êbrit

DIGITAL PANEL METERS

accuracy packed in technology

Unique Features

- ACCURACY MAINTAINED THROUGH OUT THE RANGE
- UNIVERSAL AUXILIARY SUPPLY : 80 TO 300V AC/DC
- PUSH BUTTON BASED SITE PROGRAMMING OF CT/PT RATIO
- NETWORK SELECTIONS FOR STAR (3 PHASE 4 WIRE) AND DELTA (3 PHASE 3 WIRE)
- COLOURED INDICATION FOR R, Y B PHASES
- BRIGHT 4 DIGIT 14MM LED DISPLAY
- FREQUENCY METER IN CLASS 0.2
- AUTO ADJUSTABLE DECIMAL POINT
- SAME MODEL FOR A KA
- SAME MODEL FOR V KV
- PUSH BUTTONS FOR PHASE SELECTION IN 3 PHASE METERS
- PASSWORD PROTECTED PROGRAMMING

ISO-9001:2000

CE

HPL

The Power of Technology

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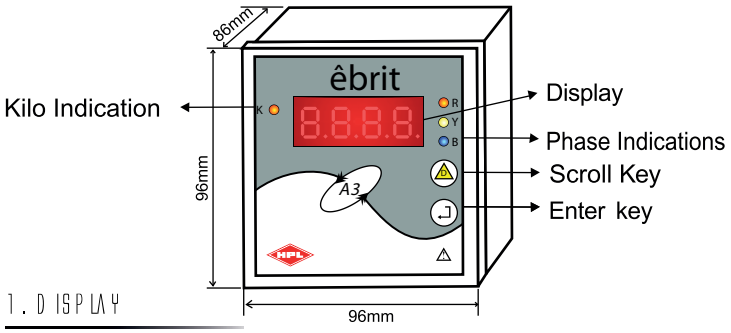
DIGITAL PANEL METERS

HPL-SOCOMEC BRINGS TO YOU A WIDE RANGE OF DIGITAL PANEL METERS WHICH MEASURE THE BASIC ELECTRICAL PARAMETERS USING STATE-OF-THE-ART TECHNOLOGY.

Front View



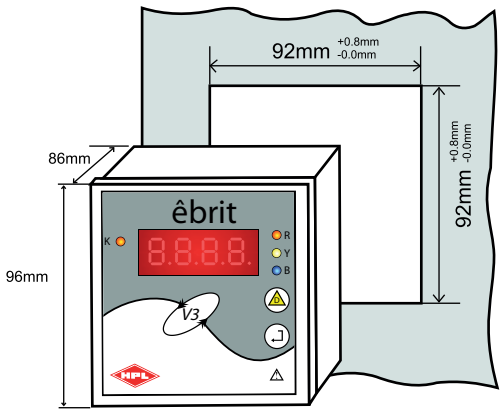
1. DISPLAY
2. PHASE INDICATIONS
3. SCROLL KEY
4. ENTER KEY
5. KILO INDICATION

Cutout Details

THE PANEL METER IS TO BE FIRMLY SECURED USING THE 4 TRANSPARENT FIXING CLIPS.

USE 0.5 TO 2.5 MM^2 CABLE FOR VOLTAGE TERMINALS.

USE 3 MM^2 TO 6 MM^2 CABLE FOR CURRENT TERMINALS.



Ordering Information

Model	Parameter	Phases	Accuracy
VOLTMETER AMMETER KILOWATTMETER	V A W	1 3	1.0 1 0.5 2
PF METER	P	1	1.0 1
FREQUENCY METER	F	1	0.2 3

For Example:

- TO ORDER FOR 3 PHASE AMMETER WITH ACCURACY CLASS 0.5 THE ORDERING CODE WILL BE -A32
  OR
- TO ORDER FOR 1 PHASE VOLTMETER WITH ACCURACY CLASS 1.0 THE ORDERING CODE WILL BE -V11

Applications

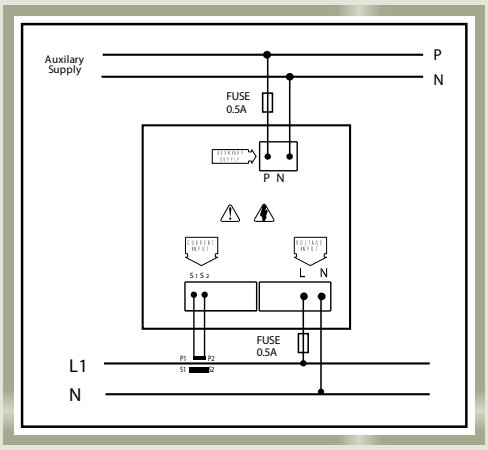
- ✓ ELECTRICAL PANELS - INDUSTRIAL HT LT PANELS
- ✓ MOTOR CONTROL CENTRES, DISTRIBUTION CONTROL RELAY PANELS
- ✓ AIR CONDITIONING AND REFRIGERATION PANELS
- ✓ GENSET PANELS
- ✓ GENERATION, TRANSMISSION AND DISTRIBUTION PANELS
- ✓ TEST BENCHES AND LABORATORY EQUIPMENT
- ✓ UNINTERRUPTED POWER SUPPLY
- ✓ SPECIAL OEM APPLICATIONS

Models

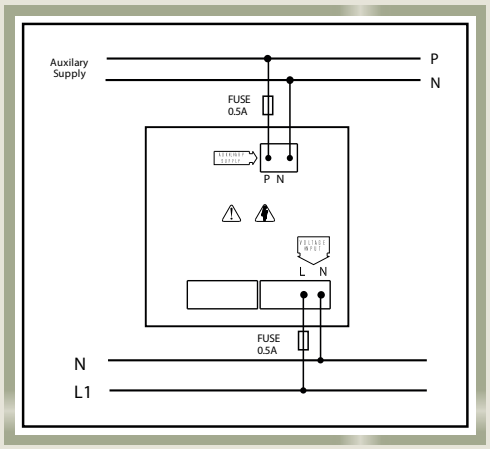
MODEL	SINGLE PHASE					THREE PHASE	
	V	A	F	PF	KW	V	A
êbrit V1	✓						
êbrit A1		✓					
êbrit F			✓				
êbrit PF				✓			
êbrit KW					✓		
êbrit V3						✓	
êbrit A3							✓

