iot
SOLUTIONS

Eastron®
EUROPE
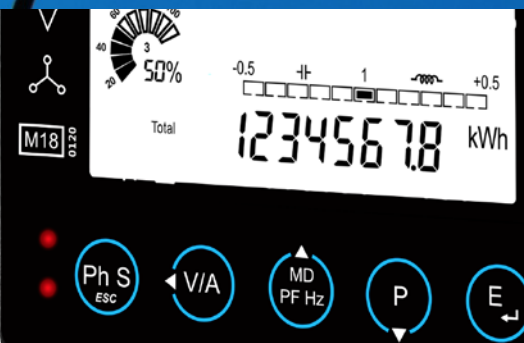
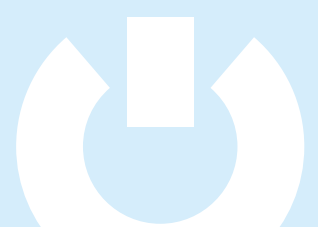Innovation, Quality and Competitive edge

**Easy**Click

A fast, easy and reliable solution for installing power metering systems.

Total 1234567.8 kWh

M18 0120

Ph S ESC

V/A

MD PF Hz

P

E

Eastron®    SDM630MCT-ML

0000 kWh
M 031.4

MD PF Hz

Designed and certified in the United Kingdom.

iots.no

![Eastron Europe logo]

**EasyClick** is a proven solution for making the installation process of power metering systems reliable, fast and error free.

Engineered and designed around a "plug and play" concept, consisting of a full range in plug in RJ12 Three phase current transformers and DIN rail and panel mounted Panel meters. This replaces the need to hardwire 6 individual secondary cables from the current transformer to the power meter. We also use a plug-in terminal for the voltage references (L1, L2, L3 and N). This not only reduces installation time by up to 85%, but also removes any potential wiring errors. Making the overall installation faster and error free.

It is also possible to have up to 32 devices powered from one voltage reference fused supply, as the meters have a voltage output plug in terminal, allowing you to daisy chain from one meter to the next. We provide a full range of Current transformer, Voltage in and Voltage out looms. If you prefer to manufacture you own voltage looms, then this is also possible as we supply the terminal kits free of Charge with each meter.

Due to the demand of most applications requiring the power meters to be read remotely using the RS485 modbus output, we also provide free commissioning and configuration software. This allows the modbus network to be checked prior to installation of the panel / switchboard. It also allows you to set the programmable parameters from one central point and read each meter individually.
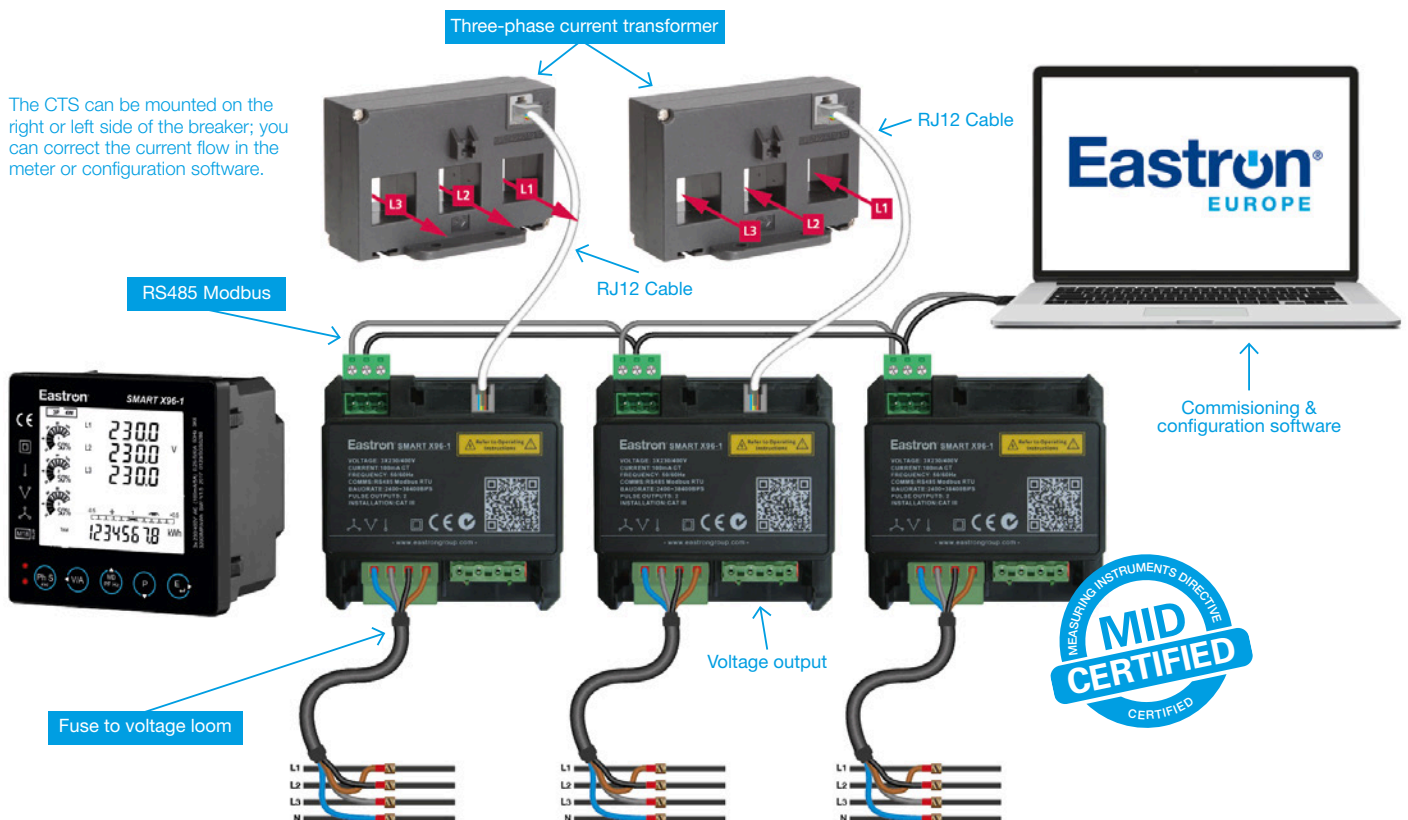
We have a full range from 96x96mm Panel mounted, DIN rail mounting (Single Load, Dual Load, Tri-Load and Quad Load.

