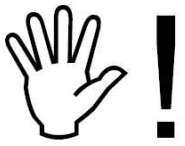
PERFORMANCE ELECTRONICS

Infinity 58X LS Engine Harness System User Manual 30-3801

THIS PRODUCT IS LEGAL IN CALIFORNIA FOR RACING VEHICLES ONLY AND SHOULD NEVER BE USED ON PUBLIC HIGHWAYS.

WARNING:



WARNING:
This installation is not for the tuning novice! Use this system with EXTREME caution! If you are not well versed in engine dynamics and the tuning of engine management systems DO NOT attempt the installation. Refer the installation to an AEM trained tuning shop. A list of AEM trained tuning shops is available at www.aemelectronics.com/dealer_locator.php or by calling 800-423-0046.

NOTE: All supplied AEM calibrations, Wizards and other tuning information are offered as potential starting points only. IT IS THE RESPONSIBILITY OF THE ENGINE TUNER TO ULTIMATELY CONFIRM THE CALIBRATION IS SAFE FOR ITS INTENDED USE. AEM holds no responsibility for any engine damage that results from the misuse or mistuning of this product!

AEM Performance Electronics
AEM Performance Electronics, 2205 126th Street Unit A, Hawthorne, CA 90250
Phone: (310) 484-2322 Fax: (310) 484-0152
http://www.aemelectronics.com
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Introduction

This Infinity Layover Harness was designed for the GM LS Engine 58x (manual transmission). The harness includes all standard GM (or equivalent) connectors for direct plug-in fitment, and requires minimal wiring to complete the Power Distribution Center (PDC) connections. The Infinity ECU is sold separately, and includes base configuration files for the GM LS Engines 58x.

Connector interface features include:

- 1 wire alternator
- Manifold Pressure Sensor
- Fuel Pressure Sensor
- Oil Pressure Sensor
- Air Temperature Sensor
- Coolant Temperature Sensor
- Drive By Wire Throttle Body
- Harness Flash
- Lambda (UEGO)
- Drive By Wire Accelerator Pedal
- 4 Wire GM Stepper IAC (Optional)
- Crank Position
- Cam Position
- 8x Injectors
- Bank1 and Bank2 Coils
- 2x Knock
- Power Distribution Center with 5 automotive relays (fuse protected), distributed coil and injector power, fuel pump power, fan power, accessory power

3801 Kit Contents

- Infinity 58X LS Engine Harness
- User Instructions

ECU Connectors

The Infinity-6/8h/8/10 ECUs use the MX123 Sealed Connection System from Molex. AEM strongly recommends that users become familiar with the proper tools and procedures before attempting any modifications or additions to these connector housings. The entire Molex user manual can be downloaded direct from Molex at http://www.molex.com/mx_upload/family//MX123UserManual.pdf

Splice Savers

Some harness assemblies include connector housings called splice savers. These are used to distribute power and ground circuits throughout the harness without requiring unreliable crimp splices within the harness. There are no external interfaces required at these connectors. Example shown below.

3801/3805/3809 Power Distribution Center

Included in the harness is a Power Distribution Center (PDC), pre-populated with the required relays and fuses for correct operation of accessory loads. The PDC comes with a bundle of flying leads that need to be properly wired as part of the installation. Flying leads include switched ignition, an optional fused +12V relay power output for auxiliary loads, and optional fused +12V relay outputs for a Fuel Pump and Coolant Fan.

3801 Installation Tips

Battery Power and Ground

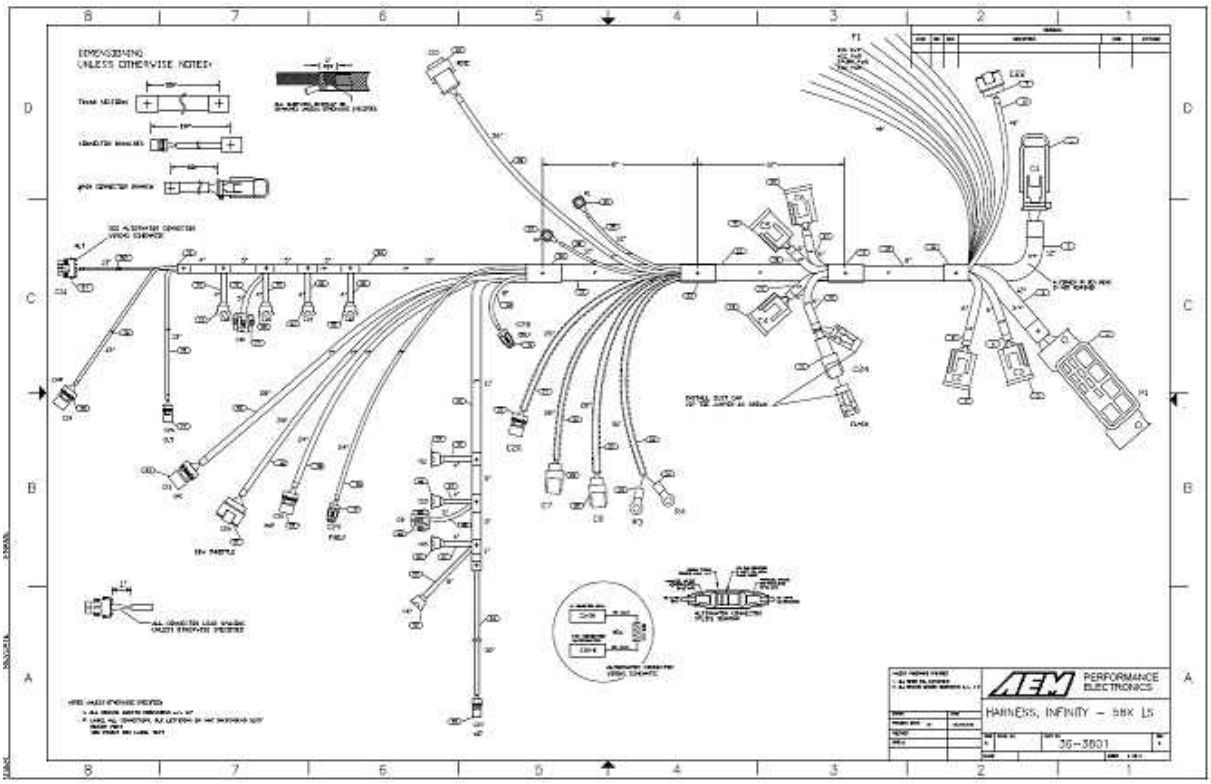
The main power and ground feeds (R1-R4) include a heavy duty ring terminal and should only be modified if absolutely necessary. The red battery power leads are intended to be installed on the starter solenoid positive terminal. The two black battery ground terminals are intended to be connected to a bold on the rear of each cylinder head.

