

# PRODUCT PROFILE

## POWERMONITOR™ 1000

### MINIMIZE YOUR ENERGY COSTS

#### FEATURES

- Compact Size
- Available EtherNet/IP, Serial DF1, Modbus RTU, Modbus TCP Communications
- Integrated LCD Display
- Panel or DIN Rail Mounting
- UL, cUL, CE Certifications
- Wiring Diagnostics
- Time of Use (On-Peak, Off-Peak)
- Logs – Energy, Min/Max, Status, and Load Factor
- View Data and Configure Through Integrated Web Page
- Revenue Meter Accuracy
- Two Status Inputs
- Configurable KYZ Output
- Integration with RSPower™, RSEnergyMetrix®, and RSView®

The Powermonitor 1000 can also be used in the following control and monitoring applications:

- Demand Management
- Electrical SCADA
- Emergency Load Shed
- Electrical Optimization
- Energy Accountability
- HVAC
- Machine Level Monitoring



Energy management and understanding energy costs are a major focus today in the manufacturing industry. The Allen-Bradley® Powermonitor 1000 is a cost effective energy monitoring and control solution. The Powermonitor 1000 is perfect for your applications where load profiling, cost allocation, or energy control is required. It can also provide seamless integration your existing energy monitoring systems where sub-metering is required. The Powermonitor 1000 is available in five models (two transducers, and three energy-monitors), with features and a price point to meet your application.

Transducer models feature the ability to measure voltage, current, and power related tags. Energy-monitor models feature the ability to measure consumption related tags such as real, reactive, and apparent energy. The top of the line energy-monitor (EM3) provides all the features of both the transducer and energy-monitor models.

The Powermonitor 1000 integrates into your existing energy monitoring systems featuring, RSView, RSPower, or RSEnergyMetrix to further enhance the view into energy costs. Your existing Allen-Bradley PLC's (PLC-5®, SLCTM, ControlLogix® Family) can also easily communicate to the Powermonitor 1000 to allow energy data to be used in control systems.

Measured Parameters	TR1	TR2	EM1	EM2	EM3
Voltage	X	X			X
Current	X	X			X
Frequency	X	X			X
Voltage Unbalance	X	X			X
Current Unbalance	X	X			X
kW		X			X
kVAR		X			X
kVA		X			X
True Power Factor		X			X
kWh			X	X	X
kVARh				X	X
kVAHh				X	X
kW Demand				X	X
kVAR Demand				X	X
kVA Demand				X	X
Projected kW Demand				X	X
Projected kVAR Demand				X	X
Projected kVA Demand				X	X
Demand Power Factor				X	X
Logs	TR1	TR2	EM1	EM2	EM3
Energy Log			X	X	X
Minimum/Maximum Log	X	X		X	X
Load Factor Log				X	X
Status Log	X	X	X	X	X

Catalog Numbers	
1408-TR1A-485	PM1000 Transducer TR1 Serial
1408-TR1A-ENT	PM1000 Transducer TR1 Ethernet
1408-TR2A-485	PM1000 Transducer TR2 Serial
1408-TR2A-ENT	PM1000 Transducer TR2 Ethernet
1408-EM1A-485	PM1000 Energy Monitor EM1 Serial
1408-EM1A-ENT	PM1000 Energy Monitor EM1 Ethernet
1408-EM2A-485	PM1000 Energy Monitor EM2 Serial
1408-EM2A-ENT	PM1000 Energy Monitor EM2 Ethernet
1408-EM3A-485	PM1000 Energy Monitor EM3 Serial
1408-EM3A-ENT	PM1000 Energy Monitor EM3 Ethernet

Input and Output Ratings	
Parameter	Rating
Control Power	85V ...264V ac 47...63 Hz 2.5 VA maximum loading
Voltage Sense Inputs: V1, V2, V3	Input Impedance: 5 M ohm minimum Input current: 2 mA maximum
Current Sense Inputs: I1, I2, I3	Overload Withstand: 15 Amps Continuous, 200 Amps for one-half second Burden: 0.05 VA Impedance: 0.002 ohms Maximum Crest Factor at 5 A is 3.0 Starting Current: 5 mA
Status Inputs	Contact Closure (Internal 24V dc)
KYZ Output	30 mA at 240V ac / 300V dc

General Specifications		
Parameter	Rating	
Dielectric Withstand	Control Power	2500V
	Voltage Inputs	2500V
	Status Inputs	2500V
	KYZ Output	2500V
Terminal Blocks	22...14 AWG (0.34...2.5 mm <sup>2</sup> , 75 °C (167 °F Minimum Copper Wire only) Recommended torque 0.8 Nm (7 lb-in)	
Operating Temperature	-10...60 °C (14...140 °F)	
Storage Temperature	-40...85 °C (-40...185 °F)	
Humidity	5%...95%, Noncondensing	
Vibration	2.0 g 10...500 Hz	
Shock	30 g peak each axis (operating) 50 g peak each axis (non-operating)	

Accuracy and Range		
Parameter	Accuracy in % of Full Scale at +25 °C (77 °F) 50/60 Hz Unity Power Factor	Nominal Range
Voltage Sense Inputs: V1, V2, V3	±0.5%	Line-neutral RMS: 347V / 15...399 V Line-line RMS: 600V / 26...691V
Current Sense	±0.5%	5A / 0.05...1.0A RMS
Frequency	±0.05 Hz	50 or 60 Hz / 40...75 Hz
Power Functions: kW, kVAR, kVA	EN62053-21:20 03 Accuracy	
Demand Functions	Requirement	
Energy Functions	Class 1	
Metering Update Rates	100 mS V, I, Hz 200 mS Power	

Allen-Bradley, ControlLogix, PLC-5, Powermonitor 1000, RSEnergyMetrix, RSPower, RSView and SLC are trademarks of Rockwell Automation, Inc.

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