



Infinity-6/8h Mini Harness User Manual 30-3705

**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!

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Introduction

Some harness user manuals contain active hyperlinks that point to specific sections or even launch additional documents such as wiring diagrams. Recommend viewing this document electronically to take advantage of all features.

Several universal wiring harness options are available for Infinity products. They range in complexity from simple plug and pin kits to complete engine harness assemblies that include power distribution centers. Custom wiring harness projects should only be undertaken by experienced harness builders. If in doubt, please contact AEM for recommendations.

30-3805 Universal V8 harness system for Infinity-8/10 systems

The Infinity Universal V8 Harness system consists of a universal core harness and optional application specific extensions. It was designed with flexibility in mind. The harness system includes many features and it can be used in many different applications.

30-3809 Universal V8 harness system for Infinity-6/8h systems

The Infinity Universal V8 Harness system consists of a universal core harness and optional application specific extensions. It was designed with flexibility in mind. It includes throttle body and pedal interfaces for DBW applications. The harness system includes many features and it can be used in many different applications.

30-3705 Universal Mini Harness for Infinity-6/8h systems

This harness is intended to be used as a starting point by experienced harness builders. It saves time by including basic power distribution features that can be expanded to suit many application requirements. It allows the harness builder to populate the ECU connector with only the features needed by the application.

30-3702 Infinity-8/10/12 Mini-harness

This harness is intended to be used as a starting point by experienced harness builders. It saves time by including basic power distribution features that can be expanded to suit many application requirements. It allows the harness builder to populate the ECU connector with only the features needed by the application. Includes 100 96" pre-terminated leads.

30-3703 Infinity-8/10/12 Mini-harness

This harness is intended to be used as a starting point by experienced harness builders. It saves time by including basic power distribution features that can be expanded to suit many application requirements. It allows the harness builder to populate the ECU connector with only the features needed by the application.

30-3701 Infinity-8/10/12 Plug & Pin Kit

Bare necessities to begin a custom wire harness design. Includes 73 and 56 pin Molex MX123 harness connectors, terminals and sealing plugs, main relay and relay socket.

30-3704 Infinity-6/8h Plug & Pin Kit

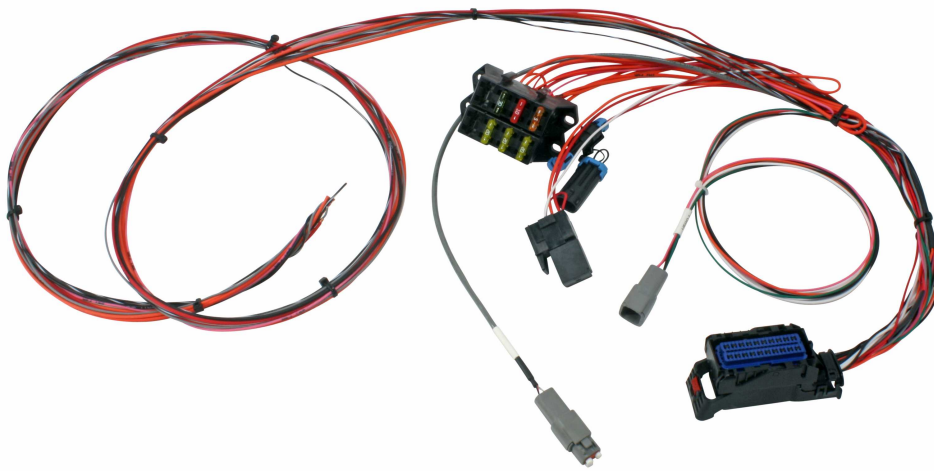
Bare necessities to begin a custom wire harness design. Includes 80 pin Molex MX123 harness connector, terminals and sealing plugs, main relay and relay socket.

This manual is focused primarily on the universal V8 harness system components but it can be used as a reference for any custom harness build based on the Infinity ECU.

Please read the entire User Manual prior to beginning any installation.

