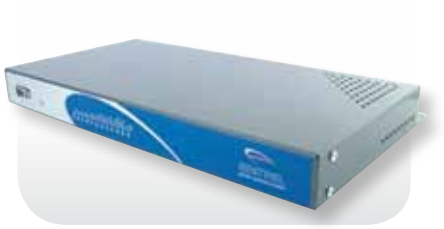
SENTINEL SYSTEM SPECIFICATION

Permanent monitoring for lead-acid and Ni-Cad batteries.

The PowerShield Sentinel system provides monitoring for an unlimited number of batteries. A complete solution of hardware and software ensures you get the information you need to confirm your batteries are operating within IEEE/IEC guidelines.



Sentinel Monitor

The monitor captures, processes and stores data from a range of sensors. This includes monoblock voltage, impedance and temperature, string voltage and current, plus ambient temperature.

Power supply	DC option: 48V – 110V DC, max 0.4A AC option: 110V – 230V AC (50/60Hz), max 0.15A
Battery inputs	up to 160 (scaleable to 1280)
Sensor type	Measurement Module or m-Senzor
String voltage	2V-600V
Current inputs	up to 5 (scaleable to 16)
Sensor type	Hall Effect
Measurement range	0A – 2000A
System accuracy	±1% + sensor accuracy
Maximum distance	15m / 50ft [1]
Temperature inputs (Ambient)	up to 5 (scaleable to 16)
Measurement range	0°C to 50°C/32F to 122F
System accuracy	±1°C / 1.8F
Maximum distance	15m/50ft
Digital inputs	4
Relay outputs	4
Rating	1.25A @ 24VDC
Selectable	Any relay configurable to any alarm
Memory	700kb
Physical dimensions	Width: 430mm / 17 inches (19" rack compatible) Depth: 270mm / 10.6 inches Height: 45mm / 1.8 inches (1U)
Operating temperature	0°C to 50°C/32F to 122F
Storage temperature	0°C to 70°C/32F to 158F
Service port	RS232
Com port 1 (Optional)	Primary monitoring connection with option of: Ethernet – 10Base-T RS232
Com port 2 (Optional)	Building management interface with option of: RS485 or RS232 interface Modbus ASCII or Modbus RTU protocol SNMP

PowerShield.

SENTINEL SYSTEM SPECIFICATION

m-Senzor

Dual and Single Input

Purpose	Measures individual monoblock voltage, impedance and temperature			
Application	VRLA and vented lead acid, Ni-Cad			
Nominal voltage	Ni-Cad	2V	6V	12V
Voltage measurement range	0.8V-1.9V	1.6V-2.6V	4.8V-7.8V	9.6V-15.6V
Accuracy	±0.3%	±0.3%	±0.2%	±0.2%
Resolution	0.001V	0.001V	0.005V	0.005V
Impedance measurement range	-	0.15-5.00mΩ	0.50-20.00mΩ	1.00-40.00mΩ
Accuracy	-	±2.5% ±15uΩ	±2.5% ±25uΩ	±2.5% ±25uΩ
Resolution	-	1uΩ	1uΩ	1uΩ
Temperature measurement range	-10°C to 70°C/32F to 158F			
Measurement location	Negative post of battery (Variable – Pilot to 1 per battery by demand)			
Maximum input voltage	±5V	±6V	±25V	±65V
Power supply current	50mA	30mA	18mA	18mA
Isolation	750V DC			
Power supply	Powered by monoblock being monitored			
Interface to Sentinel	PowerShield BBUS II (maximum 150m/492ft per BBUS port)			

4V, 8V m-Senzors also available. Contact PowerShield for full details.

Measurement Module

Dual and Single Input

Purpose	Measures individual monoblock voltage		
Application	VRLA and vented lead acid		
Nominal voltage	2V	6V	12V
Measurement range	1.6V-2.6V	4.8V-7.8V	9.6V-15.6V
Typical accuracy[2]	±0.25%	±0.2%	±0.2%
Maximum input voltage	6V	36V	36V
Power supply current	10mA	3mA	3mA
Isolation	600V DC		
Power supply	Powered by monoblocks being monitored		
Interface to Sentinel	PowerShield BBUS (maximum 100m/330ft per BBUS port)		

Link Battery Management Software

Recommended[3] minimum PC system requirements for PowerShield Link software:

Processor	Intel E5400 or better
Operating System	Windows XP Professional or later
RAM	2 GB
Hard Drive	Single SATA 2 hard drive or better. 160 GB
Monitor	1680 x 1050

[1] Greater distances may be used in a benign electrical environment.
[2] Measurement module accuracy is ±0.3% for temperature range of 0°C to 50°C / 32F to 122F.
[3] Recommended for up to 5 Sentinel sites, with single seat operation. Refer to PowerShield for larger configurations

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