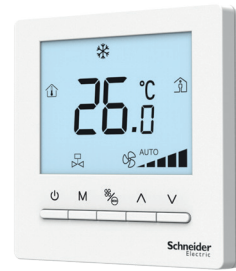


EasyLogic Thermostat

TC700 Series for Fan Coil Applications



Product Description

The TC700 Series fan coil thermostats are optimized for office buildings, schools and hotels. These devices can be used for 2-pipe or 4-pipe applications.

The TC700 Series is both easy to operate and install. The devices feature microprocessor-based control and large backlit LCD screens that display operation status (Cooling, Heating, Auto and Ventilation), fan speed, room temperature and set-point.

Features

- Large back-lit LCD screen
- ECO button for energy saving
- Button lockout function controls unauthorized operation
- Non-volatile memory (MCU Flash) retains user settings during power loss
- Low temperature protection
- Standard BS wall box for installation
- Alert function facilitates temperature sensor maintenance
- Temperature display units: °C
- 0-10V valve control mode models include external door key/occupancy sensor input

Available Products

Part Number	Application	Actuator Control	Fan Control	Input Voltage	Digital Input Terminal	Housing
TC700-3A2LXX	2-pipe	2-Position, on/off	3-Speed, Auto	90 to 240 Vac	No	Medium White
TC700-3A4LXX	4-pipe*	2-Position, on/off	3-Speed, Auto	90 to 240 Vac	No	Medium White
TC700-3A2PXX	2-pipe	Proportional	3-Speed, Auto	90 to 240 Vac	Yes	Medium White
TC700-3A4PXX	4-pipe*	Proportional	3-Speed, Auto	90 to 240 Vac	Yes	Medium White
TC700-3A2PXX-24	2-pipe	Proportional	3-Speed, Auto	24 Vac	Yes	Medium White
TC700-3A4PXX-24	4-pipe*	Proportional	3-Speed, Auto	24 Vac	Yes	Medium White

* Can be changed from 4-pipe system with 2-wire motorized valve, to 2-pipe system with 3-wire motorized valve.

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 Asia Pacific (Singapore): +65 6484 7877
 product.support@schneider-electric.com
 www.schneider-electric.com

Life Is On

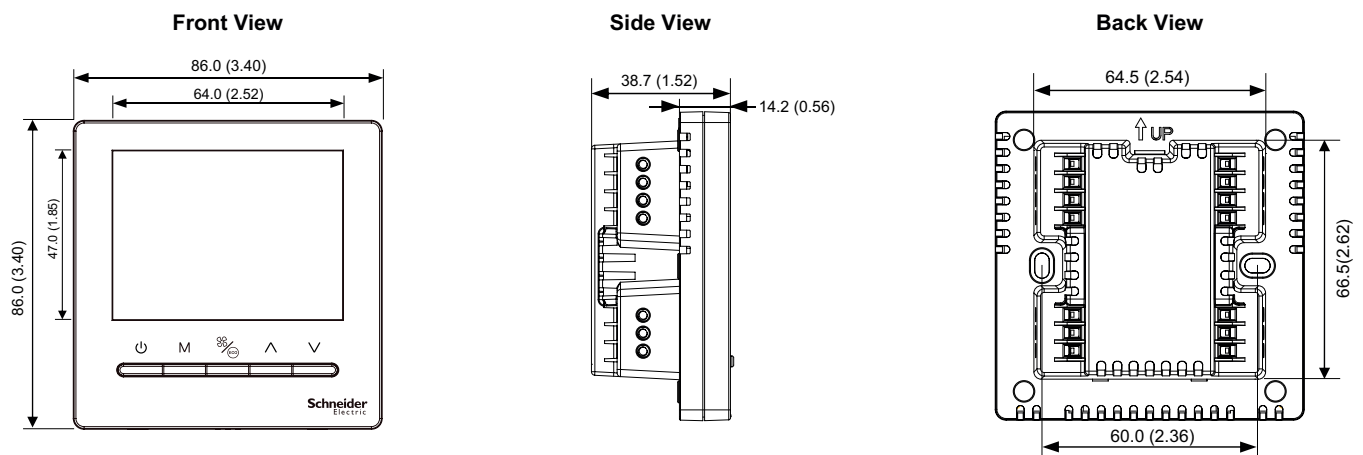
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Specifications