Wiring Diagram

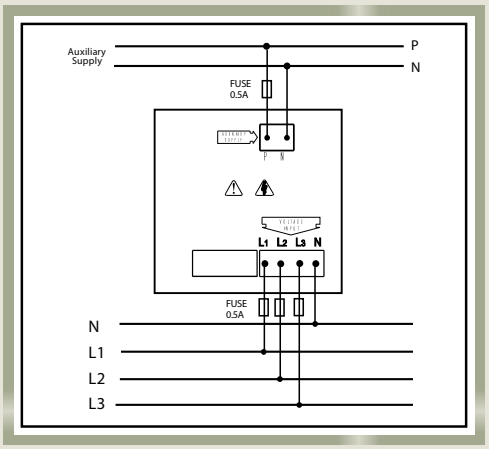
For P.F Meter and Kilo Watt Meter



For Volt Meter and Frequency Meter

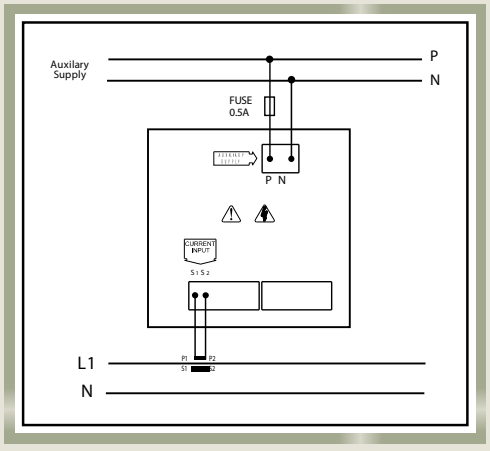


SINGLE PHASE VOLTMETER/ FREQUENCY METER

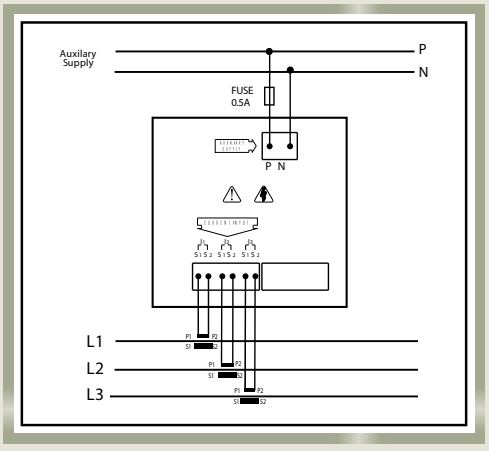


THREE PHASE VOLTMETER

For Ammeter



SINGLE PHASE AMMETER



THREE PHASE AMMETER

Technical Specification

Electrical

AUX POWER SUPPLY	80-300V AC/DC
AUX BURDEN	2.5VA AT 230V
VOLTAGE CIRCUIT BURDEN	0.5VA
CURRENT CIRCUIT BURDEN	0.5VA

Measuring Range

VOLTAGE (DIRECT MEASUREMENT)	0-750V AC
CURRENT (DIRECT MEASUREMENT)	0-7A AC
P.F	ZERO LAG-UNITY-ZERO LEAD
FREQUENCY	40.00-99.99 HZ
KILO WATT (DIRECT MEASUREMENT)	0-3.000 KW

Resolution

VOLTAGE (DIRECT MEASUREMENT)	0.1 V
CURRENT (DIRECT MEASUREMENT)	0.001 A
P.F	0.01
FREQUENCY	0.01 HZ
KILO WATT (DIRECT MEASUREMENT)	0.001 KW

Display

DISPLAY	14 MM SEVEN SEGMENT LED DISPLAY
DISPLAY RANGE	0 TO 9999 0 TO 999 (FOR P F METER)
DECIMAL	AUTO ADJUST
INDICATIONS	• R, Y, B COLOURED LED INDICATION FOR THREE PHASE METERS • LED INDICATION FOR KILO • LAG/LEAD INDICATION FOR P F METER

Mechanical

ENCLOSURE MATERIAL	ENGINEERING PLASTIC
BEZEL SIZE	96 X 96 MM
PANEL CUTOUT	92 X 92 MM
WEIGHT	300G

Accuracy

VOLTMETER/AMMETER/KILO WATTMETER

CLASS 1.0	1 OF MEASURED VALUE
CLASS 0.5	0.5 OF MEASURED VALUE
P F METER	0.01
FREQUENCY METER	
CLASS 0.2	0.2 OF MEASURED VALUE

