Installation Guide

Rover™ Service Tool

X3964106501

⚠️**SAFETY WARNING**

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

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TRANE
TECHNOLOGIES™

Introduction

These instructions describe how to install, upgrade, and connect the Rover Service Tool and how to verify network communications.

Warnings, Cautions, and Notices

Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:

⚠ WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.
NOTICE	Indicates a situation that could result in equipment or property-damage only accidents.

⚠ WARNING

Proper Field Wiring and Grounding Required!

Failure to follow code could result in death or serious injury.

All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state/national electrical codes.

⚠ WARNING

Personal Protective Equipment (PPE) Required!

Failure to wear proper PPE for the job being undertaken could result in death or serious injury.

Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, MUST follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- Before installing/servicing this unit, technicians MUST put on all PPE required for the work being undertaken (Examples; cut resistant gloves/sleeves, butyl gloves, safety glasses, hard hat/bump cap, fall protection, electrical PPE and arc flash clothing). ALWAYS refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.

- When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labelling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.

- If there is a risk of energized electrical contact, arc, or flash, technicians MUST put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, PRIOR to servicing the unit. NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.

> ⚠ **WARNING**
>
> **Follow EHS Policies!**
> **Failure to follow instructions below could result in death or serious injury.**
>
> - All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.
> - Non-Trane personnel should always follow local regulations.

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Revision History

This version of the *Rover™ Service Tool, Version 7.3 Installation Instructions* include an update to ordering number and software requirements.

Table of Contents

Installation Requirements and Procedures

Use the following information and procedures to install, uninstall, reinstall, and upgrade the Rover Service Tool.

Rover Laptop Requirements

Your laptop must meet the following hardware and software requirements:

- 1 GB RAM (minimum for 32–bit systems; 2 GB RAM for 64–bit systems)
- 1024 x 768 screen resolution
- Ethernet 10/100 LAN card
- An available USB 2.0 port
- Windows 7 Service Pack 1 Enterprise or Professional (32-bit or 64-bit), Windows 10 operating system (32–bit or 64–bit), or Windows 11
- Microsoft .NET Framework 3.5
- Microsoft Visual C++ 2010 Redistributable Package (x86)

Note: Rover is designed and validated for this minimum laptop configuration. Any variation from this configuration may have different results. Therefore, support for Rover is limited to only those laptops with the configuration previously specified.

Installing Rover for the First Time

Before you begin, set your screen resolution to 1024 x 768 or higher. Close all open programs and virus protection software. Depending on your operating system, a Windows logo warning will display asking to install a driver. Click **Continue**.This message may occur at the end of the installation procedure.

Do Not insert the USB Comm4 card until the Rover installation is complete, and **Do Not** insert the USB LonTalk card until you are instructed by the system.

To install Rover:

1. Insert the Rover USB flash drive, navigate to the Setup.exe file, and double-click it.

    Note: The USB flash drive should only be used to install the Rover software.

2. Double-click the **Rover** icon on your desktop, then click **Registration** to register Rover.

    You will need an Internet connection and the authorization code from your flash drive.

Uninstalling Rover

Follow these instructions to completely remove all components of the Rover service tool from your laptop PC.

1. Click **Start>Control Panel>Programs and Features**.
2. Locate the Rover program under the listing on the "Uninstall or change a program" screen.
3. Click **Uninstall** to uninstall the current version of Rover.

Reinstalling Rover

If any of the Rover application files become corrupt or lost, you can perform a reinstall. If reinstalling does not restore the files or fix the problem, try uninstalling Rover (refer to the previous section) and then reinstalling it again. Before beginning, close all open programs.

1. Insert the Rover USB flash drive, navigate to the Setup.exe file, and double-click it.
2. Follow the on-screen instructions.
3. When the *Setup Complete* dialog box appears, click the **Finish** button to complete the reinstallation.

Upgrading Rover

Follow these instructions if you have a previous version of Rover installed and before beginning, close all open programs and virus protection software.

1. Insert the Rover USB flash drive, navigate to the Setup.exe file, and double-click it.

2. Double-click the **Rover** icon on your desktop, then click **Registration** to register Rover. You will need an Internet connection and the authorization code from the USB flash drive.

Note: All previous versions of Rover software will be automatically uninstalled prior to installation of Rover 7.3. Future upgrades will be automatically supported.

Connecting to a LonTalk Link

This section describes several Rover connection methods.

Connecting to a LonTalk Link Using the USB LonTalk Adapter

The USB LonTalk adapter is supplied with Rover packages X13651500-01, X13651502-01, X13651499-01, and X13651503-01.

To connect to a LonTalk link:

1. Connect the USB LonTalk adapter and cables through a zone sensor or a USB LonTalk controller as shown in the two figures that follow in this subsection.

