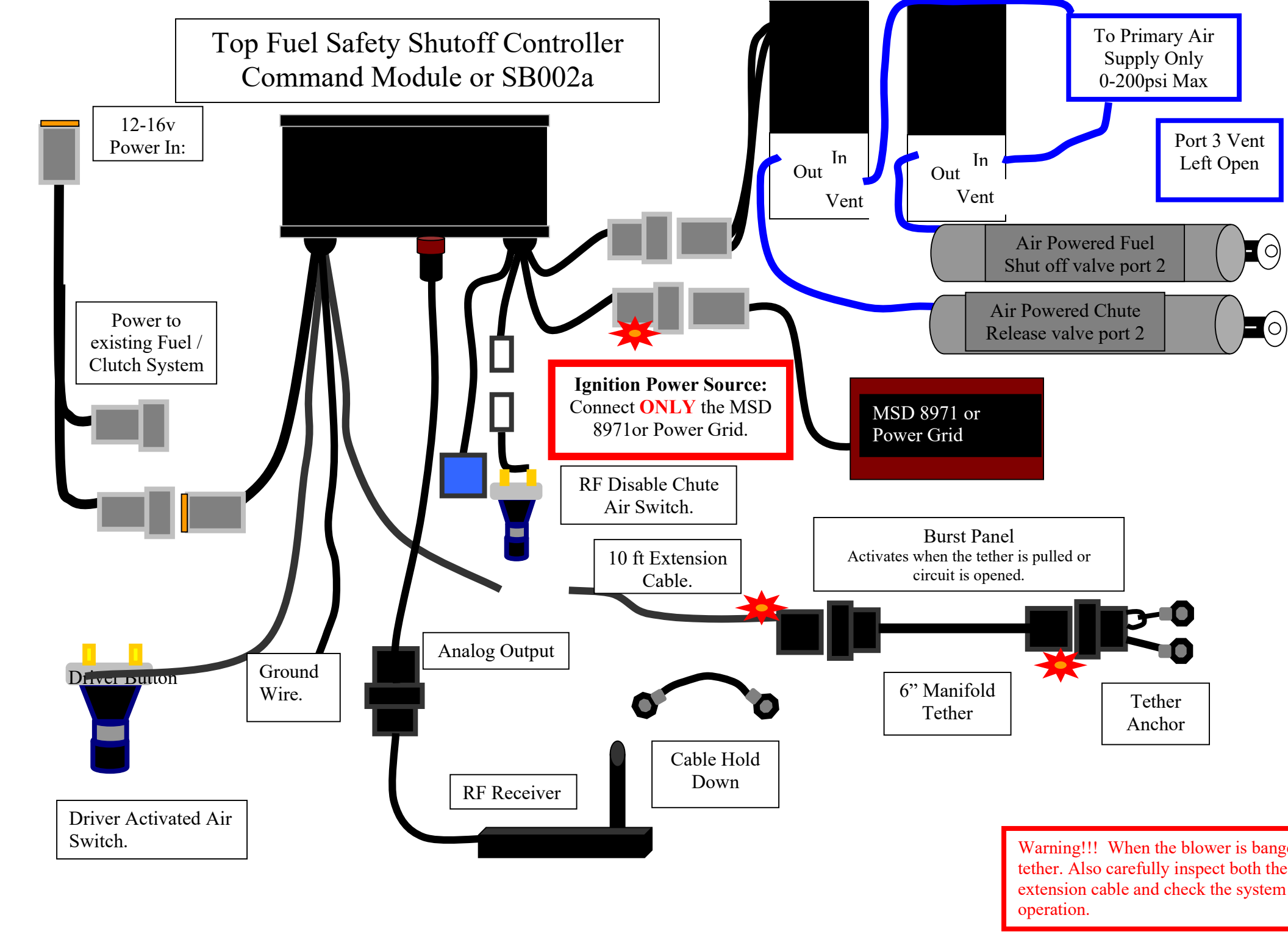

Top Fuel Safety Shutoff Controller
Command Module or SB002a
12-16v
Power In:
Power to
existing Fuel /
Clutch System
Ignition Power Source:
Connect ONLY the MSD
8971or Power Grid.
MSD 8971 or
Power Grid
To Primary Air
Supply Only
0-200psi Max
Port 3 Vent
Left Open
Out
In
Vent
Out
In
Vent
Air Powered Fuel
Shut off valve port 2
Air Powered Chute
Release valve port 2
RF Disable Chute
Air Switch.
10 ft Extension
Cable.
Burst Panel
Activates when the tether is pulled or
circuit is opened.
Driver Button
Ground
Wire.
Analog Output
6” Manifold
Tether
Tether
Anchor
Cable Hold
Down
RF Receiver
Driver Activated Air
Switch.
Warning!!! When the blower is bang
tether. Also carefully inspect both the
extension cable and check the system
operation.

