

EM4000 series

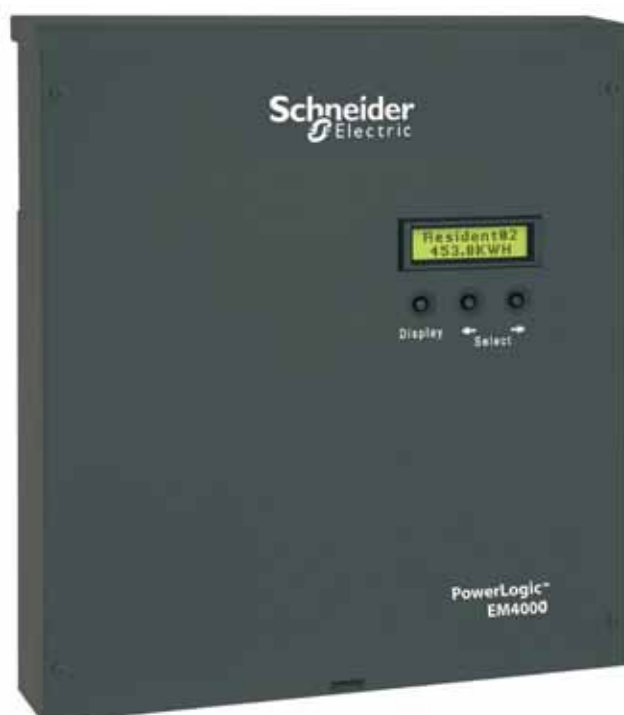
Technical Data Sheet

The compact PowerLogic EM4000 series multi-circuit energy meter from Schneider Electric enables the reliable monitoring of building electrical loads with a low installation cost-per-point by combining revenue-accurate electricity sub-metering with advanced communications technology.

Applications

- Energy management
- Energy cost allocation
- Utility bill verification

PS113714



The solution for

Markets that can benefit from a solution that includes PowerLogic EM4000 series meters:

- Buildings
- Industry
- Healthcare
- Data Centre 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

End users' benefit

- Ease of use
- Precision metering & sub-billing
- Billing flexibility
- Comprehensive, consistent and superior performance

Competitive advantages

- Compact, maintenance-free design
- Hi-density, flexible connection
- Direct connection
- Multiple CT types
- No rewiring required
- Integrated communications networks.

Power management solutions

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

Conformity of standards

- IEC 61557-12
- IEC 61000-4-4
- IEC 62053-22
- IEC 61000-4-5
- IEC 62053-24
- IEC 61000-4-6
- IEC 61010-1
- IEC 61000-4-8
- IEC 61000-4-2
- Etc.
- IEC 61000-4-3

EM4000 series



EM4000 series multi-circuit energy meter

The compact PowerLogic EM4000 series multi-circuit energy meter from Schneider Electric enables the reliable monitoring of building electrical loads with a low installation cost-per-point by combining revenue-accurate electricity sub-metering with advanced communications technology.

The EM4000 is ideal for departmental metering applications and M&V within office towers, condominiums, apartment buildings, shopping centres and other multi-user environments, or small-footprint retail.

The PowerLogic EM4000 series meters monitor up to 24 meter points with a single device. Multiple meters can be combined to support an unlimited number of points.

Two meter models offer a choice of CTs and installation options:

- PowerLogic EM4033: 333 mV, split-core CTs
- PowerLogic EM4080: 80 mA solid core CTs

