

### Features

- Modern Appearance
- Stylish rotary dial and buttons
- Large LCD with backlight
- 0-10 VDC (2-10 VDC) Fan speed output
- Retention of temperature set-point and fan-speed upon power failure
- Window mode for remote on-off control
- Unoccupied mode contact for energy saving
- 2-wire on-off, 0-10 VDC and 3-wire floating models
- Dual-output model provides auto cooling/heating changeover with adjustable dead-band or/and manual override
- PI Algorithm (modulating models)
- Parameter setup manual
- Remote sensor capability
- Seasonal changeover sensor availability
- Optional remote controller

### Selectable Functions

- Field selectable program to retain last operating event upon power failure
- Measured temperature off-set
- 0...10 or 2...10 VDC output selections
- Selectable fan speed steps
- Selectable P-band and I-time
- Selectable Actuator stroke time (3-wire floating model)
- Field selectable 1 to 5 K deadband for dual-output models
- Field adjustable high and low set point limit
- Field adjustable cooling and heating energy saving mode set points
- Selectable fan action in unoccupied mode
- Selectable Auto Fan sequence in heating mode
- Selectable operating mode sequence for dual-output models
- Selectable manual/auto operating sequence for single output models
- Selectable constant display of temperature between sensing or set-point



### General

The ETAF 0-10 VDC fan speed output Standalone LCD Fan Coil Thermostats are designed to control heating, cooling, or year round air conditioning units in commercial, industrial and residential Installation. Typical application includes the control of fan coil units, packaged terminal air conditioners and combination heating and cooling equipment. As part of the system that consists of two-way or three-way valve and a multi-speed line voltage fan.

### Ordering

To order the ETAF Series thermostat, contact the nearest Cyrus' representative. Specify the desired product code number from model selection guide.

## Product Overview

The ETAF are line voltage LCD fan coil thermostat with 5 basic models that cover all type of FCU stand-alone applications. There are models for cooling only, heating only and heating/cooling fan coil system integrate with 2-wire, 0-10 VDC or 3-wire input valve control. On-board high accuracy NTC sensor allows precision comfort control over occupied space area. The display temperature offset for the built-in temperature sensor will be compensated after being energized for approximately 15 minutes.

86 x 86mm size of ETAF allows for 75 x 75 x 35 mm standard wall box installation.

### Model ETAF-1

The Model ETAF-1 is line voltage LCD (with backlit) fan coil thermostat that is designed for cooling only / heating only fan coil unit with 2-wire valve actuator application. Integral with system of Cooling/Heating-Fan-Off button that allows users to cutoff power for fan and the output for valve actuator. Simply pressing the fan speed button, allows users to select desired fan speed that outputs to fan coil unit with 0-10 VDC signal.

### Model ETAF-1F

The Model ETAF-1F is line voltage LCD (with backlit) fan coil thermostat that is designed for cooling only / heating only fan coil unit with line-voltage 3-wire valve actuator application. Integral with system of Cooling/Heating-Fan-Off button that allows users to cutoff power for fan and the output for valve actuator. Simply pressing the fan speed button, allows users to select desired fan speed that outputs to fan coil unit with 0-10 VDC signal.

### Model ETAF-1A

The Model ETAF-1A is line voltage LCD (with backlit) fan coil thermostat that is designed for cooling only / heating only fan coil unit with 0-10 VDC input valve actuator application. Integral with system of Cooling/Heating-Fan-Off button that allows users to cutoff power for fan and the output for valve actuator. Simply pressing the fan speed button, allows users to select desired fan speed that outputs to fan coil unit with 0-10 VDC signal.

### Model ETAF-2

The Model ETAF-2 is line voltage LCD (with backlit) fan coil thermostat that is designed for cooling / heating fan coil unit with 2-wire valve actuator application. Integral with system of Cooling-Heating-Auto-Fan-Off button that allows users to cutoff power for fan and the output for valve actuators. Simply pressing the fan speed button, allows users to select desired fan speed that outputs to fan coil unit with 0-10 VDC signal.

