



PERFORMANCE ELECTRONICS

***Installation Instructions for:
EMS P/N 30-6030***

***2002-2004 Acura RSX K20A2 and K20A3
2002-2004 Honda CR-V K24A1
2001-2005 Honda Civic Si K20A3
2001-2005 Honda Civic D17A1, D17A2, and D17A6***

WARNING:



This installation is not for the tuning novice nor the PC illiterate! Use this system with EXTREME caution! The AEM EMS System allows for total flexibility in engine tuning. Misuse of this product can destroy your engine! If you are not well versed in engine dynamics and the tuning of management systems or are not PC literate, please do not attempt the installation. Refer the installation to a AEM trained tuning shop or call 800-423-0046 for technical assistance. You should also visit the AEM EMS Tech Forum at <http://www.aempower.com>

NOTE: AEM holds no responsibility for any engine damage that results from the misuse of this product!

This product is legal in California for racing vehicles only and should never be used on public highways.

| Vehicle fitment | Series I EMS | Series II EMS |
|---|--------------|---------------|
| 2002-2004 Acura RSX K20A2 and K20A3 | 30-1030 | 30-6030 |
| 2002-2004 Honda CR-V K24A1 | 30-1030 | 30-6030 |
| 2001-2005 Honda Civic Si K20A3 | 30-1030 | 30-6030 |
| 2001-2005 Honda Civic D17A1, D17A2, and D17A6 | 30-1030 | 30-6030 |

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 Instruction Part Number: 10-6030

Thank you for purchasing an AEM Engine Management System.

The AEM Engine Management System (EMS) is the result of extensive development on a wide variety of cars. Each system is engineered for each particular application. The AEM EMS differs from all others in several ways. The EMS is a stand alone system, which completely replaces the factory ECU and features unique Plug and Play Technology, which means that each system is configured especially for your make and model of car without any jumper harnesses. There is no need to modify your factory wiring harness and in most cases your car may be returned to stock in a matter of minutes.

For stock and slightly modified vehicles, the supplied startup calibrations are configured to work with OEM sensors, providing a solid starting point for beginner tuning. For more heavily modified cars, the EMS can be reconfigured to utilize aftermarket sensors and has many spare inputs and outputs allowing the elimination of add-on rev-limiters, boost controllers, nitrous controllers, fuel computers, etc. It also includes a configurable onboard 1MB data logger that can record any 16 EMS parameters at up to 250 samples per second. Every EMS comes with all functions installed and activated; there is no need to purchase options or upgrades to unlock the full potential of your unit.

The installation of the AEM EMS on the supported vehicles uses the stock sensors and actuators. After installing the AEMTuner software, the startup calibration will be saved to the following folder on your PC:

C:\Program Files\AEM\AEMTuner\Calibrations\Honda - Acura

Multiple calibrations may be supplied for each EMS; additional details of the test vehicle used to generate each calibration can be found in the Calibration Notes section for that file.

Please visit the AEM Performance Electronics Forum at <http://www.aemelectronics.com> and register. We always post the most current strategy release, PC Software and startup calibrations online. On the forum, you can find and share many helpful hints/tips to make your EMS perform its best.

TUNING NOTES AND WARNING:

While the supplied startup calibration may be a good starting point and can save considerable time and money, it will not replace the need to tune the EMS for your specific application. AEM startup calibrations are not intended to be driven aggressively before tuning. We strongly recommend that every EMS be tuned by someone who is already familiar with the AEM software and has successfully tuned vehicles using an AEM EMS. Most people make mistakes as part of the learning process; be warned that using your vehicle as a learning platform can damage your engine, your vehicle, and your EMS.

Read and understand these instructions **BEFORE** attempting to install this product.

- **Engine Wiring Harnesses, 'swapped' engine installations**

It would be very wise to double-check that the vehicle's wiring harness destinations match the pinout chart provided in this document. This is especially true if the vehicle contains a 'swapped' engine or if the wiring harness has been cut, spliced, soldered, tapped or modified in any manner. It is the user's responsibility to check that the wiring on the vehicle matches the pinout chart in this document. AEM will not be held responsible for loss or damage that can occur if the EMS is installed in a vehicle in which the wiring harness does not match the AEM-supplied pinout chart!

- **EMS Fuel Map, Boost Fuel Trim Table**

The 30-6030 calibration maps provided utilize the "*Boost Fuel Trim Table*" to provide a 1:1 fuel compensation above and below atmospheric pressure. To use this table, the "*Boost Fuel Trim Table*" should be configured to provide twice as much fuel when the manifold pressure is twice as high and half the fuel when the manifold pressure is half as high; this should help simplify the tuning process for different vacuum and boost levels. Notice the values in the main "*Fuel Map*" do not change above 100 kPa (0 psi boost), the fuel correction is being made by the "*Boost Fuel Trim Table*."

Note: the "*Boost Fuel Trim Table*" must be adjusted if a different MAP sensor is installed or if the Load breakpoints are adjusted. The Boost Fuel Trim value should be set to -90 at 10kPa, 0 at 100 kPa, +100 at 200 kPa, +200 at 300 kPa, etc...

- **Honda Multiplex Control**

The supported vehicles utilize a Multiplex system which communicates with many of the vehicle's control modules. The 30-6030 Series 2 EMS is different than the 30-1030 Series 1 EMS since it does not require the stock ECU to be installed for the coolant temperature gauge and air conditioning switch to function.

If the AEM 30-6030 EMS is being installed into a different vehicle which does not use the 01-05 Honda Multiplex system, there is no action required in either the software or the hardware.

Note: When using the 30-6030 EMS, always use the 30-6030 specific Coolant Temp Wizard calibration (note: this has been configured in all the 6030 startup calibrations).

Internal Logging

Since these vehicles do not have a constant 12V wire in the factory ECU harness, a permanent 12V wire must be installed at Pin C1 for the Internal Log Memory. The pins and connector in this kit can be used. Note: PC Logging can still be used to record data from the EMS while the laptop is connected to the vehicle, it does not require power at pin C1.

Check Engine Light

The Low Side 10 output (LS10) activates the Check Engine Light on the gauge cluster. It is configured to activate at high RPM in the AEM startup calibrations; this can be reconfigured by selecting Tools>>Configure Outputs.

Variable Valve Control (VVC)

The VTEC output (pin B15, High Side 1 output on the EMS) switches from the low-lift camshaft lobes to the high-lift camshaft lobes, similar to traditional Honda B-series engines. This is controlled by the HS1 output (VTEC function) in the EMS, and can be adjusted in the Tools>>Configure Outputs settings.

The i-VTEC output (pin B23, Injector 10 output on the EMS) advances the phase angle of the intake camshaft; this will have effects similar to moving an adjustable intake cam gear. This is controlled by the VVC 1 output; VVC position is monitored using the T3 input for closed-loop feedback. The VVC settings can be adjusted in the VVC tab (which may be hidden in the default AEM workspace).