Flying Leads

A bundle of flying lead wires is included for various input and output functions. They are described below.

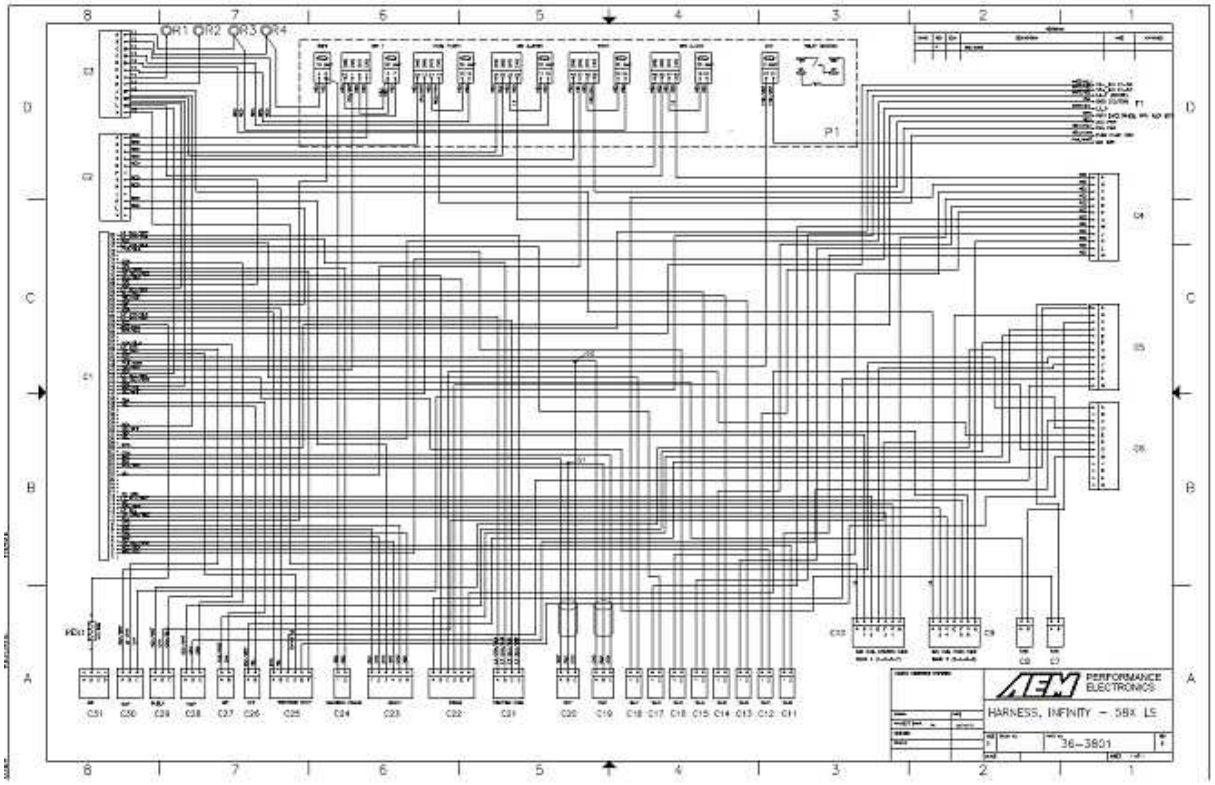
Wire	Description
PNK/WHT	Ignition Switch - +12V power in crank and run positions only. Recommend that no other loads or devices be connected to this wire
RED/BLU	Relay controlled fused fan power - connect to fan motor +
RED/GRN	Relay controlled fused fuel pump power - connect to fuel pump motor +
RED	Relay controlled fused auxiliary power - connect to optional relay primary coil +
BRN	DIG3 - for frequency or switched inputs - see ECU pinout for hardware limitations
WHT/VIO	Lowside 5 - switched ground output - see ECU pinout for hardware limitations
YEL	DIG5 - for frequency or switched inputs - see ECU pinout for hardware limitations
WHT/YEL	Lowside 1 - switched ground output - see ECU pinout for hardware limitations
WHT/RED	VR+ 3 - for mag frequency inputs - connect to signal positive
WHT/BLU	VR- 3 - for mag frequency inputs - connect to signal negative

3801 Harness Layout



If viewing this manual electronically, an embedded document containing the above layout can be found here.

