

PowerLogic™ EM3570 Series Technical Datasheet

The PowerLogic™ EM3570 series DIN rail mount energy meters with Ethernet are the new benchmark for affordable and precision metering application.

Engineered on the trusted PowerLogic platform, Ethernet-enabled EM3570 DIN rail meters are designed to install easily and integrate seamlessly with existing BACnet/IP and Modbus TCP/IP networks common in today's building and power management systems. With wide range CT compatibility, high reliability, IEC 61557-12 and UL2808 compliance, as well as ASHRAE 90.1 for power and energy logging capability, EM3570 meters support the energy efficiency designs of most buildings and are ideally suited for energy cost management applications.

Applications

Capable of essential cost management:

- Energy monitoring in building automation systems
- Renewable energy
- Energy management
- Commercial sub-metering
- Industrial monitoring
- Cost allocation

Also ideal for electrical network management:

- Track real-time power conditions
- Monitor control functions
- Provide basic power quality values
- Extended data log feature support up to 3 years
- Analyze equipment and network status
- BACnet/IP and Ethernet TCP/IP protocol support



The solution for

Markets that can benefit from a solution that includes PowerLogic™ EM3570 series meters:

- Buildings
- Industry
- Healthcare
- Data Center and networks
- Infrastructure

Benefits

System integrators' benefit

- Ease of integration
- Ease of setup
- Cost effectiveness

Panel builders' benefit

- Ease of installation
- Cost effectiveness
- Aesthetically pleasing
- Simplified ordering
- Externally powered with LVDC control power
- Digital inputs
- Relay output

End users' benefit

- Retrofitment in existing panel with Split core LVCT or Rogowski coil
- Ease of use
- Comprehensive, consistent and superior performance
- Maximize uptime, eliminate faults, and enhance safety
- Cybersecurity features

Competitive advantages

- Easy to install and operate
- Easy for circuit breaker monitoring and control
- 2GB memory for data logging up to 3 years with 16 parameters in 15 min interval. Flexibility of selecting parameters from 75 different parameters with option of setting the logging interval from 10 sec to 32767 sec
- Load management combined with alarm and timestamping
- High performance and accuracy
- Onboard BACnet/IP and EthernetTCP/IP protocol support
- Low voltage DC control powered for safer installation

Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximize electrical network reliability and availability, and optimize electrical asset performance.

Features

- Open, robust communications
 - Ethernet protocol and daisy-chain functionality with two RJ45 connectors at 10/100 Mbps
 - Supports HTTPS, SNMP, DHCP, Modbus TCP/IP, BACnet/IP
 - Easy remote management through web/mobile devices
- Easy installation
 - DIN-mounted form factor option for easy, plug-in installation
 - Industry standard Modbus register and BACnet object list
- ASHRAE 90.1 compliant data logging
 - Two (2) GB capacity power and energy data logging in 15-minute increments over a 36 month period
 - Wide CT compatibility: LVCTs (0.333 V and 1 V), and Rogowski Coils (up to 5000 A)
- High reliability
 - IEC 61557-12 standards with capacity to measure up to 600 VAC
- Cybersecurity
 - Adheres to IEC 62443 SL1 requirements
 - California CA 2020
- BTL-certified BACnet communication
 - Conformance based on independent testing

Conformity of standards

- BS/EN/IEC 61557-12:2018/AMD1:2021
- BS/EN/IEC 61326-1: edition 3
- cULus as per UL 61010-1 edition 3
- BS/EN/IEC 61010-2-30:2017
- CE and UKCA as per IEC/BS 61010-1 edition 3
- CSA 22.2 UL 61010-1:2010/2019
- CSA 22.3 61010-2-030:2017
- BACnet/IP - BTL listed (B-ASC)
- Align with cyber security guidelines as per IEC 62443