This system is active on this EMS when used with the provided startup calibrations and can be adjusted through the use of the 'VVC 1 Target' map. Adjustments to the intake cam timing are made by changing the values in the 'VVC 1 Target' map per Engine RPM and Engine Load. The values in the 'VVC 1 Target' map can vary from 0 degrees for zero intake cam advance to 50 degrees for full intake cam advance.

Please note that the VVC Target angle for best power output will depend on the VTEC settings, and vice-versa. If VTEC settings are adjusted it would be wise to adjust the VVC Target map as well to ensure best power at all engine speeds.

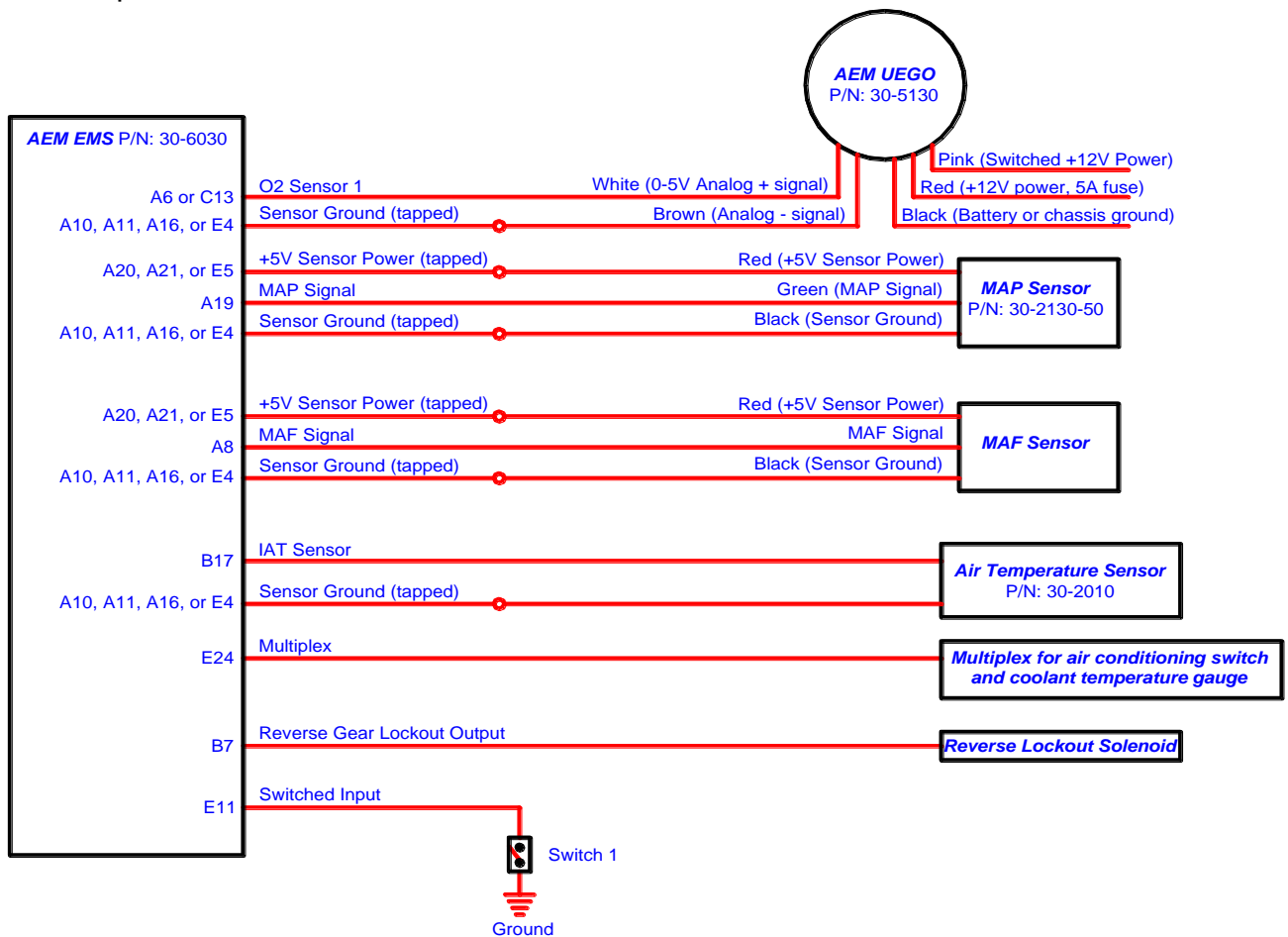
WARNING:

Improper use of the Variable Valve Control (VVC) in the AEMTuner software can lead to engine failure with certain setups!

Be very careful when building or tuning 'hybrid' engine combinations or using aftermarket engine internals. OEM engines and camshafts are designed and manufactured in such a way that the intake valves cannot be crashed into the pistons or exhaust valves regardless of VVC advance angle and/or VTEC settings. It is NOT recommended to build setups that will allow the intake valves to be crashed into the pistons or exhaust valves by adjusting settings in the EMS!

Wiring accessories to the EMS

Please follow this suggested wiring diagram when adding new accessories and retaining original accessories such as the multiplex coolant temperature gauge, air conditioning switch, reverse lockout, UEGO gauges, MAP sensors, IAT sensors, or switches for use with the EMS. Note that wire polarity is not important for the Air Temperature sensor.



30-1030 (Series 1) vs 30-6030 (Series 2) EMS differences:

The EMS functions assigned to certain pins have been changed and no longer match the 30-1030 EMS. Unless otherwise noted, the following pins and functions will need to be manually reconfigured after using AEMTuner to convert a V1.19 30-1030, Series 1 EMS calibration for use with the 30-6030 Series 2 hardware.

| Pin | Vehicle harness destination | 30-1030 function | 30-6030 function | Notes |
|--------|------------------------------|-----------------------------|------------------|--|
| A27 | Ignition coil 4 | Coil 5 | Coil 4 | Changed in startup calibration |
| C21 | --- | Injector 9i | CAN1H | Changed to CAN high side |
| C22 | --- | Injector 10i | CAN1L | Changed to CAN low side |
| D1-D17 | --- | Stock ECU Multiplex control | --- | 30-6030 EMS does not require stock ECU piggyback for multiplex |
| E13 | --- | FM | Coil 6 | |
| E24 | Instrument cluster multiplex | --- | Multiplex | 6030 EMS now controls multiplex |

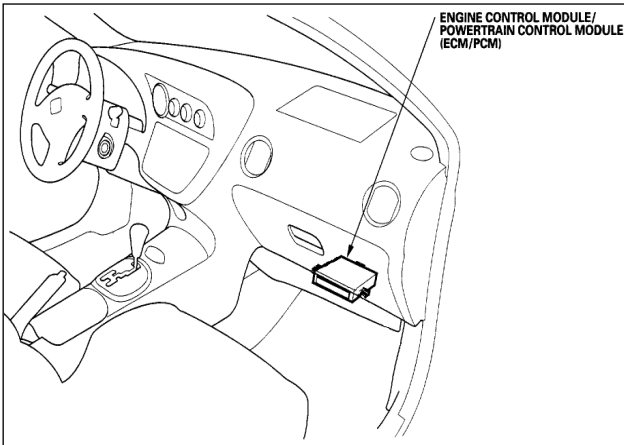
1) Install AEMTuner software onto your PC

The latest version of the AEMTuner software can be downloaded from the AEMTuner section of the AEM Performance Electronics forums found at www.aemelectronics.com. Series 2 units are not supported by the older AEMPro tuning software.

