

***FuelTech***



OWNER'S MANUAL

***WIRING HARNESS***  
***LS550***



## 1. Index

2.	Presentation .....	4
3.	Warnings and Warranty Terms .....	5
4.	Overview .....	6
5.	Labels .....	7
6.	Diagrams .....	8
	6.1 FT550 A connector - Inputs/outputs .....	8
	6.2 FT550 B connector - Inputs/outputs .....	9
	6.3 Nano WB O2 #1 .....	11
	6.4 Nano WB O2 #2 .....	11
7.	Connectors .....	12
	7.1 Relay and Fuses .....	12
	7.2 Crank Trigger and Cam Sync sensor .....	12
	7.3 H2O and Air Temperature .....	12
	7.4 Oil and Fuel Pressure .....	13
	7.5 Flex Fuel Sensor .....	13
	7.6 Injectors .....	13
	7.7 Extra Connectors .....	13
	7.8 TPS .....	14
	7.9 Electronic throttle body (Drive-by-wire) .....	14
	7.10 Signal Outputs to stock ECU .....	15
	7.11 Coils connectors .....	15
8.	Standard Sensors .....	16
	8.1 Fuel and Oil Pressure .....	16
	8.2 Intake Air Temperature .....	16
	8.3 Engine Temperature .....	16
	8.4 Flex fuel sensor .....	16
	8.5 Bosch LSU 4.2 Wideband O2 Sensor .....	17
9.	O2 Reading .....	17
	9.1 FuelTech WB-O2 Nano .....	17
10.	Peak and Hold - External Injector Driver .....	17
11.	Troubleshooting .....	18
12.	FuelTech Latest Manuals and Software .....	18

## 2. Presentation

The FuelTech LS Wiring Harness is the perfect link between the FuelTech FT550 ECU and all sensors and actuators in a LS engine.

The harness has all the components needed to make a plug and play installation on a LS engine. It has all the relays and fuses needed for the system on a standard setup, a firewall grommet to hold and seal the harness and every connector has its own label.

The insulation and connectors are humidity, heat and moisture resistant.

### Specifications:

- 8 injector outputs (EV1 (Jeetronic/Minitimer)
- Coil outputs: The harness is ready for OEM LS3 coils
- Coils are setup in SEQUENTIAL mode
- 2 FuelTech Peak and Hold external drivers ready
- Connectors for both 58x and 24x crank triggers (only one is used)
  - 24x sensor connector for SKU: 12560228 sensors
  - 58x sensor connector for SKU: 12585546 sensors
- Connectors for both front and rear cam sync sensors (only one is used) - \* CAM GEAR MUST BE SINGLE TOOTH ON 24X APPLICATIONS (USE LS2 STYLE GEAR: PN 12576407). In case of using the 58X crank trigger it is compatible with either single tooth or 4 tooth cam gear.
  - *Front cam sensor: AC Delco*

12591720

- *Rear cam sensor: AC Delco*

12561211

- Connectors for stock electronic throttle body (88mm to 90mm) and pedal (drive by wire) and cable throttle (GM TPS – round 3-wire Connector)
- PEDAL: 2005 to 2013 Corvette style - GM 25835421
- TPS connector
  - LS2 90mm - GM 12570790
  - LS7 90mm - GM 12605109
  - LSA/LS9 88mm - GM 12629992
- Dual FuelTech WB-Nano O2 ready
- Dual Bosch wideband O2 sensor ready
- GM Style intake air temperature sensor ready
- GM Style engine temperature sensor ready
- GM Style Flex Fuel sensor ready (sensor 5005100353 is sold separately)
- 2 pressure sensor ready for fuel and oil 0-5V sensor (FuelTech PS150 connector)
- 3x high output relays with fuses
- Extra connector with 6 inputs and 8 outputs for generic use
- Grommet for firewall (58 mm / 2.25")

Dimensions (in package): 14" x 11" x 14"

Weight for LS HARNESS: 8 lbs 3oz

## 3. Warnings and Warranty Terms

**The use of this equipment implies in total accordance with the terms described in this manual and exempts the manufacturer from any responsibility regarding to product misuse.**

Read all the information in this manual before starting the product installation.

**This product must be installed and tuned by specialized auto shops and/or personnel with experience on engine tuning.**

Before starting any electrical installation, disconnect the battery.

The inobservance of any of the warnings or precautions described in this manual might cause engine damage and lead to the invalidation of this products warranty. The improper adjustment of the product might cause engine damage.