If you also require a full end to end solution, we have the Eastron ConneX sub metering system which is integrated with our data logging, remote monitoring and HMI platform.

For mer informasjon om disse produktene, vennligst kontakt vårt salgsteam på + 47 951 09 606 eller e-post ep@iotsolutions.no
www.iots.no

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- **CE and MID Certified in the UK**
- **Overall System Accuracy Class B (1%)**
- **Phase sequence indication**
- **Programmable Pulsed output**
- **Built in RS485 RTU Modbus output**
- **individual phase summary display (Amps, Volts, Watts and kWh)**
- **Individual Harmonic Levels up to 61st Tested to 1% accuracy (SMART X96-1 only)**
- **Min and Max Voltage levels (SMART X96-1 Only)**
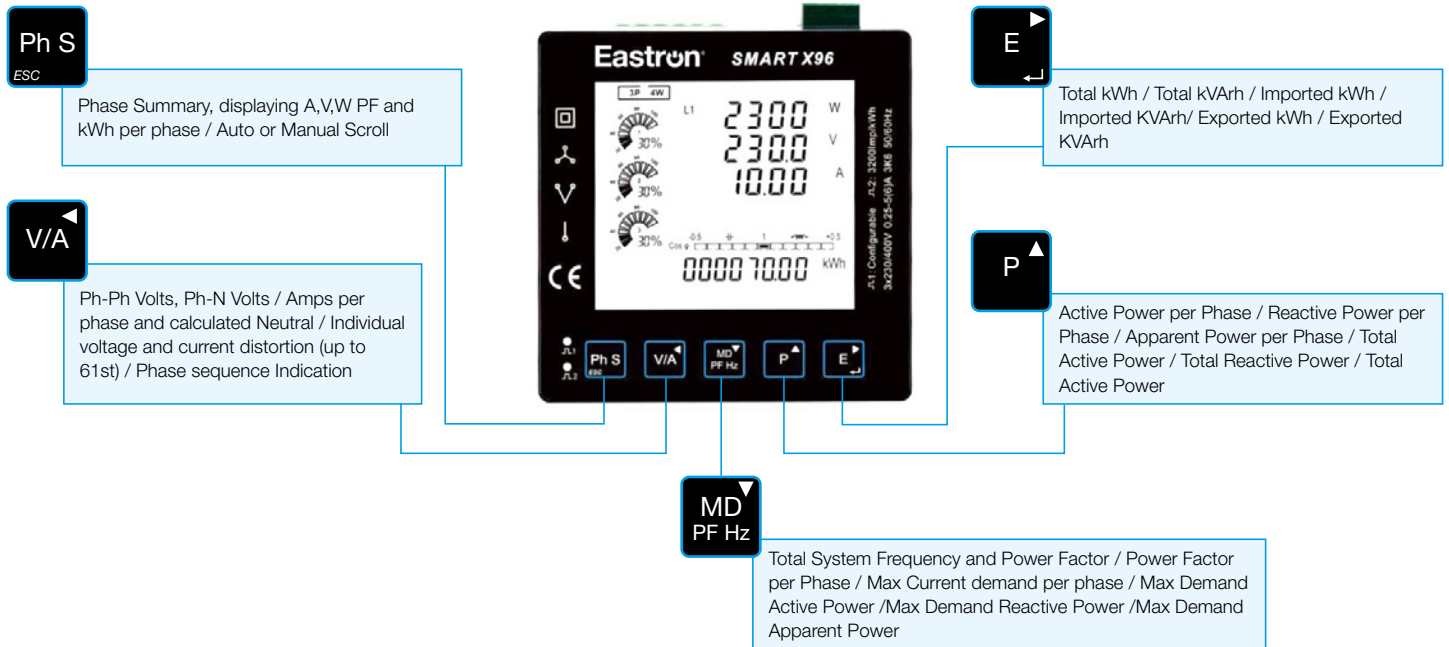- **Lower specification option for further cost saving (SMART X96-1E)**

# Example of installation

Three-phase current transformer

The CTS can be mounted on the right or left side of the breaker; you can correct the current flow in the meter or configuration software.

RJ12 Cable

RS485 Modbus

RJ12 Cable

Commisioning & configuration software

Voltage output

Fuse to voltage loom

| Meter Type | Description of Meter |
|---|---|
| **SMART X96-1** | Active Import/Export (kWh) 3x230/400V, 100mA/5(6)A, Transformer operated, Multifunction, RS485 Modbus RTU |
| **SMART X96-1E** | Active Import/Export (kWh) 3x230/400V, 100mA/5(6)A, Transformer operated, Multifunction, RS485 Modbus RTU, No THD, No Voltage Output and 1P2W and 3P4W only |

# Features

**Ph S**
*ESC*

Phase Summary, displaying A,V,W PF and kWh per phase / Auto or Manual Scroll

**V/A**

Ph-Ph Volts, Ph-N Volts / Amps per phase and calculated Neutral / Individual voltage and current distortion (up to 61st) / Phase sequence Indication

**E**

Total kWh / Total kVArh / Imported kWh / Imported KVArh/ Exported kWh / Exported KVArh

**P**

Active Power per Phase / Reactive Power per Phase / Apparent Power per Phase / Total Active Power / Total Reactive Power / Total Active Power

**MD PF Hz**

Total System Frequency and Power Factor / Power Factor per Phase / Max Current demand per phase / Max Demand Active Power /Max Demand Reactive Power /Max Demand Apparent Power

