

Ocean Engineering Technical Data Sheet

SACII ADJUSTMENT FOR LOW CURRENT MAIN LAMPS (20- to 40-WATTS)

This adjustment procedure is required if your main light is SACII-controlled and has one of the following lamps:

- ◆ 1.9A CC8
- ◆ 2.03A C8
- ◆ 35-Watt Tungsten-Halogen
- ◆ 3A CC8
- ◆ 3.05A C8

Since the SACII was designed, set, and shipped from the factory to control higher current lamps, you need to lower the SACII's current monitoring reference point by performing the following adjustment procedure at room temperature:

Adjustment Procedure: (refer to the attached diagram)

- ◆ Ensure wire jumper is connected between TB1-2 and TB1-3.
- ◆ Ensure switch S1 is in the "1" position on SACII.
- ◆ Peel back or puncture through ID label on top of SACII to gain access to test point (TP1) and threshold adjust trimmer potentiometer (R4). They are both located under the ID label near TB2 (the hi-power three-terminal port). The test point, TP1, is physically the tip of a stainless steel shaft.

(The newer "C" version SACII's have TP1 and R4 at slightly different locations: access hole for TP1 is located under the blue dot between the markings "2 BATTERY(-)" and "3 LAMPCHGR(F)"; access hole for R4 is located just below the letter "U" in the word GUARD in the marking "U.S. COAST GUARD". The blue/silver mylar label must be carefully peeled back starting at corner nearest the TB2-3 (LAMPCHGR(F)) terminal to gain access. Firmly press the label back on after the adjustment is made).

- ◆ Manually rotate the lampchanger turret to position five (5) and install a single 0.77A lamp there. Ensure there is no lamp installed in position six (6).
- ◆ Ensure nothing is connected to terminals TB1-5 or TB1-6 on the SACII.
- ◆ Set the power supply to exactly 12.0VDC and connect +12VDC power to the SACII (at TB1-1) and the Lampchanger (at L).
- ◆ Connect the (-) terminal of the lampchanger to TB2-1 of the SACII.
- ◆ Connect negative side of the power supply (12VDC return) to TB2-2 of the SACII.

- ◆ The lamp should light up and remain on.

(If the SACII times out and turns off the lamp at any time before the new threshold is set, simply apply a momentary ground to TB1-6 to reset the SACII and continue. Or, if you have the newer "C" version SACII, simply press the RESET button to reset the SACII and continue).

- ◆ Check the DC voltage at TP1 with a multimeter. You should read 0VDC (logic LO) as measured between TP1 and TB2-2 (BATTERY(-)). 0VDC at TP1 indicates that the SACII is actively timing out and will switch to auxiliary mode in 100 seconds due to insufficient lamp current since the 0.77 amp lamp current is below the factory-set 1.5 amp threshold.

(If the voltage at TP1 is about 11VDC (logic HI) and the lamp is on, R4 was probably fiddled with since leaving the factory. A peeled back or punctured label is a good indication that it probably was. If this is the case, simply turn R4 about fifteen (15) turns CCW and continue on with the next step. Note: TP1 will register a logic HI also when the SACII has timed out, turned the lamp off, and switched over to the auxiliary mode).

- ◆ While monitoring the voltage at TP1, slowly and carefully adjust R4 (R4 is a multi-turn pot) in the **CW** direction with a small screwdriver until voltage just jumps to about 11VDC (logic HI) and stop immediately. If you went too fast and missed the trip point (or just to double check), turn R4 CCW until logic goes back to LO and then very slowly approach the trip point again by adjusting R4 **CW** and stop immediately after logic goes to HI (about 11VDC). Finally, to set the new threshold, carefully tweak R4 one-quarter turn (90 degrees) in the **CW** direction and stop. The current threshold is now set to just under 0.77 amps. This setting should work very well for lamp/flasher combos down to 20 Watts.

- ◆ Ensure the lamp remains on even after a full two minutes.

- ◆ To check proper operation of SACII and the new sensing threshold, twist and release the lampchanger's circular solenoid plate to manually advance the lampchanger turret to the sixth and final position. After two minutes, manually rotate the turret back to the fifth position; if the lamp does not light up, the SACII is functioning correctly.

- ◆ Reset the SACII by applying a momentary ground to TB1-6 and ensure the lamp lights up and remains on even after a full two minutes.

- ◆ Shut off the power supply and dismantle the test circuit.

- ◆ Remove the jumper between TB1-2 and TB1-3.

- ◆ Tag your newly adjusted SACII with a stick-on label to warn of/identify new current threshold setting (0.77A). End of procedure.