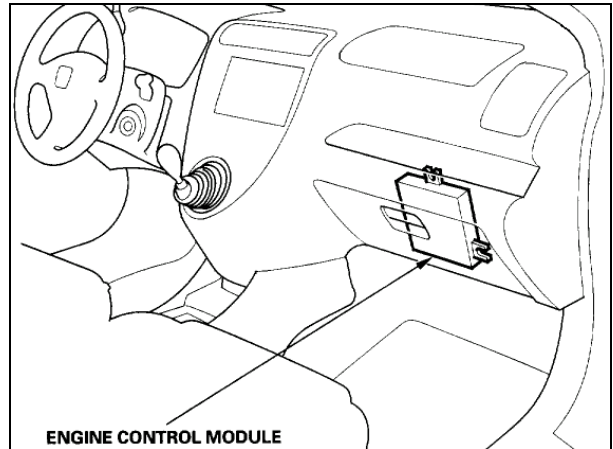
2) Remove the Stock Engine Control Unit

- a) Disconnect negative terminal from battery
- b) Access the stock Engine Control Unit (ECU). The location of the ECU on the Acura RSX, Honda Civic, and Honda CR-V vehicles is on the passenger side of the vehicle behind the glove box.

Acura RSX



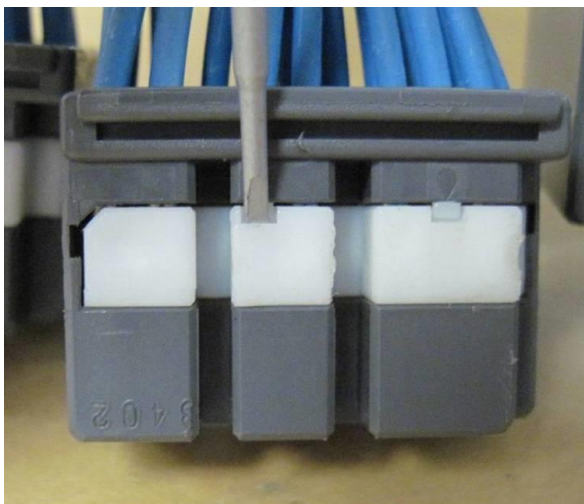
Honda Civic Si



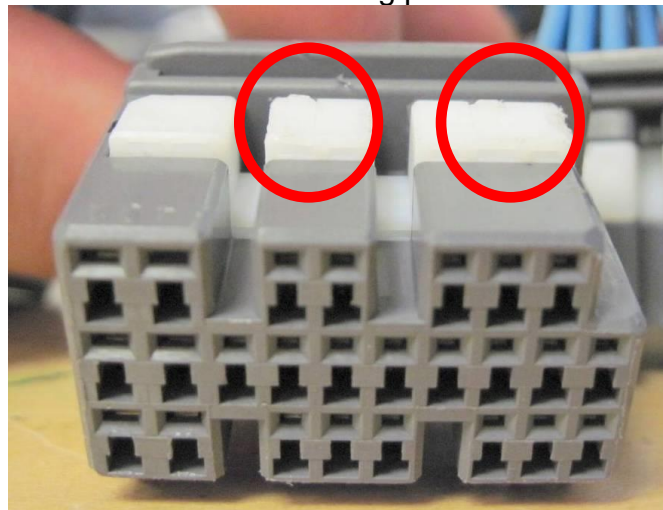
- c) Carefully disconnect the wiring harness from the ECU. Avoid excessive stress or pulling on the wires, as this may damage the wiring harness. All connectors must be removed without damage to work properly with the AEM ECU. Do not cut any of the wires in the factory wiring harness to remove them.
- d) Remove the fasteners securing the ECU to the car body, and set them aside. Do not destroy or discard the original ECU, as it can be reinstalled easily for street use and troubleshooting.

3) Repin ECU pins (only necessary if adding or relocating ECU pins)

- a) Locate a small screwdriver (a precision 1.5mm wide flathead screwdriver is recommended) and carefully pry white plastic retainer using both slots in the retainer so it disengages vertically about 1mm as shown in the following pictures:

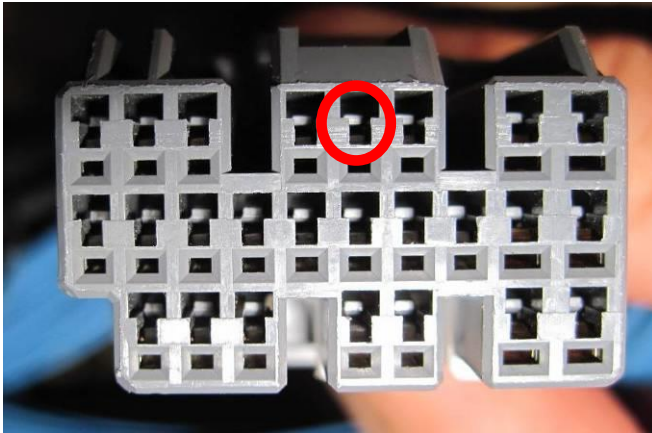


Screwdriver lifts here

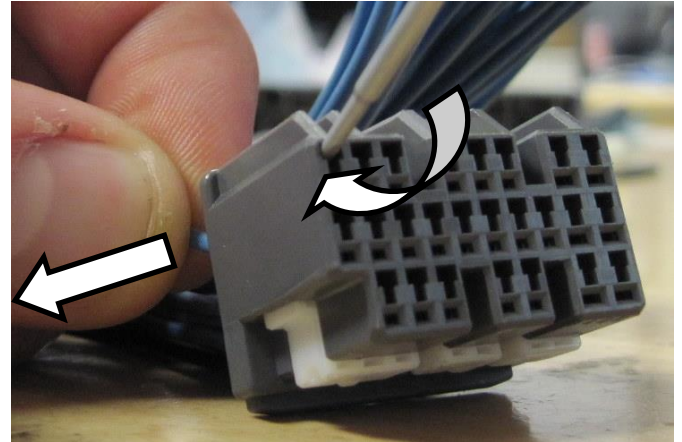


Plastic retaining mechanism after lifting

- b) Next remove the metal pin from the plastic connector by lightly prying on the plastic tabs that secure the metal pin in the plastic connector while pulling on the wire at the same time as shown below.