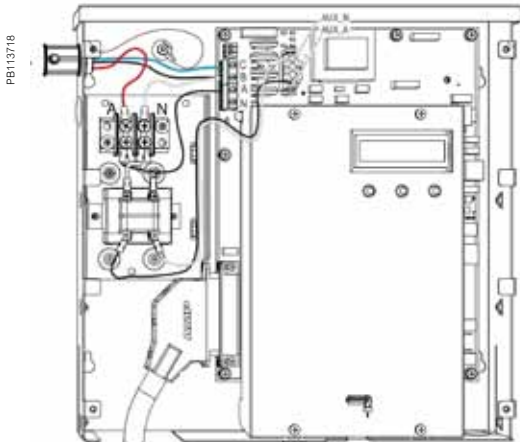
Main characteristics

- Compact, maintenance-free design
 - Requires no floor space
- Hi-density, flexible connection
 - From single-pole to single- or three-phase metering, supports up to 24 circuits.
 - Select the connection type using an intuitive configuration tool.
- Direct connection
 - For 100 - 300 V AC L-N electrical distribution systems: 120/240 V, 120/208 V, 277/480 V
- Multiple CT types
 - Support a variety of needs in both new and retrofit installations.
 - 1/3 V output CT option does not require shorting blocks, making it the ideal choice for retrofit installations.
- No rewiring required
 - Use existing wiring to connect to existing panels.
- Integrated communications networks.
 - Onboard Ethernet or RS-485 allows for easy integration into existing communications networks.

Feature selection

Commercial ref. no.	Model	Description
METSEEM403316	EM4033	PM5310 CI 0.5, RS-485 Modbus, 2DI/2DO
METSEEM403336		PM5330 CI 0.5, RS-485 Modbus, 2DI/2DO, Relay
METSEEM408016	EM4080	PM5331 Power & Energy meter
METSEEM408036		PM5320 Power & Energy meter

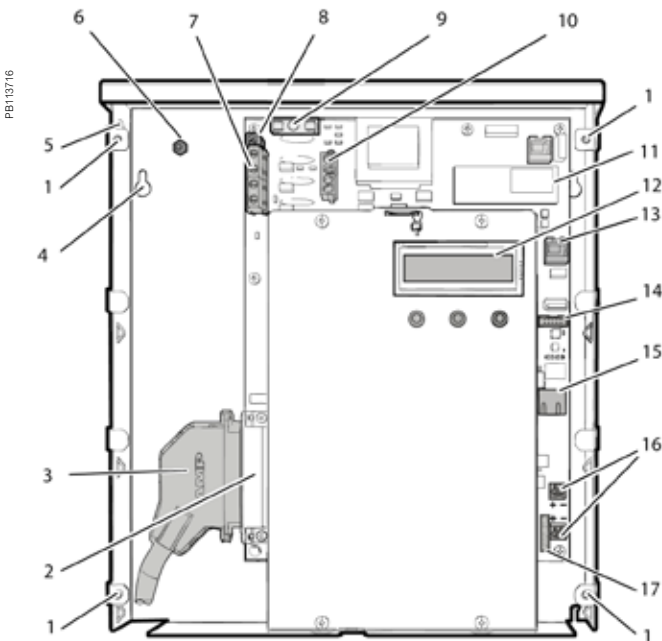
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PowerLogic EM4000 meter 480Y/277V three-phase wye service connection

Selection guide

		EM4033	EM4080
General			
Use on LV systems		■	■
Accuracy	+/- 0.5 %	■	■
Accuracy compliance	ANSI C12.1 and C12.20 Class 0.5; IEC 62053-22, Class 0.5S	■	■
Maximum circuits: single-pole / single-phase / three-phase	24 / 12 / 8	■	■
Instantaneous rms values			
Energy	real, kWh received/delivered	■	■
	reactive, kvarh received/delivered	■	■
	apparent, VAh	■	■
Voltage		■	■
Pulse counts		■	■
Voltage and current	V rms, I rms per phase	■	■
Power	real, reactive, apparent	■	■
Power factor		■	■
Measurements available for data logging			
Energy	real, kWh received/delivered	■	■
	reactive, kvarh received/delivered	■	■
	apparent, VAh	■	■
Voltage		■	■
Display			
Backlit LCD display	2 lines of 16 characters	■	■
Optional remote modular display available		■	■
Communication			
Ethernet port		■	■
MODBUS-RTU over RS-485		■	■
Pulse inputs	2	■	■
Protocols: Modbus TCP/IP, HTTP, BACnet/IP, FTP, and SNMP		■	■
Installation options			
0.333 V CTs		■	
80 mA CTs			■
Split-core CT		■	
Solid core CT		■	■



