
smartcontroller
Electrical Excellence
PRODUCT CATALOGUE

Smart Controller is an ISO 9001 certified company and all our products are design to deliver efficient results for our clients all over the world.

COMPANY

Smart Controller is UK most reputable organization involved in the manufacturing and supply of electrical measuring devices. We specialize in offering solutions for energy measurement, energy saving and consumption along with a range of additional electrical measuring devices for industrial, residential and renewable energy sectors.

We have a dedicated team with technical excellence working on our existing and new product range to deliver outs tanding technical innovation with new and techniques of production.

Smart Controller is an ISO 9001certified company and all our products are design to deliver efficient results for our clients all over the world.

We special in the manufacturing of metering components our products are fully compatible with open protocol software as well as our designed software which is the most suitable way to manage all Smart Controller products.

All our company products are modular and can easily be expanded if required due to the option of multiple connection Smart Controller has several local and foreign dis tributors around the world and we share the same goal everywhere

SAVE YOU ON ENERGY COST

CONTENT

DIN RAIL MULTI-FUNCTION ENERGY METER

DIN RAIL KWH METER

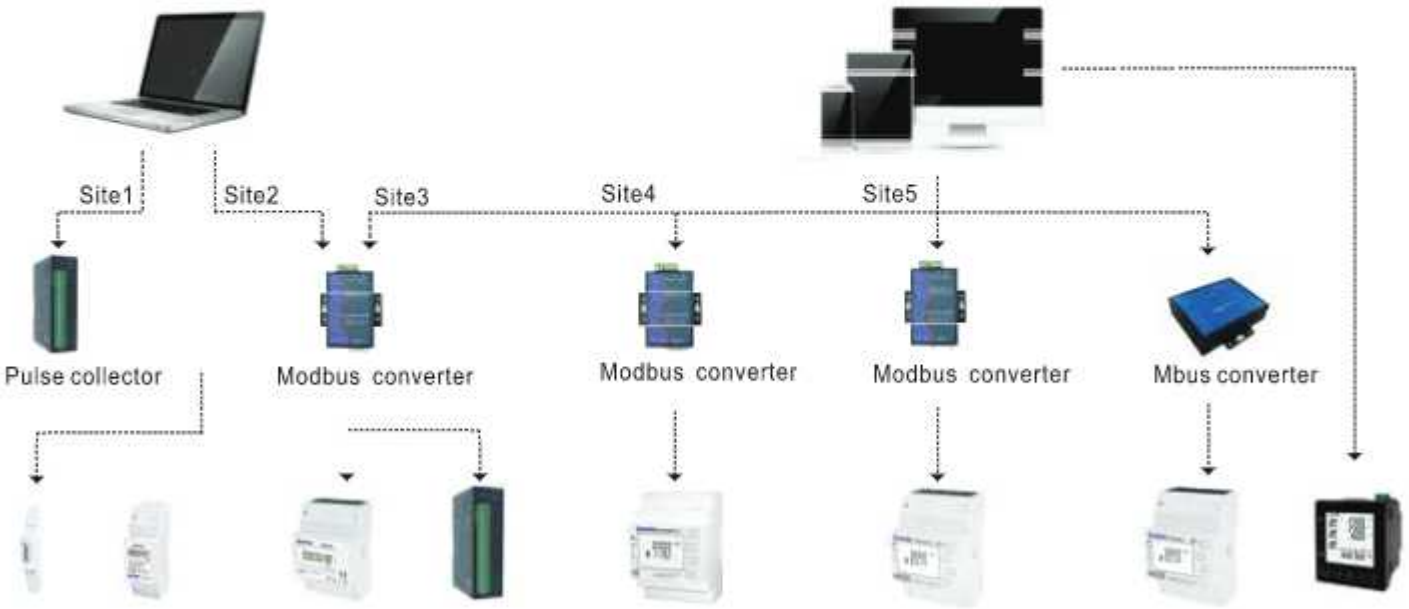
PANEL MOUNTED METER

TIME RELAY

CURRENT TRANSFORMER

Smart Controller

MANAGEMENT SYSTEM



DESCRIPTION

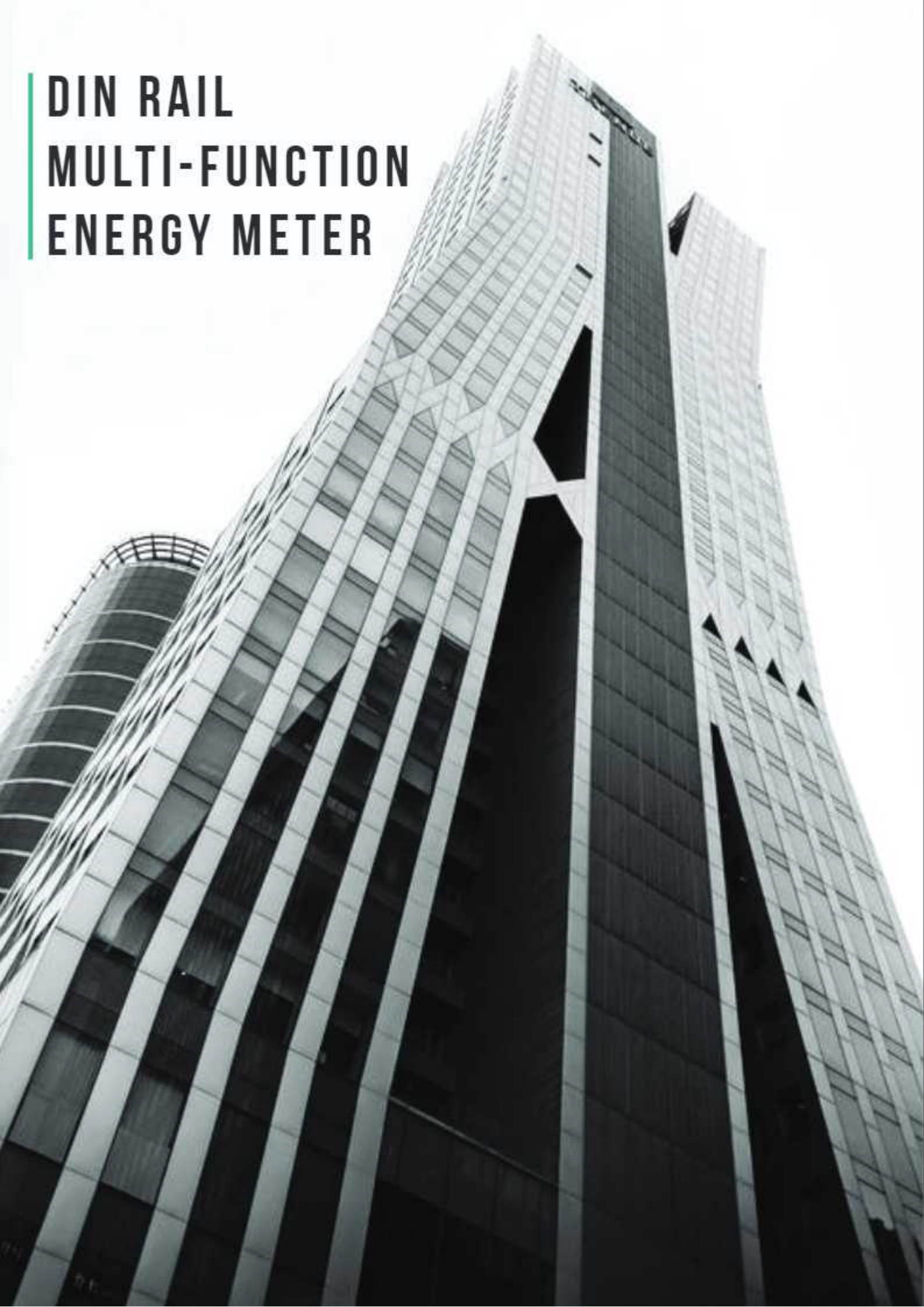
In many residential and commercial buildings, The need to control and measure the energy consumption of single users is becoming more important for an accurate cost allocation. The accurate measurement of energy consumption is the first step in the collection and analysis of the information required for effective energy management.

Smart Controller monitoring and management system provide all important electrical information so that operators can check power consumption records, identify consumption trends and take corrective measures.

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 measures can be taken.

Real-time power consumption monitoring allows energy managers to anticipate overloads and avoid circuit breaks.

DIN RAIL MULTI-FUNCTION ENERGY METER



SINGLE PHASE MULTI-FUNCTION ENERGY METER

Model No: SMART-SME 100D

- 45A Direct Load
- Module 17.5mm Wide
- RS 485 Modbus or M-bus Communication
- Measuring kWh, W, A, PF, Hz, dmd, etc.
- Bi-Directional Measurement
- 2 Pulse Outputs

INTRODUCTION

Modbus/Mbus are advanced Single Phase Energy monitoring solution with built-in configuration push button and led data display particularly Indicated for energy and other parameter metering and for cost allocation.

Housing for din-rail mounting, IP51 protection degree direct connection for energy and other parameter metering and cost allocation. Housing for din-rail mounting, IP51 protection degree, direct connection up to max 45A.

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.

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
Degree of Pollution	2
Protection Against Penetration of Dust and Water	2
Insulating Encased Meter of Protective Class	IP51(indoor)
Attitude	II
Electrostatic Discharges	up to 2000m
Electromagnetic HF Fields	8kV contact / 15kV air gap
Electrical Fast Transients	IEC 61000-4-3
Surge	4kV
Radiated and Conducted	4kV
Emission	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

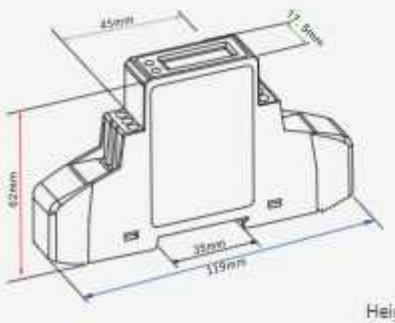
M-BUS

Bus Type	M-bus
Protocol	13757-3
Baud Rate	300/600/1200/2400/4800/9600
Parity	NONE/EVEN/ODD
Stop Bit	1 or 2
Primary Address	1 to 250
Secondary Address	00 00 00 01 to 99 99 99 99

PULSE OUTPUT

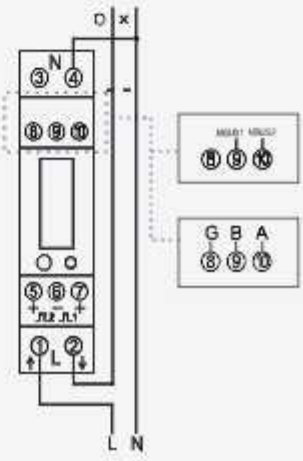
Pulse Outputs	2
Pulse Output Type	Passive
Pulse Output 1	Configurable
Pulse Width	200/100(default)/60ms
Pulse Output 2	1000imp/kWh

DIMENSIONS



Height 119mm
Width 17.5mm
Depth 62mm

WIRING DIAGRAM



SINGLE PHASE MULTI-FUNCTION ENERGY METER

Model No: SMART-SME 102CT

- CT Operated
- One Module 17.5mm Wide
- Measuring kWh, W, A, PF, Hz, dmd, etc.
- Bi-Directional Measurement
- 2 Pulse Outputs
- RS 485 Modbus or M-bus Communication

INTRODUCTION

Modbus/Mbus are advanced Single Phase Energy monitoring solution with built-in configuration push button and led data display particularly Indicated for energy and other parameter metering and for cost allocation.

Housing for din-rail mounting, IP51 protection degree direct connection for energy and other parameter metering and cost allocation. Housing for din-rail mounting , IP51 protection degree, direct connection up to max 45A.

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.

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)	5~9999A
Maximum Rated Current (Imax)	100mV or 100mA
Operational Current Range	20 Imax for 0.01s
Over Current withstand	50 or 60Hz
Operational frequency Range	≤ 2W/10VA
Internal Power Consumption	configurable
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
Degree of Pollution	E2
Protection Against Penetration of Dust and Water	2
Insulating Encased Meter of Protective Class	IP51(indoor)
Attitude	II
Electrostatic Discharges	up to 2000m
Electromagnetic HF Fields	8kV contact / 15kV air gap
Electrical Fast Transients	IEC 61000-4-3
Surge	4kV
Radiated and Conducted	4kV
Emission	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

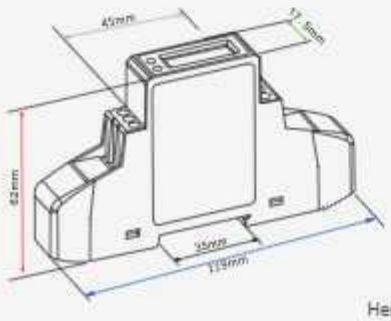
MODBUS

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

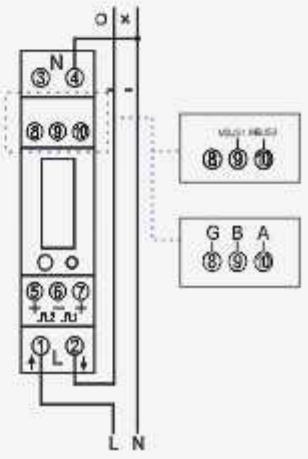
Bus Type	M-bus
Protocol	13757-3
Baud Rate	300/600/1200/2400/4800/9600
Parity	NONE/EVEN/ODD
Stop Bit	1 or 2
Primary Address	1 to 250
Secondary Address	00 00 00 01 to 99 99 99 99

DIMENSIONS



Height 119mm
Width 17.5mm
Depth 62mm

WIRING DIAGRAM



SINGLE PHASE MULTI-FUNCTION ENERGY METER

Model No: SMART-SME 102D

- 100A Direct Load
- 2 Module 36mm Wide
- Measuring kWh, W, A, PF, Hz, dmd, etc.
- Bi-Directional Measurement
- RS 485 Modbus or M-bus Communication
- Multi-Tariffs VA, PF, Hz, dmd, V, A etc.

INTRODUCTION

Smart Controller series is 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, RS 485 Modbus RTU or M-bus EN 13757-3 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.

SPECIFICATION

Nominal Voltage(Un)	230V ac
Operational Voltage	80%~120% of Un
Instation 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
Internal 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
Degree of Pollution	E2
Protection Against Penetration of Dust and Water	2
Insulating Encased Meter of Protective Class	IP51(indoor)
	II

MULTI-TARIFF

Time Clock Accuracy	< 1s/day
Tariffs	4
Time Segments	10

ACCURCY

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

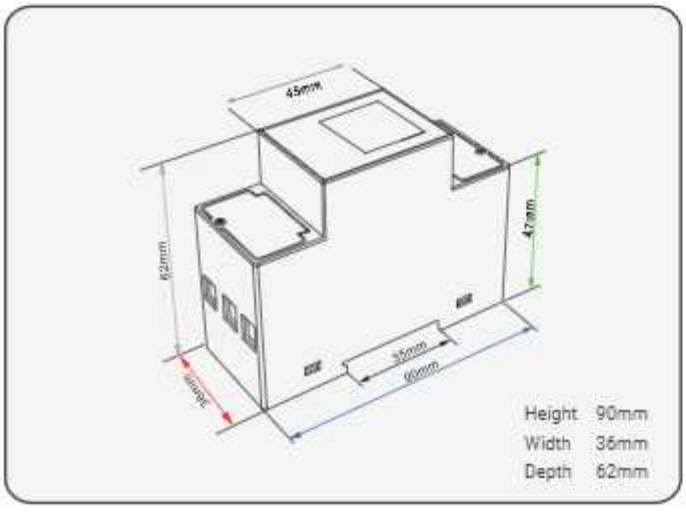
M-BUS

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

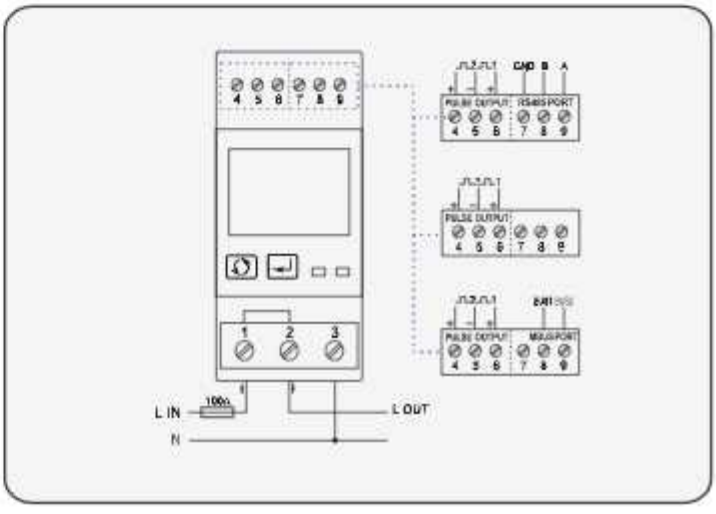
PULSE OUTPUT

Pulse Outputs	2
Pulse Output Type	Passive
Pulse Output 1	Configurable
Pulse Width	200/100(default)/60ms
Pulse Output 2	1000imp/kWh

DIMENSIONS



WIRING DIAGRAM



SINGLE PHASE MULTI-FUNCTION ENERGY METER

Model No: SMART-SME 103D

- 100A Direct Load
- 2 Module 36mm Wide
- Measuring kWh, W, A, PF, Hz, dmd, etc.
- Bi-Directional Measurement
- 2 Pulse Outputs
- RS 485 Modbus or M-bus Communication
- 2 Tariffs Available

INTRODUCTION

Smart Controller series is 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-directionalmeasurement makes this unit an ideal choice for solar PV measurement. A remote communication port is provided

RS485 mudbus RTU and M-bus EN13757-3 communication parameters are password protectedin setup mode. User can check data and set up the meter via the buttons on the front panel.

SPECIFICATION

Nominal Voltage(Un)	120V or 230V ac
Operational Voltage	80% ~ 120% of Un
Instation 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
Internal 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	Class1/Class B
Installation Category	CAT II
Mechanical Environment	M1
Degree of Pollution	E2
Protection Against Penetration of Dust and Water	2
Insulating Encased Meter of Protective Class	IP51(indoor)
Attitude	II
Electrostatic Discharges	8kV contact / 15kV air gap
Electromagnetic HF Fields	IEC 61000-4-3
Electrical Fast Transients	4kV
Surge	4kV
Radiated and Conducted Emission	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

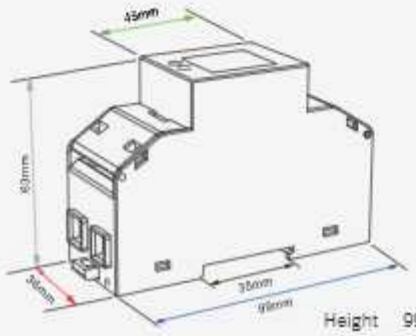
M-BUS

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

PULSE OUTPUT

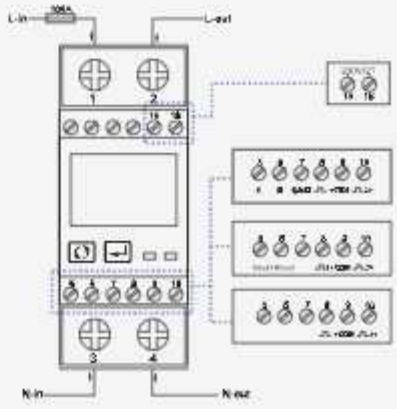
Pulse Outputs	2
Pulse Output Type	Passive
Pulse Output 1	Configurable
Pulse width	200/100(default)/60ms
Pulse Output 2	1000imp/kWh

DIMENSIONS



Height 99mm
Width 36mm
Depth 63mm

WIRING DIAGRAM



SINGLE PHASE MULTI-FUNCTION ENERGY METER

Model No: SMART-SME 104D

- Max. 100A Direct Load
- 2 Module Wide
- Measuring kWh, W, A, PF, Hz, dmd, etc.
- Active Energy Measured
- Pulse Output
- LCD Display

INTRODUCTION

Smart Controller series is 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. The unit allows Max.100A direct connection, saving the cost and avoiding the trouble to connect external CTs. 1 pulse output is provided for energy measurement.

RS485 mudbus RTU and M-bus EN13757-3 communication parameters are password protectedin setup mode. User can check data and set up the meter via the buttons on the front panel.

SPECIFICATION

Nominal Voltage(Un)	120V or 230V ac
Operational Voltage	80%—120% of Un
Instation 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
Internal 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℃ - +55℃
Storage Temperature	-40℃ - +70℃
Reference Temperature	23℃± 2℃
International Standard	IEC 62053-21 / EN50470-1/3
Accuracy Class	Class1/Class B
Installation Category	CAT II
Mechanical Environment	M1
Degree of Pollution	E2
Protection Against Penetration of Dust and Water	2
Insulating Encased Meter of Protective Class	IP51(indoor)
Attitude	II
Electrostatic Discharges	8kV contact / 15kV air gap
Electromagnetic HF Fields	IEC 61000-4-3
Electrical Fast Transients	4kV
Surge	4kV
Radiated and Conducted Emission	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

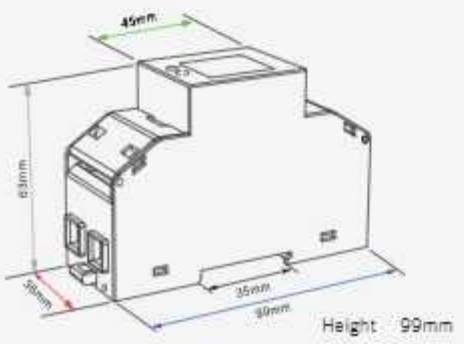
M-BUS

Rated Current	10 A
Max Current	100A A
Min Current	0.5 A
Starting Current	20mA
Stop Bit	1 or 2
Primary Address	1 to 250
Secondary Address	00 00 00 01 to 99 99 99 99 99 99

PULSE OUTPUT

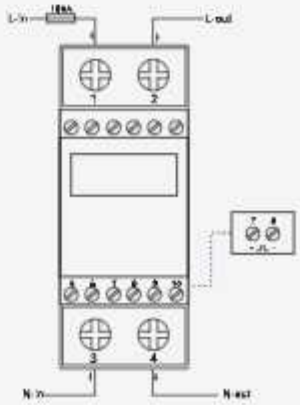
Pulse Outputs	2
Pulse Output Type	Passive
Pulse Output 1	Configurable
Pulse width	200/100(default)/60ms
Pulse Output 2	1000imp/kWh

DIMENSIONS



Height 99mm
Width 36mm
Depth 63mm

WIRING DIAGRAM



THREE PHASE 4 WIRE MULTI-FUNCTION ENERGY METER

Model No: SMART-SME 200D

- 100A Direct Load
- 7 Module Wide
- Bi-Directional Measurement
- 2 Pulse Outputs
- RS 485 Modbus or M-bus Communication
- Multi kWh, kVarh, W, Var, VA, PF, Hz, dmd, etc.
- Multi-Tariffs

INTRODUCTION

The Smart Controller series measure and display the characteristics of three phase four wires (3p, 4w) Supplies, Including Voltage, Frequency, Current, Power Active and Reactive Energy, Import 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 input in addition tot he supply required to power the product.

Smart Controller series support max. 100A direct connection, save the cost the trouble to connect CTs, giving the unit a cost-effective and easy operation. Built-in interface provides pulse and RS485 modbus RTU output / MBus port. All the configuration are password protected.

SPECIFICATION

Nominal Voltage(Un)	3x230/400 V ac
Operational Voltage	80%～120% of Un
Instation Capabilities	
- AC Voltage Withstand	4KV for 1 minute
- Impulse Voltage Withstand	6KV-1.2μS
Basic Current (Ib)	10A
Maximum Rated Current (Imax)	0.4% Ib-Imax
Operational Current Range	30 Imax for 0.01s
Over Current Withstand	50 or 60Hz
Pulse Output	≤ 2W/10VA
Display	LCD
Max Reading	999999.99 kWh/kVarh

PERFORMANCE CRITERIA

Operating Humidity	≤ 90%
Storage Humidity	≤ 95%
Operating Temperature	-25℃ - +55℃
Storage Temperature	-40℃ - +70℃
Reference Temperature	23℃± 2℃
International Standard	IEC 62053-21 / EN50470-1/3
Accuracy Class	Class1/Class B
Installation Category	CAT III
Mechanical Environment	M1
Degree of Pollution	E2
Protection Against Penetration of Dust and Water	2
Insulating Encased Meter of Protective Class	IPS1(indoor)
Attitude	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
Tariffs	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

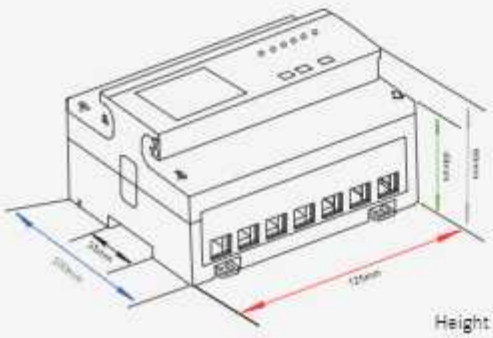
M-BUS

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

PULSE OUTPUT

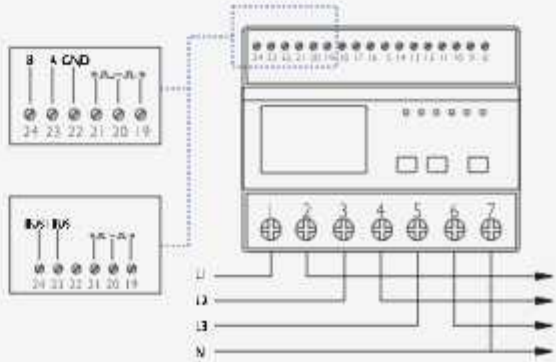
Pulse Outputs	2
Pulse Output Type	Passive
Pulse Output 1	Configurable
Pulse Width	200/100(default)/60ms
Pulse Output 2	400imp/kWh

DIMENSIONS



Height 100mm
Width 125mm
Depth 65mm

WIRING DIAGRAM



THREE PHASE 4 WIRE MULTI-FUNCTION ENERGY METER

Model No: SMART-SME 201CT

- 5A CT Operated
- 7 Module Wide
- Multi kWh, kVarh, W, Var, VA, PF, Hz, dmd, etc.
- Bi-Directional Measurement
- 2 Pulse Outputs
- RS 485 Modbus or M-bus Communication
- Multi-Tariffs

INTRODUCTION

The Smart Controller series measure and display the characteristics of Three Phase four wires including voltage, frequency, current, power active and reactive energy, import 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 input in addition to the supply required to power the product.