3801 Harness Schematic



If viewing this manual electronically, an embedded document containing the above schematic can be found here.

3801 Harness Pinouts

36-3801 - Infinity Pinout GM LSX 58X for Venice Platform

C1	Infinity Connector C1					80 Way F Receptacle 0.64 2.8 Series Sealed (BL)
Pin	Wire Color	Gauge	Destination			
			1	2	3	
C1-01						
C1-02	WHT/VIO	20	F1			Low sideSw itch_5
C1-03	RED/BLK	20	C12-2			Injector 7/Low sideSw itch_6
C1-04	DK BLU/WHT	20	C11-2			Injector 8/Low sideSw itch_7
C1-05	WHT	18	C23-4			UEGO1_Heat
C1-06	GRN	20	C23-2			UEGO1_IA
C1-07	RED	20	C23-6			UEGO1_IP
C1-08	BLK	20	C23-1			UEGO1_UN
C1-09	ORG	20	C23-5			UEGO1_VM

C1-10	RED	20	P1-8			+12V_R8C_CPU
C1-11	DK GRN/WHT	20	C9-C			Coil4
C1-12	LT BLU	20	C10-F			Coil3
C1-13	RED/WHT	20	C9-B			Coil2
C1-14	VIO	20	C10-G			Coil1
C1-15	LT BLU/WHT	20	C9-F			Coil6
C1-16	DK GRN	20	C10-C			Coil5
C1-17						
C1-18						
C1-19						
C1-20						
C1-21	VIO	20	P1-37			LowsideSwitch_2
C1-22						
C1-23	BLK/WHT	20	C5-A			AGND_1
C1-24	BLK	22	S1			AGND_1
C1-25	WHT	22	C20-A			Crank_Hall
C1-26	GRN	22	C19-C			Cam1_Hall
C1-27						
C1-28	BRN	20	F1			Digital_In_3
C1-29						
C1-30	YEL	20	F1			Digital_In_5
C1-31	TAN	20	C10-B			COIL7/Digital_In_6
C1-32	VIO/WHT	20	C9-G			COIL8/Digital_In_7
C1-33	BLK	20	C3-K			PGND
C1-34						
C1-35						
C1-36						
C1-37						
C1-38	YEL	20	C26-B			Analog_In_Temp_1
C1-39	TAN	20	C27-B			Analog_In_Temp_2
C1-40						
C1-41	VIO/WHT	20	P1-13			LowsideSwitch_0
C1-42	WHT/YEL	20	F1			LowsideSwitch_1
C1-43	BLK	20	C3-K			PGND
C1-44	DK BLU/WHT	20	C8-A			KnockSensor_1
C1-45	LT BLU/WHT	20	C7-A			KnockSensor_2
C1-46	BLK	20	C3-L			PGND

C1-47	YEL/WHT	20	P1-1			+12V_Relay_Cntrl
C1-48	PNK/WHT	20	P1-27			+12V_SW
C1-49	ORG	22	S2			+5V_Out_1
C1-50	GRY	20	C6-A			+5V_Out_1
C1-51	DK BLU	20	C25-D			Analog_In_7
C1-52	LT GRN	20	C30-B			Analog_In_8
C1-53	GRN/BLU	20	C29-C			Analog_In_9
C1-54						
C1-55						
C1-56	WHT/BLU	20	F1			VR-_IN3
C1-57	WHT/RED	20	F1			VR+_IN3
C1-58	RED	20	RES1			
C1-59	LT BLU/BLK	20	C21-C			Stepper_1B
C1-60	LT GRN/BLK	20	C21-A			Stepper_2B
C1-61	BRN	20	C25-A			DBW1 Motor -
C1-62	YEL	20	C25-B			DBW1 Motor +
C1-63	RED	20	C2-L			+12V
C1-64	YEL/BLK	20	C13-2			Injector 6
C1-65	BLU/RED	20	C14-2			Injector 5
C1-66	LT BLU/BLK	20	C15-2			Injector 4
C1-67	BLK	20	C3-L			PGND
C1-68	RED	20	C2-G			+12V
C1-69	RED/BLK	20	C22-E			Analog_In_19
C1-70	DK BLU/RED	20	C22-B			Analog_In_18
C1-71	RED/GRN	20	C25-F			Analog_In_16
C1-72	RED	20	C24-2			Flash_Enable
C1-73	GRN	20	C28-C			Analog_In_13
C1-74						
C1-75						
C1-76	PNK/BLK	20	C16-2			Injector 3
C1-77	LT GRN/BLK	20	C17-2			Injector 2
C1-78	BLU	20	C18-2			Injector 1
C1-79	LT GRN/WHT	20	C21-B			Stepper_2A
C1-80	LT BLU/WHT	20	C21-D			Stepper_1A

