

PowerShield8



Battery management system

The PowerShield8 system provides monitoring for an unlimited number of batteries, with hardware options targeting both large and small battery systems. A complete solution of hardware and software ensures you get the information you need to confirm your backup batteries are operating within IEEE/IEC guidelines.

System specifications

	Controller LX	Controller MX		Controller LX	Controller MX
Capability	up to 512 blocks up to 8 strings*	up to 200 blocks up to 4 strings*	Interfaces	Link Battery Management Software Controller Web Interface	
				16 x 2 character LCD & keypad	–
Battery system information	Block: Voltage, Ripple Voltage, Ohmic, Temperature String: Voltage, Current, Ripple Current Environment: Ambient Temperature, Humidity		Communication ports	2 x 1000Base-T Ethernet 2 x Expansion ports - RS485 (optional)	1 x 1000 Base-T Ethernet 1 x USB 1 x Expansion ports - RS485 (optional)
Battery types	Lead Acid (2V, 4V, 6V, 8V, 12V & 16V) Ni-Cd (1.2V, 3.6V)		Protocols	ModbusTCP, SNMP and HTTP ModbusRTU when RS485 card is fitted	
Battery charging regime	Float and Intermittent		Relay outputs	4	1
Thermal runaway management	String breaker or charger step down signalling		Digital inputs	up to 10 2 via Controller, up to 8 via Hubs	up to 4 via Hubs*
Environment	Operating temperature: 0 to 50°C / 32 – 122°F Storage temperature: -10 to 70°C / 14 – 158°F 10 to 90% RH non condensing Altitude: 2000m max., Indoor use only.		Certifications		

Controller

	Controller LX	Controller MX		Controller LX	Controller MX
Service port	Front Ethernet port (1000Base-T)	USB 2.0 (Type B)	Dimensions	1U High 19" rack mount	
Port 1	Back Ethernet port (1000Base-T)		Width	430mm / 16.9 inches	250mm / 9.84 inches
Port 2	Expansion port - optional RS485		Depth	265mm / 10.4 inches	155mm / 6.1 inches
Port 3	Expansion port - optional RS485	–	Height	45mm / 1.8 inches	36mm / 1.4 inches
Display	16 x 2 character LCD	–	Power supply	AC Model: 90 – 260V 50/60Hz 24V DC Model: 18 – 30V 48V DC Model: 35 – 60V 110V DC Model: 80 – 150V	AC Model: 90 – 260V 50/60Hz 48 DC Model: 18 – 60V 110 DC Model: 80 – 150V
Front	USB data storage	SD Card data storage	Power consumption	5W + 1.2W per Hub	1.5W + 1.2W per Hub
Relay outputs	4 SPDT	1 SPDT	Digital inputs	2 (Voltage free / Dry contact)	–
Rating Selectable	1A @ 30VDC, resistive* Any relay configurable to any alarm		Memory	2GB RAM 4GB Flash	512MB RAM 4GB Flash
Configuration interface	Web browser				
Minimum version	Chrome 50, Firefox 45, Safari 6.1, Internet Explorer 10, Edge 12				

*Contact PowerShield for further details.

Link battery management software

Minimum PC system requirements¹

Processor	Intel i3-6100 or faster	RAM	8GB
Operating system	Windows 10 Windows Server 2012, 2012 R2, 2016	Storage	20GB available hard disk space
		Monitor	1024 x 768 or 1366 x 768

¹Recommended for up to 5 Controller connections, with single seat operation. Refer to PowerShield for larger configurations.

mSensor

Dual and Single Input

Battery type	Lead Acid (2V, 4V, 6V, 8V, 12V & 16V) Ni-Cd (1.2V, 3.6V)			
Nominal voltage¹	NiCad ²	2V	6V	12V
Operating range	0.8V-1.9V	1.6V-2.6V	4.8V-7.8V	9.6V-15.6V
Maximum input voltage	±5V	±6V	±25V	±65V
DC resolution / accuracy	1mV / ±0.3%	1mV / ±0.3%	5mV / ±0.2%	5mV / ±0.2%
AC resolution	1mV	1mV	1mV	1mV
Ohmic measurement range	0.10-5mΩ	0.10-5mΩ	0.50-20mΩ	1.00-40.00mΩ
Resolution / accuracy	1uΩ / ±2.5% + ±15uΩ	1uΩ / ±2.5% + ±15uΩ	1uΩ / ±2.5% + ±25uΩ	1uΩ / ±2.5% + ±25uΩ
Temperature³				
Range	-10 to 70°C / 14 to 158°F			
Resolution / accuracy	0.1°C / ±1°C			
Power supply current⁴	50mA	30mA	18mA	18mA

¹Most common models, other models available on request

³Operating temperature -10 to 50°C / 14 to 122°F

Design rated to 750VDC. UL certified to 600Vdc

²Ni-Cd single 1V mSensor cannot perform ohmic measurement

⁴Power by block being monitored

The mSensor communicates via Modbus, meaning it can be easily integrated with other Modbus based site management systems. Contact PowerShield for further details.

Hub

Powered	24Vdc supplied by Controller	Power consumption	1.2W
Digital inputs	1, voltage free	Relay outputs	1
DC current¹	0 - 2000A (Hall Effect sensor)	Temperature	-10 to 80°C / 14 to 176°F
Typical resolution	0.05A	Resolution	0.1°C / 0.18°F
Accuracy	±1% + CT accuracy	Accuracy	±1°C / 1.8°F
Ripple current (AC)¹	True RMS	Relative humidity	0 - 100%
Typical resolution	0.5A	Resolution	1.0%
Accuracy	±1% + CT accuracy	Accuracy	20% - 80% ±3% at 25°C / 77°F
Frequency range	10 – 1000Hz		

¹Resolution dependent on CT model used, typical values are based on 400A CT

*Contact PowerShield for further details.

Installation Dimensions

Dimension	Maximum		Factory sizes	
	Metres	Feet	Metres	Feet
A	75	246	-	-
B	50	164	3, 5, 10, 15	10, 16, 33, 49
C	25	82	-	-
D	15	49	3	10
E	-	-	0.2, 0.4, 0.7, 1.0	8, 16, 28, 39 inches