# Conformity references:

**Electromagnetic Compatibility:** IEC/EN61326-1, IEC/EN55011 Class A, IEC/EN61000-4-2,-3-4-5-6-8-11 IEC/EN50470-1/3

**Accuracy:** IEC/EN50470-1/3, IEC/EN62053-21, IEC/EN62053-23, DIRECTIVE 2014/32/EU
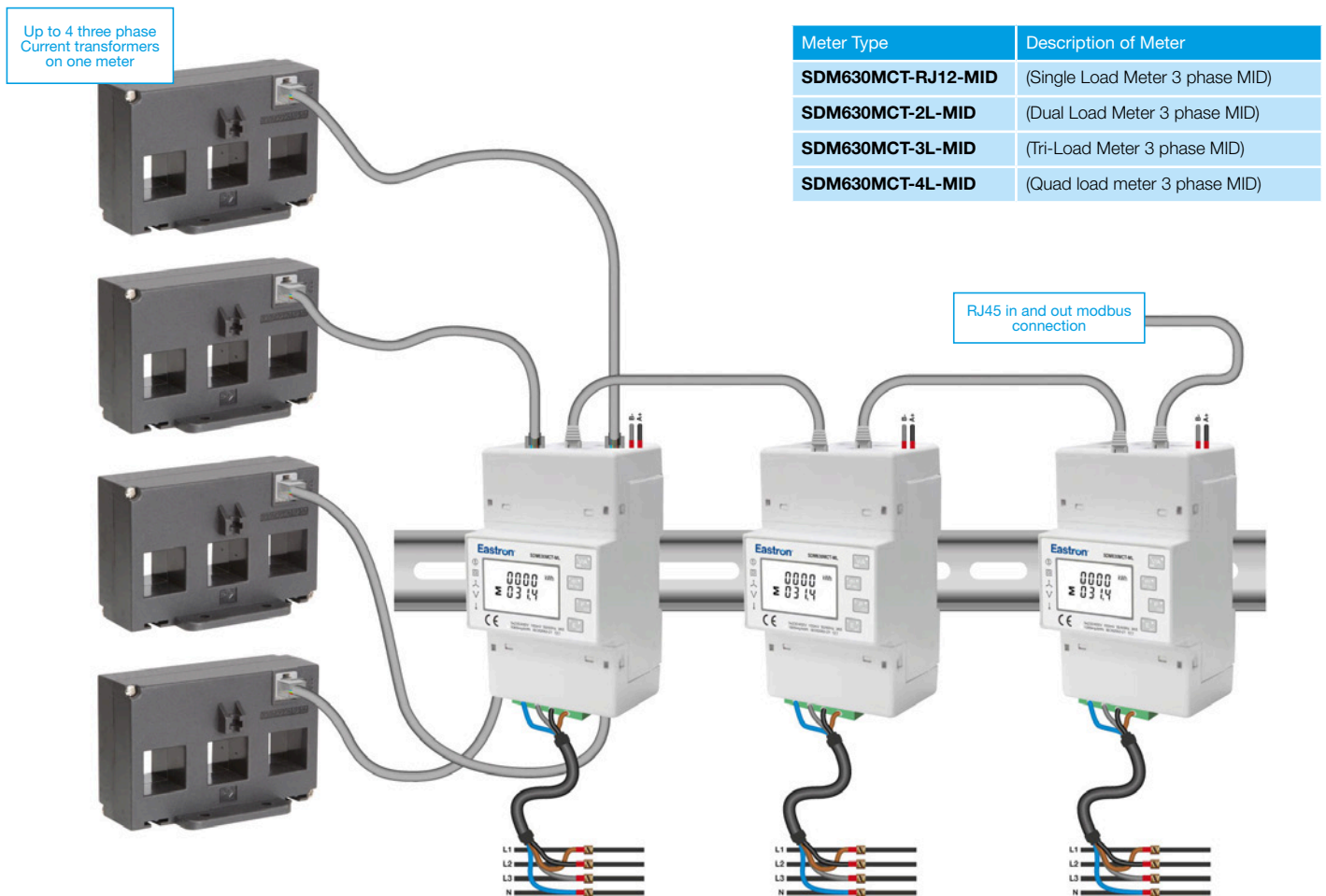
**Safety:** EC/EN61010, IEC/EN50470-1

# Dimension drawing
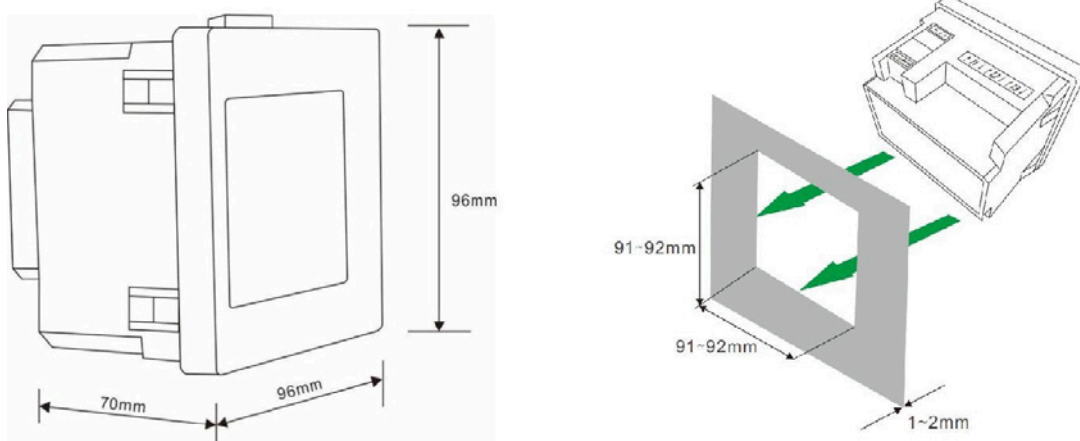
- CE and MID Certified in the UK (SGS 0534)

- Overall System Accuracy Class B (1%)

- Phase sequence indication

- Built in RS485 RTU Modbus output

- Total Harmonic Distortion up to 31st Level

- Single Load option 3 phase 4 wire or 3 x 1 phase circuits (SDM630MCT-RJ12)

- Dual load option 2 x 3 phase 4 wire or 6 x 1 phase circuits (SDM630MCT-2L)

- Tri load option 3 x 3 phase 4 wire or 9 x 1 phase circuits (SDM630MCT-3L)

- Quad load option 4 x 3 phase 4 wire or 12 x 1 phase circuits (SDM630MCT-4L)

