
INSTALLATION INSTRUCTIONS

Original Issue Date: **7/09**

Model: **8.5/12/17/18RES, 15/30RES, 15/30RYG**

Market: **Residential/Commercial**

Subject: **OnCue™ Software Kits GM62630-KP1, GM62630-KP2, and GM62630-KP3**

1 Introduction

The Kohler® OnCue™ software kits include network bridge GM58703, which allows connection of the residential/commercial generator sets listed below to the Internet through an Ethernet router and cable or DSL modem. A personal computer (PC) running Kohler® OnCue™ software can then communicate with the generator set to monitor the generator set from any location with Internet access. With the correct password, the remote PC can also start or stop the generator set.

Figure 1 shows network bridge GM58703.

The following generator set models equipped with the generator set controllers shown can use the OnCue™ network bridge (see Figure 2 and Figure 3):

- 8.5/12RES with ADC-RES *
- 17/18RES with ADC-RES *
- 15/30RES with the ADC 2100
- 15/30RYG with the ADC 2100

Note: Model 8.5RES and 12RES generator sets equipped with the ADC 2100 cannot communicate with the OnCue system.

The network bridge has two connections: one connection to the generator set controller, and a connection to a customer-supplied ethernet router. The OnCue™ kit includes harnesses for connection of the network bridge to the ADC 2100 or ADC-RES controller. Extension harnesses (available separately) are required if the network bridge is not mounted inside the generator set enclosure. Do not exceed a total of 36.6 m (120 ft.) of cable length. See Figure 4.

The network connection to the router requires CAT5e cable, not provided in the kit. See Figure 5. Network cable length should not exceed 100 m (328 ft.).

* ADC-RES controller application code version 1.16 or higher required. See Section 7.

The OnCue™ program requires “always-on” Internet service in order to provide continuous generator set monitoring and notification. A personal computer (PC), cable or DSL modem, Ethernet router, and associated network cables must be supplied by the customer. An uninterruptible power supply (UPS) for the PC is also strongly recommended to maintain power to the PC during the momentary changeover to the generator set after the utility source is lost. See Figure 5.

A typical installation will have the network bridge connected to an Ethernet router, which in turn is connected to a cable or DSL modem for Internet access. The local PC is also connected to the router. Remote PCs using OnCue™ software can also access the generator set over the Internet. See Figure 6.

Read the entire installation procedure and compare the kit parts with the parts list at the end of this publication before beginning installation. Perform the steps in the order shown.

After the bridge and router setup in Section 9 are complete, proceed to install and use the OnCue™ software. See TP-6616, OnCue™ Software Operation Manual, for instructions.



Figure 1 Network Bridge GM58703

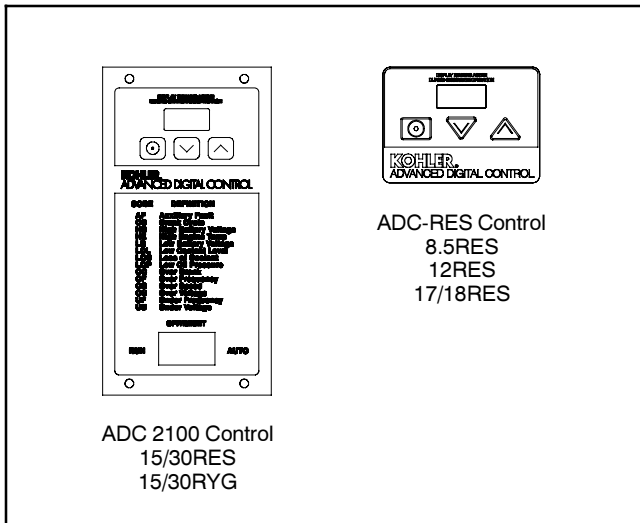


Figure 2 Applicable Controllers

Kit Part Number	Applicable Models
GM62630-KP1	17/18RES w/ADC-RES
GM62630-KP2	15/30RES and 15/30RYG w/ADC 2100
GM62630-KP3	8.5/12RES w/ADC-RES

Note: See kit parts lists on the last page of this document.

Figure 3 OnCue™ Kit Identification

Part Number	Length
GM32333-KP2	7.6 m (25 ft.)
GM32333-KP4	30.5 m (100 ft.)

* Maximum allowable cable length is 36.6 meters (120 ft.)

Figure 4 Extension Harnesses (optional)

Item	Included in OnCue™ Kit	Customer-provided
Network bridge	●	
Harnesses, bridge to generator set connection *	●	
OnCue™ Software	●	
DeviceInstaller software	●	
Cable modem or DSL modem for “always-on” Internet service		●
Ethernet router (dynamic DNS capability recommended)		●
Category 5e network cable		●
Personal computer (PC) with Windows XP® or Windows Vista®		●
Uninterruptible power supply (UPS) for PC, router, and modem		●

* Kit harnesses allow installation of the bridge inside the generator set enclosure. Extension harnesses for remote bridge location are available separately. Do not exceed 36.6 m (120 ft.) total cable length. See Figure 4.

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Figure 5 Hardware and Software

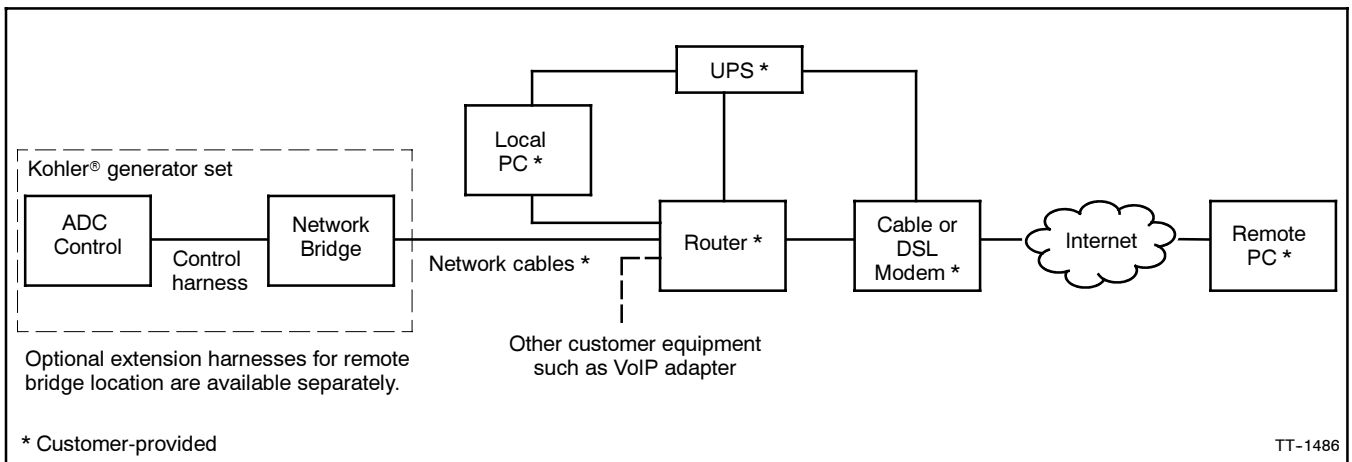


Figure 6 Typical Connections

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3 Network Bridge Specifications

The network bridge converts J1939 protocol from the ADC controller to Modbus TCP/IP protocol for network communication. The bridge has a standard RJ45 connector for Ethernet connection.

The network bridge is powered by the generator set's engine starting battery. Input voltage can range from 8 to 36 VDC.

The bridge also has an RS-485 connector for service personnel who need to communicate with the generator set over the RS-485 connection.

- Environmental specifications:
 - Operating temperature: -40°C to 70°C (-40°F to 158°F)
 - Storage temperature: -40°C to 85°C (-40°F to 185°F)
 - Humidity: 5-95% non-condensing
- Power requirements:
 - Powered by the generator set engine starting battery
 - Maximum power draw 2.5 W
 - 8-36 VDC with fuse protection
- Standard RJ45 jack for network connection
- Terminal block for generator connection (harness provided)
- Status-indicating LEDs for diagnostics
- Standard 10/100 Ethernet
- FCC Class A compliant
- Dimensions, L x W x H, mm (in): 111 x 79 x 32 (4.4 x 3.1 x 1.25)
- Weight: 0.5 kg (1 lb.)

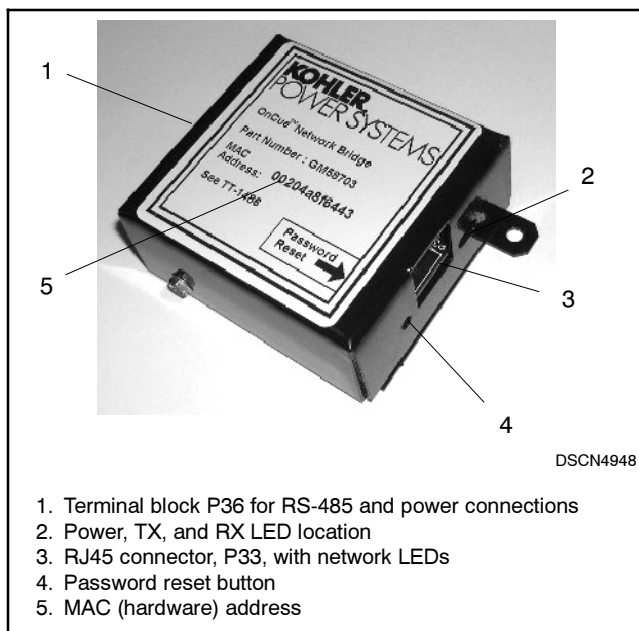


Figure 7 Network Bridge Components

4 Safety Precautions

Observe the following safety precautions while installing the kit.

⚠ WARNING

**Accidental starting.
Can cause severe injury or death.**

Disconnect the battery cables before working on the generator set. Remove the negative (-) lead first when disconnecting the battery. Reconnect the negative (-) lead last when reconnecting the battery.

