

# EasyLogic™

## Power Metering Range Catalog

Catalog 2026

A Complete Range Of Meters For  
Essential Electrical System Measurement



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# Panorama of the EasyLogic™ Range

|                                                               |  |  |                                      |
|---------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Family                                                        | PM2000                                                                            | PM2220R                                                                            | EM1000H                                                                                                                 |
| Parameters                                                    | PM2100 (LED)                                                                      | PM2220R                                                                            | EM1220H / EM1250H                                                                                                       |
| Amps: per phase and 3-ph avg                                  | ■                                                                                 | ■                                                                                  | ■ / -                                                                                                                   |
| Volts: per phase and 3-ph avg                                 | ■                                                                                 | ■                                                                                  | ■ / -                                                                                                                   |
| Frequency                                                     | ■                                                                                 | ■                                                                                  | ■ / -                                                                                                                   |
| Power Factor per phase and 3-ph avg                           | ■                                                                                 | ■                                                                                  | ■                                                                                                                       |
| W per phase and 3-ph total, Wh                                | ■                                                                                 | ■                                                                                  | ■                                                                                                                       |
| VAR per phase and 3-ph total, VARh                            | ■                                                                                 | ■                                                                                  | □ * / ■                                                                                                                 |
| VA per phase and 3-ph total, VAh                              | ■                                                                                 | ■                                                                                  | □ * / ■                                                                                                                 |
| Class of Accuracy*                                            | 1.0 active<br>(0.5S PM2x30)<br>1.0 reactive                                       | 1.0 active<br>1.0 reactive                                                         | Active - Cl 1.0, Cl 0.5 / Cl 1.0<br>Reactive - Cl 2.0 / Cl 2.0                                                          |
| 2 DI / 2 DO or 2 DI / 2 RO (optional)                         | (PM2130)                                                                          |                                                                                    |                                                                                                                         |
| 2 AI / 2 AO (optional)                                        | (PM2130)                                                                          |                                                                                    |                                                                                                                         |
| RS-485 Modbus RTU                                             | ■                                                                                 | ■                                                                                  | ■                                                                                                                       |
| CT Secondary I nominal                                        | 5 A or 1 A                                                                        | LVCT                                                                               | 5 A or 1 A                                                                                                              |
| Control Power                                                 | 48 - 277 V AC / DC ±10%**                                                         | 48 - 277 V AC / DC ±10%**                                                          | 48 - 277 V AC / DC ±10%<br>or 9 - 36 V DC (option)                                                                      |
| Form Factor in mm                                             | 96x96x54                                                                          | 96x96x54                                                                           | 96x96x49                                                                                                                |
| With IO module                                                | 96x96x72                                                                          | 96x96x72                                                                           |                                                                                                                         |
| Mounting                                                      | Flush/Panel                                                                       | Flush/Panel                                                                        | Flush/Panel                                                                                                             |
| Simple energy cost management                                 |                                                                                   |                                                                                    |                                                                                                                         |
| Data aggregation                                              | ■                                                                                 | ■                                                                                  | ■                                                                                                                       |
| Load profile                                                  | ■                                                                                 | ■                                                                                  | ■                                                                                                                       |
| Bill verification                                             | ■                                                                                 | ■                                                                                  | ■                                                                                                                       |
| Cost allocation                                               | ■                                                                                 | ■                                                                                  | ■                                                                                                                       |
| Basic network management                                      |                                                                                   |                                                                                    |                                                                                                                         |
| Panel instrumentation                                         | ■                                                                                 | ■                                                                                  | ■                                                                                                                       |
| Power metering                                                | ■                                                                                 | ■                                                                                  | ■                                                                                                                       |
| Basic harmonic monitoring                                     | ■                                                                                 | ■                                                                                  |                                                                                                                         |
| Status monitoring                                             | ■                                                                                 | ■                                                                                  |                                                                                                                         |
| Threshold alarming                                            | ■                                                                                 | ■                                                                                  |                                                                                                                         |
| Monitoring and verification                                   |                                                                                   |                                                                                    |                                                                                                                         |
| Test bench                                                    | ■                                                                                 | ■                                                                                  | ■                                                                                                                       |
| Genset                                                        | ■                                                                                 | ■                                                                                  | ■                                                                                                                       |
| PF Improvement panel                                          | ■                                                                                 | ■                                                                                  | ■                                                                                                                       |
| Labs / OEMs                                                   | ■                                                                                 | ■                                                                                  | ■                                                                                                                       |
| Commercial reference numbers<br>(Link to product information) | METSEPM2110<br>METSEPM2120<br>METSEPM2130                                         | METSEPM2220R                                                                       | METSEEM1220HCL10RS<br>METSEEM1220HCL05RS<br>METSEEM1250HCL1<br>METSEEM1220HCL1<br>METSEEM1220HCL5<br>METSEEM1220HCL5LVD |

□\* One power vector at a time (W/Wh or VA/VAh or VAR/VARh in EM1220H).

\*\* 80 - 277 Vac ±10% for PM2x30.

# Panorama of the EasyLogic™ Range



| Family                                                               | PM1000H                                                                                                                          |                                                                                | PM1130H                 | PM1140H                            | PM1230H                                                  |
|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------|------------------------------------|----------------------------------------------------------|
| Parameters                                                           | PM1120H / PM1125H                                                                                                                | PM1225H                                                                        | PM1130H (LED)           | PM1140H (LED)                      | PM1230H (LCD)                                            |
| Amps: per phase & 3-ph avg                                           | ■                                                                                                                                | ■                                                                              | ■                       | ■                                  | ■                                                        |
| Volts: per phase & 3-ph avg                                          | ■                                                                                                                                | ■                                                                              | ■                       | ■                                  | ■                                                        |
| Frequency                                                            | ■                                                                                                                                | ■                                                                              | ■                       | ■                                  | ■                                                        |
| Power Factor per phase & 3-ph avg                                    | ■                                                                                                                                | ■                                                                              | ■                       | ■                                  | ■                                                        |
| W per phase & 3-ph total, Wh                                         | □/■                                                                                                                              | ■                                                                              | ■                       | ■                                  | ■                                                        |
| VAR per phase & 3-ph total, VARh                                     | □/■                                                                                                                              | ■                                                                              | □                       | □                                  | □                                                        |
| VA per phase & 3-ph total, VAh                                       | □/■                                                                                                                              | ■                                                                              | □                       | □                                  | □                                                        |
| Display type                                                         | LED                                                                                                                              | LCD                                                                            | LED                     | LED                                | LCD                                                      |
| Class of Accuracy*                                                   | 1.0 active<br>(0.5 optional)                                                                                                     | 1.0 active<br>(0.5 optional)                                                   | 0.5 active              | 1.0 active<br>(0.5 optional)       | 1.0 active<br>(0.5 optional)                             |
| Control Power                                                        | 48 - 277 Vac/dc ±10%<br>or 9 - 36 Vdc (option)                                                                                   | 48 - 277 Vac/dc ±10%<br>or 9 - 36 Vdc (option)                                 | 60 - 277 Vac/dc<br>±10% | 60 - 277 Vac/dc<br>±10%            | 60 - 277 Vac/dc ±10%<br>or 9 - 36 Vdc (option)           |
| RS-485 Modbus RTU                                                    | ■                                                                                                                                | ■                                                                              | ■                       | ■                                  | ■                                                        |
| CT Secondary I nominal                                               | 5 A or 1 A                                                                                                                       | 5 A or 1 A                                                                     | 5 A or 1 A              | 5 A or 1 A                         | 5 A or 1 A                                               |
| Form Factor in mm                                                    | 96x96x49                                                                                                                         | 96x96x49                                                                       | 96x96x52                | 96x96x52                           | 96x96x52                                                 |
| Relay                                                                |                                                                                                                                  |                                                                                | 1                       | 1                                  | 1                                                        |
| Mounting                                                             | Flush/Panel                                                                                                                      | Flush/Panel                                                                    | Flush/Panel             | Flush/Panel                        | Flush/Panel                                              |
| <b>Simple energy cost management</b>                                 |                                                                                                                                  |                                                                                |                         |                                    |                                                          |
| Data aggregation                                                     | ■                                                                                                                                | ■                                                                              | ■                       | ■                                  | ■                                                        |
| Load profile                                                         | -                                                                                                                                | -                                                                              | -                       | -                                  | -                                                        |
| Bill verification                                                    | ■                                                                                                                                | ■                                                                              | ■                       | ■                                  | ■                                                        |
| Cost allocation                                                      | ■                                                                                                                                | ■                                                                              | ■                       | ■                                  | ■                                                        |
| <b>Basic network management</b>                                      |                                                                                                                                  |                                                                                |                         |                                    |                                                          |
| Panel instrumentation                                                | ■                                                                                                                                | ■                                                                              | ■                       | ■                                  | ■                                                        |
| Power metering                                                       | ■                                                                                                                                | ■                                                                              | ■                       | ■                                  | ■                                                        |
| Basic harmonic monitoring                                            | ■                                                                                                                                | ■                                                                              | ■                       | ■                                  | ■                                                        |
| Status monitoring                                                    | -                                                                                                                                | -                                                                              | -                       | -                                  | -                                                        |
| Threshold alarming                                                   | -                                                                                                                                | -                                                                              | ■                       | ■                                  | ■                                                        |
| <b>Monitoring and verification</b>                                   |                                                                                                                                  |                                                                                |                         |                                    |                                                          |
| Test bench                                                           | ■                                                                                                                                | ■                                                                              | ■                       | ■                                  | ■                                                        |
| Genset                                                               | ■                                                                                                                                | ■                                                                              | ■                       | ■                                  | ■                                                        |
| PF Improvement panel                                                 | ■                                                                                                                                | ■                                                                              | ■                       | ■                                  | ■                                                        |
| Labs / OEMs                                                          | ■                                                                                                                                | ■                                                                              | ■                       | ■                                  | ■                                                        |
| <b>Commercial reference numbers</b><br>(Link to product information) | METSEPM1120HCL10RS<br>METSEPM1120HCL05RS<br>METSEPM1125HCL10RS<br>METSEPM1125HCL05RD<br>METSEPM1125HCL1LVD<br>METSEPM1125HCL5LVD | METSEPM1225HCL1<br>METSEPM1225HCL5<br>METSEPM1225HCL1LVD<br>METSEPM1225HCL5LVD | METSEPM1130HCL05RS      | METSEPM1140HCL1<br>METSEPM1140HCL1 | METSEPM1230HCL1<br>METSEPM1230HCL5LVD<br>METSEPM1230HCL5 |

\* Refer data sheet for operating range

□ One power vector at a time (W/Wh or VA/VAh or VAR/VARh in PM1120H, PM1130H and PM1230H)

# Panorama of the EasyLogic™ Range



| Family                                 | DM1000               |                      |                      | DM3000               |                      | DM6xx0H              |                                                |
|----------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|------------------------------------------------|
| Parameters                             | DM1110               | DM1210               | DM1310               | DM3110               | DM3210               | DM6000H              | DM62X0H                                        |
| Amps: per phase & 3-ph avg             | 1-ph                 | -                    | -                    | 3-ph (per ph)        | -                    | ■                    | ■                                              |
| Volts: per phase & 3-ph avg            | -                    | 1-ph                 | -                    | -                    | 3-ph (per ph)        | ■                    | ■                                              |
| Frequency                              | -                    | -                    | ■                    | -                    | -                    | ■                    | ■                                              |
| Power Factor per phase & 3-ph avg      | -                    | -                    | -                    | -                    | -                    | ■                    | ■                                              |
| CT Secondary I nominal                 | 5 A or 1 A           | -                    | -                    | 5 A or 1 A           | -                    | 5 A or 1 A           | 5 A or 1 A                                     |
| Class of Accuracy                      | 0.5                  | 0.5                  | 0.2                  | 0.5                  | 0.5                  | 1                    | 1                                              |
| Control power                          | 48 - 277 Vac/dc ±10% | 48 - 277 Vac/dc ±10% | 48 - 277 Vac/dc ±10% | 48 - 277 Vac/dc ±10% | 48 - 277 Vac/dc ±10% | 48 - 277 Vac/dc ±10% | 48 - 277 Vac/dc ±10%<br>or 9 - 36 Vdc (option) |
| RS-485 Modbus RTU                      | -                    | -                    | -                    | -                    | -                    | -                    | ■                                              |
| Display type                           | LED                  | LED                  | LED                  | LED                  | LED                  | LED                  | LED (DM6200H)<br>LCD (DM6220H)                 |
| Form Factor in mm (LengthxWidthxDepth) | 96x96x44             | 96x96x44             | 96x96x44             | 96x96x44             | 96x96x44             | 96x96x49             | 96x96x49                                       |
| Mounting                               | Flush/Panel          | Flush/Panel          | Flush/Panel          | Flush/Panel          | Flush/Panel          | Flush/Panel          | Flush/Panel                                    |

## Simple energy cost management

|                   |   |   |   |   |   |   |   |
|-------------------|---|---|---|---|---|---|---|
| Data aggregation  | - | - | - | - | - | - | ■ |
| Load profile      | - | - | - | - | - | - | - |
| Bill verification | - | - | - | - | - | - | - |
| Cost allocation   | - | - | - | - | - | - | - |

## Basic network management

|                           |   |   |   |   |   |   |   |
|---------------------------|---|---|---|---|---|---|---|
| Panel instrumentation     | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Power metering            | - | - | - | - | - | - | - |
| Basic harmonic monitoring | - | - | - | - | - | - | - |
| Status monitoring         | - | - | - | - | - | - | - |
| Threshold alarming        | - | - | - | - | - | - | - |

## Monitoring and verification

|                                                   |        |        |        |        |        |               |                                              |
|---------------------------------------------------|--------|--------|--------|--------|--------|---------------|----------------------------------------------|
| Test bench                                        | ■      | ■      | ■      | ■      | ■      | ■             | ■                                            |
| Genset                                            | ■      | ■      | ■      | ■      | ■      | ■             | ■                                            |
| PF Improvement panel                              | -      | -      | -      | -      | -      | ■             | ■                                            |
| Labs / OEMs                                       | ■      | ■      | ■      | ■      | ■      | ■             | ■                                            |
| Commercial reference numbers starts with METSE*** | DM1110 | DM1210 | DM1310 | DM3110 | DM3210 | DM6000HCL10NC | DM6200HCL10RS<br>DM6220HCL1<br>DM6220HCL1LVD |

# EasyLogic™ PM2000 Series Technical Datasheet

## The EasyLogic™ PM2000 multi-function power and energy meter

Offering all the measurement capabilities required to monitor and electrical installation in a single 96x96 mm unit, with LED or LCD display options.

### Applications

#### Cost management applications

- Bill checking to verify that you are only charged for the energy you use
- Aggregation of energy consumption, including WAGES, and cost allocation per area, per usage, per shift or per time within the same facility
- Energy cost and usage analysis per zone, per usage or per time period to optimise energy usage

#### Network management applications

- Metering of electrical parameters to better understand the behaviour of your electrical distribution system
- Power quality analysis



**LED display**



**LCD display**

# PM2000 Series



PM2100 series LED display meter



PM2200 series LCD display meter

Introducing EasyLogic PM2000 series, next generation power meter which offers all the measurement capabilities required to monitor an electrical installation in a single 96x96 mm unit. PM2000 meters are available in LED and LCD display variants.

- PM2100 series:
  - LED display type: Intuitive navigation with self-guided, three buttons, bright red colour LEDs of 14.2 mm height. Two columns of LEDs indicate the parameter name chosen for display.
- PM2200 series:
  - LCD display type: Monochrome graphical LCD of 128x128 pixels lets users read all three phase values simultaneously. The bright display enables easy reading even in extreme lighting conditions and viewing angles. with intuitive menus, multi-language text, icons and graphics.
- Network management:
  - Power Quality analysis: THD % and individual harmonics to 15<sup>th</sup> or 31<sup>st</sup> order.
  - Measurement of True PF and Displacement PF.
  - Recording Min/Max values of instantaneous parameters with date and timestamp.
  - Optional IO modules comprising either 2 Digital Inputs and 2 Outputs, or 2 Analog Inputs and 2 Outputs, or 2 Digital Inputs and 2 Relay Outputs for comprehensive WAGES monitoring.
  - Calculates % unbalance for voltage & current.
  - Embedded 2 D/I and 2 R/O or 2 A/I and 2 A/O in PM2125 and PM2225 meters.
- Main characteristics:
  - Easy to install: Mounts using two clips, no tools required. Compact 54 mm depth, connectable up to 480 ±10% AC Volts L-L without voltage transformers for installations compliant with measurement category III, and double insulated.
  - Easy to operate: Intuitive navigation with self-guided menus and LED for test and calibration on site or lab. Heartbeat LED indicates normal functioning and communication status if connected to RS-485 network.
  - Product standard compliance
    - Active energy Class 1.0 as per IEC 62053-21
    - Active energy Class 0.5S as per IEC 62053-22 (partial compliance for active energy test clause only)
    - Reactive energy Class 1.0 as per IEC 62053-23 (partial compliance for reactive energy test clause only)
  - Tested in accordance with IEC 62052-11 standard for
    - 5 A, I-nominal
    - 1 A, I-nominal (field settable).
  - Power quality analysis: The PM2000 offers THD % measurements and Individual harmonics up to 15<sup>th</sup> order in PM2x20 and PM2x25C variants and up to 31<sup>st</sup> in PM2x30 variants.
  - Load management: Simultaneous display of peak, present, predicted & rising demands of all the four demand parameters (W, VA, VAR, Amps)
  - Billing: Tenant billing/utility meter cross check (where local regulations are not applicable).
  - Timer: Active load timer, Meter operation timer and Run hours timer. These features help advise maintenance requirements and scheduling.

# PM2000 Series



Rear of PM2100 series - closed



Rear of PM2100 series - open



Rear of PM2100 series without I/O module

- Main characteristics: (cont'd)
  - Password: Field configurable password for securing set up information and prevent tampering of integrated values.
  - Cyber security: Option for disabling RS-485 port through front panel keys against unauthorized access. It helps during installation and troubleshooting of communication network.
  - LED display: Auto scaling, 9+3 digits for energy, 4 digits for other parameters.
  - LCD display: 5 digits for energy, 5 or 6 digits for other parameters, with auto scaling.
  - Daily time snapshot: Snapshot of Avg Voltage, Avg Current, Total Active Power & Energy delivered as measured by the meter at configurable time of day. The static page will be refreshed with new values at a configured time next day.
  - Rate counters: 2 configurable counters display values in custom specified units based on energy recorded (e.g., kgCO<sub>2</sub> carbon emission or energy cost).
  - Energy preset feature: Write the energy values during maintenance operation or replacement of meters. Configuration is through ION set up utility tool.
  - Auto reset: Monthly reset of all energies and max demand based on configurable day of the month at fixed 00 Hours (PM2220, PM2230).
  - Suppression current: To disregard induced or negligible current flowing in the circuit, minimum value of current detection can be settable from 5 to 99 mA, default is 5 mA (all variants).
  - Retrofit register: Legacy modbus registers to read 50 parameters (meters with communication port).
  - Quadrant based VARh: Available through communication.
  - Multi-tariff energy - 4 multi tariff registers, can be activated through command, TOU or Input mode with Digital IO card (PM2230).
  - Non-resettable energy (Del & Rec values of Wh, VARh, VAh) counter on display and communication that cannot be reset to zero (PM2210/20/30).
  - Configurable favourite page: Pick and configure any 4 parameters for display from the list of - V L-L, V L-N, Amps, F, W-tot, VA-tot, VAR-tot, PF and Wh-Del, VAh-Del, VARh-Del (PM2220, PM2230).
  - Whetting output voltage: Can be used for excitation of status input signal, available in PM2K2DIRO module.
  - Auto correction of CT polarity: self-correction of CT polarity through setup mode to avoid shutdown/rewiring
  - Phase sequence reversal: self-correction of phase sequence rotation through setup mode to eliminate the need of rewiring
  - Per phase energy: individual, per-phase energy measurement and display in 3 phase network.

# PM2000 Series

## Technical specifications

| General                                                                                             |                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use on LV and MV systems with onsite programmable PT/CT ratio                                       |                                                                                                                                                                                                                                                                                     |
| Basic metering with THD %, Individual Harmonics, RTC and min/max readings                           |                                                                                                                                                                                                                                                                                     |
| Instantaneous rms values                                                                            |                                                                                                                                                                                                                                                                                     |
| Current                                                                                             | Average line current of 3-phase, per-phase, and calculated neutral current                                                                                                                                                                                                          |
| Voltage                                                                                             | Average voltage of L-L, L-N parameters, and per-phase                                                                                                                                                                                                                               |
| Frequency                                                                                           | Any available line                                                                                                                                                                                                                                                                  |
| Real, reactive, and apparent power                                                                  | Total and per-phase value                                                                                                                                                                                                                                                           |
| Displacement power factor                                                                           | Average and per-phase signed, four quadrant                                                                                                                                                                                                                                         |
| True Power Factor                                                                                   | Average and per-phase signed, four quadrant                                                                                                                                                                                                                                         |
| % Unbalance                                                                                         | Among the phase for Amps, V L-N, V L-L                                                                                                                                                                                                                                              |
| Energy values stored in non-volatile memory                                                         |                                                                                                                                                                                                                                                                                     |
| Four quadrant measurement for Delivered (Forward or Import) and Received (Reverse or Export) energy | Accumulated energy values for Active, Reactive & Apparent Energy parameters, quadrant basis Net & Total (absolute) values                                                                                                                                                           |
| Timer                                                                                               | Accumulated time counters for active load timer, meter operation timer, run hours and power outage counter                                                                                                                                                                          |
| Old Registers                                                                                       | Facilitates retrieval of last cleared energy values                                                                                                                                                                                                                                 |
| Demand values                                                                                       |                                                                                                                                                                                                                                                                                     |
| Current average                                                                                     | Present, Last, Predicted, Peak, and Peak Date Time                                                                                                                                                                                                                                  |
| Active power                                                                                        | Present, Last, Predicted, Peak, and Peak Date Time                                                                                                                                                                                                                                  |
| Reactive power                                                                                      | Present, Last, Predicted, Peak, and Peak Date Time                                                                                                                                                                                                                                  |
| Apparent power                                                                                      | Present, Last, Predicted, Peak, and Peak Date Time                                                                                                                                                                                                                                  |
| Demand sync methods                                                                                 | Thermal, Timed, Command Sync, and Clocked Sync                                                                                                                                                                                                                                      |
| Demand calculation mode                                                                             | Sliding, fixed and rolling block                                                                                                                                                                                                                                                    |
| Demand intervals                                                                                    | Settable from 1 to 60 minutes, in steps of 1 minute                                                                                                                                                                                                                                 |
| Display                                                                                             |                                                                                                                                                                                                                                                                                     |
| PM2100 series                                                                                       | Bright red colour LED display, 7 segment LED, ~ 14.2 mm height, 3 rows with 4 digits per row, Auto range                                                                                                                                                                            |
| PM2200 series                                                                                       | Full scape, monochrome graphical LCD of 128 x 128 pixels with viewable area of 67x62.5 mm                                                                                                                                                                                           |
| Visualization mode for signs                                                                        | IEC or IEEE type in LCD display meter                                                                                                                                                                                                                                               |
| Communication                                                                                       |                                                                                                                                                                                                                                                                                     |
| RS-485 serial                                                                                       | Channel connection Industry standard Modbus RTU protocol                                                                                                                                                                                                                            |
| Integration with software                                                                           | SCADA/DCS/PMS/EMS/BAS/BMS software                                                                                                                                                                                                                                                  |
| Native Plug and Play support                                                                        | Schneider Electric energy management system software - EcoStruxure™ Power Monitoring Expert, EcoStruxure™ Power Operation, & ION Setup programming support                                                                                                                          |
| Min/Max values                                                                                      |                                                                                                                                                                                                                                                                                     |
| Minimum & Maximum value recording of 3-ph average or total                                          | For 9 parameters, viz., V L-L, V L-N, Amps, PF, Hz, W, VA, VAR, calculated neutral current value with date and time stamp, resettable separately through set up mode                                                                                                                |
| Alarms                                                                                              |                                                                                                                                                                                                                                                                                     |
| Alarming with time stamping in PM2x30 meters                                                        | A different combination of set point driven alarms and digital alarms with 1 s time stamping. The alarms can be programmed and combined to trigger digital outputs, the meter keeps an alarm logs with the active and historical alarms with date and time stamping in 40 registers |
| Diagnostics                                                                                         |                                                                                                                                                                                                                                                                                     |
| Diagnostic page                                                                                     | Indicates LED/LCD status, sl number, diag pages for communication, OS & RS version                                                                                                                                                                                                  |
| Lock/ Un-Lock                                                                                       |                                                                                                                                                                                                                                                                                     |
| Page Lock & Unlock (PM2100 series)                                                                  | Unique feature to ensures that commonly referred page is restored in 4 minutes of inactive time                                                                                                                                                                                     |
| Rate 1 counter <sup>(+1)</sup>                                                                      |                                                                                                                                                                                                                                                                                     |
| kgCO <sub>2</sub> emission (example)                                                                | Rate counter can be configured to display the CO <sub>2</sub> emission in kgCO <sub>2</sub> format based on the kWh measured either in delivered or received direction.                                                                                                             |
| Rate 2 counter <sup>(+1)</sup>                                                                      |                                                                                                                                                                                                                                                                                     |
| Tariff counter (example)                                                                            | Rate counter can also be configured to calculate the electricity cost based on the energy consumption in customized currency format.                                                                                                                                                |
| Configurable snapshot                                                                               |                                                                                                                                                                                                                                                                                     |
| Configurable snapshot <sup>(+1)</sup>                                                               | Snapshot of Avg Voltage, Avg Current, Total Active Power & Energy delivered as measured by the meter at configurable time in Hours:Minutes format. Static page is refreshed with new values by next day at pre-configured time                                                      |

<sup>(+1)</sup> Available in PM2220/PM2230 (LCD) meters

# PM2000 Series

## Technical specifications (continued)

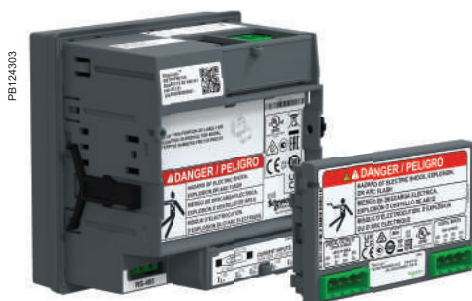
| Electrical characteristics                        |                                                                                                                                                                              |             |                                                                           |             |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------|-------------|
| Type of measurement                               | True RMS 64 samples per cycle                                                                                                                                                |             |                                                                           |             |
| Measurement accuracy                              |                                                                                                                                                                              |             |                                                                           |             |
| Parameters                                        | PM2210/PM2220/PM2110/PM2120                                                                                                                                                  |             | PM2230/PM2130/PM2225C/PM2125C                                             |             |
|                                                   | Accuracy class as per IEC standards<br>IEC 61557-12: PMD/[SD][SS]/K70/1                                                                                                      | % error     | Accuracy class as per IEC standards<br>IEC 61557-12: PMD/[SD][SS]/K70/0.5 | % error     |
| Active (Wh) energy                                | Class 1 (Class 1 as per IEC 62053-21 at In = 5A nominal CT)                                                                                                                  | ±1%         | Class 0.5S (Class 0.5s as per IEC 62053-22 at In = 5A nominal CT)         | ±0.5%       |
| Reactive (VARh) energy                            | Class 2 (Class 1 as per IEC 62053-23 at In = 5A nominal CT)                                                                                                                  | ±1%         | Class 2 (Class 1 as per IEC 62053-23 at In = 5A nominal CT)               | ±1%         |
| Apparent (VAh) energy                             | Class 1 at In = 5A nominal CT                                                                                                                                                | ±1%         | Class 0.5 at In = 5A nominal CT                                           | ±0.5%       |
| Active power                                      | Class 1                                                                                                                                                                      | ±1%         | Class 0.5                                                                 | ±0.5%       |
| Reactive power                                    | Class 1                                                                                                                                                                      | ±1%         | Class 1                                                                   | ±1%         |
| Apparent power                                    | Class 1                                                                                                                                                                      | ±1%         | Class 0.5                                                                 | ±0.5%       |
| Current                                           | Class 1                                                                                                                                                                      | ±0.5%       | Class 0.5                                                                 | ±0.2%       |
| Voltage (L-L)                                     | Class 1                                                                                                                                                                      | ±0.5%       | Class 0.5                                                                 | ±0.2%       |
| Voltage (L-N)                                     | Class 1                                                                                                                                                                      | ±0.5%       | Class 0.5                                                                 | ±0.2%       |
| Frequency                                         | Class 1                                                                                                                                                                      | ±0.05%      | Class 0.05                                                                | ±0.05%      |
| Power factor                                      | Class 1                                                                                                                                                                      | ±0.01 Count | Class 0.5                                                                 | ±0.01 Count |
| THD % and individual harmonics                    | Class 5                                                                                                                                                                      | ±5%         | Class 5                                                                   | ±5%         |
| Input-voltage                                     |                                                                                                                                                                              |             |                                                                           |             |
| VT primary                                        | 999 kV L-L max, secondary voltage depends on VT ratio                                                                                                                        |             |                                                                           |             |
| U nominal                                         | 277 V L-N/480V L-L                                                                                                                                                           |             |                                                                           |             |
| Measured V with full range                        | 20-277 V L-N/35 - 480 V L-L, cat III<br>20-347 V L-N/35 - 600 V L-L, cat II                                                                                                  |             |                                                                           |             |
| Permanent overload                                | 750 Vac L-L                                                                                                                                                                  |             |                                                                           |             |
| Impedance                                         | => 5 MΩ                                                                                                                                                                      |             |                                                                           |             |
| Frequency nominal                                 | 50/60 Hz                                                                                                                                                                     |             |                                                                           |             |
| VA burden                                         | < 0.2 VA at 240 Vac L-N                                                                                                                                                      |             |                                                                           |             |
| Input-current                                     |                                                                                                                                                                              |             |                                                                           |             |
| CT ratings                                        | Primary adjustable 1 A to 32768 A<br>Secondary 1 A or 5 A I-nominal field settable                                                                                           |             |                                                                           |             |
| Measured Amps with over range and Crest Factor    | 5 mA to 6 A                                                                                                                                                                  |             |                                                                           |             |
| Over current withstand                            | Continuous 12 A, 10s/hr 50 A, 1s/hr 500 A                                                                                                                                    |             |                                                                           |             |
| Impedance                                         | < 0.3 mΩ                                                                                                                                                                     |             |                                                                           |             |
| Frequency nominal                                 | 50/60 Hz                                                                                                                                                                     |             |                                                                           |             |
| VA Burden                                         | <0.024 VA at 6 A                                                                                                                                                             |             |                                                                           |             |
| AC control power                                  |                                                                                                                                                                              |             |                                                                           |             |
| Operating range                                   | 44- 277 Vac ±10%<br>(80-277 Vac ±10% for PM2x30/PM2x25)                                                                                                                      |             |                                                                           |             |
| Burden                                            | <6 VA at 277 Vac L-N<br>(<8 VA for PM2x30 and PM2x25)                                                                                                                        |             |                                                                           |             |
| Frequency                                         | 45 to 65 Hz                                                                                                                                                                  |             |                                                                           |             |
| Ride-through time                                 | 100 ms typical at 120 V AC and maximum burden (50 ms with Analog IO card for PM2x30)<br>400 ms typical at 230 V AC and maximum burden (50 ms with Analog IO card for PM2x30) |             |                                                                           |             |
| DC control power                                  |                                                                                                                                                                              |             |                                                                           |             |
| Operating range                                   | 48-277 Vdc ±10% (100-277 Vdc ±10% for PM2x30/PM2x25)                                                                                                                         |             |                                                                           |             |
| Burden                                            | < 2 W at 277 Vdc<br>(< 3.3 W for PM2x30 and PM2x25)                                                                                                                          |             |                                                                           |             |
| Ride-through time                                 | 50 ms typical at 125 Vdc and maximum burden                                                                                                                                  |             |                                                                           |             |
| Real time clock                                   |                                                                                                                                                                              |             |                                                                           |             |
| RTC with battery backup                           | 3 years (when meter is in Power OFF condition)                                                                                                                               |             |                                                                           |             |
| Displays update                                   |                                                                                                                                                                              |             |                                                                           |             |
| Instantaneous                                     | 1 s                                                                                                                                                                          |             |                                                                           |             |
| Demand                                            | 15 s                                                                                                                                                                         |             |                                                                           |             |
| Harmonics                                         | 5 s                                                                                                                                                                          |             |                                                                           |             |
| Wiring configuration                              |                                                                                                                                                                              |             |                                                                           |             |
| User programmable                                 | 1ph, 2w, L-N                                                                                                                                                                 |             |                                                                           |             |
|                                                   | 1ph, 2w, L-L                                                                                                                                                                 |             |                                                                           |             |
|                                                   | 1ph, 3w, L-L with N (2phase)                                                                                                                                                 |             |                                                                           |             |
|                                                   | 3ph, 3w, Delta, Ungrounded                                                                                                                                                   |             |                                                                           |             |
|                                                   | 3ph, 3w, Delta, Corner Grounded <sup>(+2)</sup>                                                                                                                              |             |                                                                           |             |
|                                                   | 3ph, 3w, Wye, Ungrounded <sup>(+2)</sup>                                                                                                                                     |             |                                                                           |             |
|                                                   | 3ph, 3w, Wye Grounded <sup>(+2)</sup>                                                                                                                                        |             |                                                                           |             |
|                                                   | 3ph, 3w, Wye, Resistance Grounded <sup>(+2)</sup>                                                                                                                            |             |                                                                           |             |
|                                                   | 3ph, 4w, Open Delta, Center-Tapped <sup>(+2)</sup>                                                                                                                           |             |                                                                           |             |
|                                                   | 3ph, 4w, Delta, Center-Tapped <sup>(+2)</sup>                                                                                                                                |             |                                                                           |             |
|                                                   | 3ph, 4w, Wye, Ungrounded <sup>(+2)</sup>                                                                                                                                     |             |                                                                           |             |
|                                                   | 3ph, 4w, Wye Grounded                                                                                                                                                        |             |                                                                           |             |
|                                                   | 3ph, 4w, Wye, Resistance Grounded <sup>(+2)</sup> 3ph, 3w, Wye Grounded <sup>(+2)</sup>                                                                                      |             |                                                                           |             |
|                                                   | 3ph, 3w, Wye, Resistance Grounded <sup>(+2)</sup>                                                                                                                            |             |                                                                           |             |
|                                                   | 3ph, 4w, Open Delta, Center-Tapped <sup>(+2)</sup>                                                                                                                           |             |                                                                           |             |
|                                                   | 3ph, 4w, Delta, Center-Tapped <sup>(+2)</sup>                                                                                                                                |             |                                                                           |             |
|                                                   | 3ph, 4w, Wye, Ungrounded <sup>(+2)</sup>                                                                                                                                     |             |                                                                           |             |
| 3ph, 4w, Wye Grounded                             |                                                                                                                                                                              |             |                                                                           |             |
| 3ph, 4w, Wye, Resistance Grounded <sup>(+2)</sup> |                                                                                                                                                                              |             |                                                                           |             |

