



# Product Catalog

## Tracker™ Version 12, Building Automation System





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## Revision Summary

BAS-PRC010-EN (Aug 2012)

Removed all reference to Water Source Heat Pump (WSHP) and Tracer Loop Controller

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## Overview

### What is Tracker?

- The Tracker Version 12 building automation system (BAS) is a heating, ventilating, and air conditioning (HVAC) energy management system for small- to medium-size buildings. It provides reliable, centralized control for HVAC equipment and managing it for optimal comfort and efficiency.
- The Tracker Version 12 BAS includes a controller (Figure 1) with a liquid crystal display (LCD) touch screen. In addition, the Tracker BAS includes optional Windows-based software that can be installed on a PC workstation.
- The Tracker Version 12 BAS is LonMark® compliant. It communicates with supported devices over a Trane™ Comm5 link. The Comm5 link is a communication link that implements LonTalk®, an open, industry-standard protocol.

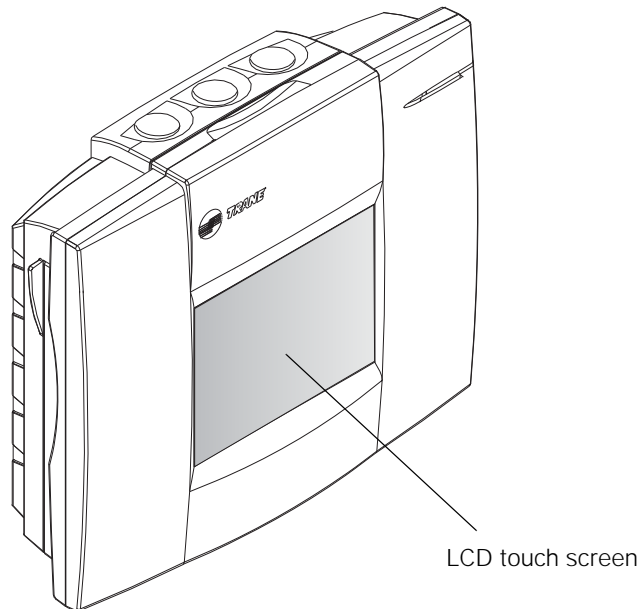
Both the controller and the Tracker PC Workstation (in its recommended hardware configuration) provide modems or optional Ethernet cards for remote access.

The modem enables off-site connections over standard phone lines, remote operation of the Tracker BAS, and provides a means to deliver alarms and messages to pagers.

The Ethernet card enables the Tracker controller to reside on an Ethernet/IP network. A Tracker PC Workstation on the network has access to all Tracker controllers on the network. If multiple Tracker workstations and controllers reside on the network, Tracker has the capability of selectively routing alarms and diagnostic messages to specified Tracker PC Workstations.

Both the touch screen and the PC provide an easy-to-use visual interface. The interfaces enable an operator to set up and change HVAC operating parameters and collect and display building information. HD\_1

**Figure 1. Tracker Controller**



# Features

The Tracker Version 12 BAS offers the installer and operator standard and specific features that ensures its ease of use.

## Tracker BAS Features

Both the controller and the PC software of the Tracker BAS offer the following features:

- Intuitive, menu-driven user interface
- 365-day scheduling and 10 schedules
- Capability of including all equipment and devices in one schedule
- Temporary schedule override
- Easy-to-administer security system with two levels of access
- Automatic daylight savings time changeover
- Error and alarm messaging
- Setpoint viewing and editing
- Trend data collection
- Report generation
- Optimal start

## Specific Features of the Controller

The following are specific features of the controller:

- Auto-configuration
- Pager notification for error and alarm messages
- LCD touch screen
- Real-time receipt of alarm messages from networked controllers

## Specific Features of the Optional Tracker PC Software

The following are specific features of the optional Tracker PC software:

- Dial-in connection
- Backup and restore capability
- Standard graphics and HTML graphical interface
- Binary output programming capability
- Operator-defined custom alarms capability
- Printer support
- Connection to controllers over shared Ethernet/IP connection
- E-mail forwarding of alarms and messages
- Standard timed override (after hours) usage report
- Standard daily, monthly, and yearly energy reports

*Note: The Tracker PC software is not needed to set up and operate a typical building.*



## System Description

The Tracker Version 12 BAS is reliable and easily installed, operated, and serviced. It simplifies the work of the building operator and the installing contractor.

### Tracker System Devices

In addition to the Tracker controller and the optional Tracker PC Workstation, a Tracker system consists of the interconnected devices on the Comm5 link.

Currently, all equipment that makes up a comprehensive Tracker system is available from Trane. In addition to a Tracker BAS, a Tracker system can include the following Trane HVAC components:

- Voyager™ constant-volume rooftop units (RTUs)
- Precedent™ constant-volume RTUs with ReliaTel™ controls
- VariTrac™ central control panels (CCPs)
- Voyager III variable air volume (VAV) RTU (with CCP)
- Tracer ZN510 zone controller, Tracer ZN511 zone controller, and ZN517 unitary controller
- Tracer MP503 I/O modules

The Tracer I/O modules in a Tracker system are used to monitor and control building equipment such as lights, exhaust fans, ventilation fans, and humidity control equipment.

The components of the Tracker network are connected in a daisy chain (refer to [Figure 2, p. 7](#)) configuration. Communication wire is twisted (shielded) pair wire.

### Tracker Applications

The Tracker system goes well beyond accurate temperature control. It provides centralized scheduling and control for multiple RTUs and split systems. In addition, it provides multiple-zone control when paired with a VariTrac system and control for multiple VariTrac systems.

