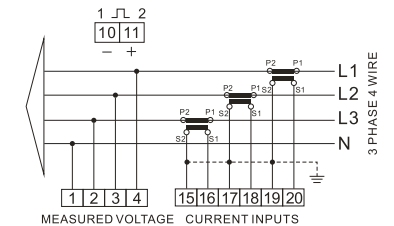
► Description



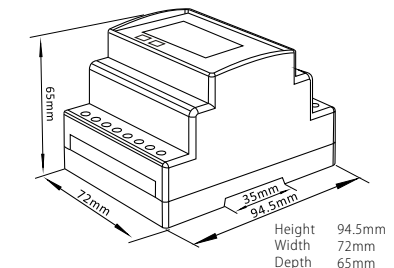
○ Keys



► Wiring diagrams



► Dimensions



Height 94.5mm
Width 72mm
Depth 65mm



Smart X96 Series

SMART ENERGY ANALYZER FOR SINGLE AND THREE PHASE SYSTEMS

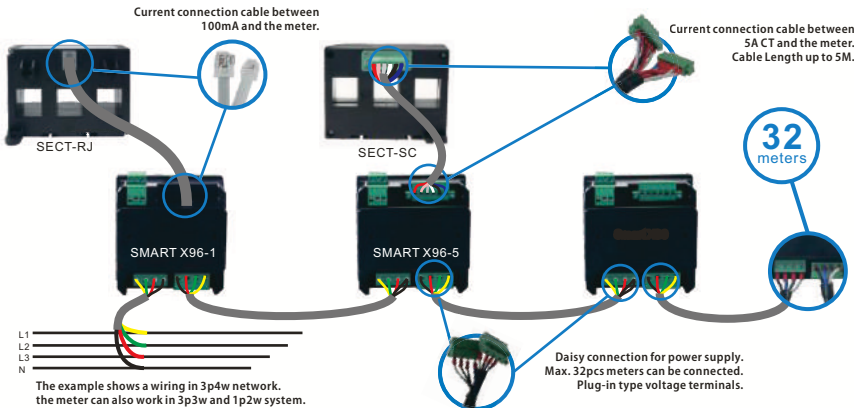
- Measures kWh, kVarh, kW, kVar, kVA, P, F, PF, Hz, dmd, V, A, etc.
- Bi-directional Measurement IMP & EXP
- Energy Information of Each Phase
- Total Harmonic Distortion of Voltage and Current
- 2nd~63rd Individual Harmonic Distortion
- RS485 Modbus RTU & Two Pulse Outputs
- Bar Graph for Power Indication
- Three phase self-power supply
- Backlit LCD Display for Full Viewing Angles
- Accuracy Class 1 / 0.5S
- Plug-in Play solution

Introduction

The Smart X96 digital smart meter from Eastron is an ideal solution for the measurement and display of all important electrical parameters including harmonic distortion of total and individual, up to 63rd. The meter uses a high definition screen with programmable backlight for high visibility in dark area and from all viewing angles. New sector icons shows the percentage of the power load on 3 phases. Modbus RS485 RTU and 2 pulse outputs are equipped as standard.

The Smart X96 and 3-in-1 Current transformers provide a simple and fast installation solutions. With pre-cut wiring looms, the meters and CTs can be easily connected. This solution reduces lot of wiring and installation time, and save wrong wiring troubles.

“Plug-in Play Solution”



Input	
Nominal input voltage	100-276V AC (L-N) 173-480V AC (L-L)
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	100mA / 5A
Nom. Input current burden	< 0.1VA
Max. continuous input overload current	120% of nominal
Max. short duration input current	20 x nominal current for 1 second

Power supply	
Operating range	Self powered (from any of the three phases)
Supply burden	< 2W / 10VA

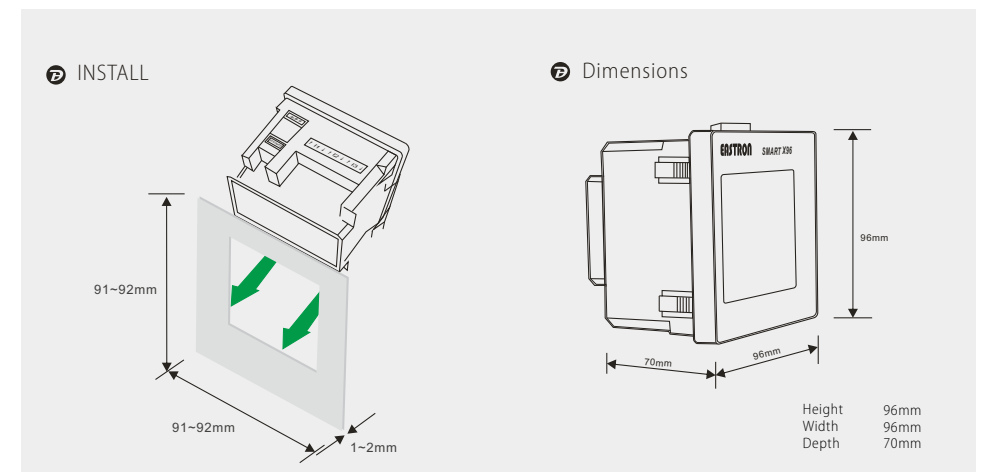
Accuracy	
Voltage (V)	0.5% of range maximum
Current (A)	0.5% of range maximum
Frequency (Hz)	0.2% of mid-frequency
Power factor (PF)	1% of unity (0.01)
Active power (W)	1.0% of range maximum
Reactive power (VAr)	1.0% of range maximum
Apparent power (VA)	1.0% of range maximum
Active energy (kWh)	Class 0.5S IEC62053-22 Class 1.0 IEC62053-21
Reactive energy (kVArh)	1.0% of range maximum to IEC 62053-24
THD	2% to 63rd harmonic

Measured Range	
Voltage (V)	5 – 120% of nominal (Min 100V -self powered)
Current (A)	5 – 120% of nominal
Frequency (Hz)	45 – 66 Hz
Power (W, VAr, VA)	5 – 144% of nominal (bi-directional)
Energy	8digit, upto 9999999.9 kWh
Power factor	4 quadrant
THD	0 – 40% upto 63rd harmonic

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 voltage and current to earth
Altitude	3000m
Warm-up	1 minute

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 of SO 1	0.01 / 0.1 / 1 / 10 / 100 kWh/kVArh
Pulsed output of SO 2 (non-configurable)	3200IMP/kWh
Communications	Modbus RTU (RS485)
Type	2-wire half duplex
Baud rate	2400, 4800, 9600, 19200, 38400
Address	1 to 247

Enclosure	
Enclosure Style	DIN 96 panel mount
Dimensions	96x96x62 mm
Panel cut-out	92x92mm
Panel thickness	1-2 mm
Protection rating	Ip51 (Indoor)
Material	UL 94-V0
Weight	340 g
Cable size	0.05mm-4mm stranded wire
Terminals	Voltage: Shrouded screw-clamp. Current: RJ12





Smart X835 series

SMART ENERGY ANALYZER FOR SINGLE AND THREE PHASE SYSTEMS

- Multi-parameters measured
- 2~63rd individual Harmonic Distortion
- Support 3P4W, 3P3W, 1P2W system
- CT and PT connected
- Multi tariffs available
- Digital output/ Digital input/ Analog output / Pulse output
- RS485 Modbus communication
- Crest factor & Key factor

Introduction

The multifunction energy analyzer SMART X835 series is a top new-generation intelligent panel meter, used not only in the electricity transmission and power distribution system, but also in the power consumption measurement and analysis in high voltage intelligent power grid.

The unit measures and displays the characteristics of single phase two wires, three phase three wires and three phase four wires supplies, including voltage, frequency, current, power, active and reactive energy, imported or exported, Harmonic, Power factor, Max. Demand, crest factor and key factor etc. Energy is measured in terms of kWh, kVAh. Maximum demand current can be measured over preset periods of up to 60minutes. In order to measure energy, the unit requires voltage and current inputs in addition to the supply required to power the product. The requisite current input(s) are obtained via current transformers The SMART X835 can be configured to work with a wide range of CTs, giving the unit a wide range of operation. Built-in interfaces provide pulse and RS485 Modbus RTU outputs. Configuration is password protected.



SMART X835 - X - X

- 1: Single Tariff
- 4: Multi Tariffs
- P: 2 Pulse outputs
- B: RS485 Modbus, 2 Pulse outputs
- DIO: 2 Digital Inputs, 2 Digital Outputs, RS485 Modbus
- AO: 2 Analog Outputs, RS485, 2 Pulse outputs

SMART X835: Multi-parameter measured; 3p4w, 3p3w, 1p2w network workable; 2~63rd harmonic distortion.