This product does not have a certification for the use on aircrafts or any flying vehicles, as it was not designed for such use or purpose. In some countries where an annual inspection of vehicles is enforced, no modification in the OEM ECU is permitted. Be informed about local laws and regulations prior to the product installation.

### Limited Warranty

All products manufactured by FUELTECH are warranted to be free from defects in material and workmanship for one year following the date of original purchase. Warranty claim must be made by original owner with proof of purchase from an authorized reseller. This

warranty does not include sensors or other products that FUELTECH carries but did not manufacture. If a product is found defective, such products will, at FUELTECH's option, be replaced or repaired at no cost. All products alleged by Purchaser to be defective must be returned to FUELTECH, postage prepaid, within the one year warranty period.

This limited warranty does not cover labor or other costs or expenses incidental to the repair and/or replacement of products or parts. This limited warranty does not apply to any product which has been subject to misuse, mishandling, misapplication, neglect (including but not limited to improper maintenance), accident, improper installation, tampered seal, modification (including but not limited to use of unauthorized parts or attachments), or adjustment or repair performed by anyone other than FUELTECH.

The parties hereto expressly agree that the purchaser's sole and exclusive remedy against FUELTECH shall be for the repair or replacement of the defective product as provided in this limited warranty. This exclusive remedy shall not be deemed to have failed of its essential purpose so long as FUELTECH is willing and able to repair or replace defective goods.

FUELTECH reserves the right to request additional information such as, but not limited to, tune up and log files in order to evaluate a claim.

Seal violation voids warranty and renders loss of access to update releases.

Manual version 1.1 – May/2020

## 4. Overview

The FuelTech LS Wiring Harness is a complete plug n' play wiring solution to be used with a FuelTech FT550 ECU. It is designed for systems with 8 staged injectors, 8 individual LS3 coils and FuelTech Dual Nano O2 to run sequential, semi-sequential or multipoint injection. It is already wired for 2 FuelTech Peak and Hold drivers for setups utilizing low impedance injectors. When using high impedance injectors, Peak and Holds are not needed. In this case two jumper harness 2001000071 (sold separately) is required.

The harness is a single piece with a rubber grommet (hole 58 mm / 2.25"). You will find the connections to all the units, the wires for power supply (+12V to battery, ground and power ground to battery and switched +12V input), relays and fuses. Check below to see all of the connectors and where they are connected:

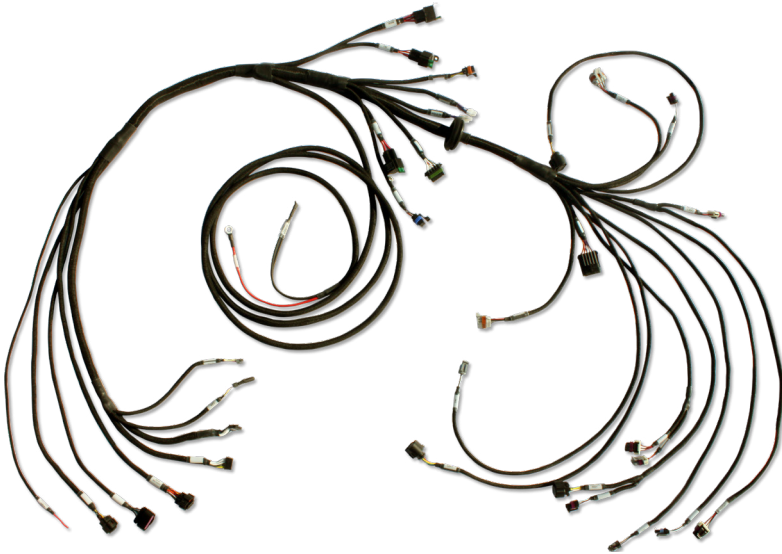
- **FuelTech FT550 main and auxiliary:** Direct connection to FT550, both connectors must be securely installed.
- **CAN A:** 4 way connector in the harness close to the ECU in order to allow CAN communication with the Wideband Nano and other CAN products.
- **CAN B:** Deutsch connector in the harness close to the ECU to allow a second CAN communication with a different protocol. Usually CAN B is used to communicate with stock GM CAN or other equipments.
- **2x FuelTech Peak and Hold:** These are the driver boxes needed to fire low impedance injectors. When the system uses high impedance injectors, two jumper harnesses are required 2001000071 (sold separately). If the Peak and Hold or the jumper wires are not being used, the injectors will not fire.
- **FuelTech Dual WB-O2 Nano:** This

connector goes to the FuelTech WB-O2 Nano unit. On the engine side, there is a connector for the wide band O2 sensor 3022000965 (sold separately).