Comments:

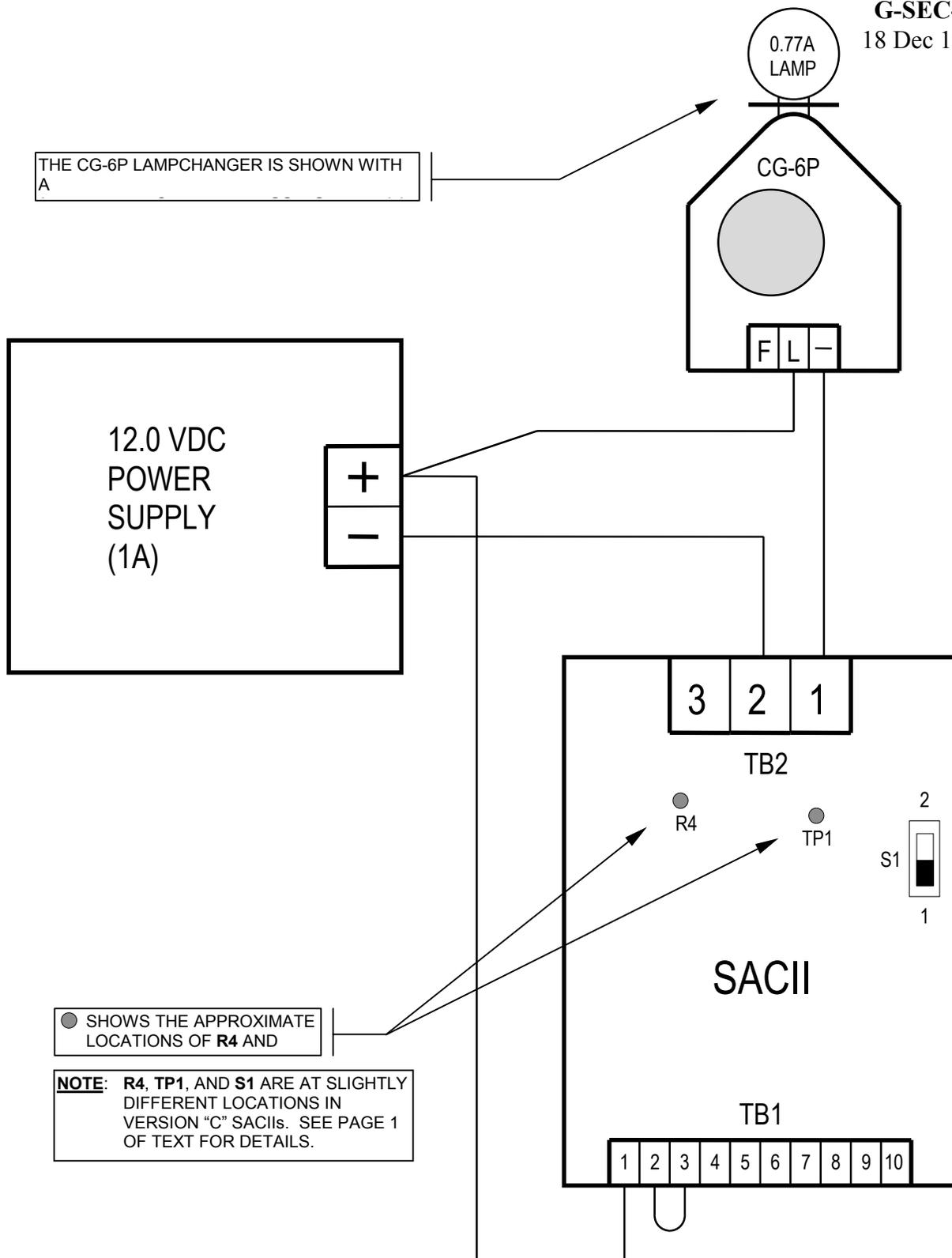
Prior to installation at an operational aid, install this newly adjusted SACII in a mock solar lighthouse light signal system, and check for proper operation of your light system by sweeping through a full range of supply voltages and lampchanger positions. More specifically, test the system's operation at 11, 12, 13, 14, 15, and 16 volts DC and ensure the main light remains on in the lampchanger's first position even after a full two minutes at each of these voltage settings. At each voltage setting, manually remove the lamp from the first position (but BE CAREFUL, lamp will be HOT!!!) and ensure the flasher senses lamp failure and advances the lampchanger. Then, manually advance the lampchanger turret to the sixth (and final) position and again ensure the main light remains on even after a full two minutes. Finally, carefully remove the lamp (lamp will be HOT!!!) from the lampchanger's sixth position and ensure the system switches over to the emergency light in about 100 seconds.

For installation at the lighthouse, ensure you have a properly functioning fixed flasher. Use the flasher to perform lampchanging, **NOT** the SACII (in other words, there should be nothing connected to TB2-3 of the SACII). If daylight control of the light is required, it should be done by the SACII and not the flasher: connect a Type L DLC between TB1-2 and TB1-5 of the SACII.

Note: While not recommended, it is **possible** to use this Lamp/SACII setup configuration with 1.15A, 1.0A and 0.77A main lamps under specific conditions:

- The SACII **must** be from the most recently manufactured lot (Mfgr: Process Automation Company -- check for mfgr name on Description Sheet, blue label, "C" prefix in serial no., and red reset button)
- For 0.77A lamps, **substitute a 0.55A lamp** into the setup procedure described above.

For further information or assistance with this procedure, the G-SEC-2A Signal & Power Team POC is Mr. Kam Agi, 202-267-1872 between 0630 and 1600 Eastern Time; Kagi@comdt.uscg.mil.



SACII CURRENT-THRESHOLD SET-UP DIAGRAM