PowerLogic™ EM3500 series Technical Datasheet

The PowerLogic™ EM3500 Series DIN Rail Meter combines exceptional performance and easy installation to deliver a cost-effective solution for power monitoring applications.

The EM35xx can be installed on standard DIN rail or surface mounted as needed. Pulse output and phase alarms provide additional versatility.

Applications

Capable of essential cost management:

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

EM3500 series

EM3500 series	EM3502	EM3550	EM3560	EM3561	EM3555	EM3502A	EM3550A	EM3560A	EM3561A
Measurement Capability, Full Data Set									
Bi-directional Energy Measurements					■				
Power (3-phase total and per phase): Real (kW) Reactive (kVAR), and Apparent (kVA)	■	■	■	■	■	■	■	■	■
Power Factor: 3-phase average & per phase	■	■	■	■	■	■	■	■	■
Present Power Demand: Real (kW), Reactive (kVAR), and Apparent (kVA)	■	■	■	■	■	■	■	■	■
Import and Export totals of Present Power Demand: Real (kW), Reactive (kVAR), & Apparent (kVA)					■				
Peak Power Demand: Real (kW), Reactive (kVAR), and Apparent (kVA)	■	■	■	■	■	■	■	■	■
Current (3-phase average and per phase)	■	■	■	■	■	■	■	■	■
Voltage: Line-Line and Line-Neutral (3-phase average and per phase)	■	■	■	■	■	■	■	■	■
Frequency	■	■	■	■	■	■	■	■	■
ANSI C12.20 0.5 % accuracy, IEC 62053-22 Class 0.5S						■	■	■	■
ANSI C12.20 0.2 % accuracy, IEC 62053-22 Class 0.2S	■	■	■	■	■				
Accumulated Net Energy: Real (kWh), Reactive (kVARh), and Apparent (kVAh)	■	■	■	■	■	■	■	■	■
Accumulated Real Energy by phase (kWh)	■	■	■	■	■	■	■	■	■
Import and Export Accumulators of Real and Apparent Energy					■				
Reactive Energy Accumulators by Quadrant (3-phase total & per phase)					■				
Demand Interval Configuration: Fixed or Rolling Block	■	■	■	■	■	■	■	■	■
Demand Interval Configuration: External Sync to Comms		■	■	■	■		■	■	■
Data Logging (Store up to 60 days at 15-minute interval)									
Data Logging: 10 16-Bit Configurable (can include Date/Time) Data Buffers					■				
Data Logging: 3 Timestamped 32-Bit Configurable Data Buffers			■					■	
Outputs									
Alarm Output (N.C.)	■	■	■		■	■	■	■	
1 Pulse Output (N.O.)		■			■		■		
2 Pulse Outputs (N.O.)	■					■			
RS-485 Serial (Modbus RTU Protocol)		■			■		■		
RS-485 Serial (BACnet MS/TP Protocol)			■	■				■	■
LON FT Serial (LonTalk Protocol)									
Inputs									
2 Pulse Contact Accumulator Inputs				■					■
1 Pulse Contact Accumulator Input			■					■	

PowerLogic™ PM5000 series Technical Datasheet

The PowerLogic™ PM5000 series power meters are the new benchmark in affordable, precision metering.

The value you want, the precision you need. Compact, affordable power meters with high-end cost capabilities and basic mobile energy management.

Applications

Capable of essential cost management:

- Sub-billing/tenant metering (+1)
- Equipment sub-billing
- Energy cost allocation

Also ideal for electrical network management:

- Track real-time power conditions
- Monitor control functions
- Provide basic power quality values
- Detect and capture voltage sag and swell events
- Monitor residual current
- Analyze equipment and network status
- BACnet/IP, EtherNet/IP, and DNP3.0 protocol support

Compliance with international standards:

- 62053-22 Class 0.5S/Class 0.2S
- ANSI C12.20 Class 0.2 (PM5500 and higher models)
- IEC 61557-12 PMD/S/K70/0.5 (PM5100 and PM5300 models)
- IEC 61557-12 PMD/S/K70/0.2 (PM5500 and higher models)
- IEC 62053-23
- IEC 62052-11
- MID, EN50470-1/3, Annex B & Annex D
- CE as per IEC 61010-1 Ed.3
- cULus as per UL 61010-1 Ed.3

