

AiM Infotech

AEM Infinity ECUs

Release 1.02



ECU



1 Supported models

AEM Infinity supported models are:

- Infinity 506/508H
- Infinity 708/710/712

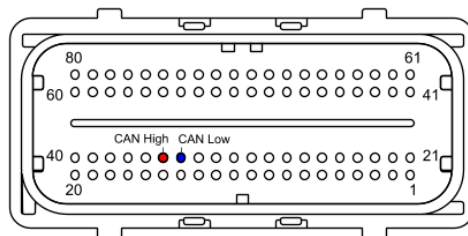
Technical note: for AEM Infinity plug&Play kits address to AEM technical service.

2 Connection to AiM devices

Infinity ECUs feature a bus communication protocol based on CAN. Here follow instructions on how to connect these ECUs to AiM devices.

2.1 Connection of Infinity 506/508H

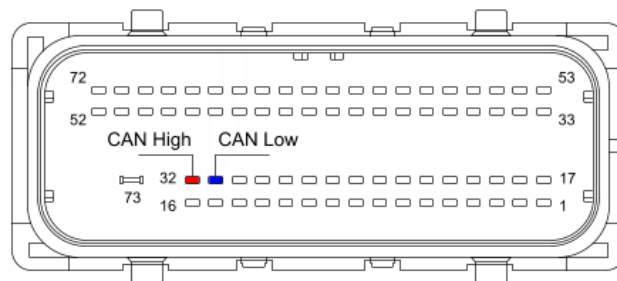
Infinity 506/508H ECU has a front Molex connector. Here below is connector pinout from solder termination side as well as connection table.



Molex connector pin	Pin function	AiM cable
C1-35	CAN High	CAN+
C1-34	CAN Low	CAN-

2.2 Connection of Infinity 708/710/712

Infinity 708/710/712 ECU has two front Molex connectors: one grey and the other blue. To connect AEM 708/710/712 ECU to AiM device use the grey one. Here below is connector pinout from solder termination side as well as connection table.



Molex connector pin	Pin function	AiM cable
C1-32	CAN High	CAN+
C1-31	CAN Low	CAN-

3 AiM device configuration

Before connecting the ECU to AiM device set this up using AiM Race Studio software. The parameters to select in the device configuration are:

- ECU manufacturer "AEM"
- ECU Model
 - "EMS v1.17 CAN+DynoShaft" for ECU with firmware version up to v96.1
 - "Infinity v96.1 CAN" for ECU with firmware version from v96.1 included onward

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Available channels

Channels received by AiM devices changes according to the selected protocol.

4.1

"AEM" "EMS v1.17 CAN+Dynoshaft" protocol

Channels received by AiM devices connected to "AEM" "EMS v1.17 CAN+DynoShaft " protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	EMS_RPM	RPM
ECU_2	EMS_ENG_LOAD	Engine Load
ECU_3	EMS_TPS	Throttle position sensor
ECU_4	EMS_AIR_TEMP	Air Temperature
ECU_5	EMS_COOL_TEMP	Engine Coolant Temperature
ECU_6	EMS_ADCR11	Analog Digital Converter 11; 0-5 Volts
ECU_7	EMS_ADCR13	Analog Digital Converter 13; 0-5 Volts
ECU_8	EMS_ADCR14	Analog Digital Converter 14; 0-5 Volts
ECU_9	EMS_ADCR17	Analog Digital Converter 17; 0-5 Volts
ECU_10	EMS_ADCR18	Analog Digital Converter 18; 0-5 Volts
ECU_11	EMS_ADCR15	Analog Digital Converter 15; 0-5 Volts
ECU_12	EMS_ADCR16	Analog Digital Converter 16; 0-5 Volts
ECU_13	EMS_ADCR08	Analog Digital Converter 08; 0-5 Volts
ECU_14	EMS_O2_#1	Lambda sensor
ECU_15	EMS_O2_#2	Lambda sensor
ECU_16	EMS_VEH_SPEED	Vehicle speed
ECU_17	EMS_GEAR	Engaged Gear
ECU_18	EMS_IGN_TIM	Ignition Time
ECU_19	EMS_BATT_VOLT	Battery Voltage