Pry this tab up to release the pin



While prying tab up, gently pull pin back

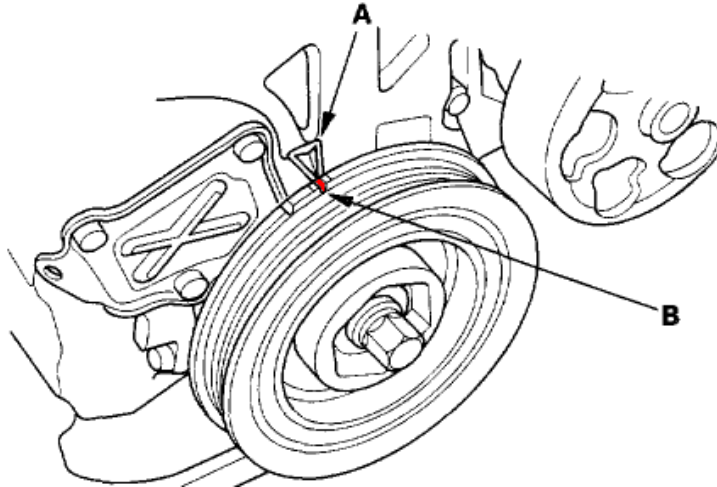
4) Install the AEM Engine Management System

- a) Plug the factory wiring harness into the AEM EMS and position it so the wires are not pulled tight or stressed in any manner. Secure the EMS with the provided Velcro fasteners.
- b) Reconnect the negative battery terminal.
- c) Plug the communications cable into the EMS and into your PC.
- d) Turn the ignition on, but do not attempt to start the engine.
- e) At the time these instructions were written, new EMS units do not require USB drivers to be installed on the PC. The EMS will automatically be detected as a human interface device (HID).
- f) With the AEMTuner software open, select **ECU>>Upload Calibration** to upload the startup calibration file (.cal) that most closely matches the vehicle's configuration to be tuned. Check the Notes section of the calibration for more info about the vehicle it was configured for. These files can be found in the following folder:
C:\Program Files\AEM\AEMTuner\Calibrations\Honda - Acura
- g) Set the throttle range: Select Wizards>>Set Throttle Range and follow the on-screen instructions. When finished, check that the 'Throttle' channel never indicates less than 0.2% or greater than 99.8%, this is considered a sensor error and may cause some functions including idle feedback and acceleration fuel to operate incorrectly.

5) Ready to begin tuning the vehicle.

- a) Before starting the engine, verify that the fuel pump runs for a couple of seconds when the key is turned on and there is sufficient pressure at the fuel rail.
If a MAP sensor is installed, check that the Engine Load indicates something near atmospheric pressure (approximately 101kPa or 0 PSI at sea level) with the key on and engine off. Press the throttle and verify that the 'Throttle' channel responds but the Engine Load channel continues to measure atmospheric pressure correctly.
- b) Start the engine and make whatever adjustments may be needed to sustain a safe and reasonably smooth idle. Verify the ignition timing: Select **Wizards>>Ignition Timing Sync** from the pull-down menu. Click the '*Lock Ignition Timing*' checkbox and set the timing to a safe and convenient value (for instance, 10 degrees BTDC). Use a timing light to compare the physical timing numbers to the timing value you selected. Use the *Sync Adjustment Increase/Decrease* buttons to make the physical reading match the timing number you selected.

Crankshaft timing marks are not labeled for some vehicles. Consult the factory service manual for more information. The diagram below shows labels for the original timing marks. "A" points to the timing indicator and "B" points to the red mark that is located 8° before top dead center.



- c) Note: This calibration needs to be properly tuned before driving the vehicle. It is intended for racing vehicles and may not operate smoothly at idle or part-throttle.

NEVER TUNE THE VEHICLE WHILE DRIVING

6) Troubleshooting an engine that will not start

- a) Double-check all the basics first. Engines need air, fuel, compression, and a correctly-timed spark event. If any of these are lacking, we suggest checking simple things first. Depending on the symptoms, it may be best to inspect fuses, sufficient battery voltage, properly mated wiring connectors, spark using a timing light or by removing the spark plug, wiring continuity tests, measure ECU pinout voltages, replace recently-added or untested components with known-good spares. Check that all EMS sensor inputs measure realistic temperature and/or pressure values.
- b) If the EMS is not firing the coils or injectors at all, open the Start tab and look for the 'Stat Sync'd' channel to turn ON when cranking. This indicates that the EMS has detected the expected cam and crank signals; if Stat Sync'd does not turn on, monitor the Crank Tooth Period and T2PER channels which indicate the time between pulses on the Crank and T2 (Cam) signals. Both of these channels should respond when the engine is cranking, if either signal is not being detected or measuring an incorrect number of pulses per engine cycle the EMS will not fire the coils or injectors.
- c) If the Engine Load changes when the throttle is pressed this usually indicates that there is a problem with the MAP sensor wiring or software calibration (when the EMS detects that the MAP Volts are above or below the min/max limits it will run in a failsafe mode using the TPS-to-Load table to generate an artificial Engine Load signal using the Throttle input). This may allow the engine to sputter or start but not continue running properly.

Sufficient battery voltage during cranking (starting)

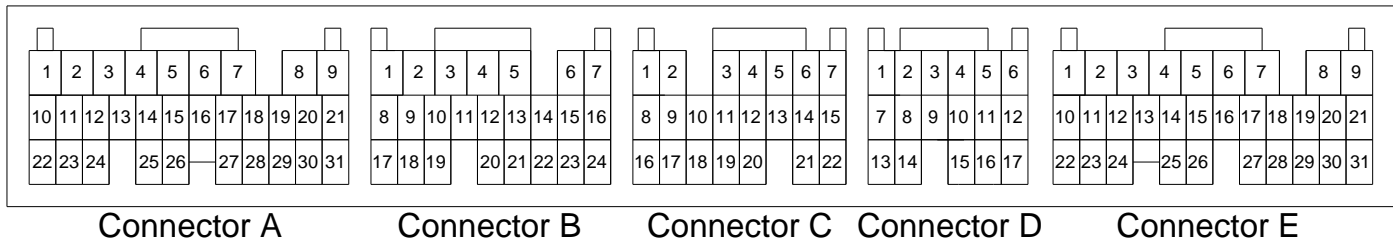
Having enough battery voltage when you crank over your vehicle is critical to the operation of your vehicle and your AEM EMS. For the EMS to function properly, the battery voltage must remain at or above 8 Volts when the vehicle is first starting. This is the time when your electrical system will be worked its hardest and be at its lowest voltage. If you are connected to your Series 2 EMS with a USB communications cable, and you experience disconnecting while the vehicle is cranking, the reason may be a battery voltage of less than 8 volts. If this is the case, you can confirm this by connecting with a serial cable (a serial adapter may be required if your computer is not equipped with a serial port) and check in the AEMTuner software for a Channel called "Run Time". "Run Time" is the amount of time, in seconds, that the EMS has been turned on for. If you notice that this Channel goes to zero while the EMS is communicating with the computer and the vehicle is being cranked, that means the EMS has had lower than 8 Volts at some point and has reset the system. A thorough wiring check may reveal a large voltage drop causing this problem, or it may simply be the need for a new or a larger battery.

