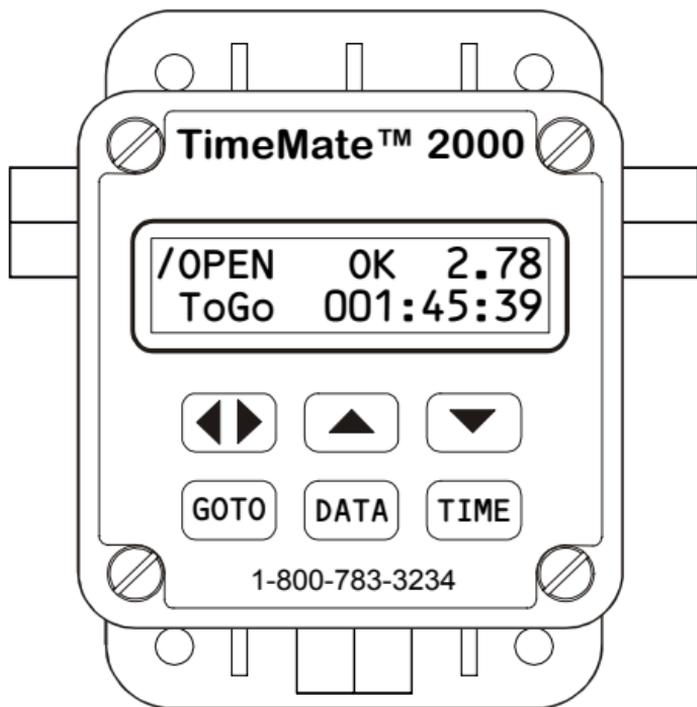


Power Guide

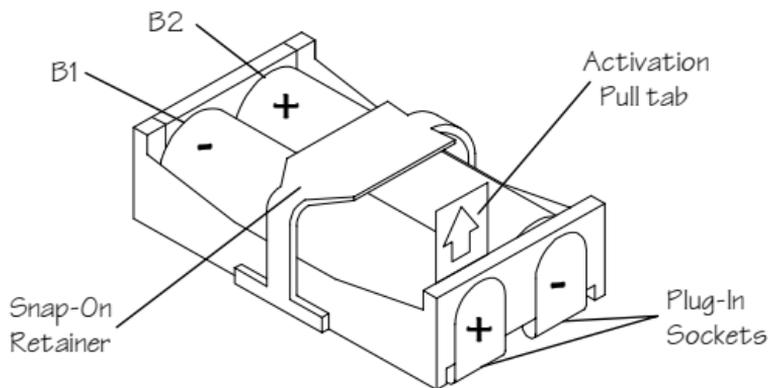


Flexible and reliable power system

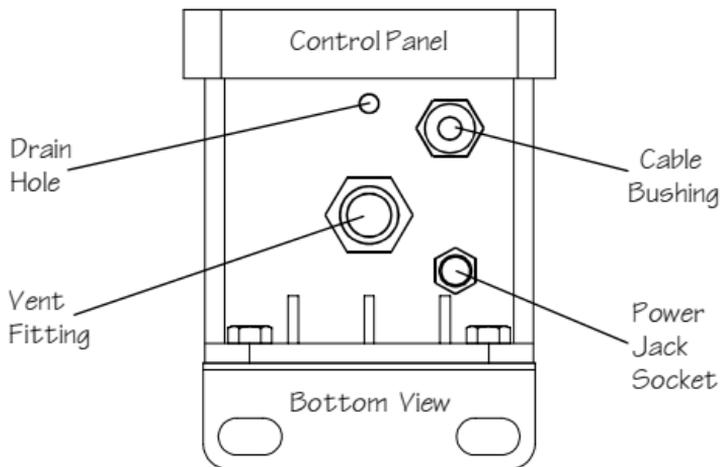
Internal Rechargeable AA Battery Holder
Convenient Power Jack Connector

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



Power Jack Plug-In Location



Battery Holder Notes

The battery holder accepts two rechargeable AA batteries and features springless, nickel plated battery contacts and snap-on battery retainer. The battery holder is replaceable via two mounting screws (under the batteries) and gold plated connection sockets located to the right and under the battery holder.

The AA batteries may be Nicd (Nickel Cadmium) or Nimh (Nickel Metal Hydride) cells. When using Nicd cells, best performance is obtained with 1100 mA or greater battery capacity AA cells. All new AA cells should be initially charged using a commercial AA battery charger.

To replace the AA batteries, first remove the removable 7-terminal screw block. Spread the retainer legs and remove the battery retainer. Push each battery from the positive terminal (+) toward the negative terminal (-) and pull up on the battery to remove it. Observe battery polarity when inserting new batteries.

CSA Approval

Controllers bearing the CSA Intrinsic Safety Approval label must use only CSA approved AA batteries. CSA approved AA batteries include:

<i>Part Number</i>	<i>Manufacturer</i>	<i>Mfg. Part No.</i>	<i>Capacity</i>
4008-0121100	BYD	D-AA1000	1000 mAh
4008-0121500	Power Sonic	PS-NH1250AL	1250 mAh
4008-0121300	BYD	MH-AA1300A	1300 mAh
4008-0121700	Sanyo	HR3U	1700 mAh

Power Jack Socket

The power jack socket provides a convenient method for connecting other power sources to the controller to charge the internal AA batteries or operate the controller with the internal AA batteries removed. The power jack socket is on the bottom of the controller.