ECU_20	EMS_ENG_LOAD2	Engine Load 2
ECU_21	DY_DSH_RPM	Driveshaft RPM
ECU_22	DY_DSH_TQ_FTLB	Driveshaft Torque - ft-lb
ECU_23	DY_DSH_PW_HP	DriveShaft Power - HP
ECU_24	DY_TQ_FR_FTLB	Torque Fraction ft-lb
ECU_25	DY_PW_FR_HP	PowerFraction - HP
ECU_26	DY_DSH_RPM2	DriveShaft RPM
ECU_27	DY_DSH_TQ2FTLB	Driveshaft Torque (low range) - ft-lb
ECU_28	DY_DSH_PW2_HP	Driveshaft Power (low range) - HP
ECU_29	DY_SYS_VOLT	System Voltage
ECU_30	DY_TANK_VOLT	Tank Voltage
ECU_31	DY_SENS_VOLT	Sensor Voltage
ECU_32	DY_POW_LEV	Power level
ECU_33	DY_SENS_TEMP	Sensor Temp
ECU_34	DY_DRV_FREQ	Drive Frequency
ECU_35	DY_SYST_TEMP	System Temp
ECU_36	DY_ERROR	Mixed Errors and status: bit = 0 – Sensor firmware error bit = 1 – Controller firmware error bit = 2 – Sensor comms active bit = 3 – Got good zero offset bit = 4 – Got good calibration bit = 5 – Led aligned bit = 6 – Auto zero active bit = 7 – not used

4.2

"AEM" "Infinity v.96 CAN" protocol

Channels received by AiM devices connected to "AEM" "Infinity v96 CAN" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	ECU_RPM	RPM
ECU_2	ECU_TPS	Throttle position sensor
ECU_3	ECU_AIR_T	Intake air temperature
ECU_4	ECU_ECT	Engine coolant temperature
ECU_5	ECU_MAP	Manifold air pressure
ECU_6	ECU_VE	Idle value
ECU_7	ECU_FUEL_P	Fuel pressure
ECU_8	ECU_OIL_P	Oil pressure
ECU_9	ECU_LAMB_TRG	Lambda target
ECU_10	ECU_FUEL_PUMP	Fuel pump
ECU_11	ECU_N2O_ACTIV	N2O active switch
ECU_12	ECU_MIL	Malfunctioning indication lamp
ECU_13	ECU_MAF	Manifold air flow
ECU_14	ECU_CLUTCH_P	Clutch pressure
ECU_15	ECU_BRAKE_SW	Brake switch
ECU_16	ECU_CLUTCH_SW	Clutch switch
ECU_17	ECU_INJ_PULSE	Injection pulse
ECU_18	ECU_MODE_SW	Mode switch
ECU_19	ECU_WATER_P	Water pressure
ECU_20	ECU_CRANK_P	Crank pressure
ECU_21	ECU_EST_TORQ	Estimated engine torque
ECU_22	ECU_LAMB1	Lambda 1 value
ECU_23	ECU_LAMB2	Lambda 2 value
ECU_24	ECU_VEH_SPD	Vehicle speed
ECU_25	ECU_GEAR	Engaged gear



ECU_26	ECU_IGN_TIME	Ignition time
ECU_27	ECU_BATT_VOLT	Battery supply
ECU_28	ECU_LAMB_TRIM	Lambda trim
ECU_29	ECU_BARO_P	Barometric pressure
ECU_30	ECU_IAT	Intake air temperature
ECU_31	ECU_OIL_T	Oil temperature
ECU_32	ECU_VTEC_SW	Vtec switch
ECU_33	ECU_TRASM_T	Transmission temperature
ECU_34	ECU_BOOST_TRG	Boost target
ECU_35	ECU_BOOST_CTRL	Boost control
ECU_36	ECU_TC_RET	Traction control retard
ECU_37	ECU_TC_MODE	Traction control mode
ECU_38	ECU_W_SPD_FL	Front left wheel speed
ECU_39	ECU_W_SPD_FR	Front right wheel speed
ECU_40	ECU_W_SPD_RL	Rear left wheel speed
ECU_41	ECU_W_SPD_RR	Rear right wheel speed
ECU_42	ECU_TC_SP_TRG	Traction control slip target
ECU_43	ECU_TC_SP_MES	Traction control slip measurement
ECU_44	ECU_TC_TRQ_RED	Traction control torque reduction
ECU_45	ECU_ADCR11	User 11
ECU_46	ECU_ADCR13	User 13
ECU_47	ECU_ADCR14	User 14
ECU_48	ECU_ADCR17	User 17
ECU_49	ECU_ADCR18	User 18
ECU_50	ECU_ADCR15	User 15
ECU_51	ECU_ADCR16	User 16
ECU_52	ECU_ADCR08	User 08