The Tracker BAS is packaged and delivered for use in three (3) major applications:

- Multiple constant-volume rooftop and split single-zone system
- Changeover bypass system
- Variable air volume system

## Multiple Constant Volume Trane Rooftop and Split Single-zone System

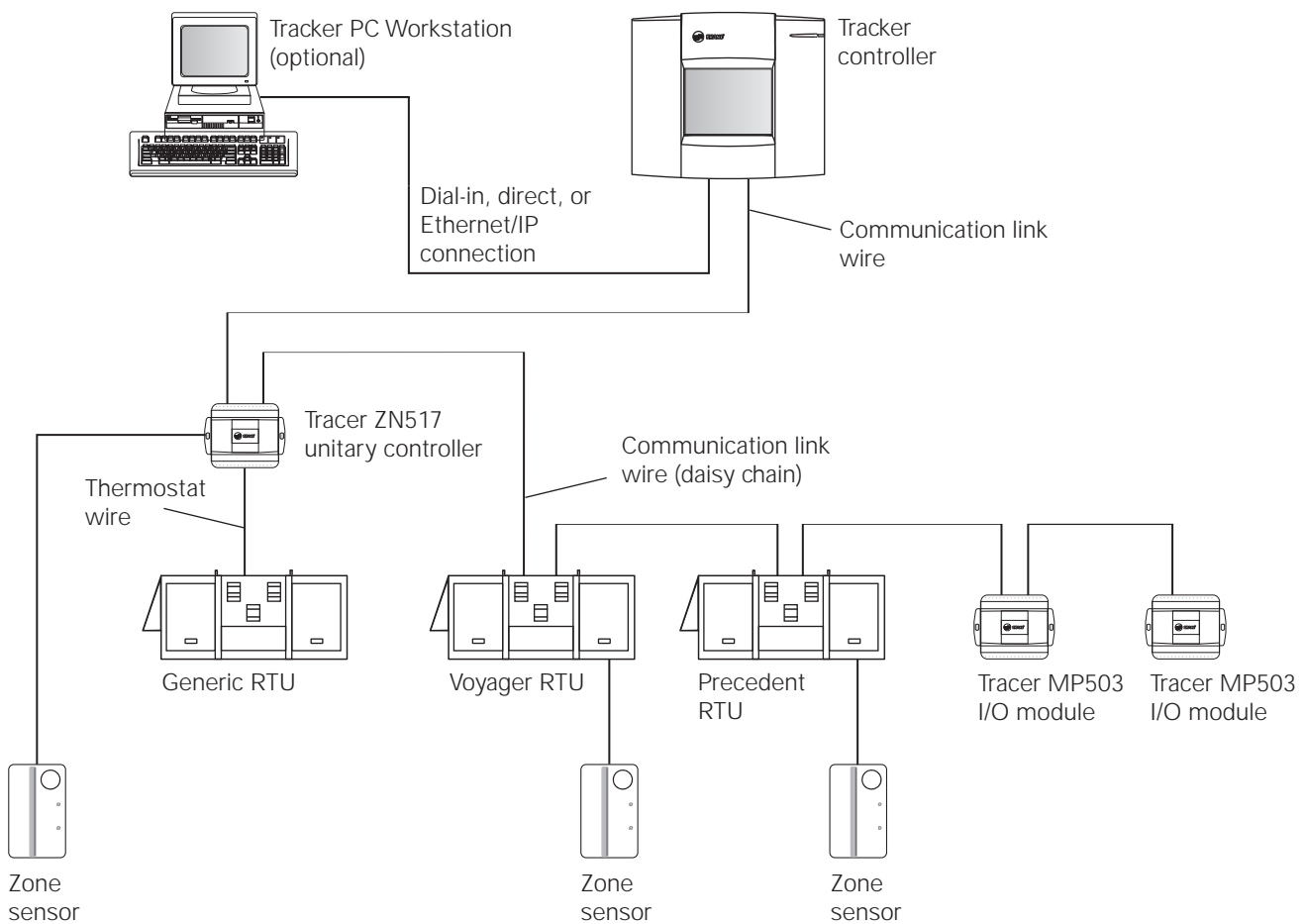
The Tracker BAS is capable of controlling multiple constant volume Trane rooftop and split single-zone systems (Figure 2). The Trane unitary controller enables non-Trane HVAC systems to be easily integrated into the Tracker system.

The Tracker BAS communicates with the unit controllers on the Comm5 network and controls them to temperature setpoints and operating parameters determined by the operator. With established communications, the Tracker BAS receives alarms automatically.

Connecting multiple unit controllers to the Tracker BAS enables the installer and operator to:

- Save installation time and materials costs by reducing the amount of wire used and by requiring only a thermistor in each area, rather than a programmable zone sensor.
- Schedule all devices from one location, rather than requiring that each device be scheduled independently.
- Monitor alarms from one location.