C2		280 METRI-PACK 12F

Pin	Wire Color	Gauge	Destination			
			1	2	3	
A	RED	12	P1-2			
B	RED	20	P1-22			
C	RED	20	P1-34			
D	RED	20	P1-46			
E	RED	20	P1-48			
F						
G	RED	20	C1-68			
H	RED	20	F1			
J						
K	BRN	20	C23-3			
L	RED	20	C1-63			
M						

C3						280 METRI-PACK 12F
Pin	Wire Color	Gauge	Destination			
			1	2	3	
A	RED	12	R3			
B	RED	12	R4			
C	RED	12	P1-7			
D	RED	12	P1-15			
E	RED	12	P1-23			
F	RED	12	P1-16			
G	BLK	12	R1			
H	BLK	12	R2			
J	BLK	18	C9-A			
K	BLK	20, 22, 20	C1-33	P1-25	C1-43	
L	BLK	20, 22, 20	C1-67	P1-39	C1-46	
M	BLK	18	10-A			

C4						280 METRI-PACK 12F
Pin	Wire Color	Gauge	Destination			
			1	2	3	
A	RED	12	P1-40			
B	RED	20	C18-1			

C	RED	20	C16-1			
D	RED	18	C10-H			
E	RED	20	C14-1			
F	RED	20	C12-1			
G	RED	12	P1-26			
H	RED	18	C17-1			
J	RED	18	C15-1			
K	RED	18	C9-H			
L	RED	20	C13-1			
M	RED	20	C11-1			

C5						280 METRI-PACK 12F
Pin	Wire Color	Gauge	Destination			
			1	2	3	
A	BLK/WHT	20	C1-23	C7-B		
B	BLK/WHT	20	C9-E			
C	BLK/WHT	20	C8-B			
D	BLK/WHT	20	C26-A			
E	BLK/WHT	20	C27-A			
F	BLK/WHT	20	C28-A			
G	BLK/WHT	20	C29-A			
H	BLK/WHT	20	C30-A			
J	BLK/WHT	20	C10-E			
K	BLK/WHT	20	C22-F			
L	BLK/WHT	20	C22-A			
M	BLK/WHT	20	C25-C			

C6						280 METRI-PACK 12F
Pin	Wire Color	Gauge	Destination			
			1	2	3	
A	GRY	20	C1-50			
B						
C	GRY	20	C28-B			
D	GRY	20	C30-C			
E	GRY	20	C22-C			
F	GRY	20	C29-B			

G	GRY	20	C22-D			
H	GRY	20	C25-E			
J						
K						
L						
M						

C7						2 Way F GT 150 Series, Sealed (BK)
Pin	Wire Color	Gauge	Destination			Knock2
			1	2	3	
A	LT BLU/WHT	20	C1-45			
B	BLK/WHT	20	C5-A			

C8						2 Way F GT 150 Series, Sealed (BK)
Pin	Wire Color	Gauge	Destination			Knock1
			1	2	3	
A	DK BLU/WHT	20	C1-44			
B	BLK/WHT	20	C5-C			

C9						7 Way F Metri-Pack 150 Series Sealed (Cream)
Pin	Wire Color	Gauge	Destination			Coil Bank 2
			1	2	3	
A	BLK	18	C3-J			
B	RED/WHT	20	C1-13			
C	DK GRN/WHT	20	C1-11			
D						
E	BLK/WHT	20	C5-B			
F	LT BLU/WHT	20	C1-15			
G	VIO/WHT	20	C1-32			
H	RED	18	C4-K			

C10						7 Way F Metri-Pack 150 Series Sealed (Cream)
Pin	Wire Color	Gauge	Destination			Coil Bank 1
			1	2	3	
A	BLK	18	C3-M			

B	TAN	20	C1-31			
C	DK GRN	20	C1-16			
D						
E	BLK/WHT	20	C5-J			
F	LT BLU	20	C1-12			
G	VIO	20	C1-14			
H	RED	18	C4-D			

C11						
Pin	Wire Color	Gauge	Destination			INJ8
			1	2	3	
1	RED	20	C4-M			
2	DK BLU/WHT	20	C1-4			

C12						
Pin	Wire Color	Gauge	Destination			INJ7
			1	2	3	
1	RED	20	C4-F			
2	RED/BLK	20	C1-3			

C13						
Pin	Wire Color	Gauge	Destination			INJ6
			1	2	3	
1	RED	20	C4-L			
2	YEL/BLK	20	C1-64			

C14						
Pin	Wire Color	Gauge	Destination			INJ5
			1	2	3	
1	RED	20	C4-E			
2	BLU/RED	20	C1-65			

C15						
Pin	Wire Color	Gauge	Destination			INJ4
			1	2	3	

1	RED	20	C4-J			
2	LT BLU/BLK	20	C1-66			

C16						
Pin	Wire Color	Gauge	Destination			INJ3
			1	2	3	
1	RED	20	C4-C			
2	PNK/BLK	20	C1-76			

C17						
Pin	Wire Color	Gauge	Destination			INJ2
			1	2	3	
1	RED	20	C4-H			
2	LT GRN/BLK	20	C1-77			

C18						
Pin	Wire Color	Gauge	Destination			INJ1
			1	2	3	
1	RED	20	C4-B			
2	BLU	20	C1-78			

C19						
Pin	Wire Color	Gauge	Destination			CAM
			1	2	3	
A	ORG	22	S2			
B	BLK	22	S1			
C	GRN	22	C1-26			

