SECURITRON POWER SUPPLY MODEL: BACS-24-10
OPERATION AND INSTALLATION INSTRUCTIONS

1. DESCRIPTION

The part number expresses first the **output voltage** (24 VAC) and finally the **maximum output current capacity** (the model BACS-24-10 can supply up to 10 amps at 24 volts). The unit consists of a transformer and CCS-8 control board to which all installer connections are made. The board accomplishes several functions. It provides terminals for line voltage input and low voltage AC outputs on eight separate output circuits, so that a number of devices can be powered separately. Each control circuit has an individual slide switch to turn it on and off and an LED to annunciate its status. The BACS-24-10 is **Class 2 rated** when installed following these instructions.

2. SAFETY

Two hazards are present in the supply. Line voltage input presents a high voltage shock hazard and the low voltage AC output, represents a high energy (current) hazard. To insure safety, note first that the cover LED is on at any time that the supply is dangerous. **When the cover LED is on, the supply enclosure must only be opened by trained service personnel.** Other safety features include line voltage and low voltage AC fuses and the fact that the line voltage input terminals are under a warning guard plate. Finally, the 24 VAC outputs of the supply are all on individual 2.5 Amp Polyswitch protected circuits to protect against high energy hazard.

3. OPERATING CHARACTERISTICS

3.1 LINE VOLTAGE INPUT

110-120 VAC should be input to terminals "H", "N", "G", as shown in the drawing. This is fed to the input of the transformer through factory made connections. The line voltage current drawn by the power supply module will be approximately 5 amps.

Note: if the suffix “H” appears in the part number (i.e. BACSH-24-10), the unit requires 220 VAC input. Apart from this change, all other characteristics are the same.

3.2 CENTRAL RELEASE TERMINALS

If the unit has power, the LED on the cover will illuminate. One leg of 24VAC will then be on terminal F1. Connection must then be made between terminals F1 and F2 before this power is routed to the "P" terminals. **Terminals F1 and F2 therefore constitute an central release point.** NC contacts can be connected across terminals F1 and F2 to immediately cut power to all devices controlled by the supply. Make sure that the switching capability of any switch or relay contacts placed across F1 and F2 can handle the full output load of the power supply**.** If you do not require any central release capability, jumper a wire between F1 and F2. **Make sure this wire is of sufficient gauge** (thickness) to conduct the full output current of the supply.

Terminal FA is a free parking terminal used for other applications.

3.3 OUTPUT TERMINALS

The CCS-8 board has three types of output terminals. **“P” terminals** are on individual circuit breakers and carry 24 VAC on them (when the central release terminals are closed). **The “H” terminal** carries the full low voltage 24 VAC output current of the supply on a single terminal (when F1 and F2 are closed). Use the “H” terminal for applications where the device being powered requires more than 2 Amps of current. The Polyswitch circuit breakers cannot reliably supply more than 2 Amps of current without tripping and **you should never wire multiple “P” terminals in parallel** to supply increased current. This bypasses the safety role of the Polyswitch breakers and also does not work very well. When two “P” terminals are wired in parallel, current carrying capacity is not doubled. The current conducted through the two terminals will not be identical so one switch will break first and then the second will immediately trip. Always use the “H” terminal for applications requiring high current. Finally, the **“R” terminals** are all for the return leg of the low voltage AC output and are in common.

3.4 FUSING AND CIRCUIT POLYSWITCHES

An **AC fuse, “DC” fuse** and eight **Polyswitches** are present on the board. The AC fuse is on the hot 120 VAC input and protects against an internal short in the power supply transformer.

