

INJECTION FAILSAFE IFS-10



Alcohol Injection Monitoring System

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 **CAUTION**

You must completely read though these instructions before installing and operating this product. Failure to due so can result in damage to this product and the vehicle.

Introduction

The Injection Fail-Safe unit by Labonte MotorSports is designed to ensure reliability for highly modified performance vehicles using Alcohol Injection Systems. The unit can detect faults and will output a 12 volt trigger signal in the event a fault occurs. The IFS-10 unit has an internal flow meter the can measure flow from 100ml/min up to 2.5L/min.

Installation Mechanical

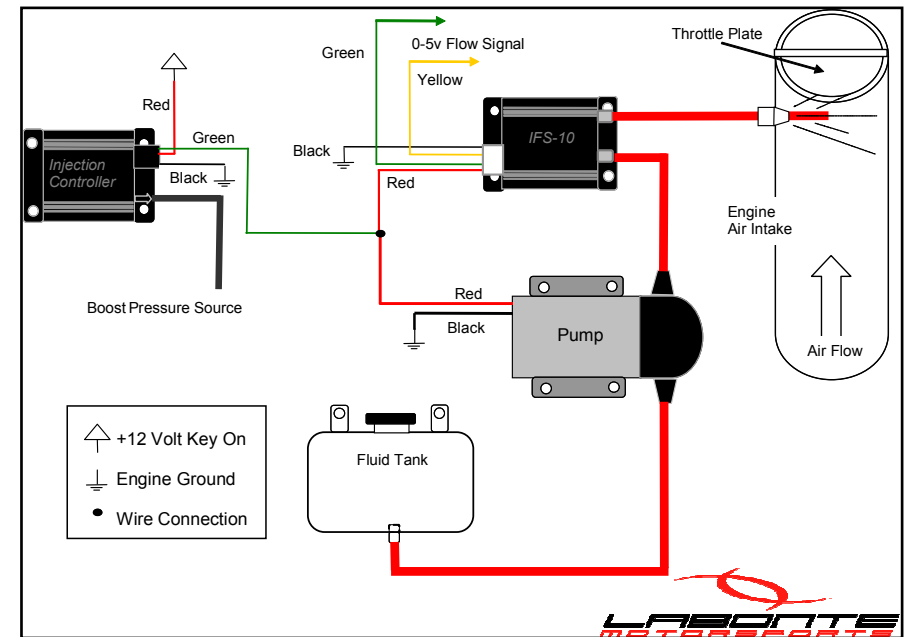
The Injection Fail-Safe unit can be installed in the engine bay of the vehicle. Do not mount the unit directly on the engine block or damage to the product may result.

Please refer to the System Diagram on the next page for typical system installation.

Insert the high pressure line from the output of the pump into the quick connect fitting labeled PUMP on the front of the IFS-10 unit. Pull on the hose after inserting to insure a tight connection. Insert a second high pressure hose into the quick connect fitting labeled NOZZLE on the front panel. The other end of this hose is to be connected to the injection nozzle. If you have an Injection Flow Control Solenoid, it can be installed on the hose between the output of the IFS-10 unit labeled NOZZLE and the injection nozzle.



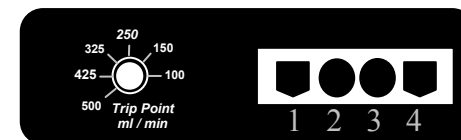
Front view of Injection Fail-Safe



System Installation Diagram

Electrical Connections

- Connect the BLACK wire from pin 1 to a secure ground or battery negative terminal.
- Connect YELLOW wire from pin 2 to input of optional flow display device or 0-5volt input to an aftermarket data logger.
- Connect the GREEN wire from pin 3 to the device that will receive the 12 volt Trigger signal. See Application Index for recommended connections.
- Connect the RED wire from pin 4 to the red power wire of the Water/Methanol injection pump. Note – Connecting the Red power wire directly to battery voltage will result in the 12volt trigger being active until the Trip Point is reached.



Back view of IFS-10

Operation

The Injection Fail-Safe unit monitors the flow of Alcohol Injection in the system. When flow drops below the unit's set point, the fault trigger will go to a high state of 12 volts. This trigger can be used to signal the following:

- To reduce timing with an ignition/timing controller such as an MSD or other after market ignition enhancer (see applications below).
- Aftermarket engine computer. See your ECU instruction manual to set up the triggering of a less aggressive "tune".
- A solenoid to be used with turbo vehicles equipped with an after market boost controller. In the event the IFS-10 activates, the solenoid will open, allowing full boost pressure to the turbo waste gates. This will limit the maximum boost pressure of the turbo to that set by the waste gate springs.
- A relay to be used with turbo engines equipped with a stock boost control bleeder valve. In the event the IFS-10 activates, the relay will open to disable the bleeder valve, allowing full boost pressure to the turbo waste gates. This will limit the maximum boost pressure of the turbo to that set by the waste gate springs.
- A solenoid and anti-surge valve for super charged vehicles. In the event the IFS-10 activates, the solenoid will close and divert boost from the anti-surge valve. This will cause the valve to open and limit max boost.

Operating Characteristics

Characteristic	Min	Typ.	Max	Units
Operating Temperature	0	----	105	deg C
Supply Voltage	9	13.8	16	Vdc
Trigger Drive Current	----	1	1.5	Amps
Flow Range	100	----	2500	ml/min
Output Trigger	1.25	----	12.5	Vdc

Adjustable Trigger

The IFS-10 unit has a user adjustable Trigger that can be used to set the flow point at which the +12v signal is activated. The adjustment dial is located on the back of the IFS-10 unit next to the electrical connector. The recommended starting point is one half of total nozzle flow rating. For example, if using a 375ml/min nozzle set the Trip Point around 187ml/min. If using two 375ml/min nozzles for a total of 750 nozzle flow, set the trip point to 375.

