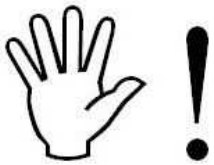
Instruction Manual

PERFORMANCE ELECTRONICS

INFINITY
Hardware Specification
Infinity Series-3 Systems
30-7113/7114



STOP!

THIS PRODUCT HAS LEGAL RESTRICTIONS.
READ THIS BEFORE INSTALLING/USING!

WARNING! THIS IS A RACE ONLY PRODUCT MANUFACTURED AND SOLD FOR INSTALLATION ON VEHICLES DESIGNED TO BE USED SOLELY FOR COMPETITION PURPOSES. ONCE THIS PART IS INSTALLED, THE VEHICLE MAY NEVER BE USED, OR REGISTERED OR LICENSED FOR USE, ON A PUBLIC ROAD OR HIGHWAY. IF YOU INSTALL THIS PART ON YOUR VEHICLE AND USE THE VEHICLE ON A PUBLIC ROAD OR HIGHWAY, YOU WILL VIOLATE THE CLEAN AIR ACT AND MAY BE SUBJECT TO PERSONAL CIVIL OR CRIMINAL LIABILITY, INCLUDING FINES OF UP TO $4,819 PER DAY.

IT IS THE RESPONSIBILITY OF THE INSTALLER AND/OR USER OF THIS PRODUCT TO ENSURE THAT IT IS USED IN COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. IF THIS PRODUCT WAS PURCHASED IN ERROR, DO NOT INSTALL AND/OR USE IT. THE PURCHASER MUST ARRANGE TO RETURN THE PRODUCT FOR A FULL REFUND.

THIS POLICY ONLY APPLIES TO INSTALLERS AND/OR USERS WHO ARE LOCATED IN THE UNITED STATES; HOWEVER CUSTOMERS WHO RESIDE IN OTHER COUNTRIES SHOULD ACT IN ACCORDANCE WITH THEIR LOCAL LAWS AND REGULATIONS.

WARNING!

Improper installation and/or adjustment of this product can result in major engine/vehicle damage. For technical assistance visit our dealer locator to find a professional installer/tuner near you.

Note: AEM holds no responsibility for any engine damage or personal injury that results from the misuse of this product, including but not limited to injury or death caused by

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
Instruction Part Number: 10-7113/7114
Document Build 1/20/2021

