

FumeOut™

Battery Compartment Vent Fan

FumeOut™ is designed to keep your battery compartment free of the fumes that are normally generated during battery recharging or equalization. Consisting mostly of hydrogen and oxygen, these gases can become explosive if allowed to accumulate in the battery compartment or other enclosed spaces. By drawing these fumes outdoors, **FumeOut™** performs an essential safety function.

HOW FumeOut™ WORKS – A "smart" Fan Controller monitors the voltage of your battery bank, automatically turning on an Exhaust Fan whenever the battery voltage becomes high enough to cause gassing.

The Controller is factory-calibrated to turn the Fan on if the battery voltage exceeds 2.33 volts per cell, (i.e., 14.0 volts for a 12-volt battery bank) and to shut off the Fan when the voltage drops to 2.30 volts per cell (i.e., 13.8 volts for a 12 volt bank). A different fan turn-on or turn-off voltage can be user-programmed by pressing the **Set Von** or **Set Voff** buttons as soon as the battery voltage reaches the new desired setpoint. Pressing and holding either button for several seconds restores both settings to their factory-calibrated values. All settings are stored in non-volatile RAM.

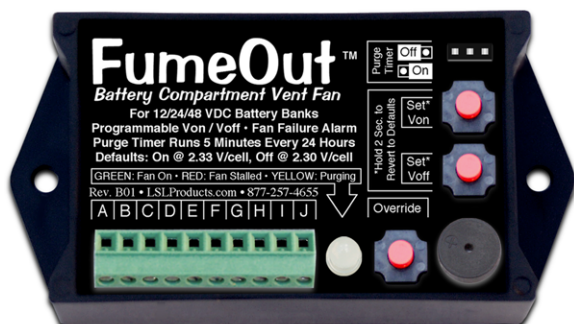
The Fan uses a 12 volt DC brushless motor, and fits standard 2" I.D. PVC pipe (typically plumbed between the battery compartment and outdoors). The Fan's pipe fittings are offset to one corner of the enclosure, for easier installation in tight spaces. The Controller can be attached to a metal bracket (included) on the side of the Fan, or can be remote-mounted in any convenient location. Other features include:

FAN FAILURE ALARM – This safety feature sounds a built-in alarm if the fan motor stalls or fails to start. Provision is also included for connecting an external alarm.

PURGE TIMER – When enabled, this function runs the Exhaust Fan for 5 minutes every 24 hours to remove any fumes that might accumulate in between recharges. A jumper plug on the Controller enables or disables it.

MULTI-VOLTAGE OPERATION – The Controller contains a built-in voltage regulator that allows the same 12 volt Fan to be operated from 12, 24 or 48 volt battery banks. This efficient switching regulator design minimizes power consumption, regardless of battery bank voltage.

RUGGED CONSTRUCTION – The Controller is encapsulated inside a solid block of epoxy, and uses sealed pushbutton switches and a moisture-resistant terminal block. The Exhaust Fan motor is housed inside a gasketed, airtight PVC enclosure, and is field-replaceable.



FEATURES

SAFE & EFFECTIVE

- Keeps your battery compartment free of explosive fumes
- PURGE TIMER feature provides occasional ventilation even when the batteries are idle
- FAN FAILURE alarm warns you if the Fan fails to start, or stops running

CONVENIENT

- Completely automatic — Install it and forget it!
- User-programmable - Set your own fan turn-on and turn-off voltages
- 3-color LED and piezo beeper provide instant confirmation of system status

HIGH PERFORMANCE

- Low idling battery drain - Uses just 0.05 watts typ.
- 4-wire battery connection scheme minimizes measurement errors
- DC Brushless Fan is powerful, quiet and reliable
- Fully protected against reverse polarity, improper connections

EXPANDABLE & UPGRADEABLE

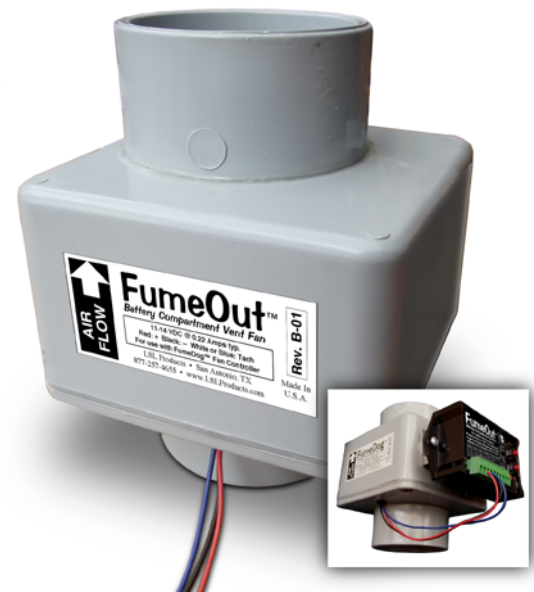
- One Controller can be used with multiple fans - Ideal for very large battery banks
- Works on 12-48 volt systems - Simplifies battery bank upgrades