The Electrimotion Safety Shutoff box is designed to shut the car off as a result of a catastrophic event. The box has 3 trigger inputs (sb002), 5 inputs (Command Module) which will trigger 3 separate output events. The 3 trigger inputs are a burst panel input, an air activated driver push button trigger input and a wireless shut down input, CM has pan psi input and wheel counter inputs as well. The Command Module also has, a throttle release output.

For the air activated trigger input, a typical 10lb air pressure switch is supplied. This air pressure switch should be plumbed to an air switch on the steering wheel.

For the burst panel input, a tether is supplied with an extension cable. The tether is to be installed across the manifold burst panels. A typical installation is shown on the following pages. ***The tether must be installed at power up or the ignition output will not turn on!*** This is by design to make sure the tether is connected. If during normal operation the tether connectors are unplugged, the circuit is opened and the controller is triggered.

For the wireless shut down option, a small 3-pin connector is utilized. When the car passes the on track transmitter the Safety Box will trigger. The RF kill switch function can be disabled by the use of an air switch that is to be closed when the chutes are manually deployed. ***The chute air switch must have no air at power up or the ignition output will not turn on!***

The 3 outputs are Ignition Power, fuel shutoff air, and parachute air. The fuel and parachute outputs are hi flow air valves. To mechanically complete the system, 2 air cylinders are required. The suggested air cylinder is 7/8" bore, 3" stroke Fabco PN **F-0875D02-03A** or Clippard PN UDR-14-3 with Rod End RE-1285**.** The air cylinders are available from EM upon request. Typical installations for both fuel shutoff and chute activation are shown on the following pages. The Ignition power output is a 2 pin Deutsch connector. **Only** connect the MSD 8771 or 8971 to the Ignition power output. **(Max Current 2A)**.

When any of the inputs becomes true, the 3 outputs will immediately trigger. ***Both parachutes must be deployed in the event that the safety system is tripped.*** The throttle release output can be configured to trip via pan psi input (CM only)

The controller will receive power from the existing +12-16v battery pack that is already used.

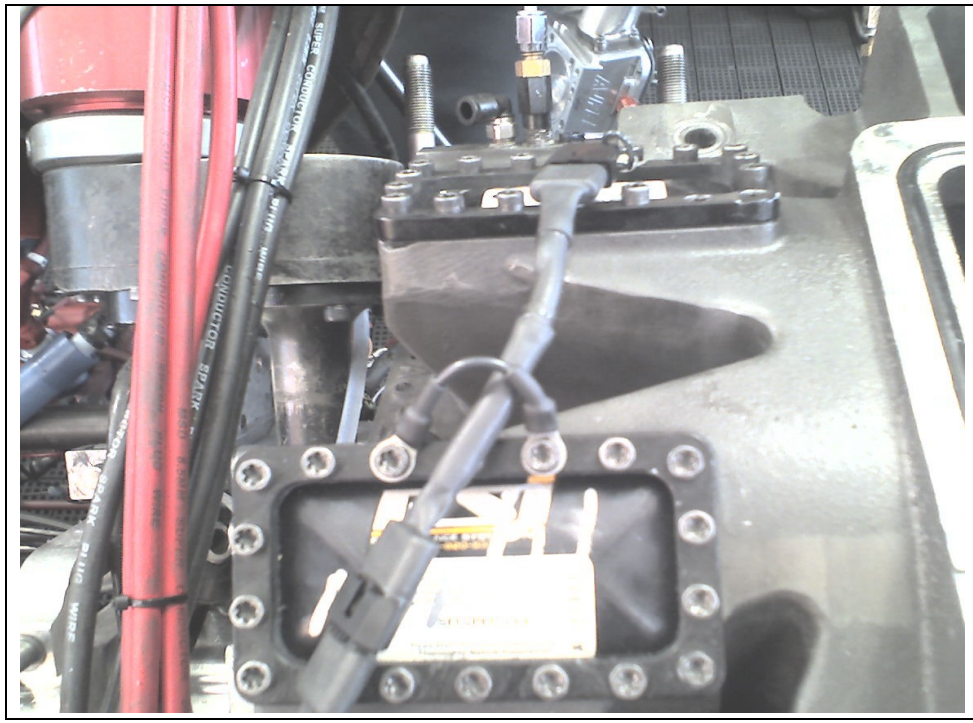
Both air valves must be connected to the primary air supply.