Table of Contents

Hardware

Wiring Harness

Hardware

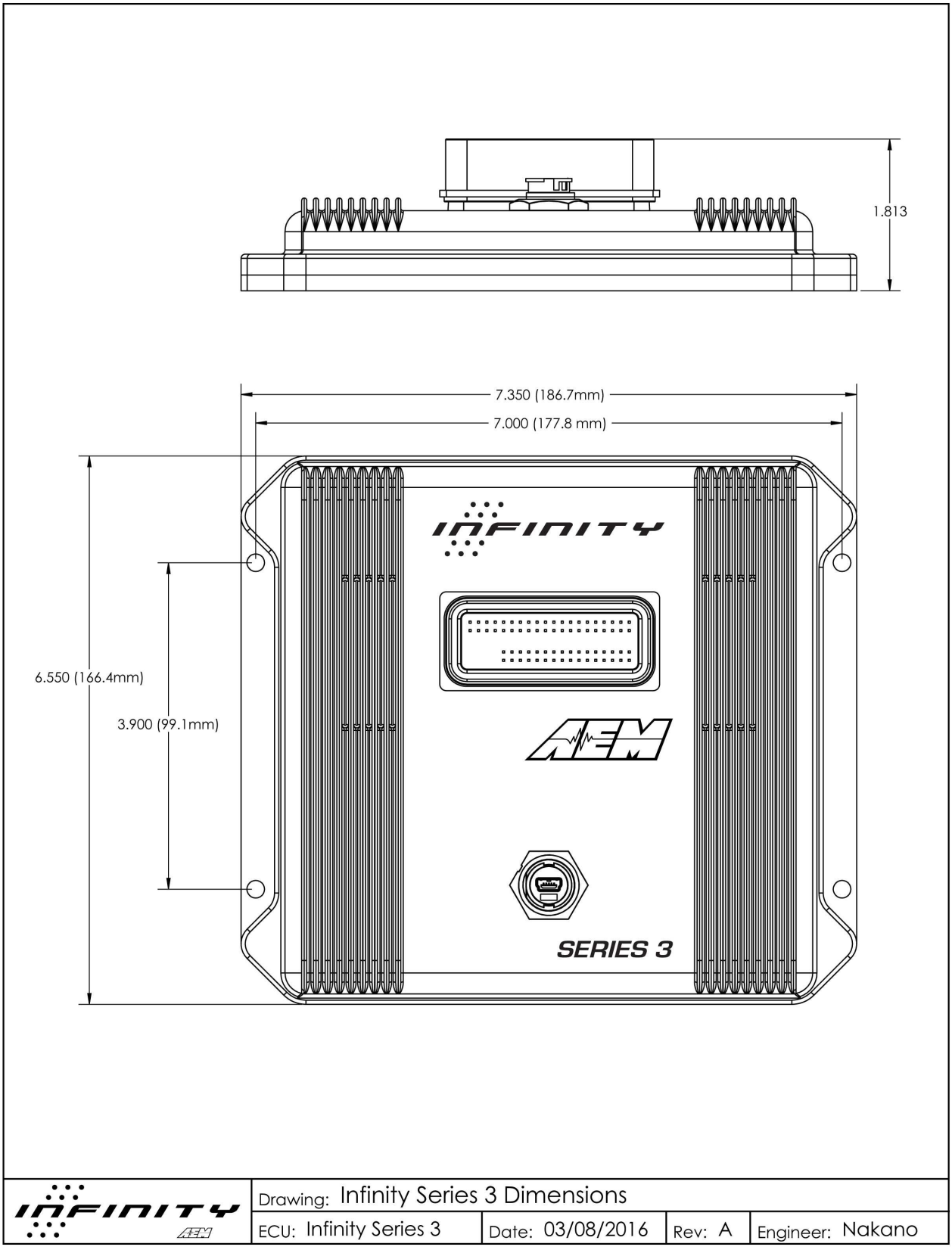
Infinity Hardware Specifications

Specifications	Infinity-308 PN: 30-7113	Infinity-358 PN: 30-7114	Infinity-506 PN: 30-7106	Infinity-508 PN: 30-7108/7112	Infinity-708 PN: 30-7101	Infinity-710 PN: 30-7100	Infinity-712 PN: 30-7111
Cylinders	Up to 8	Up to 8	Up to 6	Up to 8	Up to 8	Up to 10	Up to 12
Injectors, Low Impedance (Sequential)	2	N/A	6	N/A	8	10	12
Injectors High Impedance (Sequential)	8	8	Up to 6	8	8	10	12
Ignition (or Coil) Triggers - 0-5v Falling Edge	8	N/A	6	8	8	10	10
Direct Coil Driver - Distributed	1	1	N/A	N/A	N/A	N/A	N/A
Direct Coil Drivers - COP	N/A	8	N/A	N/A	N/A	N/A	N/A
Connector Pins	73	73	80	80	129	129	129
Drive-by-Wire	N/A	N/A	Single	Single	Dual	Dual	Dual
H-Bridge Channels	N/A	N/A	1	1	2	2	2
RS232 Channels*	1	1	1	1	1	1	1
CAN Channels	1	1	2	2	2	2	2
Knock Control	2-Channel	2-Channel	2-Channel	2-Channel	2-Channel	2-Channel	2-Channel
Analog Voltage Inputs	Up to 9	Up to 9	Up to 9	Up to 9	Up to 17	Up to 17	Up to 17
Analog Temp Inputs	Up to 3	Up to 3	Up to 3	Up to 3	Up to 6	Up to 6	Up to 6
VR/Mag Inputs	Up to 2	Up to 2	Up to 4	Up to 4	Up to 6	Up to 6	Up to 6
Digital Inputs	Up to 8	Up to 8	Up to 8	Up to 6	Up to 8	Up to 8	Up to 8
Internal Wideband UEGO Controller	N/A	N/A	1	1	2	2	2
High Side Outputs	N/A	N/A	1	1	Up to 2	Up to 2	Up to 2
Low Side Outputs	10	10	8	6	10	10	10

Specifications	Infinity-308 PN: 30-7113	Infinity-358 PN: 30-7114	Infinity-506 PN: 30-7106	Infinity-508 PN: 30-7108/7112	Infinity-708 PN: 30-7101	Infinity-710 PN: 30-7100	Infinity-712 PN: 30-7111
4-Wire Stepper Motor Control	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Boost Control (RPM, Time, Gear, VSS, Switch Input, Flex Fuel Content	Application Dependent	Application Dependent	Yes	Yes	Yes	Yes	Yes
Engine Protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Variable Cam Control	Up to 2 Application Dependent	Up to 2 Application Dependent	Up to 2	Up to 2	Up to 4	Up to 4	Up to 4
Launch Control	Application Dependent	Application Dependent	Yes	Yes	Yes	Yes	Yes
Nitrous Control	Application Dependent	Application Dependent	Single Stage	Single Stage	Single Stage	Single Stage	Single Stage
Data Logging	PC & Internal Engine History	PC & Internal Engine History	Up to 64 GB	Up to 64 GB	Up to 64 GB	Up to 64 GB	Up to 64 GB
Traction Control	Up to 2-Wheel Speed Application Dependent	Up to 2-Wheel Speed Application Dependent	Up to 2-Wheel Speed	Up to 2-Wheel Speed	Up to 4-Wheel Speed	Up to 4-Wheel Speed	Up to 4-Wheel Speed
Weather Resistance	Yes, Sealed Enclosure with IP67 Connectors	Yes, Sealed Enclosure with IP67 Connectors	Yes, Sealed Enclosure with IP67 Connectors	Yes, Sealed Enclosure with IP67 Connectors	Yes, Sealed Enclosure with IP67 Connectors	Yes, Sealed Enclosure with IP67 Connectors	Yes, Sealed Enclosure with IP67 Connectors
Enclosure Dims	7.35"x6.55"x1.8"	.855"x5.55"x1.8"	5.855"x5.55"x1.8"	5.855"x5.55"x1.8"	6.75"x6.00"x1.8"	6.75"x6.00"x1.8"	6.75"x6.00"x1.8"
Weight	29.9 oz/848g	29.9 oz/848g	18.8 oz/476.27g	18.8 oz/476.27g	24oz/680g	24oz/680g	24oz/680g

**Dual use pins. Tx and Rx shared with 2 digital inputs.

ECU Installation Dimensions Infinity-Series3



INFINITY AEM	Drawing: Infinity Series 3 Dimensions			
	ECU: Infinity Series 3	Date: 03/08/2016	Rev: A	Engineer: Nakano

Wiring Harness

Wiring

Universal Pinout, Infinity-Series3, 30-7113

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
C1-1	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.
C1-2	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.
C1-3	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.
C1-4	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.
C1-5	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.
C1-6	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.
C1-7	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.
C1-8	Crankshaft Position Sensor VR+	Differential Variable Reluctance Zero Cross Detection	See Setup Wizard page Cam/Crank for options.
C1-9	Crankshaft Position Sensor VR-		See Setup Wizard page Cam/Crank for options.
C1-10	Camshaft Position Sensor 1 VR-	Differential Variable Reluctance Zero Cross Detection	See Setup Wizard page Cam/Crank for options.
C1-11	Camshaft Position Sensor 1 VR+		See Setup Wizard page Cam/Crank for options.
C1-12	CANH A	Dedicated High Speed CAN Transceiver	Recommend twisted pair (one twist per 2") with terminating resistor. Contact AEM for additional information.

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
C1-13	CANL A	Dedicated High Speed CAN Transceiver	Recommend twisted pair (one twist per 2") with terminating resistor. Contact AEM for additional information.
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 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.
C1-16	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.
C1-17	Coil 7	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.
C1-18	Ignition Switch	10K pulldown	Full time battery power must be available at C1-34 before this input is triggered.
C1-19	Main Relay Power Input	12 volt power from relay	12 volt power from relay. Relay must be controlled by +12V Relay Control signal, pin C1-7 above.
C1-20	Knock Sensor 2	Dedicated knock signal processor	See Setup Wizard page Knock Setup for options.
C1-21	Knock Sensor 1	Dedicated knock signal processor	See Setup Wizard page Knock Setup for options.
C1-22	Analog Sensor Ground	Dedicated analog ground	Analog 0-5V sensor ground
C1-23	Analog Sensor Ground	Dedicated analog ground	Analog 0-5V sensor ground
C1-24	Crankshaft Position Sensor Hall	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page Cam/Crank for options.
C1-25	Camshaft Position Sensor 1 Hall	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page Cam/Crank for options.
C1-26	Digital 2	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page Cam/Crank for options.
C1-27	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.