- **3x 40A Relay:** The system has 3 relays to power everything. The Main Relay powers the ECU, WB-O2 Nano and all the sensors. There's a second relay that powers the Peak and Hold drivers and the injectors. Also, there's a third relay that powers the coils.
- **Switched +12V wire:** This wire comes from the ignition switch and it turns the main relay on.
- **Power ground, battery ground and battery positive:** These wires are the system power supply and must be connected exactly as the following: Battery (+) goes straight to the battery's positive or kill switch. Battery (-) and power ground **MUST BE CONNECTED** to the battery's negative terminal.
- **Throttle position sensor:** The TPS measures the throttle position. The LS harness has a 3-way Metri-Pack connector and almost any 0-5V TPS can be used or Electronic throttle body (drive-by-wire) (GM 25835421 - Corvette Style)
- **Fuel pressure sensor:** This input can be used to read fuel pressure using a FuelTech PS sensor or SSI P51 Packard sensor.
- **Oil pressure sensor:** This input can be used to read oil pressure using a FuelTech PS sensor or SSI P51 Packard sensor.
- **Crank trigger sensor (Hall effect):** LS harness is ready for both 58x and 24x OEM Hall Effect sensors.
- **Cam sync sensor (Hall effect):** LS Harness is ready for both front and rear cam sync OEM Hall Effect sensors **MUST BE SINGLE TOOTH ON 24X APPLICATIONS.** (USE CAM GEAR

#12576407)

- **Flex Fuel Sensor:** GM style Flex fuel sensor ready (sensor 5005100353 sold separately).
- **Engine temperature sensor:** Ready for GM style CLT sensor.
- **Intake air temperature sensor:** Ready for GM style IAT sensor.
- **2x Bosch wideband sensors:** This harness is ready to use a Bosch LSU 4,2 Wideband Sensor.
- **8x fuel injectors outputs:** 8 injectors outputs (EV1 or EV6/EV14 or Nippon Denso) which allows sequential fuel injection and individual fuel cylinder trim.



## 5. Labels

All connectors have proper labels for easy identification. It is labeled by color and description name. The colors are related to its functions:

**Green** – The green labels are related to the RPM sensors (Crank Trigger and Cam Sync);

**Yellow** – Input sensors such as TPS, Engine Temp, Air temp, Fuel Pressure, Oil Pressure, Back Pressure or any other 0-5V sensor, CAN port;

**Blue** – Exclusively to O2 sensors (NTK or Bosch);

**White** – FT550 Aux connector, Nano connector, Extra Outputs, Extra Inputs, Signals outputs to stock ECU and coils connectors;

**Purple** – Peak and Hold and fuel injectors (Primary bank);

**Black** – FT550, A and B connector, Battery (-), Power Ground;

**Red** – Battery (+), Main and Injectors relays/fuses, 12V switch;

## 6. Diagrams

### 6.1 FT550 A connector - Inputs/outputs

From		To			
ConneC	Pin	Wire color	Connector	Pin	Function
FT550 A	#1	Blue #1	PH Odd cyl	#4	Injector #1
FT550 A	#2	Blue #2	PH Even cyl	#4	Injector #2
FT550 A	#3	Blue #3	PH Odd cyl	#2	Injector #3
FT550 A	#4	Blue #4	PH Even cyl	#2	Injector #4
FT550 A	#5	Blue #5	PH Odd cyl	#5	Injector #5
FT550 A	#6	Blue #6	PH Even cyl	#5	Injector #6
FT550 A	#7	Black	Ground	(-) Battery ring	Power Ground
FT550 A	#8	Gray	Coil Cyl #1	C	Ignition output #1
FT550 A	#9	Gray	Coil Cyl #2	C	Ignition output #2
FT550 A	#10	Gray	Coil Cyl #3	C	Ignition output #3
FT550 A	#11	Gray	Coil Cyl #4	C	Ignition output #4
FT550 A	#12	Black	Signal Ground	(-) Battery ring	Sensor ground
FT550 A	#13	Red	Main relay/Extra Input/12V sensors	(87/K)	Switched 12V
FT550 A	#14	Green/Red	5V (Thr. Body/Acc/Fuel/Oil/TPS)	(C/C and D/B/B/A)	5V for sensors
FT550 A	#15	Yellow/Blue	CAN A Low/CAN Low WB Nano	3/12	CAN A
FT550 A	#16	White/Red	CAN A HI/CAN HI WB Nano	4/6	CAN A
FT550 A	#17	White	S. Outputs (purple) /CAM Rear/ CAM Front	E/A/C	CAM sync input
FT550 A	#18	White	-		
FT550 A	#19	White	Crank sensor/Signal Outputs	A/F	CRANK input
FT550 A	#20	White #1	Flex Fuel	#1	Flex Fuel input
FT550 A	#21	White #2	Extra input	B	Available input
FT550 A	#22	White #3	TPS/Throttle body	C/F	TPS input
FT550 A	#23	White #4	Oil Pressure	C	Oil Pressure input
		Brown	Signal Outputs	D	Signal Output
FT550 A	#24	White #5	H2O	B	Coolant temp input
		Blue	Signal Outputs	C	Signal Outputs
FT550 A	#25	White #6	Fuel Pressure	C	Fuel Pressure input
			Extra inputs	C	Extra input
FT550 A	#26	White	Air Temperature	B	Air temp input