- Up to 124 x 3 phase 4 wire channels or 372 x 1 phase channels on one Modbus network (32 SDM630MCT)
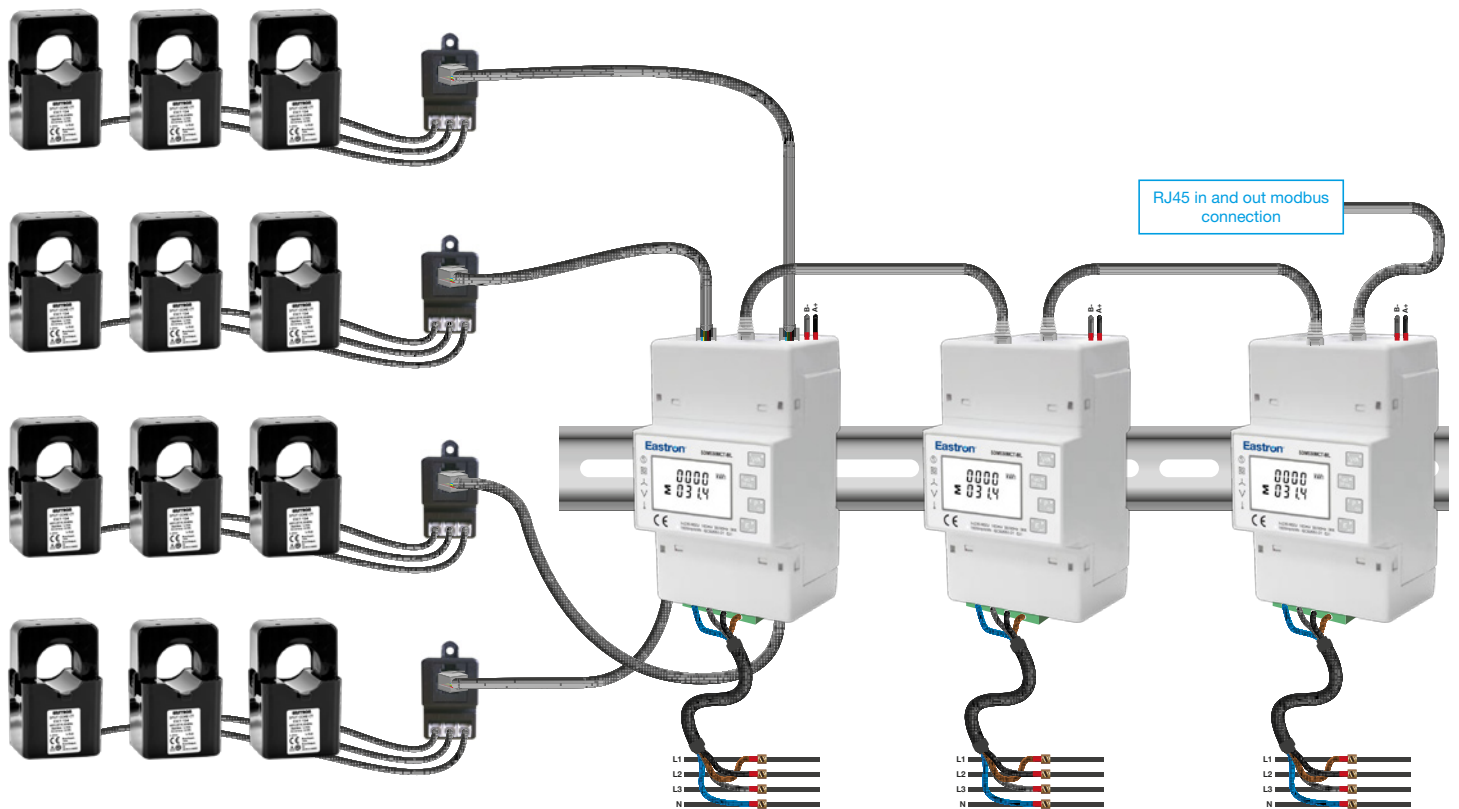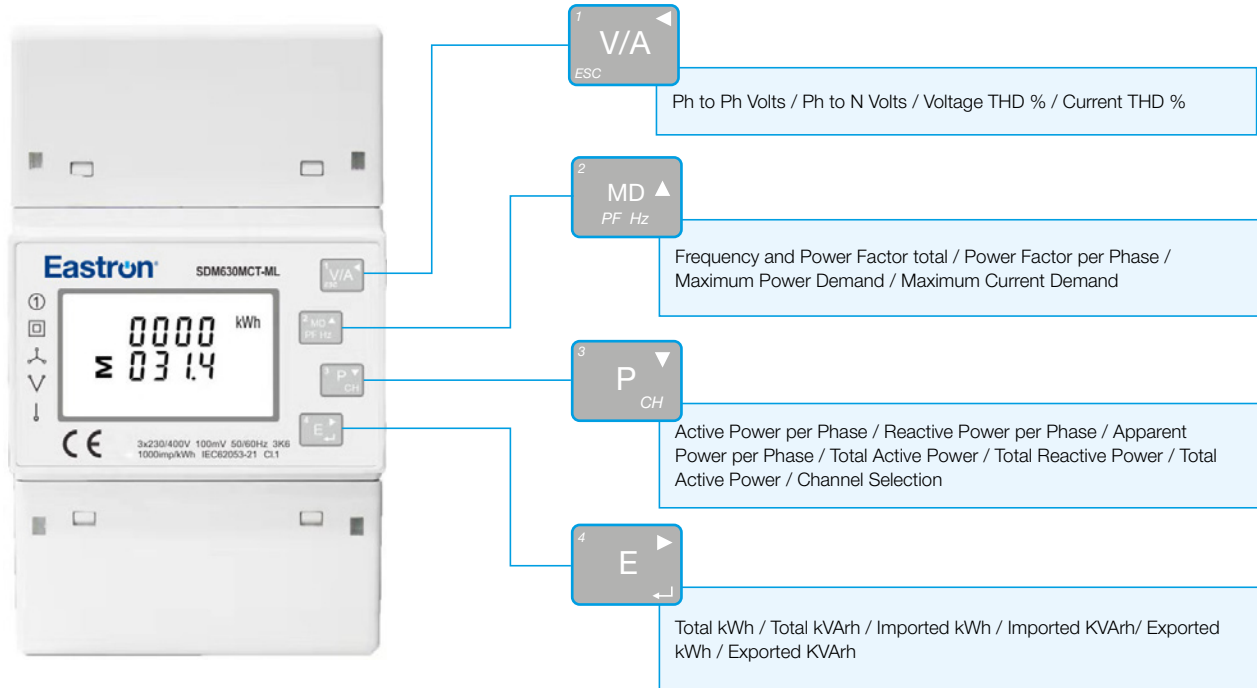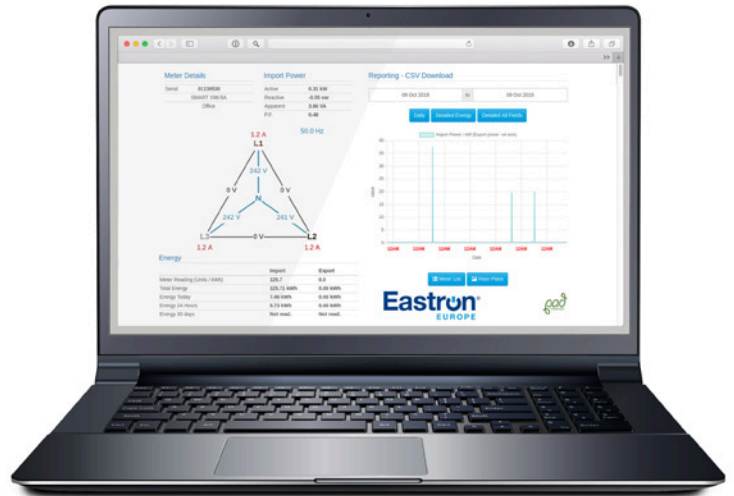
## Example of 3 phase installation