Environmental

OPERATIONAL TEMP.	0 TO 60°C
STORAGE TEMP.	-20 TO 70°C
RELATIVE HUMIDITY	0 TO 95

Safety

IP PROTECTION	IP 54 ON FRONT PLATE
DEVICE SAFETY	AS PER IEC 61010

Programming

For Ammeter and kilo Watt Meter

- CT PRIMARY AND SECONDARY PROGRAMMABLE

CT PRIMARY	:5 TO 6000A FOR CT SECONDARY 5A :1 TO 1200A FOR CT SECONDARY 1A
• CT SECONDARY	:5/1 A

For Voltmeter

PT PRIMARY SELECTABLE

• PT PRIMARY	:110V, 1.1KV, 11KV, 33KV, 132KV
• PT SECONDAY	:110V

NEW

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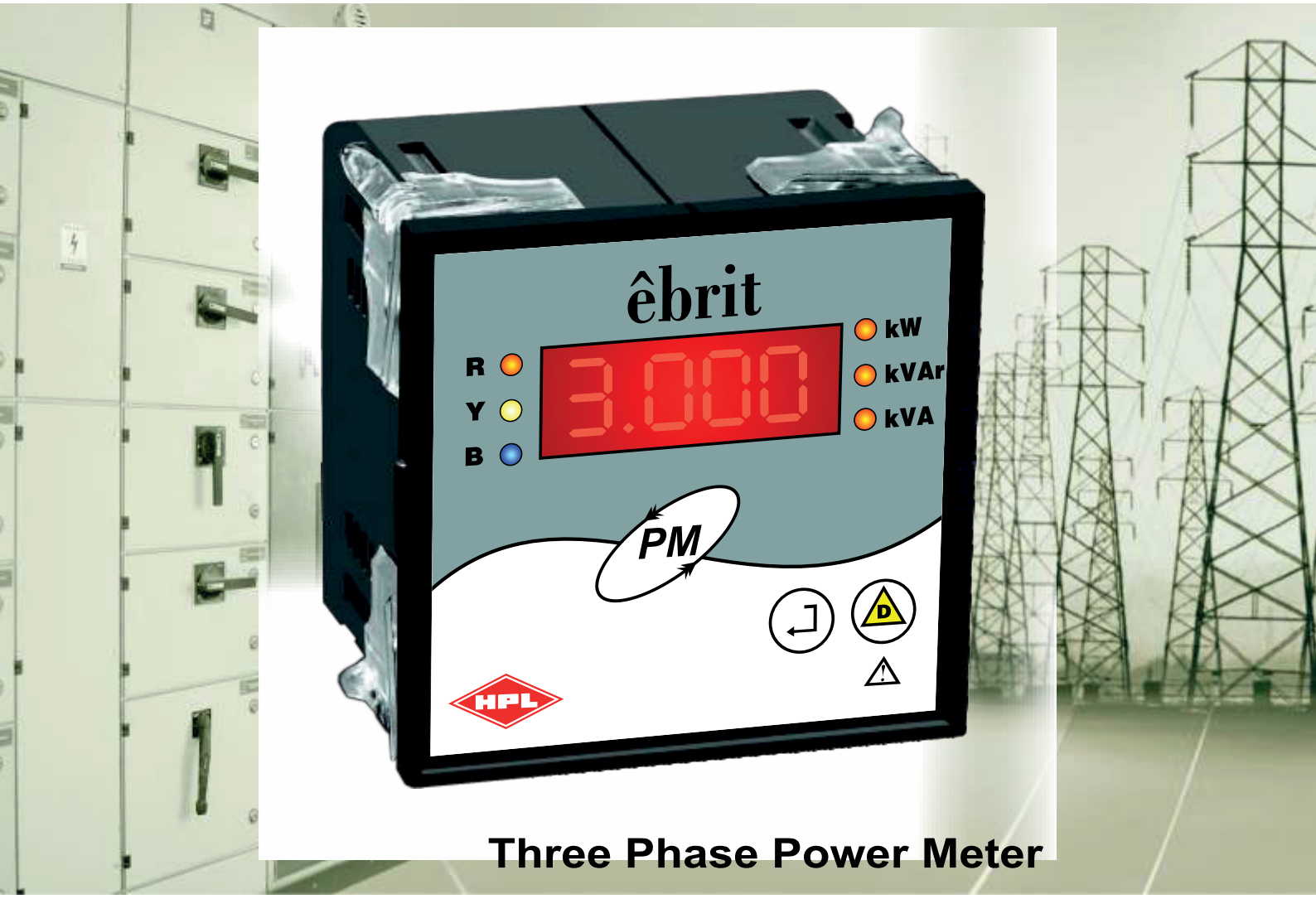
DIGITAL PANEL METERS

accuracy packed in technology



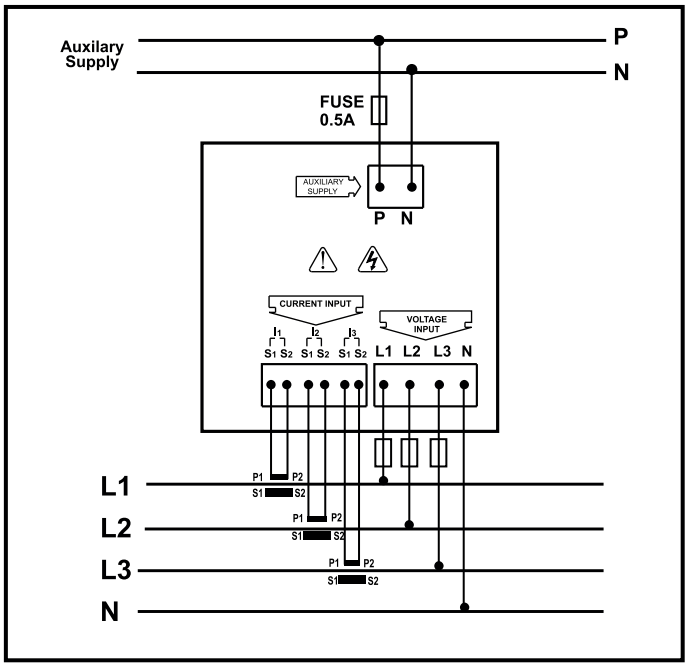
Three Phase Power Meter

Unique Features

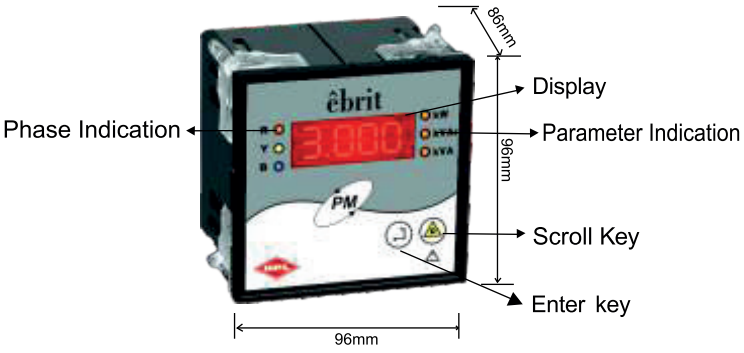
- ✓ kW, kVA, kVAr on a same meter – Site selectable
- ✓ Accuracy Maintained through out the range
- ✓ Universal auxiliary supply : 80 to 300V AC/DC
- ✓ Push button based site programming of CT ratio
- ✓ Coloured indication for R, Y & B phases
- ✓ Bright 4 Digit 14mm LED display
- ✓ Auto adjustable decimal point
- ✓ Auto scroll facility & Scroll Lock facility provided
- ✓ Password protected programming

HPL

Wiring Diagram



Front View



Ordering Information

Model	Code
3 Phase Power meter with Class 1.0 Accuracy	PAMEBRITPM31
3 Phase Power meter with Class 0.5 Accuracy	PAMEBRITPM32

Technical Specifications

A. Electrical Specification

Auxiliary Power Supply	80 – 300V AC/DC, 50 Hz
Auxiliary burden	<2.5 VA at 230V (Rated Voltage)
Voltage circuit burden	< 0.5 VA
Current circuit burden	< 0.5 VA
Input Voltage	0 – 450 V AC per Phase
Input Current	0 – 7.5 A per phase