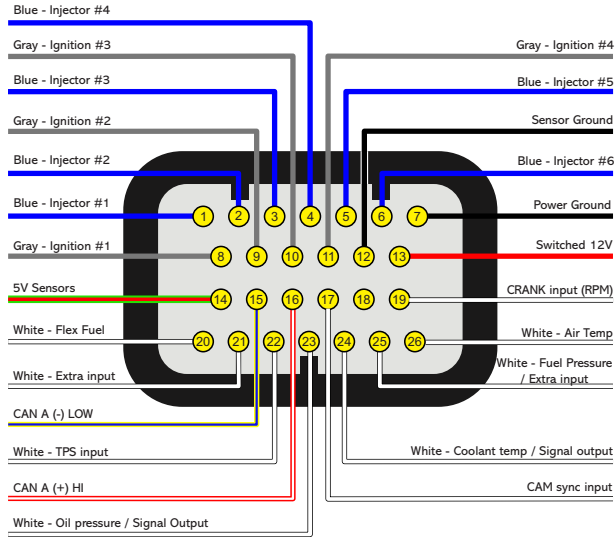


## 6.2 FT550 B connector - Inputs/outputs

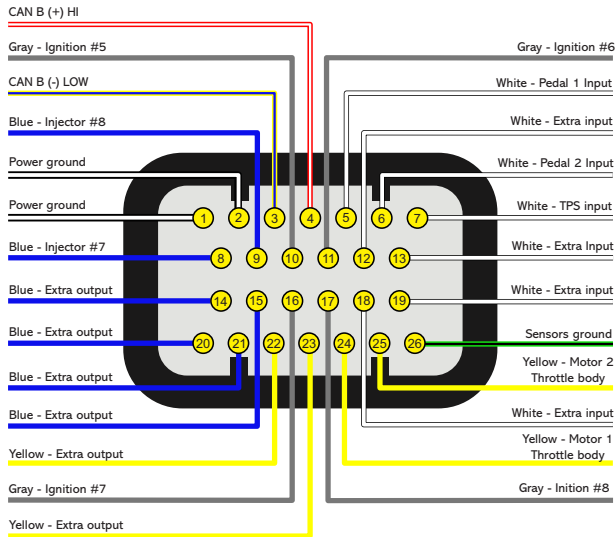
From		To			
Connector	Pin	Wire color	Connector	Pin	Function
FT550 B	#1	Black/ White	Power Ground	(-) Battery ring	Power Ground
FT550 B	#2	Black/ White	Power Ground	(-) Battery ring	Power Ground
FT550 B	#3	Yellow/ Blue	CAN B Low	A	CAN B Communication
FT550 B	#4	White/Red	CAN B HI	B	CAN B Communication
FT550 B	#5	White #8	Accelerator Pedal/Signal Outputs Yellow	E/A	Pedal 1 Input
FT550 B	#6	White #9	Accelerator Pedal/Signal Outputs Red	B/B	Pedal 2 Input
FT550 B	#7	White #10	Throttle Body	D	TPS Input
FT550 B	#8	Blue #7	Peak and Hold Odd	#1	Injector #7
FT550 B	#9	Blue #8	Peak and Hold Even	#1	Injector #8
FT550 B	#10	Gray #5	Coil cylinder #5	C	Ignition output #5
FT550 B	#11	Gray #6	Coil cylinder #6	C	Ignition output #6
FT550 B	#12	White #11	Extra Input	F	Available Input
FT550 B	#13	White #12	Extra Input	G	Available Input
FT550 B	#14	Blue #9	Extra Blue Output	A	Available Output
FT550 B	#15	Blue #10	Extra Blue Output	B	Available Output
FT550 B	#16	Gray #7	Coil cylinder #7	C	Ignition output #7
FT550 B	#17	Gray #8	Coil cylinder #8	C	Ignition output #8
FT550 B	#18	White #13	Extra Input	H	Available Input
FT550 B	#19	White #14	Extra Input	J	Available Input
FT550 B	#20	Blue #11	Extra Blue Output	C	Available Output
FT550 B	#21	Blue #12	Extra Blue Output	D	Available Output
FT550 B	#22	Yellow #1	Extra Yellow Output	H	Available Output
FT550 B	#23	Yellow #2	Extra Yellow Output	G	Available Output
FT550 B	#24	Yellow #3	Extra Yellow Output/Throttle Body	F/B	Motor 1 Throttle Body
FT550 B	#25	Yellow #4	Extra Yellow Output/Throttle Body	E/A	Motor 2 Throttle Body
FT550 B	#26	Green/ Black	Sensor Grounds	-	Sensor Ground