Built-in sensing element	100 kΩ NTC
Accuracy	±1 °C
Set-point range	5 to 35 °C
Display range	0 to 50 °C (shown in 0.5 °C increments)
Operating temp.	0 to 45 °C
Operating humidity	0 to 95% RH (non-condensing)
Actuator control	SELV DC 0 to 10V max. ±1 mA
Power consumption	< 2 W
Power supply	90 to 240 Vac, 50/60 Hz 24 Vac (models with suffix '-24')
Relay and load	Relay rating 5A Load rating 2A resistive, 1A inductive @ cosφ=0.6 (power factor)
Protection class	IP30
Housing	Flame-retardant PC
Dimensions	86 x 86 x 14.2 mm (3.40" x 3.40" x 0.56")
Wall box	BS wall box, min. 35 mm depth
Hole pitch	60 mm (standard)
Pollution Degree	Pollution Degree 2
Type of operation	Type 1.B
Terminal sizing	Max. 2 x 1.5 mm ² or 1 x 2.5 mm ² conductors
Screw terminals max. torque*	0.44 Nm
Regulatory Information	
Agency approvals	European conformance CE: IEC/EN 60730-1 IEC/EN 60730-2-9 RoHS: 2011/65/EU, 2015/863/EU REACH: 1907/2006/EC

*Terminal screw torque should not exceed the maximum torque specification to avoid plastic cracks. Over-tightening the terminal screw may lead to cracked plastic.

Dimensions mm (in.)



Precautions

⚡ ⚠ **DANGER**

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Read and understand the instructions before installing the product. Follow the instructions during installation.
- Installation, wiring, testing or service must be performed only by qualified persons in accordance with all applicable codes and regulations.
- Do not use the product for life or safety applications.
- Do not install the product in hazardous or classified locations.
- Do not exceed the product's ratings or maximum limits.
- Turn off ALL power supplying equipment before working on or inside the equipment.
- Use a properly rated voltage sensing device to confirm that all power is off.
- Do NOT depend on the product for voltage indication.
- Products rated only for basic insulation must be installed on insulated conductors.
- Current transformer secondaries (current mode) must be shorted or connected to a burden at all times.
- Remove all wire scraps and tools, replace all covers and protective devices before powering the equipment.

Failure to follow these instructions will result in death or serious injury.

A qualified person is one who has skills and knowledge related to the construction and operation of this electrical equipment and installations, and has received safety training to recognize and avoid the hazards involved.

If this product is used in a manner not specified by the manufacturer, the protection provided by the product may be impaired. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

External housing may be cleaned with a damp cloth if it becomes dirty. Do not use any cleaning agent, especially alcohol.

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Functions

Set-point Adjustment

The set-point buttons allow users to adjust the set-point in 0.5 °C increments for the space.

Fan Speed

Users can select a fan speed (High, Medium, Low or Auto) with a short press of the FAN/ECO button.

Mode Control

Users can switch operating modes (Heating, Cooling, Auto or Ventilation) by pressing the Mode button.

Eco Power Saving Mode

Initiate Eco mode with a short press of the FAN/ECO button. The ECO icon will appear in the bottom center of the display. In Cooling mode, the set-point is automatically adjusted to 26 °C and the fan speed is set to Low. In Heating mode, the set-point is automatically adjusted to 18 °C and the fan speed is set to Low. Exit Eco mode with a short press of the FAN/ECO button and choose any other fan speed, as desired.

Button Lockout Function

This function allows the buttons to be deactivated to prevent operation of the device by others.