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
C1-28	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	Digital 5	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page "Input Function Assignments" for setup options.
C1-30	Dig6 [Hz] / Dig6_Duty	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page "Input Function Assignments" for setup options.
C1-31	Digital 7	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	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.
C1-33	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.
C1-34	Battery Perm Power	Dedicated power management CPU	Full time battery power. MUST be powered before the ignition switch input is triggered (See C1-18).
C1-35	Main Relay Power Input	12 volt power from relay	12 volt power from relay. Relay must be controlled by +12V Relay Control signal, pin C1-7 above.
C1-36	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.
C1-37	Analog Temp 1	12 bit A/D, 2.49K pullup to 5V	Default Coolant Temperature Input
C1-38	Analog Temp 2	12 bit A/D, 2.49K pullup to 5V	Default Air Temperature Input
C1-39	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.
C1-40	Analog 7	12 bit A/D, 100K pullup to 5V	Default primary Throttle Position 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. See Setup Wizard Set Throttle Range

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
			page for automatic min/max calibration. Monitor the Throttle [%] channel.
C1-41	Analog 8	12 bit A/D, 100K pullup to 5V	Default Manifold 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.
C1-42	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.
C1-43	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.
C1-44	+5V Sensor Power	Regulated, fused +5V supply for sensor power	Analog sensor power
C1-45	+5V Sensor Power	Regulated, fused +5V supply for sensor power	Analog sensor power
C1-46	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.
C1-47	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.

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
C1-48	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.
C1-49	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.
C1-50	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 the Setup Wizard "Input Function Assignments" page for options.
C1-51	Battery Ground	Battery Ground	Connect directly to battery ground
C1-52	Coil 1 HO	IGBT Ignition Driver	
C1-53	Lowside 9	Lowside switch, 2A 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.
C1-54	Lowside 8	Lowside switch, 2A 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.
C1-55	Lowside 7	Lowside switch, 2A 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.
C1-56	Lowside 6	Lowside switch, 2A max with internal flyback diode. Inductive load should NOT have full time	See Setup Wizard Page "Output Function Assignment" for setup options.

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
		power. No pullup	
C1-57	Lowside 5	Lowside switch, 2A 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.
C1-58	Injector 8	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Injector 8
C1-59	Injector 6	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Injector 6
C1-60	Injector 4	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Injector 4
C1-61	Injector 2	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Injector 2
C1-62	Injector 2 Peak and Hold	Peak and hold, 3A max continuous	Injector 2 Peak and Hold - for use with typical throttle body injection systems
C1-63	Injector 1 Peak and Hold	Peak and hold, 3A max continuous	Injector 1 Peak and Hold - for use with typical throttle body injection systems
C1-64	Injector 1	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Injector 1
C1-65	Injector 3	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Injector 3
C1-66	Injector 5	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Injector 5
C1-67	Injector 7	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Injector 7
C1-68	Lowside 4	Lowside switch, 2A max, NO internal flyback diode. 12V pullup	See Setup Wizard Page "Output Function Assignment" for setup options.
C1-69	Lowside 3	Lowside switch, 2A max with	See Setup Wizard Page "Output

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
		internal flyback diode. Inductive load should NOT have full time power. No pullup	Function Assignment" for setup options.
C1-70	Lowside 2	Lowside switch, 1.7A max, NO internal flyback diode. No pullup	See Setup Wizard Page "Output Function Assignment" for setup options.
C1-71	Lowside 1	Lowside switch, 2A 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.
C1-72	Lowside 0	Lowside switch, 2A max, NO internal flyback diode. No pullup	See Setup Wizard Page "Output Function Assignment" for setup options.
C1-73	Battery Ground	Battery Ground	Connect directly to battery ground

Universal Pinout, Infinity-Series3, 30-7114

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
C1-1	Coil 5	IGBT Ignition Driver	Connect directly to coil primary negative. Coil power should be provided by a source switched by the ECU controlled EFI main relay.
C1-2	Coil 3	IGBT Ignition Driver	Connect directly to coil primary negative. Coil power should be provided by a source switched by the ECU controlled EFI main relay.
C1-3	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.
C1-4	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.

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
C1-5	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.
C1-6	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.
C1-7	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.
C1-8	Crankshaft Position Sensor VR+	Differential Variable Reluctance Zero Cross Detection	See Setup Wizard page Cam/Crank for options.
C1-9	Crankshaft Position Sensor VR-		See Setup Wizard page Cam/Crank for options.
C1-10	Camshaft Position Sensor 1 VR-	Differential Variable Reluctance Zero Cross Detection	See Setup Wizard page Cam/Crank for options.
C1-11	Camshaft Position Sensor 1 VR+		See Setup Wizard page Cam/Crank for options.
C1-12	CANH A	Dedicated High Speed CAN Transceiver	Recommend twisted pair (one twist per 2") with terminating resistor. Contact AEM for additional information.
C1-13	CANL A	Dedicated High Speed CAN Transceiver	Recommend twisted pair (one twist per 2") with terminating resistor. Contact AEM for additional information.
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 4	IGBT Ignition Driver	Connect directly to coil primary negative. Coil power should be provided by a source switched by the ECU controlled EFI main relay.
C1-16	Coil 6	IGBT Ignition Driver	Connect directly to coil primary negative. Coil power should be provided by a source switched by the ECU controlled EFI main relay.
C1-17	Coil 7	IGBT Ignition Driver	Connect directly to coil primary negative. Coil power should be

