EasyLogic™ DM6220H / EM1220H / EM1250H

MFR9435901-03

Schneider Electric

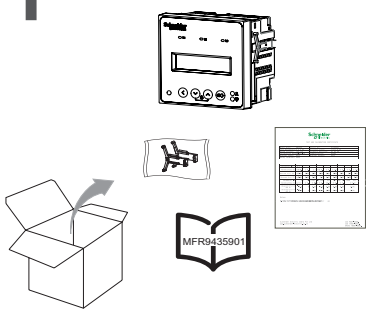
DM6220H / EM1220H / EM1250H meter

To download user manuals and other documentation, visit www.se.com. Type DM6220H / EM1220H / EM1250H meter in search field.

Refer to the user manual when you see this icon.

User manual MFR9435902

1



Note:
Do not use the product if it is damaged.
Contact Schneider Electric customer care representative for support.

Commercial Reference	CL 1.0 RS-485	CL 0.5 RS-485	CE	UL	Control Power
METSEDM6220HCL1	✔	–	✔	✔	**1***
METSEDM6220HCL1LVD	✔	–	✔	✔	**2***
METSEEM1220HCL1	✔	–	✔	✔	**1***
METSEEM1220HCL5	–	✔	✔	✔	**1***
METSEEM1220HCL5LVD	–	✔	✔	✔	**2***
METSEEM1250HCL1	✔	–	✔	✔	**1***

1* : 48 - 277 V L-N ± 10% (L1/L+, L2/L-)
48 - 277 V DC ± 10% (L1/L+, L2/L-)

2* : 10 - 32 V DC ± 10% (+, -)

2 Safety Precautions

⚠⚠ DANGER

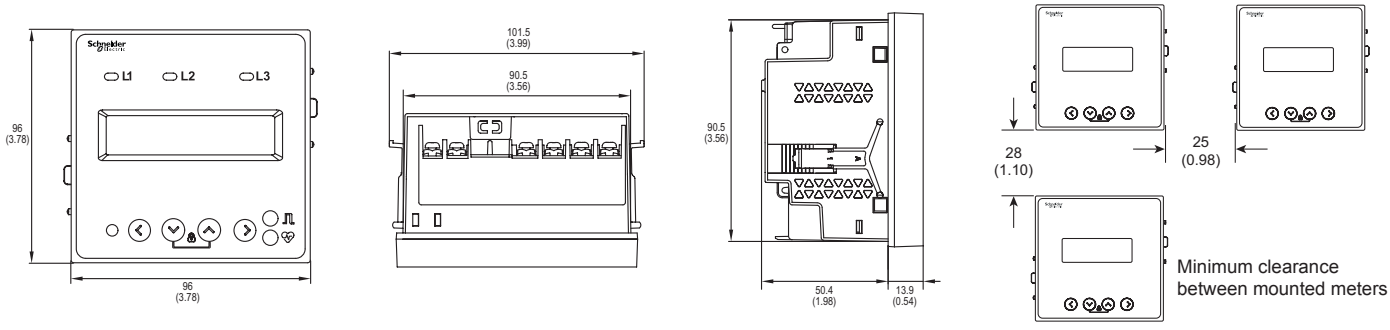
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E in the USA or applicable local standards.
- Turn off all power to this device before working on it.
- 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.
- Always use grounded external CTs for current inputs.