2. Test the communications link. (Refer to "Verifying Using a USB Adapter," p. 17..)

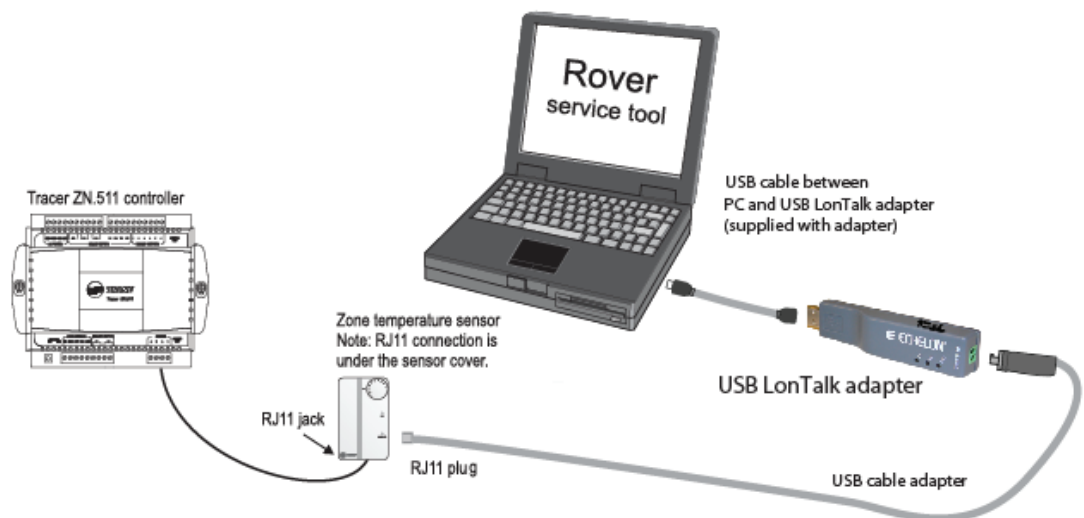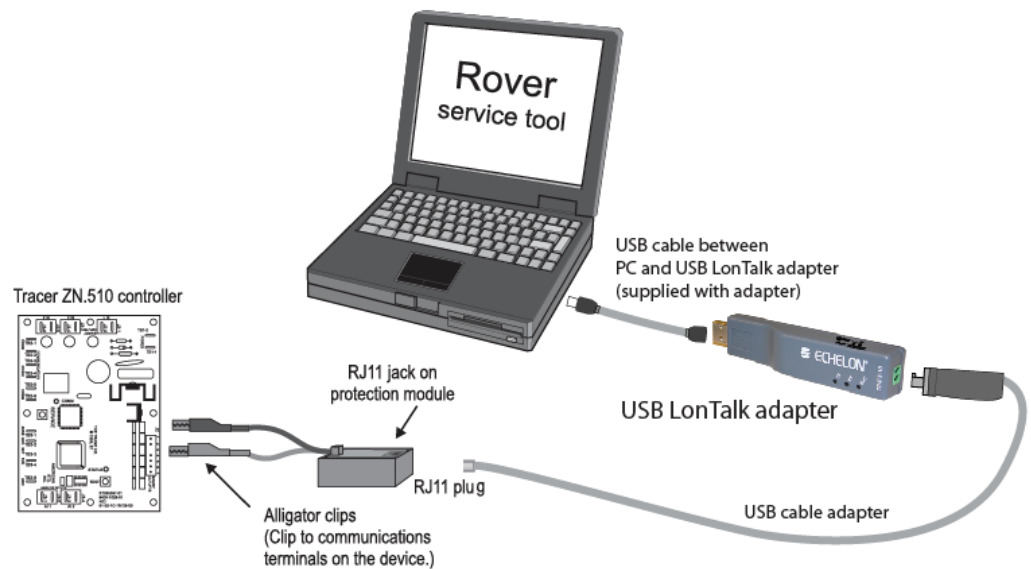**Figure 1.   Connecting to a LonTalk controller through a zone sensor**

Figure 2.   Connecting to a LonTalk controller using alligator clips or the quick connect adapter

Connecting to a LonTalk Link Using the PCMCIA LonTalk Card

The PCMCIA LonTalk card was previously supplied with Rover Version 5.0 and older. To connect to a LonTalk link:

1. Insert the PCMCIA LonTalk card in your laptop PC.

2. Connect the cables through a zone sensor or a LonTalk controller as shown in the figures that follow in this subsection.

3. Test communications link (refer to .).

Figure 3.   Connecting to a LonTalk controller through a zone sensor
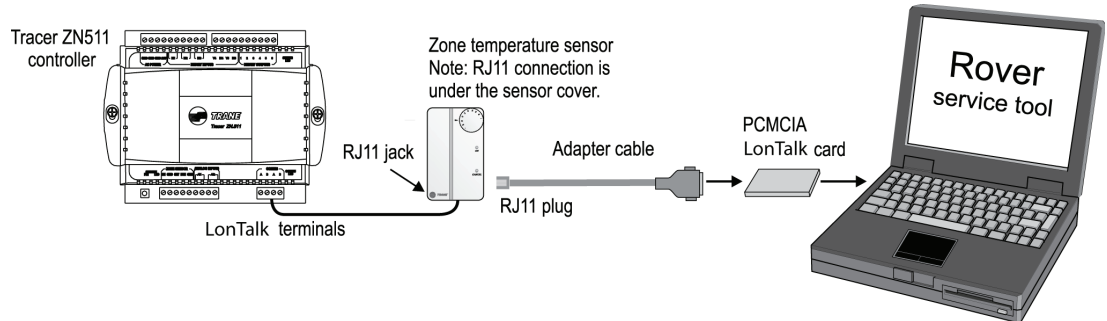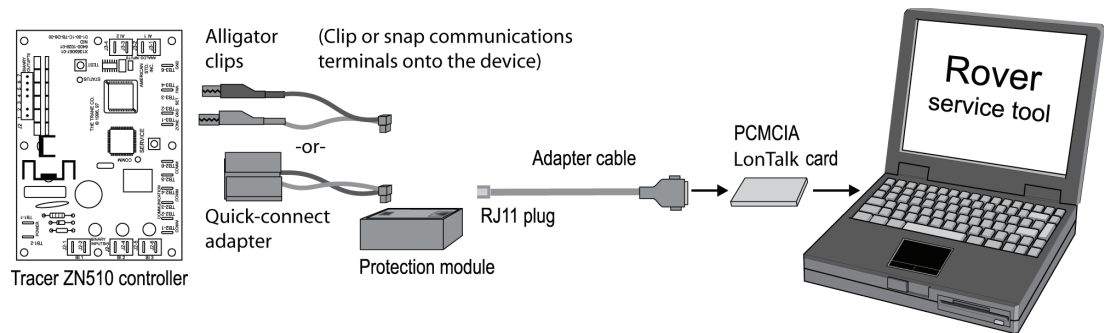