C20						
Pin	Wire Color	Gauge	Destination			CRANK
			1	2	3	
A	WHT	22	C1-25			
B	BLK	22	S1			
C	ORG	22	S2			

C21						
Pin	Wire Color	Gauge	Destination			IDLE
			1	2	3	
A	LT GRN/BLK	20	C1-60			
B	LT GRN/WHT	20	C1-79			
C	LT BLU/BLK	20	C1-59			
D	LT BLU/WHT	20	C1-80			

C22						
Pin	Wire Color	Gauge	Destination			PEDAL
			1	2	3	
A	BLK/WHT	20	C5-L			
B	DK BLU/RED	20	C1-70			
C	GRY	20	C6-E			
D	GRY	20	C6-G			
E	RED/BLK	20	C1-69			
F	BLK/WHT	20	C5-K			

C23						
Pin	Wire Color	Gauge	Destination			UEGO
			1	2	3	
1	BLK	20	C1-8			
2	GRN	20	C1-6			
3	BRN	20	C2-K			
4	WHT	18	C1-5			
5	ORG	20	C1-9			
6	RED	20	C1-7			

C24						
Pin	Wire Color	Gauge	Destination			FLASH
			1	2	3	
1	RED	20	P1-8			
2	RED	20	C1-72			

C25						

Pin	Wire Color	Gauge	Destination			THROTTLE
			1	2	3	
A	BRN	20	C1-61			
B	YEL	20	C1-62			
C	BLK/WHT	20	C5-M			
D	DK BLU	20	C1-51			
E	GRY	20	C6-H			
F	RED/GRN	20	C1-71			

C26						
Pin	Wire Color	Gauge	Destination			COOLANT
			1	2	3	
A	BLK/WHT	20	C5-D			
B	YEL	20	C1-38			

C27						
Pin	Wire Color	Gauge	Destination			AIR TEMP
			1	2	3	
A	BLK/WHT	20	C5-E			
B	TAN	20	C1-39			

C28						
Pin	Wire Color	Gauge	Destination			OIL PRESS
			1	2	3	
A	BLK/WHT	20	C5-F			
B	GRY	20	C6-C			
C	GRN	20	C1-73			

C29						
Pin	Wire Color	Gauge	Destination			FUEL PRESS
			1	2	3	
A	BLK/WHT	20	C5-G			
B	GRY	20	C6-F			
C	GRN/BLU	20	C1-53			

C30		

Pin	Wire Color	Gauge	Destination			MAP
			1	2	3	
A	BLK/WHT	20	C5-H			
B	LT GRN	20	C1-52			
C	GRY	20	C6-D			

C31						
Pin	Wire Color	Gauge	Destination			ALT
			1	2	3	
A						
B	RED	20	RES1			
C						
D						

RES 1						
Pin	Wire Color	Gauge	Destination			ALT
			1	2	3	
	RED	20	C31-B			
	RED	20	C1-58			

P1						Power Distribution Module, PDM-T3AA1
Pin	Wire Color	Gauge	Destination			
			1	2	3	
1	YEL/WHT	20	C1-47			
2	RED	12	C2-A			
3	RED	12, 22	P1-9	P1-10		
4	RED	20	R4			
5						
6						
7	RED	12	C3-C			
8	RED	20, 20	C1-10	C24-1		
9	RED	12	P1-3			
10	RED	22	P1-3			
11	RED	12	P1-33			
12	RED	12	P1-21			

13	VIO/WHT	20	C1-41			
14	RED/GRN	12	F1			
15	RED	12	C3-D			
16	RED	12	C3-F			
17						
18						
19	RED	12	P1-47			
20	RED	12	P1-45			
21	RED	12	P1-12			
22	RED	20	C2-B			
23	RED	12	C3-E			
24	RED	12	R3			
25	BLACK	20	C3-K			
26	RED	12	C4-G			
27	PNK/WHT	20	C1-48			
28						
29						
30						
31	PNK/WHT	22	F1			
32						
33	RED	12	P1-11			
34	RED	20	C2-C			
35						
36						
37	VIO	20	C1-21			
38	RED/BLU	12	F1			
39	BLK	22	C3-L			
40	RED	12	C4-A			
41						
42						
43						
44						
45	RED	12	P1-20			
46	RED	20	C2-D			
47	RED	12	P1-19			
48	RED	20	C2-E			

F1						Flying Leads
Pin	Wire Color	Gauge	Destination			
			1	2	3	
	WHT/BLU	20	C1-56			
	WHT/RED	20	C1-57			
	WHT/YEL	20	C1-42			
	YEL	20	C1-30			
	WHT/VIO	20	C1-2			
	BRN	20	C1-28			
	RED	20	C2-H			
	RED/BLU	12	P1-38			
	RED/GRN	12	P1-14			
	PNK/WHT	22	P1-31			

S1						Splice
Pin	Wire Color	Gauge	Destination			
			1	2	3	
IN	BLK	22	C1-24			
OUT	BLK	22	C20-B			
OUT	BLK	22	C19-B			

S2						Splice
Pin	Wire Color	Gauge	Destination			
			1	2	3	
IN	ORG	22	C1-49			
OUT	ORG	22	C20-C			
OUT	ORG	22	C19-A			