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

3 Dimensions

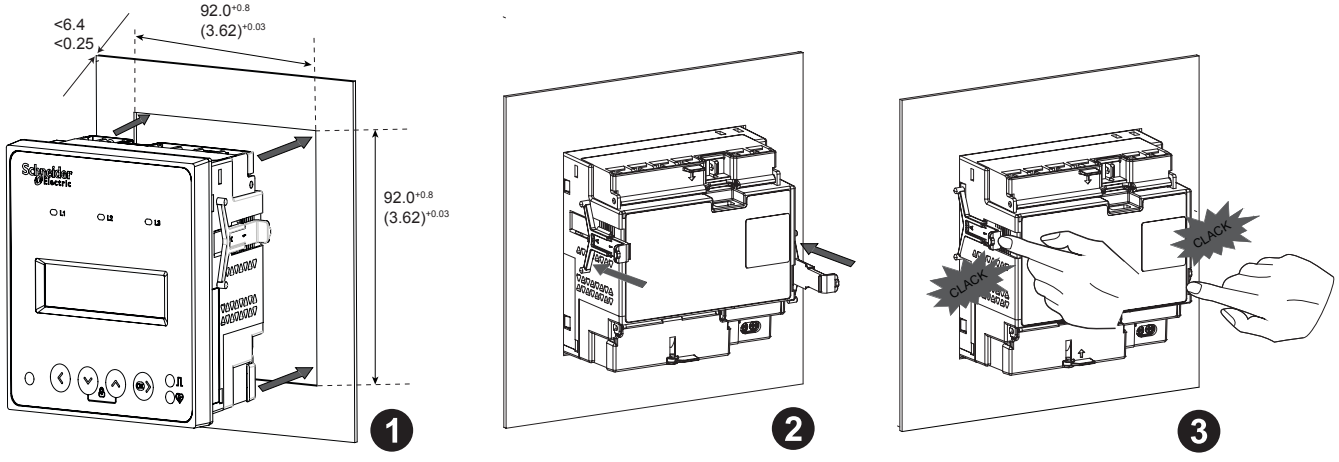
mm
(in)



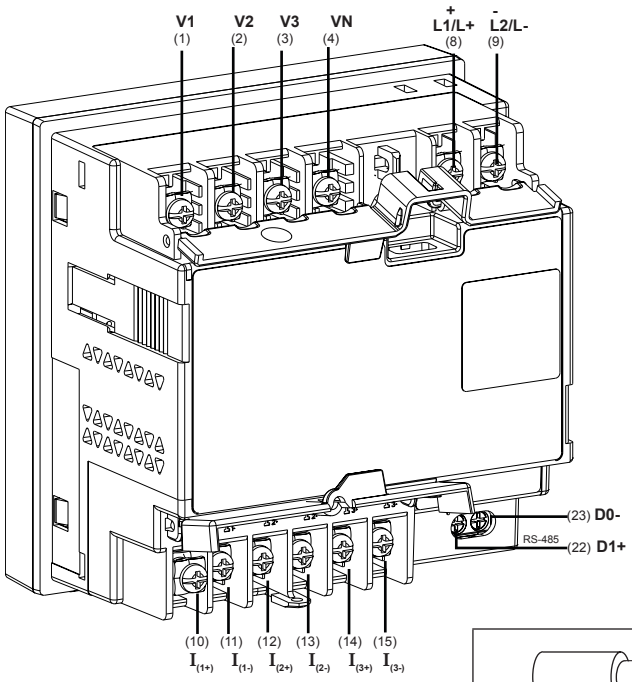
Minimum clearance between mounted meters

4 Mounting

mm
(in)



5 Wiring

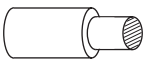
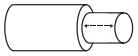
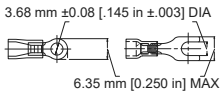


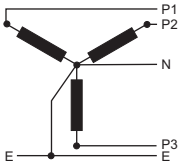
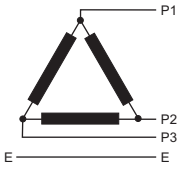
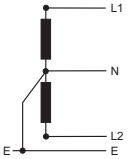
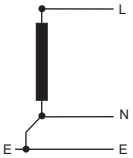
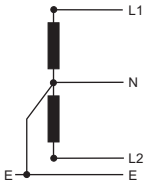
Straight-line topology only. Loop or ring topology is not supported.

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.