Low Temperature Protection

If the room temperature drops below 5 °C, Heating mode will start automatically and the fan speed will be set to High. Once the temperature reaches 7 °C, the device will switch off the output.

Alert

In the event of an operating exception, the thermostat will attempt to command the valve to close and place the device in an inoperative state. The display will indicate the current status with one of the following diagnostic messages:

- EE: MCU Flash failure (retain user setting area)
- E1: Temperature sensor short-circuit alert
- E2: Temperature sensor open-circuit alert
- HI: Ambient temperature is higher than 50°C
- Lo: Ambient temperature is lower than 0°C

Occupancy Sensor/Key Card



The digital input terminal in selected models allows FCU control based on an external occupancy sensor or key card input. Note: This function is only available on models with a 'P' in the model number: 3A2PXX, 3A4PXX, 3A2PXX-24, 3A4PXX-24.

Installation Guidelines





- Install the thermostat about 1.5 m (59") above the floor.
- Make sure the device is powered off prior to installation/service.
- Do not install in locations that can be affected by radiant heat or in places with high levels of sunlight.
- Do not install thermostats behind doors or in corners.
- Protect from water/debris to avoid damaging the device.

Operation Instructions





Power On/Off

A press of the ON/OFF button  will turn the power on. Another press of the ON/OFF button  will turn off the power, fan coil and motorized valve. If no buttons are pressed for 10 seconds, the thermostat backlight turns off. Press any button to turn the backlight back on.






Temperature Setting

With the power on, press  to decrease the temperature setting and  to increase temperature in steps of 0.5°C. The  will appear on the display. If no buttons are pressed for six seconds,  is displayed, indicating the setpoint is confirmed.

Mode Selection

With the power on, press M to switch the operation mode. The display indicates Cooling with , Heating with  and Ventilation with . Auto mode can be selected in the parameter settings and is indicated on the display with .

Fan Speed Selection

With the power on, press the  button to select a fan speed of High , Medium , Low  or Auto . In Auto mode, the fan speed changes automatically. For a difference of 1 °C, the fan will automatically switch to Low speed. For a difference of 2 °C, the fan will automatically switch to Medium speed. For a difference of 3 °C or more, the fan will automatically switch to High speed.

Motorized Valve Control (2-Pipe Models)

In Cooling (or Heating) mode, the motorized valve will be switched on when the room temperature is higher than (or lower than) the temperature setting by 1 °C. It will switch off when the room temperature reaches the temperature setting.







Motorized Valve Control (4-Pipe Models)

In Cooling mode, the cold water valve will be opened when the room temperature is 1 °C higher than the temperature setting or closed when the room temperature drops to the setting. The hot water valve will remain closed.

In Heating mode, the hot water valve will open when the room temperature is 1 °C lower than the temperature setting and will close when the room temperature rises to the setting. The cold water valve will remain closed.





Energy Saving Functions

Eco Mode






Press the FAN/ECO  button to turn on Eco mode. The display will show the  and  icons. If the thermostat is in Cooling mode, the temperature is automatically set to 26 °C with the fan running at Low speed. If the thermostat is in Heating mode, the temperature is automatically set to 18 °C with the fan running at Low speed. To turn Eco mode off, press the up  or down  buttons to change the temperature setting or press the FAN/ECO  button.

Energy Saving Functions (cont.)

Unoccupied Energy Saving Mode


Unoccupied Energy Saving mode can be entered via a hotel room key card. Example: after a hotel room key card is removed from the reader  and  are displayed. If the thermostat is in Cooling mode, the temperature is automatically set to 28 °C with the fan running at Low speed. If the thermostat is in Heating mode, the temperature is automatically set to 16 °C with the fan running at Low speed. When the key card is returned to the reader, the indoor  display and ECO  icon turn off and the thermostat returns to the previously set mode.

Button Lockout Function

Press and hold the up  and down  buttons at the same time for six seconds to activate the keypad lockup function to prevent thermostat operation by others. While lockout is active, the lock icon  will be displayed on the screen. To deactivate the lockout function, press and hold the up  and down  buttons at the same time for six seconds to unlock the system.