Figure 4.   Connecting to a LonTalk controller using alligator clips or quick-connect adapter

TRANE

Connecting to a System Controller Using the LonTalk Interface Adapter

The procedures in this section explain how to attach the LonTalk Interface Adapter to a Tracer SC or to a Tracer SC+ with an Echelon U60 module and then connect Rover to the Tracer SC or Tracer SC+.

Connecting to a Tracer SC Using the LonTalk Interface Adapter

To connect Rover to a Tracer SC using the provided adapter (refer to the figure in "Alternate Wiring," p. 9):

1. Unplug the terminal block from the lower Lon Link on the Tracer SC.

   Note: The Rover LonTalk Adapter will only fit into the lower Lon Link on the Tracer SC. Therefore, reserve the lower Lon Link for the adapter and do not connect the LonTalk network wiring to this terminal. Instead, wire the LonTalk network link to the upper Lon Link terminal. If the Tracer SC is terminated at the end of the LonTalk network link, there will only be one set of wires connected on the upper terminal block. However, if the Tracer SC is installed in the middle of the LonTalk network link, there will be two sets of wires to connect. In this case, gang two wires under each terminal of the upper Lon Link terminal block instead of using both the upper and lower Lon Link terminal blocks. If using both the upper and lower Lon Link terminals for network wiring, refer to the Alternate Wiring section below.

2. Plug the supplied LonTalk interface adapter into the location where the terminal block was removed.

3. Plug the terminal block, removed in the first step, into the top of the LonTalk interface adapter.

4. Connect the supplied USB cable between the PC and the USB LonTalk adapter (as shown in the second figure in "Connecting to a LonTalk Link Using the USB LonTalk Adapter," p. 7).

5. Connect the USB cable adapter to the USB LonTalk adapter (as shown in "Connecting to a LonTalk Link Using the USB LonTalk Adapter," p. 7). The adapter should click easily into the card. If you have to use force, the adapter may be upside down.

6. Connect the RJ11 plug on the other end of the cable adapter to the RJ11 jack on the LonTalk interface adapter on the Tracer SC.

7. Test the communications link. Refer to "Verifying Network Communications," p. 17..

Alternate Wiring

In cases where the LonTalk network wiring uses both the upper and lower terminals, the technician will have to break the communication on the link in order to insert the LonTalk interface adapter into the lower Lon Link terminal.
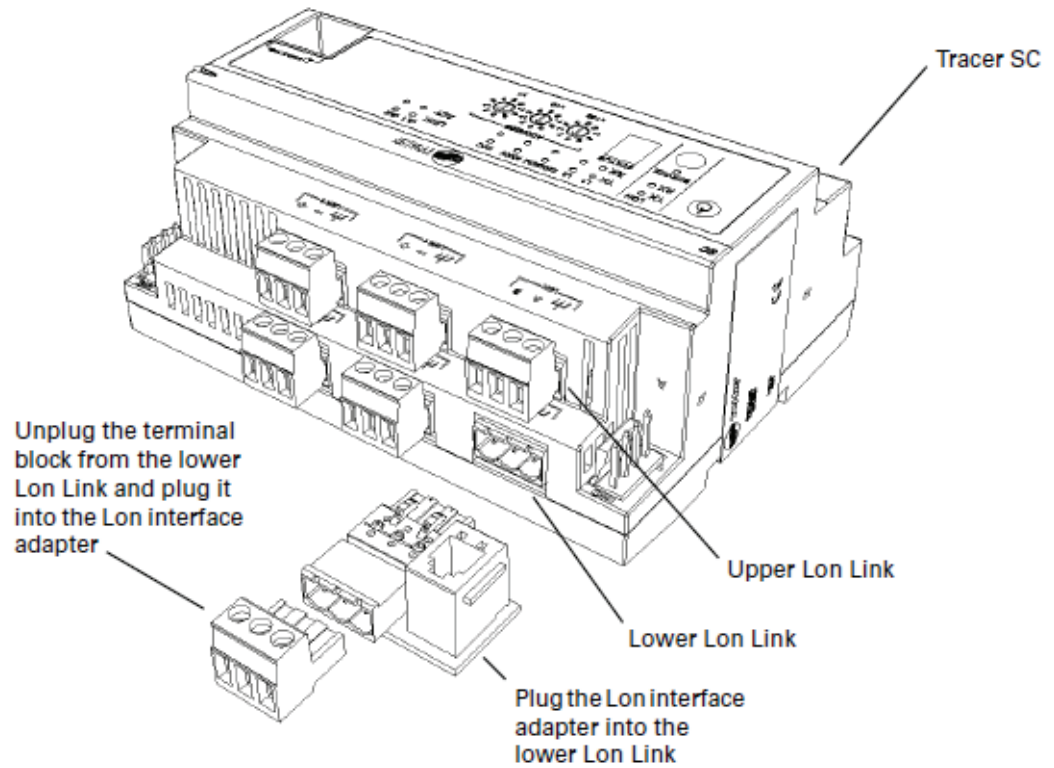
Important: Minimize the time the LonTalk link is disconnected from the System Controller so the disruption doesn't generate entries in the Event Log (as early as 90 seconds), or cause commands to be lost on the link.