EM3570 series



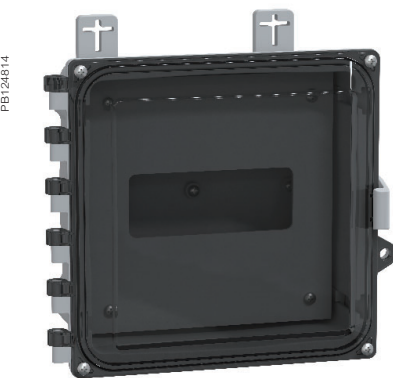
PB124612

EM3570 meter front ISO view



PB124613

Power supply for EM3570 front ISO view



PB124814

NEMA enclosure for EM3570 front ISO view

PowerLogic™ EM3570 series

The PowerLogic™ EM3570 energy meter is the ideal fit for cost management applications. Designed for use in both energy management systems and building management systems, it provides the measurement capabilities needed to allocate energy usage, perform sub-billing, pin-point energy savings, optimize equipment efficiency and utilization, and perform a high level assessment of the power quality of the electrical network.

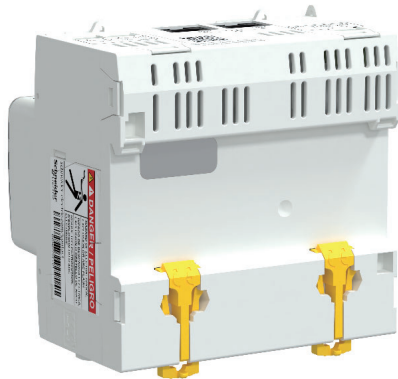
In a single DIN Rail mount 5 module width unit, with a graphical display, all three phases and neutral can be monitored simultaneously. The bright, anti-glare display features large characters and powerful backlighting for easy reading even in extreme lighting conditions and viewing angles. Ethernet communication ports are enriched with cyber security guidelines.

Applications

- **Cost management:** Cost saving opportunities become clear once you understand how and when your facility uses electricity. The PowerLogic™ EM3570 series meters are ideal for:
 - **Sub-billing:** Allows a landlord, property management firm, condominium association, homeowners association, or other multi-tenant property to bill tenants for individual measured utility (electricity) usage depending on the local regulations.
 - **Cost allocation:** Allocate energy costs between different departments (HVAC, indoor and outdoor lighting, refrigeration, etc.), different parts of an industrial process or different cost centres. Cost allocation systems can help you save money by making changes to your operation, better maintaining your equipment, taking advantage of pricing fluctuations, and managing your demand.
- **Network management:** Improving reliability of the electrical network is key for success in any business. Monitoring values such as voltage levels and power factor will help you to ensure proper operation and maintenance of your electrical network and equipment. PowerLogic™ EM3570 series meters are the perfect tool for:
 - **Basic Power Quality monitoring:** Power quality phenomena can cause undesirable effects such as heating in transformers, capacitors, motors, generators and misoperation of electronic equipment and protection devices.
 - **Min/Max monitoring (with timestamp):** Understanding when electrical parameters, such as voltage, current and power demand, reach maximum and minimum values that will give you the insight to correctly maintain your electrical network and assure equipment will not be damaged.
 - **Alarming:** alarms help you to be aware of any abnormal behaviour on the electrical network in the moment it happens.
 - **Data logging:** reproduce the data logging mentioned feature section
- **Main characteristics**
 - Easy to install
 - DIN rail mount, no tools required. Compact meter with 90 mm width, current input through LVCT or Rogowski coil, connectable up to 600 V L-L without voltage transformers for installations compliant with category III.
 - Easy to operate
 - Intuitive navigation with self-guided, selectable menus. Two LEDs on the meter face help the user confirm normal operation with a green LED - heartbeat/communications indicator, and the amber LED - customizable either for alarms or energy pulse outputs. Onboard web pages show real-time and logged information, and verify communications.
 - Easy circuit breaker monitoring and control
 - The EM3570 provides 1 relay output (high performance Form A type) with capability to command most of the circuit breaker coils directly. For Digital Inputs, monitored switches can be wired directly to the meter.
 - Alarms
 - Alarms can be visualized as Active (the ones that have picked up and did not drop out yet) or Historical (the ones that happened in the past). Alarms can be programmed and combined to trigger digital outputs and relay.
 - The EM3570 series keeps an alarm log with the active and historical alarms with date and time stamping. SMTP protocol for receiving alarm conditions via email and text. SNTP protocol for date/time network synchronization.

