

SENTINEL SYSTEM SPECIFICATION

Permanent monitoring for lead-acid batteries. Unlimited capacity with networking.

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-Sensor
String voltage	2V-600V
Current inputs	up to 5 (scaleable to 32)
Sensor type	Hall Effect
Signal	nominal $\pm 4V$ max $\pm 10V$
System accuracy	$\pm 1\%$ + sensor accuracy
Maximum distance	15m / 50ft ¹
Temperature inputs	up to 5 (scaleable to 32)
System accuracy	$\pm 1^\circ C$ / 1.8F
Measuring range	0°C to 50°C/32F to 122F
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 Modem – PSTN or proprietary leased line mode
Com port 2 (Optional)	Building management interface RS485 or RS232 interface Modbus ASCII or Modbus RTU protocol



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m-Senzor Dual or Single Input



Purpose	Measures monoblock voltage, impedance and temperature in a string			
Application	VRLA and vented lead acid			
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 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
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 and 16V m-Senzors also available. Contact PowerShield for full details.

Measurement Module Dual or Single Input



Purpose	Measures monoblock voltage in a string		
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)		

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.

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