EasyLogic™ EM6400NG+

NHA2768501-14

Schneider Electric

EasyLogic™ EM6400NG+ meter

The EM6400NG+ meters offer comprehensive 3-phase electrical instrumentation and load management features in a compact and rugged package.

Retain this installation sheet throughout the lifecycle of the product.

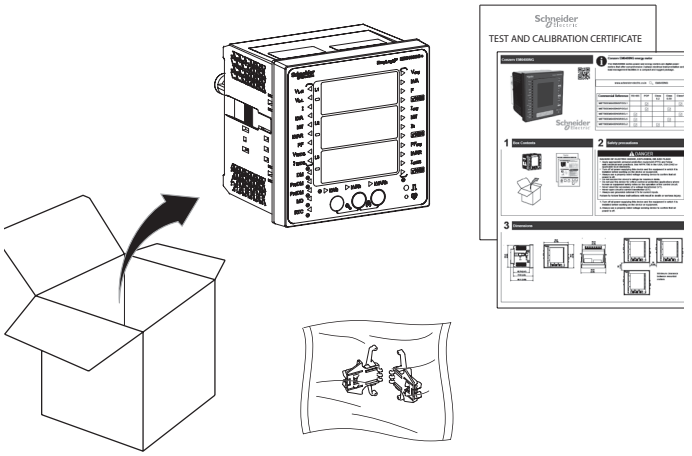
To download user manual and other documentation, visit *www.se.com/in*. Type EM6400NG+ in the search field.

Refer to the user manual when you see this icon.

Commercial Reference	RS-485 / RTC	POP	Class 0.2	Class 0.5S	Class1
METSEEM6400NGPOCL1		☑			☑
METSEEM6400NGPOCL5		☑		☑	
METSEEM6400NGRSCL1	☑				☑
METSEEM6400NGRSCL5	☑			☑	
METSEEM6400NGRSCL2	☑		☑		

Accuracy classes as per IEC 62053-21 and IEC 62053-22

1 Box contents



2 Safety precautions

⚠⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

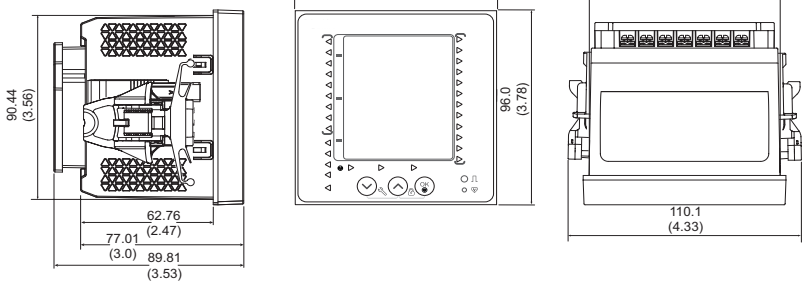
- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E in the USA, CSA Z462 or applicable local standards.
- Turn off all power supplying this device and the equipment in which it is installed before working on the device or equipment.
- Always use a properly rated voltage sensing device to confirm that all power is off.
- Do not exceed the device's ratings for maximum limits.
- Do not use this device for critical control or protection applications where human or equipment safety relies on the operation of the control circuit.
- Never short the secondary of a voltage transformer (VT).
- Never open circuit a current transformer (CT).
- Always use grounded external CTs for current inputs.
- Do not install CTs in equipment where they exceed 75% of the wiring space of any cross-sectional area in the equipment.
- Do not install CTs in areas where ventilation openings may be blocked or in areas of breaker arc venting.
- Do not install CTs using Class 2 wiring methods or connect to Class 2 equipment. See NFPA 70.
- Secure CT secondary conductors to ensure they do not contact live circuits.
- Use listed Energy monitoring current transformers for UL approval.

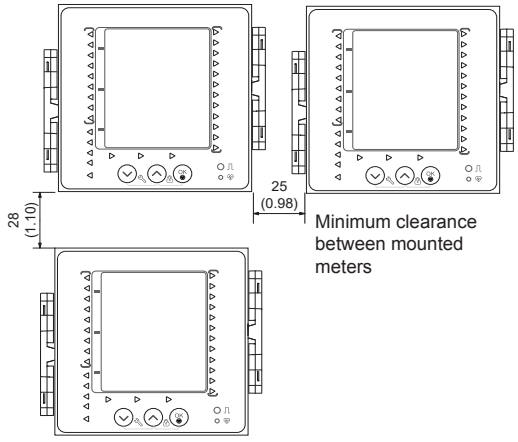
Failure to follow these instructions will result in death or serious injury.

1. Turn off all power supplying this device and the equipment in which it is installed before working on the device or equipment.
2. Always use a properly rated voltage sensing device to confirm that all power is off.
3. If you have received a damaged product, contact Customer Care before using it.