Up to 4 three phase Current transformers on one meter

RJ45 in and out modbus connection

| Meter Type | Description of Meter |
|---|---|
| SDM630MCT-RJ12-MID | (Single Load Meter 3 phase MID) |
| SDM630MCT-2L-MID | (Dual Load Meter 3 phase MID) |
| SDM630MCT-3L-MID | (Tri-Load Meter 3 phase MID) |
| SDM630MCT-4L-MID | (Quad load meter 3 phase MID) |

## Example of 1 phase installation

Up to 12 one phase current transforms on one meter ( SDM630MCT-4L)

RJ45 in and out modbus connection

# Features

**1 V/A** *ESC*
Ph to Ph Volts / Ph to N Volts / Voltage THD % / Current THD %

**2 MD** *PF Hz*
Frequency and Power Factor total / Power Factor per Phase / Maximum Power Demand / Maximum Current Demand

**3 P** *CH*
Active Power per Phase / Reactive Power per Phase / Apparent Power per Phase / Total Active Power / Total Reactive Power / Total Active Power / Channel Selection

**4 E**
Total kWh / Total kVArh / Imported kWh / Imported KVArh/ Exported kWh / Exported KVArh

# Conformity references:

**Electromagnetic Compatibility:** IEC/EN61326-1, IEC/EN55011 Class A, IEC/EN61000-4-2,-3-4-5-6-8-11 IEC/EN50470-1/3

**Accuracy:** IEC/EN50470-1/3, IEC/EN62053-21, IEC/EN62053-23, DIRECTIVE 2014/32/EU
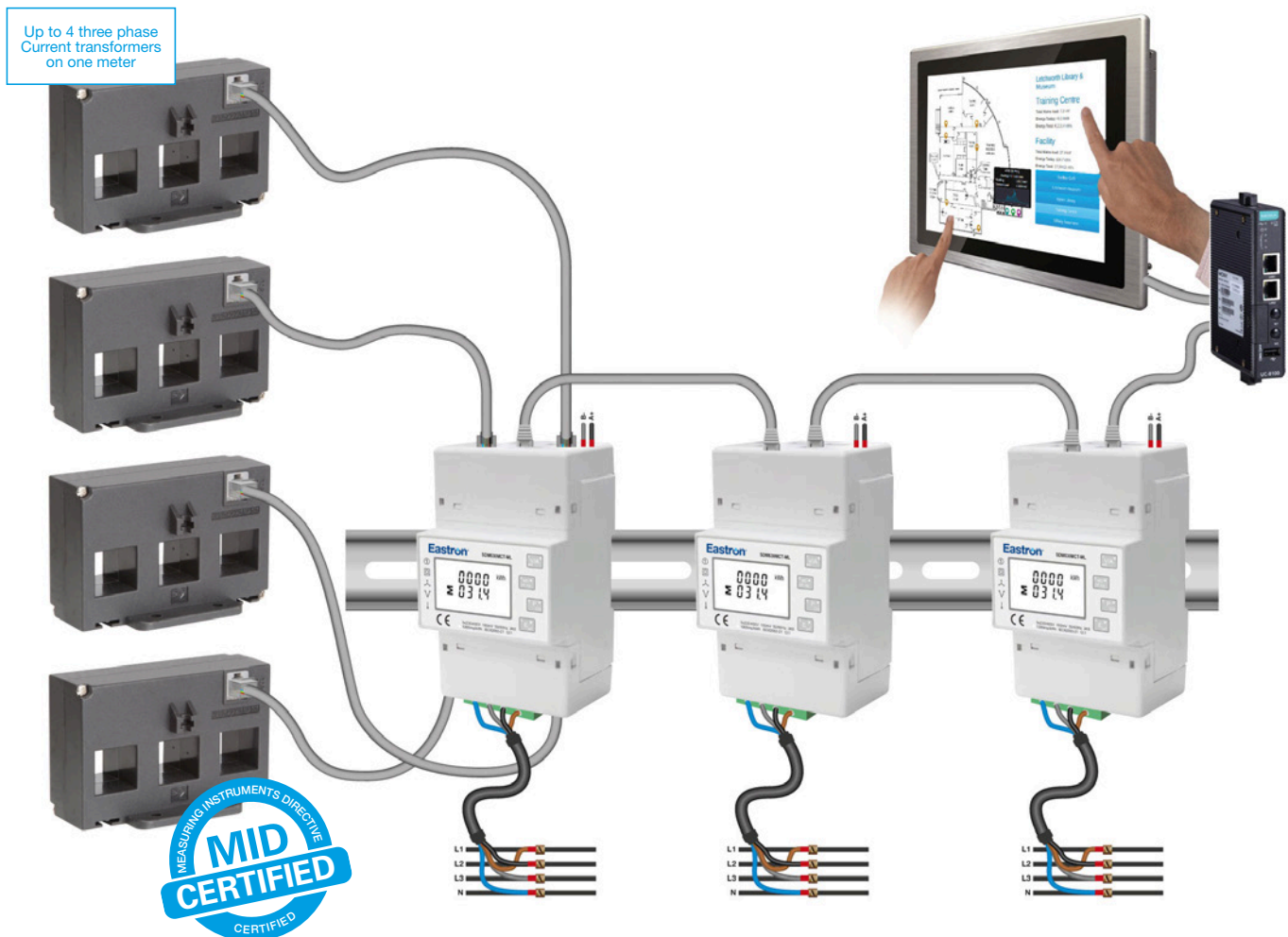
**Safety:** IEC/EN61010, IEC/EN50470-1