<sup>(+2)</sup> Through communication in PM2100 series meters

# PM2000 Series



Rear of PM2100 series with I/O module



Rear of PM2100 series with I/O module disconnected

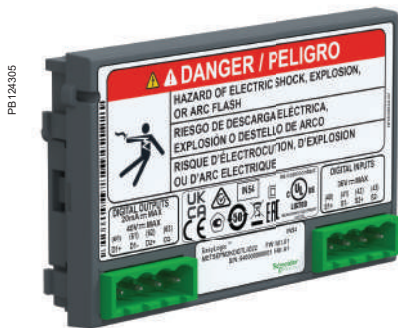
## Technical specifications (continued)

| Mechanical characteristics                                |                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight                                                    | ~ 300 g                                                                                                                                                                                                                                                                  |
| IP degree of protection                                   | IP54 front side, IP30 meter body as per IEC 60529; Upgrade to IP65 front side with Optional accessory kit METSEIP65OP96X96FF                                                                                                                                             |
| Material                                                  | Polycarbonate meets UL 94V-0 flammability rating                                                                                                                                                                                                                         |
| Dimensions WxHxD                                          | 96x96x54 mm maximum (depth of the meter from housing mounting flange) and 13 mm (protrusion of meter from housing flange). Meter depth with IO module is 74 mm                                                                                                           |
| Mounting position                                         | Vertical                                                                                                                                                                                                                                                                 |
| Panel thickness                                           | 5 mm maximum                                                                                                                                                                                                                                                             |
| Environmental characteristics                             |                                                                                                                                                                                                                                                                          |
| Operating temperature                                     | Meter -10 to +60 °C (14 to 140 °F)                                                                                                                                                                                                                                       |
| Storage temperature                                       | Meter -25 to +70 °C (-13 to 158 °F)                                                                                                                                                                                                                                      |
| Humidity rating                                           | 5 to 95 % RH non condensing                                                                                                                                                                                                                                              |
| Pollution degree                                          | 2                                                                                                                                                                                                                                                                        |
| Altitude                                                  | ≤ 2000 m (6562 ft) Category III                                                                                                                                                                                                                                          |
| Product life                                              | Minimum 7 years                                                                                                                                                                                                                                                          |
| Electromagnetic compatibility (tested as per IEC 61326-1) |                                                                                                                                                                                                                                                                          |
| Electrostatic discharge                                   | IEC 61000-4-2                                                                                                                                                                                                                                                            |
| Immunity to radiated field                                | IEC 61000-4-3                                                                                                                                                                                                                                                            |
| Immunity to fast transients                               | IEC 61000-4-4                                                                                                                                                                                                                                                            |
| Immunity to impulse waves                                 | IEC 61000-4-5                                                                                                                                                                                                                                                            |
| Conducted immunity                                        | IEC 61000-4-6                                                                                                                                                                                                                                                            |
| Immunity to magnetic fields                               | IEC 61000-4-8                                                                                                                                                                                                                                                            |
| Immunity to voltage dips                                  | IEC 61000-4-11                                                                                                                                                                                                                                                           |
| Emissions                                                 | Emissions FCC Part 15 Class A/CE                                                                                                                                                                                                                                         |
| Safety                                                    |                                                                                                                                                                                                                                                                          |
| Europe                                                    | CE, as per IEC 61010-1 Ed-3                                                                                                                                                                                                                                              |
| US and Canada                                             | cULus as per UL61010-1 and CAN/CSA-C22.2 No. 61010-1, for 600 Vac                                                                                                                                                                                                        |
| Measurement Category (Voltage and Current inputs)         | CAT III up to 480 V L-L<br>CAT II up to 600 V L-L                                                                                                                                                                                                                        |
| Overvoltage Category (Control power)                      | CAT III up to 300 V L-N                                                                                                                                                                                                                                                  |
| Dielectric                                                | As per IEC/UL 61010-1 Ed-3                                                                                                                                                                                                                                               |
| Protective Class                                          | II, Double insulated for user accessible parts                                                                                                                                                                                                                           |
| Green premium                                             | EOL, REACH, PEP, RoHS complied                                                                                                                                                                                                                                           |
| Other certification                                       | RCM (Australia), EAC (Russia)                                                                                                                                                                                                                                            |
| Communication                                             |                                                                                                                                                                                                                                                                          |
| RS-485 port                                               | Modbus RTU: 2-Wires, with ground & shield, 4800, 9600, 19200 or 38400 baud, Parity - Even, Odd, None, 1 stop bit if parity is Odd or Even, 2 stop bits if None<br>DLF3000: Firmware update through communication port                                                    |
| Pulse Output – POP                                        | Max 40 Vdc, 20 mA 20 ms ON time<br>Configurable pulse weight from 1 to 9999000 pulses/k <sub>h</sub> (kWh, kVAh, or kVARh)                                                                                                                                               |
| Isolation                                                 | 2.5 kV RMS, double insulated                                                                                                                                                                                                                                             |
| Protection features                                       | Password protected for set-up & clearing energy and Min/Max data                                                                                                                                                                                                         |
| Display language (LCD)                                    | English, Spanish, French, Chinese, German, Portuguese, Russian, Turkish                                                                                                                                                                                                  |
| Technical publication                                     | Printed installation guide (IG) with the meter in multi-language (EN, ES, FR, DE, PT, RU, TR, ZH)                                                                                                                                                                        |
| Human machine interface                                   |                                                                                                                                                                                                                                                                          |
| Display type                                              | LED display: 7 segment LED, ~ 14.2 mm height, 3 rows with 4 digits per row 2 columns of LEDs, one on each side of the LED panel to indicate the parameters under measurement<br>LCD display: Monochrome graphical LCD of 128x128 pixels with viewable area of 67x62.5 mm |
| Keypad / Buttons                                          | PM2100 series: 3 buttons for navigation & combination of 2 buttons for performing set-up, Lock/unlocking of page, Diagnostic page operation<br>PM2200 series: 4 buttons for intuitive navigation of HMI/UI pages                                                         |
| Calibration LED Indicator                                 | Red colour, meter constant is configurable from 1 to 9999000 pulses/k <sub>h</sub> (kWh, kVAh, or kVARh)                                                                                                                                                                 |
| Communication activity                                    | Green LED (for indicating RS-485 interface or heartbeat pulse)                                                                                                                                                                                                           |

# PM2000 Series



Rear of PM2200 series with I/O module



Digital I/O module



Analog I/O module

## PM2000 series electrical characteristics of IO modules

| Status Inputs (Digital Inputs) |                                                                                                                                                                                                           |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Voltage ratings                | 18.5 to 36 Vdc, OFF 0 to 4 Vdc                                                                                                                                                                            |
| Input resistance               | 110 kΩ                                                                                                                                                                                                    |
| Max Frequency                  | 2 Hz (T ON min = T OFF min = 250 ms)                                                                                                                                                                      |
| Detect Time                    | 20 ms                                                                                                                                                                                                     |
| Update time                    | 1 s                                                                                                                                                                                                       |
| Isolation                      | 2.5 kV RMS                                                                                                                                                                                                |
| Supported models               | Available as default feature in PM2125/PM2225 and Expandable option in PM2130/PM2230 meter model                                                                                                          |
| Application                    | Integration of Breaker status or other non-electrical devices like steam, water, gas meter through pulse inputs                                                                                           |
| Display support                | Available on PM2230/PM2225 (LCD type). In PM2130/PM2125 meter, data is available through communication only.                                                                                              |
| Set up and configuration       | Through set-up software                                                                                                                                                                                   |
| Digital Outputs                |                                                                                                                                                                                                           |
| Voltage ratings                | 40 Vdc max, 20mA max                                                                                                                                                                                      |
| On Resistance                  | 50 W max                                                                                                                                                                                                  |
| Meter constant                 | Configurable from 1 to 9999000 k_h (kWh, kVARh, kVAh)                                                                                                                                                     |
| Pulse width                    | 20, 25, 50, 100 ms                                                                                                                                                                                        |
| Pulse frequency (typical)      | 25 Hz                                                                                                                                                                                                     |
| Leakage current                | 1 micro Amps                                                                                                                                                                                              |
| Isolation                      | 2.5 kV RMS                                                                                                                                                                                                |
| Supported models               | Available as default feature in PM2125/PM2225 and Expandable option in PM2130/ PM2230 meter model                                                                                                         |
| Alarm conditions               | 23 set point driven standard alarms, 4 Unary alarms, 2 Digital inputs status                                                                                                                              |
| Application                    | Pulse output: configurable for energies upper / lower limit: configurable for 9 parameters with 14 set point: V L-L, V L-N, Amps, F, V-THD %, W-tot, VA-tot, VAR-tot, PF-avg                              |
| Display support                | Available on PM2230/PM2225 (LCD type). In PM2130/PM2125 meter, data is available through communication only                                                                                               |
| Set up and Configuration       | Through set-up software                                                                                                                                                                                   |
| Analog inputs                  |                                                                                                                                                                                                           |
| Measurement scale              | 4-20 mA                                                                                                                                                                                                   |
| Input impedance                | ≤300 W                                                                                                                                                                                                    |
| Max source impedance           | >500 W                                                                                                                                                                                                    |
| Update rate                    | 1 s                                                                                                                                                                                                       |
| Accuracy                       | 1 % of Full scale at ambient temp 0.1 %/K for de-rating                                                                                                                                                   |
| Voltage ratings                | Typical 12 V (max 30 V)                                                                                                                                                                                   |
| Power Consumption              | <1.5 W                                                                                                                                                                                                    |
| Isolation                      | 2.5 kV RMS                                                                                                                                                                                                |
| Supported models               | Expandable option in PM2130/PM2230 meter models                                                                                                                                                           |
| Application                    | Configurable for inputs from flow rates, RPM, fluid level, oil pressure, temperature measurement devices or transducers with option of 81 different Uni code selection. Configuration via set up software |
| Display                        | Available on PM2230 (LCD type). In PM2130 meter, data is available through communication only                                                                                                             |
| Set up and configuration       | Through set up software                                                                                                                                                                                   |
| Analog outputs                 |                                                                                                                                                                                                           |
| Scale                          | 4-20 mA                                                                                                                                                                                                   |
| Load impedance                 | ≤600 W                                                                                                                                                                                                    |
| Update rate                    | 1 s                                                                                                                                                                                                       |
| Accuracy                       | 1 % of Full scale at ambient temp                                                                                                                                                                         |
| Voltage ratings                | Typical 12 V (max 30 V)                                                                                                                                                                                   |
| Power Consumption              | <1.5 W                                                                                                                                                                                                    |
| Isolation                      | 2.5 kV RMS                                                                                                                                                                                                |
| Supported models               | Expandable option in PM2130/PM2230 meter models                                                                                                                                                           |
| Application                    | Analog outputs can be associated to 40 different instantaneous parameters                                                                                                                                 |
| Display                        | Available on PM2230 (LCD type). In PM2130 meter, data is available through communication only                                                                                                             |
| Set-up & configuration         | Through set-up software                                                                                                                                                                                   |
| Mechanical characteristics     |                                                                                                                                                                                                           |
| Mechanical dimension (WxHxD)   | 90.5 mm x 53 mm x 14.67 mm (without connector)                                                                                                                                                            |
| Weight                         | 50 g                                                                                                                                                                                                      |

# PM2000 Series



**Digital Input Relay Output module**

## PM2000 series electrical characteristics of IO modules

| Relay Outputs             |                                                                                                                                                                                                  |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Voltage rating            | 30 Vdc 5A load<br>250 Vac 8A, PF=1.0<br>250 Vac 6A, PF=0.4                                                                                                                                       |
| Output Frequency          | 0.5 Hz maximum (1 second ON/1 second OFF)                                                                                                                                                        |
| Relay type                | Mechanical, Form A, Potential free                                                                                                                                                               |
| Isolation                 | 2.5 kV RMS                                                                                                                                                                                       |
| Supported models          | Available as default feature in selected references in PM2125/PM2225 model.<br>Expandable options in PM2130/PM2230 model.                                                                        |
| Alarm conditions          | 23 set point driven standard alarms, 4 Unary alarms, 2 Digital inputs status                                                                                                                     |
| Application               | Upper / lower limit: configurable for 10 parameters with 23 set points: V L-L, V L-N, Amps, F, V-THD %, W-tot, VA-tot, VAR-tot, PF-avg, last, present & predicted parameters for 3 power demands |
| Display and communication | Available on PM2230/PM2225 (LCD type).<br>In PM2130/PM2125 meter, data is available through communication only                                                                                   |
| Set up and Configuration  | Through ION set up software utility tool                                                                                                                                                         |

## Feature selection

| Commercial ref. number    | Model                   |
|---------------------------|-------------------------|
| <b>METSEPM2110</b>        | PM2110                  |
| <b>METSEPM2120</b>        | PM2120                  |
| <b>METSEPM2125C2AI2AO</b> | PM2125C <sup>(+3)</sup> |
| <b>METSEPM2125C2DI2RO</b> | PM2125C <sup>(+3)</sup> |
| <b>METSEPM2130</b>        | PM2130                  |
| <b>METSEPM2210</b>        | PM2210                  |
| <b>METSEPM2220</b>        | PM2220                  |
| <b>METSEPM2225C2AI2AO</b> | PM2225C <sup>(+3)</sup> |
| <b>METSEPM2225C2DI2RO</b> | PM2225C <sup>(+3)</sup> |
| <b>METSEPM2230</b>        | PM2230                  |
| <b>METSEPM2KDGTLIO22</b>  | PM2K2DIDO               |
| <b>METSEPM2KANLGIO22</b>  | PM2K2AIAO               |
| <b>METSEPM2KANLGIO11</b>  | PM2K1AIAO               |
| <b>METSEPM2K2DI2RO</b>    | PM2K2DIRO               |

<sup>(+3)</sup> Available in China only

Please contact your Schneider Electric representative for complete ordering information.

# PM2000 Series

| Feature set summary                                                                                                                                                                                                                                      | PM2110                 | PM2120                                                                                               | PM2125C                                | PM2130                                 | PM2210                                | PM2220                                          | PM2225C                        | PM2230                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------------------|---------------------------------------|-------------------------------------------------|--------------------------------|------------------------|
| Accuracy Class for Wh                                                                                                                                                                                                                                    | 1.0                    |                                                                                                      | 0.5s                                   |                                        | 1.0                                   |                                                 | 0.5s                           |                        |
| Accuracy Class for VARh                                                                                                                                                                                                                                  | 1.0                    |                                                                                                      |                                        |                                        |                                       |                                                 |                                |                        |
| Accuracy for VAh                                                                                                                                                                                                                                         | ±1.0 %                 |                                                                                                      | ±0.5 %                                 |                                        | ±1.0 %                                |                                                 | ±0.5 %                         |                        |
| Current, per-phase, average and calculated neutral current                                                                                                                                                                                               |                        |                                                                                                      |                                        |                                        | ■                                     |                                                 |                                |                        |
| Voltage, V L-N, V L-L, per-phase and average                                                                                                                                                                                                             |                        |                                                                                                      |                                        |                                        | ■                                     |                                                 |                                |                        |
| Power Factor                                                                                                                                                                                                                                             | True PF                | True PF<br>Displacement PF <sup>(+4)</sup>                                                           |                                        |                                        | True PF                               | True PF<br>Displacement PF                      |                                |                        |
| Frequency, any available phase                                                                                                                                                                                                                           |                        |                                                                                                      |                                        |                                        | ■                                     |                                                 |                                |                        |
| Power: W, VA, VAR: per phase and total                                                                                                                                                                                                                   |                        |                                                                                                      |                                        |                                        | ■                                     |                                                 |                                |                        |
| 3-phase unbalance %                                                                                                                                                                                                                                      | Current                | Current<br>Voltage <sup>(+4)</sup>                                                                   |                                        |                                        | Current                               | Current<br>Voltage                              |                                |                        |
| Demand parameters (Present, Last, Predicted and Peak for W, VA, VAR, A)<br>Date and Time stamp for peak demand                                                                                                                                           | ■<br>(no timestamp)    | ■                                                                                                    |                                        |                                        | ■<br>(no timestamp)                   | ■                                               |                                |                        |
| Energy: Wh, VAh, VARh (4 quadrant)<br>Delivered (Import or Forward),<br>Received (Export or Reverse)                                                                                                                                                     | Delivered,<br>Received | Delivered, Received<br>Total <sup>(+4)</sup> , Net <sup>(+4)</sup> ,<br>Last cleared <sup>(+4)</sup> |                                        |                                        | Delivered,<br>Received,<br>Total, Net | Delivered, Received<br>Total, Net, Last cleared |                                |                        |
| Active load timer, meter operating timer, run hours and power outage counter                                                                                                                                                                             | -                      | Through communication                                                                                |                                        |                                        | -                                     | ■                                               |                                |                        |
| THD % and thd %: Voltage L-N or L-L, Amps per phase                                                                                                                                                                                                      | ■                      |                                                                                                      |                                        |                                        |                                       |                                                 |                                |                        |
| Individual harmonics for Voltage, Current, per-phase                                                                                                                                                                                                     | -                      | Up to 15 <sup>th</sup> <sup>(+4)</sup>                                                               | Up to 15 <sup>th</sup> <sup>(+4)</sup> | Up to 31 <sup>st</sup> <sup>(+4)</sup> | -                                     | Up to 15 <sup>th</sup>                          | Up to 15 <sup>th</sup>         | Up to 31 <sup>st</sup> |
| Min/ Max with real time clock For avg or total of V L-L, V L-N, Amps, PF, Hz, W, VA, VAR parameters with date and time stamp of occurrence                                                                                                               | -                      | Through communication                                                                                |                                        |                                        | -                                     | ■                                               |                                |                        |
| RTC/battery <sup>(+6)</sup>                                                                                                                                                                                                                              | -                      | ■                                                                                                    | ■                                      | ■                                      | -                                     | ■                                               | -                              | ■                      |
| Communication                                                                                                                                                                                                                                            | Pulse Output           | RS-485                                                                                               |                                        |                                        | Pulse Output                          | RS-485                                          |                                |                        |
| Expandable Analog IO module <sup>(+5)</sup><br>PM2K2AIAO: 2 input & 2 output channels<br><b>METSEPM2KANLGIO22</b><br>PM2K1AIAO: 1 input & 1 output channel<br><b>METSEPM2KANLGIO11</b>                                                                   | -                      | Embedded with 2AI/2AO                                                                                |                                        |                                        | ■                                     | -                                               | Embedded with 2AI/2AO          | ■                      |
| Expandable Digital IO module <sup>(+5)</sup><br>PM2K2DIDO: 2 input & 2 output channels<br><b>METSEPM2KDGTLIO22</b>                                                                                                                                       | -                      | -                                                                                                    | -                                      | ■                                      | -                                     | -                                               | -                              | ■                      |
| Expandable DI RO module <sup>(+5)</sup><br>PM2K2DI2RO: 2 Digital input, 2 Mech Relay output channels. Whetting output voltage: 24V DC, 8 mA max load.<br><b>METSEPM2K2DI2RO</b>                                                                          | -                      | -                                                                                                    | Embedded with 2DI/2RO                  | ■                                      | -                                     | -                                               | Embedded with 2DI/2RO          | ■                      |
| Customizable data logging up to 2 parameters. Option to select Power (W, VA, VAR) Bi-directional energy (±Wh, ±VAh, ±VARh), Demand (W, VA, VAR, A) with configurable interval and duration (e.g., 2 parameters for 60 days at 15 minutes interval)       | -                      | -                                                                                                    | -                                      | ■                                      | -                                     | -                                               | -                              | ■                      |
| Alarms: 14 set point driven alarms from 9 parameters (V L-L, V L-N, Amps, F, V-THD %, W-tot, VA-tot, VAR-tot, PF-avg), 4 Unary alarms (meter power up, meter reset, meter diagnostic, phase reversal) and 2 digital inputs status (with DI/DO card only) | -                      | -                                                                                                    | ■                                      | ■                                      | -                                     | -                                               | ■                              | ■                      |
| Daily time snapshot of Avg Voltage, Avg Current, Total active power & Energy delivered as measured at configurable time of day <sup>(+7)</sup>                                                                                                           | -                      | -                                                                                                    | -                                      | -                                      | -                                     | ■                                               | -                              | ■                      |
| Rate counters: 2 configurable counters to display values in customer specified units base on energy measured (e.g., kgCO <sub>2</sub> emission or energy cost) <sup>(+7)</sup>                                                                           | -                      | -                                                                                                    | -                                      | -                                      | -                                     | ■                                               | -                              | ■                      |
| Commercial references                                                                                                                                                                                                                                    |                        |                                                                                                      |                                        |                                        |                                       |                                                 |                                |                        |
| Commercial reference starts with METSE***                                                                                                                                                                                                                | PM2110                 | PM2120                                                                                               | PM2125C2AI2AO<br>PM2125C2DI2RO         | PM2130                                 | PM2210                                | PM2220                                          | PM2225C2AI2AO<br>PM2225C2DI2RO | PM2230                 |

<sup>(+4)</sup> Through communication only

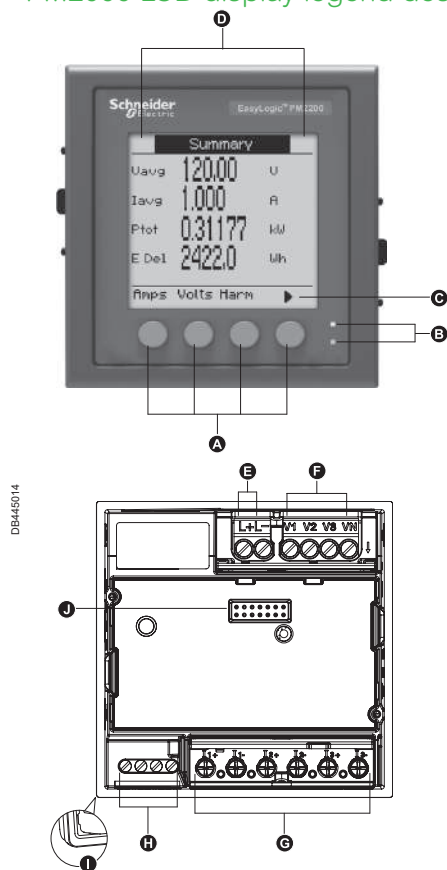
<sup>(+5)</sup> Any one IO module can be used at a time with PM2130 or PM2230 meter. The control power range with IO module (including PM2125C/PM2225C references) shall be 72 to 304 Vac L-N or 90 to 304 Vdc.

<sup>(+6)</sup> Battery backup duration 3 years when meter is in Power OFF condition.

<sup>(+7)</sup> Configurable snapshot and rate counter features (not available in PM2125C/PM2225C meters)

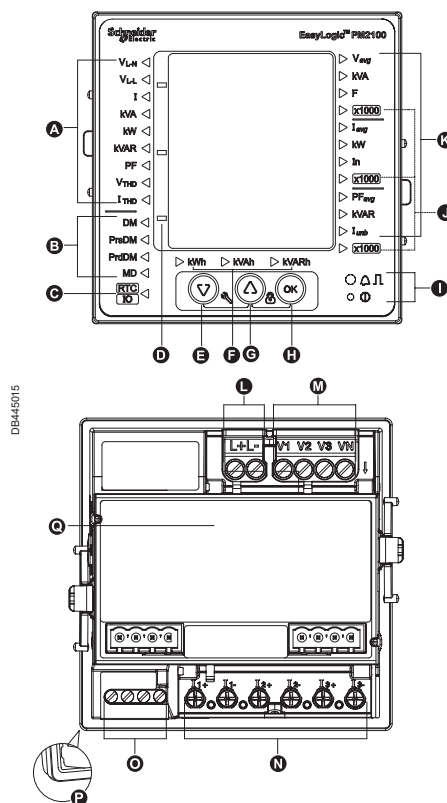
# PM2000 Series

## PM2000 LCD display legend description



- A** Menu selection buttons
- B** Energy pulsing LED (red) Heartbeat / communications LED (green)
- C** Navigation or menu selections:
  - ▲ Exit screen and go up one level
  - ▲ Move cursor up list of options
  - ▼ Move cursor down, display more options
  - ◀ Move cursor one character to the left
  - ▶ Scroll right and display more menu items
  - + Show next item in list or increase the highlighted value
  - Show previous item in list
- D** Maintenance & alarm notification area
- E** Control power
- F** Voltage inputs
- G** Current inputs
- H** RS-485 / POP
- I** Gasket
- J** IO channel slot - optional accessory for PM2230, embedded in PM2225 meter

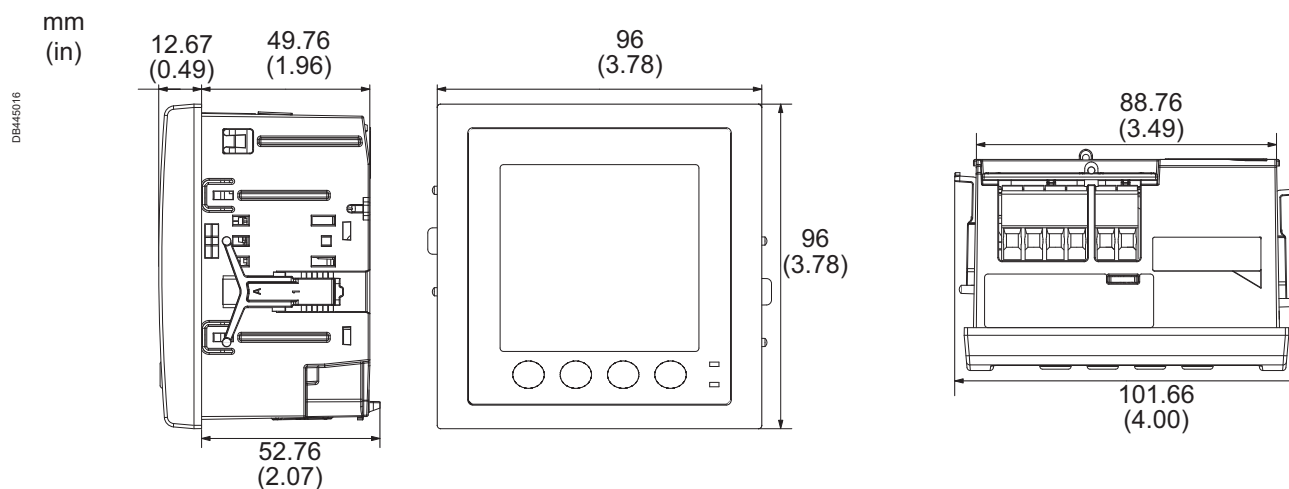
## PM2000 LED display legend description



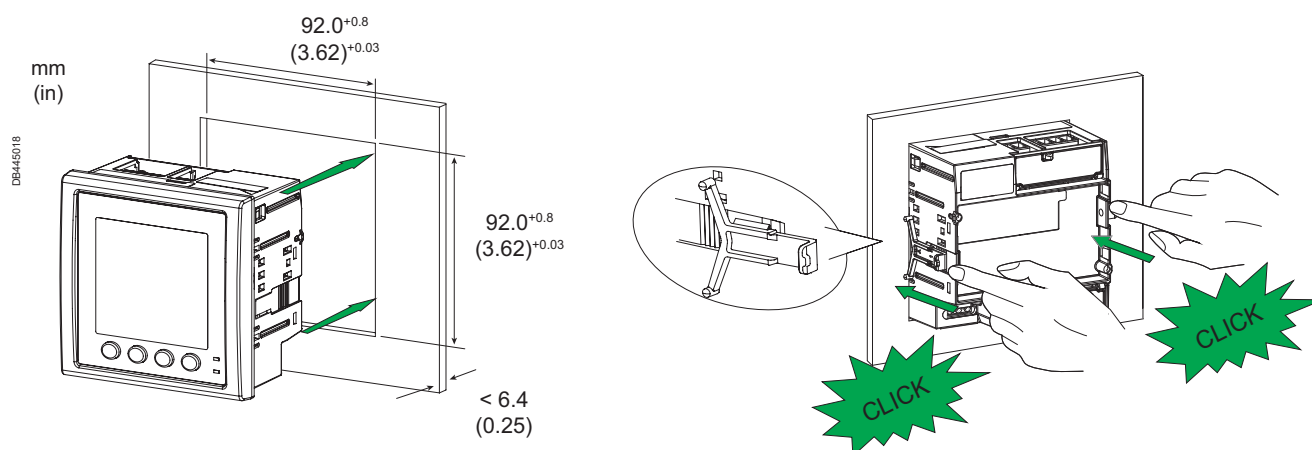
- A** Phase measurements (VL-N, VL-L, I, kVA, kW, kVAR, PF, V-THD %, I-THD %)
- B** Demand measurements (DM=Demand, PrsDM=Present demand, PrdDM=Predictor demand, MD=Maximum demand)
- C** RTC Date & time
- D** Negative indicator
- E** Navigation key to navigate down
- F** Energy readings Apparent energy, Active energy, Reactive energy
- G** Navigation key to navigate up
- H** OK 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** Control power L1, L2
- M** Input voltage terminals V1, V2, V3, VN
- N** Input current terminals I1+, I1-, I2+, I2-, I3+, I3-
- O** RS-485 communications / POP terminals
- P** Gasket
- Q** IO channel slot - optional accessory for PM2130, embedded feature in PM2125 meter

# PM2000 Series

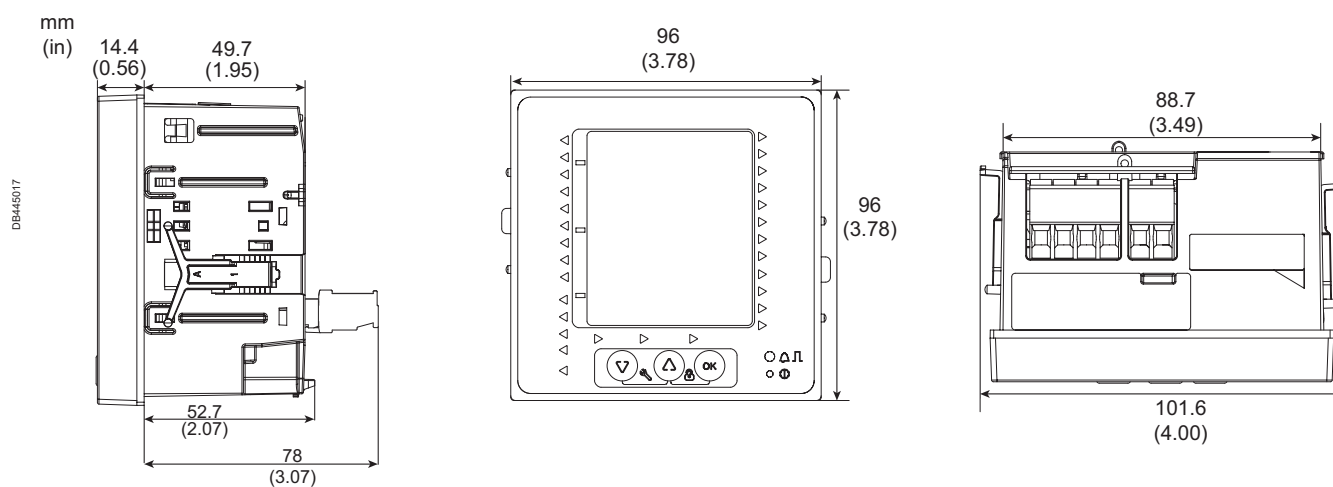
## PM2000 LCD multi-function meter mechanical dimensions



## PM2000 LCD multi-function meter installation

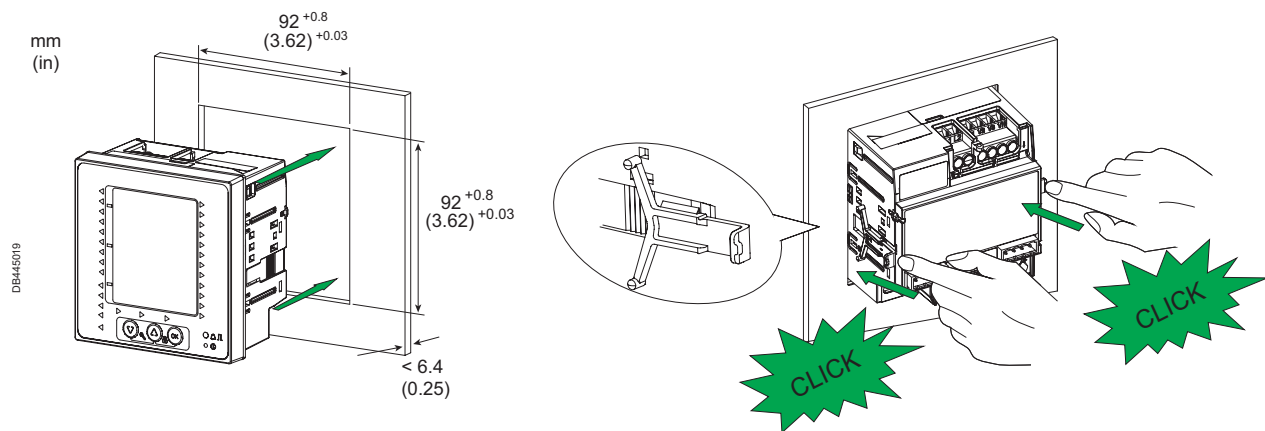


## PM2000 LED multi-function meter mechanical dimensions

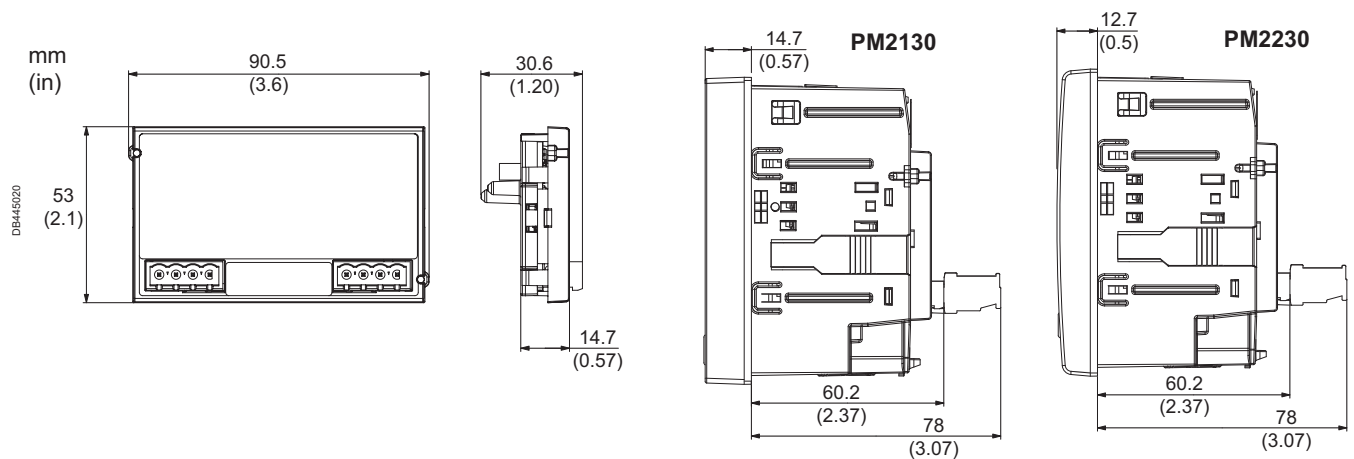


# PM2000 Series

## PM2000 LED multi-function meter installation



## PM2000 Digital and Analog IO module mechanical dimensions



See the appropriate Installation Guide for correct installation instructions.

