Specifications

Input Power Requirements

Powered through control board—NETCOM2P 140 mA + control board 130 mA = 270 mA

Powered through CIM—NETCOM2P 140 mA + CIM 150 mA = 290 mA

Network Interface

RJ45 (10/100 Base-T) Ethernet

LAN/WAN (TCP/IP protocol—port 3001)

Agency Approvals—Ethernet Socket

Complies with Class B limits of EN 55022: 1998 Direct & Indirect ESD.

Complies with EN55024:1998

Dimensions

1 9/16" x 1 15/16" (41 mm x 49 mm)

Environmental

Suitable for industrial and commercial applications.

Operating temperatures: 5^0 C to 70^0 C (41^0 F to 158^0 F)

RJ45 Ethernet (Xport) LED States

The RJ45 Ethernet terminal has two bi-colour LEDs:

Link LED (left side)		Activity LED (right side)	
Amber – solid	10 Mbps	Amber – flashing	Half-duplex
Green – solid	100 Mbps	Green – flashing	Full-duplex

Address Settings

*IP Address:
*Subnet Mask:
Gateway:
**Ethernet Connection Type:

* Required fields for device configuration with software

** If other than Automatic Negotiation

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Technical Support

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NETCOM2P Installation Guide – KD10031-E-0321

NETCOM2P Installation Guide

This guide outlines how to install and program the NETCOM2P—serial to Ethernet converter—for network communication. As the NETCOM2P can be configured to operate with a CIM or directly from a PC109x or later ACU control board, this guide is divided into the following two separate installation sections:

- NETCOM2P/CIM Installation—page 2
- NETCOM2P/ACU Control Board Installation (PC109x or later)—page 11

Please refer to the appropriate installation instructions and diagrams. Installation procedures are different for each type of configuration.

Important

Installing the NETCOM2P involves two connection procedures, temporary programming connections either via a serial cable or a network crossover cable, and permanent operating connections. This applies to both types of installations. Please be sure to review the relevant diagrams for programming and operating connections.

Before You Start

- Verify that you have all the parts as outlined below.
- Obtain a static IP address, subnet mask, and, if applicable, a gateway from the network administrator for each NETCOM2P. Space is provided at the back for recording addresses.
- Ensure the latest Keyscan NETCOM Program Utility is installed on a laptop or PC that can be connected via a serial data cable or network cross-over cable with the NETCOM2P for programming.

About the Reset Function

During the NETCOM2P programming procedures, you are prompted to reset the device, which is a soft re-boot. This is equivalent to a power cycle.

Contents	

Parts List	
NETCOM2P	1

NETCOM2P/CIM Installation

For installing a NETCOM2P mounted on a CIM, follow the directions in this section of the installation guide.

Install Keyscan NETCOM Program Tool Utility

Each NETCOM2P that you are installing must be programmed with the Keyscan NETCOM Program Utility. Ensure you have the latest NETCOM Program Utility software installed; otherwise you may encounter communication difficulties. You require a PC or laptop that has either of the following types of connections to program the device:

- direct serial connection (serial cable not supplied) with the NETCOM2P via the CIM terminal block
- network crossover cable (not supplied) with a connection to the NETCOM2P's RJ45 terminal

To install the Keyscan NETCOM Program Tool utility, use the download link and run the setup file available here: https://www.dormakaba.com/us-en/knowledge-center/software-downloads-updates/device-drivers-download

Important
If you program the NETCOM2P with a previous version of the NETCOM Program Utility, you may experience technical difficulties. You may have to re-program the NETCOM following the procedures outlined in Manually Configure the NETCOM2 via a Serial Connection located on page 19.

Embedded IP for Network Crossover Cable Programming

The NETCOM2P can be programmed using a network crossover cable connected to the NETCOM2P's RJ45 terminal. The NETCOM2P must be plugged into a CIM board. The CIM requires a 12 VDC power source.

The embedded IP address for programming the NETCOM2P is: 192.168.100.254

Connection Diagrams

Connection diagrams are on the succeeding pages of the guide as outlined:

- See Figure 1 to Figure 4 for temporary serial programming connections to the laptop/PC with the Keyscan NETCOM Program Tool utility software.
- See Figure 5 for NETCOM2P/CIM permanent operating connections on the network.

Supplementary Documents

You may also require the following Keyscan documentation:

- CIM Setup Guide (KD10027)
- Keyscan Technical Guide (KD10001)

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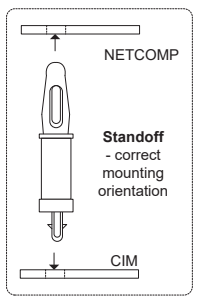
Steps to Program and Install a NETCOM2P with a CIM

1. Mount the NETCOM2P in the socket on the CIM as shown below. Press down so the standoffs secure the NETCOM2P to the CIM circuit board. Do not change the orientation of the standoffs.



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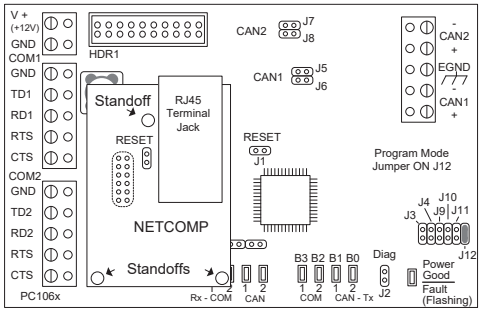
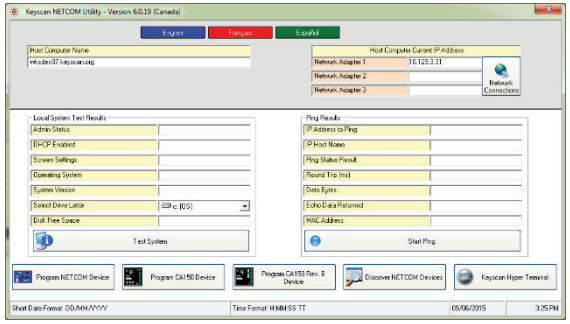