**Figure 2. Example of Tracker System, Models 12 and 24**



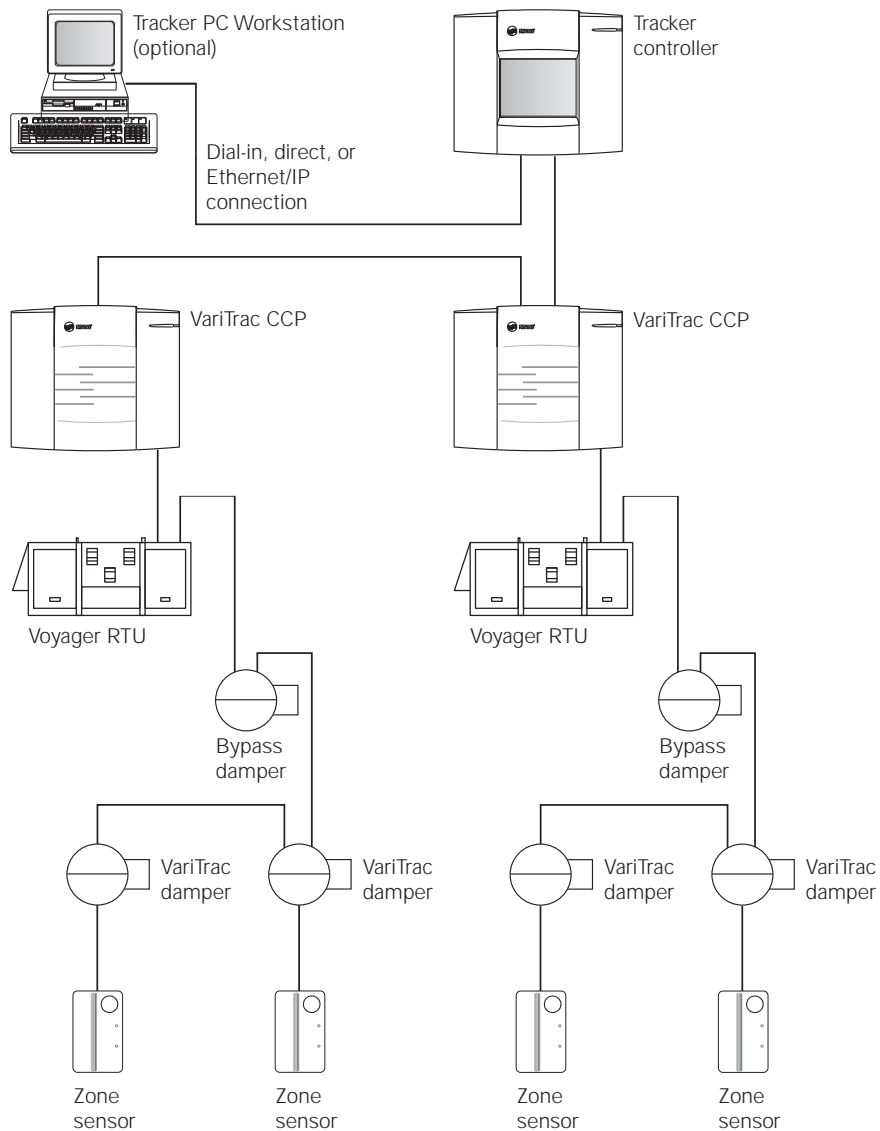
## Changeover Bypass System

The Tracker BAS is capable of supervising and scheduling a VariTrac VAV system. To do this, Trane VariTrac changeover bypass zoning systems are introduced into the Tracker system.

A Tracker controller is connected to one or more VariTrac CCPs (Figure 3). Each CCP is connected to one RTU, bypass dampers, and up to 24 zone dampers.

The Tracker controller provides centralized scheduling and access to CCP alarms. Each CCP monitors its zone sensors and allows each zone to *vote* its needs, which are determined by the schedule and its setpoints. Based on that data, the CCP sets the operating mode (heat or cool) of the HVAC equipment. In addition, the CCP also maintains a operator-defined static pressure in the ductwork by controlling a bypass damper.

**Figure 3. Example of Changeover Bypass System**





## Variable-air-volume (VAV) System

The Tracker BAS is capable of supervising and scheduling a system comprised of a VariTrac CCP and a Voyager III VAV RTU. In this application, the Tracker controller uses the CCP to coordinate the RTU and its VAV boxes (refer to [Figure 4, p. 10](#)). A Tracker controller can be connected to one or more CCPs. Each CCP is connected to one Trane Voyager III variable air volume RTU. The Tracker controller provides centralized scheduling and access to CCP alarms. This configuration can include the following Trane equipment:

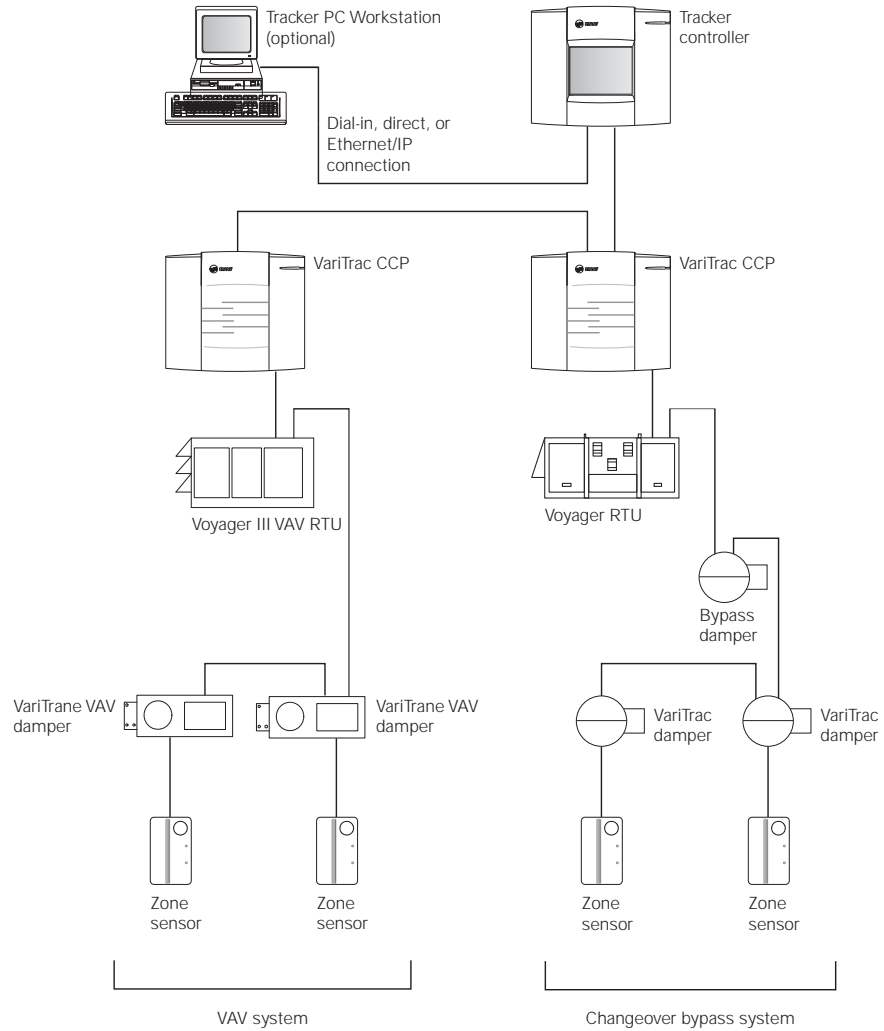
- Tracker BAS
- VariTrac CCP
- Voyager III 27.5-ton to 50-ton RTU
- VariTrac VAV boxes (not shown)
- VariTrane VAV boxes

Since these components are designed to work together, they offer the advantage of *plug-and-play* for easy installation. In addition, the VAV configuration offers these additional advantages:

- Central location of major equipment and controls.
- Inexpensive temperature control for a large number of zones.
- Simultaneous accommodation of heating and cooling, eliminating the heat/cool contention of the changeover bypass system.
- Energy savings through the use of modulating fans and the isolation of unoccupied areas.
- Flexibility that enables easy, low cost zoning changes.

