EasyLogic™ PM2200R Quick Click series Technical Datasheet

The EasyLogic™ PM2200R multi-function power and energy meter with Quick Click CTs

Offering the same extensive measurement capabilities of the PM2200 meters - now with the option to significantly reduce installation time, cost, and complexity with new plug & play, 3-in-1 Quick Click CTs.
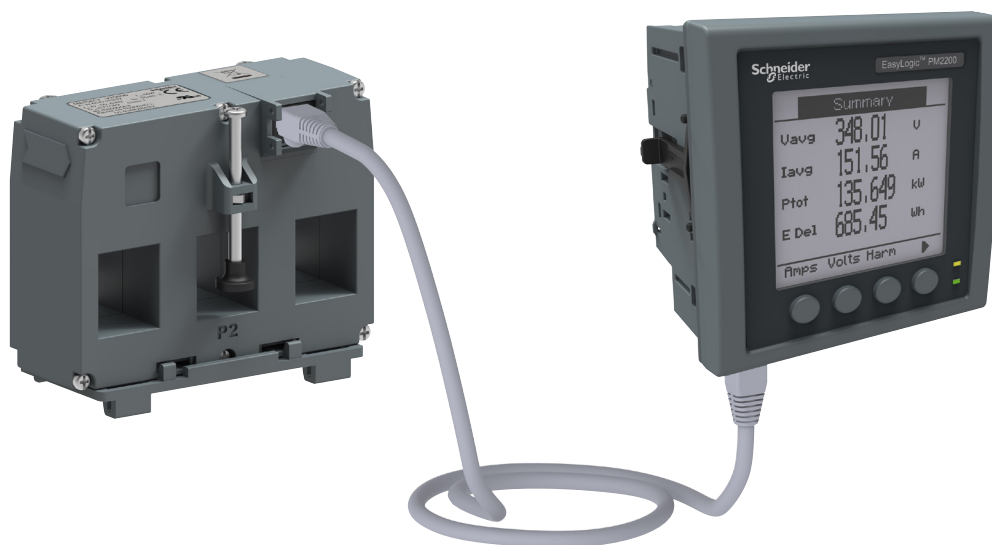
Applications

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 optimise energy consumption

Network management applications

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

PB119508

PM2200R

PM2200R meter

Introducing the new Quick Click enabled Easylogic PM2200R series, next generation power meter which offers all of the measurement capabilities of the PM2200 series with the added benefit of plug & play CT installation. For installers - time, labour, 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 (PM2200R)
  - Measurement of True PF and Displacement PF
  - Recording Min/Max values of instantaneous parameters with date & timestamp
  - Calculates % unbalance for voltage & current

- 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 ±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[+1]
    - 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 & 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.

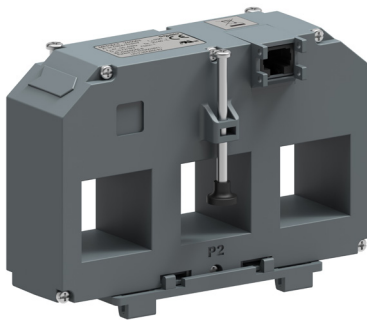[+1] Meters have been tested to ANSI C12.20 and IEC 62053-21 assuming an ideal CT.

PM2200R

METSECTV35xxx series CT

METSECTV45xxx series CT

– 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., $kgCO_2$ 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.
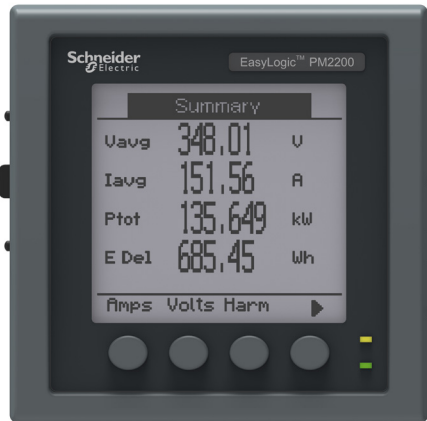
Feature selection

