

POWER GUIDE

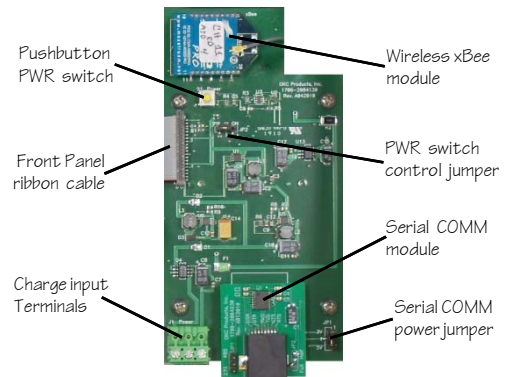


SunSmart® with vTagNet™ Technology

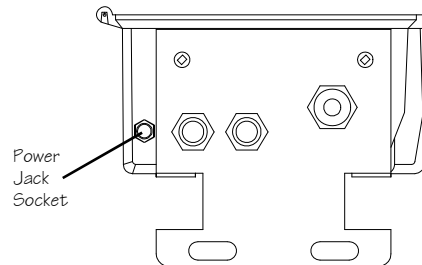
Non-Incendive, Intrinsically Safe for Use in
Class 1 Division 1 and Class 1 Division 2
Group C and Group D Hazardous Locations

U.S. Patent No.'s 6,194,793 and 6,462,507
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Power Assembly

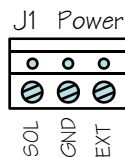


Power Jack Plug-In Location



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Power Connector



Removable 3-Terminal Block

SOL – GND Solar panel charger input for charging rechargeable Nimh AA-Cell battery pack. Use with less than 6 Vdc charging sources.

EXT – GND External power input for use as an alternate to internal AA-Cell battery pack. Use with greater than 6 Vdc power sources.

The SOL (<6Vdc) and the EXT (>6Vdc) terminals are NOT tied together and provide two independent power options. The SOL (<6Vdc) input is for use with unregulated power sources such as solar panels or a unregulated 6Vdc wall socket charger. Since solar panels are unregulated voltage sources, either a 6, 8, 10 or 12 Vdc solar panel may be used with the SOL (<6 Vdc) input, provided the maximum solar panel wattage is less than 10 Watts.

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SOL Power Input

The SOL (<6 Vdc) input terminal is intended to be used with an external solar panel to charge up to four Nimh (Nickel Metal Hydride) rechargeable, batteries in the B1/B2 2xAA battery packs. The SOL (<6 Vdc) input is connected to the external power jack connector located on the bottom, left side of the controller to allow easy hook up to an external solar panel.

Solar panels are unregulated power sources, thus either a 6, 8, 10 or 12 Vdc solar panel may be used with the SOL (<6 Vdc) input, provided the maximum solar panel wattage rating is less than 10 Watts.

Battery charging using the SOL (<6Vdc) input is only active when the controller is powered On. Turning the controller power Off will also turn off charging.

Caution!

When using the SOL (<6Vdc) charger input, limit the input power source to less than 10 Watts and/or less than +6 Vdc. Batteries must be installed to power the controller with an external power source connected to the SOL (<6 Vdc) input.

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EXT. Power Input

The EXT (>6 Vdc) power input terminal is intended to be used with an alternate power source ranging from +4.5Vdc to +20Vdc. Since the EXT (>6 Vdc) input is voltage regulated, it may be used with or without the AA-Cell batteries installed in the internal B1 and B2 battery holders .

With the AA-Cell batteries removed, a power source connected to the EXT (>6 Vdc) input does not have to supply a battery charging current and will only need to supply the power to operate the controller.

The EXT (>6Vdc) input voltage is regulated to keep the battery voltage from exceeding 2.85Vdc. This will maintain the 2.4Vdc AA-Cell battery pack at about 80% full charge without risking over charge.

The EXT (>6Vdc) power input is particularly useful when the controller is used in conjunction with other on-site equipment that already contains a sizable battery power reserve, such as a SCADA or EFM system. Removing the internal AA-cell batteries and powering the controller from nearby equipment draws the minimum power (75mW) and eliminates the need and cost for an additional solar panel.

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Battery Charge Control

Battery charge control is only associated with the SOL (<6 Vdc) power input. Charge current is turned Off when the battery pack reaches 3.1Vdc, and is turned back On when battery voltage drops to 2.8Vdc.

When the battery voltage drops to 2.2Vdc, a Low Battery control will shut power Off until the battery voltage returns to an acceptable level. When the battery voltage returns above the Low Battery level, the controller is automatically powered back On to resume normal operation.

EVS System

The patented Enhanced Valve Switching (EVS) system generates and stores the power to reliably switch the solenoid valves independent of the battery or external power system. This advanced feature guarantees reliable operation of solenoid valve(s) irrespective of the battery charge status or adverse battery conditions resulting from high and low temperature extremes.

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Approved Solar Panels

PumpMate 2010 units bearing the CSA Intrinsic Safety label must use approved external power sources or power jack accessories otherwise intrinsic safety status may be compromised.

Approved solar panels include:

<u>OKC Number</u>	<u>Mfg. Part No.</u>	<u>Power</u>
9200-0490560	20584-A	2 Watts
9200-0501200	126006SC6-6	6 Watts

Approved Batteries

PumpMate 2010 units bearing the CSA Intrinsic Safety label must use approved AA-Cell Nimh batteries, otherwise intrinsic safety status may be compromised.

Approved AA-Cell batteries include:

<u>Manufacturer</u>	<u>Mfg. Part No.</u>	<u>Capacity Rating</u>
Energizer	NH15-2500-VP	2.4V@2500mAh
Sanyo	HR3U2500	2.4V@2500mAh
PowerEx	MHRAA4-B	2.4V@2500mAh

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Accessories

<i>Part Number</i>	<i>Accessory Description</i>
2154-1242252	2xAA Battery Holder. Nickel plated battery contacts. Replace in sets of 2 each.
4008-0122500	Nimh AA-Cell Battery (2.5 A-Hr) Use two per B1/B2 battery pack. 1.2 Vdc @ 2500 mA-Hr capacity.
4022-1206300	Wall Socket Utility Charger. 6 Vdc @ 300 mA charge rate. Connects directly to Power Jack.
6016-PJ22206	Power Jack Cable w/ alligator clips. 6 ft., 2-Conductor #22 AWG wire. White stripe marks positive lead.
9200-0490560	Ext. 2 W Solar Panel w/ stand. 4.1 Vdc @ 520 mA charging. 6 ft. Power Jack cable provided
9200-0501200	Ext. 6 W Solar Panel w/ stand. 5.0 Vdc @ 1200 mA charging. 6 ft. Power Jack cable provided.

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