Application Notes for EMS P/N 30-6030 K20A2, K20A3, K24A1, D17A1, D17A2, D17A6

| | |
|------------------------------------|--|
| Make: | Acura/Honda |
| Model: | Civic, Civic SI, RSX, CR-V |
| Years Covered: | 2001-2005 |
| Engine Displacement: | 1.7L, 2.0L, 2.4L |
| Engine Configuration: | Inline 4 |
| Firing Order: | 1-3-4-2 |
| N/A, S/C or T/C: | N/A |
| Load Sensor Type: | MAP |
| MAP Min: | 0.32V @ -13.9 psi |
| MAP Max: | 4.84V @ 10.94 psi |
| # Coils: | 4 |
| Ignition driver type: | 0-5V Falling Edge trigger |
| # of Injectors: | 4 (Inj 1-4) |
| Factory Injectors: | 215cc-330cc saturated |
| Factory Inj Resistors: | No |
| Injection Mode: | Sequential |
| Knock Sensors used: | 1 (Knock 1) |
| Lambda Sensors used: | 1 (O2 # 1, wideband sensor required, original O2 sensor not supported) |
| Idle Motor Type: | Duty-controlled solenoid PW 1 |
| Main Relay Control: | Yes (hardware controlled) |
| Crank Pickup Type: | Hall Effect |
| Crank Teeth/Cycle: | 24 + 2 |
| Cam Pickup Type: | Hall Effect |
| Cam Teeth/Cycle: | 4 + 1 |
| Transmissions Offered: | Manual/Automatic |
| Trans Supported: | Manual |
| Drive Options: | FWD and AWD |
| Supplied Connectors: | Plug C with connectors |
| AEM Extension/patch harness | 30-2986 or 30-2986CD |
| AEM Plug/pin kit: | N/A |

| Description | Function | ECU Pin # |
|--|-------------|-------------|
| Spare Injector Drivers: | Injector 8 | B7 and C5 |
| Spare Injector Drivers: | Injector 5 | B14 and C2 |
| Spare Injector Drivers: | Injector 6 | B16 and C3 |
| Spare Injector Drivers: | Injector 7 | B18 and C4 |
| Spare Injector Drivers: | Injector 10 | B23 and C6 |
| Spare Injector Drivers: | Injector 9 | E21 and C7 |
| Spare Coil Drivers: | Coil 6 | E13 |
| Boost Solenoid: | PW 2 | E10 and C12 |
| Spare PWM Freq Driver (PW 1 inverted): | PW 1i | C19 |
| Spare PWM Freq Driver (PW 2 inverted): | PW 2i | C20 |
| EGT 1 Location: | EGT 1 | B10 and C8 |
| EGT 2 Location: | EGT 2 | B11 and C9 |
| EGT 3 Location: | EGT 3 | B12 and C10 |
| EGT 4 Location: | EGT 4 | B13 and C11 |
| Spare 0-5V Input Channel: | ADCR 13 | E14 |
| Spare 0-5V Input Channel: | ADCR 11 | E15 |
| Spare 0-5V Input Channel: | ADCR 14 | E29 |
| Spare Low Side Output Driver: | Low side 1 | A1 |
| Spare Low Side Output Driver: | Low side 5 | B20 |
| Spare Low Side Output Driver: | Low side 4 | B21 |
| Spare Low Side Output Driver: | Low side 12 | E6 |
| Spare Low Side Output Driver: | Low side 2 | E8 |
| Spare Low Side Output Driver: | Low side 6 | E18 |
| Spare Low Side Output Driver: | Low side 9 | E20 |
| Spare Low Side Output Driver: | Idle 1 | A14 |
| Spare Low Side Output Driver: | Idle 3 | B19 |
| Spare Low Side Output Driver: | Idle 5 | E17 |
| Spare Low Side Output Driver: | Idle 7 | E25 |
| Check Engine Light: | Low side 10 | E31 |
| Spare High Side Driver: | High side 2 | A22 |
| Spare High Side Driver: | High side 4 | E28 |
| Spare High Side Driver: | Idle 2 | A17 |
| Spare High Side Driver: | Idle 8 | A31 |
| Spare High Side Driver: | Idle 4 | B24 |
| Spare High Side Driver: | Idle 6 | E19 |
| VVC High Side Driver: | High side 3 | B1 |
| VTEC High Side Driver: | High side 1 | B15 |
| Spare Switch Input: | Switch 1 | E11 and C15 |
| Spare Switch Input: | Switch 2 | E12 and C16 |
| Spare Switch Input: | Switch 5 | E16 |
| Spare Switch Input: | Switch 6 | E22 |
| Spare Switch Input: | Switch 3 | C17 |
| VTEC Switch Input: | Switch 4 | B9 |

***** Important: Wire View of AEM EMS. Reference diagram below for pin location. *****



WARNING:

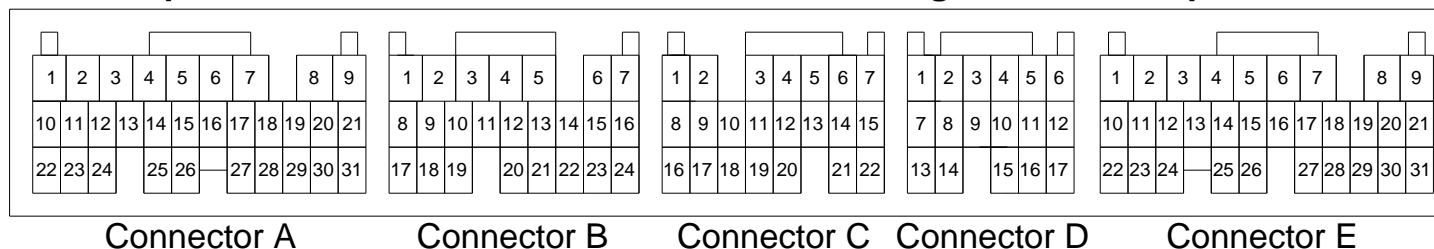
*All switch input pins must connect to ground; the switch should not provide 12V power to the EMS because that will not be detected as on or off.

Connection Diagram for EMS P/N 30-6030

| | |
|-----------|---|
| PnP | Means the Plug and Play system comes with this configured for proper operation of this device. Is still available for reassignment by the end user. |
| Available | Means the function is not currently allocated and is available for use |
| Dedicated | Means the location is fixed and cannot be changed |
| Not used | Means that the AEM EMS does not use this pin location for this application |