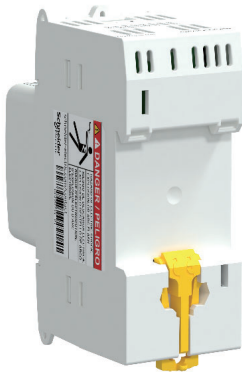
EM3570 series

PB124815



EM3570 meter rear ISO view

PB124816



Power supply for EM3570 rear ISO view

PB124817



NEMA enclosure for EM3570 rear ISO view

- High Performance and accuracy
 - IEC 61557-12 Performance measuring and monitoring devices (PMD). Defines the performance expectation based on classes. It defines the allowable error in the class for real and reactive power and energy, frequency, current, voltage, power factor, as well as ratings for temperature, relative humidity, altitude, start-up current and safety. It makes compliant meters readings comparable - they will measure the same values when connected to the same load.
- NEMA Enclosure
 - METSEEM3570ENC enclosure offers a mounting option for EM3570 DIN Ethernet Meters with NEMA 4x level protection from the elements. The enclosure is equipped with DIN rail mounting hardware for convenient installation and a swing panel kit for electrical protection.
 - NEMA 4x level protection - weather-proofing and durability
 - Clear front panel - maximum visibility
 - Swing panel kit - clean and pleasing look
- Power Supply
 - The METSEEM3570PS Power Supply provides 24 V DC, 0.3 A output control power to the EM3570 series power and energy meter. The power supply supports the same voltage range as the EM3570 meter.
 - Wide input range: 90 to 600 V AC (600V LL/347V LN) or 125 to 300 V DC

Native multi-protocol support

The EM3570 series is easy to integrate into new and existing BMS systems. With native BACnet/IP protocol support, meters can simultaneously communicate via BACnet and Modbus in applications where multiple software systems are used (building management and energy management systems).

The EM3570 series has been tested and certified in accordance with BACnet Testing Laboratories (BTL) requirements.

- EM3570 series metering:
 - Power Quality analysis
 - The EM3570 offers Total Demand
- Load management
 - Peak demands with time stamping are provided. Predicted demand values can be used in combination with alarms for basic load shedding applications.
- Alarming with time stamping
 - A different combination of set point and drop point driven alarms from array of 17 different alarm

| | EM3570 series |
|-------------------------|---------------|
| Set point driven alarms | 17 |
| Custom defined | ■ |

EM3570 series

EM3570 Series Feature Selection

| | METSEEM3570 | METSEEM3570A | METSEEM3570X | METSEEM3570AX |
|---|-------------|--------------|--------------|---------------|
| Installation | | | | |
| Fast installation, DIN rail mount with integrated display | ■ | ■ | ■ | ■ |
| Accuracy | | | | |
| Class | CL 0.5 | CL 0.5 | CL 0.5 | CL 0.5 |
| Display | | | | |
| Backlit LCD, multilingual, 4 lines, 4 concurrent values | ■ | ■ | ■ | ■ |
| Power and energy metering | | | | |
| 3-ph voltage, current, power, demand, energy, frequency, power factor | ■ | ■ | ■ | ■ |
| Multi-tariff | 4 | 4 | 4 | 4 |
| I/Os and relays | | | | |
| Digital inputs | 2 | 2 | 2 | 2 |
| Relay output | 1 | 1 | 1 | 1 |
| Alarms and control | | | | |
| Alarms | 17 | 17 | 17 | 17 |
| Set point response time, seconds | 1 | 1 | 1 | 1 |
| Single and multi-condition alarms | ■ | ■ | ■ | ■ |
| Memory for data logging | 2 GB | 2 GB | 2 GB | 2 GB |
| Communications | | | | |
| Ethernet port with Modbus TCP protocol | ■ | ■ | ■ | ■ |
| BACnet/IP protocol | ■ | ■ | ■ | ■ |
| Onboard web server with web pages | ■ | ■ | ■ | ■ |