Disabling the generator set. Accidental starting can cause severe injury or death. Before working on the generator set or connected equipment, disable the generator set as follows: (1) Move the generator set master switch to the OFF position. (2) Disconnect the power to the battery charger. (3) Remove the battery cables, negative (-) lead first. Reconnect the negative (-) lead last when reconnecting the battery. Follow these precautions to prevent starting of the generator set by an automatic transfer switch, remote start/stop switch, or engine start command from a remote computer.

⚠ DANGER

**Hazardous voltage.
Will cause severe injury or death.**

Disconnect all power sources before opening the enclosure.

⚠ WARNING

**Hazardous voltage. Moving parts.
Can cause severe injury or death.**

Operate the generator set only when all guards and electrical enclosures are in place.

5 Installation Procedure

1. Place the generator set master switch in the OFF position.
2. Disconnect the power to the battery charger, if equipped.
3. Disconnect the generator set engine starting battery(ies), negative (-) lead first.
4. Determine whether the network bridge will be mounted inside the generator set enclosure (recommended) or in a remote location.
 - a. For a remote location, find a protected location for the network bridge. Do not install the bridge outdoors unless it is inside the generator set enclosure. The maximum cable length between the network bridge and the generator set controller is 36.6 meters (120 ft.).
 - b. For mounting network bridge GM58703 inside the generator set enclosure, proceed to the instructions for your generator set model. See Figure 8.

Model	Proceed to
8.5/12RES with ADC-RES	Step 5
17/18RES with ADC-RES	Step 7
15/30RES or 15/30RYG with ADC 2100	Step 9

Figure 8 Bridge Mounting Instructions by Model

5. 8.5/12RES Bridge Installation (GM62630-KP3)

- a. Remove existing junction box panel GM60625. See Figure 9. Save the hardware and seal for reuse.
- b. Mount network bridge GM58703 onto the new panel using two screws X-51-15, washers M125A-04-80, and nuts M934-04-50.
- c. Install new J-box panel GM66795 as shown in Figure 10. Use the existing hardware and seal X-6422-31.
- d. Affix decal GM54820 in the location shown in Figure 10.

6. Proceed to Section 6, Network Bridge Connection.

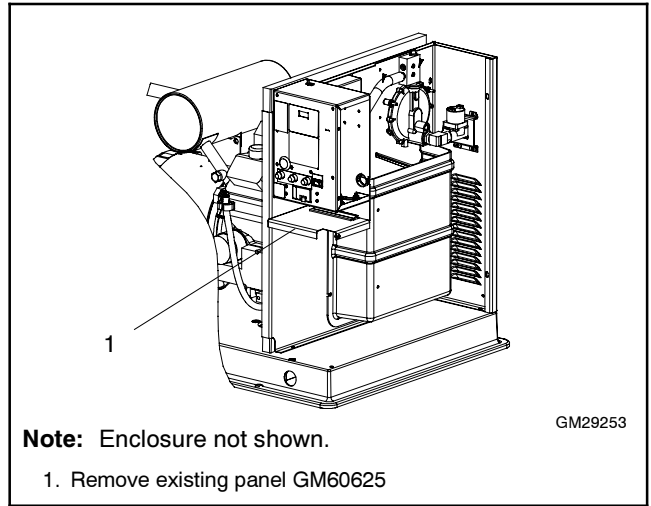


Figure 9 8.5/12RES Existing Junction Box Panel

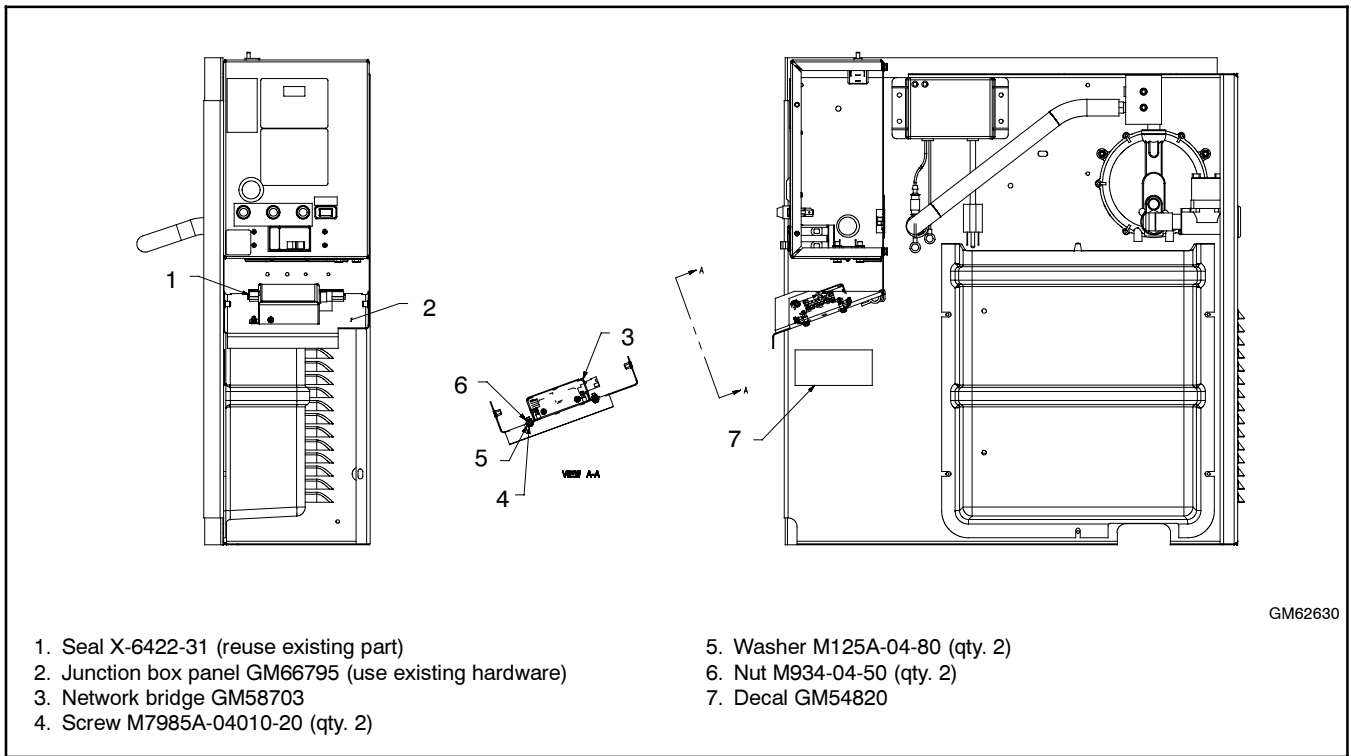


Figure 10 8.5/12RES Bridge Installation

7. 17/18RES Bridge Installation (GM62630-KP1)

- a. Open the enclosure and remove the front panel to gain access to the inside of the controller junction box. Cover the internal components to protect them from metal chips and debris during the bridge installation.
- b. Drill a hole for the Ethernet cable (customer-supplied) as shown in Figure 11.

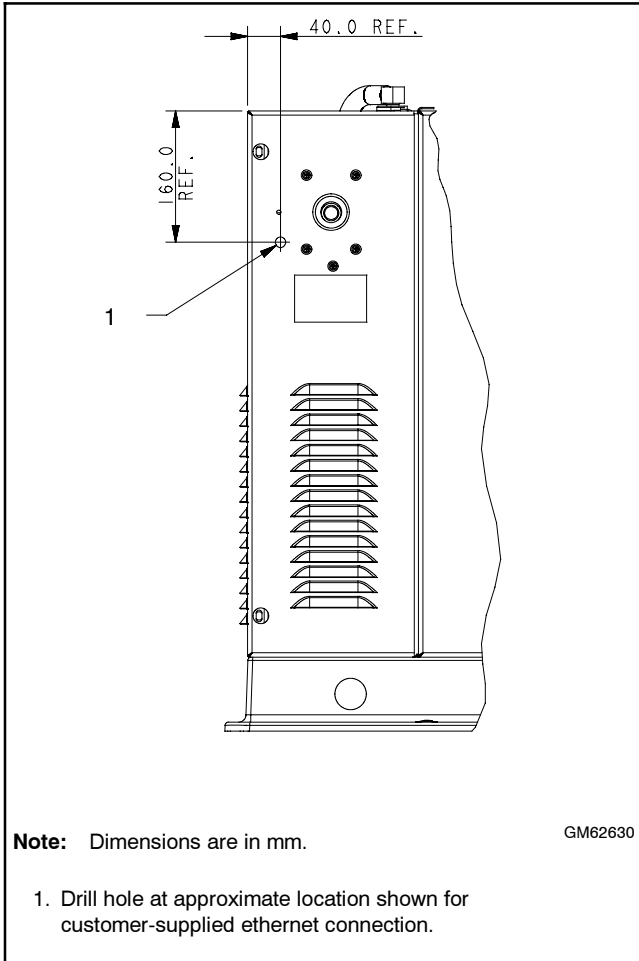


Figure 11 Ethernet Cable Opening

- c. Drill a 38.1 mm (1.5 in.) hole in the bottom of the junction box as shown in Figure 12. Insert bushing X-634-28 into the hole.

Connector P21 of Y-harness GM62626 will be routed through this opening.

