PowerLogic power-monitoring units

EM1000 series power meter

Technical data sheet

EM1000 series
Functions and characteristics

PB105460

EM1000 power meter.

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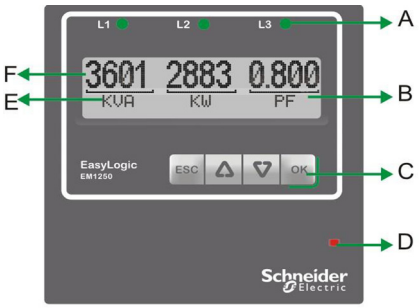

EM1000/1200 Front panel parts

A - Voltage Line Indicators (Green)
B - Back-lit LCD Display
C - Keys
D - Calibration LED (Red)
E - Units/Menu Items
F - Values

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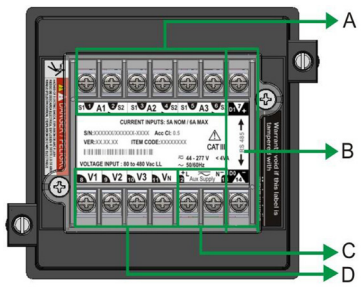

EM1000/1200 Rear panel parts

A - Input current terminals A1, A2, A3
B - RS 485 terminals for EM1250 and EM1251 energy meters
C - Auxiliary supply (control power) 44 to 277 V AC/DC
D - Input voltage terminals V1, V2, V3, VN 80 to 480 V AC LL

The EasyLogic EM1000 series energy meter offers all the basic energy measurement capabilities required to monitor an electrical installation in a single 96 x 96 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.

The EasyLogic EM1000 series energy meter is available in two different versions to better fit specific applications:
EM1250 for 5 Amp CT Secondary, class 0.5 accuracy and RS 485 port on MODBUS RTU
EM1251 for 1 Amp CT Secondary, class 0.5 accuracy and RS 485 port on MODBUS RTU

Applications
- Energy billing.
- Load balancing and optimization.
- Sub-metering.
- Electrical load monitoring.
- Gensets, Test benches, and laboratories.

Main characteristics
- Elegant single row, bright backlit LCD display
- Fast in-line view, Three parameters name and value at one glance
- Direct reading of primary values - No multiplication factor
- Kilo, Mega, and Giga indications with autoscaling capability
- User selectable default display page and lock.
- Resettable energy counter in addition to a permanent counter for energy display
- Test Pulse LED, in front of meter, for testing the calibration of the meter.
- Healthy phase indicators

High Resolution
- RMS values: 4 digits for RMS values
- Energy values: 10+3

Auto-scrolling
- Allows you to monitor a group of parameters sequentially with out any manual key operation.

Secure settings
- Unique password protection for the setup parameters.

Smart line indicators
- Helps you to check the presence of input supply voltage (healthy phase).

Smart Diagnostic
- CT missing.
- Communication Status Indication
- PT missing.

Part numbers

Energy meter	Part number
EM1250 class 0.5 accuracy, 5 Amp CT Secondary and RS 485 port	METCOEM1250
EM1251 class 0.5 accuracy, 1 Amp CT Secondary and RS 485 port	METCOEM1251

EM1000 series
Functions and characteristics (cont.)

Selection guide		EM1250	EM1251
General			
Use on LV and HV systems		■	■
Power accuracy		0.5 %	0.5 %
Energy accuracy		0.5 %	0.5 %
Power factor accuracy		0.5 %	0.5 %
Instantaneous rms values			
Active, apparent, and reactive power	Per phase and total	■	■
Active, apparent, and reactive energy		■	■
Power factor	Per phase and average	■	■
Communication			
RS 485 communication (2 terminals)		1	1
MODBUS RTU protocol		■	■
CT Secondary			
1 Amp			■
5 Amp		■	

EM1000 series
Functions and characteristics (cont.)

