Instruction Bulletin

POWERLINK® G3 Modem Kit Installation
for Modem Kit 6382G3MODEM

Retain for future use.

INTRODUCTION

This bulletin explains how to install Modem Kit 6382G3MODEM for use with POWERLINK G3 Controllers. To communicate to the controller via modem, you will need two modems: an originating modem connected to your computer and an answering modem connected to the controller. This bulletin provides instructions on installing the modem in this kit as an answering modem connected to the controller. You should already have an originating modem installed on your computer. Also, you will need the POWERLINK Controller Software PCS-101 (not included) installed on your computer for testing the modem connection.

KIT CONTENTS

In addition to this bulletin, this kit contains the following items:

- Modem, modem power supply, and modular telephone cable
- POWERLINK G3 modem cable

The modem in this kit has been pre-configured to match the factory default communications settings of the controller. Do not change the controller communication settings, other than the controller address. Any other changes can result in a loss of communication between the controller and the modem.

INSTALLATION

> ## ⚠ DANGER
>
> **HAZARD OF ELECTRIC SHOCK, BURN, OR EXPLOSION**
>
> - This equipment must be installed and serviced only by qualified personnel.
> - Turn off all power supplying this equipment before working on or inside equipment.
> - Always use a properly rated voltage sensing device to confirm that 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.**

SQUARE D

Before You Begin

- Determine a location to place the modem. You will need to connect the modem to an electrical outlet, a telephone outlet, and the panelboard containing the controller.

- Do not exceed a total distance of 50 feet (15 m) if using a supplemental cable to extend the distance of the connection from the modem to the controller.

- Unpack the kit parts and check that all items in the kit are present.

Connecting the Modem

Refer to Figure 1 and Figure 2 to when making the connections.

Figure 1   Modem connections
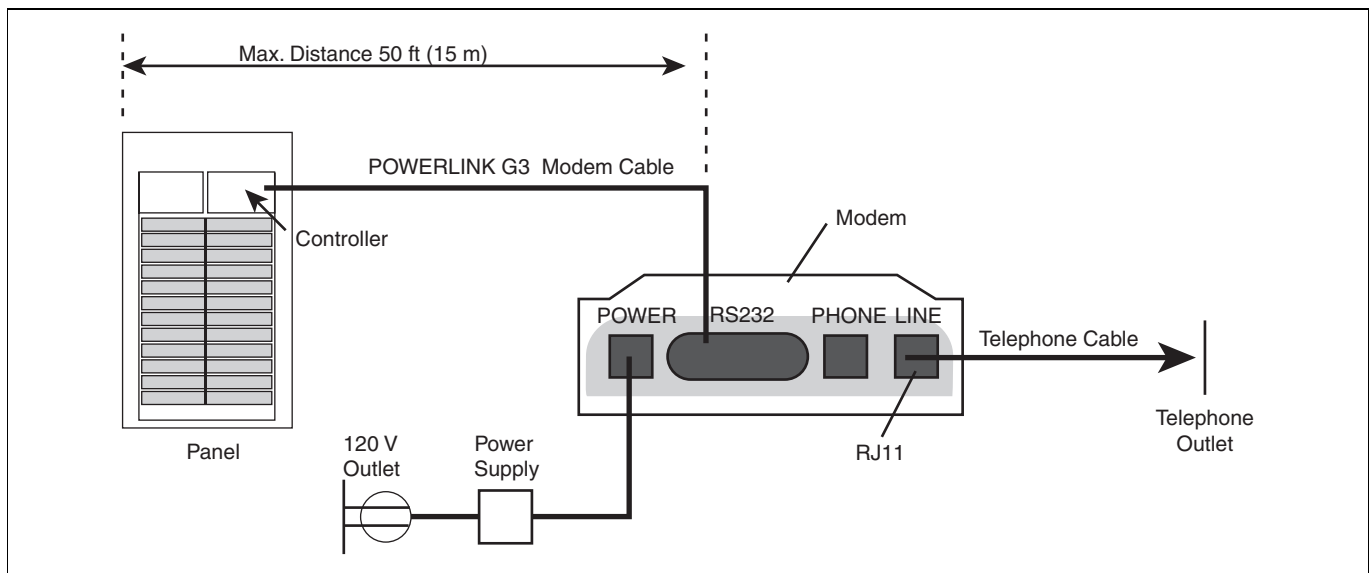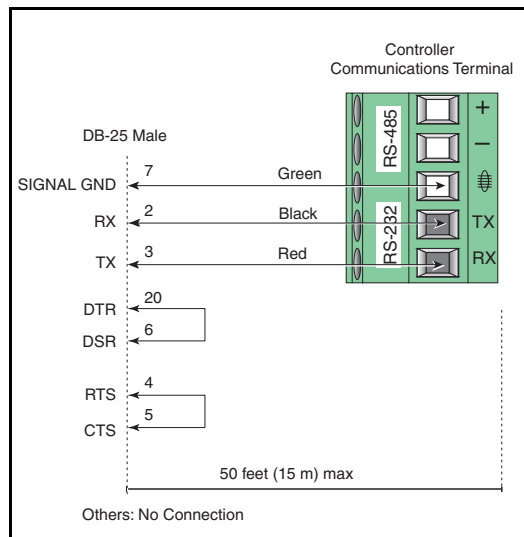