2. Mount the CIM/NETCOM2P in the designated location in the metal enclosure.
   - As an option the NETCOM2P can be programmed off-site before installation, providing you have a 12 VDC power supply that can be connected to the CIM's TB4 power terminal.
3. If programming the NETCOM2P using a serial connection, place a jumper on the CIM circuit board's jumper J12. If programming with a network crossover cable, do not place a jumper on J12.
4. Connect the ribbon cable from the HDR1 terminal on the CIM circuit board to the H2 terminal on the control board. See Figure 1 or Figure 3. The H2 terminal provides power to the CIM and the NETCOM2P.
5. Ensure the control board has power.
6. If the control board is newly installed and this is the first time it is powered up, restore the factory defaults as outlined depending on the version of PC109x control board:
   - J16 Jumpers – after applying power, place a jumper ON J16—pin H, then momentarily place a jumper ON J1—Clear Memory to load the factory defaults. Allow approximately 2 minutes and do not make any changes while the control board re-configures. Remove the jumper from J16—pin H.
   - S1 and S3 Switches – After applying power, press S1, wait 5 seconds, and then press S3 within 10 seconds to load the factory defaults. Allow approximately 2 minutes and do not make any changes while the control board re-configures.
7. Either connect the RS-232 serial cable from the laptop or PC to the COM2 terminal block on the CIM circuit board or connect the network crossover cable from the PC/laptop to the RJ45 terminal on the NETCOM2P.
   - If using the USB-SER adaptor, be sure the USB-SER adaptor has been configured before programming.
8. Turn on the laptop or PC connected to the CIM circuit board.

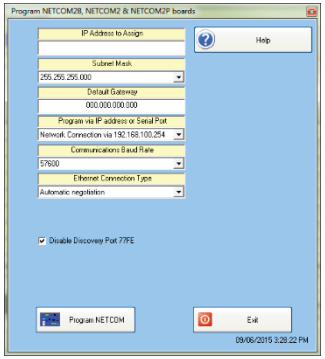
Continued on the next page…

Installation Steps …cont'd

9. Select start > All Programs > Keyscan NETCOM Program Tool > Keyscan NETCOM Program Tool.



10. From the Keyscan NETCOM Utility screen, click on Program NETCOM Device.
11. From the Select NETCOM Device Type screen, click on the Program NETCOM2 Family of Boards button.
12. From the Program NETCOM2B, NETCOM2 & NETCOM2P Boards screen, enter the IP address, the subnet mask and, if applicable, a gateway.



13. From Program via IP Address or Serial Port, do one of the following steps:
    - If using a serial cable, select the port on the PC/laptop that has the serial connection with the CIM/NETCOM2P.
    - If using a network crossover cable, select Network Connection via 192.168.100.254
14. Select the baud rate that corresponds to the J16 jumper settings or the S2 switch settings on the control board.
    - The recommended ACU bit/s (baud rate) is 57,600
15. Leave Ethernet Connection Type set on Automatic Negotiation unless the IT administrator gives a specific setting.
    - If the NETCOM device experiences network communication difficulties, you may have to alter the Ethernet Connection Type from automatic negotiation. (The Ethernet Connection Type is the network speed & duplex setting). Set the NETCOM so it matches the network equipment setting. If the network equipment was on an automatic setting, then reconfigure both the network equipment, which may include routers or switches, and the NETCOM to a matching fixed speed and duplex setting. As an example, NETCOM = 100 Mbit/Half Duplex – Network equipment = 100Mbit/Half Duplex.

11. After completing the Server parameters, press 1 for Channel 1 setup parameters and enter the following Keyscan values. Press the Enter key after each entry.

1 Channel 1 (Keyscan Values)

- Baudrate = 9600 (Must match ACU settings)
- I/F Mode = 4C
- Flow = 00
- Port No. = 3001
- ConnectMode = C0
- Send '+++' in Modem Mode = N
- Show IP addr after 'RING' = N
- Remote IP Address = 000.000.000.000
- Remote Port = 0
- DisConnMode = 00
- FlushMode = 80
- Pack Cntrl = 01
- DisConnTime = 15:00
- SendChar 1 = 00
- SendChar 2 = 00

12. After completing the Channel 1 parameters, Press 9 to save the configuration and restart the NETCOM2P unit.

Note

To exit without saving any changes, press 8.

0 Server (User Defined Values)

- IP Address: Enter the User Static IP Address, and press the Enter key.
- Set Gateway IP Addr: Press the Y key for yes or the N key for no.
- If Y was selected in the previous step, then enter the Gateway IP address, and press the Enter key.
- Netmask: Specify the Netmask by entering its list number (the number on the left opposite the Netmask) and press the Enter key.

  3 = 255.255.255.248

  4 = 255.255.255.240

  5 = 255.255.255.224

  6 = 255.255.255.192

  7 = 255.255.255.128

  8 = 255.255.255.0 (Default)

  9 = 255.255.254.0

  10 = 255.255.252.0

  11 = 255.255.248.0

  12 = 255.255.240.0

  13 = 255.255.224.0

  14 = 255.255.192.0

  15 = 255.255.128.0

  16 = 255.255.0.0

  17 = 255.254.0.0

  18 = 255.252.0.0

  19 = 255.248.0.0

  20 = 255.240.0.0

  21 = 255.224.0.0

  22 = 255.192.0.0

  23 = 255.128.0.0

  24 = 255.0.0.0
- Set DNS Server IP addr: Press the N key for no.
- Change telnet config password: Press the N key for no.

