

Installing Three-Wire Start Kit 300-3167 in 40 to 125 Ampere OT Series Transfer Switches (Spec G and Later Series Only)

These instructions give the procedure for installing a 3-Wire Start kit in a Spec G (or later) OT transfer switch. Because the transfer switch presents a severe shock hazard, this kit is to be installed by technically qualified personnel only.

⚠WARNING *The transfer switch presents a shock hazard that can cause severe personal injury or death unless all AC power is removed. Before beginning the installation, remove all sources of AC power. If a generator set provides emergency power, move the generator set operation selector switch to Stop, disconnect AC line power, disconnect the battery charger from its AC power source, and disconnect the starting battery (negative [-] lead first).*

1. Turn the operation selector switch to Stop. (The selector switch is located on the genera-

tor set control panel on two-wire start systems and inside the cabinet door on three-wire start systems.)

Disconnect all sources of AC power from the transfer switch.

If there is an external battery charger, disconnect it from its AC power source. Then disconnect the set starting battery (negative [-] lead first).

⚠WARNING *Ignition of explosive battery gases can cause severe personal injury. Do not smoke or cause any spark, arc, or flame while servicing batteries.*

2. Remove the Power Sentry cover. The Power Sentry circuit boards are secured by additional screws and will not fall out when the four corner screws (that secure the cover) are removed.

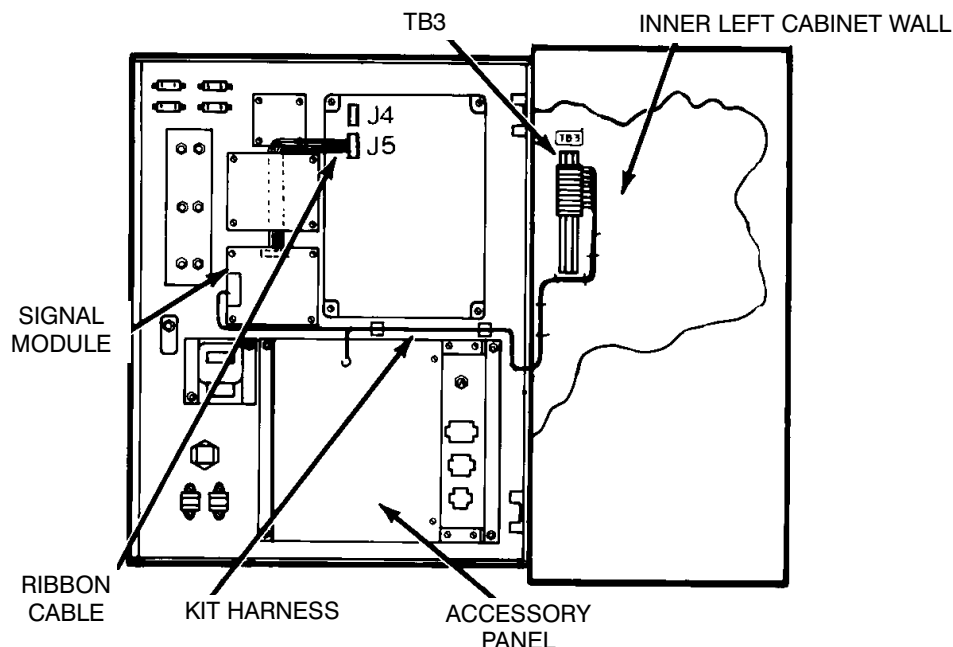


FIGURE 1. COMPONENT LOCATION

3. Carefully plug one end of the kit ribbon cable into J10 on the kit circuit board.
4. Mount the circuit board and the cover as shown in Figures 1 and 2.
5. Route the ribbon cable under the Signal Module (if present), bend it at a 90° angle, and carefully plug the free end into J5 on the Power Sentry mother board (Figure 1).
6. Reinstall the Power Sentry cover.
7. Install the terminal block, rail, end plate (1), and end brackets (2) using the hex head nuts (2) provided (Figure 3).
8. Install the terminal tags (1 to 10) as shown in Figure 3.
9. Plug the kit wiring harness into J11 on the 3-Wire Start module.
10. Remove the accessory panel cover.
11. Route the kit wiring harness along the main harness as shown in Figure 1.
12. Connect the kit harness leads (as marked) to the matching terminals on TB3 and to the ground connector on the accessory control panel.

