



Features and Benefits

- ▶ FCU Cooling/Heating Controls
- ▶ Models for 2-pipe and 4-pipe systems
- ▶ Modulating 0-10V Control Output
- ▶ Wall Panel available as Optional
- ▶ Optional Remote Sensor Input Interface
- ▶ Non-volatile Memory (EEPROM) Retains Settings During Power Loss
- ▶ Connectivity through RS-485 Modbus RTU and BACnet MS/TP Protocols

Technical Information

Operating Voltage	24VAC ($\pm 10\%$), 50/60 Hz
Operating Environment	0-50°C, 5-95 % Rh non-condensing
Control Type	Proportional plus integral (PI) control
Communication Interface (Modbus)	RS-485, 2 wires, Modbus/RTU protocol, 19.2 Kbps (configurable)
Communication Interface (BACnet)	RS-485, 2 wires, BACnet MS/TP protocol, 19.2 Kbps (configurable)
Display Range	-30 ... 120°C with suitable sensor, 0.1°C /resolution
Indication Accuracy	+/-1.0°C at 25°C and output off
Setpoint Range	0 ... 50°C, 0.5°C /setting step
Setpoint Adjustment	Through wall panel or Modbus/BACnet communication
Analog Output Signal	Max. 3 mA for 0(2)-10 VDC
Valve/Fan On/Off Control Output	SPST relays for fan speed control, 1 SPST/SPDT relay for optional on/off control
Electrical Rating	SPDT: 1.2A/250Vac, inductive load; SPST: 2A/250Vac, inductive load
Temperature Sensor Interface (Remote Sensor, RS)	For connecting external NTC Thermistor 3K ohm
Energy Savings Input (ESI) Interface	For activating Unoccupied mode triggered by Normally Open (N.O.) or Normally Closed (N.C.) dry contact
Extra Digital Input (DI) Interface:	For monitoring, triggered by Normally Open (N.O.) or Normally Closed (N.C.) dry contact
Dimensions (mm)	156 x 150 x 50 mm
Mounting	Wall mounting
Wiring	Screw-in terminals, suitable for 14 to 22 AWG wires or 1.5 mm ² wires

Product Description

The NCCFCU1 unitary controllers are fully configurable, networked direct digital unitary controllers, suitable for modulating controls of 2-pipe or 4-pipe cooling/heating FCU systems. The controller also contains optional digital inputs for a variety of detection devices, such as occupied/unoccupied detection. The controller can also be equipped with an optional Wall Panel for showing and adjusting the setpoint and other settings.

Connectivity

Available communication interfaces include RS485 Modbus RTU and BACnet MS/TP protocols.

Application

The controller uses temperature measurement of a room or distant space as input for the control output 0(2)-10VDC signal. The controller uses proportional-integral (PI) algorithm to control cooling/heating devices and relays to switch fan speeds and actuator devices in the HVAC system to maintain the room space temperature in a desired temperature setpoint. The 3-speed fan can be operated in the mode of auto changeover or manual selected continuous mode.

NCCFCU1 Networked Unitary Controller

Wiring Diagram

Ordering Codes

- NCCFCU1M Unitary Controller with Modbus connectivity
- NCCFCU1B Unitary Controller with BACnet MS/TP connectivity
- NCSFCU1WP Wall Panel