| Pin | 2002-2004 Acura RSX K20A2, K20A3 2002-2004 Honda CRV K24A1 2001-2005 Honda Civic D17, Civic Si K20A3 | Wire color | AEM EMS 30-6030 | EMS I/O | EMS pin description |
|-----|--|--|--------------------|---------|---|
| A1 | Primary O2 sensor heater control | Black/White (Green for D17A6) | Low Side 1 | Output | Available, switched ground, 1.5A max |
| A2 | Ignition Power 2 | Yellow/Black | Ignition Power | Input | Dedicated, +12V power for EMS |
| A3 | Ignition Power 1 | Yellow/Black | Ignition Power | Input | Dedicated, +12V power for EMS |
| A4 | Power Ground 2 | Black | Power Ground | Input | Dedicated, ground for EMS |
| A5 | Power Ground 1 | Black | Power Ground | Input | Dedicated, ground for EMS |
| A6 | Primary O2 sensor signal | Red (White for D17A1, D17A2) | O2 #1 | Input | Available, 0-5V O2 sensor #1 (connected to C13) |
| A7 | Crankshaft position sensor | Blue | Crank (T1) | Input | Dedicated, crank position sensor (T1) |
| A8 | Intake manifold runner control sensor (2002-2004 RSX K20A3 and 2002-2004 CRV K24A1 only) | Red/Yellow (K20A3/K24A1) (Yellow for D17) | MAF | Input | Available, 0-5V mass airflow sensor |
| A9 | Knock sensor | Red/Blue | Knock 1 | Input | PnP for knock sensor |
| A10 | Sensor ground 2 | Green/Yellow | Sensor Ground | Output | Dedicated, sensor ground |
| A11 | Sensor ground 1 | Green/White | Sensor Ground | Output | Dedicated, sensor ground |
| A12 | Idle air control valve | Black/Red | PW 1 | Output | PnP for idle air control valve |
| A13 | EGR valve position sensor (2001-2005 Civic D17A2/D17A6 only) | White/Black | Knock 2 | Input | Available, knock sensor 2 |
| A14 | Secondary O2 sensor heater control (2001-2005 Civic D17A1/D17A6 only) | Black/White | --- | --- | --- |
| A15 | Throttle position sensor | Red/Black | TPS | Input | PnP for throttle position sensor |
| A16 | Primary O2 sensor ground | Red/Yellow | Sensor Ground | Output | Dedicated, sensor ground |

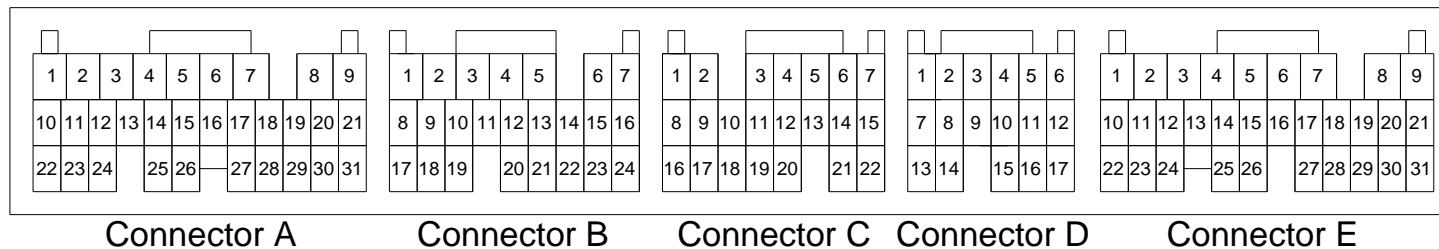
*** Important: Wire View of AEM EMS. Reference diagram below for pin location. ***



Connection Diagram for EMS P/N 30-6030

| Pin | 2002-2004 Acura RSX K20A2, K20A3 2002-2004 Honda CRV K24A1 2001-2005 Honda Civic D17, Civic Si K20A3 | Wire color | AEM EMS 30-6030 | EMS I/O | EMS pin description |
|-----|--|-----------------------------------|--------------------|---------|---|
| A17 | --- | --- | Idle 2 | Output | Available, switched +12V power, 1.5A max |
| A18 | Vehicle speed sensor | White/Green | Spare Speed (T4) | Input | PnP for vehicle speed sensor |
| A19 | Manifold absolute pressure sensor | Green/Red | MAP | Input | PnP for manifold absolute pressure sensor |
| A20 | +5V sensor power 2 | Yellow/Blue | +5V Sensor | Output | Dedicated, +5V sensor power |
| A21 | +5V sensor power 1 | Yellow/Red | +5V Sensor | Output | Dedicated, +5V sensor power |
| A22 | O2 sensor heater control | White | High Side 2 | Output | Available, switched +12V power, 1.5A max |
| A23 | Logic ground 2 | Brown/Yellow | Power Ground | Input | Dedicated, ground for EMS |
| A24 | Logic ground 1 | Brown/Yellow | Power Ground | Input | Dedicated, ground for EMS |
| A25 | Camshaft position sensor A (K-series) Secondary O2 sensor heater (2001-2005 Honda Civic D17A1/D17A6 only); | Blue/White (White/Red for D17) | Vehicle Speed (T3) | Input | Available, 0-5V vehicle speed sensor |
| A26 | Camshaft position sensor B | Green | Cam (T2) | Input | Dedicated, camshaft position sensor (T2) |
| A27 | Ignition pulse no. 4 | Brown | Coil 4 | Output | PnP for coil 4 |
| A28 | Ignition pulse no. 3 | White/Blue | Coil 3 | Output | PnP for coil 3 |
| A29 | Ignition pulse no. 2 | Blue/Red | Coil 2 | Output | PnP for coil 2 |
| A30 | Ignition pulse no. 1 | Yellow/Green | Coil 1 | Output | PnP for coil 1 |
| A31 | --- | --- | Idle 8 | Output | Available, switched +12V power, 1.5A max |

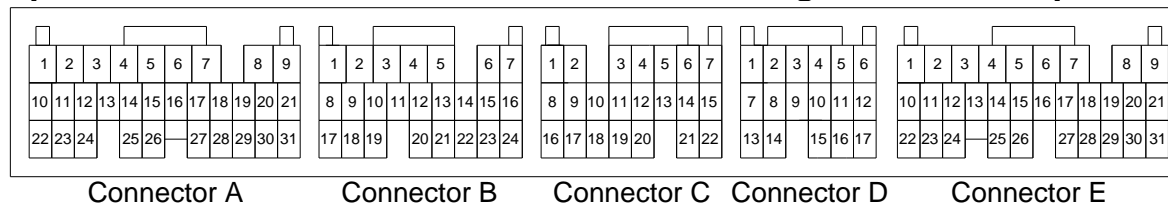
***** Important: Wire View of AEM EMS. Reference diagram below for pin location. *****