# EasyLogic™ PM2220R Quick Click Technical Datasheet

## The EasyLogic™ PM2220R multi-function power and energy meter with Quick Click CTs

Offering the same extensive measurement capabilities of the PM2220 meters - now with the option to significantly reduce installation time, cost, and complexity with new plug and play, 3-in-1 Quick Click CTs.

### Applications

#### Cost management applications

- Bill checking to verify that you are only charged for the energy you use.
- Aggregation of energy consumption and cost allocation per area, per usage, per shift or per time within the same facility.
- Energy cost analysis per zone, per usage or per time period to optimize energy consumption.

#### Network management applications

- Metering of electrical parameters to better understand the behavior of your electrical distribution system.
- Power quality analysis.

PB119508



# PM2220R



PM2220R meter

Introducing the new Quick Click enabled EasyLogic PM2220R meter, next generation power meter, which offers all of the measurement capabilities of the PM2200 series with the added benefit of plug and play CT installation. For installers - time, labor, and rework savings of over 75% compared to traditionally wired meters with conventional CTs.

- Applications
  - Cost management:
    - Electrical installation remote monitoring
    - Energy accounting and balancing
    - Tenant and sub-billing
    - Panel instrumentation
    - Energy management
- Network management:
  - Power quality analysis: THD % and individual harmonics up to the 15th order (PM2220R).
  - Measurement of True PF and Displacement PF.
  - Recording Min/Max values of instantaneous parameters with date and timestamp.
  - Calculates % unbalance for voltage and current.

## Feature selection

| Commercial Ref. Number | Model                                                                                          |
|------------------------|------------------------------------------------------------------------------------------------|
| Meter Model            | Description                                                                                    |
| <b>METSEPM2220R</b>    | PM2220R power meter 15th Har RS-485 CI 1.0 Quick Click RJ45 LVCT                               |
| <b>LVCTs</b>           | <b>LVCT Solid 3-in-1 RJ45</b>                                                                  |
| <b>METSECTV35006</b>   | LVCT Solid core 3 in 1 with RJ45 cable, 35 mm phase center, 60 Amps, 0.333V output, Class 1.0  |
| <b>METSECTV35010</b>   | LVCT Solid core 3 in 1 with RJ45 cable, 35 mm phase center, 100 Amps, 0.333V output, Class 1.0 |
| <b>METSECTV35013</b>   | LVCT Solid core 3 in 1 with RJ45 cable, 35 mm phase center, 125 Amps, 0.333V output, Class 1.0 |
| <b>METSECTV35016</b>   | LVCT Solid core 3 in 1 with RJ45 cable, 35 mm phase center, 160 Amps, 0.333V output, Class 1.0 |
| <b>METSECTV35020</b>   | LVCT Solid core 3 in 1 with RJ45 cable, 35 mm phase center, 200 Amps, 0.333V output, Class 1.0 |
| <b>METSECTV35025</b>   | LVCT Solid core 3 in 1 with RJ45 cable, 35 mm phase center, 250 Amps, 0.333V output, Class 1.0 |
| <b>METSECTV45025</b>   | LVCT Solid core 3 in 1 with RJ45 cable, 45 mm phase center, 250 Amps, 0.333V output, Class 1.0 |

Please contact your Schneider Electric representative for complete ordering information.

# PM2220R



METSECTV35xxx series CT



METSECTV45xxx series CT

## • Main characteristics:

- Simple CT connection and installation with Quick Click-enabled meters and LVCTs: A single RJ-45 port on the meter allows for direct connection to the RJ-45 port on Schneider Electric Quick Click CTs. As Quick Click CTs have a low voltage output, the shorting block required for traditional 5 A or 1 A output CTs is no longer needed. CT input screw terminals on the meter, screw terminals on the CTs, and screw terminals on the shorting block are all eliminated with the Quick Click solution.
- Easy to install: Mounts using two clips, no tools are required. Compact meter with 54 mm depth, connectable up to  $480 \pm 10\%$  V AC Volts L-L without voltage transformers for installations compliant with measurement category III, and double insulated.
- Easy to operate: Intuitive navigation with self-guided menus and test LED at the front panel used for test and calibration of the meter on site or laboratory. Heart-beat LED indicates normal functioning and communication status if connected to RS-485 network.
- Product standard compliance
  - Active energy Class 1.0 as per IEC 62053-21<sup>(+1)</sup>.
  - Reactive energy Class 1.0 as per IEC 62053-24 (partial compliance for reactive energy test clause only).
- Power quality analysis: The PM2220R offers THD % measurements and Individual harmonics up to the 15th order.
- Load management: Simultaneous display of peak, present, predicted and rising demands of all the four demand parameters (W, VA, VAR, Amps)
- Billing: Tenant billing/utility meter cross check (where local regulations are not applicable).
- Timer: Active load timer, meter operation timer and run hours timer. These features help advise maintenance requirements and scheduling.
- Display type: Monochrome graphical LCD of 128 x 128 resolution with viewable area of 67 x 62.5 mm lets the users read all three phase measured values simultaneously. The bright anti-glare display features large characters and powerful backlighting for easy reading even in extreme lighting conditions and viewing angles. Intuitive menus, multi-language text, icons and graphics create a user-friendly environment to learn about your electrical network.
- Password: Field configurable password for securing set-up information and prevent tampering of integrated values.
- Cyber security: Option for disabling RS-485 port through front panel keys against unauthorized access. It helps during installation and trouble shooting of communication network.
- LCD display: 5 digits for energy, 5 or 6 digits for other parameters, with auto scaling.
- Daily time snapshot (PM2220R): The values from summary page will be stored as snapshot and refreshed by a configurable time next day.
- Rate counters (PM2220R): 2 configurable counters display values in custom specified units based on energy recorded (e.g., kgCO<sub>2</sub> carbon emission or energy cost).
- Energy preset feature: For retrofit application.
- Suppression current: To disregard measurement of induced current or negligible current flowing in the circuit, settable from 5 mA to 99 mA.

<sup>(+1)</sup> Meters have been tested to ANSI C12.20 and IEC 62053-21 standards, assuming an ideal CT.

# PM2220R



PM2220R series meter - front display



PM2220R series meter - rear view



PM2220R series meter - underside view

## PM2220R Technical Specifications

| General                                                                                             |                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use on LV and MV systems with onsite programmable PT ratio                                          |                                                                                                                                                                                                                     |
| Basic metering with THD %, Individual Harmonics, RTC and min/max readings                           |                                                                                                                                                                                                                     |
| Instantaneous RMS Values                                                                            |                                                                                                                                                                                                                     |
| Current                                                                                             | Average line current of 3-phase, per-phase, and calculated neutral current                                                                                                                                          |
| Voltage                                                                                             | Average voltage of L-L, L-N parameters, and per-phase                                                                                                                                                               |
| Frequency                                                                                           | Any available line                                                                                                                                                                                                  |
| Real, reactive, and apparent power                                                                  | Total and per-phase value                                                                                                                                                                                           |
| Displacement power factor                                                                           | Average and per-phase signed, four quadrant                                                                                                                                                                         |
| True Power Factor                                                                                   | Average and per-phase signed, four quadrant                                                                                                                                                                         |
| % Unbalance                                                                                         | Among the phase for Amps, V L-N, V L-L                                                                                                                                                                              |
| Energy Values Stored in Non-Volatile Memory                                                         |                                                                                                                                                                                                                     |
| Four quadrant measurement for Delivered (Forward or Import) and Received (Reverse or Export) energy |                                                                                                                                                                                                                     |
| Net and Total (absolute) values                                                                     |                                                                                                                                                                                                                     |
| Timer                                                                                               | Accumulated time counters for active load timer, meter operation timer, run hours and power outage counter                                                                                                          |
| Old Registers                                                                                       | Facilitates retrieval of last cleared energy values                                                                                                                                                                 |
| Demand Values                                                                                       |                                                                                                                                                                                                                     |
| Current average                                                                                     | Present, Last, Predicted, Peak, and Peak Date Time                                                                                                                                                                  |
| Active power                                                                                        | Present, Last, Predicted, Peak, and Peak Date Time                                                                                                                                                                  |
| Reactive power                                                                                      | Present, Last, Predicted, Peak, and Peak Date Time                                                                                                                                                                  |
| Apparent power                                                                                      | Present, Last, Predicted, Peak, and Peak Date Time                                                                                                                                                                  |
| Demand sync methods                                                                                 | Thermal, Timed, Command Sync, and Clocked Sync                                                                                                                                                                      |
| Demand calculation mode                                                                             | Sliding, fixed and rolling block                                                                                                                                                                                    |
| Demand intervals                                                                                    | Settable from 1 to 60 minutes, in the step of 1 minute                                                                                                                                                              |
| Display                                                                                             |                                                                                                                                                                                                                     |
| PM2220R                                                                                             | Full-scope, monochrome graphical LCD of 128 x 128 resolution with viewable area of 67 x 62.5 mm                                                                                                                     |
| Visualization mode for signs                                                                        | IEC or IEEE type in LCD display meter                                                                                                                                                                               |
| Communication                                                                                       |                                                                                                                                                                                                                     |
| RS-485 serial                                                                                       | Channel connection Industry standard Modbus RTU protocol                                                                                                                                                            |
| Integration with software                                                                           | SCADA / DCS / PMS / EMS / BAS / BMS software                                                                                                                                                                        |
| Native Plug and Play support                                                                        | Native plug-and-play support for: EcoStruxure™ Power Monitoring Expert, EcoStruxure™ Power Operation, ION Setup.                                                                                                    |
| Min/Max Values                                                                                      |                                                                                                                                                                                                                     |
| Minimum and Maximum value recording of 3-ph average or total                                        | For 8 parameters, viz., V L-L, V L-N, Amps, PF, Hz, W, VA, VAR with date and time stamp, resettable separately through set up mode                                                                                  |
| Diagnostics                                                                                         |                                                                                                                                                                                                                     |
| Diagnostic page                                                                                     | Indicates LCD status, serial number, diag pages, OS and RS version                                                                                                                                                  |
| Rate 1 Counter <sup>(+2)</sup>                                                                      |                                                                                                                                                                                                                     |
| kgCO <sub>2</sub> emission (example)                                                                | Rate counter can be configured to display the CO <sub>2</sub> emission in kgCO <sub>2</sub> format based on the kWh measured either in delivered or received direction.                                             |
| Rate 2 Counter <sup>(+2)</sup>                                                                      |                                                                                                                                                                                                                     |
| Tariff counter (example)                                                                            | Rate counter can also be configured to calculate the electricity cost based on the energy consumption in customized currency format.                                                                                |
| Daily Time Snapshot <sup>(+2)</sup>                                                                 |                                                                                                                                                                                                                     |
| Daily time snapshot                                                                                 | Snapshot of Avg Voltage, Avg Current, Total Active Power and Energy delivered as measured by the meter at configurable time of day. The static page will be refreshed with new values at a configured time next day |

<sup>(+2)</sup> Available in PM2220R.

# PM2220R

PB119508



PM2220R with 35 mm CT attached

## PM2220R Technical Specifications

| Electrical Characteristics              |                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of measurement                     | True RMS 64 samples per cycle                                                                                                                                                                                                                                                                                                                                                            |
| Measurement Accuracy                    |                                                                                                                                                                                                                                                                                                                                                                                          |
| Current, average and per-phase          | ±0.5 %                                                                                                                                                                                                                                                                                                                                                                                   |
| Voltage average and per-phase           | ±0.5 %                                                                                                                                                                                                                                                                                                                                                                                   |
| Frequency                               | ±0.05 %                                                                                                                                                                                                                                                                                                                                                                                  |
| Power Factor, average and per-phase     | ±0.01                                                                                                                                                                                                                                                                                                                                                                                    |
| Power (W-Active, VA- Apparent)          | ±0.5 %                                                                                                                                                                                                                                                                                                                                                                                   |
| Power (VAR- Reactive)                   | ±1.0 %                                                                                                                                                                                                                                                                                                                                                                                   |
| Real / Active Energy (Wh)               | Class 1.0                                                                                                                                                                                                                                                                                                                                                                                |
| Reactive Energy                         | Class 1.0                                                                                                                                                                                                                                                                                                                                                                                |
| Apparent Energy                         | ±0.5 %                                                                                                                                                                                                                                                                                                                                                                                   |
| THD % and Individual Harmonics- V and A | ±5 % FS for THD % and Individual harmonics                                                                                                                                                                                                                                                                                                                                               |
| Input-Voltage                           |                                                                                                                                                                                                                                                                                                                                                                                          |
| VT primary                              | 999 kV L-L max, secondary voltage depends on VT ratio                                                                                                                                                                                                                                                                                                                                    |
| U nominal                               | 277 V L-N/480 V L-L                                                                                                                                                                                                                                                                                                                                                                      |
| Measured V with full range              | 20-277 V L-N/35 - 480 V L-L, cat III<br>20-347 V L-N/35 - 600 V L-L, cat II                                                                                                                                                                                                                                                                                                              |
| Permanent overload                      | 750 V AC L-L                                                                                                                                                                                                                                                                                                                                                                             |
| Measured range                          | 0.00333 V to 0.4 V                                                                                                                                                                                                                                                                                                                                                                       |
| Frequency nominal                       | 50/60 Hz                                                                                                                                                                                                                                                                                                                                                                                 |
| Input-Current                           |                                                                                                                                                                                                                                                                                                                                                                                          |
| CT ratings                              | Compatible with Schneider Electric Quick Click CTs with available primary current ratings of 60 A-1600 A Secondary 0.333 V                                                                                                                                                                                                                                                               |
| Frequency nominal                       | 50/60 Hz                                                                                                                                                                                                                                                                                                                                                                                 |
| AC Control Power                        |                                                                                                                                                                                                                                                                                                                                                                                          |
| Operating range                         | 44 - 277 Vac                                                                                                                                                                                                                                                                                                                                                                             |
| Burden                                  | <6 VA at 277 Vac L-N                                                                                                                                                                                                                                                                                                                                                                     |
| Frequency                               | 45 to 65 Hz                                                                                                                                                                                                                                                                                                                                                                              |
| Ride-through time                       | 100 ms typical at 120 Vac and maximum burden<br>400 ms typical at 230 Vac and maximum burden                                                                                                                                                                                                                                                                                             |
| DC Control Power                        |                                                                                                                                                                                                                                                                                                                                                                                          |
| Operating range                         | 48-277 V DC ±10 %                                                                                                                                                                                                                                                                                                                                                                        |
| Burden                                  | < 2 W at 277 Vdc                                                                                                                                                                                                                                                                                                                                                                         |
| Ride-through time                       | 50 ms typical at 125 Vdc and maximum burden                                                                                                                                                                                                                                                                                                                                              |
| Real Time Clock                         |                                                                                                                                                                                                                                                                                                                                                                                          |
| RTC with battery backup                 | 3 years (when meter is in Power OFF condition - PM2220R)                                                                                                                                                                                                                                                                                                                                 |
| Displays Update                         |                                                                                                                                                                                                                                                                                                                                                                                          |
| Instantaneous                           | 1 s                                                                                                                                                                                                                                                                                                                                                                                      |
| Demand                                  | 15 s                                                                                                                                                                                                                                                                                                                                                                                     |
| Harmonics                               | 5 s                                                                                                                                                                                                                                                                                                                                                                                      |
| Wiring Configuration                    |                                                                                                                                                                                                                                                                                                                                                                                          |
| User programmable                       | 1ph, 2w, L-N<br>1ph, 2w, L-L<br>1ph, 3w, L-L with N (2phase)<br>3ph, 3w, Delta, Ungrounded<br>3ph, 3w, Delta, Corner Grounded<br>3ph, 3w, Wye, Ungrounded<br>3ph, 3w, Wye Grounded<br>3ph, 3w, Wye, Resistance Grounded<br>3ph, 4w, Open Delta, Center-Tapped<br>3ph, 4w, Delta, Center-Tapped<br>3ph, 4w, Wye, Ungrounded<br>3ph, 4w, Wye Grounded<br>3ph, 4w, Wye, Resistance Grounded |

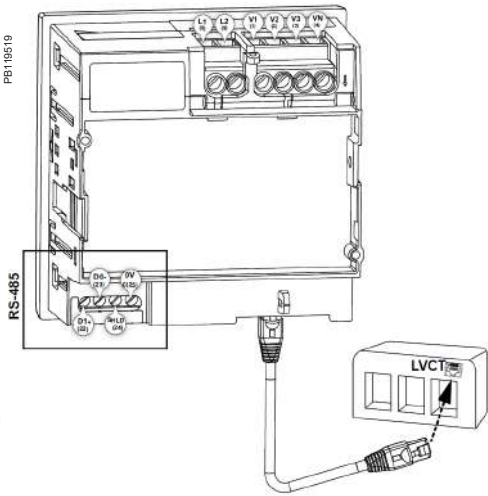
# PM2220R

## PM2200R Series

| Mechanical Characteristics                                |                                                                                                                                                                                                                         |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight                                                    | ~ 300 g                                                                                                                                                                                                                 |
| IP degree of protection                                   | IP54 front side, IP30 meter body as per IEC 60529<br>Upgrade to IP65 front side with optional accessory kit METSEIP65OP96X96FF                                                                                          |
| Material                                                  | Polycarbonate meets UL 94V-0 flammability rating                                                                                                                                                                        |
| Dimensions W x H x D                                      | 96 x 96 x 54 mm maximum (depth of the meter from housing mounting flange) and 13 mm (protrusion of meter from housing flange).                                                                                          |
| Mounting position                                         | Vertical                                                                                                                                                                                                                |
| Panel thickness                                           | 5 mm maximum                                                                                                                                                                                                            |
| Environmental Characteristics                             |                                                                                                                                                                                                                         |
| Operating temperature                                     | Meter -10 to +60 °C (14 to 140 °F)                                                                                                                                                                                      |
| Storage temperature                                       | Meter -25 to +70 °C (-13 to 158 °F)                                                                                                                                                                                     |
| Humidity rating                                           | 5 to 95 % RH non-condensing                                                                                                                                                                                             |
| Pollution degree                                          | 2                                                                                                                                                                                                                       |
| Altitude                                                  | ≤2000 m (6562 ft), Category III                                                                                                                                                                                         |
| Product life                                              | Minimum 7 years                                                                                                                                                                                                         |
| Electromagnetic Compatibility (tested as per IEC 61326-1) |                                                                                                                                                                                                                         |
| Electrostatic discharge                                   | IEC 61000-4-2                                                                                                                                                                                                           |
| Immunity to radiated field                                | IEC 61000-4-3                                                                                                                                                                                                           |
| Immunity to fast transients                               | IEC 61000-4-4                                                                                                                                                                                                           |
| Immunity to impulse waves                                 | IEC 61000-4-5                                                                                                                                                                                                           |
| Conducted immunity                                        | IEC 61000-4-6                                                                                                                                                                                                           |
| Immunity to magnetic fields                               | IEC 61000-4-8                                                                                                                                                                                                           |
| Immunity to voltage dips                                  | IEC 61000-4-11                                                                                                                                                                                                          |
| Emissions                                                 | Emissions FCC Part 15 Class A/CE                                                                                                                                                                                        |
| Safety                                                    |                                                                                                                                                                                                                         |
| Europe                                                    | CE, as per IEC 61010-1 Ed-3                                                                                                                                                                                             |
| US and Canada                                             | cULus as per UL61010-1 and CAN/CSA-C22.2 No. 61010-1, for 480 V AC                                                                                                                                                      |
| Measurement Category (Voltage and Current inputs)         | CAT III up to 480 V L-L<br>CAT II up to 600 V L-L                                                                                                                                                                       |
| Overvoltage Category (Control power)                      | CAT III up to 300 V L-N                                                                                                                                                                                                 |
| Dielectric                                                | As per IEC/UL 61010-1 Ed-3                                                                                                                                                                                              |
| Protective Class                                          | II, Double insulated for user accessible parts                                                                                                                                                                          |
| Compliance                                                | EOL, REACH, PEP, RoHS complied                                                                                                                                                                                          |
| Other certification                                       | RCM (Australia), EAC (Russia)                                                                                                                                                                                           |
| Communication                                             |                                                                                                                                                                                                                         |
| RS-485 port (PM2220R)                                     | Modbus RTU: 2-Wires, with ground and shield, 4800, 9600, 19200 or 38400 baud, Parity - Even, Odd, None, 1 stop bit if parity is Odd or Even, 2 stop bits if None<br>DLF3000: Firmware update through communication port |
| Pulse Output                                              | Max 40 V DC, 20 mA 20 ms ON time<br>Configurable pulse weight from 1 to 9999000 pulses/k_h (kWh, kVAh, or kVARh)                                                                                                        |
| Isolation                                                 | 2.5 kV RMS, double insulated                                                                                                                                                                                            |
| Protection features                                       | Password protected for set-up and clearing energy and Min/Max data                                                                                                                                                      |
| Display language                                          | English, Spanish, French, Chinese, German, Portuguese, Russian, Turkish                                                                                                                                                 |
| Technical publication                                     | Printed installation guide (IG) with the meter in multi-language (EN, ES, FR, DE, PT, RU, TR, ZH)                                                                                                                       |
| Human Machine Interface                                   |                                                                                                                                                                                                                         |
| Display type                                              | LCD display: Monochrome graphical LCD of 128 x128 mm resolution with viewable area of 67 x 62.5 mm                                                                                                                      |
| Keypad                                                    | 4 buttons for intuitive navigation of HMI/ UI pages                                                                                                                                                                     |
| CAL LED Indicator                                         | Red color, meter constant is configurable from 1 to 9999000 pulses/k_h (kWh, kVAh, or kVARh)                                                                                                                            |
| Communication activity                                    | Green LED (for indicating RS-485 interface or heartbeat pulse)                                                                                                                                                          |

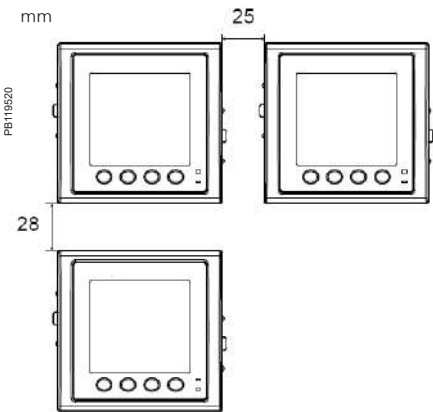
PM2220R

PM2220R Meter Rear

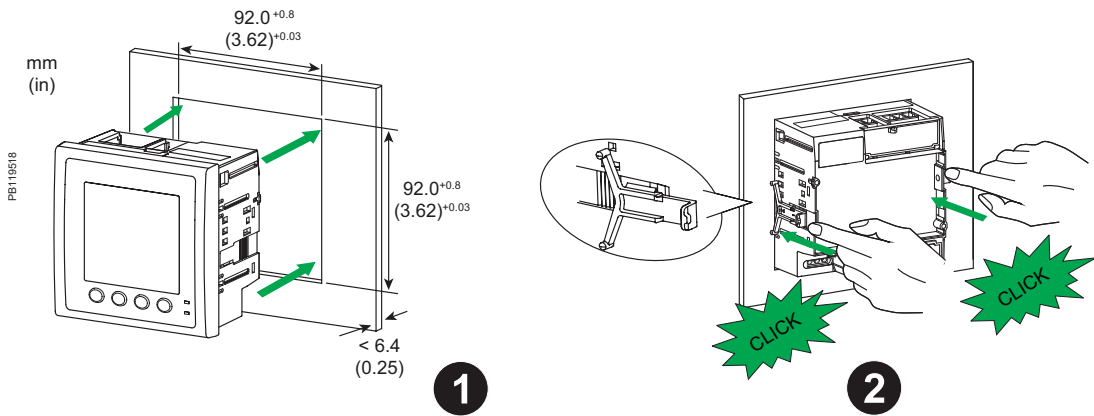


| Feature Set Summary                                                                                                                        | PM2220R                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Accuracy Class for Wh                                                                                                                      | 1.0                                                 |
| Accuracy Class for VARh                                                                                                                    | 1.0                                                 |
| Accuracy for VAh                                                                                                                           | ±0.5 %                                              |
| Amps, per-phase, average and calculated neutral current                                                                                    | ■                                                   |
| Voltage, V L-N, V L-L, per-phase and average                                                                                               | ■                                                   |
| Power Factor                                                                                                                               | True PF<br>Displacement PF                          |
| Frequency, any available phase                                                                                                             | ■                                                   |
| Power: W, VA, VAR: per-phase and total                                                                                                     | ■                                                   |
| 3-phase unbalance %                                                                                                                        | Current<br>Voltage                                  |
| Demand parameters (Present, Last, Predicted and Peak for W, VA, VAR, Amps)<br>Date and Time stamp for peak demand                          | ■                                                   |
| Energy: Wh, VAh, VARh (4 quadrant)<br>Delivered (Import or Forward),<br>Received (Export or Reverse)                                       | Delivered, Received,<br>Total, Net, Last<br>cleared |
| Active load timer, meter operating timer, run hours and power outage counter                                                               | ■                                                   |
| THD %: Voltage L-N or L-L, Amps per phase                                                                                                  | ■                                                   |
| Individual harmonics for Voltage, Current, per-phase                                                                                       | Up to 15th                                          |
| Min/ Max with real time clock For avg or total of V L-L, V L-N, Amps, PF, Hz, W, VA, VAR parameters with date and time stamp of occurrence | ■                                                   |
| RTC/battery                                                                                                                                | ■                                                   |
| Communication                                                                                                                              | RS-485                                              |
| Daily time snapshot of Avg Voltage, Avg Current, Total active power and Energy delivered as measured every day at a configurable time      | ■                                                   |

PM22xx Panel Grouping



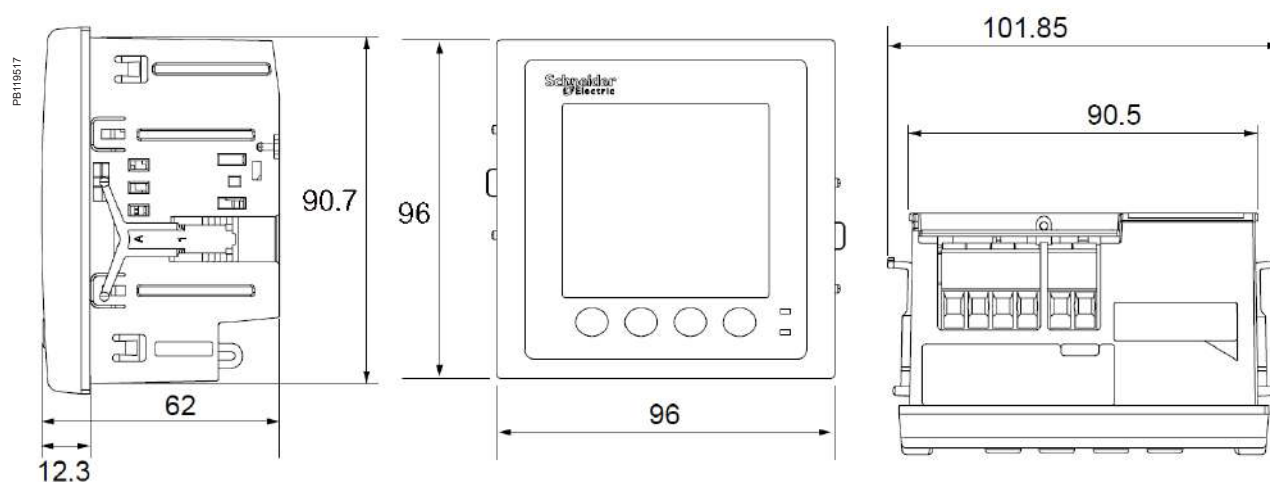
PM22xx Meter Installation



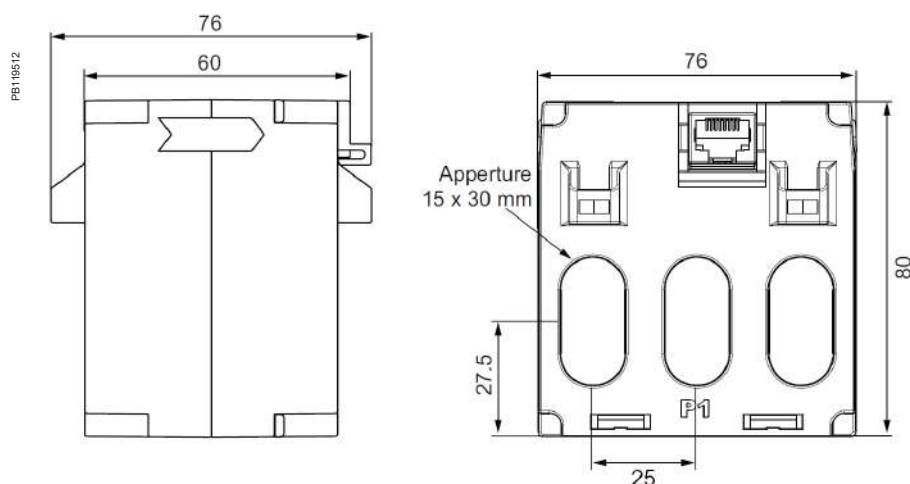
See the appropriate **Installation Guide** for correct installation instructions.