EasyLogic EM1250 meter

EasyLogic EM1251 meter

Electrical characteristics			
Type of measurement			True RMS
Measurement accuracy* at current operating range: For 5A Nominal CT: 0.25A to 6A. For 1A nominal CT: 0.15A to 1.2A	Power	Active	+/-0.5% of reading at Cos Ø=1 for EM1250 and EM1251
		Apparent	+/-0.5% of reading at Cos Ø=1 for EM1250 and EM1251
		Reactive	+/- 1.0% of reading at Cos Ø=1 for EM1250 and EM1251
	Power factor		+/- 0.5% of reading at Cos Ø=1 for EM1250 and EM1251
	Energy	Active	Class 0.5 as per IEC 62053-22 for EM1250 and EM1251
		Apparent	+/- 0.5% of reading for EM1250 and EM1251
		Reactive	Class 1.0 as per IEC 62053-24 for EM1250 and EM1251
Note: * PF error limit is same as W error limit in %			
Data update rate			1s
Input-voltage characteristics	Inputs		V1, V2, V3, VN
	Measured voltage		80 to 480 VAC L-L without PTs Up to 999 kV with external PTs
	Permissable overload		600 VLL
	Burden		0.2 VA per phase max.
	Impedance		VLL - 3 MΩ, VLN – 3 MΩ (with communication
	Frequency		50/60 Hz+/-5%
Input-current	CT ratings	Primary	1A - 99.0KA for 1A meter 5 A- 99.0KA for 5A meter
		Secondary	1A for EM1251 5A for EM1250
	Measurement range		250mA to 6A with 0.5% accuracy for EM1250 . Starting current 5mA 150mA to 1.2 A with 0.5% accuracy for EM1251 . Starting current 1mA
	Permissible overload		10A for EM1250 and 2A for EM1251
	Burden		<0.2 VA per phase
	Impedance		< 0.1 ohm
Auxiliary supply	AC		44 to 277 V
	DC		44 to 277 V
	Burden		4 VA max.
Mechanical characteristics			
Weight			Approx. 0.5Kg (shipping), 0.4Kg (without packing)
IP degree of protection			Front: IP 51; Rear: IP 40
Dimensions			Bezel: 96 x 96 mm Depth: 80 mm behind bezel Panel cutout: 92 x 92 mm
Environmental characteristics			
Operating temperature			-10°C to +60°C (14 to 140 °F)
Storage temperature			-25°C to +70°C (-4 to 158 °)
Humidity rating			5 to 95 % RH non-condensing
Altitude			2000 m
Measurement Category			III
Pollution degree			2
Protection class			2
Electromagnetic compatibility			
Electrostatic discharge			as per IEC 61000-4-2*
Immunity to Electromagnetic RF Fields			as per IEC 61000-4-3*
Conducted Immunity			as per IEC 61000-4-6*
Immunity to Magnetic Fields			as per IEC 61000-4-8*
Immunity to voltage dips and interruptions			as per IEC 61000-4-11*
Fast transient			as per IEC 61000-4-4*
Immunity to surge waves			as per IEC 61000-4-5*
Impulse voltage			as per IEC 60060 - 1*
Conducted and radiated emissions			CISPR22 Class A
Safety and standards			
Construction			Self extinguishable V0 plastic; Double insulation at user accessible area Spacing and isolation as per UL and IEC standards

EM1000 series
Installation and connections

EM1000 series meter dimensions

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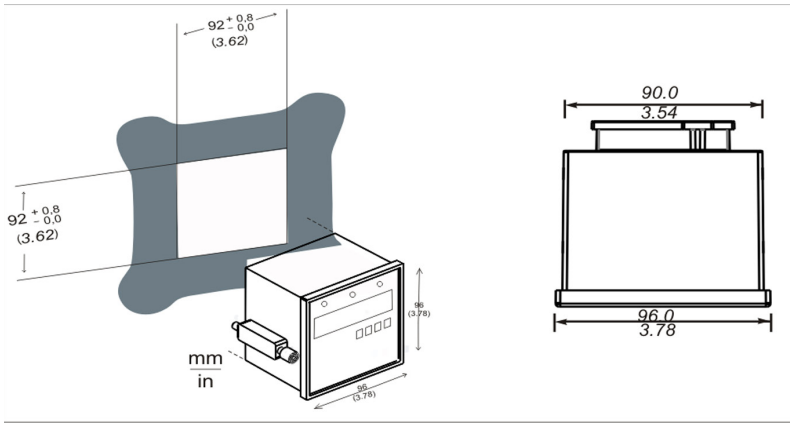