# Dimension drawing

66mm

70.9mm

122.5mm
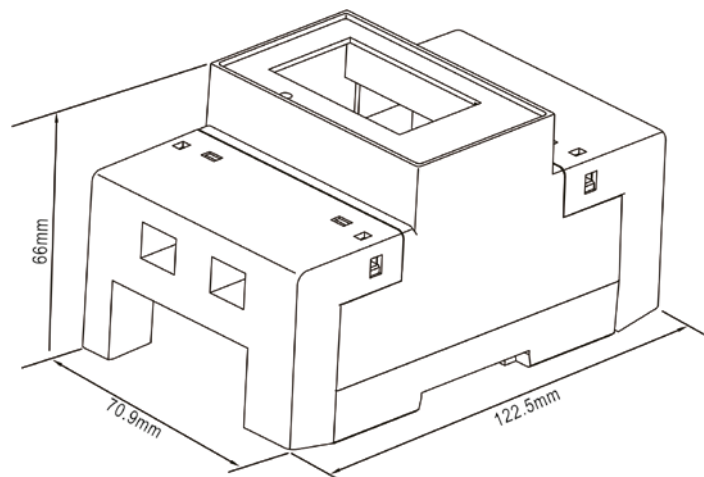
- **Remote Monitoring or Central Data Point access within the building (Or both)**
- **Prewired and commissioned solution**
- **No ongoing software license costs**
- **Auto-Detect function re meter id's**
- **Upload floor plan and drag and drop metering points for easy to use navigation**
- **Graphs and reporting function**
- **Optional HMI web-based touchscreen**
- **MOXA UC-8112-LX Industrial PC and fully integrated into all Eastron products**

## Example of installation

Up to 4 three phase Current transformers on one meter

MID CERTIFIED — MEASURING INSTRUMENTS DIRECTIVE — CERTIFIED

For mer informasjon om disse produktene, vennligst kontakt vårt salgsteam på + 47
951 09 606 eller e-post ep@iotsolutions.no
www.iots.no

**EASTRON** is displayed as the Eastron Europe logo.

# EASTRON ConneX Sub-Metering - Software Platform

## Sub-Meter Data Logging & HMI Hardware - MOXA UC-8112-LX Industrial PC

The Eastron ConneX Sub-Metering software platform runs on a dedicated Industrial PC, the MOXA UC-8112-LX. This device runs a Linux operating system (Debian) to provide a stable and versatile platform on which the ConneX "GoConfigure" software can run. The Connex "GoConfigure" software system is developed in-house by PAD Technology Ltd, Eastron Europe's software and hardware integration partner.

This device is able to store data locally on an Industrial SD card using robust SLC NAND Flash, suitable for long term storage of data under harsh environments.

Data logging frequency can be configured to the application, typically 1 minute or 5 minute reads being suitable for most applications. Where higher read frequencies are required, e.g. sub-minute reads, this can also be accommodated by the platform.

## Simplified Commissioning

The ConneX "GoConfigure" software automatically detects new meters added to the sub-metering network, streamlining initial commissioning, extension and repair of metering networks.

## Datalogging Cloud Storage

The ConneX "GoConfigure" software may also be configured to push data reads to the PAD Technology "eMIG" cloud based service to allow on-line access to your sub-metering data. eMIG provides secure access to graphical and reporting views of your data.

Automatically paging views of your sub-meters allow you to keep an eye on the state of your plant's energy consumption in detail, without the need to manually search through for individual meters.

## Local-only Data Storage

Occasionally the internal security arrangements of an organisation make it impossible to push data to the cloud for long term storage. We are able to offer "local-only" long term data storage, using a local server and optional network attached storage solution. This provides robust storage and backup of your data on RAID 1 redundant hard drives. Where the metering system is on a totally isolated LAN, the server workstation can also be used for interrogating the metering data, generating CSV reports and saving data to memory sticks for processing elsewhere.

# Human Machine Interface - HMI

The Connex "GoConfigure" software runs a Web-HMI. This may be displayed on a dedicated HMI touch screen, for example the IP65 ARCHMI-815P 15" HMI touchscreen, or the HMI may be accessed from any PC or laptop on the same local area network, using an Internet Browser.

The HMI provides an auto-paging view of all meters on the system, providing instantaneous power and energy readings for each individual meter. This view may be accessed from (for example) a separate smart TV or display PC, to allow continuous monitoring of your sub-metering system in your office.

Where required, we are able to integrate your logo or text into the display.

The HMI allows you to set up any number of plant-specific views of your meters, using e.g. a floor plan, or a plant schematic that you create. Floor plans or schematics can be uploaded to the HMI as JPG, PNG or GIF files. The administrator of the system can then position meters on to the floor plan or schematic.

This example shows a library with a number of sub-meters annotated on it.

Here the user has clicked on one of the meters to see a quick 'pop-up' view of the current reading and power information for the meter.