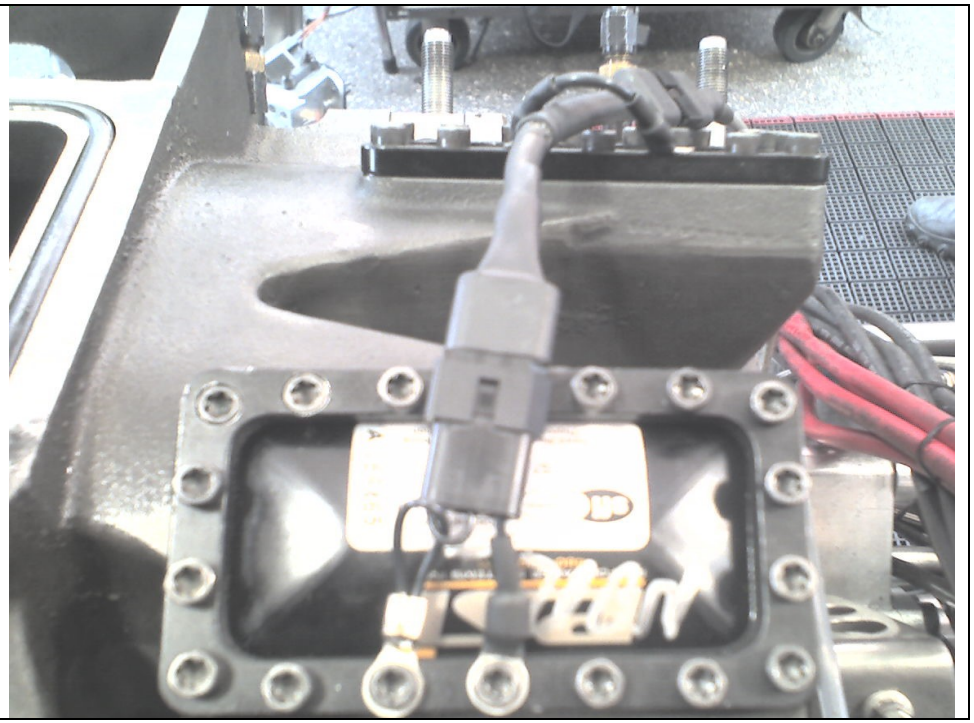
Dimensions of the sb002a box are 4.5"W x 2.0H x 1.75"D.

Top Fuel Safety Box Kit PN SB002TF

Part	Qty	Part Number
Safety Box	1	SB002 or Command Module
10ft Tether Extension Cable	1	n/a
Optional 12ft Tether Extension Cable	0	n/a
Manifold Tether	1	n/a
Tether Anchor	1	n/a
Cable Hold Down	1	n/a
10lb Air Switch	1	n/a
1 Pole air manifold	1	n/a
High Flow Air Switches	2	n/a
7/8" Bore Air Cylinders	Not Included	Fabco 7/8" F-0875D02-03A
PFA Teflon 1/4" Air Line	Not Included	Mc Master Carr PN 51805K86
PFA Teflon 5/32" Air Line	Not Included	Mc Master Carr PN 5733K52

Typical Manifold Tether Installation





Analog Output Table

The SB002A has an analog (0-5v) output (Blue Molex Connector) that will help you determine which event triggered the Safety Box. The Chart below shows each voltage change for each input.

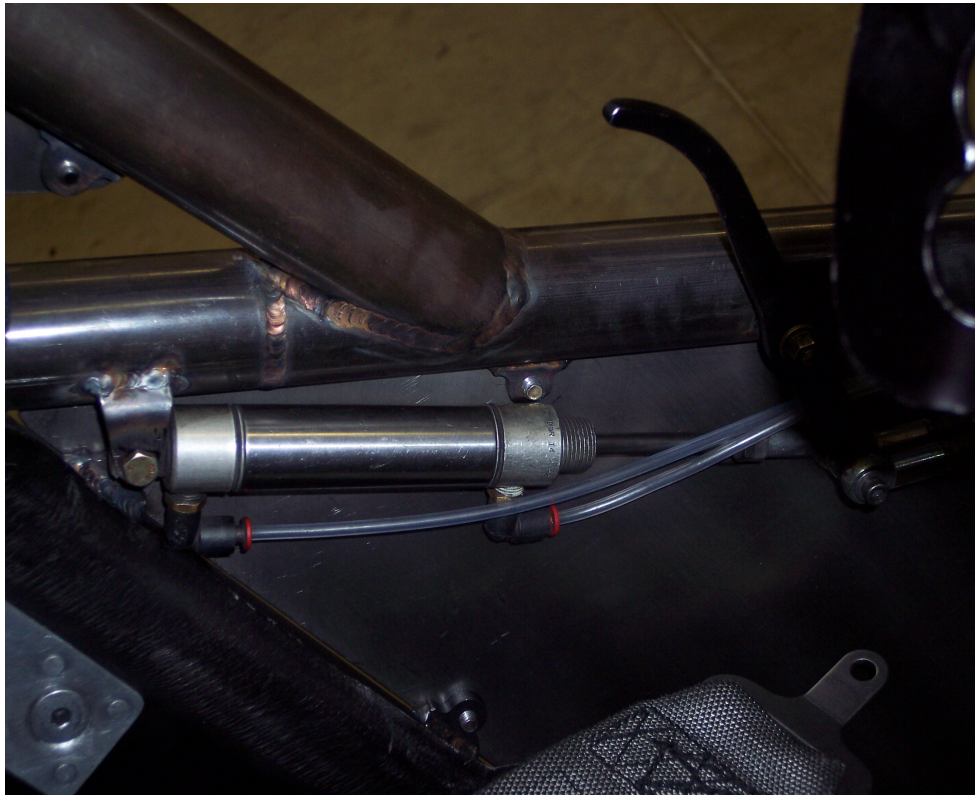
The Blue Molex Analog out connector can be connected to any data logger 0-5v input.

