INSTALLATION MANUAL
TIS HVAC VAV CONTROLLER
Model: HVAC6-3A-T

TIS
Automation Made Easy

ℹ PRODUCT INFORMATION

This module has 6 relays to control multiple fan speeds (low, medium, high), cooling, heating, and auxiliary contact. the auxiliary contact can be configured for both a dehumidifier and/or second heating/cooling pump or a Valve Reverse Connection.

The HVAC Module is also equipped with an external temperature sensor and 0-10V output for VAV control.

PRODUCT SPECIFICATIONS

Output switching voltage	Number of channels	6	
	Nominal voltage	0 – 230 V AC 50/60 Hz	
	VAV outputs	**0-10V / 50mA**	
Output switching current	Nominal current per channel		
	Low current	3 A / VDC	
	Air condition controllers	2 A / VAC	
	Max switching current	3 A / VDC	
	Max Continues current	2 A / VAC	
Input	Temperature	Resistive temperature sensor	
TIS Bus	Number of devices on 1 line	Max. 64	
	Bus voltage	12-32 V DC	
	Current consumption	<30 mA / 24 V DC	
	Protection	Reverse Polarity Protection	
Functions	Cool, Heat, Aux	Cool, Heat, Aux programmable outputs	
	Fan speed control	Low, Medium, High linked outputs	
	VAV 0-10V	Can set any voltage for Low, Med & High	
Dimensions	Width × Length × Height	76mm × 75mm × 91mm	
Housing	Materials	ABS fire proof	
	Casing color	Black Gray	
	IP rating	IP 20	

CE RoHS COMPLIANT PGT ✔ FC

Read Instructions

We recommend that you read this Instruction Manual before installation.

Safety instructions

Electrical equipment should only be installed and fitted by electrically skilled persons.
Failure to observe the instructions may cause damage to the device and other hazards.
These instructions are an integral part of the product and must remain with the end customer.

Programming

This device can be tested and programmed manually. Advanced programming requires TIS Device Search software. Advanced software programming knowledge should be obtained in the advanced training courses.

Simple Installation

DIN Rail mount facilitates installation. Fixing points are provided for installation without the use of DIN rail.

Mounting Location

Install in a dry, well-ventilated location. Controllers may emit some mechanical noises. Consider this when deciding on a mounting location.

Data Cable

Use screened stranded RS485 data cable with four twisted pairs. Configure devices in a "Daisy Chain."
Do not cut or terminate live data cables.

Electrical Wires

The installer should adequately consider the total current consumption when selecting the wires.

Warranty

We provide a warranty as required by law. A hologram warranty seal and product serial number are provided on each device. Please send the description of the defect with Product S/N to our dealer network.

www.tiscontrol.com
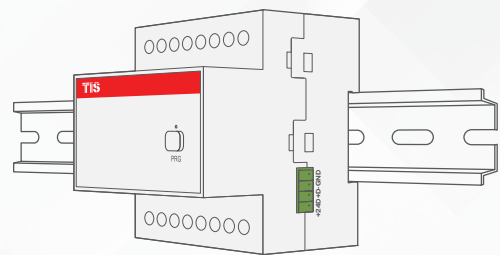
⚙ INSTALLATION STEPS

1 » Turn off the main electrical source before installation.
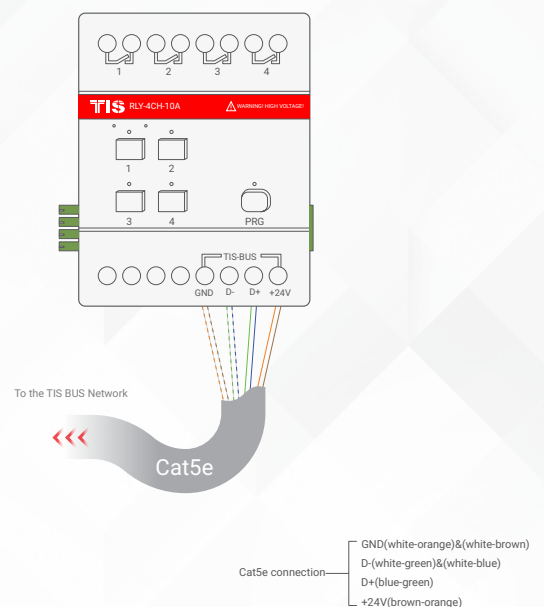
⚡ **WARNING! HIGH VOLTAGE**

2 » Mount the device on a DIN Rail inside an approved enclosure. The device can also be installed without the use of DIN Rail by two mounting screw holes.

3 » Connect RS485 data cable to the TIS-BUS port as per the connection diagram. No need to loop the TIS-bus cable if 2 DIN Rail modules are connected together from the side bus train terminal.