Continued on the next page…

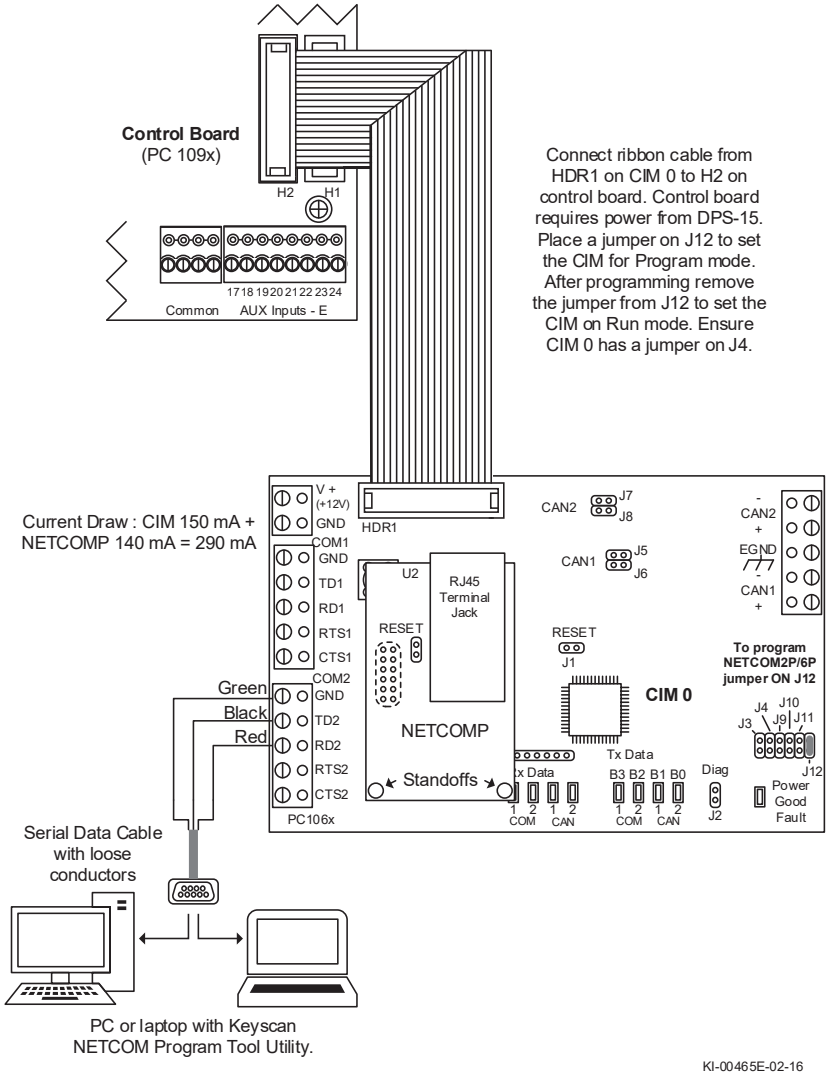
16. The Discovery Port 77FE is disabled by default. We recommend that you leave it on the default setting. This function is principally for troubleshooting communication difficulties.
    - If you de-select the Disable Discovery Port 77FE function (the box does not have a check mark) the Discover NETCOM Devices function will list the device by its MAC address and IP address if it is located on the network.
17. Click on the Program NETCOM button.
18. The Program NETCOM2B, NETCOM2 & NETCOM2P Boards screen indicates it is waiting for a NETCOM reset or power cycle. Momentarily place a jumper on the CIM board's J1 RESET pins; then remove the jumper and wait while the NETCOM is programmed.
    - If the NETCOM does not program on the 1st attempt, keep the NETCOM Program Settings screen open and press the F4 key. Click inside the box to the left of Program Server Address Settings Only so it has a check mark. Ensure the settings have been retained, including the IP Address, otherwise re-enter them. Click on the Program NETCOM button. If successful, program the NETCOM one more time. For additional programming tips, press the F1 key with the Keyscan NETCOM Program Settings screen open.
19. Do one of the following steps:
    - If using a serial connection, when prompted by the NETCOM Program Tool Utility, click on the OK button in the Disconnect the serial cable… screen and ensure that you remove the temporary RS-232 data cable connection from the CIM's COM2 terminal after the device has been programmed. Remove the jumper from J12 on the CIM circuit board.
    - If using a network crossover cable, disconnect the cable from the NETCOM2P and the PC/laptop.
20. Momentarily place a jumper on the NETCOM2P's RESET pins and then remove the jumper.
21. Place a jumper on J4 on the CIM unit to designate it as CIM 0.
22. Momentarily place a jumper on the CIM board's J1 RESET pins to initiate the jumper change in the preceding step.
23. Connect a network cable from the RJ45 jack on the NETCOM2P to a network terminal.
24. If the PC /laptop has a network connection, verify network communication with the NETCOM2P by selecting the Start Ping button on the Keyscan NETCOM Utility screen.
    - If the PC/laptop does not have a network connection, close the NETCOM Program Tool utility, complete any remaining connections for permanent operation, re-locate to a PC connected to the network and PING the NETCOM2's IP address using the Command Prompt. The Average Round Trip Times should be less than 100 milliseconds and the Packets Sent should equal the Packets Received with 0% loss. Continue at step 26.
25. Wait for the Ping Status result message:
    - IP Success indicates the NETCOM2P has network communication
    - IP Timed Out indicates the NETCOM2P does not have network communication—verify settings and connections
26. Click on the x in the upper right corner of the Keyscan NETCOM Utility screen to close the application.
27. Depending on the type of installation do one of the following steps:
    - If this is a new installation, install the Keyscan software, set up the site, and perform a full panel upload.
    - If this is an existing installation, log on to a Client software module, edit the site setup screens and perform a panel upload.

Temporary Programming Connections CIM/NETCOM2P

Figure 1 to Figure 4 illustrate serial programming connections from the PC or laptop to the CIM/NETCOM2P using the enclosed data cable.

If the PC or laptop does not have a serial port, use the optional USB-SER adaptor.

Figure 1 - Serial Programming Connections Powered via H2 on Control Board



Temporary connections for programming only.

Manually Configure the NETCOM2P via a Serial Connection

These procedures should only be performed in the event that the NETCOM Program Tool utility was used to program the NETCOM2P and the device is still failing to communicate.

If this condition does not apply to the NETCOM2P, use the appropriate procedures outlined in the preceding sections of this installation guide.

These procedures are intended for advanced computer users only.

Important
We recommend that you review the setup procedures before you actually perform them so you are familiar with the steps, some of which are intricate and require quick dexterity.