B. Unit of Measurement

Active power	kW
Reactive power	kVAr
Apparent power	kVA

C. Measuring Range (For CT ratio = 1)

Phase wise power	0.000 – 3.300
Total Power	0.000 – 9.900

Total active power is the absolute sum of all three phase active powers

Total apparent power is the absolute sum of all three phase apparent powers

Total reactive power is the algebraic sum of all three phase reactive powers

D. Resolution

0.001 Unit	for CT Ratio 1
0.01 Unit	for CT Ratio between 1 & 10
0.1 Unit	for CT Ratio between 10 & 100
1 Unit	for CT Ratio > 100

E. Display

Display	14 mm Seven segment LED Display
Display Range	0000 to 9999
Decimal	Auto adjust depending on CT ratio

F. Mechanical

Dimensions	96mm x 96mm x 86mm
Weight	< 300g
Protection Index	IP54 (front panel)

G. Accuracy

Class 1.0	±1.0% of measured value ±1digit
Class 0.5	±0.5% of measured value ±1digit

H. Environmental

Operational temperature	0 to 60°C
Storage temperature	-20 to 70°C
Relative humidity	0 to 95%

I. Measurement Category **Category III**

J. Standards of Conformity IEC 61010 – 1
IEC 61326 – 1

K. Programming

CT Primary and secondary Programmable

CT Primary	:5 to 6000A for CT secondary 5A :1 to 1200A for CT secondary 1A
CT Secondary	: 5/1 A

L. Default Factory Settings :

CT Primary	5A
CT Secondary	5A
Power selection	Active

The Power of Technology

emfis

Digital Multi-Function Panel Mounted Meter

emfis **emfis HT**

Energy Metering, Monitoring & Management System for Industrial and Commercial Application

ISO-9001:2000

CE

- ✓ Maximum demand with real time & date
- ✓ Optically Isolated Energy pulse output
- ✓ RS - 485 port
- ✓ IP - 54 Degree of protection

Multifunction Panel Mounted Meter

HPL emfis is state of the art Multi Function Panel Mounted Meter. It uses latest Micro Controller with non-volatile memory, provides anti tamper features and communication facility at high accuracy to meet functional requirements of customers.

Special Features

- ✓ **DISPLAY** : 3 Line Backlit LCD Display of 6 digit each to display Voltage, Current, Active Power,Reactive power, Apparent power, Power factor, frequency and other parameters.
- ✓ Easy mounting on panel with slide clips
- ✓ True RMS measurement
- ✓ Finger touch - proof terminals for CT & Voltage connection
- ✓ Programming of CT & PT with password protection
- ✓ Programming of CT secondary for 5A and 1A for HT applications

Anti- tamper features:

Records energy under the following Tamper Conditions :

a) One or Two phases are removed

OR

b) Neutral is Removed

- ✓ Data retained during absence of auxiliary supply
- ✓ Optically isolated Active Energy pulse output for networking application
- ✓ Auto scroll and push button mode for display of parameters with scroll locking on any parameter.

Models Available

a) For LT 3 Phase 4 Wire application

- CT2emfA - Basic Version
- CT2emfA1 - Basic Version with Maximum Demand in kVA and kW
- CT2emfA2 - Basic Version with Maximum Demand in kVA and kW and RS 485 MODBUS

b) For HT 3 Phase 3 Wire application

- CT2emfB - Basic Version
- CT2emfB1 - Basic Version with Maximum Demand in kVA and kW
- CT2emfB2 - Basic Version with Maximum Demand in kVA and kW and RS 485 MODBUS.

Technical Specifications

Accuracy	
Active Energy	IS 13779:99/IEC 61036, CL. 1.0

Operating Condition	
Operating temperature	: -10^0C to $+55^0$C
Relative humidity	: 95% non condensing

Enclosure	
Compact	96mm x 96mm x 86 mm
Weight	320 gm approx.

Sealing facility provided

Front Panel	
Display	3 Line Backlit LCD Display of 6 digit each
Digit Height	8mm x 4.8mm
Protection Index	IP 54

Typical Applications

- Electrical Panels - Industrial HT and LT Panels,
- Motor Control Centres, Distribution Control and Relay Panels.
- Air Conditioning and Refrigeration Panels etc.
- Genset Panels
- Generation, Transmission and Distribution Panels
- Test Benches and Laboratory Equipment
- Uninterrupted Power Supplies
- Special OEM Application

Technical specifications cont....

emfis

Parameter Display

- Cummulative Active Energy kWh
- Cummulative Apparent Energy kVAh
- Cummulative Reactive energy kVArh
- Instantaneous Phase Voltages
- Line Voltages
- Instantaneous Phase Currents *(Phase wise & total)*
- Instantaneous Power Factors *(Phase wise & total)*
- Instantaneous Active Power kW *(Phase wise & total)*
- Instantaneous Apparant Power KVA *(Phase wise & total)*
- Instantaneous Reactive power kVAr (Phase wise & total)
- Average Current
- Average Active Power
- Average Apparent Power
- Average Reactive Power
- Maximum Current (Phase wise)
- Maximum Active Power
- Maximum Apparent Power
- Maximum Reactive Power
- Frequency
- Total instantaneous current
- Total instantaneous Active Power
- Total instantaneous Reactive Power
- Total instantaneous Apparent Power
- Maximum Demand* in kW and kVA with 30min integration period with date and time stamp.
- Communication RS 485 MODBUS*

** Separate Model*

Inputs

A Current

- Via Current Transformer with Primary upto 6000A configurable in multiples of 10
- Insulated secondary 5A
- Current circuit burden < 0.1VA
- Starting current 10mA (for 5A secondary)
- Overload 7A

B. Voltage

Measurement range

- 120V AC to 300V AC Phase to Neutral

Pulse Output

- Pulse duration : 100msec
- Pulse weight : 1 Pulse = 1kWh
- Potential free contact : Integrated with an external DC voltage of 5V to 24V

Auxiliary Supply

- 140V AC to 300V AC, 50Hz
  Burden < 2.5VA

emfis HT

Parameter Display

- Cumulative Active Energy kWh
- Cumulative Reactive Energy kVArh lag & lead
- Cumulative Apparent Energy
- Line Voltages.
- Instantaneous phase currents
- Total instantaneous power factor with inductive and (-) capacitive sign indication
- Total instantaneous current
- Total instantaneous Active Power
- Total instantaneous Reactive Power
- Total instantaneous Apparent Power
- Instantaneous active power phasewise
- Instantaneous reactive power Phasewise.
- Average Currents
- Average active power,
- Average reactive power
- Average apparent power.
- Maximum active power
- Maximum reactive power
- Maximum apparent power.
- Maximum Current
- Line Frequency
- Maximum Demand* in kW and kVA with 30min integration period with date and time stamp.
- Communication RS 485 MODBUS*