When power is applied, the VariTrac CCP (like the Tracker BAS) auto-configures all devices and equipment to factory default operating conditions and activates the equipment. The VariTrac CCP automatically determines if the connected system is a changeover bypass or VAV system and controls it appropriately without operator or installer programming. When the CCP is connected to the Tracker BAS, the CCP and Tracker controllers begin to share information.

**Figure 4. Example of Combination VAV System and Changeover Bypass System**



# Connection Capacities

The Tracker Version 12 BAS is available in five (5) models. Each model is distinguished by its approvals and by the number and type of devices that it can communicate with and control.

Table 1 shows the maximum number of devices with which the new and old Tracker controllers can communicate.

**Table 1. Tracker Connection Capacities**

BAS	Software Version	Model	Voyager and Precedent RTUs and packaged heat pumps (SCC devices) with LonTalk communication interface (LCI) cards (See notes 1 and 2) (a)	Tracer ZN510/ZN511 zone controllers and ZN517 unitary and ZN524 WSHP controller (SCC device) (See note 2)	New VariTrac III CCP	Tracer MP503 I/O module	Voyager and Precedent RTUs and packaged heat pumps (with Trane communication interface [TCI]), Thermostat Control Module (TCM)	Slave Thermostat Control Module (TCM)	VariTrac I Comfort Manager (CM)	VariTrac II CCP	Maximum Devices (b) (c)
Tracker Version 11-12	11.0-12.0	WSHP	100	100	0	4	0	0	0	0	105
Tracker Version 10-12	10.0-12.0	12 24	12 24	12 24	5 10	4 4	0 0	0 0	0 0	0 0	21 38
Tracker Version 1-6	6.0-6.5	Stat 4 Stat 7 Stat 16	0 0 0	0 0 0	0 0 0	0 0 0	4 7 12	1 2 2	0 0 0	2 4 8	6 7 16
	5.0-5.12	Stat 4 Stat 7 Stat 16	0 0 0	0 0 0	0 0 0	0 0 0	4 7 12	1 2 2	2 2 8	2 4 4	6 7 16
	4.0-4.2	CM S7	0 0	0 0	0 0	0 0	12 7	2 2	8 2	0 0	16 7
	3.0	CM CV	0 0	0 0	0 0	0 0	12 12	2 2	8 0	0 0	16 16
	2.1-2.5	CM CV	0 0	0 0	0 0	0 0	12 12	1 1	12 0	0 0	16 16
	1.3-2.0	CM	0	0	0	0	12	1	12	0	16

- (a) The RTUs communicating with a Tracker Version 10 or greater controller directly must be constant volume only. To interface a Tracker controller with a Voyager III variable-air-volume (VAV) RTU having a variable frequency drive or inlet guide vanes, use a CCP to coordinate the Voyager and the VAV boxes. The Tracker controller can then interface with up to five (5) [Model 12] or ten (10) [Model 24] CCPs controlling one Voyager III each.
- (b) The Tracker Model 12 can communicate with a maximum of 21 devices: any combination of up to 12 SCCs, five (5) CCPs, and four (4) I/O controllers. Each Voyager and Precedent RTU must have a Trane unit controller with a Comm5 interface card. The Precedent RTU must be equipped with a ReliaTel™ unit controller. Each CCP provides control of one RTU and up to 24 VariTrac zones or 32 delivered VAV zones.
- (c) The Tracker model 24 can communicate with a maximum of 38 devices each: any combination of up to 24 SCCs, ten (10) CCPs, and four (4) I/O controllers. Each Voyager and Precedent RTU must have a Trane unit controller with a Comm5 interface card. The Precedent RTU must be equipped with a ReliaTel unit controller. Each CCP provides control of one (1) RTU and up to 24 VariTrac zones or 32 delivered VAV zones.





# Supported Devices

## Voyager and Precedent Rooftop Units

Both the Voyager and Precedent RTUs (Figure 5) are available from the factory as devices that conform to the LonMark® Space Comfort Controller (SCC) device profile. Each is equipped with a factory-installed Trane unit controller and a Comm5 communication interface card. The Comm5 card enables the unit controller to communicate over a LonTalk network. The Tracker controllers (Version 10 through 12) can be wired directly to these RTUs (refer to Table 1, p. 11).

Figure 5. Voyager and Precedent RTUs



## VariTrac Central Control Panel

The VariTrac CCP (shown on the right) controls a VariTrac zone control system. Table 1, p. 11, shows the maximum number of CCPs with which the Tracker controllers can communicate. Table 2 shows the VariTrac CCP communication capacities.



Table 2. VariTrac CCP Communication Capacities

CCP Type	HVAC Unit (Rooftop or Split System)	VariTrac Zone Damper or VariTrane VAV Box	Bypass Damper
New VariTrac	1 Constant Volume Voyager, Precedent, or Other RTU <sup>(a)</sup>	24	1
	1 Voyager III VAV RTU	32	0

(a) The Voyager RTU, Precedent RTU, or other RTU must have either a communication interface card (TCI) or low-voltage relay interface. If a low-voltage relay is used, the CCP must be ordered with the optional relay board.

