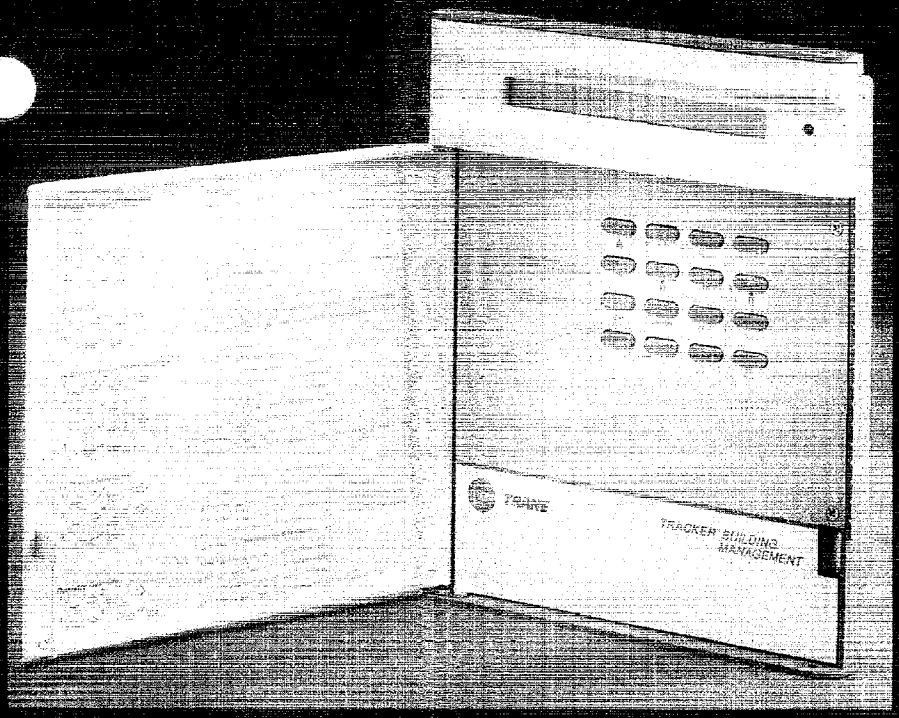
EMTK-IN-8
22-6045-03

Tracker™ Stat 4

Advanced Thermostat System

Installation Guide



Software Version 6.0

Includes Trackers used with:

- Thermostat Control Modules™
- Voyager™ Rooftop Units
- VariTrac™ II Central Control Panels

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About This Manual

Contents

This manual describes the steps required to properly install, set up, and operate the Tracker Stat 4 advanced thermostat system. Sections in this manual are as follows:

- **FCC Information**: Information about FCC approval and possible radio and telephone interference.
- **Specifications:** Technical specifications for the Tracker Stat 4 unit.
- **General Information:** A brief description of the Tracker Stat 4 advanced thermostat system, including an illustration of a typical Stat 4 application.
- **Installation:** Detailed installation information such as mounting, wiring, and switch settings. Includes an Installation Checklist.
- **Troubleshooting:** General troubleshooting guidelines for common problems.

Naming Conventions

The use of the name *Tracker* in this manual implies Tracker Stat 4.

Warnings and Cautions

Where appropriate, cautionary statements are used to signal procedures or conditions that require particular attention.
A **WARNING** alerts installing contractors and service personnel to potential hazards that could result in personal injury or death. A **CAUTION** alerts the user to the risk of equipment damage. Your personal safety and the proper operation of these systems depend upon the strict observance of these precautions.

Related Literature

- Tracker Stat 4 Operator's Guide
- Thermostat Control Module Installation/Operation/Maintenance
- VariTrac II Central Control Panel Installation Guide
- VariTrac II Central Control Panel Operator's Guide
- Trane Communications Interface Installation Guide

FCC Information

Tracker Radio and Television Interference

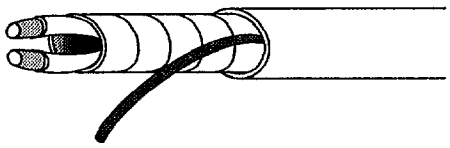
The Tracker generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio and television reception. The Tracker has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference in a commercial installation.

There is no guarantee that interference will not occur in a particular installation. If the Tracker does cause interference, consult a radio or television technician for suggestions to correct the problem. Also, the booklet *How to Identify and Resolve Radio-TV Interference Problems* is available from the U.S. Government Printing Office, Washington, D.C. 20402. Order stock #004-000-00345-4.

Specifications

Power Requirements	20-30 VAC, 60 Hz, 1 Ph 20 VA Minimum Class 2 Transformer Required
Operating Environment	32 to 120° F 10 to 90% relative humidity, non-condensing
Storage Environment	-40 to 140° F 10 to 90% relative humidity, non-condensing
Cabinet	NEMA 1 Enclosure
Mounting	Mount directly on wall surface or mount on recessed 4" x 4" conduit box.
Dimensions	12" high x 9-3/4" wide x 2-3/4" deep
Weight	4 pounds
Communication Link Wiring	Communication link wiring must be 18 AWG twisted, shielded pair wire. Each conductor must be stranded tinned copper. The maximum total wire length is 5,000 feet. Wire must meet the specifications of Trane wire ordering number 400-20-28. See Figure 1 for specifications.
Analog Temp. Input	Thermistor device, range -30 to 150° F
U.L. Approval	The Tracker is U.L. approved.
Memory Backup	Upon a power loss, all operator-edited data stored in the Tracker, such as area names, setpoints, and Time of Day schedules, will be maintained permanently. System time and date will be maintained for a minimum of 14 days at a temperature below 104° F (40° C).