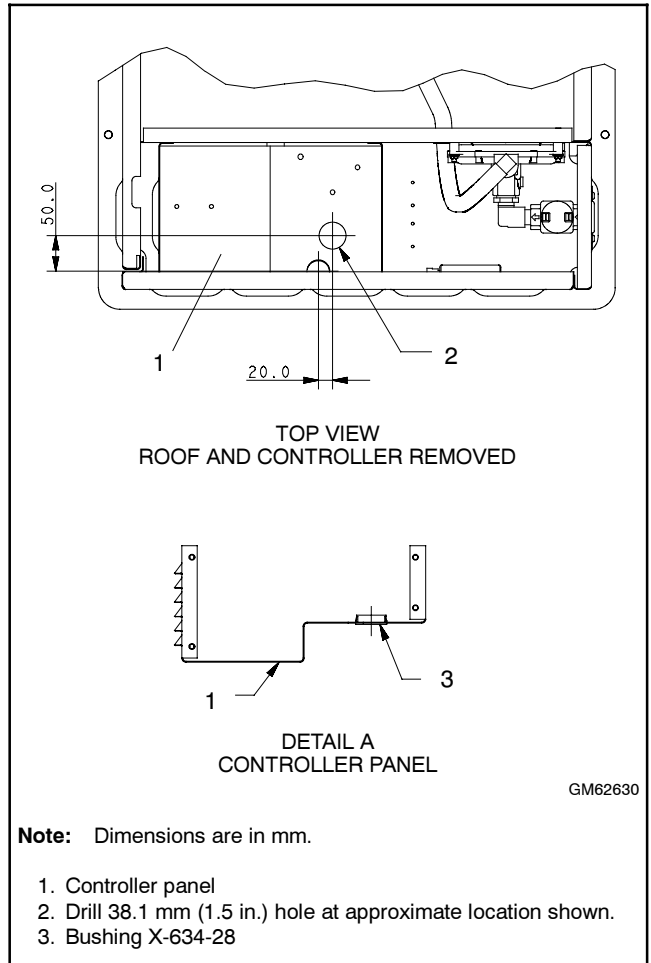


Figure 12 Cable Opening and Bushing for Y-Harness GM62626

d. Network bridge GM58703 mounts inside the front panel as shown in Figure 13. Drill two 4.8 mm (3/16 in.) mounting holes in the front panel at the locations shown in Figure 14.

e. Use two screws M7985A-04010-20, washers X-6278-8, and nuts M934-04-50 to mount network bridge GM58703 on the inside of the front panel as shown in Figure 14.

8. Proceed to Section 6, Network Bridge Connection.

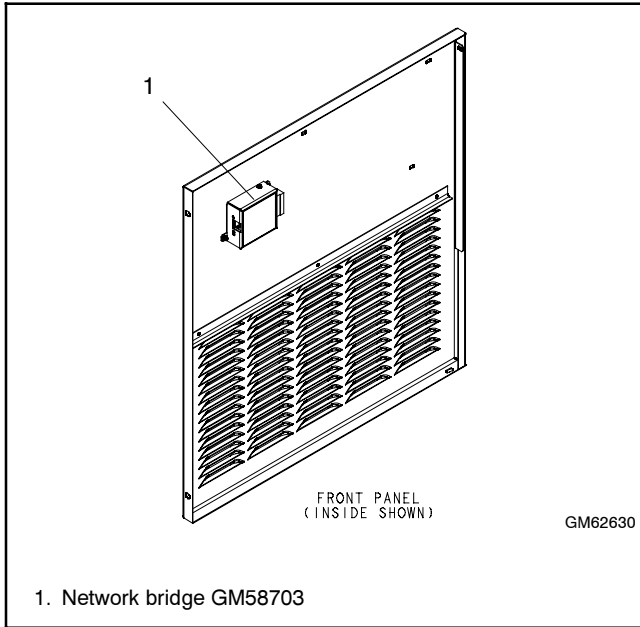


Figure 13 17/18RES Network Bridge Installation

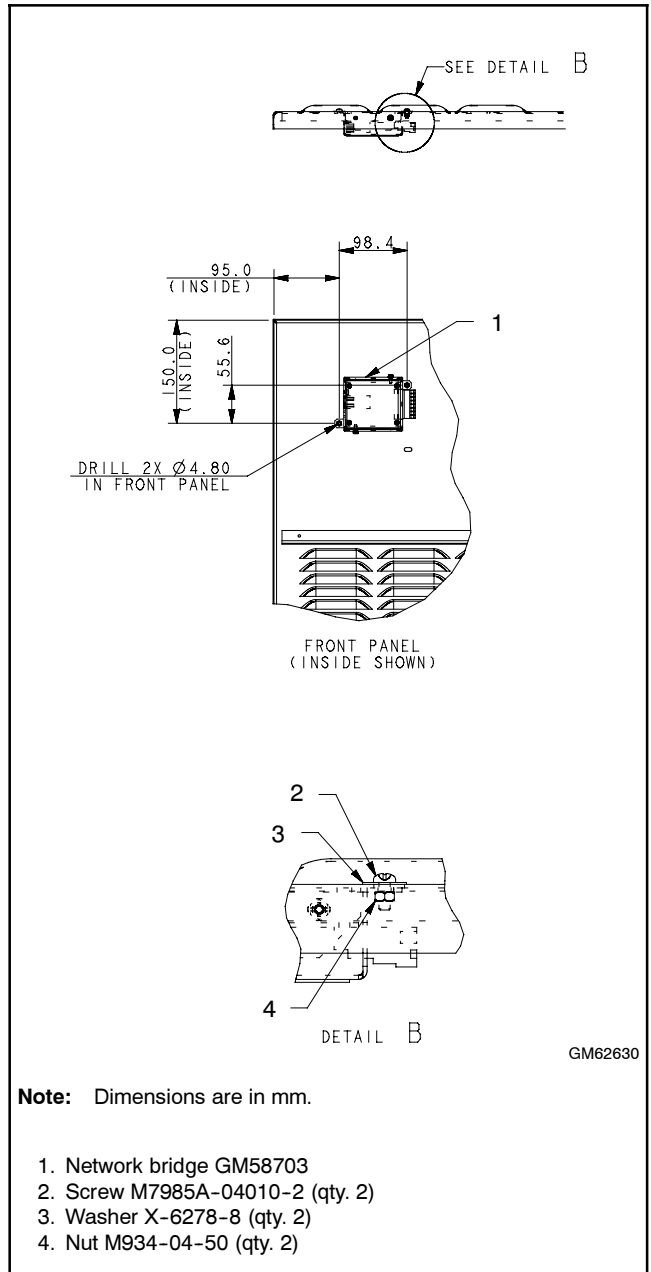


Figure 14 Bridge Mounting

9. 15/30RES and 15/30RYG Bridge Installation (GM62630-KP2)

- a. Remove the junction box panel to gain access to the inside of the junction box. See Figure 15.
- b. Drill two 4.8 mm (3/16 in.) mounting holes at the locations shown in Figure 16.

- c. Install network bridge GM58703 inside the junction box as shown in Figure 17. Use two screws M7985A-0410-20, washers M125A-04-80, and nuts M934-04-50 to secure the bridge.

10. Proceed to Section 6, Network Bridge Connection.

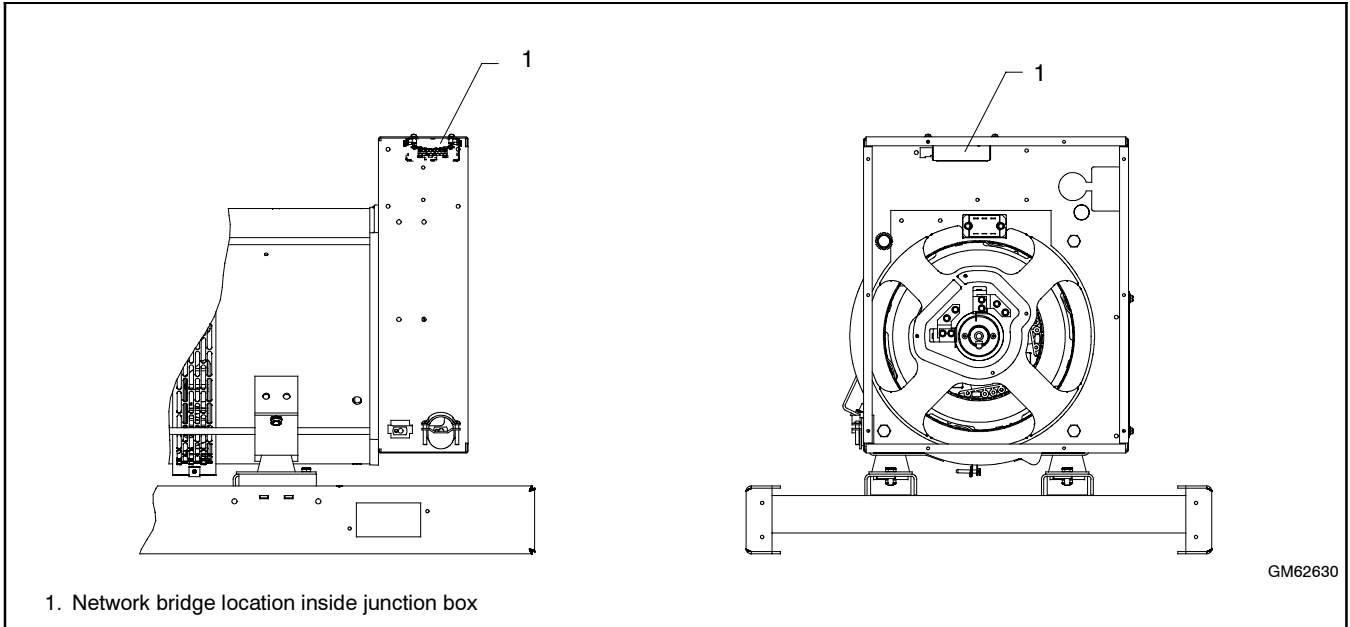


Figure 15 15/30RES/RYG Network Bridge Installation

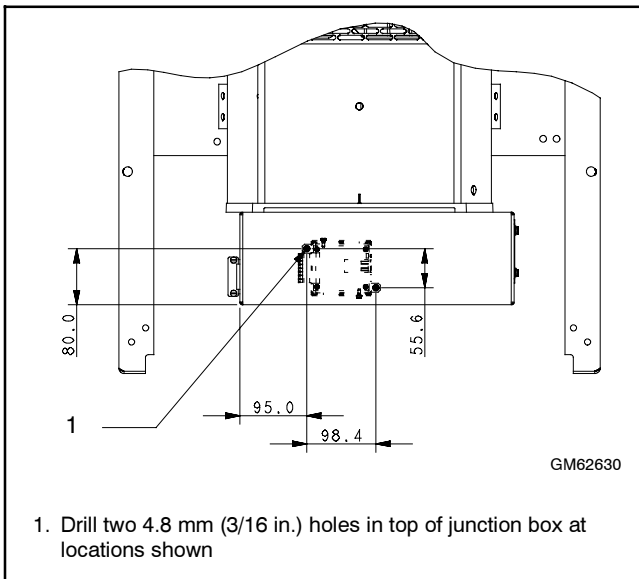


Figure 16 Network Bridge Mounting Hole Locations

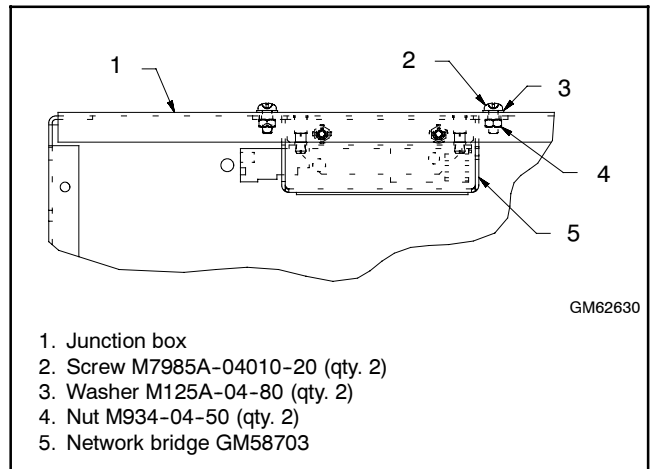


Figure 17 Network Bridge Mounting

6 Network Bridge Connection

Use the Y-harness provided with the kit to connect the generator set controller to the network bridge as instructed below.