Input	
Nominal input voltage	57.7 – 276V AC L-N (100-480V L-L)
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	5A
Nom. Input current burden	< 0.1 VA
Max. continuous input overload current	120% of nominal
Max. short duration input current	20 x nominal current for 1 second
Auxiliary	85-276V AC 50/60Hz or 120-380V DC
Supply burden	< 2W / 10VA

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 (kVAh)	1.0% of range maximum to IEC 62053-24
THD	2% to 63rd harmonic

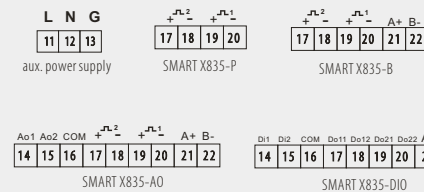
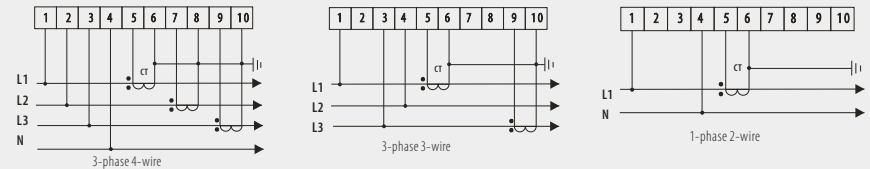
Measured Range	
Voltage (V)	5 – 120% of nominal (Min 100V – self powered)
Current (A)	5 – 120% of nominal
Frequency (Hz)	45 – 66 Hz
Power (W, VAr, VA)	5 – 144% of nominal (bi-directional)
Energy	8 digit, upto 9999999.9 kWh
Power factor	4 quadrant
THD	0 – 40% upto 63rd harmonic

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 voltage and current to earth
Altitude	3000m
Warm-up	1 minute

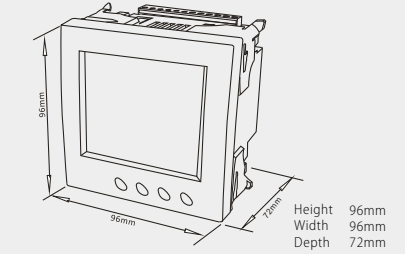
Outputs	
Pulsed output relay (configurable)	Opto-coupled, potential-free SPST-NO contact
Contact Rating current	2-27mA at 27V DC
Contact Rating voltage	5-27V DC
Pulse Width	60 / 100 / 200 ms
Pulse rate of SO 1	0.01 / 0.1 / 1 / 10 / 100 kWh/kVAh
Pulsed output of SO 2 (non-configurable)	3200IMP/kWh
Communications	Modbus RTU (RS485)
Type	2-wire half duplex
Baud rate	2400, 4800, 9600, 19200, 38400
Address	1 to 247

Enclosure	
Enclosure Style	DIN 96 panel mount
Dimensions	96x96x72 mm
Panel cut-out	92x92mm
Panel thickness	1-2 mm
Protection rating	Ip51 (Indoor)
Material	UL 94-V0
Weight	340 g
Cable size	0.05mm-4mm stranded wire

Wiring diagram



Dimensions





SMARTconnect X835
SMART POWER ANALYZER

- Measures kWh, kVarh, kW, kVar, kVA, P, F, PF, Hz, dmd, V, A, etc.
- Bi-directional Measurement IMP & EXP
- Total Harmonic Distortion of Voltage and Current
- RS485 Modbus RTU & Two Pulse Outputs
- Backlit LCD Display
- Plug-in solution



Smart X72
SMART POWER ANALYZER

- Multi-parameters measured
- RS485 Modbus RTU & two pulse output
- Digital input & Digital output
- CT&PT programmable
- THD of Voltage and current

Input	
Nominal input voltage	100-276V AC (L-N) 173-480V AC (L-L)
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	333mV / 5A
Nom. Input current burden	< 0.1 VA
Max. continuous input overload current	120% of nominal
Max. short duration input current	20 x nominal current for 1 second
Operating range	Self powered (from any of the three phases)
Supply burden	< 2W / 10 VA

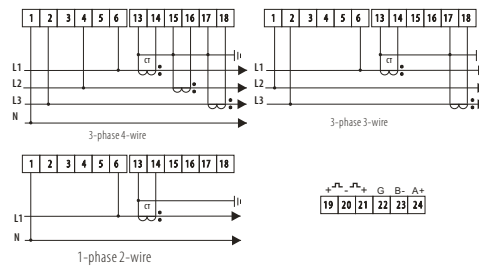
Outputs	
Pulsed output relay (configurable)	Opto-coupled, potential-free SPST-NO contact
Contact Rating current	2-27mA at 27V DC
Contact Rating voltage	5-27V DC
Pulse Width	60 / 100 / 200 ms
Pulse rate	0.01 / 0.1 / 1 / 10 / 100 kWh/kVarh
Pulsed output relay (non-configurable)	3200IMP/kWh
Communications	Modbus RTU (RS485)
Type	2-wire half duplex
Baud rate	2400, 4800, 9600, 19200, 38400
Address	1 to 247

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	2%

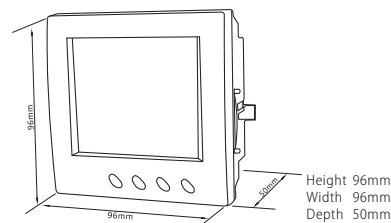
Enclosure	
Enclosure Style	DIN 96 panel mount
Dimensions	96x96x62 mm
Panel cut-out	92x92mm
Protection rating	Front IP54, Rear IP30
Material	UL 94-V0
Weight	340 g
Cable size	0.05mm-4mm stranded wire
Terminals	Voltage: Shrouded screw-clamp. Current: RJ12

Measured Range	
Voltage (V)	5 - 120% of nominal (Min 100V - self powered)
Current (A)	5 - 120% of nominal
Frequency (Hz)	44 - 66 Hz
Power (W, VA, VAR)	5 - 144% of nominal (bi-directional)
Energy	8 digit, upto 9999999.9 kWh
Power factor	4 quadrant
THD	0 - 40% upto 63rd harmonic

► **Wiring diagrams**



► **Dimension**



Input	
Nominal input voltage	57.7 - 276V AC L-N (100-480V L-L)
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	5A
Nom. Input current burden	< 0.1 VA
Max. continuous input overload current	120% of nominal
Max. short duration input current	20 x nominal current for 1 second

Power supply	
Auxiliary	85-276V AC 50/60Hz or 120-380V DC
Supply burden	< 2W / 10VA

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 of current and voltage	2%

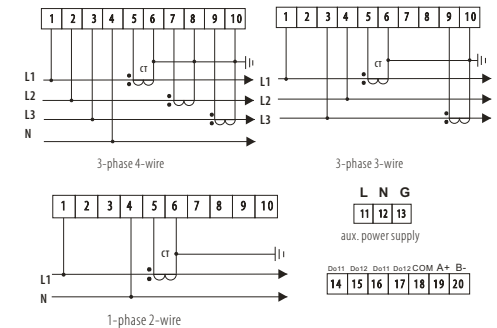
Measured Range	
Voltage (V)	5 - 120% of nominal (Min 100V - self powered)
Current (A)	5 - 120% of nominal
Frequency (Hz)	45 - 66 Hz
Power (W, VAR, VA)	5 - 144% of nominal (bi-directional)
Energy	8 digit, upto 9999999.9 kWh
Power factor	4 quadrant
THD	0 - 40% upto 21st harmonic

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 voltage and current to earth
Altitude	3000m
Warm-up	1 minute

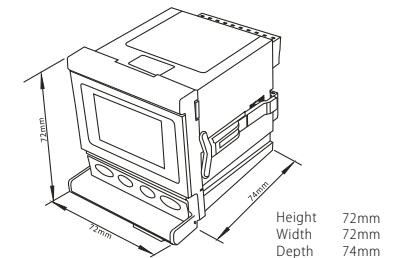
Outputs	
Communications	Modbus RTU (RS485)
Type	2-wire half duplex
Baud rate	2400, 4800, 9600, 19200, 38400
Address	1 to 247

Enclosure	
Enclosure Style	DIN 96 panel mount
Dimensions	96x96x50 mm
Panel cut-out	92x92mm
Protection rating	Front IP54, Rear IP30
Material	UL 94-V0
Weight	300 g
Cable size	0.05mm-4mm stranded wire
Terminals	Voltage: Shrouded screw-clamp. Current: RJ12

► **Wiring diagrams**



► **Dimension**





SMART X302 Series
THREE PHASE SYSTEMS

- High precision measurement of single phase Voltage
- (AC or DC), or current AC or DC) or Frequency or Power
- Programmable voltage ratio
- Auxiliary power supply: AC/DC 85V~265V
- Accuracy Class 0.5 or 1
- Dimension optional: 48X96, 72x72, 96x96mm



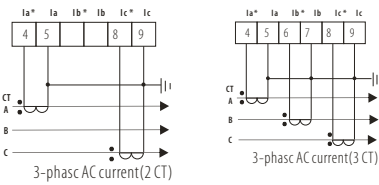
SMART X203 Series
SINGLE PHASE SYSTEMS

- High precision measurement of single phase Voltage
- (AC or DC), or current AC or DC) or Frequency or Power
- Programmable voltage ratio
- Auxiliary power supply: AC/DC 85V~265V
- Accuracy Class 0.5 or 1
- Dimension optional: 48x96, 72x72, 96x96mm

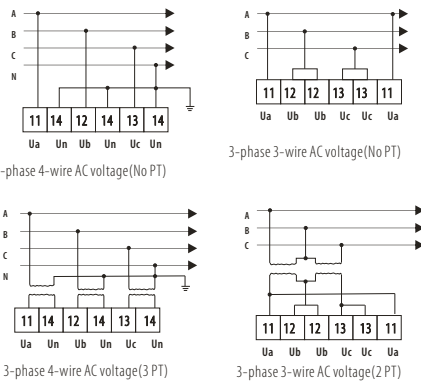
Specification	
Ratio value	AC100V, AC230V, AC400V
Overload	120%
Ferquency	45~65Hz or DC
Working range	AC100V, AC230V, AC400V
Power consumption	<4VA
Operational environment	-25°C~+55°C
Storage environment	-40°C~+70°C
Relative humidity	≤ 90%, in the place without corrosive gas
Height above sea level	≤ 2000m
Insulation resistance	>100Mohm
AC withstand voltage	AC 2KV
Electro-Static discharge	class 4
Electrical Fast Transient pulse train	class 4
Electrical surge	class 4

