# **PowerShield 8**



## **Battery management system**

#### **System specifications**

Capability	up to 512 blocks up to 8 strings*	Interfaces	Link Battery Management Software Controller Web Interface 16 x 2 character LCD & keypad
Battery system information	Block Voltage, Block Temperature, Block Ohmic, Block Ripple Voltage Ambient Temperature, Humidity, Current, Ripple Current and String Voltage	Communication ports	2 x 1000Base-T Ethernet 2 x Expansion ports RS485 (optional) USB port for storage devices
Battery types	Lead Acid (2V, 4V, 6V, 8V, 12V & 16V) Ni-Cd (1,2V, 3.6V, 4.8V)	Protocols	ModbusTCP, SNMP and HTTP ModbusRTU when RS485 card is fitted
Battery Charging Regime	Float and Intermittent	Outputs	4 relays
Certifications	FC CE CULUS	Digital Inputs	up to 18 2 via Controller, up to 16 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.

### Link battery management software

#### Minimum pc system requirements

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

#### Controller

Service Port	Front Ethernet port (1000Base-T)	Physical dimensions	1U High 19" rack mount	
Port 1	Back Ethernet port (1000Base-T)	- 4   1   1	Width: 430mm / 16.9 inches Depth: 265mm / 10.4 inches Height: 45mm / 1.8 inches	
Port 2	Expansion port	-4 		
Port 3	Expansion port	Power supply	AC Model: 90 – 260V 50/60Hz	
Port 2/3 Expansion option	RS485 card	- 4 	24V DC Model: 18 – 30V 48V DC Model: 35 – 60V	
Display	16 x 2 character LCD		110V DC Model: 80 – 150V	
Front USB	USB data storage	Power consumption	Typical 5W + 1.6W per Hub Max. 6W + 1.8W per Hub	
Relay outputs	4 Single Pole Double Throw (SPDT)	Digital Inputs	2	
Relay outputs Rating	4 Single Pole Double Throw (SPDT) 1A (Q 30VDC, resistive	Digital Inputs type	2 Voltage free	
		· .	_	
Rating	1A (q 30VDC, resistive	· .	_	
Rating Selectable	1A (Q 30VDC, resistive Any relay configurable to any alarm	type	Voltage free	

<sup>\*</sup>Contact PowerShield for further details.

#### **mSensor**

#### **Dual and Single Input**

0.1°C/±1°C			
	-10 to 7	70°C / 14 to 158°F	
$1u\Omega$ / $\pm 2.5\%$ + $\pm 15u\Omega$	$1u\Omega$ / $\pm 2.5\%$ + $\pm 15u\Omega$	1uΩ/±2.5%+±25uΩ	1uΩ/±2.5%+±25uΩ
$0.10\text{-}5\text{m}\Omega$	0.10-5mΩ	$0.50\text{-}20\text{m}\Omega$	$1.00\text{-}40.00\text{m}\Omega$
1mV	1mV	1mV	1mV
1mV / ±0.3%	1mV / ±0.3%	5mV/±0.2%	5mV / ±0.2%
±5V	±6V	±25V	±65V
0.8V-1.9V	1.6V-2.6V	4.8V-7.8V	9.6V-15.6V
NiCad²	2V	6V	12V
Ni-Cd (1.2V, 3.6V, 4.8V)			
	Ni-Cd (1.2V, 3.6V, 4.8V)  NiCad²  0.8V-1.9V  ±5V  1mV / ±0.3%  1mV  0.10-5mΩ	NiCad² 2V   0.8V-1.9V   1.6V-2.6V   ±5V   ±6V   1mV / ±0.3%   1mV   1mV   0.10-5mΩ   0.10-5mΩ   1uΩ / ±2.5% + ±15uΩ   -10 to $\frac{1}{2}$	Ni-Cd (1.2V, 3.6V, 4.8V)         NiCad²       2V       6V         0.8V-1.9V       1.6V-2.6V       4.8V-7.8V         ±5V       ±6V       ±25V         1mV / ±0.3%       5mV / ±0.2%         1mV       1mV         0.10-5mΩ       0.50-20mΩ         1uΩ / ±2.5% + ±15uΩ       1uΩ / ±2.5% + ±25uΩ

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

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

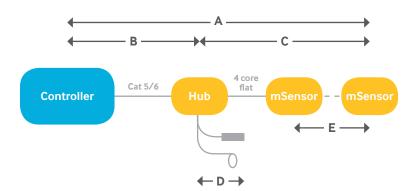
#### Hub

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

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

#### **Installation Dimensions**

Dimension	Maximum		Factory sizes		
	Metres	Feet	Metres	Feet	
Α	75	246	-	-	
В	50	164	3, 5, 10, 15	10, 16, 33, 49	
С	25	82	-	-	
D	15	49	3	10	
Е	-	-	0.2, 0.4, 0.7, 1.0	8, 16, 28, 39 inches	





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

Design rated to 750VDC. UL certified to 600Vdc

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

<sup>&</sup>lt;sup>4</sup>Power by block being monitored

<sup>\*</sup>Contact PowerShield for further details.