



# FC100 Operating Guide

*Smart controller with fault detection*



## OPERATION

Controller monitors temperature sender and controls fan speed 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 |

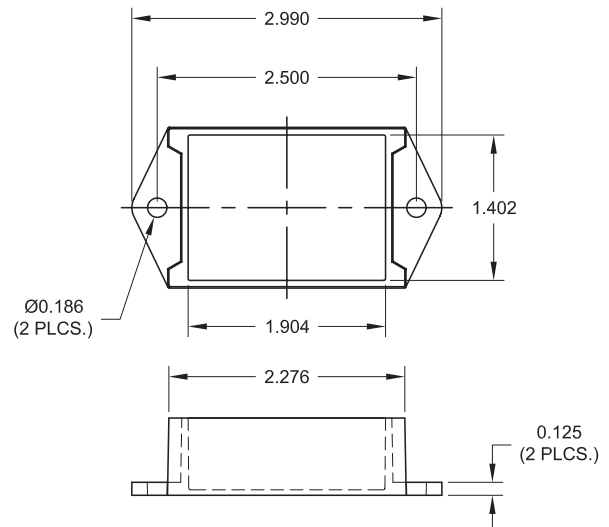
Alarm output is energized in fault condition. (0.5-amp max.)

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



## Care and Handling

Failure to follow care and handling instructions will void the warranty and could result in unsafe equipment operation.

Remove unit from machine prior to welding on machine.

Do not paint electrical connectors.

### **IMPORTANT!**

Read this manual completely before operating system.

Keep this manual available for future reference.

Make sure the area is safe for operating equipment before turning power on or starting equipment.

If you encounter any problem or malfunction, discontinue use immediately, and contact your equipment dealer for service or replacement parts.

### **CAUTION**

Improper operation of these controls could cause damage to equipment. Do not allow anyone to operate this equipment before completely reading all manuals.

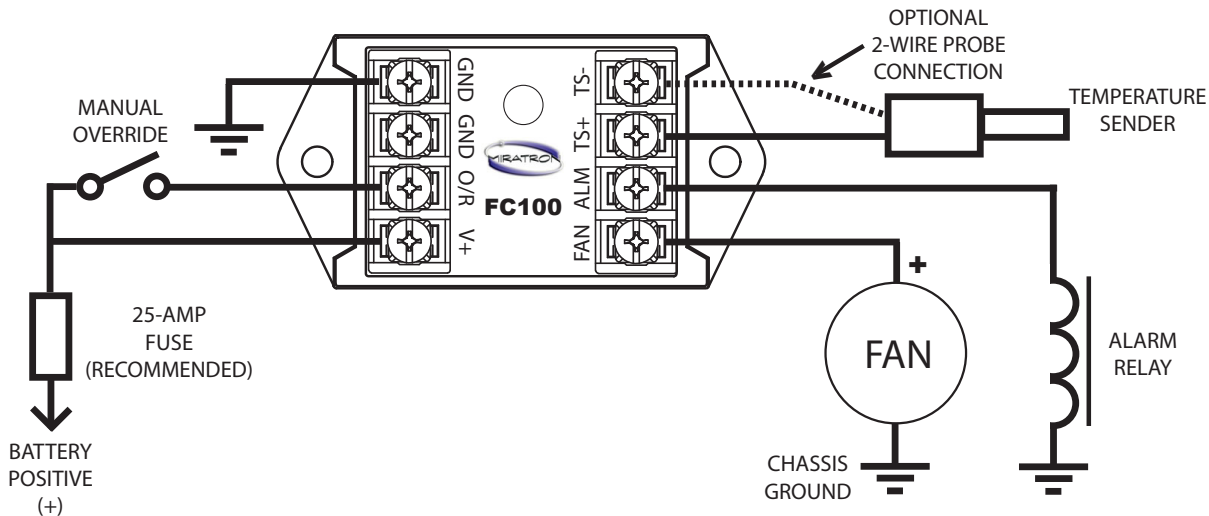
### **NOTICE**

Miratron, Inc. controls are not intended for life or safety applications. Miratron, Inc. shall not accept responsibility for installation, application, or safety of machine or systems which utilize miratron, Inc. controls.

# SPECIFICATIONS

<b>General</b>	Power Requirement	12-24vdc, 100mA nominal + power to FAN	
	<b>Outputs</b>	Fan	Solid-State proportional output. 25-Amps Max. Output de-energized on overcurrent (>30 amps) fan condition. Reset power to retry.
<b>Control Range</b>	Alarm	Solid-State open collector, positive output. 0.5-Amp Max. Alarm output energized on fault or above high temperature limit.	
	Operation	130degF = ramp to 100%, 120degF = off. Other setpoint temperatures possible. Consult factory.	
	High Temperature Limit	185degF Alarm output energized.	
<b>Inputs</b>	Temperature	Single or Dual wire temperature sender. 10k Ohm.	
	Override	Connect to 12 or 24Vdc (battery) to energize fan.	
<b>Indicators</b>	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	
	<b>Dimensions</b>	Overall	3.0" L x 1.6" W x 1" H
	Mounting	Hardware included. Optional mounting bracket available.	
	<b>Environmental</b>	Sealing	Potted electronic module
	Storage	-40°C to 85°C	
	Operating ambient temperature (FS100 controller temperature only)	-10°C to 50°C	

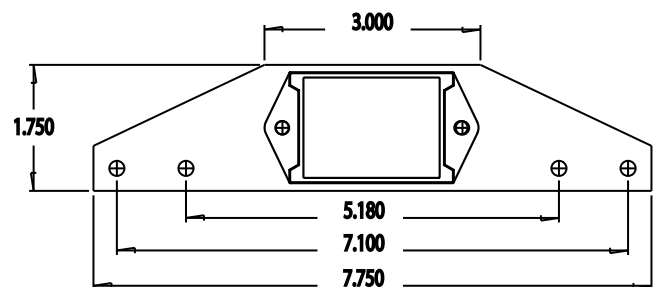
# WIRING



### 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)

# INSTALLATION



Optional mounting bracket (FCB)