R1						Ring Terminal
Pin	Wire Color	Gauge	Destination			**Batt-**
			1	2	3	
	BLK	12	C3-G			

R2				Ring Terminal
Pin	Wire Color	Gauge	Destination	**Batt-**

			1	2	3	
	BLK	12	C3-H			

R3						Ring Terminal
Pin	Wire Color	Gauge	Destination			Batt+
			1	2	3	
	RED	12,12	C3-A	P1-24		

R4						Ring Terminal
Pin	Wire Color	Gauge	Destination			Batt+
			1	2	3	
	RED	12, 20	C3-B	P1-4		

Infinity-6/8h ECU Pinout

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
C1-1	Lowside 4	Lowside switch, 1.7A max, NO internal flyback diode. 12V pullup	See Setup Wizard Page "Output Function Assignment" for setup options.
C1-2	Lowside 5	Lowside switch, 6A max with internal flyback diode. Inductive load should NOT have full time power. 12V pullup	See Setup Wizard Page "Output Function Assignment" for setup options.
C1-3*	Lowside 6 (*Infinity-6 Only)	Lowside switch, 6A max with internal flyback diode. Inductive load should NOT have full time power. No pullup	See Setup Wizard Page "Output Function Assignment" for setup options.
C1-3**	Injector 7 (**Infinity-8H Only)	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Available on P/N 30-7108 only
C1-4*	Lowside 7 (*Infinity-6 Only)	Lowside switch, 6A max, NO internal flyback diode. No pullup	See Setup Wizard Page "Output Function Assignment" for setup options.
C1-4**	Injector 8 (**Infinity-8H Only)	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Available on P/N 30-7108 only

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
C1-5	UEGO 1 Heat	Bosch UEGO controller	Lowside switch for UEGO heater control. Connect to pin 4 of Bosch UEGO sensor. NOTE that pin 3 of the Sensor is heater (+) and must be power by a fused/switched 12V supply.
C1-6	UEGO 1 IA		Trim Current signal. Connect to pin 2 of Bosch UEGO sensor
C1-7	UEGO 1 IP		Pumping Current signal. Connect to pin 6 of Bosch UEGO sensor
C1-8	UEGO 1 UN		Nernst Voltage signal. Connect to pin 1 of Bosch UEGO sensor
C1-9	UEGO 1 VM		Virtual Ground signal. Connect to pin 5 of Bosch UEGO sensor.
C1-10	Battery Perm Power	Dedicated power management CPU	Full time battery power. MUST be powered before the ignition switch input is triggered (See C1-48).
C1-11	Coil 4	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C1-12	Coil 3	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C1-13	Coil 2	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C1-14	Coil 1	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C1-15	Coil 6	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C1-16	Coil 5	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C1-17	Crankshaft Position Sensor VR+	Differential Variable Reluctance Zero Cross Detection	See Setup Wizard page Cam/Crank for options.

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
C1-18	Crankshaft Position Sensor VR-		See Setup Wizard page Cam/Crank for options.
C1-19	Camshaft Position Sensor 1 VR-	Differential Variable Reluctance Zero Cross Detection	See Setup Wizard page Cam/Crank for options.
C1-20	Camshaft Position Sensor 1 VR+		See Setup Wizard page Cam/Crank for options.
C1-21	Lowside 2	Lowside switch, 1.7A max, NO internal flyback diode. No pullup	See Setup Wizard Page "Output Function Assignment" for setup options.
C1-22	Lowside 3	Lowside switch, 6A max with internal flyback diode. Inductive load should NOT have full time power. No pullup	See Setup Wizard Page "Output Function Assignment" for setup options.
C1-23	Analog Sensor Ground	Dedicated analog ground	Analog 0-5V sensor ground
C1-24	Analog Sensor Ground	Dedicated analog ground	Analog 0-5V sensor ground
C1-25	Crankshaft Position Sensor Hall	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page Cam/Crank for options.
C1-26	Camshaft Position Sensor 1 Hall	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page Cam/Crank for options.
C1-27	Digital 2	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page Cam/Crank for options.
C1-28	Dig3 [Hz] / Dig3 Duty	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page "Input Function Assignments" for setup options.
C1-29	Dig4 [Hz] / Dig4 Duty	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page "Input Function Assignments" for setup options.
C1-29	RS232 Rx	RS232 Line Driver/Receiver	Future expansion
C1-30	Digital 5	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page "Input Function Assignments" for setup options.