3705 Kit Contents

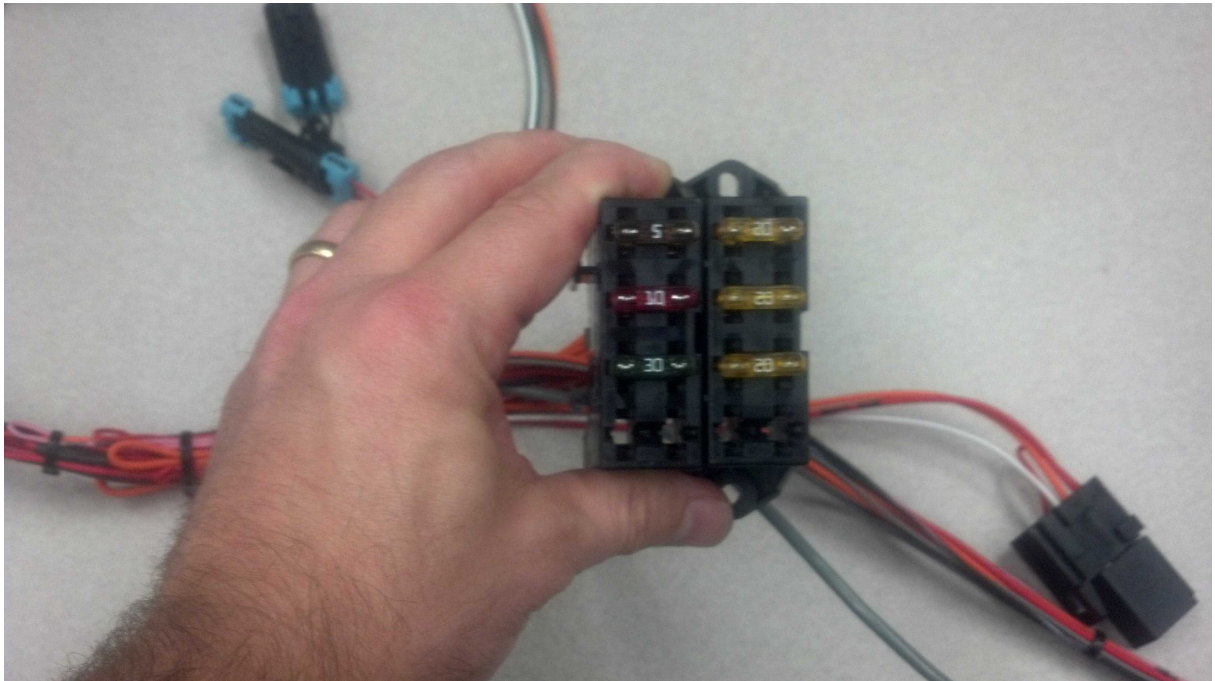
- Infinity-6/8h Mini-Harness
- 80 Molex MX64 terminals
- 30 Molex MX64 sealing plugs
- User Instructions