Figure 1
Communication Link Wire Specifications (Trane ordering number 400-20-28) 18 AWG Plenum-Rated Shielded Pair Cable



Application:

Plenum-rated, communication link wiring, and sensor wiring for Trane Building Management Systems.

Construction:

Stranded tinned copper, insulated with extruded FEP conductors - cabled and shielded with overall aluminum/mylar tape and stranded tinned copper drain wire extruded solef (violet) jacket.

Listing/Rating:

300 Volt 150° C NEC 725-2 (b)Class 2, Type CL2P.

Specifications:

Number of Conductors:	2
AWG Strand:	18 19/30 (19 strands of 30 gauge)
Insulation Thickness:	015 Inch/38 mm
Jacket Thickness:	009 Inch/23 mm
Nominal Diameter:	179 Inch/455 mm
Capacitance between Conductors:	25 picofarads/ft Maximum certified
Conductor Color Code:	Black/White
Jacket Color:	Violet

Dimensions specified are nominal and are subject to normal manufacturing tolerancing.

Note: If you purchase cable from an alternate vendor, make sure the cable meets the technical specifications in Figure 1.

General Information

Unit Description

The Tracker Stat 4 is an advanced thermostat system designed to provide centralized access (status and setup) to the following Trane devices:

- Thermostat Control Module (TCM: thermostat 2H2C, heat pump, and slave)
- Voyager Rooftop Unit
- VariTrac II Central Control Panel and zone damper Unit Control Module (UCM)

The Tracker Stat 4 provides input monitoring and output control based on distributed control through the Thermostat Control Modules, Voyager Rooftops, and VariTrac II Central Control Panels. The Tracker provides one thermistor input for an outdoor air temperature sensor.

The Tracker Stat 4 maintains time and date and provides time of day (TOD) scheduling for the connected devices. Also, Stat 4 provides setpoint control for day/night heating and cooling temperatures of the connected devices.

The Tracker Stat 4 ships with a default set of pre-programmed comfort operating parameters, and automatically assigns default point names to devices with which it is communicating. The Tracker also automatically names binary outputs for slave TCMs.

The operator interface with the Tracker is a 16-key front panel keypad with a two line by 40 character display.

Additional building control features of the Tracker include the following:

- Alarming of communication failures and system/unit diagnostics, which can be viewed at the front panel display.
- A slave Thermostat Control Module whose outputs can be assigned to TOD schedules.
- Optimal start.
- Holiday and exception scheduling.
- Four-character password security protection.

Figure 2 illustrates a typical Stat 4 application. Figure 3 shows the major Tracker terminator card components.

Figure 2
Typical Tracker Stat 4 Application

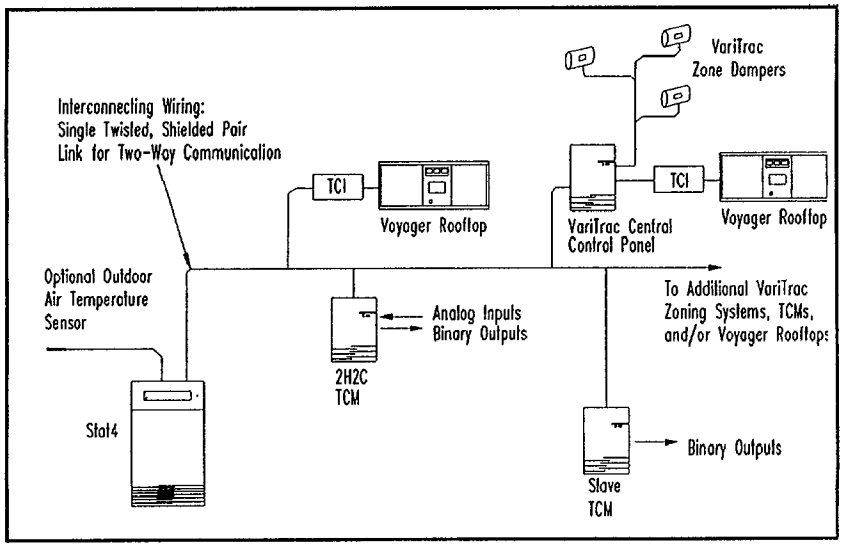
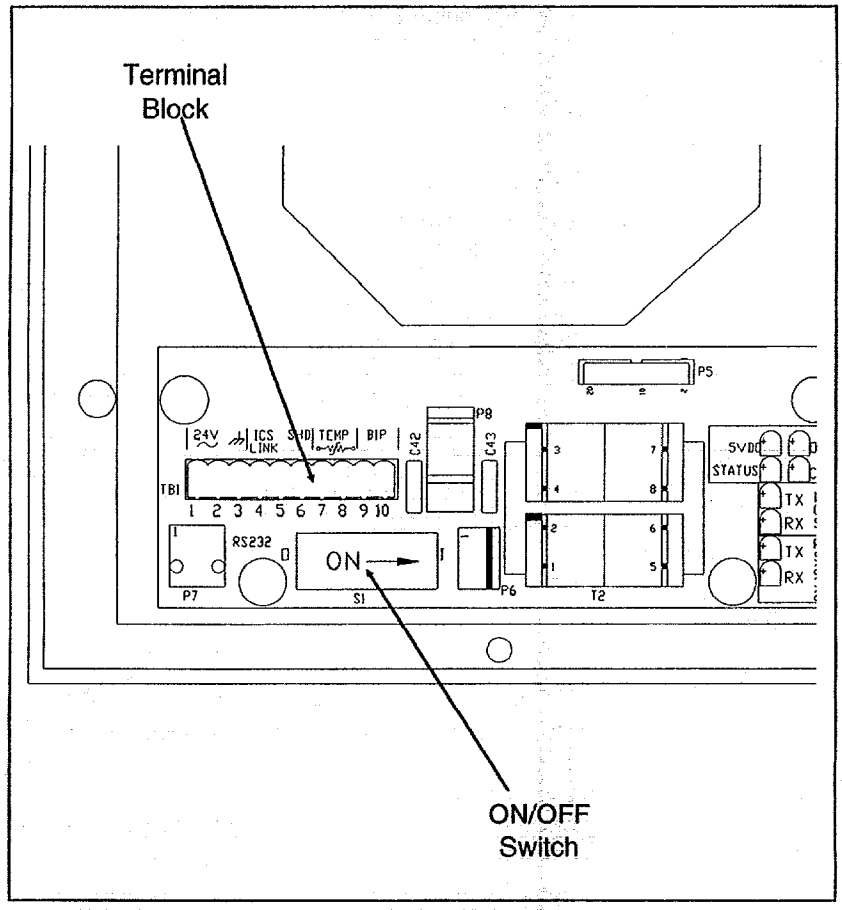