Connection Diagram for EMS P/N 30-6030

| Pin | 2002-2004 Acura RSX K20A2, K20A3 2002-2004 Honda CRV K24A1 2001-2005 Honda Civic D17, Civic Si K20A3 | Wire color | AEM EMS 30-6030 | EMS I/O | EMS pin description |
|-----|--|--------------|--------------------|---------|--|
| B1 | VTC oil control solenoid valve high side (except 2001-2005 Honda Civic D17A1/2/6) | Blue/White | High Side 3 | Output | PnP for VTC solenoid (Variable Valve Timing control) |
| B2 | No. 4 Injector | Yellow | Injector 4 | Output | PnP for Injector 4 |
| B3 | No. 3 Injector | Blue | Injector 3 | Output | PnP for Injector 3 |
| B4 | No. 2 Injector | Red | Injector 2 | Output | PnP for Injector 2 |
| B5 | No. 1 Injector | Brown | Injector 1 | Output | PnP for Injector 1 |
| B6 | Radiator Fan control relay | Green | Low Side 8 | Output | PnP for Radiator Fan control |
| B7 | Reverse lock solenoid valve (2002-2004 Acura RSX K20A2/3 and 2001-2005 Honda Civic SI K20A3 only) | Green | Injector 8 | Output | Available, switched ground, 1.5A max (connected to C5) |
| B8 | Engine coolant temperature sensor | Red/White | Coolant | Input | PnP for coolant temperature sensor |
| B9 | VTEC oil pressure switch (except 2001-2005 Honda Civic D17A1) | Blue/Black | Switch 4 | Input | PnP for VTEC oil pressure switch |
| B10 | Alternator L signal | White/Blue | EGT 1 | Input | Available, jumper set for 0-5V input (connected to C8) |
| B11 | --- | --- | EGT 2 | Input | Available, jumper set for 0-5V input (connected to C9) |
| B12 | --- | --- | EGT 3 | Input | Available, jumper set for 0-5V input (connected to C10) |
| B13 | Alternator F signal | White/Red | EGT 4 | Input | Available, jumper set for 0-5V input (connected to C11) |
| B14 | EGR valve control (2001-2005 Honda Civic D17A2/6 only) | Blue/Red | Injector 5 | Output | Available, switched ground, 1.5A max (connected to C2) |
| B15 | VTEC solenoid valve (except Civic D17A1) | Green/Yellow | High Side 1 | Output | PnP for VTEC solenoid valve activation |
| B16 | --- | --- | Injector 6 | Output | Available, switched ground, 1.5A max (connected to C3) |
| B17 | Intake air temperature sensor | Red/Yellow | AIT | Input | PnP for intake air temperature sensor |
| B18 | Alternator C control | White/Green | Injector 7 | Output | Available, switched ground, 1.5A max (connected to C4) |
| B19 | --- | --- | Idle 3 | Output | Available, switched ground, 1.5A max |
| B20 | --- | --- | Low Side 5 | Output | Available, switched ground, 1.5A max |
| B21 | Evaporative emission canister purge valve | Yellow/Blue | Low Side 4 | Output | Available, switched ground, 1.5A max |
| B22 | Intake manifold runner control valve (2002-2004 Acura RSX/Honda CR-V only) | Red/Blue | Low Side 3 | Output | PnP for intake manifold runner control valve |
| B23 | VTC oil control solenoid valve low side (except 2001-2005 Honda Civic D17A1/2/6) | Black/White | Injector 10 | Output | PnP for VTC solenoid (variable valve timing control, connected to C6) |
| B24 | --- | --- | Idle 4 | Output | Available, switched +12V power, 1.5A max |

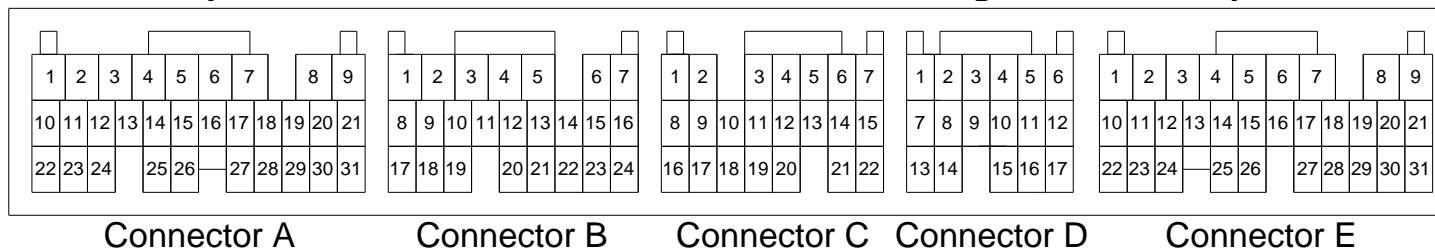
***** Important: Wire View of AEM EMS. Reference diagram below for pin location. *****



Connection Diagram for EMS P/N 30-6030

| Pin | 2002-2004 Acura RSX K20A2, K20A3 2002-2004 Honda CRV K24A1 2001-2005 Honda Civic D17, Civic Si K20A3 | Wire color | AEM EMS 30-6030 | EMS I/O | EMS pin description |
|-----|--|------------|--------------------|---------|---|
| C1 | --- | --- | Permanent +12V | Input | Dedicated, permanent +12V power |
| C2 | --- | --- | Injector 5 | Output | Available, switched ground, 1.5A max (connected to B14) |
| C3 | --- | --- | Injector 6 | Output | Available, switched ground, 1.5A max (connected to B16) |
| C4 | --- | --- | Injector 7 | Output | Available, switched ground, 1.5A max (connected to B18) |
| C5 | --- | --- | Injector 8 | Output | Available, switched ground, 1.5A max (connected to B7) |
| C6 | --- | --- | Injector 10 | Output | Available, switched ground, 1.5A max (connected to B23) |
| C7 | --- | --- | Injector 9 | Output | Available, switched ground, 1.5A max (connected to E21) |
| C8 | --- | --- | EGT 1 | Input | Available, jumper set for 0-5V input (connected to B10) |
| C9 | --- | --- | EGT 2 | Input | Available, jumper set for 0-5V input (connected to B11) |
| C10 | --- | --- | EGT 3 | Input | Available, jumper set for 0-5V input (connected to B12) |
| C11 | --- | --- | EGT 4 | Input | Available, jumper set for 0-5V input (connected to B13) |
| C12 | --- | --- | PW 2 | Output | Available, switched ground, 1.5A max (connected to E10) |
| C13 | --- | --- | O2 #1 | Input | Available, 0-5V O2 sensor #1 (connected to A6) |
| C14 | --- | --- | O2 #2 | Input | Available, 0-5V O2 sensor #2 (connected to E2) |
| C15 | --- | --- | Switch 1 | Input | Available, switched input (connected to E11) |
| C16 | --- | --- | Switch 2 | Input | Available, switched input (connected to E12) |
| C17 | --- | --- | Switch 3 | Input | Available, switched input |
| C18 | --- | --- | Timing Ground | Input | Available, timing ground |
| C19 | --- | --- | PW 1i | Output | Available, switched ground, inverted PW 1 signal |
| C20 | --- | --- | PW 2i | Output | Available, switched ground, inverted PW 2 signal |
| C21 | --- | --- | CAN1H | Output | Dedicated, CAN1 high side |
| C22 | --- | --- | CAN1L | Output | Dedicated, CAN1 low side |

