

voltage to the injector and measure minimum pulse width at which the injectors will flow for a particular voltage. This is the required dead-time for that injector at that tested voltage.

To determine injector dead-time on a running engine, with the engine fully warmed and operating at stable air/fuel ratios (a very precise AFR meter is required – a narrow band O2 sensor will not suffice), electrical drain needs to be applied to the system; the preferred method is disconnecting the alternator main fuse. Battery load testers are also useful here too.

Watching the air fuel ratios change while the battery voltage drops, the dead-time table can be trimmed to maintain the same stable air/fuel ratio. Injector dead-time can be viewed as a row graph. A smooth curve needs to be maintained at all times.

NOTE: any change to the fuel pressure or injectors will require a recalibration of the injector dead-times.

Master

Master should be set so that the numbers in the middle of the fuel table end up around a value of 50. This is to allow sufficient span of the numbers in the main fuel table.

1.8 Pinouts

Pin information is provided to assist when troubleshooting. All pinouts are looking into the ECU (wire side).

1.8.1 S13Link

101	102	103	104	105	106	107	108	1	2	3	4	5	6	7	8	9	10		21	22	23	24	25	26	27	28	29	30	41	42	43	44	45	46	47	48	49	50
109	110	111	112	113	114	115	116	11	12	13	14	15	16	17	18	19	20		31	32	33	34	35	36	37	38	39	40	51	52	53	54	55	56	57	58	59	60
Pin		ECU Pin		Function				Pin		ECU Pin		Function																										
101		Injector 1		Injection				31		nc																												
102		nc						32		Aux 7		CE Light (S14 SR20DET)																										
103		Injector 3		Injection				33		Aux 8		Cat Light / Engine Fan (High) (S14 SR20DET)																										
104		nc						34		DI 1		Power Steer Switch (S14 SR20DET)																										
105		nc						35		An Volt 2		MAP (Factory Sensor) (S14 SR20DET)																										
106		Injector 5 (Aux)		ISC Solenoid				36		nc																												
107		Ground						37		nc																												
108		Ground						38		An Volt 5		TPS																										
109		+12V constant		ISC Flywheeling				39		nc																												
110		Injector 2		Injection				40		nc																												
111		nc						41		Trig 2		Trig 2																										
112		Injector 4		Injection				42		Trig 1		Trig 1																										
113		Aux 5		VTC Cam Solenoid (S14 SR20DET)				43		DI 3		Start Signal																										
114		nc						44		nc																												
115		Ground (O2 Heater)						45		12V Ignition Sw Input		Control Pin 16																										
116		Ground						46		DI 4		A/C In																										
								47		nc																												
1		Ignition 1		Ignition				48		+5V Out																												
2		Ignition 2		Ignition				49		+14V ECCS Relay		ECU Power																										

3	Ignition 3	Ignition	50	Ground (Signal)	
4	Injector 5 (Aux)	ISC Solenoid	51	Trig 2	Trig 2
5	Aux 1	Boost Solenoid (S13 CA18DET Only)	52	Trig 1	Trig 1
6	Injector 6 (Aux)	A/C Out	53	DI 2	Vehicle Speed
7	Aux 2	Tacho	54	nc	
8	Aux 3	Intake Runner Control (S13 CA18DET)	55	An Temp 2	Factory IAT (some S13 CA18DET)
9	Injector 6 (Aux)	A/C Out	56	nc	
10	Ground		57	nc	
11	Ignition 3 or 4 (via J1)	Ignition	58	nc	
12	Ignition 4	Ignition	59	+14V ECCS Relay	ECU Power
13	nc		60	Ground (Signal)	
14	nc		On Board MAP	An Volt 3	MAP
15	nc		Expansion 1	Ground (Signal)	
16	ECCS Relay Control	Pulls to ground when Ign is on	Expansion 2	+5V Out	
17	nc		Expansion 3	DI 5	
18	Aux 4	Fuel Pump Relay	Expansion 4	DI 6	
19	Aux 3	Engine Fan (Low Speed) (S14 SR20DET)	Expansion 5	DI 7	
20	Ground		Expansion 6	An Volt 6	
21	nc		Expansion 7	An Temp 4	
22	nc		Expansion 8	An Temp 3	
23	Knock 1	Knock	Expansion 9	Ign 5	
24	nc	nc	Expansion 10	Ign 6	
25	Aux 6	Boost Solenoid (S14 SR20DET)	Expansion 11	Ign 7	
26	Ground (AFM)		Expansion 12	Ign 8	
27	An Volt 4	AFM Signal	Expansion 13	An Volt 8	
28	An Temp 1	ECT	Expansion 14	An Volt 9	
29	An Volt 1	Oxy Signal	Expansion 15	An Volt 10	
30	Ground (Signal)		Expansion 16	An Volt 11	

Note: Aux 3 is exposed on two pins (8 & 19) and has a different function depending on the vehicle.

Note: Injector Drives 7 and 8 aren't exposed and don't have the hardware required to drive Injectors.

1.9 CAN Information

The following CAN (Controller Area Network) information is provided:

1.9.1 S13Link

The G4X S13Link Plug-in ECU has two CAN buses. These CAN buses exist to support aftermarket CAN devices.

CAN bus 1 uses a 5 pin connector and is labeled on the ECU as 'CAN 1/RS232'.

If using this connector for CAN ensure the cable being used doesn't have Serial wires connected as this can act as an aerial and prevent USB communications from working.

CAN 1/RS232 Connector		
Pin	Function	Colour
1	Comms GND	Brown
2	CAN1 L	Green
3	CAN1 H	White
4	RS232-RX	Grey
5	RS232-TX	Yellow

CAN bus 2 uses a 5 pin connector and is labeled on the ECU as 'CAN 2/OBD'.

CAN 2/OBD Connector		
Pin	Function	Colour
1	GND	Brown
2	CAN2 L	Green
3	CAN2 H	White
4	NC	Grey
5	+14V	Yellow

To learn more about CAN see PCLink help.

1.10 Known Issues

All plug-in ECUs are fully tested on a range of relevant vehicles, although there are often variations that have not been tested. For this reason issues can arise.

WARNING: Always download the latest Installation Manual from linkecu.com and check the latest status of known issues before installing the ECU.

Please contact your nearest Link dealer when suspecting a compatibility issue.

1.10.1 S13Link

There are currently no known issues.