► **Wiring diagrams**

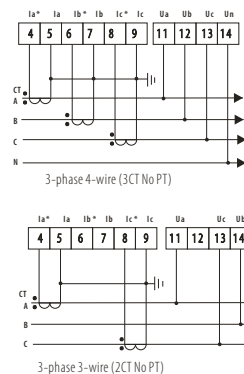
○ **Amperemeter**



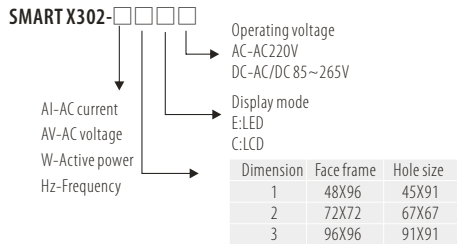
○ **Voltmeter**



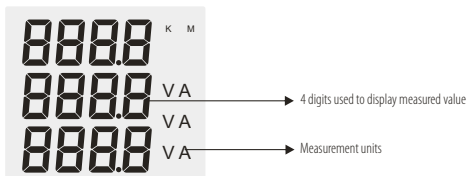
○ **VA meter/Power meter**



► **Model Options**



► **Description**

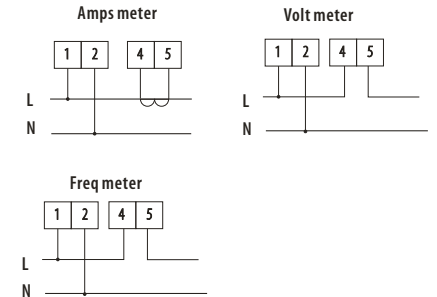


Keys

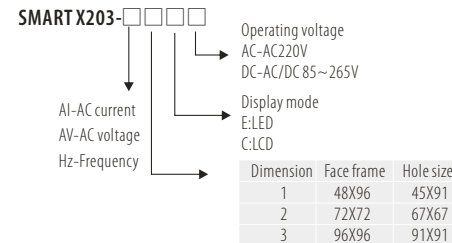
	○ Enter configuration menu		○ Select menu
	○ Exit configuration menu		○ Digit -
	○ Select menu		○ Backward
	○ Digit +		○ Confirm settings

Specification	
Ratio value	AC100V, AC230V, AC400V
Overload	120%
Ferquency	45~65Hz or DC
Working range	AC100V, AC230V, AC400V
Power consumption	<4VA
Operational environment	-25°C~+55°C
Storage environment	-40°C~+70°C
Relative humidity	≤ 90%, in the place without corrosive gas
Height above sea level	≤ 2000m
Insulation resistance	>100Mohm
AC withstand voltage	AC 2KV
Electro-Static discharge	class 4
Electrical Fast Transient pulse train	class 4
Electrical surge	class 4

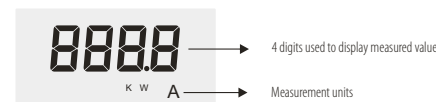
► **Wiring diagrams**



► **Model Options**



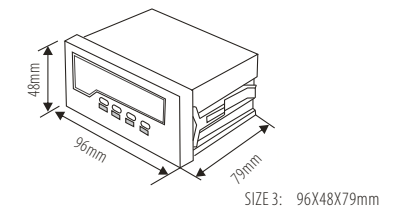
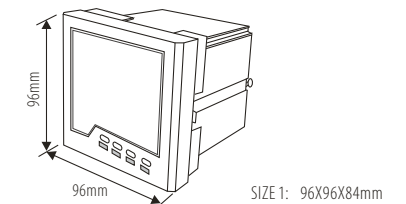
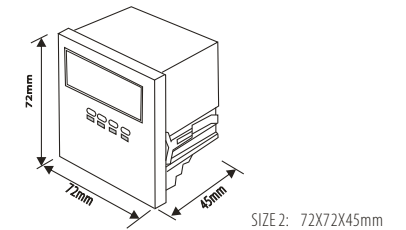
► **Description**



Keys

	○ Enter configuration menu		○ Select menu
	○ Exit configuration menu		○ Digit -
	○ Select menu		○ Backward
	○ Digit +		○ Confirm settings

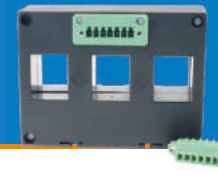
► **Dimensions**





ESCT-RJ Series
3-IN-1 CURRENT TRANSFORMER

- Cost effective three-phase moulded case
- Ratio's ranging from 100A~600A
- RJ12 socket for quite connection and to eliminate wiring error
- Busbar, DIN-rail and metal feet are supplied as standard

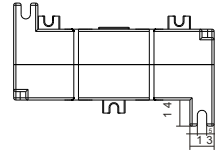
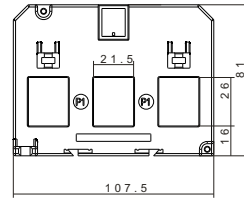


ESCT-SC Series
3-IN-1 CURRENT TRANSFORMER

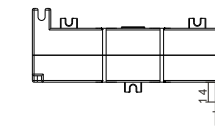
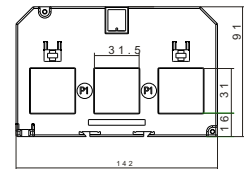
- Cost effective three-phase moulded case
- Ratio's ranging from 60/5 to 630/5
- Plug-in quite connection, 80% labor saving
- Lockable terminal for safety
- Both available for Busbar or DIN Rail mounted

Specification	
Frequency	50Hz-60Hz
Rated current	100A to 630A loads
Rated output	100mA / 333mV (AC)
Secondary terminals	RJ12
Aperture holes centers	35,45mm
Accuracy	Class 0.5 or 1 from 20% to 120% of rated current
Phase angle	Less than 2 degrees at 50% of rated current
Insulation voltage	600Vac
Maximum primary voltage	5000Vac (Insulated Conductor)
Dielectric strength	2.5KV / 1mA / 1min
Operating temperature	-15°C to 60°C
Operating humidity	<85%
Case material	PC / UL 94-V0
Bobbin	PBT
Internal structure	Epoxy
Compliant with	IEC/EN60044/1

► Dimension



ESCT-RJ335

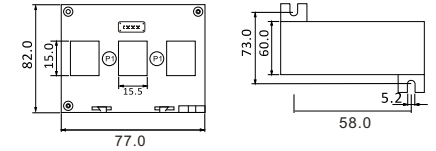


ESCT-RJ345

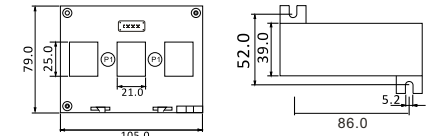
Model	Rated Amp	Output	Burden (VA)	
			class:0.5	Class:1.0
ESCT-RJ335	60A	100mA	0.25	0.25
ESCT-RJ335	125A	100mA	0.25	0.5
ESCT-RJ335	150A	100mA	0.25	0.5
ESCT-RJ335	200A	100mA	0.25	0.5
ESCT-RJ335	250A	100mA	0.25	0.5
ESCT-RJ345	250A	100mA	0.25	0.5
ESCT-RJ345	300A	100mA	0.25	0.5
ESCT-RJ345	400A	100mA	0.25	0.5
ESCT-RJ345	500A	100mA	0.25	0.5
ESCT-RJ345	600A	100mA	0.25	0.5
ESCT-RJ345	630A	100mA	0.25	0.5

Specification	
System voltage	720V maximum
Test voltage	3kV for 1 minute
System frequency	50Hz or 60Hz
Primary ratings	60A to 630A
Short circuit thermal current	60 x rated primary current
Overload withstand	1.2 x rated current continuously
Rated dynamic current	2.55 x Ith
Secondary terminals	M4 screw terminals
Enclosure	Flame retardant grad classified UL 94V-0
Aperture holes centers	25,35,45mm
Mounting hardware	Plug-in metal feet for wall or base Mounting Bus-bar and DIN-rail
Compliant with	IEC/EN60044-1

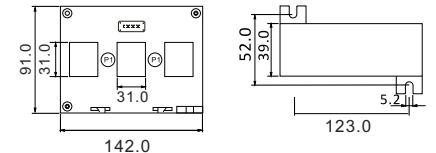
► Dimension



ESCT-SC325



ESCT-SC335



ESCT-SC345

Model	Ratio (A)	Burden (VA)	
		class:0.5	Class:1.0
ESCT-SC325	60/1	-	1
ESCT-SC325	100/1	-	1.5
ESCT-SC325	125/1	1.5	1.5
ESCT-SC325	150/1	1.5	1.5
ESCT-SC325	300/1	1.5	1.5
ESCT-SC335	100/1	-	1.5
ESCT-SC335	125/1	-	1.5
ESCT-SC335	150/1	-	1.5
ESCT-SC335	160/1	1.5	1.5
ESCT-SC335	200/1	1.5	1.5
ESCT-SC335	250/1	1.5	1.5
ESCT-C345	250/1	1.5	1.5
ESCT-C345	300/1	2.5	2.5
ESCT-C345	400/1	2.5	2.5
ESCT-C345	500/1	2.5	2.5
ESCT-C345	600/1	2.5	2.5
ESCT-C345	630/1	2.5	2.5



