Safety control — FFCB-1

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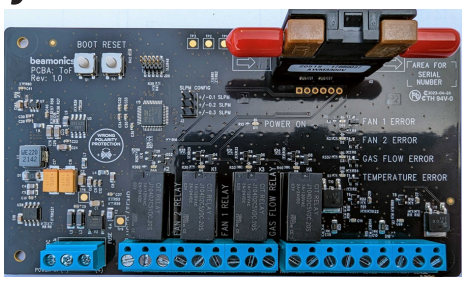
Precision Photonics



Features

- Turnkey solution for fan and flow control
- Controls gas flow rate in configurable units (Default: l/min)
- Trigger potential-free relay if flow rate is outside configured tolerances
- Controls up to two fans, including fan speed (rpm)
- Control of temperature on the board
- Supply voltage: 15-32 VDC polarity protected

Description

The FFCB-1 is a high-performance turnkey solution that will replace complex solutions for flow rate and fan control using e.g. rotameters.

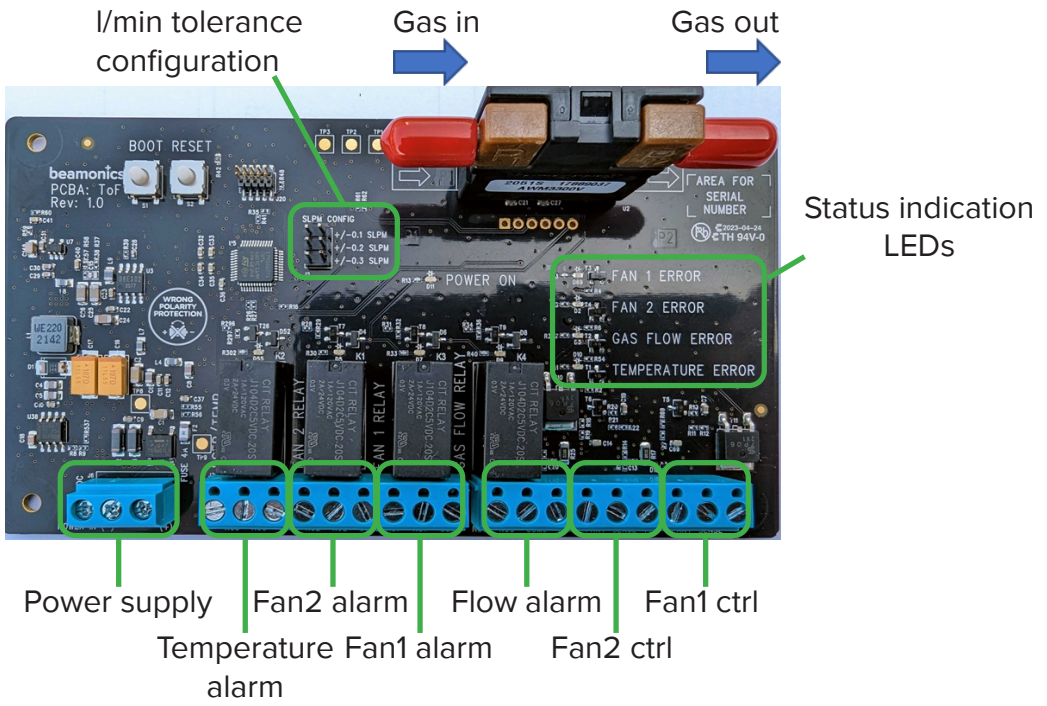
The system is designed with user-friendliness in mind, for integration in industrial settings triggering an alarm or giving error/warning message through potential-free relays.

The control board can be used in a gas analysis cabinet for monitoring of fan functionality to ensure the ventilation of the cabinet functions properly, to avoid creating an explosive environment in case of gas leakage inside the cabinet. In addition to monitoring the functionality of the fans, the FFCB-1 can also control the fan speed, reducing the rpm to increase fan life. This will reduce the maintenance cost. If one of the fans starts to wear out or if some external factor reduces the speed of the fan, the FFCB-1, can force the speed of the fan while triggering an alarm, so that ventilation is maintained until service or replacement of the fan has been performed.

The other functionality of the FFCB-1 is to monitor the gas flow rate. The tolerance of the flow rate can easily be configured by a bridge. If the flow rate decrease or increase outside the configured range, it will trigger a potential-free relay.

If the supply voltage for some reason is out of the 15-32 VDC range, the FFCB-1 will also trigger a potential-free relay.

Finally, the FFCB-1 also monitors the temperature, and allows for a triggering of a potential-free relay if the temperature on the control board exceeds the temperature limits set upon installation.



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Connector Specifications

Connector (Designator)	Specification	Direction	Description
Fan1 alarm (J7:1 – 3)	Relay NO/NC[1)]	Output	Fan1 error
Fan2 alarm (J7:4 – 6)	Relay NO/NC[1)]	Output	Fan2 error
Temperature alarm (J7:7 – 9)	Relay NO/NC[1)]	Output	Temperature alarm, configurable at purchase
Fan1 ctrl (J1:1 – 3)		Output/Input	Fan1 control and RPM-sense
Fan2 ctrl (J1:4 – 6)		Output/Input	Fan2 control and RPM-sense
Flow alarm (J1:7 – 9)	Relay NO/NC[1)]	Output	Flow rate below threshold (configurable through J2 jumpers or software)
Power supply (J6)	15 – 32 VDC	Input	Integrated Polarity protection
Tolerance config (J2)	Jumpers (l/min)	Input	User configuration of flow rate threshold tolerance in Standard Liters Per Minute
Gas in/out	Male 0.2” (5.08 mm)		

[1)]+/- 60 V DC, 30 V AC RMS