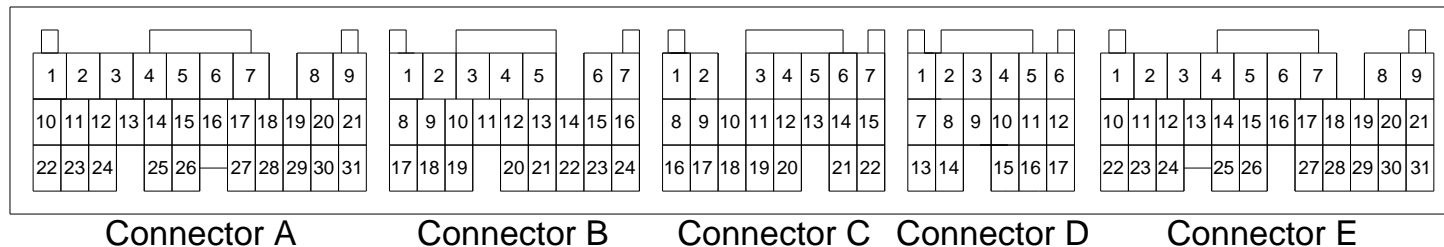
***** Important: Wire View of AEM EMS. Reference diagram below for pin location. *****



Connection Diagram for EMS P/N 30-6030

| Pin | 2002-2004 Acura RSX K20A2, K20A3 2002-2004 Honda CRV K24A1 2001-2005 Honda Civic D17, Civic Si K20A3 | Wire color | AEM EMS 30-6030 | EMS I/O | EMS pin description |
|-----|--|---|--------------------|---------|---|
| E1 | Immobilizer fuel pump relay | Green/Yellow | Low Side 11 | Output | PnP for fuel pump relay |
| E2 | Secondary O2 sensor signal (all except D17A1/6) Third O2 sensor (2001-2005 Honda Civic D17A6 only) | White/Red (Red/Blue for K24A1) | O2 #2 | Input | Available, 0-5V O2 sensor #2 (connected to C14) |
| E3 | Logic ground 3 | Brown/Yellow | --- | --- | Not used |
| E4 | Sensor ground 3 | Pink (White/Green for K24A1) | Sensor Ground | Output | Dedicated, sensor ground |
| E5 | Sensor voltage 3 | Yellow/Blue | +5V Sensor | Output | Dedicated, sensor power |
| E6 | Secondary O2 sensor heater control (all except D17A6) Third O2 sensor heater control (2001-2005 Honda Civic D17A6 only) | Black/White (White/Black for D17A1/6) | Low Side 12 | Output | Available, switched ground, 1.5A max |
| E7 | Main relay control | Red/Yellow | Main Relay | Output | Dedicated, ECU activates main relay with switched GND |
| E8 | O2 sensor heater control relay | Orange | Low Side 2 | Output | Available, switched ground, 1.5A max |
| E9 | Ignition switch signal 1 | Black/Yellow (Yellow/Black for Civic, CRV) | Ignition Switch | Input | Dedicated, +12V Ignition switch signal from Ign key |
| E10 | --- | --- | PW 2 | Output | Available, switched ground, 1.5A max (connected to C12) |
| E11 | --- | --- | Switch 1 | Input | Available, switched input (connected to C15) |
| E12 | --- | --- | Switch 2 | Input | Available, switched input (connected to C16) |
| E13 | --- | --- | Coil 6 | Output | Available, switched ground, 1.5A max |
| E14 | Fuel tank pressure sensor | Light Green | ADCR 13 | Input | Available, 0-5V sensor |
| E15 | Electrical load detector | Green/Red | ADCR 11 | Input | Available, 0-5V sensor |
| E16 | Power steering pressure switch signal | Light Green/Black | Switch 5 | Input | Available, switched input |

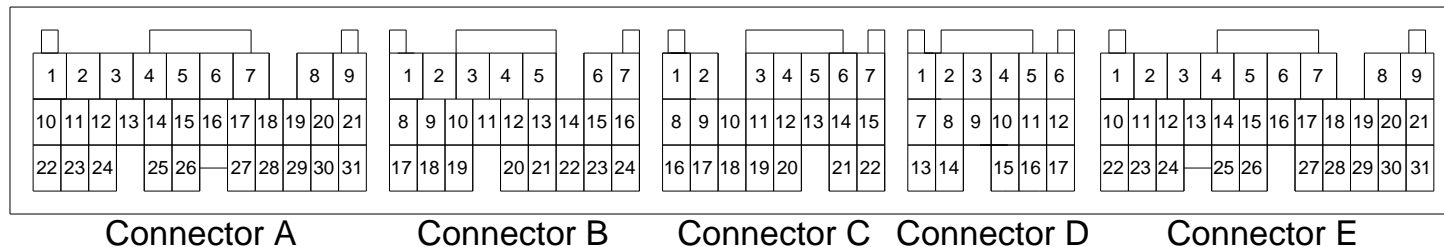
*** Important: Wire View of AEM EMS. Reference diagram below for pin location. ***



Connection Diagram for EMS P/N 30-6030

| Pin | 2002-2004 Acura RSX K20A2, K20A3 2002-2004 Honda CRV K24A1 2001-2005 Honda Civic D17, Civic Si K20A3 | Wire color | AEM EMS 30-6030 | EMS I/O | EMS pin description |
|-----|--|--|--------------------|---------|--|
| E17 | --- | --- | Idle 5 | Input | Available, switched ground, 1.5A max |
| E18 | Air conditioner clutch relay | Red | Low Side 6 | Output | Available, switched ground, 1.5A max |
| E19 | --- | --- | Idle 6 | Output | Available, switched +12V power, 1.5A max |
| E20 | Evaporative emission bypass solenoid valve | Blue/Red (Grey / Red for K24A1) | Low Side 9 | Output | Available, switched ground, 1.5A max |
| E21 | Evaporative emissions canister vent shut valve | Light Green/Red (White/Red for K24A1) | Injector 9 | Output | Available, switched ground, 1.5A max (connected to C7) |
| E22 | Brake pedal position switch | White/Black | Switch 6 | Input | Available, switched input |
| E23 | K-line | --- | --- | --- | Not used |
| E24 | SEFMJ (Instrument cluster multiplex communication) | Yellow | Multiplex | Output | Dedicated, used to drive the air conditioning switch and coolant temperature gauge |
| E25 | --- | --- | Idle 7 | Output | Available, switched ground, 1.5A max |
| E26 | Engine speed pulse | Blue | Low Side 7 | Output | PnP for Tacho signal - RPM pulse to instrument cluster |
| E27 | Immobilizer code | Red/Blue (White for K24A1) | --- | --- | Not used |
| E28 | --- | --- | High Side 4 | Output | Available, switched +12V power, 1.5A max |
| E29 | Service check signal | Brown | ADCR 14 | Input | Available, 0-5V input |
| E30 | Write enable signal | Red/White | --- | --- | Not used |
| E31 | Malfunction indicator lamp (MIL) | Green/Orange (Green/White for K24A1) | Low Side 10 | Output | Available, switched ground, 1.5A max |

***** Important: Wire View of AEM EMS. Reference diagram below for pin location. *****



AEM Electronics Warranty

Advanced Engine Management Inc. warrants to the consumer that all AEM Electronics products will be free from defects in material and workmanship for a period of twelve months from date of the original purchase. Products that fail within this 12-month warranty period will be repaired or replaced 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 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 \$75.00 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.