Smart Controller series can be configured to work with wide range of Ct,s giving the unit a wide rangeof operation. Built-in interfaces provides pulse and RS485 Modbus or Mbus.

SPECIFICATION

Nominal Voltage(Un)	3x230/400 V ac
Operational Voltage	80%~120% of Un
Instation Capabilities	
- AC Voltage Withstand	4KV for 1 minute
- Impulse Voltage Withstand	6KV-1.2μS
Basic Current (Ib)	5A
Maximum Rated Current (Imax)	0.4% Ib-Imax
Operational Current Range	20 Imax for 0.01s
Over Current Withstand	50 or 60Hz
Pulse Output	≤ 2W/10VA
Display	LCD
Max Reading	999999.99 kWh/kVarh

PERFORMANCE CRITERIA

Operating Humidity	≤ 90%
Storage Humidity	≤ 95%
Operating Temperature	-25℃ - +55℃
Storage Temperature	-40℃ - +70℃
Reference Temperature	23℃± 2℃
International Standard	IEC 62053-21 / EN50470-1/3
Accuracy Class	Class1/Class B
Installation Category	CAT III
Mechanical Environment	M1
Degree of Pollution	E2
Protection Against Penetration of Dust and Water	2
Insulating Encased Meter of Protective Class	IP51(indoor)
Attitude	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
Tariffs	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

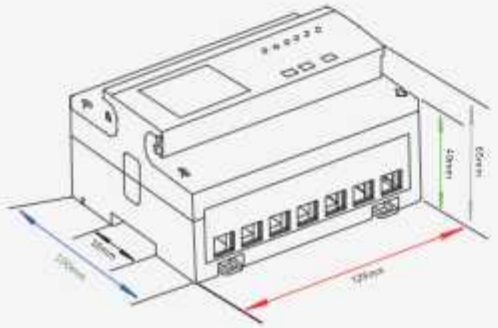
M-BUS

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

PULSE OUTPUT

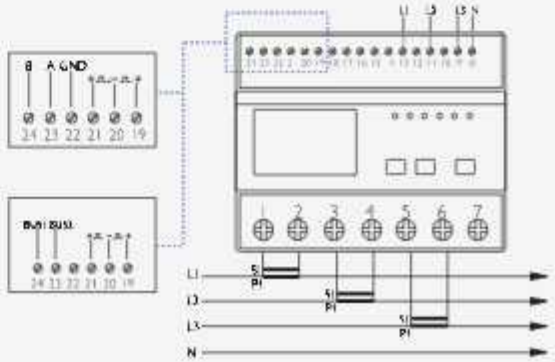
Pulse Outputs	2
Pulse Output Type	Passive
Pulse Output 1	Configurable
Pulse Width	200/100(default)/60ms
Pulse Output 2	1000imp/kWh

DIMENSIONS



Height 100mm
Width 125mm
Depth 65mm

WIRING DIAGRAM



THREE PHASE 4 WIRE ENERGY METER

Model No: SMART-SME 202

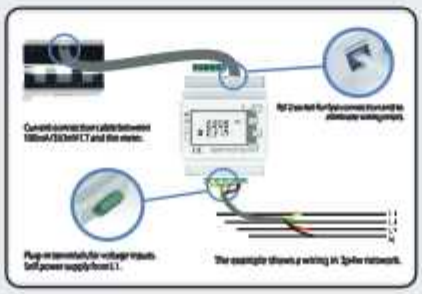
- CT Operated
- Plug-in Conncetion
- RJ 12 100mA / 33mV Current Input
- Multi-Parameter Measures
- THD of Voltage and Current
- RS 485 Modbus RTS and Pulse Output

INTRODUCTION

The Smart Controller is a Three Phase 4 wire multi-function energy meter. It measure and display 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 current input. With 3-in-1 current transformer meter provides easy an quick and error-free connection solution. Equipped with RS485 communication port and 2 pulse outputs the meter ideal product for sub-metering in low voltage application.

LOAD SOLUTION



SPECIFICATION

Nominal Voltage(Un)	3x230/400 V ac
Operational Voltage	60%~120% of Un
Instation Capabilities	
- AC Voltage Withstand	4KV for 1 minute
- Impulse Voltage Withstand	6KV-1.2μS
Basic Current (Ib)	100mA or 333mV CT input
Maximum Rated Current (Imax)	0.4% Ib-Imax
Operational Current Range	20 Imax for 0.01s
Over Current Withstand	50 or 60Hz
Internal Frequency Range	≤ 2W/10VA
Internal Power Consumption	Configurable
Pulse Output 1	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
Degree of Pollution	E2
Protection Against Penetration of Dust and Water	2
Insulating Encased Meter of Protective Class	IP51(indoor)
Attitude	II
Electrostatic Discharges	8kV contact / 15kV air gap
Electromagnetic HF Fields	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

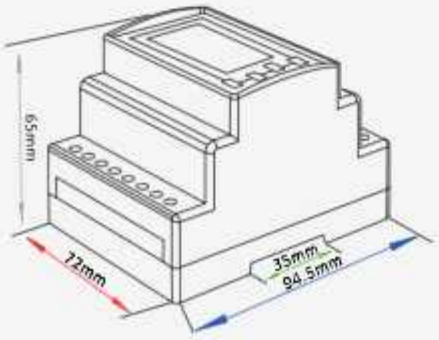
MODBUS

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)

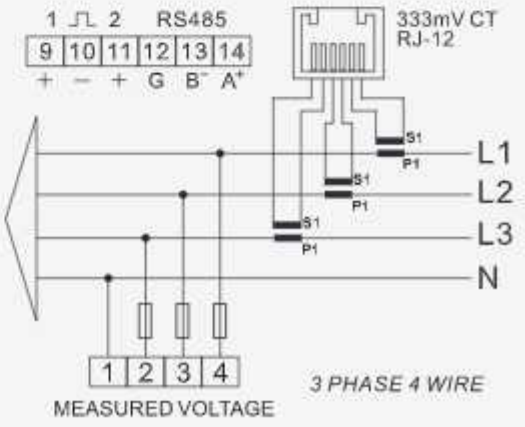
Bus Type	M-bus
Protocol	EN13757-3
Baud Rate	300/600/1200/2400/4800/9600
Parity	NONE/EVEN/ODD
Stop Bit	1 or 2
Primary Address	1 to 250
Secondary Address	00 00 00 01 to 99 99 99 99

DIMENSIONS



Height 94.5mm
Width 72mm
Depth 65mm

WIRING DIAGRAM



THREE PHASE MULTI-FUNCTION POWER ANALYZER

Model No: SMART-SME 203D

- 100A Direct Load
- 4 Module Wide
- Work with 3P 4W/ 3P 4W/ 1P 2W
- Bi-Directional Measurement
- 2 Pulse Outputs
- RS 485 Modbus or M-bus Communication
- Multi-Tariffs

INTRODUCTION

The Smart Controller series is a Three Phase multi-function DIN rail meter. It can measure and display the characteristic of 1p2w, 3p3w and 3p4w supplies, including voltage, 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 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 interface provide pulse and RS485 Modbus RTS output.

SPECIFICATION

Nominal Voltage(Un)	3x230/400 V ac
Operational Voltage	80% ~ 120% of Un
Instation Capabilities	
- AC Voltage withstand	4KV for 1 minute
- Impulse Voltage withstand	6KV-1.2μS
Basic Current (Ib)	10A
Maximum Rated Current (Imax)	0.4% Ib-Imax
Operational Current Range	30 Imax for 0.01s
Over Current withstan	50 or 60Hz
Pulse Output	≤ 2W/10VA
Display	LCD
Max Reading	999999.99 kWh/kVarh

PERFORMANCE CRITERIA

Operating Humidity	≤ 90%
Storage Humidity	≤ 95%
Operating Temperature	-25℃ - +55℃
Storage Temperature	-40℃ - +70℃
Reference Temperature	23℃ ± 2℃
International Standard	IEC 62053-21 / EN50470-1/3
Accuracy Class	Class1/Class B
Installation Category	CAT III
Mechanical Environment	M1
Degree of Pollution	E2
Protection Against Penetration of Dust and Water	2
Insulating Encased Meter of Protective Class	IP51(indoor)
Attitude	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
Tariffs	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

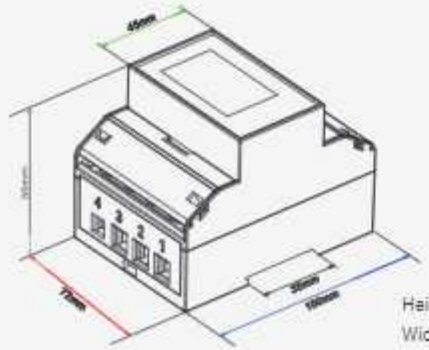
M-BUS

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

PULSE OUTPUT

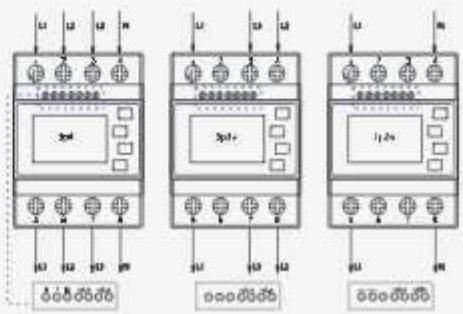
Pulse Outputs	2
Pulse Output Type	Passive
Pulse Output 1	Configurable
Pulse Width	200/100(default)/60ms
Pulse Output 2	400imp/kWh

DIMENSIONS



Height 100mm
Width 72mm
Depth 66mm

WIRING DIAGRAM



THREE PHASE MULTI-FUNCTION POWER ANALYZER

Model No: SMART-SME 204CT

- CT Operated
- Work with 3P 4W/ 3P 4W/ 1P 2W
- Bi-Directional Measurement
- RS 485 Modbus or M-bus Communication
- Pulse Outputs
- Tariffs Available
- Module Wide

INTRODUCTION

The Smart Controller series is a Three Phase multi-function DIN rail meter. It can measure and display the characteristic of 1p2w, 3p3w and 3p4w supplies, including voltage, 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 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 interface provide pulse and RS485 Modbus RTS output.

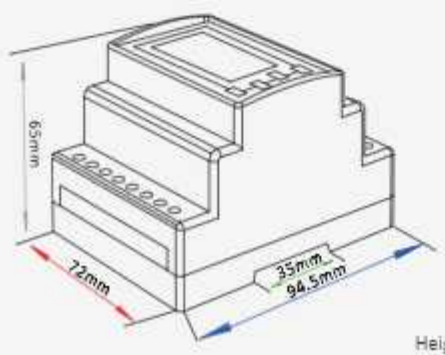
SPECIFICATION

Nominal Voltage(Un)	3x230/400 V ac
Operational Voltage	60%~120% of Un
Instation Capabilities	
- AC Voltage withstand	4KV for 1 minute
- Impulse Voltage withstand	6KV-1.2μS
Basic Current (Ib)	5A CT or 333mV CT input
Maximum Rated Current (Imax)	0.4% Ib-Imax
Operational Current Range	20 Imax for 0.01s
Over Current withstand	50 or 60Hz
Internal Frequency Range	≤ 2W/10VA
Internal Power Consumption	Configurable
Pulse Output	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
Degree of Pollution	E2
Protection Against Penetsation of Dust and Water	2
Insulating Encased Meter of Protective Class	IP51(indoor)
Electrostatic Discharges	II
Electromagnetic HF Fields	8kV contact / 15kV air gap
Electrical Fast Transients	EN 55022

DIMENSIONS



Height 94.5mm
Width 72mm
Depth 65mm

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

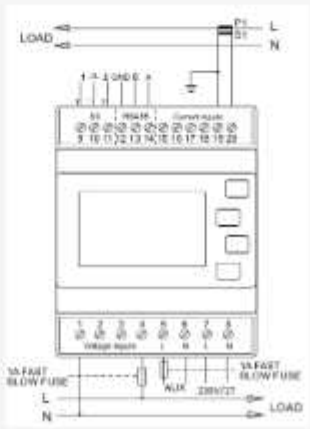
Bus Type	RS485(semi-duplex)
Protocol	Modbus RTU
Baud Rate	2400/4800/9600/19200/38400bps
Address Range	1-247
Max. Bus loading	64pcs
Communication Distance	1000M
Parity	EVEN/ODD/NONE
Data Bit	8
Stop Bit	1

M-BUS

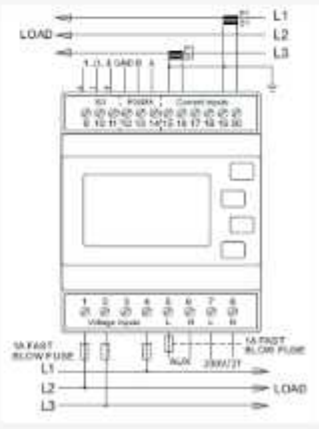
Bus Type	M-bus
Protocol	EN13757-3
Baud Rate	300/600/1200/2400/4800/9600
Parity	NONE/EVEN/ODD
Stop Bit	1 or 2
Primary Address	1 to 250
Secondary Address	00 00 00 01 to 99 99 99 99

WIRING DIAGRAM

SINGLE PHASE TWO WIRE



THREE PHASE THREE WIRE



THREE PHASE MULTI-FUNCTION POWER ANALYZER

Model No: SMART-SME 204D

- 100A Direct Load
- Work with 3P4W/3P3W/1P2W
- 4 Module 72mm Wide
- Bi-Directional Measurement
- 2 Pulse Outputs
- RS485 Modbus
- 2 Tariffs Available (Dual Power Source)
- Multi-Measurement: kWh,kVarh,W,Var,VA,PF,Hz,dmd,V,

INTRODUCTION

The Smart Controller series series measures and displays the characteristics of 1p2w, 3p3w and 3p4w supplies, Including Voltage, Frequency, Current, Power, Active and Reactive Energy, Imported or Exported, harmonic etc. Bi-directional measurement makes it an ideal choice for Solar PV measurement.

The units support Max. 100A direct connection, saving the cost and avoiding the trouble to connect external CTs. Two pulse outputs and 1 communication port (Mbus/Modbus) are provided for remote monitoring.

The unit has been approved to meet the requirements of EU Directive 2014/32/EU.

MEASUREMENT

Power	0.5% of range maximum
Active Energy	IEC 62053-22 Class 0.5S, IEC 62053-21
Reactive Energy	IEC62053-23 Class 2, IEC 61557-12 Class 2
Frequuecy	0.1% of mid-frequency
Current	0.2% of range maximum
Voltage	0.2% of range maximum
Power Factor	1% of unity (0.01)

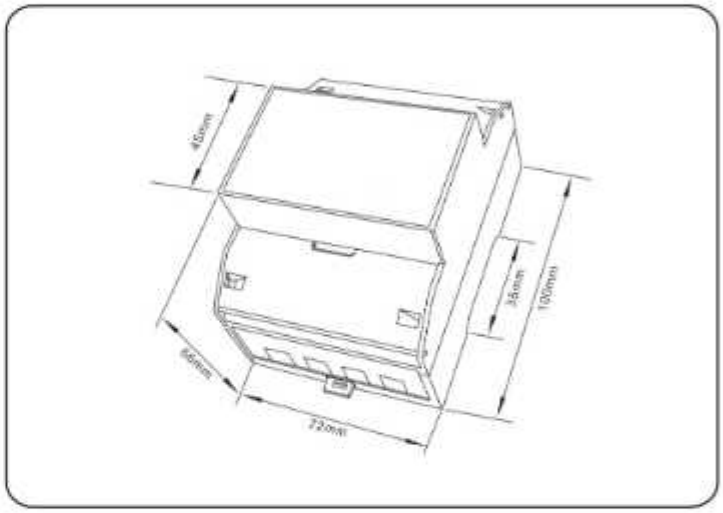
INPUT-OUTPUT

Rated Current	10A
Max Current	100A
Min Current	0.5A
Starting Current	40mA
TME104-Pulse	2 Pulse Output for Imp/exp. energy
TME104-Modbus	2 Pulse Output + RS485 Modbus
TME104D-Mbus	2 Pulse Output + M-bus EN13757

MODBUS COMMUNICATIONS

Interface Standard and Protocol	RS485 and MODBUS RTU
Communication Address	1-247
Transmission Mode	Half Duplex
Data Type	Floating Point
Transmission Distance	1000m Maximum
Transmission Speed	2400bps-38400bps
Parity	None (default), Odd, Even
Stop Bits	1 or 2
Response Time	<100 mS

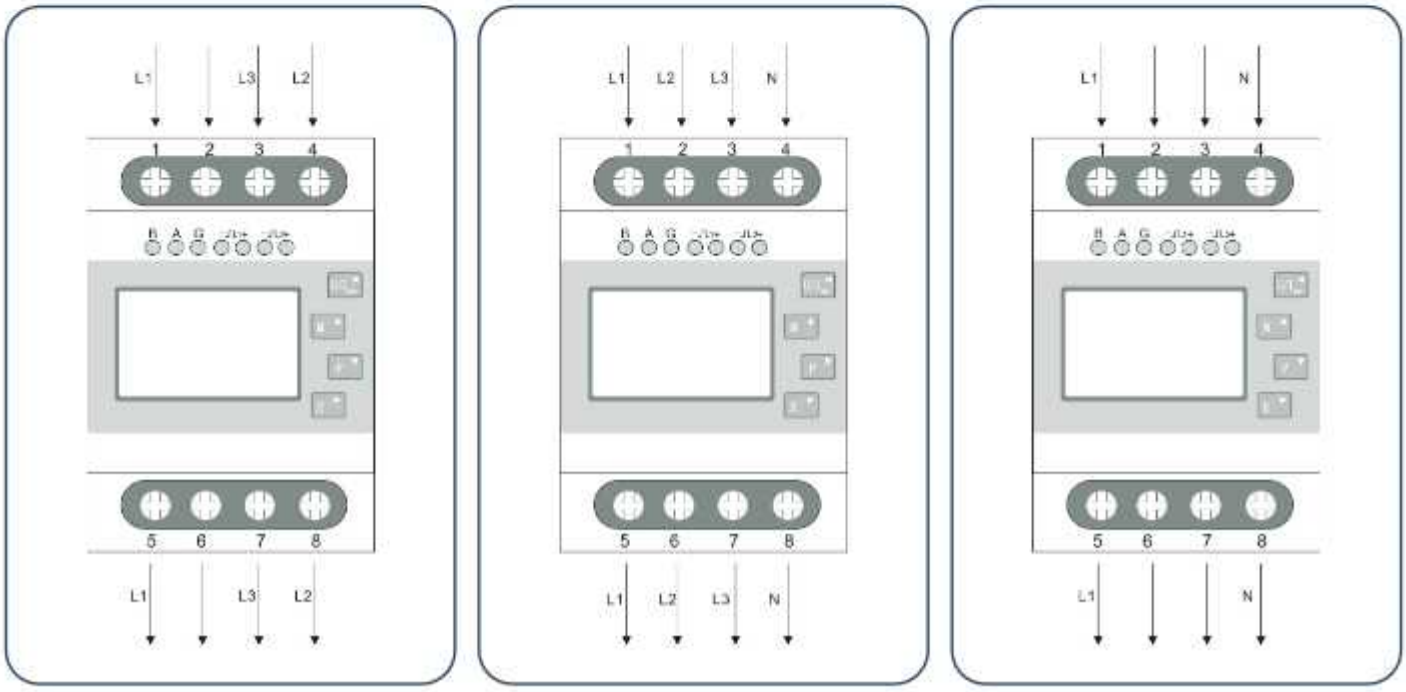
DIMENSIONS



WIRING GUIDE

Terminals		
COMM/Pulse/2T	0.5~1.5mm²	0.4Nm
Load	4~25mm²	3Nm

WIRING DIAGRAM



DUAL LOAD MULTI-FUNCTION ENERGY METER

Model No: SMART-DME 300

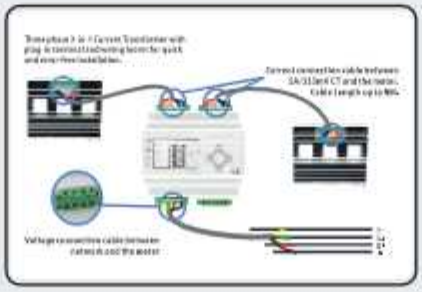
- 2 Meters in 1
- Easy and Error free Connection
- 5A/33mV CT Input
- Multi-Paramter Measures
- 2 Pulse Output
- RS 485 Modbus RTS

INTRODUCTION

The Smart - DME 300 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, demand active energy reactive energy.

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.

DUAL LOAD SOLUTION



SPECIFICATION

Norminal Voltage(Un)	3x230/400V ac
Operational Voltage	80%~120% of Un
Instation Capabilities	
- AC Voltage Withstand	4KV for 1 minute
- Impulse Voltage Withstand	6KV-1.2μS
Basic Current (Ib)	5A or 333mV CT input
Maximum Rated Current (Imax)	0.4% Ib-Imax
Operational	20 Imax for 0.01s
Current Range	50 or 60Hz
Over Current Withstand	≤ 2W/10VA
Pulse Output	Configurable
Display	LCD
Max Reading	9999999.9 kWh/kVarh

PERFORMANCE CRITERIA

Operating Humidity	≤ 90%
Storage Humidity	≤ 95%
Operating Temperature	-25℃ - +55℃
Storage Temperature	-40℃ - +70℃
Reference Temperature	23℃± 2℃
International Standard	IEC 62053-21 / EN50470-1/3
Accuracy Class	Class1/Class B
Installation Category	CAT III
Mechanical Environment	M1
Degree of Pollution	E2
Protection Against Penetration of Dust and Water	2
Insulating Encased Meter of Protective Class	IPS1(indoor)
Electrostatic Discharges	II
Electromagnetic HF Fields	8kV contact / 15kV air gap
Electrical Fast Transients	IEC 61000-4-3
Surge	4kV
Radiated and Conducted	4kV
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

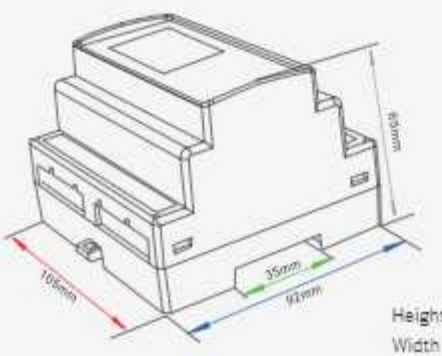
MODBUS

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

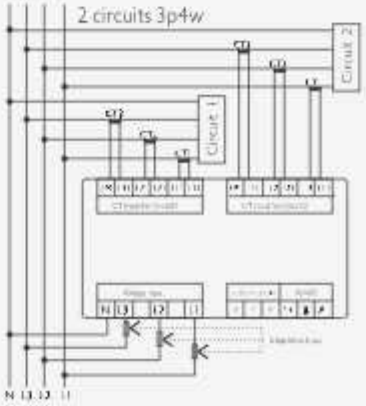
Pulse Outputs	2
Pulse Output Type	Passive
Pulse Output 1	C1 Configurable
Pulse Width	C2 Configurable
Pulse Output 2	200/100(default)/60ms

DIMENSIONS



Height 92mm
Width 105mm
Depth 65mm

WIRING DIAGRAM



THREE PHASE MULTI-FUNCTION DIN RAIL METER

Model No: SMART-VEN 580CT / VEN 580D

- **The Smart Controller Smart VEN580 series multi-function is a Three-Phase DIN rail power quality meter with multi-tariff.**
- **Output is LCD displayed and the data can be transported by isolated RS485. The meter is provided with a non-volatile memory sys tem that ensures that the readings are not los t or altered when power off.**

INTRODUCTION

The Smart VEN580 has both direct connection version and CT connection version. The direct connection version meter measures up to 100A load. The CT connection Type requests an external current transformerwith 5A secondary input. Although we produce the Smart VEN 580 meter according to IEC 62053 - 21 and our quality inspection is very accurate there might always be a possibility that your product shows afault or failure for which we do apologize. Under normal conditions your product should give you years of benefit and pleasure. In case there is a problem with the energy meter you should contact your dealer immediately.