# PM2220R

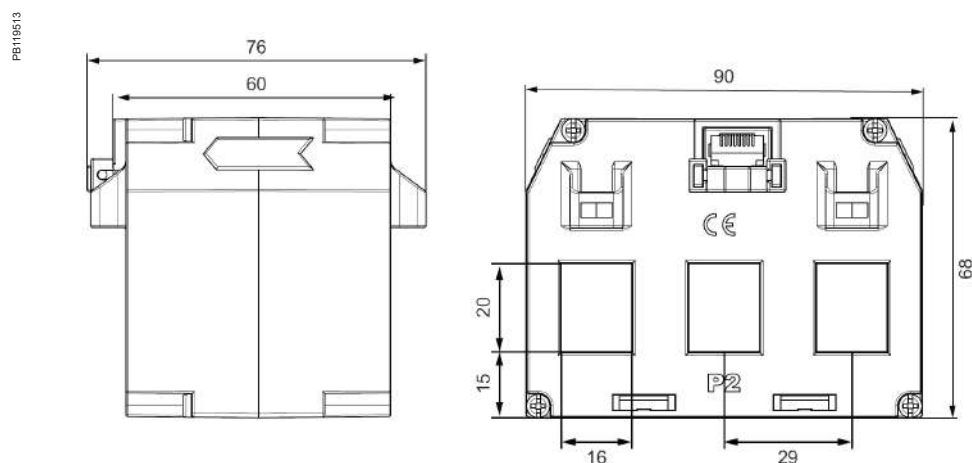
## PM2220R Multi-Function Meter Mechanical Dimensions



## SECTV25xxx 3-in-1 LVCT Mechanical Dimensions



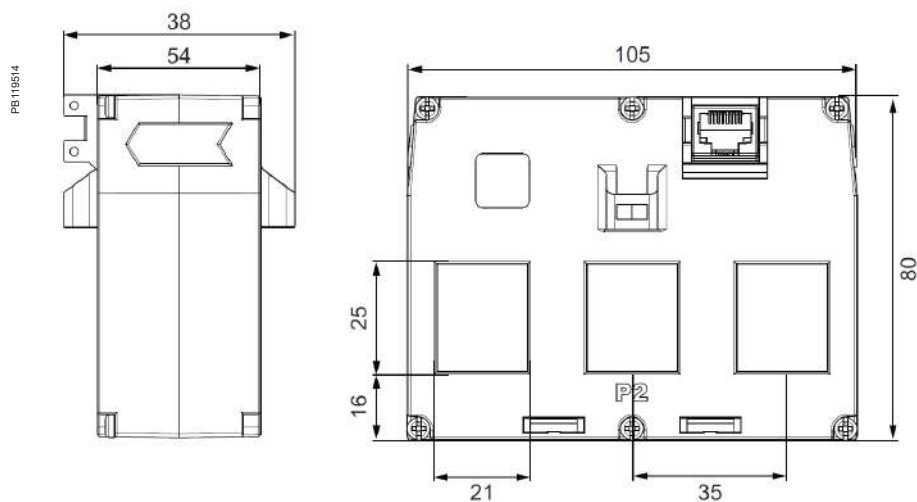
## SECTV29xxx 3-in-1 LVCT Mechanical Dimensions



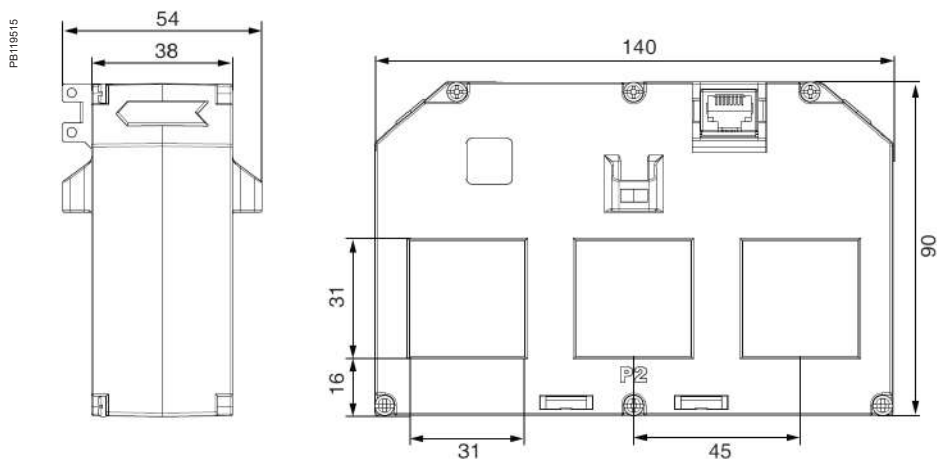
See the appropriate **Installation Guide** for correct installation instructions.

# PM2220R

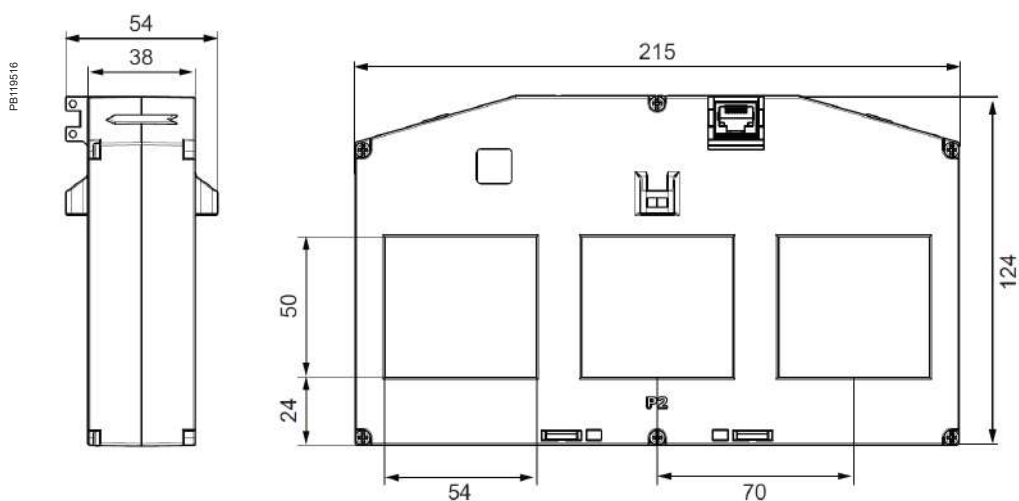
## SECTV35xxx 3-in-1 LVCT Mechanical Dimensions



## SECTV45xxx 3-in-1 LVCT Mechanical Dimensions



## SECTV70xxx 3-in-1 LVCT Mechanical Dimensions



See the appropriate **Installation Guide** for correct installation instructions.

# EasyLogic™ EM1000H Series

## EM1000H Series energy meters in LCD display

The EasyLogic™ EM1000H Series energy meter offers all the basic energy measurement capabilities required to monitor an electrical installation in a single 96x96 mm unit.

Characterized by their rugged construction, compact size, and low installation costs, these state-of-the-art meters are ideal for control panels, motor control centres, and genset panels.



EM1000H

# EM1000H Series



EasyLogic™ EM1000H front view



EasyLogic™ EM1000H rear view



EasyLogic™ EM1000H rear ISO view

EasyLogic™ meters are ideal replacements for multiple analog meters for stand-alone metering in custom panels, switch boards, switch-gear, genset panels, motor control centres, power factor improvement panels and OEM panel board.

## • Application

- Cost management applications
  - Measurement of basic electrical parameters in control panels, motor control panels, power distribution boards, OEM's, Building management systems, panel instrumentation.
  - Aggregation of energy consumption and cost allocation per area, per usage, per shift and per time within the same facility.
- Network management applications
  - Measurement of Power Factor.
  - Modbus RTU protocol RS-485 communication port for integration with energy management system.

## • Main characteristics

- Easy to install: Mounts using two retainer clips, no tools required. Compact meter with 49 mm meter depth behind the panel, connectable up to 480 V +10% AC volts L-L without voltage transformers for installation compliant with measurement category III, and double insulated.
- Easy to operate: Intuitive navigation with self-guided menus and Heart beat LED indicates normal functioning of meters while it conveys the communication status when connected to RS-485 network.
- LCD display: elegant, single row, bright, back lit graphical LCD display, 128\*32 pixels. Fast, in-line view, three parameters, name and value at one glance.
- Power and energy: measurement, display and recording of all three power and corresponding energy parameter at a time (W/ Wh, VA/ VAh or VAR/ VARh). Any one combination of power and energy parameter for measurement in EM1220H
- Accuracy:
  - Class 1.0 for active energy as per the test limits given in IEC 62053-21
  - Class 2.0 for reactive energy as per the test limits given in IEC 62053-23
  - Tested in accordance with IEC 62052-11 for energy test requirements
  - EMI/ EMC tests: As per IEC 61326-1
- CT nominal: 5 A or 1 A I-nominal (field settable). CT reversal auto correction for energy consumption.
- Password: Field configurable password for securing set up information and prevents tampering of integrated values.
- Cyber security: Option for disabling RS-485 port through front panel keys against unauthorized access. This feature can also be used for maintenance and troubleshooting of complex communication network.
- Favourite page : The device enables user with the option to select parameters to be set in favourite page.
- Display: Auto scaling, 4 digits for Instantaneous parameters and 9+3 digits for energy parameter with auto scroll and auto range capability.
- Smart line indicators in LCD display meter: Helps check the presence of input supply voltage.
- Suppression current: To disregard the measurement of induced and panel auxiliary load current in the circuit (settable from 5 to 99 mA).
- Protective cover: Tamper-proof terminal screws do not detach from housing.
- Control power options: Universal range 44 to 300 V L-N ac/dc or Low voltage DC control power option of 9 to 36 Vdc.

# EM1000H Series

## Technical specifications

| General                                                                                                                                                                                                  |                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Use on LV & MV systems with Potential transformer (PT or VT)/Current transformer (CT) ratio programmable at site                                                                                         |                                                                                                                     |
| Digital panel meters for measurement of basic electrical parameters                                                                                                                                      |                                                                                                                     |
| Instantaneous rms values                                                                                                                                                                                 |                                                                                                                     |
| Real (active), reactive, and apparent power                                                                                                                                                              | Total and per-phase                                                                                                 |
| True power factor                                                                                                                                                                                        | Average and per-phase signed                                                                                        |
| Energy values stored in non-volatile memory                                                                                                                                                              |                                                                                                                     |
| Delivered or forward or import energy from the grid - Accumulated or integrated active (Real - Wh), reactive (VARh) and apparent (VAh) energy                                                            |                                                                                                                     |
| Time counters such as meter ON Hours, load RUN Hours and power outage counters                                                                                                                           |                                                                                                                     |
| Old registers facilitate retrieval of last cleared energy values and load Run Hours                                                                                                                      |                                                                                                                     |
| Display                                                                                                                                                                                                  |                                                                                                                     |
| LCD display: Elegant single row, bright back lit graphical LCD display 132 (Horizontal) * 32 (Vertical) pixels, 60 Degree angular view. Fast in-line view, three parameters name and value at one glance |                                                                                                                     |
| Communication                                                                                                                                                                                            |                                                                                                                     |
| RS-485 serial channel connection Industry standard Modbus RTU protocol                                                                                                                                   |                                                                                                                     |
| Native Plug and Play support for Schneider Electric energy management system software - EcoStruxure™ Power Monitoring Expert, EcoStruxure™ Power Operation along with ION Setup programming support      |                                                                                                                     |
| Diagnostics                                                                                                                                                                                              |                                                                                                                     |
| Diagnostic page indicates the healthiness of communication system, device serial number, device model number OS & RS version, communication status, error code display                                   |                                                                                                                     |
| Page lock                                                                                                                                                                                                |                                                                                                                     |
| Page lock and unlock features. Once the commonly referred page is enabled for lock feature, then the display returns to locked page in 4 minutes of inactive time                                        |                                                                                                                     |
| Favourite page                                                                                                                                                                                           |                                                                                                                     |
| Number and type of parameters can be chosen and arranged in Favourite page according to the user's requirement                                                                                           |                                                                                                                     |
| Electrical characteristics                                                                                                                                                                               |                                                                                                                     |
| Type of measurement                                                                                                                                                                                      | True RMS, 4 quadrant power and 2 quadrant energy, 32 samples/ cycle                                                 |
| Measurement accuracy                                                                                                                                                                                     |                                                                                                                     |
| Current, per-phase & average                                                                                                                                                                             | ± 0.5 % of reading                                                                                                  |
| Voltage, L-N, L-L, per-phase & average                                                                                                                                                                   | ± 0.5 % of reading                                                                                                  |
| Frequency                                                                                                                                                                                                | ± 0.05 % for F-nominal 50/60 Hz ± 2 Hz<br>± 0.2 % for Frequency range from 30 to 48 Hz, 52 to 58 Hz and 62 to 70 Hz |
| Power (active and apparent)                                                                                                                                                                              | ± 1.0 % for Class 1.0, ± 0.5 % for Class 0.5                                                                        |
| Power (reactive)                                                                                                                                                                                         | ± 2.0 % for Class 1.0                                                                                               |
| Power factor, per-phase & average                                                                                                                                                                        | ± 0.01 of reading                                                                                                   |
| Active or real energy                                                                                                                                                                                    | Class 1.0 (± 1.0 %), Class 0.5 (± 0.5 %)                                                                            |
| Apparent energy                                                                                                                                                                                          | ± 1.0 % for Class 1.0, ± 0.5 % for Class 0.5                                                                        |
| Reactive energy                                                                                                                                                                                          | Class 2.0 (± 2.0 %)                                                                                                 |
| Input-voltage                                                                                                                                                                                            |                                                                                                                     |
| VT (PT) connection                                                                                                                                                                                       | Selectable from No VT (direct), 1 VT, 2 VT to 3 VT                                                                  |
| VT (PT) primary                                                                                                                                                                                          | 100 V L-L to 999 kV L-L max                                                                                         |
| U (V) nominal (secondary)                                                                                                                                                                                | Up to 277 V L-N/ 480 V L-L (selectable VT secondary from 100, 110, 115, 120 to 415 V L-L)                           |
| Operating voltage range with accuracy                                                                                                                                                                    | 80-480 V L-L ± 10 % Category III                                                                                    |
| Measured Voltage with full range                                                                                                                                                                         | 35 to 600 V L-L                                                                                                     |
| Permanent overload (withstand)                                                                                                                                                                           | 750 V L-L, continuous                                                                                               |
| Impedance                                                                                                                                                                                                | ≥ 5 MΩ                                                                                                              |
| Frequency range                                                                                                                                                                                          | 50/60 Hz ± 2                                                                                                        |
| VA burden                                                                                                                                                                                                | ≤ 0.2 VA at 240 V L-N at 50 Hz                                                                                      |
| Input current                                                                                                                                                                                            |                                                                                                                     |
| CT connect                                                                                                                                                                                               | Solo or multi-phase current measurement by installing CT(s) in either of A1, A2, A3, A12, A23, A13, A123 phase(s)   |
| CT primary                                                                                                                                                                                               | 1 A to 32767 A programmable                                                                                         |
| CT secondary                                                                                                                                                                                             | 1 A or 5 A I-nominal (field settable)                                                                               |
| Operating current range with accuracy                                                                                                                                                                    | 10 mA to 6 A <sup>(+1)</sup>                                                                                        |
| Measured Amps with full range                                                                                                                                                                            | 5 mA to 10 A                                                                                                        |
| Suppression current                                                                                                                                                                                      | 5 to 99 mA (to disregard negligible load)                                                                           |
| Permanent overload (withstand)                                                                                                                                                                           | Continuous 10 A, 10 s/hr 50 A, 1s/hr 500 A                                                                          |
| Impedance                                                                                                                                                                                                | 0.3 mΩ                                                                                                              |
| Frequency range                                                                                                                                                                                          | 50/60 Hz ± 2 Hz                                                                                                     |
| VA burden                                                                                                                                                                                                | ≤ 0.1 VA at 5 A, 50 Hz                                                                                              |

# EM1000H Series

## Technical specifications (continued)

|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AC - control power</b>                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Operating range                                                  | 48 to 277 V L-N ac $\pm 10\%$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Burden                                                           | $\leq 4$ VA at 240 V L-N, 50 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Frequency                                                        | 50/60 Hz nominal (45 to 65 Hz operating range)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Ride-through time                                                | 120 ms at 240 V L-N, 50Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>DC - control power</b>                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Operating range                                                  | 48 to 277 Vdc $\pm 10\%$<br>(Optional Low voltage DC control power option of 10 to 32 Vdc $\pm 10\%$ is available in EM1220H)                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Burden                                                           | $\leq 2$ W at 240 Vdc, $< 2$ W at 24 Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Ride-through time                                                | 120 ms at 240 Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Display update</b>                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Instantaneous/ RMS parameters                                    | 1 s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Power system</b>                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Phase labelling                                                  | Configurable to 123, ABC, rst, pqr or ryb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Wiring configuration                                             | 13 wiring schemes (5 on front screen)<br>1ph, 2 w, L-N<br>1ph, 2 w, L-L<br>1ph, 3 w, L-L with N (2phase)<br>3ph, 3 w, Delta, Ungrounded<br>3ph, 3 w, Delta, Corner Grounded <sup>(+2)</sup><br>3ph, 3 w, Wye, Ungrounded <sup>(+2)</sup><br>3ph, 3 w, Wye Grounded <sup>(+2)</sup><br>3ph, 3 w, Wye, Resistance Grounded <sup>(+2)</sup><br>3ph, 4 w, Open Delta, Center-Tapped <sup>(+2)</sup><br>3ph, 4 w, Delta, Center-Tapped <sup>(+2)</sup><br>3ph, 4 w, Wye, Ungrounded <sup>(+2)</sup><br>3ph, 4 w, Wye Grounded<br>3ph, 4 w, Wye, Resistance Grounded <sup>(+2)</sup> |
| <b>Mechanical characteristics</b>                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Weight                                                           | ~ 300 gm (10.6 oz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| IP degree of protection                                          | IP 51 front side, IP 30 meter body, tested as per IEC 60529<br>(IP 54 with optional gasket METSEIP54GK96X96FF or upgrade to IP65 front side with Optional accessory kit METSEIP65OP96X96FF)                                                                                                                                                                                                                                                                                                                                                                                    |
| Material                                                         | Polycarbonate meets UL 94V-0 flammability rating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Dimensions W x H x D                                             | 96x96x48 mm (3.78x3.78x1.89 in) (D = depth of the meter from housing mounting flange)<br>13 mm (0.51 in) protrusion of meter from housing flange                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Mounting position                                                | Vertical                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Panel thickness                                                  | 6 mm (0.25 in) maximum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Environmental characteristics</b>                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Operating temperature                                            | - 10 to +60 °C (14 to 140 °F)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Storage temperature                                              | - 25 to +70 °C (-13 to 158 °F)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Humidity rating                                                  | 5 % to 95 % RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Pollution degree                                                 | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Attitude                                                         | $\leq 2000$ metres (6562 ft), Category III                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Product life                                                     | >7 years                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Insulation category                                              | Double insulation for user accessible parts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Electromagnetic compatibility (tested as per IEC 61326-1)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Electrostatic discharge                                          | IEC 61000-4-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Immunity to radiated field                                       | IEC 61000-4-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Immunity to fast transients                                      | IEC 61000-4-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Immunity to impulse waves                                        | IEC 61000-4-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Conducted immunity                                               | IEC 61000-4-6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Immunity to magnetic fields                                      | IEC 61000-4-8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Immunity to voltage dips                                         | IEC 61000-4-11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Emissions (IEC61326-1)                                           | Emissions CISPR 11 and FCC Part 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

<sup>(+1)</sup> Additional error of  $\pm 2\%$  between 10 mA to 50 mA,  $\pm 1\%$  between 50 mA to 100 mA

<sup>(+2)</sup> Through communication

# EM1000H Series

## Technical specifications (continued)

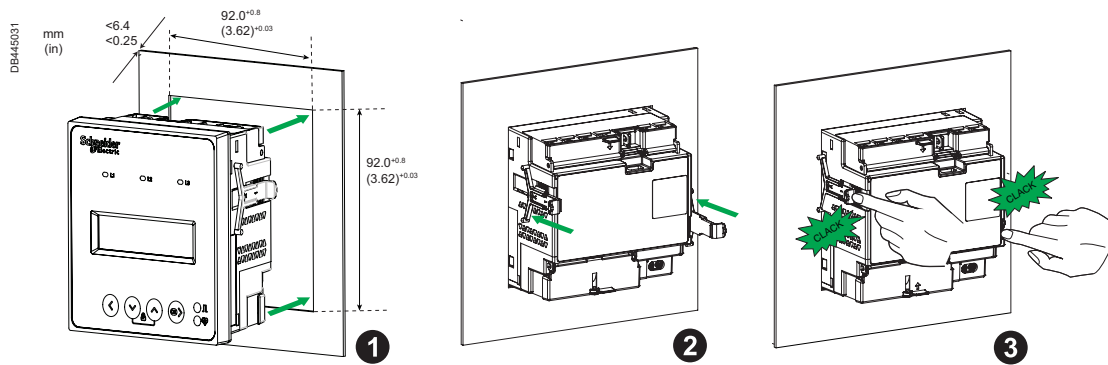
| Safety                                |                                                                                                                                                                                          |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Europe                                | CE, as per IEC 61010 -1 and IEC 61326 - 1                                                                                                                                                |
| US and Canada                         | cULus per UL 61010-1<br>CAN / CSA-C22.2 IEC 61010 - 1 - 12, for 480 Vac L-L                                                                                                              |
| Measurement Category (Voltage inputs) | CAT III up to 480 V L-L                                                                                                                                                                  |
| Overvoltage Category (Control power)  | CAT III up to 300 V L-N                                                                                                                                                                  |
| Dielectric                            | As per IEC/UL 61010-1 edition-3                                                                                                                                                          |
| Protective Class                      | II, Double insulated for user accessible parts                                                                                                                                           |
| Green premium                         | EOL, REACH, PEP, RoHS complied                                                                                                                                                           |
| Communication                         |                                                                                                                                                                                          |
| RS-485 port                           | Modbus RTU: 2-Wire, 4800, 9600, 19200 or 38400 baud<br>Parity - Even, Odd, None<br>1 stop bit if parity is Odd or Even, 2 stop bits if none                                              |
| Isolation                             | 2.5 kV RMS, double insulated                                                                                                                                                             |
| Protection features                   | User configurable password (selectable from 0000 to 9999) protected for set-up and clearing of energy, and other integrated data                                                         |
| Display language                      | English                                                                                                                                                                                  |
| Technical publication                 | Printed installation guide (QSG) supplied with meter in English and user guide in soft copy format                                                                                       |
| Human machine interface               |                                                                                                                                                                                          |
| Display type - LCD                    | Segment Fast in-line view, three parameters, name and value at one glance. 3+1 digits for instantaneous parameters and 9+3 digits for energy parameters with auto scroll and auto range. |
| Keypad                                | 4 buttons for navigation at the front, combination of 2 buttons for performing set-up, lock/unlock pages and viewing diagnostic pages                                                    |
| Calibration LED (pulse LED)           | Red colour, meter constant is configurable from 1 to 9999000 pulses/k_h (kWh, kVAh, or kVARh)                                                                                            |
| Communication activity                | Green LED (for indicating RS-485 interface or heartbeat pulse)                                                                                                                           |

## Feature set summary

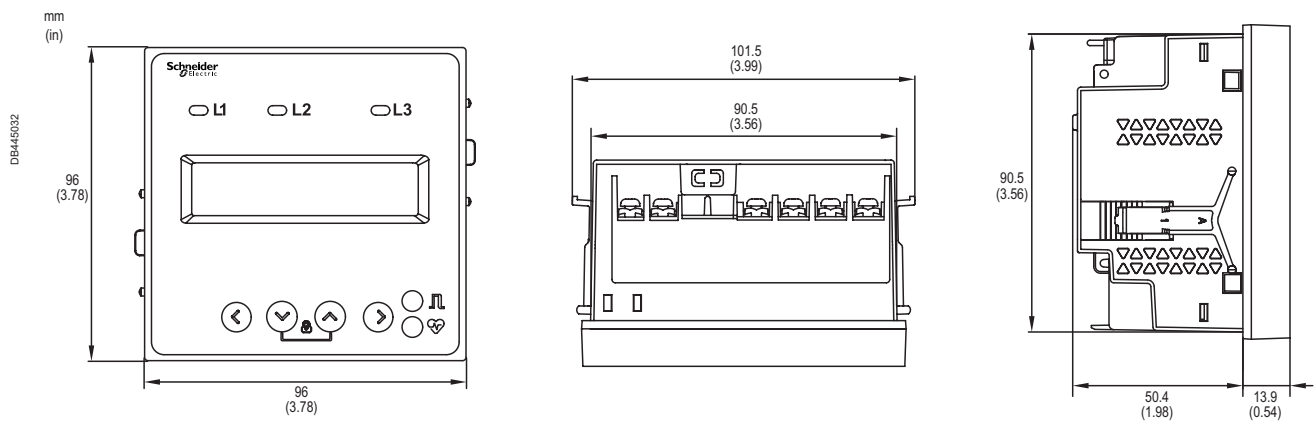
| Parameter/ Meter reference                                                           | EM1220H                                              | EM1250H                  |
|--------------------------------------------------------------------------------------|------------------------------------------------------|--------------------------|
| Class of accuracy for active energy                                                  | Cl 1.0/Cl 0.5                                        | Cl 1.0                   |
| Sampling rate per cycle                                                              | 32                                                   | 32                       |
| Class of accuracy (VARh)                                                             | 2.0                                                  | 2.0                      |
| Voltage, V L-N, V L-L, per-phase and average                                         | ■                                                    | -                        |
| Current, per-phase, average and calculated neutral current                           | ■                                                    | -                        |
| Frequency, any available phase                                                       | ■                                                    | -                        |
| Power factor: average and per-phase                                                  | ■                                                    | ■                        |
| Power W, VA, VAR - 4 quadrant, Total and per-phase                                   | 1 power at a time                                    | ■                        |
| Energy - delivered or forward or import energy: Wh, VAh, VARh - 2 quadrant           | 1 energy at a time                                   | ■                        |
| Old registers - retrieval of last cleared values of energy and Run Hours             | ■                                                    | ■                        |
| Life time counter - meter ON Hours, Load Run Hours and number of power interruptions | ■                                                    | ■                        |
| Communication: 2 wire, RS-485, Modbus RTU protocol                                   | ■                                                    | ■                        |
| Revolution per minute (RPM)                                                          | ■                                                    | -                        |
| Commercial reference number                                                          |                                                      |                          |
| Commercial reference for 44 - 300 Vac/dc control power                               | METSEEM1220HCL1 (Cl 1.0)<br>METSEEM1220HCL5 (Cl 0.5) | METSEEM1250HCL1 (Cl 1.0) |
| Commercial reference for Low Voltage DC (9-36 V) option                              | METSEEM1220HCL5LVD (Cl 0.5)                          |                          |

# EM1000H Series

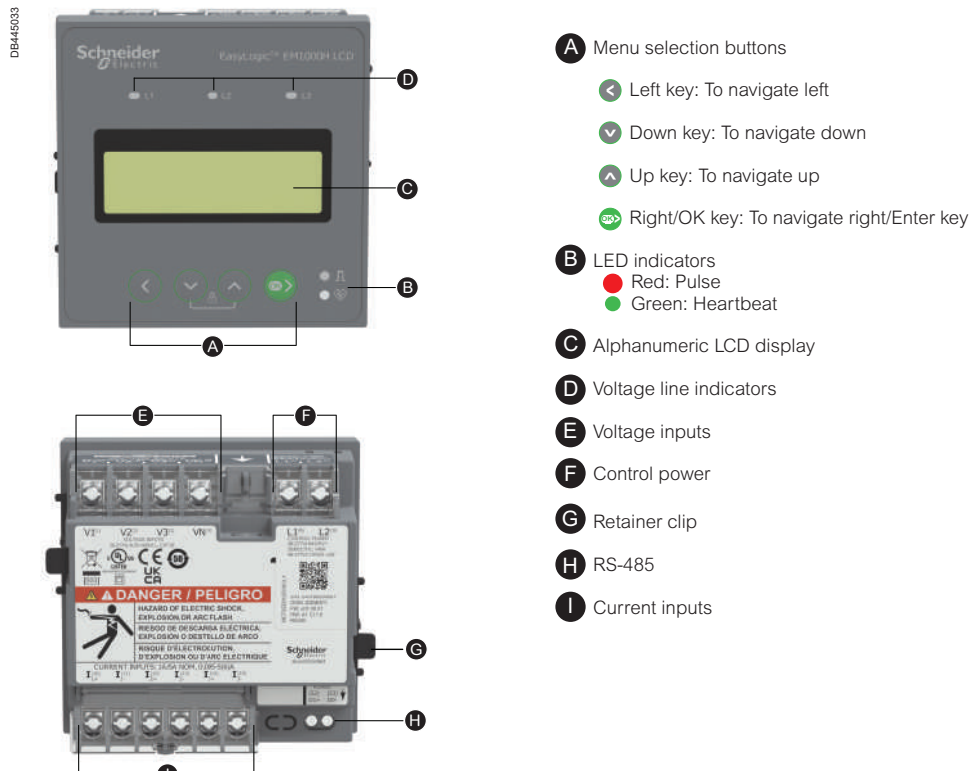
## EM1000H Series meter mounting



## EM1000H Series meter mechanical dimensions



## EM1000H Series meter LCD green overview



See the appropriate **Installation Guide** for correct installation instructions.

# EasyLogic™ PM1000H Series Technical Datasheet

## The EasyLogic™ PM1000H Series basic power and energy meters

Offering all the measurement capabilities required to monitor the electrical installation in a single 96x96 mm unit, with 8 segment alphanumeric bright, large 14.2 mm high LED display (PM1110H, PM1120H, PM1125H, PM1130H and PM1140H).



PM1110H

EasyLogic™ PM1110H/PM1120/PM1125H/PM1140H/PM1130H meters are ideal replacements for multiple analog meters for stand-alone metering in custom panels, switch boards, switch-gear, genset panels, motor control centres, power factor improvement panels, and OEM panel board.

- Application
  - Cost management applications
    - Measurement of basic electrical parameters in control panels, motor control panels, power distribution boards, OEM's, Building management systems, and panel instrumentation.
    - Aggregation of energy consumption and cost allocation per area, per usage, per shift and per time within the same facility.
  - Network management applications
    - Power quality analysis (THD %)
    - Demand measurement
    - Measurement of Power Factor.
    - Phase angle between the voltage and current.
    - Percentage unbalance among voltage and current.
    - Modbus RTU protocol RS-485 communication port for integration with energy management system.

# PM1000H Series



EasyLogic™ PM1000H Series front view LED display



EasyLogic™ PM1000H Series power meter rear view

- Main characteristics
  - Easy to install: Mounts using two retainer clips, no tools required. Compact meter with 49 mm meter depth behind the panel, connectable up to 480 V +10% ac volts L-L without voltage transformers for installation complaint with measurement category III, and double insulated.
  - Easy to operate: Intuitive navigation with self-guided menus and Heartbeat LED indicates normal functioning of meters while it conveys the communication status when connected to RS-485 network.
  - LED display: Intuitive navigation with self-guided, four buttons, 8 segment alphanumeric LEDs of height ~14.2 mm (0.55 in), and three lines of concurrent values with Kilo and Mega value indicators. 4 digits for instantaneous parameters and 5+3 (LED) for energy. Auto scaling and auto scrolling.
  - Power and energy: Measurement, display and recording of three power and corresponding energy parameters simultaneously in PM1110H, PM1125H and PM1140H - W/Wh, VAVAh and var/ varh.
  - Demand: Measurement of Peak, present and last demand values of either W, VA or VAR parameters with selectable demand parameter, demand interval and demand technique.
  - Accuracy:
    - Class 1.0 for active energy as per the test limits given in IEC 62053-21 and IEC 61557-12
    - Class 0.5s for active energy as per the test limits given in IEC 62053-22 and IEC 61557-12
    - Class 2.0 for reactive energy as per the test limits given in IEC 62053-23 and IEC 61557-12
    - Tested in accordance with IEC 62052-11 for energy test requirements
    - EMI/ EMC tests: As per IEC 61326-1
  - CT nominal: 5 A or 1 A I-nominal (field settable) CT reversal auto correction for energy consumption.
  - Password: Field configurable password for securing set up information and prevents tampering of integrated values.
  - Cyber security: Option for disabling RS-485 port through front panel keys against unauthorized access. This feature can also be used for maintenance and troubleshooting of complex communication network.
  - Favourite page: The device enables user with the option to select parameters to be set in favourite page.
  - Analog load bar in LED display type: The colour-coded analog load bar at the front side indicates the percentage of load through 12 LED's with the option to select full scale based on connected load.
  - Suppression current: To disregard the measurement of induced and panel auxiliary load current in the circuit (settable from 5 to 99 mA).
  - Protective cover: Tamper-proof terminal screws do not detach from housing.
  - Control power options: Universal range 44 to 300 V L-N ac/dc or Low voltage dc control power option of 9 to 36 Vdc.
  - Quadrant based varh: Measurement of total or net varh, quadrant based +varh and -varh.

# PM1000H Series

## Technical specifications

### General

Use on LV & MV systems with Potential transformer (PT or VT)/Current transformer (CT) ratio programmable at site

Digital panel meters for measurement of basic electrical parameters

### Instantaneous rms values

|                                             |                                                                                                     |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Current                                     | Average line current of 3-phase, per-phase, and calculated neutral current                          |
| Voltage                                     | Average voltage of L-L, L-N parameters, per-phase                                                   |
| Frequency                                   | Any available line                                                                                  |
| Real (active), reactive, and apparent power | Total and per-phase                                                                                 |
| True power factor                           | Average and per-phase signed                                                                        |
| % Unbalance                                 | Maximum % unbalance among phases for Volts & Amps                                                   |
| Revolution per minute (RPM)                 | RPM of alternator or generator when number of poles set for 2, 4, 6, 8, 12, 14 or 16 (any one pole) |

### Energy values stored in non-volatile memory

Delivered & Received or Forward & Reverse or Import & Export energy (4 quadrant) - Accumulated or Integrated active (Real - Wh), reactive (varh), apparent (VAh). 2 quadrant energy measurement in PM1120H, PM1130H and, PM1140H.

Independent energy (Wh) counter with non-resettable feature.

Energy values can be set for overflow units (e.g., in kilo or mega scale)(for 1225H)

Quadrant based registers for Reactive energy

Time counters such as meter ON Hrs, load RUN Hrs and power outage counters

Old registers facilitate retrieval of last cleared energy values and load Run Hrs. Set up counters for tracking number of edits carried out since from installation

### Display

LED display: Bright red colour, 8 segment alphanumeric LED, ~ 14.2 mm (0.55 in) height, 3 rows with 4 digits per row, auto range, auto scroll

### Communication

Native Plug and Play support for Schneider Electric energy management system software - EcoStruxure™ Power Monitoring Expert, EcoStruxure™ Power Operation along with ION Setup programming support

### Diagnostics

Diagnostic page indicates the healthiness of communication system, device serial number, device model number OS & RS version, communication status, All LED segment check in LED display.