Be aware of the following issues when disrupting the LonTalk link to insert the LonTalk interface adapter:

- While the LonTalk Link is disconnected, the System Controller will be unable to read/write equipment-resident data. Any System Controller TGP2 routines that are looking for equipment-resident data will not react to changes until the LonTalk Link is reconnected.

- Some commands issued while communication is disrupted, will not be sent to the devices.

- If the LonTalk link is disconnected for longer than 15 minutes, the LonTalk devices will revert to using their default, standalone settings.

- Disconnecting and reconnecting the LonTalk link to insert the interface adapter, while in the process of troubleshooting a LonTalk communication problem, may cause unexpected changes in the link and complicate the troubleshooting task.

Figure 5.   Connecting Rover to a Tracer SC using the LonTalk Adapter

Unplug the terminal block from the lower Lon Link and plug it into the Lon interface adapter

Tracer SC

Upper Lon Link

Lower Lon Link

Plug the Lon interface adapter into the lower Lon Link

Connecting to a Tracer SC+ with an Echelon UC60 Using the LonTalk Interface Adapter

To connect Rover to a Tracer SC+ Echelon UC60 using the LonTalk Interface:

1. Unplug the terminal block (orange connector) from the Echelon U60.

2. Plug the supplied LonTalk interface adapter into the location where the terminal block was removed.

3. Plug the terminal block that you removed in step 1 into the top of the LonTalk interface adapter.

4. Connect the supplied USB cable between the PC and the USB LonTalk adapter (as shown in the second figure in "Connecting to a LonTalk Link Using the USB LonTalk Adapter," p. 7

5. Connect the USB cable adapter to the USB LonTalk adapter as shown in "Connecting to a LonTalk Link Using the USB LonTalk Adapter," p. 7.

   The adapter should click easily into the card. If you have to use force, the adapter may be upside down.

6. Connect the RJ11 plug on the other end of the cable adapter to the RJ11 jack on the LonTalk interface adapter on the Tracer SC+.

7. Test the communications link. Refer to "Verifying Network Communications," p. 17.

**Figure 6.   Tracer SC+ and Echelon UC60 with LonTalk Adapter**
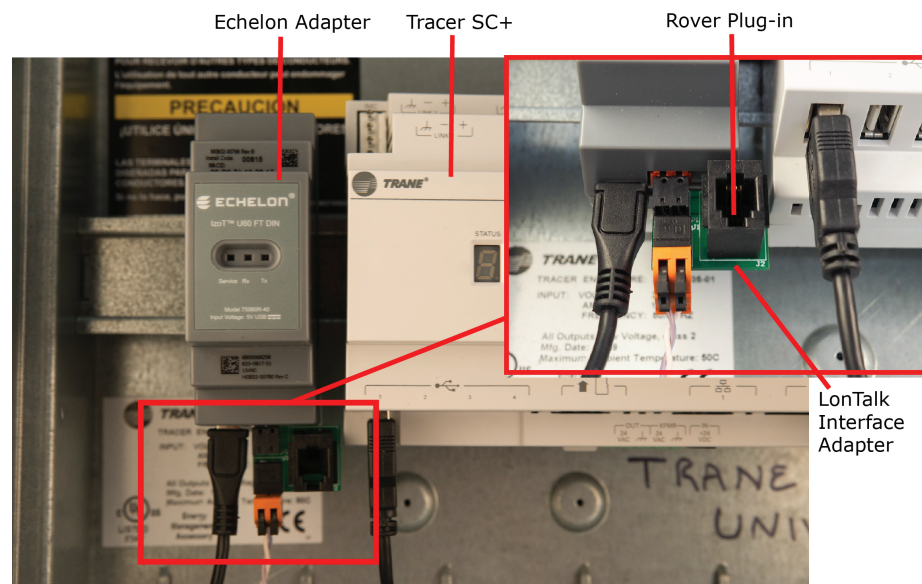
Connecting With a Communication Key

Most LonTalk controllers have built-in communications capability, but the Tracer™ ZN010 does not. To connect to a Tracer ZN010, you must first install the communication key as shown in the following figure. The communication key was previously supplied with Rover.

NOTICE

Damage to Communication Key!

Failure to follow instructions below could result in damage to the communication key.

To avoid damage to the communication key included in the Rover package when connecting to a Tracer ZN010, power down the ZN010 before installing or removing the communication key.