All energy meters are sealed with a special seal. Once this seal is broken there is no possibility to claim for warranty. Therefore NEVER open an energy meter or break the seal of the energy meter. The warranty time is 18 months, after installation, and only valid for construction faults.

RS485 OUTPUT

RS485 communication port is between the meter terminals 11 and 10. It is a synchronization wire port. Installing a software in PC, via RS485 adapter connecting the terminal 11 and 10, PC can communicate with the meter immediately.

COMMUNICATION PROTOCOL

Smart Controller Smart VEN580 has a RS485 port with Modbus RTU protocol. RS485 is a balanced line half-duple transmission system allowing transmission dis tances of up to 1km. The following table summarizes the RS-485 Standard.

PARAMETER	
Mode of Operation	Differential
Number of Drivers and Receivers	32 Drivers 32 Receivers
Maximum Cable Length	1200m
Maximum Data Rate	10M baud
Maximum Common Mode Voltage	12V to -7V
Minimum Driver Output Levels (Loaded)	±1.5V
Minimum Driver Output Levels (Uploaded)	±6V
Drive Load	Minimum 60 ohms
Driver Output Short Circuit Current Limit	150mA to Ghd 250mA to 12V 250mA to -7V
Minimum Receiver Input Resistance	12kohms
Receiver Sensitivity	±200mV

Further information relating to RS485 may be obtained from either the smart controller directly or the various RS485 device manufacturers, for example Texas Ins truments or Maximum Semi conductors. This list is not exhaustive.

SPECIFICATION

Meter Type	SMART VEN580 (LCD display)
Nominal Voltage(Un)	230/400V AC (3–) ; 110/190V AC (3–)
Operational Voltage	161/279 – 300/520V AC (3–)
Insulation Capabilities	4KV for 1 minute
- AC Voltage withstand	6KV – 1.2μS waveform
- Impulse Voltage withstand	
Basic Current (Ib)	
- CT Type	1.5A
- Directly Connect	10A
Maximum Rated Current (Imax)	
- CT Type	6A
- Directly Connect	100A

PERFORMANCE CRITERIA

Operational Current Range	0.4% Ib- Imax
Over Current Withstand	20Imax for 0.01s
Operational Frequency Range	50Hz ±10%
Internal Power Consumption	≤2W / 10VA per phase
Test Output Flash Rate (Pulse Led)	
- Ct Type	3200imp/kWh
- Directly Connect	400imp/kWh
Test Pulse Output Rate (Pins 8 & 9)	
- Ct Type	3200imp/kWh
- Directly Connect	400imp/kWh
Consumption Indicator (PULSE & SO LED)	Flashing at load running
Communication Indicator	Flashing at communication running
Data Communication Port	RS485 and far infrared
Data Save	than 20 years when power off
Voltage, LN & LL (Phase1, 2,3)	±0.5%
Amps (Phase 1,2,3)	±0.5%

TARIFF

Tariff Number	4
Time Segments	10
Clock Accuracy	≤0.5S (every 24 hours)

ACCURACY

PF (Phase 1,2,3 &Σ)	±0.5%
Active Power (Phase 1,2,3&Σ)	±0.5%
Frequency	±1%
Active Energy	± 1%
Reactive energy	±1%
Protection Against penetration of dust and water	IP51
Insulating Encased meter of protective class	II

RS485 COMMUNICATION

Bus Type	RS485
Protocol	MODBUS RTU with 16 bit CRC & DL/T645
Baud Rate	1200(default), 2400, 4800,9600
Address Range	0-247 user settable
Bus Loading	32 meters per bus
Rage	1200m
Parity	Even
Data Bit	8
Stop Bit	1

BASIC ERRORS

0.05Ib	Cosφ = 1	±1.5%
0.1Ib	Cosφ = 0.5L	±1.5%
0.1Ib - Imax	Cosφ = 0.8C	±1.5%
0.2Ib - Imax	Cosφ = 0.5L	±1.0%
With balanced loads	Cosφ = 0.8C	±1.0%
0.1Ib - Imax	Cosφ = 1	±2.0%
0.2Ib - Imax	Cosφ = 0.5L	±2.0%

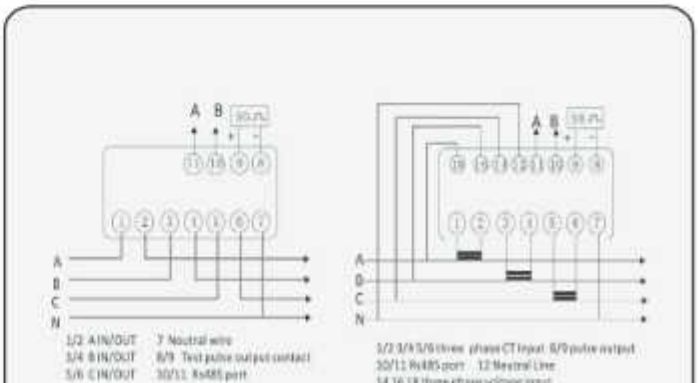
FAR INFRARED COMMUNICATION

Infrared Wavelengths	900- 1000nm
Baud Rate	1200bps (default), 9600bps (optional)
Communication Distance	5m
Communication Angle	-15°~+15°
Protocol	MODBUS RTU with 16 bit CRC & DL/T645

DIMENSIONS

Height 65mm
Width 100mm
Depth 40mm

WIRING DIAGRAM



DIN RAIL KWH METER

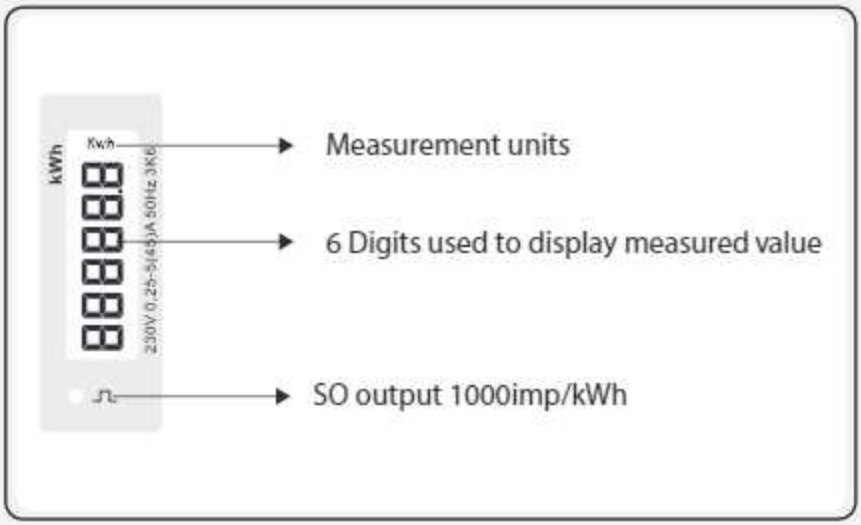
SINGLE PHASE 2 WIRE KWH METER

Model No: SMART-KME 400D

- 45A MAX, Direct Load
- One Module Wide
- Active Energy Measured
- Pulse Output
- Din Rail Mounted

DESCRIPTION

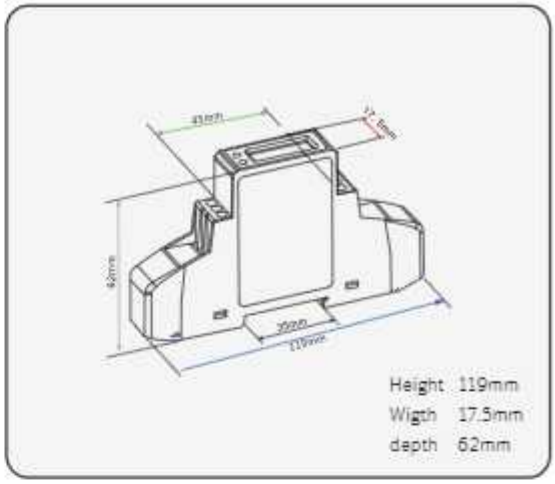
The Smart Controller A/D/DB series provides a unit-direction (anti-reverse) measurement model. It would only counts the forward energy, and not counts the reverse energy. It is widely used In solar generation energy measurement.



SPECIFICATION

Display	LCD
	LCD with Backlit
Norminal Voltage (Un)	120V or 230V ac
Operational Voltage	80%~120% of Un
Insulation Capabilitie	
– AC Voltage Withstand	4KV for 1 minute
– Impulse Voltage Withstand	6KV-1.2μS
Basic Current (Ib)	5A
Maximum Rated Current (Imax)	45A
Operational Current Rage	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

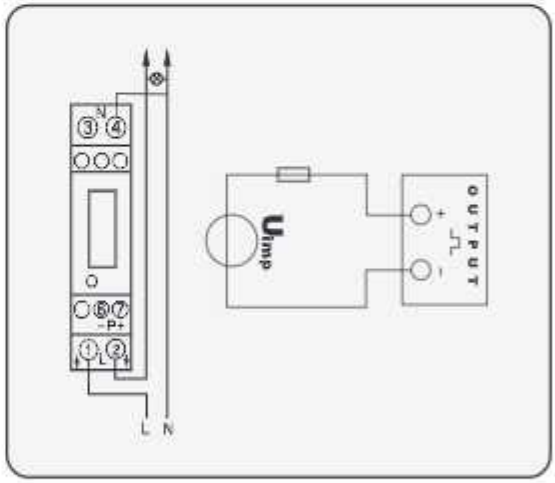
DIMENSIONS



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
Degree of Pollution	E2
Protection Against Penetration of Dust and Water	2
Insulating Encased Meter of Protective Class	IP51(indoor)
Electrostatic Discharges	II
Electromagnetic HF Fields	8kV contact / 15kV air gap
Electrical Fast Transients	IEC 61000-4-3
Surge	4kV
Radiated and Conducted	4kV
Emissions	EN 55022

WIRING DIAGRAM



Pulso Output

ATTENTION:

Pulse output must be fed as show in the wiring diagram below. Scrupulously respect polarities and the connection mode to coupler with potential free SPST-NO content.

Contact range: 5~27VDC

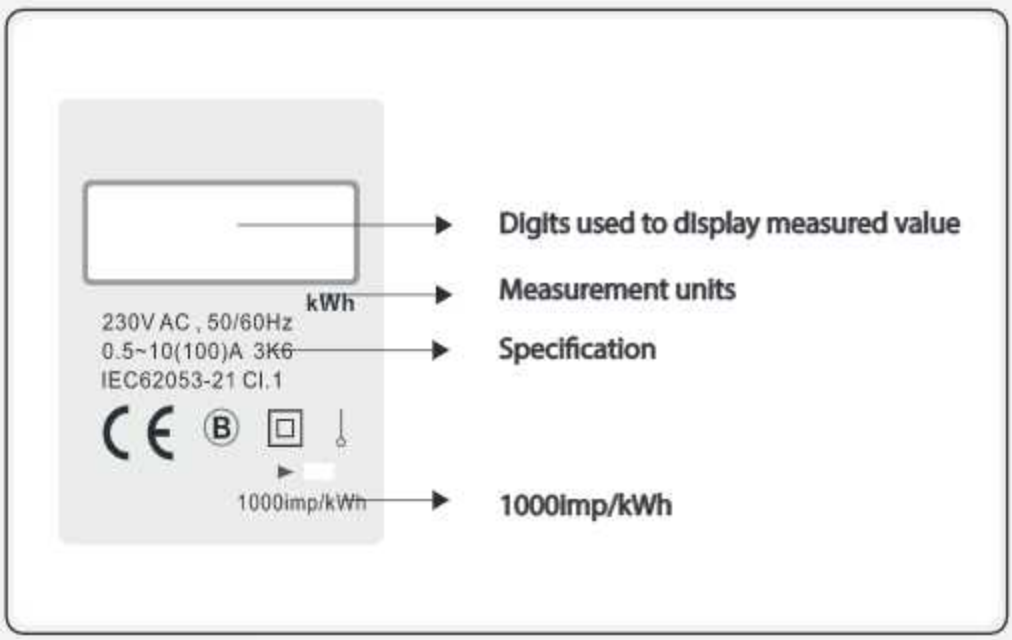
Max. current input: 27mA DC.

SINGLE PHASE 2 WIRE KWH METER

Model No: SMART-KME 401D

- 100A MAX, Direct Load
- Two Module Wide
- Active Energy Measured
- Pulse Output
- Din Rail Mounted

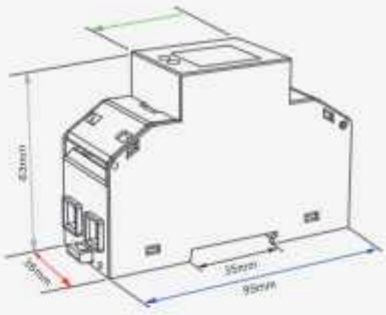
DESCRIPTION



SPECIFICATION

Display	LCD
Norminal Voltage (Un)	120V or 230V ac
Operational Voltage	80%~120% of Un
Insulation Capabilitie	
- AC Voltage Withstand	4KV for 1 minute
- Impulse Voltage Withstand	6KV-1.2μS
Basic Current (Ib)	10A
Maximum Rated Current (Imax)	100A
Operational Current Rage	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	999999.9 kWh(SDM230A)
	99999.9 kWh(SDM230D)

DIMENSIONS

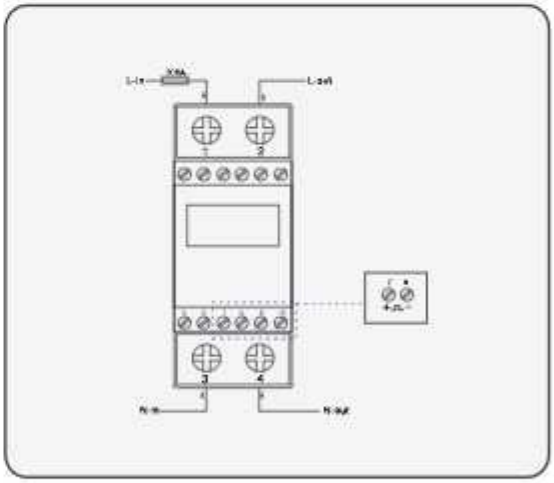


Height 99mm
Width 36mm
Depth 63mm

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
Degree of Pollution	E2
Protection Against Penetration of Dust and Water	2
Insulating Encased Meter of Protective Class	IP51(indoor)
Electrostatic Discharges	II
Electromagnetic HF Fields	up to 2000m
Electrical Fast Transients	8kV contact / 15kV air gap
Surge	IEC 61000-4-3
Radiated	4kV
Conducted Emissions	4kV
	EN 55022

WIRING DIAGRAM



MECHANICS

Din Rail Dimension	99x36x63 (WxHxD) DIN 43880
Mounting DIN Rail	35mm
Sealing	IP51 (indoor)
Meterial	self-extinguishing UL94V-0

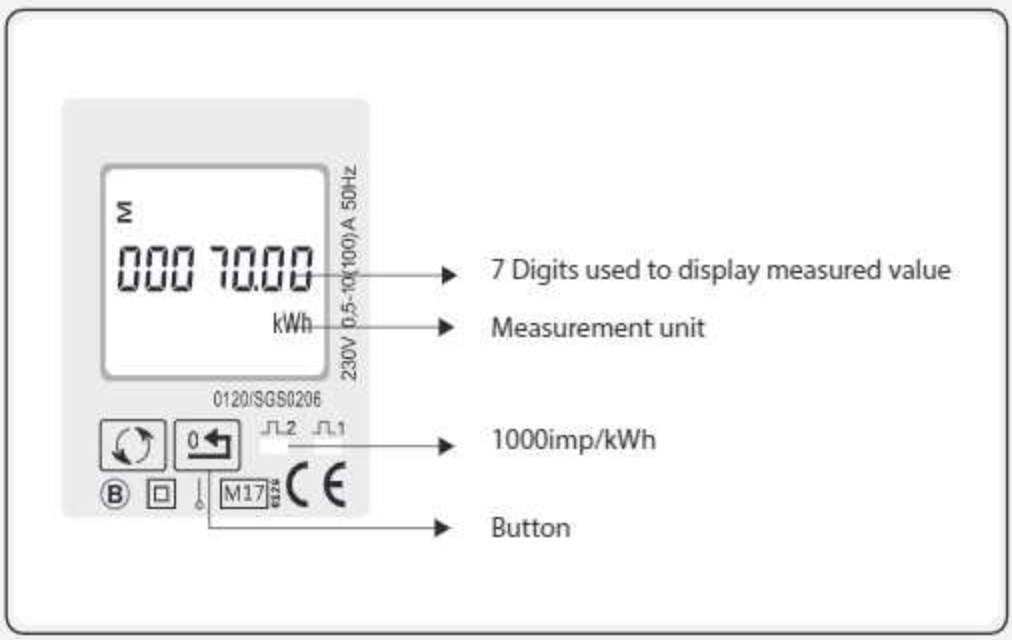
SINGLE PHASE 2 WIRE KWH METER

Model No: SMART-KME 402D

- 100A MAX, Direct Load
- Active Energy + Power Measured
- Resettable Energy
- Pulse Output
- Din Rail Mounted

DESCRIPTION

There are two buttons on the panel of Smart - KME 402D



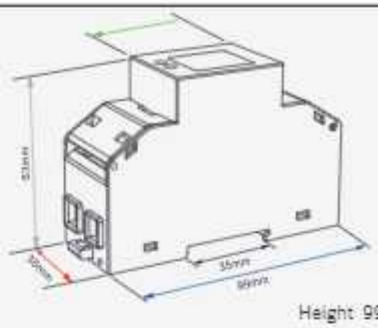
This button is used to scroll the information pages.

This button is used to rest the partial energy information.

SPECIFICATION

Display	LCD
Nominal Voltage (Un)	120V or 230V ac
Operational Voltage	80%~120% of Un
Insulation Capabilitie	
- AC Voltage Withstand	4KV for 1 minute
- Impulse Voltage Withstand	6KV-1.2μS
Basic Current (Ib)	10A
Maximum Rated Current (Imax)	100A
Operational Current Rage	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	999999.9 kWh(SDM230A)
	99999.9 kWh(SDM230D)

DIMENSIONS

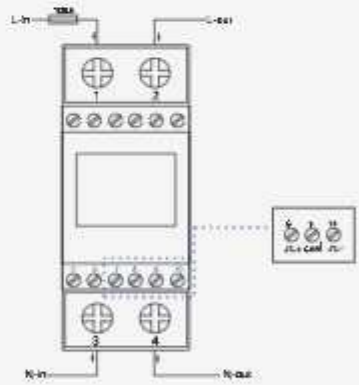


Height 99mm
Width 36mm
Depth 63mm

PERFORMANCE CRITERIA

Operating Humidity	≤ 90%
Storage Humidity	≤95%
Operating Temperature	-25℃ - +55℃
Storage Temperature	-40℃ - +70℃
Reference Temperature	23℃± 2℃
International Standard	IEC 62053-21 / EN50470-1/3
Accuracy Class	Class1/Class B
Installation Category	CAT II
Mechanical Environment	M1
Degree of Pollution	E2
Protection Against Penetration of Dust and Water	2
Insulating Encased Meter of Protective Class	IP51(indoor)
Electrostatic Discharges	II
Electromagnetic HF Fields	up to 2000m
Electrical Fast Transients	8kV contact / 15kV air gap
Surge	IEC 61000-4-3
Radiated	4kV
Conducted Emissions	4kV
	EN 55022

WIRING DIAGRAM



MECHANICS

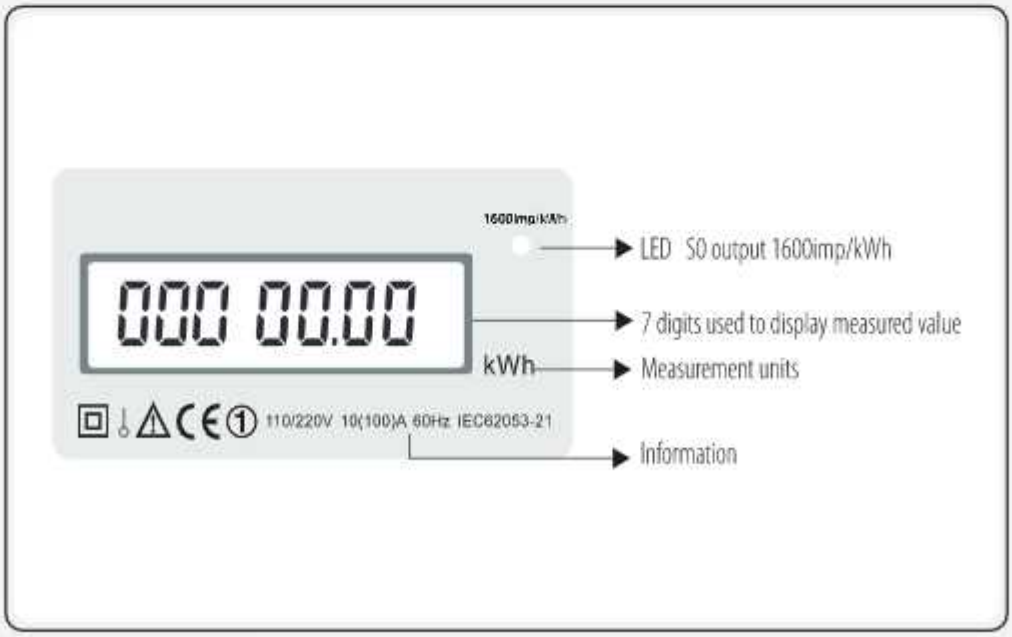
Din Rail Dimension	99x36x63 (WxHxD) DIN 43880
Mounting DIN Rail	35mm
Sealing	IP51 (indoor)
Meterial	self-extinguishing UL94V-0

SINGLE PHASE 3 WIRE KWH METER

Model No: SMART-KME 403D

- 100A MAX, Direct Load
- Active Energy Measured
- 4 Module Wide
- Pulse Output
- IEC 62053-21 Class 1

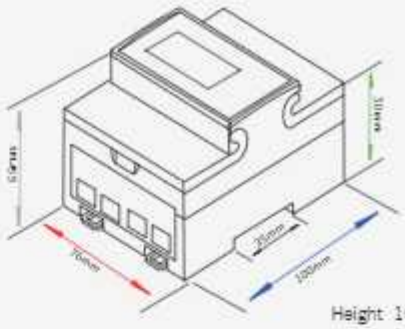
DESCRIPTION



SPECIFICATION

Nominal Voltage(Un)	230V ac / 110V ac
Operational Voltage	80%~120% of Ur
Instation Capabilities	
- AC Voltage withstand	4KV for 1 min Lte
- 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 Conumption	≤ 2W/10VA
Pulse Output	1600imp/kWh
Display	LCD
Max Reading	99999.99 kWh

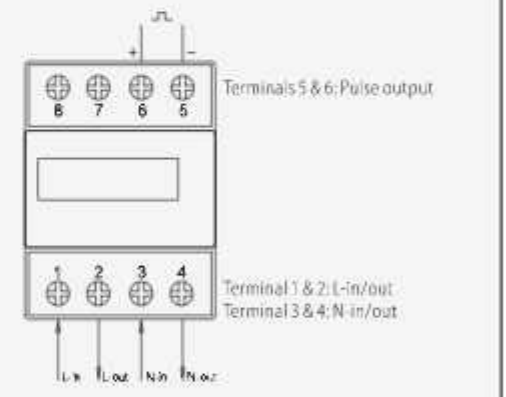
DIMENSIONS



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	up to 2000m
Electromagnetic HF Fields	8kV contact / 15kV air gap
Electrical Fast Transients	IEC 61000-4-3
Surge	4kV
Radiated Conducted Emissions	4kV
	EN 55022

WIRING DIAGRAM



MECHANICS

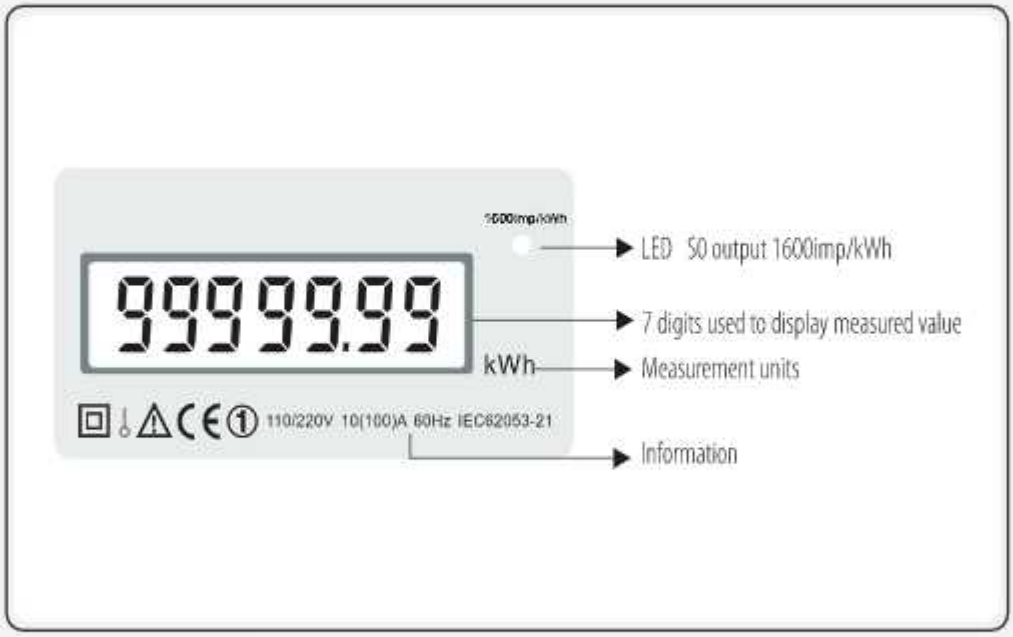
Din Rail Dimension	76x100x66 (WxHxD) DIN 43880
Mounting DIN Rail	35mm
Sealing	IP51 (indoor)
Mererial	self-extinguishing UL94V-0