EM3570 Commercial References

| Comm. ref numbers | Description |
|-------------------|--|
| METSEEM3570 | DIN Ethernet power meter, LVCT input with external Power Supply module |
| METSEEM3570A | DIN Ethernet power meter, Rogowski coil input with external Power Supply module |
| METSEEM3570X | DIN Ethernet power meter, LVCT input without external Power Supply module |
| METSEEM3570AX | DIN Ethernet power meter, Rogowski coil input without external Power Supply module |
| METSEEM3570PS | 24V DC Power Supply Module for DIN Ethernet meter 600V AC input |
| METSEEM3570ENC | NEMA enclosure accessory for Din Ethernet meter METSEEM35x Schneider brand |

Please contact your Schneider Electric representative for complete ordering information.

EM3570 series

EM3570 Series Technical Specifications

| | METSEEM3570 | METSEEM3570A | METSEEM3570X | METSEEM3570AX |
|---|--|---|--------------|---------------|
| Use on LV systems | | | ■ | |
| Basic metering with min/max readings | | | ■ | |
| Instantaneous rms values | | | | |
| Current | | | ■ | |
| Voltage | | | ■ | |
| Frequency | | | ■ | |
| Real, reactive, and apparent power | | | ■ | |
| True Power Factor | | Signed, Four Quadrant | | |
| Displacement PF | | | ■ | |
| V L-N, V L-L | | | ■ | |
| Calculated neutral current | | | ■ | |
| Energy values | | | | |
| Accumulated Active, Reactive and Apparent Energy | | Received/Delivered | | |
| Demand value | | | | |
| Current average | | Present, Last, Peak, and Peak Date Time | | |
| Active power | | Present, Last, Peak, and Peak Date Time | | |
| Reactive power | | Present, Last, Peak, and Peak Date Time | | |
| Apparent power | | Present, Last, Peak, and Peak Date Time | | |
| Peak demand with timestamping D/T for current and three powers | | | ■ | |
| Demand calculation method | Sliding, fixed and rolling block | | ■ | |
| Synchronisation of the measurement window to input, communication command or internal clock | | | ■ | |
| Settable Demand intervals | | | ■ | |
| Other measurements | | | | |
| I/O timer | | | ■ | |
| Operating timer | | | ■ | |
| Alarm counters and alarm logs | | | ■ | |
| Power quality measurements | | | | |
| Calculated Neutral current | | | ■ | |
| samples/cycle | | | 32 | |
| Data recording | | | | |
| Min/max of instantaneous values, plus phase identification ⁽⁺¹⁾ | | | ■ | |
| Alarms with 1s timestamping ⁽⁺¹⁾ | | | ■ | |
| Data logging | 2GB memory up to 3 years with 16 parameters in 15 min interval. Flexibility of selecting parameters from 75 different parameters with option of setting the logging interval from 10 s to 32767 s | | | |
| Min/max log | | | ■ | |
| Maintenance, alarm and event logs | | | ■ | |
| Customisable data logs | | | ■ | |
| RTC with battery back up | 3 years (when meter is in Power OFF condition) | | | |
| Display resolution | 5 digits for Energy and other parameters with auto scaling | | | |

EM3570 series

EM3570 Series Technical Specifications (Contd.)