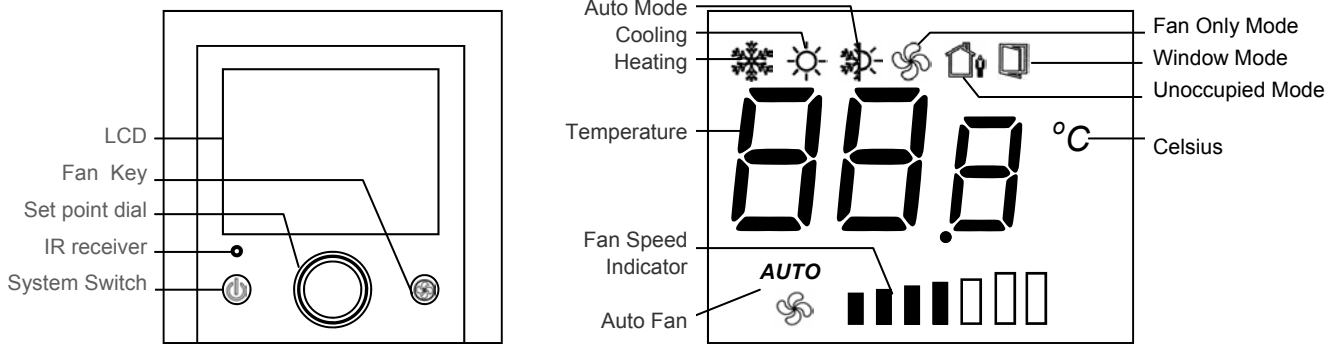
### Model ETAF-2AH

The Model ETAF-2AH is line voltage LCD (with backlit) fan coil thermostat that is designed for cooling / heat fan coil unit with 0-10 VDC input cooling valve actuator and line-voltage on-off heating application. Integral with system of Cooling-Heating-Auto-Fan-Off button that allows users to cutoff power for fan and the output for valve actuator. Simply pressing the fan speed button, allows users to select desired fan speed that outputs to fan coil unit with 0-10 VDC signal.

## Model Selection Guide

	ETAF	-	1A	-	R
Power	<b>100 - 250 V, 50/60 Hz</b>				
Valve Control Output	1	=	2-wire on-off (Heating only or Cooling only 2-pipe)		
	1F	=	3-wire floating (Heating only or Cooling only 2-pipe)		
	1A	=	0-10 VDC (Heating only or Cooling only 2-pipe)		
	2	=	2-wire on-off (Heating / Cooling 4-pipe)		
	2AH	=	0-10 VDC Cooling and 2-wire on-off heating (4-pipe)		
Options & Color Compliance	Nil	=	Grey Faceplate		
	W	=	White Faceplate		
	<b>R</b>	=	<b>IR Receiver for Remote Controller</b>		

