



FAQ

Quick Fundamentals of Solar Gate Operators and Application Ideas

This guide is intended to help you determine if a solar operator is right for your application and how to properly specify and install the system.

FAQ #1: When is Solar appropriate?

Solar Pros

- Does not need line voltage
- Works very well in sunny locations or limited duty applications
- Can add solar panels in increments as application requires
- Can still use many accessories
- Tax breaks for solar portion of install leads to lower effective cost to customer

Solar Cons

- Limited power availability results in limited operation or features
- High duty cycles or power requirements may require auxiliary battery pack provisions
- Power hampered even further by clouds or extensive night operation

Tip #1: Know your power requirements and availability

Just like your household money budget, there are two parts to the gate operators power budget – how much you take in and can save/store, and how much you can spend.

FAQ #2: What affects the amount of energy I will spend?

- The larger the gate is and the more often you move the gate, the more energy it will consume.
- Swing gates take less energy to move than comparably sized slide gates.

Tip #2: Usually, smaller, lower duty cycle, swing gate applications are much better suited towards solar applications

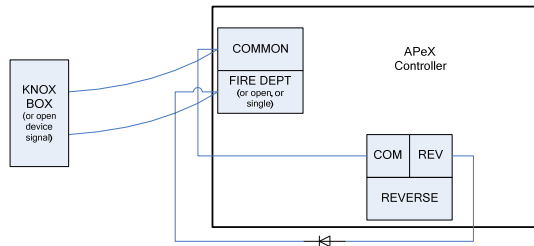
Tip #3: Use low current draw accessories for items that need to be continuously powered.

Tip #4: Use the APeX controller Low Power (LP) mode, to further reduce the current draw of the operator. (see APeX Controller LP Mode Function Table)

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Idea #1: When a fire department knox box is required for the low power mode installation, you can connect the fire department terminal input and the reversing input with a diode on one leg of the connection.



Idea #2: On a dual gate application, you only need to learn in the MegaCode transmitter into one of the two controllers. The MegaCode radio transmission will cause the controller with the learned transmitter to wake up and start opening, the other controller will only wake up, but will receive the open command communication from the first controller and start opening.

Idea #3: For use as a free exit loop, there are several ways you can issue an open command from a loop while the operator is asleep.

Idea #3a: Use a low power loop detector. Connect the relay output on the detector to the open input on the APeX controller and then diode connect that to the reversing input per Idea #1 above.

Idea #3b: For a free exit using a loop and a plug in loop detector: Use a plug-in loop detector with two channel outputs (Linear plug in loop detectors, EDI LMA-1500, or LMA-1500-LP) and activate the second channel to an output on vehicle entry (DIP 4 and 5 to ON). Plug the detector into the reversing loop input (this is the only one powered during sleep mode). Connect a wire between the lug next to the detector to the open input. Upon loop detection, this will wake up the controller as well as issue an open command.





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Idea #3c: Attach a MegaCode transmitter with wires jumpered from one of the transmitter buttons (i.e. Linear P/N ACP00933) to the relay output of the detector.

Idea #4: For controlled entry using wired entry devices, you can put a reversing loop near the entry device (keypad, etc) and have the entry device powered by the operator. When the operator goes into low power mode, the entry device will not be powered. When a vehicle approaches the entry device, it will be sensed by the reversing loop, thus waking up the operator and powering the entry device (and any other accessories attached like photo eyes) for normal (battery powered) use. Remember to account for the current draw of the entry device when awake during any energy and power calculations.

Idea #5: Photo eyes can be used on a solar operator in LP mode; they just aren't powered while the operator is idle. Remember to account for the current draw of the photo eyes when awake during any energy and power calculations.

FAQ #3: What affects the amount of energy I can take in and store?

This is determined by the size of the panel, and the amount of sun you get. Another often overlooked factor in how much energy you can take in a store is the charge control circuit. Energy coming from the panel needs to be controlled so it can properly charge the batteries. The Linear APeX gate controller includes a battery charger that properly controls the charge process in order to make the batteries last as long as possible. The amount of energy that you can store is determined primarily by the size of your batteries.

For more detailed information, please see the full publication (Fundamentals of Solar Gate Operators and Application Ideas).