| | | METSEEM3570 | METSEEM3570A | METSEEM3570X | METSEEM3570AX |
|--|-----------------------------------|---|---|--------------|---------------|
| Inputs / Outputs / Mechanical Relays | | | | | |
| Digital inputs | | 2 | 2 | 2 | 2 |
| Form A Relay (SPST) output | | 1 | 1 | 1 | 1 |
| Timestamp resolution in seconds | | 1 | 1 | 1 | 1 |
| Type of measurement: True rms on three-phase (3P, 3P + N) | | ■ | | | |
| | | METSEEM3570 | METSEEM3570A | METSEEM3570X | METSEEM3570AX |
| Measurement accuracy | IEC 61557-12 | PMD/[SD SS]/K70/0.5 | | | |
| | Active Energy | Class 0.5 as per BS/EN/IEC 61557-12 | | | |
| | Reactive Energy | Class 2.0 as per BS/EN/IEC 61557-12 | | | |
| | Active Power | Class 0.5 as per BS/EN/IEC 61557-12 | | | |
| | Apparent Power | Class 0.5 as per BS/EN/IEC 61557-12 | | | |
| | Reactive Power | Class 2.0 as per BS/EN/IEC 61557-12 | | | |
| | Current, Phase | Class 0.5 as per BS/EN/IEC 61557-12 | | | |
| | Voltage, L-N | Class 0.5 as per BS/EN/IEC 61557-12 | | | |
| | Frequency | Class 0.5 as per BS/EN/IEC 61557-12 | | | |
| | Power Factor | Class 0.5 as per IEC 61557-12/±0.005 count | | | |
| | Calculated neutral current | Class 0.5 as per IEC 61557-12 | | | |
| Input-voltage (up to 1.0 MV AC max, with voltage transformer) | Nominal Measured Voltage range | 90 V L-N/156 V L-L to 347 V L-N/600 V L-L | | | |
| | Impedance | 5 MΩ | | | |
| | Frequency nominal | 50 Hz/60 Hz ± 10% | | | |
| Input-current (configurable for 0.333 V or 1 V secondary CTs) | I nominal | 0.333 V (0.4 V max) or 1 V nominal (1.1 V max) | | | |
| | Measured Amps with over range | 0.00333...0.4 V | | | |
| | Frequency nominal | 50 Hz/60 Hz ± 10% | | | |
| DC control power | Operating range | 12...36 V DC ±20 % | | | |
| | Burden | < 5 W | | | |
| Outputs | Relay outputs | Max output frequency | 0.5 Hz maximum (1 s ON/1 s OFF - min times) | | |
| | | Switching current, at resistive load | 5 A @250 V AC and 5 A @30 V DC | | |
| | | Isolation | 2.5 kV rms | | |
| Status Inputs | ON Voltage | | 11...40 V DC | | |
| | OFF Voltage | | 0...5 V DC | | |
| | Minimum pulse width | | 10 ms | | |
| | Opto Isolation | | 3.75 kV rms | | |
| Mechanical characteristics | | | | | |
| IP degree of protection (IEC 60529) | | IP40 front display, IP20 body | | | |
| Dimensions W x H x D | Meter | | 90 x 91.4 x 70.6 mm | | |
| | Power Supply (optional) | | 36 x 91.4 x 67.6 mm | | |
| | NEMA enclosure (optional approx.) | | 271 x 277 x 135 mm | | |
| Mounting position | | Meter and power supply - Vertical DIN rail mount NEMA enclosure (optional) - Projection type | | | |

EM3570 series

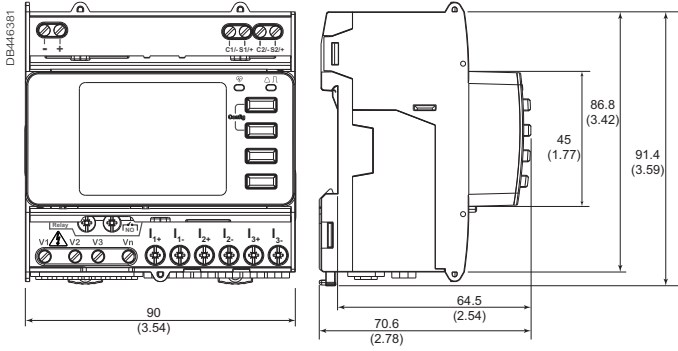
EM3570 Series Technical Specifications (Contd.)