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
			provided by a source switched by the ECU controlled EFI main relay.
C1-18	Ignition Switch	10K pulldown	Full time battery power must be available at C1-34 before this input is triggered.
C1-19	Main Relay Power Input	12 volt power from relay	12 volt power from relay. Relay must be controlled by +12V Relay Control signal, pin C1-7 above.
C1-20	Knock Sensor 2	Dedicated knock signal processor	See Setup Wizard page Knock Setup for options.
C1-21	Knock Sensor 1	Dedicated knock signal processor	See Setup Wizard page Knock Setup for options.
C1-22	Analog Sensor Ground	Dedicated analog ground	Analog 0-5V sensor ground
C1-23	Analog Sensor Ground	Dedicated analog ground	Analog 0-5V sensor ground
C1-24	Crankshaft Position Sensor Hall	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page Cam/Crank for options.
C1-25	Camshaft Position Sensor 1 Hall	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page Cam/Crank for options.
C1-26	Digital 2	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page Cam/Crank for options.
C1-27	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.
C1-28	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	Digital 5	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page "Input Function Assignments" for setup options.
C1-30	Dig6 [Hz] / Dig6_Duty	10K pullup to 12V. Will work with ground or floating switches.	See Setup Wizard page "Input Function Assignments" for setup options.
C1-31	Digital 7	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	IGBT Ignition Driver	Connect directly to coil primary negative. Coil power should be provided by a source switched

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
			by the ECU controlled EFI main relay.
C1-33	Coil 2	IGBT Ignition Driver	Connect directly to coil primary negative. Coil power should be provided by a source switched by the ECU controlled EFI main relay.
C1-34	Battery Perm Power	Dedicated power management CPU	Full time battery power. MUST be powered before the ignition switch input is triggered (See C1-18).
C1-35	Main Relay Power Input	12 volt power from relay	12 volt power from relay. Relay must be controlled by +12V Relay Control signal, pin C1-7 above.
C1-36	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.
C1-37	Analog Temp 1	12 bit A/D, 2.49K pullup to 5V	Default Coolant Temperature Input
C1-38	Analog Temp 2	12 bit A/D, 2.49K pullup to 5V	Default Air Temperature Input
C1-39	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.
C1-40	Analog 7	12 bit A/D, 100K pullup to 5V	Default primary Throttle Position 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. See Setup Wizard Set Throttle Range page for automatic min/max calibration. Monitor the Throttle [%] channel.
C1-41	Analog 8	12 bit A/D, 100K pullup to 5V	Default Manifold 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.

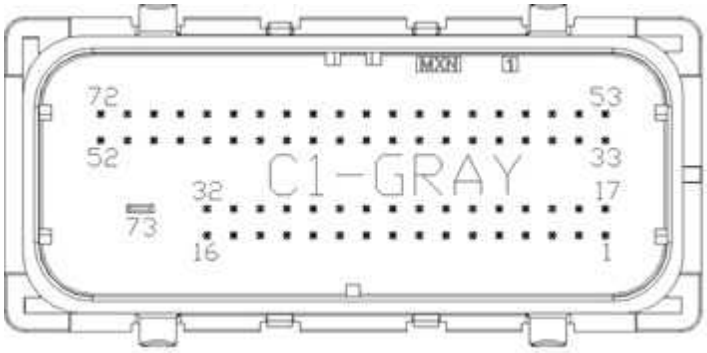
Infinity Pin	Hardware Ref.	Hardware Specification	Notes
C1-42	Analog 9	12 bit A/D, 100K pullup to 5V	Default Fuel Pressure Sensor Input. 0-5V analog signal. Use +5V Out pins as power supply and Sensor Ground pins as the low reference. Do not connect signals referenced to +12V as this can permanently damage the ECU.
C1-43	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.
C1-44	+5V Sensor Power	Regulated, fused +5V supply for sensor power	Analog sensor power
C1-45	+5V Sensor Power	Regulated, fused +5V supply for sensor power	Analog sensor power
C1-46	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.
C1-47	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.
C1-48	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.
C1-49	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

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
			this can permanently damage the ECU. See Setup Wizard page "Input Function Assignments" for setup options.
C1-50	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 the Setup Wizard "Input Function Assignments" page for options.
C1-51	Battery Ground	Battery Ground	Connect directly to battery ground
C1-52	Coil 1 HO	IGBT Ignition Driver	Connect directly to coil primary negative. Coil power should be provided by a source switched by the ECU controlled EFI main relay.
C1-53	Lowside 9	Lowside switch, 2A 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.
C1-54	Lowside 8	Lowside switch, 2A 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.
C1-55	Lowside 7	Lowside switch, 2A 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.
C1-56	Lowside 6	Lowside switch, 2A 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.
C1-57	Lowside 5	Lowside switch, 2A max with internal flyback diode. Inductive load should NOT have full time power.	See Setup Wizard Page "Output Function Assignment" for setup options.

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
		No pullup	
C1-58	Injector 8	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Injector 8
C1-59	Injector 6	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Injector 6
C1-60	Injector 4	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Injector 4
C1-61	Injector 2	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Injector 2
C1-62	Not used		
C1-63	Not used		
C1-64	Injector 1	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Injector 1
C1-65	Injector 3	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Injector 3
C1-66	Injector 5	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Injector 5
C1-67	Injector 7	For use with high impedance (10-15 ohms) injectors only, 1.7A max.	Injector 7
C1-68	Lowside 4	Lowside switch, 2A max, NO internal flyback diode. 12V pullup	See Setup Wizard Page "Output Function Assignment" for setup options.
C1-69	Lowside 3	Lowside switch, 2A 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.
C1-70	Lowside 2	Lowside switch, 1.7A max, NO internal flyback diode. No pullup	See Setup Wizard Page "Output Function Assignment" for setup options.
C1-71	Lowside 1	Lowside switch, 2A max with internal flyback diode. Inductive	See Setup Wizard Page "Output Function Assignment" for setup

Infinity Pin	Hardware Ref.	Hardware Specification	Notes
		load should NOT have full time power. No pullup	options.
C1-72	Lowside 0	Lowside switch, 2A max, NO internal flyback diode. No pullup	See Setup Wizard Page "Output Function Assignment" for setup options.
C1-73	Battery Ground	Battery Ground	Connect directly to battery ground

Connector Views Infinity-Series3



Example System Schematics

Custom wiring harness projects should only be undertaken by experienced harness builders. If in doubt, please contact AEM for recommendations.

For users wishing to build their own wiring harnesses from scratch, the following kits are available to help.

30-3701 Infinity Series 7 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.

30-3702 Infinity Series 7 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 Series 7 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.

30-3704 Infinity Series 5 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.

30-3805 Universal modular V8 harness system for Infinity Series 7 systems
The Infinity Universal Modular 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 modular V8 harness system for Infinity Series 5 systems
The Infinity Universal Modular 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.

30-3705 Universal Mini Harness for Infinity Series 5 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.

30-3706 Universal Mini Flying Lead for Infinity Series 5 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.

