



Multiple Power Supply Installation with RB5 Relay

To maintain sufficient voltage and amperage to support the PTI Remote Units at a site, you may need to install multiple PTI Remote Power Supplies. Although PTI recommends that all power supplies for a site be installed together in the office or in a central maintenance room, this is not always feasible. Multiple power supplies may be installed anywhere along a line of PTI Remotes. If it becomes necessary to install multiple power supplies, it must be done properly in order to allow one person to reset all of the power supplies by pressing one reset button on the main power supply. This requires the use of an Altronix RB5 Relay Board. If the multiple power supplies are not tied together in this fashion, it will be very difficult to fully reset the site for troubleshooting or site maintenance at a later date. Please read the entire document before beginning and be sure to follow all steps in order. Planning and installing the wiring of a site is a process that requires a high degree of technical knowledge, PTI recommends that this be done by a knowledgeable, trained professional. If you have questions, please contact our Technical Support Department by telephone at (480) 941-1513 or by email at support@ptiaccess.com. If you would like to purchase an Altronix RB5 Relay, contact our Business Development Department by telephone at (800) 331-6224 or by email at sales@ptiaccess.com.

1. Do not power other electronics such as maglocks, cameras, door strikes, gate operators, or sirens from the same power supply that PTI Remote Units are connected to and do not connect the power supplies for these items in-line with the power supplies for PTI Remote Units. These should be powered separately as these items can cause power spikes, under powering and locking up the PTI Remote Units. Warning – Incorrect installation of electrical components can result in damage to electronics as well as personal injury. Warning – Cross-wiring the positive and negative on the DC part of the system will damage the electronics.
2. Multiple PTI Remote Power Supplies of different amperage ratings may be tied together, but the effect is not cumulative. The PTI Remote Power Supplies will still only output 12VDC at the stated amperage rating. Also, the total current draw of the remotes powered by a specific power supply in the line still should not exceed 75% of the amperage rating on that individual supply.
3. In Figure I, note that a secondary power supply has been added to this system. This can be done anywhere along the line after the first remote on the line but before the last remote in the line. Be sure to calculate voltage drop to verify that there will be sufficient voltage (12V minimum) for each PTI remote. Refer to the Voltage Drop Calculation document.
4. The Main power supply should still be installed as instructed in the Power Supply Installation Manual. The Main Power Supply should be in the main office or in a central maintenance room that will be accessible at a later date. As many secondary power supplies as necessary may be installed elsewhere in the system by using the instructions in this document. Secondary Power Supplies are still installed similarly to the Main Power Supply with the exception of a few wiring differences. Secondary Power Supplies still must be installed inside, sheltered from weather. If Secondary Power Supplies are installed, note the location of all other power supplies on the inside lid of the main power supply using a sticker or permanent marker to allow for service later. All Power Supplies must be installed near a 120V wall outlet and plugged in using the transformer provided. Never bring 120VAC directly into the power supply box, as this will damage the electronics.
5. Mount the RB5 Relay board inside the power supply box or in a separate junction box next to the power supply using the foam adhesive strip provided. If you are installing it inside the power supply box, mount it in such a way that it does not interfere with the wiring or the ability to open and close the case. Be sure that the board is not touching metal as it can short out the electronics.
6. Bring the system wires coming from the last remote in line into the box. The RB5 is made to run on 6VDC or 12VDC. Do not exceed these voltages or you will damage the electronics.
 - a. If there is 12VDC – 15VDC, make sure that the jumper is open.
 - b. If there is 6VDC – 9VDC coming into the board, close the jumper at the bottom of the board.
7. Please note, all connections to terminals on the RB5 or Power Supply circuit boards should be made using spade connectors. Do not wrap wires around the screw terminals. All connections from one wire to another should be made using wire nuts or crimp connectors and wrapped in electrical tape to protect the splice. See Correct Splicing Techniques Document.
8. Connect the incoming positive wire (coming from the remote closest to the main power supply) to the POS+ terminal on the RB5 circuit board using a spade connector.
9. Connect the output positive wire (going to the next remote in line farther from the main power supply) to the NO (Normally Open) terminal on the RB5 circuit board using a spade connector. This positive wire then goes out to the terminal block on the next PTI remote unit in line.
10. Connect an additional positive wire to the C terminal next to the NEG– terminal on the RB5 circuit board using a spade connector. Connect the other end of this additional positive wire to the output positive wire from the secondary Power Supply using a wire nut.

Multiple Power Supply Installation with RB5 Relay (Page 2)

- Connect the incoming negative wire to the output negative wire in the secondary power supply using a wire nut. Also, connect the output negative wire (going to the next remote in line farther from the main power supply) to the black negative wire coming from the DC- terminal on the secondary power supply circuit board using the same wire nut. Connect an additional negative wire from the secondary power supply DC- Negative terminal on the secondary power supply circuit board to the NEG- terminal on the RB5 circuit board using a spade connector. This wire should be a minimum of 18 awg. This creates a common ground reference preventing a ground fault. See Figure II for an enlarged view of the wiring.