| | | METSEEM3570 | METSEEM3570A | METSEEM3570X | METSEEM3570AX |
|---|---|---|--------------|--------------|---------------|
| Environmental characteristics | | | | | |
| Operating temperature | Operating temperature | -25...70 °C | | | |
| | Display (reduced display performance at -25 °C) | -25...70 °C | | | |
| Storage temperature | | -40...85 °C | | | |
| Humidity range | | 5...95 % RH at 50 °C (non-condensing) | | | |
| Pollution degree | | 2 | | | |
| Altitude | | ≤ 3000 m (9842 ft) above sea level | | | |
| Mission profile / Life span | | 15 years, 45 °C (113 °F) 60% RH, refer Mission Profile document | | | |
| Protective treatment | | Conformal coating | | | |
| Safety | | | | | |
| Europe | | CE/UKCA as per BS/EN/IEC 61557-12, BS/EN/IEC 61326-1, BS/EN/IEC 61010-1, BS/EN/IEC 61010-2-30 | | | |
| U.S. and Canada | | UL/EN 61010-1, UL/EN 61010-2-030 | | | |
| Measurement category (Voltage & Current inputs) | | CAT III up to 400 V L-N/690 V L-L | | | |
| Dielectric | | As per IEC/UL 61010-1 (Edition 3) | | | |
| Protective Class | | II, Double insulated for user accessible parts | | | |
| Communication | | | | | |
| Ethernet Port speed | | 100 Mbps = Green/10 Mbps = Off | | | |
| Protocol | | BACnet/ IP and Ethernet TCP/IP | | | |
| FTPS | | Yes | | | |
| SNMP, SNTP | | Yes | | | |
| HTTPS | | Yes | | | |
| Firmware and language file update | | Yes | | | |
| Isolation | | 2.5 kV rms, double insulated | | | |
| Human machine interface | | | | | |
| Display type | | Monochrome Graphics LCD | | | |
| Resolution | | 126 x 94 pixels | | | |
| Backlight | | White LED | | | |
| Keypad | | 4-button | | | |
| Indicator Heartbeat / Communication activity | | Green LED | | | |
| Energy pulse output / Active alarm (configurable) | | Orange LED | | | |
| Wavelength | | 590...635 Nm | | | |
| Maximum pulse rate | | 2.5 kHz | | | |

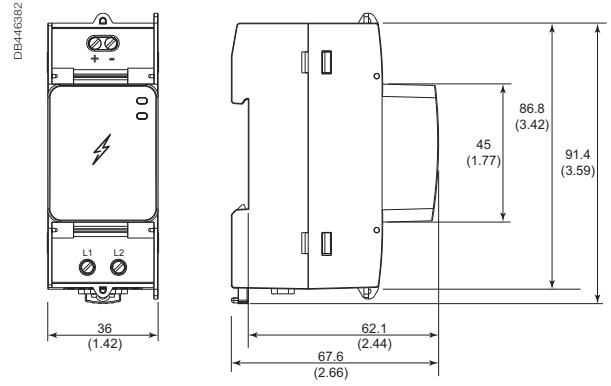
EM3570 series

Note:The dimensions are in mm (in).

