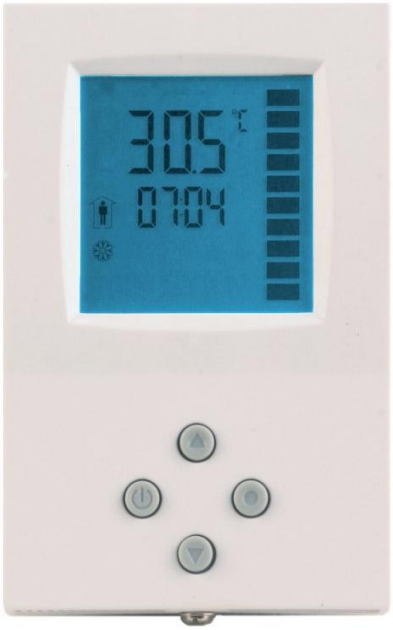
TLC3-FCR-M-U
Programmable PID Fan Coil controller

Features



- Proven PID control algorithm reduces room temperature fluctuations and energy consumption
- Temperature control for 2- and 4-pipe fan coil systems: modulating heating, cooling or fan only
- Automatic or manual control of 3-speed fans
- Economy mode and setpoint limits for energy saving
- Password-protected user and control parameters
- Low power consumption < 1 W, display in °C or °F
- Deluxe version: clock with time schedules, blue backlight, infrared remote control option

Applications

- Fan coil units in 2- or 4-pipe systems, radiators and chilled ceilings
- Constant or variable air volume systems with 3-stage fans
- Individual room control in hotel rooms, meeting rooms and offices
- PID control of up to 2 modulating valves (0–10 V) for heating and cooling

General Description

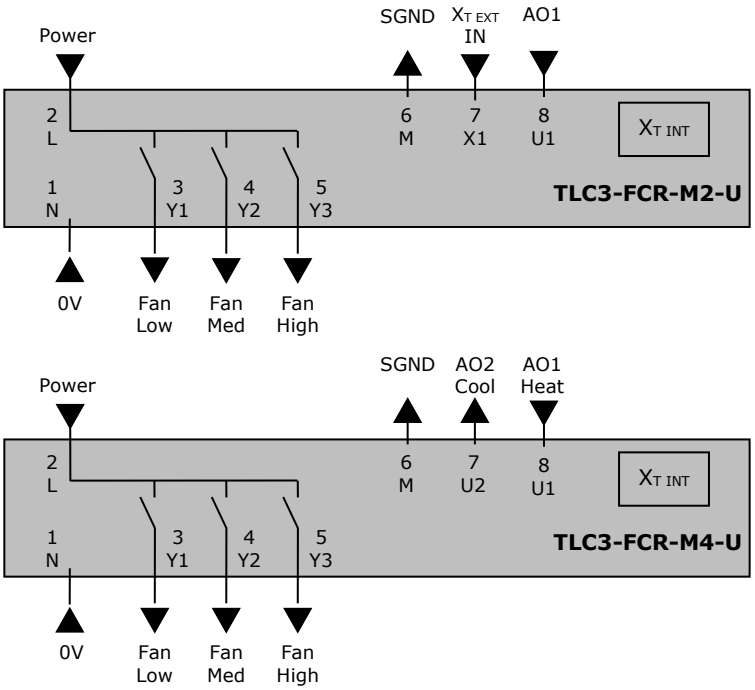
The TLC3-FCR-M-U is a stand-alone electronic fan coil controller with one control loop. The TLC3-FCR-M2-U is designed for 2-pipe systems: 1 internal NTC temperature sensor, 1 external passive input for temperature or a potential-free contact, 3 relay outputs for the fan speeds and 1 analog output (0–10 V). The TLC3-FCR-M4-U is designed for 4-pipe systems: 1 internal NTC temperature sensor, 3 relay outputs and 2 analog outputs (0–10 V) for heating and cooling. It is configured with the standard operation terminal; no special tools or software are required.

Ordering

Item Name	Item code	Variant	Power	Features
TLC3-FCR-M2-U-24	40-10 0141	Standard	24VAC/DC	Fan coil controller with: 1 TI int, 1 external input 3 DO (Relay) Fan control 1 AO (0-10VDC) PID valve control
TLC3-FCR-M2-U-120	40-10 0151		120VAC	
TLC3-FCR-M2-U-230	40-10 0102		230VAC	
TLC3-FCR-M2-U-D-24	40-10 0146	Deluxe	24VAC/DC	
TLC3-FCR-M2-U-D-120	40-10 0156		120VAC	
TLC3-FCR-M2-U-D-230	40-10 0103		230VAC	
TLC3-FCR-M4-U-24	40-10 0142	Standard	24VAC/DC	1 TI int 3 DO (Relay) Fan control 2 AO (0-10VDC) PID valve control
TLC3-FCR-M4-U-120	40-10 0152		120VAC	
TLC3-FCR-M4-U-230	40-10 0106		230VAC	
TLC3-FCR-M4-U-D-24	40-10 0147	Deluxe	24VAC/DC	
TLC3-FCR-M4-U-D-120	40-10 0157		120VAC	
TLC3-FCR-M4-U-D-230	40-10 0107		230VAC	
-W01	-1	Cooling only		Add to name or code for special settings

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Wiring Diagram



Description:

N	Power supply:	0V Neutral
L	Power supply:	-24: 24VAC/DC, -120: 120VAC, -230: 230VAC
Y1	Binary output 230V AC:	Fan speed low
Y2	Binary output 230V AC:	Fan speed medium
Y3	Binary output 230V AC:	Fan speed high

TLC3-FCR-M2-U:

M	Signal common:	Common 0 potential for inputs and analog outputs.
X1	External input:	NTC 10kΩ @ 25°C (77°F) or open contact to SGND
U1	Analog output:	0…10 V DC

TLC3-FCR-M4-U:

M	Signal common:	Common 0 potential for inputs and analog outputs.
U2	Analog cooling output:	0…10 V DC
U1	Analog heating output:	0…10 V DC

Selection of fans

Do not directly connect devices that exceed 2A. Observe startup current on inductive loads! Do not connect more than one fan coil unit to one controller.