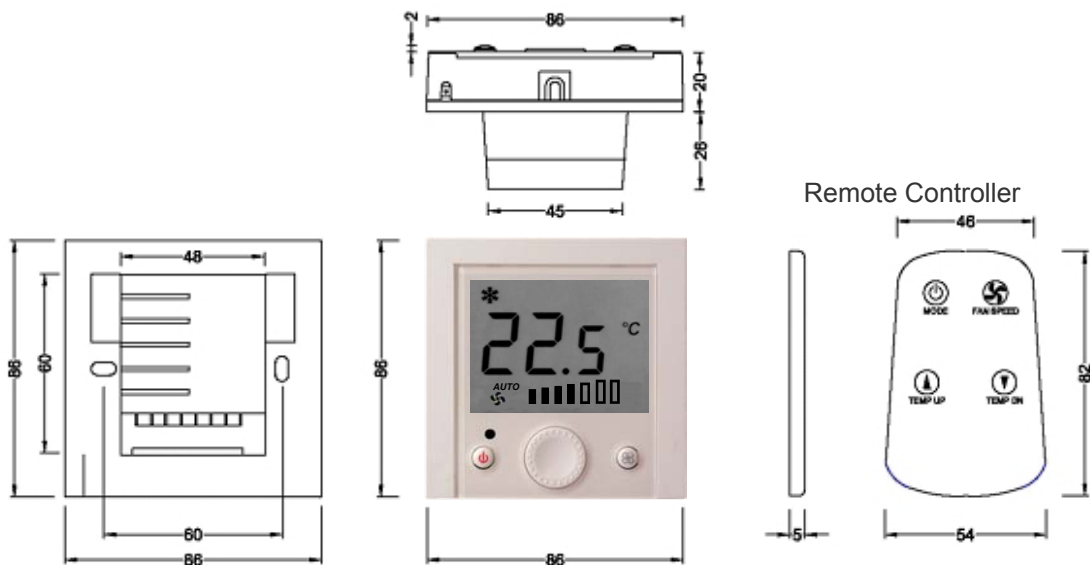
## LCD Segments and Buttons



## Operation Notes

Temperature Display	LCD shows sensing temperature constantly except when temperature set point adjustment is being made
Backlight	The backlight will light up for 5 seconds when any button is pressed
Mode of operation	Press the system control key  to enter into the desired operating mode: Cool-Heat-Auto-Fan Only-Off
Fan speed	Press the fan control key  to desired fan speed or auto fan speed
Temperature Set-point	Increase or decrease temperature set point by rotating the adjustment dial clockwise or counter-clockwise.
Unoccupied Mode (Energy-saving)	The energy saving mode is activated while "OCU" contact is in closure. In unoccupied mode, all buttons are locked and preset temperature set points are 26 °C and 16 °C for cooling and heating respectively. Fan speed will run in speed 2.
Window Contact	Window contact closure turns off the thermostat and locks all buttons
Parameter setup menu	The thermostat allows authorized service agent to change the certain number of operating parameters, please refer to parameter setup manual for details.

