Power Supply for use with Powerlink[™] Systems

Retain for future use.

Introduction

This bulletin explains how to install the Powerlink power supply, which is used to provide voltage for operating ECB remotely operated circuit breakers, Powerlink controllers, and Powerlink control busses.

The power supply is installed in a NF panelboard by connecting the power supply, which mounts like a standard circuit breaker, to the interior bus. There are two different types of power supplies. The first is intended for direct panel connection. Primary power is supplied by connecting it to the panelboard interior mounting rail and securing the white neutral wire to the panelboard neutral. The second type is intended for connection to a remote AC power source. Both are available in three different voltage ratings (see Table 1). ¹

Table 1 - Power Supply Catalog Numbers and Voltage Ratings

Power Supply (Panelboard Bus Powered)	Power Supply (Externally Powered)	Voltage Rating (+/- 10%)	System Voltage
NF120PSG3	NF120PSG3L	110–120 Vac 50/60 Hz	120/240 Vac
			208Y/120 Vac
NF240PSG3	NF240PSG3L	220–240 Vac 50/60 Hz	380Y/220 Vac
			415Y/240 Vac
NF277PSG3	NF277PSG3L	277 Vac 50/60 Hz	480Y/277 Vac

Two LEDs are located on the power supply labeled CL1 and CL2. The CL1 LED represents Class 1 power supplied to the control busses, while the CL2 LED represents Class 2 power supplied to the controller and any devices connected to the controller.

Installing the Power Supply

Follow these instructions to install the power supply on a NF panelboard. The installation is illustrated in Power Supplies on Standard and Column-width Panelboards, page 3.

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^{1.} Powerlink supplies can also be installed in Powerlink remote mount controllers. Refer to 80043–870–01 for more information.



HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E, NOM-029-STPS or CSA Z462 or local equivalent.
- Electrical equipment must be installed, operated, serviced, and maintained only by qualified personnel.
- Turn off all power supplying the panelboard interior and the equipment in which it is installed before working on or inside equipment.
- · Always use a properly rated voltage sensing device to confirm power is off.
- Replace all devices, doors, and covers before turning on power to this equipment.
- Before energizing panelboard, all unused spaces must be filled with blank fillers.

Failure to follow these instructions will result in death or serious injury.



WARNING: This product can expose you to chemicals including nickel compounds, which are known to the State of California to cause cancer, and Bisphenol A (BPA), which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

- 1. Disconnect all power to the panelboard.
- 2. Remove the panelboard cover and deadfront. Verify that power is off using a properly rated voltage sensing device.
- 3. Insert the power supply's bus connectors into the vertical bus connections on the left control bus (see Figure 1).

NOTE: If a standard NF panelboard is used, the power supply is installed at the top of the left control bus. If a column-width panelboard is used, the power supply is installed at the bottom of the panelboard (see Power Supplies on Standard and Column-width Panelboards, page 3).

4. Push the power supply onto the control bus until the mounting feet snap onto the panelboard mounting rail.





NOTE: Red power wire is only available on power supplies NF120PSG3L, NF240PSG3L, and NF277PSG3L.

5. After installing the power supply, the line terminal will line up with the hole on the panelboard interior bus bar. Use a screwdriver to secure the line terminal, torquing the screw 20–30 lb-in. (2.3 N•m).

- 6. Connect the power supply's white neutral wire to the panelboard neutral bar assembly.
- 7. When installing power supply NF120PSG3L, NF240PSG3L, or NF277PSG3, connect the red wire to the external power source and the white neutral wire to the panelboard neutral bar assembly. The neutral side of the remote power source to the panelboard neutral bar assembly must also be connected.

Figure 2 - Power Supplies on Standard and Column-width Panelboards



Connecting to a Controller

Follow these instructions to connect the power supply to the controller. The process is illustrated in Connecting to the Controller, page 3.

- 1. Install the controller according to the instruction sheet provided with the controller.
- 2. Push the power supply connector plug into the power connection on the controller (see Connecting to the Controller, page 3).

NOTE: If a column-width NF panelboard is used, the column-width controller cable NFCWG3 is required to connect the power supply and controller.

Figure 3 - Connecting to the Controller



Connecting to a Subnetwork

If the NF panelboard is part of a subnetwork, follow these instructions to connect the subnet connector to the power supply.

NOTE: Powerlink power supplies can also be installed in Powerlink remote mount controllers. Refer to 80043–870–01 for more information.

1. Using the four-wire,18 AWG subnet cable (General Cable 236100, Belden 27326, or equivalent) from the main network, insert one of the colored wires into the first terminal of the subnet connector plug.

NOTE: If connecting to one or more secondary panelboards, refer to the installation and wiring instruction sheet for the secondary address selector.





- Once the wire is in place, secure the terminal by torquing the screw to 5 lb-in. (0.6 N•m).
- 3. Using the same process above, secure the wires into the remaining three terminals A, –, and + (see Figure 4).

NOTE: It is important to use the same wire color sequence for all subnet connector plugs. For example, if a blue wire is inserted into the first terminal for the first subnet connector plug, the blue wire must be inserted into the first terminal on all additional subnet connector plugs.

4. Push the subnet connector plug into the mating connection on the left side of the power supply (see Figure 5).



Figure 5 - Connecting the Subnet Connector Plug to the Power Supply

Completing the Installation

- 1. Verify that the power supply is installed correctly by noting whether the CL1 and CL2 LEDs are lit. If lit, the power supply was installed correctly.
- 2. To allow the power supply to protrude through the panelboard deadfront, remove the twist-outs in the deadfront corresponding with the power supply position.
- 3. Proceed with the installation of other panelboard components according to related instruction sheets. When finished with the installation, replace the deadfront and panelboard cover, and turn on the power to the Powerlink system.