Figure 7.   Connecting the communication key
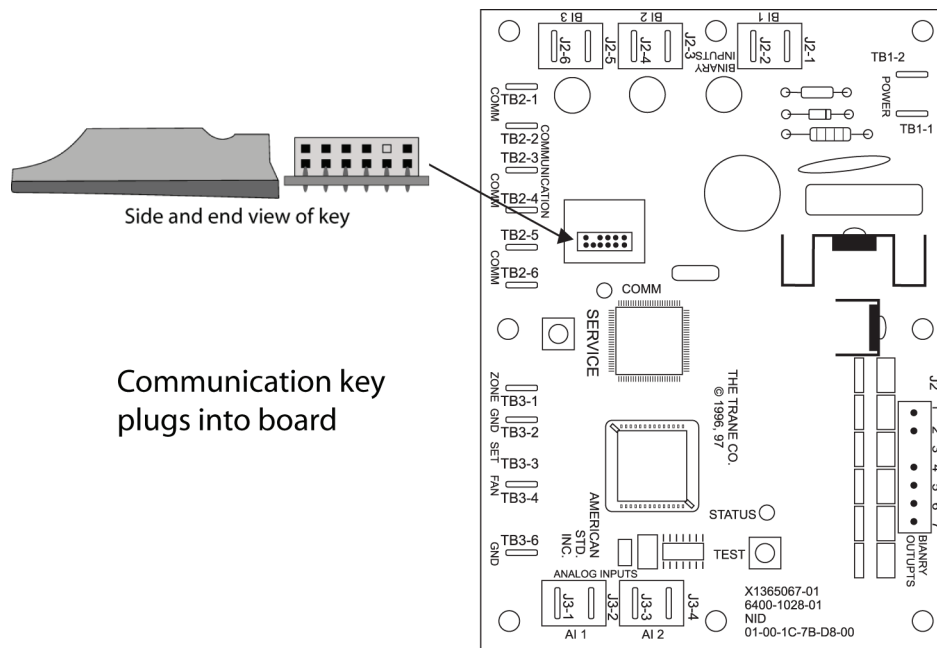
Connecting to a Comm4 Link

This section describes the various ways you can connect Rover to a Comm4 Link.

Connecting to a Comm4 Link Using the USB Comm4 Adapter

The USB Comm4 adapter is supplied with Rover packages X13651500-01, X13651501-01, and X13651503-01. You can also use the EveryWare serial adapter to connect to a Comm4 link (see "Connecting to a Comm4 Link Using the EveryWare™ Serial Adapter," p. 16). For replacement instructions of a Comm4 adapter, refer to installation sheet *X39641082-01*.

The USB Comm4 adapter is supported in Windows 7 Professional and Windows 8.1.

To connect to the Comm4 link:

1. Connect the USB Comm4 adapter and cables as shown in the following figures that illustrate connection through a zone sensor or through a USB Comm4 adapter.

2. Go to the next section, "Selecting the Port in Rover Comm4," p. 14.

The default dip switch settings are illustrated on the label on top of the USB Comm4 adapter as shown the following figure. The third and forth figures in this subsection point out the adapter dip switch location.

Figure 8.   Comm4 adapter dip switch settings
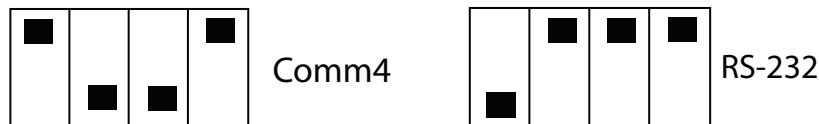
Comm4

RS-232

Note: Rover Comm4 works on Comm4 position. RS-232 is intended for other Trane applications and is not related to Rover.

The next figure shows the Comm4 adapter cable pin out (left) and terminal block connection (right) related to the two figures that follow it.

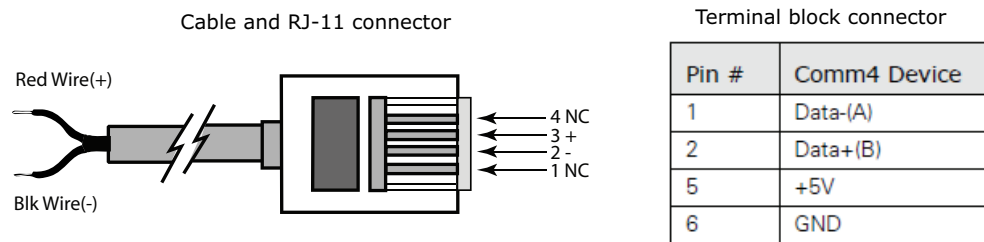**Figure 9.   Comm4 adapter cable pin out and terminal block connections**

Cable and RJ-11 connector

Terminal block connector

Red Wire(+)

Blk Wire(-)