### Favourite page

Number and type of parameters can be chosen and arranged in Favourite page according to the user's requirement

### Electrical characteristics

|                     |                                                         |
|---------------------|---------------------------------------------------------|
| Type of measurement | True RMS, 4 quadrant power and energy, 32 samples/cycle |
|---------------------|---------------------------------------------------------|

### Measurement accuracy

|                                          |                                                                                                                  |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Current, per-phase and average           | ± 0.5 % of reading                                                                                               |
| Voltage, L-N, L-L, per-phase and average | ± 0.5 % of reading                                                                                               |
| Frequency                                | ± 0.05 % for F-nominal 50/60 Hz ± 2 Hz<br>± 0.2 % for Frequency range from 30...48 Hz, 52...58 Hz and 62...70 Hz |
| Power (active and apparent)              | ± 1.0 % for Class 1.0, ± 0.5 % for Class 0.5                                                                     |
| Power (reactive)                         | ± 2.0 % for Class 1.0                                                                                            |
| Power factor, per-phase & average        | ± 0.01 of reading                                                                                                |
| Active or real energy                    | Class 1.0 (± 1.0 %), Class 0.5 (± 0.5 %)                                                                         |
| Apparent energy                          | ± 1.0 % for Class 1.0, ± 0.5 % for Class 0.5                                                                     |
| Reactive energy                          | Class 2.0 (± 2.0 %)                                                                                              |
| THD %                                    | ± 5 % of reading                                                                                                 |

### Input-voltage

|                                       |                                                                                         |
|---------------------------------------|-----------------------------------------------------------------------------------------|
| VT (PT) connection                    | Selectable from No VT (direct), 1 VT, 2...3 VT                                          |
| VT (PT) primary                       | 100 V L-L...999 kV L-L max                                                              |
| U (V) nominal (secondary)             | Up to 277 V L-N/480 V L-L (selectable VT secondary from 100, 110, 115, 120...415 V L-L) |
| Operating voltage range with accuracy | 80...480 V L-L ± 10 % Category III                                                      |
| Measured Voltage with full range      | 35...600 V L-L                                                                          |
| Permanent overload (withstand)        | 750 V L-L, continuous                                                                   |
| Impedance                             | ≥5 MΩ                                                                                   |
| Frequency range                       | 50/60 Hz ± 2                                                                            |
| VA burden                             | ≤0.2 VA at 240 V L-N at 50 Hz                                                           |

### Frequency – measurement

|                          |                                                          |
|--------------------------|----------------------------------------------------------|
| Nominal operating range  | 50/60 Hz ± 2 Hz (± 0.05 % accuracy)                      |
| Extended operating range | 30...48 Hz, 52...58 Hz and 62...70 Hz (± 0.2 % accuracy) |
| Voltage input            | 80...480 V L-L ± 10 %                                    |

# PM1000H Series

## Technical specifications (continued)

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Input-current</b>                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| CT connect                            | Solo or multi-phase current measurement by installing CT (s) in either of A1, A2, A3, A12, A23, A13, A123 phase(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| CT primary                            | 1...32767 A, programmable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| CT secondary                          | 1 A or 5 Amps I-nominal (field settable)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Operating current range with accuracy | 10 mA...6 A <sup>(+1)</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Measured Amps with full range         | 5 mA...10 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Suppression current                   | 5...99 mA (to disregard negligible load)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Permanent overload (withstand)        | Continuous 10 A, 10 s/hr 50 A, 1s/hr 500 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Impedance                             | 0.3 mΩ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Frequency range                       | 50/60 Hz ± 2 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| VA burden                             | ≤0.1 VA at 5 A, 50 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>AC - control power</b>             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Operating range                       | 48...277 Vac ± 10 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Burden                                | ≤4 VA at 240 V L-N, 50 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Frequency                             | 50/60 Hz nominal (45...65 Hz operating range)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Ride-through time                     | 100 ms at 240 V L-N, 50 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>DC - control power</b>             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Operating range                       | 48...277 Vdc ± 10 % or Low Voltage dc option of 10...32 Vdc ± 10 % (for PM1225H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Burden                                | ≤2 W at 240 Vdc, <2 W at 24 Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Ride-through time                     | 50 ms at 125 Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Display update</b>                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Instantaneous/ RMS parameters         | 1 s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Demand parameters                     | 5 s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| THD % (voltage and current)           | 5 s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Power system</b>                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Phase labelling                       | Configurable to 123, ABC, rst, pqr or ryb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Wiring configuration                  | 13 wiring schemes (5 on front screen)<br>1ph, 2 w, L-N<br>1ph, 2 w, L-L<br>1ph, 3 w, L-L with N (2phase)<br>3ph, 3 w, Delta, Ungrounded<br>3ph, 3 w, Delta, Corner Grounded <sup>(+2)</sup><br>3ph, 3 w, Wye, Ungrounded <sup>(+2)</sup><br>3ph, 3 w, Wye Grounded <sup>(+2)</sup><br>3ph, 3 w, Wye, Resistance Grounded <sup>(+2)</sup><br>3ph, 4 w, Open Delta, Center-Tapped <sup>(+2)</sup><br>3ph, 4 w, Delta, Center-Tapped <sup>(+2)</sup><br>3ph, 4 w, Wye, Ungrounded <sup>(+2)</sup><br>3ph, 4 w, Wye Grounded<br>3ph, 4 w, Wye, Resistance Grounded <sup>(+2)</sup> |
| <b>Mechanical characteristics</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Weight                                | ~ 300 g (10.6 oz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| IP degree of protection               | IP 51 front side, IP 30-meter body, tested as per IEC 60529<br>(IP 54 with optional gasket METSEIP54GK96X96FF or upgrade to IP65 front side with Optional accessory kit METSEIP65OP96X96FF)                                                                                                                                                                                                                                                                                                                                                                                    |
| Material                              | Polycarbonate meets UL 94V-0 flammability rating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Dimensions W x H x D                  | 96 x 96 x 49 mm (3.78 x 3.78 x 1.93 in) (D = depth of the meter from housing mounting flange)<br>13 mm (0.51 in) protrusion of meter from housing flange                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Mounting position                     | Vertical                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Panel thickness                       | 5 mm (0.196 in) maximum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Environmental characteristics</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Operating temperature                 | - 10...+60° C (14...140° F)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Storage temperature                   | - 20...+70° C (-4...158° F)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Humidity rating                       | 5...95 % RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Pollution degree                      | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Attitude                              | ≤2000 metres (6562 ft), Category III                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Product life                          | >7 years                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Insulation category                   | Double insulation for user accessible parts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

<sup>(+1)</sup> Additional error of ± 2 % between 10 mA to 50 mA, ± 1% between 50 mA to 100 mA

<sup>(+2)</sup> Set up through communication

# PM1000H Series

## Technical specifications (continued)

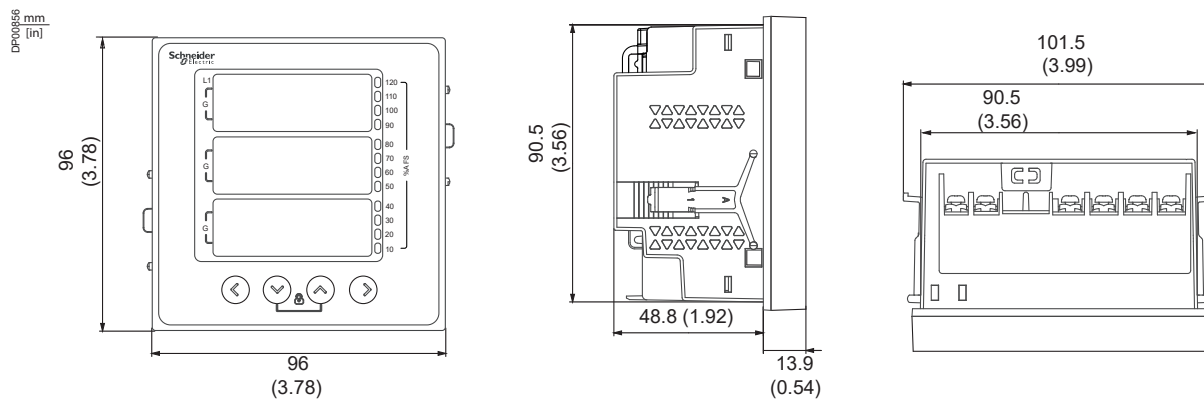
| Electromagnetic compatibility (tested as per IEC 61326-1) |                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electrostatic discharge                                   | IEC 61000-4-2                                                                                                                                                                                                                                                                             |
| Immunity to radiated field                                | IEC 61000-4-3                                                                                                                                                                                                                                                                             |
| Immunity to fast transients                               | IEC 61000-4-4                                                                                                                                                                                                                                                                             |
| Immunity to impulse waves                                 | IEC 61000-4-5                                                                                                                                                                                                                                                                             |
| Conducted immunity                                        | IEC 61000-4-6                                                                                                                                                                                                                                                                             |
| Immunity to magnetic fields                               | IEC 61000-4-8                                                                                                                                                                                                                                                                             |
| Immunity to voltage dips                                  | IEC 61000-4-11                                                                                                                                                                                                                                                                            |
| Emissions                                                 | Emissions FCC Part 15 Class A/CE                                                                                                                                                                                                                                                          |
| Safety                                                    |                                                                                                                                                                                                                                                                                           |
| Europe                                                    | CE, as per IEC 61010-1 edition-3                                                                                                                                                                                                                                                          |
| US and Canada                                             | cULus as per UL61010-1 and CAN/CSA-C22.2 IEC 61010-1 edition-3, for 480 Vac L-L                                                                                                                                                                                                           |
| Measurement Category (Voltage inputs)                     | Category III up to 480 V L-L                                                                                                                                                                                                                                                              |
| Overvoltage Category (Control power)                      | Category III up to 300 V L-N                                                                                                                                                                                                                                                              |
| Dielectric                                                | As per IEC/UL 61010-1 edition-3                                                                                                                                                                                                                                                           |
| Protective Class                                          | Category II, Double insulated for user accessible parts                                                                                                                                                                                                                                   |
| Green premium                                             | EOL, REACH, PEP, RoHS complied                                                                                                                                                                                                                                                            |
| Communication                                             |                                                                                                                                                                                                                                                                                           |
| RS-485 port                                               | Modbus RTU: 2-Wires, 4800, 9600, 19200 or 38400 baud, Parity - Even, Odd, None, 1 stop bit if parity is Odd or Even, 2 stop bits if none.<br>DLF3000: Firmware update through communication port                                                                                          |
| Isolation                                                 | 2.5 kV RMS, double insulated                                                                                                                                                                                                                                                              |
| Protection features                                       | User configurable password (selectable from 0000 to 9999) protected for set-up and clearing of energy, and other integrated data                                                                                                                                                          |
| Display language                                          | English                                                                                                                                                                                                                                                                                   |
| Technical publication                                     | Printed installation guide (QSG) supplied with meter in multi-language (EN, ES, FR, DE, PT, RU, TR, ZH) and user guide in soft format                                                                                                                                                     |
| Human machine interface                                   |                                                                                                                                                                                                                                                                                           |
| Display type                                              | LED display: 8 segment Alpha-numeric LED, ~ 14.2 mm (0.55 in) height, 3 rows with 4 digits per row, 1 column of 12 LEDs to indicate percentage of load connected in system. 4 digits for instantaneous parameters and 5+3 digits for energy parameters with auto scrolling and auto range |
| Keypad                                                    | 4 buttons for navigation at the front, combination of 2 buttons for performing set-up, lock/unlock pages and viewing diagnostic pages                                                                                                                                                     |
| Calibration LED (pulse LED)                               | Red colour, meter constant is configurable from 1 to 9999000 pulses/ k_h (kWh, kVAh, or kvrh)                                                                                                                                                                                             |
| Communication activity                                    | Green LED (for indicating RS-485 interface or heartbeat pulse)                                                                                                                                                                                                                            |

## Feature set summary

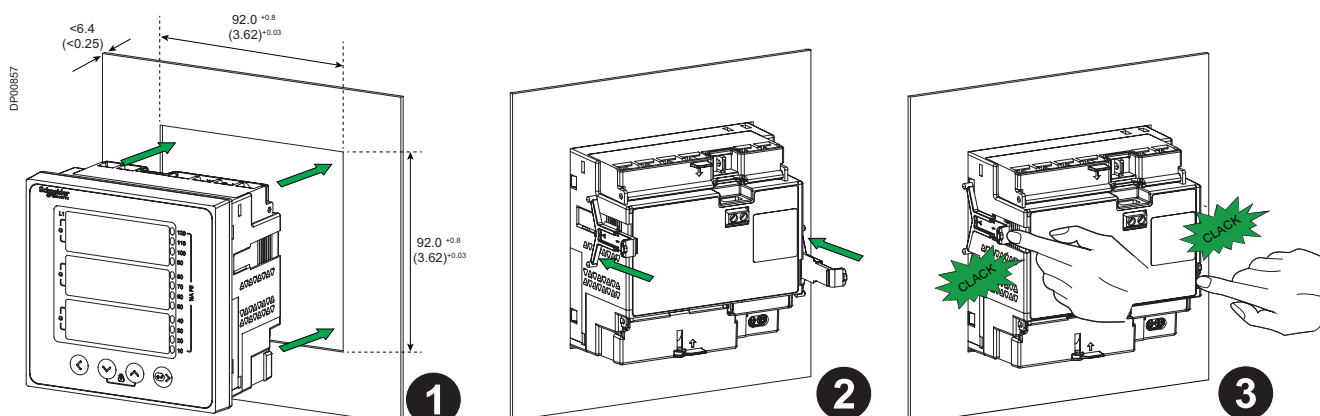
| Parameter/Meter reference                                                     | PM1110H                                                     | PM1125H                                                       | PM1140H                                                    | PM1120H                                                          | PM1130H                        |
|-------------------------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------------|--------------------------------|
| Class of accuracy for active energy                                           | Cl 1.0/Cl 0.5                                               | Cl 1.0/Cl 0.5                                                 | Cl 1.0/Cl 0.5                                              | Cl 1.0/Cl 0.5                                                    | Cl 0.5                         |
| Sampling rate per cycle                                                       | 32                                                          | 32                                                            | 32                                                         | 32                                                               | 32                             |
| Amps: average and per-phase, calculated neutral current                       | -                                                           | ■                                                             | ■                                                          | ■                                                                | ■                              |
| Voltage: V L-N, V L-L, average, per-phase                                     | -                                                           | ■                                                             | ■                                                          | ■                                                                | ■                              |
| Power factor: average and per-phase                                           | ■                                                           | ■                                                             | ■                                                          | ■                                                                | ■                              |
| Frequency: any available phase                                                | -                                                           | ■                                                             | ■                                                          | ■                                                                | ■                              |
| Power (W, VA, Var) - Total and per-phase                                      | ■                                                           | ■                                                             | ■                                                          | ■                                                                | ■                              |
| Energy (Wh, Varh, VAh) - Delivered and Received                               | ■                                                           | ■                                                             | ■ 1 energy (Del only)                                      | ■ 1 energy (Del only)                                            | ■ 1 energy (Del only)          |
| Demand parameters – selectable for W, VA, Var (one at a time)                 | ■                                                           | ■                                                             | ■                                                          | ■                                                                | ■                              |
| Old registers – retrieval of last cleared values of energy and Run Hrs        | ■                                                           | ■                                                             | ■                                                          | ■                                                                | ■                              |
| Revolutions per minute (RPM)                                                  | ■                                                           | ■                                                             | ■                                                          | ■                                                                | ■                              |
| Phase angle : Amp Deg (V to Amps, per-phase)                                  | ■                                                           | ■                                                             | ■                                                          | ■                                                                | ■                              |
| % Unbalance: Max unbalance Volts and Amps among 3 phase (s)                   | ■                                                           | ■                                                             | ■                                                          | ■                                                                | ■                              |
| Life time counter - meter ON Hrs, Load Run Hrs, number of power interruptions | ■                                                           | ■                                                             | ■                                                          | ■                                                                | ■                              |
| Communication: 2 wire, RS-485, Modbus RTU protocol                            | ■                                                           | ■                                                             | ■                                                          | ■                                                                | ■                              |
| Display                                                                       | LED                                                         | LED                                                           | LED                                                        | LED                                                              | LED                            |
| Conformal Coating                                                             | ■                                                           | ■                                                             | -                                                          | ■                                                                | ■                              |
| 1 Digital Input and 1 Relay Output (DIRO)                                     | -                                                           | -                                                             | ■                                                          | ■                                                                | ■                              |
| Commercial reference numbers                                                  |                                                             |                                                               |                                                            |                                                                  |                                |
| Commercial reference for 44...300 Vac/dc control power                        | METSEPM1110HCL1<br>(Cl 1.0)<br>METSEPM1110HCL05<br>(Cl 0.5) | METSEPM1125HCCL1<br>(Cl 1.0)<br>METSEPM1125HCCL05<br>(Cl 0.5) | METSEPM1140HCL1<br>(Cl 1.0)<br>METSEPM1140HCL1<br>(Cl 0.5) | METSEPM1120HCL10RS<br>(Cl 1.0)<br>METSEPM1120HCL05RS<br>(Cl 0.5) | METSEPM1130HCL05RS<br>(Cl 0.5) |

# PM1000H Series Dimensions

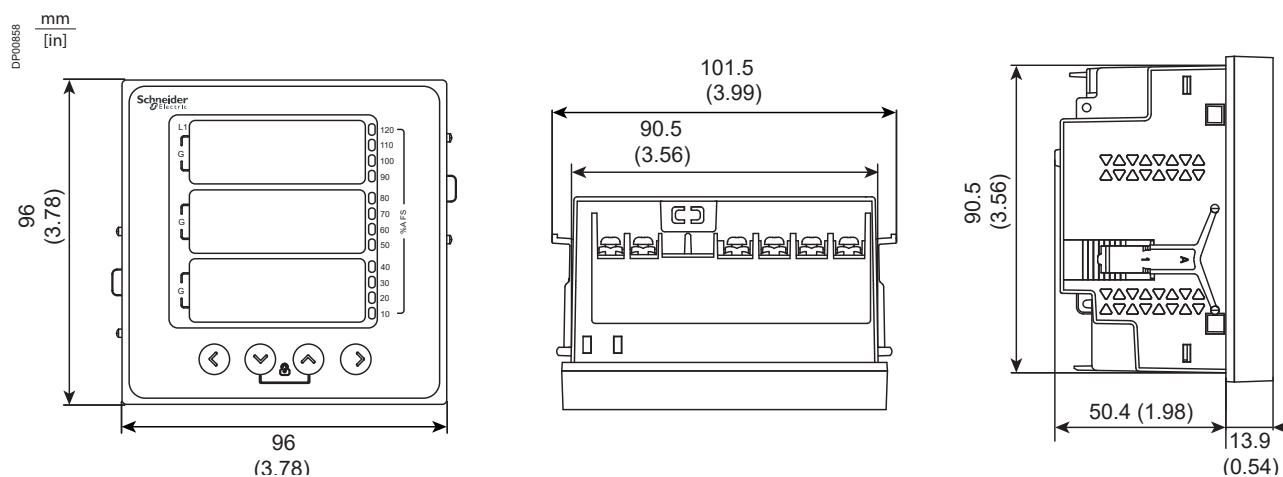
## PM1110/PM1125H meter mechanical dimensions



## PM1110H meter mounting

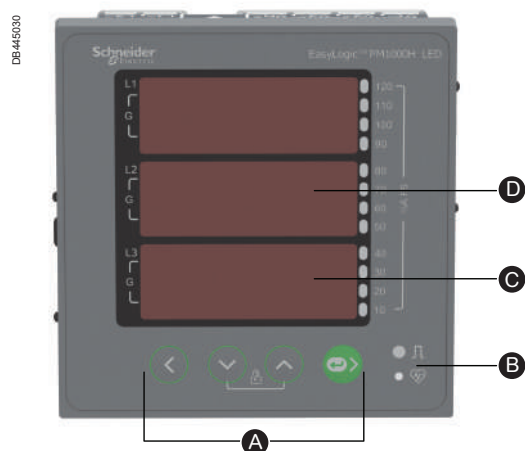


## PM1140/PM1130 meter mechanical dimensions

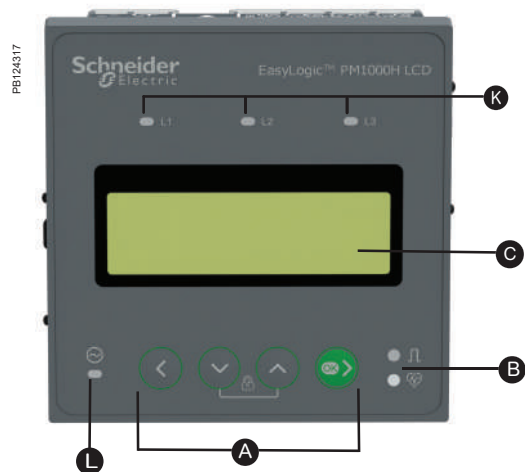


# PM1000H Series Dimensions

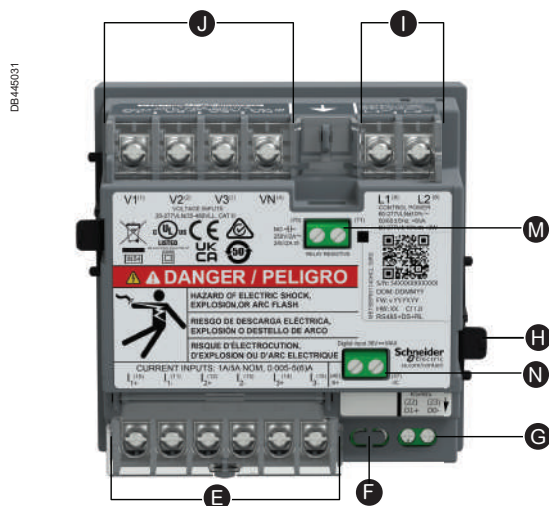
## PM1000H Series LED meter displays overview



Front view for PM1140H Series



Front view for PM1110H



Rear view for PM1140 Series

- A** Menu selection buttons
  - ◀ Left key: To navigate left
  - ▼ Down key: To navigate down
  - ▲ Up key: To navigate up
  - ➡ Right/OK key: To navigate right/Enter key
- B** LED indicators
  - Red: Pulse
  - Green: Heartbeat
- C** Alphanumeric LED display
- D** Analog load bar
- E** Current inputs
- F** Alternate source (e.g. Genset)
- G** RS-485
- H** Retainer clip
- I** Control power
- J** Voltage inputs
- K** Voltage line indicators
- L** Dual source LED Indicator
- M** Relay resistive
- N** Digital input

# EasyLogic™

## PM1130H/PM1140H/PM1230H meters Technical Datasheet

EasyLogic™ PM1130H/PM1140H/PM1230H dual/alternate source power and energy meters.

Two energy registers (Utility vs Genset, Utility vs Solar, Utility vs Wind, or a combination of any two power sources) separately records consumption for dual source energy accounting. Ideal for any installation which requires split energy monitoring for two conditions, e.g., running and Idle. Form A relay to control the load in the event of abnormality in the electrical circuit including excess consumption of power. The meters can be used for secondary billing application in large commercial complexes or buildings as tenant meters in custom panels, switch boards, switchgear, genset panels, non-renewable energy panel and OEM panel board.

Offering all the measurement capabilities required to monitor the electrical installation in a single 96x96 mm unit.

PM1130H and PM1140H meter displays measured parameters and values in elegant three rows with 8 segment alpha-numeric bright, large 14.2 mm height LED display.

PM1230H meter displays measured parameters and values in elegant single row, bright back lit graphical LCD display in 128\*32 pixels size.

PB124308



PM1130H

PB124309



PM1230H

# PM1130H/PM1140H/PM1230H



EasyLogic™ PM1130H/PM1140H dual source meter front view



EasyLogic™ PM1140H DIRO meter rear view



EasyLogic™ PM1230H dual source meter front view



EasyLogic™ PM1130H and PM1230H dual source meter rear view

- Applications
  - Cost management applications
    - Measure basic electrical parameters in control panels, power distribution boards, OEM's, and Building management systems
    - Aggregate energy consumption and cost allocation based on consumption from Utility vs Genset, or between any two power sources, per area, per shift and per time within the same facility
  - Network management applications
    - Power quality analysis (THD %)
    - Demand measurement
    - Measurement of Power factor
    - Phase angle between the voltage and current
    - % unbalance among voltage and current
    - Modbus RTU protocol RS-485 port for integration with energy management system
- Main characteristics
  - Easy to install: Mounts using two retainer clips, no tools required. Compact meter with 49 mm meter depth behind the panel, connectable up to 480 V +10% ac volts L-L without voltage transformers for installation compliant with measurement category III, and double insulated.
  - Easy to operate: Intuitive navigation with self-guided menus and Heartbeat LED indicates normal functioning of meters while it conveys the communication status when connected to RS-485 network.
  - LED display: Intuitive navigation with self-guided, four buttons, 8 segment alphanumeric LEDs of height ~14.2 mm (0.55 in), and three lines of concurrent values with Kilo & Mega value indicators. 4 digits for instantaneous parameters and 5+3 (LED) for energy. Auto scroll and auto range.
  - LCD display: Elegant single row, bright back lit graphical LCD display 132\*32 pixels, Fast in-line view, three parameters name and value at one glance. 4 digits for instantaneous parameters and 9+3 (LCD) for energy. Auto scroll and auto range.
  - Power and energy: measurement, display and recording of three power and corresponding energy parameters simultaneously in PM1125H and PM1225H - W/Wh, VA/VAh and VAR/VARh.
  - Demand: measurement of Peak, present and last demand values of either W, VA or VAR parameters with selectable demand parameter, demand interval and demand technique.
  - Accuracy:
    - Class 1.0 for active energy as per the test limits given in IEC 62053-21 and IEC 61557-12
    - Class 0.5S for active energy as per the test limits given in IEC 62053-22 and IEC 61557-12
    - Class 2.0 for reactive energy as per the test limits given in IEC 62053-23 and IEC 61557-12
    - Tested in accordance with IEC 62052-11 for energy test requirements
    - EMI/EMC tests: As per IEC 61326-1
  - CT nominal: 5 A or 1 A I-nominal (field settable). CT reversal auto correction for energy consumption.
  - Password: Field configurable password for securing set up information and prevents tampering of integrated values.
  - Cyber security: Option for disabling RS-485 port through front panel keys against unauthorized access. This feature can also be used for maintenance and troubleshooting of complex communication network.
  - Favourite page: The device enables user with the option to select parameters to be set in favourite page.
  - Analog load bar in LED display type: The colour-coded analog load bar at the front side indicates the percentage of load through 12 LED's with the option to select full scale based on connected load.
  - Suppression current: To disregard the measurement of induced and panel auxiliary load current in the circuit (settable from 5 to 99 mA).
  - Protective cover: Tamper-proof terminal screws do not detach from housing.
  - Control power options: Universal range 44 to 300 V L-N ac/dc or Low voltage dc control power option of 9 to 36 Vdc.
  - Smart line indicators in LCD display meter: Helps check the presence of input supply voltage (healthy phase).
  - Relay: Form A, 2 terminals mechanical relay for alarm, control or annunciation if parameters exceeds or recedes set limit. Also activated on decremental energy from the preset energy value.
  - Alternate/dual source power sensor supports multiple generator paralleling and bus coupler islanding schemes.
  - Tamper cover protects against tampering with voltage and current terminals.
  - Non-resettable energy counter to ensure integrity of energy readings.

# PM1130H/PM1140H/PM1230H

## Technical specifications

|                                                                                                                                                                                                                                                                                                                           |                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>General</b>                                                                                                                                                                                                                                                                                                            |                                                                                                                      |
| Use on LV & MV systems with Potential transformer (PT or VT)/Current transformer (CT) ratio programmable at site                                                                                                                                                                                                          |                                                                                                                      |
| Digital panel meters for measurement of basic electrical parameters                                                                                                                                                                                                                                                       |                                                                                                                      |
| <b>Instantaneous rms values</b>                                                                                                                                                                                                                                                                                           |                                                                                                                      |
| Current                                                                                                                                                                                                                                                                                                                   | Average line current of 3-phase, per-phase, and calculated neutral current                                           |
| Voltage                                                                                                                                                                                                                                                                                                                   | Average voltage of L-L, L-N parameters, per-phase                                                                    |
| Frequency                                                                                                                                                                                                                                                                                                                 | Any available line                                                                                                   |
| Real (active), reactive, and apparent power                                                                                                                                                                                                                                                                               | Total and per-phase                                                                                                  |
| True power factor                                                                                                                                                                                                                                                                                                         | Average and per-phase signed                                                                                         |
| % Unbalance                                                                                                                                                                                                                                                                                                               | Maximum % unbalance among phases for Volts & Amps                                                                    |
| Revolution per minute (RPM)                                                                                                                                                                                                                                                                                               | RPM of alternator or generator when number of poles set for 2, 4, 6, 8, 12, 14 or 16 (any one pole)                  |
| <b>Energy values stored in non-volatile memory</b>                                                                                                                                                                                                                                                                        |                                                                                                                      |
| Energy delivered from power source no.1 and power source no. 2: Accumulated active (Real - Wh) or reactive (VARh) or apparent (VAh) energy with user programmable alpha-numeric name                                                                                                                                      |                                                                                                                      |
| Independent energy (Wh) counter with non-resettable feature.                                                                                                                                                                                                                                                              |                                                                                                                      |
| Energy values can be set for overflow units (e.g., in kilo or mega scale)                                                                                                                                                                                                                                                 |                                                                                                                      |
| Quadrant based registers for Reactive energy                                                                                                                                                                                                                                                                              |                                                                                                                      |
| Time counters such as meter ON Hrs, load RUN Hrs for both source of power and power outage counters. Old registers facilitate retrieval of last cleared energy values and load Run Hrs                                                                                                                                    |                                                                                                                      |
| <b>Display</b>                                                                                                                                                                                                                                                                                                            |                                                                                                                      |
| LED display: Bright red colour, 8 segment alphanumeric LED, ~ 14.2 mm (0.55 in) height, 3 rows with 4 digits per row, auto range, auto scroll                                                                                                                                                                             |                                                                                                                      |
| LCD display: Elegant single row, bright back lit graphical LCD display 132 (Horizontal) * 32 (Vertical) pixels. Fast in-line view, three parameters name and value at one glance                                                                                                                                          |                                                                                                                      |
| <b>Communication</b>                                                                                                                                                                                                                                                                                                      |                                                                                                                      |
| RS-485 serial channel connection Industry standard Modbus RTU protocol                                                                                                                                                                                                                                                    |                                                                                                                      |
| Native Plug and Play support for Schneider Electric energy management system software - EcoStruxure™ Power Monitoring Expert, EcoStruxure™ Power Operation along with ION Setup programming support                                                                                                                       |                                                                                                                      |
| Alternate or dual source sensor: For sensing the presence of alternate power source to measure and record energy in separate registers                                                                                                                                                                                    |                                                                                                                      |
| <b>Diagnostics</b>                                                                                                                                                                                                                                                                                                        |                                                                                                                      |
| Diagnostic page indicates the healthiness of communication system, device serial number, device model number OS & RS version, communication status, All LED segment check in LED display. In LCD display meter - alternate pixels ON/ OFF test. LCD contrast level, set back-lit time out in the range of 1 to 99 seconds |                                                                                                                      |
| <b>Page lock</b>                                                                                                                                                                                                                                                                                                          |                                                                                                                      |
| Page lock and unlock features. Once the commonly referred page is enabled for lock feature, then the display returns to locked page in 4 minutes of inactive time                                                                                                                                                         |                                                                                                                      |
| <b>Favourite page</b>                                                                                                                                                                                                                                                                                                     |                                                                                                                      |
| Number and type of parameters can be chosen and arranged in Favourite page according to the user's requirement                                                                                                                                                                                                            |                                                                                                                      |
| <b>Relay</b>                                                                                                                                                                                                                                                                                                              |                                                                                                                      |
| Relay can be operated based on the set limits assigned for V L-L, V L-N, A, Hz, PF, Instantaneous power (W, VA, VAR), demand parameter (W, VA, VAR)<br>Relay can also be programmed to activate based on decremental energy consumed in the system from the preset energy value                                           |                                                                                                                      |
| <b>Electrical characteristics</b>                                                                                                                                                                                                                                                                                         |                                                                                                                      |
| Type of measurement                                                                                                                                                                                                                                                                                                       | True RMS, 4 quadrant power and 2 quadrant energy, 32 samples/ cycle                                                  |
| <b>Measurement accuracy</b>                                                                                                                                                                                                                                                                                               |                                                                                                                      |
| Current, per-phase & average                                                                                                                                                                                                                                                                                              | ± 0.5 % of reading                                                                                                   |
| Voltage, L-N, L-L, per-phase & average                                                                                                                                                                                                                                                                                    | ± 0.5 % of reading                                                                                                   |
| Power (active and apparent)                                                                                                                                                                                                                                                                                               | ± 1.0 % for Class 1.0, ± 0.5% for Class 0.5                                                                          |
| Power (reactive)                                                                                                                                                                                                                                                                                                          | ± 2.0 % for Class 1.0 & Class 0.5                                                                                    |
| Power factor, per-phase & average                                                                                                                                                                                                                                                                                         | ± 0.01 of reading                                                                                                    |
| Frequency                                                                                                                                                                                                                                                                                                                 | ± 0.05 % for F-nominal 50/ 60 Hz ± 2 Hz<br>± 0.2 % for Frequency range from 30 to 48 Hz, 52 to 58 Hz and 62 to 70 Hz |
| Active or real energy                                                                                                                                                                                                                                                                                                     | Class 1.0 (± 1.0 %) Class 0.5 (± 0.5%)                                                                               |
| Apparent energy                                                                                                                                                                                                                                                                                                           | ± 1.0 % for Class 1.0, ± 0.5% for Class 0.5                                                                          |
| Reactive energy                                                                                                                                                                                                                                                                                                           | Class 2.0 (± 2.0 %)                                                                                                  |
| THD %                                                                                                                                                                                                                                                                                                                     | ± 5 % of reading                                                                                                     |
| <b>Input-voltage</b>                                                                                                                                                                                                                                                                                                      |                                                                                                                      |
| VT (PT) connection                                                                                                                                                                                                                                                                                                        | Selectable from No VT (direct), 1 VT, 2...3 VT                                                                       |
| VT (PT) primary                                                                                                                                                                                                                                                                                                           | 100 V L-L...999 kV L-L max                                                                                           |
| U (V) nominal (secondary)                                                                                                                                                                                                                                                                                                 | Up to 277 V L-N/ 480 V L-L (selectable VT secondary from 100, 110, 115, 120 to 415 V L-L)                            |
| Operating voltage range with accuracy                                                                                                                                                                                                                                                                                     | 80-480 V L-L ± 10 % Category III                                                                                     |
| Measured Voltage with full range                                                                                                                                                                                                                                                                                          | 35...600 V L-L                                                                                                       |
| Permanent overload (withstand)                                                                                                                                                                                                                                                                                            | 750 V L-L, continuous                                                                                                |
| Impedance                                                                                                                                                                                                                                                                                                                 | ≥ 5 MΩ                                                                                                               |
| Frequency range                                                                                                                                                                                                                                                                                                           | 50/60 Hz ± 2                                                                                                         |
| VA burden                                                                                                                                                                                                                                                                                                                 | ≤ 0.2 VA at 240 V L-N at 50 Hz                                                                                       |