# LS550 V8 Complete Harness

## A Connector Diagram



## B Connector Diagram



## 6.3 Nano WB O2 #1

From		To			
Connector	Pin	Wire color	Connector	Pin	Function
Nano WB O2 #1	#1	Red	O2 Sensor left	#6	IP+
Nano WB O2 #1	#2	Yellow	O2 Sensor left	#5	VS-
Nano WB O2 #1	#3	Brown	O2 Sensor left	#1	VS+
Nano WB O2 #1	#4	Red	Main relay	87	Switched +12V from relay
Nano WB O2 #1	#5	Yellow/Red	-	-	
Nano WB O2 #1	#6	White/Red	CAN male/female	#4	CAN HI
Nano WB O2 #1	#7	Orange	O2 Sensor left	#2	IA
Nano WB O2 #1	#8	Green	O2 Sensor left	#3	H+
Nano WB O2 #1	#9	Blue	O2 Sensor left	#4	H-
Nano WB O2 #1	#10	Black/White	Power ground	-	Power ground
Nano WB O2 #1	#11	Black	Signal ground	-	Signal ground
Nano WB O2 #1	#12	Yellow/Blue	CAN male/female	#3	CAN LO

## 6.4 Nano WB O2 #2

From		To			
Connector	Pin	Wire color	Connector	Pin	Function
Nano WB O2 #2	#1	Red	O2 Sensor right	#6	IP+
Nano WB O2 #2	#2	Yellow	O2 Sensor right	#5	VS-
Nano WB O2 #2	#3	Brown	O2 Sensor right	#1	VS+
Nano WB O2 #2	#4	Red	Relay	87	Switched +12V from relay
Nano WB O2 #2	#5	Yellow/Red	-	-	
Nano WB O2 #2	#6	White/Red	CAN male/female	#4	CAN HI
Nano WB O2 #2	#7	Orange	O2 Sensor right	#2	IA
Nano WB O2 #2	#8	Green	O2 Sensor right	#3	H+
Nano WB O2 #2	#9	Blue	O2 Sensor right	#4	H-
Nano WB O2 #2	#10	Black/White	Power ground	-	Power ground
Nano WB O2 #2	#11	Black	Signal ground	-	Signal ground
Nano WB O2 #2	#12	Yellow/Blue	CAN male/female	#3	CAN LO

## 7. Connectors

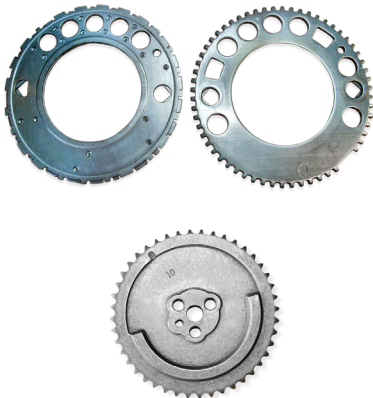
### 7.1 Relay and Fuses

All relays available in the LS Harness are fuse protected. Their max current is 30A. There is a main relay for the FuelTech units such as ECU, O2 conditioner, one relay for the injectors and another relay for the coils.



