

ProntoFLOW Control L-T series

Programmable DC Fan Controller

Features

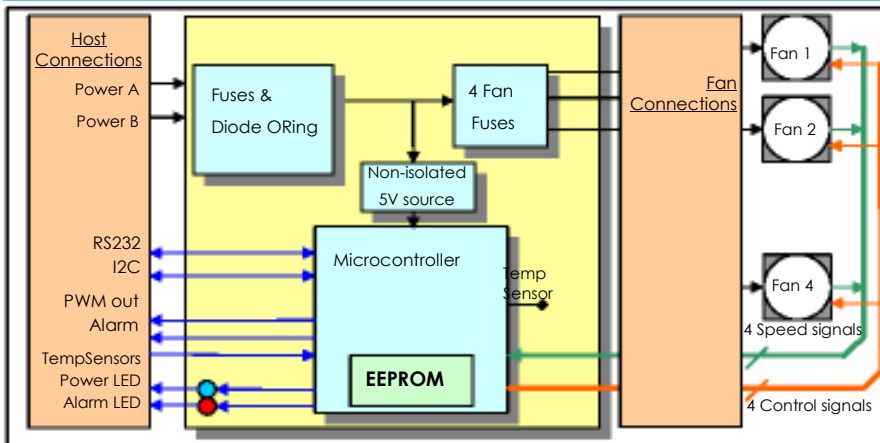
- Accepts up to four fans
- Synchronizes rotational speeds of 4-wire fans to eliminate "beat" noise and vibration
- Monitors speed of 3-wire fans
- Simultaneously controls up to two types of fans
- Jumper selectable 12V or 24/48V operation
- Isolated open collector alarm output
- Non-isolated I2C and TTL level RS232 communication interface
- Field configurable through serial interface
- Programmable alarm thresholds & fan curve
- Non-volatile memory to store configuration
- Power & Alarm LEDs with external connections
- Internally generated non-isolated +5V logic
- Single/Dual power input
- Fan failure detection
- Filter blockage detection
- Designed to operate with POWER-AC and PRONTO-DC power boards (PPA & PPD Series)
- Individual fan fuses for better reliability
- Compatible with many industry standard fans
- Small size; Ideal for 1U applications
- One onboard, two external temperature sensors

About PRONTOflow

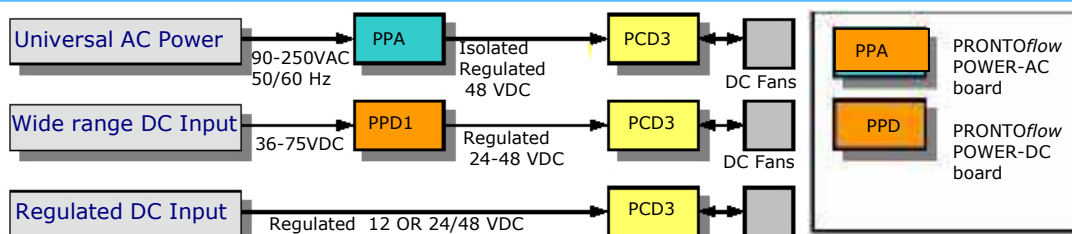


The PRONTOflow CONTROL-LT is an off-the-shelf programmable controller from DegreeC for thermal management and fan speed control of DC fans. This controller is a scaled down version of the PRONTOflow CONTROL, and is designed for use in a 1U or larger fan tray controlling up to four fans. The input power is fed to the fans after polarity and fuse protection. Each fan power is individually fused for higher fail-safe protection. The on-board micro-processor controls or monitors fan speeds, communicates with a host through serial interfaces, measures temperatures, detects filter blockage and reports alarms. The control curve and alarm thresholds are programmable via our PRONTOflow CONFIGURE software package.

Functional Block



Typical Applications

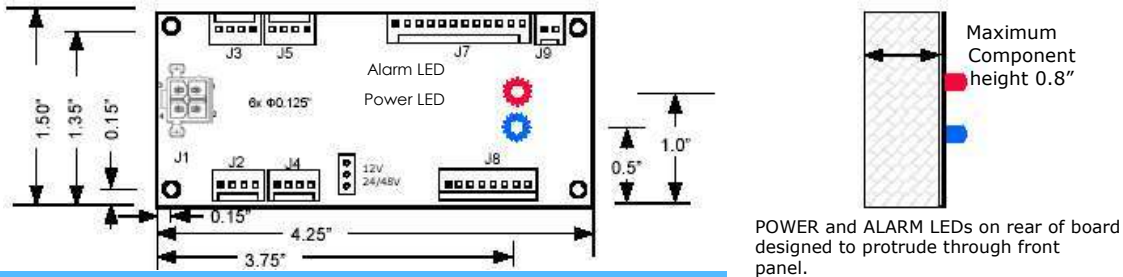


Electrical Interface

	Min	Nor	Max	Units
Input Voltage (=Fan voltage)	18	48	60(Max Fan Volt)	Volts DC
Input Current			4	Amps DC
Fan Current 1		0.8	1	Amps DC
Isolation			1500	VDC

