FRC100 Deluxe reversing fan controller

Smart reversing fan controller with fault detection

FEATURES

- **Easy Installation**
  No setup or configuration required. Ideal for retrofit. Terminal blocks provided for easy wiring. Optional mounting bracket available.

- **Proportional soft-start**
  Slowly ramps up fan speed to reduce mechanical shock and increase motor life. Safety is improved by slowly starting fan.

- **Solid State**
  High current, reliable solid-state output can drive up to 25-amp fan loads directly. No relays to fail.

- **Auto Reversing**
  Automatically reverses fan direction to clear debris from cooler, improving efficiency.

- **Override/Thermostat Mode**
  Mode input allows fan to be energized remotely by a switch, thermostat, or other controller.

- **Fault Detection**
  Automatically detects fan and temperature sender failure. LED blinks fault codes for easy troubleshooting.

- **Alarm Output**
  Alarm output energized on fault detection or over-temperature condition. Automatically shut down equipment or activate light or siren.

**OPERATION**

Controller monitors temperature sender and controls fan to maintain field-selectable oil temperature.

Fan controller ramps fan on momentarily in reverse to clear debris from cooler. Fan is then allowed to spin down, and ramped back on in forward direction.

Active fault detection monitors temperature sender and fan current. LED blinks fault codes for troubleshooting:

- Solid  Normal Operation
- 1 blink ( ** ) Fan open / No load
- 2 blink (*** **) Fan shorted / Over current
- 3 blink (** *** ) Temp sensor open
- 4 blink (**** ****)Over temp alarm, above 185degF

Alarm output is energized in fault condition. (0.5-amp max.)

Output is operated continuously at 100% in temp sensor open condition. (broken temperature sensor wire)

If multiple faults are detected, fault codes are flashed sequentially.

Ground TS+ and MODE input to manually run fan at 100%.

**DIMENSIONS**

**ORDERING INFORMATION**

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<th>PART #</th>
<th>DESCRIPTION</th>
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<td>FRC100</td>
<td>Deluxe Fan Reversing Controller with temperature sender included</td>
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<tr>
<td>TS10</td>
<td>Temperature sender probe only</td>
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<tr>
<td>FCB</td>
<td>Fan Controller mounting bracket only</td>
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SPECIFICATIONS

General
Power Requirement 12-24vdc, 100mA nominal + power to FAN

Outputs
Fan Solid-State proportional output. 25-Amps Max.
Output de-energized on overcurrent (>30 amps) fan condition. Reset power to retry.

Operation
Reverse time 10 seconds
Ramp on time 5 seconds
Alarm Solid-State open collector, positive output. 0.5-Amp Max.
Alarm output energized on fault or above high temperature limit.

Control Range
Operation Temperature above setpoint = ramp to 100% output
Setpoint adjustment range = 120 to 180degF
High Temperature Limit 185degF Alarm output energized.

Inputs
Temperature For use with Datcon 02024-00 (Miratron TS10)
Mode Connect to 12 or 24Vdc (battery) and ground TS+ to energize fan.

Indicators
Fault LED Solid = Normal operation
1 blink = Open or disconnected fan motor
2 blink = Shorted or overcurrent fan motor
3 blink = Temp sensor open or out of range
4 blink = Over temp alarm

Dimensions
Overall 4.0” L x 2.1” W x 1” H
Mounting Hardware included. Optional mounting bracket available.

Environmental
Sealing Potted electronic module
Storage -40ºC to 85ºC
Operating ambient temperature (FRC100 controller temperature only) -10ºC to 50ºC

WIRING

TERMINAL BLOCK LABELS:
TS + TEMP SENDER (+) OR THERMOSTAT
TS - TEMP SENDER (-) OR THERMOSTAT
ALM ALARM OUTPUT, 0.5 AMP MAX.
MODE MODE SELECT
V+ 12/24V BATTERY POS (+)
GND CHASSIS GROUND / BATTERY NEG (-)
FAN + FAN OUTPUT, 25 AMPS MAX.
FAN - FAN OUTPUT, 25 AMP MAX.