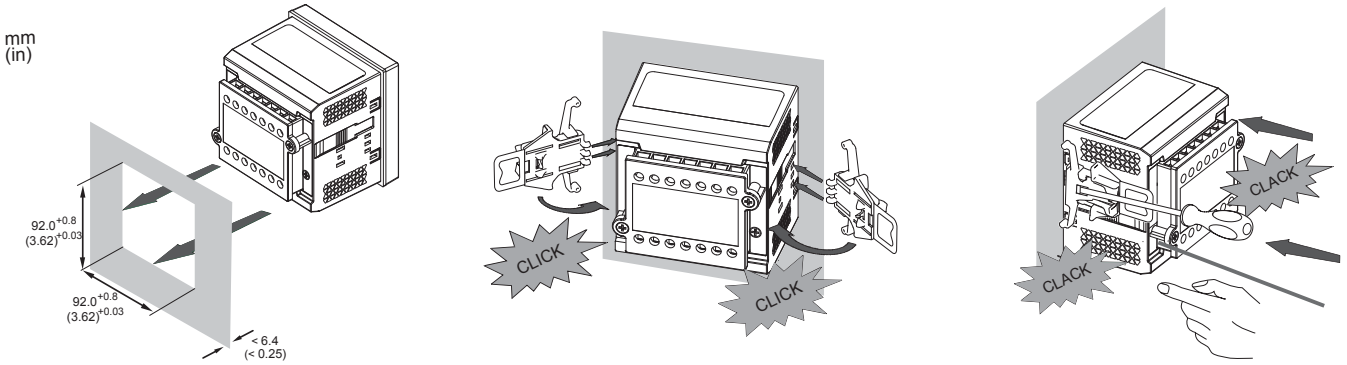
3 Dimensions

mm
(in)

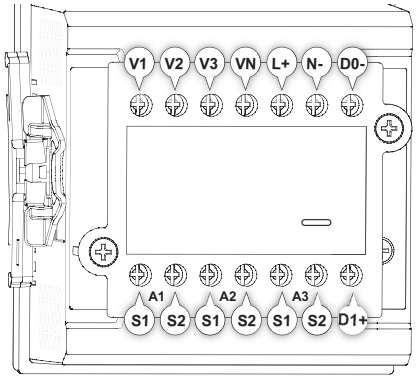




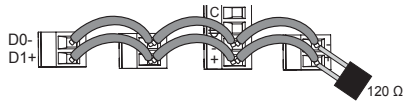
4 Mounting



5 Wiring



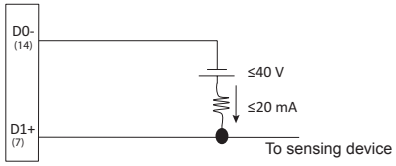
RS-485

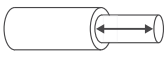
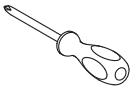
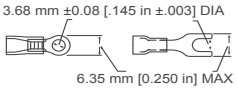


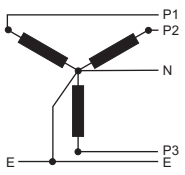
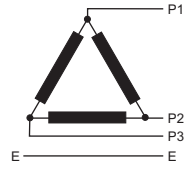
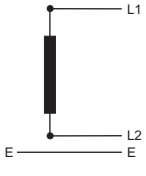
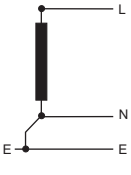
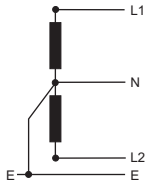
Straight-line topology only. Loop or ring topology is not supported.

Note: Resistor is an optional accessory that you can order separately. To terminate a series, it is recommended to use a 120 Ω / 0.5 W resistor.

POP

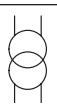


					
Current terminals	A1 (S1, S2) A2 (S1, S2) A3 (S1, S2)	2.08 - 3.31 mm² (14 - 12 AWG)		⊕ (PH2)	0.9 - 1.0 N·m (8.0 - 9.0 in·lb) *Note: Exceeding torque over 1.0 N·m (8.0 - 9.0 in·lb) may damage the screw or the screw head.*
Voltage terminals	V1, V2, V3, VN	0.82 - 3.31 mm² (18 - 12 AWG)	7 mm (0.28 in)		
Control power	L+, N-				
RS-485 / POP	D1+, D0-	0.33 - 3.31 mm² (22-12 AWG)			

Power system configuration types*					
Maximum voltage at terminals (UL / IEC)	≤ 277 V L-N / 480 V L-L (CAT III)	≤ 480 V L-L (CAT III)	≤ 240 V L-L (CAT III)	≤ 277 V L-N (CAT III)	≤ 240 V L-N / 480 V L-L (CAT III)
	≤ 347 V L-N / 600 V L-L (CAT II)	≤ 600 V L-L (CAT II)	≤ 600 V L-L (CAT II)	≤ 347 V L-N (CAT II)	≤ 347 V L-N / 600 V L-L (CAT II)

Recommended cable material: Copper wire

* The meter display allows configuration of 5 power system types, additional 8 can be configured through ION setup.