Figure 3
Tracker Terminator Card Component Layout



Note: BIP (Terminals 9 and 10) are not used on the Tracker Stat 4.

Communication Link

The Tracker Stat 4 has a serial communication link to allow it to communicate with Thermostat Control Modules, Voyager Rooftop Units, and VariTrac II Central Control Panels. Table 1 lists the total device counts for the Tracker Stat 4.

Table 1
Device Counts for Tracker Stat 4

Number of Devices Allowed for Tracker Stat 4				
TCM	Voyager Rooftop	VariTrac I Comfort Manager	VariTrac II Central Control Panel	Slave TCM
4	4	0	2	1

Note: *Total device count on a Tracker Stat 4 may not exceed 6 plus 1 Slave TCM.*

Shipment

The Tracker and service literature are shipped in the same package. When unpacking, make sure that the literature is not lost or discarded with the packing material.

Visually inspect the Tracker for obvious defects or damage. All components are thoroughly inspected before leaving the factory. Any claims for damage incurred in shipping should be filed with the carrier.

Storage

If the unit is to be stored for a period of time, the storage temperature should be -40° to 140° F. The relative humidity of the storage location should be 10 to 90 percent, non-condensing. A controlled indoor environment is recommended for storage.

Installation

Unit Mounting

Location Within Building

Mount the Tracker with the LCD at eye level to allow for easy on-site adjustments by building personnel. If possible, locate the Tracker near the controlled equipment to reduce wiring cost.

Operating Environment

The Tracker is designed for indoor use only. Locate the unit in a dust-free and corrosive-free environment, within a range of 32° to 120° F, and 10 to 90% humidity (non-condensing).

Clearances

Mount the Tracker on any vertical flat surface. The Tracker panel is approximately 12 inches high, 9-3/4 inches wide, and 2-3/4 inches deep (see Figure 4). With the front cover open, you have access to the front, top, and bottom panels.

When mounted, the Tracker should be easily accessible for making wiring connections and for servicing. Provide two inches of clearance on the left and right sides, and sufficient clearance above the unit to make conduit connections. At least 24 inches should be available in front of the unit for making wiring connections and performing maintenance.

Mounting

1. Remove the Tracker panel from the shipping carton.
2. Remove the screw at the bottom right corner (see Figure 5) and open the cover.
3. Remove the two screws on the right side of the faceplate. Swing open the faceplate.
4. Mount the enclosure to the wall. Three 3/16" holes are provided for mounting; use #8 mounting screws. Use the enclosed mounting template for marking and drilling mounting holes. As an alternate mounting method, a 4" x 4" knockout is provided for mounting the Tracker to a 4" x 4" recessed metal conduit box; use two #8 mounting screws. Figure 4 shows the Tracker mounting dimensions and the recommended mounting height. The unit weighs approximately four pounds.

CAUTION: To avoid damaging the circuit board, do not use the knockout at the bottom of the panel. A warning sticker is attached to the bottom knockout. This sticker can be removed, and residue can be cleaned off with rubbing alcohol.

5. Complete the wiring to the enclosure:
   - 24 VAC power
   - ICS communication link
   - Optional outdoor air temperature sensor

   Refer to the following sections on *AC Power Wiring* and *Communication Link Wiring*.

6. Turn on the power switch. Refer to Figure 3.
7. Close the faceplate and tighten the two screws to secure.
8. Close the front cover. For additional local security, reinstall the screw at the bottom right corner. See Figure 5.