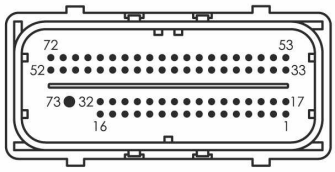
30-3707 Universal Mini Flying Lead for Infinity Series 3 systems
This harness is intended to be used as a starting point by experienced harness builders. It saves time by including basic power distribution features that can be expanded to suit many application requirements.

30-3708 Infinity Series 3 Plug & Pin Kit
Bare necessities to begin a custom wire harness design. Includes 73-pin Molex MX123 harness connector, terminals and sealing plugs, main relay and relay socket.

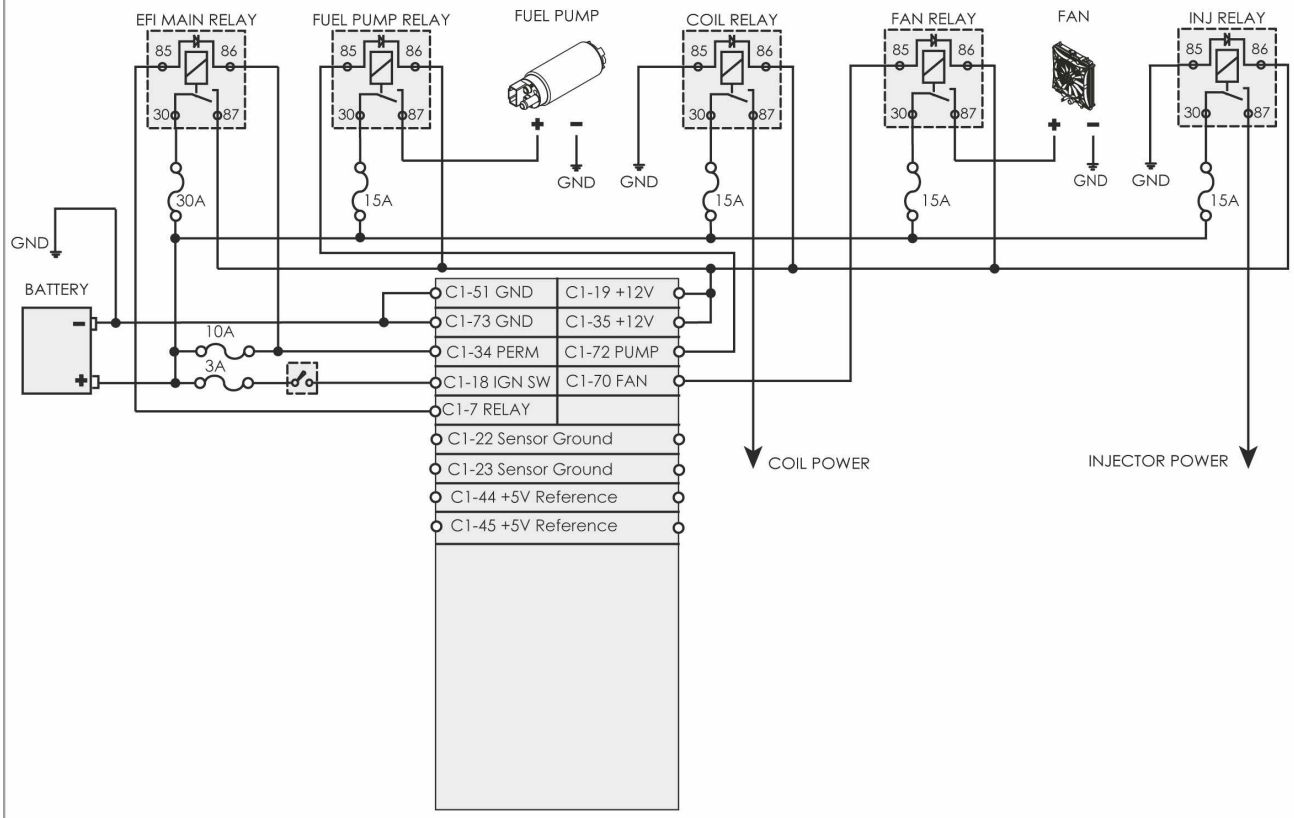
The following schematics show examples for wiring a basic Infinity system. Examples are included for Infinity Series 3, Infinity Series 5 and Infinity Series 7 hardware platforms. ***The power, ground and accessory relay sections of the following schematics must be strictly followed to avoid inconsistent power sequencing and possible ECU damage.***

Power Distribution, Infinity-Series3

NAME	FUNCTION
GND	Battery ground
PERM	Fused connection to battery positive terminal (+12V, always hot)
IGN SW	Fused connection to vehicle ignition switch (+12V in RUN/CRANK only)
RELAY	Switched ground from ECU connected to relay coil primary negative
+12V	Relay driven +12V power source for ECU power and auxiliary outputs
+5V Reference	+5V supplied by ECU
Sensor Ground	Analog ground used as ground point for sensors