Commercial ref. number	Model
Meter model	Description
METSEPM2210R	PM2210R power meter THD POP CL1.0 Quick Click LVCT
METSEPM2220R	PM2220R power meter 15th Har RS-485 Cl 1.0 Quick Click RJ45 LVCT
LVCTs	LVCT Solid 3 in 1 RJ45
METSECTV25006	LVCT Solid Core 3 in 1 RJ45 25mm Ctr 60 A:1/3V
METSECTV25010	LVCT Solid Core 3 in 1 RJ45 25mm Ctr 100 A:1/3V
METSECTV25013	LVCT Solid Core 3 in 1 RJ45 25mm Ctr 125 A:1/3V
METSECTV25016	LVCT Solid Core 3 in 1 RJ45 25mm Ctr 160 A:1/3V
METSECTV35006	LVCT Solid Core 3 in 1 RJ45 35mm Ctr 60 A:1/3V
METSECTV35010	LVCT Solid Core 3 in 1 RJ45 35mm Ctr 100 A:1/3V
METSECTV35012	LVCT Solid Core 3 in 1 RJ45 35mm Ctr 120 A:1/3V
METSECTV35013	LVCT Solid Core 3 in 1 RJ45 35mm Ctr 125 A:1/3V
METSECTV35015	LVCT Solid Core 3 in 1 RJ45 35mm Ctr 150 A:1/3V
METSECTV35016	LVCT Solid Core 3 in 1 RJ45 35mm Ctr 160 A:1/3V
METSECTV35020	LVCT Solid Core 3 in 1 RJ45 35mm Ctr 200 A:1/3V
METSECTV35025	LVCT Solid Core 3 in 1 RJ45 35mm Ctr 250 A:1/3V
METSECTV45025	LVCT Solid Core 3 in 1 RJ45 45mm Ctr 250 A:1/3V
METSECTV45040	LVCT Solid Core 3 in 1 RJ45 45mm Ctr 400 A:1/3V
METSECTV45060	LVCT Solid Core 3 in 1 RJ45 45mm Ctr 600 A:1/3V
METSECTV45063	LVCT Solid Core 3 in 1 RJ45 45mm Ctr 630 A:1/3V
METSECTV29006	LVCT Solid Core 3 in 1 RJ45 29mm Ctr 60 A:1/3V
METSECTV29010	LVCT Solid Core 3 in 1 RJ45 29mm Ctr 100 A:1/3V
METSECTV29012	LVCT Solid Core 3 in 1 RJ45 29mm Ctr 120 A:1/3V
METSECTV29013	LVCT Solid Core 3 in 1 RJ45 29mm Ctr 125 A:1/3V
METSECTV29015	LVCT Solid Core 3 in 1 RJ45 29mm Ctr 150 A:1/3V
METSECTV29016	LVCT Solid Core 3 in 1 RJ45 29mm Ctr 160 A:1/3V
METSECTV29020	LVCT Solid Core 3 in 1 RJ45 29mm Ctr 200 A:1/3V
METSECTV70080	LVCT Solid Core 3 in 1 RJ45 70mm Ctr 800 A:1/3V
METSECTV70100	LVCT Solid Core 3 in 1 RJ45 70mm Ctr 1000 A:1/3V
METSECTV70125	LVCT Solid Core 3 in 1 RJ45 70mm Ctr 1250 A:1/3V

See your Schneider Electric representative for complete ordering information.
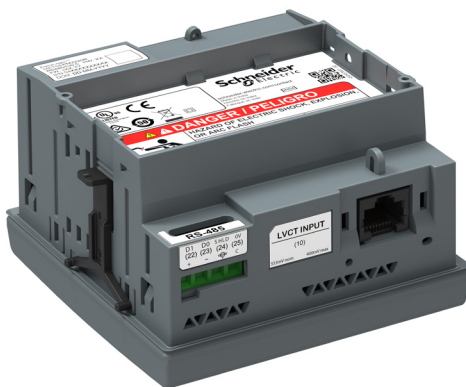
PM2200R

PM2200R series meter - front display

PM2220R series meter - rear view

PM2220R series meter - underside view

PM2200R 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	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 the step of 1 minute

Display	
PM2200 series	Full scape, 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 & 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 & RS version

Rate 1 counter[+2]	
kgCO$_2$ emission (example)	Rate counter can be configured to display the CO$_2$ emission in kgCO$_2$ format based on the kWh measured either in delivered or received direction.