Figure 4
Dimensions for Tracker Stat 4 Enclosure

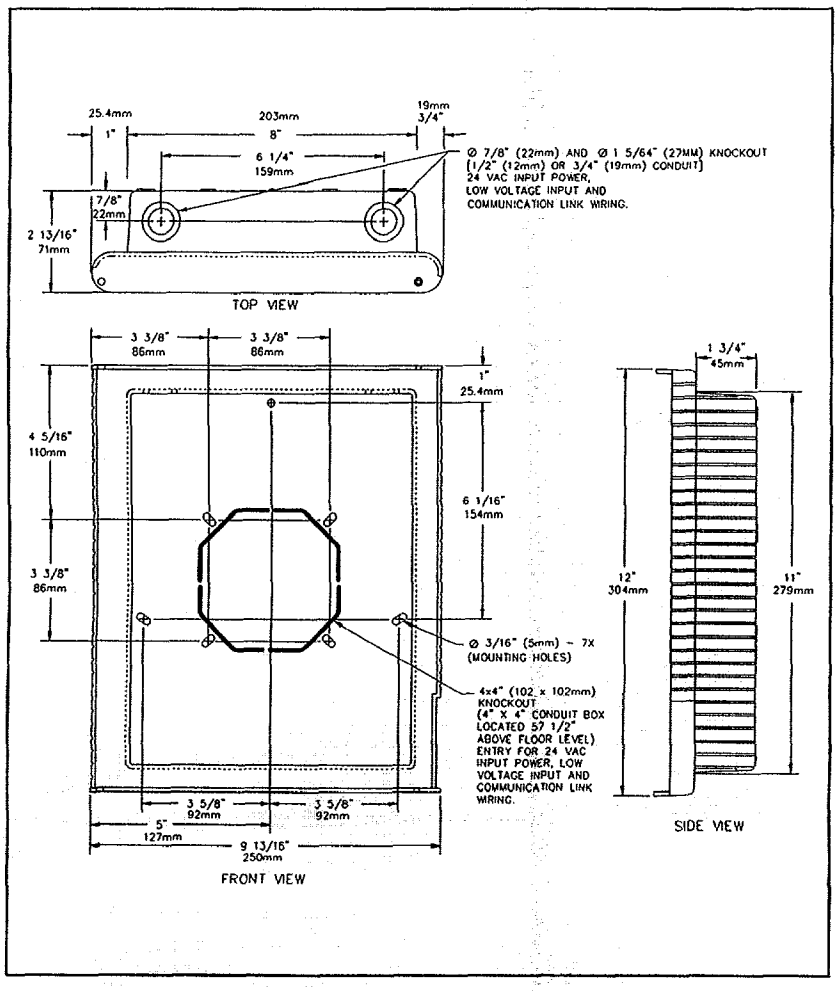
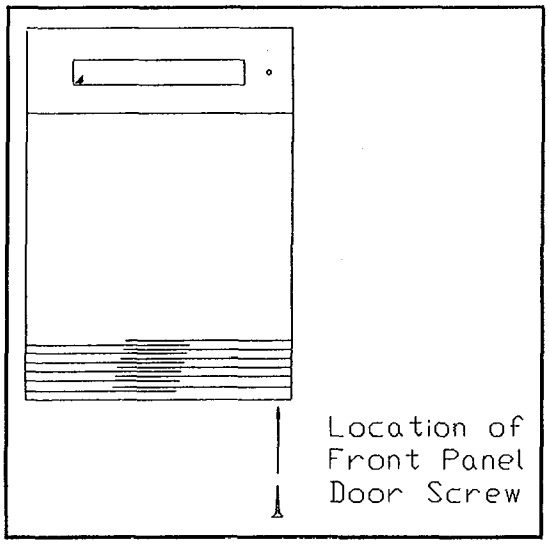


Figure 5
Location of Front Panel Door Screw



AC Power Wiring

Power Supply

A dedicated 24 VAC, 20 VA class 2 transformer is required to power the Tracker.

CAUTION: The 24 VAC power supply must not be used to power any devices other than the Tracker. This could result in malfunction of the Tracker due to electrical noise.

The Tracker requires 3-wire service with a nominal voltage of 24 VAC and a utilization range of 20 to 30 VAC. We recommend you use 16 AWG wire and metal conduit. All wiring must comply with the National Electrical Code and local codes.

WARNING: To prevent injury or death from electrical shock, disconnect power external to the Tracker before making power connections.

AC Power Connections

The 24 VAC line can enter the Tracker cabinet through the 4" x 4" knockout or through the knockouts in the top of the panel.

Figure 4 shows the 24 VAC conduit entry holes. Connect the 24 VAC line to the unit at TB1, located on the terminator card inside the Tracker, as shown in Figure 3. Connect the 24 VAC wires to TB1-1 and TB1-2 and connect the ground wire from the circuit breaker panel ground to TB1-3. Use copper conductors only.

CAUTION: Do not run AC power wires in the same conduit or wire bundle with any input/output or communication link wires. This may cause the Tracker to malfunction due to electrical noise.

AC Power Checkout

1. After the 24 VAC connections have been made at TB1, apply AC power by closing the circuit breaker for the class 2 transformer.
2. Measure the voltages at TB1. The voltage between TB1-1 and TB1-2 should be 20 to 30 VAC.

WARNING: When measurements must be made with the power on, use care to prevent injury or death from electrical shock.

Communication Link Wiring

The Tracker communication link (TB1-4, 5, and 6) is for communication with Thermostat Control Modules, Voyager Rooftop units, and VariTrac II Central Control Panels. Field wiring for the communication link must meet the following requirements.

1. All wiring must be in accordance with the National Electrical Code and local codes.
2. Communication link wiring must be 18 AWG twisted, shielded pair wire (meets or exceeds specifications for Trane ordering number KBA 400 2028). Refer to Figure 1.
3. At the Tracker, the communication link wires must be connected to Terminals TB1-4 and TB1-5. Refer to Figure 7. **There is no polarity requirement for this connection.**

4. At the Tracker, connect the shield on the communication link wiring to TB1-6. At each connected ICS device, splice and tape the shield with the shield wire from the next section of communication link wiring. Tape back any exposed shield wire to prevent any connection between the shield wire and ground. At the end of the communication link, cut and tape the shield to prevent any connection between the shield and ground.

   Note: *The entire communication link shield should be grounded only at TB1-6.*

5. The maximum total wire length is 5,000 feet for the communication link (Refer to Figure 1).

6. The communication link wiring cannot pass between buildings.

7. Units on the communication link can be connected in a "daisy chain" configuration. The daisy chain configuration is preferred over other wiring configurations, such as the star configuration, because it is easier to solve communication problems by isolating portions of the communication link. See Figure 6 for an example of a daisy chain configuration.

