

ProntoFlow™ Control Series TC10257 Single fan, fan controller

The TC10257 is small form factor, RoHS compliant, individual fan controller. It is intended for those who are designing equipment that uses a single, 24 or 48V DC fan, and do not wish to merely run it at full speed, thereby wasting energy and reducing fan life, while producing excess acoustic noise. Implementing this controller will provide fan RPM control, based on sensed temperature. The temperature may be sensed on the controller itself, or remotely, using a thermistor cable, so that the sensing location is made at the most strategic or important location for optimal thermal management.

The controller provides linear RPM control across a temperature range, and can also turn ON/OFF the fan completely, if the user wishes to specify conditions where the fan should no longer be powered. This can prevent the fan from running at temperatures outside of its specified range.

The alarm output relay can be used to trigger a system alarm should an over temperature or fan failure scenario occur. The relay will close an alarm circuit with power loss to the controller. Degree Controls can help suggest ways for you to implement this in your system's larger control scheme or control panel.

Users who find this controller most useful are those who:

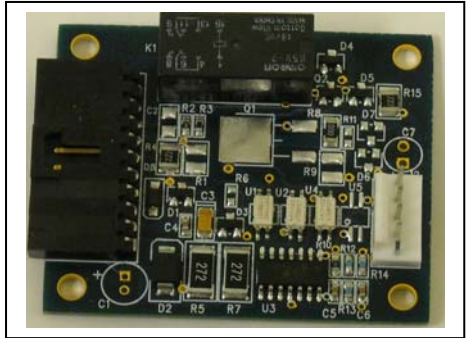
- Are re-marketing their products as "greener" technology to reduce overall power consumption.
- Are interested in designing in higher performance fans to provide maximum cooling availability during periods of environmental extreme, yet desire the acoustic and power attenuation of fan speed control during normal temperature operation.
- Want to stay focused on their core competencies – and need an off-the-shelf fan controller rather than an in-house and untested solution.

Note: This board is also available for a 12V fan configuration.

In all cases, optimizing fan RPM based on thermal management saves power, reduces operational costs, and increases product reliability.

Are you wondering if this controller fits your application? Call us today @ 877-degreeC and improve your thermal management design. Customizations are available, and done routinely at degreeC to best fit your application.

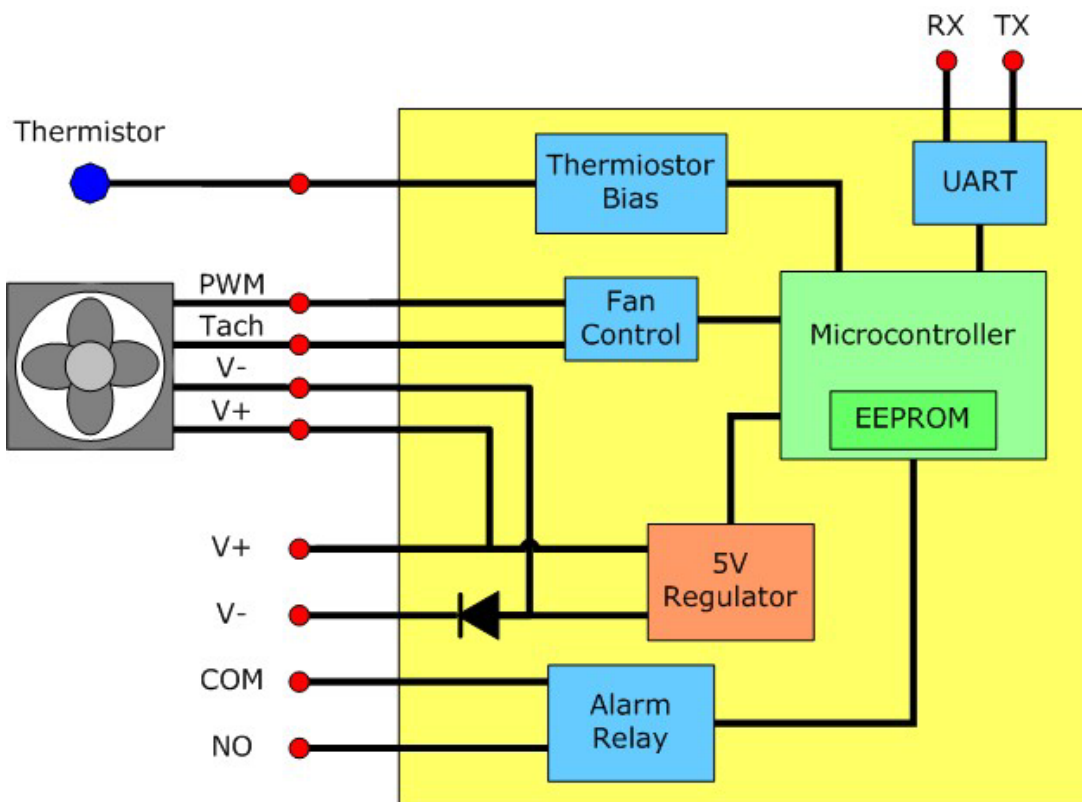
The ProntoFlow series is a line of off-the-shelf programmable fan controllers from degreeC which sense air velocity or temperature, as well as fan RPM, and are used for thermal management or monitoring of all kinds of electronic enclosures and devices. Years of experience in thermal management and fan controller development have been distilled into these products to ensure reliable and flexible operation. Don't reinvent the wheel, call degreeC today.