The power jack socket is wired to connect to the external socket on the controller's control panel just below the solar socket. Both the control panel's solar and external sockets are wired together allowing either the built-in solar panel cable or the external power jack cable to be inserted into either socket.

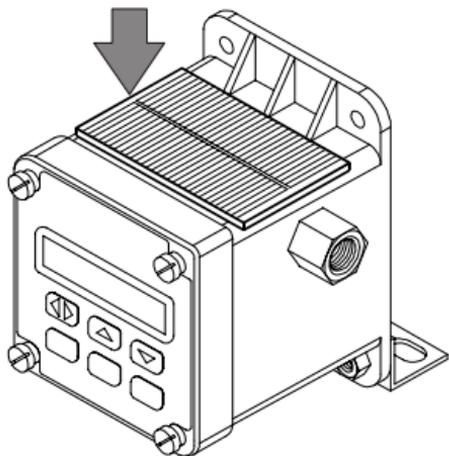
Several accessories are available for use with the power jack socket including a 2 W external solar panel, a 115 Vac wall socket charger, an auto lighter plug charger, and a generic power connection cable with alligator clips. All these accessories use a mating, molded power jack plug and cable with a white stripe to show the positive (+) connection wire.

CSA Approval

Controllers bearing the CSA Intrinsic Safety Approval label must use only CSA approved power jack accessories. Approved power jack accessories include:

<i>Part Number</i>	<i>Manufacturer</i>	<i>Mfg. Part No.</i>	<i>Power</i>
9200-0852251	Solar World	SPE 225-6	2 Watts

Two-Season Solar Panel

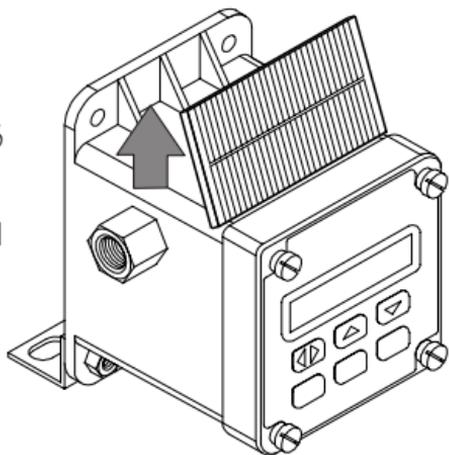


Spring – Summer – Fall
March 16 – November 14

Press down on the solar panel to lock it into the horizontal position.

Winter Charging
November 15 – March 15

Pull up on the solar panel to allow it to spring to the vertical 45° position.



Power Options

The controller's power input voltage and current regulation system allow a wide variety of power options to be used. For supplemental battery charging, any external power source from 4.5 to 16 Vdc may be used including direct connection to a 12 Vdc automotive cigarette lighter socket, an external 2 W solar panel, an external 6 Vdc battery, or a 115 Vac wall socket charger. The manufacturer's 115 Vac wall socket charger can be connected to the controller for an indefinite period without damaging the AA rechargeable batteries. The built-in solar panel supplements and works with any power source connected to the controller through the external power jack socket.

Rechargeable Batteries Removed

With the internal rechargeable AA batteries removed from the battery holder, any power source from 4.5 to 24 Vdc may be used for normal operation. The controller will even start up and operate normally in direct sunlight using just the built-in solar panel.

CSA Approval

Controllers bearing the CSA Intrinsic Safety Approval label must use only CSA approved external power sources or power jack accessories or the intrinsic safety status may be compromised.

EVS System

The patented Enhanced Valve Switching (EVS) system generates and stores the power to reliably switch the solenoid valve independent of the battery or an external power system. This advanced feature guarantees reliable valve operation irrespective of the battery charge status or battery conditions resulting from high and low temperature extremes. With the EVS system, you can say “Good Bye!” to the many battery related problems that have plagued well head controllers for decades.

Low Voltage

The SunSmart® and EVS systems allow reliable operation down to where the batteries are dead. To provide a warning of a low battery condition, a “LOW” battery message will be displayed 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 low battery condition is cleared. The “LOW” battery message should give one or more weeks warning before shut-in occurs. If the battery voltage is above 2.0 Vdc, the display will show a battery “OK” message.

The nominal 2-AA cell battery voltage is 2.4 Vdc. During routine operation, battery voltages ranging from 2.6 Vdc to 2.8 Vdc are considered normal for this controller.

Accessories

<i>Part Number</i>	<i>Accessory Description</i>
2154-1242252	2 x AA Battery Holder. Nickel plated w/ springless contacts. Uses #2-56 hold-down screws.
4008-0121500 CSA Approved	Nimh AA Battery (1250 mA-Hr). Uses 2 each in AA battery holder. Recommend charging before use.
4015-1250300	4 x AA Auto Lighter Charger. One hour Nimh battery charging. Plugs into auto lighter socket.
4022-PD7510A	115 Vac Wall Socket Charger. 6 ft. molded power jack cable. Output 3 Vdc @ 300 mA (.90 W).
4160-2075010	Control Panel Weather Guard. No screws – slides over panel top. Blocks freezing rain and strong sun.
6016-PJ22206	Power Jack Cable w/ alligator clips. 6 ft. 2-Conductor #22 AWG wire. White stripe marks positive lead.
9200-0852251 CSA Approved	Ext. 2 W Solar Panel w/ stand. 8.5 Vdc @ 225 mA charging. 6 ft. Power Jack cable provided.