EASY INSTALLATION

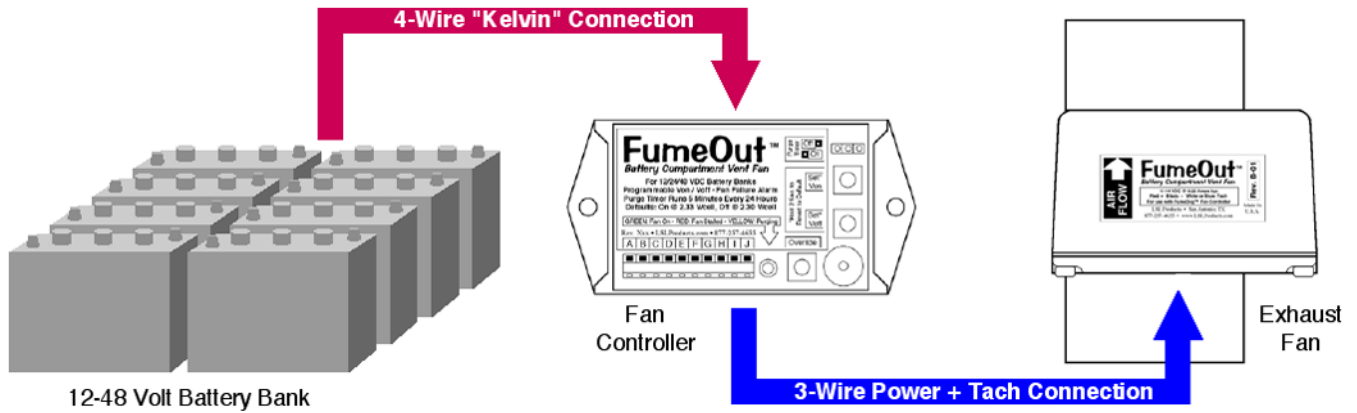
- Fan fits standard 2" I.D. PVC pipe
- Fan Controller can be remotely mounted, or attached to the side of the Exhaust Fan (mounting bracket included)
- Includes illustrated installation instructions & mounting hardware

QUALITY CONSTRUCTION

- Controller uses sealed switches and is embedded inside a solid block of epoxy
- American-Made
- One-Year Warranty



EASY INSTALLATION - ONLY 7 WIRES TO CONNECT



SPECIFICATIONS

Absolute Min. / Max. Supply Voltage: 8.0 / 78.0 VDC

Nominal Battery Voltage:

12 volt / 6 cell battery bank: 9 to 16 VDC

24 volt / 12 cell battery bank: 18 to 32 VDC

48 volt / 24 cell battery bank: 36 to 64 VDC

Current Consumption:

Vbat = 12.8 VDC: **Vbat = 25.6 VDC:** **Vbat = 51.2 VDC:**

Fan Off: 5 mA typ. 3 mA typ. 2 mA typ.

Fan On: 220 mA typ. 120 mA typ. 60 mA typ.

Default Fan Turn-On / Turn-Off Voltage: 2.33 / 2.30 Volts Per Cell \pm 1%

Von, Voff Voltage Stability: \pm 1% typ.

Von, Voff Voltage Range: 0 to 2.65 volts per cell in 1024 increments
(Note: Von must be a higher value than Voff)

BATTERY DISCONNECTED Alarm Turn-On Voltage: 0.2 Volts Per Cell typ.

Purge Timer Duration & Interval: 5 Minutes every 3 hours \pm 10%

Regulated +12V Output Voltage: 12.3 volts typ. @ Vbat \geq 14.0 VDC

Regulated +12V Output Maximum Current: 500 mA
(including current supplied to Exhaust Fan)

Fan Control Max. Voltage & Sink Current: 20 VDC, 1500 mA
(An internal low-side MOSFET switch grounds this terminal to turn on the fan)

External Alarm Max. Voltage & Sink Current: 20 VDC, 1500 mA
(An internal low-side MOSFET switch grounds this terminal to turn on the alarm)

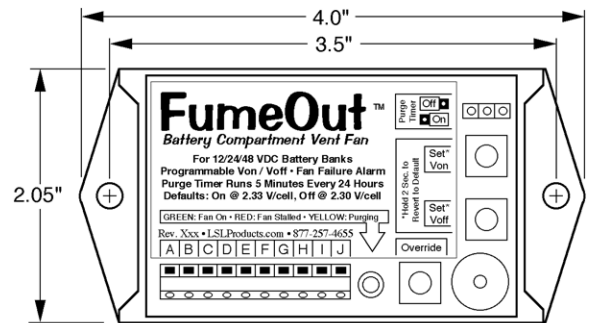
Fan Type: 12VDC Brushless, Ball Bearings, 3.5" 7-blade Impeller

Rated Airflow: 45 CFM (free-air)

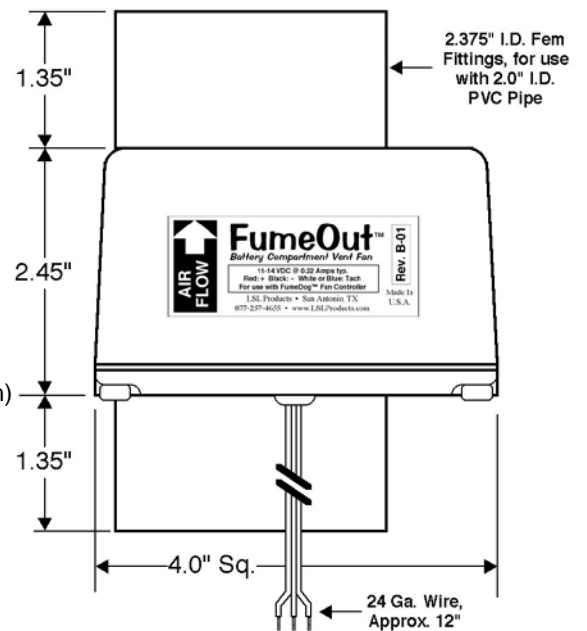
Operating Noise: 27 dBa @ 1 meter, with inlet & outlet pipes installed

Notes:

1. Specifications tested at 72 °F.
2. All specifications subject to change without notice.
3. Installed airflow will be less than the free-air rating, and will vary by application.



Fan Controller Dimensions



Exhaust Fan Dimensions

Designed & Manufactured in the U.S.A. by

LSL PRODUCTS

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