SINGLE PHASE 3 WIRE KWH METER

Model No: SMART-KME 404D

- 100A MAX, Direct Load
- Active Energy Measured
- 4 Module Wide
- Pulse Output

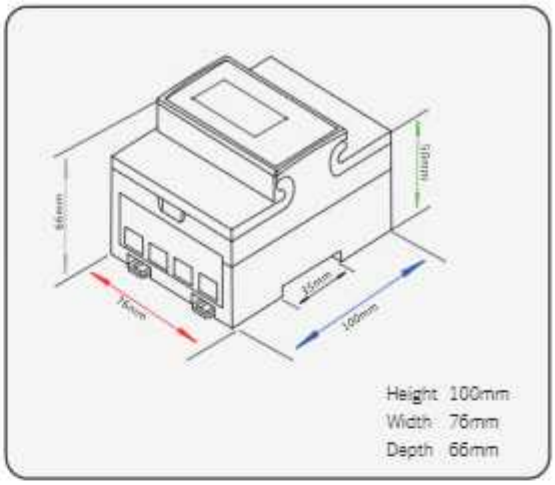
DESCRIPTION



SPECIFICATION

Nominal Voltage(Un)	110/220V ac
Operational Voltage	80%~120% of Un
Instation 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 Conumption	≤ 2W/10VA
Pulse Output	1600imp/kWh
Display	LCD
Max Reading	99999.99 kWh

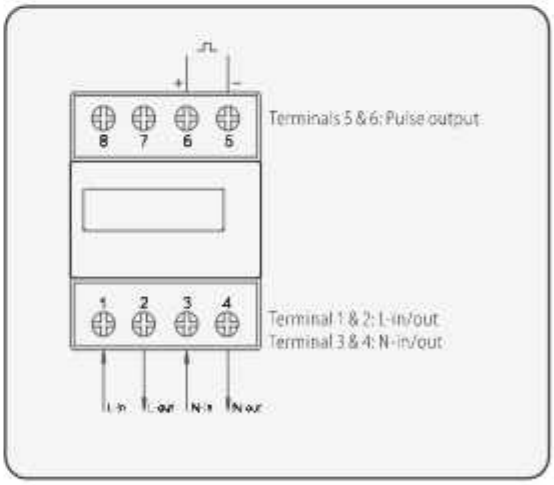
DIMENSIONS



PERFORMANCE CRITERIA

Operating Humidity	≤ 90%
Storage Humidity	≤ 95%
Operating Temperature	-25℃ - +55℃
Storage Temperature	-40℃ - +70℃
Reference Temperature	23℃± 2℃
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

WIRING DIAGRAM



MECHANICS

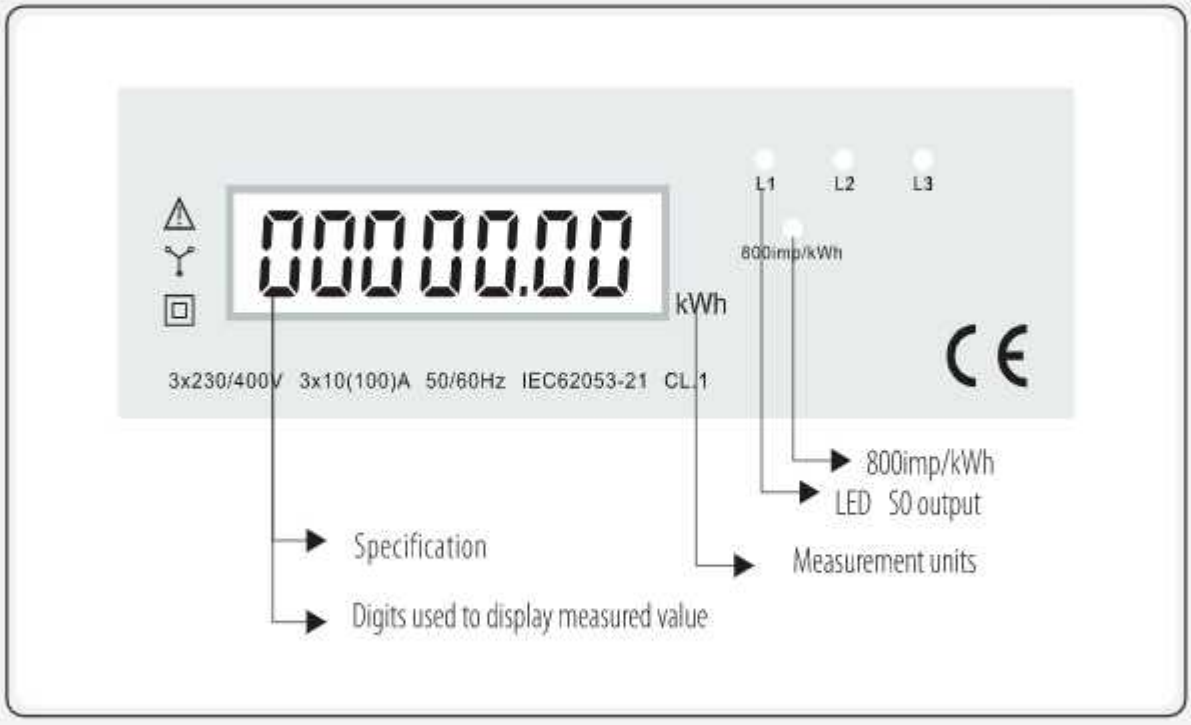
Din Rail Dimension	76x100x66 (WxHxD) DIN 43880
Mounting DIN Rail	35mm
Sealing	IP51 (indoor)
Meterial	self-extinguishing UL94V-0

THREE PHASE 4 WIRE KWH METER

Model No: SMART-KME 405D

- 100A MAX, Direct Load
- Active Energy Measured
- 7 Module Wide
- Pulse Output
- 2 Tariffs Output

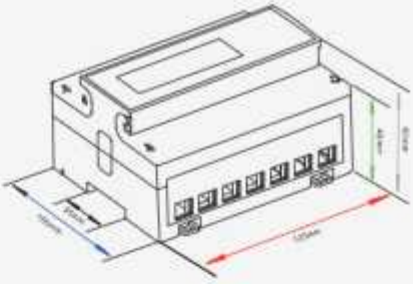
DESCRIPTION



SPECIFICATION

Nominal Voltage(Un)	3x230/400 V ac or 3x127/220 V ac
Operational Voltage	80%~120% of Un
Instation 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 Conumption	≤ 2W/10VA
Pulse Output	1600imp/kWh
Display	LCD
Max Reading	99999.99 kWh
	999999.99 kWh

DIMENSIONS

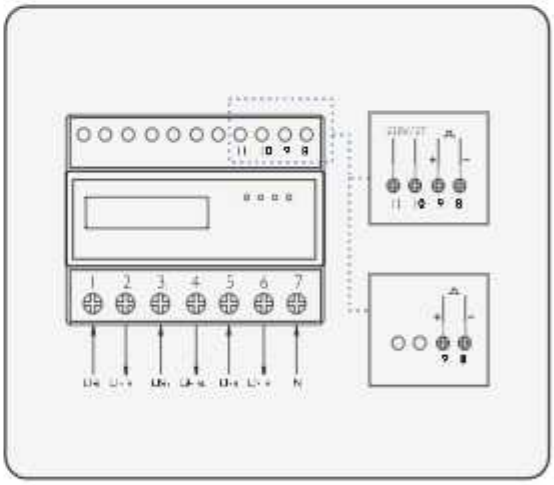


Height 100mm
Width 125mm
Depth 65mm

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

WIRING DIAGRAM



MECHANICS

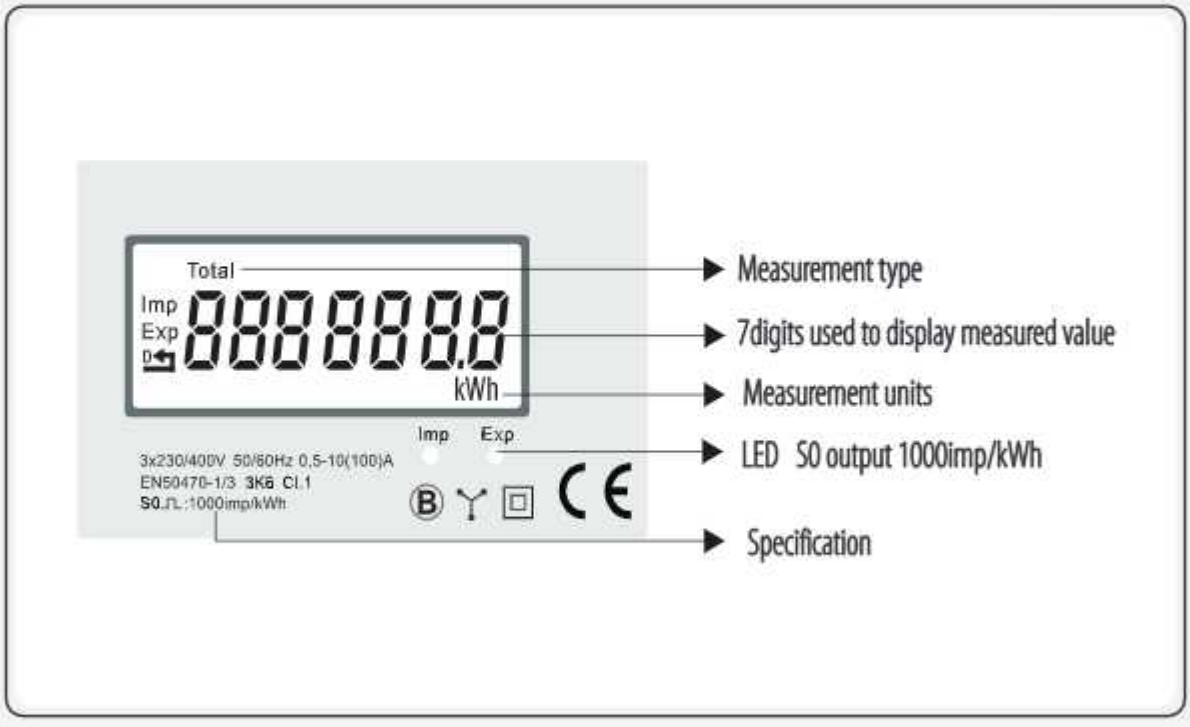
Din Rail Dimension	76x100x66 (WxHxD) DIN 43880
Mounting DIN Rail	35mm
Sealing	IP51 (indoor)
Meterial	self-extinguishing UL94V-0

THREE PHASE 4 WIRE KWH METER

Model No: SMART-KME 406D

- 100A MAX, Direct Load
- 4 Module Wide
- Measures Active Energy(kWh) + power(W)
- Bi-Directional Measurement
- Pulse Output
- Resettable Energy

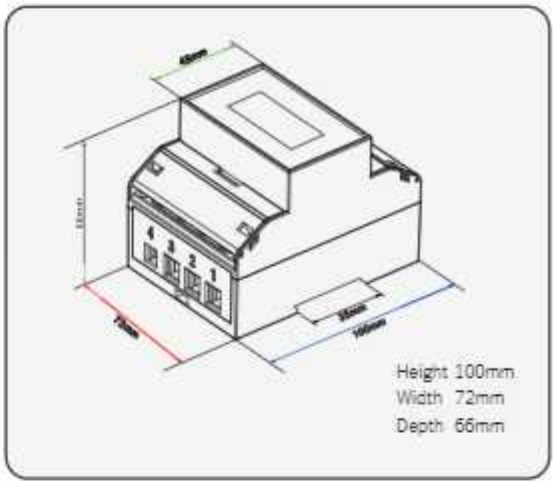
DESCRIPTION



SPECIFICATION

Nominal Voltage(Un)	3x230/400 V ac or 3x127/220 V ac
Operational Voltage	80% ~ 120% of Un
Instation 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 Conumption	≤ 2W/10VA
Pulse Output	1600imp/kWh
Display	LCD
Max Reading	99999.99 kWh
	999999.99 kWh

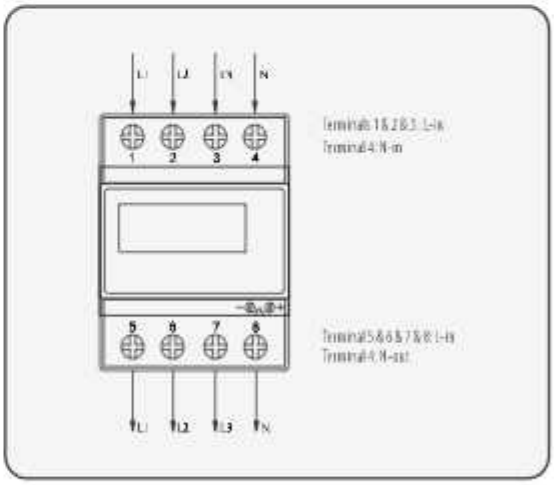
DIMENSIONS



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 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	up to 2000m
Electromagnetic HF Fields	8kV contact / 15kV air gap
Electrical Fast Transients	IEC 61000-4-3
Surge	4kV
Radiated Conducted Emissions	4kV
	EN 55022

WIRING DIAGRAM



MECHANICS

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

THREE PHASE 4 WIRE KWH METER

Model No: SMART-KME 407CT

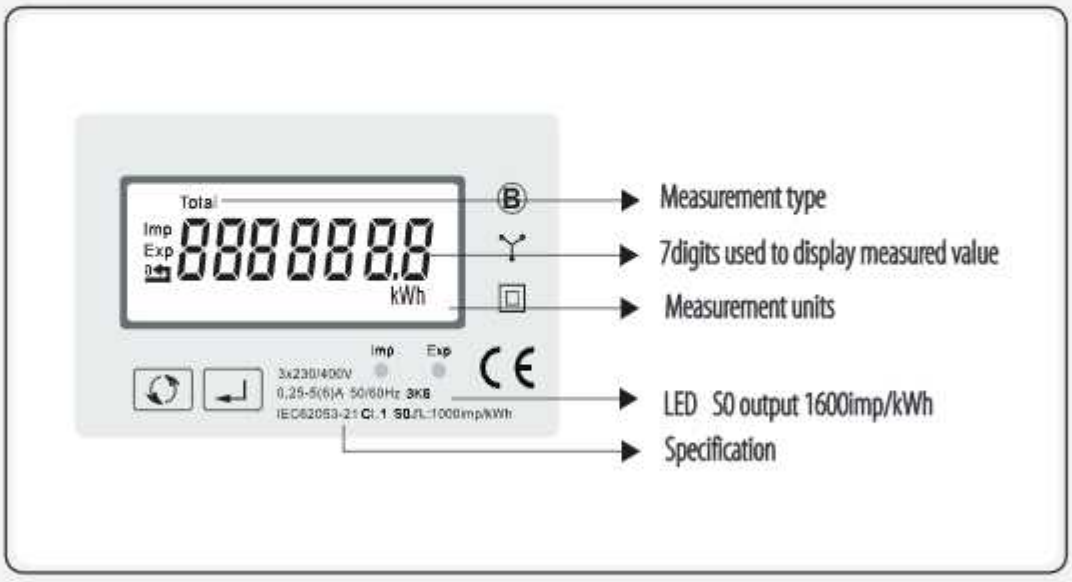
- CT Operated
- 4 Module Wide
- Measures Active Energy(kWh) + Power(W)
- Bi-Directional Measurement
- Pulse Output
- Resettable Energy

DESCRIPTION

KEYS

Scroll display — Confirm selection

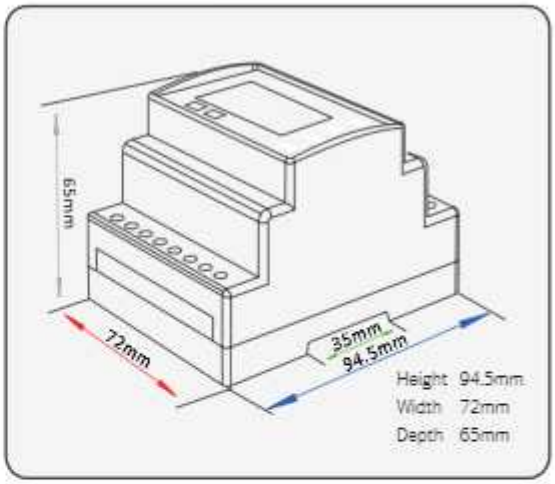
Reset the energy information — Getting into setup mode



SPECIFICATION

Nominal Voltage(Un)	3x230/400V ac
Operational Voltage	80%~120% of Un
Instation 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 Conumption	≤ 2W/10VA
Pulse Output	1600imp/kWh
Display	LCD
Max Reading	99999.99 kWh
	999999.99 kWh

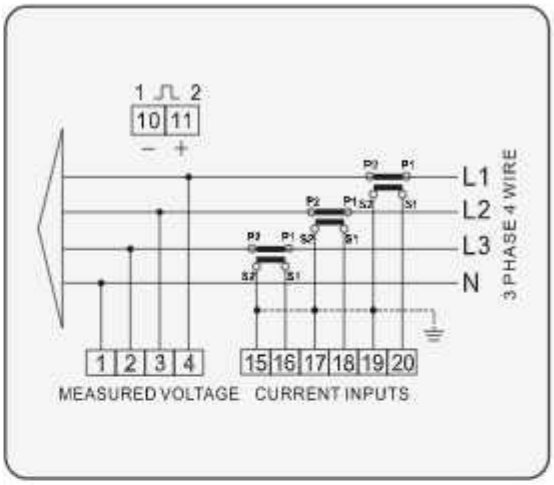
DIMENSIONS



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 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	up to 2000m
Electromagnetic HF Fields	8kV contact / 15kV air gap
Electrical Fast Transients	IEC 61000-4-3
Surge	4kV
Radiated Conducted Emissions	4kV
	EN 55022

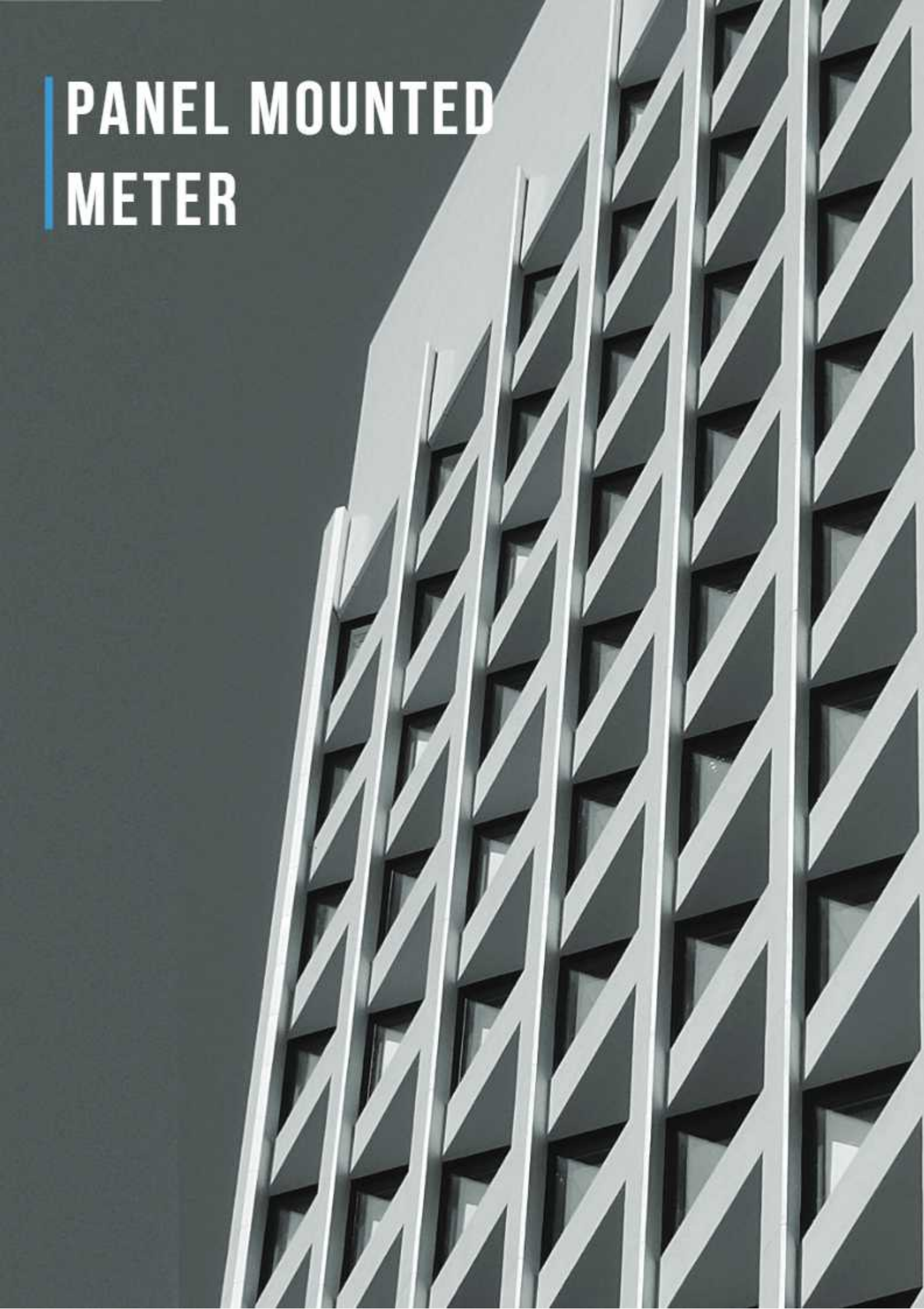
WIRING DIAGRAM



MECHANICS

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

PANEL MOUNTED METER



SMART SERIES, SINGLE PHASE VOLT METER

Model No: SMART-V200 V

- High Precision Measurement of Single Phase Voltage
- Programmable Voltage Ratio
- Auxiliary Power Supply
- Accuracy Class 0.5 or 1
- Size 96 x 96

INTRODUCTION

Smart Controller offers the smart series Single Phase Volt Meter which adopts alternating current sampling techniques. This enables it to measure single phase voltage in the grid with high accuracy, good sensitivity and excellent resistance to vibrations.

INSTALLATION AND HANDLING

The device is easy to maintain and handle, easy to wire and very simple to install for the ease of user and only qualified person should be involved in the wiring and installation job of this power meter. Certain partof the power meter does contain high voltage, improper handling therefore can cause serious injuries and device damage.

There are certain points that need to be taken into strict account as follow:

- Only use insulating tools.
- Do not connect when circuit is live.
- Place the device in only dry surroundings.
- Make sure that the wire used is suitable for the maximum current of this meter.

