**“TS” Traffic Signal Transfer Switches**

**One/Two Circuit Transfer Switches**

**INSTALLATION AND OPERATING INSTRUCTIONS**

**INSTALLATION OF OUTDOOR / TS MODELS:**

**ONE- AND TWO-POLE AND TRAFFIC SIGNAL TRANSFER SWITCHES:**

1. Remove front cover on outdoor units OR open front and bottom covers on traffic signal units.
2. Remove and place aside the two screws that secure interior assembly to the back box.
3. Lift and pull out interior assembly.
4. Mount back box in desired position using four (4) mounting holes in back.
   - NOTE: If you are using KO on the back of the box for wiring, the desired KO size must be removed before mounting the box, and hole must be aligned with hole in the desired location. Installer must follow standard wiring practices to “bush” and seal around this hole at this time.
5. After mounting the box and sealing around the mounting screws, install the proper fittings and conduit to the KO’s (if used) located on the side of the box.
6. Pull in the proper size wire for the application. Pull in approx. 6” of wire into the back box. NOTE: For 20 amp units, use #12 wire. For 30 amp units, use #10 wire. For 50 amp units, use #8 THHN.
7. Insert the White wire directly into the inlet mounted on the interior assembly and tighten screw OR connect it to the white lead provided using a wire connector. Using wire nuts, connect the Green ground wires together. Connect the RED LINE/utility lead(s) to the incoming HOT lead using a wirenut. Connect the BLACK wire(s) to the LOAD wire(s) using a wirenut.
8. Fold wires neatly, and push interior assembly into back box by hooking the top over the studs on the inside of the box and secure the bottom with the two screws removed earlier. Unit is now ready for operation.
9. After testing or operation, replace and secure cover on the unit.

**WIRING TO THE LOAD CENTER CIRCUIT BREAKER(S):**

1. For 1-pole models, there should be four wires coming into the circuit breaker (CB) box from the transfer switch. For 2-pole models, there should be 6 wires coming into the circuit breaker box from the transfer switch.
2. Turn OFF the circuit breaker(s) you want to connect to the transfer switch.
3. Loosen the screw on the CB, and remove the wire(s) from the circuit breaker.
4. Insert the RED wire(s) from the transfer switch into the breaker(s). NOTE: On two-pole models, installer can either connect one two-pole circuit such as a well pump, OR connect two separate single-pole circuits, such as a furnace and refrigerator circuit. Be aware that if one of the two separate circuits trips, this will disable both circuits.
5. Using a wirenut, connect the wire removed from the circuit breaker in step 3 with the BLACK wire(s) coming from the transfer switch.
6. Insert the WHITE wire from the transfer switch into the NEUTRAL bar in the load center.
7. Insert the GREEN wire from the transfer switch into the GROUND bar in the load center. If there is no ground bar, insert it into an unused space in the Neutral bar.

**USING THIS TRANSFER SWITCH:**

When a power failure occurs,
1. move generator outdoors. Never operate a generator indoors or in an enclosed area. Make sure generator is at least 5 feet away from windows, doors or other openings such as dryer vents, or airconditioning units.
2. Open the front cover on the transfer switch to gain access to the breakers inside.
3. Plug in generator cord to the power inlet on the bottom of the unit, and start generator BEFORE switching any breakers.
4. Turn UTIL breaker OFF and slide interlock mechanism over UTIL breaker.
5. Turn GEN breaker ON, and power should start to flow to the load(s).

When utility power is restored:
1. Turn OFF the GEN breaker on transfer switch.
2. Slide the interlock mechanism over GEN breaker, exposing the UTIL breaker.
3. Turn ON the UTIL breaker.
4. Shut off generator and remove generator cord. Store generator and cord.
5. Replace or close cover(s) on transfer switch and secure as needed.
PILOT LIGHT (PL) OPTION ON TRAFFIC SIGNAL SWITCHES

The green pilot light on models supplied with the "PL" option is factory-wired to the UTIL/Line side of the transfer switch. This light is used to alert an attending technician that the UTIL power has been restored, and the transfer switch can be changed back to the "UTIL" mode. The pilot light will turn off when the UTIL breaker is turned ON.

EXTERNAL PILOT LIGHT (EPL) OPTION ON TRAFFIC SIGNAL SWITCHES

A domed pilot light would be mounted on the top of the transfer switch making it visible from a distance, eliminating the need for the attending technician to get out of his vehicle to determine if utility power has been restored. It operates the same way that the standard "PL" option does. *See photo at right.*

SWITCHED NEUTRAL (SN) OPTION ON ONE-POLE TRANSFER SWITCHES

For certain applications, a switched neutral ("SN") is desired in a transfer operation. Essentially this is handled as a two-pole application. Instead of running black and red wires to the second pole, white wires are used. A white is run from the neutral bar in the load center to the LINE White in the transfer switch, and the LOAD Neutral White is connected with a wirenut to the load neutral isolated in the load center.

SERVICE ENTRANCE (SE) OPTION ON TRAFFIC SIGNAL SWITCHES

If the transfer switch is going to be the Main disconnect between the utility and the equipment receiving the power, the transfer switch will be the Service Entrance. The "SE" option includes an insulated neutral bar where the Neutral is bonded (grounded) to the grounding conductor – a bonding jumper is provided. A SERVICE DISCONNECT label is also provided in this package, and should be affixed to the transfer switch by the installer. If Pilot light option is provided with the Service Entrance (SE) option, a separate circuit breaker is provided for the pilot light.

ACCESSORIES YOU MAY NEED

Power Cords and Plugs or Connectors can be ordered on our website at [www.gen-tran.com](http://www.gen-tran.com) or by calling toll free 1-888-GEN-TRAN. We can usually ship the same day if the order is received by noon.

*Note:* Male plugs connect to generator, and female receptacles connect to Power Inlet Box or Transfer Switch. Check your generator receptacle for exact receptacle configuration to avoid ordering the wrong part.