4 NC
3 +
2 -
1 NC

Pin #	Comm4 Device
1	Data-(A)
2	Data+(B)
5	+5V
6	GND

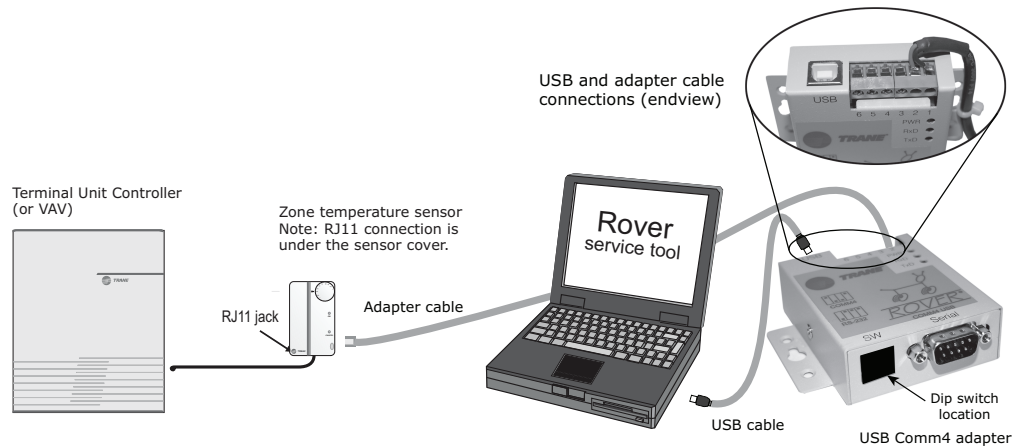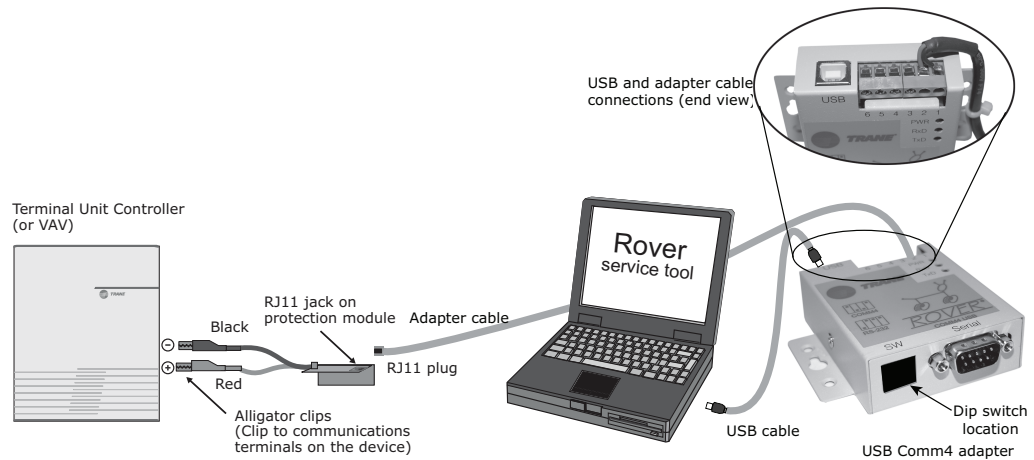**Figure 10. Connecting to a Comm4 controller through a zone sensor**

Figure 11. Connecting to a Comm4 controller using alligator clips

Connecting to a Comm4 link Using the PCMCIA Comm4 Card

The PCMCIA Comm4 card is supplied with Rover packages X13651500-01, X13651501-01, and X13651503-01. You can also use the EveryWare serial adapter to connect to a Comm4 link (see "Connecting to a Comm4 Link Using the EveryWare™ Serial Adapter," p. 16).

To connect to a Comm4 link:

1. Insert the Comm4 card in your laptop PC.

2. Connect the cables using either a zone sensor or alligator clips as shown in the figures that follow in the next section, "Selecting the Port in Rover Comm4," p. 14

Note: If using alligator clips, be sure to maintain polarity.

Selecting the Port in Rover Comm4

You must provide the port number that the Comm4 card is using. To do this:

1. Click **Start>Control Panel**.

2. Click **Device Manager**.

3. Double-click the **Ports** icon to see the ports.

    Figure 14, p. 10 illustrates how to check the port number that has been assigned to your Comm4 card.

4. Start Rover Comm4, then click **Options** on the Tools menu.

5. In the Port Number field, type the number assigned to the Comm4 card.

6. Click **OK**.

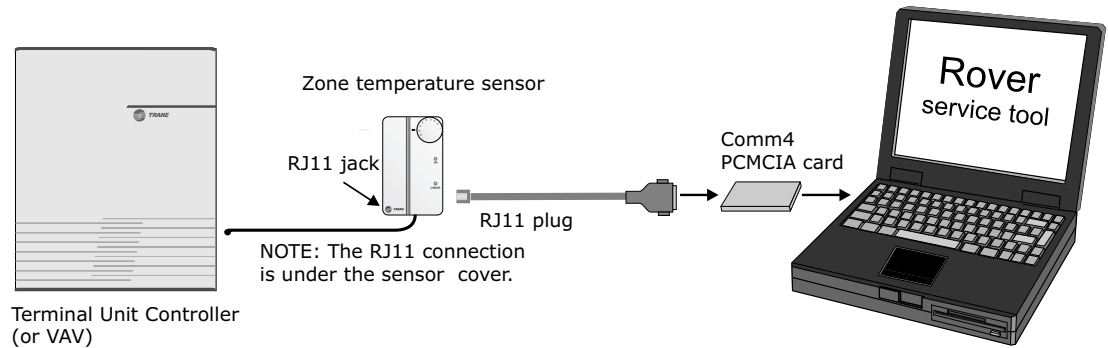**Figure 12.   Connecting to a Comm4 controller through a zone sensor**