Feature List

- ✓ Designed specifically for use with 24V or 48V fans which have tachometer output and PWM input.
 - ✓ Fan and logic are powered via this controller; user needs only provide 24 or 48 volt source.
- ✓ Full range of fan RPM control, from zero to full RPM.
- ✓ Supports fan PWM from 1KHz to 2KHz (*send us your fan and we will verify performance with this controller!*)
- ✓ Fan shutdown based on sensed temperature.
- ✓ Failure and performance monitoring of the fan and temperature sensor.
- ✓ Wide operating range, -40°C to +70°C
- ✓ Dedicated alarm relay.
- ✓ Custom firmware can be provided by Degree Controls.
- ✓ Fan speeds and alarm trip points reconfigurable via PC interface.
- ✓ Can be shipped pre-configured, to your contract manufacturer.
- ✓ Small size, 2.0in x 1.7in, with max component height of 0.7".
- ✓ RoHS compliant
- ✓ May be integrated into data room equipment, medical products, and industrial process equipment.
- ✓ One of the smallest intelligent fan controller on the market
- ✓ Optimizes power consumption of your cooling fans

Implementation Diagram

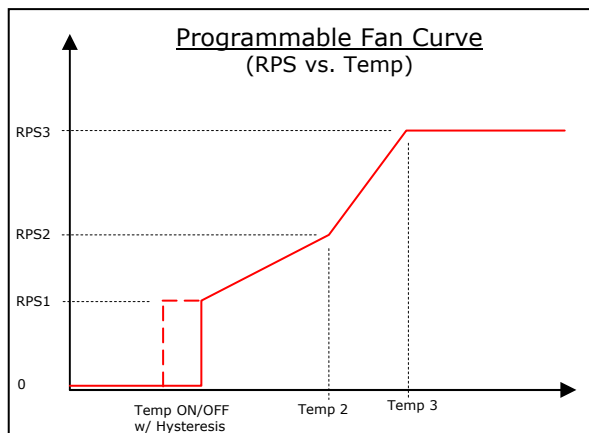


Technical Specifications

General Specifications	
Storage temperature	-40°C to 85°C
Operating temperature	-20°C to 70°C
Relative humidity	5-95% (non-condensing)
Supply voltage	18 to 55V DC
Max Fan Current	1 A
Alarm Relay	Normally Closed Type (driven Open in Healthy State)
Fan Tach	Open Collector
Fan PWM frequency range	10 – 150 Hz
Communication	UART
Input Connector	Molex 50-57-9410

Settable Parameters	
Temp 1, RPS 1	Controller will linearly interpolate RPS between temperature values chosen, in order to define a fan RPS curve based on sensed temperature.
Temp 2, RPS 2	
Temp 3, RPS 3	
Fan Turn ON Temp	Temperature where fan turns ON
Fan Turn OFF Temp	Temperature where fan turns OFF
Turn ON/OFF Hysteresis	Widens gap between turn ON/OFF temps to prevent cycling
Overtemp Alarm Temp	Temperature where alarm register is set and relay is asserted

Mechanical Size	1.7" x 2.0" x 0.7"
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Input Connector (J1) Pin Out	
Pin 1	V IN
Pin 2	V RTN
Pin 3	Thermistor +
Pin 4	Thermistor -
Pin 5	V Fan +
Pin 6	V FAN -
Pin 7	Fan TACH
Pin 8	Fan PWM (Control)
Pin 9	Alarm +
Pin 10	Alarm -