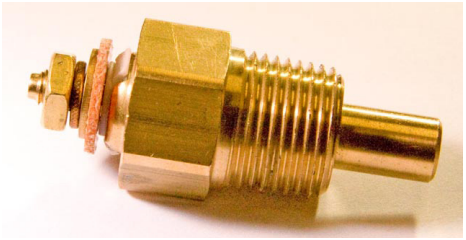
FC100 Proportional fan control thermostat

Smart controller with fault detection



The FC100 is an affordable, full featured proportional fan controller that is reliable and easy to use.

FEATURES

- **Easy Installation**
  No setup or configuration required. Compatible with a wide range of temperature sender probes. Ideal for retrofit. 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.
- **Override Input**
  Override input allows fan to be energized remotely by a switch, sensor, 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 120-130degF oil temperature. (Other temperature setpoints available. Consult factory.)

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

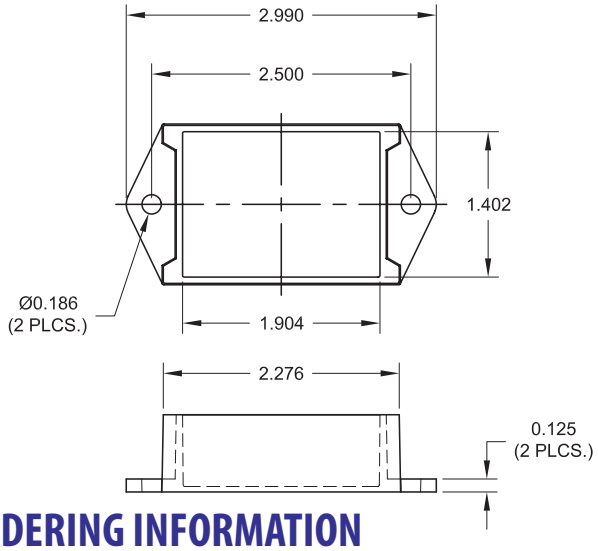
Alarm output is energized in fault condition. (0.5-amp max.)

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.

Energize override input to manually run fan at 100%.

DIMENSIONS



ORDERING INFORMATION

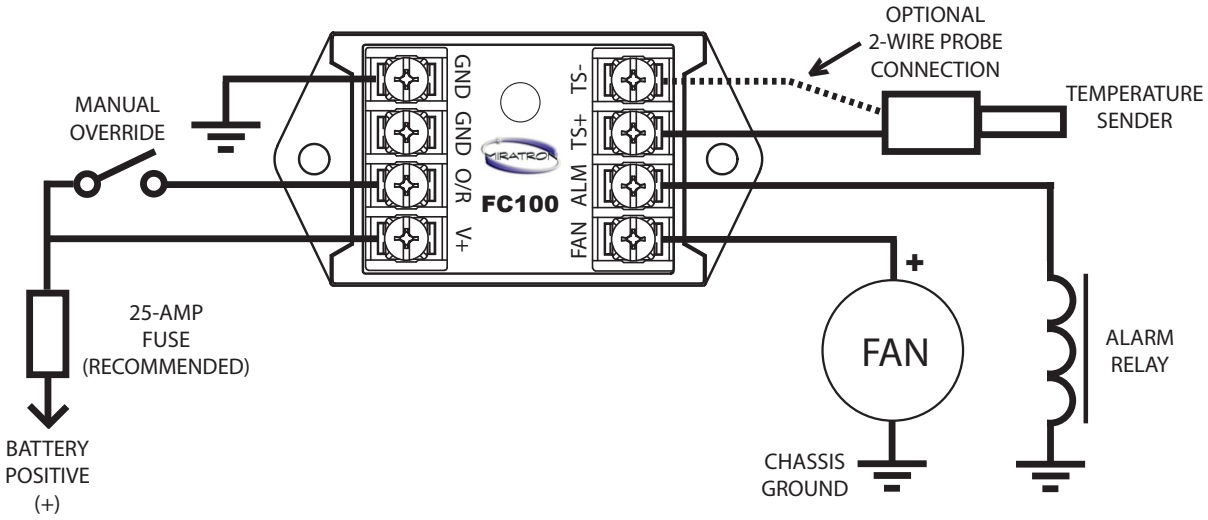
PART #	DESCRIPTION
FC100	Fan Controller Module with temperature sender included
TS10	Temperature sender probe only
FCB	Fan Controller mounting bracket only

Consult factory for compatibility with other temperature senders.

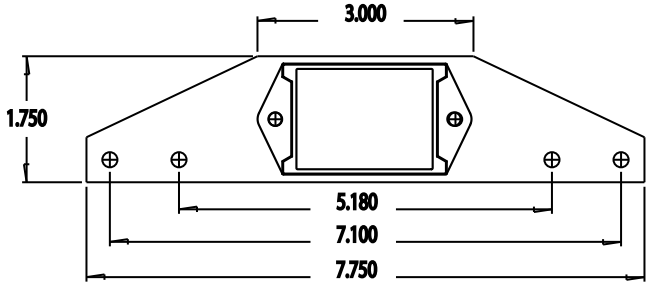
SPECIFICATIONS

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.
	Alarm	Solid-State open collector, positive output. 0.5-Amp Max.
		Alarm output energized on fault or above high temperature limit.
Control Range	Operation	130degF = ramp to 100%, 120degF = off.
		Other setpoint temperatures possible. Consult factory.
	High Temperature Limit	185degF Alarm output energized.
Inputs	Temperature	For use with Datcon 02024-00 (Miratron TS10)
	Override	Connect to 12 or 24Vdc (battery) 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	3.0" L x 1.6" W x 1" H
	Mounting	Hardware included. Optional mounting bracket available.
Environmental	Sealing	Potted electronic module
	Storage	-40°C to 85°C
	Operating ambient temperature (FS100 controller temperature only)	-10°C to 50°C

WIRING



TERMINAL BLOCK LABELS:

GND	CHASSIS GROUND / BATTERY NEG (-)
GND	FAN GROUND (IF NEEDED)
O/R	OVERRIDE INPUT (+12/24V)
V+	12/24V BATTERY POS (+)
FAN	FAN OUTPUT, 25 AMPS MAX.
ALM	ALARM OUTPUT, 0.5 AMP MAX.
TS +	TEMP SENDER (+) (ONE WIRE TYPES)
TS -	TEMP SENDER (-) (TWO WIRE TYPES)

Optional mounting bracket (FCB)