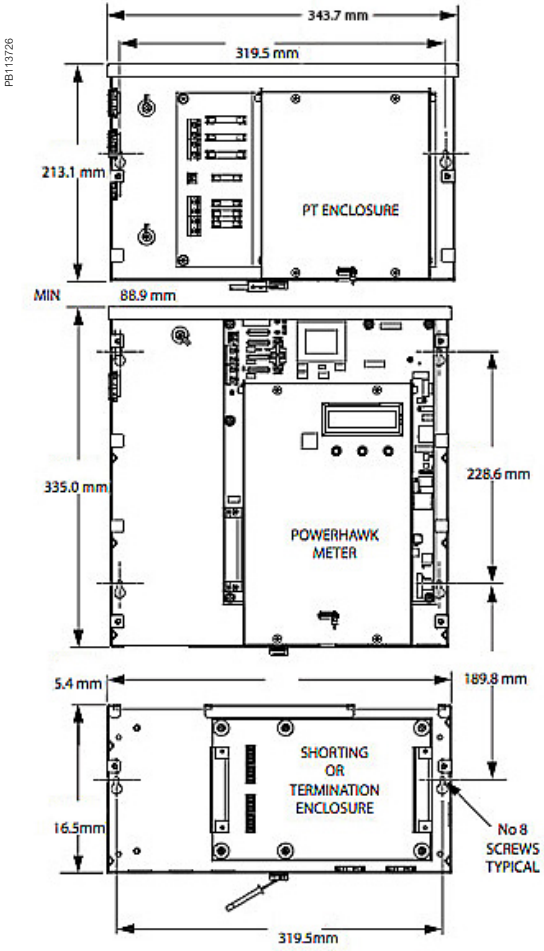
Legend:

- 1 Cover screw location
- 2 Meter point input connector
- 3 Cable connector
- 4 Mounting keyhole
- 5 Ingress punch-outs
- 6 Earth stud
- 6 Sense voltage terminal block
- 8 Control voltage terminal block
- 9 Fuse
- 10 Control voltage jumper
- 11 RTU interface
- 12 Display
- 13 Remote display connector
- 14 Serial RS-232
- 15 Ethernet port
- 16 Pulse in terminal blocks
- 17 Pulse out connector