Refer to sheets 1 and 5 of the schematic and wiring diagram package (shipped with the switch). The schematic and wiring diagram package is also available through your distributor.

If an optional battery charger is present, move the charger B+ connection from TB2-3 to TB3-1.

13. Reinstall the accessory panel cover.
14. Tie all wires neatly into the main wiring harness using the cable ties provided.
15. Check and install terminal block jumpers:
 - a. On 3-wire start systems that use a switching ground, remove the jumper between TB2-2 and TB2-B+. Place a jumper from TB2-GND to TB2-2. Make no other connections to TB2; terminals GND, 2, B+, and RMT.
 - b. On 3-wire start systems that use a switching B+, leave the jumper between TB2-2 and TB2-B+. (Check to make sure that there is one.) Place a jumper from TB2-B+ to TB3-1. Make no other connections to TB2; terminals GND, 2, B+, and RMT.

To determine whether your generator set has a switching ground or a switching B+ remote start system, measure the DC voltage from the Start terminal to the Ground terminal. (The starting battery must be connected.) If you measure 12 VDC, it is a switching ground system. If you measure 0 VDC, it is a switching B+ system.

⚠ WARNING *Improper wiring of start/stop connections can result in personal injury or equipment damage. Carefully follow all wiring instructions and make no other connections to TB2; terminals GND, 2, B+, and RMT.*

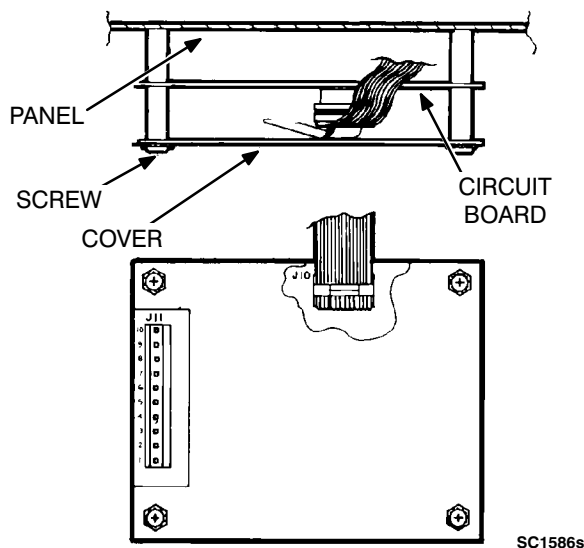


FIGURE 2. CIRCUIT BOARD

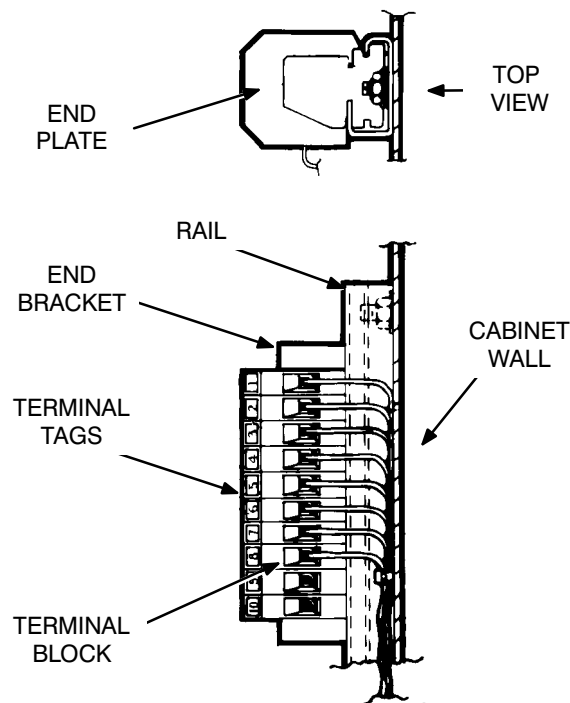


FIGURE 3. TERMINAL BLOCK

16. Connect terminals 1, 2, 3, and 4 to terminals on the generator set, as shown in Figure 4. With diesel sets that use the preheat circuit, connect terminal 5 on TB3 to the preheat terminal on the generator set control.