Eastron Demonstration Board

**Library**
Total Power: 1.8 kW
Energy Today: 44.9 kWh
Energy Total: 745.6 kWh

**Facility**
Total Power: 1.8 kW
Energy Today: 47.6 kWh
Energy Total: 773.4 kWh

Upper Library

Meter List

Double clicking on the meter then takes the user to the detailed meter view:

In this view the user is able to interrogate information such as line to line voltages, reactive power, power factor and mains frequency, to allow them to diagnose issues with individual power supplies in the network.

The user can view energy usage over time.

Additionally, this page provides meter specific graphical plots and reading downloads in a variety of forms, for opening in spreadsheet software such as Microsoft Excel.

## Easy Configuration

Adding new view on the data, by uploading bespoke images and positioning meter on to them is very easy. This is secured by an administrator login username / password.

The user may upload an image file from their local computer by clicking on "Add Floor Plan" and adding basic information about the view (for example the view name, description and the order in which it should appear in a list).
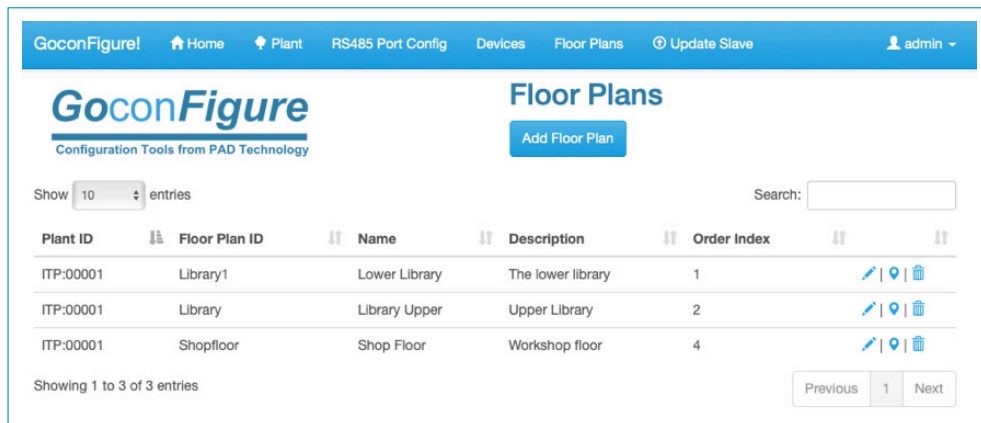


The user may then add or remove any of the meters in the network to overlay the graphic, ready for them to view in the HMI.
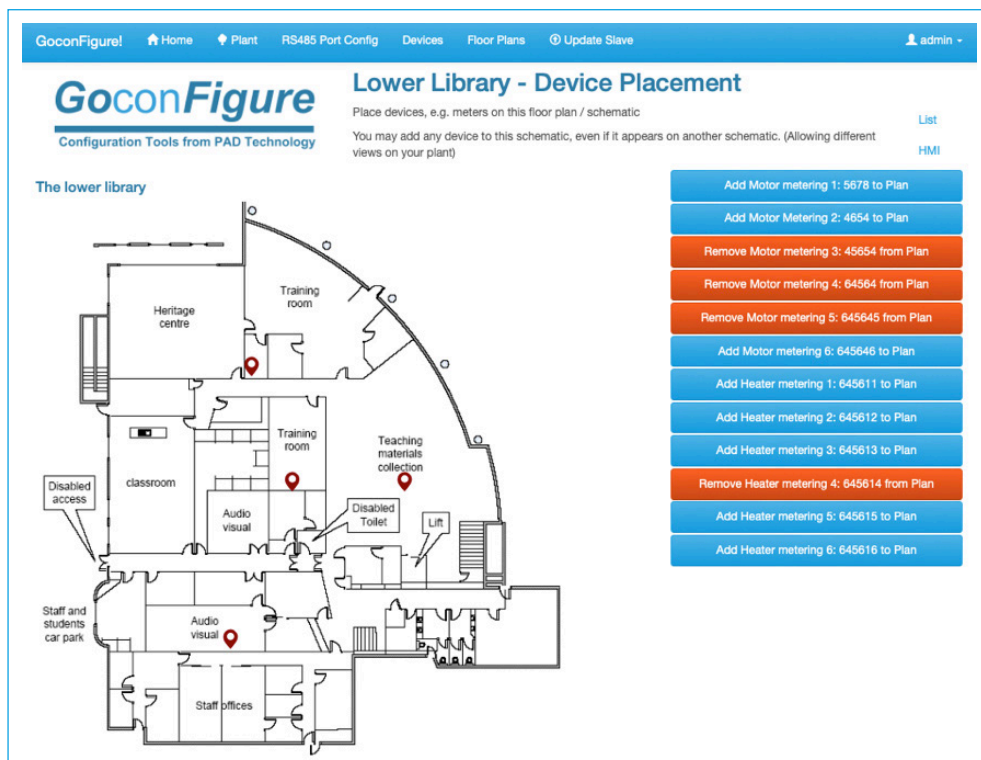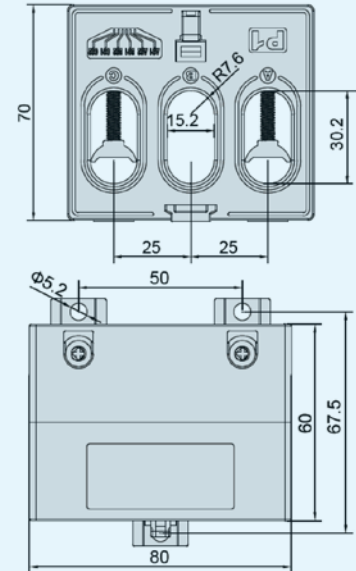
## RJ325

- Class 0.5 Accuracy
- 100mA Secondary
- RJ12 Connector Output
- 25mm Centres
- 60-200A Primary current options
- Tamper proof clip for RJ12 connection