   Note: *If the wire length on a daisy chain configuration exceeds 2,500 feet, install a 100-ohm termination resistor at the far end of the communication link.*

   The termination resistor is wired across the link (Example: from the black wire to the white wire).

   Do not connect the termination resistor to ground.

   If the wire length is less than 800 feet, install a 300-ohm (or 270 to 330-ohm) termination resistor at the far end of the communication link. If you use the star configuration, you may need to install a 300-ohm (or 270 to 330-ohm) termination resistor at the end of each branch. Fewer branches reduce the chance of having communication problems.

8. Refer to the appropriate installation manual for the connected ICS equipment for the communication link terminator connections.
9. Each Voyager Rooftop requires a Trane Communications Interface (TCI) board for connection to the Tracker communication link. If a Voyager Rooftop is to be controlled by a VariTrac II Central Control Panel, a TCI also is required. See Figure 2.

CAUTION: Do not run communication link wiring on the same conduit or wire bundle with AC power wires. This may cause the Tracker to malfunction due to electrical noise.

Figure 6
Daisy Chain Configuration for Communication Link Wiring

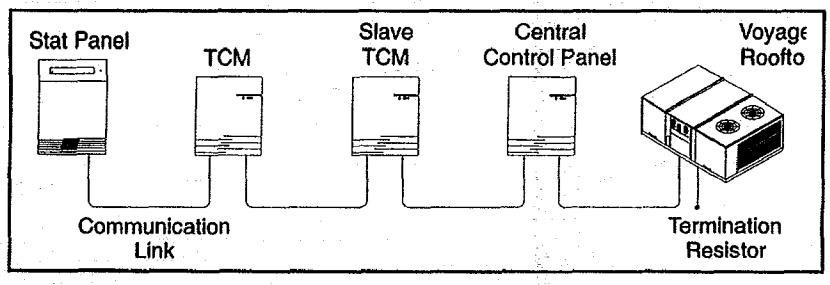
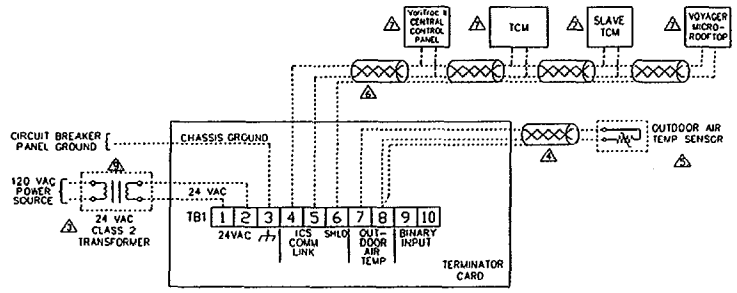


Figure 7
Tracker Field Wiring Connections



CUSTOMER NOTE

1. COMPONENTS AND WIRING SHOWN DASHED ARE FURNISHED AND INSTALLED BY CUSTOMER.
2. ALL CUSTOMER WIRING MUST BE IN ACCORDANCE WITH NATIONAL ELECTRIC CODES AND LOCAL CODES.
3. INPUT POWER AT TB1 MUST BE 20-30 VAC, 50/60 HZ, 20 VA FROM A CLASS 2 TRANSFORMER (CUSTOMER SUPPLIED). THE TRACKER CHASSIS GROUND TB1-3 MUST BE CONNECTED TO THE CIRCUIT BREAKER PANEL GROUND THAT SUPPLIES THE TRANSFORMER.
4. AT OUTDOOR AIR TEMPERATURE SENSOR, SHIELD MUST BE CUT BACK AND TAPED. AT TRACKER TERMINATOR, SHIELD WIRE MUST BE CONNECTED TO TERMINAL TB1-8. SEE NOTE 8 FOR WIRE SPECIFICATIONS. MAXIMUM WIRING DISTANCE IS 300 FEET (91m).
5. THE OUTDOOR AIR TEMPERATURE SENSOR IS A RESISTANCE THERMISTOR DEVICE (PART NUMBER 4190-1063) WITH A RANGE OF -30° TO 150F (-35° TO 65°C).
6. THE STAT 4 ICS COMMUNICATIONS LINK IS FOR COMMUNICATION WITH VARIOUS TRANE ICS EQUIPMENT CONTROLLERS. MAXIMUM ICS WIRE LENGTH IS 5000 FEET (1524m). SEE NOTE 8 FOR WIRE SPECIFICATIONS. AT THE STAT 4 TERMINATOR, SHIELD WIRE MUST BE CONNECTED TO TERMINAL TB1-6. AT THE ICS EQUIPMENT, THE SHIELD WIRE MUST BE SPLICED WITH THE SHIELD WIRE FROM THE NEXT SECTION OF COMMUNICATION LINK WIRING AND TAPED TO PREVENT ANY CONNECTION BETWEEN THE SHIELD AND GROUND.
7. TRACKER STAT 4 CAN SUPPORT UP TO 2 VariTrac II CENTRAL CONTROL PANELS, 4 VOYAGER MICRO ROOFTOPS, 4 THERMOSTAT CONTROL MODULES (TCMs), AND 1 SLAVE TCM. THE COMBINED TOTAL OF VariTrac II CENTRAL CONTROL PANELS, VOYAGER ROOFTOPS, AND TCM UNITS CANNOT EXCEED 6 PLUS 1 SLAVE TCM.
8. RECOMMENDED WIRE FOR OUTDOOR AIR SENSOR AND ICS LINK WIRING IS TRANE ORDERING NUMBER 400-20-28. THIS WIRE IS PLENUM RATED, 150°C, 18 GA, SHIELDED, TWISTED PAIR. EACH CONDUCTOR IS STRANDED, TINNED COPPER. CAPACITANCE BETWEEN CONDUCTORS IS 25+/-2 PICOFARADS PER FOOT. (IF PLENUM IS NOT REQUIRED, ADDITIONAL TRANE WIRE OPTIONS ARE AVAILABLE. SEE TRANE WIRE SUBMITTAL FOR SPECIFICATIONS.)
9. DO NOT RUN AC POWER WIRES IN THE SAME CONDUIT OR WIRE BUNDLE WITH ANY INPUT/OUTPUT WIRES OR COMMUNICATION LINK WIRES.