** Separate Model*

Inputs

A Current

- Via Current Transformer with Primary from 10A to 1200A configurable in multiples of 10 for -/1A CT Secondary
- Via Current Transformer with Primary from 50A to 6000A configurable in multiples of 10 for -/5A CT Secondary
- Insulated secondary 5A or 1A (Selectable)
- Current circuit burden < 0.1VA
- Starting current 10mA (for 5A secondary)
- Overload 7A

B. Voltage

Measurement range

- Direct Measurement 50V AC to 300V AC Phase to Phase

Measurement Via PT

- Primary upto 132 KV configurable in multiples of 110
- Secondary 110V AC Phase to Phase

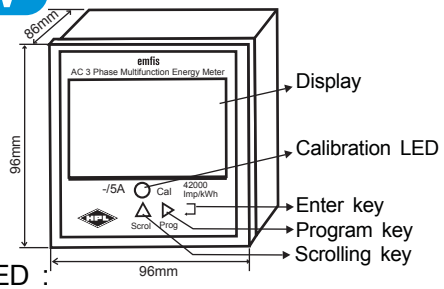
Pulse Output

- Pulse duration : 100msec
- Pulse weight : 1 Pulse=10 kWh for V ⩽ 11 KV
  : 1 Pulse= 100kWh for V>11kV
- Potential free contact : Integrated with an external DC voltage of 5V to 24V

Auxiliary Supply

- 85V AC to 275V AC, 50Hz
  Burden < 2.5VA

Front View

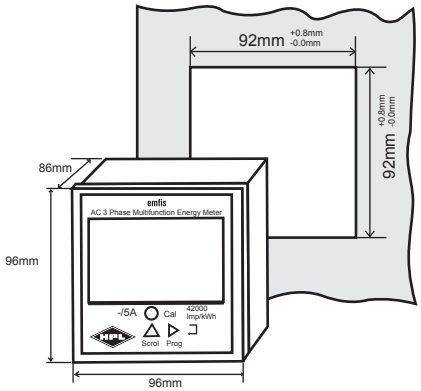


1. Display
2. Calibration LED : 42000 imp/kWh for -/5A
3. Scrolling key
4. Program key
5. Enter key

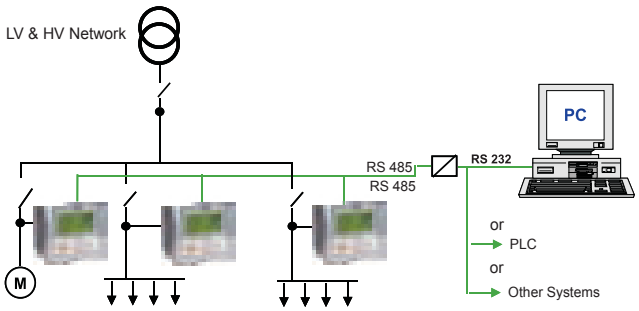
Cutout Details

The Panel Meter is to be firmly secured using the 4 transparent fixing clips.

Use 0.5 to 2.5mm² Cable for Voltage terminals
Use 3 mm² to 6mm² cable for Current terminals.



Communication

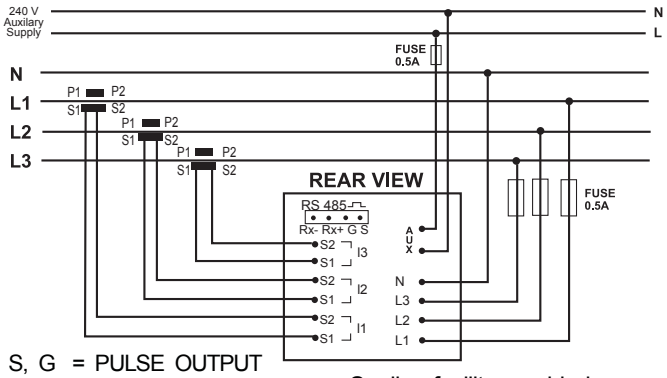


- This document is not a contract
- As part of our continuous improvement processes the specifications are subject to change without prior notice

Wiring Diagram

The meter shall be as per the following wiring diagram

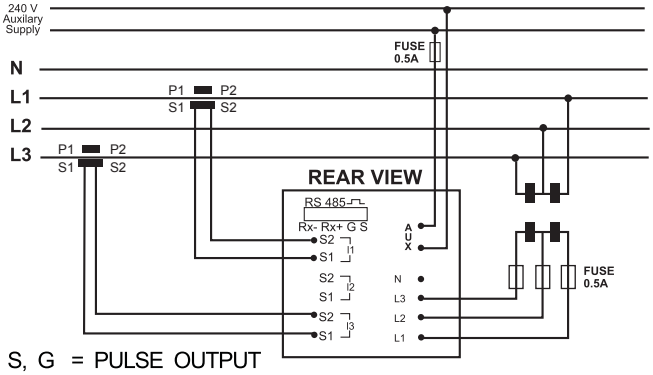
For 3 phase 4 wire emfis for LT applications



S, G = PULSE OUTPUT
Rx-, Rx+ = RS 485 PORT

- Sealing facility provided

emfis HT for 3 phase 3 wire HT applications

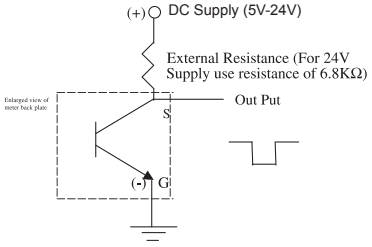


S, G = PULSE OUTPUT
Rx-, Rx+ = RS 485 PORT

- Sealing facility provided

Pulse Diagram

- Pulse Output is Open Collector Type.
- External Resistance is to be used between DC Supply point & 'S' of our pulse output.
- For 24V DC use an external resistance of 6.8KΩ .
- This external resistance value will vary depending upon the external voltage (5-24V) being given by the user.