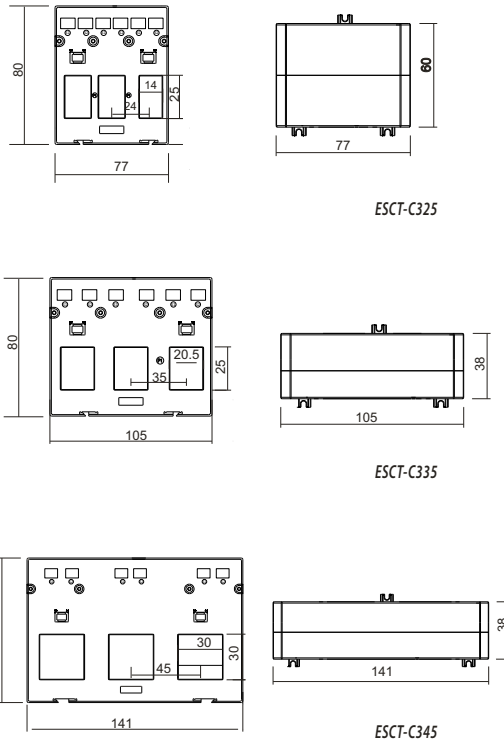
ESCT-C Series
3-IN-1 CURRENT TRANSFORMER

- Cost effective three-phase moulded case
- Ratio's ranging from 60/5 to 630/5
- Integrated wire sealable terminal cover
- Busbar, DIN-rail and metal feet mounting hardware supplied
- Combined M4 posi /slot screw

Specification	
Rated current	60A to 630A loads
Rated output	5A (AC)
Accuracy	Class 0.5 or 1 from 20% to 120% of rated current
Phase angle	Less than 2 degrees at 50% of rated current
Insulation voltage	600Vac
Maximum primary voltage	5000Vac (Insulated Conductor)
Dielectric strength	2.5 KV / 1mA / 1min
Operating temperature	-15°C to 60°C
Operating humidity	< 85%
Case material	PC / UL 94-V0
Bobbin	PBT
Internal structure	Epoxy

Model	Ratio (A)	Burden (VA)	
		class 0.5	Class 1.0
ESCT-C325	60/5	-	1
ESCT-C325	100/5	1.5	1.5
ESCT-C325	125/5	1.5	1.5
ESCT-C325	150/5	1.5	1.5
ESCT-C325	200/5	-	1.5
ESCT-C335	100/5	-	1.5
ESCT-C335	125/5	-	2.5
ESCT-C335	150/5	1.5	3.75
ESCT-C335	160/5	1.5	1.5
ESCT-C335	200/5	1.5	1.5
ESCT-C335	250/5	-	1.5
ESCT-C345	250/5	2.5	1.5
ESCT-C345	300/5	2.5	2.5
ESCT-C345	400/5	2.5	2.5
ESCT-C345	500/5	2.5	2.5
ESCT-C345	600/5	2.5	2.5
ESCT-C345	630/5	-	2.5

► Dimension



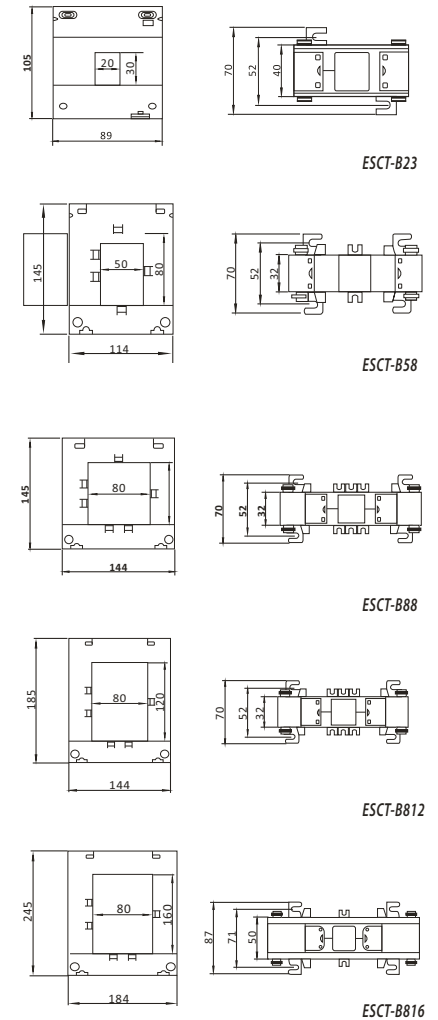
ESCT-B Series
SPLIT CORE CURRENT TRANSFORMER

- Split Core
- Primary input 100A~5000A
- Secondary output 5A / 1A
- Two building fixing methods: Base; Busbar mounting
- Wide inner window, allowing clamping of big cables or bus-bars
- Standard: IEC60044-1, EN60044-1, VDE0414-44-1, GB1208-2006

Specification	
Frequency	50Hz-60Hz
Rated current	100A to 5000A loads
Rated output	5A / 1A (AC)
Accuracy	Class 0.5 or 1 from 20% to 120% of rated current
Phase angle	Less than 2 degrees at 50% of rated current
Insulation voltage	600Vac
Maximum primary voltage	5000Vac (Insulated Conductor)
Dielectric strength	2.5 KV / 1mA / 1min
Operating temperature	-15°C to 60°C
Operating humidity	< 85%
Case material	PC / UL 94-V0
Bobbin	PBT
Internal structure	Epoxy

Model	Ratio (A)	Burden (VA)	
		class 0.5	Class 1.0
ESCT-B23	100/5	1.5	2.5
ESCT-B23	150/5	1.5	2.5
ESCT-B23	200/5	2.5	3.75
ESCT-B23	250/5	2.5	5
ESCT-B23	300/5	5	5
ESCT-B23	400/5	5	5
ESCT-B58	250/5	1.5	2.5
ESCT-B58	300/5	2.5	5
ESCT-B58	400/5	3.75	5
ESCT-B58	500/5	5	7.5
ESCT-B58	600/5	5	7.5
ESCT-B58	750/5	5	10
ESCT-B58	800/5	5	10
ESCT-B58	1000/5	7.5	10
ESCT-B812	500/5	2.5	5
ESCT-B812	600/5	2.5	5
ESCT-B812	750/5	5	10
ESCT-B812	800/5	5	10
ESCT-B812	1000/5	7.5	10
ESCT-B812	1200/5	7.5	10
ESCT-B812	1250/5	7.5	10
ESCT-B812	1500/5	7.5	10
ESCT-B816	1000/5	10	15
ESCT-B816	1500/5	10	15
ESCT-B816	2000/5	15	20
ESCT-B816	2500/5	20	25
ESCT-B816	3000/5	20	30
ESCT-B816	4000/5	20	30
ESCT-B816	5000/5	20	30
ESCT-B816	6000/5	20	30

► Dimension





ESCT-T Series
SPLIT CORE CURRENT TRANSFORMER

- Split Core, easy installation
- Primary input 100A~600A
- Secondary output 5A / 1A
- Safe operation
- Standard: IEC60044-1, EN60044-1, VDE0414-44-1, GB1208-2006



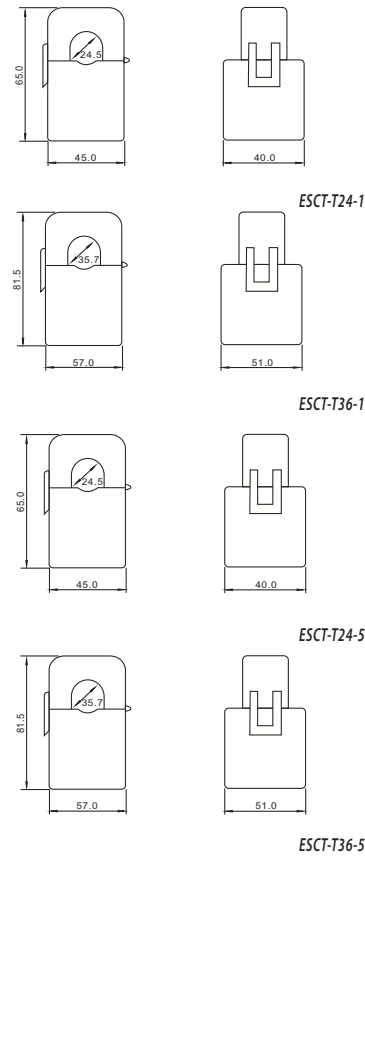
ESCT-TU Series
MINI SPLIT CORE CURRENT TRANSFORMER

- Split Core, easy installation
- Primary input 5A~600A
- Secondary output 333mV / 100mV / 100mA
- Safe operation
- Standard: IEC60044-1, EN60044-1, VDE0414-44-1, GB1208-2006

Specification	
Frequency	50-60Hz
Rated current	100A to 600A loads
Rated output	1A / 5A (AC)
Accuracy	Class 0.5 or 1 from 20% to 120% of rated current
Phase angle	Less than 2 degrees at 50% of rated current
Insulation voltage	600Vac
Maximum primary voltage	5000Vac (Insulated Conductor)
Dielectric strength	2.5KV/1mA/1min
Operating temperature	-15°C to 60°C.
Operating humidity	<85%
Case material	PC / UL94-V0
Bobbin	PBT
Core	Permalloy
Internal structure	Epoxy

