

## INSTRUCTIONS FOR THE RELIANCE *Panel/Link*<sup>®</sup> - XR Series

**THE RELIANCE *Panel/Link*<sup>®</sup> IS NOT FOR "DO-IT-YOURSELF" INSTALLATION. It must be installed by a qualified electrician thoroughly familiar with all applicable electrical and building codes.**

The Reliance *Panel/Link*<sup>®</sup> is designed to provide, in the event of a utility power outage, a safe and simple method of powering designated branch circuits from a portable generator. The unique mechanical interlock between the "GENERATOR SUPPLY" and "UTILITY SUPPLY" circuit breakers, which supply power to the panel bus, prevents feedback by prohibiting these breakers from being in the "ON" position at the same time. The mechanical interlock also switches the neutrals between the two sources in a sequence that avoids any voltage variations that result from not having the neutral connected when supply breakers are connected. This panel may be installed either in a **separately derived system** where the neutral switch is utilized or in a **non-separately derived system** where the neutral switch is bypassed. Bonded neutral generators generally have GFCI protection and are installed as separately derived systems. Floating neutral generators are installed as non-separately derived systems.

Generally, a small portable generator will not have sufficient capacity to power a large number of circuits at the same time. The Reliance *Panel/Link*<sup>®</sup> allows you to power selectively any number or combination of branch circuits wired into the panel, up to the capacity of the generator.

### INSTALLING THE PANEL/LINK<sup>®</sup>

**WARNING: Be sure the main breaker in the main panel is turned off and the generator is not running before starting this procedure. Failure to do so could result in serious injury or death.**

**Do not use this panel as a service entrance.**

1. Mount the transfer panel next to the main load center (circuit breaker or fuse box).
2. Install a large diameter nipple (2 inch trade size recommended) between the two panels. If this is nonmetallic or does not qualify as a ground connection in your location, run a separate ground wire between the ground bar in the main panel and the ground bar in the transfer panel.
3. If the main load center does not have sub-feed lugs, install a double pole circuit breaker that is the same ampacity as the Utility Supply breaker in the transfer panel. Leave this breaker in the off position.
4. Run the proper ampacity wires between the breaker or sub-feed lugs in the main panel and the Utility Supply breaker in the transfer panel.
5. Connect an insulated neutral wire to the neutral bar in the main panel and run it to the transfer panel as instructed below. **Failure to correctly install this wire may result in damage to electronic devices.** The neutral wire must be the same ampacity as the wires in 4 above.

**For separately derived systems**, connect the neutral wire from the main panel to the Utility Neutral Switch in the transfer panel. Change the terminal screw in the switch to the longer one in the plastic bag if using AWG 8 gage wire or smaller.

**For non-separately derived systems**, connect the neutral wire from the main panel to the neutral bus in the transfer panel.

6. Select the circuits to be powered by the generator. **Important: If a selected circuit shares a common neutral with another circuit (multi-wire branch circuit), you must move both those circuits to the transfer panel.** Determine if the branch circuit breakers for the selected circuits can be moved from the main panel into the transfer panel. Reliance transfer panels are UL listed for a number of interchangeable breakers (see label on the inside cover of the transfer panel). If the main panel has this type of breaker, relocate the selected branch circuit breakers to the transfer panel. If the breakers cannot be moved, other breakers of the same ampacity must be installed in the transfer panel. Balance the loads between L1 and L2 to get the most output from the generator. Wire as described in Step 7. **Be sure the openings created by removing the breakers from the main panel are fitted with appropriate covers.**
7. If the branch circuit conductor is long enough, you may want to pull it from the main panel and reinstall it in the transfer panel. If not possible or desirable, wire-nut an extension to the branch conductor in the main panel and run it through the 2 inch nipple to the transfer panel. Connect to the appropriate branch circuit breaker. Repeat for each of the selected circuits. **The branch conductors must be connected to the same ampacity breakers as in the main panel. Make sure that for multi-wire branch circuits, one breaker is in on L1 and the other is on L2.**

8. **Complete this step for separately derived systems only, otherwise go to Step 9.** Identify the neutrals of the circuits selected in Step 6. Disconnect these neutral wires from the neutral bar in the main panel. If the neutral conductors are long enough, you may want to pull them from the main panel and reinstall them in the transfer panel. If not possible or desirable, wire-nut an extension using the same ampacity wire and run it through the 2 inch nipple to the transfer panel. Connect to the neutral bar in the transfer panel. **Failure correctly identify and connect the neutrals may result in damage to electronic devices.**
9. For transfer panel models without the optional power inlet or watt meters, connect the two hot feeds from the generator directly to the Generator Supply breaker in the transfer panel. Go to Step 11.
10. For transfer panel models with the optional watt meters and no power inlet, thread one of the two hot wires coming from the generator through the center of the left meter's current transformer (small doughnut-shaped object connected to the meter) and connect it to the top lug of the generator breaker. Thread the other hot wire coming from the generator through the right meter's current transformer and connect it to the bottom lug of the generator breaker. The meters will now register when the wires carry sufficient current from the generator.
11. Connect the neutral wire from the generator to the transfer panel as instructed below. **Failure to correctly connect this wire may result in damage to electronic devices.**  
**For separately derived systems,** connect the generator neutral wire to the Generator Neutral Switch (position 1) in the transfer panel. Change the terminal screw in the switch to the longer one in the plastic bag if using AWG 6 gauge wire or smaller.  
**For non-separately derived systems,** connect the generator neutral wire to the transfer panel neutral bus. This results in a direct connection to the utility neutral which is also connected to the same bus.
12. Connect the ground wire from the generator to the grounding bar in the transfer panel.