To the TIS BUS Network

Cat5e

Cat5e connection
— GND(white-orange)&(white-brown)
— D-(white-green)&(white-blue)
— D+(blue-green)
— +24V(brown-orange)

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INSTALLATION STEPS

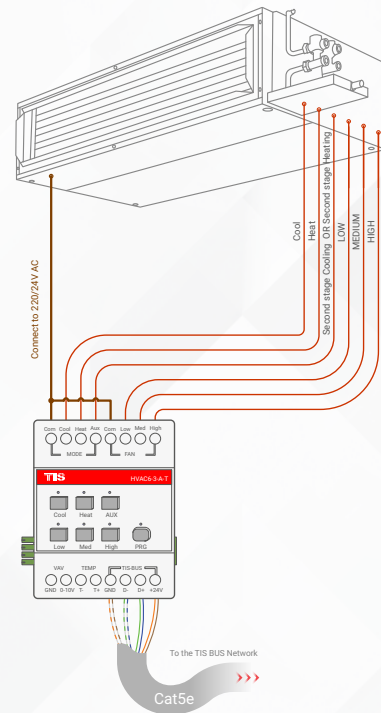**4** ›› Complete the connection, as per the following steps:

CONNECTING TO FCU/HVAC UNIT

Connect the cool (Y), heat (W), and fan speed wires (Low, Med, Heat) to their respective terminals on the module.
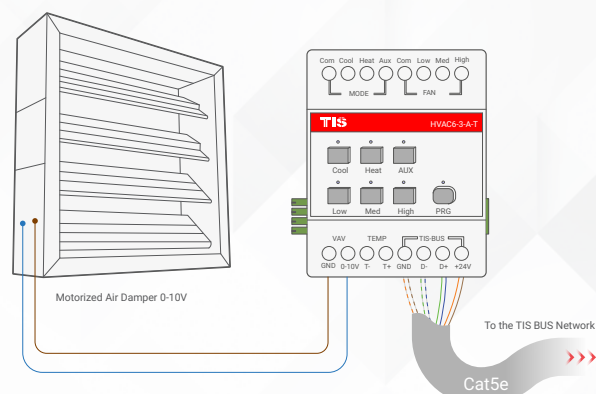
⚠ **WARNING:** For Aux connection you should configure the aux output (Y2, W2, O/B, humidifier or dehumidifier) in software before connecting it to the unit terminal. Each channel can control a maximum of 5A loads. The installer should make sure not to overload the channels.

Connect the supply wire (24V,110V, or 220V) to module COM connection. All inputs must have an appropriate voltage source and an MCB to protect that load circuit.

CONNECTING TO VAV UNIT

Connect the 0-10v wires of the unit to the module 0-10V connection.

Motorized Air Damper 0-10V

low voltage Cable
low voltage Cable

Cat5e connection
- GND(white-orange)&(white-brown)
- D-(white-green)&(white-blue)
- D+(blue-green)
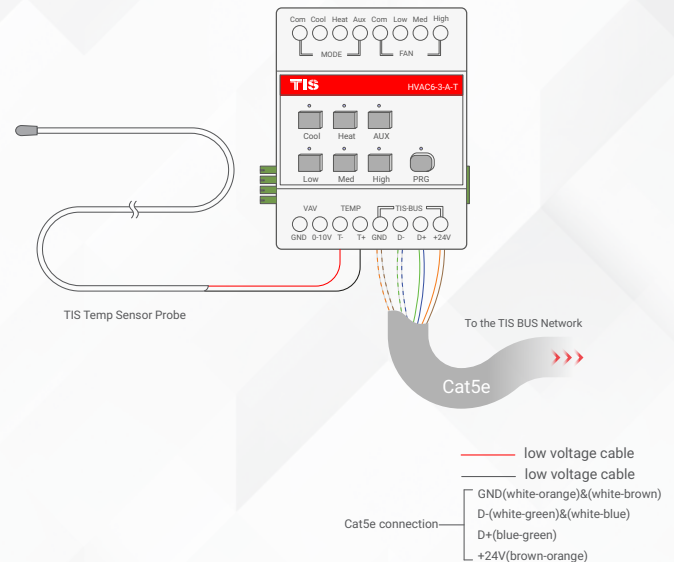- +24V(brown-orange)

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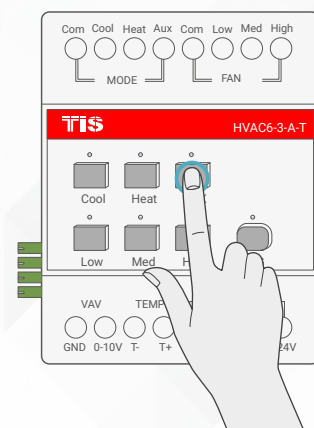
INSTALLATION STEPS

TEMPERATURE SENSOR

If you want to use the HVAC as stand-alone device without the wall panel (thermostat).