If the network bridge is not mounted inside the generator set enclosure, obtain optional extension harnesses for connection of the network bridge to the generator set controller. Do not exceed 36.6 m (120 ft.) of cable length. See Figure 4.

Obtain Category 5e network cables of the length required to connect the network bridge to the Ethernet router. Network cable length should not exceed 100 m (328 ft.).

8.5RES, 12RES, or 17/18RES

1. For model 8.5RES, 12RES, or 17/18RES generator sets with the ADC-RES controller, disconnect the engine harness from the controller at the large P1 connector. See Figure 18.
2. Connect the mating connectors of Y-harness GM62626 to the controller and the engine harness. See Figure 18. For the 17/18RES, thread the smaller P21 connector of the Y-harness through the opening made in the junction box in step 7c.
3. Connect the 12-pin connector of network bridge harness GM62627 to the third plug of Y-harness GM62626. Use extension harnesses if necessary. Do not exceed 36 m (120 ft.) of cable length.
4. Proceed to the instructions for All Models, next column.

15RES, 15RYG, 30RES, or 30RYG

1. For model 15RES, 15RYG, 30RES, or 30RYG generator sets with the ADC 2100 controller, disconnect the existing harness at the 12-pin customer interface connector on the junction box.

2. Connect Y-harness GM65797 to the disconnected plug and to the customer interface connector. See Figure 18.
3. Connect the 12-pin connector of network bridge harness GM62627 to the third plug of Y-harness GM65797. Use extension harnesses if necessary. Do not exceed 36 m (120 ft.) of cable length.
4. Proceed to the instructions for All Models, below.

All Models

1. Connect harness GM62627 to P36 on the bridge. See Figure 19.
2. Connect leads 3 and 4 to the remote start/stop switch or automatic transfer switch engine start contacts, if applicable.
3. Connect the network bridge to the customer's Ethernet router. The router must be connected to the cable modem or DSL modem used for Internet access (not provided). See Figure 19.
 - Network cables are not provided with the kit. Obtain Category 5e network cables of the required length locally. Network cable length should not exceed 100 m (328 ft.).
 - The network bridge can be connected directly to a personal computer using a crossover cable (not provided). Direct connection is typically used only for network bridge setup or service.
4. Check that the generator set master switch is in the OFF position.
5. Reconnect the generator set engine starting battery, negative (-) lead last.
6. Reconnect power to the battery charger, if equipped.