	VT	CT
IEC		
ANSI		

Ⓐ 250 mA fuses and disconnect switch#

Ⓑ Shorting block#

Ⓒ VT primary fuses and disconnect switch#

Clearly label the device's disconnect circuit mechanism and install it within easy reach of the operator.

The fuses / circuit breakers must be rated for the installation voltage and sized for the available fault current.

Fuse for neutral terminal is required if the source neutral connection is not grounded.

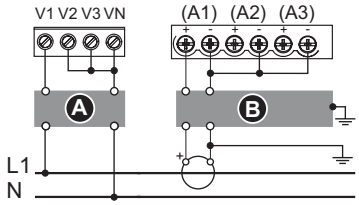
♦ Indicates wiring for a balanced system

\# Not supplied with meter

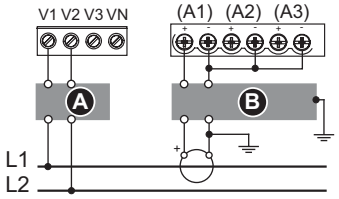
5 Wiring

1PH

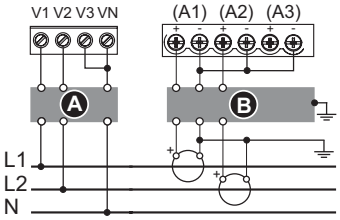
1PH2W LN



1PH2W LL

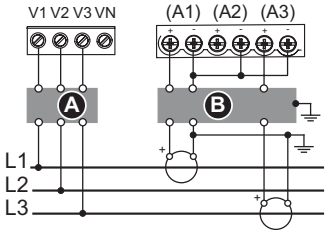


1PH3W LL with N

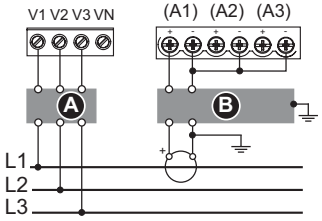


3PH3W

2CT

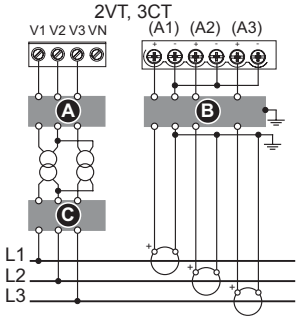


1CT ♦

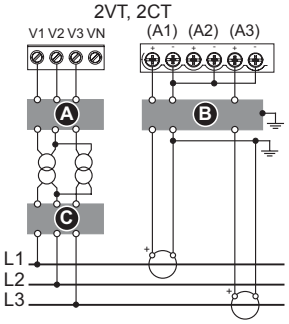


3PH3W

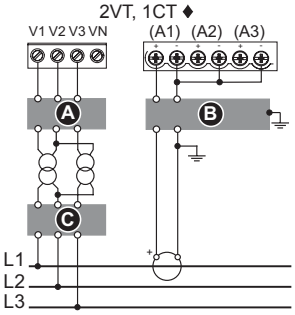
2VT, 3CT



2VT, 2CT

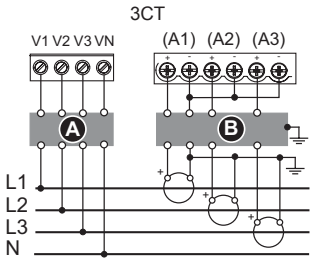


2VT, 1CT ♦

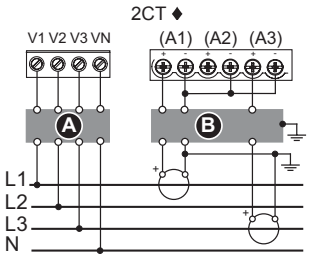


3PH4W

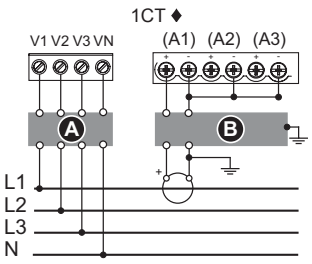
3CT



2CT ♦