Modulating Actuators:

Choose actuators with an input signal type of 0-10V DC or 2-10V DC. Observe maximal signal current of 1mA!

Mounting and installation

Mount the controller on an interior wall, approx. 1.5 m above the floor, in a place with average room temperature. Avoid direct sunlight, heat sources, doors, outside walls and air outlets. The location is less critical if an external temperature sensor is used.

Mount and connect the controller as shown in the installation sheet supplied with the device, and wire it according to the wiring diagram on page 2.

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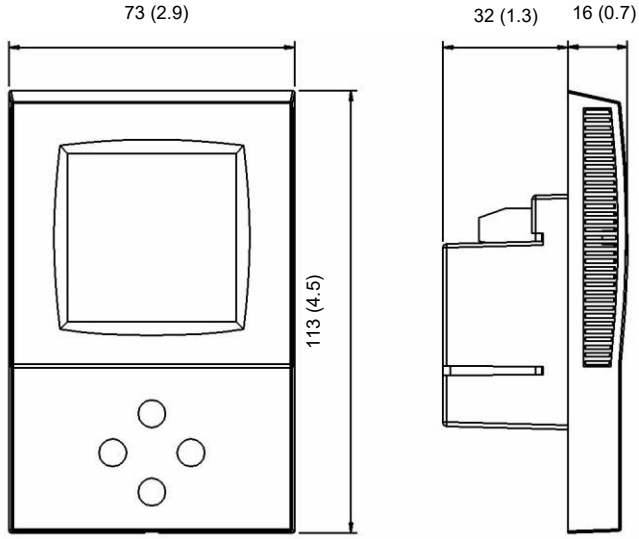
Technical Specification

Caution! This device is intended to be used for comfort applications. Where a device failure endangers human life and/or property, it is the responsibility of the owner, designer and installer to add additional safety devices to prevent or detect a system failure caused by such a device failure. Vector Controls or its affiliates cannot be held liable for any damage caused by such a failure. Failure to follow specifications and local regulations may endanger life, cause equipment damage and void warranty.

Power Supply	Operating Voltage	-24	-120	-230
	AC voltage: 50/60Hz	22-26V AC/DC	100-130 VAC	210–250 VAC
	Power Consumption	Max 1W, 1.5 VA		
	Electrical Connection	Terminal Connectors		
	Deluxe type only: Power backup for real time clock	Min 48h if charged for 24h		
Signal Inputs	Temperature Inputs Range Accuracy	RT Internal, External (Sxx-Tn10 sensor) 0…50 °C (32…122 °F) 0.5°C (1°F)		
Signal Outputs	Digital Switching Outputs Switching Type AC Switching power Insulation strength between relays contacts and system electronics: between neighboring relays contacts	DO1 to DO3 Relays 2A max. each output For -120 and -230 types: 3750V AC to EN 60 730-1 1250V AC to EN 60 730-1		
Environment	Analog Outputs Output Signal Minimum impedance / Max load	AO1, For TLC3-FCR-M4 AO2 DC 0…10 V 10kOhm, 1mA.		
	Operation Climatic Conditions Temperature Humidity	To IEC 721-3-3 class 3 K5 0°C …50°C (32°F…122°F) <95% R.H. non-condensing		
Standards	Transport & Storage Climatic Conditions Temperature Humidity Mechanical Conditions	To IEC 721-3-2 and IEC 721-3-1 class 3 K3 and class 1 K3 -25°C…70°C (-13°F…158°F) <95% R.H. non-condensing class 2M2		
	CE conformity EMC Directive Low Voltage Directive	 2004/108/EC 2006/95/EC		
	Product standards Automatic electrical controls for household and similar use Special requirement on temperature dependent controls	 EN 60 730 –1 EN 60 730 – 2 - 9		
	Electromagnetic compatibility for domestic sector	Emissions: EN 60 730-1 Immunity: EN 60 730-1		
	Degree of Protection	IP30 to EN 60 529		
	Pollution Class	II (EN 60 730-1)		
	Safety Class: for -24 types for -230 types	III (IEC 60 536) II (IEC 60 536)		
	Overvoltage Category: for -24 types for -230 types	I (EN 60 730-1) III (EN 60 730-1)		
General	Dimensions (H x W x D) Front part: Power case:	16 x 73 x 113mm (0,7 x 2.9 x 4.5 in.) 60 x 50 x 32mm (2.4 x 2.0 x 1.3 in.)		
	Material: Cover, back part Mounting Plate	ABS plastic (UL94 class V-0) Galvanized Steel		
	Weight (including package) for -24 types for -120 and -230 types	standard: 270g (9.5oz), deluxe: 275g (9.7oz) standard: 295g (10.5oz), deluxe: 305g (10.8oz)		

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Dimensions



Space required in flush mounting box:
(H x W x D)
60 x 50 x 32mm (2.4 x 2.0 x 1.3 in.)

Distance for mounting screws:

Horizontal 55 to 60mm (2.2 to 2.4 in.)
Vertical: 55 to 93mm (2.2 to 3.7 in.)

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