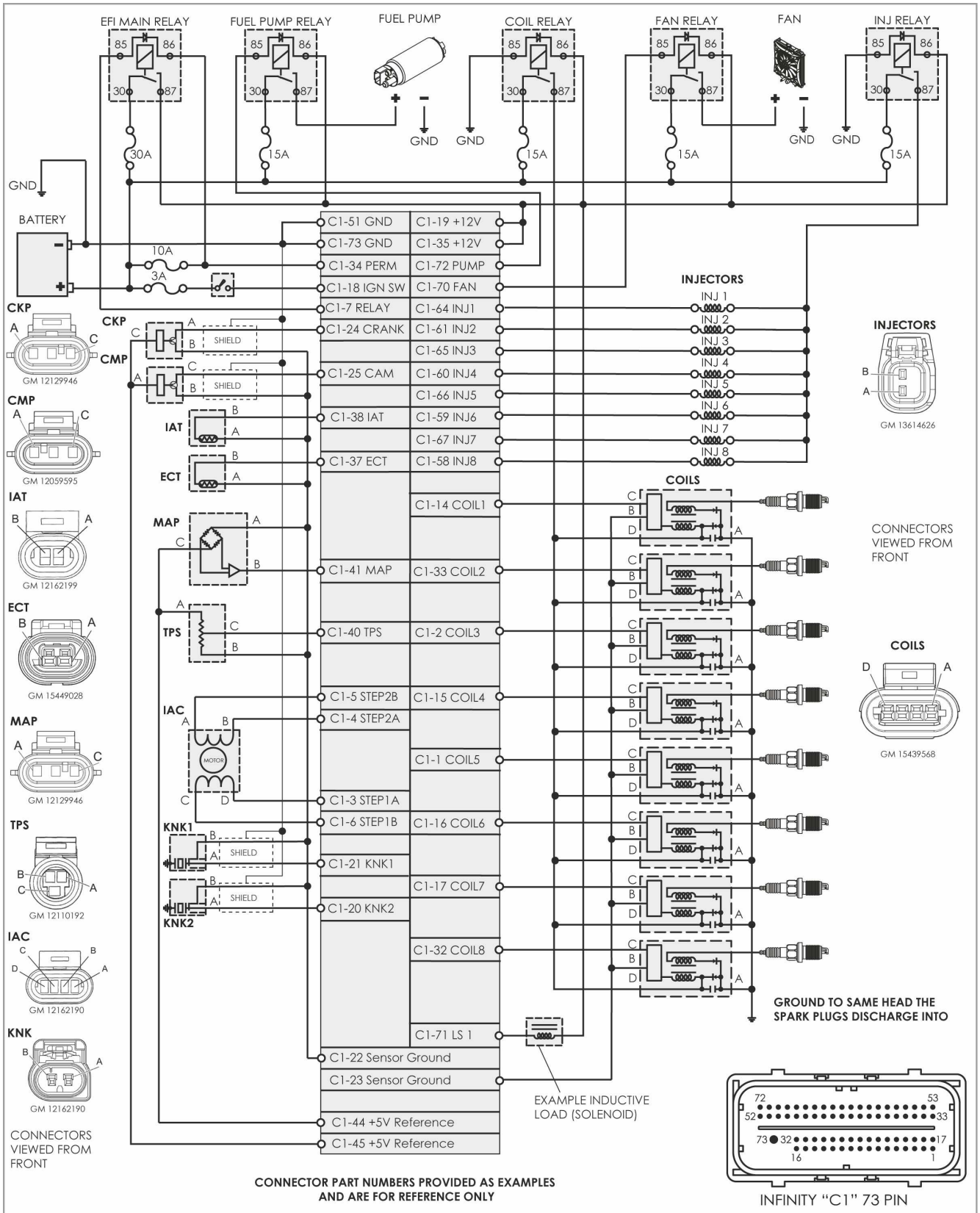


INFINITY "C1" 73 PIN



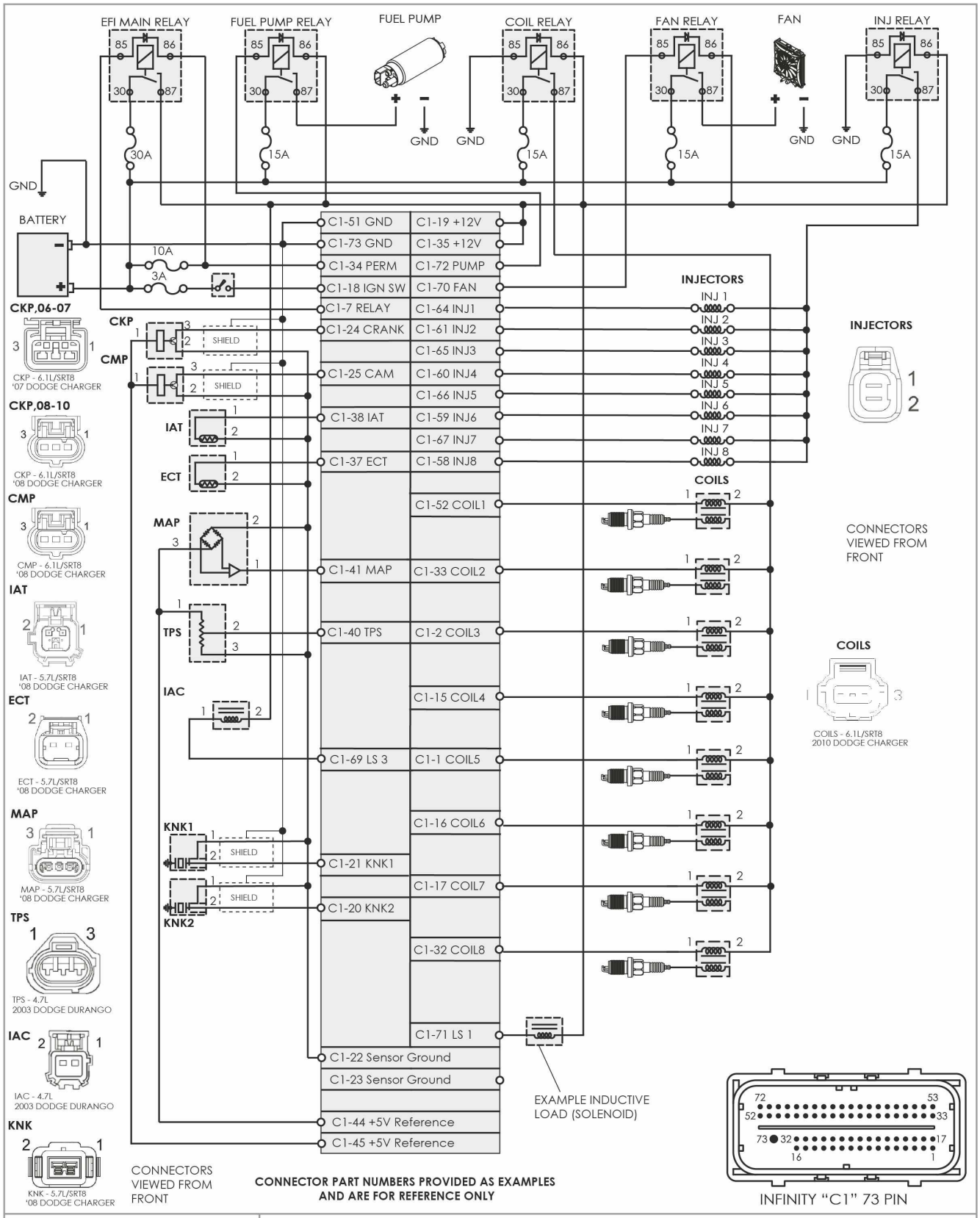
INFINITY AEM	Drawing: Power Distribution - Infinity-Series 3			
	ECU: INFINITY 308/358	Date: 3/24/16	Rev: A	Engineer: Armish