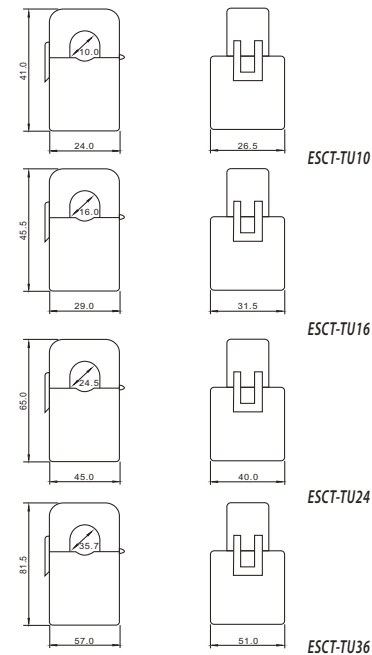
Model	Ratio (A)	Burden (VA)	
		class 0.5	Class 1.0
ESCT-T24-1	100/1	-	1.5
ESCT-T24-1	150/1	-	1.5
ESCT-T24-1	200/1	1.5	2.5
ESCT-T24-1	250/1	1.5	2.5
ESCT-T24-1	300/1	1.5	2.5
ESCT-T36-1	100/1	-	1.5
ESCT-T36-1	150/1	-	1.5
ESCT-T36-1	200/1	1.5	2.5
ESCT-T36-1	300/1	1.5	2.5
ESCT-T36-1	400/1	1.5	2.5
ESCT-T36-1	500/1	2.5	3.75
ESCT-T36-1	600/1	2.5	5
ESCT-T24-5	100/5	-	1.5
ESCT-T24-5	150/5	-	1.5
ESCT-T24-5	200/5	1.5	2.5
ESCT-T24-5	250/5	1.5	2.5
ESCT-T24-5	300/5	1.5	2.5
ESCT-T36-5	100/5	-	1.5
ESCT-T36-5	150/5	-	1.5
ESCT-T36-5	200/5	1.5	2.5
ESCT-T36-5	300/5	1.5	2.5
ESCT-T36-5	400/5	1.5	2.5
ESCT-T36-5	500/5	2.5	3.75
ESCT-T36-5	600/5	2.5	5

► Dimension



Specification	
Frequency	50-60Hz
Rated current	5A to 600A loads
Rated output	333mV/100mV (AC)
Accuracy	Class 0.5 or 1 from 20% to 120% of rated current
Phase angle	less than 2 degrees at 50% of rated current
Insulation voltage	600Vac
Maximum primary voltage	5000Vac (Insulated Conductor)
Dielectric strength	2.5KV/1mA/1min
Operating temperature	-15°C to 60°C.
Operating humidity	<85%
Case material	PC / UL94-V0
Bobbin	PBT
Core	Permalloy
Internal structure	Epoxy
Leads	UL 1015, Twisted Pair, 22AWG

► Dimension



Model	Rated Amps	Output	Accuracy
ESCT-TU10	5	0.333	0.5 or 1
ESCT-TU10	10	0.333	0.5 or 1
ESCT-TU10	20	0.333	0.5 or 1
ESCT-TU10	50	0.333	0.5 or 1
ESCT-TU10	75	0.333	0.5 or 1
ESCT-TU10	5	0.1	0.5 or 1
ESCT-TU10	10	0.1	0.5 or 1
ESCT-TU10	20	0.1	0.5 or 1
ESCT-TU10	50	0.1	0.5 or 1
ESCT-TU10	75	0.1	0.5 or 1
ESCT-U16	5	0.333	0.5 or 1
ESCT-U16	10	0.333	0.5 or 1
ESCT-U16	50	0.333	0.5 or 1
ESCT-U16	100	0.333	0.5 or 1
ESCT-U16	150	0.333	0.5 or 1
ESCT-U16	5	0.1	0.5 or 1
ESCT-U16	10	0.1	0.5 or 1
ESCT-U16	50	0.1	0.5 or 1
ESCT-U16	100	0.1	0.5 or 1
ESCT-U16	150	0.1	0.5 or 1
ESCT-U24	10	0.333	0.5 or 1
ESCT-U24	50	0.333	0.5 or 1
ESCT-U24	100	0.333	0.5 or 1
ESCT-U24	250	0.333	0.5 or 1
ESCT-U24	300	0.333	0.5 or 1
ESCT-U24	10	0.1	0.5 or 1
ESCT-U24	50	0.1	0.5 or 1
ESCT-U24	100	0.1	0.5 or 1
ESCT-U24	250	0.1	0.5 or 1
ESCT-U24	300	0.1	0.5 or 1
ESCT-U36	20	0.333	0.5 or 1
ESCT-U36	100	0.333	0.5 or 1
ESCT-U36	250	0.333	0.5 or 1
ESCT-U36	400	0.333	0.5 or 1
ESCT-U36	600	0.333	0.5 or 1
ESCT-U36	20	0.1	0.5 or 1
ESCT-U36	100	0.1	0.5 or 1
ESCT-U36	250	0.1	0.5 or 1
ESCT-U36	400	0.1	0.5 or 1
ESCT-U36	600	0.1	0.5 or 1



ESCT-U Series
SPLIT CORE CURRENT TRANSFORMER

- Split Core, easy installation
- Primary input 5A~3000A
- Secondary output 333mV
- Wide inner window, allowing clamping of big cables
- Standard: IEC60044-1, EN60044-1, VDE0414-44-1, GB1208-2006



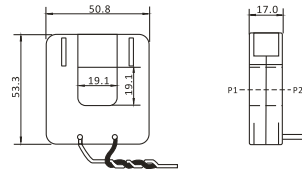
ESCT-RC
FLEXIBLE ROGOWSKI COIL CURRENT SENSOR

- Flexible and light weights
- Easy & quick installation in tight spaces
- No danger from open-circuited secondary
- No core saturation or damage if overloaded
- excellent linearity
- Multi-size are available
- Single phase and three phase are available

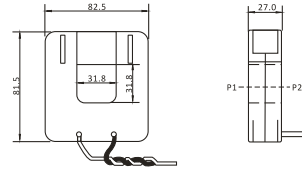
Specification	
Frequency	50-60Hz
Rated current	5A to 3000A loads
Rated output	333mV (AC)
Accuracy	± 1% from 20% to 120% of rated current
Phase angle	less than 2 degrees at 50% of rated current
Insulation voltage	600Vac
Maximum primary voltage	5000Vac (Insulated Conductor)
Dielectric strength	2.5KV/1mA/1min
Operating temperature	-15°C to 60°C.
Operating humidity	<85%
Case material	PC / UL94-V0
Bobbin	PBT
Core	Permalloy
Internal structure	Epoxy
Leads	UL 1015, Twisted Pair, 22AWG

Model	Rated Amps	Output	Accuracy
ESCT-U75	5	0.333V	1
ESCT-U75	10	0.333V	1
ESCT-U75	50	0.333V	1
ESCT-U75	75	0.333V	1
ESCT-U75	100	0.333V	1
ESCT-U75	125	0.333V	1
ESCT-U75	150	0.333V	1
ESCT-U75	200	0.333V	1
ESCT-U125	50	0.333V	1
ESCT-U125	100	0.333V	1
ESCT-U125	200	0.333V	1
ESCT-U125	250	0.333V	1
ESCT-U125	400	0.333V	1
ESCT-U125	600	0.333V	1
ESCT-U125	630	0.333V	1
ESCT-U200	100	0.333V	1
ESCT-U200	125	0.333V	1
ESCT-U200	250	0.333V	1
ESCT-U200	400	0.333V	1
ESCT-U200	630	0.333V	1
ESCT-U200	800	0.333V	1
ESCT-U200	1000	0.333V	1
ESCT-U200	2000	0.333V	1
ESCT-U300	400	0.333V	1
ESCT-U300	800	0.333V	1
ESCT-U300	1000	0.333V	1
ESCT-U300	1500	0.333V	1
ESCT-U300	2500	0.333V	1
ESCT-U300	3000	0.333V	1

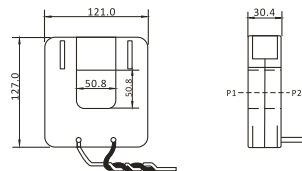
► Dimension



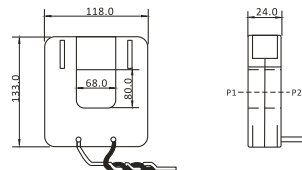
ESCT-U75



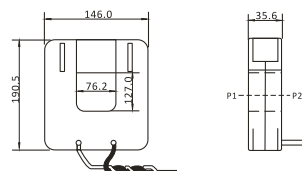
ESCT-U125



ESCT-U200



ESCT-U250

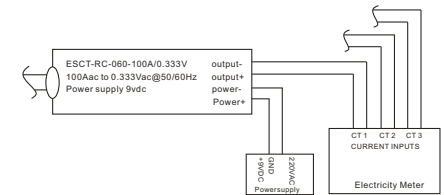


ESCT-U300

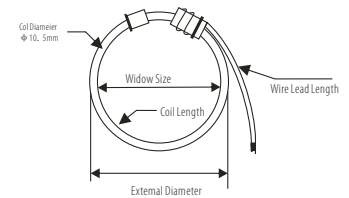
Specification	
Current Range	10A to 100kA
Rated output	0.333Vac at rated current with Integrator, 100mV/per 1000A @ 50Hz without integrator
Accuracy	± 1% from 5% to 120% of rated current with integrator(45-65Hz)
Phase Angle	≤ ± 1° 5% to 120% from 5% to 120% of rated current
Linear	0.5%
Frequency	1Hz-1MHz, 50/60 Hz nominal
Work Voltage	600V
Power supply	7-30VDC (9 Vdc, 12 Vdc recommended)
Coil Diameter	10.5mm, 12mm or as customer order
Window size	10mm, 15mm or as per customer ordered
Wire lead	1 meter sheath cable or as customers order
Withstand Voltage	3000V
Operating temperature	-25°C+70°C
IP class	IP65
Certification	CE recognized, RoHS Compliant