DIP Switch Settings

Each device connected to the Tracker Stat 4 must have its DIP switch set to a specific address. No two devices (of the same type) can have the same address. Tables 2, 4, 5, and 7 list the address settings for units that can be connected to a Tracker. In addition to setting the address, the program option must be set for each TCM. Table 6 lists the DIP switch settings for TCM program selections.

Table 2
DIP Switch Settings (on TCI) for Voyager Rooftop Addresses

Voyager Number	DIP Switch Settings					
	SW1-1	SW1-2	SW1-3	SW1-4	SW1-5	SW1-6
01	Off*	Off	Off	Off	Off	Off
02	Off*	Off	Off	Off	Off	**ON**
03	Off*	Off	Off	Off	**ON**	Off
04	Off*	Off	Off	Off	**ON**	**ON**

** **Note:** SW1-1 is used to enable (ON) or disable (OFF) the optional high temperature limit switch binary input (TB2 on the TCI board).*

Table 3
DIP Switch Settings (on TCI) for VariTrac II Central Control Panel

VariTrac II Central Control Panel	DIP Switch Settings					
	SW1-1	SW1-2	SW1-3	SW1-4	SW1-5	SW1-6
All	Off*	**ON**	**ON**	**ON**	**ON**	**ON**

** **Note:** SW1-1 is used to enable (ON) or disable (OFF) the optional high temperature limit switch binary input (TB2 on the TCI board).*

Table 4
DIP Switch Settings for Slave TCM Addresses

Slave TCM Number	DIP Switch Settings					
	S1-1	S1-2	S1-3	S1-4	S1-5	S1-6
01	ON	ON	ON	ON	Off	Off

***Note:** Slave TCM DIP Switches 7 and 8 must be configured as per Table 7.*

Table 5
DIP Switch Settings for TCM Addresses

TCM Number	DIP Switch Settings					
	S1-1	S1-2	S1-3	S1-4	S1-5	S1-6
01	Off	**ON**	**ON**	**ON**	Off	**ON**
02	**ON**	Off	**ON**	**ON**	Off	**ON**
03	Off	Off	**ON**	**ON**	Off	**ON**
04	**ON**	**ON**	Off	**ON**	Off	**ON**

Table 6
DIP Switch Settings for TCM Program Options

Option	S1-7	S1-8
Slave TCM	Off	Off
Air Conditioning Thermostat	Off	**ON**
Heat Pump Thermostat	**ON**	Off

***Note:** Slave TCM DIP Switches 1-6 must be configured as per Table 5.*

Table 7
DIP Switch Settings for VariTrac II Central Control Panel

VariTrac II Central Control Panel	DIP Switch Settings				
	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5
01	**ON**	Off	Off	Off	Off
02	Off	**ON**	Off	Off	Off

DIP Switch Settings 6-8 on VariTrac II CentralControl Panel

DIP Switch 2-#6 - Type of Bypass Control
If DIP switch #6 is OFF (down), the VariTrac II Central Control Panel controls the bypass damper using velocity control. When the DIP switch is in the ON (up) position, the VariTrac II Central Control Panel controls the bypass using static pressure control. The control type is determined at installation. See the VariTrac II Central Control Panel Installation Guide for more information.

DIP Switch 2-#7 - RS-232 Baud Rate Override
When DIP switch #7 is in the OFF (down) position, the RS-232 port on the VariTrac II Central Control Panel operates at the edited baud rate set up in the Central Control Panel System Setup menu. When the

DIP switch is in the ON (up) position, the RS-232 port is overridden to 1200 baud.

DIP Switch 2-#8 - Local Test Mode
If DIP switch #8 is in the OFF (down) position, the VariTrac II Central Control Panel operates normally. When the DIP switch is in the ON (up) position, the VariTrac II Central Control Panel is in the Local Test Mode. See the Local Test Mode section of the VariTrac II Central Control Panel Operator's Guide for an explanation of Local Test Mode operation.

Input Wiring

Input Wiring Requirements

Note: All input wiring must comply with applicable electrical codes. Metal conduit may be required by local codes when running wires for the temperature sensor.

Use only stranded, tinned copper conductors for input wiring. The temperature sensor input and binary input wiring must be shielded, twisted pair (meets or exceeds specifications for Trane ordering number KBA 400 2028). The recommended wire size is 18 gauge. Do not run input wires in the same conduit or wire bundle with any AC power wires.

CAUTION: Running input wires in the same conduit or wire bundle with any AC power wires may cause the Tracker to malfunction due to electrical noise.

For the Tracker enclosure, the input wires should enter the cabinet through the conduit entry holes shown in Figure 4. Input wiring connections are shown in Figure 7.

Outdoor Air Temperature Sensor - Analog Input Wiring

The Tracker analog (outdoor air) input temperature sensor must be a resistance thermistor device. Make all connections according to job wiring diagrams and in compliance with national and local codes.