PM5000 series features

Features and options	PM5110	PM5330	PM5340	PM5560	PM5563	PM5580	PM5650
Installation							
Fast panel mount with integrated display	●	●	●	●	—	●	●
Fast installation, DIN rail mountable	—	—	—	—	●	—	—
Control power	AC/DC	AC/DC	AC/DC	AC/DC	AC/DC	LVDC	AC/DC
Accuracy Class	Cl 0.5S	Cl 0.5S	Cl 0.5S	Cl 0.2S	Cl 0.2S	Cl 0.2S	Cl 0.2S
Display							
Backlit LCD, multilingual, bar graphs, 6 lines, 4 concurrent values	●	●	●	●	—	●	●
Remote display (optional)	—	—	—	—	●	—	—
Power and energy metering							
Three-phase voltage, current, power, demand, energy, frequency, power factor	●	●	●	●	●	●	●
Multitariff	—	4	4	8	8	8	8
Power quality analysis							
THD, thd, TDD	●	●	●	●	●	●	●
Harmonics, individual (odd) up to	15th	31st	31st	63rd	63rd	63rd	63rd
Waveform capture & sag/swell detection	—	—	—	—	—	—	●
I/Os and relays							
I/Os	1DO	2DI/2DO	2DI/2DO	4DI/2DO	4DI/2DO	4DI/2DO	4DI/2DO
Relays	0	2	2	0	0	0	0
Alarms and control							
Alarms	33	35	35	52	52	52	52
Set point response time, seconds	1	1	1	1	1	1	1
Single and multicondition alarms	—	●	●	●	●	●	●
Boolean alarm logic	—	—	—	●	●	●	●
Communications							
Serial ports with Modbus™ protocol	1	1	—	1	1	1	1
Ethernet port with Modbus TCP, BACnet/IP, and EtherNet/IP protocols*	—	—	1	2**	2**	2**	2**
Ethernet-to-serial gateway	—	—	—	●	●	●	●
Onboard Web server with Web pages	—	—	—	●	●	●	●

** Ability to simultaneously communicate via Modbus TCP, BACnet/IP, and EtherNet/IP.*

*** 2 Ethernet ports for daisy chain, one IP address.*

PM8000 series

The PowerLogic PM8000 series meters are compact, cost-effective multifunction power meters that will help you ensure reliability and efficiency of your power-critical facility.

Reveal and understand complex power quality conditions. Measure, understand, and act on insightful data gathered from your entire power system. Designed for key metering points throughout your energy infrastructure, the PowerLogic PM8000 series meter has the versatility to perform nearly any job you need a meter to do, wherever you need it.

Applications:

- Ideal for low- to high-voltage applications in industrial facilities, commercial buildings, utility networks, or critical power environments

General		
Use on LV and MV systems		■
Current accuracy (5A nominal)		0.1 % reading
Voltage accuracy (57 V LN/100 V LL to 400 V LN/690 V LL)		0.1 % reading
Active energy accuracy		0.2 %
Number of samples per cycle or sample frequency		256
Instantaneous RMS values		
Current, voltage, frequency		■
Active, reactive, apparent power	Total and per phase	■
Power factor	Total and per phase	■
Current measurement range (autoranging)		0.05 - 10A
Energy values		
Active, reactive, apparent energy		■
Settable accumulation modes		■
Demand values		
Current	Present and max values	■
Active, reactive, apparent power	Present and max values	■
Predicted active, reactive, apparent power		■
Synchronization of the measurement window		■
Setting of calculation mode	Block, sliding	■

Power quality measurements		
Harmonic distortion	Current and voltage	■
Individual harmonics	Via front panel and web page	63
	Via EcoStruxure software	127
Waveform capture		■
Detection of voltage swells and sags		■
Fast acquisition	1/2 cycle data	■
EN 50160 compliance checking		■
Customizable data outputs (using logic and math functions)		■
Data recording		
Min/max of instantaneous values		■
Data logs		■
Event logs		■
Trending/forecasting		■
SER (sequence of event recording)		■
Timestamping		■
GPS synchronization (+/- 1 ms)		■
Memory (in MB)		512

Display and I/O	
Front panel display	■
Wiring self-test	■
Pulse output	1
Digital or analog inputs (max)	27 digital,16 analog
Digital or analog outputs (max, including pulse output)	1 digital, 8 relay, 8 analog
Communication	
RS 485 port	1
Ethernet port	2
Serial port (Modbus, ION, DNP3)	■
Ethernet port (Modbus/TCP, ION TCP, DNP3 TCP, IEC 61850[(2)])	■
Ethernet gateway	■
Alarm notification via email	■
HTTPS web server	■
SNMP with custom MIB and traps for alarms	■
SMTP email	■
NTP and PTP time synchronization	■
FTP file transfer	■