


# PowerShield 8



## Battery management system

### System specifications

<b>Capability</b>	up to 512 blocks up to 8 strings*	<b>Interfaces</b>	Link Battery Management Software Controller Web Interface 16 x 2 character LCD & keypad
<b>Battery system information</b>	Block Voltage, Block Temperature, Block Ohmic, Block Ripple Voltage Ambient Temperature, Humidity, Current, Ripple Current and String Voltage	<b>Communication ports</b>	2 x 1000Base-T Ethernet 2 x Expansion ports RS485 (optional) USB port for storage devices
<b>Battery types</b>	Lead Acid (2V, 4V, 6V, 8V, 12V & 16V) Ni-Cd (1.2V, 3.6V)	<b>Protocols</b>	ModbusTCP, SNMP and HTTP ModbusRTU when RS485 card is fitted
<b>Battery Charging Regime</b>	Float and Intermittent	<b>Outputs</b>	4 relays
<b>Certifications</b>		<b>Digital Inputs</b>	up to 18 2 via Controller, up to 16 via Hubs
		<b>Environment*</b>	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.

## Link battery management software

### Minimum pc system requirements

<b>Processor</b>	Intel i3-4170 or faster	<b>RAM</b>	4GB (32bit OS) or 8GB (64bit OS)
<b>Operating system</b>	Windows 7, 10 Windows Server 2008, 2012, 2012 R2, 2016	<b>Storage</b>	20GB available hard disk space
		<b>Monitor</b>	1024 x 768 or 1366 x 768

## Controller

<b>Service Port</b>	Front Ethernet port (1000Base-T)	<b>Physical dimensions</b>	1U High 19" rack mount Width: 430mm / 16.9 inches Depth: 265mm / 10.4 inches Height: 45mm / 1.8 inches
<b>Port 1</b>	Back Ethernet port (1000Base-T)		
<b>Port 2</b>	Expansion port		
<b>Port 3</b>	Expansion port	<b>Power supply</b>	AC Model: 90 – 260V 50/60Hz 24V DC Model: 18 – 30V 48V DC Model: 35 – 60V 110V DC Model: 80 – 150V
<b>Port 2/3 Expansion option</b>	RS485 card		
<b>Display</b>	16 x 2 character LCD	<b>Power consumption</b>	Typical 5W + 1.6W per Hub Max. 6W + 1.8W per Hub
<b>Front USB</b>	USB data storage	<b>Digital Inputs type</b>	2 Voltage free
<b>Relay outputs</b>	4 Single Pole Double Throw (SPDT)		
<b>Rating</b>	1A @ 30VDC, resistive		
<b>Selectable</b>	Any relay configurable to any alarm	<b>Memory</b>	2GB RAM 4GB Flash
<b>Configuration interface</b>	Web browser		
<b>Minimum version</b>	Chrome 50, Firefox 45, Safari 6.1, Internet Explorer 10, Edge 12		

\*Contact PowerShield for further details.

# mSensor

## Dual and Single Input

<b>Battery type</b>	Lead Acid (2V, 4V, 6V, 8V, 12V & 16V) Ni-Cd (1.2V, 3.6V)			
<b>Nominal voltage<sup>1</sup></b>	NiCad <sup>2</sup>	2V	6V	12V
<b>Operating range</b>	0.8V-1.9V	1.6V-2.6V	4.8V-7.8V	9.6V-15.6V
<b>Maximum input voltage</b>	±5V	±6V	±25V	±65V
<b>DC resolution / accuracy</b>	1mV / ±0.3%	1mV / ±0.3%	5mV / ±0.2%	5mV / ±0.2%
<b>AC resolution</b>	1mV	1mV	1mV	1mV
<b>Ohmic measurement range</b>	0.10-5mΩ	0.10-5mΩ	0.50-20mΩ	1.00-40.00mΩ
<b>Resolution / accuracy</b>	1uΩ / ±2.5% + ±15uΩ	1uΩ / ±2.5% + ±15uΩ	1uΩ / ±2.5% + ±25uΩ	1uΩ / ±2.5% + ±25uΩ
<b>Temperature<sup>3</sup></b>				
<b>Range</b>	-10 to 70°C / 14 to 158°F			
<b>Resolution / accuracy</b>	0.1°C / ±1°C			
<b>Power supply current<sup>4</sup></b>	50mA	30mA	18mA	18mA

<sup>1</sup>Most common models, other models available on request

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

Design rated to 750VDC. UL certified to 600Vdc

<sup>2</sup>Ni-Cd single mSensor cannot perform ohmic measurement

<sup>4</sup>Power 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

<b>Powered</b>	24Vdc supplied by Controller	<b>Power consumption</b>	1.3W typical, 1.8W max.
<b>Digital inputs</b>	2, voltage free	<b>Aux. Input*</b>	-12 to 12V
<b>DC current<sup>1</sup></b>	0 - 2000A (Hall Effect sensor)	<b>Temperature</b>	-10 to 80°C / 14 to 176°F
<b>Typical resolution</b>	0.05A	<b>Resolution</b>	0.1°C / 0.18°F
<b>Accuracy</b>	±1% + CT accuracy	<b>Accuracy</b>	±1°C / 1.8°F
<b>Ripple current (AC)<sup>1</sup></b>	True RMS	<b>Relative Humidity</b>	0 - 100%
<b>Typical resolution</b>	0.5A	<b>Resolution</b>	1.0%
<b>Accuracy</b>	±1% + CT accuracy	<b>Accuracy</b>	20%-80% ±3% at 25°C / 77°F < 20%, > 80% ±5% at 25°C / 77°F
<b>Frequency range</b>	10 – 1000Hz		

<sup>1</sup>resolution 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
<b>A</b>	75	246	-	-
<b>B</b>	50	164	3, 5, 10, 15	10, 16, 33, 49
<b>C</b>	25	82	-	-
<b>D</b>	15	49	3	10
<b>E</b>	-	-	0.2, 0.4, 0.7, 1.0	8, 16, 28, 39 inches