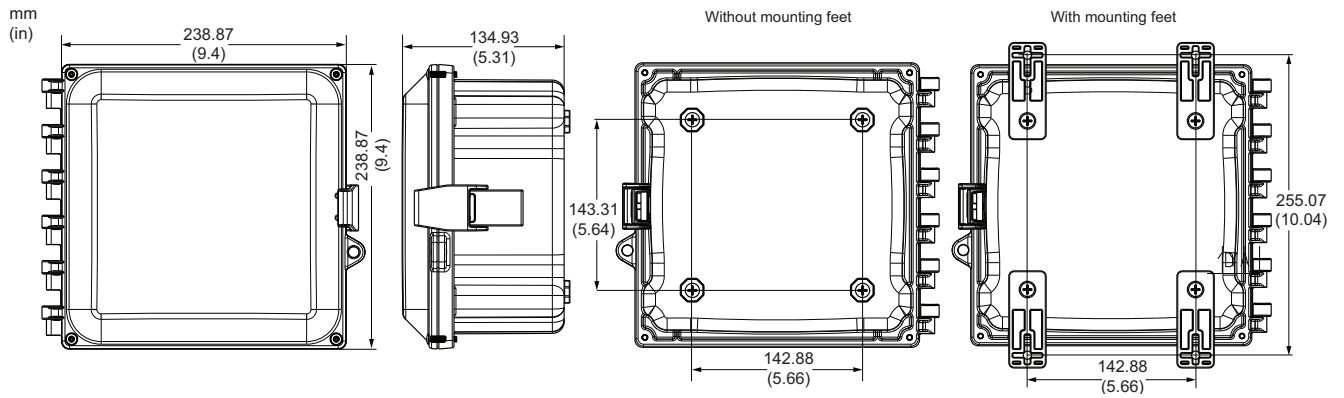
EM3570 Meter Dimensions



EM3570 Power Supply Dimensions

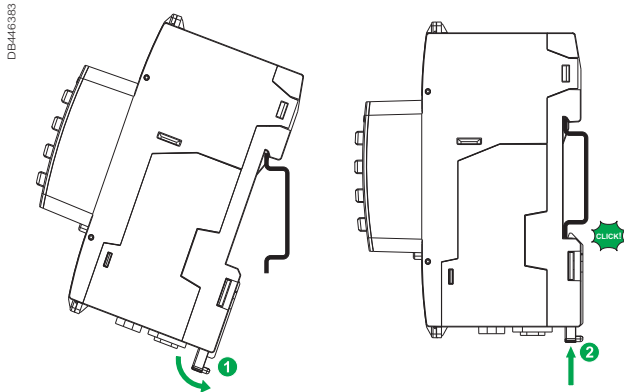


EM3570 Enclosure Dimensions

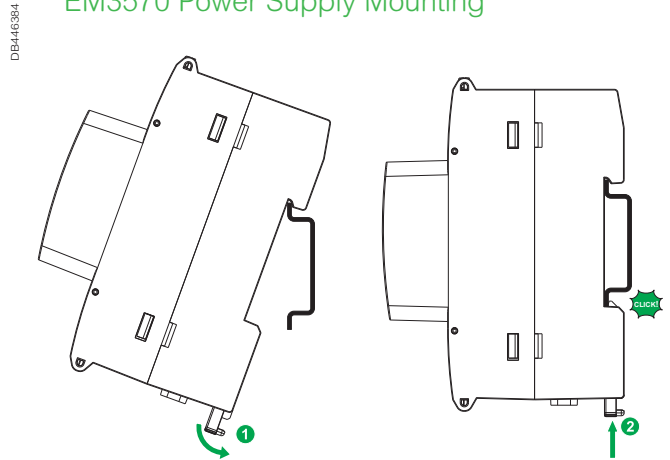


EM3570 series

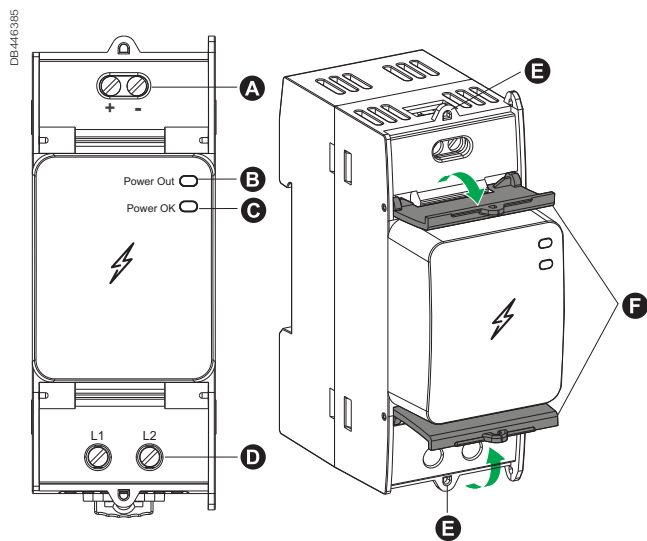
EM3570 Meter Mounting



EM3570 Power Supply Mounting



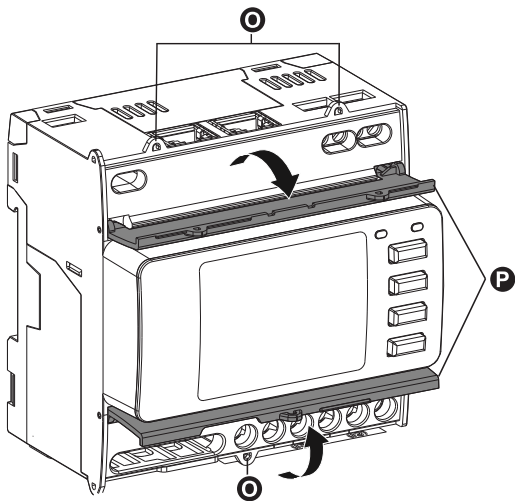
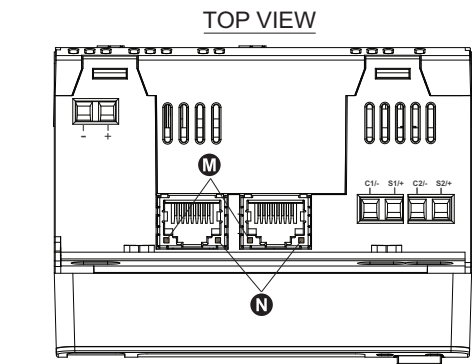
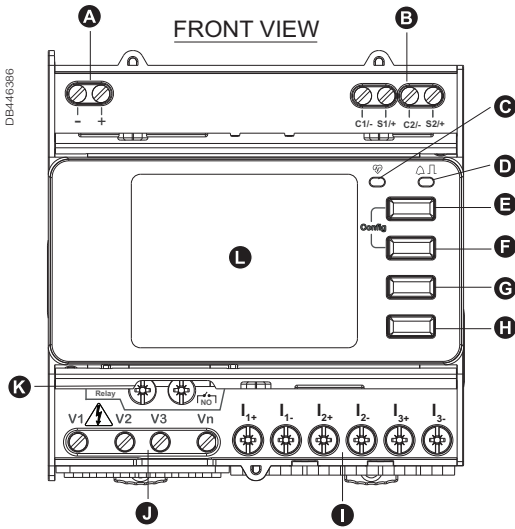
EM3570 Power Supply Description



- A** 24 V DC Output (+,-)
- B** Power Out status LEDED
- C** Power OK status LED
- D** Input L1, L2
- E** Sealing points
- F** Sealable covers

EM3570 series

EM3570 Meter Description



- A** Control power input 24 V DC (-,+)
- B** Status inputs (C1/-, S1/+; C2/-, S2/+)
- C** Operation LED (Green)
- D** Alarm / Energy pulse LED (Orange)
- E** Cancellation button
- F** Confirmation button
- G** Up button
- H** Down button
- I** Current inputs (I_{1+} , I_{1-} , I_{2+} , I_{2-} , I_{3+} , I_{3-})
- J** Voltage inputs (V1, V2, V3, Vn)
- K** Relay output (NO (↔))
- L** Display with white backlight
- M** Ethernet port link/Activity LED (Green)
- N** Ethernet port Speed LED (Green)
(100 Mbps=Green / 10 Mbps=Off)
- O** Three sealing points
- P** Two sealable covers

DB446386



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