ELECTROMAGNETIC COMPATIBILITY

ESD (Electro–Static Discharge):
Level 4 Electrical fast transient burst: Level 4

MEASUREMENT

Accuracy Class	Class 0.5
Display Range	0.000 - 9999
Overload	Coninuous 1.2 Times
Instantaneous	Current 10Times/5sec
Nominal Input	AC Current 100V~600V
Power Consumption	Less than 2VA
Diectric Strength	2kV/1 Min
Frequency	45 - 65 Hz

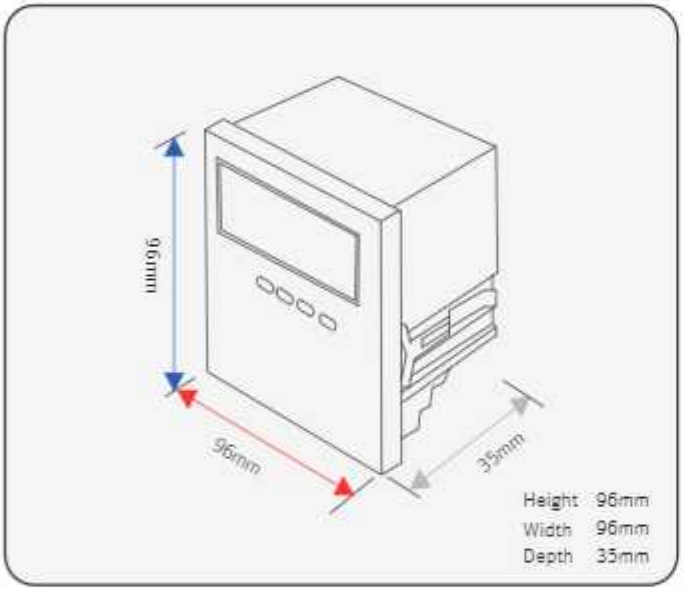
CERTIFICATIONS

V - 200V complies with all the international standards which includes certification from standards such a EN-61326-1: 2013, EN 50470-1: 2006

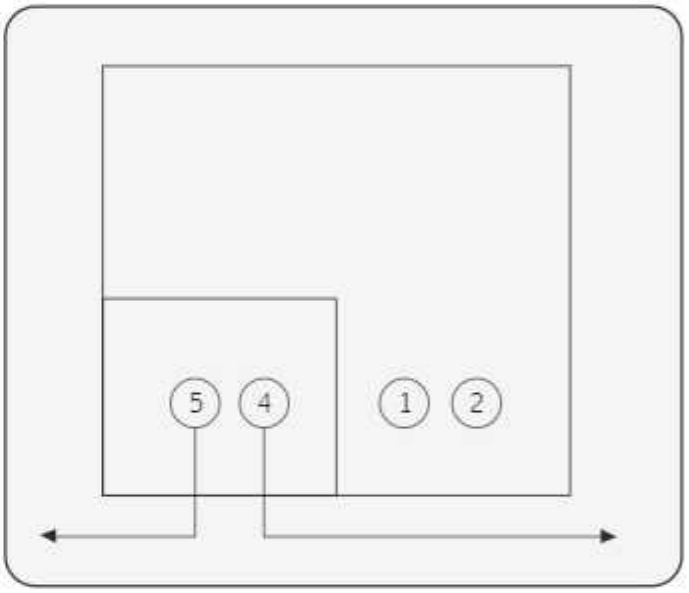
ENVIRONMENT

Working Temperature	10~55 Degree Celsius
Storage Temperature	-25~70 Degree Celsius
Relative Humidity	93% No Corrosive Gas
Elevation	Less Than 2500m

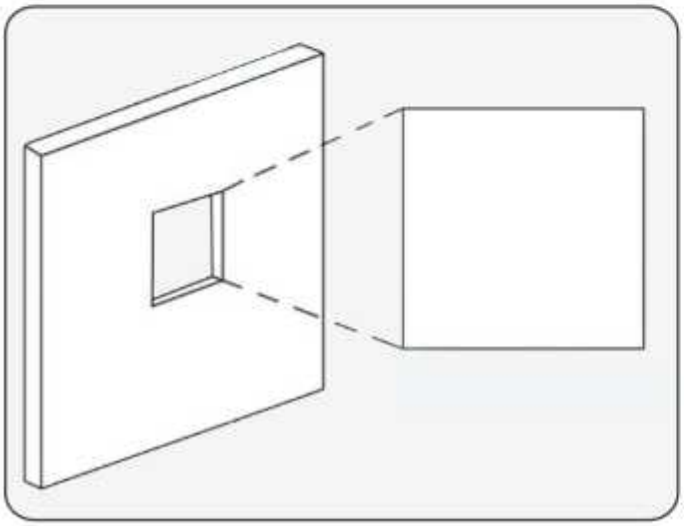
DIMENSIONS



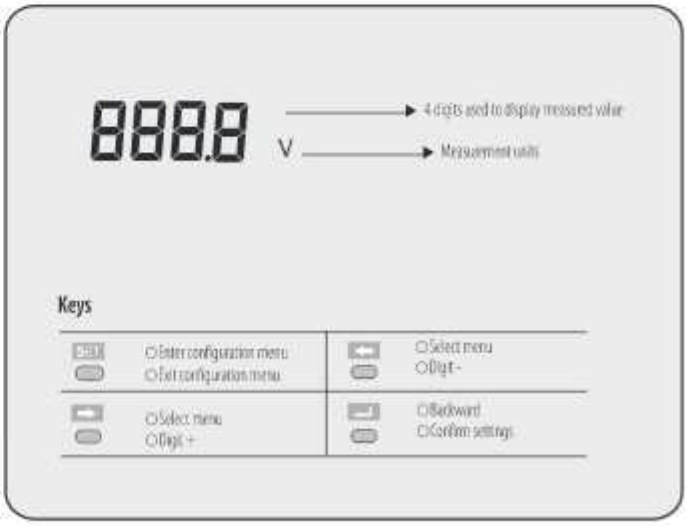
WIRING DIAGRAM



INSTALLATION



DESCRIPTION



ADDITIONAL METER

Size 72x72	Model No. V272-V

SMART SERIES, SINGLE PHASE AMPERE METER

Model No: SMART-V200 A

- High Precision Measurement of Single Phase Ampere
- Programmable Voltage Ratio
- Auxiliary Power Supply
- Accuracy Class 0.5 or 1
- Size 96 x 96

INTRODUCTION

Smart Controller offers the smart series Single Phase Ampere Meter which adopts alternating current sampling techniques. This enables it to measure single phase voltage in the grid with high accuracy, good sensitivity and excellent resistance to vibrations.

INSTALLATION AND HANDLING

The device is easy to maintain and handle, easy to wire and very simple to install for the ease of user and only qualified person should be involved in the wiring and installation job of this power meter. Certain part of the power meter does contain high voltage, improper handling therefore can cause serious injuries and device damage.

There are certain points that need to be taken into strict account as follow:

- Only use insulating tools.
- Do not connect when circuit is live.
- Place the device in only dry surroundings.
- Make sure that the wire used is suitable for the maximum current of this meter.

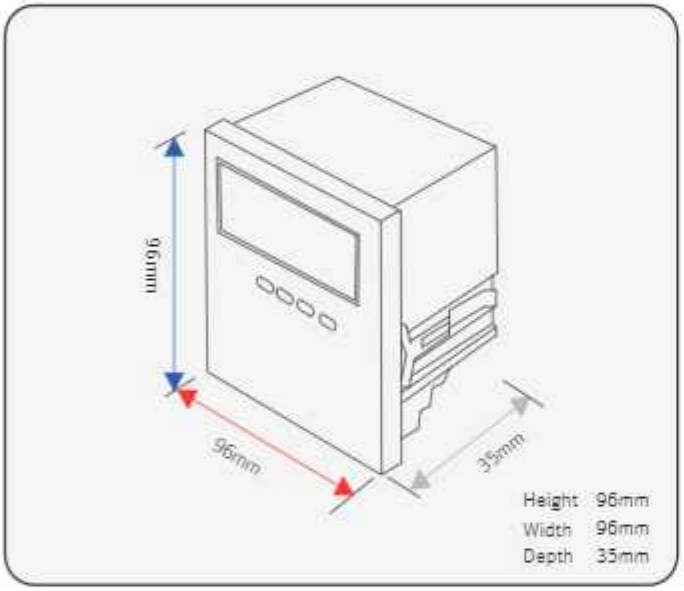
ELECTROMAGNETIC COMPATIBILITY

ESD (Electro–Static Discharge):
Level 4 Electrical fast transient burst: Level 4

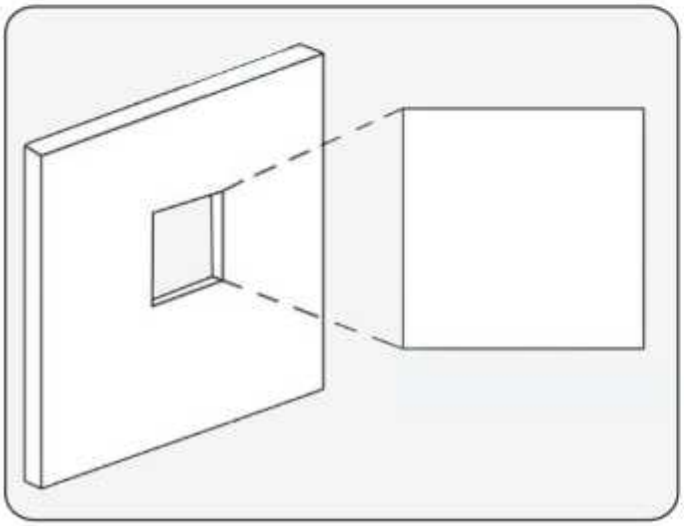
MEASUREMENT

Accuracy Class	Class 0.5
Display Range	0.000 - 9999
Overload	Coninuous 1.2 Times
Instantaneous	Current 10Times/5sec
Nominal Input	AC Current 100V~600V
Power Consumption	Less than 2VA
Diectric Strength	2kV/1 Min
Frequency	45 - 65 Hz

WIRING DIAGRAM



INSTALLATION



ADDITIONAL METER

Size 72x72	Model No. V272-A

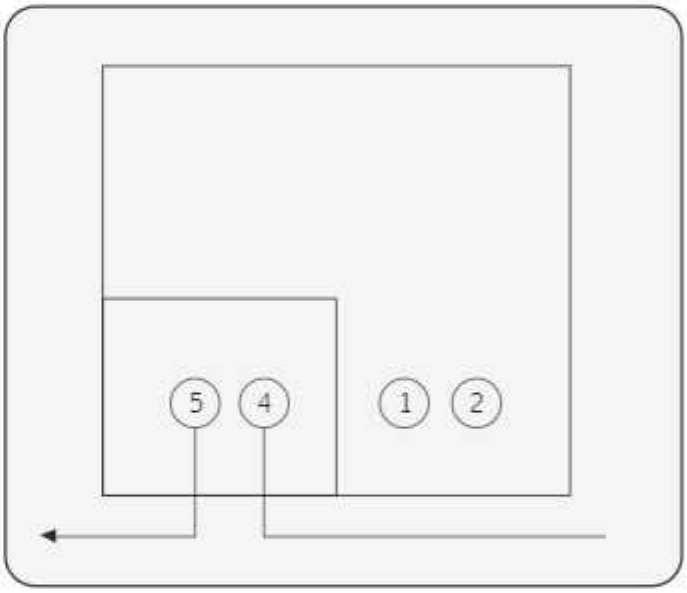
CERTIFICATIONS

V - 200A complies with all the international standards which includes certification from standards such a EN-61326-1: 2013, EN 50470-1: 2006

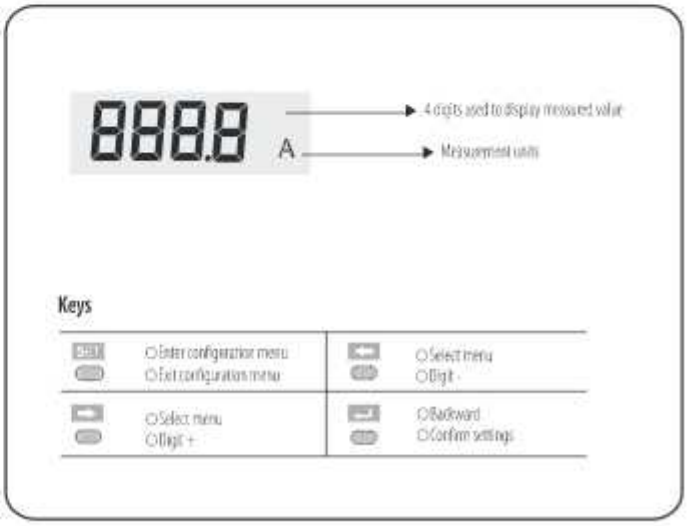
ENVIRONMENT

Working Temperature	10~55 Degree Celsius
Storage Temperature	-25~70 Degree Celsius
Relative Humidity	93% No Corrosive Gas
Elevation	Less Than 2500m

WIRING DIAGRAM



DESCRIPTION



SMART SERIES,THREE PHASE VOLT METER

Model No: SMART-V396 V

- **The Smart Series Three Phase Volt Meter**
- **That Adopts Alternating Current Sampling Techniques.**
- **This enables it to measure three phase voltage current in the grid with high accuracy, good sensitivity and excellent resis tance to vibrations.**

INTRODUCTION

The device is easy to maintain and handle, easy to wire and very simple to install for the ease of user and only qualified person should be involved in the wiring and installation job of this ower meter. Certain parts of the power meter does contain high voltage, improper handling therefore can cause serious injuries and device damage.

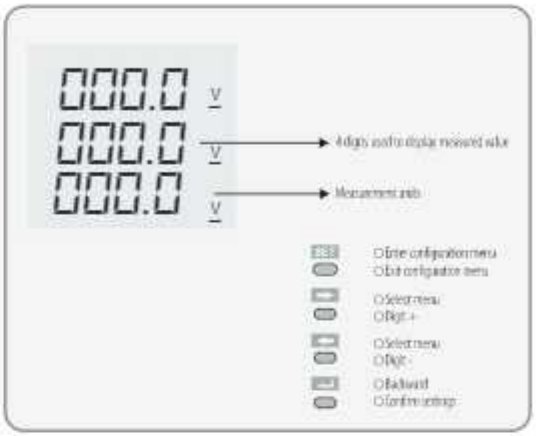
There are certain points that need to be taken into strict account as follow:

- Only use insulating tools.
- Do not connect when circuit is live.
- Place the device in only dry surroundings.
- Make sure that the wire used is suitable for the maximum current of this meter.
- Make sure the AC wires are connected correctly before activating the current / voltage to the meter.
- Do not drop or allow physical impact to the meter as the internal components are of high precision material as it may experience in an electric shock and may result in breakage and malfunction of the device.

TECHNICAL DATA

Accuracy Class	Class 0.5
Display Range	0.000 – 9999
Overload	Continuous 1.2 times
Instantaneous	Current 10times/5seconds
Nominal Input	AC Current 100V~600V
Power Consumption	Less than 2VA
Dielectric Strength	2kV/1min
Frequency	45-65 Hz

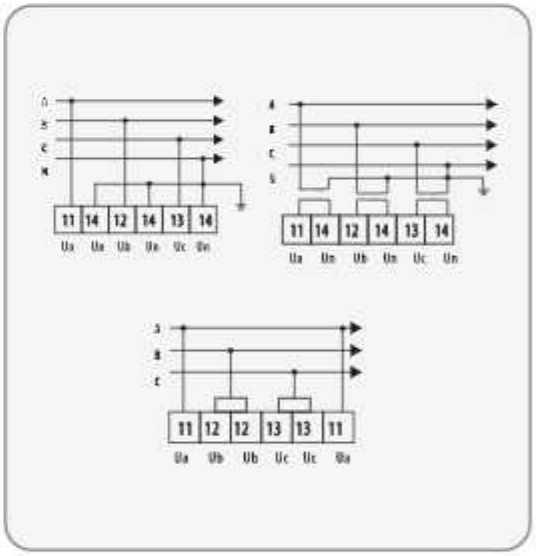
DIMENSIONS



ENVIRONMENT

Working Temperature	-10 ~ 55 Degree Celsius
Storage Temperature	-25 ~ 70 Degree Celsius
Relative Humidity	Less than 93%, (No corrosive gas)
Elevation	Less than 2500m
Height	96mm
Width	96mm
Depth	80mm

WIRING DIAGRAM



CERTIFICATIONS

V396 – V complies with all the international standards which includes certification from standards such as EN-61326-1: 2013,EN 50470-1: 2006 and also confirm all the requirements of MI-003 of EC directive 2004/22/EC.

ELECTROMAGNETIC COMPATIBILITY

- ESD (Electro – Static Discharge): Level 4
- Electrical fast transient burst: Level 4

SMART SERIES,THREE PHASE AMPERE METER

Model No: SMART-V396 A

- **The Smart Series Three Phase Ampere Meter**
- **That Adopts Alternating Current Sampling Techniques.**
- **This enables it to measure three phase ampere current in the grid with high accuracy, good sensitivity and excellent resistance to vibrations.**

INTRODUCTION

The device is easy to maintain and handle, easy to wire and very simple to install for the ease of user and only qualified person should be involved in the wiring and installation job of this ower meter. Certain parts of the power meter does contain high voltage, improper handling therefore can cause serious injuries and device damage.

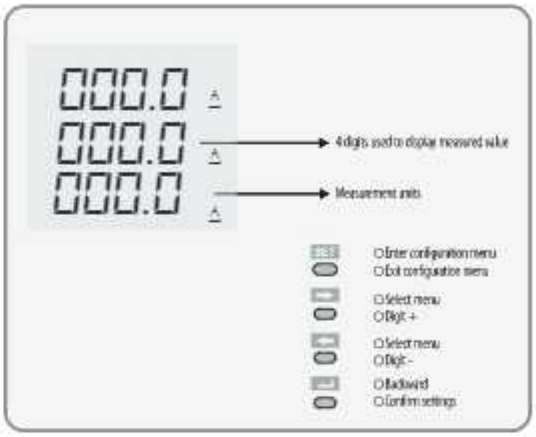
There are certain points that need to be taken into strict account as follow:

- Only use insulating tools.
- Do not connect when circuit is live.
- Place the device in only dry surroundings.
- Make sure that the wire used is suitable for the maximum current of this meter.
- Make sure the AC wires are connected correctly before activating the current / voltage to the meter.
- Do not drop or allow physical impact to the meter as the internal components are of high precision material as it may experience in an electric shock and may result in breakage and malfunction of the device.

TECHNICAL DATA

Accuracy Class	Class 0.5
Display Range	0.000 – 9999
Overload	Continuous 1.2 times
Instantaneous	Current 10times/5seconds
Nominal Input	AC Current 100V~600V
Power Consumption	Less than 2VA
Dielectric Strength	2kV/1min
Frequency	45-65 Hz

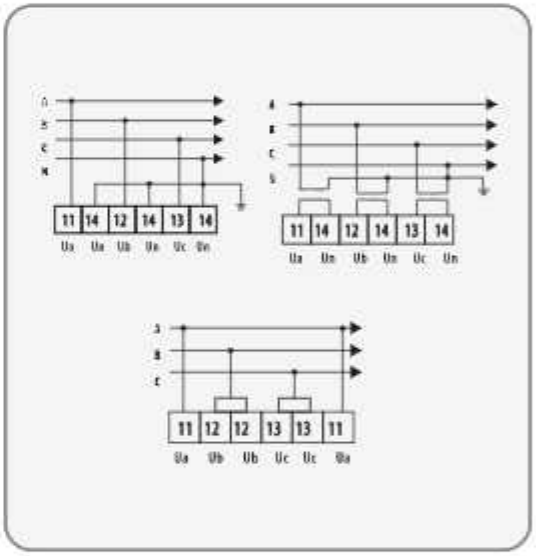
DIMENSIONS



ENVIRONMENT

Working Temperature	-10 ~ 55 Degree Celsius
Storage Temperature	-25 ~ 70 Degree Celsius
Relative Humidity	Less than 93%, (No corrosive gas)
Elevation	Less than 2500m
Height	96mm
Width	96mm
Depth	80mm

WIRING DIAGRAM



CERTIFICATIONS

V396 – A complies with all the international standards which includes certification from standards such as EN-61326-1: 2013,EN 50470-1: 2006 and also confirm all the requirements of MI-003 of EC directive 2004/ 22/EC.

ELECTROMAGNETIC COMPATIBILITY

- ESD (Electro – Static Discharge): Level 4
- Electrical fast transient burst: Level 4

SMART SERIES, SINGLE PHASE FREQUENCY METER

Model No: SMART-VEN 961 F

- **The Smart Series Single Phase Frequency Meter**
- **That Adopts Alternating Current Sampling Techniques.**
- **This enables it to measure frequency in the grid with high accuracy, good sensitivity and excellent resistance to vibrations.**

INTRODUCTION

The device is easy to maintain and handle, easy to wire and very simple to install for the ease of use and only qualified person should be involved in the wiring and installation job of this power meter. Certain partof the power meter does contain high voltage, improper handling therefore can cause serious injuries and device damage.

There are certain points that need to be taken into strict account as follow:

- Only use insulating tools.
- Do not connect when circuit is live.
- Place the device in only dry surroundings.
- Make sure that the wire used is suitable for the maximum current of this meter.
- Make sure the AC wires are connected correctly before activating the current / voltage to the meter.
- Do not drop or allow physical impact to the meter as the internal components are of high precision material as it may experience in an electric shock and may result in breakage and malfunction of the device.

TECHNICAL DATA

Accuracy Class	Class 0.5
Voltage Input	AC 220V
Overload	Continuous 1.2 times
Instantaneous	Voltage 2 time/1 seconds
Auxiliary Power Supply	AC 220V
Display Range	0.000-9999
Instantaneous	Current 10times/5seconds
Nominal Input	AC Current 1A, 5A
Power Consumption	Less than 2 VA
Isolation Voltage	Input/Output 2kV/1 min
CT Ratio	0001-9999
PT Ratio	0001-9999
Dielectric Strength	2kV/1 min
Frequency	45-65Hz

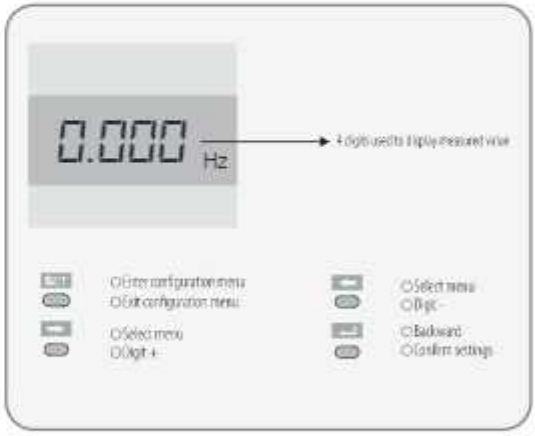
ENVIRONMENT

Working Temperature	-10 ~ 55 Degree Celsius
Storage Temperature	-25 ~ 70 Degree Celsius
Relative Humidity	Less than 93%, (No corrosive gas)
Elevation	Less than 2500m
Height	96mm
Width	96mm
Depth	80mm

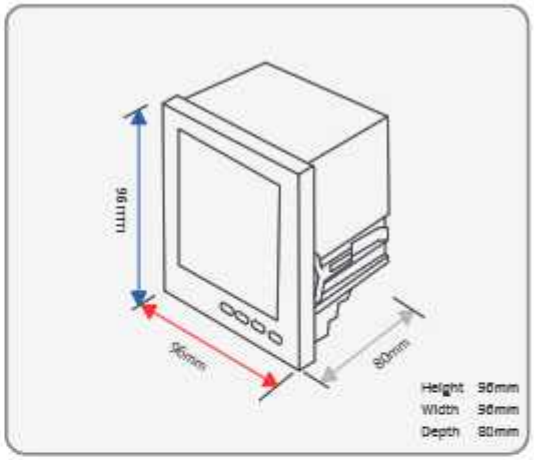
ADDITIONAL METER

SIZE	TYPE	MODEL
Size 72X72	Single Phase	Model No. VEN721-F
Size 72x72	Three Phase	Model No. VEN723-F
Size 96x96	Three Phase	Model No. VEN936-F

DIMENSIONS



WIRING DIAGRAM

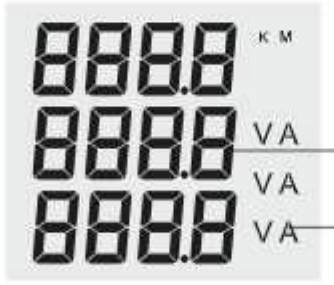


SMART SERIES, THREE PHASE VOLT/AMPERE METER

Model No: SMART-V350 V A

- High Precision Measurement of Single Phase Voltage.
- (AC or DC), or current AC or DC Frequency on Power.
- Programmable Voltage Ratio.
- Auxiliary Power Supply : AC/DC 85V~265V.
- Accuracy Class 0.5 or 1.