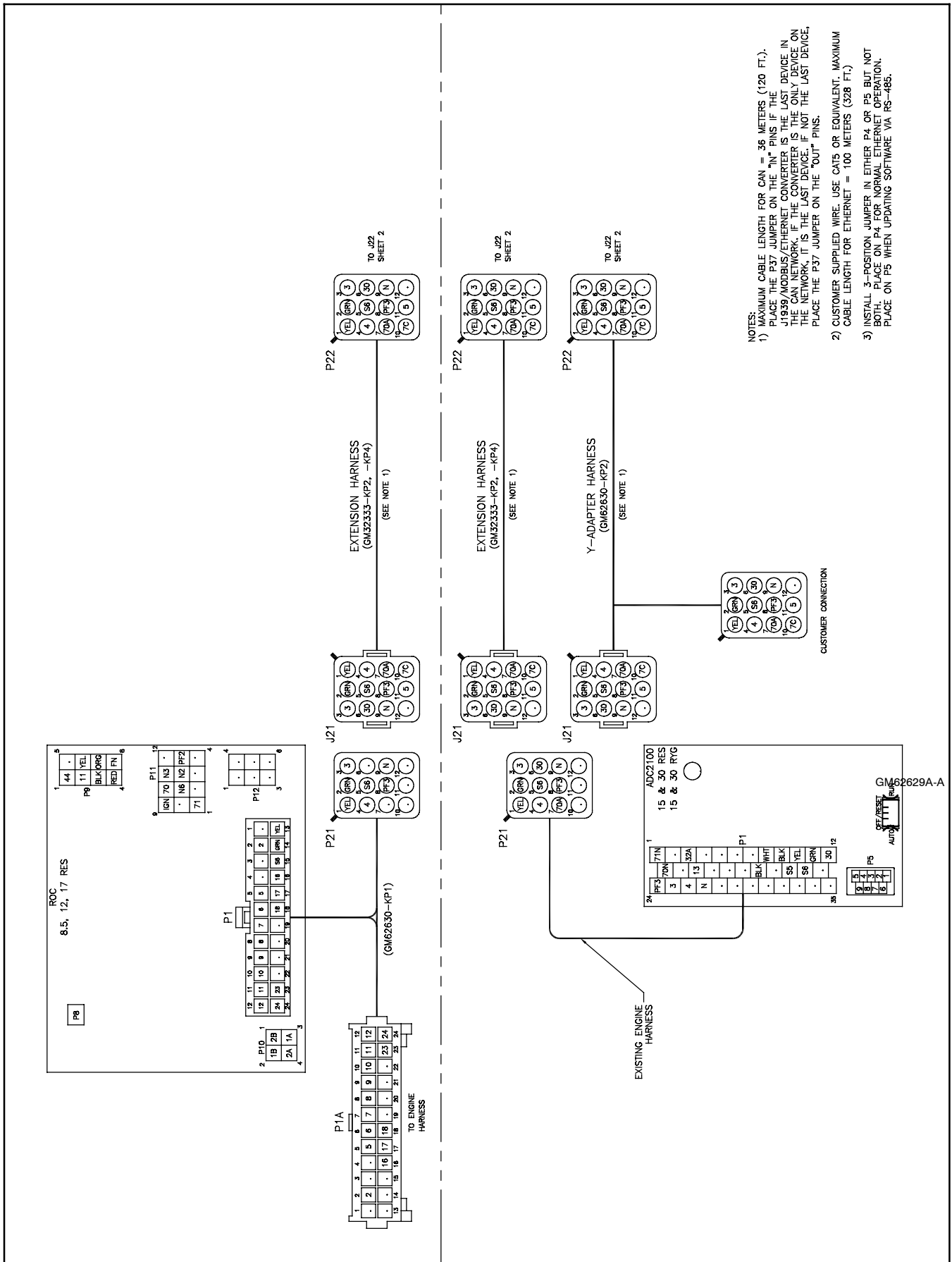


Figure 18 Network Connection Diagram, Sheet 1

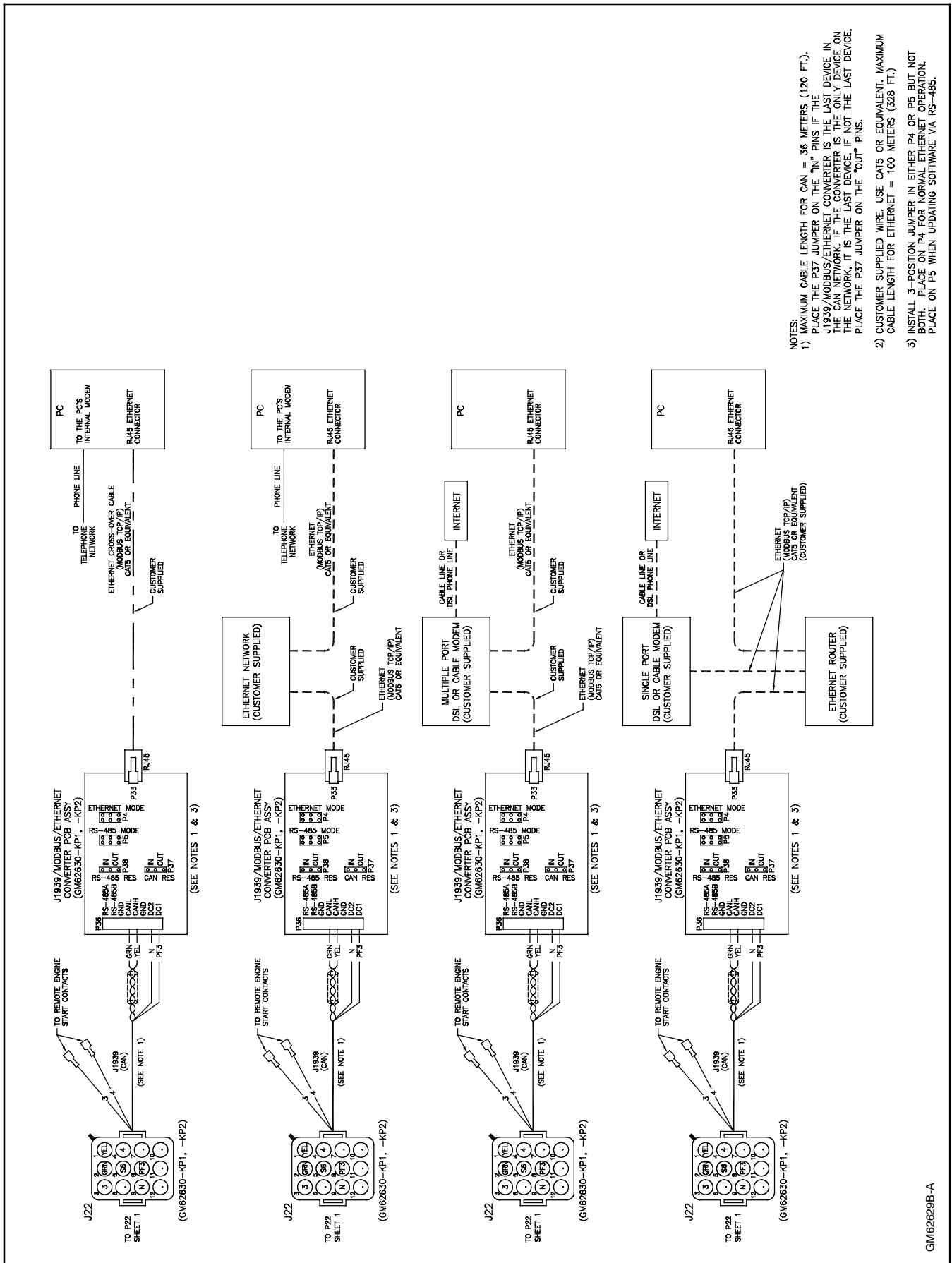


Figure 19 Network Connection Diagram, Sheet 2

7 ADC-RES Controller Setup

7.1 ADC-RES Controller Application Code Upgrade

Check the application code version on the ADC-RES controller. **Code Version 1.16** or higher is required for OnCue communication and remote fault reset.

1. Move the generator set master switch to OFF/RESET. See Figure 20.
2. Hold the Select button and move the master switch to RUN. Wait about 5 seconds for the code version to appear on the controller display.
3. Release the Select button and move the master switch back to OFF/RESET.

Use Program Loader to upgrade the ADC-RES application code to version 1.16 or higher, if necessary. Program Loader software, the controller application code, and TT-1285, Program Loader instructions, are included on the OnCue™ CD-ROM. Program Loader software, application code files, and instructions are also available on KOHLERnet through TechTools. Contact your distributor.

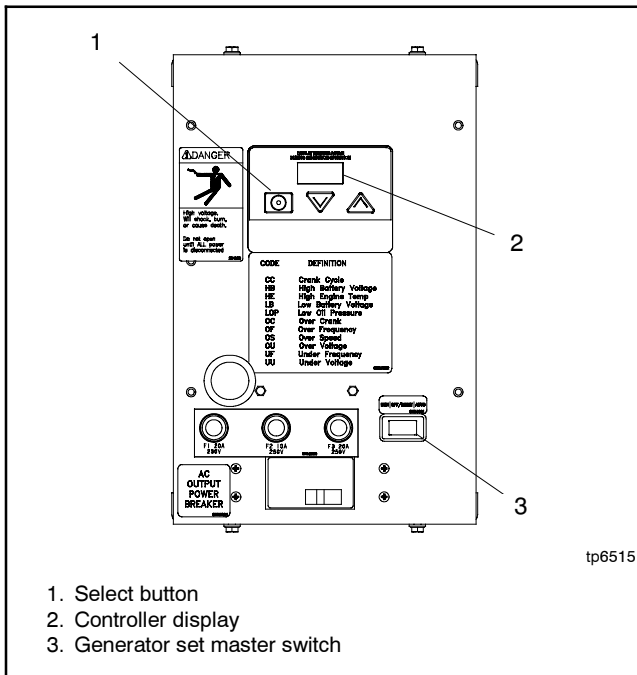


Figure 20 ADC-RES Controller and Master Switch

7.2 ADC-RES Controller Configuration

After loading the new application code onto the ADC-RES, verify that the communication parameter is set to **Cn01**.

The communication parameter Cn enables or disables J1939 communication, and also disables or enables the controller sleep mode. Setting the communication parameter to Cn01 enables J1939 communication and turns off the sleep mode to allow uninterrupted communication with a personal computer running OnCue™ software. See Figure 21.

The default setting for controllers with application code version 1.13 or higher is Cn01, communication on/sleep mode off. Controllers with application code versions below 1.13 have communication disabled and the sleep mode enabled. The Cn setting is not adjustable on controllers with code versions below 1.13.

Parameter	Setting	Definition
Communication setting	Cn00	No J1939 communication. Sleep mode enabled (48-hour power down in AUTO).
	Cn01 *	J1939 communication enabled. Sleep mode disabled (no power down in AUTO).

* Default setting for application code version 1.13 or higher.

Figure 21 Controller Communication Settings

Procedure to check/change the Cn setting

Use the instructions in this section to check the Cn parameter setting and change it to Cn01, if necessary. Follow the instructions in Figure 22 to enter the configuration mode while the engine is not running and then step through to the Cn parameter. Use the up (Λ) and down (∇) arrow buttons to change the Cn setting, if necessary.

The controller will automatically exit the configuration mode without saving any changes after about 1 minute if no buttons are pressed. Start the configuration procedure over again from the beginning if the controller exits the configuration mode before the settings have been saved.

Note: Be sure to save your settings before exiting the configuration mode. The controller reverts to the last saved settings when the master switch is moved to the OFF/RESET position.

Controller Configuration Mode:

Hold the Select button:

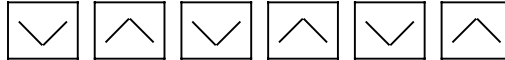


Move the generator set master switch to the RUN position. (The generator set engine will not start.)

Display:

Wait about 5 seconds until the display shows the program version number. (The number may be different than the one shown here.)

Press the down arrow key and then the up arrow key 3 times to enter the configuration mode. (This is the controller "password.")



Now release the Select button.

The voltage/frequency setting is displayed after the password is entered.

60 Hz

50 Hz

Press:



To step to the next parameter, engine type Ec.

8.5/12RES

17/18RES



To step to the next parameter, communication setting Cn.



or



To change the communication setting, if necessary. See Figure 21.



To enter setting and step to SAVE.

Press:



To **SAVE CHANGES**.

OR



To **DISCARD CHANGES** without saving.

"Yes" or "no" flashes when the up or down arrow is pressed and then the controller exits the configuration mode. The display returns to the runtime hours.

Now move the master switch to OFF/RESET.

Note: Shaded boxes show which number in the controller display changes when the up or down arrow key is pressed. X in the runtime hours display above denotes any number from 0 to 9.

Figure 22 Configuration Mode (system voltage/frequency, engine type, and communication parameters)

8 ADC 2100 Controller Setup

For the ADC 2100 controller, application code version 3.20 or higher is recommended. To check the code version, hold the Select button and move the generator set master switch to RUN. Wait about 5 seconds for the code version to appear on the controller display. Use the Program Loader software to upgrade the controller application code, if necessary. Program Loader software, application code files, and instructions are available on KOHLERnet through TechTools. Contact your distributor.

Set the communications parameter to Cn01 to enable CANbus communication and disable the automatic power down function. Refer to the generator set Installation Manual or TT-1364 for instructions.

If your ADC 2100 controller has the continuous power mode jumper, which was used on early models, verify that the jumper is connected to keep the controller powered at all times. See the instruction manuals provided with the generator set.

9 Network Bridge and Router Configuration

9.1 Introduction

The following sections explain how to configure the network bridge and Ethernet router. Use the information sheet in Figure 44 (on the last page of this document) to record important information during the system setup.

For local communication between the network bridge and the PC connected to the Ethernet router, it is necessary to assign an IP address to the network bridge. The network bridge will use an IP address that is recognized by the Ethernet router. The router will have a different external IP address or domain name. See Figure 23.

For remote monitoring, you will also need to configure your router to allow a remote PC to access the OnCue™ network bridge over the Internet. For example, you may want to install the OnCue™ software on multiple PCs to allow you to check your generator set from remote locations. You may also want to allow your generator set dealer or distributor to be able to use OnCue™ to communicate with your generator set for monitoring and troubleshooting.

Because of the large number of router manufacturers and models available, the procedures for router configuration will vary. Typical router setup screens are shown in the following procedures, but the screens and procedures for your router may be quite different. Refer to the instructions provided with your router as you perform the router setup described in the following sections.

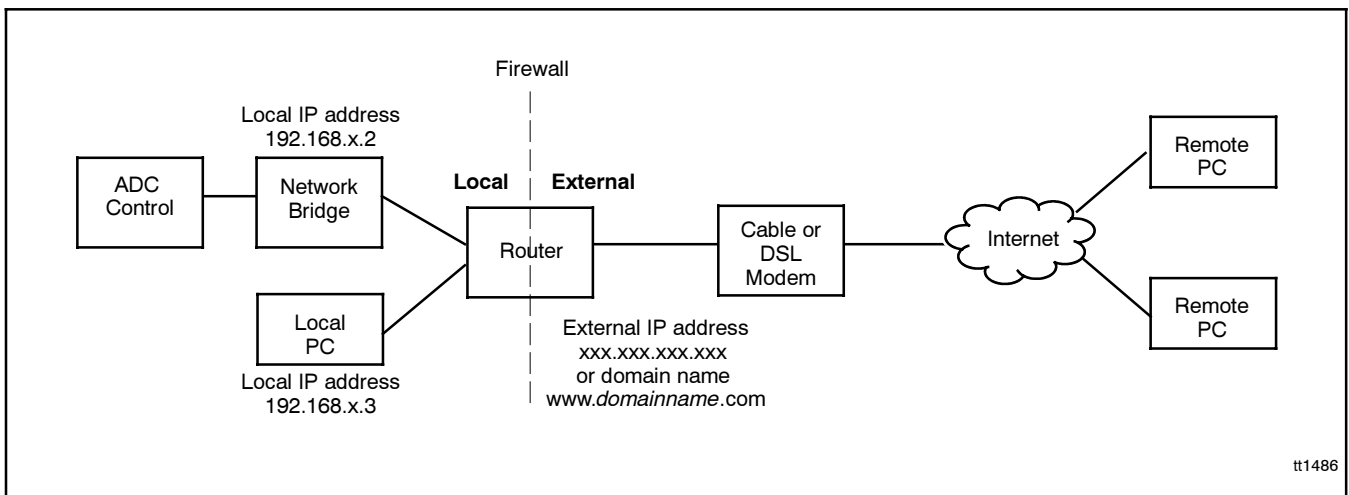


Figure 23 Local and External IP Addresses

9.2 Home Network Domain Name or IP Address

The IP addresses of most home networks change periodically. To access the network bridge from a remote PC over the internet, OnCue™ needs to know the address of your home network. A domain name or IP address that does not change is required.