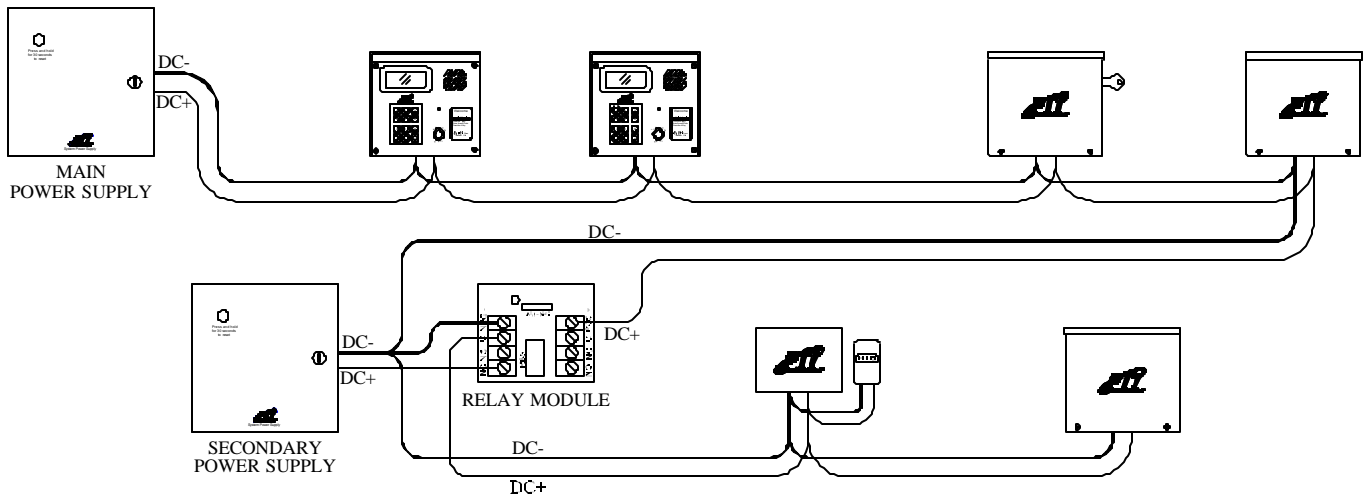


Figure I

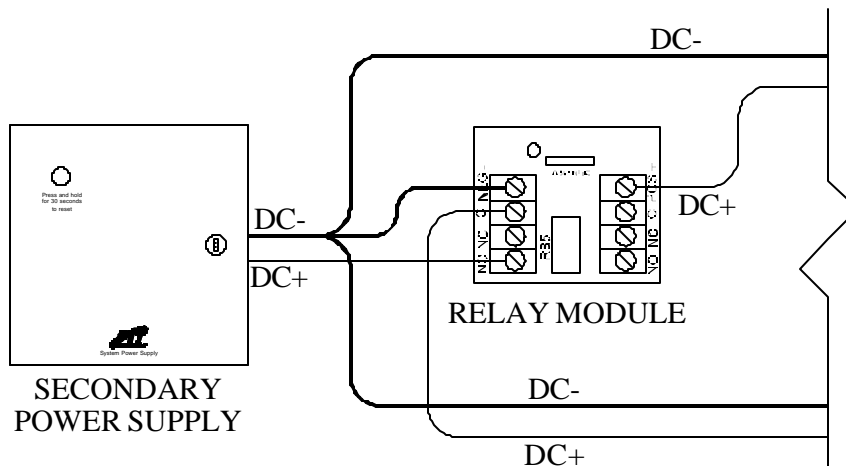


Figure II

We strongly recommend that installation and setup of any PTI equipment be done by a certified, licensed, qualified, and competent person. PTI Integrated Systems can recommend local dealers and installers, but it is up to the customer to verify their qualifications and negotiate any pricing or contracts unless PTI has been specifically contracted in writing to do so for the customer. These guidelines are subject to change without notice. With any setup or configuration, some troubleshooting and adjustment of the configuration may be required. This will differ with every installation depending on many outside and site-specific variables. This troubleshooting and configuration may include purchasing additional equipment. In no circumstances will PTI Integrated Systems be responsible for any damages either incidental or consequential based on these recommendations. All installation of electronics and electrical systems must be in compliance with local, municipal, state, and National Electrical Code.

Warning – Incorrect installation of electrical components can result in damage to electronics as well as personal injury.
 Warning – Cross-wiring the positive and negative on the DC part of the system will damage the electronics.