Single phase connection

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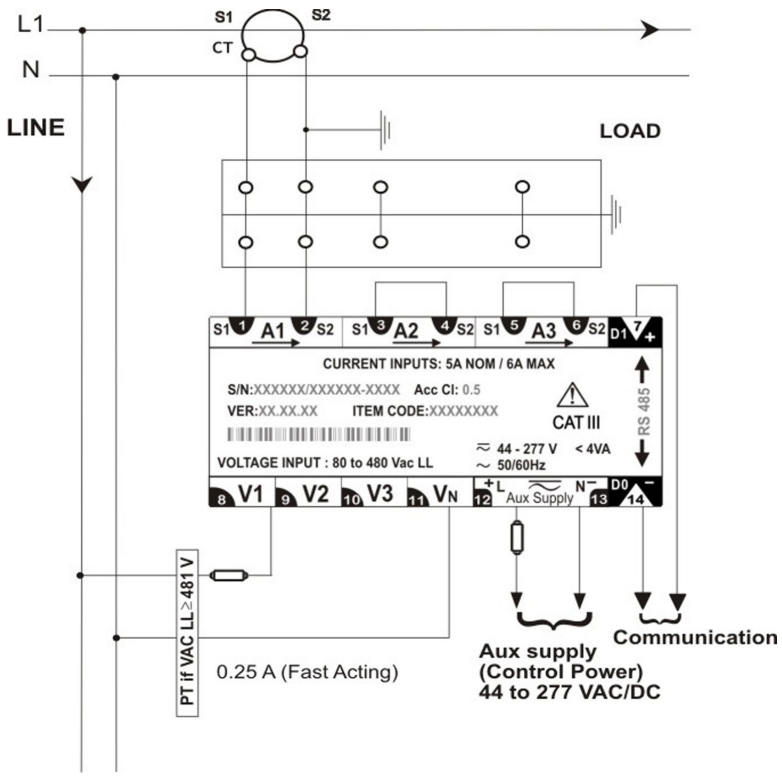
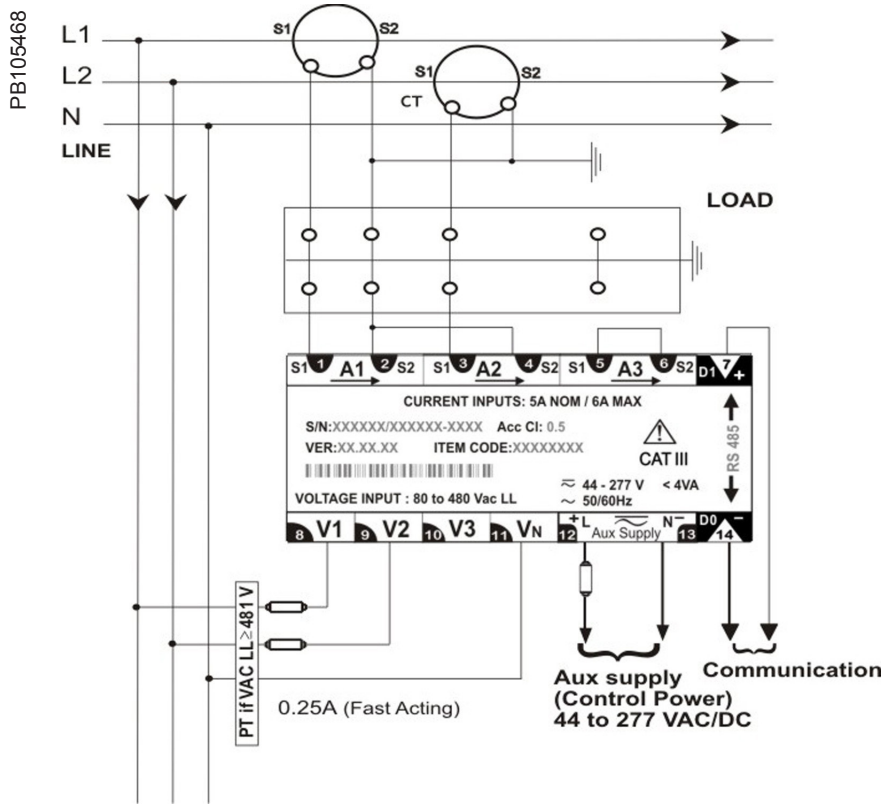
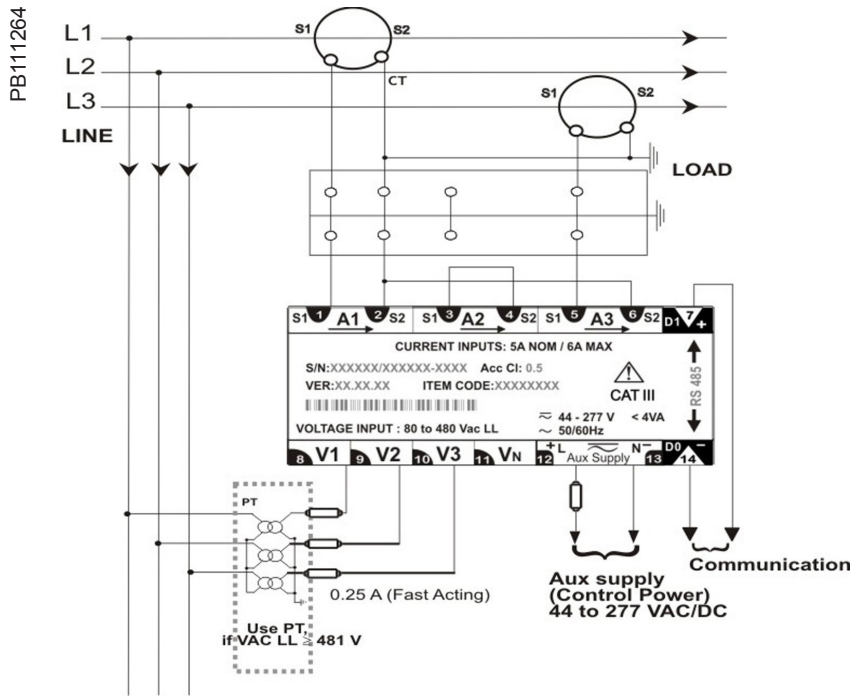