Dynamic domain name system (DDNS) service is recommended. With DDNS service, you acquire a domain name for your network that remains the same even as the IP address changes. See the instructions provided with your router to identify acceptable DDNS service providers and enable DDNS on your router. Section 9.5.2 gives instructions to register for DDNS service and enable DDNS on the router.

Note: Some routers do not support DDNS. Check the specifications and instructions provided with the router.

An alternative to DDNS is to request a static IP address from your internet service provider (ISP). Your ISP may charge a fee for a static IP address.

Write down the domain name or static IP address for use with the OnCue™ software. You will need to enter the domain name or static IP address into the OnCue™ configuration screen. See TP-6616, OnCue™ Software Operation Manual.

9.3 DeviceInstaller Software

Use DeviceInstaller software, which is included on the OnCue software CD-ROM, to set up the network bridge. The DeviceInstaller software is typically only needed for initial setup of the bridge.

Install the DeviceInstaller software on the PC. If the software is already installed, proceed to the next section.

DeviceInstaller Software Installation Procedure

1. Insert the OnCue™ software CD-ROM into your PC's CD drive and wait a moment for the opening window to appear on the computer screen. If the opening screen does not appear, click on my computer and find the CD drive in the list that appears on the screen.
2. Click on DeviceInstaller Software. A new window will open.
3. Click on the Installer.msi file. The DeviceInstaller Setup Wizard will start. See Figure 24.
4. Read the information on the screen and click Next.

5. See Figure 25. DeviceInstaller software will be installed in the directory shown on the screen. Normally this will be the C:\Program Files directory. If you want to install the program in a different directory, click the Browse button and navigate to the desired location.
6. The next item on the screen is important if there are multiple users who log on to the PC with separate logins. If you want all PC users to be able to use the DeviceInstaller software, click Everyone. Otherwise select Just me. Click Next.
7. Continue to follow the instructions on the screen to install DeviceInstaller software on your PC.



Figure 24 DeviceInstaller Setup Wizard Opening Screen

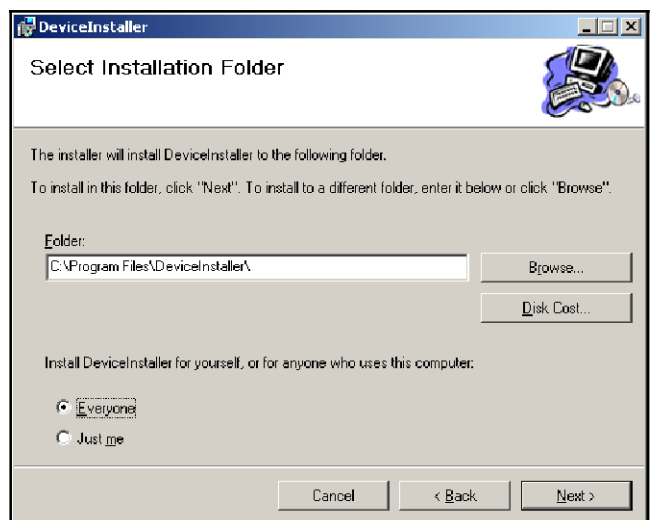


Figure 25 Installation Folder

9.4 Bridge Setup

9.4.1 Select Bridge IP Address

Use the following procedure to select an IP address for the network bridge.

Note: The network bridge may have a default IP address assigned at the factory for test purposes. Factory-set IP addresses are owned by the manufacturer and will not work on other networks.

Because of the large number of router manufacturers and models available, the procedures for router configuration may vary. Refer to the instructions provided with your router.

1. Use a network cable to connect the PC to the router.
2. Refer to the router instructions to use your web browser to connect to the router. Typical methods are to enter *www.routerlogin.com* or the router's IP address, which is usually 192.168.x.1 where x is 0, 1, or 2, depending on the router manufacturer.
3. You will then need to enter the router username and password (typical defaults are *admin* and *password* or *<blank>*).
4. Check the router's LAN IP setup screen or the router instructions for a list of IP addresses that can be assigned to connected devices. Look for the starting and ending IP addresses. See Figure 26 for a typical LAN IP Setup screen.

#	IP Address	Device Name	Mac Address
1	---	---	00:20:4a:99:2f:5c
2	192.168.1.2	LONE-ISLANDS	00:0f:20:c7:35:65

Figure 26 Typical LAN IP Setup Screen

5. Check the router's list of attached devices to identify IP addresses that are already used by devices connected to the router. See Figure 27.

#	IP Address	Device Name	MAC Address
1	--	--	00:20:4a:99:2f:5c
2	192.168.1.2	LONE-ISLANDS	00:0f:20:c7:35:65

Figure 27 Typical Attached Devices Screen

6. Select an unused IP address within the range of starting and ending numbers identified in step 4. An example based on the screens shown for this router would be 192.168.1.4.

Use the following procedure to change the IP address of the network bridge to the IP address selected above.

9.4.2 Assign Bridge IP Address

Use DeviceInstaller to Connect to the Network Bridge

1. Launch DeviceInstaller from the Windows Start button: All Programs → DeviceInstaller → DeviceInstaller.
2. In the DeviceInstaller menu on the top of the opening screen, click *View* → *Details*. If the devices are already displayed in detail format, nothing will change.
3. Click the button labeled *Search* on the left side of the DeviceInstaller toolbar. It has a picture of a magnifying glass. See Figure 29.
4. In the list of displayed devices, find the device with the hardware address that matches the MAC address printed on the external label of the network bridge. It will consist of 6 pairs of alphanumeric characters separated with dashes and is displayed in the column labeled *Hardware Address*. The Type column will show XPort or XPortIAP.

Procedure to Set the Bridge IP Address

5. Check the IP address column for the bridge.
 - If the device **does not** have an IP address already assigned, proceed to step 6.
 - If the device **does** have an IP address assigned, proceed to step 7.
6. If the device **does not** have an IP address already assigned:
 - a. Make sure NONE of the devices listed are highlighted by clicking in the white area below the list of devices.
 - b. Click the button labeled *Assign IP* in the DeviceInstaller toolbar. It has a picture of a globe with a plug in it. See Figure 29.
 - c. Enter the bridge's hardware address (MAC address) in the first *Assign IP Address* window. See Figure 28. The MAC address is printed on the bridge's label. See Figure 7. Include dashes between each pair of characters. The letters are not case-sensitive. Example: 00-20-3A-44-F5-6C.
 - d. Click *Next* and go to Step 8.

7. If the device **does** have an IP address assigned, follow these steps to change it to the address allocated by the router:
 - a. Click once on the line of the device to be changed. It should become highlighted. See Figure 29. If you accidentally double-click a dialog box will appear. Click the *Cancel* button to close it.
 - b. Click the button labeled *Assign IP* in the DeviceInstaller toolbar. It has a picture of a globe with a plug in it. See Figure 29.
 - c. Go to Step 8.

