

Battery Management System

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, Temp String: Voltage, Current, Ripple Current Environment: Ambient Temperature, Humidity		Communication ports	2 x 1000Base-T Ethernet 2 x Expansion ports Expansion port options: RS485, Wi-Fi ¹	1 x 1000Base-T Ethernet 1 x USB 1 x Expansion ports - RS485 (optional) 1 x Wifi (optional) ¹
Battery types	Lead Acid (2V, 4V, 6V, 8V, 12V & 16V) Ni-Cd (1.2V, 3.6V)		Protocols	ModbusTCP, SNMP, HTTP and HTTPS ModbusRTU when RS485 card is fitted	
Battery charging regime	Float and Intermittent		Relay outputs	up to 12, 4 via Controller up to 8 via Hubs	Up to 5, 1 via Controller, up to 4 via Hubs
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		

¹Wi-Fi 802.11 dual band 2.4/5 GHz a/ac/b/g/n, security WPA2. * Contact PowerShield for further details.

Controller

	Controller LX	Controller MX		Controller LX	Controller MX
Service port	Front Ethernet port (1000Base-T)	USB 2.0 (Type B)	Dimensions Width Depth Height Weight	1U High 19" rack mount 430mm / 16.9 inches	250mm / 9.84 inches
Port 1	Back Ethernet port (1000Base-T)			265mm / 10.4 inches	155mm / 6.1 inches
Port 2	Expansion port - optional RS485			45mm / 1.8 inches	36mm / 1.4 inches
Port 3	Expansion port ¹ RS485 or Wi-Fi ¹	–	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
Display	16 x 2 character LCD	–	Power consumption	5W + 1.2W per Hub	1.5W + 1.2W per Hub
Front	USB data storage	SD Card data storage	Digital inputs	2 (Voltage free / Dry contact)	–
Relay outputs	4 SPDT	1 SPDT			
Rating Selectable	1A @ 30VDC, resistive* Any relay configurable to any alarm				
Configuration interface Minimum version	Web browser Chrome 51, Edge 15, Firefox 54, Safari 10.0		Memory	2GB RAM 16GB Flash	1GB RAM 8GB Flash

Link battery management software

Minimum PC system requirements¹

Processor	Intel i3-8100 or faster	RAM	8GB
Operating system	Windows 10 or 11 Windows Server 2012 R2, 2016, 2019 or 2022	Storage Monitor	20GB available hard disk space 1024 x 768 or 1366 x 768

¹Recommended for up to 5 Controller connections, with single seat operation. Refer to PowerShield for larger configurations. Maximum of 75 systems per Link instance recommended, contact PowerShield for more information

mSensor

Dual and Single Input

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	-10 to 80°C / 14 to 176 °F (all models) 0.1°C / ±1°C (all models)			
Range				
Resolution / accuracy				
Power supply current⁴	50mA	30mA	20mA	20mA
Dimensions	76mm x 26mm x 106mm (W x D x H) (all models)			
Weight	110 g / 0.24 lb (all models)			

¹Most common models, other models available on request

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

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

⁴Power by block being monitored

Design rated to 750VDC. UL certified to 600Vdc

Hub

Powered	24Vdc supplied by Controller	Digital inputs	1, voltage free
Power consumption²	1.2W	Relay outputs	1 SPDT
Current transducer input	2	Rating	1A @ 30VDC, resistive*
DC current	0 - 2000A	Selectable	Configurable to any alarm
Typical resolution¹	0.05A	Temperature	-10 to 80°C / 14 to 176°F
Accuracy	±1% + CT accuracy	Resolution	0.1°C / 0.18°F
Ripple current (AC)	True RMS	Accuracy	±1°C / 1.8°F
Typical resolution¹	0.5A	Relative humidity	0 - 100%
Accuracy	±1% + CT accuracy	Resolution	1.0%
Frequency range	45 - 1000Hz	Accuracy	±3% @ 25°C / 77 °F, 20% to 80% RH
Dimensions	120mm x 25mm x 107mm (W x D x H)	Weight	180 g / 0.40 lb

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

²With 1 CT connected

*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 in