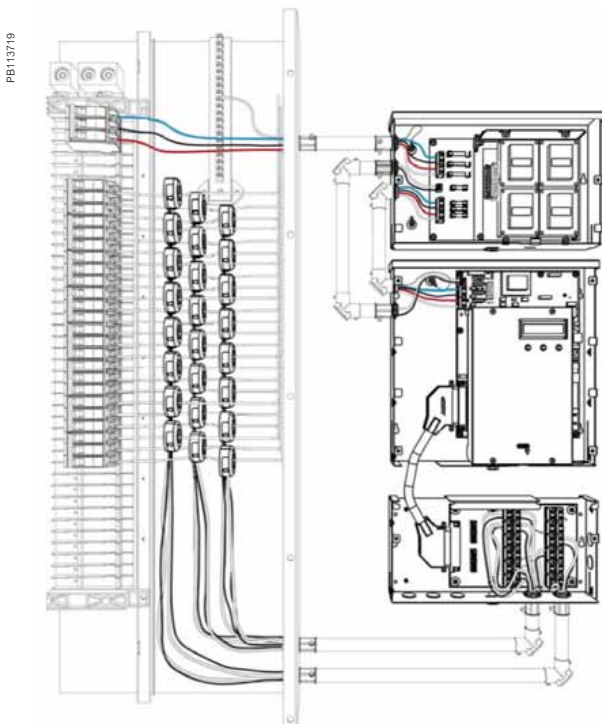
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EM4000 technical specifications		
Electrical characteristics		
Input-voltage characteristics	Inputs	V1, V2, V3, Vn
	Measured voltage	80 - 480 V AC L-L without PTs Up to 999 kV with external PTs
	Frequency range	60 Hz
Mechanical characteristics		
Weight	EM4033/EM4080	approx. 4.0 kg
Dimensions	EM4033/EM4080	335 x 305 x 55 mm
Environmental conditions		
Operating temperature	-40 °C to 70 °C	
Storage temperature	-40 °C to 70 °C	
Humidity rating	0 % to 90 % RH non-condensing	
Enclosure	Type 1 (indoor or enclosed outdoor use)	
Altitude	3000 m	
Pollution degree	2	
Safety and standards		
UL Certified to IEC/EA/CSA 61010-1		
CSA-C22.2 No 61010-1-04		
FCC Part 15 Class B		
ICES-003 EN 55022, IEC 6100-4-5		
ANSI/TIA968-A: 2002		
Communication		
Ports	Ethernet	
	MODBUS-RTU over RS-485	
Pulse inputs	2	
Protocols: Modbus TCP/IP, HTTP, BACnet/IP, FTP, and SNMP		
Display characteristics		
Integrated backlit LCD display	2 lines, 16 digits per line display; R / L arrow buttons select metering point; Display button cycles through measurements per point.	

EM4X00, CT termination, PT module



EM4X00, CT termination, PT module



EM4000 series

PE113724



PT Module

The PT module provides step-down voltage connections to Schneider Electric PowerLogic meters for metering single-phase to three-phase voltages of 600 V, 347 V, or 400 V, while meeting all regulatory electrical safety and ANSI 0.5 Accuracy Class standards. The PT module provides both the per-phase input metering voltages and the auxiliary input power required by Schneider Electric PowerLogic energy meters.

There are two variants of the PT module that support the following source voltages and wiring configurations:

- 347 V Wye / 600 V Delta variant supports:
 - 347 V, three-phase, 4-wire wye
 - 600 V, three-phase, 3-wire delta

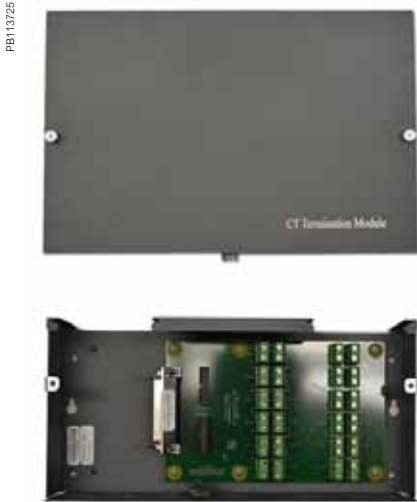
- 480V Delta variant supports:
 - 480 V, three-phase, 3-wire delta

The 347 V/600 V PT module variant has three sense voltage potential transformers for metering. The configuration of the transformers (347 V wye or 600 V delta) is selected by using the jumper provided. The 480V PT module has two sense voltage potential transformers for metering. There is a separate auxiliary power transformer in both variants to operate the meter. All voltage inputs are fused.