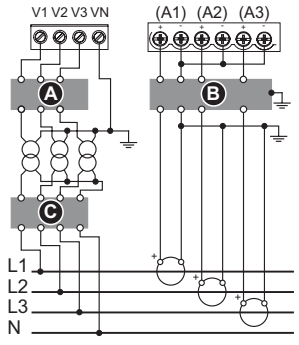


1CT ♦

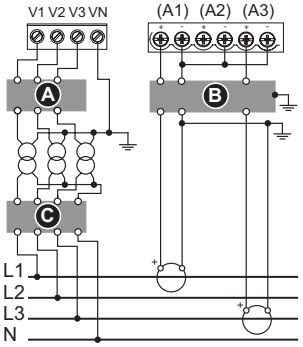


3PH4W

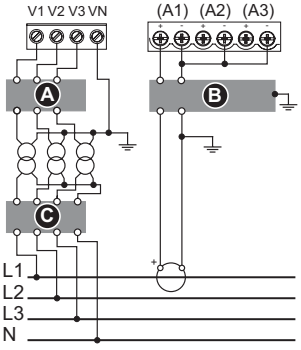
3VT, 3CT



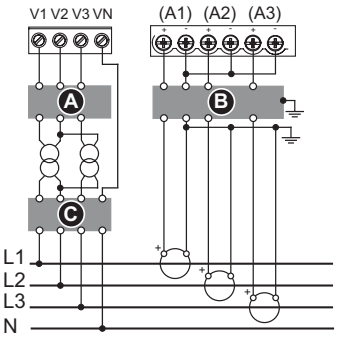
3VT, 2CT ♦



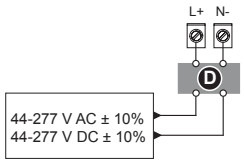
3VT, 1CT ♦



2VT, 3CT ♦



6 Control power



D 250 mA fuses

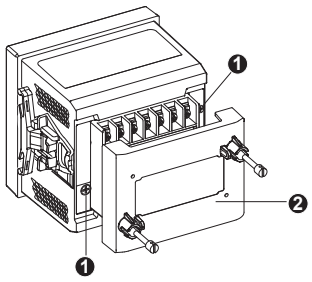
L+ and N- are non-polarized. If using an AC power supply with neutral, connect neutral to the meter's N- terminal.

Always use a fuse on L+. Fuse N- when connecting an ungrounded neutral to the control power.

If using a control power transformer, fuse both primary and secondary sides of the transformer.

The fuses / circuit breakers must be rated for the installation voltage and sized for the available fault current.

7 Tamper-resistant cover



1 Sealing points

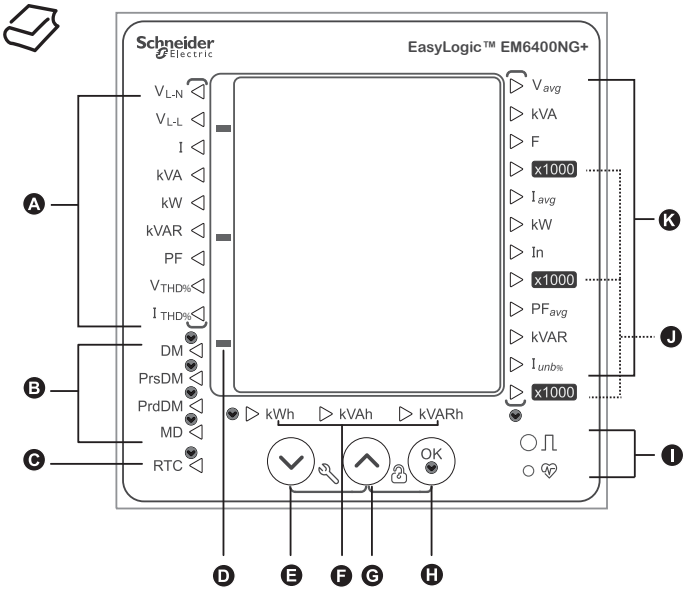
2 Tamper-resistant cover

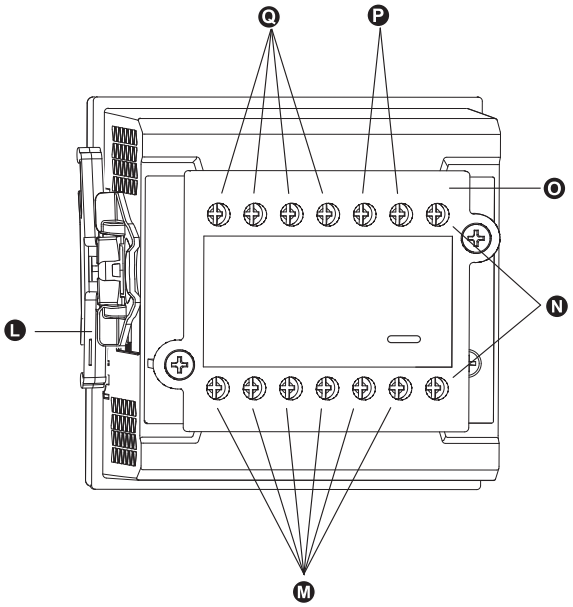
To install the tamper-resistant cover:

1. Remove the protective cover.
2. Place the tamper-resistant cover over the terminal block.
3. Tighten the screws at the sealing points to seal the cover.