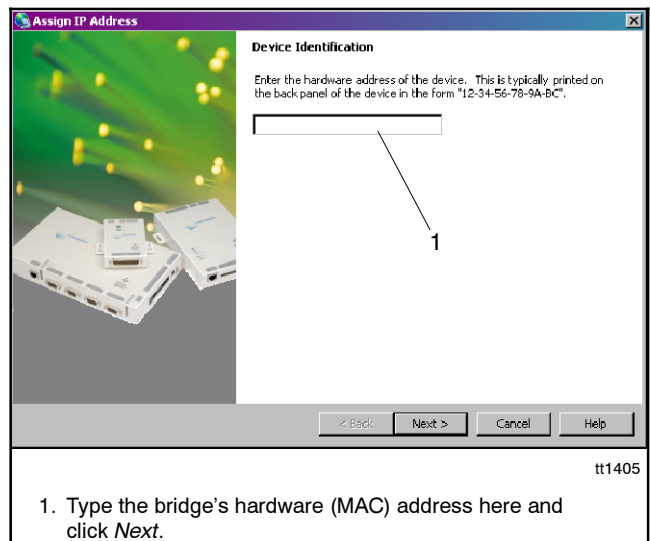


Figure 28 Enter Hardware (MAC) Address

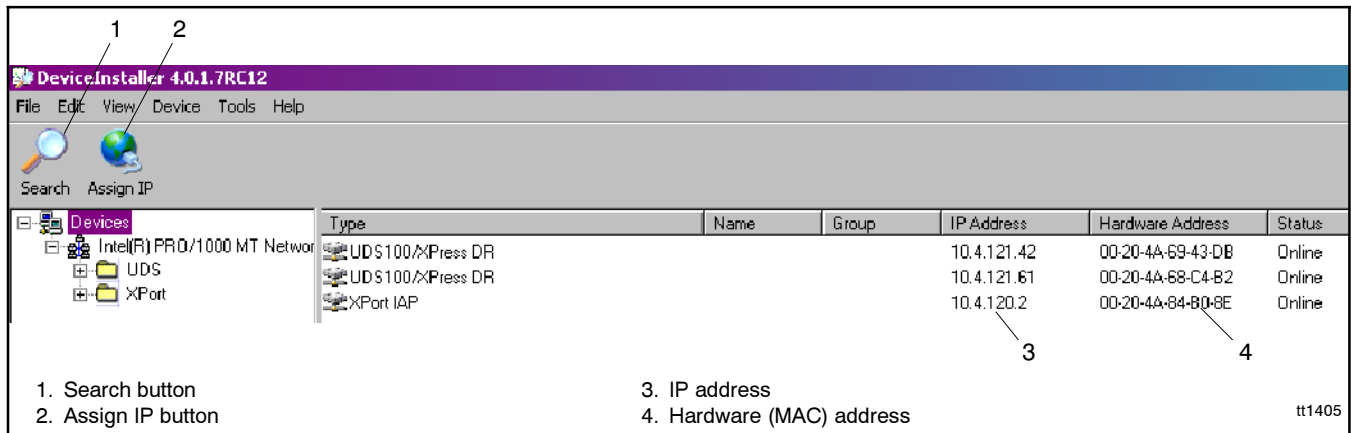


Figure 29 DeviceInstaller Opening Screen

8. Select *Assign a Specific IP Address* in the Assignment Method window, and click *Next*. See Figure 30.

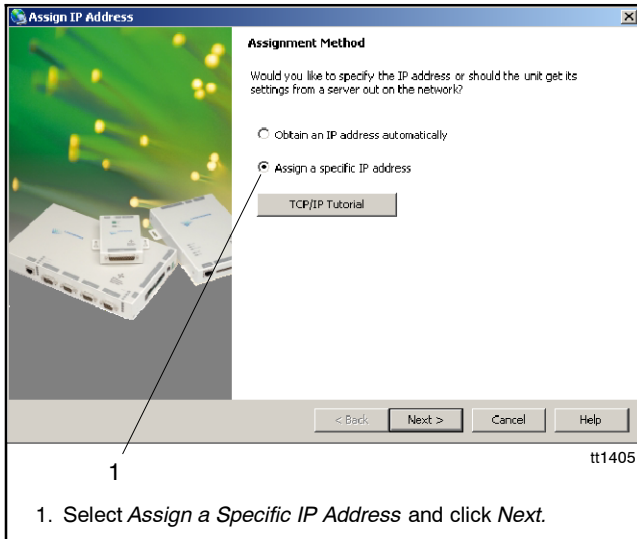


Figure 30 Assignment Method

9. See Figure 31. Use an available IP address that you identified in Section 9.4. Refer to the instructions provided with your router to find the subnet mask and gateway. Type in the bridge IP address, subnet mask, and default gateway in dotted decimal notation. Click Next.

Note: Write down the IP address. You will need it for the OnCue™ program later.

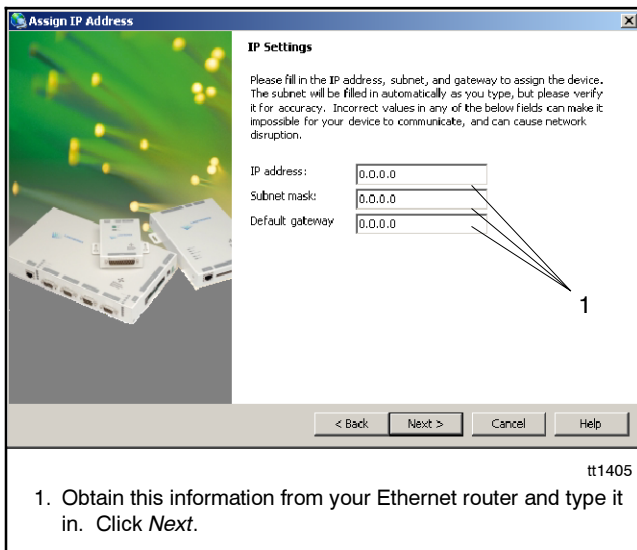


Figure 31 IP Settings

Note: Anytime before you click the *Assign* button in the next step, you can click *Cancel* to discard the settings and close the wizard.

10. Click the *Assign* button in the next window to assign the IP settings, or click *Cancel* to discard changes and close the wizard. See Figure 32.
11. After the IP address has been assigned, click the *Finish* button on the bottom of the Wizard window.

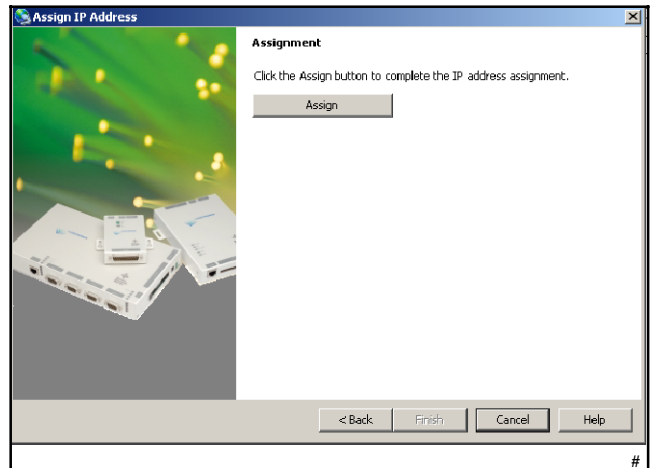


Figure 32 Assignment

9.5 Router Setup

9.5.1 Set Up Port Forwarding

The router must be configured to allow communication from the Internet to the network bridge. Configure your router to forward port 502 to the bridge IP address.

Refer to the information provided with your router for port forwarding instructions. Depending on the router's brand and model, the port forwarding instructions may be covered under the topics of virtual server, firewall settings, network address translation (NAT) settings, or other similar topics.

1. Follow the instructions provided with the router to find the port forwarding setup screen. See Figure 34.
2. Select port forwarding (not port triggering).
3. Add a service. In this example, click on Add Custom Service.
4. Select or enter the following information:

Name	Type in a name for your application
Type	TCP
Starting Port	502
Ending Port	502
IP Address	Enter bridge IP address assigned in Section 9.4.2.
Schedule	Always

Figure 33 Port Forwarding Information

Port Forwarding / Port Triggering

Please select the service type

Port Forwarding **Select Port Forwarding**

Port Triggering

Service Name: Server IP Address:

#	Service Name	Start Port	End Port	Server IP Address
<input type="radio"/> 1	KohlerOnCue	502	502	192.168.1.4

Click Add Custom Service

Ports - Custom Services

Service Name:

Service Type: **Enter information shown in Figure 33.**

Starting Port: (1~65534)

Ending Port: (1~65534)

Server IP Address:

Click Apply

Figure 34 Typical Port Forwarding Screens

9.5.2 Set Up Dynamic Domain Name System (DDNS)

Acquiring a home network domain name through a Dynamic Domain Name System (DDNS) service is recommended. See Section 9.1 for information about IP addresses and domain names.

The procedures for acquiring DDNS service will vary depending on your router and the DDNS service provider that you choose. These instructions are only guidelines based on one typical router manufacturer's instructions.

Check the available DDNS service providers that are allowed by the router by clicking on the down arrow in the router's Dynamic DNS screen. One example is DynDNS.com. Also note the information that you will need to obtain from the DDNS service provider to enter into the router setup screen, such as host name, username, and password. See Figure 35 for an example.

Go to the DDNS service provider's website and follow their instructions to register for free DDNS service. Select from a list of available domain names. Then create a name for your system, which will be added to the domain name, so that your personal domain name will look like *myname.homeip.net*.

Return to the router Dynamic DNS setup screen and enter the required information.

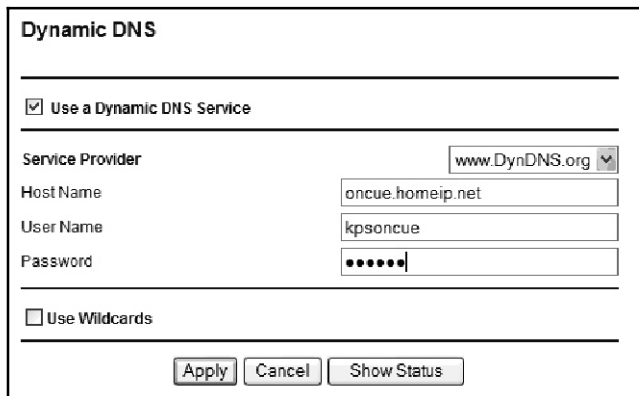


Figure 35 Typical DDNS Setup Screen

9.6 OnCue™ Software

After the bridge and router setup in Section 9 are complete, proceed to install and use the OnCue™ software. See TP-6616, OnCue™ Software Operation Manual, for instructions.

10 Password Reset

A password is required in order to operate the generator set from a personal computer using OnCue™ software. The password is required to start or stop the generator set or clear faults from the controller. The password is not needed to simply view the generator set operation data. See TP-6616, OnCue Software Operation Manual, for information about using and changing the password.

The network bridge is equipped with a password reset button for use in the event that the password is lost or forgotten. See Figure 37 for the location of the password reset button. To reset the network bridge password to the factory default password, use a bent paperclip or similar small tool to press and hold the password reset button for at least 10 seconds. The STAT LED on the circuit board will turn off and the OnCue display will show Not Connected when the password resets. See Figure 38 for LED locations.

11 Network Bridge Diagnostics

LED Indicators

LEDs indicate bridge operation as shown in Figure 36. Network LEDs on the RJ45 connector indicate communication on the Ethernet network side. See Figure 37.

Three LEDs are located on the circuit board. See Figure 38. TX and RX LEDs indicate communication on the generator set (CAN) side. If neither the TX nor the RX LEDs flashes, check the bridge power, connections and settings. If only one of the TX or RX LEDs flashes, check the connected devices on the generator set (CAN) side.

The STAT LED on the circuit board indicates power to the network bridge. If the STAT LED is not lit, check connections and check the generator set engine starting battery that supplies power to the bridge.

LED	Indication
STAT	Lights to indicate power to the bridge.
TX	Flashes to indicate CAN data is being transmitted.
RX	Flashes to indicate CAN data is being received.
RJ45	LEDs on the RJ45 connector light and flicker to indicate network communication on the Ethernet side.