Rate 2 counter[+2]	
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[+2]	
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

[+2] Available in PM2220R.

Life Is On   **Schneider** *Electric*

PM2200R

PM2200R with 35 mm CT attached

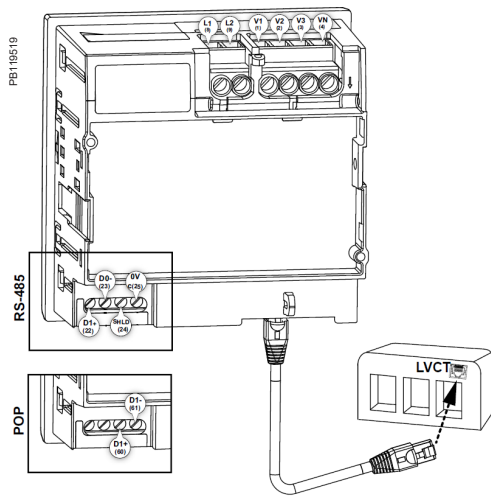| Electrical characteristics	
Type of measurement	True RMS 64 samples per cycle
Measurement accuracy	
Current, average & per-phase	±0.5 %
Voltage average & per-phase	±0.5 %
Frequency	±0.05 %
Power Factor, average & per-phase	±0.01
Power (W-Active, VA- Apparent)	±0.5 %
Power (VAR- Reactive)	±1.0 %
Real / Active Energy (Wh)	Class 1.0 as per IEC 62053-21
Reactive Energy	Class 1.0 as per IEC 62053-24
Apparent Energy	±0.5 %
THD % and Individual Harmonics- V & A	±5 % FS for THD % & 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 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 V AC
Burden	<6 VA at 277 V AC L-N
Frequency	45 to 65 Hz
Ride-through time	100 ms typical at 120 V AC and maximum burden 400 ms typical at 230 V AC and maximum burden
DC control power	
Operating range	48-277 V DC ±10 %
Burden	< 2 W at 277 V DC
Ride-through time	50 ms typical at 125 V DC 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 1ph, 2w, L-L 1ph, 3w, L-L with N (2phase) 3ph, 3w, Delta, Ungrounded 3ph, 3w, Delta, Corner Grounded 3ph, 3w, Wye, Ungrounded 3ph, 3w, Wye Grounded 3ph, 3w, Wye, Resistance Grounded 3ph, 4w, Open Delta, Center-Tapped 3ph, 4w, Delta, Center-Tapped 3ph, 4w, Wye, Ungrounded 3ph, 4w, Wye Grounded 3ph, 4w, Wye, Resistance Grounded

PM2200R

PM2200R series

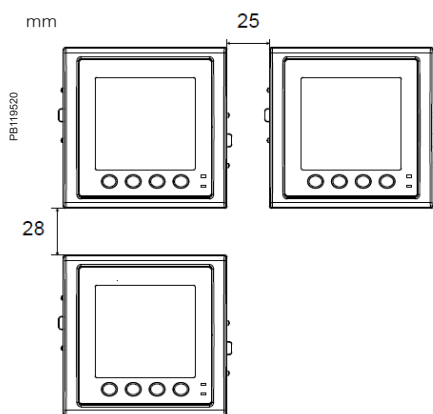| Mechanical characteristics	
Weight	~ 300 gm
IP degree of protection	IP54 front side, IP30 meter body as per IEC 60529 Upgrade to IP65 front side with optional accessory kit METSEIP65OP96X96FF
Material	Polycarbonate meets UL 94V-0 flammability rating
Dimensions W x H x D	96 x 96 x 54 mm maximum (depth 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 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 (PM2220R)	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 DLF3000: Firmware update through communication port
Pulse Output – POP (PM2210R)	Max 40 V DC, 20 mA 20 ms ON time
	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 & clearing energy and Min/Max data
Display language	English, Spanish, French, Chinese, German, Portugese, 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 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)