Note: The tamper-resistant cover is an optional accessory (METSEDM5240TK) that you can order separately.

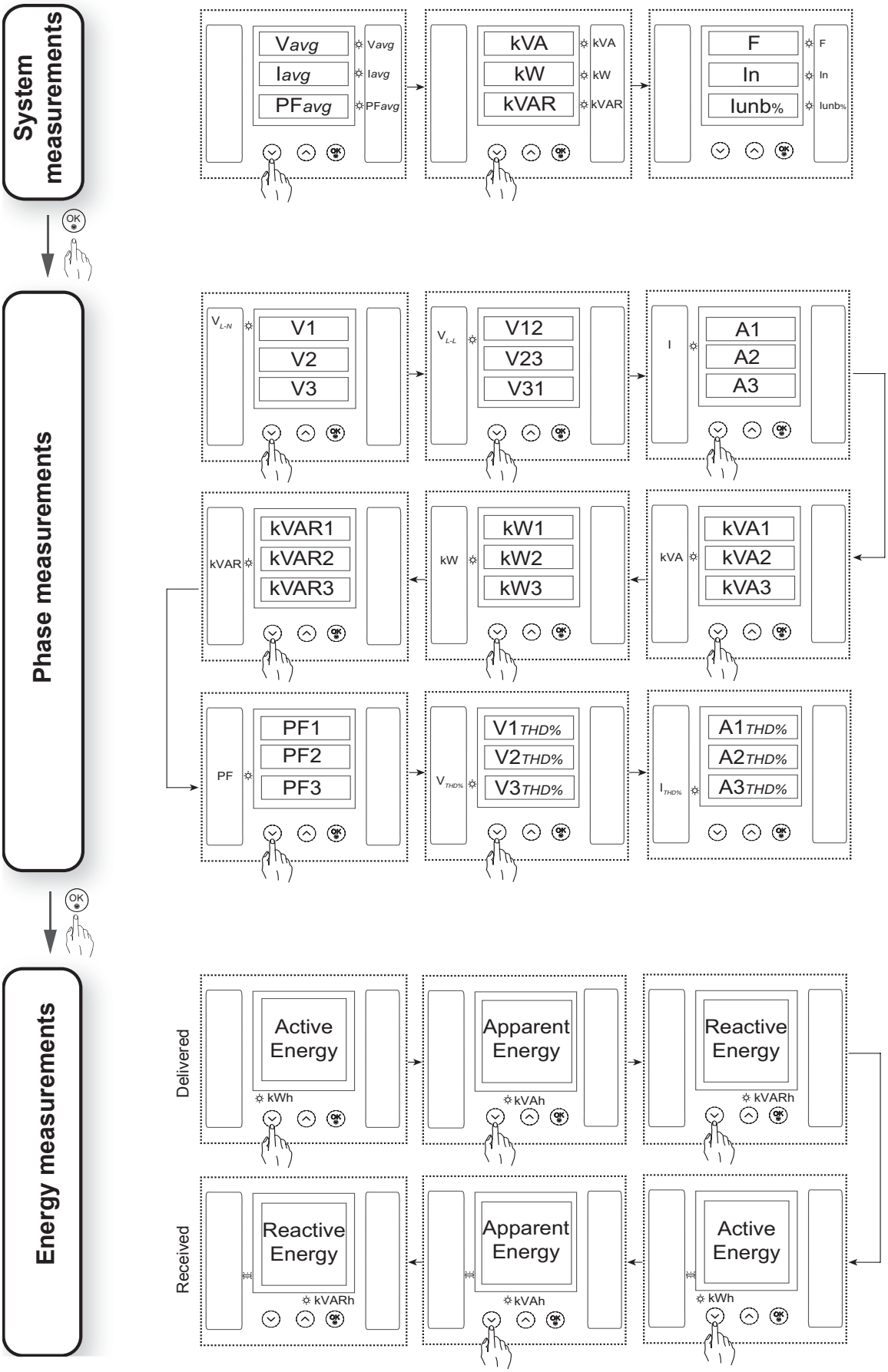
8 Description

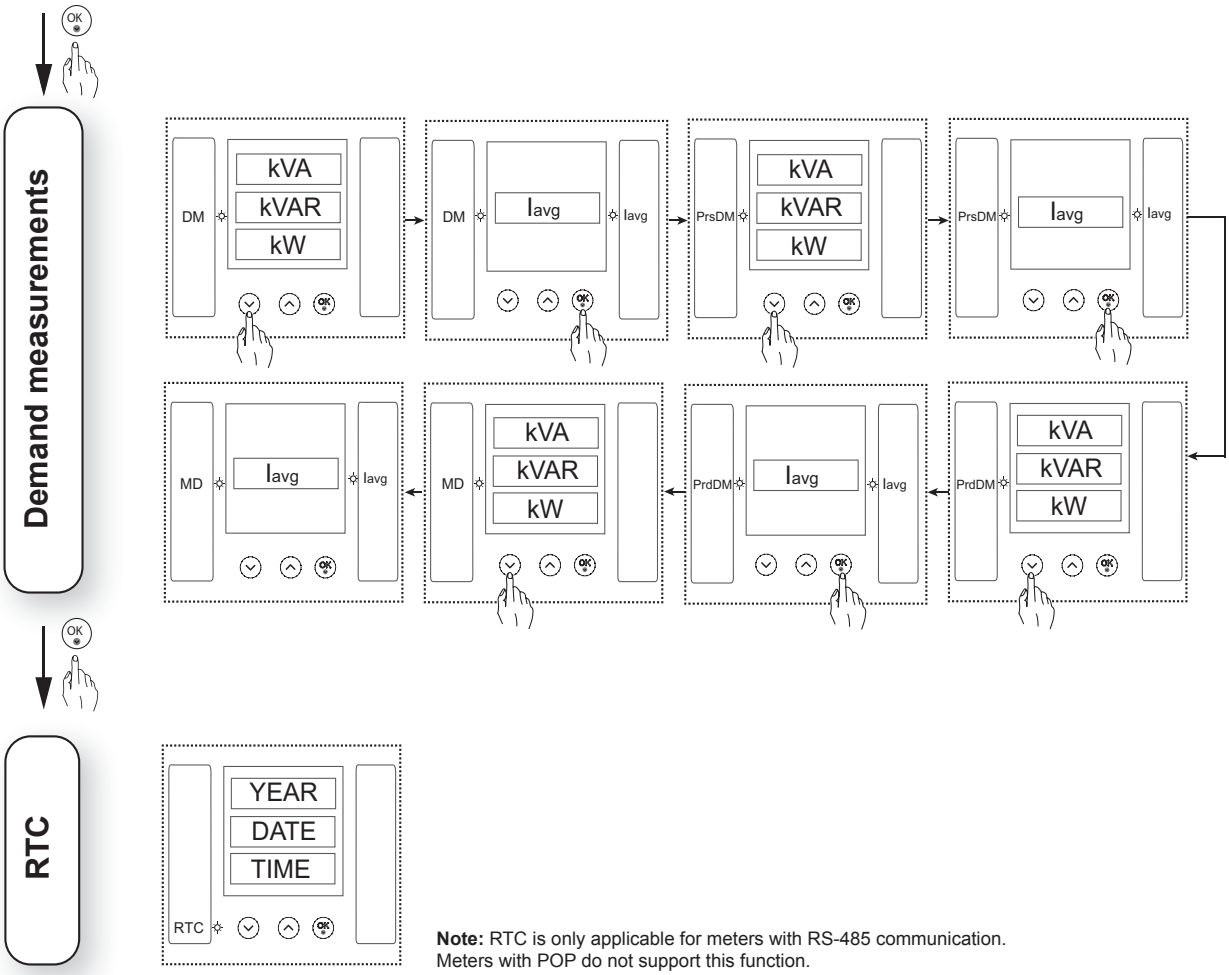




A	Phase measurements	VL-N, VL-L, I, kVA, kW, kVAR, PF, VTHD, ITHD
B	Demand measurements	DM, PrsDM, PrdDM, MD
C	RTC	Date and time
D	Negative indicator	
E	Navigation key	To navigate down
F	Energy readings	Apparent energy, Active energy, and Reactive energy
G	Navigation key	To navigate up
H	OK / Navigation through measurement parameters	Enter key
I	Energy pulsing LED (Red), Heartbeat / communications LED (Green)	
J	x 1000 indicator	
K	System measurements	Vavg, kVA, F, Iavg, kW, In, PFavg, kVAR, Iunb
L	Retainer clip	
M	Input current terminals	A1(S1, S2), A2 (S1, S2), A3 (S1, S2)
N	RS-485 communications/ POP terminals	D1+, D0-
O	Protective cover	
P	Auxiliary power supply (control power) terminals	L+, N-
Q	Input voltage terminals	V1, V2, V3, VN

9 Meter navigation



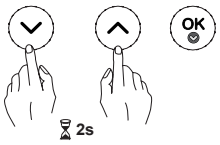


Note: RTC is only applicable for meters with RS-485 communication. Meters with POP do not support this function.

Basic setup

1

Press and hold the navigation keys simultaneously for 2 seconds.

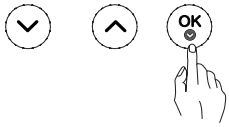


2

Enter the password. The default password is 0000.

3

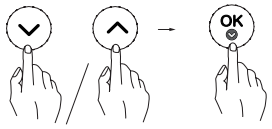
Press OK.



4

Press the Up or Down key to navigate to the required parameter.