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

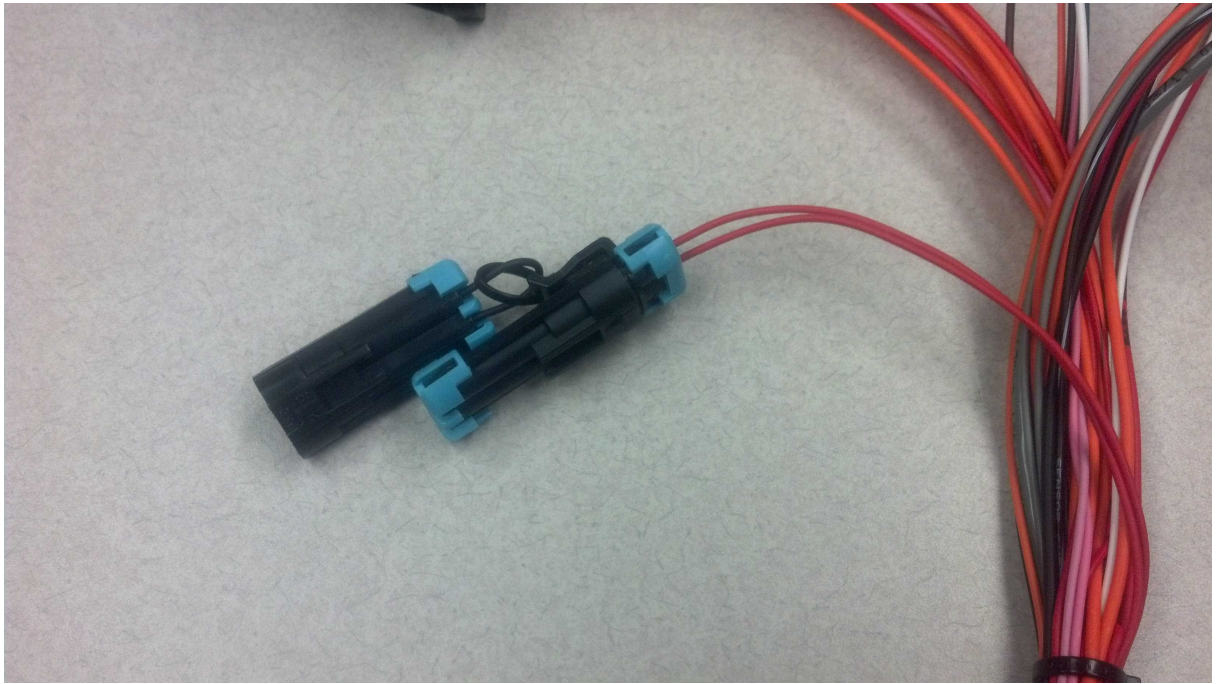
3705 Power Distribution Center



3703 and 3705 Connectors

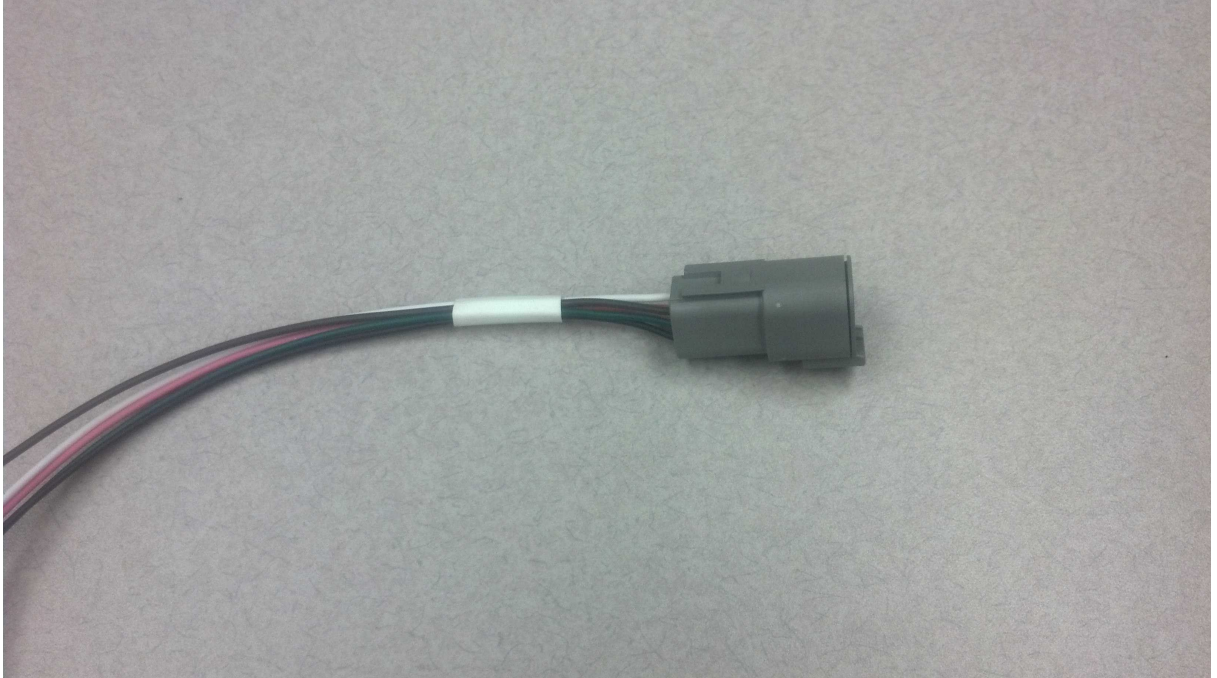
Flash enable connector

Not usually needed. Used under certain conditions to force the ECU into flash programming mode.



UEGO connector

Connect to 30-3600 UEGO extension harness.



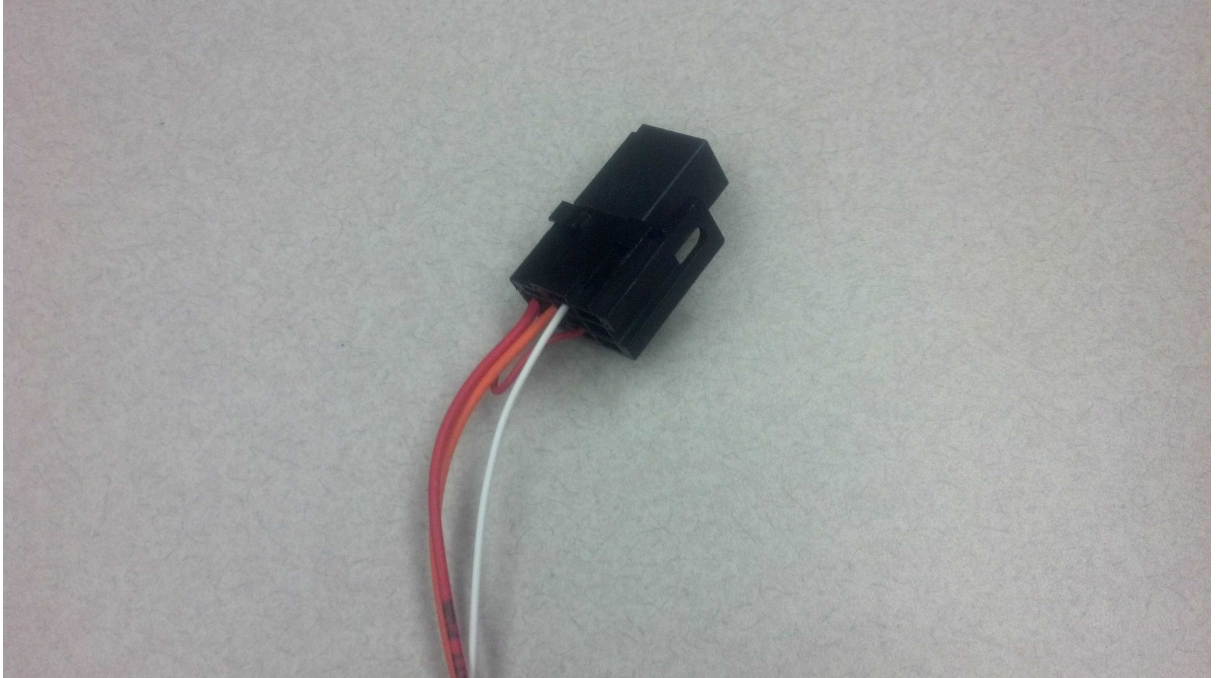
AEMNet connector

Connect to optional AEMNet enabled devices.