	Potential Transformer	Current Transformer
IEC		
ANSI		

RS-485

				
V1, V2, V3, VN + , - (METSEDM6220HCL1LVD / METSEEM1220HCL5LVD) L1/L+, L2/L- (METSEDM6220HCL1 / METSEEM1220HCL1 / METSEEM1220HCL5 / METSEEM1250HCL1)	0.82 - 3.31 mm ² (18 - 12 AWG)	0.28 in (7 mm)	0.9 - 1.0 N·m (8.0 - 9.0 in·lb)	PH1/PH2
I_{1+}, I_{1-}, I_{2+}, I_{2-}, I_{3+}, I_{3-}	2.08 - 3.31 mm² (14 - 12 AWG)			
D0-, D1+	0.33 - 3.31 mm ² (22 - 12 AWG)	0.24 in (6 mm)	0.5 - 0.6 N·m (4.4 - 5.3 in·lb)	PH1
Recommended cable	RS-485: Belden 3105A /Belden 3106A or equivalent			

Direct connect maximum voltage					
Power system configuration types [1]					
Maximum voltage at terminals(UL/ IEC)	≤ 277 V L-N / 480 V L-L (CAT III)	≤ 480 V L-L (CAT III)	≤ 480 V L-L (CAT III)	≤ 277 V L-N (CAT III)	≤ 277 V L-N / 480 V L-L (CAT III)

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

Ⓐ 500 mA fuses / circuit breaker #

Ⓑ Shorting block #

Ⓒ PT primary fuses and disconnect switch #

\# not supplied

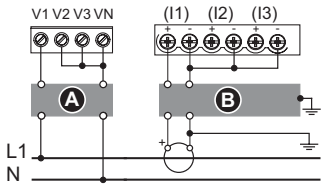
♦ indicates wiring for a balanced system

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.