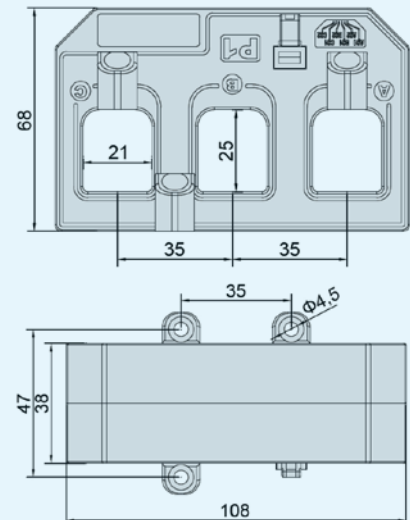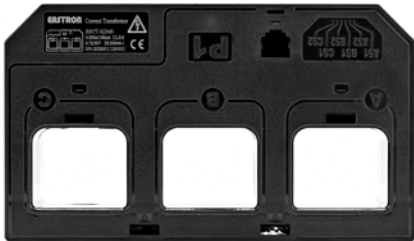| Model | Rated Amp | Output | Burden | |
|---|---|---|---|---|
| | | | Class 0.5 | Class 1.0 |
| ESCT-RJ325 | 60A | 100mA | 0.25 | 1 |
| ESCT-RJ325 | 100A | 100mA | 0.25 | 1 |
| ESCT-RJ325 | 120A | 100mA | 0.25 | 1.5 |
| ESCT-RJ325 | 125A | 100mA | 0.25 | 1.5 |
| ESCT-RJ325 | 150A | 100mA | 0.25 | 2.5 |
| ESCT-RJ325 | 160A | 100mA | 0.25 | 2.5 |
| ESCT-RJ325 | 200A | 100mA | 0.25 | 2.5 |

## RJ335

- Class 0.5 Accuracy
- 100mA Secondary
- RJ12 Connector Output
- 35mm Centres
- 60-250A Primary current options
- Tamper proof clip for RJ12 connection

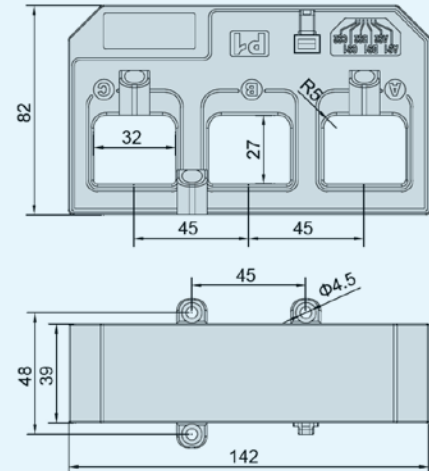| Model | Rated Amp | Output | Burden | |
|---|---|---|---|---|
| | | | Class 0.5 | Class 1.0 |
| ESCT-RJ335 | 63A | 100mA | 0.25 | 0.25 |
| ESCT-RJ335 | 125A | 100mA | 0.25 | 0.5 |
| ESCT-RJ335 | 150A | 100mA | 0.25 | 0.5 |
| ESCT-RJ335 | 200A | 100mA | 0.25 | 0.5 |
| ESCT-RJ335 | 250A | 100mA | 0.25 | 0.5 |

## RJ345



- Class 0.5 Accuracy
- 100mA Secondary
- RJ12 Connector Output
- 45mm Centres
- 250-630A Primary current options
- Tamper proof clip for RJ12 connection



| Model | Rated Amp | Output | Burden | |
|---|---|---|---|---|
| | | | Class 0.5 | Class 1.0 |
| 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 |

## RJ370



- Class 0.5 Accuracy
- 100mA Secondary
- RJ12 Connector Output
- 70mm Centres
- 600-1600A Primary current options
- Tamper proof clip for RJ12 connection



| Model | Rated Amp | Output | Burden | |
|---|---|---|---|---|
| | | | Class 0.5 | Class 1.0 |
| ESCT-RJ370 | 600A | 100mA | 0.25 | 3.75 |
| ESCT-RJ370 | 630A | 100mA | 0.25 | 3.75 |
| ESCT-RJ370 | 800A | 100mA | 0.25 | 5 |
| ESCT-RJ370 | 1000A | 100mA | 0.25 | 5 |
| ESCT-RJ370 | 1200A | 100mA | 0.25 | 7.5 |
| ESCT-RJ370 | 1600A | 100mA | 0.25 | 7.5 |
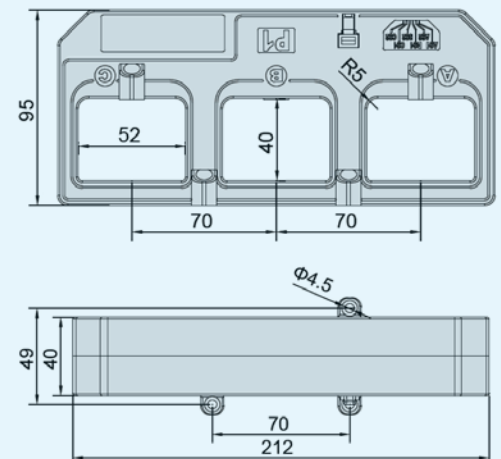
## X96-C2

Voltage Input Cable. 4*1mm2 cables,one end with male terminal.

| | |
|---|---|
| 0.3 Metre | |
| 0.5 Metre | |
| 1.0 Metre | |
| 1.5 Metre | |
| 2.0 Metre | |

## X96-C3

Cable between meter voltage output to the voltage input of next meter. 4*1mm2 cables, one end with male terminal and another end with female terminal.

| | |
|---|---|
| 0.3 Metre | |
| 0.5 Metre | |
| 1.0 Metre | |
| 1.5 Metre | |
| 2.0 Metre | |

## RJ12CABLE-*CW

Grey / White RJ12 cable from meter to CT (SET-UP 1).

| | |
|---|---|
| 1.0 Metre | 6.0 Metre |
| 2.0 Metre | 7.0 Metre |
| 3.0 Metre | 8.0 Metre |
| 4.0 Metre | 9.0 Metre |
| 5.0 Metre | 10.0 Metre |

## RJ12CABLE-*CB

Black Reversed  RJ12 cable from meter to CT (SET-UP 2).

| | |
|---|---|
| 1.0 Metre | 6.0 Metre |
| 2.0 Metre | 7.0 Metre |
| 3.0 Metre | 8.0 Metre |
| 4.0 Metre | 9.0 Metre |
| 5.0 Metre | 10.0 Metre* |

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Innovation, Quality and Competitive edge

Designed and certified in the United Kingdom.