Installation Instructions

Variable Refrigerant Flow (VRF) System

External Contact Interface Module or
Auxiliary Heat Module

Model Numbers: TVCTRLTIMB14A0

⚠ 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.

⚠ 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.

March 2015 **VRF-SVN54B-EN**

© 2015Trane All Rights Reserved

Ingersoll Rand

1

Important: Environmental Concerns! *Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants-including industry replacements for CFCs such as HCFCs and HFCs.*

Important: Responsible Refrigerant Practices! *Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified. The Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.*

⚠ WARNING

Personal Protective Equipment Required!

Installing/servicing this unit could result in exposure to electrical, mechanical and chemical hazards. Before installing/servicing this unit, technicians MUST put on all Personal Protective Equipment (PPE) recommended for the work being undertaken. ALWAYS refer to appropriate MSDS sheets and OSHA guidelines for proper PPE. When working with or around hazardous chemicals, ALWAYS refer to the appropriate MSDS sheets and OSHA guidelines for information on allowable personal exposure levels, proper respiratory protection and handling recommendations. If there is a risk of arc or flash, technicians MUST put on all necessary Personal Protective Equipment (PPE) in accordance with NFPA70E for arc/flash protection PRIOR to servicing the unit. Failure to follow recommendations could result in death or serious injury.

⚠ WARNING

Proper Field Wiring and Grounding Required!

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

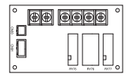
2

Module Options

The enclosed module can function as either an external contact interface or an auxiliary heat module. Choose the configuration instructions for the desired option.

Components

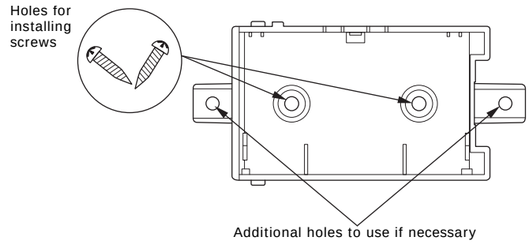
The module is shipped with the following components:

Circuit board	Circuit board case	Wiring harness (1 each)	Wiring harness screws (2)
			

Mounting

1. Mount the circuit board case with screws (provided) inside the indoor unit control box or at another appropriate location (Figure 1).

Figure 1. Mounting the circuit board case



3

2. Align the circuit board with the case and lock it into place using the locking tab (see Figure 2).

Wiring

1. Shut off power to the indoor unit before wiring the module.

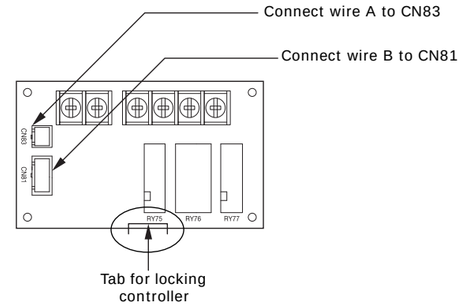
⚠ WARNING

Hazardous Voltage!

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

2. Connect the 2-pin wiring harness to the interface module at CN83 (Figure 2) and to the indoor unit at CN83.
3. Connect the 4-pin wiring harness to the interface module at CN81 (Figure 2) and to the indoor unit at CN81.
4. Restore power to the indoor unit.

Figure 2. Wiring the module



4

External Contact Interface Configuration

Using the Technician Utilities Tool (TUT) or the remote control, configure indoor unit options as required by customer application. Refer to Table 1, Figure 3, and the configuration section of the indoor unit installation manual.

Table 1. Option settings for the module as an external contact interface

Option setting mode: Digit 2=2[a]	Option setting	Terminals 5,6[b]	Terminals 3,4	Terminals 1,2
Digit 14	"0"	No function		
	"1"	On/Off control	—	
	"2"	Off control		
Digit 15	"0"	—	Thermo On/Off status (On=closed)	Error status (normally closed)
	"1"		Operation On/Off status (On=closed)	

(a) Refer to "Configuration" in the indoor unit installation manual for more details.
(b) Used in conjunction with a set of dry contacts.

External Contact Interface Sequence of Operation

If Digit 14 terminals 5, 6

- Option setting 0 has no function.
- Option setting 1 will enable an auxiliary contact to enable the indoor unit on or off.
- Option 2 will enable an auxiliary contact to enable the indoor unit off. The indoor unit will require reset to release and re-enable the connected indoor unit.