EFI Main Relay

Required for normal power sequencing function.



Flying lead bundle

Wires are ink stamped with descriptions as follows:

BATT GND	Connect directly to battery negative
BATT PWR	Connect directly to battery positive
Sensor GND	Connect to low reference (GND) of 5V analog sensors
SWT PWR	Ignition switch input.
5V REF	Connect to high reference (5V PWR) of 5V analog sensors
ACC PWR	Option for powering accessory relays
INJ PWR	Fused 12V power for injectors
IGN PWR	Fused 12V power for coils



Completing the harness

Use the supplied Molex MX64 terminals to add circuits and features as needed. Refer to the Infinity-6/8h pinout for available options. Refer to the example schematic included below for recommended wiring designs.

Installation Notes

Wiring Conventions and EMI

Some wire harness assemblies come pre-wired with all connectors, fuses, and relays needed to operate an engine. Harnesses that include a PDC generally require extension/termination of the flying leads to their appropriate devices, and additional sensors and other devices can be wired into the harness as needed for the specific application. The following guidelines should be adhered to while completing the required wiring.

A proper wiring job includes proper termination of the wire at the sensor. The wire terminal end must be moisture tight where it plugs into the sensor and it must have strong, electrically sound terminals. The preferred method of securing a wire to a terminal is to use a crimp terminal with NO solder. It is important to use the proper crimping tool for sound terminal construction. Plastic terminal plugs must have moisture tight seals. Inspect each plug to make sure the seals are in place. Di-electric grease can be added in the terminal slots to further aid in corrosion resistance.

If a splice into a wire must be made and no solder-less terminals are available, then you must properly solder the splice.

Noise can be a serious problem and can cause intermittent misfiring of the engine. Every precaution should be taken to prevent interference to the ECU's operation. Resistive plug leads are REQUIRED.

To eliminate or reduce the chance of EMI, wires that carry high current must run in twisted pairs. An example of this would be the power leads from a multiple spark ignition system. These ignition systems can carry up to 100 amps for a couple milliseconds at the time of discharge, which induces a strong magnetic field in close proximity of the wires.

The routing of the wire loom is critical to EFI system performance and safety. The following safety considerations should be made when installing the wire loom:

- Heat protection: the loom should be placed away from or insulated from sources of heat. The obvious item(s) that should be avoided are the exhaust manifolds, EGR delivery tubes, and turbochargers. If it is absolutely necessary to route a wire in close proximity to any of these items, then a suitable insulator must be used.
- Noise suppression: do not route wires near the HT leads. For coil-on-plug ignition systems this is not as critical.
- Moving component protection: route wires away from moving components such as fans, the blower belt, or the throttle linkage. Also, make sure the wires are not under any strain when the engine is at full deflection on the motor mounts.
- Never have the wires in exposed bundles throughout the engine compartment.

Determining ECU Location

- It is recommended that the ECU be placed in an environment that does not expose it to temperatures above 85° Celsius (160F).
- In cases where the Infinity is to be used in place of the stock ECU, the location that the stock ECU occupied is suitable.
- On applications where the ECU is to be located in a different position than stock, the interior of the vehicle is best.
- The Infinity should be located in a place that reduces the length of extension wires from the PDC while maintaining an environmentally sound location.
- The ECU location must permit the PDC to be mounted in a serviceable location.

Power Distribution Center

PDCs included in the harness assemblies generally include all relays and fuses necessary for proper

function and should be mounted in a location which permits serviceability. Ideally the PDC should be located in the passenger compartment, or if necessary within the engine compartment as far away from heat sources as can be achieved. Some PDCs contain flying lead bundles which must be wired to the battery, fuel pump and radiator fan(s), switched ignition and possibly other interfaces. Routing of this flying lead bundle should also be taken into account when determining the mounting location of the PDC.

3705 Mini-Harness Pinouts

36-3705

C1	Infinity Connector C1					80 Way F Receptacle 0.64 2.8 Series Sealed (GY)
Pin	Wire Color	Gauge	Destination			
			1	2	3	
C1-1						
C1-2						
C1-3						
C1-4						
C1-5	WHT	20	C5-4			UEGO1 HEAT
C1-6	GRN	20	C5-2			UEGO1 IA
C1-7	PNK	20	C5-6			UEGO1 IP
C1-8	BLK	20	C5-1			UEGO1 UN
C1-9	ORG	20	C5-5			UEGO1 VM
C1-10	RED/BLK	20	F1-1			PERM BATTERY PWR
C1-11						
C1-12						
C1-13						
C1-14						
C1-15						
C1-16						
C1-17						
C1-18						
C1-19						
C1-20						
C1-21						
C1-22						
C1-23	BLK/WHT	20	C6, FLYING LEAD			ANALOG SENSOR GROUND
C1-24	BLK/WHT	20	C6, FLYING LEAD			ANALOG SENSOR GROUND
C1-25						
C1-26						
C1-27						
C1-28						
C1-29						