Life Is On **Schneider Electric**
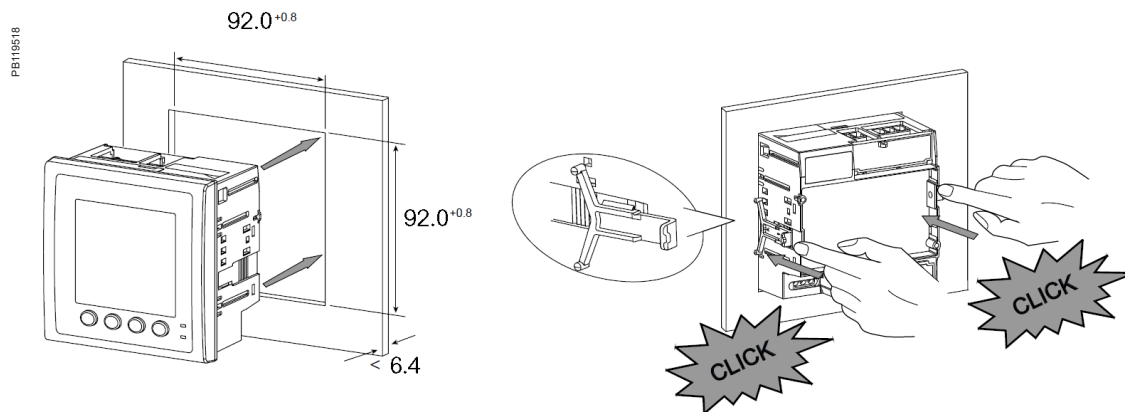
PM2200R

PM2200R meter rear

PM22xx panel grouping

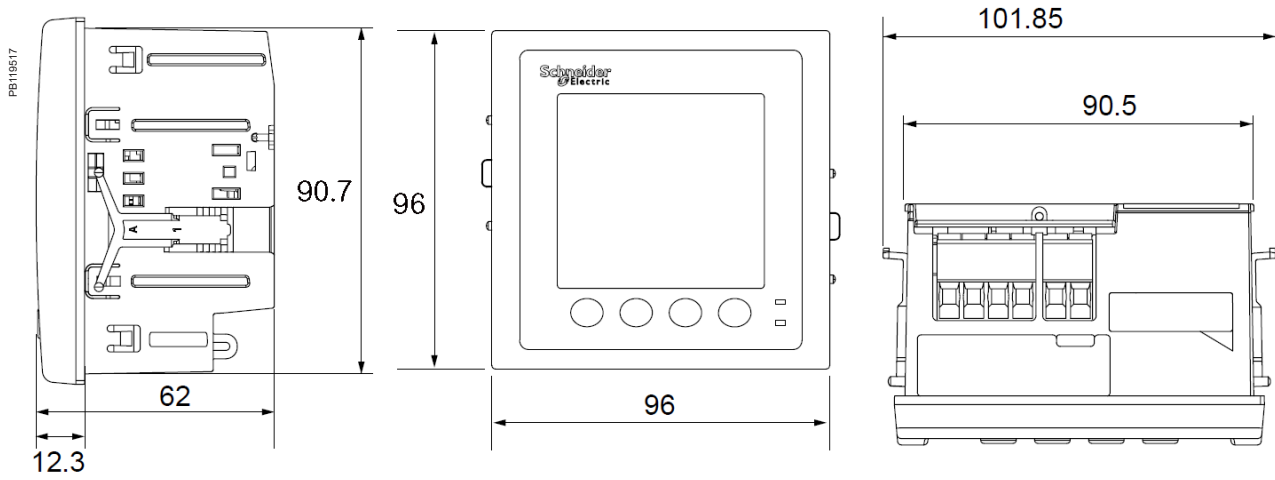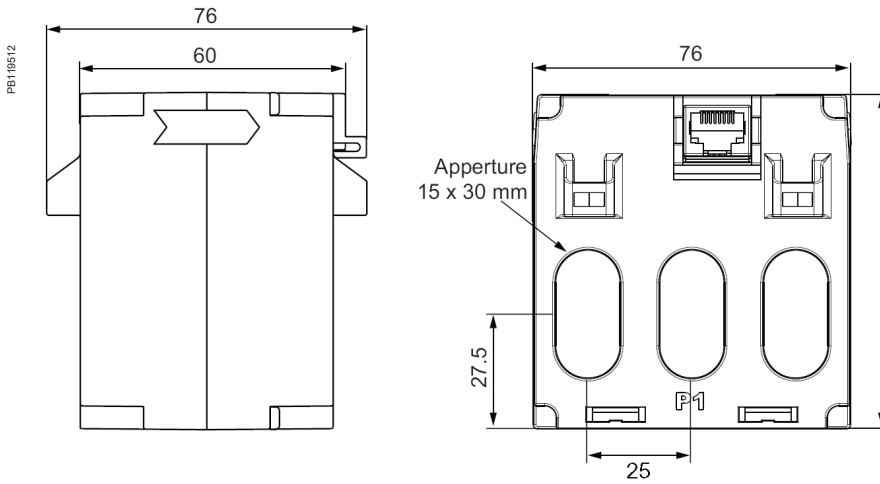| Feature set summary	PM2210R	PM2220R
Accuracy Class for Wh	1.0	
Accuracy Class for VARh	1.0	
Accuracy for VAh	±0.5 %	
Amps, per-phase, average and calculated neutral current	■	
Voltage, V L-N, V L-L, per-phase and average	■	
Power Factor	True PF	True PF Displacement PF
Frequency, any available phase	■	
Power: W, VA, VAR: per phase and total	■	
3-phase unbalance %	Current	Current Voltage
Demand parameters (Present, Last, Predicted and Peak for W, VA, VAR, Amps) Date and Time stamp for peak demand	■ (no timestamp)	■
Energy: Wh, VAh, VARh (4 quadrant) Delivered (Import or Forward), Received (Export or Reverse)	Delivered, Received, Total, Net	Delivered, Received Total, Net, Last 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	Pulse Output	RS-485
Daily time snapshot of Avg Voltage, Avg Current, Total active power & Energy delivered as measured every day at a configurable time		■