Counter type

The Power of Technology

THREE PHASE kWh PANEL METER

SALIENT FEATURES

- Digital measurement
- CT operated energy meter
- Flush mounting compact design (96 x 96mm)
- Potential free pulse output for energy
- Conforms to IS-13779

ISO-9001:2000

CE

kWh Panel Meter - **Counter Display**

Functions

- Measures Energy accurately even under adverse supply

Range

(1) -/5A

(2) For direct reading with external CTs

50/5A 75/5A 100/5A 125/5A 150/5A 200/5A
250/5A 300/5A 400/5A 500/5A 600/5A 800/5A

Conformity to Standards

- IS 13779 / IEC - 61036

Other Features

- Instantaneous start.
- No separate Auxiliary supply is required.
- Low power consumption less than 1 watt. Saving of more than 30% over conventional meters.
- Direct reading CT operated meter
- Potential free pulse output for energy
- No frequent adjustments required.
- No mechanical wear & tear.

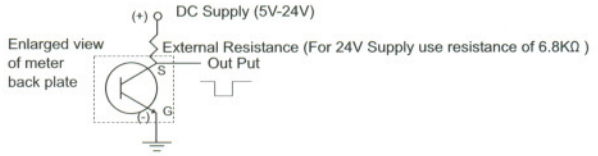
Accuracy

- Accuracy class 1.0
- Accuracy maintained even under wide voltage fluctuation form -40% to +20% of Reference Voltage.
- Accurate reading even under rapid current fluctuation.
- Accurate reading for balance as well as unbalance loads.

Anti Tamper Features

- Meter records correct energy with same accuracy under reverse current connection of one or all phases.
- Phase available indication provided.
- Meter works on neutral removal.
- Meter works on removal of any one or two phases

Connection Diagram for Pulse Output

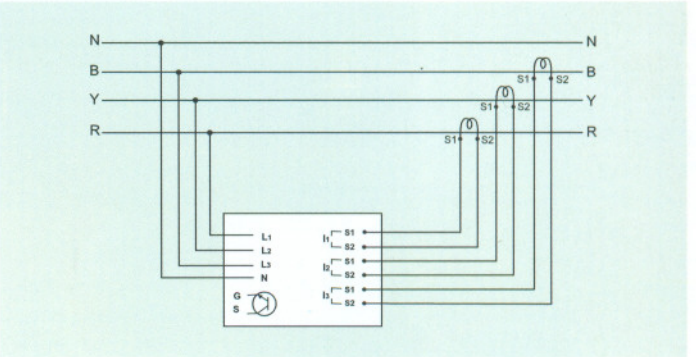


Note: 1) Our Pulse Output is **Open Collector** Type.
2) External Resistance is to be used between DC Supply point & 'S' of our pulse output.
3) For 24V DC use an external resistance of 6.8KΩ.
4) This external resistance value will vary depending upon the external voltage (5-24V) being given by the user.

Technical Specification

Type	CT-2M
Operating Voltage	240V, -40% to + 20% Phase to Neutral
Frequency Range	50 Hz ±5%
Display	5+1 digits for -/5A meter 6 digits for direct reading meter
Operating temp	-10°C. to 60°C.
Dimensions	96 X 96 X 86mm (L X W X H) (with connectors)
Power consumption	Less than 1 watt / Phase
Pulse Output	Potential free contact
Pulse Duration	100m sec (Minimum)
LEDs	Four LEDs provided on front window for following indications. - Meter Calibration. - Phase available indication for each phase. (3 Nos.)

Wiring Diagram



Panel Cutout Details

The Power of Technology

THREE PHASE kWh PANEL METER

LCD DISPLAY

SALIENT FEATURES

- Liquid Crystal Display
- CT Primary Site Selectable
- Password Protected CT Selection
- Flush Mounting Compact Design Size 96mm X 96mm
- Potential Free Pulse Output for Energy
- Conforms to IS-13779/IEC-61036

ISO-9001:2000

Functions

Measures Energy accurately even under adverse supply conditions

Range

LT 3 Phase 4Wire suitable for:

(1) -/5A CT Secondary

(2) For direct reading with external CTs of 5A Secondary. The primary is selectable from 5A to 6000A in steps of 10A

Conformity to Standards

IS 13779 / IEC - 61036

Other Features

- Instantaneous start.
- No separate Auxiliary supply is required.
- Low power consumption less than 1 watt. Saving of more than 30% over conventional meters.
- Direct reading CT operated meter
- Potential free pulse output for energy
- No frequent adjustments required.
- No mechanical wear & tear.
- Finger touch-proof terminals for CT & Voltage connections

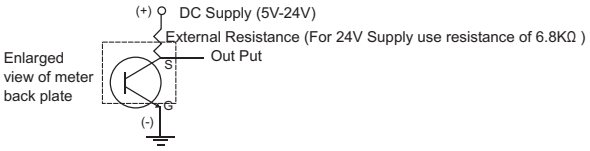
Accuracy

- Accuracy class 1.0
- Accuracy maintained even under wide voltage fluctuation form -40% to +20% of Reference Voltage.
- Accurate reading even under rapid current fluctuation.
- Accurate reading for balance as well as unbalance loads.

Anti Tamper Features

1. Records energy accurately under the following Tamper conditions:
   a) One or Two phases are removed OR
   b) Neutral is Removed OR
   c) Reverse current condition
2. Indication on LCD ' ⌐in case of CT reverse connection

Connection Diagram for Pulse output

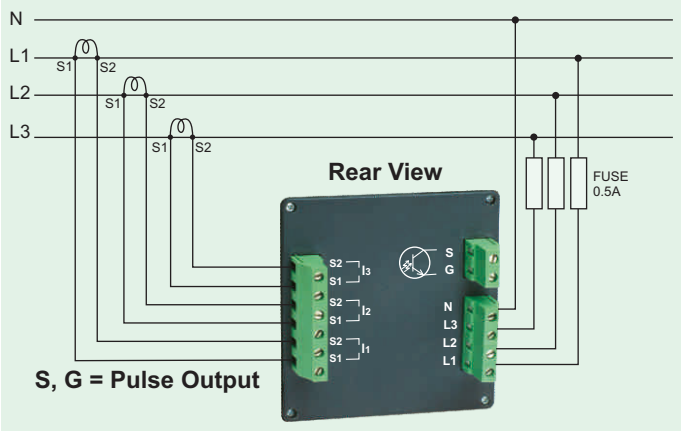


Note: 1) Our Pulse Output is **Open Collector** Type.
2) External Resistance is to be used between DC Supply point & 'S' of our pulse output.
3) For 24V DC use an external resistance of 6.8KΩ .
4) This external resistance value will vary depending upon the external voltage (5-24V) being given by the user.