Notes: 1. Current to each fan, total fan current limited to Maximum Input

Mechanical Dimensions



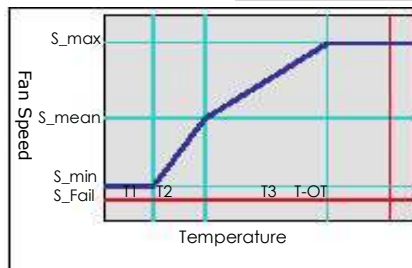
Electrical Connections

J1: Power Connector Molex: 39-28-9048		J9: PWM switch Molex: 22-11-2022		J2-5: Fan Connectors. Molex: 22-11-2042		J7: Logic Signals Molex: 22-11-2122		J8: Sensor/LED Signals Molex: 22-11-2082					
Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	+ POWER A	1	PWM+	1	RETURN(-)	1	EXT +5V	7	SCL-2 (I2C)	1	THERMISTOR 1 +	5	ALARM LED +
2	- POWER A	2	PWM-	2	VFAN+	2	DGND	8	SDA-2 (I2C)	2	THERMISTOR 1 -	6	ALARM LED
3	+ POWER B			3	TACHOMETER	3	RXD (RS232)	9	OVERRIDE (TTL)	3	THERMISTOR 2 +	7	POWER LED +
4	- POWER B			4	CONTROL	4	TXD (RS232)	10	I2C SELECT	4	THERMISTOR 2 -	8	POWER LED
						5	SCL-1 (I2C)	11	ALARM -				
						6	SDA-1 (I2C)	12	ALARM +				

PWM switch is a signal that controls the voltage output from PPA and PPD power boards. Typically used with 3-wire fans for speed control.

User Programmable Controller

Variable	Description
T1	Low-speed (S_min) temp
T2	Mid-Speed (S_mean) temp
T3	High-speed (S_max) Temp
T_OT	Over temperature limit
S_Fail	Fan fail speed



T1, T2 & T3 may be configured as the inlet or exhaust temps as read by the three sensors.



DegreeC's PRONTOflow CONFIGURE software enables configuration of PCD3 boards using a PC. Fan speed control curves, alarm thresholds and fan characteristics can be programmed and stored in nonvolatile memory in PCD3.

ProntoFLOW Control L-T series

Programmable DC Fan Controller

Features

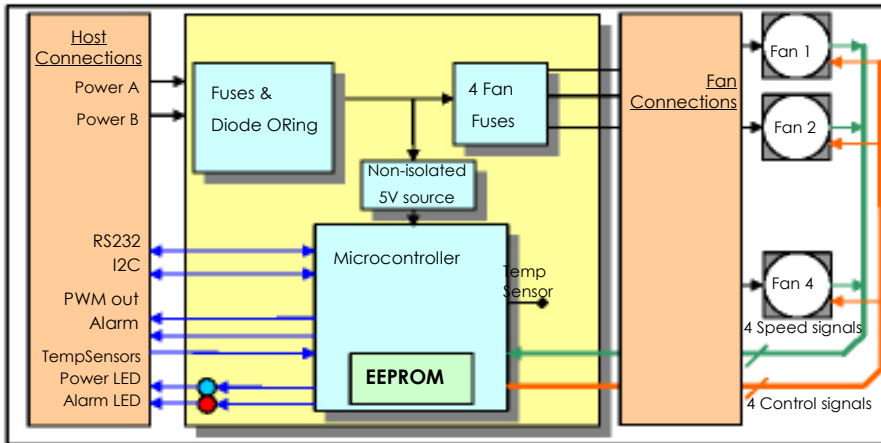
- Accepts up to four fans
- Synchronizes rotational speeds of 4-wire fans to eliminate "beat" noise and vibration
- Monitors speed of 3-wire fans
- Simultaneously controls up to two types of fans
- Jumper selectable 12V or 24/48V operation
- Isolated open collector alarm output
- Non-isolated I2C and TTL level RS232 communication interface
- Field configurable through serial interface
- Programmable alarm thresholds & fan curve
- Non-volatile memory to store configuration
- Power & Alarm LEDs with external connections
- Internally generated non-isolated +5V logic
- Single/Dual power input
- Fan failure detection
- Filter blockage detection
- Designed to operate with POWER-AC and PRONTO-DC power boards (PPA & PPD Series)
- Individual fan fuses for better reliability
- Compatible with many industry standard fans
- Small size; Ideal for 1U applications
- One onboard, two external temperature sensors