Figure 36 Network Bridge LEDs

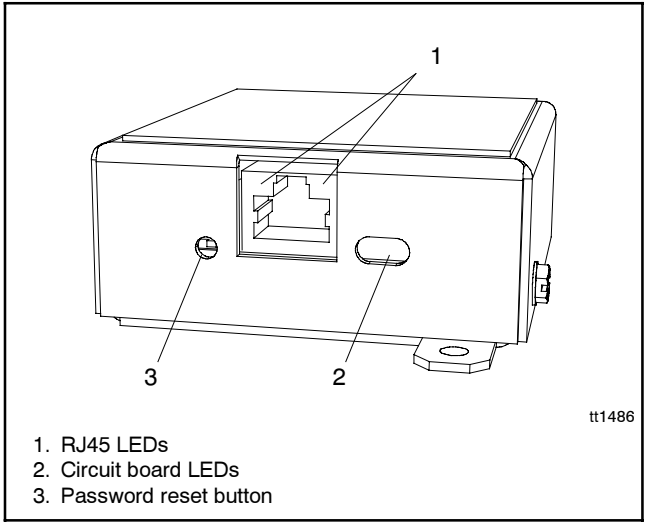


Figure 37 Network Bridge (side view)

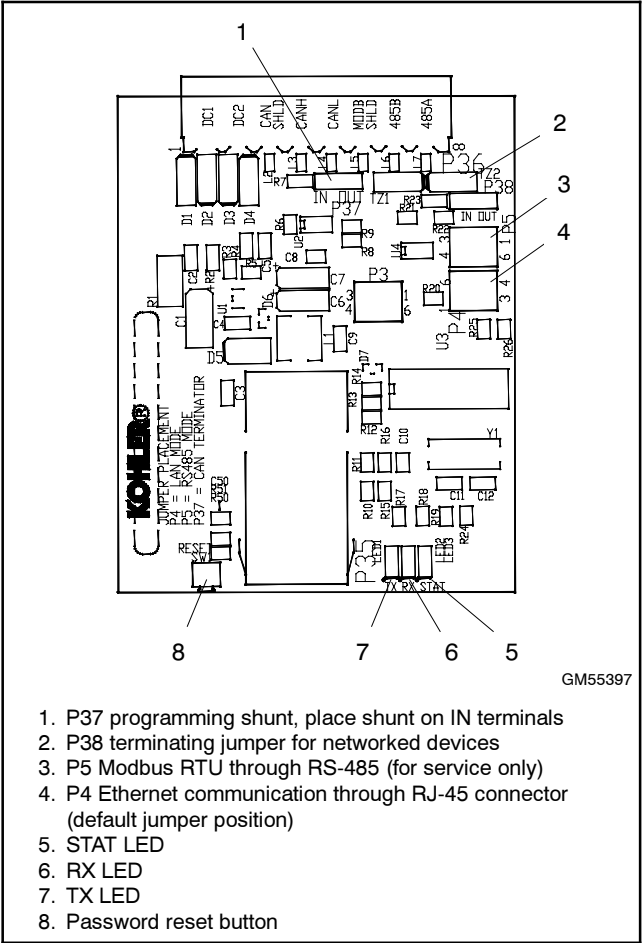


Figure 38 LEDs and Jumpers on the Circuit Board

Bridge Circuit Board Jumpers

Jumpers are used to set the communication parameters shown in Figure 39.

Jumper	Default	Description
P4*	Jumper	Ethernet communication through the RJ45 connector
P5*	None	Modbus RTU communication through the RS-485 connector (typically for service only)
P37	Jumper IN	CAN terminating resistor. Must be IN.
P38	None	Terminating resistor for the first and last devices in a daisy-chained network.

* Do not place jumpers on both P4 and P5.

Figure 39 Circuit Board Shunts/Jumpers

12 Modbus Information

Modbus registers are shown in Figure 40 for reference.

Register	Description	Access	Data Type	Range/Units
40001	Average AC L-L Voltage	RO	WORD	1 volt per bit
40002	Average AC Frequency	RO	WORD	1 Hz per bit
40003	Engine RPM	RO	WORD	1 RPM per bit
40004	Coolant Temp	RO	WORD	1 degree C per bit; -40 degree C offset
40005	Oil Pressure	RO	WORD	1 kPa per bit
40006	Battery Voltage	RO	WORD	0.1 VDC per bit
40007	Engine Hours (high word)	RO	WORD	0.1 hours per bit
40008	Engine Hours (low word)	RO	WORD	0.1 hours per bit
40009	Active Fault Codes SPN	RO	WORD	See Figure 42 and SAE J1939
40010	Active Fault Codes FMI	RO	WORD	See Figure 42 and SAE J1939
40011	Communications Status	RO	WORD	See Figure 41
40012	Code Version	RO	WORD	MSB = major version, LSB = minor version
40013-40028	Kohler proprietary	—	—	—
49999	Device ID	RO	WORD	J1939->MODBUS Convertor Device ID = 0x22

Figure 40 Network Bridge Modbus Registers

Bit Position	Description
Bit 0 (LSB)	CAN Receive Warning
Bit 1	CAN Transmit Warning
Bit 2	Receiver Bus Passive
Bit 3	Transmitter Bus Passive
Bit 4	CAN Bus Off
Bit 5	CAN Receive Buffer 0 Overflow
Bit 6	CAN Receive Buffer 1 Overflow
Bit 7	Unused
Bit 8	Unused
Bit 9	UART Frame Overrun
Bit 10	UART Framing Error
Bit 11	Unused
Bit 12	Unused
Bit 13	Unused
Bit 14	Unused
Bit 15 (MSB)	Unused

Figure 41 Communications Status for Register 40011

Fault Code	Fault FMI	Fault SPN	Fault Description
LOP	1	0x0064	Low oil pressure
HE	0	0x006E	High engine temp
LCL	1	0x006F	Low coolant level
LOC	1	0x006F	Loss of coolant
HB	0	0x00A8	High battery voltage
LB	1	0x00A8	Low battery voltage
OS	0	0x00BE	Overspeed
AF	2	0x02BD	Auxiliary fault
OC	0	0x068B	Overcrank
OF	0	0x0984	Overfrequency
UF	1	0x0984	Underfrequency
OU	0	0x0988	Overvoltage
UU	1	0x0988	Undervoltage
CC			Crank cycle

Figure 42 Fault Codes

Term	Definition
RO	Read only
WO	Write only
FMI	Failure mode identifier (see Figure 42)
SPN	Suspect parameter number (see Figure 42)
MSB	Most significant bit
LSB	Least significant bit

Figure 43 Definitions

13 Parts Lists

OnCue™, 8.5/12RES with ADC-RES

Kit: GM62630-KP3		
Qty.	Description	Part Number
1	Decal, Terminal Block	GM54820
1	Assy, J1939/ModBus/Ethernet Converter	GM58703
1	Harness, Y-Connector 8.5-17KW	GM62626
1	Harness	GM62627
1	Software, OnCue	GM62628
1	Diagram, Wiring Network Communication	GM62629
1	Panel Assy, Junction Box	GM66795
2	Washer, Plain	M125A-04-80
2	Screw, Pan Head Machined	M7985A-04010-20
2	Nut, Hex 4mm	M934-04-50
1	O/M OnCue Software, Res/Coml	TP-6616
1	TT Network Connection, OnCue, Res/Com	TT-1486

OnCue™, 17/18RES with ADC-RES

Kit: GM62630-KP1		
Qty.	Description	Part Number
1	Assy, J1939/ModBus/Ethernet Converter	GM58703
1	Harness, Y-Connector 8.5-17KW	GM62626
1	Harness	GM62627
1	Software, OnCue	GM62628
1	Diagram, Wiring Network Communication	GM62629
2	Screw, Pan Head Machined	M7985A-04010-20
2	Nut, Hex 4mm	M934-04-50
1	O/M OnCue Software, Res/Coml	TP-6616
1	TT Network Connection, OnCue, Res/Com	TT-1486
2	Washer, nylon, .194 ID x .625 in.OD	X-6278-8
1	Bushing	X-634-28

OnCue™, 15/30RES/RYG with ADC 2100

Kit: GM62630-KP2		
Qty.	Description	Part Number
1	Assy, J1939/ModBus/Ethernet Converter	GM58703
1	Harness	GM62627
1	Software, OnCue	GM62628
1	Diagram, Wiring Network Communication	GM62629
1	Harness, Y-Adapter On Cue	GM65797
2	Washer, Plain	M125A-04-80
2	Screw, Pan Head Machined	M7985A-04010-20
2	Nut, Hex 4mm	M934-04-50
1	O/M OnCue Software, Res/Coml	TP-6616
1	TT Network Connection, OnCue, Res/Com	TT-1486

Record the following information during system setup:	Notes
Generator Set Model <input type="checkbox"/> 8.5RES <input type="checkbox"/> 15RES <input type="checkbox"/> 12RES <input type="checkbox"/> 30RES <input type="checkbox"/> 17RES <input type="checkbox"/> 15RYG <input type="checkbox"/> 18RES <input type="checkbox"/> 30RYG	The model name is shown on the generator set nameplate.
Generator Controller Type <input type="checkbox"/> ADC 2100 <input type="checkbox"/> ADC-RES	See Figure 2 for controller identification.
Controller Application Code Version:	Recommended versions: ADC 2100: version 3.20 or higher ADC-RES: version 1.16 or higher Upgrade code if necessary.
Network Bridge IP Address:	Set the network bridge IP address using DeviceInstaller software. See Section 9.4. Example: 192.168.123.5
<p>CHOOSE ONE:</p> <input type="checkbox"/> Static IP Address Address:	Choose either a static IP address from your internet service provider (ISP) or a domain name from a dynamic domain name service (DDNS) provider. See Sections 9.2 and 9.5.2. Required information may vary for different DDNS service providers. See Section 9.5.2.
<p>OR</p> <input type="checkbox"/> Dynamic Domain Name Service (DDNS) Service Provider: Host Name: User Name: Password:	
Application Name (for port forwarding, if required):	See Section 9.5. Example: Kohler OnCue
OnCue Software Version Number:	Shown on the OnCue CD-ROM label and listed under Help>About in the OnCue Software.
Network Bridge Password:	Use OnCue software to set the password. See TP-6616, OnCue™ Software Operation Manual.

Figure 44 OnCue System Information Record