GM LS Wiring, Infinity-Series3



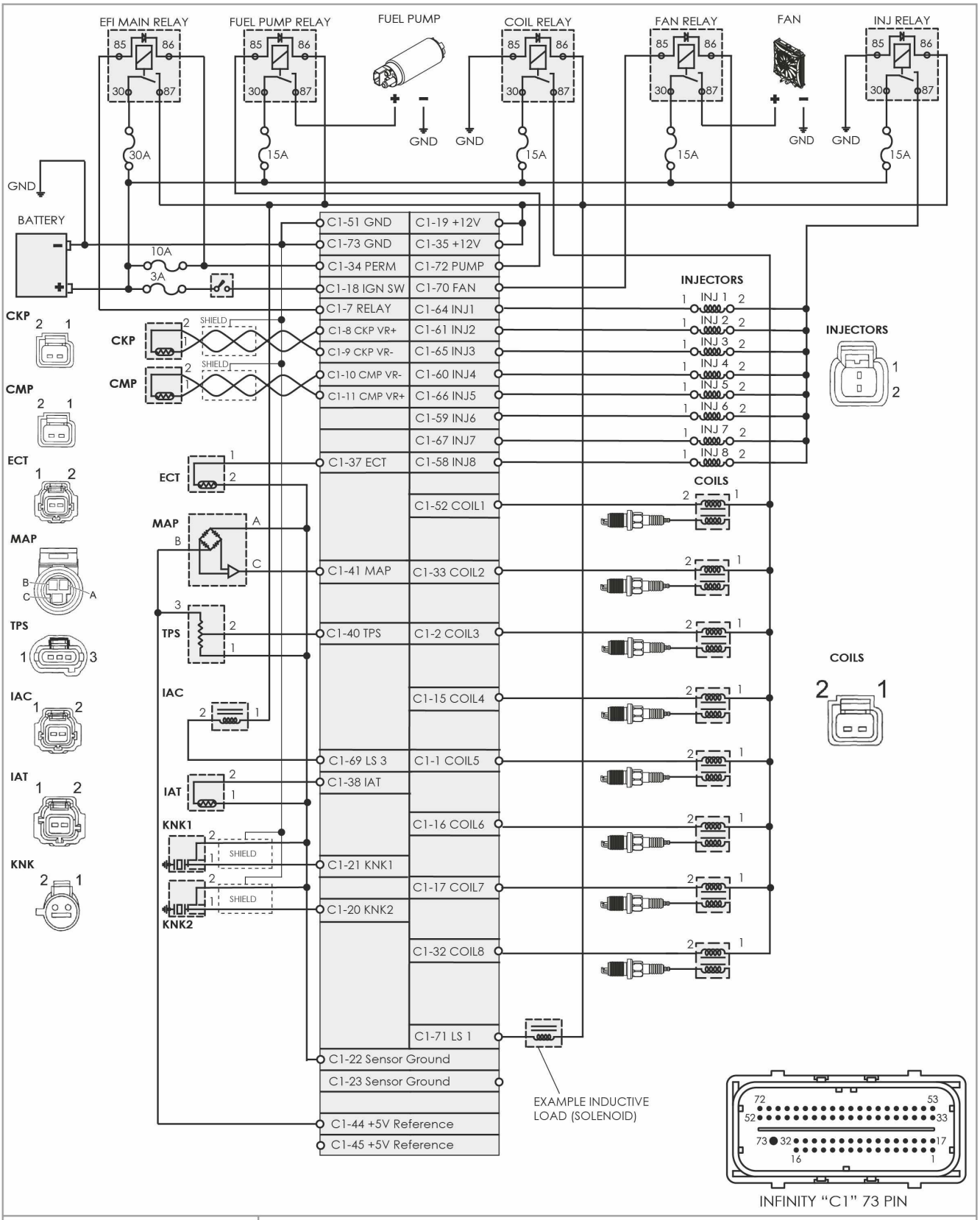
INFINITY AEM	Drawing: GM LS			
	ECU: INFINITY 308	Date: 3/24/16	Rev: A	Engineer: Armish

Dodge Hemi 6.1L Wiring, Infinity-Series3



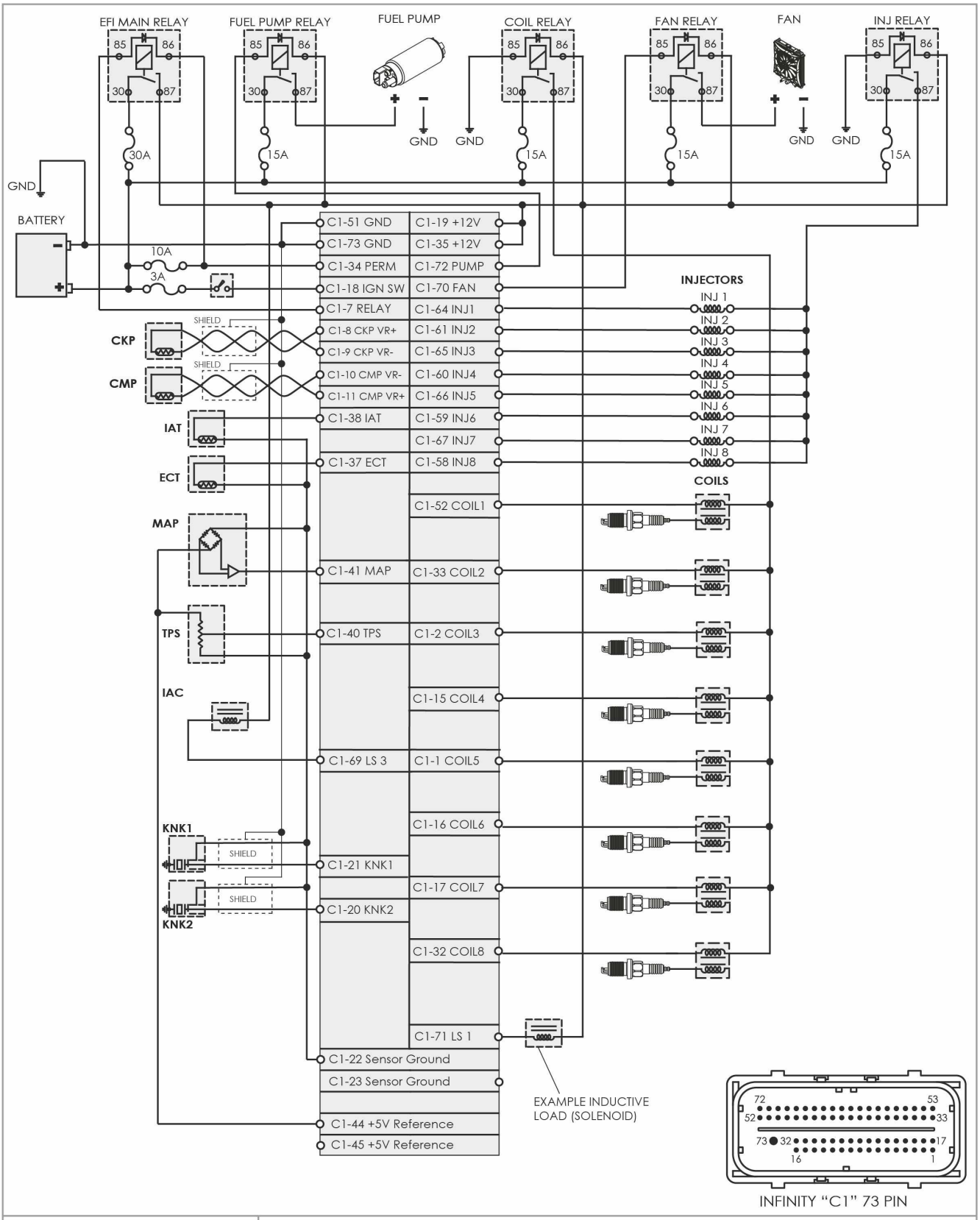
INFINITY AEM	Drawing: 2006-2010 HEMI 6.1L			
	ECU: INFINITY 358	Date: 3/24/16	Rev: A	Engineer: Armish