# PM1130H/PM1140H/PM1230H

## Technical specifications (continued)

|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Frequency – measurement</b>                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Nominal operating range                                          | 50/60 Hz $\pm$ 2 Hz ( $\pm$ 0.05 % accuracy)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Extended operating range                                         | 30...48 Hz, 52...58 Hz and 62...70 Hz ( $\pm$ 0.2 % accuracy)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Voltage input                                                    | 80...480 V L-L $\pm$ 10 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Input-current</b>                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| CT connect                                                       | Solo or multi-phase current measurement by installing CT (s) in either of A1, A2, A3, A12, A23, A13, A123 phase(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| CT primary                                                       | 1 A...32767 Amps, programmable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| CT secondary                                                     | 1 A...5 Amps I-nominal (field settable)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Operating current range with accuracy                            | 10 mA...6 A <sup>(+1)</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Measured Amps with full range                                    | 5 mA...10 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Suppression current                                              | 5...99 mA (to disregard negligible load)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Permanent overload (withstand)                                   | Continuous 10 A, 10 s/hr 50 A, 1s/hr 500 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Impedance                                                        | 0.3 m $\Omega$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Frequency range                                                  | 50/60 Hz $\pm$ 2 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| VA burden                                                        | $\leq$ 0.1 VA at 5 A, 50 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>AC - control power</b>                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Operating range                                                  | 60...277 V L-N ac $\pm$ 10 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Burden                                                           | $\leq$ 6 V A at 240 V L-N, 50 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Frequency                                                        | 50/60 Hz nominal (45 to 65 Hz operating range)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Ride-through time                                                | 120 ms at 240 V L-N, 50Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>DC - control power</b>                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Operating range                                                  | 60 to 277 V L-N dc $\pm$ 10 % or Low Voltage dc option of 10 to 32 Vdc $\pm$ 10 % for PM1230H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Burden                                                           | $\leq$ 3 W at 240 Vdc, $\leq$ 3 W at 24 Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Ride-through time                                                | 120 ms at 240 Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Display update</b>                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Instantaneous/ RMS parameters                                    | 1 s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Demand parameters                                                | 5 s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| THD % (voltage and current)                                      | 5 s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Power system</b>                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Phase labelling                                                  | Configurable to 123, ABC, rst, pqr or ryb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Labelling for energy source identification – one letter settable | alpha-numeric, A to Y (except X), or 0...9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Wiring configuration                                             | 13 wiring schemes (5 on front screen)<br>1ph, 2 w, L-N<br>1ph, 2 w, L-L<br>1ph, 3 w, L-L with N (2phase)<br>3ph, 3 w, Delta, Ungrounded<br>3ph, 3 w, Delta, Corner Grounded <sup>(+2)</sup><br>3ph, 3 w, Wye, Ungrounded <sup>(+2)</sup><br>3ph, 3 w, Wye Grounded <sup>(+2)</sup><br>3ph, 3 w, Wye, Resistance Grounded <sup>(+2)</sup><br>3ph, 4 w, Open Delta, Center-Tapped <sup>(+2)</sup><br>3ph, 4 w, Delta, Center-Tapped <sup>(+2)</sup><br>3ph, 4 w, Wye, Ungrounded <sup>(+2)</sup><br>3ph, 4 w, Wye Grounded<br>3ph, 4 w, Wye, Resistance Grounded <sup>(+2)</sup> |
| <b>Mechanical characteristics</b>                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Weight                                                           | ~ 300 gm (10.6 oz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| IP degree of protection                                          | IP 51 front side, IP 30-meter body, tested as per IEC 60529 (IP 54 with gasket METSEIP54GK96X96FF or upgrade to IP65 front side with Optional accessory kit METSEIP65OP96X96FF)                                                                                                                                                                                                                                                                                                                                                                                                |
| Material                                                         | Polycarbonate meets UL 94V-0 flammability rating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Dimensions WxHxD                                                 | 96x96x51 mm (3.78x3.78x2.01 in) (D = depth of the meter from housing mounting flange)<br>13 mm (0.51 in) protrusion of meter from housing flange                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Mounting position                                                | vertical                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Panel thickness                                                  | 5 mm (0.196 in) maximum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Environmental characteristics</b>                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Operating temperature                                            | -10 to +60° C (+14 to +140° F)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Storage temperature                                              | -20 to +70° C (-4 to +158° F)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Humidity rating                                                  | 5...95 % RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Pollution degree                                                 | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Attitude                                                         | $\leq$ 2000 metres (6561 ft), Category III                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Product life                                                     | >7 years                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Insulation category                                              | Double insulation for user accessible parts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

<sup>(+1)</sup> Additional error of  $\pm$ 2 % between 10 mA to 50 mA,  $\pm$ 1 % between 50 mA to 100 mA

<sup>(+2)</sup> Through Communication

# PM1130H/PM1140H/PM1230H

## Technical specifications (continued)

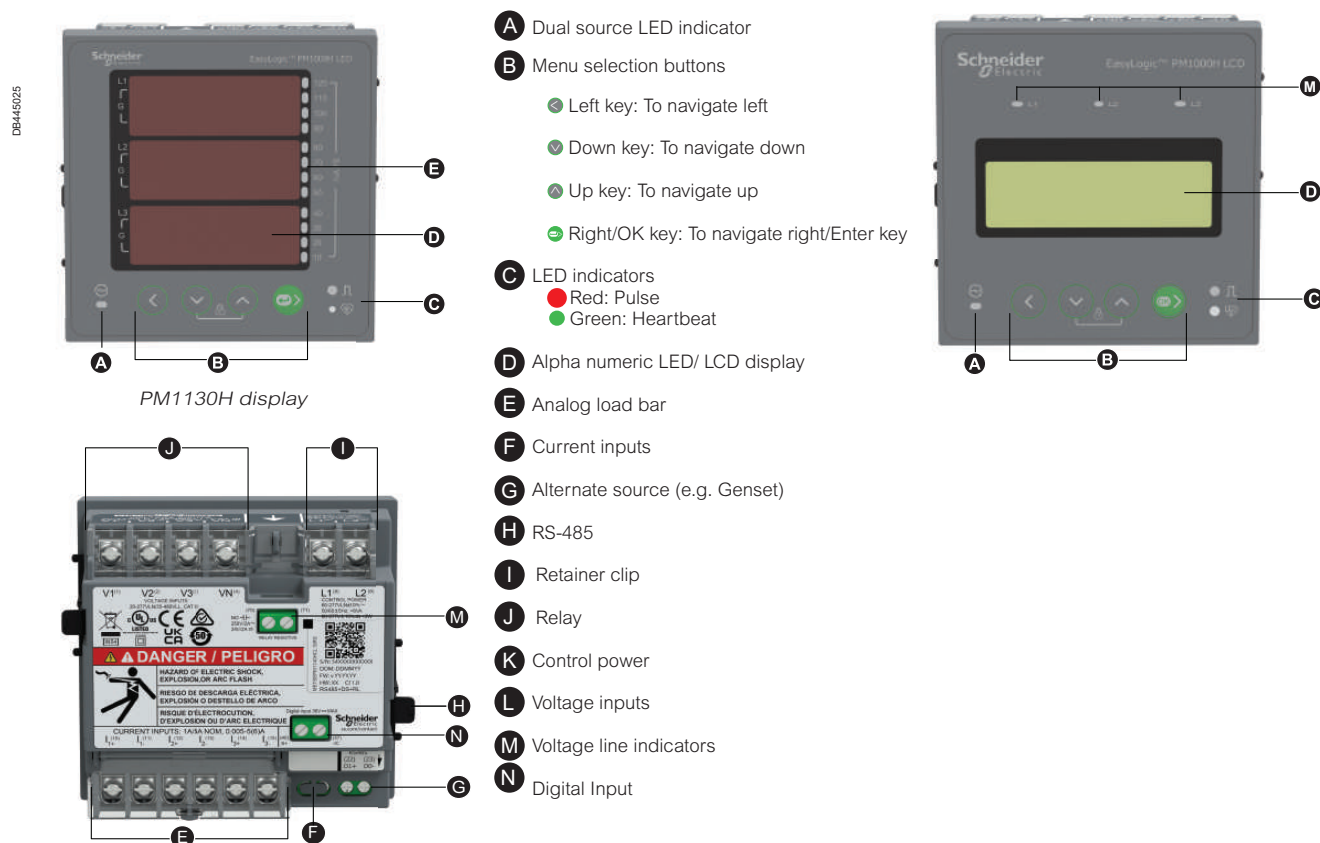
| Electromagnetic compatibility (tested as per IEC 61326-1) |                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electrostatic discharge                                   | IEC 61000-4-2                                                                                                                                                                                                                                                       |
| Immunity to radiated field                                | IEC 61000-4-3                                                                                                                                                                                                                                                       |
| Immunity to fast transients                               | IEC 61000-4-4                                                                                                                                                                                                                                                       |
| Immunity to impulse waves                                 | IEC 61000-4-5                                                                                                                                                                                                                                                       |
| Conducted immunity                                        | IEC 61000-4-6                                                                                                                                                                                                                                                       |
| Immunity to magnetic fields                               | IEC 61000-4-8                                                                                                                                                                                                                                                       |
| Immunity to voltage dips                                  | IEC 61000-4-11                                                                                                                                                                                                                                                      |
| Emissions                                                 | Emissions FCC Part 15 Class A                                                                                                                                                                                                                                       |
| Safety                                                    |                                                                                                                                                                                                                                                                     |
| Europe                                                    | CE, as per IEC 61010-1 edition-3                                                                                                                                                                                                                                    |
| US and Canada                                             | cULus as per UL61010-1 and CAN/CSA-C22.2 IEC 61010-1 edition-3, for 480 Vac L-L                                                                                                                                                                                     |
| Measurement Category (Voltage inputs)                     | CAT III up to 480 V L-L                                                                                                                                                                                                                                             |
| Overvoltage Category (Control power)                      | CAT III up to 300 V L-N                                                                                                                                                                                                                                             |
| Dielectric                                                | As per IEC/UL 61010-1 edition-3                                                                                                                                                                                                                                     |
| Protective Class                                          | II, Double insulated for user accessible parts                                                                                                                                                                                                                      |
| Green premium                                             | EOL, REACH, PEP, RoHS complied                                                                                                                                                                                                                                      |
| Other certification                                       | UKCA - PM1130H and PM1230H<br>RCM and EAC - PM1130H                                                                                                                                                                                                                 |
| Communication                                             |                                                                                                                                                                                                                                                                     |
| RS-485 port                                               | Modbus RTU: 2-Wires, 4800, 9600, 19200 or 38400 baud, Parity - Even, Odd, None, 1 stop bit if parity is Odd or Even, 2 stop bits if none.                                                                                                                           |
| Alternate or dual source sensor                           | 2 pin connector, suitable for pair of 1.5 sq mm multi-strand or single strand cable<br>AC: 80 - 277 V L-N $\pm 10\%$ ON status, 0 to 30 V L-N OFF status<br>DC: 18 - 60 Vdc $\pm 10\%$ ON status, 0 to 4 Vdc OFF status                                             |
| Relay output                                              | Form A relay, 2 pins terminal, externally excited with 300 V L-N ac max./2 A or 24 Vdc/2 A                                                                                                                                                                          |
| Isolation                                                 | 2.5 kV RMS, double insulated                                                                                                                                                                                                                                        |
| Protection features                                       | Password protected for set-up parameters, energy clearing, and other integrated data                                                                                                                                                                                |
| Display language                                          | English                                                                                                                                                                                                                                                             |
| Technical publication                                     | Printed installation guide (QSG) supplied with meter in multi-language (EN, ES, FR, DE, PT, RU, TR, ZH) and user guide in soft format                                                                                                                               |
| Human machine interface                                   |                                                                                                                                                                                                                                                                     |
| Display types                                             | LED display: Intuitive navigation with self-guided, four buttons, 8 segment alphanumeric LEDs of height ~14.2 mm (0.55 in), and three lines of concurrent values with Kilo & Mega value indicators. 4 digits for instantaneous parameters and 5+3 (LED) for energy. |
|                                                           | LCD display: Elegant single row, bright back lit graphical LCD display 132*32 pixels, Fast in-line view, three parameters name and value at one glance. 4 digits for instantaneous parameters and 9+3 (LCD) for energy.                                             |
| Keypad                                                    | 4 buttons for navigation at the front, combination of 2 buttons for lock/unlock pages                                                                                                                                                                               |
| Calibration LED (pulse LED)                               | Red colour, meter constant is configurable from 1 to 9999000 pulses/k <sub>h</sub> (kWh, kVAh, or kVARh)                                                                                                                                                            |
| Communication activity                                    | Green LED (for indicating RS-485 interface or heartbeat pulse)                                                                                                                                                                                                      |
| Alternate or dual source LED                              | Red colour LED glows continuously during the presence of ac or dc voltage across the dual source sensor                                                                                                                                                             |

# PM1130H/PM1140H/PM1230H

## Feature set summary

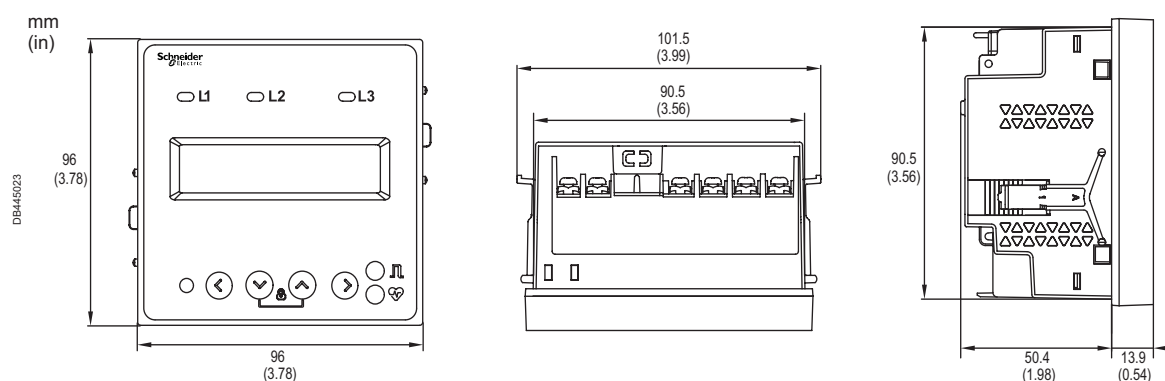
| Parameter/ Meter reference                                                                                                                 | PM1140H                                                    | PM1130H                        | PM1230H                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------|------------------------------------------------------------|
| Accuracy Class of Wh (active energy)                                                                                                       | CI 1.0/CI 0.5                                              | 0.5 (± 0.5 %)                  | 1.0 (± 1.0%)/ 0.5 (± 0.5%)                                 |
| Accuracy Class of VARh (reactive energy)                                                                                                   | 2.0 (± 2.0 %)                                              | 2.0 (± 2.0 %)                  | 2.0 (± 2.0%)                                               |
| Amps: average and per-phase, calculated neutral current                                                                                    | ■                                                          | ■                              | ■                                                          |
| Voltage: V L-N, V L-L, average, per-phase                                                                                                  | ■                                                          | ■                              | ■                                                          |
| Power factor: average and per-phase                                                                                                        | ■                                                          | ■                              | ■                                                          |
| Frequency: any available phase                                                                                                             | ■                                                          | ■                              | ■                                                          |
| Power (W, VA or VAR – any one)<br>Measurement and display of any one power parameter at a time, configurable through set-up/ communication | ■                                                          | ■                              | ■                                                          |
| Energy (Wh, VAh, VARh)- delivered or forward or import energy:<br>One energy measurement based on power parameter selection                | ■ 1 energy (Del only)                                      | ■                              | ■                                                          |
| Demand - selectable for W, VA, VAR (one parameter at a time)                                                                               | ■                                                          | ■                              | ■                                                          |
| Total Harmonic Distortion (THD %)                                                                                                          | ■                                                          | ■                              | ■                                                          |
| Relay, Form A type                                                                                                                         | ■                                                          | ■                              | ■                                                          |
| Old registers - retrieval of last cleared values of source 1 & source 2 energy, source 1 and source 2 load run Hrs                         | ■                                                          | ■                              | ■                                                          |
| Revolutions per minute (RPM)                                                                                                               | ■                                                          | ■                              | ■                                                          |
| Phase angle : Amp Deg (V to Amps, per-phase)                                                                                               | ■                                                          | ■                              | ■                                                          |
| % Unbalance: Maximum of 3-ph V and Amps                                                                                                    | ■                                                          | ■                              | ■                                                          |
| Life time counter - meter ON Hrs, source 1 Load Run Hrs, source 2 Load Run Hrs and number of power interruptions                           | ■                                                          | ■                              | ■                                                          |
| Communication: 2 wire, RS-485, Modbus RTU protocol                                                                                         | ■                                                          | ■                              | ■                                                          |
| Display type                                                                                                                               | LED                                                        | LED                            | LCD                                                        |
| Digital Input                                                                                                                              | ■                                                          | -                              | -                                                          |
| Commercial reference number                                                                                                                |                                                            |                                |                                                            |
| Commercial reference for 60 - 277 V ac/dc control power                                                                                    | METSEPM1140HCL1<br>(CI 1.0)<br>METSEPM1140HCL1<br>(CI 0.5) | METSEPM1130HCL05RS<br>(CI 0.5) | METSEPM1230HCL1<br>(CI 1.0)<br>METSEPM1230HCL5<br>(CI 0.5) |
| Commercial reference for Low Voltage dc (9-36 V) option                                                                                    |                                                            |                                | METSEPM1230HCL5LVD<br>(CI 0.5)                             |

## PM1130H/PM1230H series dual source meter display overview

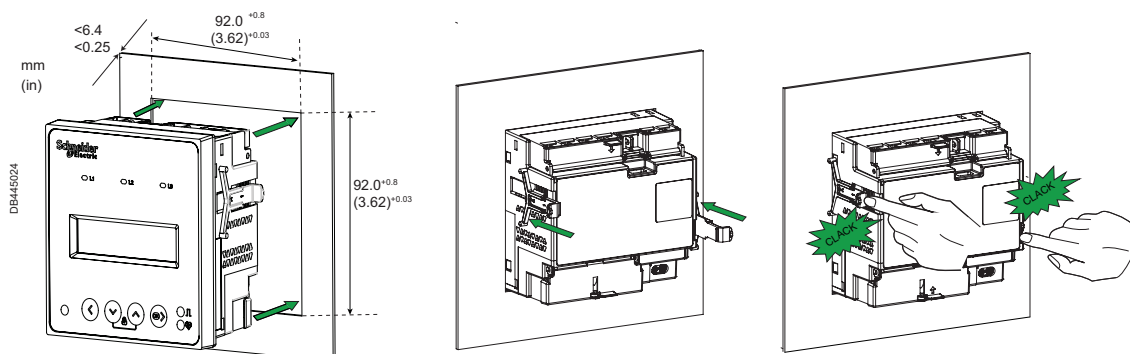


# PM1130H/PM1140H/PM1230H

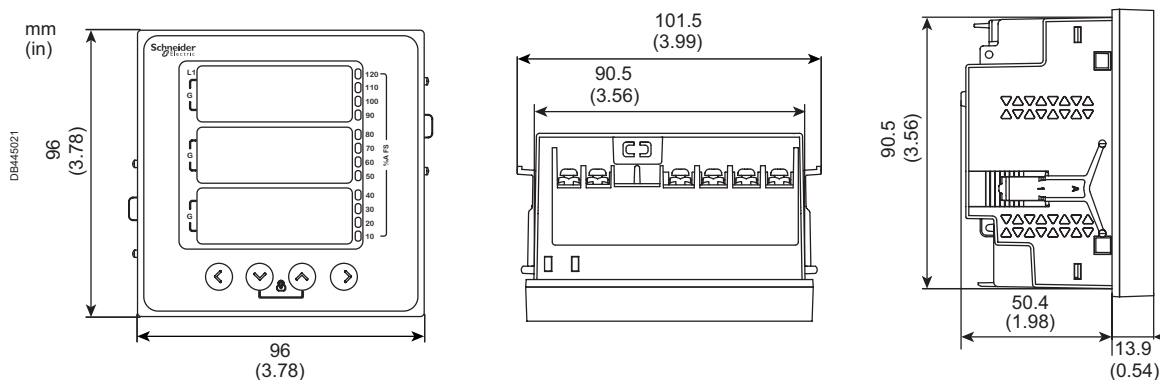
## PM1230H dual source meter mechanical dimensions



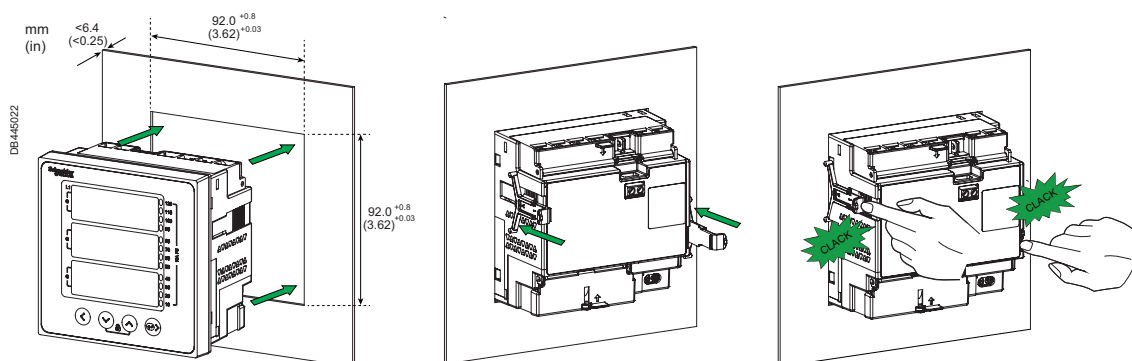
## PM1230H dual source meter installation



## PM1130H dual source/PM1140H DIRO meter mechanical dimensions



## PM1130H and PM1140H DIRO dual source meter installation



See the appropriate **Installation Guide** for correct installation instructions.

# EasyLogic™

## DM1000 / DM3000 Series

DM1000 series: 1-phase Volt / Amps / Frequency digital panel meters in LED display

DM3000 series: 3-phase Volt / Amps digital panel meters in LED display

Introducing EasyLogic™ DM1000/DM3000 Series meters that are ideal replacements for multiple analog meters for stand-alone metering in custom panels, switch boards, switch-gear, genset panels, motor control centres, and OEM panel board.

DM1000/DM3000 series meters offer large 7-segment numeric LED display type, intuitive navigation with self-guided 1 button, bright LED's of 14.2 mm height.



DM1000 series

PB124325



DM3000 series

# DM1000/DM3000 Series



EasyLogic™ DM1000 series front view



EasyLogic™ DM1000 series rear view



EasyLogic™ DM3000 series front view



EasyLogic™ DM3000 series rear view

## Applications

- Basic Voltage, Current, Frequency parameter measurement
  - Control panels
  - Motor control centres
  - Power distribution boards
  - Original equipment manufacturers (OEM's)
  - Panel instrumentation

## Main characteristics

- Easy to install: Mounts using two retainer clips. Compact meter with 43.5 mm depth behind the panel, direct measurement upto 480 V +10 % AC volts L-L without voltage transformers for installation compliant with measurement category III and double insulated
- Easy to operate: Intuitive navigation with single button for self-guided menus
- LED display: 7 segment numeric LEDs of height ~14.2 mm (0.55 in) with 4 digits display in one row with kilo value indicator
- Standard compliance:
  - EMI/EMC tests as per IEC 61326-1
  - CE certification as per IEC 61010-1 Edition 3
  - Accuracy 0.5 % on full scale for Volt & Amps and 0.2 % for Frequency
- CT nominal: 5 A I-nominal or 1 A I-nominal (field settable)
- Password: For securing set up information
- Display: 4 digits for Volt / Amps / Frequency parameters with auto range features
- Panel key: Single key for programming, navigation or as selector switch
- Control power options: Universal range 44 to 275 V L-N AC/DC
- Green premium Ecolabel product

# DM1000/DM3000 Series

## Technical specifications

|                                                                                                                             |                                                                                                                                                        |
|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General</b>                                                                                                              |                                                                                                                                                        |
| Use on LV & MV systems. Potential transformer (PT or VT) / Current transformer (CT) ratio programmable at site              |                                                                                                                                                        |
| Digital panel meters for measurement of Volt / Amps / Frequency electrical parameters                                       |                                                                                                                                                        |
| <b>Instantaneous rms values</b>                                                                                             |                                                                                                                                                        |
| Current                                                                                                                     | Line current of 1-phase or per-phase of 3-phase                                                                                                        |
| Voltage                                                                                                                     | Line voltage of 1-phase or per-phase of 3-phase                                                                                                        |
| Frequency                                                                                                                   | 1-phase                                                                                                                                                |
| <b>Display</b>                                                                                                              |                                                                                                                                                        |
| LED display: 7 segment numeric LEDs of height ~14.2 mm (0.55 in) with 4 digits display in one row with kilo value indicator |                                                                                                                                                        |
| <b>Electrical characteristics</b>                                                                                           |                                                                                                                                                        |
| Type of measurement                                                                                                         | True RMS                                                                                                                                               |
| <b>Measurement accuracy (Class 0.5 meters)</b>                                                                              |                                                                                                                                                        |
| Current, per-phase                                                                                                          | ± 0.5 % of full scale                                                                                                                                  |
| Voltage, L-N or L-L, per-phase                                                                                              | ± 0.5 % of full scale                                                                                                                                  |
| Frequency                                                                                                                   | ± 0.2 % of full scale                                                                                                                                  |
| <b>Input-voltage</b>                                                                                                        |                                                                                                                                                        |
| Input Voltage (50/60 Hz ± 5 %)                                                                                              | 80 to 480 V L-L ± 10 % direct, upto 999 kV with external PT/VT, Category III                                                                           |
| Permanent overload (withstand)                                                                                              | 600 V L-L, continuous                                                                                                                                  |
| VA burden                                                                                                                   | ≤0.2 VA at 240 V L-N at 50/60 Hz                                                                                                                       |
| <b>Frequency – measurement</b>                                                                                              |                                                                                                                                                        |
| Nominal operating range                                                                                                     | 20 to 100 Hz                                                                                                                                           |
| Input Voltage (50/60 Hz ± 5 %)                                                                                              | 80 to 480 V L-L ± 10 %                                                                                                                                 |
| <b>Input-current</b>                                                                                                        |                                                                                                                                                        |
| CT primary                                                                                                                  | Programmable                                                                                                                                           |
| CT secondary                                                                                                                | 1 A or 5 A I-nominal (field settable)                                                                                                                  |
| Operating current range with accuracy                                                                                       | 50 mA to 6 A                                                                                                                                           |
| Permanent overload (withstand)                                                                                              | Continuous 10 A max., 5 s/hr 50 A, 1 s/hr 120 A                                                                                                        |
| Frequency                                                                                                                   | 50/60 Hz ± 5 %                                                                                                                                         |
| VA Burden                                                                                                                   | ≤0.2 VA at 5 A at 50/60 Hz                                                                                                                             |
| <b>AC control power</b>                                                                                                     |                                                                                                                                                        |
| Operating range                                                                                                             | 48 to 250 V L-N AC ± 10 %                                                                                                                              |
| Burden                                                                                                                      | ≤3 VA at 240 V L-N 50/60 Hz                                                                                                                            |
| Frequency                                                                                                                   | 50/60 Hz nominal (± 5)                                                                                                                                 |
| <b>DC control power</b>                                                                                                     |                                                                                                                                                        |
| Operating range                                                                                                             | 48 to 250 Vdc ± 10 %                                                                                                                                   |
| Burden                                                                                                                      | ≤1 W at 240 Vdc                                                                                                                                        |
| <b>Display update</b>                                                                                                       |                                                                                                                                                        |
| Instantaneous/ RMS parameters                                                                                               | 1 s                                                                                                                                                    |
| <b>Mechanical characteristics</b>                                                                                           |                                                                                                                                                        |
| Weight                                                                                                                      | DM1000 <175 gm (6.2 oz), DM3000 <220 gm (7.8 oz)                                                                                                       |
| IP degree of protection                                                                                                     | IP 51 front side, IP 30 meter body, tested as per IEC 60529                                                                                            |
| Material                                                                                                                    | Polycarbonate meets UL 94V-0 flammability rating                                                                                                       |
| Dimensions WxHxD                                                                                                            | 96x96x43.5 mm (3.78x3.78x1.71 in) maximum depth of the meter from housing mounting flange and < 6 mm (0.24 in) protrusion of meter from housing flange |
| Mounting position                                                                                                           | Vertical                                                                                                                                               |
| Panel thickness                                                                                                             | 5 mm (0.196 in) maximum                                                                                                                                |
| <b>Environmental characteristics</b>                                                                                        |                                                                                                                                                        |
| Operating temperature                                                                                                       | -10 to 60 °C (14 to 140 °F)                                                                                                                            |
| Storage temperature                                                                                                         | - 25 to 70 °C (-13 to 158 °F)                                                                                                                          |
| Humidity rating                                                                                                             | 5 to 95 % RH non-condensing                                                                                                                            |
| Pollution degree                                                                                                            | 2                                                                                                                                                      |
| Altitude                                                                                                                    | ≤2000 m (6562 ft) Category III                                                                                                                         |
| Product life                                                                                                                | >7 years                                                                                                                                               |
| Insulation category                                                                                                         | Double insulation for user accessible parts                                                                                                            |

# DM1000/DM3000 Series

## Technical specifications (Continued)

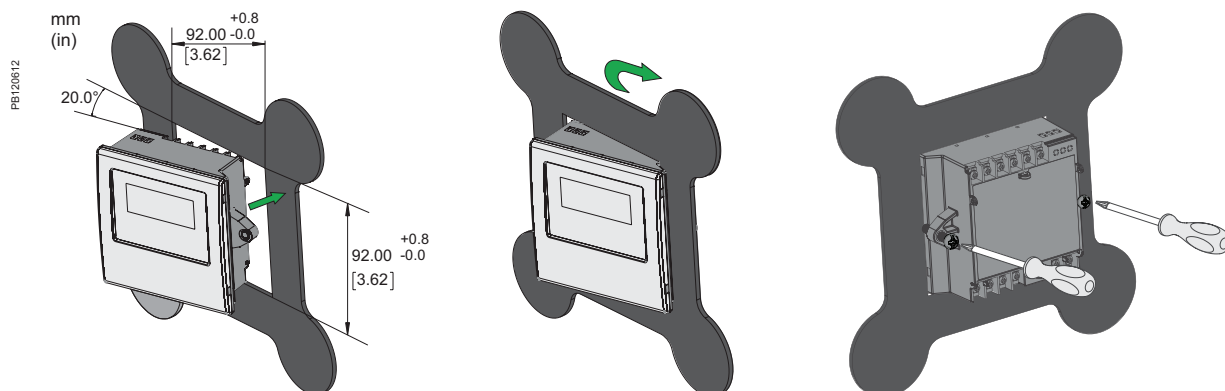
| Electromagnetic compatibility (tested as per IEC 61326-1) |                                                                                                                             |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Electrostatic discharge                                   | IEC 61000-4-2                                                                                                               |
| Immunity to radiated field                                | IEC 61000-4-3                                                                                                               |
| Immunity to fast transients                               | IEC 61000-4-4                                                                                                               |
| Immunity to impulse waves                                 | IEC 61000-4-5                                                                                                               |
| Conducted immunity                                        | IEC 61000-4-6                                                                                                               |
| Immunity to magnetic fields                               | IEC 61000-4-8                                                                                                               |
| Immunity to voltage dips                                  | IEC 61000-4-11                                                                                                              |
| Harmonic current emissions                                | IEC 61000-3-2                                                                                                               |
| Voltage fluctuations and flicker                          | IEC 61000-3-3                                                                                                               |
| Emissions                                                 | Emissions FCC Part 15 Class A/CE, CISPR11                                                                                   |
| Safety                                                    |                                                                                                                             |
| Europe                                                    | CE, as per IEC 61010-1 edition 3                                                                                            |
| Measurement Category (Voltage inputs)                     | Category III up to 480 V L-L                                                                                                |
| Overvoltage Category (Control power)                      | Category III up to 300 V L-N                                                                                                |
| Dielectric                                                | As per IEC/UL 61010-1 edition 3                                                                                             |
| Protective Class                                          | II, Double insulated for user accessible parts                                                                              |
| Green premium                                             | EOL, REACH, PEP, RoHS complied                                                                                              |
| Isolation                                                 | 4 kV for 1 min                                                                                                              |
| Protection/Installation Guide                             |                                                                                                                             |
| Protection features                                       | Password for set-up                                                                                                         |
| Display language                                          | Numeric value                                                                                                               |
| Technical publication                                     | Printed installation guide (QSG) supplied with meter in English and in soft format                                          |
| Human machine interface                                   |                                                                                                                             |
| Display type - LED                                        | LED display: 7 segment numeric LEDs of height ~14.2 mm (0.55 in) with 4 digits display in one row with kilo value indicator |
| Keypad                                                    | Panel key: Single key for programming, navigation or as selector switch                                                     |