1. Depending on the type of NETCOM2P installation, refer to the Temporary Serial Programming Connection diagrams - NETCOM2P/CIM or NETCOM2P/ACU Control Board and with the serial data cable establish a connection to the PC laptop with the NETCOM Program Tool utility.
2. Ensure you have made the necessary settings as indicated on the respective temporary serial programming diagrams.
   - If you reset jumpers on the CIM board when powered, ensure that you momentarily place a jumper on the J1 RESET pins to re-configure the board
   - If you reset jumpers or DIP switches on the control board when powered, ensure that you momentarily place a jumper on the J6 RESET pins or press the S1 switch to re-initialize the control board
3. Open the NETCOM Program Tool utility and select the Keyscan Hyper Terminal button.
4. The Comm Port Number is defaulted to port #1. If you are using a different port connection, select the correct port #.
5. Leave the baud rate set on 9600. Click on the Open Port button.
   - If this fails, then you will have to re-open the session and try with the baud rate set at 57,600.
6. To enter Setup Mode, reset the NETCOM2P as follows:
   - NETCOM2P/CIM – momentarily place a jumper on the CIM board's J1 RESET pins
   - NETCOM2P/ACU – momentarily place a jumper on the control board's J6 pins or press the S1 switch
7. Within 1 second of the NETCOM2P reset, enter 3 lowercase x characters—xxx.
   - Tip—The easiest way to enter Setup Mode is to hold down the x key at the terminal (or emulation) while resetting the unit.
8. When the Setup Mode window opens, press the Enter key within 5 seconds to enter setup mode.
9. Once you reach the Change Setup: prompt, Press 0 for Server setup parameters and enter the following values for 0 Server and 1 Channel 1 (Keyscan Values)
10. Go to the next page for setting NETCOM2P values.

NETCOM2P/Control Board Operational Connections

Figure 8 illustrates NETCOM2P operating connections and jumper settings when mounted on a PC109x or higher control board. This configuration only supports a single control board communication loop.

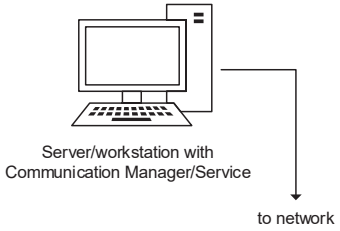
Multiple Building Communication on a WAN

Keyscan requires a point-to-point private network where NETCOMs are used on a LAN/WAN (TCP/IP) that integrates building to building communication.

Figure 8 - NETCOM2P/PC109x (or higher) Control Board Connections

Parts List

- PC
- 10/100 Base-T Cable
- Control Board
- NETCOM2P or NETCOM6P



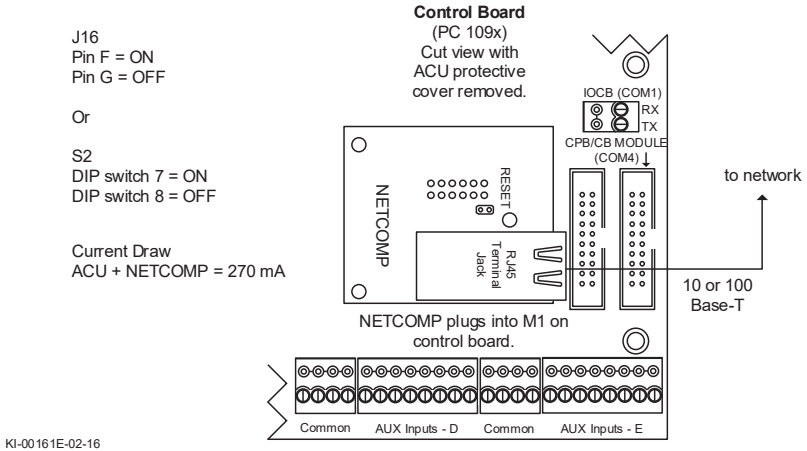


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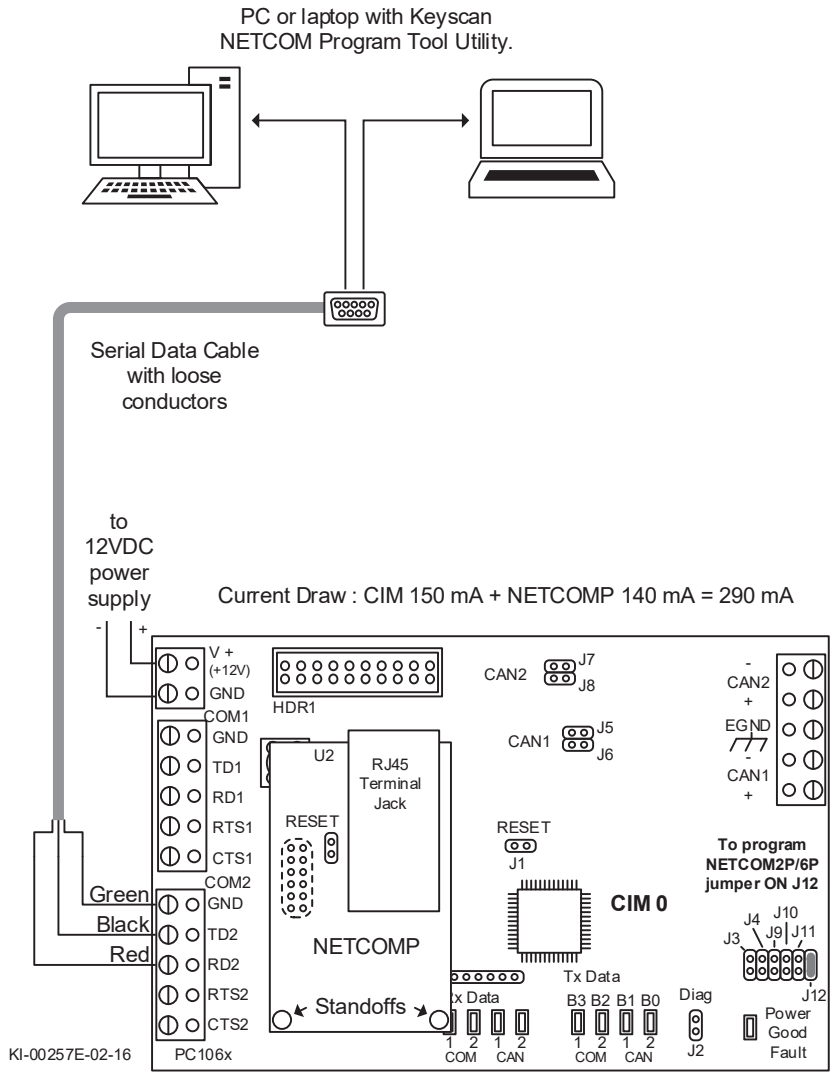
Figure 2 - Serial Programming Connections via Independent 12 VDC Supply