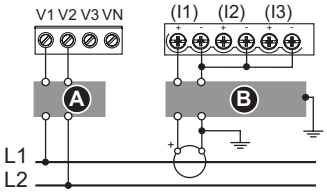
5 Wiring

1PH

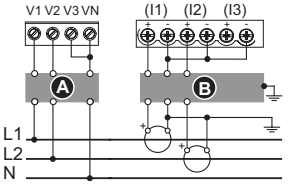
1PH2W LN



1PH2W LL

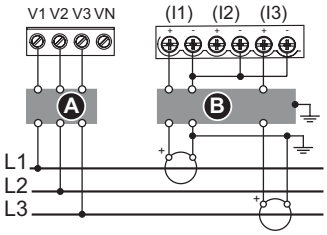


1PH3W LL with N

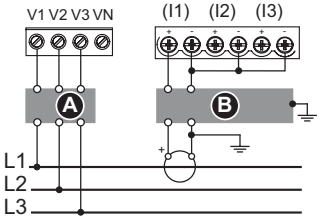


3PH3W

2CT

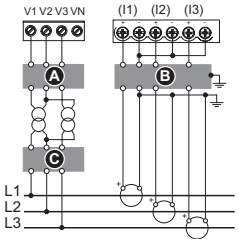


1 CT ♦

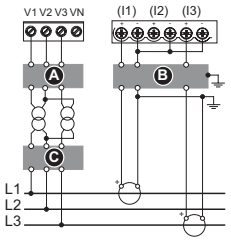


3PH3W

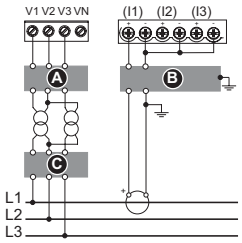
2VT, 3CT



2VT, 2CT

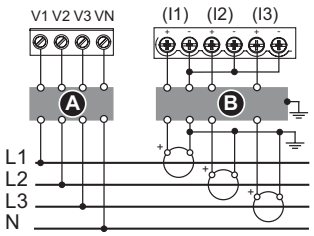


2VT, 1CT ♦

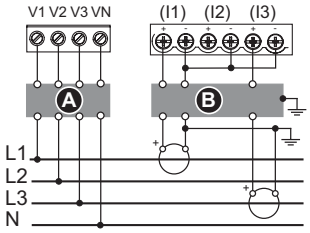


3PH4W

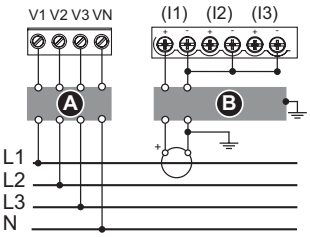
3CT



2CT ♦

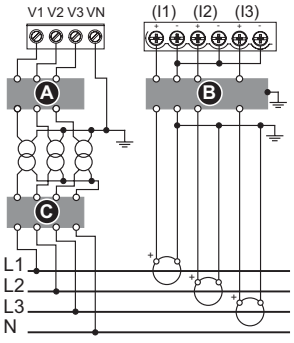


1CT ♦

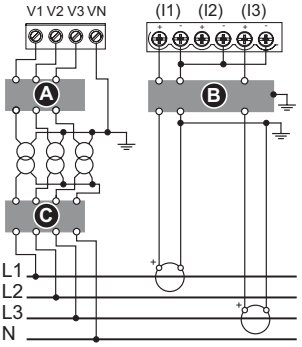


3PH4W

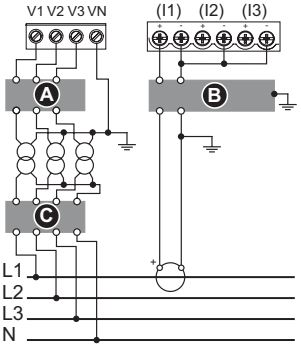
3VT, 3CT



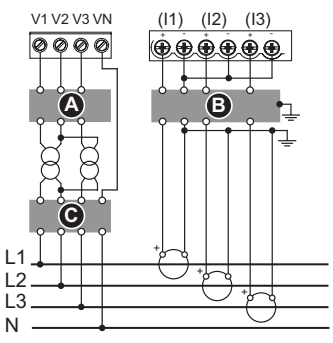
3VT, 2CT ♦



3VT, 1CT ♦



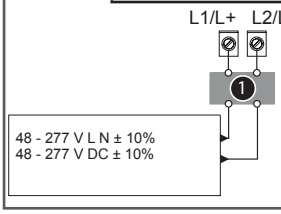
2VT, 3CT ♦



6 Control Power

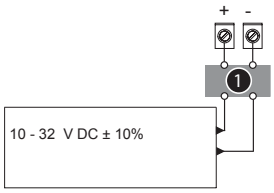
NOTICE

HAZARD OF PRODUCT DAMAGE
Do not exceed the device's ratings for maximum limits.
Failure to follow these instructions can result in equipment damage.



1 500 mA fuses

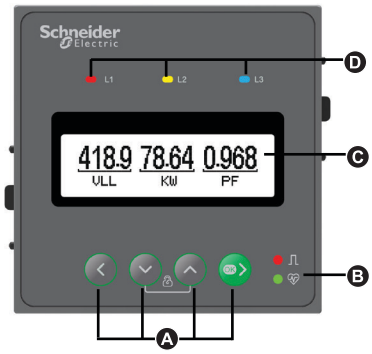
L1/L+ and L2/L- are non-polarized. If using an AC power supply with neutral, connect neutral to the meter's L2/L- terminal. Always use a fuse on L1/L+. Fuse L2/L- when connecting an ungrounded neutral to the control power. If using a control power transformer, fuse both primary and secondary sides of the transformer. The fuses / circuit breakers must be rated for the installation voltage and sized for the available fault current.

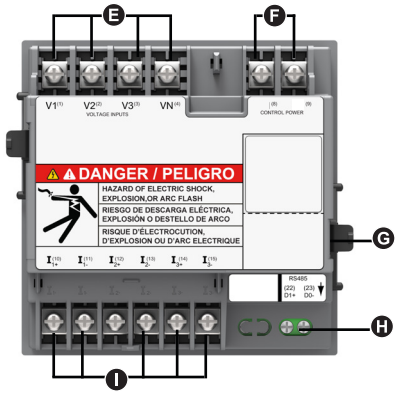


1 500 mA fuses

The low-voltage DC power connections + and − are polarized. These connections are internally reverse polarity protected. Always use a fuse on +. Fuse - when connecting to a floating DC source. The fuses / circuit breakers must be rated for the installation voltage and sized for the available fault current.

