

## Sentinel SuperCap-PS (Model WS-SuperCap-PS)

Super-Capacitor Power Supply

### Data Sheet

### Description

The WS-SuperCap-PS is a bank of super-capacitors designed to be charged from solar panels and to deliver backup power to the Wireless Sentinel series of devices or other instruments.

The bank of capacitors is feed from a solar panel that is used to charge the capacitors during day time. The energy stored by the capacitors is about 900mWh, and the voltage output available are: 5V, 7.2V, 12V and 19.5V. Additional bank of capacitors can be connected in parallel to store more energy if needed. The WS-SuperCap-PS can be fitted in an explosion proof enclosure suitable to be installed in a Class 1 Div. 1 (ATEX zone 1) hazardous location, and also there are models available to be installed in an IP66 plastic enclosure for non hazardous locations.

Three cable entries are available for field wiring. Also one magnetic switch is included to power ON/OFF the output without opening the enclosure.

The WS-SuperCap-PS is typically used to power wireless devices installed outdoor where sun light is available, eliminating the need of batteries and the associated cost of replacing the batteries, as the capacitors do not degrade significantly with the number of charging/discharging cycles.

### Features

- Suitable to be installed outdoor/indoor (IP66 enclosure).
- Models available to be installed in Hazardous locations where flammable gas is present (Class 1 Div. 1 or ATEX zone 1).
- Powered from solar panels.
- Up to 500,000 charge/discharge cycles.
- Possibility of arranging banks in series or parallel to provide more energy storing capacity and/or output voltage.



- Dual output voltages.
- Short circuit protected output.
- Suitable to be powered from intrinsically safe solar panels.

### Typical applications

- Deployment of solar powered wireless and battery less sensors and Remote Terminal Units (RTU) for data acquisition and control for industrial plants in general.
- Implementing wireless Fire and Gas detection system for outdoor installation.
- Level monitoring and alarming in tank farms.
- Well heads control and supervision for Oil & Gas.

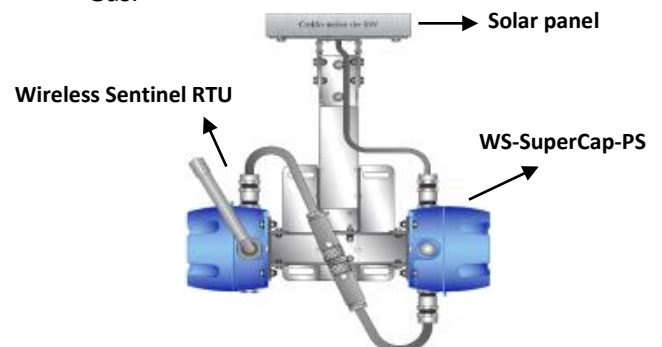


Figure 1. Typical arrangement

A typical arrangement is shown in figure 1. In this case an intrinsically safe solar panel, charges the supercapacitors bank, which in turn power the Wireless Sentinel RTU.

## Specifications

**Table 1.- WS-SuperCap-PS specifications**

Item	Description
Maximum Input Voltage	45Vdc (Reverse polarity protected)
Rated operating input voltage	18 Vdc
Maximum input current (@ rated input voltage)	180 mA
Output voltage 1	5, 7.2, 12, 19.5Vdc. Other voltages available upon request.
Output voltage 2	0 to 9.7 Vdc non regulated directly from supercapacitors
Maximum current at Output 1	250 mA (Short circuit protected)
Maximum current at Output 2	250 mA (Short circuit protected)
Maximum Energy Stored	900 mWh
Typical charging time from a 5W, 18Vdc solar panel	3 hours
Temperature range (°C)	-40 to 60
Overall Dimensions	143.5 mm (Height) x 133.4 mm (Width) x 123.5 (Depth)
Weight (kg)	<ul style="list-style-type: none"> <li>- 2.7 (Explosion proof housing)</li> <li>- 0.95 (Plastic housing)</li> </ul>
Housing material	<ul style="list-style-type: none"> <li>- Copper free aluminum (Explosion proof housing)</li> <li>- UL94V-2 polycarbonate plastic with UV stabilizers (Plastic housing)</li> </ul>
Ingress Protection	IP66 / Nema 4X
Conduit Connections	Three ¾" NPT
Window Size	85.0mm diameter
Housing color	<ul style="list-style-type: none"> <li>- Blue (Explosion proof housing)</li> <li>- Gray (Plastic housing)</li> </ul>

Explosion proof housing approvals	<ul style="list-style-type: none"> <li>- <b>FM, CSA:</b> Explosion-proof for Class I, Division 1, Groups B, C and D; dust ignition-proof for Class II/III, Division 1, Groups E, F and G, hazardous (classified) locations, indoors and outdoors (Type 4X/IP66)</li> <li>- <b>ATEX:</b> II 2 G D, Ex d IIC, Ex tD A21, IP68, Ta = -40°C to +85°C</li> <li>- <b>IEC EX:</b> Ex d IIC, Ex A21 tD, IP68, Ta = -40°C to +85°C</li> </ul>
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## Warranty

This device carries a three (3) years warranty against defect on materials and workmanship. The warranty is invalidated if the device is used under conditions other than those stated in this data sheet and other device related documentation.

During warranty period, manufacturer replaces or repairs for free all its products that do not operate because of production fault.

Risks and costs of transportation and packaging as well as other contingencies concerning product return to manufacturer are carried out by the customer.

Warranty period is 36 months since product is shipped to customer.

# Sentinel SuperCap-PS

Super-Capacitor Power Supply



S-SPS-1401-07-001 Rev.1

## Ordering information and support

### Ordering information:

Model: WS-SuperCap-PS

Part	Description
3001	WS-SuperCap-PS with explosion proof enclosure
3002	WS-SuperCap-PS with plastic enclosure

## Support

MCL Control USA, Inc.  
13652 Breton Ridge Drive, Suite A  
Houston, Texas 77070, USA  
E-mail: [jcalderon@mclcontrol.com](mailto:jcalderon@mclcontrol.com)  
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