Flow Output Signal

The IFS-10 will output a 0-5volt signal that is proportional to the flow of fluid measured by the unit. The output signal is equal to 0.1 volts for every 100ml/min of fluid flow. Note this is a low current output and not intended to drive any external device such as a relay or solenoid. Connection of the Flow Output Signal to non-recommended devices can result in an error of the flow reading.

Limited Warranty

Labonte MotorSports Warranties this product to be free from defects in materials or workmanship for one year from the date of purchase. Within this period, Labonte MotorSports will at its sole option repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labor, provided that the customer shall be responsible for any transportation costs. This warranty does not cover failures due to abuse, misuse, accident or unauthorized alteration or repairs.

THIS WARRANTIES AND REMEDIES CONTAINED HEREIN ARE EXCLUSIVE AN IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED OR STATUTORY, INCLUDING ANY LIABILITY ARISING UNDER ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, WHICH MAY VARY FROM STATE TO STATE.

IN NO EVENT SHALL LABONTE MOTORSPORTS BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE, OR INABILITY TO USE THIS PRODUCT OR FROM DEFECTS IN THE PRODUCT. Some states do not allow the exclusion of incidental or consequential damages, so the above limitations may not apply to you.

Labonte MotorSports retains the exclusive right to repair or replace the unit or software or offer a full refund of the purchase price at its sole discretion. SUCH REMEDY SHALL BE YOUR SOLE AND EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY.

To obtain warranty service, contact Labonte MotorSports for shipping instructions and an RMA tracking number. The unit should be securely packed with the tracking number clearly written on the outside of the package. The unit should then be sent, freight charges paid, to Labonte MotorSports. A copy of the original sales receipt is required as the proof of purchase for warranty repairs.

Online Auction Purchases:

Products sold through online auctions are not eligible for rebates or other special offers from Labonte MotorSports. Online auction confirmations are not acceptable for warranty verification. To obtain warranty service, an original or copy of the sales receipt from the original retailer is required. Labonte MotorSports will not replace missing components from any package purchased though an online auction.

The unit has no user-serviceable parts. Should you ever encounter a problem with your unit contact Labonte MotorSports for repairs.

The unit is fastened shut with screws. Any attempt to open the case to change or modify the unit in any way will void your warranty and may result in permanent damage to the equipment.

Application Index

Turbo	Part #	Description	Function	SI Connection	Notes
	SNOW - 30100	Aftermarket Boost Controller	Lowers Max Boost psi	NC Solenoid	IFS-10 opens solenoid to limit boost to max wastegate psi.
	SNOW - 30200	Stock boost bleeder solenoid	Lowers Max Boost psi	Normally Closed Relay	NC relay opens electrical connection of stock solenoid to limit boost to max wastegate psi.

Aftermarket ECU	Description	Function	SI Connection	Notes
	AEM	Retard timing or lower boost	NOS Solinoid Input trigger.	IFS-10 sends signal to input of aftermarket ECU. User defined safety settings.

SuperCharger	Part #	Description	Function	SI Connection	Notes
	SNOW - 30300	Centrifugal	Lowers Max Boost psi	Solenoid	IFS-10 enables solenoid that allows boost to open Bosch BOV which limits max boost psi.
	SNOW - 30100	03-04 SVT Cobra Mustang, Ford Lightning Truck	Lowers Max Boost psi	NC Solenoid	IFS-10 enables solenoid to allow vacuum to stock boost by-pass actuator.

MSD	Part #	Description	Retard Function	SI Connection	Notes
	MSD-6520	Digital-6 Plus Ignition	Single Stage Retard	Pink Wire	0.1 - 9.9 Deg retard adjustable
	MSD-7535	Digital-7 Plus Ignition	Three Stage Retard		0.1 - 15 Deg retard adjustable
	MSD-8982	Start/Retard Control		Violet Wire	10deg (factory) or 25deg
	MSD-8975	Digital Retard Control	Multi Stage Retard	4 wire	Relay and remove from ground to enable retard
	MSD-8970	3-Stage Retard	3 Stage Retard	3 wire	Relay and remove from ground to enable retard
	MSD-6200	6A	Requires 8980		
	MSD-6420	6AL	Requires 8980		
	MSD-6462	6BTM	Manual Nob / Boost psi		
	MSD-8980	Timing Controller	Single Stage Retard	Gray & Black	IFS-10 drives NC relay, Open circuit activates retard

Mallory	Part #	Description	Function	SI Connection	Notes
	MAA-685	HyFire VI-A ignition	Single Stage Retard	Yellow Wire	0.1 - 15 deg retard adjustable
	MAA-678	HyFire 7C	Four Stage Retard	RET1 to RET4	0.1 - 15 deg retard adjustable

Accel	Part #	Description	Function	SI Connection	Notes
	ACC-49500	500+	4 stage Retard		0.1 - 20 deg retard adjustable
	ACC-49375	375+	Single Stage	Yellow wire	0.1 - 15 deg retard adjustable
	ACC-49355	Timing Retard Module		Gray wire	SI drives relay to ground gray wire

Crane	Part #	Description	Function	SI Connection	Notes
	CRN-6000-6446	TRC-2	Single Stage		0 - 20 deg retard adjustable



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