### 7.2 Crank Trigger and Cam Sync sensor

The LS harness is ready to run on OEM 58x or 24x hall effect sensor crank trigger and OEM front and rear cam sync sensors.



#### Crank Trigger

OEM crank trigger should be plug and play. There are two 3-way Metri-Pack 150. For 24X for sensor SKU: 12560228 and 58X for sensor SKU: 12585546

Sensor	Sensor pin/wire	Harness wire
24X and 58X	A	Red wire from 2-core shielded cable
	B	Battery's negative
	C	Switched 12V

#### Cam Sync sensor

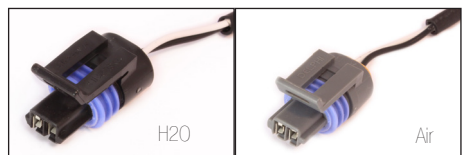
OEM cam sync sensor should be plug and play. There are two 3-way Metri-Pack 150 for either front (12591720) or rear (12561211) camshaft sensors.

Sensor	Sensor Pin/Wire	Harness wire
Front cam sync sensor	A	Switched 12V
	B	Battery's negative
	C	Black wire from 1-core shielded cable
Rear cam sync sensor	A	Black wire from 1-core shielded cable
	B	Battery's negative
	C	Switched 12V

### 7.3 H2O and Air Temperature

The LS Wiring Harness has 2 temperature inputs. One input is for the engine coolant temperature (H2O) and the other one is for the intake air temperature (AIR). Both sensors are GM style and uses Metri-Pack 150.2-way connectors.

- Pin A: signal output;
- Pin B: battery's negative.



## 7.4 Oil and Fuel Pressure

The oil and fuel pressure sensor connector are designed for the PS-150, PS-300 and PS-1500 sensors; ranging from 150 to 1500 psi, with a Packard style 3-way connector. It has 5V, sensor ground and signal wires.

- Pin A: battery's negative (black);
- Pin B: 5V supply (green/red);
- Pin C: signal output (white).



## 7.5 Flex Fuel Sensor

The LS harness is compatible with GM Style Flex Fuel sensor (5005100353 sold separately). It will provide ethanol content and fuel temperature to the ECU, allowing to use Flex Fuel compensations.

- Pin 1: Switched +12V
- Pin 2: Sensor Ground
- Pin 3: Signal output



## 7.6 Injectors

The LS Wiring Harness has 8 injector outputs available (primary bank). The injector connectors are available in 3 options:

- EV1
- EV6/14
- Nippon Denso

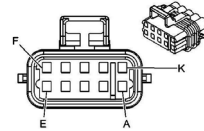
All options are ready for sequential fuel injection, allowing individual fuel cylinder trim.

## 7.7 Extra Connectors

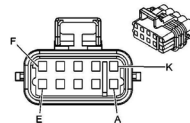
There are two extra connectors with spare inputs and outputs. The extra outputs connector has 8 outputs (4 yellow + 4 blue). Mating connector sold separately (FT 5011100092).

The extra inputs connector has 6 generic inputs (white), plus a 5V output, a switched +12V and a signal ground. Mating connector sold separately (FT 5011100093).

Extra Outputs Pinout		
Pin	FT550 Outputs	Function/Sensor
A	Blue #9	
B	Blue #10	
C	Blue #11	
D	Blue #12	
E	Yellow #4	
F	Yellow #3	
G	Yellow #2	
H	Yellow #1	

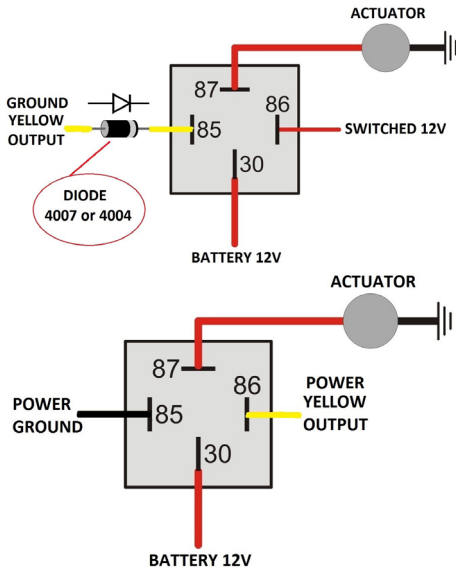


Extra Inputs Pinout		
Pin	FT550 Outputs	Function/Sensor
A	No used	
B	White #2	
C	White #6	
D	Signal ground	
E	5V supply	
F	White #11	
G	White #12	
H	White #13	
J	White #14	
K	Switched +12V	



# LS550 V8 Complete Harness

Both ways of wiring the extra outputs are described in the following diagrams:



There are some relays with a built-in diode, like Hella 003437101.