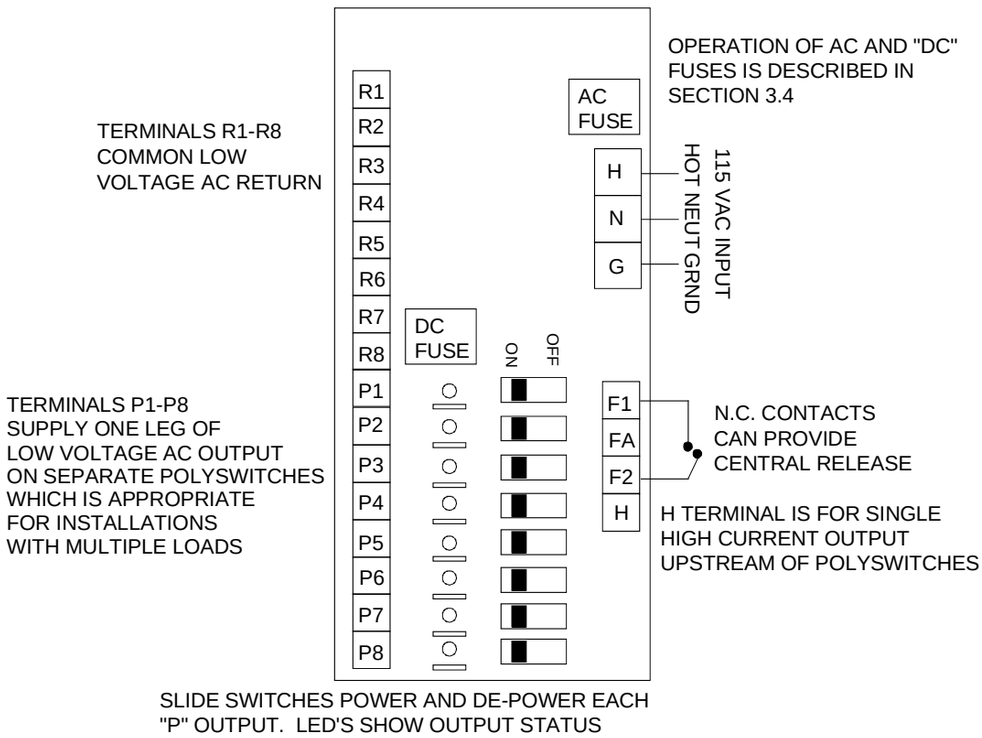
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The “DC” fuse protects the full low voltage AC output of the supply prior to it being divided through the Polyswitches to the individual “P” outputs. This fuse is “mis-labeled” because the same circuit board is used in Securitron’s DC battery charging supplies. The Polyswitch is a special type of automatic circuit breaker. If one of the Polyswitches receives an overload, it will rapidly cut the current down to a small leakage current (about 100 mA) which will **allow the rest of the installation to continue to operate**. Note that each “P” output includes a slide switch and LED. The slide switch can cut power to its respective output and the LED monitors when the output is powered. In the event of one of the Polyswitches tripping, the associated LED will go out. If all the LED’s go out, one of the fuses has tripped. **Always replace any blown fuse with the same rated fuse.**

The “DC” fuse should only trip if there is a short circuit in the supply itself (downstream short circuits or overloads will trip individual Polyswitches). This could occur if the F1-H terminal block somehow contacts the AC return (R terminals). Alternately, if you are not using the “P” terminals for downstream wiring but are using the “H” terminal to operate an individual, high current, downstream load, a short circuit or overload could trip the DC fuse.

When an individual Polyswitch trips, there is a **reset procedure**. **First, correct the overload condition. Next, all current must be removed from the Polyswitch for a period of 10 seconds**. You do this by simply moving the associated slide switch to the “off” position. Then, return the slide switch to “on” and operation will return to normal. If you haven’t corrected the overload, naturally the Polyswitch will trip again but you must always de-power and re-power the Polyswitch to reset it.

FIG. 1: POWER SUPPLY WIRING WITH CCS-8 BOARD



4. SLAVE BOARD

Your power supply may include more than one CCS-8 board. If so, the other boards will be CCB type "slave" boards whose only purpose is to provide eight additional "P" and "R" terminals. The boards will not be fully populated as the functions of AC input, emergency release and “DC” and AC fusing are only needed on the "master" board. The eight additional “P” terminals naturally constitute individual outputs protected by Polyswitches and including zone LED’s and slide switches.

5. APPROVALS

All Securitron power supplies are tested by various agencies. Consult the label inside the supply to be advised of current approval status.

6. MAGNACARE® LIFETIME REPLACEMENT WARRANTY

For warranty information visit: www.securitron.com/en/site/securitron/About/MagnaCare-Warranty/