DIMENSIONS



4 digits used to display measured value

Measurement units

Keys

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

MODEL OPTIONS □□□□

Operating voltage
AC-AC220V
DC-AC/DC 85~265V

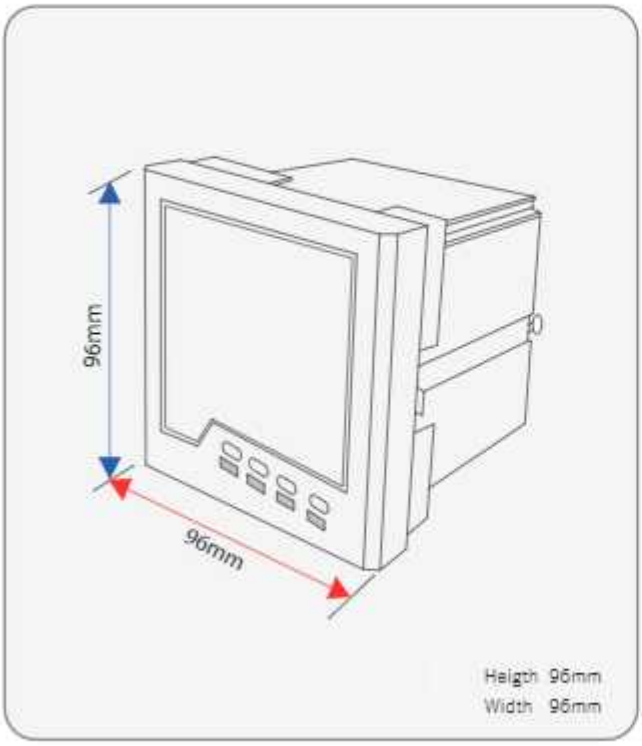
Display mode
E:LED
C:LCD

AI-AC current
AV-AC voltage
Hz-Frequency

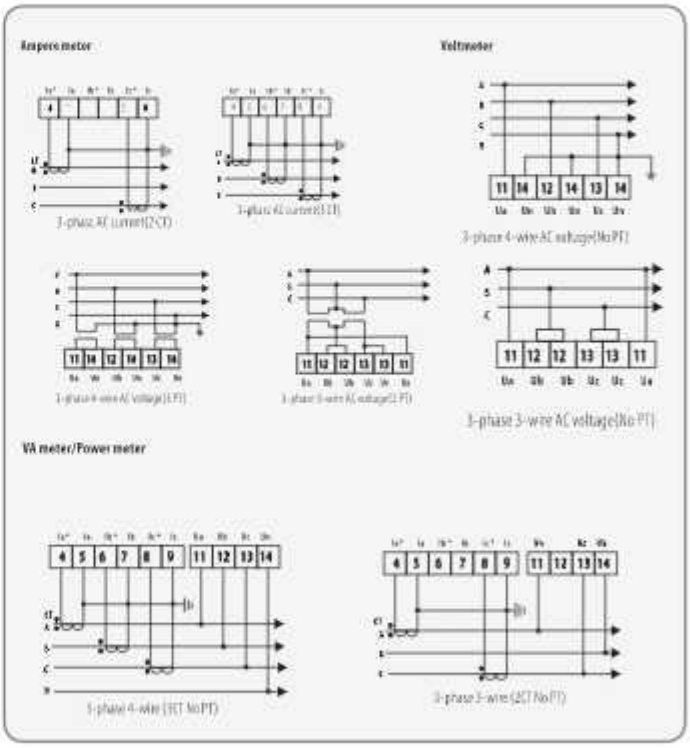
Dimension	Face frame	Hole size
1	48X96	45X91
2	72X72	67X67
3	96X96	91X91

SPECIFICATION	
Ratio Value	AC100V, AC230V, AC400V
Overload	120%
Ferquency	45~65Hz or DC
Working Range	AC100V , AC230V, AC400V
Power Consumption	<4VA
Operational Environment	-25℃~+55℃
Relative Humidty	-40℃~+70℃
Height Above Sea Level	≤ 90%, in the place without corrosive gas
Insulation Resistance	≤ 2000m
AC Withstand Voltage	>100Mohm
Electro-Static Discharge	AC 2KV
Electrical Fast	Class 4
Transient Pulse Train	Class 4
Electrical Surge	Class 4

DIMENSIONS



WIRING DIAGRAM



SMART ENERGY ANALYZER

Model No: SMART-VEN 485

- **The Smart Controller Multi-Function Panel Meter**
- **Smart VEN485 is a state of the art intelligent panel meter, used not only in the electricity transmission and power distribution system**

INTRODUCTION

This document provides operating, maintenance and instructions for the Smart Controller Smart VEN485. The unit measures and displays the characteristics of single phase two wires and three phase four wires supplies, including voltage, frequency, current, power and 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. The requisite current input(s) are obtained via current transformers (CT). The Smart VEN485 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.

The unit can be configured to operate with CT ratio between primary and secondary current is 1 and 2000. Maximum CT primary current corresponds to a maximum input current to the unit of 1/5.

UNIT CHARACTERISTICS

The Smart VEN485 can measure and display:

- Line voltage and THD% (total harmonic distortion) of all phases.
- Line frequency.
- Currents, current demands and current THD% of all phases.
- Power, maximum power demand and power factor.
- Active energy imported and exported.
- Reactive energy imported and exported.
- Changing password.
- Supply system selection 1phase 2wire, 3phase 4wires.
- CT ratio and secondary current.
- PT ratio and secondary voltage.
- Demand interval time.
- Reset for demand measurements.
- Pulse output duration.

This unit provides 2 pulse outputs. One pulse output is configurable, which can be set from the SETUP menu to refer to active or reactive energy (Total, Import, Export). While, another pulse output is fixed to total active energy, the constant is 3200imp/kWh.

MEASURED PARAMETERS

The Unit can monitor and display the following parameters of a Single Phase,
3 - Phase 3 - Wire or 3 Phase 4 - Wire supply.

POWER FACTOR AND FREQUENCY MAX

- Frequency in Hz
- Instantaneous Power
- Power 0 to 999MW
- Reactive Power 0 to 999MVAr
- Volt-Amps 0 to 999 MVA
- Maximum demanded power since last demand reset power factor
- Maximum neutral demand current, since the last demand reset (three phase supplies only)

REFERENCE CONDITIONS OF INFLUENCE QUANTITIES

Influence quantities are variables that affect measurement errorsto a minor degree. Accuracy is verified under nominal value (within the specified tolerance) of these conditions.

ACCURACY

Voltage	0·5% of range maximum
Current	0·5% of nominal
Frequency	0·2% of mid-frequency
Power Factor	±1% of Unity (0.01)
Active Power (W)	±1% of range maximum
Reactive Power (VAr)	±2% of range maximum
Apparent Power (VA)	1% of range maximum
Active Energy (Wh)	Class 1 IEC 62053-21
Reactive Energy (VARh)	±2% of range maximum
Temperature Co-Efficient	Voltage and current = 0.013%/°C typical
	Active energy = 0·018%/°C, typical
Response Time to Step Input	1s, typical, to >99% of final reading,
	at 50 Hz.

REFERENCE CONDITIONS

Aambient Temperature	23°C ±1°C
Input Waveform	50 or 60Hz ±2%
Input Waveform	Sinusoidal (distortion factor < 0·005)
Auxiliary Supply Voltage	Nominal ±1%
Auxiliary Supply Frequency	Nominal ±1%
Auxiliary Supply Waveform (if AC)	Sinusoidal (distortion factor < 0·005)
Magnetic Field of external Origin	Terrestrial flux

ENERGY MEASUREMENTS

Imported Active Energy	0 to 9999999.9 kWh
Exported Active Energy	0 to 9999999.9 kWh
Imported Reactive Energy	0 to 9999999.9 kVArh
Exported Reactive Energy	0 to 9999999.9 kVArh
Total Active Energy	0 to 9999999.9 kWh
Total Reactive Energy	0 to 9999999.9 kVArh

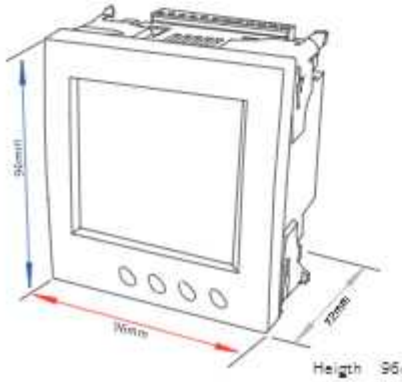
ENVIRONMENT

Operating Temperature	-25°C to +55°C
Storage Temperature	-40°C to +70°C
Relative Humidity	0 to 90%, non-condensing
Altitude	Upto 2000m
Warm up time	1 minute
Vibration	10Hz to 50Hz, IEC 60068-2
Shock	30g in 3 planes

RS485 OUTPUT FOR MODBUS RTU

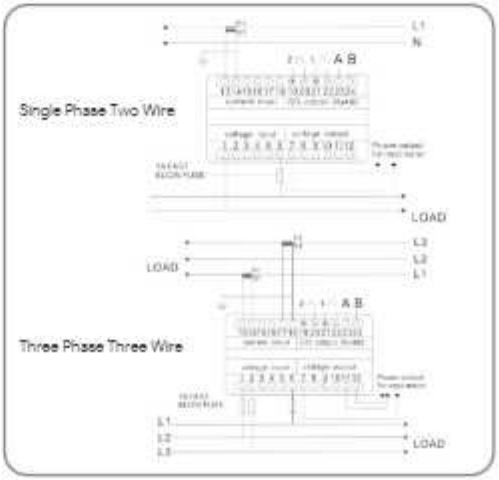
Baud Rate	2400,4800,9600,19200,38400
Parity	none/odd/even
Stop Bits	1 or 2
RS485 Network Address	nnn – 3-digit number, 1 to 247
Modbus™ Word Order	Hi/Lo byte order is set autom
	to normal or reverse. It canno
	configured from the set-up menu.

DIMENSIONS



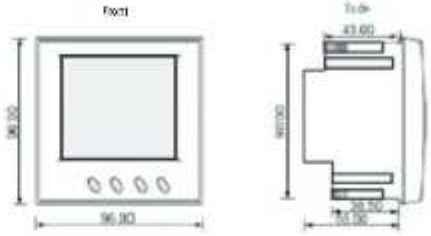
Height 96mm
Width 96mm
Depth 72mm

WIRING DIAGRAM

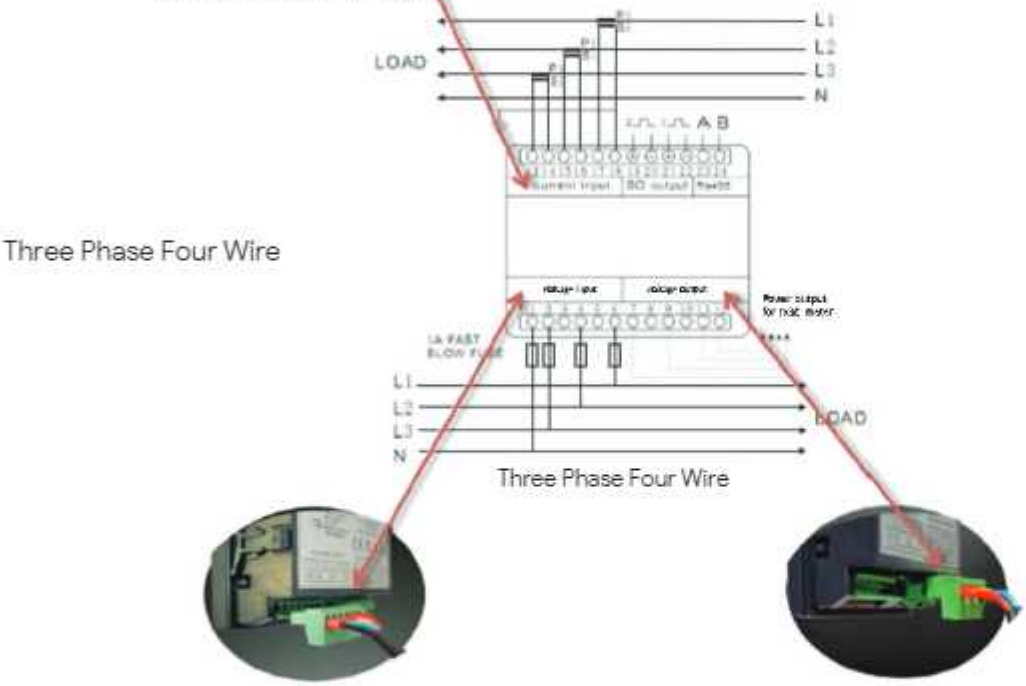


PLUG IN METERING SOLUTION:

DIMENSIONS:



1.Current Transformer Input



2.Fuse Voltage Input

3.Voltage Output to power the next meters (up to 16)

TERMINAL KIT OPTON

Optional terminal kit for customers who want to per-manufacture their own wiring looms. Also the terminal kit can be used for any standard Single Phase or split core current transformer with a 1A or 5A secondary.

No requirement for additional convertors or hard ware

PARAMETERS

Phase to Phase Voltage
Phase to Neutral Voltage
Frequency
Voltage total harmonic distortion(THD)
Current
Neutral current (Calculated modbus only)
Current max demand (Modbus only)
Current total harmonic distortion(THD)
kW
KVAr
kW max demand
Power factor
Import kWh
Export kWh
Import kVArh

SMART ENERGY ANALYZER FOR SINGLE AND THREE PHASE SYSTEMS

Model No: SMART-VEN 585

- 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
- Backlit LCD Display for Full Viewing Angles

INTRODUCTION

The Multi-Function Energy Analyzer Smart VEN585 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.

This document provides operating, maintenance and installation instructions for the Smart Controller 585 series 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 and active and reactive energy, imported or exported, harmonic, power factor, max. demand etc. Energy is measured in terms of kWh, kVArh.

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) areobtained via current transformers The Smart VEN 585 can be configured to work with a wide range of CTs, giving the unit a wide range of operation.

UNIT CHARACTERISTICS

The Unit can measure and display:

- Line voltage and THD% (total harmonic distortion) of all phases.
- 2~63rd voltage IHD% (Individual harmonic distortion) of all phases.
- Line Frequency.
- Currents, current demands and current THD% of all phases.
- 2~63rd current IHD% of all phases
- Active Power, reactive power, apparent power, maximum power demand and power factor.
- Active Energy imported and exported.
- Reactive Energy imported and exported.
- Energy of each phase.

The Unit has password-protected set-up screens for:

- Communication setting: Modbus address, baudrate, parity.
- CT setting: CT 1 (Primary) , CT2 (Secondary), CT rate
- PT setting: PT1 (Primary), PT2 (Secondary) , PT rate
- Pulse setting: Pulse output 1, Pulse rate, Pulse time
- Demand setting: Demand interval time, demand method
- Time setting: Backlit time, display scroll time
- System configuration: System type, System connect.

CT and PT

CT1 (Primary Current): 5~9999A

CT2 (Secondary Current): 1A or 5A

PT1 (Primary Voltage): 100V ~ 500,000V

PT2 (Secondary Voltage): 100 to 480 V AC (L-L)

RS485 OUTPUT FOR MODBUS RTU

This unit uses a RS485 serial port with Modbus RTU protocol to provide a means of remote monitoring and controlling.

PULSE OUTPUT

Two pulse outputs indicate real-time energy measurement. Pulse output 1 is configurable, pulse output 2 is fixed to active energy, 3200imp/kWh.

VOLTAGE AND CURRENT

- Phase to neutral voltage 100 to 276 V a.c (Not for 3p3w supplies).
- Voltage between phases 174 to 480V a.c (3p supplies only).
- Installation category III (600V).
- Rated current: 1A or 5A.
- Current input range: 5%~120% Ib.
- Percentage total voltage harmony distortion (THD%) for each phase to percentage current harmonic distortion for each phase.
- Current on each phase.

MEASURED INPUTS

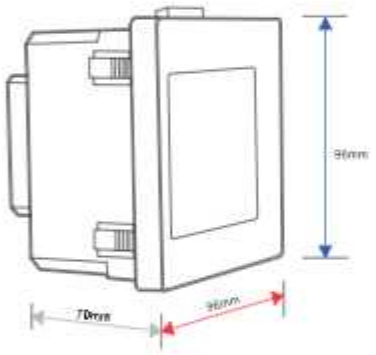
Voltage inputs through 4-way fixed connector with 2.5mm² stranded wire capacity. Single phase two wire(1p2w), three phase three wire(3p3w) or four phase four wire (3p4w) unbalanced. Line frequency measured from L1 voltage or L3 voltage. Three current inputs (six physical terminals) with 2.5mm² stranded wire capacity for connection of external CTs. Nominal rated input current 5A or 1A/ A.C.

ACCURACY	
Voltage VL-N	0-5%
Voltage VL-L	0-5%
Current	0.5 %
Frequency	0.1 %
Active Power	0.5 %
Apparent Power	0.5 %
Reactive Power	1 %
Power Factor	00.1
Active Energy	IEC62052-21 Cl.1 or IEC62053
Reactive Energy	IEC62053-23 Cl.2
THD	1 %

ENERGY MEASUREMENTS	
Imported/Exported Active Energy	0 to 9999999.9 kWh
Imported/Exported Reactive Energy	0 to 9999999.9 kVArh
Total Active Energy	0 to 9999999.9 kWh
Total Reactive Energy	0 to 9999999.9 kVArh

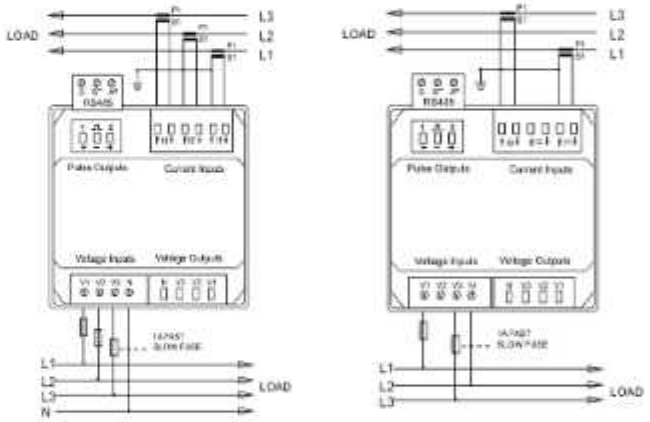
ENVIRONMENT	
Operating Temperature	-25C To +55C
Storage Temperature	-40C To +70C
Relative Humidity	0 to 95%, non -condensing
Altitude	< 2000 meter
Vibration	10Hz to 50 Hz,
Pollution Degree	IEC 60062-2

DIMENSIONS

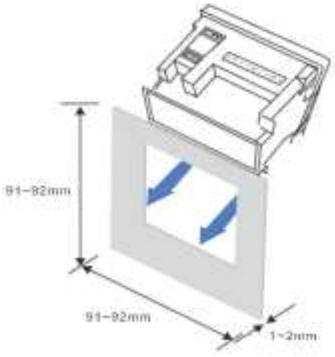


Heigth 96mm
Width 96mm
Depth 70mm

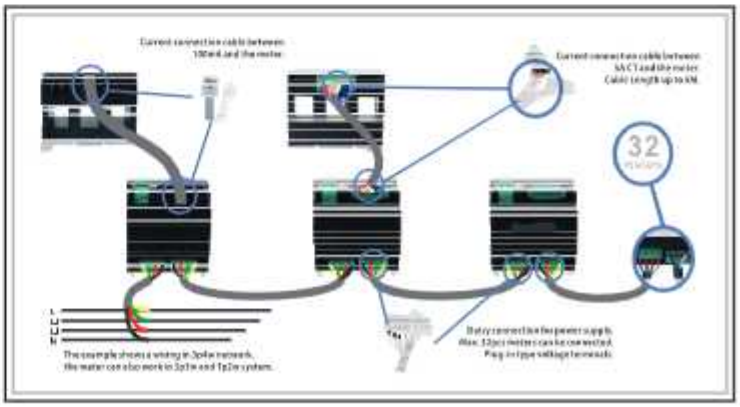
WIRING DIAGRAM

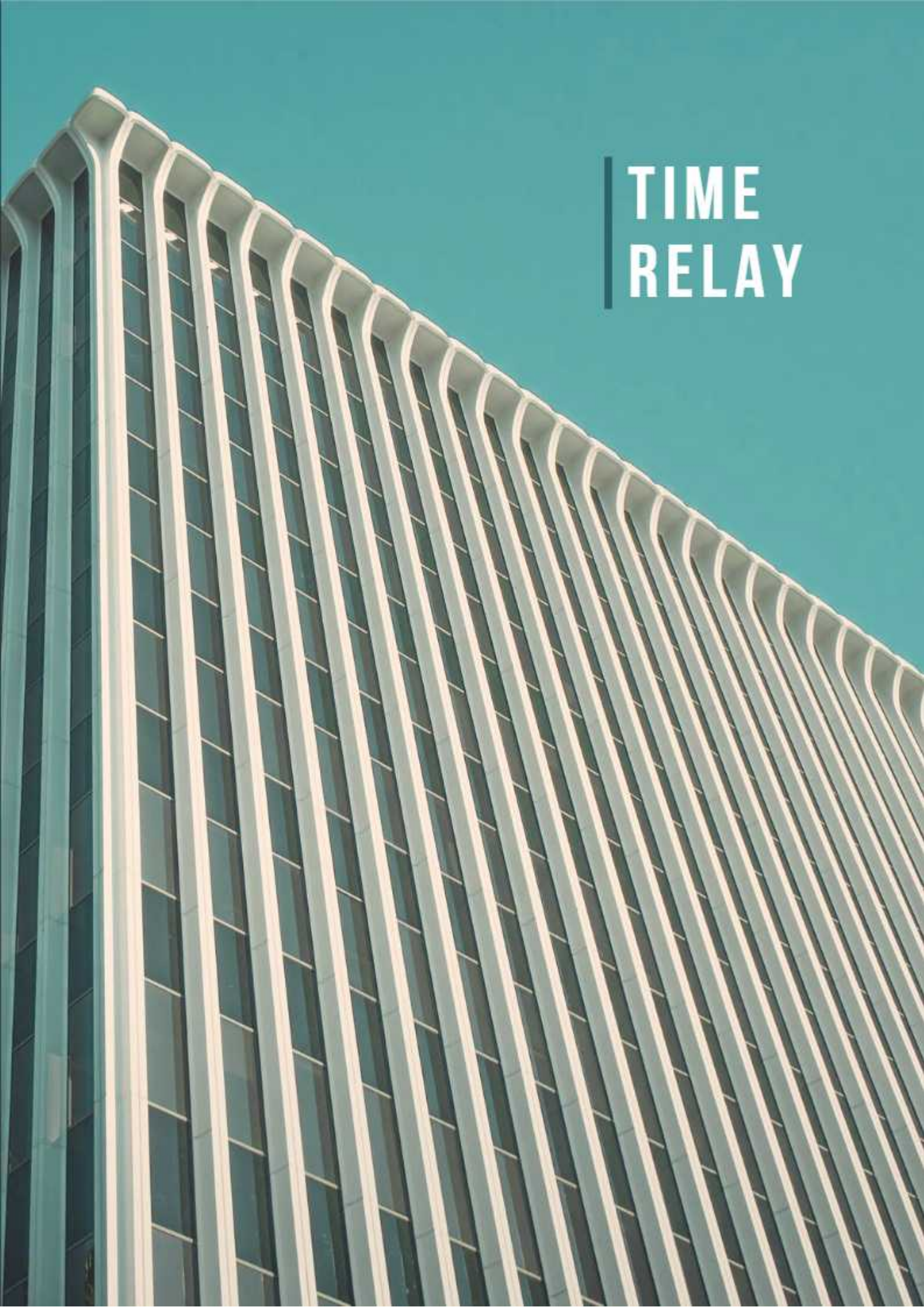


INSTALLTION



Plug-in Play Solution



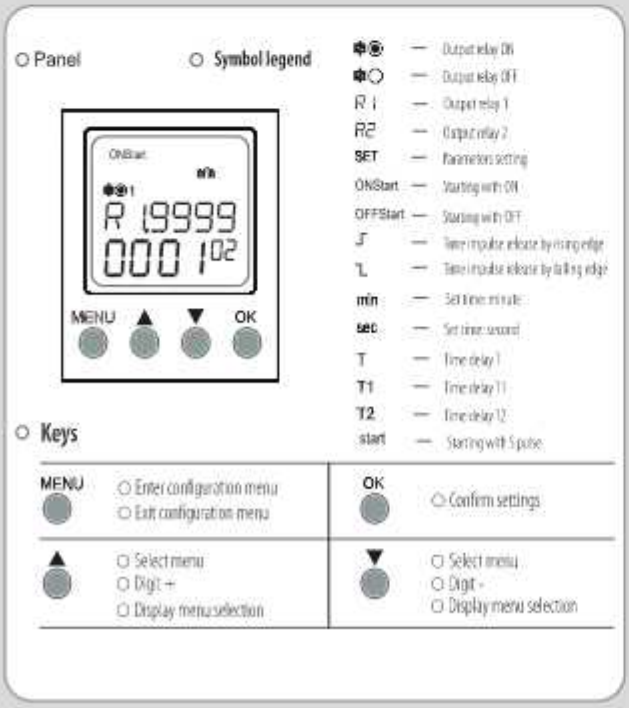

TIME
RELAY

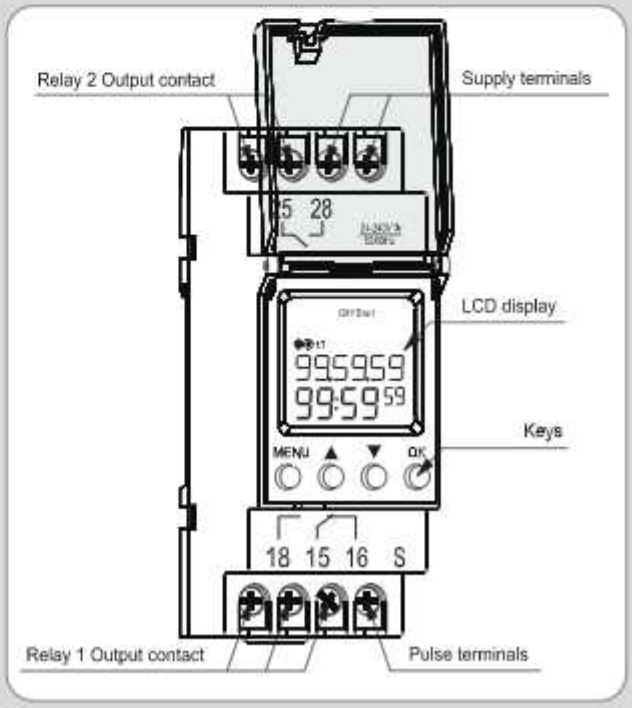
MULTI-FUNCTION TIME RELAY

Model No: SMART-MTR 150

- Microcontroller Based
- 24 Operating Modes
- LCD Display Operating Modes,
- Set Delay and Operating Time.
- Time Range: 0-9999s, 0-9999s Min.
- AC/DC 24-240V Support Voltage
- 2 Independent No Contacts,
- Controlled by Different Operating Mode.
- Backlighted LCD Display.
- Easy Setting by Key.
- 2 Module Din Rail Mounting

