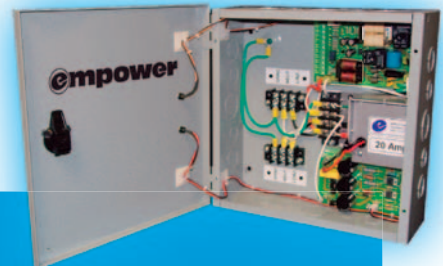


# mpower

## *EM510*

### *Install Guide*



Remote Controllable  
with **SURGEX** Surge Protection

## **Installation**

The Empower EM510 is contained in a NEMA enclosure that is to be attached to a wall near the breaker panel. Attach the unit with suitable screws through the holes provided in the enclosure.

## **120 Volt Connections**

The EM510 is rated at a load capacity of 20 Amps and shall be wired only by qualified Electricians using 12 Ga. conductors as specified in Article 310 of the 1999 National Electric Code, as set forth in Table 310-13. Any type of conductor suitable for use in wet or dry locations such as (but not limited to) THHN, THHW, THW, THWN, or TW shall be considered acceptable if local Code permits. The circuit to which the product is connected must be protected by a 20 Amp circuit breaker.

**\* In order for the SurgeX circuitry to function properly, the unit must be installed exactly as stated below. (Unit will not function with out a Neutral connection)**

- Connect the wires from the electrical service (line) to the terminal block labeled '**Line**'. Black to **Line**; White to **Neutral**; Ground to **Ground**
- Connect the wires to the equipment (load) to the lower terminal block labeled '**Load**'. Black to **Load**; White to **Neutral**; Ground to **Ground**

## **Indicator Lights**

The EM510 has three indicator lights located on the front . The blue "Pure Power" light indicates that power is applied to the unit. The green "Diagnostics" light indicates that power is applied to the unit and the internal surge protection circuitry is fully functional. The yellow "Remote" light indicates that the remote control is active and AC power is supplied to the "LOAD" terminal block.

## **Remote Control Connections**

**CAUTION: Do not repeatedly switch the unit (off—on—off—on) with a heavy load connected. The ICE™ circuitry absorbs the inrush energy each time the unit is powered up and may overheat if this is done too many times in a short period of time. Wait one minute between repeated switching.**

Control of the 120V AC power can be accomplished by using a switch (contact closure), another Empower product such as the EM2100, or by an applied voltage (5 to 30 volts dc). When using a switch, choose a switch with gold contacts for the best long-term reliability. Connections are made to the green terminal block on the printed circuit board at the top of the unit. Never solder (tin) wires before inserting in a terminal block – solder creeps and you will eventually have loose connections!

**Either:**

- Connect switch or relay contacts to the two terminals labeled **CONT CLOS**.

**Or:**

- Connect an applied DC voltage with the positive connected to **APPL V+** and the negative connected to **APPL V-**.

### **Indicator LED Connections**

Two optional LED outputs are available. One indicates that AC power is applied to the unit, and the second indicates the remote turn-on status. 10mA of current is available for each LED, but you **must use a series resistor** for each LED. For most LEDs a 1K resistor will provide suitable brightness. If you need less brightness use a larger value of resistor, and if you need more brightness use a smaller value of resistor. Connections are made to the green terminal block near the top of the unit. Be sure to observe the polarity of the LEDs before connecting the wires. LEDs will not illuminate if the + and – are reversed.

- Connect the Power LED to **PWR LED+** and **PWR LED-**
- Connect the Remote Status LED to **REM LED+** and **REM LED-**

### **Auxiliary Relay Contacts**

The auxiliary relay contacts, labeled **REL CONT** on the terminal block, provide a way to cascade units or to provide confirmation feedback to a central controller. When the AC power is on, the aux relay contacts are closed. There is a ½ second delay before the aux relay closes which gives time for the Inrush Current Elimination (ICE™) circuit to operate. This short delay in combination with the ICE™ makes it unnecessary to sequence on several large loads (such as amplifiers) because of inrush current. EM510s, when cascaded, can turn on a bank of large amplifiers with no inrush current, and therefore no risk of blowing a circuit breaker.

To cascade two or more EM510s, connect the aux relay contacts of one unit to the contact closure input of the next unit.

To provide confirmation feedback, connect the aux relay contacts to an input on the central controller.

The relay contacts are rated for 1 amp at 30 V DC.