Figure 2   POWERLINK G3 Modem Cable

1. Connect the modem to the controller:

   a. Route the POWERLINK G3 modem cable into the wiring compartment of the controller.

   b. Plug the POWERLINK G3 modem cable into the 5-pin communications terminal of the controller.

   NOTE: Refer to the POWERLINK G3 Controller Instruction Bulletin for information about the location of the terminal in the wiring compartment.

2. If additional controllers are to be networked with the modem, connect the RS485 network wiring to the 5-pin communications terminal of the controller.

   NOTE: Refer to the POWERLINK G3 Controller Instruction Bulletin for information about RS485 network connections.

3. Place the modem in its designated location.

4. Connect the cables to the modem:

   a. Plug the POWERLINK G3 modem cable into the RS232 connection of the modem and secure the cables using the captive fasteners provided on the modem cable.

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b. Plug the telephone cable into the RJ11 telephone LINE connection on the modem. Plug the other end into a telephone outlet.

c. Plug one end of the power supply cord into an electrical outlet. Plug the other end into the power terminal of the modem.

> Do not use the front panel port of the POWERLINK G3 controller when a modem is connected to the internal communications port. If you want to use the front panel port, temporarily unplug the POWERLINK G3 modem cable from the modem.

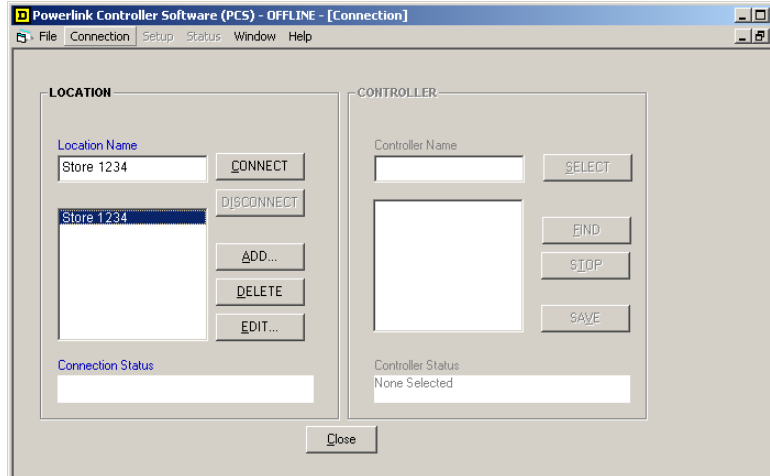## Testing the Modem Connections Using PCS

To test the connection between the originating and answering modems, follow these steps:

1. Replace the deadfront and trim on the panelboard before energizing the equipment. Observe that the controller in the panelboard is powered and operating.