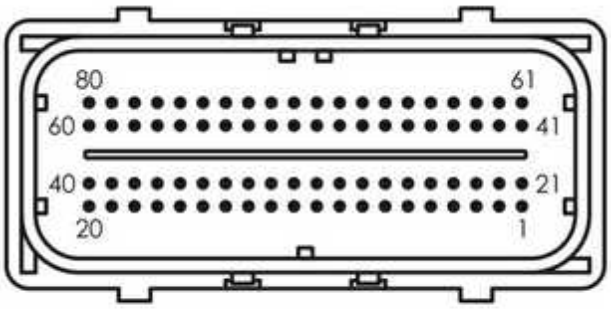
Infinity Pin	Hardware Ref.	Hardware Specification	Notes
C1-30	RS232 Tx	RS232 Line Driver/Receiver	Future expansion
C1-31*	Dig6 [Hz] / Dig6_Duty (*Infinity-6 Only)	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page "Input Function Assignments" for setup options.
C1-31**	Coil 7 (**Infinity-8H Only)	25 mA max source current	Available on P/N 30-7108 only. 0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C1-32*	Digital 7 (*Infinity-6 Only)	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page "Input Function Assignments" for setup options.
C1-32**	Coil 8 (**Infinity-8H Only)	25 mA max source current	Available on P/N 30-7108 only. 0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C1-33	Battery Ground	Battery Ground	Connect directly to battery ground
C1-34	CANL A	Dedicated High Speed CAN Transceiver	Recommend twisted pair (one twist per 2") with terminating resistor. Contact AEM for additional information.
C1-35	CANH A	Dedicated High Speed CAN Transceiver	Recommend twisted pair (one twist per 2") with terminating resistor. Contact AEM for additional information.
C1-36	CanL B	Dedicated High Speed CAN Transceiver	Not used, reserved for future expansion.
C1-37	CanH B	Dedicated High Speed CAN Transceiver	Not used, reserved for future expansion.
C1-38	Analog Temp 1	12 bit A/D, 2.49K pullup to 5V	Default Coolant Temperature Input
C1-39	Analog Temp 2	12 bit A/D, 2.49K pullup to 5V	Default Air Temperature Input
C1-40	Analog Temp 3	12 bit A/D, 2.49K pullup to 5V	Default Oil Temperature Input. See Setup Wizard page "Input Function Assignments" for setup options.
C1-41	Lowside 0	Lowside switch, 1.7A max, NO internal flyback diode. No pullup	See Setup Wizard Page "Output Function Assignment" for setup options.

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
C1-42	Lowside 1	Lowside switch, 6A max with internal flyback diode. Inductive load should NOT have full time power. No pullup	See Setup Wizard Page "Output Function Assignment" for setup options.
C1-43	Battery Ground	Battery Ground	Connect directly to battery ground
C1-44	Knock Sensor 1	Dedicated knock signal processor	See Setup Wizard page Knock Setup for options.
C1-45	Knock Sensor 2	Dedicated knock signal processor	See Setup Wizard page Knock Setup for options.
C1-46	Battery Ground	Battery Ground	Connect directly to battery ground
C1-47	EFI Main Relay Switched Ground Output	0.7A max ground sink for external relay control	Will activate at key on and at key off according to the configuration settings.
C1-48	Ignition Switch	10K pulldown	Full time battery power must be available at C1-10 before this input is triggered.
C1-49	+5V Sensor Power	Regulated, fused +5V supply for sensor power	Analog sensor power
C1-50	+5V Sensor Power	Regulated, fused +5V supply for sensor power	Analog sensor power
C1-51	Analog 7	12 bit A/D, 100K pullup to 5V	Default primary Throttle Position sensor inpur. 0-5V analog signal. Use +5V Out pins as power supply and Sensor Ground pins as the low reference. Do not connect signals referenced to +12V as this can permanently damage the ECU. See Setup Wizard Set Throttle Range page for automatic min/max calibration. Monitor the Throttle [%] channel. Also DB1_TPSA [%] for DBW applications.
C1-52	Analog 8	12 bit A/D, 100K pullup to 5V	Default Manifold Pressure Sensor input. 0-5V analog signal. Use +5V Out

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
			pins as power supply and Sensor Ground pins as the low reference. Do not connect signals referenced to +12V as this can permanently damage the ECU.
C1-53	Analog 9	12 bit A/D, 100K pullup to 5V	Default Fuel Pressure Sensor Input. 0-5V analog signal. Use +5V Out pins as power supply and Sensor Ground pins as the low reference. Do not connect signals referenced to +12V as this can permanently damage the ECU.
C1-54	VR+ 2	Differential Variable Reluctance Zero Cross Detection	See Setup Wizard page "Input Function Assignments" for setup options.
C1-55	VR- 2		
C1-56	VR- 3	Differential Variable Reluctance Zero Cross Detection	See Setup Wizard page "Input Function Assignments" for setup options.
C1-57	VR+ 3		
C1-58	Highside 0	2.6A max, High Side Solid State Relay	See Setup Wizard Page "Output Function Assignment" for setup options.
C1-59	Stepper 1B	Automotive, Programmable Stepper Driver, up to 28V and ±1.4A	Be sure that each internal coil of the stepper motor are properly paired with the 1A/1B and 2A/2B ECU outputs. Supports Bi-Polar stepper motors only.
C1-60	Stepper 2B	Automotive, Programmable Stepper Driver, up to 28V and ±1.4A	Be sure that each internal coil of the stepper motor are properly paired with the 1A/1B and 2A/2B ECU outputs. Supports Bi-Polar stepper motors only.
C1-61	DBW1 Motor -	5.0A max Throttle Control Hbridge Drive	+12V to close
C1-62	DBW1 Motor +	5.0A max Throttle Control Hbridge Drive	+12V to open
C1-63	Main Relay Power Input	12 volt power from relay	12 volt power from relay. Relay must be controlled by +12V Relay Control signal, pin C1-47 above.
C1-64	Injector 6	Saturated (P/N 30-7108) or	Injector 6