PowerHawk PT module specifications			
Dimensions	Height	213.1 mm	
	Width	54 mm	
	Depth	54 mm	
	Weight	5.67 kg	
Fuse ratings	High voltage inputs	F1	T315 mA, 1000 V
		F2	T315 mA, 1000 V
		F3	T315 mA, 1000 V
	Voltage inputs	F4	T250 mA, 250 V
		F5	T250 mA, 250 V
		F6	T250 mA, 250 V
		F7	T250 mA, 250 V
Transformer specifications	Input voltage	600 V	Voltage tolerance: +/-10 %
		480 V	Voltage tolerance: +/-10 %
		347 V	Voltage tolerance: +/-10 %
	Output voltage	120 V	Accuracy: 0.3 %
Environmental	Operating temperature	-40 °C to 70 °C	
	Operating humidity	5 % to 90 % non-condensing	
	Usage environment	Indoor or enclosed outdoor environment	
	Maximum altitude	3000 m	
	Pollution degree	2	

Feature selection	
Commercial ref. no.	Description
METSEPTMOD480	480 V PT Module for EM4X00 meter
METSEPTMOD347600	347 V/600 V PT Module for EM4X00 meter

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CT Module

PowerLogic 4080 meters have two shorting options that provide a seamless and sealable mechanical package. The CT Shorting Module provides CT connections via the color coded 25 pair cable routed into the breaker panel. All CTs are shorted at the same time for safe removal of the meter for maintenance when the electrical circuits are still live.

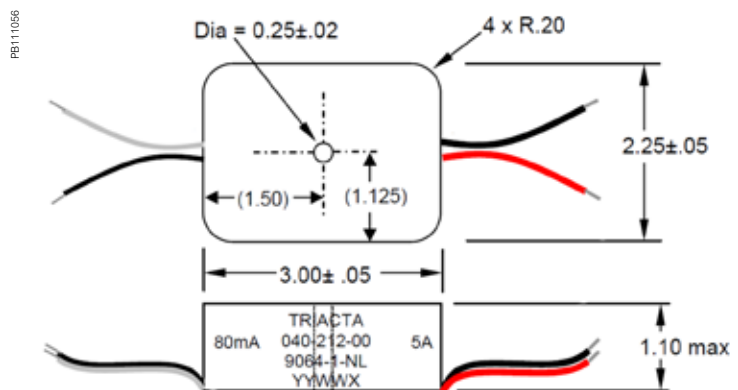
The CT Termination Module has the same shorting ability, but provides CT connections via 24 2-position screw-down terminal blocks. Individual pairs are then routed from the CT Termination Module to 1 or more breaker panels via conduit knock outs provided on the module. Thus eliminating the need for a splitter box to route CT cables to multiple panels.

Commercial ref. no.	Description
METSECTTERM	CT Termination Module for EM4X00 meter
METSECTSHORT	CT Shorting Module for EM4X00 meter

Converter

The 5 A:80 mA converter is useful in applications where there are existing 5 A CT's integrated into large motors or switch gear. The 5 A:80 mA converter matches the 5 A secondary of the load to the 80 mA input of the meter. In Billing Grade applications, the 5 A:80 mA converter is also used to connect regulatory grade large aperture, large amperage CT's with 5 A secondaries to the 80 mA of PowerLogic 4 X 80 meters.

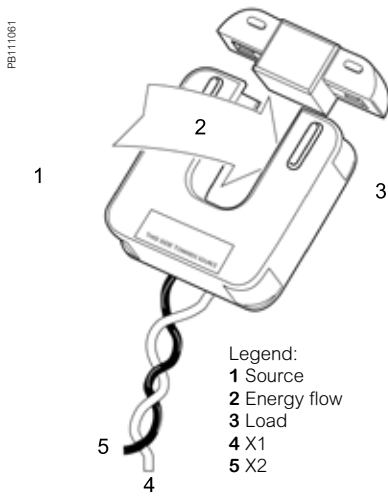
Commercial ref. no.	Description
METSECONV580	5 A : 80 mA converter for EM4X00 meter



