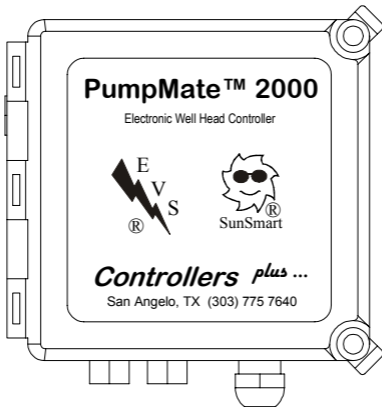


POWER GUIDE

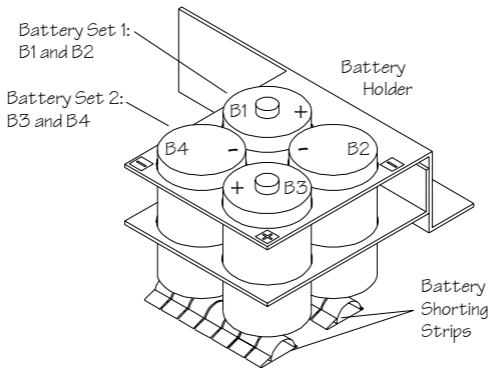


Flexible and reliable power system

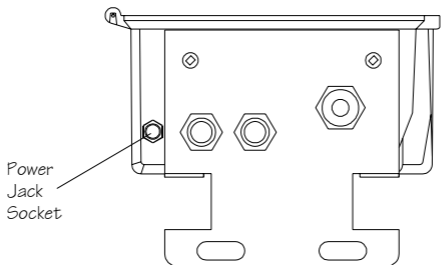
Internal Two or Four D-Cell Battery Holder
Convenient External Power Jack Connector

U.S. Patent Nos. 6,194,793 and 6,462,507
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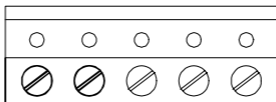
Battery Assembly



Power Jack Plug-In Location



Power Connector



+Vo gnd Ext gnd Sun

Removable 5-Terminal Block

- +Vo – gnd Voltage output used to power a plunger arrival sensor or pressure transducers. Normally set for +5 Vdc power supply.
- Ext – gnd External power input for use as an alternate to internal D-Cell batteries. Remove alkaline batteries when used.
- Sun – gnd Solar panel charger input for charging rechargeable Nicd or Nimh D-Cells. Remove alkaline batteries when used.

Caution!

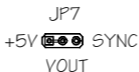
Sun and Ext voltage inputs are limited to 1 Watt maximum power dissipation. Limit hook-up of battery charging sources to the range of 4.5 Vdc up to a maximum of 16 Vdc.

Output Voltage

The +Vo voltage output terminal serves as a multi-function output for re-directing the Ext input voltage, providing a +5 Vdc output, and routing the SYNC output to the +Vo terminal.

JP3
Vout / Ext This jumper position routes the Ext input voltage to +Vo for powering external sensors.

JP3
Vout / +5V This jumper position provides the regulated +5 Vdc to +Vo for powering external sensors.



JP7
Vout / SYNC This jumper routes either the +5 Vdc or the SYNC (synchronization) logic signal to the +Vo terminal when the JP3 jumper is in the Vout/+5 position.

Caution!

The maximum +5V output current is 100 mA. The SYNC signal is a +5 Vdc active low logic output with a maximum current sink/source capability of 25 mA.

Sun Input

The Sun input terminal is primarily intended to be used with an external solar panel for charging Nicd (Nickel Cadmium) or Nimh (Nickel Metal Hydride) rechargeable, D-Cell batteries in the B1 and B2 battery holder positions. The Sun 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 for charging.

The Sun input and the Ext input terminals are tied together through blocking diodes to provide dual power inputs to the voltage and current regulated external power input and charge circuits. These circuits allow direct hook up to 12 Vdc auto-lighter connectors and to 12 -14 Vdc solar panels. Only two (2) rechargeable, D-Cell batteries are needed in the B1 and B2 battery holder positions for normal operation.

Caution!

When using the Sun charger input for D-Cell battery charging, be sure to remove any alkaline D-Cell batteries from the internal battery holder and replace them with the rechargeable batteries.

Ext. Input

The Ext power input terminal is typically used with all D-Cell batteries (B1, B2, B3 and B4) removed from the internal battery holder. This configuration allows an alternate power source ranging from 4.5 Vdc to 24 Vdc to power the controller without increasing the controller's power drain above the normal 8 mW level.

One example of an alternate power scheme is to remove the internal D-Cell battery holder and to replace it with a rechargeable 6 Vdc or 12 Vdc battery. Connect the battery to the Ext-Gnd input terminals. Change the JP3 jumper to the Vout/+Vo position and hook up an external, diode protected solar panel to the +Vo terminal to charge the battery.

With the internal D-Cell batteries removed, the Ext, Sun and +Vo terminals allow a wide variety of alternate power schemes to be implemented. See the 'Output Voltage' section of this manual for a detailed description of the JP3 jumper settings to implement various power configurations.

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.

Low Voltage

The SunSmart Technology and EVS system allow reliable controller operation down to where the batteries are dead. In practice, the controller will start up and operate with a voltage as low as 1.8 Vdc. To provide a warning of an impending low battery condition, the LCD display will show a "LOW" battery message when the battery voltage drops to 2.0 Vdc or lower.

When the battery voltage drops to 1.8 Vdc or lower, the controller will shut-in the well and stay shut-in until the critically low battery condition is cleared. The "LOW" battery message should give several weeks warning before well shut-in occurs.

Accessories

<i>Part Number</i>	<i>Accessory Description</i>
2529-9751502	Battery Shorting Strip. Nickel plated w/ adhesive back. Replace in sets of 2 each.
4002-015010D	Alkaline D-Cell Battery (14 A-Hr). Use 4 each in B1, B2, B3 and B4 for 12 to 18 months operation.
4003-012004D	Nicd D-Cell Battery (1.2 A-Hr). Use 2 each in B1 and B2 only with external solar panel.
4003-012004D	Nicd D-Cell Battery (4.0 A-Hr). Use 2 each in B1 and B2 only with external solar panel.
6016-PJ22206	Power Jack Cable w/ alligator clips. 6 ft., 2-Conductor #22 AWG wire. White stripe marks positive lead.
9200-0852251	Ext. 2 W Solar Panel w/ stand. 8.5 Vdc @ 225 mA charging. 6 ft. Power Jack cable provided.