About PRONTOflow

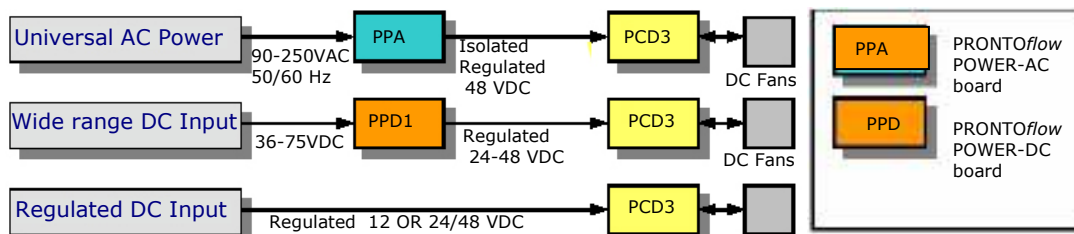


The PRONTOflow CONTROL-LT is an off-the-shelf programmable controller from DegreeC for thermal management and fan speed control of DC fans. This controller is a scaled down version of the PRONTOflow CONTROL, and is designed for use in a 1U or larger fan tray controlling up to four fans. The input power is fed to the fans after polarity and fuse protection. Each fan power is individually fused for higher fail-safe protection. The on-board micro-processor controls or monitors fan speeds, communicates with a host through serial interfaces, measures temperatures, detects filter blockage and reports alarms. The control curve and alarm thresholds are programmable via our PRONTOflow CONFIGURE software package.

Functional Block



Typical Applications

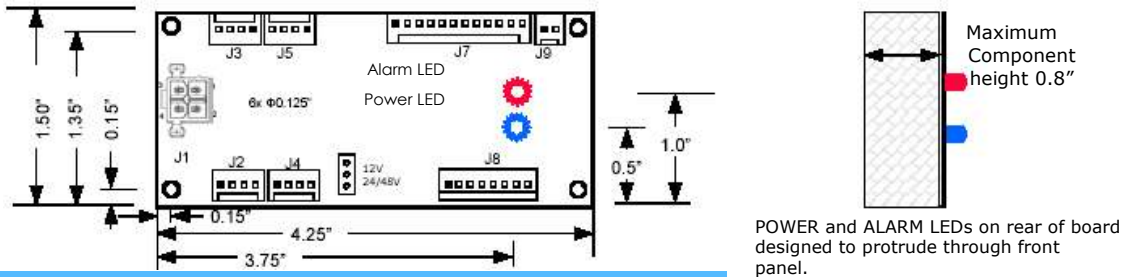


Electrical Interface

	Min	Nor	Max	Units
Input Voltage (=Fan voltage)	18	48	60(Max Fan Volt)	Volts DC
Input Current			4	Amps DC
Fan Current 1		0.8	1	Amps DC
Isolation			1500	VDC

Notes: 1. Current to each fan, total fan current limited to Maximum Input

Mechanical Dimensions



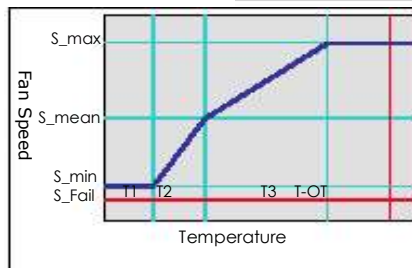
Electrical Connections

J1: Power Connector Molex: 39-28-9048		J9: PWM switch Molex: 22-11-2022		J2-5: Fan Connectors. Molex: 22-11-2042		J7: Logic Signals Molex: 22-11-2122		J8: Sensor/LED Signals Molex: 22-11-2082					
Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	+ POWER A	1	PWM+	1	RETURN(-)	1	EXT +5V	7	SCL-2 (I2C)	1	THERMISTOR 1 +	5	ALARM LED +
2	- POWER A	2	PWM-	2	VFAN+	2	DGND	8	SDA-2 (I2C)	2	THERMISTOR 1 -	6	ALARM LED
3	+ POWER B			3	TACHOMETER	3	RXD (RS232)	9	OVERRIDE (TTL)	3	THERMISTOR 2 +	7	POWER LED +
4	- POWER B			4	CONTROL	4	TXD (RS232)	10	I2C SELECT	4	THERMISTOR 2 -	8	POWER LED
						5	SCL-1 (I2C)	11	ALARM -				
						6	SDA-1 (I2C)	12	ALARM +				

PWM switch is a signal that controls the voltage output from PPA and PPD power boards. Typically used with 3-wire fans for speed control.

User Programmable Controller

Variable	Description
T1	Low-speed (S_min) temp
T2	Mid-Speed (S_mean) temp
T3	High-speed (S_max) Temp
T_OT	Over temperature limit
S_Fail	Fan fail speed



T1, T2 & T3 may be configured as the inlet or exhaust temps as read by the three sensors.



DegreeC's PRNTOflow CONFIGURE software enables configuration of PCD3 boards using a PC. Fan speed control curves, alarm thresholds and fan characteristics can be programmed and stored in nonvolatile memory in PCD3.