## Dimensions in mm

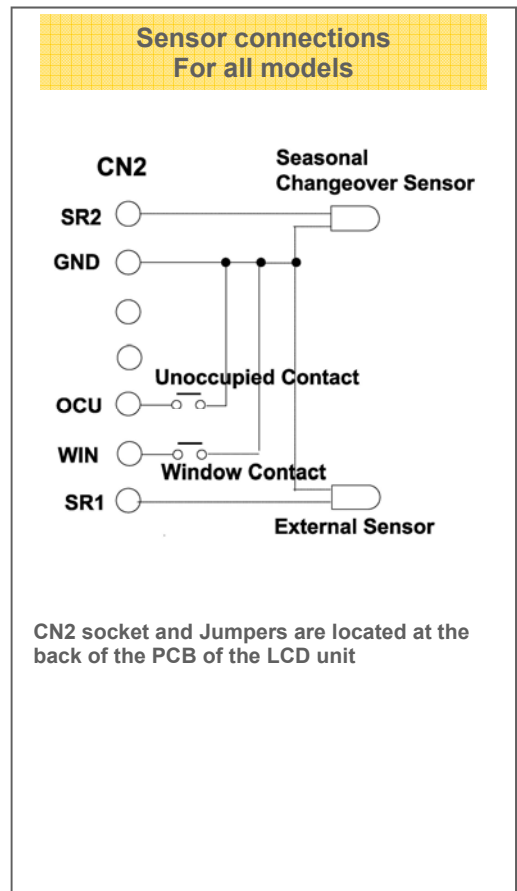
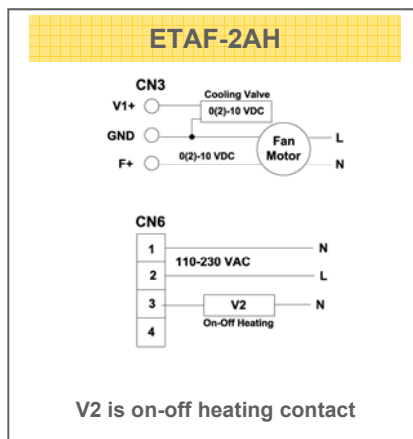
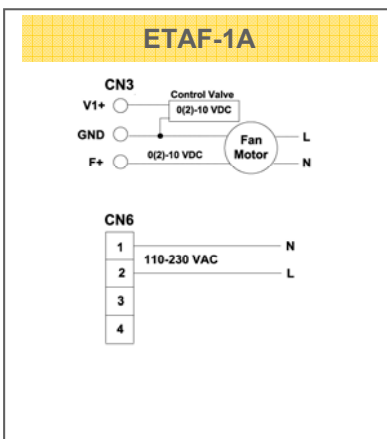
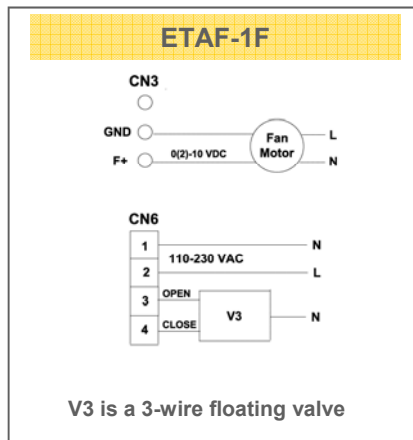
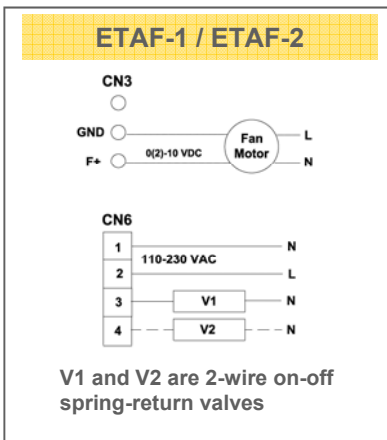
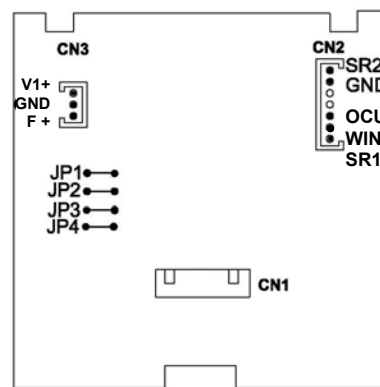
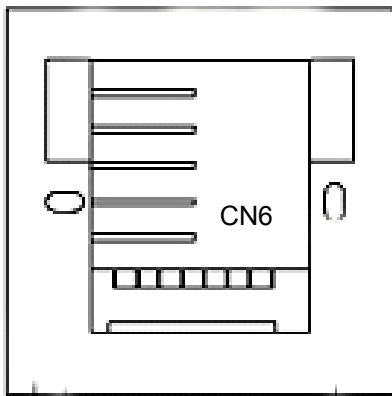


## Jumper settings

ETAf-2 can be re-configured in the field to various applications by a qualified servicing agent, if necessary, by resetting the jumper positions of JP2 and JP3. The locations of these jumpers will be found after removing the thermostat cover from its baseplate.