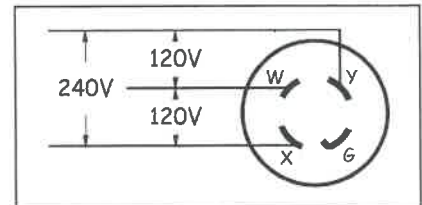
## NEUTRAL CONTINUITY CHECK

Improper connection of the neutral can cause damage to electronic devices and it is recommended the following continuity checks be made. Make sure the utility and generator power remains off.

### Separately Derived Systems

1. Connect the generator power cord to the inlet box or the transfer switch. With the cord unplugged from the generator, test the continuity between the ground pin (G) and the neutral pin (W) shown in the figure below of the plug end. There should be **no** continuity.

If there is continuity, then the neutral and ground are connected or touching somewhere between the end of the cord and the connections in the transfer panel. This will cause the GFCI to trip on the generator. Troubleshoot and fix the problem.



2. With the transfer panel Utility Supply breaker OFF, and the Generator Supply breaker ON
  - a) Test continuity between the neutral from the generator and the neutral from the utility. There should be **no** continuity.
  - b) Test the continuity between the neutral from the generator terminal on the neutral switch, and the neutral bus in the transfer panel. There should be continuity.
3. With the transfer panel Utility Supply breaker ON and the Generator Supply breaker OFF
  - a) Test the continuity between the utility and generator neutral. There should be **no** continuity.
  - b) Test the continuity between the neutral from the utility terminal on the neutral switch, and the neutral bus on the transfer panel. There should be continuity.

### Non-separately Derived Systems

1. Connect the generator power cord to the inlet box or the transfer switch. With the cord unplugged from the generator, test the continuity between the ground pin (G) and the neutral pin (W) shown in the figure below of the plug end. There should be continuity.
2. With the transfer panel Utility Supply breaker OFF and the Generator Supply breaker OFF, test the continuity between the neutral bus in the transfer panel and the neutral bus in the main panel. There should be continuity.

## COMPLETING THE INSTALLATION

Replace the covers on both panels. Turn the main breaker and the breaker feeding the transfer panel in the main panel to the on position. Turn the Utility Supply breaker in the transfer panel to the on position.

## KEY COMPONENTS OF THE PANEL/LINK®

**POWER INPUT SELECTOR (MAIN) BREAKERS.** These breakers select either utility line (UTILITY SUPPLY) or generator (GENERATOR SUPPLY) as the power source for all branch circuits that have been wired into the Panel/Link®.

**BRANCH CIRCUIT BREAKERS.** For overcurrent protection of each branch circuit wired into the Panel/Link®. These breakers may all be in the "ON" position when on utility power, and selectively "ON" or "OFF" when on generator power.

**WATTMETERS (Optional).** Indicate the circuit loads when the generator is supplying power.

	<b>Left Meter Feeds Circuits:</b>	<b>Right Meter Feeds Circuits:</b>
XRC	9, 10, 13, and 14	7, 8, 11, 12, 15, and 16
XRF/G	A and C	B and D
XRH	A, C, D and F	B and E
XRK	A, C, E, F, H and J	B, D, G and I
XRR	7, 8, 11, 12, 15, 16, 19, 20, 23, 24, 27 and 28	9, 10, 13, 14, 17, 18, 21, 22, 25, 26, 29 and 30

Two current transformers, each of which encircle a hot wire coming from the generator, power the meters. To insure that your generator will always be ready when you need it, it is very important to run it under load on a regular basis and to keep the tank filled with fresh fuel. Perform the following steps at least once a month to keep the generator properly exercised.

## TRANSFERRING FROM UTILITY POWER TO GENERATOR POWER

**Transfer between power sources only when the entire cover is in place on the panel.**

1. Move "UTILITY SUPPLY" handles to the "OFF" position.
2. Move all branch circuit breaker handles to the "OFF" position.
3. Move "GENERATOR SUPPLY" handles to the "ON" position.
4. Insert the male power cord connector plug into the appropriate outlet on the generator. Rotate to lock.
5. Plug the female end of the power cord from the generator into the power inlet that is either located on the face of the Panel/Link® or, depending upon the model, remotely from the Panel/Link®. Rotate to lock.
6. Start the generator, following the procedures described in the generator owner's manual furnished by the generator manufacturer.
7. Select the circuits to be powered by the generator by moving the corresponding branch circuit breaker handles to the "ON" position. Alternate use of larger loads such as furnace motors, well pumps, freezers, etc., so that the capacity of the generator is not exceeded. **Do not attempt to operate any loads in excess of the capacity of the generator.**

## TRANSFERRING FROM GENERATOR POWER BACK TO UTILITY POWER

1. Follow the procedures in the generator owner's manual to turn off the generator.
2. Unplug the power cord.
3. Move "GENERATOR SUPPLY" handles to the "OFF" position.
4. Move "UTILITY SUPPLY" handles to the "ON" position.
5. Return all branch circuit breaker handles to the "ON" position.



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