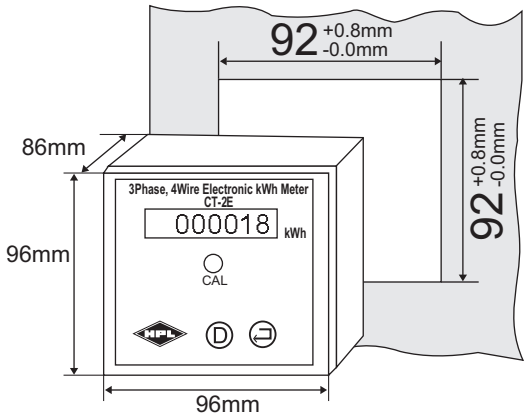
Technical Specification

Type	CT-2E
Operating Voltage	240V, -40% to + 20% Phase to Neutral
Frequency Range	50 Hz ±5%
Display	6+1 digits for -/5A meter 6 digits for direct reading meter
Operating temp	-10°C. to 55°C.
Dimensions	96 X 96 X 86mm (with connectors)
	(L X W X H)
Power consumption	Less than 1 watt/Phase
Programing Keys	Ⓓ For selection ⏎ For Confirmation
Pulse Output	Potential free contact
Pulse Duration	100m sec (Minimum)
Pulse Weight	1 Pulse = 1 kWh for direct reading
	= 100 wh for -/5A meter

Wiring Diagram



Panel Cutout Details



HPL

The Power of Technology

Electronic Energy Meters

An accurate & reliable instrument

Salient Features

- ✓ Instantaneous Start
- ✓ Low power consumption less than 1wt. saving of more than 30% over coventional meters
- ✓ Meter records correct energy with same accuracy under reverse current connection
- ✓ LCD / LED's indication for current reversal tampering and phase availability
- ✓ Optional: Optical port / RS 232 communication for LCD Meter
- ✓ An ISO-9001:2000 Company
- ✓ Suitable for AMR with meter with optical port.

BSI REGISTERED UKAS QUALITY MANAGEMENT 003

ISO-9001:2000

The Power of Technology

Electronic Energy Meter - Single Phase

MODEL SPEM 01 : Available in class 1 accuracy as per IS : 13779

Ratings Available

2.5-10A, 5-20A, 5-30A,
10-40A, 10-60A, 20-80A
-/5A CT Operated

*Other rating on request

Design

- Asic based digital technology ensures superior & drift free long term performance and reliability.
- Tamper proof design
- No frequent adjustments required
- No mechanical wear & tear.
- Immune to effects of external magnetic field as per IS : 13779

Accuracy

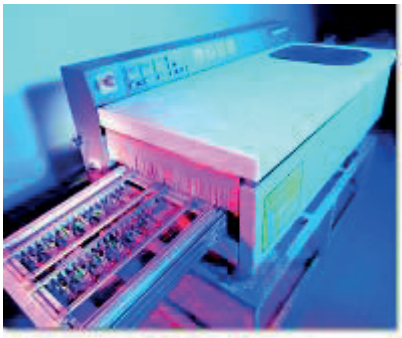
- Accuracy irrespective of mounting position
- Accuracy maintained even under wide voltage fluctuation from -40% to +20% of Vref.
- Accurate reading even under rapid current fluctuation

Anti Tamper Features

- Meter Records correct energy with same accuracy under reverse current connection
- For Indication please refer the technical specification.
- Phase available indication provided
- Meter works accurately under earth load condition

Technical Specification - Single Phase

Reference voltage	240V	
Reference Frequency	50Hz	
Starting current	0.4% of basic current for direct connected meters and 0.2% of basic current for CT operated meters	
Operating temp.	-10°C to 60°C	
Overload Capacity	400% and 600% of basic current for direct reading	
Power consumption	Less than 1.0 watt	
Versions Available		
Display Type	**Electromechanical counter**	**LCD display**
Sheet steel enclosure / Rating	2.5/10A, 5/20A, 5/30A, 10/40A, -/5A(CT operated)	LCD display meters available only in polycarbonate
Polycarbonate enclosure Rating	2.5/10A, 5/20A, 5/30A, 10/40A, 10/60A, -/5A (CT operated)	2.5/10A, 5/20A, 5/30A, 10/40A, 10/60A, CT operated meters available with -/5A and CT secondary in multiples of 5 upto 500/5A
Indications	LEDs provided on front window for following indications: • Meter calibration • Reverse indication • Phase available indication and • Earth tamper indication	LEDs provided on front window for : • Meter calibration LCD icons indication for the following: • Reverse indication • Phase available indication and • Earth tamper indication



The Power of Technology

Electronic Energy Meter - Three Phase

MODEL PPEM 01 : Available in class 1 accuracy as per IS : 13779

Ratings Available

5-20A, 10-40A, 10-60A,
10-80A
-/5A CT Operated

*Other rating on request

Technical Specification - Three Phase

Reference voltage	3 x 240V	
Reference Frequency	50Hz	
Starting current	0.4% of basic current for direct connected meters and 0.2% of basic current for CT operated meters	
Operating temp.	-10°C to 60°C	
Enclosure	Poly carbonate	
Overload Capacity	400% and 600% of basic current for direct reading	
Power consumption	Less than 1.0 watt	
Versions Available		
Display Type	**Electromechanical counter**	**LCD display**
Rating	• Direct connected:5/20A, 10/40A, 10/60A • CT operated:-/5A, 50/5A, 75/5A, 100/5A, 125/5A, 150/5A, 200/5A, 250/5A, 300/5A, 400/5A, 500/5A, 600/5A, 800/5A	• Direct connected: 5/20A, 10/40A, 10/60A • CT operated meters available with -/5A and CT secondary in multiples of 5 upto 500/5A
Indications	LEDs provided on front window for following indications: • Meter calibration • Reverse indication and • Phase available indication	LEDs provided on front window for: • Meter calibration LCD icons indication for the following: • Reverse indication • Phase available indication and

Design

- Asic based digital technology ensures superior & drift free long term performance and reliability.
- Tamper proof design
- No frequent adjustments required
- No mechanical wear & tear.
- Immune to effects of external magnetic fieldas per 13779.

