



POWER GUIDE

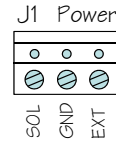


SunSmart® with vTagNet™ Technology

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 Connector



Removable 3-Terminal Block

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

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

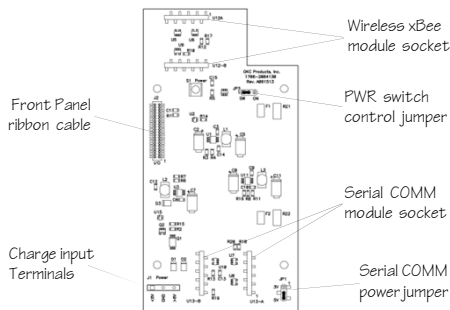
Caution!

The SOL (<6 Vdc) input is intended for solar panel and low power, unregulated power sources only. As an alternative, the EXT (>6 Vdc) input, without internal batteries installed, may be used with any power source with output voltages up to +20Vdc.

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Power Assembly



Power Jack Socket Location



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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 a external power jack connector located on the bottom, left side of the controller to allow easy hook up to an external solar panel for charging.

The SOL (<6 Vdc) input and the EXT (>6 Vdc) input terminals are NOT tied together and provide two independent power inputs. The SOL (<6 Vdc) input is intended for use with unregulated power sources such as a solar panel or unregulated +6 Vdc wall socket charger. Solar panels are unregulated voltage 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 is less than 10 Watts.

Caution!

When using the SOL charger input, limit the input power source to 8 Watts maximum or less than +6 Vdc.

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EXT. Power Input

The Ext (>6 Vdc) power input terminal is typically used with the AA-Cell batteries removed from the internal B1 and B2 battery packs. This allows for an alternate power source ranging from +4.5 Vdc to +20 Vdc to be used to power the controller without increasing the controller's power drain above its nominal 75 mW level. The Ext (>6 Vdc) power input is regulated at +2.8 Vdc to maintain battery voltage at a "Standby Charge Level".

Battery Charge Control

Battery full charge control is implemented on the SOL (<6 Vdc) power input only. When the battery pack reaches the +3.1 Vdc full charge level, input charging current is turned Off until battery voltage drops to +2.8 Vdc, then turns back On to charge the batteries back to a +3.1 Vdc full charge level.

NOTE:

The SOL (<6V) input charging is **only active** while the PumpMate power is turned ON, whereas the EXT (> 6Vdc) power input charging is always active regardless of whether PumpMate power is turned ON or OFF.

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CSA Certification

The PumpMate 2010 controller, when used with approved accessories, is certified Intrinsically Safe for use in Class 1, Division 1 and Class 1, Division 2, Group C and Group D Hazardous Locations.

Battery Charging Sources

CAUTION!

Use only manufacturer supplied accessories with the External Power Jack when rechargeable batteries are installed.

CSA Approval

PumpMate units bearing the CSA Intrinsic Safety label must use only CSA approved power jack accessories. Power accessories include:

<u>Part Number</u>	<u>Manufacturer</u>	<u>Mfg. Part No.</u>
3709-0501250	SunWize 6W	1025W5V1.35A
3709-0501770	Solar Made 8W	SGF-8W-3
4008-0122500	Tenergy 2500	10320 AA Nimh
4022-1206300	Sceptre WSC	PD6300PL06

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EVS System

The patented Enhanced Valve Switching (EVS) system generates and stores the power to reliably switch the solenoid valves independent of battery or external power system voltage. This advanced feature guarantees reliable operation of solenoid valve(s) irrespective of the battery charge status or marginal battery performance resulting from temperature extremes and over/under charging.

Low Voltage

When the battery voltage drops to a low +2.2 Vdc state, the PumpMate controller is automatically shut down (turned OFF) until the battery voltage returns to an acceptable +2.4 Vdc or higher level. When the battery voltage returns to an acceptable level, the PumpMate controller will automatically power back up and return to its normal operating status. The solenoid valve's EVS system will also detect the pending low voltage state before a full power shut-down occurs and, under program control, shifts solenoid valves to a Safe Valve shut-down status. S Safe Valve shut-down status may be programmed for a valve On or Valve Off control.

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Accessories

<u>Part Number</u>	<u>Accessory Description</u>
2154-1242252	2xAA Battery Holder. (BP1/BP2) 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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 info@siteresourcesltd.com

 Toll Free: 1-855-948-9050

 www.siteresourcesltd.com



Site Resources Ltd.

#108 11360 - 255 Street,
Acheson, Alberta
T7X 6C9