2-phase 3-wire connection



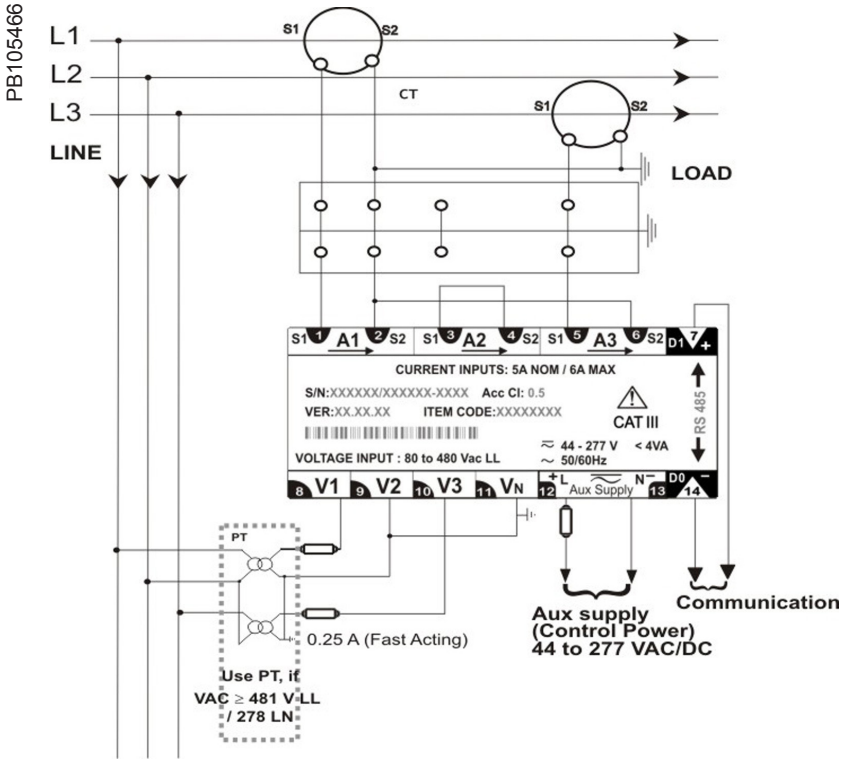
Connection representation only. Other types of connection are possible.
Refer to the EM1000 series Quick Start Guide for details.

3-phase 3-wire Delta connection



Connection representation only. Other types of connection are possible

3-phase 3-wire Open Delta connection



Connection representation only. Other types of connection are possible.
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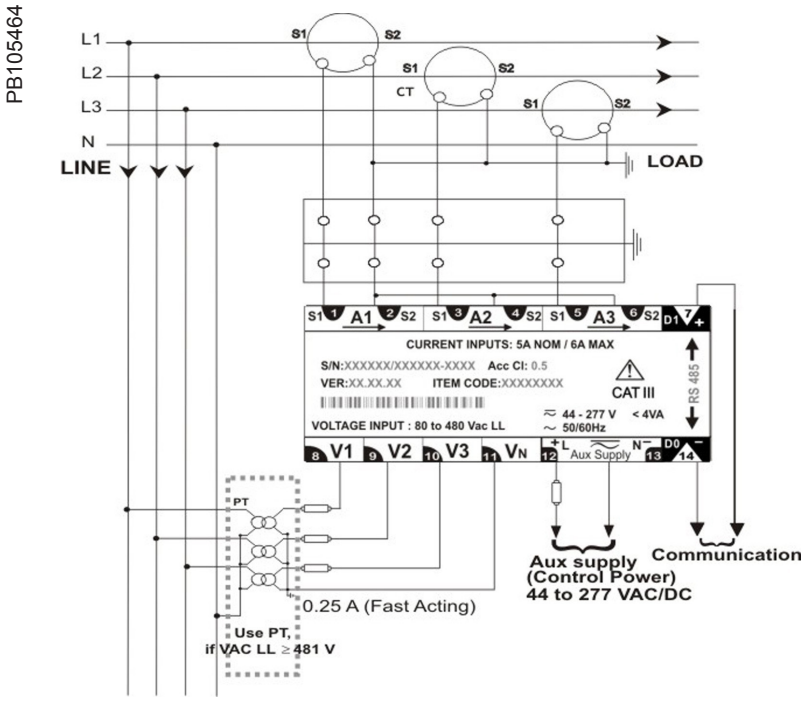
3-phase 4-wire WYE connection



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Design: Schneider Electric
Photos: Schneider Electric