**NOTE**  
 This Harness is compatible with Cable throttle using a TPS or Electronic Throttle body.

## 7.8 TPS

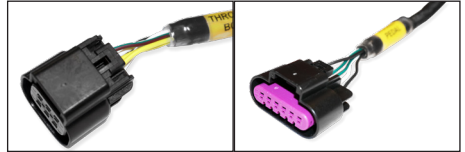
TPS is a potentiometer that informs the throttle position. FT550 can read almost any 0-5V TPS. The LS harness uses a 3-way Metri-pack 150.

- Pin A: 5V Supply (green/red);
- Pin B: signal ground (black);
- Pin C: signal output (white).



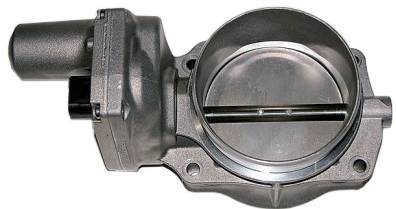
## 7.9 Electronic throttle body (Drive-by-wire)

The LS harness also has plug and play connections for the OEM electronic throttle body and pedal. The connections are:



Electronic throttle body	
A	Motor 1 – Yellow #4
B	Motor 2 – Yellow #3
C	5V supply – Green/red
D	TPS #2 – White #10
E	Signal ground – Black
F	TPS #1 – White #3

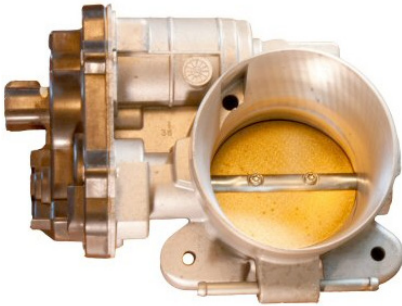
Electronic pedal	
A	Signal ground – Black
B	Pedal #1 – White #9
C	5V supply – Green/red
D	5V supply – Green/red
E	Pedal #2 – White #5
F	Signal ground – Black



LS2 90mm - GM #12570790



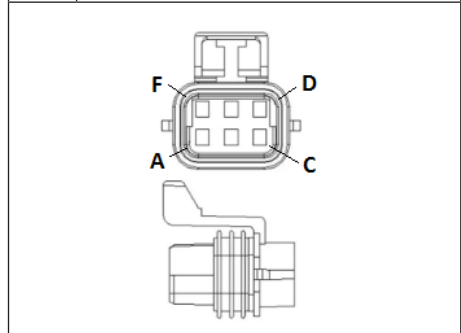
LS7 90mm - GM #12605109



LSA/LS9 88mm - GM #12629992



Pin	Outputs
A	Pedal1
B	Pedal2
C	Coolant Temp
D	Oil Pressure
E	Camshaft signal
F	Crank signal



## Pedal – 2005 to 2013 Corvette Style – GM 25835421



## 7.10 Signal Outputs to stock ECU

The LS Harness has a output connector that shares the signal from the sensors between the FT550 and the stock ECU, the mating connector to wire to the stock ECU is sold separately FuelTech part number: 5011100386.



**NOTE**  
When temperature sensors are shared, the voltage pull-up on the FuelTech ECU must be disabled.

## 7.11 Coils connectors

The LS550 harness is designed to use stock LS3 model coils. Coil connectors have labels indicated each cylinder.



## 8. Standard Sensors

### 8.1 Fuel and Oil Pressure

FuelTech PS-150/300/1500 is a high precision sensor responsible for general pressure readings (fuel, oil, boost, exhaust back pressure, etc.)

It can be purchased Online at [www.fueltech.net](http://www.fueltech.net) or from an authorized FuelTech dealer (check the website to locate the dealer nearest to you).