C1-30					
C1-31					
C1-32					
C1-33	BLK	20	S1		BATTERY GROUND
C1-34	GRN	20	C4-2		CAN LOW (AEMNET)
C1-35	WHT	20	C4-1		CAN HIGH (AEMNET)
C1-36					
C1-37					
C1-38					
C1-39					
C1-40					
C1-41					
C1-42					
C1-43	BLK		Shield ground		BATTERY GROUND
C1-44					
C1-45					
C1-46	BLK	20	S1		BATTERY GROUND
C1-47	WHT	20	R1-1		RELAY CONTROL OUT
C1-48	PNK	20	F1-3		IGN SWITCH IN
C1-49	GRY	20	C6, FLYING LEAD		ANALOG SENSOR POWER 5V
C1-50	GRY	20	C6, FLYING LEAD		ANALOG SENSOR POWER 5V
C1-51					
C1-52					
C1-53					
C1-54					
C1-55					
C1-56					
C1-57					
C1-58					
C1-59					
C1-60					
C1-61					
C1-62					
C1-63	ORG	20	C3-E		RELAY POWER IN 12V
C1-64					
C1-65					

C1-66						
C1-67	BLK	20	S1			BATTERY GROUND
C1-68	ORG	20	C3-D			RELAY POWER IN 12V
C1-69						
C1-70						
C1-71						
C1-72	RED	20	C2-A			FLASH ENABLE, 12V TO ACTIVATE
C1-73						
C1-74						
C1-75						
C1-76						
C1-77						
C1-78						
C1-79						
C1-80						

C2						
Pin	Wire Color	Gauge	Destination			FLASH ENABLE
			1	2	3	
C2-A	RED	20	C1-72			FLASH ENABLE, 12V TO ACTIVATE
C2-B	RED/BLK	20	F1-1			FUSED BATTERY POWER

C3						
Pin	Wire Color	Gauge	Destination			
			1	2	3	
C3-A	ORG	14	R1-3			FUSED RELAY POWER
C3-B	RED	20	C4-3			FUSED RELAY POWER TO AEMNET CONNECTOR
C3-C	BRN	20	C5-3			FUSED RELAY POWER TO UEGO CONNECTOR
C3-D	ORG	20	C1-68			FUSED RELAY POWER TO ECU C1
C3-E	ORG	20	C1-63			FUSED RELAY POWER TO ECU C1
C3-F	ORG	14	F2-6			FUSED RELAY POWER TO AUXILIARY FUSE BLOCK
C3-G	ORG	14	F2-4			FUSED RELAY POWER TO AUXILIARY FUSE BLOCK
C3-H	ORG	14	F2-2			FUSED RELAY POWER TO AUXILIARY FUSE BLOCK
C3-J						
C3-K						
C3-L						

C3-M						
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C4						
Pin	Wire Color	Gauge	Destination			AEMNET
			1	2	3	
C4-1	WHT	20	C1-35			CAN HIGH (AEMNET)
C4-2	GRN	20	C1-34			CAN LOW (AEMNET)
C4-3	RED	20	C3-B			FUSED RELAY POWER
C4-4	BLK	20	S1			BATTERY GROUND

C5						
Pin	Wire Color	Gauge	Destination			UEGO1
			1	2	3	
C5-1	BLK	20	C1-8			UEGO1 UN
C5-2	GRN	20	C1-6			UEGO1 IA
C5-3	BRN	20	C3-C			FUSED RELAY POWER
C5-4	WHT	20	C1-5			UEGO1 HEAT
C5-5	ORG	20	C1-9			UEGO1 VM
C5-6	PNK	20	C1-7			UEGO1 IP

C6						
Pin	Wire Color	Gauge	Destination			
			1	2	3	
	BLK	14	S1			BATTERY GROUND
	BLK/WHT	20	C1-24			ANALOG SENSOR GROUND
	BLK/WHT	20	C1-23			ANALOG SENSOR GROUND
	GRY	20	C1-50			ANALOG SENSOR POWER 5V
	GRY	20	C1-49			ANALOG SENSOR POWER 5V
	RED	20	F1-2			BATTERY POWER
	PNK/BLK	20	F1-4			IGN SWITCH
	RED	14	F1-6			BATTERY POWER
	ORG	14	F2-1			FUSED COIL POWER
	ORG	14	F2-3			FUSED INJECTOR POWER
	ORG	14	F2-5			FUSED ACCESSORY POWER