2. Turn ON the power switch on the modem. Verify that the modem is powered and operational.

3. Launch the POWERLINK Controller Software (PCS).

4. On the PCS menu bar, click **Connection** to display the **Location** dialog.

5. Click **Add** to create a connection to a dial-up location.

6. Enter the values as described, leaving all other settings at the default values:

Field	Description
Name	Enter a name that identifies the location of the answering modem.
Type	Select Modem.
Phone Number	Enter the phone number of the answering modem, including any outside access numbers you would dial.
Baud Rate	19200 (must match controller baud rate).
Port	Select the communications port of the computer where the originating modem is attached.

7. Click **Save** to save the communications setup and return to the **Location** screen.

8. Click the location to highlight it and click **Connect** to begin dialing.

   When PCS connects with the modem, the Connection Status box displays "Connected to modem at...." Also, in the Controller information box on the right side of the dialog, it displays any previously found controllers.

9. Click **Find** to locate the controllers.

   PCS will poll addresses in the specified range in search of controllers. It should find the controller to which the answering modem is connected and any other controllers connected via the RS485 automation network.

   a. Click **Stop** if you want to halt polling after PCS finds all the controllers.

   b. Click **Save** if you want to store the list of controllers and eliminate the need to use the Find function again.

10. Click the controller name to highlight it and click **Select** to connect to it.

11. From the PCS menu click **Setup** or **Status** to access information from the controller.

NOTE: Refer to the PCS online help for more information about using PCS.

TROUBLESHOOTING

If the modem does not answer, try the following:

- Verify that the answer modem is connected to the telephone outlet and the outlet is functional.

- Verify that you are dialing the correct number.

- Verify that the answer modem is powered and has an audible ring tone when the originating modem is attempting to connect. If modem is ringing but does not answer, you may need to verify that the modem's internal configuration has not been changed. Instructions for reading and changing the modem's configuration can be found in the booklet provided by the modem manufacturer.

If the modem answers, but no controllers or only some controllers are found, try the following:

- Verify that the POWERLINK G3 modem cable is connected to the modem and the controller's communication wiring terminals.

- Verify that the RX, TX, and signal ground wires are still connected to the proper communication terminals. Additional wires may have been added to these terminals if an RS485 network has been connected to the controller. No other wires are to be connected to the RX and TX terminals.

- Verify that a front panel serial cable is not connected to the controller with the modem connection.

- Verify that computers or other devices are not sending commands on the RS485 network at the same time PCS is attempting to command via the modem.

- Verify that all controller serial communication parameters are set to the factory default settings: Baud Rate = 19.2K, Parity = None, and Mode = RTU/ASCII.

- Verify that no duplicate addresses are assigned on the RS485 network.

- If modem answers but does not find the device, you may need to verify that the modem's internal configuration has not been changed. Instructions for reading and changing the modem's configuration can be found in the booklet provided by the modem manufacturer.

ABOUT MODEM CONFIGURATION

The configuration settings of a modem are stored in its internal nonvolatile memory and retrieved at powered up. The modem in this kit is configured to operate with a POWERLINK G3 controller. If you change the default baud rate of the controller, then you must also change the serial port baud rate of the modem to match the controller and save the modem configuration to its nonvolatile memory.

In general, a modem will not answer unless the data terminal ready (DTR) line indicates that the connected device is ready. Because the controller does not have a DTR line, the modem is programmed to ignore the DTR signal.

The example strings shown in Table 1 are for a MultiTech MT5634ZBA-115v modem, which is the model used in this kit. Other modems may use different codes for configuration. Consult the manufacturer's booklet provided with the modem kit for more information.

Table 1

Modem Command	Description
at	The attention code marks the beginning of the command string.
&w1	Resets the nonvolatile memory to the manufacturer's default settings.
&d0	Configures the modem to ignore the DTR signal modem.
$sb19200	Sets the serial port baud rate to a fixed 19.2K.
&w0	Stores the new settings in nonvolatile memory.

Example of modem commands strings:

at &w1	Resets the nonvolatile memory to the manufacturers default settings.
at &d0 $sb19200 &w0	Configures the modem to ignore DTR and set the serial port to 19.2K.

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SQUARE D

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