Model	Rated Amps	Window Size
ESCT-RC060-100A/0.333V	100/5	60mm
ESCT-RC076-200A/0.333V	200/5	76mm
ESCT-RC090-400A/0.333V	400/5	90mm
ESCT-RC100-800A/0.333V	800/5	100mm
ESCT-RC150-1000A/0.333V	1000/5	150mm
ESCT-RC160-1200A/0.333V	1200/5	160mm
ESCT-RC190-3000A/0.333V	3000/5	190mm
ESCT-RC200-5000A/0.333V	5000/5	200mm
ESCT-RC300-6000A/0.333V	6000/5	300mm
ESCT-3RC060-100A/0.333V	100/5	60mm
ESCT-3RC076-200A/0.333V	200/5	76mm
ESCT-3RC090-400A/0.333V	400/5	90mm
ESCT-3RC100-800A/0.333V	800/5	100mm
ESCT-3RC150-1000A/0.333V	1000/5	150mm
ESCT-3RC160-1200A/0.333V	1200/5	160mm
ESCT-3RC190-3000A/0.333V	3000/5	190mm
ESCT-3RC200-5000A/0.333V	5000/5	200mm
ESCT-3RC300-6000A/0.333V	6000/5	300mm

► Wiring diagram



► Dimension



ESCT-3RC



ESCT-ABO Series
SOLID CORE CURRENT TRANSFORMER

- Two built in fixing methods: 1 side base; Busbar mounting
- Built in hinged terminal cover
- Built in transparent cover for name plate
- Wide range accuracy (3,1,0.5,0.5s,0.2,0.2s)
- Primary current from 50A to 3000A

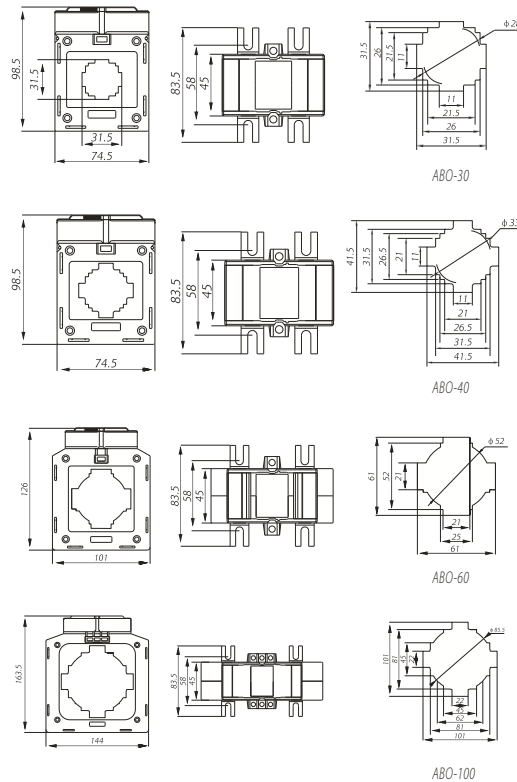
Specification	
Rated Frequency	50Hz-60Hz
Rated current	5A to 5000A loads
Rated output	5A, 1A, 0.5A, 0.25A, 0.1A
Accuracy	± 1% from 20% to 120% of rated current
Rated short-time thermal current (Ith)	60In
Rated voltage (Um)	1.2In
Operating temperature	-10°C~50°C
Housing self-extinguishing class	VO
Standard	IEC60044-1, EN60044-1, VDE0414-44-1, GB1208-2006

Model	Ratio(A)	Burden (VA)	
		class0.5	Class 1.0
ESCT-ABO-30	50/5	1.5	2.5
ESCT-ABO-30	60/5	1.5	2.5
ESCT-ABO-30	75/5	2.5	3.75
ESCT-ABO-30	100/5	3.75	5
ESCT-ABO-30	150/5	5	5
ESCT-ABO-30	200/5	5	5
ESCT-ABO-30	250/5	5	5
ESCT-ABO-30	300/5	5	5
ESCT-ABO-40	75/5	1.5	1.5
ESCT-ABO-40	80/5	1.5	1.5
ESCT-ABO-40	100/5	2.5	2.5
ESCT-ABO-40	150/5	3.75	5
ESCT-ABO-40	200/5	5	5
ESCT-ABO-40	250/5	5	5
ESCT-ABO-40	300/5	5	5
ESCT-ABO-40	400/5	5	5
ESCT-ABO-40	500/5	5	5
ESCT-ABO-60	200/5	5	5
ESCT-ABO-60	250/5	5	5
ESCT-ABO-60	300/5	5	5
ESCT-ABO-60	400/5	5	5
ESCT-ABO-60	500/5	5	5
ESCT-ABO-60	600/5	5	10
ESCT-ABO-60	750/5	5	10
ESCT-ABO-60	800/5	5	10
ESCT-ABO-60	1000/5	5	10
ESCT-ABO-100	800/5	5	10
ESCT-ABO-100	1000/5	5	10
ESCT-ABO-100	1200/5	7.5	10
ESCT-ABO-100	1500/5	7.5	10
ESCT-ABO-100	1600/5	7.5	10
ESCT-ABO-100	2000/5	10	15
ESCT-ABO-100	2500/5	10	15
ESCT-ABO-100	3000/5	10	15

► Introduction

ESCT-ABO perfect designed plastic case current transformer, advanced snap on body, high accuracy (up to Class 0.2S), humanization transparent cover and lead seal hole design makes the CT very easy to identify after long term use and perfect anti-stealing electricity.

► Dimension



ESCT-DM Series
SOLID CORE CURRENT TRANSFORMER

- Two built in fixing methods: 1 side base; Busbar mounting
- Built in hinged terminal cover
- Primary current from 15A to 300A

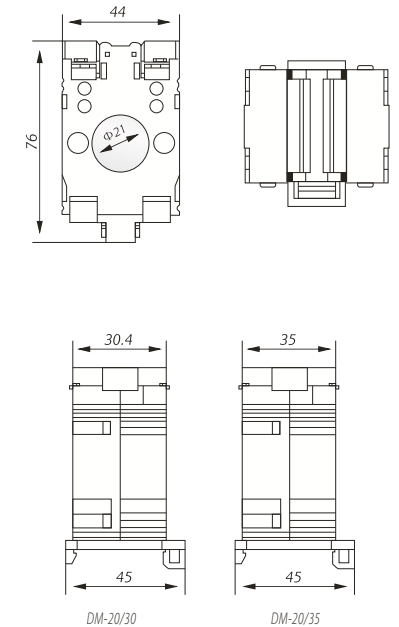
Specification	
Rated Frequency	50Hz-60Hz
Rated current	15A to 300A loads
Rated test voltage	3kV AC (1min)
Rated short-time thermal current (Ith)	60In
Rated voltage (Um)	0.72kV AC.
Rated output	5A or 1A
Rated voltage (Um)	1.2In
Operating temperature	-10°C~50°C
Housing self-extinguishing class	VO
Safety factor	F5S
Standard	IEC60044-1, EN60044-1, VDE0414-44-1, GB1208-2006

Model	Rated Amps	Burden(VA)/Class 1.0
ESCT-DM-20/30	50/5	1
ESCT-DM-20/30	60/5	1.25
ESCT-DM-20/30	75/5	1.5
ESCT-DM-20/30	80/5	1.5
ESCT-DM-20/30	100/5	2.5
ESCT-DM-20/30	120/5	2.5
ESCT-DM-20/30	150/5	2.5
ESCT-DM-20/30	200/5	3.75
ESCT-DM-20/30	250/5	3.75
ESCT-DM-20/30	300/5	3.75
ESCT-DM-20/35	50/5	-
ESCT-DM-20/35	60/5	-
ESCT-DM-20/35	75/5	1.5
ESCT-DM-20/35	80/5	1.5
ESCT-DM-20/35	100/5	2.5
ESCT-DM-20/35	120/5	2.5
ESCT-DM-20/35	150/5	2.5
ESCT-DM-20/35	200/5	2.5
ESCT-DM-20/35	250/5	3.75
ESCT-DM-20/35	300/5	3.75

► Introduction

ESCT-DM is world famous MINI design plastic case current transformer, snap on body, be wildly used in generators. It is available for connecting with cable, and also available for connecting with Busbas. Its primary currents between 15A~300A with 5A or 1A secondaries with up to Class1.0 accuracy Performance.

► Dimension





ESRD-TMS1/S2
MULTIFUNCTION TIME RELAY

- Microcontroller based
- 24 operating modes
- LCD display operating modes, set delay and operating time
- Time ranges : 0-9999s, 0-9999min
- AC/DC 24-240V supply voltage
- 2 independent NO contacts, controlled by different operating modes
- Backlighted LCD display
- Easy setting by keys
- 2 module Din rail mounting



ESRD-TPA1
SINGLE CHANNEL ASTRONOMICAL

- Digital time switch with astronomical program
- 3 year power reserve (lithium battery).
- Sealable cover of the front panel, easy setting by 4 keys.
- Automatic summer/winter time switchover
- LCD display, Holiday mode.
- Single channel
- Automatic transfer of weekdays
- 220-240V AC input supply.
- Double-modules, mounted on TH-35 rail.