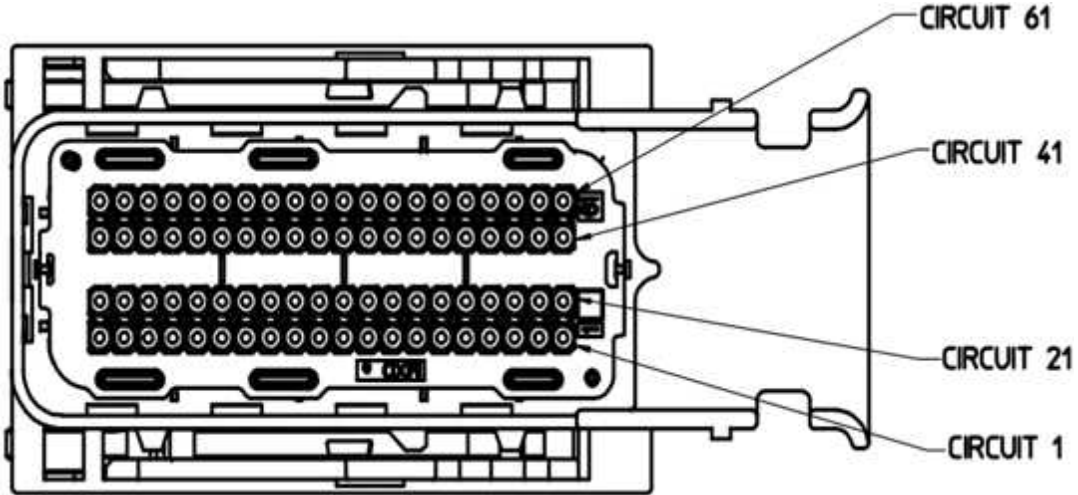
R1						
Pin	Wire Color	Gauge	Destination			
			1	2	3	
R1-1	WHT	20	C1-47			RELAY CONTROL OUT
R1-2	RED/BLK	20	F1-1			FUSED BATTERY POWER
R1-3	ORG	14	C3-A			FUSED RELAY POWER
R1-4						
R1-5	ORG	14	F1-5			FUSED BATTERY POWER

F1						
Pin	Wire Color	Gauge	Destination			
			1	2	3	
F1-1	RED/BLK	20	R1-2	C2-B	C1-10	FUSED BATTERY POWER
F1-2	RED	20	C6			BATTERY POWER
F1-3	PNK	20	C1-48			FUSED IGN SWITCH
F1-4	PNK/BLK	20	C6			IGN SWITCH
F1-5	ORG	14	R1-5			FUSED BATTERY POWER
F1-6	RED	14	C6			BATTERY POWER
F1-7						
F1-8						

F2						
Pin	Wire Color	Gauge	Destination			
			1	2	3	
F2-1	ORG	14	C6			FUSED COIL POWER
F2-2	ORG	14	C3-H			FUSED RELAY POWER
F2-3	ORG	14	C6			FUSED INJECTOR POWER
F2-4	ORG	14	C3-G			FUSED RELAY POWER
F2-5	ORG	14	C6			FUSED ACCESSORY POWER
F2-6	ORG	14	C3-F			FUSED RELAY POWER
F2-7						
F2-8						

S1				
Pin	Wire	Gauge	Destination	

	Color		1	2	3	
	BLK	14	C6			BATTERY GROUND
	BLK	20	C1-33			BATTERY GROUND
	BLK	20	C1-46			BATTERY GROUND
	BLK	20	C1-67			BATTERY GROUND
	BLK	20	C4-4			BATTERY GROUND



3705 Mini-Harness Schematic and Layout

A schematic for the 3705 mini harness is included [HERE](#).

A dimensional layout drawing for the 3705 mini harness is included [HERE](#).

Infinity-6/8h ECU Pinout

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
C1-1	LowsideSwitch_4_Out	Lowside switch, 1.7A max, NO internal flyback diode. 12V pullup	See Setup Wizard Pages "User GPOs" for activation criteria and "LowSide Assignment Tables" for output assignment
C1-2	LowsideSwitch_5_Out	Lowside switch, 6A max with internal flyback diode. Inductive load should NOT have full time power. 12V pullup	See Setup Wizard Page "LowSide Assignment Tables" for output assignment and 2D table "LS5_Duty [%]" for activation.
C1-3*	LowsideSwitch_6_Out (*Infinity-6 Only)	Lowside switch, 6A max with internal flyback diode. Inductive load should NOT have full time power. No pullup	Available on P/N 30-7106 only. See Setup Wizard Page "LowSide Assignment Tables" for output assignment and 2D table "LS6_Duty [%]" for activation.
C1-3**	Injector 7_Out (*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*	LowsideSwitch_7_Out (*Infinity-6 Only)	Lowside switch, 6A max, NO internal flyback diode. No pullup	Available on P/N 30-7106 only. See Setup Wizard Page "LowSide Assignment Tables" for output assignment and 2D table "LS7_Duty [%]" for activation.
C1-4**	Injector 8_Out (*Infinity-8H Only)	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Available on P/N 30-7108 only
C1-5	UEGO 1 Heat_Out	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 powered by a fused/switched 12V supply.
C1-6	UEGO 1 IA_In		Trim Current signal. Connect to pin 2 of Bosch UEGO sensor
C1-7	UEGO 1 IP_In		Pumping Current signal. Connect to pin 6 of Bosch UEGO sensor
C1-8	UEGO 1 UN_In		Nernst Voltage signal. Connect to pin 1 of Bosch UEGO sensor
C1-9	UEGO 1 VM_In		Virtual Ground signal. Connect to pin 5 of Bosch UEGO sensor.
C1-10	+12V_R8C_CPU_In	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_Out	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_Out	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_Out	25 mA max source current	0-5V Falling edge fire. DO NOT connect