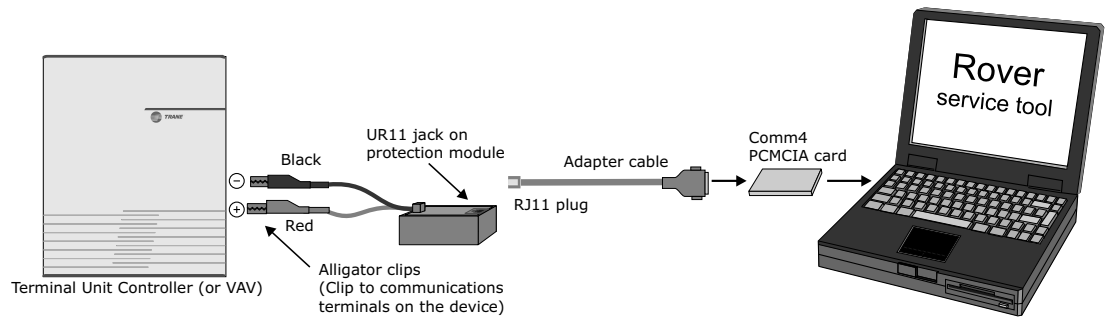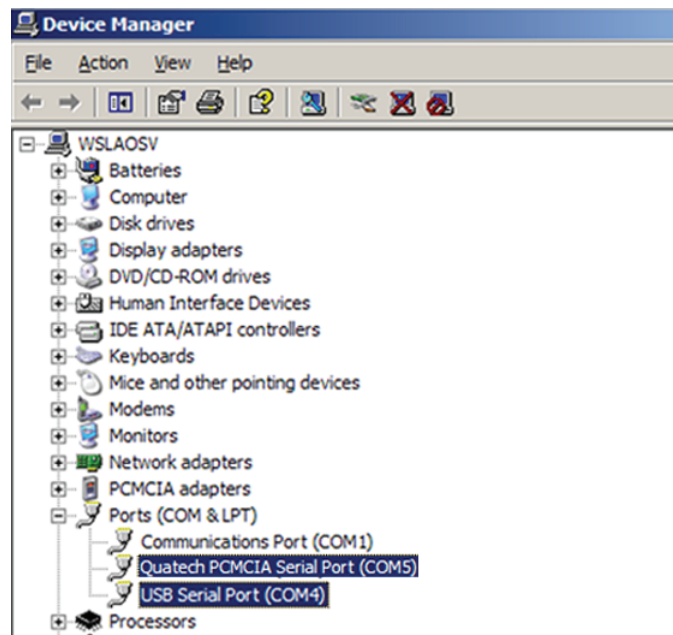**Figure 13.   Connecting to a Comm4 controller using alligator clips**

Figure 14.   Checking USB or PCMCIA port

Connecting to a Comm4 Link Using the EveryWare™ Serial Adapter

You can use the EveryWare serial adapter to connect your laptop PC to a Comm4 link at a zone sensor or to any controller on the Comm4 link. The serial adapter is not included with Rover. If you do not have an EveryWare serial adapter, use the Comm4 adapter as directed in "Connecting to a Comm4 Link," p. 13.

1. Connect the cables as shown in the appropriate figure in following subsection, *"Enabling the EveryWhere Serial Adapter"*.

   These figures show connection to a zone sensor and to the Comm4 terminals on a controller circuit board (make sure to maintain polarity).

2. Supply power to the PC adapter using either a 9-volt battery or the power cord.

3. Perform the steps in the next subsection, *"Enabling the EveryWare Serial Adapter"*.

Enabling the EveryWare Serial Adapter

1. On your Windows taskbar, click **Start > Control Panel**.

2. Click **Device Manager**.

3. Double-click the **Ports** icon to see the ports and then double-click the **Port** to which you are connecting the EveryWare serial adapter.

4. In the *Communications Port Properties* dialog box, click the **Port Settings** tab and then click **Advanced**.

5. Clear the *Use FIFO Buffers* check box, then click **OK** to save the settings. (This should not cause problems when using the port with other devices; however, change the setting back if you later upgrade to a Comm4 adapter.)

6. Restart your computer.

7. Start Rover Comm4, then click **Options** on the Tools menu. Type the port number, then select the EveryWare Serial Adapter check box.

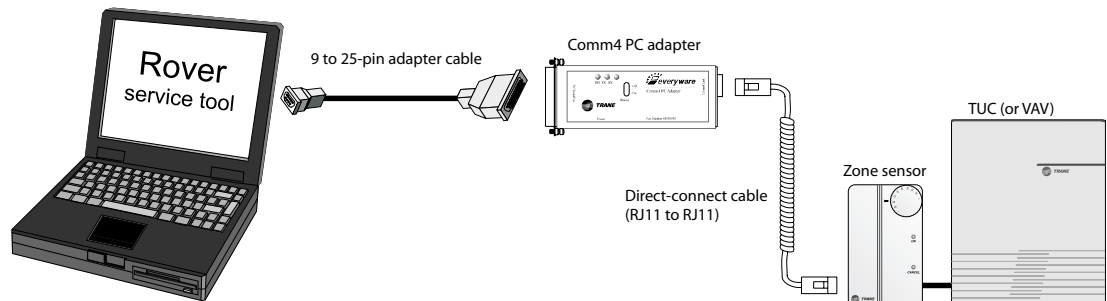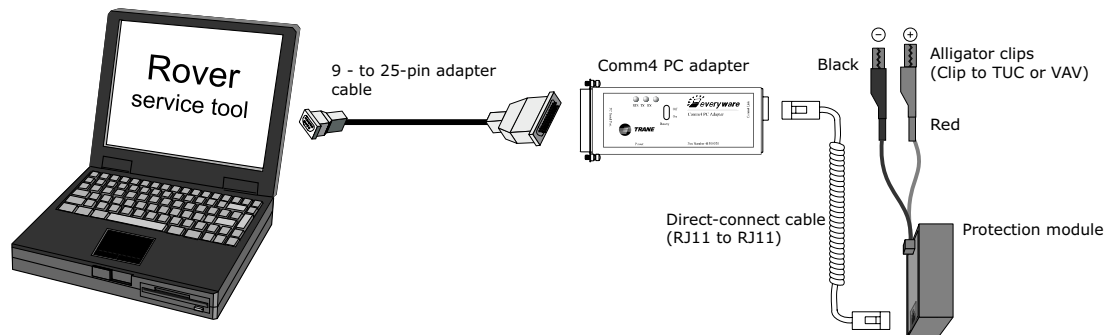**Figure 15. Connecting to a Comm4 controller through a zone sensor**