Specification	
Supply terminals	A1, A2
Pulse terminal	S
Supply voltage	AC/DC 24-240V
Rated frequency	50/60Hz
Time range	0-9999s, 0-9999min
Repetition accuracy	max. ±3s/24h 25°C
Data readout	Back-lighted LCD display
Data storage	10 years
Output contacts	1 C/O + 1 NO
Current rating	8A/ AC1
Contacts capacity	AC-15:2A
Insulation voltage	250V
Protection degree	IP20
Pollution degree	3
Electrical life	10 ⁵
Mechanical life	10 ⁶
Altitude	≤2000m
Ambient temperature	-5°C ~ +40°C
Storage temperature	-10°C ~ +50°C
Wire size	0.5mm ² ~1mm ²
Torque	0.5Nm
Mounting	TH-35 DIN-Rail

► Description

○ Panel

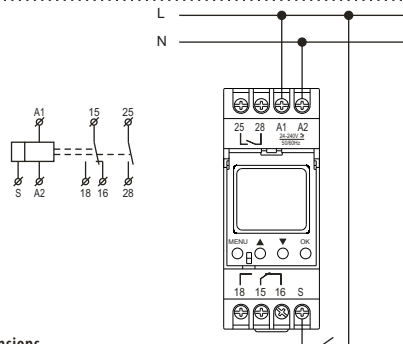
○ Symbol legend

- ☐ — Output relay ON
- ☐ — Output relay OFF
- R 1 — Output relay 1
- R 2 — Output relay 2
- SET — Parameters setting
- ONStart — Starting with ON
- OFFStart — Starting with OFF
- J — Time impulse release by rising edge
- L — Time impulse release by falling edge
- min — Set time: minute
- sec — Set time: second
- T — Time delay T
- T1 — Time delay T1
- T2 — Time delay T2
- start — Starting with S pulse

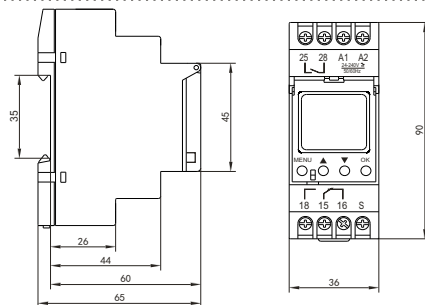
○ Keys

MENU	○ Enter configuration menu	OK	○ Confirm settings
▲	○ Select menu	▼	○ Select menu
○	○ Digit +	○	○ Digit -
○	○ Display menu selection	○	○ Display menu selection

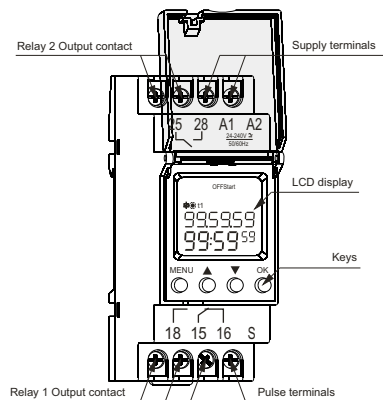
► Wiring diagrams



► Dimensions



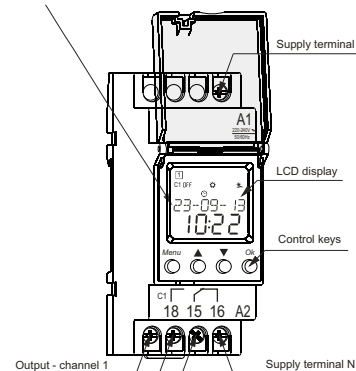
► Front-face panel



Specification	
Supply terminals	A1-A2
Rated voltage	AC220-240V
Rated frequency	50/60Hz
Power consumption	1W
Supply voltage tolerance	±10%
Number of channels	1
Program	astronomical
Mode of work	manual, automatic, holiday
Summer/winter time	off, automatic changes
Time tolerance	≤ 1s/day at 20°C
Power reserve	3 year
Data readout	LCD display
Number of contacts	1 C/O
Current of contacts	16A/250V AC1
Switching capacity	4000VA/AC, 384W/DC
Electrical life	10 ⁵
Mechanical life	10 ⁶
Rated insulation voltage	250V
Protection degree	IP20
Pollution degree	3
Altitude	≤2000m
Ambient temperature	-30°C ~ 55°C
Permissible relative humidity	≤50%(40°C, without condensation)
Storage temperature	-35°C ~ 70°C
Wire size	1mm ² ~ 4mm ²
Tightening torque	0.5Nm
Mounting	TH-35 Rail(EN60715)
Dimensions	90*36*64mm
Standard	IEC60947-1/IEC60947-2-7

► Front-face panel

23-09-13: DD-MM-YY, 23th, September, 2013



► Description

○ Panel

1 2 3 4 5 6 7 — Days of the week Monday, Tuesday, ...Sunday

C1 — Channel 1

On OFF — Relay status On Activate OFF Deactivate

☐ — Automatic mode

☐ — Manual mode

☐ — Holiday mode

☐ — Sunrise

☐ — Sunset

☐ — Winter time

☐ — Summer time

Prog — Program setting

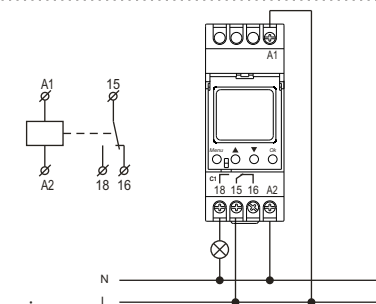
Menu

- Enter main menu
- Back to main menu
- Select menu
- Increase a numerical value
- C1 manual operation

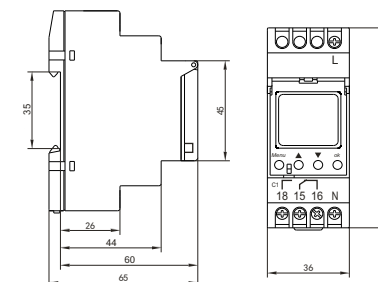
OK

- Confirm selection
- Select menu
- Decrease a numerical value

► Wiring diagrams



► Dimensions



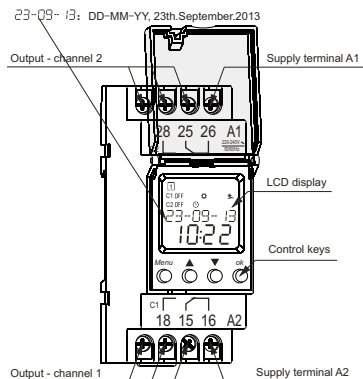


ESRD-TPW1/2
DOUBLE CHANNEL DIGITAL WEEKLY

- Digital time switch with weekly program
- 10 year power reserve(lithium battery)
- Sealable cover of the front panel, easy setting by 4 keys
- Automatic summer/winter time switchover
- Back-lighted LCD display,Holiday mode
- Double channels
- Automatic transfer of weekdays
- 24-264V AC/DC input supply
- Double-module, mounted on TH-35 rail

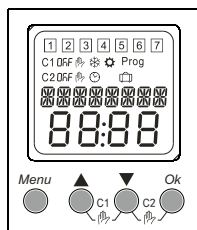
Specification	
Supply terminals	A1-A2
Rated voltage	AC220-240V
Rated frequency	50/60Hz
Power consumption	2W
Supply voltage tolerance	± 10%
Number of channels	Double channels
Number of programs	100
Program	weekly program, daily program
Operating modes	manual, automatic, holiday
Summer/winter time	off, automatic changes
Time tolerance	≤ 1s/day at 25°C
Power reserve	10 year
Data readout	LCD display with backlight
Number of contacts	2 C/O
Current of contacts	16A/250V AC1
Switching capacity	4000VA/AC1, 384W/DC
Mechanical life	10 ⁶
Electrical life	10 ⁴
Rated insulation voltage	250V
Protection degree	IP20
Pollution degree	3
Altitude	≤ 2000m
Ambient temperature	-20°C~55°C
Permissible relative humidity	≤ 50%(40°C,without condensation)
Storage temperature	-30°C~70°C
Wire size	1mm ² - 4mm ²
Tightening torque	0.5Nm
Mounting	TH-35 Rail(EN60715)
Dimensions	90*36*64mm
Standard	IEC60947-1/IEC60947-2-7

► Front-face panel



► Description

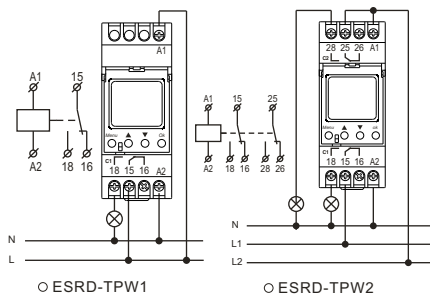
○ Panel 1 2 3 4 5 6 7 — Days of the week, Monday, Tuesday, ... Sunday



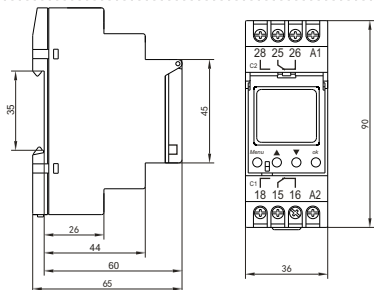
- C1 — Channel 1
- C2 — Channel 2
- On OFF — Relay status
- ☐ — Automatic mode
- ☐ — Manual mode
- ☐ — Holiday mode
- ☐ — Winter time
- ☐ — Summer time
- Prog — Program setting