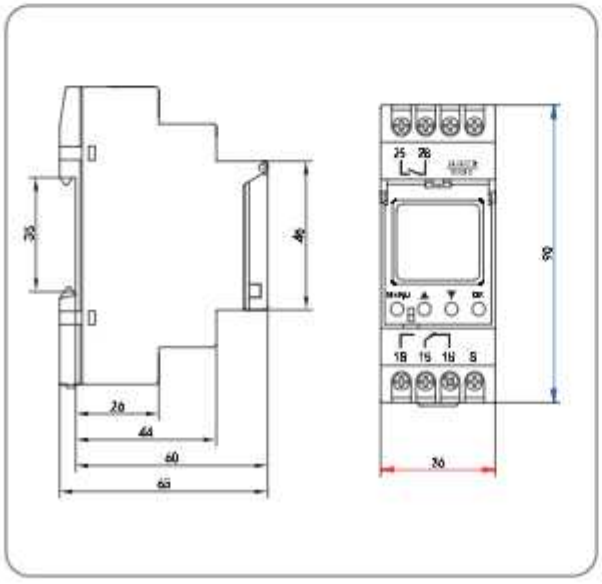
DIMENSIONS



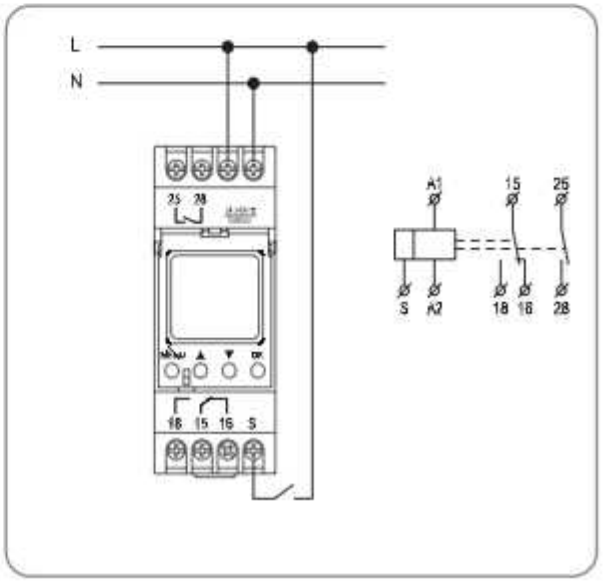


SPECIFICATION	
Supply Terminals	A1,A2
Pulse Terminal	S
Supply Voltage	AC/DC 24-240V
Rated Frequency	50/60Hz
Time Range	0~9999s, 0~9999min
Repetition Accuracy	max.±3s/24h 25 °C
Data Readout	Back-lighted LCD display
Data Storage	10 years
Outpu Contacts	1 C/O +1 NO
Current Rating	8A/ AC1
Contacts Capacting	AC-15:2A
Insulation Valtage	250V
Protection Degree	IP20
Pollution Degree	3
Electrical Life	10^{5}
Mechanical Lifa	10^{6}
Altitude	≤2000m
Ambient Temperatuer	-5°C~+40°C
Storge Tempuerature	-10°C~+50°C
Wire Size	0.5mm²~1mm²
Torque	0.5Nm
Mounting	TH-35 DIN-Rail

DIMENSIONS



WIRING DIAGRAM

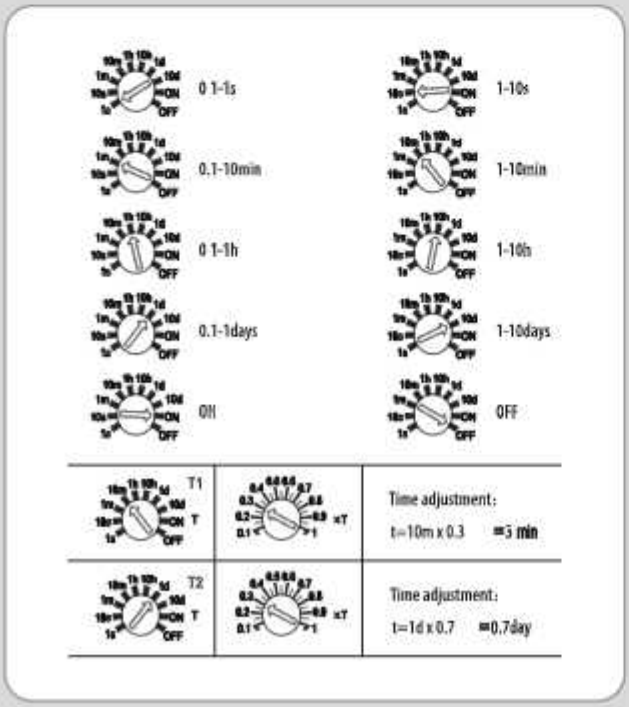


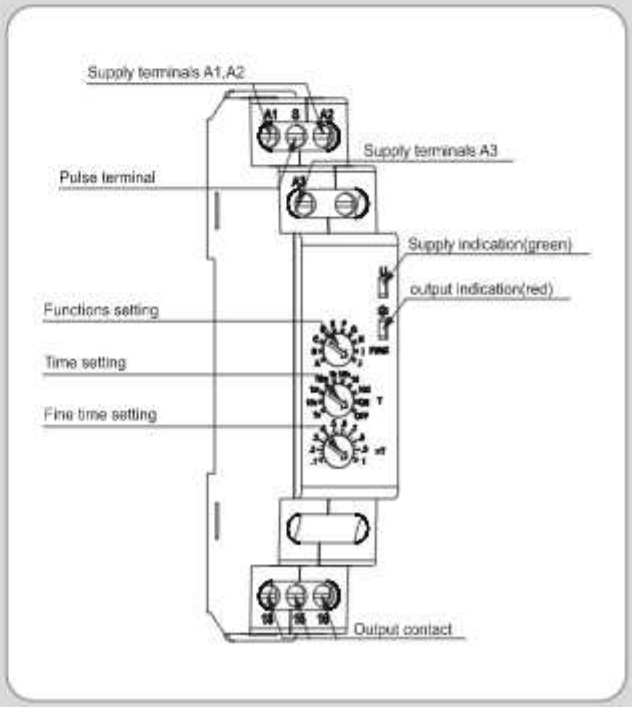
MULTI-FUNCTION TIME RELAY

Model No: SMART-MTR 151

- Microcontroller Based
- 10 Operating Modes
- Modular Design 18mm Wide Housing
- 10 Time Range (1s, 10s, 1m, 10m, 10h, 1d, 10d, On, Off)
- 1 Change Over Contact
- LED Indication for Power Supply and Relay Status.
- Din-Rail Mounting.

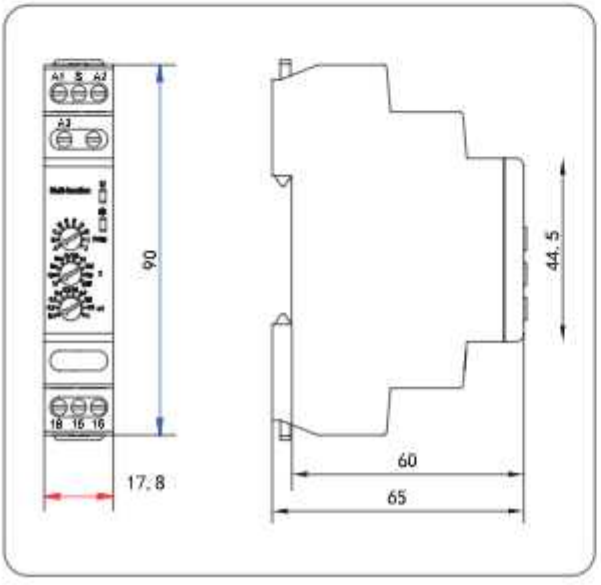
DIMENSIONS



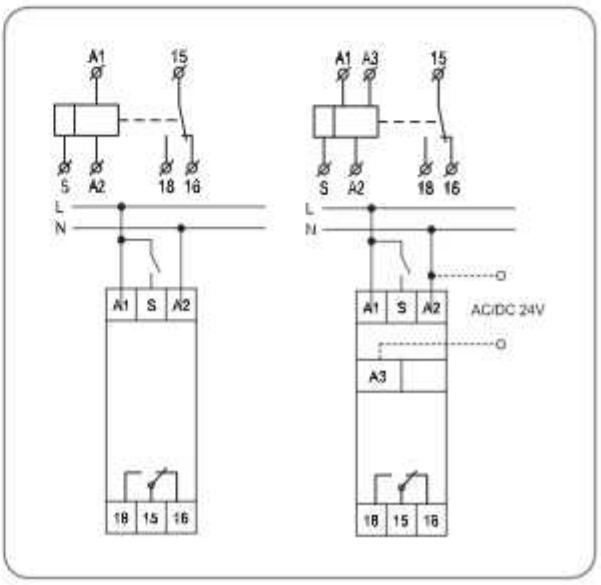


SPECIFICATION		
Supply Terminals	A1,A2	A1,A2,A3
Pulse Terminal	S	
Supply Voltage	AC 220V	A1-A2: AC 220V A3-A2: AC/DC 24V
Rated Frequency	50/60Hz	
Time Range	0.1s-10days	
Repetition Accuracy	<5%	
Data Readout	<0.2%	
Data Storage	1 C/O	
Outpu Contacts	8A /AC1	
Current Rating	AC-15: 2A	
Contacts Capacting	250V	
Insulation Valtage	IP20	
Protection Degree	3	
Pollution Degree	10^5	
Electrical Life	10^6	
Altitude	≤2000m	
Ambient Temperatuer	−5°C~+40°C	
Storge Tempuerature	−10°C~+50°C	
Wire Size	0.5mm² ~1mm²	
Torque	0.5Nm	
Mounting	TH-35 DIN-Rail	

DIMENSIONS



WIRING DIAGRAM

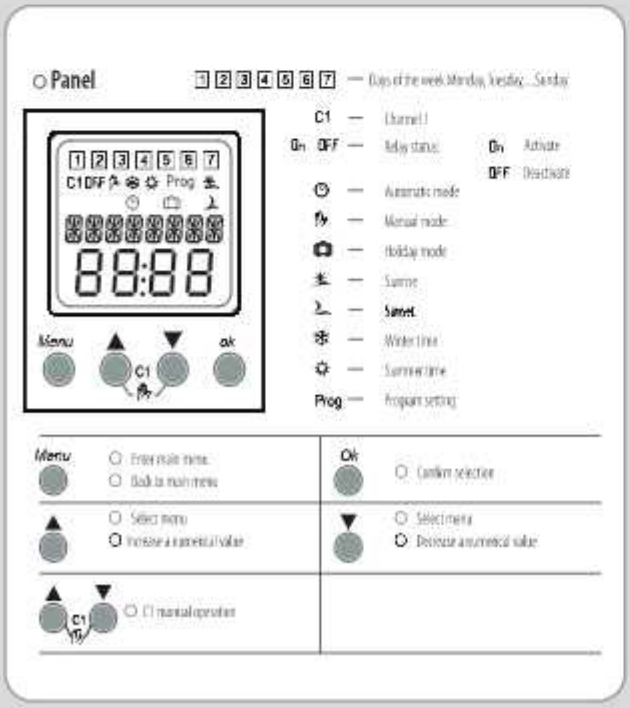


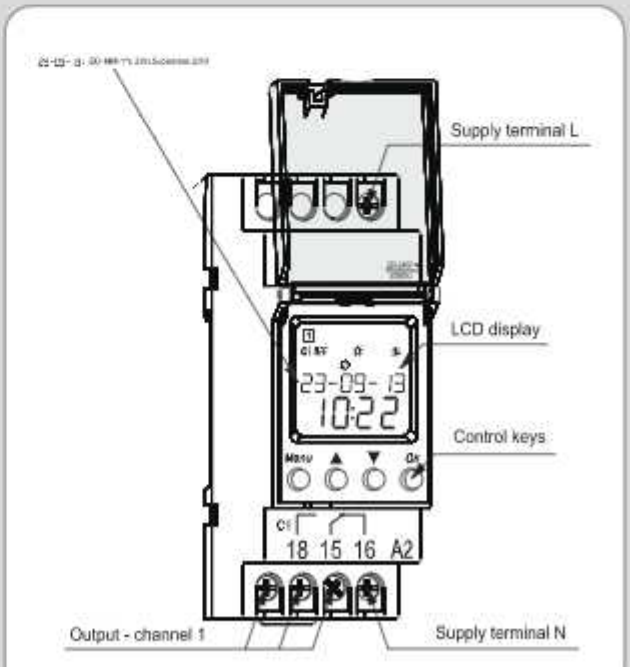
SINGLE CHANNEL ASTRONOMICAL

Model No: SMART-SCA 160

- Digital Time Switch with Astronomical Program.
- 3 Year Power Reserve (Lithium Battery).
- Sealable Cover of the Front Panel, Easy Setting By 4 Keys.
- Automatics Summer/Winter Time Switchover
- LCD Display, Holiday Mode
- Automatic Transfer of Week Days
- Double Modules Mounted on Th-35 Rail.

DIMENSIONS

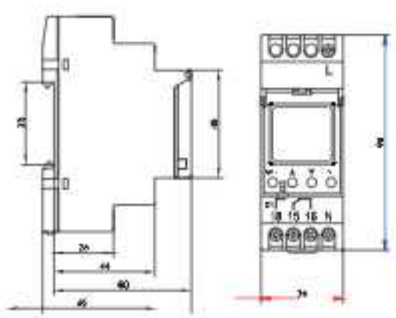




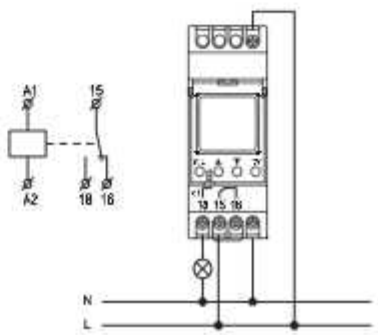
SPECIFICATION

Supply Terminals	A1-A2
Rated Voltage	AC220-240V
Rated Frequency	50/60Hz
Power Conumption	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℃
Power Reserve	3 year
Data Readout	LCD display
Number of Contacts	1 C/O
Switching Capactcity	16A/250V AC1
Electrical Life	4000VA/AC, 384W/DC
Mechanical Life	10^6
Reted	10^5
Insulaton Voltage	250V
Protection Degree	IP20
Prollution Degree	3
Altitude	≤2000m
Ambient Temperature	-30℃~55℃
Storage Temperature	≤50%(40℃,without condensation)
Wire Size	-35℃~70℃
Tighening Torque	$1mm^2$ ~ $4mm^2$
Size	0.5Nm
Mounting	TH-35 Rail(EN60715)
Dimensions	90*36*64mm
Standard	IEC60947-1/IEC60947-2-7

DIMENSIONS



WIRING DIAGRAM

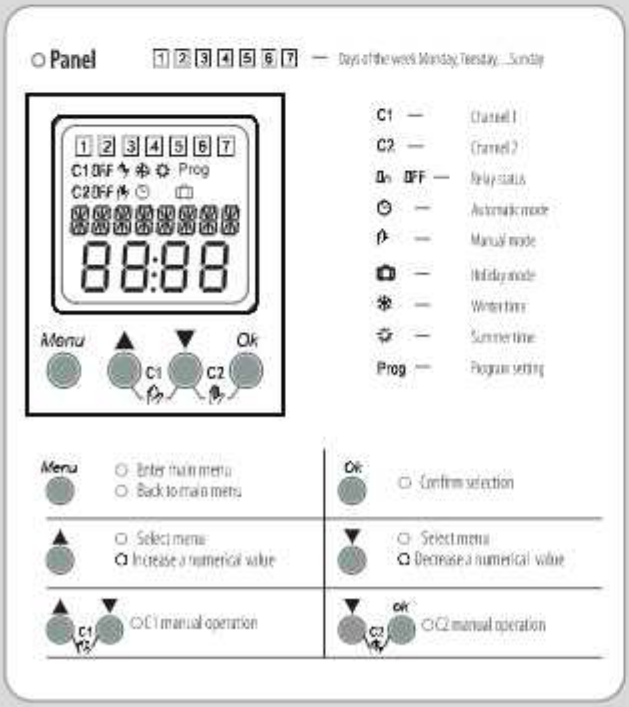


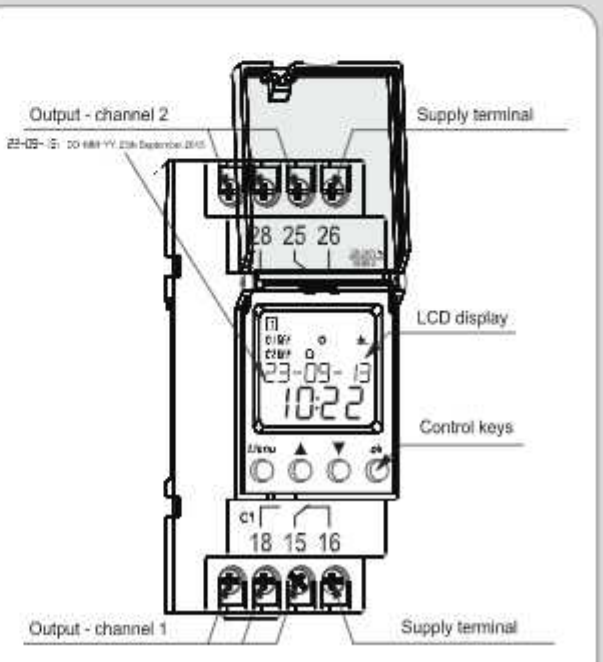
DOUBLE CHANNEL DIGITAL WEELY

Model No: SMART-DCDW 170

- Digital Time Switch With Astronomical Program.
- 10 Year Power Reserve (Lithium Battery).
- Sealable Cover of the Front Panel, Easy Setting By 4 Keys.
- Automatics Summer/Winter Time Switchover
- LCD Display, Holiday Mode
- Automatic Transfer of Week Days
- 220-240v AC Input Supply.
- Double Modules Mounted on Th-35 Rail.

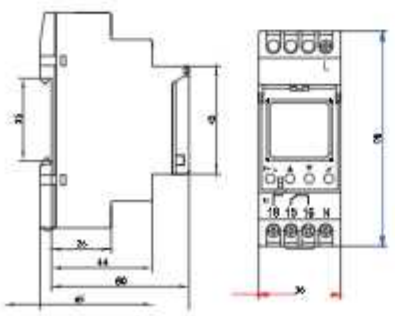
DIMENSIONS



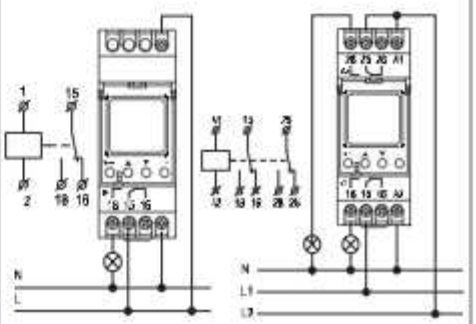


SPECIFICATION	
Supply Terminals	A1-A2
Rated Voltage	AC220-240V
Rated Frequency	50/60Hz
Power Conumption	2W
Supply Voltage Tolerance	±10%
Number of Channels	Double channels
Program	100
Mode of work	weekly program, daily program
Summer/winter time	manual, automatic, holiday
Time Tolerance	off, automatic changes
Power Reserve	≤1s/day at 25℃
Data Readout	10 year
Number of Contacts	LCD display with backlight
Switching Capactcity	2 C/O
Electrical Life	16A/250V AC1
Mechanical Life	4000VA/AC1, 384W/DC
Reted	10^6
Insulaton Voltage	10^5
Protection Degree	250V
Prollution Degree	IP20
Altitude	3
Ambient Temperature	≤2000m
Storage Temperature	-20℃~55℃
Wire Size	≤50%(40℃,without condensation)
Tighening Torqu	-30℃~70℃
Mounting	$1mm^2$ ~ $4mm^2$
Working Nm	0.5Nm
TH-Rail	TH-35 Rail(EN60715)
Dimensions	90*36*64mm
Standard	IEC60947-1/IEC60947-2-7

DIMENSIONS



WIRING DIAGRAM



TWILIGHT SWITCH

Model No: SMART-TS 180

- 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.

DESCRIPTION

Connect the sensor TS 180.

When the strength of light goes below set

Sensitivity value, output Indication LED light Up .

After the switch on delay switch energizes its contacts.

Delay can avoid any command scened by

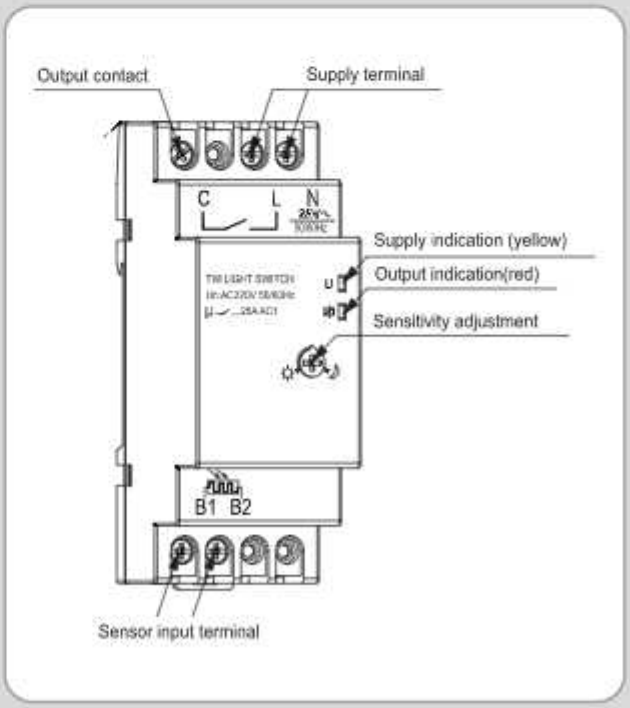
temporary illumination or headlights.

When the strength of light goes above the hysteresis

Hysteresis=1/4* set sensitivity value delay Value,

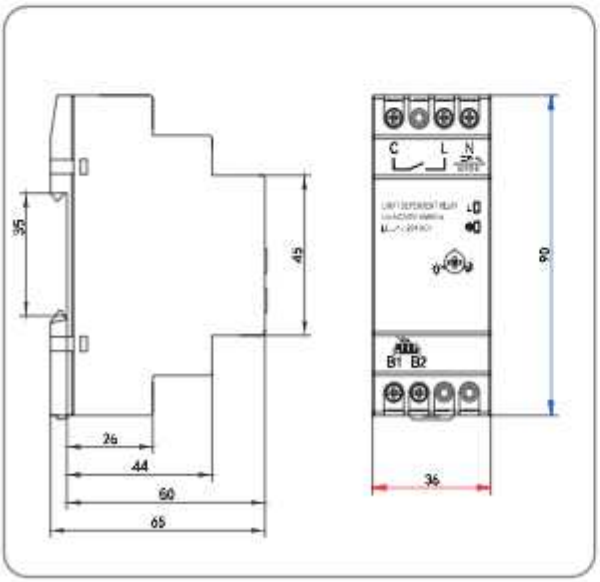
output indication LED goes out and the delay begin.

After the switch off delay, switch De-energizer its contacts.