## Tracer ZN510/ZN511 Controllers

The Tracer ZN510 is a Trane factory-installed, application-specific, direct digital control (DDC) controller. The ZN511 is the same controller as the ZN510, but a field-installed version (shown on the right). They communicate on the Comm5 link and are configured to support:

- Single speed fan
- Up to two (2) compressors
- Reversing valve
- Two-position outdoor air damper



The controllers have three (3) binary inputs for low temperature (Freeze Stat), condensate overflow, and occupancy/generic. Other features include random start, occupied/unoccupied, manual output test, automatic heat/cool determination, smart reset, and peer-to-peer communications.

[Table 1, p. 11](#) shows the maximum number of Tracer ZN510/511 controllers with which the Tracker controllers can communicate. [Table 3](#) shows the Tracer ZN510/ZN511 I/O capacities.

**Table 3. Tracer ZN510/511 I/O Capacities**

Binary Inputs (Isolated Contacts)	Binary Outputs	Analog Inputs
<ul style="list-style-type: none"> <li>• Low Temperature Detector (Freeze Stat)</li> <li>• Condensate Overflow</li> <li>• Occupancy/Generic</li> </ul>	<ul style="list-style-type: none"> <li>• Fan</li> <li>• Reversing Valve</li> <li>• Compressor 1</li> <li>• Compressor 2</li> <li>• Two-position Damper Actuator</li> </ul>	<ul style="list-style-type: none"> <li>• Zone Space Temperature</li> <li>• Local Setpoint</li> <li>• Fan Input Mode</li> <li>• Leaving Water Temperature</li> <li>• Discharge Air Temperature</li> </ul>

## Tracer ZN517 Unitary Controller

The Tracer ZN517 unitary controller is a stand-alone HVAC controller (shown on the right). When connected to a Tracker controller, the Tracer ZN517 unitary controller becomes a communicating LonMark®-compliant device with an SCC profile. The Tracker controller, through the Tracer ZN517, can then communicate with and control the equipment.

Devices controlled by the Tracer ZN517 unitary controller include electro-mechanically controlled 2-heat/2-cool (2H/2C) or 4-cool (4C) rooftop units, heat pumps, and split systems. The Tracer ZN517 controls temperature and other comfort-related conditions. Connecting a Tracker controller to it enables an operator to schedule, route alarms, and monitor the entire system.



[Table 1, p. 11](#) shows the maximum number of Tracer ZN517 unitary controllers with which the Tracker controllers can communicate. [Table 4](#) shows the Tracer ZN517 I/O capacities.

**Table 4. Tracer ZN517 I/O Capacities**

Binary Inputs (Isolated Contacts)	Binary Outputs <sup>(a)</sup>	Analog Inputs
<ul style="list-style-type: none"> <li>• Enable/Disable or Occupancy</li> <li>• Status: Fan or Generic</li> </ul>	<ul style="list-style-type: none"> <li>• Supply fan</li> <li>• Cool 1/Compressor 1</li> <li>• Cool 2/Compressor 2</li> <li>• Heat 1/Reversing Valve/Cool3</li> <li>• Heat 2/Auxiliary Heat/Cool 4</li> <li>• Exhaust Fan</li> <li>• Economizer Open/Close</li> </ul>	<ul style="list-style-type: none"> <li>• Space temperature from Trane thermistor</li> <li>• Setpoint input from Trane zone sensor (0–1k W)</li> <li>• Discharge air temperature from Trane thermistor</li> <li>• Universal input from an outside air temperature/generic temperature Trane thermistor, RH, or CO<sub>2</sub> sensor</li> </ul>

(a) Each output is rated for a maximum of 1 A at 24 Vac. One normally open (Form A) relay contact is provided. The 24 Vac is wired in common to one side of all relay contacts.

## Tracer MP503 I/O Module

The Tracer MP503 input/output module accepts electrical signals from a variety of sensors (shown on the right). In addition, it controls the state of binary outputs by energizing and de-energizing relays. Changing the state of a relay enables the I/O module to turn a device on or off.

The Tracer MP503 provides four (4) universal inputs and four (4) binary outputs.

The universal inputs can receive and interpret binary (on/off), and analog (range) values. Connecting to the module enables the Tracker controller to monitor Trane temperature, relative humidity (RH), and CO<sub>2</sub> sensors.

Using the optional Tracker PC software, the binary outputs can be programmed to energize and de-energize the relays in response to system conditions and schedules.

[Table 1, p. 11](#) shows the maximum number of Tracer MP503 I/O modules with which the Tracker controllers can communicate. [Table 5](#) shows the Tracer MP503 I/O module capacities.

**Table 5. Tracer MP503 I/O Capacities**

Universal Inputs (4 Each) [Isolated Contacts]	Binary Outputs (4 Each)
<ul style="list-style-type: none"> <li>• Thermistor (10k W at 77°F [25°C])</li> <li>• Trane CO<sub>2</sub> Sensor (0 to 10 Vdc)</li> <li>• Trane Relative Humidity (RH) sensor (4 to 20 mA)</li> <li>• Binary Input</li> </ul>	<p>Each output is rated for a maximum of 1 A at 24 Vac. One normally open (Form A) relay contact is provided. The 24 Vac is wired in common to one side of all relay contacts.</p>





# Comm5 Communication

The Tracker Version 12 BAS controller is a Comm5 device with 5th-generation Trane communication architecture. It implements LonTalk, an open, industry-standard protocol.

The RTUs, CCPs, unitary controllers, and I/O controllers that the Tracker controller communicates with reside on a LonTalk FTT-10A network. They provide data using LonMark® standard network variable types (SNVTs, *pronounced sniv-its*) and configuration properties.

The HVAC equipment controllers employ SCC profiles, as defined by LonMark® Interoperability Association. [Table 6](#) shows the devices with which the Tracker controller can communicate and the LonMark® profiles that the devices use.

*Note: Ancillary sensors (such as temperature and humidity sensors) that are hard wired to the terminals on the Tracker, CCP, and I/O module, are standard resistive-type sensors and do not communicate using LonTalk. They only provide analog inputs or binary inputs/outputs.*

LonTalk devices from other manufacturers are tested for compatibility with the Tracker BAS. Devices that are compatible are approved for inclusion in the Tracker system. Necessary support documentation for approved devices will be released, when completed.