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
		peak and hold, 3A max continuous (P/N 30-7106)	
C1-65	Injector 5	Saturated (P/N 30-7108) or peak and hold, 3A max continuous (P/N 30-7106)	Injector 5
C1-66	Injector 4	Saturated (P/N 30-7108) or peak and hold, 3A max continuous (P/N 30-7106)	Injector 4
C1-67	Battery Ground	Battery Ground	Connect directly to battery ground
C1-68	Main Relay Power Input	12 volt power from relay	12 volt power from relay. Relay must be controlled by +12V Relay Control signal, pin C1-47 above.
C1-69	Analog 19	12 bit A/D, 100K pullup to 5V	0-5V analog signal. Use +5V Out pins as power supply and Sensor Ground pins as the low reference. Do not connect signals referenced to +12V as this can permanently damage the ECU. See Setup Wizard page "Input Function Assignments" for setup options.
C1-70	Analog 18	12 bit A/D, 100K pullup to 5V	0-5V analog signal. Use +5V Out pins as power supply and Sensor Ground pins as the low reference. Do not connect signals referenced to +12V as this can permanently damage the ECU. See Setup Wizard page "Input Function Assignments" for setup options.
C1-71	Analog 16	12 bit A/D, 100K pullup to 5V	0-5V analog signal. Use +5V Out pins as power supply and Sensor Ground pins as the low reference. Do not connect signals referenced to +12V as this can permanently damage the ECU. See Setup Wizard page "Input Function Assignments" for setup options.
C1-72	Flash Enable	10K pulldown	Not usually needed for automatic firmware updates through Infinity Tuner. If connection errors occur during update, connect 12 volts to this pin before proceeding with upgrade. Disconnect the 12 volts signal after the update.

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
C1-73	Analog 13	12 bit A/D, 100K pullup to 5V	Default Oil Pressure Sensor input. 0-5V analog signal. Use +5V Out pins as power supply and Sensor Ground pins as the low reference. Do not connect signals referenced to +12V as this can permanently damage the ECU.
C1-74	Analog 11	12 bit A/D, 100K pullup to 5V	0-5V analog signal. Use +5V Out pins as power supply and Sensor Ground pins as the low reference. Do not connect signals referenced to +12V as this can permanently damage the ECU. See Setup Wizard page "Input Function Assignments" for setup options.
C1-75	Analog 10	12 bit A/D, 100K pullup to 5V	0-5V analog signal. Use +5V Out pins as power supply and Sensor Ground pins as the low reference. Do not connect signals referenced to +12V as this can permanently damage the ECU. See Setup Wizard page "Input Function Assignments" for setup options.
C1-76	Injector 3	Saturated (P/N 30-7108) or peak and hold, 3A max continuous (P/N 30-7106)	Injector 3
C1-77	Injector 2	Saturated (P/N 30-7108) or peak and hold, 3A max continuous (P/N 30-7106)	Injector 2
C1-78	Injector 1	Saturated (P/N 30-7108) or peak and hold, 3A max continuous (P/N 30-7106)	Injector 1
C1-79	Stepper 2A	Automotive, Programmable Stepper Driver, up to 28V and ±1.4A	Be sure that each internal coil of the stepper motor are properly paired with the 1A/1B and 2A/2B ECU outputs. Supports Bi-Polar stepper motors only.
C1-80	Stepper 1A	Automotive, Programmable Stepper Driver, up to 28V and ±1.4A	Be sure that each internal coil of the stepper motor are properly paired with the 1A/1B and 2A/2B ECU outputs. Supports Bi-Polar stepper motors only.



INFINITY "C1" 80 PIN

12 Month Limited Warranty

Advanced Engine Management Inc. warrants to the consumer that all AEM High Performance products will be free from defects in material and workmanship for a period of twelve (12) months from date of the original purchase. Products that fail within this 12-month warranty period will be repaired or replaced at AEM's option, when determined by AEM that the product failed due to defects in material or workmanship. This warranty is limited to the repair or replacement of the AEM part. In no event shall this warranty exceed the original purchase price of the AEM part nor shall AEM be responsible for special, incidental or consequential damages or cost incurred due to the failure of this product. Warranty claims to AEM must be transportation prepaid and accompanied with dated proof of purchase. This warranty applies only to the original purchaser of product and is non-transferable. All implied warranties shall be limited in duration to the said 12-month warranty period. Improper use or installation, accident, abuse, unauthorized repairs or alterations voids this warranty. AEM disclaims any liability for consequential damages due to breach of any written or implied warranty on all products manufactured by AEM. Warranty returns will only be accepted by AEM when accompanied by a valid Return Merchandise Authorization (RMA) number. Product must be received by AEM within 30 days of the date the RMA is issued.

UEGO oxygen sensors are considered wear items and are not covered under warranty.

Please note that before AEM can issue an RMA for any electronic product, it is first necessary for the installer or end user to contact the EMS tech line at 1-800-423-0046 to discuss the problem. Most issues can be resolved over the phone. Under no circumstances should a system be returned or a RMA requested before the above process transpires.

AEM will not be responsible for electronic products that are installed incorrectly, installed in a non-approved application, misused, or tampered with.

Any AEM electronics product can be returned for repair if it is out of the warranty period. There is a minimum charge of $50.00 for inspection and diagnosis of AEM electronic parts. Parts used in the repair of AEM electronic components will be extra. AEM will provide an estimate of repairs and receive written or electronic authorization before repairs are made to the product.