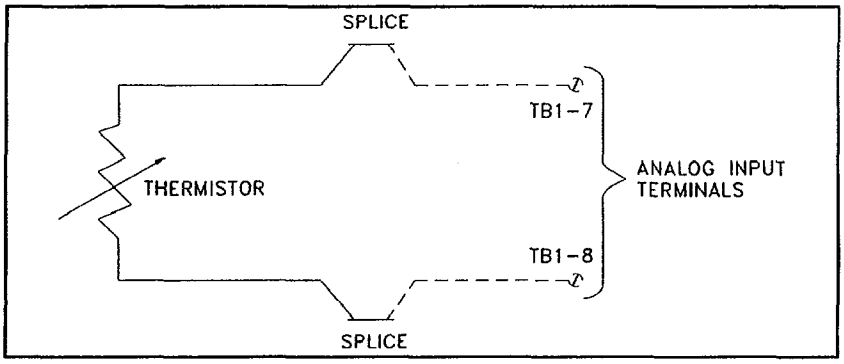
Twisted, shielded pair wire is required for this temperature sensor wiring. We recommend using 18 gauge wire (meets or exceeds specifications for Trane ordering number 400-20-28). Use only stranded, tinned copper conductors. Do not run the temperature

sensor wires in the same conduit or wire bundle with any AC power wires.

CAUTION: Running sensor wires in the same conduit or wire bundle with any AC power wires may cause a malfunction due to electrical noise.

The maximum wire length for the temperature sensor wiring is limited to 300 feet because of possible electrical noise problems with longer runs. Figures 8 and 9 show the proper methods of making wiring connections at the Tracker and at the temperature sensor.

Figure 8
Schematic Diagram of Outdoor Air Temperature Sensor



Connect one input lead at terminal TB1-7 on the Tracker terminator card. Connect the bare shield wire and the other input lead at terminal TB1-8. At the sensor, the bare shield wire and the shield should be cut back and taped to prevent any connection between the shield and ground.

CAUTION: The shield must be taped and isolated from ground at the sensor. Any connection between the shield and ground will cause a malfunction.

Figure 9 illustrates typical input wiring connections and Figure 4 shows the conduit entry locations on the Tracker. Table 8 lists the temperature sensor electrical characteristics.

Figure 9
Wire Connections at the Terminator Card and Temperature Sensor

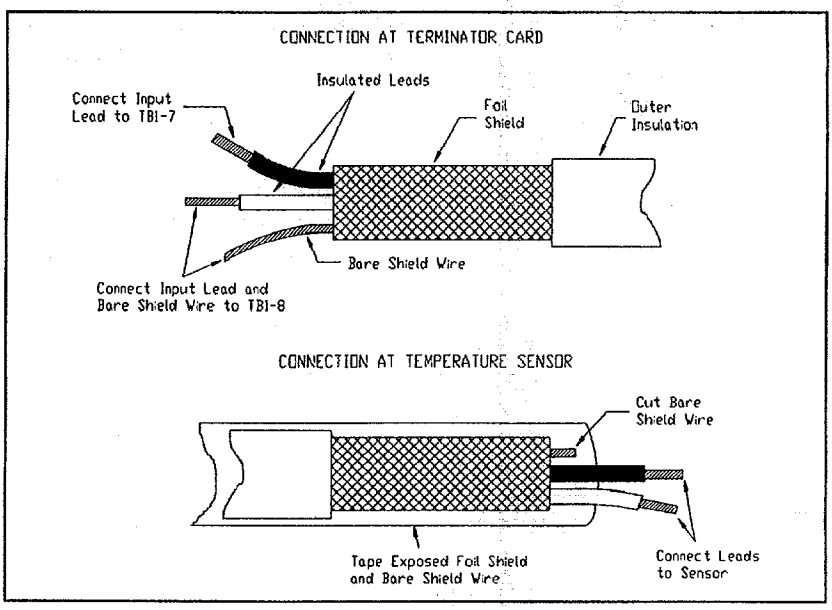


Table 8
Outdoor Air Temperature Sensor Electrical Characteristics

Temp (° F)	Sensor Resistance (Ohms)	Temp (° F)	Sensor Resistance (Ohms)
0	87,511	80	9,298
10	83,769	90	7,330
20	46,919	100	5,824
30	34,839	110	4,662
40	26,221	120	3,757
50	19,955	130	3,051
60	15,333	140	2,493
70	11,889	150	2,049

Tracker Installation Checkout

Refer to Figure 3 for the location of the major components on the Tracker terminator card.

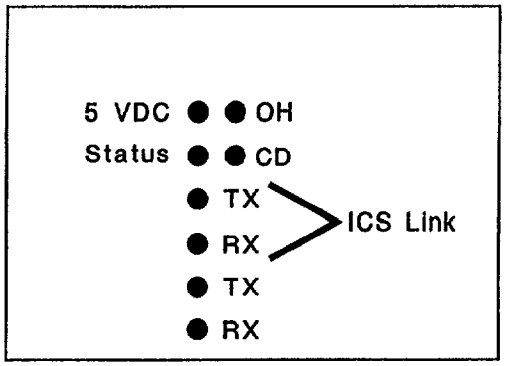
ON/OFF Switch The Tracker terminator card has an ON/OFF switch (S1) which can be used to interrupt the 24 VAC power to the

card and disable all Tracker operations. This switch must be in the ON position for the Tracker to operate.

Status LEDs

The Tracker has eight red LEDs near the lower right corner of the terminator card. Figure 10 shows the Tracker LEDs.