**Table 6. Comm5 Network Devices**

Comm5 Devices	LonMark® Profile
SCCs: <ul style="list-style-type: none"> <li>• Voyager RTU (with a LonTalk communication interface [LCI] card)</li> <li>• Precedent RTU (with a ReliaTel LCI [RLCI])</li> <li>• Tracer ZN517 unitary controller</li> </ul>	SCCs: <ul style="list-style-type: none"> <li>• Generic (85.00) with unit type HVT_ROOFTOP</li> <li>• Generic (85.00) with unit type HVT_GENERIC</li> <li>• Generic (85.00) with unit type HVT_HEAT_PUMP</li> </ul>
New VariTrac CCP	Custom profile (82.06)
Tracer MP503 I/O module	Custom profile (82.08)



## Installation

The Tracker Version 12 BAS controller is designed for easy installation. Its three-module configuration (shown on the right) enables the termination module to be mounted on a wall and the main module and display module to be stored for their protection until the site is ready for the controller to be fully assembled.

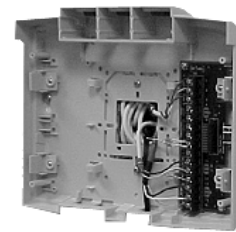
The termination module contains the termination board that accepts all electrical connections for the controller. The main module contains the main logic board and the display module contains the touch screen, which enables the operator to interact with the controller.



### Installing the Termination Module

The first step in the Tracker installation procedure is to select a location and mount the termination module on a wall as shown on the right.

It can be mounted directly to the wall or mounted on a conduit box. Since the Tracker controller is distributed in an international market, the termination module is designed to fit on all standard conduit boxes.



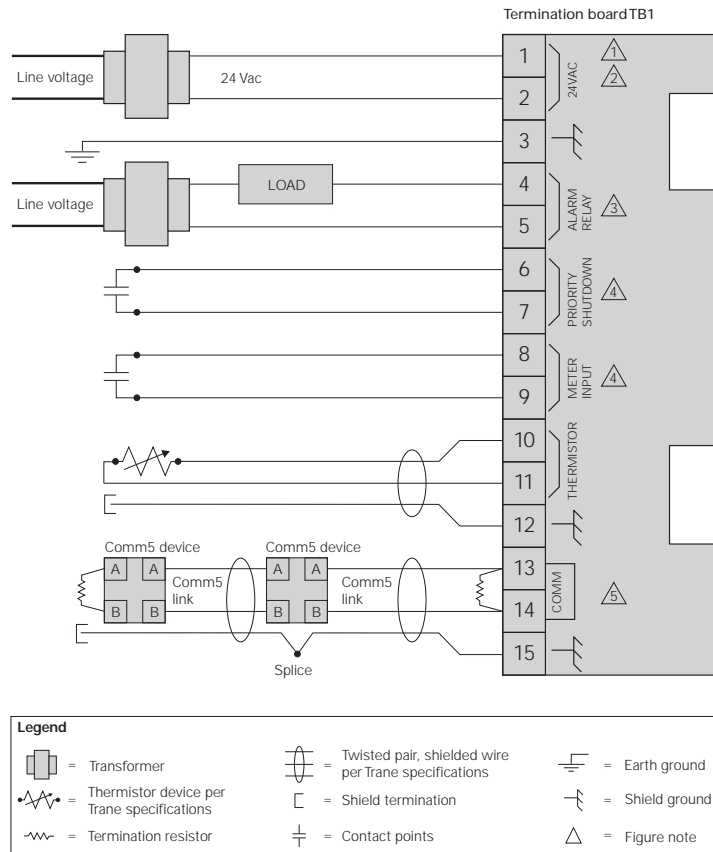
## Wiring the Termination Board

Once the termination module is mounted on the wall, the installer can make all electrical input and output connections, UCM connections, and 24 Vac power connections to the termination board (refer to Figure 6). The termination board inputs and outputs connect devices such as an alarm relay, a priority shutdown input, a pulse meter, and an outside air temperature sensor. The 24 Vac power must come from a dedicated transformer.

The module is designed to provide ample room to insert wire into the terminals. The termination screws are fully exposed and are more than 2 inches (5 cm) from the sides of the module.

When wiring is complete, the shipping container can be slipped back over the module to protect it from construction debris until the installer is ready to complete the installation.

Figure 6. Field Wiring Connections



**Important:** All customer wiring must be in accordance with national, state, and local electrical codes.

Trane recommends a dedicated transformer for 24 Vac power.

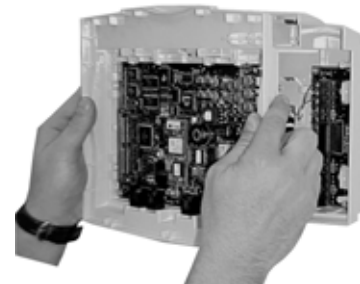
Alarm relay circuit must not exceed 24 Vac, 1 A.

**Do not** apply voltage to the priority shutdown or meter inputs.

Refer to the Comm5 Wiring Instructions (3270 3274)

## Installing the Main Module and Display Module

The main module and display module can be installed with power applied to the termination module. The main module snaps onto the termination module (top illustration on the right) and the display module snaps onto the main module (bottom figure on the right).



## Connecting the PC Workstation

If the site requires the optional Tracker PC software, the installer must connect the RJ-11 (modem connection) or RJ-12 (direct connection) cable to the appropriate connector on the underside of the controller.

## Installing the Optional Tracker PC Software

To install the optional Tracker PC software, insert the Tracker CD into the PC CD-ROM drive and follow the self-prompting installation wizard.

## Auto Configuration

When Trane Comm5 devices are used as a system and power is applied to the controller, the Tracker BAS automatically configures itself. It is no longer necessary to program the building management system. During auto configuration, the controller:

- Discovers all devices on the communication link
- Loads all devices into a non-erasable memory database
- Turns to *On* or *Occupied*, all discovered HVAC equipment except the binary output relays of the Tracer MP503 I/O module, which remain de-energized (Off)

After auto configuration, the building is under the control of the Tracker controller and its factory defaults. At this point, the controller can run the building with no further personnel involvement.