Accuracy

- Accuracy irrespective of mounting position.
- Accuracy maintained even under wide voltage fluctuation from -40% to +20% of Vref.
- Accurate reading even under rapid current fluctuation
- Accurate for balance as well as unbalance loads.

Anti Tamper Features

- Meter Records correct energy with same accuracy under reverse current connection.
- For Indication please refer the technical specification.
- Phase available indication provided

Moulding Division

Supplied more than 5 million Pilfer Proof Meter Boxes to various utilities / Electricity Boards, such as MPSEB, CSEB, DHBVN, APSEB, MSEDCL, J&K, ASEB etc.

Meter Cupboard with Hinge type locking arrangement moulded in Opaque Engineering Plastic

Meter Cupboard with Hinge type locking arrangement moulded in Transparent Engineering Plastic

Meter Cupboard with Snap fit arrangement moulded in Poly Carbonate

Salient Features

- ✓ Made of UV stabilised transparent polycarbonate / Flame retardant high grade engineering plastic
- ✓ Available in Transparent and Non transparent models
- ✓ Unique arrangement for pilfer proof interlocking with push fit and hinge type boxes
- ✓ Suitable for indoor and outdoor applications
- ✓ Complying to IS:14772 and tested at CIPET
- ✓ Sealable optical port provision on the cover of the meter box
- ✓ Sealable push buttons provided on the box cover
- ✓ Latest state of the art in house tool room to design meter boxes for special application
- ✓ Large capacity in house moulding for quick and bulk supplies

The Power of Technology

CT-2EMG Plus
Multi Function Dual Source Meter

Salient Features

- ✓ One meter records Active Energy of Two Sources
- ✓ Measures over 45 Parameters including Voltage, Current, Frequency, kW, kVA; kVAr, PF, Active Energy for Mains, Generator and Total, MD in kW and kVA for Mains and Generator separately with date and time, Run Hours, Power on Hours
- ✓ Relay outputs for V, I, kW, kVA, F, kW Demand, KVA demand
- ✓ Last 6 months history parameters for kWh and MD through communication
- ✓ Last 10 event logging for Mains / Generator switching

Parameters on Display

- Phase to Neutral Voltage
- Phase to Phase Voltage
- Current Phase wise
- Frequency
- Active Power Phase wise
- Reactive Power Phase wise
- Apparent Power Phase wise
- Total Active Power
- Total Reactive Power
- Total Apparent Power
- Power Factor Phase wise
- System Power Factor
- Active Energy of Mains
- Active Energy of Generator
- Total Active Energy
- Mains kW MD with Date & Time
- Mains kVA MD with Date & Time
- Generator kW MD with Date & Time
- Generator kVA MD with Date & Time
- Run hour for Mains and Run Hour for Generator
- Power on Hours
- Date and Time

Parameters on Communication

- All instantaneous parameters
- 6 months history for kWh for Mains and Generator
- 6 months history for MD with Date and Time for Mains and Generator
- Last 10 event logging from Mains to Generator
- Last 10 event logging from Generator to Mains

Parameters for Relay outputs

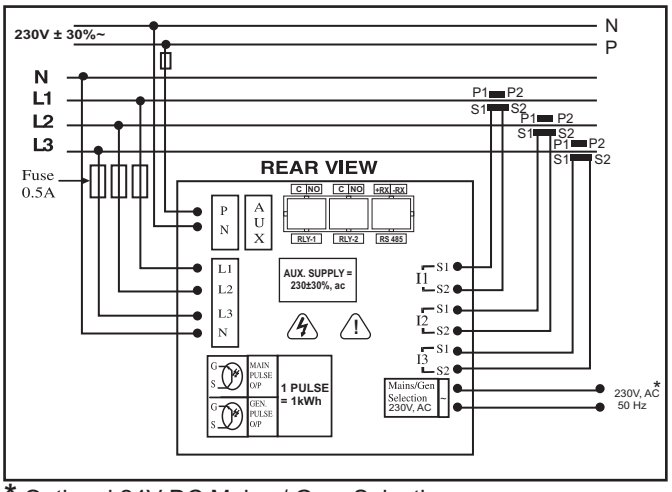
There are 2 relay outputs available which can be programmed for the following :

1) Source of Supply – Mains or Generator or Both or None
2) Parameter (Voltage, Total kW, Total kVA, F, kW Demand, kVA Demand, Total Current)
3) Higher Threshold
4) Lower Threshold
5) Time Delay
6) Hysteresis
7) NO/ NC state

Models Available

Description	Mains/ Gen Selection	Class 1.0 (Ref.)	Class 0.5 (Ref.)
Basic Version	230V ac	DUSCT2EMGPC01	DUSCT2EMGPC05
Basic Version with Rs485	230V ac	DUSCT2EMGPC11	DUSCT2EMGPC15
Basic Version with RS485 with 2Nos Relay output	230V ac	DUSCT2EMGPC21	DUSCT2EMGPC25
Basic Version	24V dc	DUSCT2EMGPD01	DUSCT2EMGPD05
Basic Version with Rs485	24V dc	DUSCT2EMGPD11	DUSCT2EMGPD15
Basic Version with Rs485 with 2Nos Relay output	24V dc	DUSCT2EMGPD21	DUSCT2EMGPD25

Wiring Diagram for CT Operated Meter



* Optional 24V DC Mains / Gen. Selection

Technical Specifications

Enclosure :	
Dimensions	96mm x 96mm x 86mm
Front Panel	
Display	Single Line 7 digit
Backlit LCD Display	
Digit Height	8mm x 4.8mm
Protection Index	IP 54 (front Panel)
Inputs	
Current	
CT primary	: 5 to 6000 for CT Primary 5A : 1 to 1200 for CT Primary 1A
CT Secondary	: 5 / 1A
Current circuit burden	: < 0.25VA
Overload	: 7A
Voltage:	
Measuring Range	: 120V AC to 300V AC (P-N)
Voltage current Burden	: < 0.1VA
Auxiliary Supply	
	230V AC ± 30%, 50 Hz Burden < 2.5 VA at 230V
Pulses Output for Mains and Generator Supply:	
Duration	100msec(min.)
Width	1Pulse=1kWh
Potential free Contact	Interrogated with an external DC Voltage of 5V to 24V
Relay Specification	
Relay Rating	5A / 230 V AC

Cutout Diagram