Figure 10
Tracker Terminator Card LEDs



These LEDs perform the following functions:

5 VDC - This LED is lit continuously when the Tracker internal power supply is on.

Status - This LED blinks slowly for about 20 seconds at Tracker power-up. After power-up, it blinks to indicate processor activity.

TX ICS (Transmit Data) - This LED blinks rapidly when the Tracker is communicating (sending data) through the communication link to connected ICS devices.

RX ICS (Receive Data) - This LED blinks rapidly when the Tracker is receiving data through the communication from connected ICS devices.

The Tracker Stat 4 does not use the following LEDs: OH (Off Hook), CD (Carrier Detect), TX RS232 (Transmit Data), and RX RS232 (Receive Data).

Installation Checklist

Complete this checklist as the Tracker is installed to verify that all recommended installation procedures are accomplished before the unit is started. This checklist does not replace the detailed instructions provided in the manual. Read the entire manual carefully to become familiar with the installation procedures before installing the unit.

Shipment

☐ Tracker inspected for shipping damage and claim filed, if necessary.

Unit Location

☐ Tracker installed in environment that meets temperature and humidity requirements.

☐ Tracker securely mounted on wall at eye level.

☐ Proper clearances around Tracker.

AC Power Wiring

☐ Field installed AC power wiring complies with all applicable codes.

☐ 24 VAC line from dedicated class 2 transformer connected to Tracker at TB1.

☐ Voltage measured at TB1-1 to TB1-2 is 20 to 30 VAC. Terminal TB1-3 wired to reliable earth ground.

Input Wiring

☐ Field installed input wiring complies with all applicable codes.

☐ Temperature sensor is installed with twisted, shielded pair wiring.

Communication Link Wiring

☐ Field installed communications wiring complies with all applicable codes.

☐ Tracker communication link wiring connected at TB1-4, TB1-5, and TB1-6.

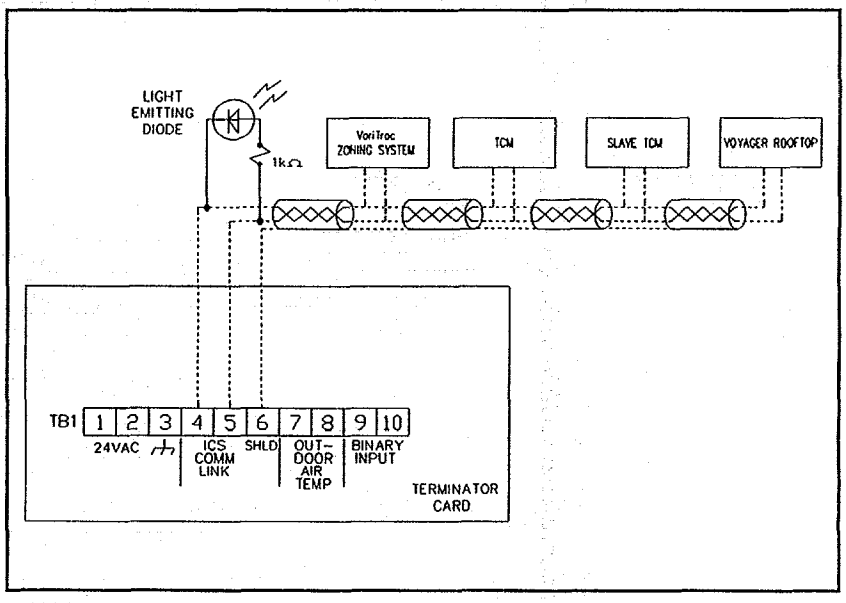
☐ Communication link wire shields spliced at each device and taped.

Following are some troubleshooting guidelines. For problems that cannot be resolved using these guidelines, contact your Trane representative for service help.

ICS Communication Link

A common light emitting diode (LED) is useful for checking the ICS communication link. An LED such as this is available from any electronics supply source. The LED can be placed directly across the link at any UCM that is not communicating to see if the Tracker is scanning that UCM. See Figure 11.

Figure 11
Placement of LED for ICS Link Troubleshooting

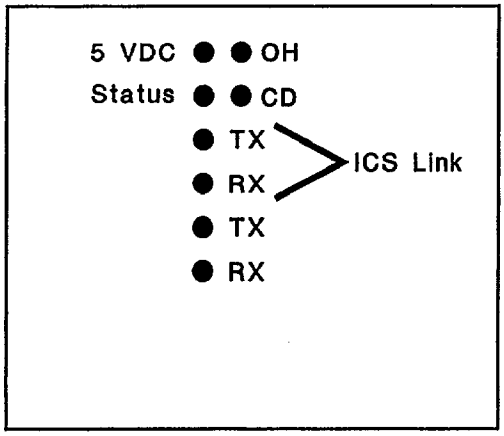


Any time the ICS transmit (TX) LED flashes on the Stat 4 terminator card, the LED across the UCM should flash. If not, there is a wiring problem. Check for shorts, open wires, or faulty connections on the communications link. If the LED flashes, but the ICS receive (RX) LED never flashes, there is a UCM

problem. This may be due to an incorrect address, power loss, faulty UCM, or other causes.

Figure 12 shows the Tracker terminator card LEDs. Refer to *Tracker Installation Checkout* for descriptions of the LEDs.

Figure 12
Tracker Terminator Card LEDs



Hardware for Troubleshooting

A digital voltmeter cannot be used to check for ICS activity because it does not have sufficient band width. The best tool for troubleshooting ICS problems is the oscilloscope.

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Price $6.00

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Building Automation Systems Division
20 Yorkton Court
St. Paul, MN 55117

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File No. 22-6045-03
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