7 Description

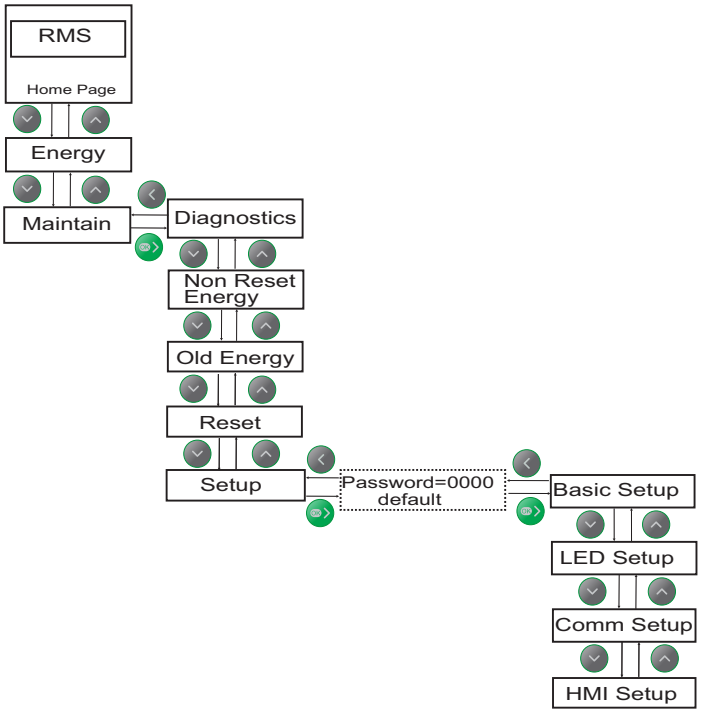




A	Menu selection buttons
	Left key: To navigate left / Escape
	Down key: To navigate down
	Up key: To navigate up
	Right/OK key: To navigate right / Enter
B	LED indicators : Pulse : Heartbeat
C	LCD
D	Voltage line indicators
E	Voltage inputs
F	Control power
G	Retainer clip
H	RS-485
I	Current inputs

8 Meter navigation

8.1 EM1220H / EM1250H meter navigation



Perform basic setup:

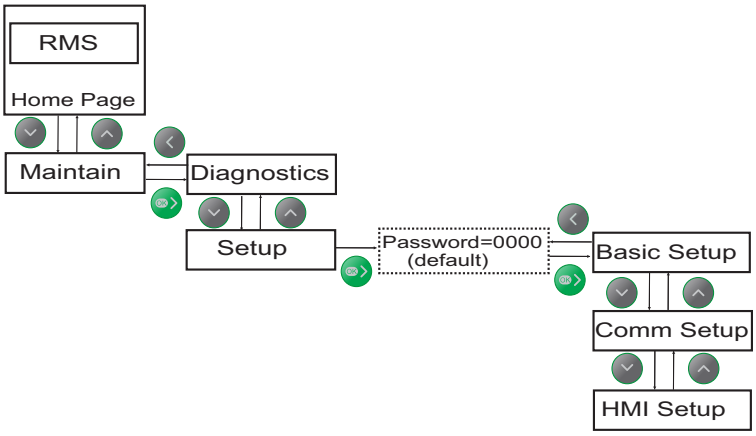
1. Navigate to **Maintain > Setup > Basic Setup**.
2. Edit all the meter parameters to match your power system and electrical wiring.
3. Exit and save your settings.

Set up communications:

1. Navigate to **Maintain > Setup > Comm Setup.**
2. Edit all parameters to match your network communications.
3. Exit and save your settings.

8 Meter navigation

8.2 DM6220H meter navigation



Perform basic setup:

1. Navigate to **Maintain > Setup > Basic Setup**.
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Set up communications:

1. Navigate to **Maintain > Setup > Comm Setup**.
2. Edit all parameters to match your network communications.
3. Exit and save your settings.