During auto configuration, the Tracker controller assigns a default name to each detected device. You can choose, now or later, to replace the default device names with descriptive names or change the building heating and cooling schedule.



# Operation

An operator can set up and change HVAC operating parameters and collect and display building information at either the Tracker controller or the PC workstation. Each location provides access to an easy-to-use user interface.

## Tracker Controller Operation

The LCD touch screen, combined with an intuitive menu-driven user interface, provides access to the Tracker system from the controller.

### *Using the Controller User Interface*

The user interface Home screen (top illustration on the right) is the entry point to the Tracker system. The screen displays the following five (5) function buttons: View, Alarm, Schedule, After Hours, and Advanced.

Pressing a function button opens the function. Once open, buttons on the user interface screens enable the operator to navigate to specific data display and data entry screens.

For example, to view status, the operator presses the View function button. On the Building Information screen that displays (bottom illustration on the right) is a button for each building area or piece of equipment in the building. Each button shows current status (such as, temperature, status of an analog input, or state of a binary output).

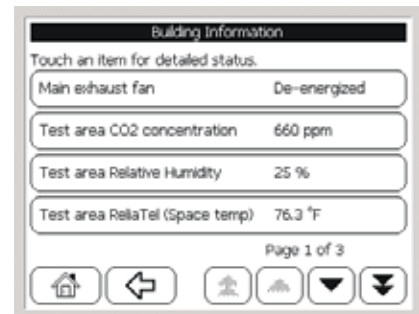
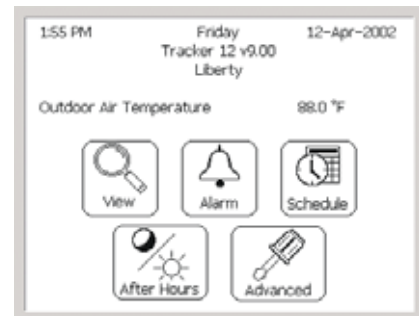
Subsequent selections enable the operator to navigate to screens that provide additional detail. For example, the operator has only to press the appropriate area or equipment button at the Building Information screen and a screen with more detail displays. From the Building Information screen, the operator can navigate to any status in one to three steps.

### *Controller Operator Support*

Beyond its ease of use, the user interface provides additional operator support:

- It informs the operator of changes that are about to be made and asks for confirmation before making those changes.
- Its alarm buttons, when pressed, can display instructions and notes on how to best handle the problem.
- Its service and alarm messages help to protect HVAC equipment. They enable the operator to ward off future problems and correct current problems, so tenant comfort can be maintained.

A printed user guide containing all the procedures that can be performed with the user interface is provided with the Tracker controller. There is also an electronic copy of the user guide on the Tracker PC software CD.



## PC Software Operation

A personal computer running Tracker PC software provides local (direct connection) or remote (dial-in or LAN) access to the Tracker controller.

The PC operator can access all functions that the controller operator can access. In addition, the PC operator has access to functions that are not available to the controller operator: Binary Output Programming, Custom Alarming, and Print.

### *Using the PC User Interface*

The user interface Home screen (top illustration on the right), which displays in the workspace area, is the entry point to the Tracker system from the PC software.

A tree displays to the left of the workspace area. The tree shows all devices in the Comm5 network.

Clicking a function button or menu item opens the function. Once inside, buttons, lists, and tabs enable the operator to navigate to specific data display screens and data entry screens.

For example, to view the status of an RTU, the operator clicks the device on the tree. The selected device then displays in the workspace area (bottom illustration on the right).

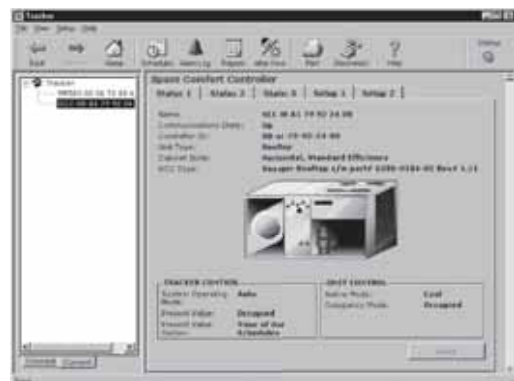
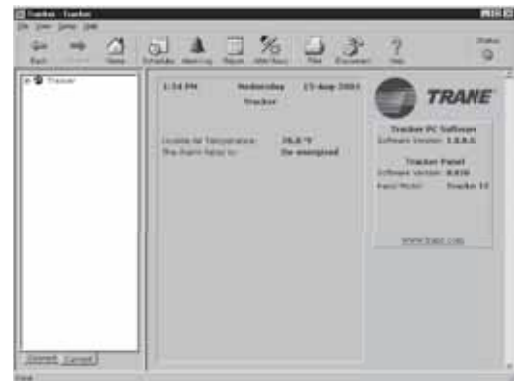
Tabs at the top of the workspace area enable the operator to easily access and view the parameter settings and current status of the selected device.

### *PC Operator Support*

Beyond its ease of use, the PC software user interface provides operator support that is similar to that of the controller. In addition:

- It provides online help, which contains all the procedures that can be performed with the user interface.
- It provides printer support, which enables the operator to print operating procedures.

The Tracker PC software CD case contains printed installation instructions for the PC software. It also contains instructions on how to access the online help. The Tracker CD contains an electronic copy of all printed user documentation.



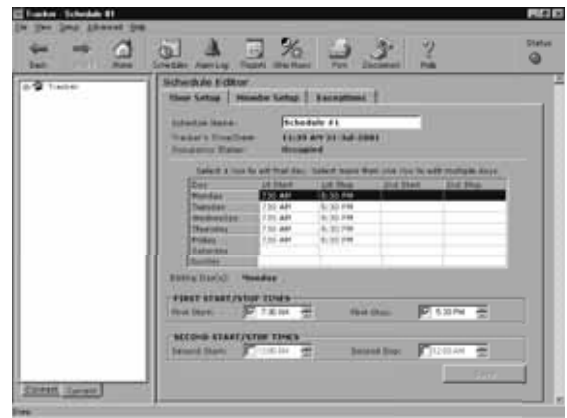
## Scheduling

Running a building as efficiently as possible means using the HVAC system only when needed. Most often, the need is based on the occupancy of the building, or better yet, the occupancy of specific areas of the building.

