

## RDF Series Fan Coil Unit Room Controllers

### Product Numbers

Product Number	Input		Application		Output			
	Changeover Sensor	Return Air Sensor	Two-pipe	Four-pipe	Floating	On/Off	0 to 10 Vdc	Electric Heat
RDF10U	•	•	•			•		
RDF20U	•	•	•			•		•
Free Energy Band™ RDF30U		•		•		•		
RDF50.1U	•	•	•				•	
RDF60.1U	•	•	•		•			

### Accessories

- ARG70 Wall Plate Adapter
- QAH11.1 Remote Temperature Sensor
- 141-570 Lockable Thermostat Guard

### Features

- Digital Display
- Up to 17 adjustable parameters for precise control
- Manual, three-speed fan switch
- Setpoint temperature scale in °F and °C
- Selectable control parameters
- Operating modes changeover input for remote control
- Automatic heat/cool changeover
- Dead Zone between heating and cooling (Free Energy Band RDF30U only)
- Operating modes: Normal, Energy Saving, Freeze Protection (not RDF50.1U), and Off
- Electronic setpoint limit stops
- Sensor calibration adjustable

### Typical Specifications

Controller shall provide temperature control of room space for two or four-pipe fan coil unit applications. Controller shall have a setpoint adjustment range of 41°F to 95°F (5°C to 35°C). The digital display shall provide temperature in Fahrenheit or Celsius degrees and be able to switch from setpoint to room temperature (thermometer). A fan selection switch will provide occupant control of three speed selections and include a standby position. All models will provide a ventilation mode with fan running continuously regardless of load on controller. Switching differential or proportional band is adjustable. Controller must conform to UL 873. Controller shall not contain any mercury or other environmentally unfriendly metals or gas. Controller shall employ a microprocessor-controlled output relay for operating

valves. Tamper-resistant, electronic upper and lower limit stops shall be settable in two-degree increments.

### Description

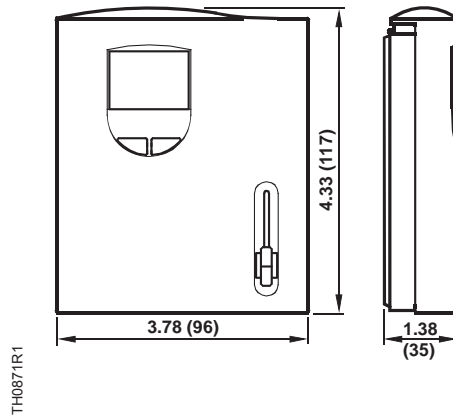
Microprocessor-based room controllers with digital display for use in heating or cooling only and heating and cooling (two-pipe or four-pipe) fan coil systems.



### Technical Data

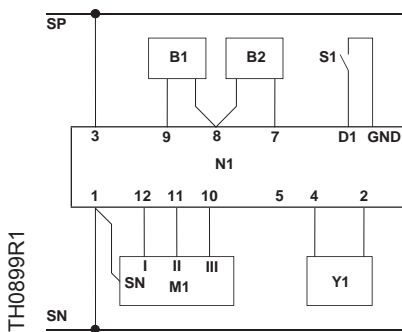
Operating voltage	24 Vac
Frequency	50/60 Hz
Setpoint range	50°F to 85°F (10°C to 30°C)
Setpoint limit stops	Adjustable
Proportional band Heating/Cooling	Adjustable (RDF50.1U only) 1°F to 7°F (0.5°C to 4°C)
Switching differential (SD) Heating/Cooling mode	Adjustable 1°F to 7°F (0.5°C to 4°C)
Switch rating @ 24V	5 Res., 3.5 FLA/7.0 LRA
Switch action	Single-pole, Double-throw (SPDT)
Fan selector switch	Standby/Low/Medium/High
Weight	0.5 lb (0.23 kg)
Color	
Cover	White
Base	Gray
Selector knobs	Gray
Ambient conditions	
Operating temp.	32°F to 122°F (0°C to 50°C)
Operating rh	<95%
Transportation temp.	-13°F to 158°F (-25°C to 70°C)
Transportation rh	<95%
Housing	
Material	ABS Plastic
Enclosure rating	NEMA 1
Wiring	
Screw terminals	2 × 16 AWG or 1 × 14 AWG Minimum 20 AWG
Agency certification	UL listed to 873 cUL listed to Canadian standard C22.2 No. 24-93

**Dimensions**

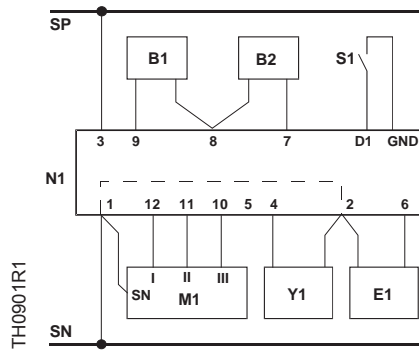


**Wiring Diagrams**

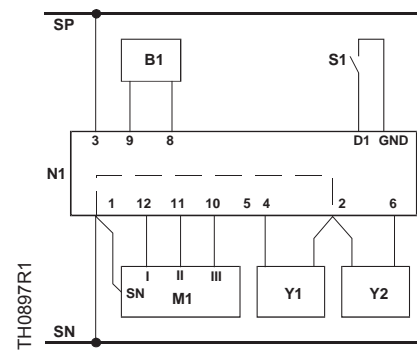
**RDF10U**



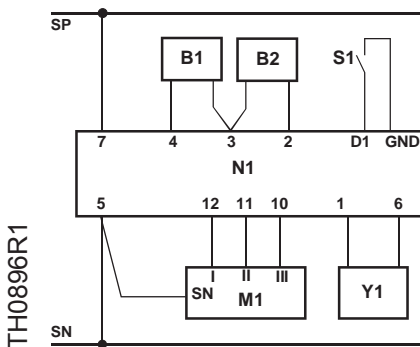
**RDF20U**



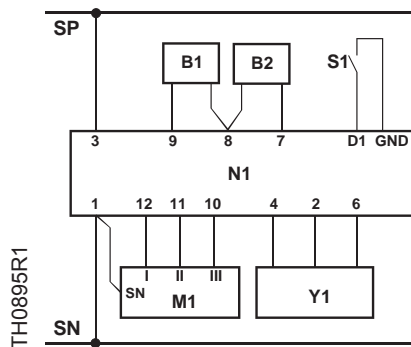
**Free Energy Band RDF30U**



**RDF 50.1U**



**RDF60.1U**



- B1 Return air temperature sensor (QAH11.1)
- B2 Changeover sensor (QAH11.1)
- E1 Electric heater
- M1 Three-speed fan
- N Neutral
- N1 Room temperature controller
- S1 External operating mode changeover switch
- SP Operating voltage 24V positive
- SN Operating voltage 24V neutral
- Y1 599 Series Zone Valve
- Y2 599 Series Zone Valve (Cooling mode)

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