		0.25V	0.5V	1V	2V	Voltage Change
Output Voltage	Standby Voltage	Tether	Fire Bottle	RF Input	RF override	
0.25	X					Standby
0.5	X	X				Tether Enabled
0.75	X		X			FB Enabled
1	X	X	X			Tether and FB enabled
1.25	X			X		RF enabled
1.5	X	X		X		RF and Tether enabled
1.75	X		X	X		RF and FB enabled
2	X	X	X	X		RF and Tether and FB enabled
2.25	X				X	RF override enabled
2.5	X	X			X	RF override and Tether enabled
2.75	X		X		X	RF override and FB
3	X	X	X		X	RF override and FB and Tether
3.25	X			X	X	RF override and RF
3.5	X	X		X	X	RF override and RF and Tether
3.75	X		X	X	X	RF override and RF and FB
4	X	X	X	X	X	RF override and RF and FB and Tether

- Analog voltage output levels have changed from SB002a to Command Module

Standby Analog output	=	0.125v
Fire Bottle/Driver Button Analog out	=	+0.125v change
Tether Analog output	=	+0.25v change
Pan Psi Analog output	=	+0.5v change
RF Analog output	=	+0.75v change
RF Override Analog output	=	+1.0v change
RPM Analog output	=	+2.0v change

Typical Mounting of Fuel and Parachute Air Cylinders.



General Warnings:

IT IS THE RESPONSIBILITY OF THE PERSON INSTALLING ANY CONTROL SYSTEM COMPONENT OR KIT TO DETERMINE THE SUITABILITY OF THE COMPONENT OR KIT FOR THAT PARTICULAR APPLICATION. IF YOU ARE NOT SURE HOW TO SAFELY USE THIS COMPONENT OR KIT, YOU SHOULD NOT INSTALL OR USE IT. DO NOT ASSUME ANYTHING. IMPROPERLY INSTALLED OR MAINTAINED CONTROL SYSTEMS ARE DANGEROUS. IF YOU ARE NOT SURE, GET HELP OR RETURN THE PRODUCT. YOU MAY OBTAIN ADDITIONAL INFORMATION AND TECHNICAL SUPPORT BY CALLING ELECTRIMOTION AT (740) 362-0251, OR VISIT OUR WEB SITE AT WWW.ELECTRIMOTION.COM. USE OF ELECTRIMOTION TECHNICAL SUPPORT DOES NOT GUARANTEE PROPER INSTALLATION. YOU, OR THE PERSON WHO DOES THE INSTALLATION, MUST KNOW HOW TO PROPERLY USE THIS PRODUCT. IT IS NOT POSSIBLE OVER THE PHONE TO UNDERSTAND OR FORESEE ALL THE ISSUES THAT MIGHT ARISE IN YOUR INSTALLATION. LIABILITY ON DEFECTIVE MERCHANDISE OR MERCHANDISE NOT CONFORMING TO MANUFACTURER'S SPECIFICATIONS IS LIMITED TO THE REPAIR OR REPLACEMENT OF THE DEFECTIVE ITEM. RACING EQUIPMENT MUST BE MAINTAINED AND SHOULD BE CHECKED REGULARLY FOR FATIGUE, DAMAGE, AND WEAR. DO NOT OPERATE ANY VEHICLE ON UNTESTED CONTROL SYSTEMS!