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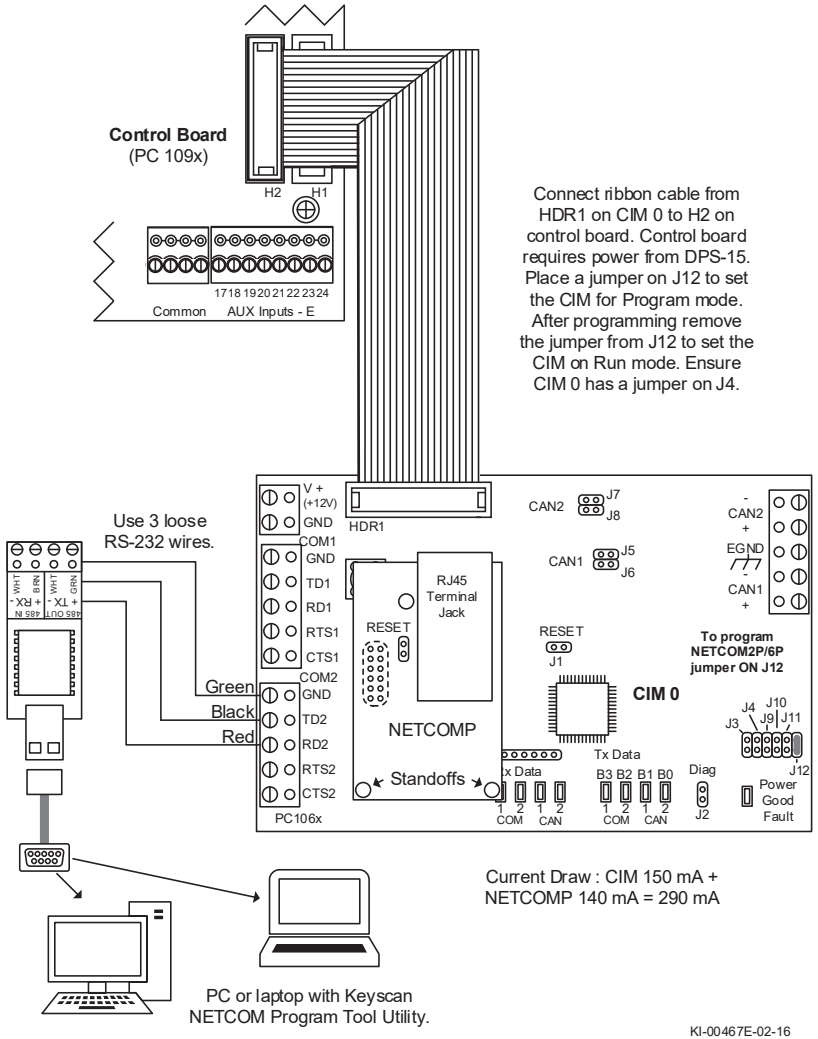
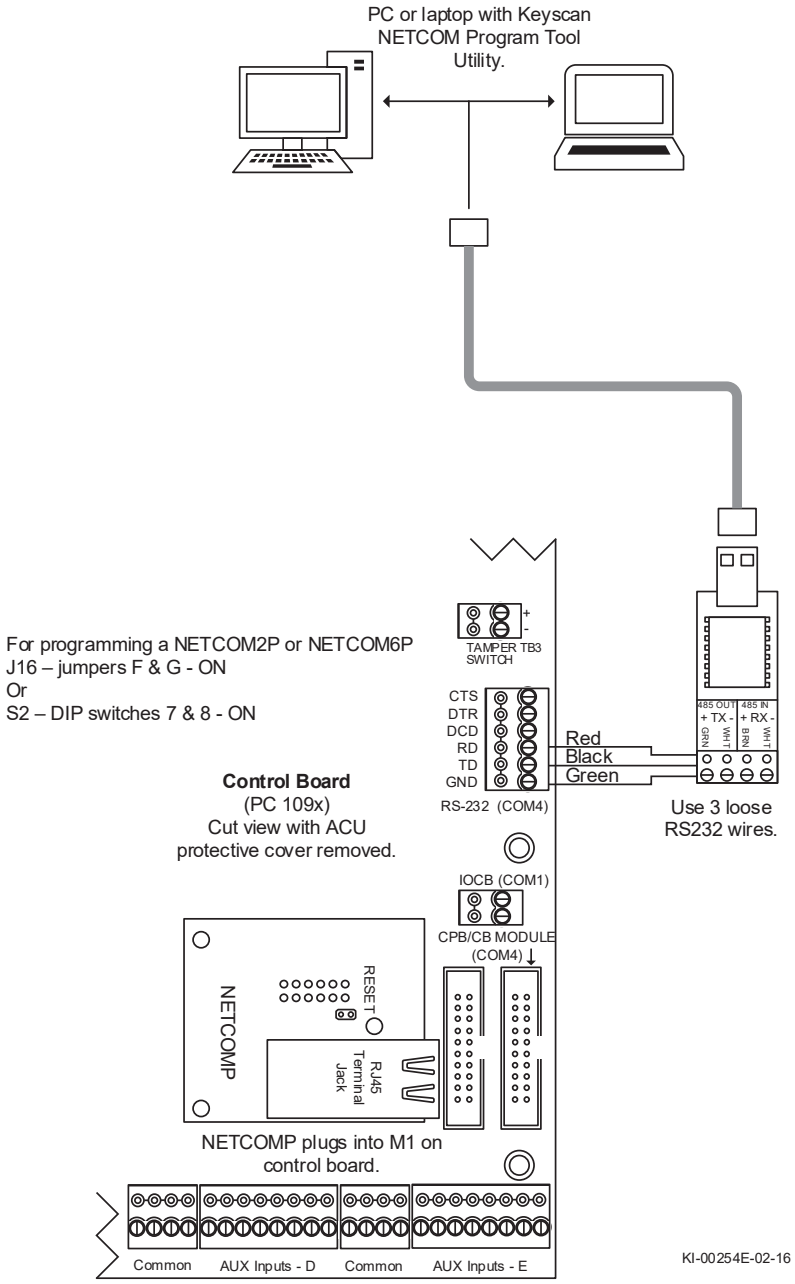
Temporary connections for programming only.

Figure 3 - Optional USB-SER Serial Programming Connections Powered via H2 on Control Board



Temporary connections for programming only.