PM22xx Meter installation

See the appropriate **Installation Guide** for correct installation instructions.
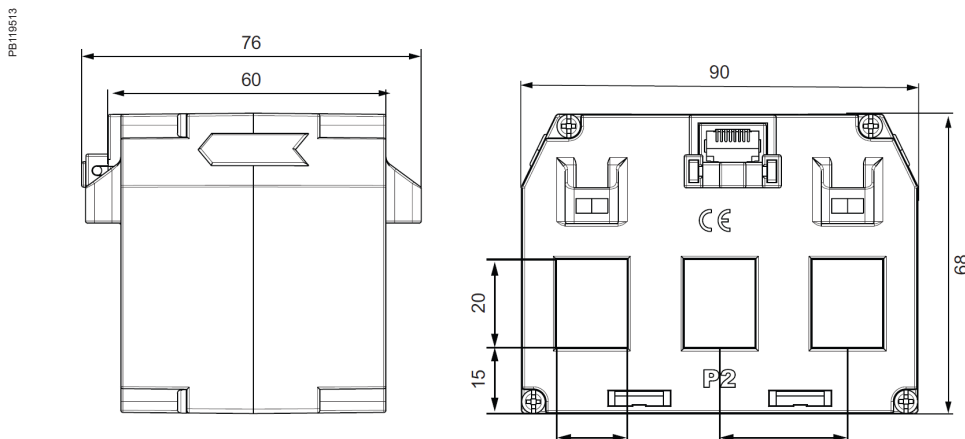
PM2200R