If Digit 15 terminals 3, 4

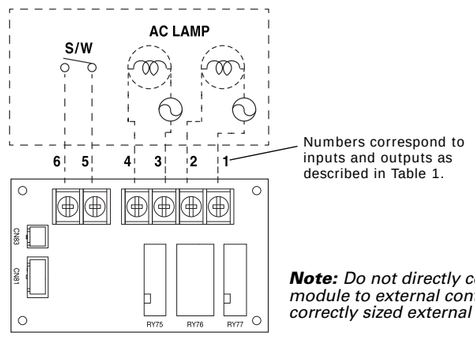
- If option setting 0, then the auxiliary device shall enable upon call for thermal heating (or cooling) to the indoor unit. Unit shall disable when indoor unit ceases thermal operation and returns to standby mode.
- If option 1, then the auxiliary device shall enable upon application of power to the indoor unit, and shall remain enabled until power is removed.

5

If Digit 15 terminals 1, 2

- If option setting 0 or 1, when power is applied, contacts are normally closed. If error code occurs, contacts open, breaking the circuit for the external device.

Figure 3. External contact interface module wiring diagram



Note: *Do not directly connect module to external contact. Use correctly sized external relays.*

6

Auxiliary Heat Module Configuration

The indoor unit firmware may need to be updated depending on the date of indoor unit manufacture. Firmware installations instructions, which can be found on Comfortsite, must be followed exactly.

Important: *Avoid system failure and loss of all system programming by following firmware installation instructions exactly. Failure to do so will cause system data to be deleted. Data is not recoverable! The unit will not function!*

Using the Technician Utilities Tool (TUT) or the remote control, configure indoor unit options as required by customer application. Refer to Table 2, Figure 4, and the configuration section of the indoor unit installation manual.

Table 2. Option settings for auxiliary heat

Option setting mode: Digit 2=2[a]	Option setting	Example Option 3: Temperature offset, No delay 02xxxx 1xxxxx 2x2xxx 3xxxxx 05xxxx 1xxxxx 2xxxx3 3xxxxx	
Digit 15	"2"		
Option setting mode: Digit 2=5[b]	**Option setting**	**Terminals 3,4 Temperature offset**	**Time output**
Digit 18	"0"	No temperature offset	No delay
	"1"		+10 minute delay
	"2"		+20 minute delay
	"3"	Temperature offset: 2.7°F (1.5°C)+	No delay
	"4"		+10 minute delay
	"5"		+20 minute delay

(a) Refer to "Configuration" in the indoor unit installation manual for more details.
(b) If further temperature offsets are desired, contact technical support.

⚠ WARNING

Fire Hazard!

Do not install an electric auxiliary heater in the air flow channel of a ducted VRF indoor unit. Installation of an electric auxiliary heater in ductwork may cause a fire, which could result in death or serious injury and property damage.

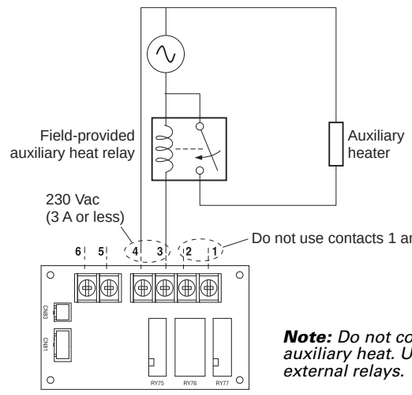
7

Auxiliary Heat Sequence of Operation

When a call for heat occurs, the indoor unit will energize internal heat. The auxiliary contact will energize as described:

- If Digit 18 is set to 0, 1, or 2, after an appropriate time delay, auxiliary heat will energize. Auxiliary heat will remain in operation until the indoor unit heat setpoint is satisfied.
- If Digit 18 is set to 3, 4, or 5, the auxiliary heat will remain un-energized until calls for heat and minimum temperature offset are received. On receiving calls for heat and minimum temperature offset, auxiliary heat will energize after the selected time delay. Auxiliary heat will remain in operation until the temperature offset has been satisfied. The indoor unit will continue to operate without regard to auxiliary heat until the indoor unit heat setpoint is satisfied.

Figure 4. External contact interface module: wiring diagram for auxiliary heat



Note: *Do not connect module to auxiliary heat. Use correctly sized external relays.*

The manufacturer optimizes the performance of homes and buildings around the world. A business of Ingersoll Rand, the leader in creating and sustaining safe, comfortable and energy efficient environments, the manufacturer offers a broad portfolio of advanced controls and HVAC systems, comprehensive building services, and parts. For more information, visit www.IRCO.com.

The manufacturer has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice.

© 2015Trane All rights reserved
VRF-SVN54B-EN 31 Mar 2015
Supersedes VRF-SVN54A-EN (15 Jun 2013)

We are committed to using environmentally conscious print practices that reduce waste.