Figure 7 - Serial Programming Connections with USB Adaptor



Serial Programming Connections—ACU/NETCOM2P

Figure 6 illustrates serial programming connections from the PC or laptop to the NETCOM2P via the RS-232 (COM4) terminal block on the control board using the enclosed data cable.

If the PC or laptop does not have a serial port, use the optional USB-SER Adaptor as shown in Figure 7.

Figure 6 - Serial Programming Connections

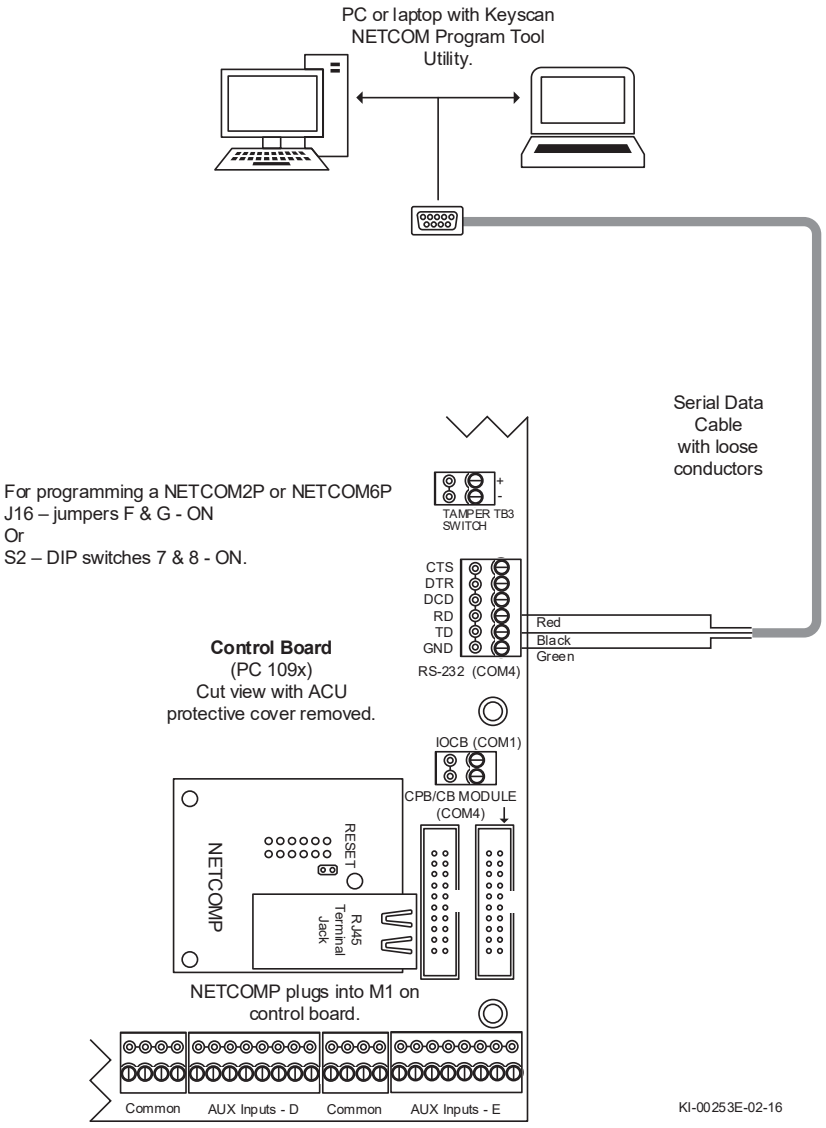
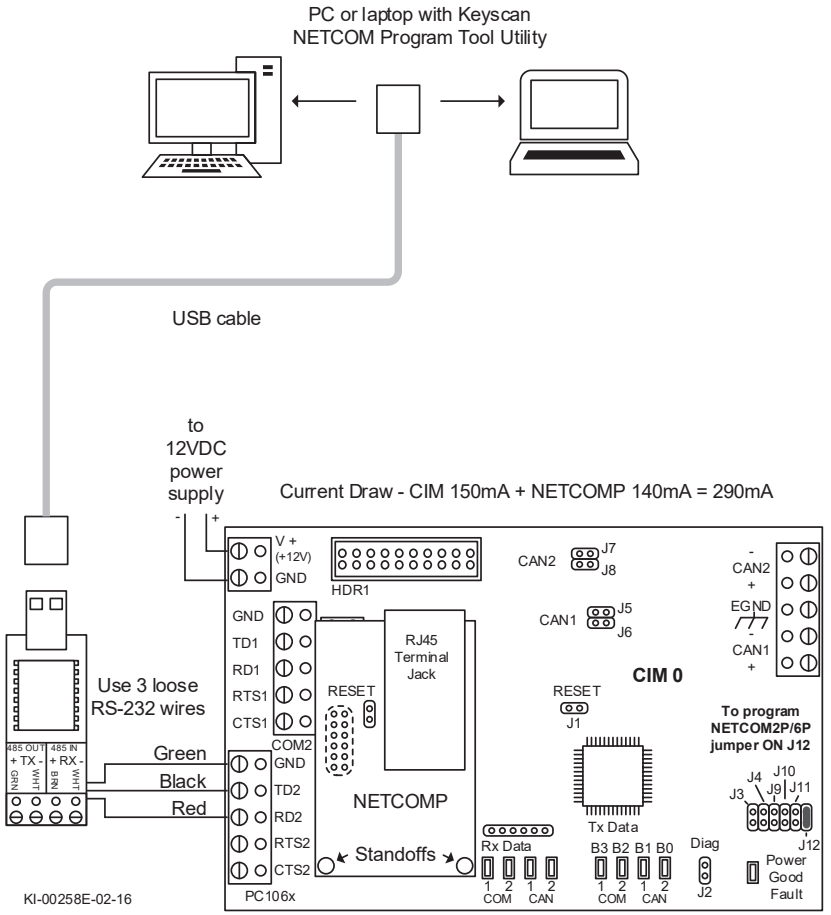


Figure 4 - Optional USB-SER Serial Programming Connections via Independent 12 VDC Supply