Low Temperature Protection Function

If the thermostat is switched off and the room temperature drops below 5 °C, the thermostat will automatically begin

heating and display the  symbol. The fan will run at High speed automatically and the motorized valve will be opened (hot water valve will be opened for 4-pipe models). When the room temperature rises to 7 °C, the low temperature protection function is canceled and the thermostat will stop automatically, returning to its previously switched off state.

Alert Function

In the event of an operating exception with the temperature sensor, the thermostat will attempt to command the fan and valve to close, place the device in an inoperative state and display an 'E1' or 'E2' alert.





E1: Sensor short-circuit alert

E2: Sensor open-circuit alert

'HI' will be displayed if the temperature is higher than 50 °C.

'Lo' will be displayed if the temperature is lower than 0 °C.

Parameter Settings

During power-off, press and hold the Mode button  for six seconds to enter the display screen. Press the Mode button  or Fan button to move forward or backward between the parameters shown in the table below. Press the up  and down  buttons to adjust these parameters.

Parameter Settings

Parameter Number	Parameter	Default	Description
1	Low temperature protection	on	oF: Disabled on: Enabled
2	Fan operation status after temperature setting is reached	dA	db: Fan off dA: Fan on
3	Power-on state	00	00: Power-down memory 01: Power-down do not remember 02: Power-up power-on
4	Temperature displayed	00	00: Room temperature 01: Setpoint
	Mode button selection (2-pipe)	02	For 2-pipe models only: 00: Heating only (heating + vent) 01: Cooling only (cooling + vent) 02: Cooling and heating (heating + cooling + vent)
5	Mode button selection (4-pipe)	02	For 4-pipe models only: 00: Heating only (heating + vent) 01: Cooling only (cooling + vent) 02: Cooling and heating (heating + cooling + vent) 03: Auto 04: 2 pipe mode with 3-wire valve, heating only (heating + vent) 05: 2 pipe mode with 3-wire valve, cooling only (cooling + vent)

Notes:

Parameters 1 to 4 apply to all models.