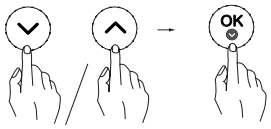
Press OK to select.



5

Use the Up or Down key to change the settings.

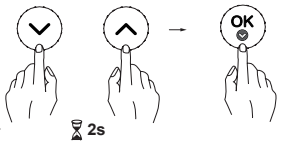
Press OK.



6

Press and hold the navigation keys simultaneously for 2 seconds.

Press OK to save your settings.



Note:

- Press and hold the navigation keys simultaneously for 2 seconds to exit Setup.
- Press and hold the Up or Down key for 2 seconds to move the cursor to the next digit or decimal point. Once selected, press the Up or Down key to move the decimal point or to change the digit.

Setup parameters

tYPE = Power System Configurations;
Input range = 1P.Ln, 1P.LL, 1P.3L, 3P.3L, 3P.4L; Default value = **3P.4L**
Note: Other power system configurations can be set through ION setup.

VT= VT Connect; Input range = no.Vt, 2.VT, 3.VT, 1.VT;
Default value = **no.Vt**
Note: The VT Connect parameters are enabled based on selected power system configuration.

Vt.Pr = Primary Voltage (V L-L); Input range = 0100 V to 999000 V;
Default value = **120 V**
Note: Vt.Pr will not be enabled if VT Connect is no.VT.

Vt.SE = Secondary Voltage (V L-L); Input range = 100, 110, 115, 120; Default value = **120 V**
Note: Vt.SE will not be enabled if VT Connect is no.VT.

Ct = CT Terminal; Input range = A.1, A.2, A.3, A.12, A.23, A.31, A.123; Default value = **A.123**
Note: The Ct terminal parameters are enabled based on the selected power system and VT connect configuration.

Ct.Pr = CT Primary; Input range = 1 A to 32760 A;
Default value = **100 A**
Note: Ct primary can be set to 32767 A through ION setup.

Ct.SE = CT Secondary; Input range = 1A, 5 A;
Default value = **5 A**

FrEq = System Frequency; Input range = 50 Hz, 60 Hz;
Default value = **50 Hz**

A.SuP = Suppression current; Input range = 5 mA to 99 mA;
Default value = **5 mA**

Ct.Sq = CT Sequence; Input range = A.123, A.321, A.312, A.231, A.213, A.132; Default value = **A.123**
Note: The CT Sequence is applicable for 3P.3L and 3P.4L configurations and A.123 CT Terminal value. If you change the Power System Configurations or CT Terminal value, then the CT sequence resets to the default value.

Ct.rV = CT Polarity Correction; Input range = nonE, A1, A.2, A.3, A.12, A.23, A.31, A.123; Default value = **nonE**
Note: The CT Polarity Correction parameters are enabled based on selected Power System Configurations and CT Terminal value. If you change the Power System Configurations or CT Terminal value, then the CT Polarity Correction resets to the default value.

Pd = Power Demand; Input range = tHEr, t.Sb, t.b, t.rb, CS.b, CS.rb, CL.b, CL.rb;
Default value = **t.b**

Pd.CY = Power Demand Period; Input range = 1 to 60 mins;
Default value = **15 mins**
Note: The demand update time is available for rolling block methods under power demand.

Pd.ut = Power Demand Update Time; Input range = 1 to 60 mins;
Default value = **15 mins**
Note: The power demand update time is available for rolling block methods under power demand.

Pd.SY = Power Demand Clock Sync Time; Input range = hh:mm;
Default value = **00.00**
Note: The clock sync time is available only for clock sync block and clock sync roll block methods under power demand.

Ad = Current Demand; Input range = tHEr, t.Sb, t.b, t.rb, CS.b, CS.rb, CL.b, CL.rb;
Default value = **t.b**

Ad.CY = Current Demand Period; Input range = 1 to 60 mins;
Default value = **15 mins**

Ad.ut = Current Demand Update Time; Input range = 1 to 60 mins; Default value = **15 mins**
Note: The current demand update time is available for rolling block methods under current demand.

Ad.SY = Current Demand Clock Sync Time;
Input range = hh.mm; Default value = **00.00**
Note: The clock sync time is available only for clock sync block and clock sync roll block methods under current demand.

LEd = LED; Input range = Off, EnrG;
Default value = **oFF**

L.PLS = LED Pulse Weight;
Input range = 1 to 9999000(Pulse per k_h);
Default value = **0001**
Note: Pulse per energy values cannot be viewed if LED is off.

L.PAr = LED Energy Parameter; Input range = d.Wh, r.Wh, t.Wh, d.Vrh, r.Vrh, t.Vrh, d.VAh, r.VAh, t.VAh, nonE;
Default value = **d.Wh**
Note: LED parameter values cannot be viewed if LED is off.