Model Number	Jumper Settings	
	JP2	JP3
ETAf-1	Cut	Cut
ETAf-2	Uncut	Uncut
ETAf-1F	Cut	Uncut
ETAf-1A	Uncut	Cut

## Locations of Jumpers, wiring socket and wiring terminals



## WARNING

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**Incorrect wiring connection may cause permanent equipment damages to the thermostat.**

## Wiring Diagrams and Application Notes

- Cut jumper JP1 open if an external sensor is wired to SR1 and GND. Run the wiring away from any electrical motors or power wiring. Failure to do so may result in poor thermostat performance due to electrical noise.
- 22 or 24 AWG twisted shielded pair double-insulated cable is recommended as remote sensor wiring and its length must not exceed 25 m.
- Do not bundle and run power wiring and remote sensor wiring in the same conduit.
- The seasonal changeover sensor should be wrapped around the supply water pipe when associated with a water system. When the changeover sensor temperature exceeds 30 °C, the thermostat enters into heating mode.
- External seasonal changeover sensor or switch is applicable to heating only or cooling only 2-pipe models only.
- OCU contact closure activates unoccupied mode for energy-saving purpose.
- WIN contact closure that shuts down the fan coil unit.
- The thermostat 2-wire and 3-wire valve control outputs are designed for controlling zone valves. If used for controlling electric heaters, external contactors must be used.
- ETAF-1 : terminal V1 of CN6 can be for either a 2-wire spring-return cooling or heating valve.
- ETAF-2 : terminal V1 of CN6 must be for a 2-wire spring-return cooling valve and terminal V2 of CN6 is for a 2-wire spring-return heating valve.
- When ETAF-1F is set in cooling mode, terminal 3 of CN6 is wired to open valve on temperature rise and terminal 4 of CN6 to close valve on temperature drop. The action in heating mode is reversed.
- ETAF-1A : V1 of CN3 socket can be for either a 0-10 VDC cooling or heating valve.
- ETAF-2AH : V1 is a 0-10 VDC cooling output and V2 is a line-voltage on-off heating output signal
- Wire "F" of CN3 provides 0-10 / 2-10 VDC signal for fan speed output
- JP4 is available for 0-10 VDC models. Cut it if 2-10 VDC control signal is required.

## Technical Specifications

Product Model	See ETAF Series Model Number Selection Guide	
Power Requirements	100...250 V, 50/60 Hz	
Operating Temperature Differential (for 2-Wire On-Off Models)	Fixed at 1 K for both cooling and heating modes	
Temperature Display Range	5-35°C in 0.5 K increments: accuracy ±1 K (41-95°F in 0.5 R increments, accuracy ±1 R)	
Temperature Set Point Range	5-35°C in 0.5 K increments, initial factory setting at 22°C (41-95°F in 0.5 R increments)	
Deadband of Dual-Output Models	3 K (Adjustable 1 to 5 K in setup menu)	
Auto Fan Temperature Differential	At 2 K (2 R) increments. At ≥0 K, fan is on speed 2 in cooling mode and fan status in heating mode depends on auto fan action selection setting.	
Sensing Element	NTC thermistor, 10 kΩ@25°C; accuracy ±0.5 K@25°C	
Unoccupied & Winodw Mode Contacts	Input signal from external voltage-free contact	
Body Material	Self-extinguishing, molded ABS	
Finish	Off white body / grey face plate (white face plate is available up on request)	
Electrical Ratings	Digital Output (s)	
	Valve output relays	100-250 V, 3 A resistive, 1 A inductive, 50/60 Hz
	Total rating	100-250 V, 5 A maximum, 50/60 Hz
	0-10 VDC Output (s)	
	Output impedance	Minimum 10,000 Ω
Ambient/Storage Temperature Limits	0 to 50 °C / -30 to 50 °C, 10% to 90% RH non-condensing	
Connections	Non-removable terminal blocks	
Power Wires	Wire size 1 mm <sup>2</sup> or 18 AWG solid copper recommended	
Sensor Wires	22 AWG twisted shielded pair double-insulated cable	
Agency Approval	CE Mark compliant to EMC and low voltage directives	
Shipping Weight	350 g	
Dimensions	See Dimensions drawing in mm	

The specification above are normal and conform to generally acceptable industry standard. Cyrus is not responsible for damages resulting from misapplication or misuse of its products.