PM2200R multi-function meter mechanical dimensions

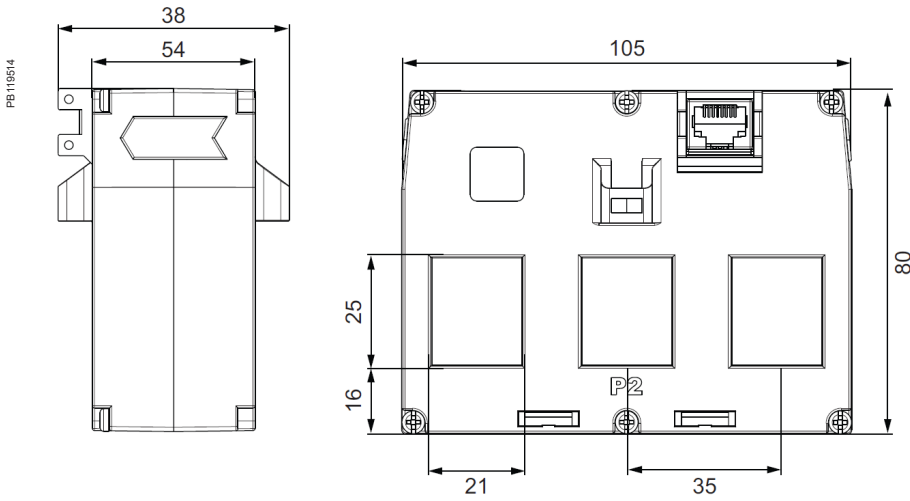## SECTV25xxx 3-in-1 LVCT mechanical dimensions
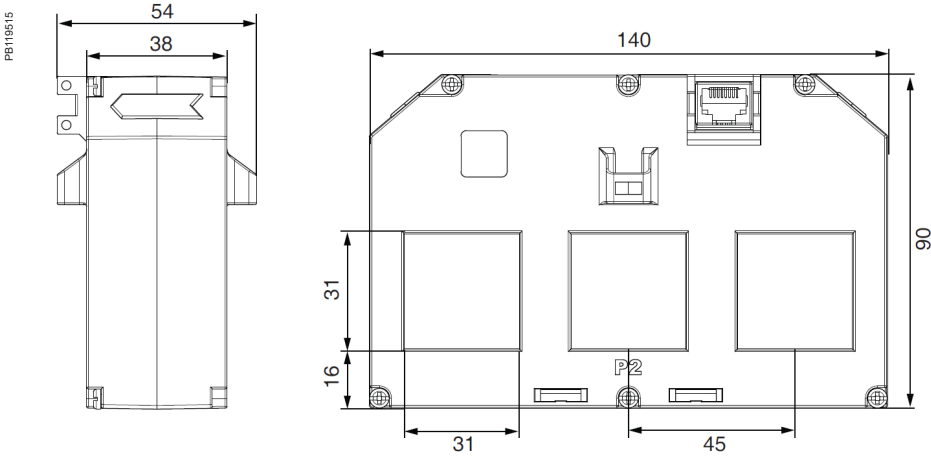

SECTV29xxx 3-in-1 LVCT mechanical dimensions

See the appropriate **Installation Guide** for correct installation instructions.
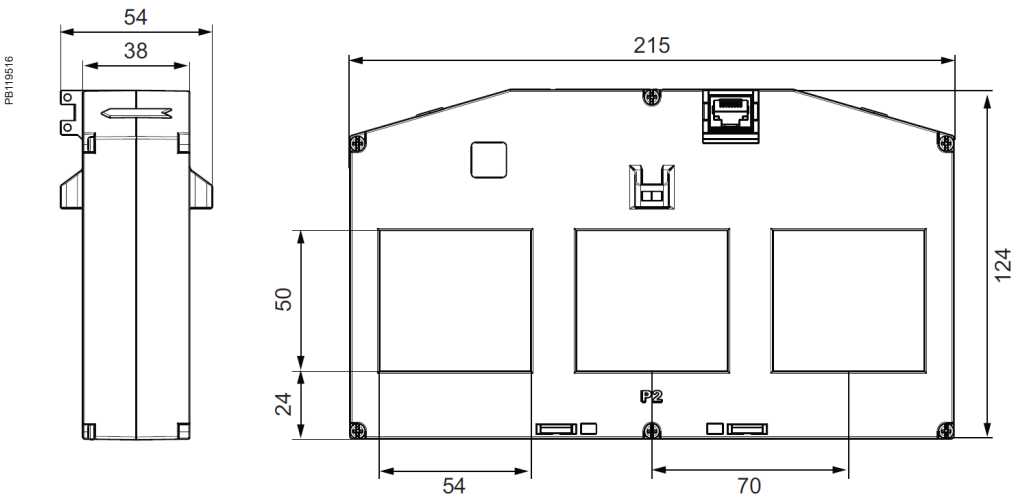
PM2200R

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.

www.se.com

June 2021
EasyLogic™ PM2200R Quick Click Series
PLSED310158EN

As standards, specifications and designs develop from time to time, please ask for confirmation of the information given in this document.

Over 75 % of Schneider Electric products have been awarded the Green Premium ecolabel.

Green Premium™ Product