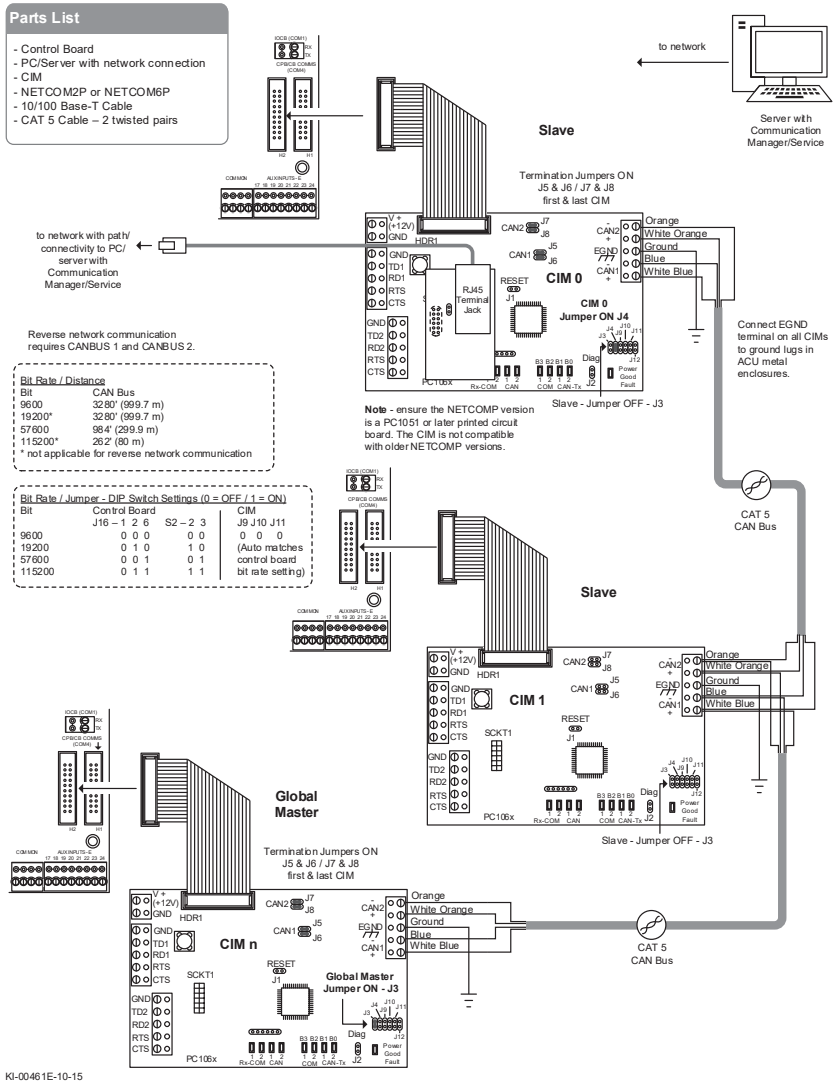


Temporary connections for programming only.

NETCOM2P/CIM Operational Connections

Figure 5 illustrates NETCOM2P operating connections with multiple CIM circuit boards. Ensure that the CIM module with the NETCOM2P is designated as CIM 0 with a jumper on J4.

Figure 5 - NETCOM2P/CIM Operational Connections



minutes and do not make any changes to the control board while the system status LED is flashing red and the piezo is beeping.

30. Close and secure the ACU enclosure door.
31. Depending on the type of installation do one of the following steps:
    - If this is a new installation, install the Keyscan software, set up the site, and perform a full panel upload.
    - If this is an existing installation, log on to a Client software module, edit the site setup screens and perform a panel upload.

which may include routers or switches, and the NETCOM to a matching fixed speed and duplex setting. As an example, NETCOM = 100 Mbit/Half Duplex – Network equipment = 100Mbit/Half Duplex.

16. Click on the Program NETCOM button.
17. The Program NETCOM screen indicates it is waiting for a NETCOM reset or power cycle. Momentarily place a jumper on the control board's J6 RESET pins then remove the jumper or press the S1 button.
18. Wait while the NETCOM Program Tool utility programs the NETCOM device.
    - If the NETCOM does not program on the 1st attempt, keep the NETCOM Program Settings screen open and press the F4 key. Click inside the box to the left of Program Server Address Settings Only so it has a check mark. Ensure the settings have been retained, including the IP Address, otherwise re-enter them. Click on the Program NETCOM button. If successful, program the NETCOM one more time. For additional programming tips, press the F1 key with the Keyscan NETCOM Program Settings screen open.
19. Do one of the following steps:
    - If using a serial connection, when prompted by the NETCOM Program Tool Utility, click on the OK button in the Disconnect the serial cable… screen and disconnect the serial cable from the RS-232 (COM4) terminal on the control board.
    - If using a network crossover cable, disconnect the cable from the NETCOM2P and the PC/laptop.
20. Connect an Ethernet cable from a network jack to the RJ45 terminal on the NETCOM2P.
21. Enable M1 for communication with the NETCOM2P as follows:
    - J16 – pin F = ON / pin G = OFF
    - S2 – switch 7 = ON / switch 8 = OFF
22. Momentarily place a jumper on J6 Reset or press the S1 switch on the control board.
23. If the PC/laptop has a network connection, verify network communication with the NETCOM2P. Select the Start PING button on the Keyscan NETCOM Utility screen.
    - If the PC/laptop does not have a network connection, close the NETCOM Program Tool utility, complete any remaining connections for permanent operation, re-locate to a PC connected to the network and PING the NETCOM2's IP address using the Command Prompt. The Average Round Trip Times should be less than 100 milliseconds and the Packets Sent should equal the Packets Received with 0% loss. Continue at step 26.
24. Wait for the PING Status result message:
    - IP Success indicates the NETCOM2P has network communication
    - IP Timed Out indicates the NETCOM2P does not have network communication—verify settings and connections
25. Click on the x in the upper right corner of the Keyscan NETCOM Utility screen to close the application.
26. Disconnect the power from the ACU control board.
27. Re-mount the ACU protective cover.
28. Re-apply power after the ACU protective cover has been re-mounted.
29. On the control board, do one of the following steps depending on the PC109x control board version:
    - J16 Jumpers - Place a jumper on J16—pin H. Momentarily place a jumper on J1 to re-load the factory default settings. This may take two minutes. Do not make any changes to the control board while the system status LED is flashing red and the piezo is beeping. When completed, remove the jumper from J16—pin H.
    - S1 and S3 Switches – After applying power, press S1, wait 5 seconds, and then press S3 within 10 seconds to load the factory defaults. Allow approximately 2

NETCOM2P/ACU Control Board Installation

For installing a NETCOM2P mounted directly on an ACU control board—PC109x or later—follow the directions from page 11 to page 18.