PASS = Password; Input range = 0000 - 9999;
Default value = **0000**

RS-485

CoM = Communication; Input range = ON, OFF, RTFT;
Default value = **on**
Note: Id, baud rate, and parity cannot be viewed if com is off.
Note: Retrofit (RTFT) - For configuring legacy communication data models

Id = Unit Id; Input range = 1 to 247;
Default value = **0001**

bAud = Baud Rate; Input range = 4800, 9600, 19200, 38400;
Default value = **19200**

PrtY = Parity; Input range = EVEn, odd, nonE;
Default value = **EVEn**

YEAr = Year; Input range = YYYY (2000 to 2127);

dAtE = Month.Day; Input range = MM.DD
MM(month) - 01 to 12, DD(day) - 01 to 31;

hour = Hours.Minutes; Input range = HH.MM
HH(hours) - 00 to 23, MM(minutes) - 00 to 59;

POP

PoP = Communication Pulse Output;
Input range = Off, EnrG; Default value = **EnrG**
Note: Pulse weight and energy parameter cannot be viewed if POP is off.

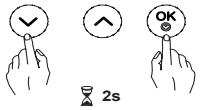
P.PLS = POP Pulse Weight; Input range = 1 to 9999000(k_h);
Default value = **0200 k_h**

P.PAr = POP Energy Parameter; Input range = Wh, Vrh, VAh;
Default value = **Wh**

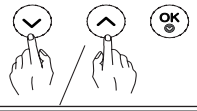
→ Optional Parameters

Diagnostics pages

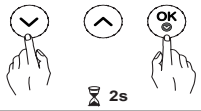
1 Press and hold the Down key and OK key simultaneously for 2 seconds.



2 Press the Up or Down key to view the required pages.



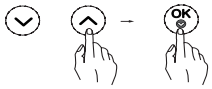
3 Press and hold the Down key and OK key simultaneously for 2 seconds to exit Diagnostics page.



Clear

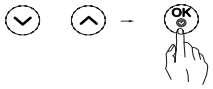
1. Press and hold the OK key for 2 seconds.

2. Press the Up key and press OK.

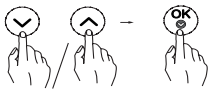


3. Enter the password. The default password is 0000.

4. Press OK.



5. Press the Up or Down key to navigate to the required parameter. Press OK to reset.

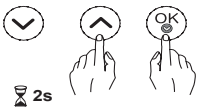


6. Screen displays DONE. The selected parameter value is cleared.

7. Press and hold the OK key for 2 seconds to exit Clear page.

Page lock

Press and hold the Up key and OK key for 2 seconds to lock or unlock a meter page.



Note:
- Page lock sets the current page as default page.
- You cannot enter the Setup page or the Clear page when a meter page is locked.

10 Specifications

Control power
- AC: 44 to 277 V AC ± 10%
- Frequency: 45 to 65 Hz
- AC burden: < 6 VA at 277 V AC
- DC: 44 to 277 V DC ± 10%
- DC burden: < 2 W at 277 V DC
- Installation category III

Communication
- RS-485 serial communication
- Pulse output
  - Voltage Rating: 5 to 40 V DC
  - Current Rating: 20 mA max
  - Pulse Width: 20 ms
  - Number of pulses per k_h: Configurable

Voltage inputs
- Measured voltage:
  - 35 to 480 V AC L-L (277 V AC L-N) CAT III
  - 600 V AC L-L (347 V AC L-N) CAT II
- Frequency: 50/60 Hz
- Permanent overload: 750 V AC L-L
- Impedance: 5 MΩ
- Measurement category II / III

Current inputs
- Nominal: 1 A or 5 A
- Measured current: 5 mA to 6 A
- Withstand: 12 A continuous
- Impedance: < 0.3 mΩ
- Burden: < 0.2 VA at 6 A
- Suppression current: 5 mA to 99 mA

Environment
- Temperature:
  - Operating: -10 to 60 °C (14 to 140 °F)
  - Storage: -25 to 70 °C (-13 to 158 °F)
- Humidity rating: 5% to 95% RH non-condensing
- Pollution degree: 2
- Altitude: ≤ 2000 m (6562 ft) above sea level
- IP30 meter body (except terminals).
  IP51 front display (IEC 60529)
  IP54 front display (IEC 60529) - METSEIP54GK96X96FF
  IP65 front display (IEC 60529) - METSEIP65OP96X96FF
- For indoor use only.
- Not suitable for wet locations.

Notices

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it.

Electrical equipment should be installed, operated, serviced and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material. A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

- This product must be installed, connected and used in compliance with prevailing standards and/or installation regulations.
- If this product is used in a manner not specified by the manufacturer, the protection provided by the product may be impaired.
- The safety of any system incorporating this product is the responsibility of the assembler/installer of the system.

As standards, specifications and designs change from time to time, always ask for confirmation of the information given in this publication.

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