8.3 Setup parameters

8.3.1 Basic Setup

Power System	Power System Configurations; [1PH2W LN, 1PH2W LL, 1PH3W LL, 3PH3W Dlt, 3PH4W Wye] Default: 3PH4W Wye
VT Connect	VT: Voltage Transformer; [Direct Con, 1VT, 2VT, 3VT] Default: Direct Con Note: The VT Connect parameters are enabled based on selected power system configuration.
VT Primary(V)	Primary Voltage (V L-L); [100 V - 999000 V] Default: 415 Note: VT Primary(V) will not be enabled if VT Connect is Direct Con.
VT Sec(V)	Secondary Voltage (V L-L); [100, 110, 115, 120, 415] Default: 415 Note: VT Sec(V) will not be enabled if VT Connect is Direct Con.
CT on Term	Current Tranformer; [A1, A2, A3, A12, A23, A31,A123] Default: A123 Note: The CT terminal parameters are enabled based on the selected power system and VT connect configuration.
CT Primary(A)	CT Primary; [1 A - 32767 A] Default: 100
CT Sec(A)	CT.Sec: CT Secondary; [1A, 5 A] Default: 5
Sys Freq(Hz)	System frequency; [50 Hz, 60 Hz] Default: 50
A.Suppress	A. Suppression (Minimum current at which meter starts functio-ing); [1 to 99 mA] Default: 5
Label	Label:Phase labelling;[123, ABC, RST, PQR, RYB] Default: 123
Full Scale%	Full scale value (Rescaling CT loading); [1 - 100] Default:100
Param Select	Parameter selection; [VA, W, VAR] Default: W Note: Based on param select parameter,energy and power will be displayed for EM1220H model.
Poles	To determine RPM of alternator / generator based on number of poles and network frequency;[02, 04, 06, 08, 10, 12, 14, 16] Default:04

8.3.2 LED Setup (EM1220H / EM1250H)

LED Mode	[OFF,Energy] Default: OFF Note: Pulses/(k_h) is enabled based on LED mode as Energy.

8.3.3 Communication Setup

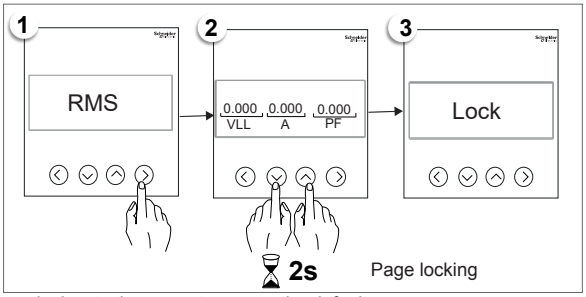
Comm	Comm: Communication; [ON, OFF, Retrofit] Default: ON ON/OFF: To enable/disable communications port. Retrofit: For configuring legacy communication data models.
Address	Address: Unit Id; [1 - 247] Default: 1
Baud Rate	Baud rate: BPS (Bits per second); [4800, 9600, 19200, 38400] Default: 19200
Parity	Parity: Parity; [Even, Odd, None] Default: Even

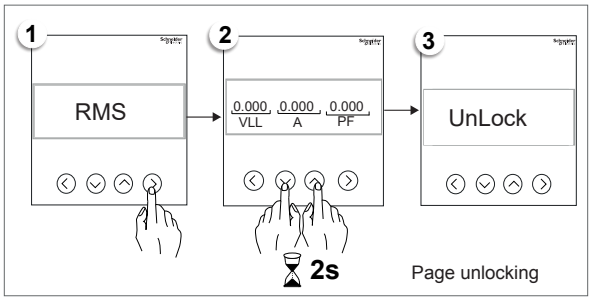
8.3.4 HMI Setup

Contrast	Contrast; [1 - 9] Default: 5
Bcklght T.Out	Backlight time out; [0 - 60] Default: 5
Password	Password; [0000 - 9999] Default: 0000