## Feature set summary

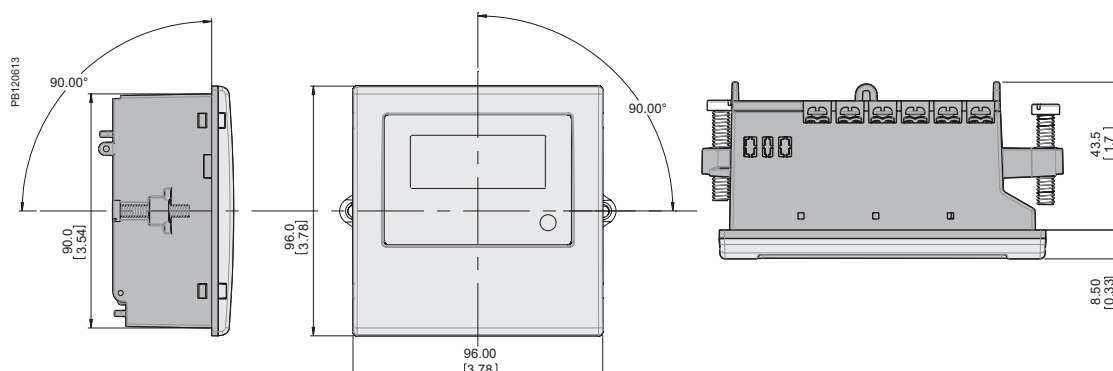
| Parameter                                 | DM1110        | DM1210        | DM1310        | DM3110        | DM3210        | Accuracy (in Full scale) |
|-------------------------------------------|---------------|---------------|---------------|---------------|---------------|--------------------------|
| 1-ph Amps                                 | ■             |               |               |               |               | 0.5 %                    |
| 1-ph Volts                                |               | ■             |               |               |               | 0.5 %                    |
| 1-ph Hz                                   |               |               | ■             |               |               | 0.2 %                    |
| 3-ph Amps                                 |               |               |               | ■             |               | 0.5 %                    |
| 3-ph Volts                                |               |               |               |               | ■             | 0.5 %                    |
| Commercial reference number               |               |               |               |               |               |                          |
| Commercial reference starts with METSE*** | <b>DM1110</b> | <b>DM1210</b> | <b>DM1310</b> | <b>DM3110</b> | <b>DM3210</b> | -                        |

# DM1000/DM3000 Series

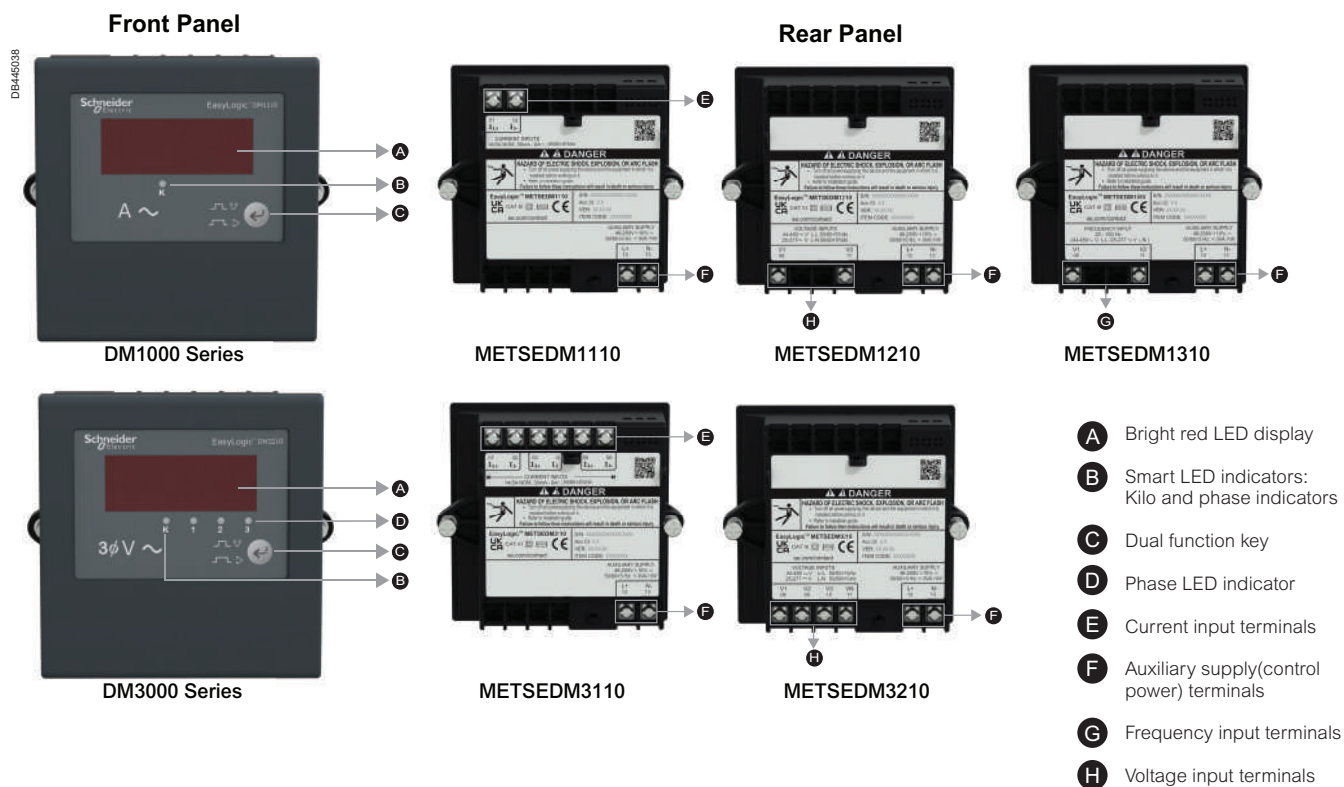
## DM1000/DM3000 Series meter installation



## DM1000/DM3000 Series meter mechanical dimensions



## DM1000/DM3000 series meter display overview



See the appropriate Installation Guide for correct installation instructions.

# EasyLogic™ DM6xx0H Series

DM6000H & DM6200H VAF PF digital panel meters in LED display

DM6220H VAF PF digital panel meters in LCD display

Introducing EasyLogic™ DM6xx0H Series meters that are ideal replacements for multiple analog meters for stand-alone metering in custom panels, switch boards, switch-gear, genset panels, motor control centres, power factor improvement panels, and OEM panel board.

DM6xx0H series meters offer large 8-segment alpha-numeric LED display type, intuitive navigation with self-guided 4 buttons, bright LED's of 14.2 mm height with 12 LEDs for indicating percentage of load in the circuit.

DM6220H meter displays measured parameters and values in elegant single row, bright back lit graphical LCD display in 128\*32 pixels size.



DM6220H series



DM6200H series

# DM6xx0H Series



EasyLogic™ DM6220H front view



EasyLogic™ DM6000H front view



EasyLogic™ DM6xx0H Rear view

- Applications
  - Cost management
    - Electrical installation remote monitoring
    - Control panels
    - Motor control centres
    - Power distribution boards
    - Original equipment manufacturers (OEM's)
    - Building management system
    - Panel instrumentation
    - Energy management system
- Network management
  - Measurement of Power Factor
  - % unbalance for voltage and current
  - Phase angle between the respective voltage and current phase
  - Modbus RTU protocol, RS-485 communication port for integration with energy management systems (DM6200H & DM6220H)
- Main characteristics
  - Easy to install: Mounts using two retainer clips, no tools required. Compact meter with 49 mm meter depth behind the panel, connectable up to 480 V +10 % AC volts L-L without voltage transformers for installation complaint with measurement category III, and double insulated
  - Easy to operate: Intuitive navigation with self-guided menus and Heartbeat LED indicates normal functioning of meters while it conveys the communication status when connected to RS-485 network
  - LED display: Intuitive navigation with self-guided, four buttons, 8 segment alphanumeric LEDs of height ~14.2mm (0.55 in) and three lines of concurrent values with Kilo & Mega value indicators
  - LCD display: Elegant single row, bright back lit graphical LCD display 128\*32 pixels, Fast in-line view, three parameters name and value at one glance
  - Standard compliance:
    - EMI/EMC tests as per IEC 61326-1
    - CE certification as per IEC 61010-1 Edition 3
    - cULus as per UL61010-1 and CAN/CSA-C22.2 IEC 61010-1 edition 3, for 480 Vac L-L
  - Accuracy class 1.0 for V AF PF metering
  - CT nominal: 5 A, I-nominal or 1 A, I-nominal (field settable)
  - Password: Field configurable password for securing set up information
  - Cyber security: Option for disabling RS-485 port through front panel keys against unauthorized access. This feature can also be used for maintenance and troubleshooting of complex communication network
  - Analog load bar in LED display: the colour-coded analog load bar at the front side indicates the percentage of load through 12 LED's with the option to select full scale based on connected load
  - Display: 4 digits for VAF PF parameters with auto scroll and auto range features
  - Suppression current: To disregard the measurement of induced and panel auxiliary load current in the circuit (settable from 5 to 99 mA)
  - Protection cover to ensure that terminal screws do not detach from the housing and are touch proof against fingers
  - Smart line indicators in LCD display meter: helps check the presence of input supply voltage (healthy phase)
  - Control power options: Universal range 44 to 300 V L-N AC/DC or low voltage DC control power of 9 to 36 Vdc

# DM6xx0H Series

## Technical specifications

| General                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use on LV & MV systems with Potential transformer (PT or VT) / Current transformer (CT) ratio programmable at site                                                                                       |                                                                                                                                                                                                                                                                                                                         |
| Digital panel meters for measurement of basic electrical parameters                                                                                                                                      |                                                                                                                                                                                                                                                                                                                         |
| Instantaneous rms values                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                         |
| Current                                                                                                                                                                                                  | Average line current of 3-phase, per-phase, and calculated neutral current                                                                                                                                                                                                                                              |
| Voltage                                                                                                                                                                                                  | Average voltage of L-L, L-N parameters, and per-phase                                                                                                                                                                                                                                                                   |
| Frequency                                                                                                                                                                                                | Any available line                                                                                                                                                                                                                                                                                                      |
| True power factor                                                                                                                                                                                        | Average and per-phase signed                                                                                                                                                                                                                                                                                            |
| Unbalance                                                                                                                                                                                                | Maximum % unbalance among phases for Volts & Amps                                                                                                                                                                                                                                                                       |
| Revolution per minute (RPM)                                                                                                                                                                              | RPM of alternator or generator when number of poles set for 2, 4, 6, 8, 12, 14 or 16 (any one pole)                                                                                                                                                                                                                     |
| Life timer stored in non-volatile memory                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                         |
| Time counters for measuring meter ON Hrs and power interruptions                                                                                                                                         |                                                                                                                                                                                                                                                                                                                         |
| Display                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                         |
| LED display: Bright red colour, 8 segment alphanumeric LED, ~ 14.2 mm (0.55 in) height, 3 rows with 4 digits per row, auto range, auto scroll                                                            |                                                                                                                                                                                                                                                                                                                         |
| LCD display: Elegant single row, bright back lit graphical LCD display 132 (Horizontal) * 32 (Vertical) pixels, 60 Degree angular view. Fast in-line view, three parameters name and value at one glance |                                                                                                                                                                                                                                                                                                                         |
| Communication                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                         |
| RS-485 serial (DM6200H)                                                                                                                                                                                  | Channel connection Industry standard Modbus RTU protocol                                                                                                                                                                                                                                                                |
| Integration with software                                                                                                                                                                                | Any Modbus compatible SCADA/DCS/PMS/EMS/BAS/BMS software                                                                                                                                                                                                                                                                |
| Native Plug and Play support                                                                                                                                                                             | Schneider Electric energy management system software - EcoStruxure™ Power Monitoring Expert, EcoStruxure™ Power Operation<br>ION Setup utility software for set-up/programming of meters                                                                                                                                |
| Diagnostics                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                         |
| Diagnostic page                                                                                                                                                                                          | Diagnostic page indicates the healthiness of communication system, device serial number, device model number OS & RS version, communication status<br>All LED segment check in LED display. In LCD display meter - alternate pixels ON/ OFF test. LCD contrast level, set back-lit time out in the range of 1 to 99 sec |
| Lock / Un-Lock                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                         |
| Page lock and unlock features                                                                                                                                                                            | Once the commonly referred page is enabled for lock feature, the display returns to locked page in 4 minutes of inactive time                                                                                                                                                                                           |
| Electrical characteristics                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                         |
| Type of measurement                                                                                                                                                                                      | True RMS, 32 samples/cycle                                                                                                                                                                                                                                                                                              |
| Measurement accuracy (Class 1.0 meters)                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                         |
| Current, per-phase & average                                                                                                                                                                             | ± 0.5 % of reading                                                                                                                                                                                                                                                                                                      |
| Voltage, L-N, L-L, per-phase & average                                                                                                                                                                   | ± 0.5 % of reading                                                                                                                                                                                                                                                                                                      |
| Power factor, per-phase & average                                                                                                                                                                        | ± 0.01 of reading                                                                                                                                                                                                                                                                                                       |
| Frequency                                                                                                                                                                                                | ± 0.05 % for F-nominal 50/60 Hz ± 2<br>± 0.2 % for Frequency range from 30 to 48 Hz, 52 to 58 Hz and 62 to 70 Hz                                                                                                                                                                                                        |
| Input-voltage                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                         |
| VT (PT) connection                                                                                                                                                                                       | Selectable from No VT (direct), 1 VT, 2 VT to 3 VT                                                                                                                                                                                                                                                                      |
| VT (PT) primary                                                                                                                                                                                          | 100 V L-L to 999 kV L-L max                                                                                                                                                                                                                                                                                             |
| U (V) nominal                                                                                                                                                                                            | Up to 277 V L-N/ 480 V L-L (selectable VT secondary from 100, 110, 115, 120 to 415 V L-L)                                                                                                                                                                                                                               |
| Operating voltage range with accuracy                                                                                                                                                                    | 80-480 V L-L ± 10 % Category III                                                                                                                                                                                                                                                                                        |
| Measured Voltage with full range                                                                                                                                                                         | 35 to 600 V L-L                                                                                                                                                                                                                                                                                                         |
| Permanent overload (withstand)                                                                                                                                                                           | 750 V L-L, continuous                                                                                                                                                                                                                                                                                                   |
| Impedance                                                                                                                                                                                                | ≥5 MΩ                                                                                                                                                                                                                                                                                                                   |
| Frequency                                                                                                                                                                                                | 50/60 Hz ± 2                                                                                                                                                                                                                                                                                                            |
| VA burden                                                                                                                                                                                                | ≤0.2 VA at 240 V L-N at 50 Hz                                                                                                                                                                                                                                                                                           |
| Frequency – measurement                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                         |
| Nominal operating range                                                                                                                                                                                  | 50/60 Hz ± 2                                                                                                                                                                                                                                                                                                            |
| Extended operating range                                                                                                                                                                                 | 30 to 48 Hz, 52 to 58 Hz and 62 to 70 Hz                                                                                                                                                                                                                                                                                |
| Voltage input                                                                                                                                                                                            | 80 to 480 V L-L ± 10 %                                                                                                                                                                                                                                                                                                  |
| Input-current                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                         |
| CT connect                                                                                                                                                                                               | Solo or multi-phase current measurement by installing CT (s) in either of A1, A2, A3, A12, A23, A13, A123 phase(s)                                                                                                                                                                                                      |
| CT primary                                                                                                                                                                                               | 1 A to 32767 A, programmable                                                                                                                                                                                                                                                                                            |
| CT secondary                                                                                                                                                                                             | 1 A or 5 A I-nominal (field settable)                                                                                                                                                                                                                                                                                   |
| Operating current range with accuracy                                                                                                                                                                    | 10 mA to 6 A <sup>(+1)</sup>                                                                                                                                                                                                                                                                                            |
| Measured Amps with over range & Crest Factor                                                                                                                                                             | 5 mA to 10 A                                                                                                                                                                                                                                                                                                            |
| Suppression current                                                                                                                                                                                      | 5 to 99 mA (to disregard negligible load)                                                                                                                                                                                                                                                                               |
| Impedance                                                                                                                                                                                                | < 0.3 mΩ                                                                                                                                                                                                                                                                                                                |
| Permanent overload (withstand)                                                                                                                                                                           | Continuous 10 A, 10 s/hr 50 A, 1 s/hr 500 A                                                                                                                                                                                                                                                                             |
| Frequency                                                                                                                                                                                                | 50/60 Hz ± 2                                                                                                                                                                                                                                                                                                            |
| VA Burden                                                                                                                                                                                                | ≤0.1 V A at 5 A at 50 Hz                                                                                                                                                                                                                                                                                                |

(+1) Additional error of ± 2 % between 10 mA to 50 mA, ± 1 % between 50 mA to 100 mA

# DM6xx0H Series

## Technical specifications (continued)

|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AC control power</b>                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Operating range                                                  | 48 to 277 V L-N AC $\pm$ 10 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Burden                                                           | $\leq$ 4 VA at 240 V L-N 50 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Frequency                                                        | 50/60 Hz nominal (45 to 65 Hz operating range)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Ride-through time                                                | 200 milliseconds at 240 V L-N, 50 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>DC control power</b>                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Operating range                                                  | 48 to 277 Vdc $\pm$ 10 % or Low Voltage DC option of 10 to 32 Vdc $\pm$ 10 % for DM6220H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Burden                                                           | $\leq$ 2 W at 240 Vdc, $<$ 2 W at 24 Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Ride-through time                                                | 120 ms at 240 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Displays update</b>                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Instantaneous/ RMS parameters                                    | 1 s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Power system</b>                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Phase labelling                                                  | Configurable to 123, ABC, rst, pqr or ryb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Wiring configuration                                             | 13 wiring schemes (5 on front screen)<br>1ph, 2w, L-N<br>1ph, 2w, L-L<br>1ph, 3w, L-L with N (2-phase)<br>3ph, 3w, Delta, Ungrounded<br>3ph, 3w, Delta, Corner Grounded <sup>(+2)</sup><br>3ph, 3w, Wye, Ungrounded <sup>(+2)</sup><br>3ph, 3w, Wye Grounded <sup>(+2)</sup><br>3ph, 3w, Wye, Resistance Grounded <sup>(+2)</sup><br>3ph, 4w, Open Delta, Centre-Tapped <sup>(+2)</sup><br>3ph, 4w, Delta, Centre-Tapped <sup>(+2)</sup><br>3ph, 4w, Wye, Ungrounded <sup>(+2)</sup><br>3ph, 4w, Wye Grounded <sup>(+2)</sup><br>3ph, 4w, Wye, Resistance Grounded <sup>(+2)</sup> |
| <b>Mechanical characteristics</b>                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Weight                                                           | ~ 300 gm (10.6 oz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| IP degree of protection                                          | IP 51 front side, IP 30 meter body, tested as per IEC 60529<br>(IP 54 with optional gasket METSEIP54GK96X96FF or upgrade to IP65 front side with Optional accessory kit METSEIP65OP96X96FF)                                                                                                                                                                                                                                                                                                                                                                                        |
| Material                                                         | Polycarbonate meets UL 94V-0 flammability rating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Dimensions WxHxD                                                 | 96x96x49 mm (3.78x3.78x1.93 in) maximum depth of the meter from housing mounting flange and 13 mm (0.51 in) protrusion of meter from housing flange                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Mounting position                                                | Vertical                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Panel thickness                                                  | 5 mm (0.196 in) maximum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Environmental characteristics</b>                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Operating temperature                                            | -10 to 60 °C (14 to 140 °F)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Storage temperature                                              | -20 to 70 °C (-4 to 158 °F)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Humidity rating                                                  | 5 to 95 % RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Pollution degree                                                 | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Altitude                                                         | $\leq$ 2000 m (6562 ft) Category III                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Product life                                                     | $>$ 7 years                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Insulation category                                              | Double insulation for user accessible parts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Electromagnetic compatibility (tested as per IEC 61326-1)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Electrostatic discharge                                          | IEC 61000-4-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Immunity to radiated field                                       | IEC 61000-4-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Immunity to fast transients                                      | IEC 61000-4-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Immunity to impulse waves                                        | IEC 61000-4-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Conducted immunity                                               | IEC 61000-4-6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Immunity to magnetic fields                                      | IEC 61000-4-8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Immunity to voltage dips                                         | IEC 61000-4-11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Emissions                                                        | Emissions FCC Part 15 Class A/CE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

<sup>(+2)</sup> Through communication

# DM6xx0H Series

## Technical specifications (continued)

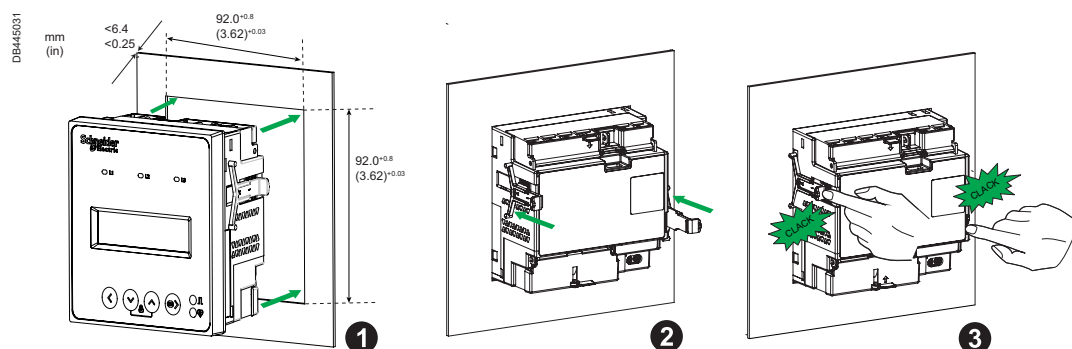
| Safety                                |                                                                                                                                                                                                                                   |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Europe                                | CE, as per IEC 61010-1 edition 3                                                                                                                                                                                                  |
| US and Canada                         | cULus as per UL61010-1 and CAN/CSA-C22.2 IEC 61010-1 edition 3, for 480 V L-L                                                                                                                                                     |
| Measurement Category (Voltage inputs) | CAT III up to 480 V L-L                                                                                                                                                                                                           |
| Overvoltage Category (Control power)  | CAT III up to 300 V L-N                                                                                                                                                                                                           |
| Dielectric                            | As per IEC/UL 61010-1 edition 3                                                                                                                                                                                                   |
| Protective Class                      | II, Double insulated for user accessible parts                                                                                                                                                                                    |
| Green premium                         | EOL, REACH, PEP, RoHS complied                                                                                                                                                                                                    |
| Other certification                   | RCM & EAC for Russia                                                                                                                                                                                                              |
| Communication                         |                                                                                                                                                                                                                                   |
| RS-485 port                           | Modbus RTU: 2-Wires, with ground & shield, 4800, 9600, 19200 or 38400 baud, Parity - Even, Odd, None, 1 stop bit if parity is Odd or Even, 2 stop bits if None<br>DLF3000: Firmware update through communication port             |
| Isolation                             | 2.5 kV RMS, double insulated                                                                                                                                                                                                      |
| Protection features                   | User configurable password (selectable from 0000 to 9999) protected for set-up                                                                                                                                                    |
| Display language                      | English                                                                                                                                                                                                                           |
| Technical publication                 | Printed installation guide (QSG) supplied with meter in multi-language (EN, ES, FR, DE, PT, RU, TR, ZH) and user guide in soft format                                                                                             |
| Human machine interface               |                                                                                                                                                                                                                                   |
| Display type - LED                    | 8 segment Alpha-numeric LED, ~ 14.2 mm (0.55 in) height, 3 rows with 4 digits per row, 1 column of 12 LEDs to indicate percentage of load connected in system. 4 digits for VAF PF parameters, with auto scrolling and auto range |
| Display type - LCD                    | Fast in-line view, three parameters name and value at one glance. 3+1 digits for instantaneous parameters with auto range                                                                                                         |
| Keypad                                | 4 buttons for navigation at the front, combination of 2 buttons for lock/unlocking of commonly viewed page                                                                                                                        |
| Communication activity                | Green LED (for indicating RS-485 interface or heartbeat pulse)                                                                                                                                                                    |

## Feature set summary

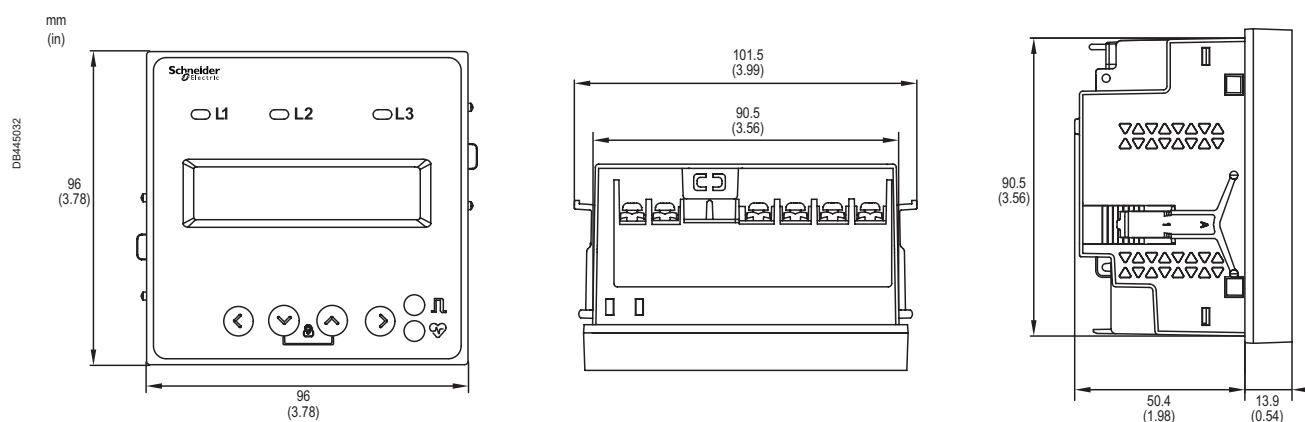
| Parameter                                                          | DM6000H Class 1.0           | DM6200H Class 1.0           | DM6220H Class 1.0           |
|--------------------------------------------------------------------|-----------------------------|-----------------------------|-----------------------------|
| V A F – per-phase & Average                                        | ■                           | ■                           | ■                           |
| PF – per-phase & Average                                           | ■                           | ■                           | ■                           |
| % Load, % V & I Unbalance, Ph-angle, RPM                           | ■                           | ■                           | ■                           |
| Modbus RS-485                                                      | -                           | ■                           | ■                           |
| Sampling rate per cycle                                            | 32                          | 32                          | 32                          |
| Amps: per-phase & Average, calculated neutral current              | ■                           | ■                           | ■                           |
| Voltage: V L-N, V L-L, per-phase & Average                         | ■                           | ■                           | ■                           |
| Power factor: per-phase & Average                                  | ■                           | ■                           | ■                           |
| Frequency: any available phase                                     | ■                           | ■                           | ■                           |
| Revolutions per minute (RPM)                                       | ■                           | ■                           | ■                           |
| Phase angle : Amp Deg (V to Amps, per-phase)                       | ■                           | ■                           | ■                           |
| % Unbalance: Maximum of 3-ph V and Amps                            | ■                           | ■                           | ■                           |
| Life time counter - meter ON Hrs and number of power interruptions | ■                           | ■                           | ■                           |
| Communication: RS-485, Modbus RTU protocol                         | -                           | ■                           | ■                           |
| Display Type                                                       | LED                         | LED                         | LCD                         |
| Commercial reference numbers                                       |                             |                             |                             |
| Commercial reference for 44 - 300 Vac/dc control power             | METSEDM6000HCL10NC (Cl 1.0) | METSEDM6200HCL10RS (Cl 1.0) | METSEDM6220HCL1 (Cl 1.0)    |
| Commercial reference for Low Voltage DC (9-36 V) option            |                             |                             | METSEDM6220HCL1LVD (Cl 1.0) |

# DM6xx0H Series

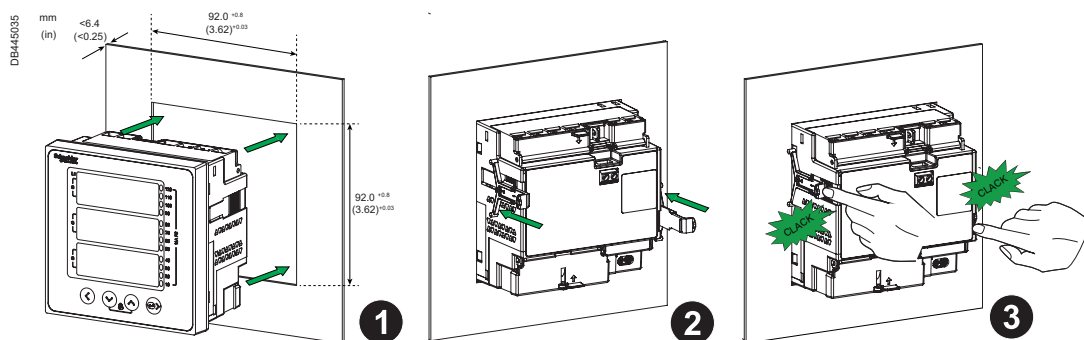
## DM6220H Series meter mounting



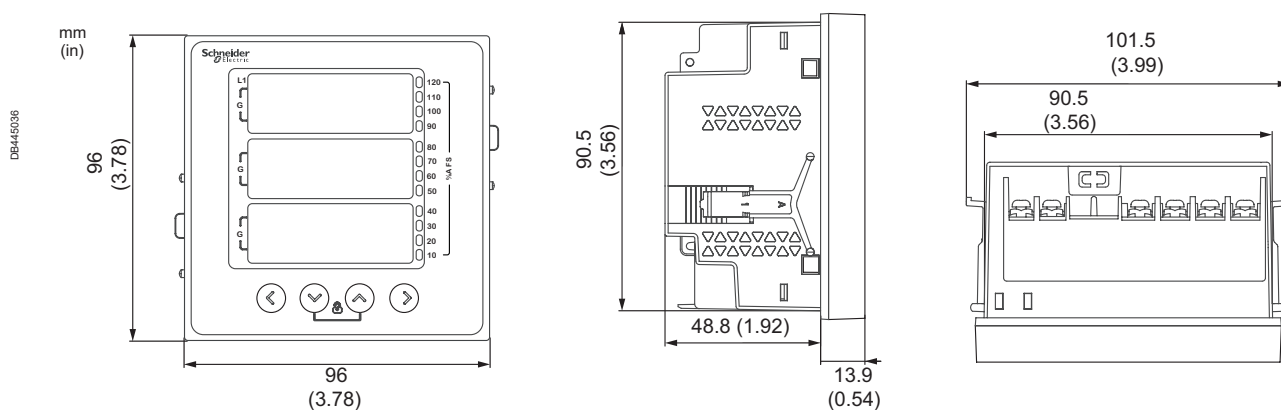
## DM6220H Series meter mechanical dimensions



## DM6000H Series meter mounting



## DM6000H Series meter mechanical dimensions



# DM6xx0H Series

## DM6000H/DM6220H meter display overview



DM6000H display



DM6220H display



Rear view for DM6000H and DM6220H

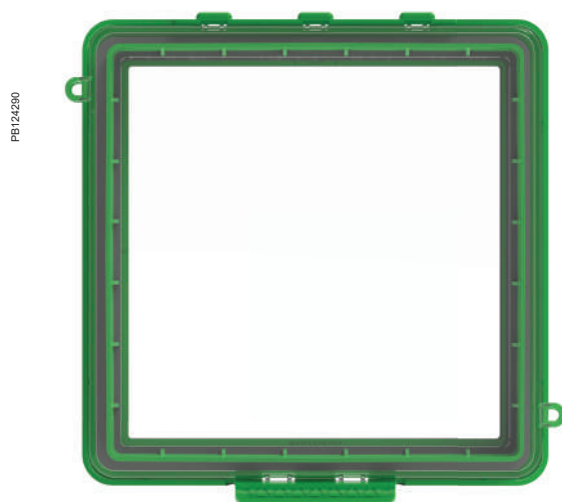
- A** Menu selection buttons
  - Left key: To navigate left
  - Down key: To navigate down
  - Up key: To navigate up
  - Right/OK key: To navigate right/Enter key
- B** LED indicators
  - Red: Pulse
  - Green: Heartbeat
- C** Alpha numeric LED/ LCD display
- D** Analog load bar
- E** Current inputs
- F** RS-485 port (DM6200H only)
- G** Retainer clip
- H** Control power
- I** Voltage inputs
- J** Voltage line indicators

See the appropriate **Installation Guide** for correct installation instructions.