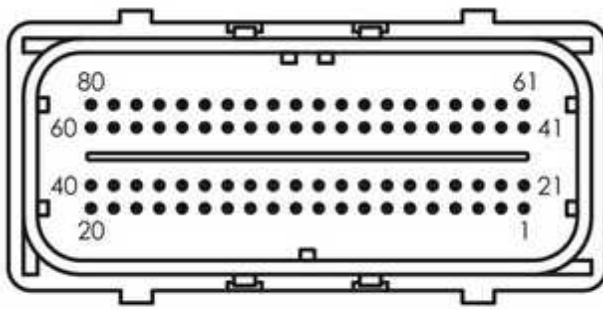
Infinity Pin	Hardware Ref.	Hardware Specification	Notes
			directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C1-14	Coil 1_Out	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C1-15	Coil 6_Out	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_Out	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+_In	Differential Variable Reluctance Zero Cross Detection	See Setup Wizard page Cam/Crank for options.
C1-18	Crankshaft Position Sensor VR-_In		See Setup Wizard page Cam/Crank for options.
C1-19	Camshaft Position Sensor 1 VR-_In	Differential Variable Reluctance Zero Cross Detection	See Setup Wizard page Cam/Crank for options.
C1-20	Camshaft Position Sensor 1 VR+_In		See Setup Wizard page Cam/Crank for options.
C1-21	LowsideSwitch_2_Out	Lowside switch, 1.7A max, NO internal flyback diode. No pullup	See Setup Wizard Pages "User GPOs" for activation criteria and "LowSide Assignment Tables" for output assignment
C1-22	LowsideSwitch_3_Out	Lowside switch, 6A max with internal flyback diode. Inductive load should NOT have full time power. No pullup	See Wizard page "LowSide Assignment Tables" for output assignment. MIL Activates when any of the following flags are true: ErrorAirTemp, ErrorBaro, ErrorCoolantTemp, ErrorEBP, ErrorFuelPressure, UEGO_0_Diag_error, UEGO_1_Diag_error, ErrorMAFAnalog, ErrorMAFDigital, ErrorMAP, ErrorOilPressure, ErrorThrottle.
C1-23	AGND_1_Out	Dedicated analog ground	Analog 0-5V sensor ground
C1-24	AGND_1_Out	Dedicated analog ground	Analog 0-5V sensor ground
C1-25	Crankshaft Position Sensor Hall_In	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_In	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page Cam/Crank for options.
C1-27	Digital_In_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_In	10K pullup to 12V. Will work with ground or floating switches.	Frequency input can be assigned to Wheel Speed, TurboSpeed, Flex Fuel or other functions. See Setup Wizard page Input Function Assignments for mapping options.
C1-29	Dig4 [Hz] / Dig4_Duty_In	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page Vehicle Speed for calibration constant.
C1-29	RS232 Rx_In	RS232 Line Driver/Receiver	Future expansion
C1-30	Digital_In_5	10K pullup to 12V. Will work with	See ClutchSwitch 1-axis table for setup

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
		ground or floating switches.	options. Input can be assigned to different pins. See Setup Wizard page Input Function Assignments for input mapping options.
C1-30	RS232 Tx_Out	RS232 Line Driver/Receiver	Future expansion
C1-31*	Dig6 [Hz] / Dig6_Duty_In (*Infinity-6 Only)	10K pullup to 12V. Will work with ground or floating switches.	Available on P/N 30-7106 only. Frequency input can be assigned to Wheel Speed, TurboSpeed, Flex Fuel or other functions. See Setup Wizard page Input Function Assignments for mapping options.
C1-31**	Coil 7_Out (*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_In_7 (*Infinity-6 Only)	10K pullup to 12V. Will work with ground or floating switches.	Available on P/N 30-7106 only. Input can be assigned to different pins. See Setup Wizard page Input Function Assignments for input mapping options.
C1-32**	Coil 8_Out (*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	Power Ground_In	Power Ground	Connect directly to battery ground
C1-34	CANL_A_Out	Dedicated High Speed CAN Transceiver	Recommend twisted pair (one twist per 2") with terminating resistor. Contact AEM for additional information.
C1-35	CANH_A_Out	Dedicated High Speed CAN Transceiver	Recommend twisted pair (one twist per 2") with terminating resistor. Contact AEM for additional information.
C1-36	CanL_B_Out	Dedicated High Speed CAN Transceiver	Not used, reserved for future expansion.
C1-37	CanH_B_Out	Dedicated High Speed CAN Transceiver	Not used, reserved for future expansion.
C1-38	Analog_In_Temp_1	12 bit A/D, 2.49K pullup to 5V	See "Coolant Temperature" Setup Wizard for selection.
C1-39	Analog_In_Temp_2	12 bit A/D, 2.49K pullup to 5V	See "Air Temperature" Setup Wizard for selection.
C1-40	Analog_In_Temp_3	12 bit A/D, 2.49K pullup to 5V	See 1D table OilTempCal table for calibration data and OilTemp [C] for channel data.
C1-41	Lowside Fuel Pump drive_Out	Lowside switch, 1.7A max, NO internal flyback diode. No pullup	Switched ground. Will prime for 2 seconds at key on and activate if RPM > 0.
C1-42	LowsideSwitch_1_In	Lowside switch, 6A max with internal flyback diode. Inductive load should NOT have full time power. No pullup	See Setup Wizard page Boost Control for options. Monitor BoostControl [%] channel for output state.