- Menu ○ Enter main menu
- Back to main menu
- OK ○ Confirm selection
- ▲ ○ Select menu
- Increase a numerical value
- ▼ ○ Select menu
- Decrease a numerical value
- ▲ C1 ○ C1 manual operation
- ▼ C2 ○ C2 manual operation

► Wiring diagrams



► Dimensions

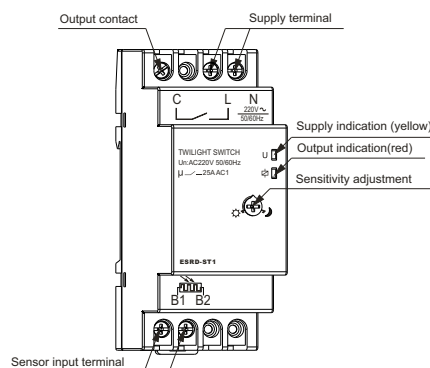


ESRD-ST1
TWILIGHT SWITCH

- Modular design, 36mm wide housing.
- Sensitivity adjustment from 2 to 100 lux
- Eternal light sensor included in delivery
- Fixed switching on and off delay
- LED indication for power supply and relay status
- DIN Rail mounting

Specification	
Rated control voltage	AC220V
Frequency	50/60Hz
Sensitivity threshold	2-100lux adjustable
Switch-on delay	2-5s
Switch-off delay	10-15s
Hysteresis (switching off/on ratio)	1.20
Output contact	1NO
Current rating	25A/250V AC1
Incandescent lamp load	3000 W
Halogen lamp load	3000 W
Fluorescent lamp load (compensated)	1000 W
Fluorescent lamp load (uncompensated)	1300 W
Protection degree	Terminal: IP20, Sensor: IP65
Ambient temperature	-25°C~+40°C

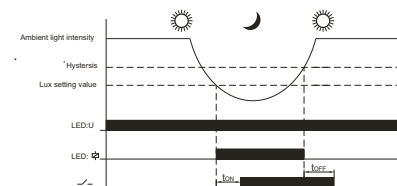
► Front-face panel



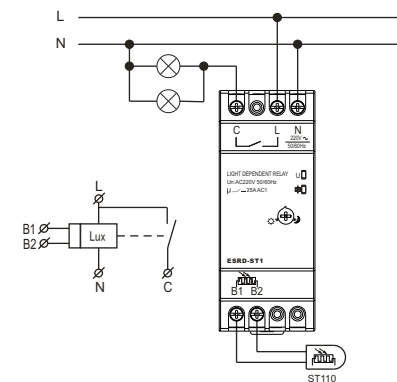
1. Connect the sensor ST110.
 2. Set the sensitivity.
 3. When the strength of light goes below set sensitivity value, output indication LED lights up and the delay begins. After the switch on delay, switch energizes its contacts. Delay can avoid any command caused by temporary illumination or headlights
- When the strength of light goes above the hysteresis value, output indication LED goes out and the delay begins. After the switch off delay, switch de-energizes its contacts.

Hysteresis= 1/4* set sensitivity value

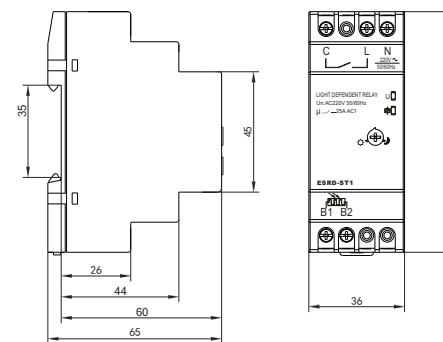
► Function diagram



► Wiring diagrams



► Dimensions



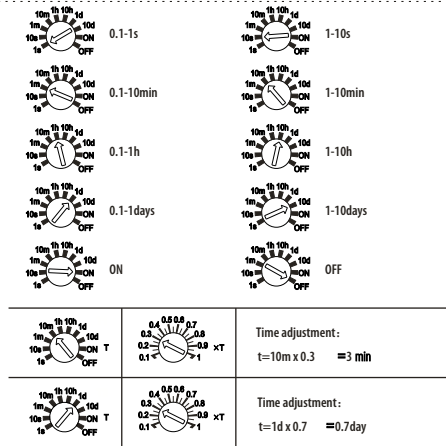


ESRS-TM11/12/14/23 MULTIFUNCTION TIME RELAY

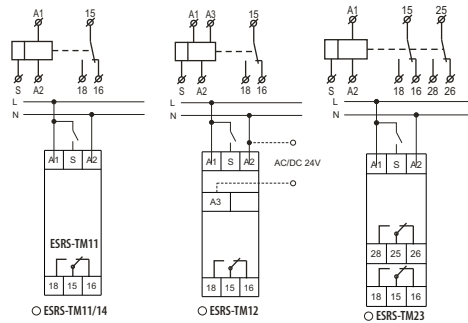
- Microcontroller based
- Modular design, 18mm wide housing
- 10 operating modes
- 10 time ranges(1s, 10s, 1m, 10m, 1h, 10h, 1d, 10d, ON, OFF)
- 1 changeover contact
- LED indication for power supply and relay status
- DIN-Rail mounting

Specification		
Models	ESRS-TM11/14/23	ESRS-TM12
Supply terminals	A1,A2	A1,A2,A3
Pulse terminal	S	
Supply voltage	AC 220V	A1-A2: AC 220V A3-A2: AC/DC 24V
Rated frequency	50/60Hz	
Time range	0.1s-10days	
Setting accuracy	<5%	
Repetition accuracy	<0.2%	
Output contacts	1 C/O	
Current rating	8A /AC1	
Contacts capacity	AC-15: 2A	
Insulation voltage	250V	
Protection degree	IP20	
Pollution degree	3	
Electrical life	10 ⁵	
Mechanical life	10 ⁶	
Altitude	≤2000m	
Ambient temperature	-5°C~+40°C	
Storage temperature	-10°C~+50°C	
Wire size	0.5mm ² ~1mm ²	
Torque	0.5Nm	
Mounting	TH-35 DIN-Rail	

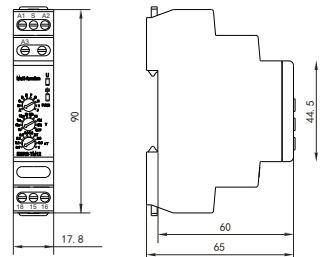
► Description



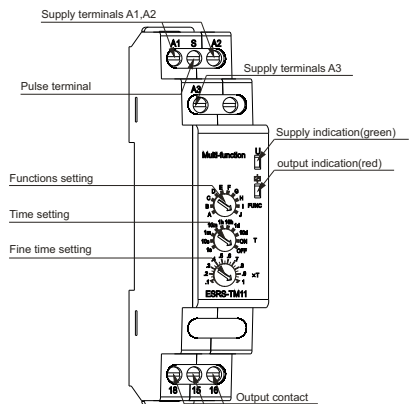
► Wiring diagrams



► Dimensions



► Front-face panel

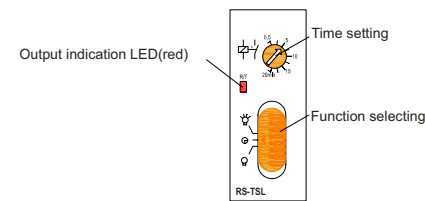


ESRD-TSL Series STAIRCASE LIGHTING TIME

- Microcontroller based
- Modular design, 18mm wide housing
- Possibility of 3 wire or 4 wire connection
- ON, OFF, AUTO three operation modes
- Repetition accuracy <0.2%
- LCD indication for relay status
- DIN-Rail mounting

Specification	
Rated supply voltage	AC230VAC, 50/60Hz
Type of contact	1NO(AgNi)
Rated current(Ith)	10A
Power consumption	≤1.5VA
Incandescent lamp load	2000W
Fluorescent lamp load, lead-lag circuit	1000W
Fluorescent lamp load, inductive-capacitive	1000W
Fluorescent lamp load, parallel compensated	650W
Inductive load, cosφ=0.6@230V	650W
Mechanical life	10 ⁵
Electrical life	10 ⁴
Time range	0.5-20m
Setting accuracy	≤5%
Repetition accuracy	≤0.2%
Maximum load of illuminated switch	50mA
Reset time	≥200ms
Altitude	≤2000m
Protection degree	IP20
Pollution degree	3
Ambient temperature	-5°C~+40°C
Storage temperature	-25°C~+75°C

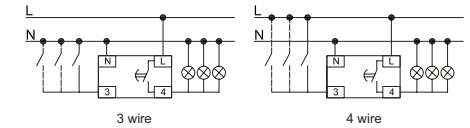
► Front-face panel



► FUNCTION DIAGRAM

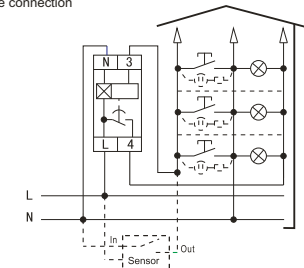


► Wiring diagrams

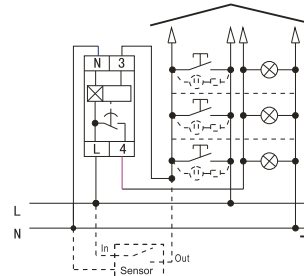


Example of application

3 wire connection



4 wire connection



► Dimensions