Figure 16. Connecting to a Comm4 controller using alligator clips

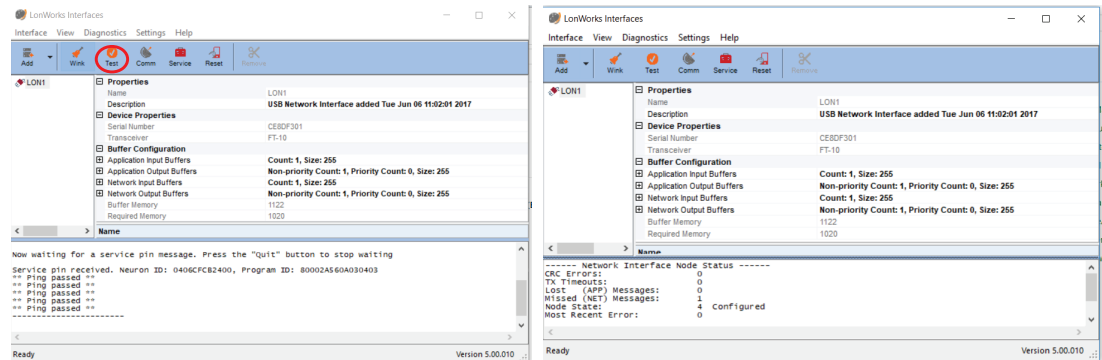# Verifying Network Communications

This section explains how to verify communication using either a USB Adapter or a PCMCIA card.

Verifying Using a USB Adapter

To verify communications:

1. Double-click the Start icon and then click the Control Panel link to display the Control Panel window.

2. Double-click the **Lonworks Interfaces** icon to display the LonWorks Interfaces dialog box. Then, click the **USB**node, select the required interface, and click **Test**.

3. Click **Comm** and a message displays stating "Now waiting for a service pin message" and is displayed in the LonWorks Interfaces Diagnostics comment box.

4. Press the service pin button of a connected device on the link. The Neuron ID of the selected device and a repeated message of "Ping Passed" are displayed in the LonWorks Interfaces Diagnostics comments box.

Figure 17.   Ping Passed and Network Interface Node Status


Verifying Using a PCMCIA Card

To verify network communication:

1. On your Windows taskbar, click **Start > Control Panel**.

2. Double-click the **LonWorks Plug 'n Play** icon and then click the **Diagnostics** to display the PCCLON1 Diagnostics dialog box.

    The LON1 Diagnostics dialog box is displayed.

3. Click **Comm** and a message displays stating that this procedure will configure the Network Interface.

4. Click **Yes** and the message "Now waiting for a service pin" message displays in the comment box.

5. Press the **service pin button** of a connected device on the link.

    The Neuron ID and Program ID of the selected device and the repeated message of "Ping Passed" displays in the comment box.

Figure 18.   Ping Passed
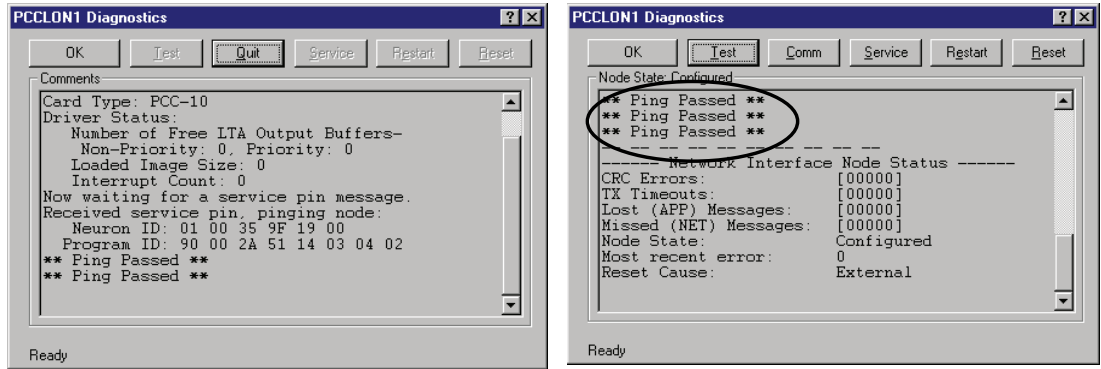
Trane - by Trane Technologies (NYSE: TT), a global climate innovator - creates comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit trane.com or tranetechnologies.com.