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
C1-43	Power Ground_In	Power Ground	Connect directly to battery ground
C1-44	Knock Sensor 1_In	Dedicated knock signal processor	See Setup Wizard page Knock Setup for options.
C1-45	Knock Sensor 2_In	Dedicated knock signal processor	See Setup Wizard page Knock Setup for options.
C1-46	Power Ground_In	Power Ground	Connect directly to battery ground
C1-47	+12V_Relay_Control_Out	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	+12V_SW_In	10K pulldown	Full time battery power must be available at C1-10 before this input is triggered.
C1-49	+5V_Out_1	Regulated, fused +5V supply for sensor power	Analog sensor power
C1-50	+5V_Out_1	Regulated, fused +5V supply for sensor power	Analog sensor power
C1-51	Analog_In_7	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 the Setup Wizard Set Throttle Range page for automatic min/max calibration. Monitor the Throttle [%] channel. Also DB1_TPSPA [%] for DBW applications.
C1-52	Analog_In_8	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 the Setup Wizard Set Manifold Pressure page for setup and calibration. Monitor the MAP [kPa] channel.
C1-53	Analog_In_9	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 the Setup Wizard Fuel Pressure page for setup and calibration. Monitor the FuelPressure [psig] channel.
C1-54	VR+_In_2	Differential Variable Reluctance Zero Cross Detection	See Non Driven Wheel Speed Calibration in the Setup Wizard Vehicle Speed page.
C1-55	VR-_In_2		
C1-56	VR-_In_3	Differential Variable Reluctance Zero Cross Detection	See Driven Wheel Speed Calibration in the Setup Wizard Vehicle Speed page.
C1-57	VR+_In_3		
C1-58	HighsideSwitch_0_Out	2.6A max, High Side Solid State Relay	See Setup Wizard page 'HighSide Assignment Tables' for configuration options. See 2D lookup table 'HS0_Table' for activation settings. See Setup Wizard page 'VTEC' for

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
			default activation criteria.
C1-59	Stepper_1B_Out	Automotive, Programmable Stepper Driver, up to 28V and $\pm 1.4A$	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_Out	Automotive, Programmable Stepper Driver, up to 28V and $\pm 1.4A$	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 -_Out	5.0A max Throttle Control Hbridge Drive	+12V to close
C1-62	DBW1 Motor +_Out	5.0A max Throttle Control Hbridge Drive	+12V to open
C1-63	+12V_In	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_Out	Saturated (P/N 30-7108) or peak and hold, 3A max continuous (P/N 30-7106)	Injector 6
C1-65	Injector 5_Out	Saturated (P/N 30-7108) or peak and hold, 3A max continuous (P/N 30-7106)	Injector 5
C1-66	Injector 4_Out	Saturated (P/N 30-7108) or peak and hold, 3A max continuous (P/N 30-7106)	Injector 4
C1-67	Power Ground_In	Power Ground	Connect directly to battery ground
C1-68	+12V_In	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_In_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.
C1-70	Analog_In_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.
C1-71	Analog_In_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.
C1-72	Flash_Enable_In	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.

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
			Disconnect the 12 volts signal after the update.
C1-73	Analog_In_13	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 Oil Pressure page for setup options. See OilPressure [psig] for channel data.
C1-74	Analog_In_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 the 1D lookup table 'ShiftSwitch' for setup. Also assignable to multiple functions. See Setup Wizard for details.
C1-75	Analog_In_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 the Setup Wizard Barometric Pressure page for setup and calibration. Monitor the BaroPress [kPa] channel.
C1-76	Injector_3_Out	Saturated (P/N 30-7108) or peak and hold, 3A max continuous (P/N 30-7106)	Injector 3
C1-77	Injector_2_Out	Saturated (P/N 30-7108) or peak and hold, 3A max continuous (P/N 30-7106)	Injector 2
C1-78	Injector_1_Out	Saturated (P/N 30-7108) or peak and hold, 3A max continuous (P/N 30-7106)	Injector 1
C1-79	Stepper_2A_Out	Automotive, Programmable Stepper Driver, up to 28V and $\pm 1.4A$	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_Out	Automotive, Programmable Stepper Driver, up to 28V and $\pm 1.4A$	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.

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.