Ford 4.6L SOHC Wiring, Infinity-Series3

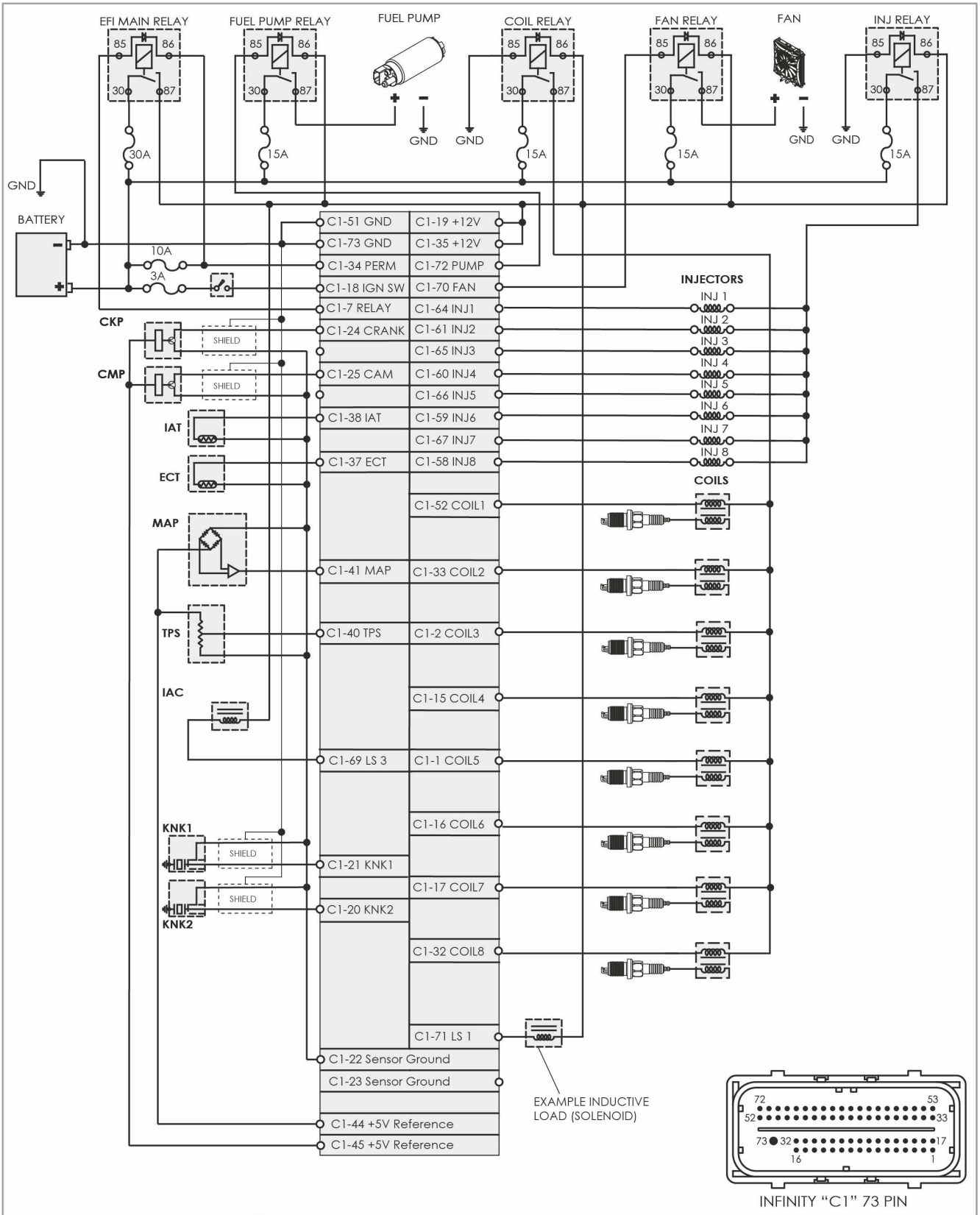


INFINITY AEM	Drawing: 1999-2005 FORD 4.6L SOHC			
	ECU: INFINITY 358	Date: 3/24/16	Rev: A	Engineer: Armish

Generic V8 Wiring, Infinity-Series3



INFINITY AEM	Drawing: Generic V8, Direct Coil Drive, Mag CKP/CMP			
	ECU: INFINITY 358	Date: 3/24/16	Rev: A	Engineer: Armish



INFINITY AEM	Drawing: Generic V8, Direct Coil Drive, Hall CKP/CMP			
	ECU: INFINITY 358	Date: 3/24/16	Rev: A	Engineer: Armish