The Tracker BAS simplifies scheduling. It is no longer necessary to create a separate occupancy schedule for each HVAC device. The operator can create a schedule and attach several devices (members) to it. From 1 to 10 schedules may be created. Grouping devices in a schedule means that changes to the building schedule are no longer a time-consuming, labor-intensive effort. The top illustration on the right shows a scheduling screen from the controller user interface. The bottom illustration on the right shows a scheduling screen from the PC software user interface.

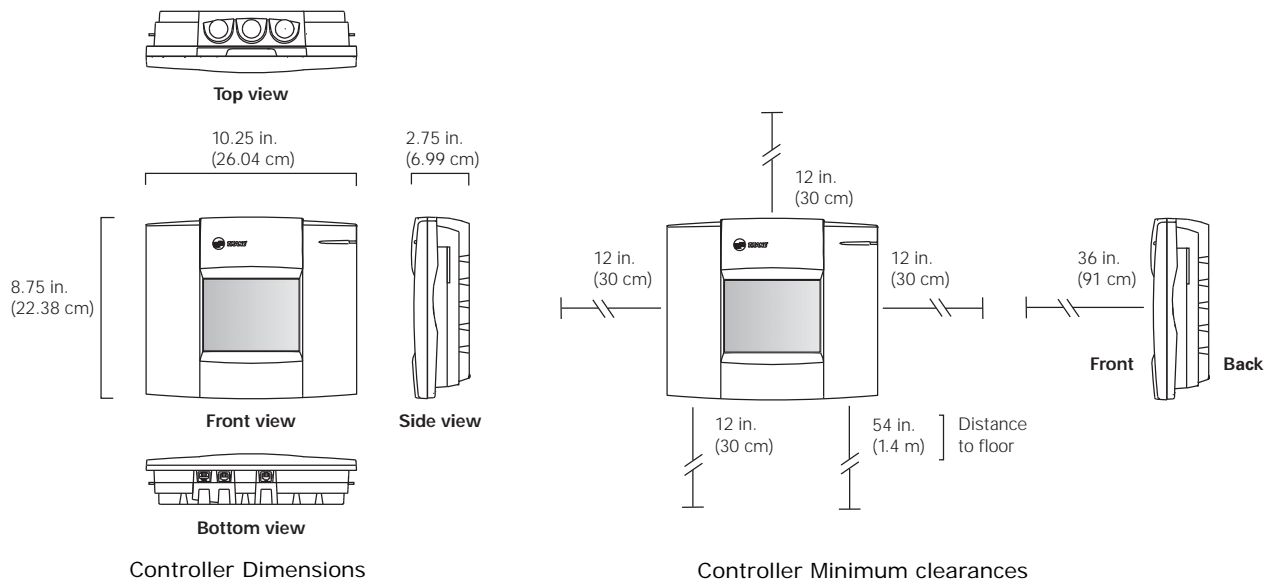
Building occupants can easily override unoccupied areas to provide comfort for predetermined lengths of time by pressing the On button on the zone sensor or by using the Tracker controller or PC user interface.

In addition, the Tracker BAS can be set up to override a schedule based on the input of occupancy sensors. The heating and cooling setpoints for the area are automatically adjusted to standby settings when the area is not occupied and to occupied settings when people are detected.



# Controller Specifications, Dimensions, and Clearances

Storage	
Temperature:	-40°F to 185°F (-40°C to 85°C)
Relative Humidity:	Between 5% and 95% (non-condensing)
Operating	
Temperature:	32°F to 122°F (0°C to 50°C)
Humidity:	Between 105% and 90% (non-condensing)
Input Power:	24 Vac nominal (19–30), 50Hz to 60Hz, 1 phase 40 VA minimum (Class 2 transformer required)
Mounting weight of controller:	Supporting mounting surface: must be 2.5 lb. (1.13 kg)
Environmental rating (enclosure):	NEMA 1
Mounting:	Flat wall surface with a conduit box that is either: <ul style="list-style-type: none"> <li>• Recessed 2 in. x 4 in. (5 cm x 10 cm)</li> <li>• Recessed 4 in. x 4 in. (10cm x 10cm)</li> </ul>
Analog Input:	Thermistor: <ul style="list-style-type: none"> <li>• 10KW at 77°F (25°C)</li> <li>• From -50°F to 200°F (-46°C to 93°C)</li> </ul>
Binary Inputs:	Utility pulse meter: <ul style="list-style-type: none"> <li>• User-supplied dry contacts <u>only</u></li> <li>• Tracker-supplied voltage: 12 Vdc nominal (10–14 Vdc), 12 mA nominal (10–14 mA)</li> </ul> Priority shutdown: <ul style="list-style-type: none"> <li>• User-supplied dry contacts <u>only</u></li> <li>• Tracker-supplied voltage: 12 Vdc nominal (10–14 Vdc), 12 mA nominal (10–14 mA)</li> </ul>
Binary Output:	Alarm relay: <ul style="list-style-type: none"> <li>• Tracker-supplied relay</li> <li>• Single-pole single-throw (SPST) dry contact rated at 24 Vac, 1 A maximum</li> </ul>
Memory Backup:	At power loss, the Tracker controller performs memory backup stores all data for seven days; after seven days, alarms are not retained
Agency Listing	
<ul style="list-style-type: none"> <li>• UL and C-UL Listed: 916 Energy Management Equipment</li> <li>• Flammable Rating: UL94-5V, Flammability Rating for Plenum Use</li> <li>• CE Approvals: For Models 12 and 24</li> <li>• FCC Part 15, Class A, CFR 47</li> </ul>	





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