SECURITRON POWER SUPPLY MODEL: BACS-12-20
OPERATION AND INSTALLATION INSTRUCTIONS

1. DESCRIPTION

The part number expresses first the **output voltage** (12 VAC) and finally the **maximum output current capacity** (the model BACS-12-20 can supply up to 20 amps at 12 volts). The unit consists of a transformer, CCS-8 control board and CCB-8 "slave" board to which all installer connections are made. The CCS-8 board accomplishes several functions. It provides terminals for line voltage input and low voltage AC outputs on eight separate output circuits (the slave board adds eight more), 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-12-20 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 a line voltage fuse and the fact that the line voltage input terminals are under a warning guard plate. Finally, the 12 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-12-20), the unit requires 220 VAC input. Apart from this change, all other characteristics are the same.

3.2 OUTPUT TERMINALS

The CCS-8 board has two types of output terminals. First, the **"P" terminals** are on individual circuit breakers and carry 12 VAC on them. 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. Second, the **"R" terminals** are all for the return leg of the low voltage AC output and are in common.

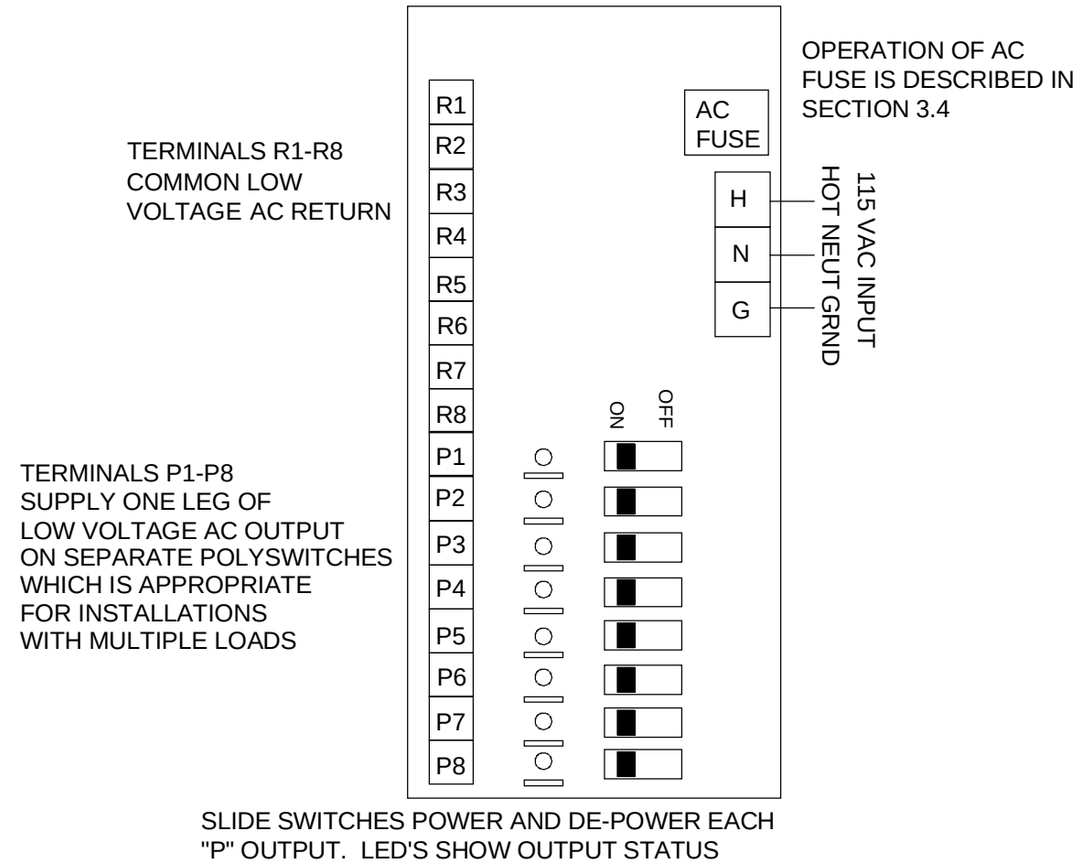
3.3 FUSING AND CIRCUIT POLYSWITCHES

An **AC 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. 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, the AC fuse has tripped (or line voltage has been interrupted to the supply from some other cause). **Always replace any blown fuse with the same rated 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 includes a second CCS-8 board which is configured as a CCB type "slave" board whose only purpose is to provide eight additional "P" and "R" terminals. This is because eight Polyswitched outputs are not sufficient to supply the full rated 20 Amp output of the supply. The eight additional “P” terminals constitute additional individual protected outputs which include 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/