Use 18 AWG wire (larger for longer runs). Resistance must not exceed 0.5 ohm per line. Stranded wire is recommended.

17. Terminals 6, 7, and 8 of TB3 (Figure 4) are for connection to the overcrank alarm contacts. These (form C) contacts are rated for 4 amperes at 125 VAC or 3 amperes at 30 VDC and are provided for customer use.

18. The 3-Wire Start module has two adjustable timers.

The Preheat timer delays the start signal to allow preheating the generator set. The Preheat timer's range of adjustment is 0 to 60 seconds.

Make sure that the Preheat Delay On-Off switch is in the correct position.

The Overcrank timer limits the time that the generator set starter is allowed to operate. The Overcrank timer's range of adjustment is 0 to 120 seconds.

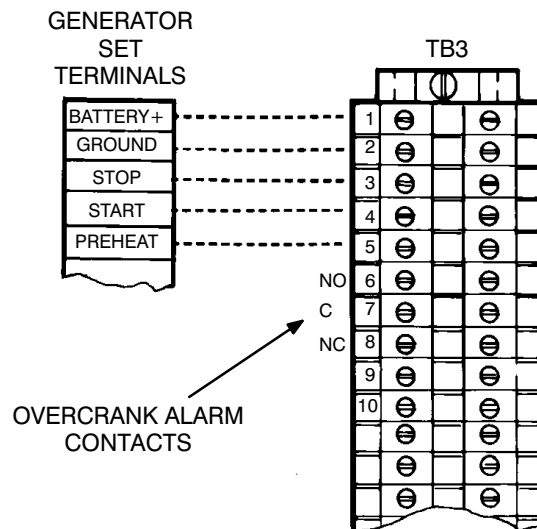
To set the timers, align the slots on the potentiometers with the desired markings on the faceplate (Figure 5).

19. Place the Auto/Handcrank/Stop switch on the 3-Wire Start module in the Stop position.

20. Connect the generator set starting battery (negative [-] lead last). If applicable, connect the battery charger to its AC power source.

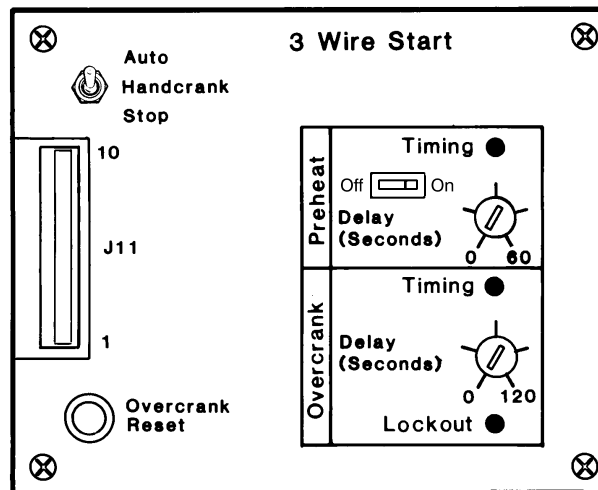
⚠ WARNING *Ignition of explosive battery gases can cause severe personal injury. Do not smoke or cause any arc, spark, or flame while servicing batteries.*

21. Connect AC line power to the transfer switch.
22. Check the system for proper operation as described in the installation manual.
23. For normal automatic operation, place the Auto/Handcrank/Stop switch on the 3-Wire Start module in the Auto position.



SC1578-2s

FIGURE 4. 3-WIRE START CONNECTIONS



SC1573-2s

FIGURE 5. 3-WIRE START MODULE