FuelTech PS-150/300/1500 sensor below:

- Connection: 1/8" - 27NPT
- Pressure Range: 0 to 150/300/500/1500/3000psi
- Power Voltage: 5V
- Output Scale: 0.5-4.5V
- Electric Connector: 3-way Metri-pack 150
  - Pin A: Battery's Negative
  - Pin B: 5V supply
  - Pin C: Output signal



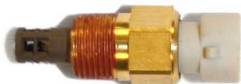
FuelTech part numbers:

- 5005100020 - 0-150 psi sensor
- 5005100021 - 0-300 psi sensor
- 5005100217 - 0-500 psi sensor
- 5005100022 - 0-1500 psi sensor
- 5005100220 - 0-3000 psi sensor

### 8.2 Intake Air Temperature

With this sensor, the ECU can monitor the intake air temperature and perform real time compensations. One of its pins is connected to the battery negative, the other to the white #7 wire.

Part numbers: FuelTech 5005100015 or GM 25036751



### 8.3 Engine Temperature

This sensor is very important for a good running engine, as varying engine temperatures dramatically affect an engine's fuel and timing requirements.

Place this sensor near the engine head, reading the engine coolant temperature.

Part numbers: FuelTech 5005100016 or GM 12146312



### 8.4 Flex fuel sensor

GM Style Flex Fuel sensor to read ethanol percentage and fuel temperature, apply FuelTech Flex Fuel compensations FuelTech 5005100353.





## 8.5 Bosch LSU 4.2 Wideband O2 Sensor

Bosch LSU 4.2 is a pretty popular wideband O2 sensor used with the WB-O2 Nano.

Part numbers: FuelTech 3022000965.



## 9. O2 Reading

### 9.1 FuelTech WB-O2 Nano

There are dual FuelTech WB-O2 Nano connectors built into the harness. Each WB-O2 Nano has one connector with 12-way Molex MX120G connector. FuelTech WB-O2 Nano does not require free-air calibration. For further information, check FuelTech WB-O2 Nano manual FuelTech 3010003841.



## 10. Peak and Hold - External Injector Driver

Peak and Hold drivers are designed to control the current on low impedance injectors and they are not needed when using high impedance injectors.

The FuelTech Peak and Hold has 4 outputs and in the LS Wiring Harness will run one injector per

channel. There are 3 different versions of Peak and Hold available to fire different injectors, according to the resistance of the injector. The only differences between the versions are the peak current and the hold current.

Considering one injector per channel application:

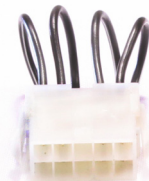
2A/0.5A – Bosch 1600cc, Ford Racing 1600cc

4A/1A – Siemens Deka 225lb/h, Precision 225lb/h

8A/2A – Precision 550lb/h, Billet Atomizer, Moran

Some earlier Moran injectors require a 4A/1A driver. Contact FuelTech tech support to confirm correct Peak and Hold drivers before purchasing.

When using high impedance injectors without Peak and Hold drivers, jumper wires (sold separately, part number 2001000071) must be connected to the Peak and Hold Connectors in the harness. If the jumper wires are not being used then the injectors won't fire since there will be no continuity between the FT550 and injectors.



## 11. Troubleshooting

Issue	Solution
FT550 Unit doesn't turn on	1. Check battery voltage
	2. Check power and ground cables
	3. Check Switched 12V cable
	4. Check ECU harness cables
FT550 doesn't read cranking	1. Check crank trigger and cam sync connections
	2. Check sensor gap
	3. Check diagnostic panel for RPM signal
FT550 reads RPM but engine doesn't start	1. Check if there is spark and injector pulse
	2. Check fuel pressure
	3. Check crank trigger alignment and TPS calibration
	4. Check if outputs are activated and properly configured
	5. Check the O2 sensor reading
Engine runs but doesn't idle	1. Check TPS calibration
	2. Check timing with a timing light
	3. Check TPS idle table and adjustment
	4. Check O2 sensor reading
Engine spits & sputters	1. Check O2 sensor reading
	2. Check ignition calibration and firing order
ECU won't communicate to PC	1. Ensure your software version is compatible with your FT550 firmware version
	2. Check if read and write buttons get colored when FT550 is connected

## 12. FuelTech Latest Manuals and Software

You can access all updated manuals and software at the FuelTech website:

[www.fueltech.net/manuals](http://www.fueltech.net/manuals)

[www.fueltech.net/software](http://www.fueltech.net/software)



***FuelTech***

455 Wilbanks Dr.  
Ball Ground, GA, 30107, USA

Phone: +1 678-493-3835  
Toll Free: +1 855-595-3835

E-mail: [info@FuelTech.net](mailto:info@FuelTech.net)  
[www.FuelTech.net](http://www.FuelTech.net)

 FuelTechUSA