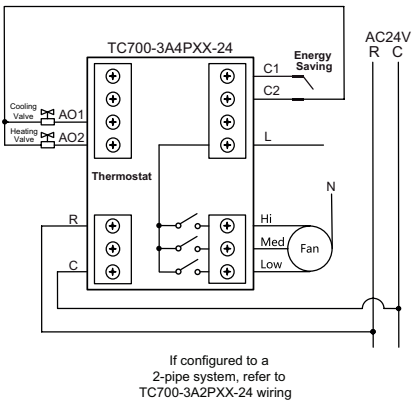
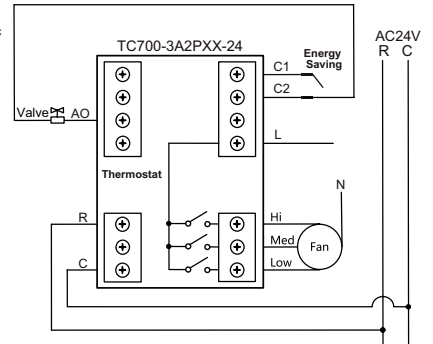
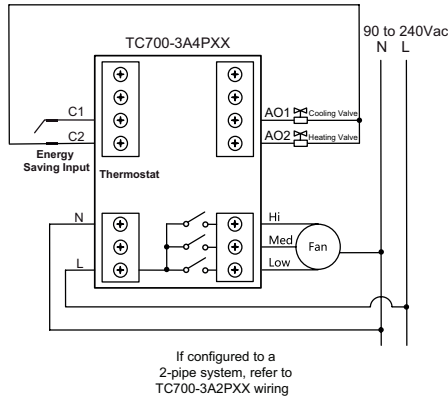
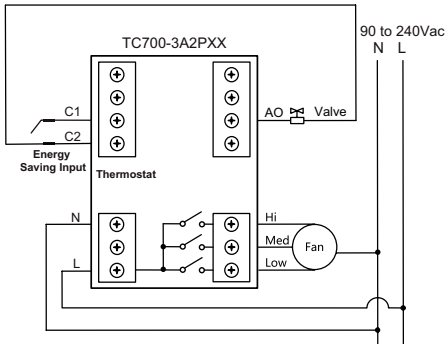
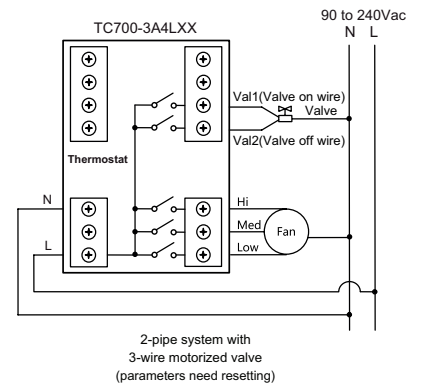
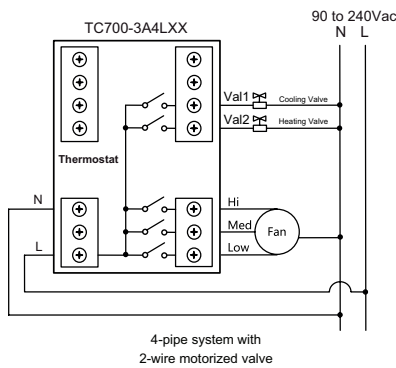
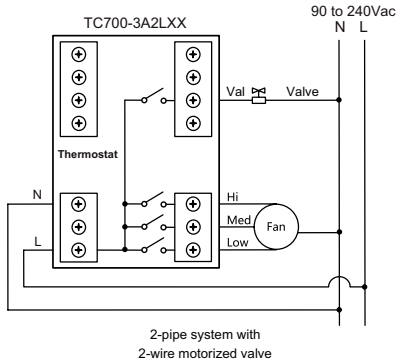
Parameter 5 mode button selection (2-pipe) only applies to models with a '2' in the part number (2-pipe).

Parameter 5 mode button selection (4-pipe) only applies to models with a '4' in the part number (4-pipe).

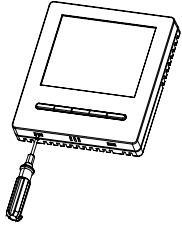
For a 2-pipe system with 3-wire motorized valve, the thermostat supports either Heating mode or Cooling mode, but not both simultaneously.

Wiring

Provide an approved means for disconnection and over-current protection to supply conductors. The disconnecting device(s) shall meet the relevant requirements of IEC 60947-1 and IEC 60947-3 and shall be suitable for the application. Locate and mark per local requirements.

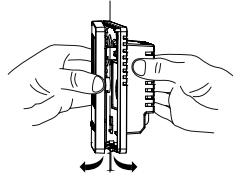


Mounting



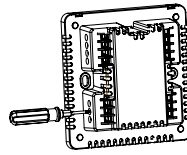
1.

Insert a 3.5 mm flat head screwdriver along the bevel into the slot. Pry upwards with enough force to release the two hooks.



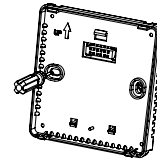
2.

Rotate the display module around the left side, separating the display and base modules. Do not separate the display and base modules from the top or bottom sides.



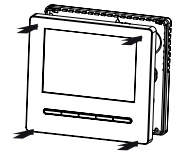
3.

Connect the wires according to the appropriate wiring diagram shown above. Ensure the polarity of the mains supply is correct.



4.

Mount the base module onto the wall box using the two screws supplied.



5.

Align the female connector on the base module with the male connector on the display module. Carefully replace the wiring connection if it has been removed. Follow the direction of the arrows above to click the display module into place by securing the four hooks on the base module.