The 5 A to 80 mA converter dimensions

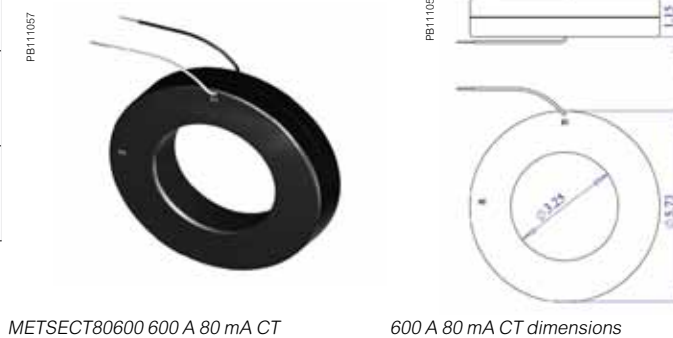
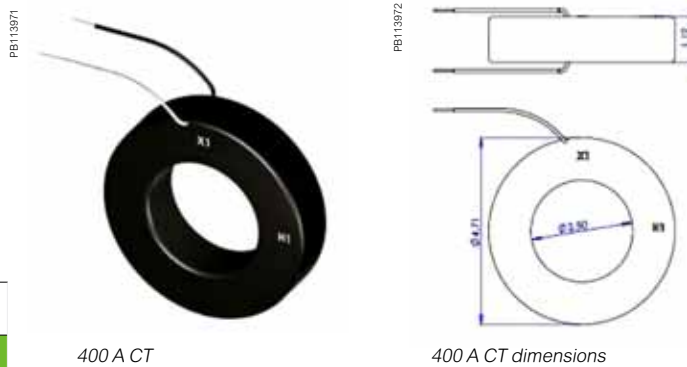
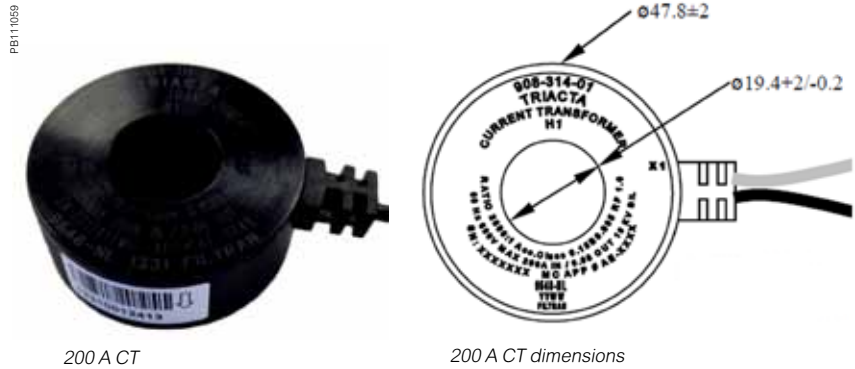
See appropriate Installation Guide for this product.

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CTs

- Model 8 (80/100 mA Secondary)
- Window Size: 82.5 mm Diameters
- Application: Metering
- Frequency: 50-400 Hz
- Insulation Level: 600 Volts, 10 Kv BIL Full Wave
- Flexible leads available for all case configurations. Flexible leads are UL 1015 105 °C, CSA approved #16 AWG, 609.6 mm long standard length. Non-standard lengths are available upon request.
- Terminals are brass studs No. 8-32 UNC with one flat washer, one lock washer and one nut each. Terminals are only available on the square case configuration.
- Mounting brackets kits for the Model 8SHT are available when required.
- Approximate weight: 1.36 kg



Feature selections	
Commercial reference number	Description
METSECT80200	CT, solid core, 200 A primary, 80 mA secondary, for use with EM4X80 multi-circuit meter
METSECT80400	CT, solid core, 400 A primary, 80 mA secondary, for use with EM4X80 multi-circuit meter
METSECT80600	CT, solid core, 600 A primary, 80 mA secondary, for use with EM4X80 multi-circuit meter

Schneider Electric Industries SAS
35, Rue Joseph Monier,
CS 30323
F - 92506 Rueil Malmaison Cedex

RCS Nanterre 954 503 439
Capital social 896 313 776
www.schneider-electric.com

Product name
PLSED310066EN

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