# IP65 Accessory Kit

Upgrade IP degree of protection against ingress of dust and water for panel meters with optional IP65 accessory kit. Compatible with Schneider make power meter models: DM6000, EM1000, DM6xx0H, EM1000H, EM64xxH, EM6400NG+, EM7200, PM1000H, PM2000, PM5000 series.

IP – Ingress protection rating is used to specify the environmental protection of electrical equipment Ingress Protection (IP) ratings are developed by the European Committee for Electro Technical Standardization (CENTEC), to specify the environmental protection on the device enclosures. The applicable standard for testing IP degree of protection of the device is IEC 60529.



IP65 accessory kit



Power meter upgraded to IP65 degree of protection

# IP65 Accessory Kit

PE124292



IP65 Accessory Kit iso view

- Applications
  - Upgrade Ingress protection of power meters to IP65 level
  - Specific electrical panels require higher degree of ingress protection against the penetration of dust and water
    - Mines, Minerals and Metals
    - FMCG, Food and Beverages
    - Outdoor panels
    - Substation
    - RMU (Ring Main Unit)
    - Generators
    - Panel instrumentation
  - Optional accessory for PowerLogic™ PM5000 series and EasyLogic™ DM6000, EM1000, DM6xx0H, EM1000H, EM64xxH, EM6400NG+, EM7200, PM1000H, PM2000 series power meter
- Main characteristics
  - IP65 enclosure kit for 96mmx96 mm form factor power meters with bezel thickness of maximum 15 mm
  - CE compliant
  - Field upgradable
  - Sealing provision against tampering of meter data
  - Clear transparent view of the meter display
  - Easy to operate with one click snap button
  - IP65 certified as per IEC 60529 standard
  - Tested for flammability as per UL 94

## Commercial reference number

| Commercial reference number | Description                                                          |
|-----------------------------|----------------------------------------------------------------------|
| METSEIP65OP96X96FD          | IP65 Accessory kit for 96x96 mm form factor power meter (for India)  |
| METSEIP65OP96X96FF          | IP65 Accessory kit for 96x96 mm form factor power meter (for global) |

## IP65 Accessory Kit Technical Specifications

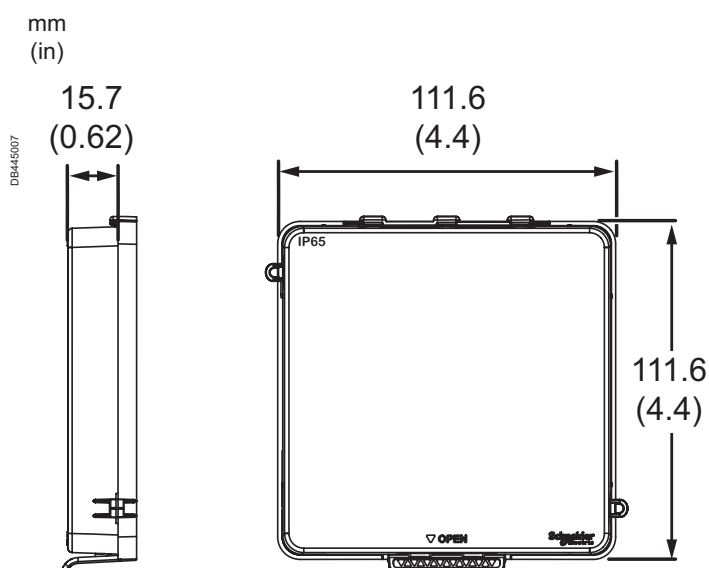
| Environmental characteristics          |                               |
|----------------------------------------|-------------------------------|
| Operating temperature                  | -25 to 70 °C (-13 to 158 °F)  |
| Storage temperature                    | - 30 to 80 °C (-22 to 175 °F) |
| Humidity rating                        | 5 to 95 % RH non-condensing   |
| Altitude                               | ≤3000 m (9842.5 ft)           |
| RoHS compliance                        | 2015/863/EU                   |
| General                                |                               |
| IP protection degree                   | IP65 as per IEC 60529         |
| Weight                                 | 0.07 kg/part                  |
| Flammability rating according to UL 94 | V2 grade                      |
| Sealing hole                           | Ø2.0 mm (Ø0.08 in)            |

## IP degree rating table

| First number: | Protection against:                                    | Second number: | Protection against:                                                                                                   |
|---------------|--------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------|
| 0             | No protection                                          | 0              | No protection                                                                                                         |
| 1             | Solid objects greater than 50 mm                       | 1              | Vertical water drops to which indoor equipment can be exposed due to leaks or condensation, limited ingress permitted |
| 2             | Solid objects greater than 12 mm                       | 2              | Direct sprays of water up to 15° from the vertical, limited ingress permitted                                         |
| 3             | Solid objects over 2.5 mm (tools and wires)            | 3              | Direct sprays of water up to 60° from the vertical, limited ingress permitted                                         |
| 4             | Solid objects over 1 mm (tools, wire, and small wires) | 4              | Water sprayed from all directions, limited ingress permitted                                                          |
| 5             | Dust limited ingress (no harmful deposit, 2 to 8 hrs)  | 5              | Low pressure jets of water from all directions, limited ingress permitted                                             |
| 6             | Dust, no ingress of dust, 2 to 8 hrs                   | 6              | Low pressure jets of water, limited ingress permitted                                                                 |
|               |                                                        | 7              | The effect of immersion between 15 cm and 1 m for 30 mins                                                             |
|               |                                                        | 8              | Long periods of immersion under pressure                                                                              |

# IP65 Accessory Kit

## IP65 accessory kit mechanical dimensions

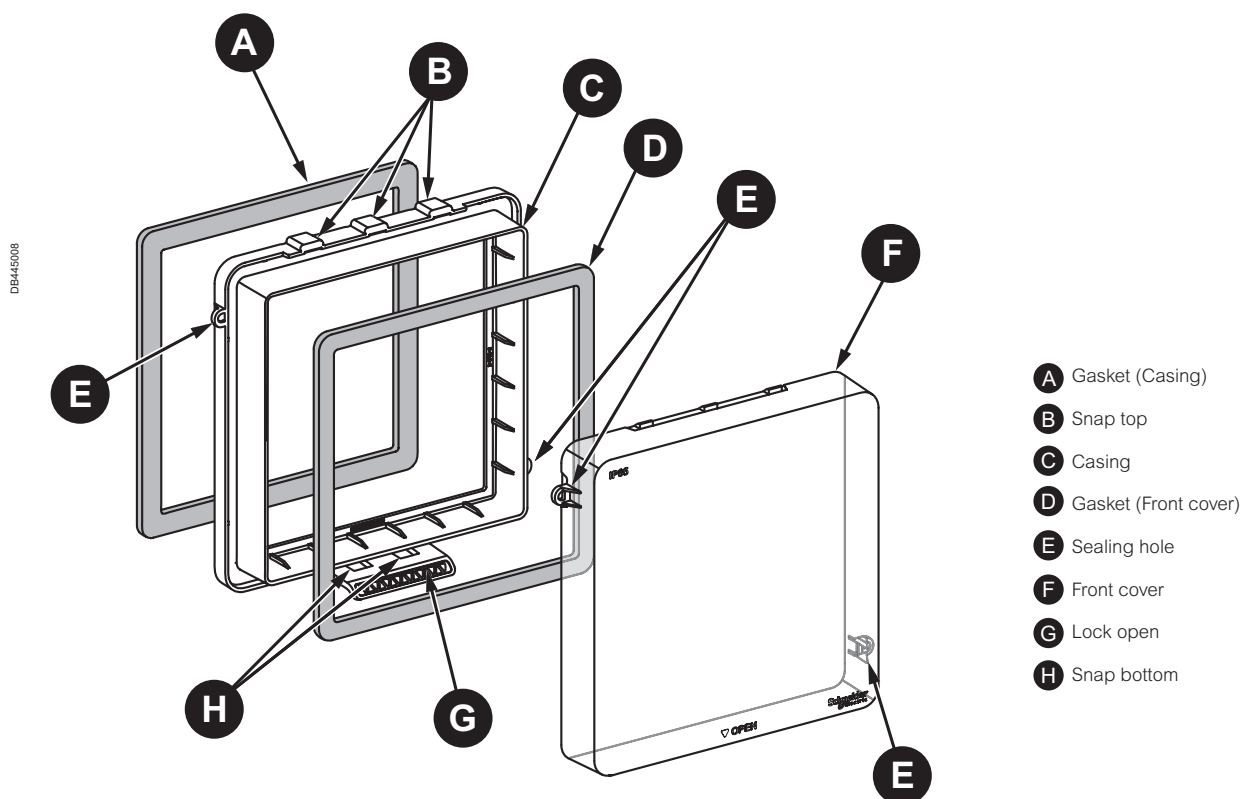


## Compatible Schneider power meter ranges

| Range       | Power meter series |
|-------------|--------------------|
| PowerLogic™ | PM5000 series      |
| EasyLogic™  | DM6000 / EM1000    |
|             | DM6xx0H            |
|             | EM1000H            |
|             | EM64xxH            |
|             | EM6400NG+          |
|             | EM7200             |
|             | PM1000H            |
|             | PM2000 series      |

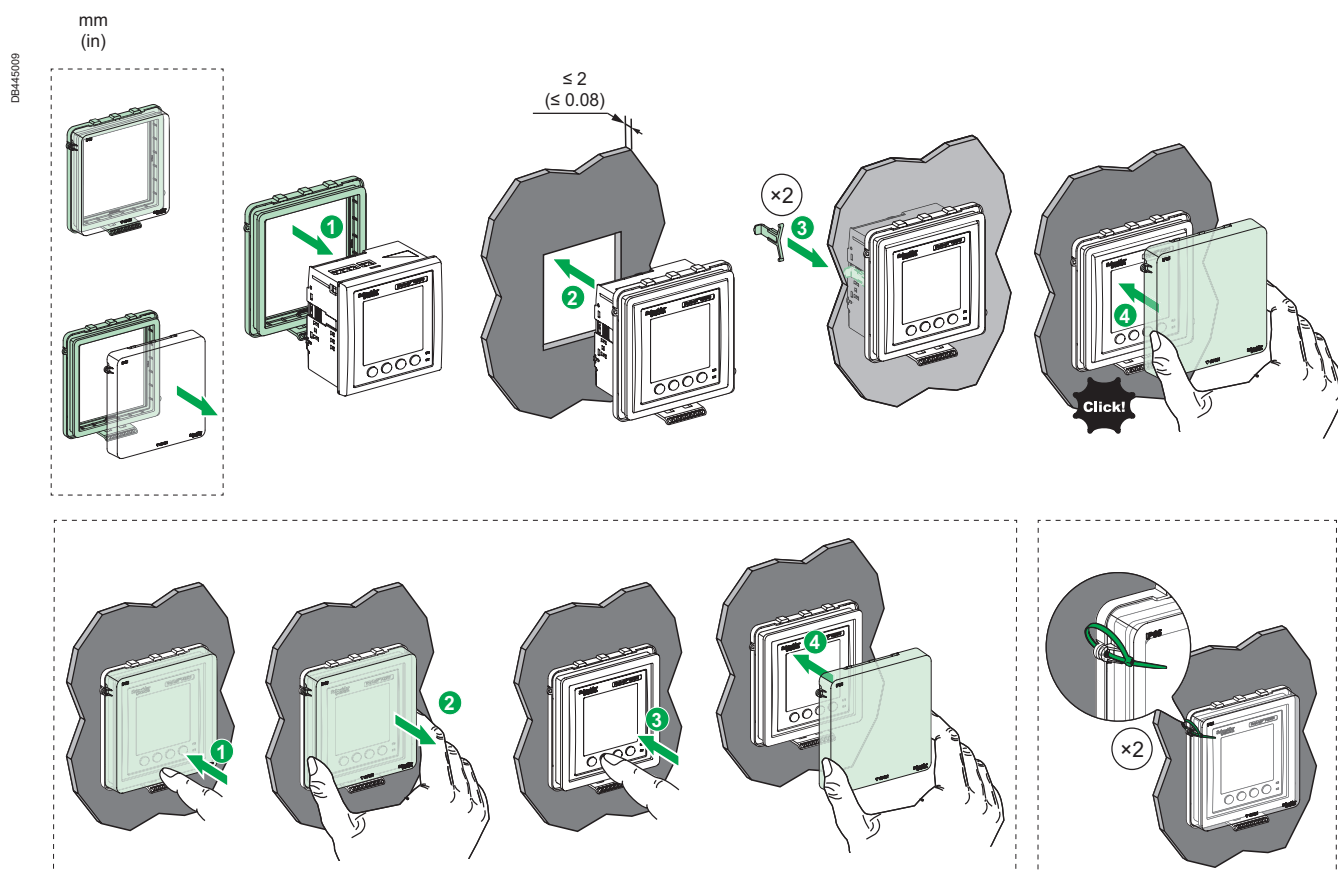
**Note:** See the appropriate Technical Datasheets of power meter series for more information.

## IP65 accessory kit description

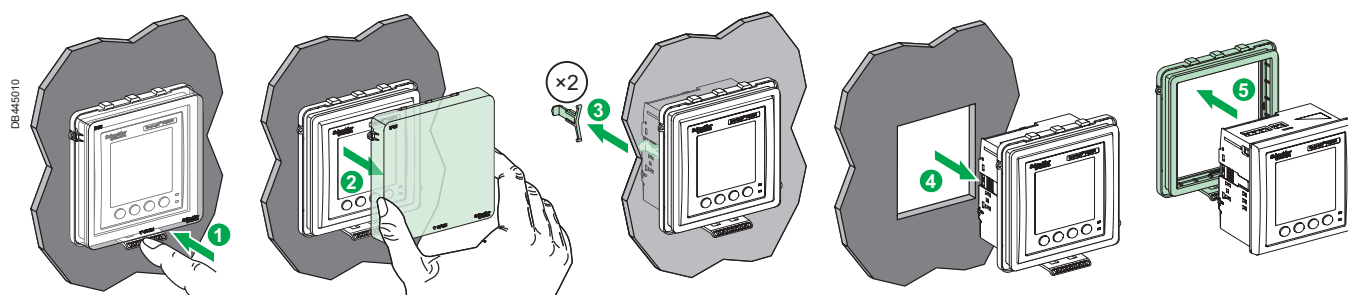


# IP65 Accessory Kit

## IP65 accessory kit mounting



## IP65 accessory kit dismounting



See the appropriate **Installation Guide** for correct installation instructions.

# IP54 Gasket

Upgrade IP degree of protection against ingress of dust and water for panel meters with optional IP54 Gasket. Compatible with Schneider make power meter with 96 mmx96 mm form factor/dimension.

IP – Ingress protection rating is used to specify the environmental protection of electrical equipment Ingress Protection (IP) ratings are developed by the European Committee for Electro Technical Standardization (CEN/TC61), to specify the environmental protection on the device enclosures. The applicable standard for testing IP degree of protection of the device is IEC 60529.

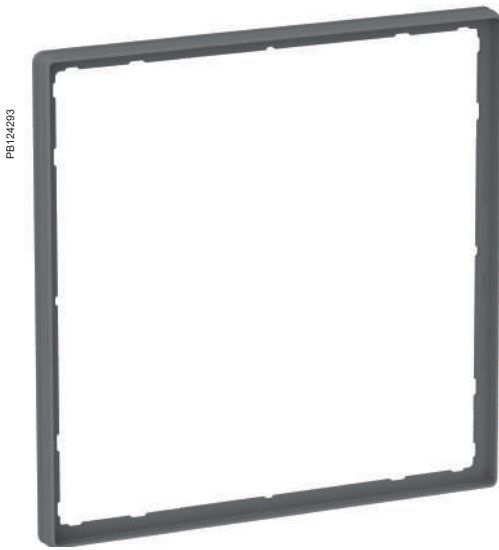


IP54 Gasket



Power meter upgraded to IP54 degree of protection

# IP54 Gasket



IP54 Gasket iso view

- Applications
  - Upgrade Ingress protection of power meters to IP54 level
  - Power meters in the electrical panels require higher degree of ingress protection against the penetration of dust and water
  - Add-on accessory for EasyLogic™ PM2000 series and PowerLogic™ PM5000 series power meter
  - Optional accessory for EasyLogic™ DM1000, DM3000, DM6000, EM1000, DM6xx0H, EM1000H, EM64xxH, EM6400NG+, EM7200, PM1000H series power meter
- Main characteristics
  - Compatible to use with 96 mm x 96 mm form factor power meters having cut out size of 90 mm x 90 mm ±2
  - High grade Wacker Silicones LR 3003\70 to withstand against harsh environmental conditions
  - Color: Pantone Cool Grey 11C
  - Ensures IP54 degree of protection to the power meters installed in the electrical panel
  - Long life (>15 years)
  - Easy to upgrade
  - IP54 certified as per IEC 60529 standard
  - Tested for flammability as per UL 94

## Commercial reference number

| Commercial reference number | Description                                                        |
|-----------------------------|--------------------------------------------------------------------|
| METSEIP54GK96X96FD          | IP54 gasket for 96 mm x 96 mm form factor power meter (for India)  |
| METSEIP54GK96X96FF          | IP54 gasket for 96 mm x 96 mm form factor power meter (for global) |

## IP54 Gasket Technical Specifications

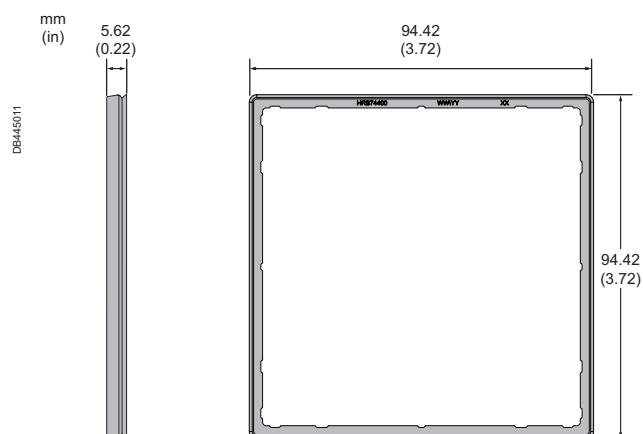
| Environmental characteristics          |                               |
|----------------------------------------|-------------------------------|
| Operating temperature                  | -25 to 70 °C (-13 to 158 °F)  |
| Storage temperature                    | - 30 to 80 °C (-22 to 175 °F) |
| Humidity rating                        | 5 to 95 % RH non-condensing   |
| Altitude                               | ≤3000 m (9842.5 ft)           |
| RoHS compliance                        | 2002/95/EC                    |
| General                                |                               |
| IP protection degree                   | IP54 as per IEC 60529         |
| Weight                                 | < 0.02 kg/part                |
| Flammability rating according to UL 94 | HB grade                      |

## IP degree rating table

| First number: | Protection against:                                    | Second number: | Protection against:                                                                                                   |
|---------------|--------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------|
| 0             | No protection                                          | 0              | No protection                                                                                                         |
| 1             | Solid objects greater than 50 mm                       | 1              | Vertical water drops to which indoor equipment can be exposed due to leaks or condensation, limited ingress permitted |
| 2             | Solid objects greater than 12 mm                       | 2              | Direct sprays of water up to 15° from the vertical, limited ingress permitted                                         |
| 3             | Solid objects over 2.5 mm (tools and wires)            | 3              | Direct sprays of water up to 60° from the vertical, limited ingress permitted                                         |
| 4             | Solid objects over 1 mm (tools, wire, and small wires) | 4              | Water sprayed from all directions, limited ingress permitted                                                          |
| 5             | Dust limited ingress (no harmful deposit, 2 to 8 hrs)  | 5              | Low pressure jets of water from all directions, limited ingress permitted                                             |
| 6             | Dust, no ingress of dust, 2 to 8 hrs                   | 6              | Low pressure jets of water, limited ingress permitted                                                                 |
|               |                                                        | 7              | The effect of immersion between 15 cm and 1 m for 30 mins                                                             |
|               |                                                        | 8              | Long periods of immersion under pressure                                                                              |

# IP54 Gasket

## IP54 gasket mechanical dimensions

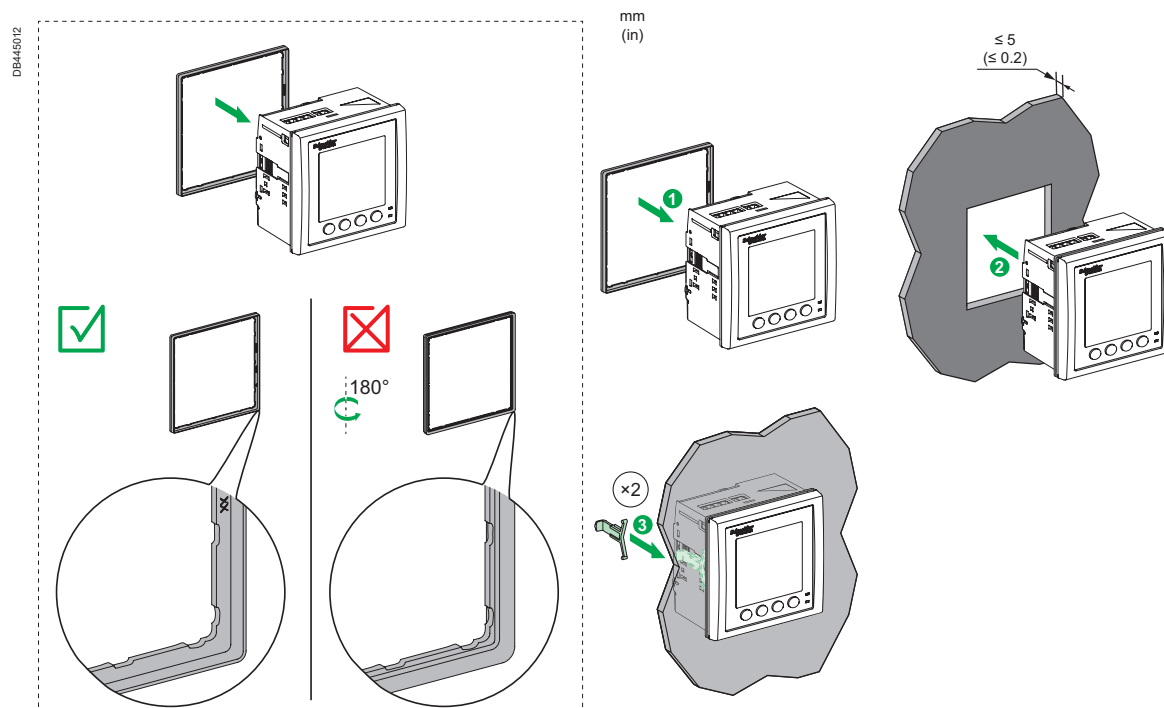


## Compatible Schneider power meter ranges

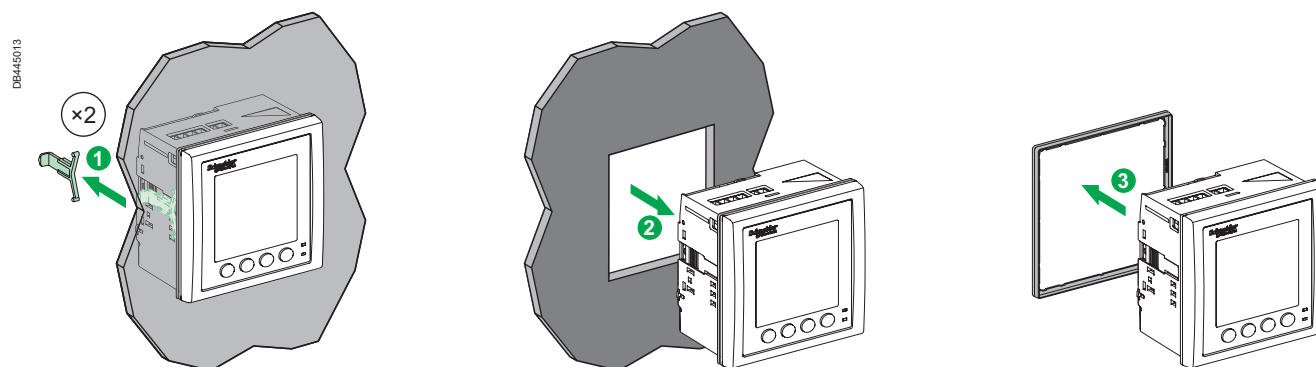
| Range       | Power meter series |
|-------------|--------------------|
| PowerLogic™ | PM5000 series      |
| EasyLogic™  | DM1000 / DM3000    |
|             | DM6000 / EM1000    |
|             | DM6xx0H            |
|             | EM1000H            |
|             | EM64xxH            |
|             | EM6400NG+          |
|             | EM7200             |
|             | PM1000H            |
|             | PM2000 series      |

**Note:** See the appropriate Technical Datasheets of power meter series for more information.

## IP54 gasket Mounting



## IP54 gasket Dismounting



See the appropriate Installation Guide for correct installation instructions.

# EasyLogic™ Commercial Reference Numbers

| Comm. reference number                       | Description                                                                                    |
|----------------------------------------------|------------------------------------------------------------------------------------------------|
| <b>PM2000 series</b>                         |                                                                                                |
| METSEPM2110                                  | PM2110 CI 1.0 Pulse output power and energy meter LED display                                  |
| METSEPM2120                                  | PM2120 CI 1.0 RS-485 power and energy meter LED display                                        |
| METSEPM2125C2AI2AO                           | PM2125C CI 0.5S RS-485 power and energy meter 2-AI 2-AO LED display                            |
| METSEPM2125C2DI2RO                           | PM2125C CI 0.5S RS-485 power and energy meter 2-DI 2-RO LED display                            |
| METSEPM2130                                  | PM2130 CI 0.5S RS-485 CI power and energy meter LED display                                    |
| METSEPM2210                                  | PM2210 CI 1.0 Pulse output power and energy meter LCD display                                  |
| METSEPM2220                                  | PM2220 CI 1.0 RS-485 power and energy meter LCD display                                        |
| METSEPM2225C2AI2AO                           | PM2225C CI 0.5S RS-485 power and energy meter 2-AI 2-AO LCD display                            |
| METSEPM2225C2DI2RO                           | PM2225C CI 0.5S RS-485 power and energy meter 2-DI 2-RO LCD display                            |
| METSEPM2230                                  | PM2230 CI 0.5S RS-485 CI power and energy meter LCD display                                    |
| <b>PM2000 IO Modules - site configurable</b> |                                                                                                |
| METSEPM2KDGTLIO22                            | PM2x30 Digital IO Module with 2 channels each                                                  |
| METSEPM2KANLGIO22                            | PM2x30 Analog IO module with 2 channels each                                                   |
| METSEPM2KANLGIO11                            | PM2x30 Analog IO module with 1 channel each                                                    |
| METSEPM2K2DI2RO                              | PM2x30 Digital Input and Relay Output Module with 2 channels each                              |
| <b>PM2000R series</b>                        |                                                                                                |
| METSEPM2220R                                 | PM2220R CI 1.0 RS-485 power and energy meter RSJ45 LVCT LCD display                            |
| <b>PM2200R series</b>                        |                                                                                                |
| <b>LVCT Solid 3 in 1 RJ45</b>                |                                                                                                |
| METSECTV35006                                | LVCT Solid core 3 in 1 with RJ45 cable, 35 mm phase center, 60 Amps, 0.333V output, Class 1.0  |
| METSECTV35010                                | LVCT Solid core 3 in 1 with RJ45 cable, 35 mm phase center, 100 Amps, 0.333V output, Class 1.0 |
| METSECTV35013                                | LVCT Solid core 3 in 1 with RJ45 cable, 35 mm phase center, 125 Amps, 0.333V output, Class 1.0 |
| METSECTV35016                                | LVCT Solid core 3 in 1 with RJ45 cable, 35 mm phase center, 160 Amps, 0.333V output, Class 1.0 |
| METSECTV35020                                | LVCT Solid core 3 in 1 with RJ45 cable, 35 mm phase center, 200 Amps, 0.333V output, Class 1.0 |
| METSECTV35025                                | LVCT Solid core 3 in 1 with RJ45 cable, 35 mm phase center, 250 Amps, 0.333V output, Class 1.0 |
| METSECTV45025                                | LVCT Solid core 3 in 1 with RJ45 cable, 45 mm phase center, 250 Amps, 0.333V output, Class 1.0 |
| <b>Cables</b>                                |                                                                                                |
| DCEPCURJX5GYM                                | Category 5e, Patch Cord, UTP, 0.5 M, Grey                                                      |
| DCEPCURJ01GYM                                | Category 5e, Patch Cord, UTP, 1 M, Grey                                                        |
| DCEPCURJ02GYM                                | Category 5e, Patch Cord, UTP, 2 M, Grey                                                        |
| DCEPCURJ03GYM                                | Category 5e, Patch Cord, UTP, 3 M, Grey                                                        |
| DCEPCURJ05GYM                                | Category 5e, Patch Cord, UTP, 5 M, Grey                                                        |
| DCEPCURJ10GYM                                | Category 5e, Patch Cord, UTP, 10 M, Grey                                                       |
| <b>EM1000H</b>                               |                                                                                                |
| METSEEM1250HCL1                              | EM1250H CI 1.0 RS-485 energy meter LCD display                                                 |
| METSEEM1220HCL1                              | EM1220H CI 1.0 RS-485 energy meter LCD display                                                 |
| METSEEM1220HCL5                              | EM1220H CI 0.5 RS-485 energy meter LCD display                                                 |
| METSEEM1220HCL5LVD                           | EM1220H CI 0.5 RS-485 energy meter LCD display LVDC control power                              |
| <b>PM1000H series</b>                        |                                                                                                |
| METSEPM1120HCL10RS                           | PM1120H CI 1.0 RS-485 power meter LED display                                                  |
| METSEPM1120HCL05RS                           | PM1120H CI 0.5 RS-485 power meter LED display                                                  |
| METSEPM1125HCL10RS                           | PM1125H CI 1.0 RS-485 multi-function power meter LED display                                   |
| METSEPM1125HCL05RD                           | PM1125H CI 0.5 RS-485 multi-function power meter LED display                                   |
| METSEPM1125HCL1LVD                           | PM1125H CI 1.0 RS-485 multi-function power meter LED display LVDC control power                |
| METSEPM1125HCL5LVD                           | PM1125H CI 0.5 RS-485 multi-function power meter LED display LVDC control power                |
| METSEPM1225HCL1                              | PM1225H CI 1.0 RS-485 multi-function power meter LCD display                                   |
| METSEPM1225HCL5                              | PM1225H CI 0.5 RS-485 multi-function power meter LCD display                                   |

Please contact your Schneider Electric representative for complete ordering information.

# EasyLogic™ Commercial Reference Numbers (contd.)

| Comm. reference number          | Description                                                                     |
|---------------------------------|---------------------------------------------------------------------------------|
| <b>METSEPM1225HCL1LVD</b>       | PM1225H CI 1.0 RS-485 multi-function power meter LCD display LVDC control power |
| <b>METSEPM1225HCL5LVD</b>       | PM1225H CI 0.5 RS-485 multi-function power meter LCD display LVDC control power |
| <b>PM1130H / PM1230H series</b> |                                                                                 |
| <b>METSEPM1130HCL05RS</b>       | PM1130H CI 0.5 RS-485 dual source energy meter LED display                      |
| <b>METSEPM1230HCL1</b>          | PM1230H CI 1.0 RS-485 dual source energy meter LCD display                      |
| <b>METSEPM1230HCL5</b>          | PM1230H CI 0.5 RS-485 dual source energy meter LCD display                      |
| <b>METSEPM1230HCL5LVD</b>       | PM1230H CI 0.5 RS-485 dual source energy meter LCD display LVDC control power   |
| <b>PM1140H</b>                  |                                                                                 |
| <b>METSEPM1140HCL1</b>          | PM1140H Power meter Class 1.0 RS485                                             |
| <b>METSEPM1140HCL5</b>          | PM1140H Power meter Class 0.5 RS485                                             |
| <b>DM1000 series</b>            |                                                                                 |
| <b>METSEDM1110</b>              | DM1110 Class 0.5 1-phase Ammeter                                                |
| <b>METSEDM1210</b>              | DM1210 Class 0.5 1-phase Voltmeter                                              |
| <b>METSEDM1310</b>              | DM1310 Class 0.2 1-phase Frequency meter                                        |
| <b>DM3000 series</b>            |                                                                                 |
| <b>METSEDM3110</b>              | DM3110 Class 0.5 3-phase Ammeter                                                |
| <b>METSEDM3210</b>              | DM3210 Class 0.5 3-phase Voltmeter                                              |
| <b>DM6xx0H series</b>           |                                                                                 |
| <b>METSEDM6000HCL10NC</b>       | DM6000H Class 1.0 VAF PF meter LED display                                      |
| <b>METSEDM6200HCL10RS</b>       | DM6200H Class 1.0 RS-485 VAF PF meter LED display                               |
| <b>METSEDM6220HCL1</b>          | DM6220H Class 1.0 RS-485 VAF PF meter LCD display                               |
| <b>METSEDM6220HCL1LVD</b>       | DM6220H Class 1.0 RS-485 VAF PF meter LCD display LVDC control power            |
| <b>IP65 Accessory kit</b>       |                                                                                 |
| <b>METSEIP65OP96X96FD</b>       | IP65 Accessory kit for 96x96 mm form factor power meter (for India)             |
| <b>METSEIP65OP96X96FF</b>       | IP65 Accessory kit for 96x96 mm form factor power meter (for global)            |
| <b>IP54 Gasket</b>              |                                                                                 |
| <b>METSEIP54GK96X96FD</b>       | IP54 gasket for 96 mm x 96 mm form factor power meter (for India)               |
| <b>METSEIP54GK96X96FF</b>       | IP54 gasket for 96 mm x 96 mm form factor power meter (for global)              |

Please contact your Schneider Electric representative for complete ordering information.



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