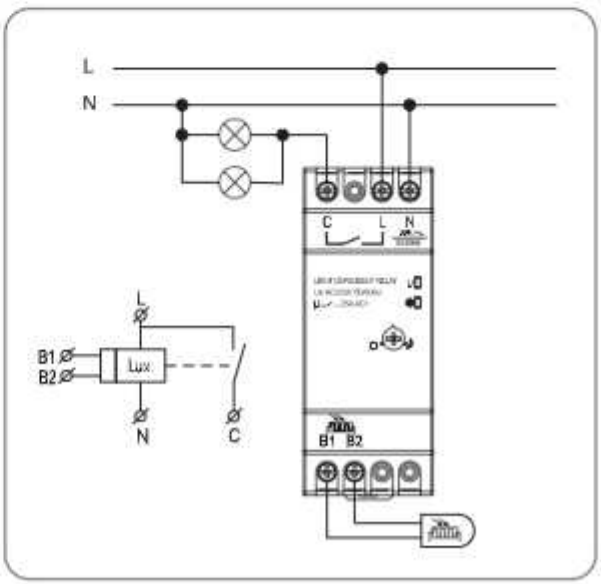


SPECIFICATION	
Reted Content Voltage	AC220V
Frequency	50/60Hz
Senitivity Thrshold	2~100lux adjustable
Switch-on Delay	2-5s
Switch-off Delay	10-15s
Hysteresis (Switching off/on ratio)	1.20
Output Contact	1NO
Current Rating	25A/250V AC1
Incandescent Lamp Load	3000 W
Halogen Lamp Load	3000 W
Fluoresent Lamp Load (Compensated)	1000 W
Uncompensted	1300 W
Protection Degree	Terminal: IP20, Sensor: IP65
Ambient Temperature	-25°C~+40°C

DIMENSIONS



WIRING DIAGRAM

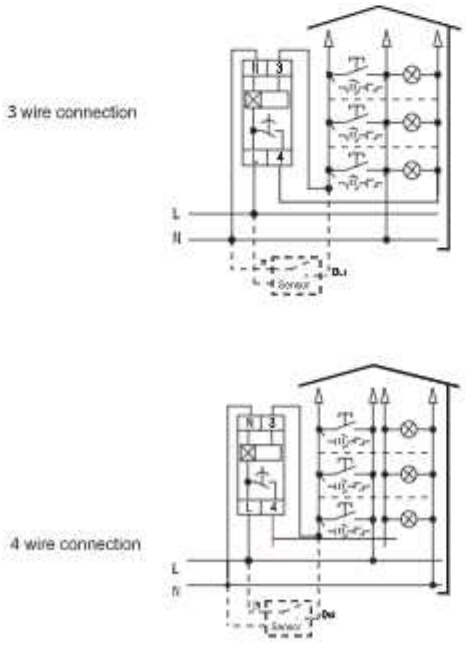


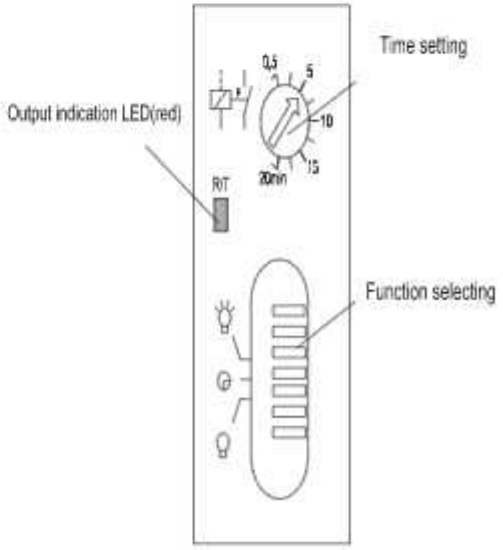
STAIRCASE LIGHTING TIME

Model No: SMART-SLT 190

- Microcontroller Based
- Modular Design 18mm Wide Housing
- Possibility of 3 wire or 4 Wire Connection.
- ON, OFF, AUTO Three Operating Modes
- Repartition Accuracy <0.2%, LED
- DIN-Rail Mounting

APPLICATION

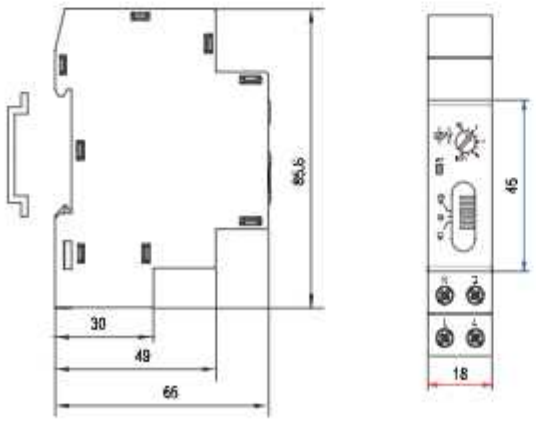




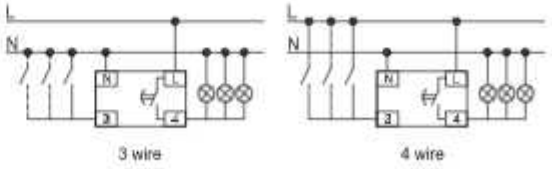
SPECIFICATION

Reted Supply Voltage	AC230VAC,50/60Hz
Type of Contact	1NO(AgNi)
Reted Current (Lth)	10A
Power Consumption	≤1.5VA
Incandescent Lamp Load	2000W
Fluorescent Lamp Loa,Leat-lag Circuit	1000W
Fluorescent Lamp Load, Incductive-Capactive	1000W
Fluorescent Lamp Load, Co$=0.6 @ 230|V	650W
Mechanical	650W
Elevtrical	5*10
Time Range	6*10
Setting	0.5-20m
Repetintion	≤5%
Altitude	≤0.2%
Protection Degree	50mA
Pollution Degree	≥200ms
Storage	≤2000m
IP	IP20
Mode	3
Work Temperature	-5℃~+40℃
Temperature Opertion	-25℃~+75℃

DIMENSIONS



WIRING DIAGRAM



CURRENT TRANSFORMER

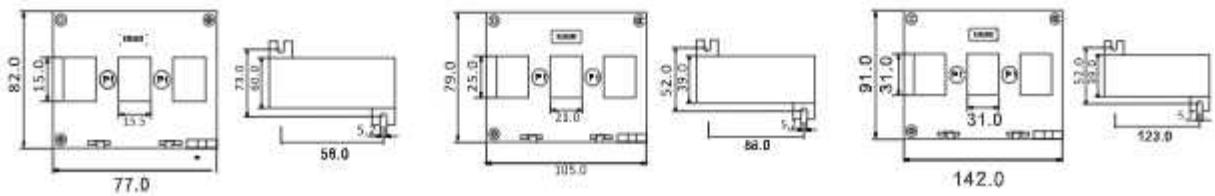
3 IN1 CURRENT TRANSFORMER

- Cost Effective Three-Phase Molded 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.

Ration (A)	BURDNRN (VA)	
	CLASS 0.5	CLASS 1.0
60/1	-	1
100/1	-	1.5
125/1	1.5	1.5
150/1	1.5	1.5
300/1	1.5	1.5
100/1	-	1.5
125/1	-	1.5
150/1	-	1.5
160/1	1.5	1.5
200/1	1.5	1.5
250/1	1.5	1.5
250/1	1.5	1.5
300/1	2.5	2.5
400/1	2.5	2.5
500/1	2.5	2.5

SPECIFICATION	
System Voltage	720V maximum
Test Voltage	3kV for 1 minute
System Frequency	50Hz or 60Hz
Primary Ratings	60A to 630A
Short Circuit Thermal	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 Hand ware	Plug-in metal feet for wall or base Mounting
	Bus-bar and DIN-rail
Compliant	IEC/EN60044-1

DIMENSIONS



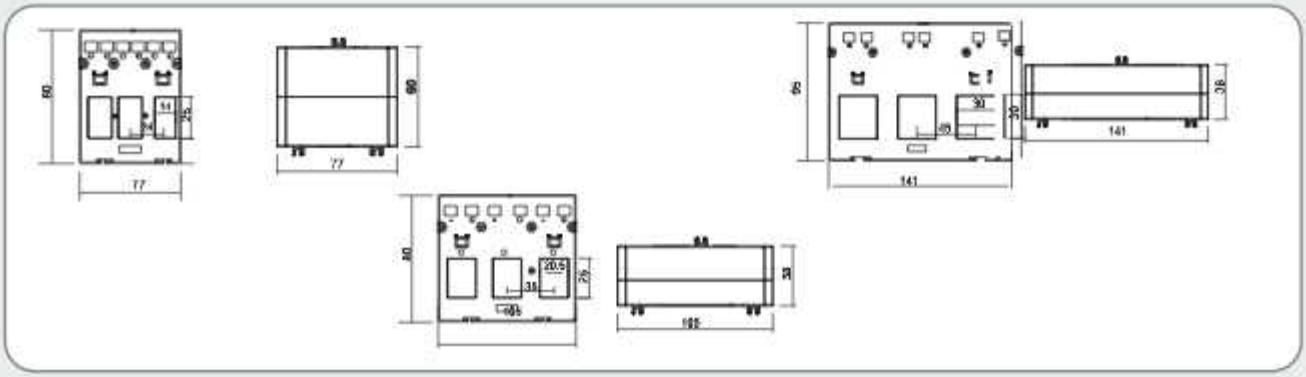
3 IN1 CURRENT TRANSFORMER

- Cost Effective Three-Phase Molded Case
- Ratio,s Ranging From 60/5 To 630/5
- Integrated wire sealable terminal cover
- Busbas, DIN-rail metal feet mounting
- Combined M4 posi/slot screwhardware supplied

Ration (A)	BURDNRN (VA)	
	CLASS 0.5	CLASS 1.0
60/5	-	1
100/5	1.5	1.5
125/5	1.5	1.5
150/5	1.5	1.5
200/5		1.5
	-	
100/5	-	1.5
125/5	-	2.5
150/5	1.5	3.75
160/5	1.5	1.5
200/5	1.5	1.5
250/5		1.5
	1.5	
250/5	2.5	1.5
300/5	2.5	2.5
400/5	2.5	2.5
500/5	2.5	2.5
600/5	2.5	2.5
600/5		2.5

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	600 Vac
Maximum Primary	5000Vac (Insulated Conductor)
Dielectric Strength	2 ℃
Operating Temperature	
Operating Humidity	
Case Material	
Bobbin	
Internal Structure	

DIMENSIONS



3 IN1 CURRENT TRANSFORMER

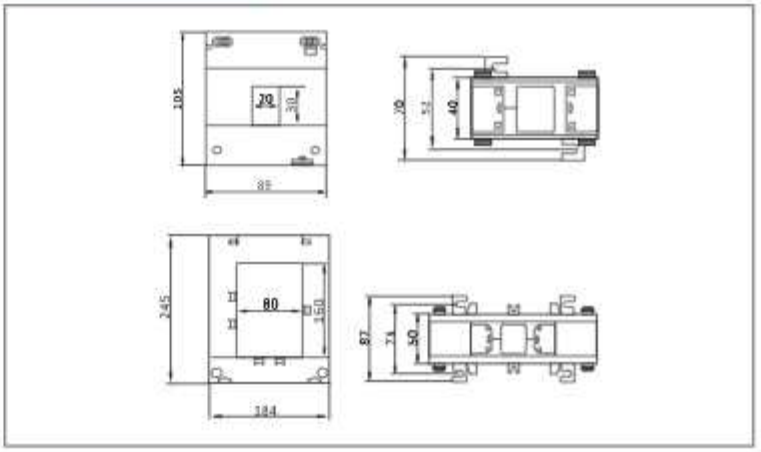
- Split Core
- Primary Input 100A~5000A
- Secondary Output 5A/1A
- Two building fixing methods: base, busbar mounting.
- Wide inner mindow, allowing clamping of big cables or bus-bars

Ration (A)	BURDNRN (VA) CLASS 0.5	CLASS 1.0
100/5	1.5	2.5
150/5	1.5	2.5
200/5	2.5	3.75
250/5	2.5	5
300/5	5	5
400/5	5	5
250/5	1.5	2.5
300/5	2.5	5
400/5	3.75	5
500/5	5	7.5
600/5	5	7.5
750/5	5	10
800/5	5	10
1000/5	7.5	10
500/5	2.5	5
600/5	2.5	5
750/5	5	10
800/5	5	10
1000/5	7.5	10
1200/5	7.5	10
1250/5	7.5	10
1500/5	7.5	10
1000/5	10	15
1500/5	10	15
2000/5	15	20
2500/5	20	25
3000/5	20	30
4000/5	20	30
5000/5	20	30
6000/5	20	30

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	5000Vac (Insulated Conductor)
Dielectric Strength	2.5 KV / 1mA / 1min
Operating Temperature	-15℃ to 60℃
Operating Humidity	<85%
Case Material	PC / UL94-V0
Bobbin	PBT
Internal Structure	Epoxy

DIMENSIONS



SPLIT CORE CURRENT TRANSFORMER

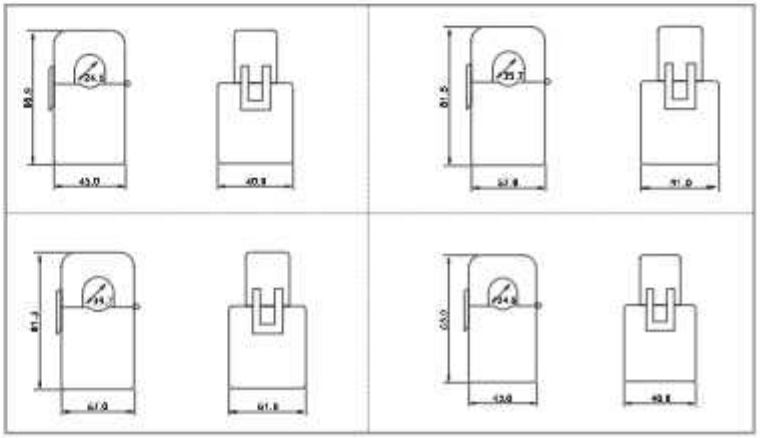
- Split Core, Easy Installtion
- Primary Input 100A~5000A
- Secondary Output 5A/1A
- Safe Mode

Ration (A)	BURDNRN (VA) CLASS 0.5	CLASS 1.0
100/1	-	1.5
150/1	-	1.5
200/1	1.5	2.5
250/1	1.5	2.5
300/1	1.5	2.5
100/1	-	1.5
150/1	-	1.5
200/1	1.5	2.5
300/1	1.5	2.5
400/1	1.5	2.5
500/1	2.5	3.75
600/1	2.5	5
100/5	-	1.5
150/5	-	1.5
200/5	1.5	2.5
250/5	1.5	2.5
300/5	1.5	2.5
100/5	-	1.5
150/5	-	1.5
200/5	1.5	2.5
300/5	1.5	2.5
400/5	1.5	2.5
500/5	2.5	3.75
600/5	2.5	5

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	5000Vac (Insulated Conductor)
Dielectric Strength	2.5KV/1mA/1min
Operating Temperature	-15℃to 60℃.
Operating Humidity	<85%
Case Material	PC / UL94-V0
Bobbin	PBT
Core	Permalloy
Internal Structure	Epoxy

DIMENSIONS



MINI SPLIT CORE CURRENT TRANSFORMER

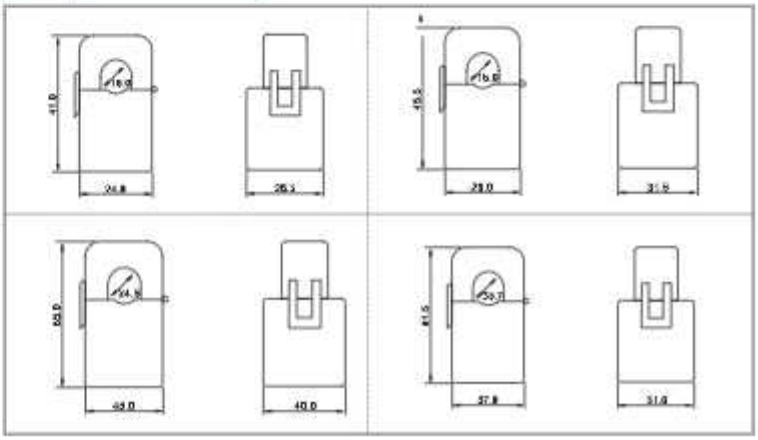
- Split Core, Easy Installtion
- Primary Input 5A ~ 6000A
- Secondary Output 333mV
- Safe Mode

RATED AMPS	OUTPUT	ACCURACY
5	0.333	0.5or1
10	0.333	0.5or1
20	0.333	0.5or1
50	0.333	0.5or1
75	0.333	0.5or1
5	0.1	0.5or1
10	0.1	0.5or1
20	0.1	0.5or1
50	0.1	0.5or1
75	0.1	0.5or1
5	0.333	0.5or1
10	0.333	0.5or1
50	0.333	0.5or1
100	0.333	0.5or1
150	0.333	0.5or1
5	0.1	0.5or1
10	0.1	0.5or1
50	0.1	0.5or1
100	0.1	0.5or1
150	0.1	0.5or1
10	0.333	0.5or1
50	0.333	0.5or1
100	0.333	0.5or1
250	0.333	0.5or1
300	0.333	0.5or1
10	0.1	0.5or1
50	0.1	0.5or1
100	0.1	0.5or1
250	0.1	0.5or1
300	0.1	0.5or1

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	5000Vac (Insulated Conductor)
Dielectric Strength	2.5KV/1mA/1min
Operating Temperature	-15℃to 60℃
Operating Humidity	<85%
Case	PC / UL94-V0
Material	PBT
Bobbin	Permalloy
Core	Epoxy
Internal Structure	UL 1015, Twisted Pair, 22AWG

DIMENSIONS



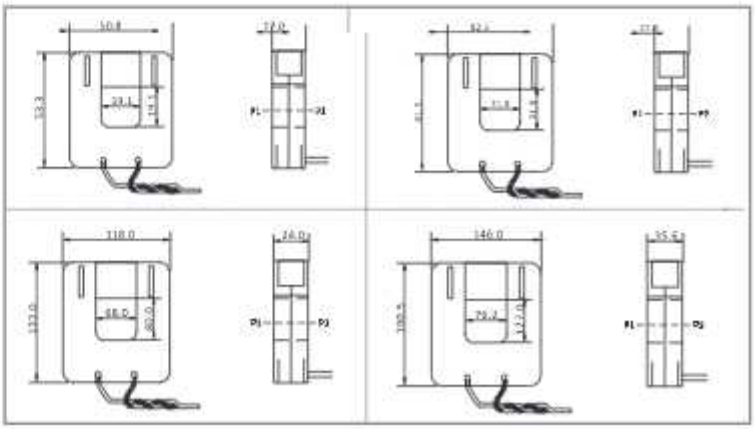
SPLIT CORE CURRENT TRANSFORMER

- Split Core, Easy Installtion
- Primary Input 5A~3000A
- Secondary Output 333mV
- Wide Inner Window Allowing
- Clamping of Big Cable

RATED AMPS	OUTPUT	ACCURACY
5	0.333V	1
10	0.333V	1
50	0.333V	1
75	0.333V	1
100	0.333V	1
125	0.333V	1
150	0.333V	1
200	0.333V	1
50	0.333V	1
100	0.333V	1
200	0.333V	1
250	0.333V	1
400	0.333V	1
600	0.333V	1
630	0.333V	1
100	0.333V	1
125	0.333V	1
250	0.333V	1
400	0.333V	1
630	0.333V	1
800	0.333V	1
1000	0.333V	1
2000	0.333V	1
400	0.333V	1
800	0.333V	1
1000	0.333V	1
1500	0.333V	1
2500	0.333V	1
3000	0.333V	1

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	5000Vac (Insulated Conductor)
Dielectric Strength	2.5KV/1mA/1min
Operating Temperature	-15℃to 60℃
Operating Humidity	<85%
Case Material	PC / UL94-V0
Bobbin	PBT
Core	Permalloy
Internal Structure	Epoxy
Leads	UL 1015,Twisted Pair, 22AWG

DIMENSIONS



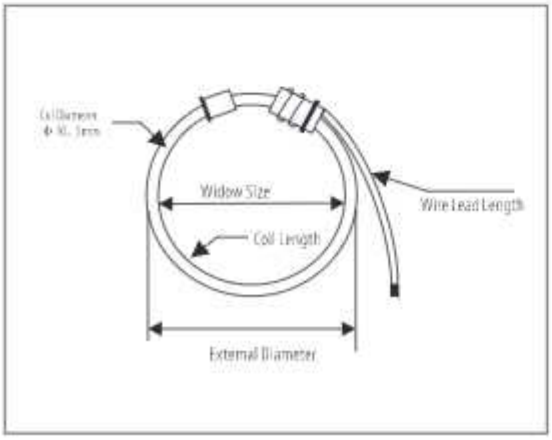
FLEXIBLE ROGOWSKI COIL CURRENT SENSOR

- Flexible and Light Weight
- Easy and Quick Installation in Tight Spaces.
- No Danger from Open-Circuited Secondary.
- No Core Saturation or Damage if Overloaded.

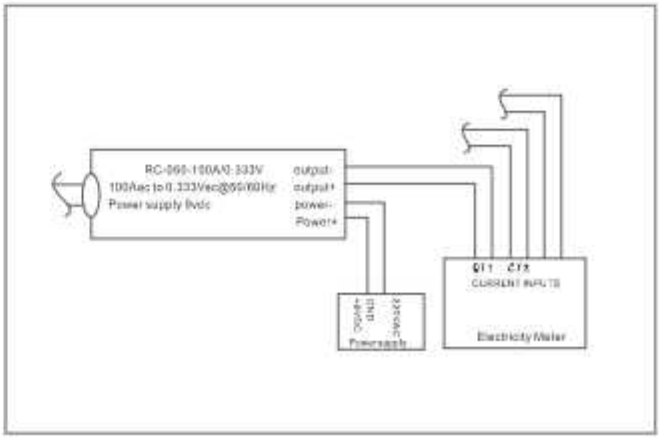
RATED AMPS	WINDOW SIZE
100/5	60mm
200/5	76mm
400/5	90mm
800/5	100mm
1000/5	150mm
1200/5	160mm
3000/5	190mm
5000/5	200mm
6000/5	300mm
100/5	60mm
200/5	76mm
400/5	90mm
800/5	100mm
1000/5	150mm
1200/5	160mm
3000/5	190mm
5000/5	200mm
6000/5	300mm

SPECIFICATION	
Rated Current	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	7~38VDC (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

DIMENSIONS



WIRING DIAGRAM



SOLID CORE CURRENT TRANSFORMER

- Two Built in Fixing Methods
- Built in Hinged Terminal Cover
- Built in Transparent Cover
- Wide Range Accuracy (3,1,0.5,0.5s,0.2,0.2s)

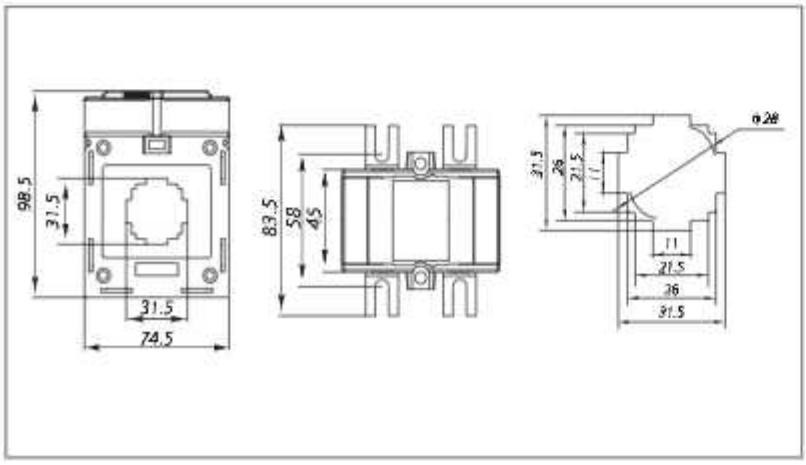
INTRODUCTION

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 s tealing electricity.

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	60In
Rated Voltage (Um)	1.2 In
Operating Temperature	-10℃~50℃
Housing Self-Extinguishing Class	V0
Standard	IEC60044-1, EN60044-1, VDE0414-44-1, GB1208

RATIO (A)	BURDEN (VA)	
	CLASS 0.5	CLASS
50/5	1.5	2.5
60/5	1.5	2.5
75/5	2.5	3.75
100/5	3.75	5
150/5	5	5
200/5	5	5
250/5	5	5
300/5	5	5
75/5	1.5	1.5
80/5	1.5	1.5
100/5	2.5	2.5
150/5	3.75	5
200/5	5	5
250/5	5	5
300/5	5	5
400/5	5	5
500/	5	5



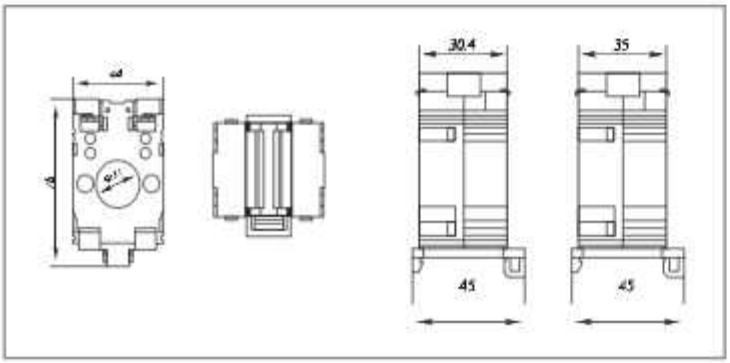
SOLID CORE CURRENT TRANSFORMER

- Two Built in Fixing Methods
- 1 Side Base, Busbar Mounting
- Built in Transparent Cover
- Primary Current From 50A To 300A

INTRODUCTION

Smart Controller is world famous Mini Design Plastic case current transformer, snap on body be wildly 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 class 1.0 accuracy performance.

SPECIFICATION	
Rated Frequency	50Hz-60Hz
Rated Current	15A to 300A loads
Rated Output	3kV AC (1min)
Accuracy	60In
Rated Short-Time	0.72Kv AC
Rated Voltage (Um)	5A or 1A
Operating Temperature	1.2 In
Housing Self	-10°C~50°C
Extinguishing Class	V0
Safe State	FsS
Standard	IEC60044-1, EN60044-1,



RATED AMPS	BURDEN(VA)/CLASS1.0
50/5	1
60/5	1.25
75/5	1.5
80/5	1.5
100/5	2.5
120/5	2.5
150/5	2.5
200/5	3.75
250/5	3.75
300/5	3.75
50/5	-
60/5	-
75/5	1.5
80/5	1.5
100/5	2.5
120/5	2.5
150/5	2.5
200/5	2.5
250/5	3.75
300/5	3.75

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