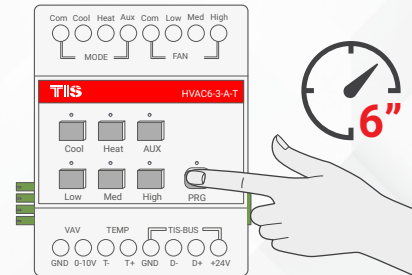Then connect TIS temperature sensor 2 wires to Temperature sensor terminal in the module.

TIS Temp Sensor Probe

To the TIS BUS Network

Cat5e

low voltage cable
low voltage cable

Cat5e connection —
- GND(white-orange)&(white-brown)
- D-(white-green)&(white-blue)
- D+(blue-green)
- +24V(brown-orange)

5 » Turn on the power source, and then test the loads by short pressing on the device's local override buttons Cool, Heat, Aux, Low, Med, High.

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TIS CONTROL LIMITED
RM 1502-p9 Easey CommBldg
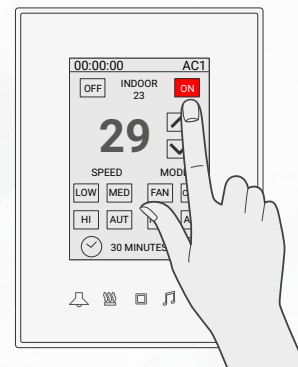253-261 Hennessy Rd Wanchai
Hong Kong

PAIRING (MANUAL PROGRAMMING)

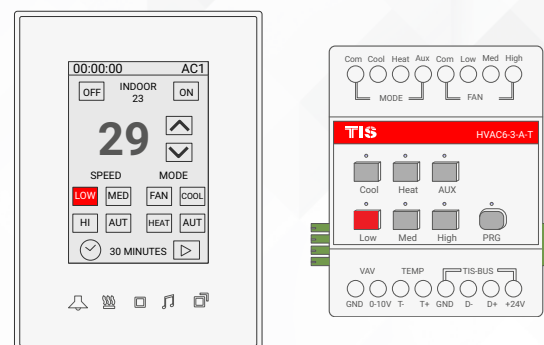To pair the module to wall panel (thermostat) complete the following steps manually:

1 Press the PRG button for 6 seconds until the green LED steady turns on.

2 Go to the Air Conditioning page in your Luna TFT, Mars AC, Terre AC, or other thermostat panel, and turn the AC ON.

3 Test your air conditioning by changing the fan speed from low to medium to high. HVAC module should respond accordingly.
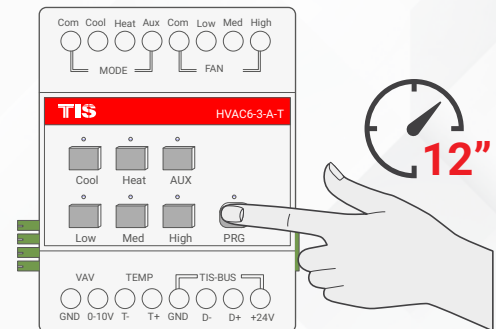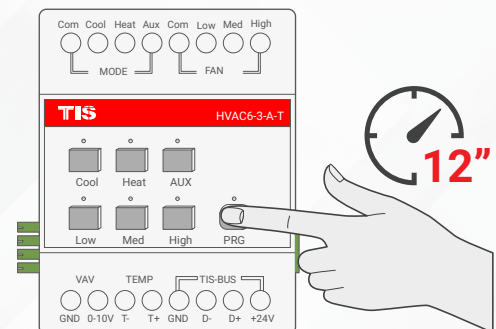
DISABLING/ ENABLING LOCAL OVERRIDE BUTTONS

1 » To disable device's local override buttons, press on the PRG button for 12 seconds until the LED starts blinking rapidly.

2 » To enable device's local override buttons if it was disabled, press on the PRG button for 12 seconds until the LED starts blinking rapidly.

🧰 TROUBLESHOOTING

PRG Button Blinks Red Color Rapidly	**Reason:** The Module address conflicts with other device in TIS network, you need to press and hold the PRG button for 6 seconds so the module can get new address
Device PRG LED is not Blinking; Device not Powered	**Reason:** Device is not powered on; no TIS-BUS 24V supply connected to the device.
Device Button LED is ON but unit is not responding	**Reason 1:** Compressor / heat protection time enabled **Reason 2:** Unit main supply is off.
Wall Panels can't Pair with the Device	**Reason 1:** TIS-BUS connection has a problem; check the wires and make sure there's not a short in the connection. **Reason 2:** Manual programming function disabled in the device (default is enabled).
Wall Panels can't Control the Device Channels	**Reason 1:** TIS-BUS connection has a problem; check the wires and make sure there's not a short in the connection. **Reason 2:** Programming address is wrong.
HVAC Turned ON even when the Wall Thermostat is Off.	**Reason 1:** HVAC stand-alone Logic enabled in software. **Reason 2:** another wall panel thermostat programmed to the same HVAC module address.