Install Keyscan NETCOM Program Tool Utility

Each NETCOM2P that you are installing must be programmed with the Keyscan NETCOM Program Utility. Ensure you have the latest NETCOM Program Utility software installed; otherwise you may encounter communication difficulties. You require a PC or laptop that has either of the following types of connections to program the device:

- direct serial connection (serial cable not supplied) with the NETCOM2P via the CIM terminal block
- network crossover cable (not supplied) with a connection to the NETCOM2P's RJ45 terminal

To install the Keyscan NETCOM Program Tool utility, use the download link and run the setup file available here: https://www.dormakaba.com/us-en/knowledge-center/software-downloads-updates/device-drivers-download

Important
If you program the NETCOM2P with a previous version of the NETCOM Program Tool utility, you may experience technical difficulties. You may then have to re-program the NETCOM following the procedures outlined in Manually Configure the NETCOM via a Serial Connection on page 19.

Embedded IP for Network Crossover Cable Programming

The NETCOM2P can be programmed using a network crossover cable connected to the NETCOM2P's RJ45 terminal. The NETCOM2P must be plugged into a PC109x control board. The control board requires a 12 VDC power source.

The embedded IP address for programming the NETCOM2P is: 192.168.100.254

Connection Diagrams

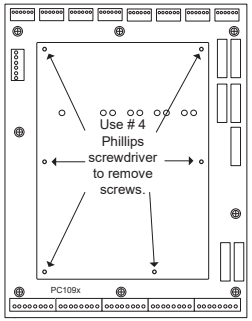
Connection diagrams are on the succeeding pages of the guide as outlined:

- See Figure 6 or Figure 7 for temporary serial programming connections to the laptop/PC with the Keyscan NETCOM Program Tool software.
- See Figure 8 for permanent network operating connections with a NETCOM2P and ACU. This format only supports a one panel communication loop.

Steps to Program and Install a NETCOM2P on a Control Board

The NETCOM2P can be plugged directly into a PC109x or later control board. Please note that this configuration only supports a single control board communication loop. For programming the NETCOM2P (required), use a direct serial connection via the RS-232 (COM4) terminal block on the ACU as instructed.

1. Touch the earth ground lug in the ACU metal enclosure to discharge body static.
2. Power down the ACU control board.
3. Using a #4 Phillips screwdriver, unfasten the 6 screws holding the ACU protective cover. Remove the cover and set it aside with the six screws.



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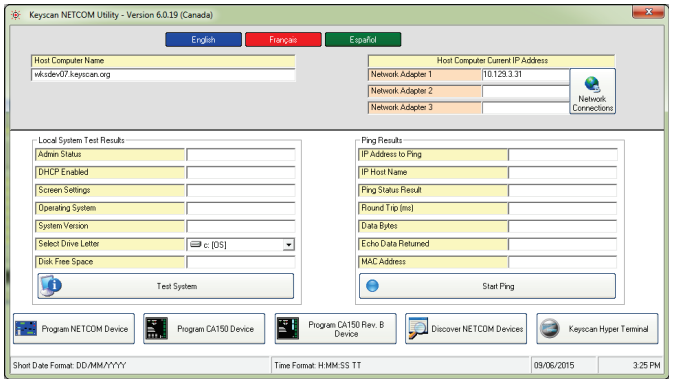
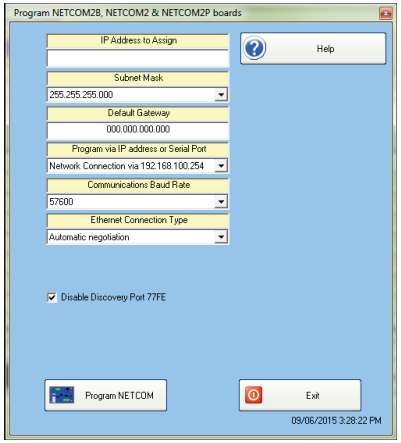
4. Mount the NETCOM2P into M1 in the correct orientation as shown in Figure 6 or Figure 7.
5. If programming via a serial cable, set the control board's Ethernet M1 communication on program mode for the NETCOM2P to one of the following settings depending on the PC109x version. If programming via a network crossover cable, go to the next step.
   - J16 – pins F and G – ON
   - S2 – switches 7 and 8 – ON
6. Either connect the serial programming cable from the RS-232 (COM4) terminal on the ACU to the laptop or PC or connect the network crossover cable from the PC/laptop to the RJ45 terminal on the NETCOM2P.
   - If using the USB-SER adaptor, be sure the USB-SER adaptor has been configured before programming.
7. Apply power to the ACU control board.
8. Turn on the laptop or PC connected to the ACU control board.
9. Select start > All Programs and select Keyscan NETCOM Program Tool from the Keyscan menu.

Steps to Program and Install a NETCOM2P/ACU Control Board …cont'd

10. From the Keyscan NETCOM Utility screen, click the Program NETCOM Device button.



11. From the Select NETCOM Device Type screen, click on the Program NETCOM2 Family of Boards button.
12. From the Program NETCOM2B, NETCOM2 & NETCOM2P Boards screen, enter the IP address, the Subnet Mask, and a Gateway (optional).



13. From Program via IP Address or Serial Port, do one of the following steps:
    - If using a serial cable, select the port on the PC/laptop with the serial connection to the control board's RS-232 (COM4) terminal so the NETCOM2P can be programmed.
    - If using a network crossover cable, select Network Connection via 192.168.100.254
14. Select the baud rate that corresponds to the control board communication J16 or S2 setting. The recommended ACU bit/s (baud rate) is 57,600.
15. Leave Ethernet Connection Type set on Automatic Negotiation unless the IT administrator gives a specific setting.
    - If the NETCOM device experiences network communication difficulties, you may have to alter the Ethernet Connection Type from automatic negotiation. (The Ethernet Connection Type is the network speed & duplex setting). Set the NETCOM so it matches the network equipment setting. If the network equipment was on an automatic setting, then reconfigure both the network equipment,