8 Meter Navigation

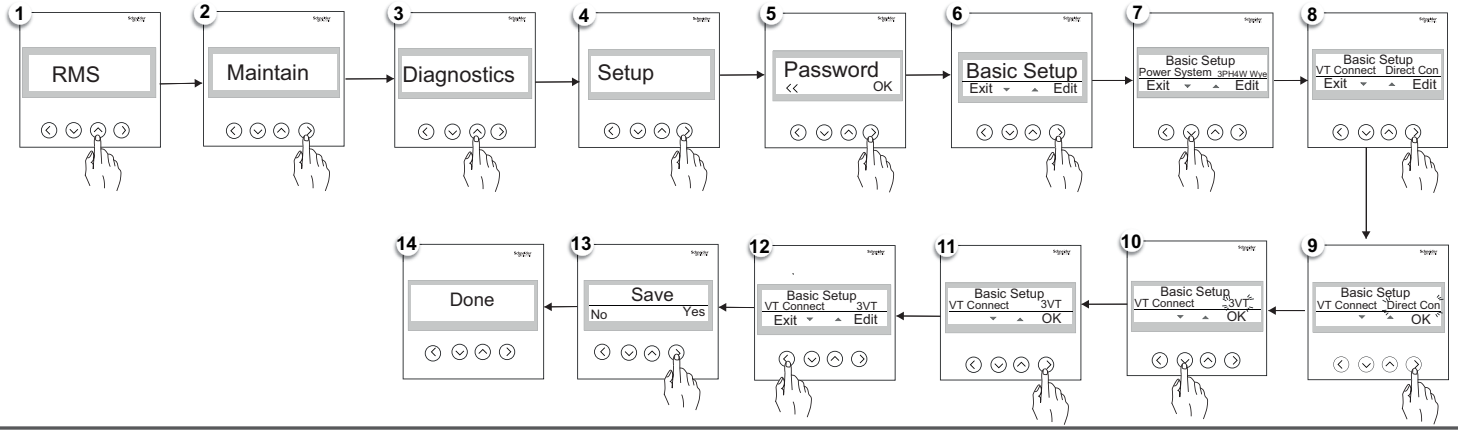
8.4 Page lock / unlock





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

8.5 Basic setup menu example: Changing VT parameter (Direct Con to 3VT)



9 Specifications

Control power (METSEDM6220HCL1 / METSEEM1220HCL1 / METSEEM1220HCL5 / METSEEM1250HCL1)
- AC: 48 - 277 V L-N ± 10%
- Frequency: 45 - 65 Hz
- AC Burden: <4 VA at 240 V L-N, 50 Hz
- DC: 48 - 277 V DC ± 10%
- DC burden: <2 W at 240 V DC
- Installation category III

Control power (METSEDM6220HCL1LVD / METSEEM1220HCL5LVD)
- DC: 10 - 32 V DC ± 10%
- DC burden: <2 W at 24 V DC
- Installation category III

Voltage inputs
- Measured voltage: 80 - 480 V L-L ± 10%
- Frequency: 50/60 Hz ± 2 Hz
- Permanent overload: 750 V L-L continuous
- Impedance: 5 MΩ
- Burden: ≤ 0.2 VA maximum @ 240 V L-N, 50 Hz
- Measurement category III, 480 V L-L

Current inputs
- 1 A or 5 A nominal
- Measured current:
  Current range (5 A nominal): 50 mA - 6 A
  Current range (1 A nominal): 10 mA - 1.2 A
- Withstand: 10 A continuous
- Impedance: 0.3 mΩ
- Burden: ≤ 0.1 VA max @5 A, 50 Hz
- Suppression current: 5 mA - 99 mA

Environment
- Operating temperature: -10 to 60 °C (14 to 140 °F)
(Display functions to -5 °C (23 °F) with reduced performance)
- Storage temperature: -25 to 70 °C (-13 to158 °F)
- Humidity: 5% to 95% RH non-condensing at 37 °C (98.6 °F)
- Pollution degree 2
- Altitude: ≤ 2000 m (6562 ft)
- Front IP51 (IP54 w/ gasket)
- Rear IP30 - as per IEC 60529
- Not suitable for wet locations
- For indoor use only

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 consequenes 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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