



***Installation Instructions for:
EMS P/N 30-1000
1992-1995 Civic / Del Sol / Integra***



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.

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Instruction Part Number: 10-1000
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Congratulations! You have just purchased the finest Engine Management system for your car at any price!

The AEM Engine Management System (EMS) is the result of extensive development on a wide variety of cars. Each system is engineered for the particular application. The AEM EMS differs from all others in several ways. The EMS is an all new 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. 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. The AEMPro software is configured to work with the factory sensors and equipment, so that there is no need for expensive or hard to find sensors, making replacement and repairs as simple as with an unmodified car. For stock and some slightly modified cars, the AEMPro software will be preprogrammed with a set of base parameters, providing a starting point for individual tuning. For more heavily modified cars, the EMS has many spare inputs and outputs allowing the elimination of separate rev-limiters, boost controllers, nitrous controllers, and fuel computers. It will also allow programmable control over all automatic transmission functions, and includes a configurable onboard data logger capable of recording 512kb of information. Every EMS comes with all functions installed and activated, and there are no expensive options or upgrades to be performed.

The installation of the AEM ECU on the 1992-1995 Civic / Del Sol / Integra uses the stock sensors and actuators. The base map is automatically installed in the base calibrations directory in the AEMPro directory on your computer. It is named 1000.V#.#.CAL.

Full details of the test vehicle used to generate this map can be found in the files notes section. However, while the base map is a good starting point and may save you considerable time and money, it will not replace the need to tune your specific application. It is not intended to be driven aggressively. Ignoring this can and will damage your engine.

When installing an EMS (pn 30-1000 or 30-1001 only) check pin A22. If a yellow/green or red/green wire is in A22 on the factory engine harness, depin it.

Honda made a wiring revision in mid 1993 where they stopped using A22 completely. Basically, A22 was spliced together with A21 for the Ignition Control Module signal and was never necessary. Pin A22 on the EMS, however, is used for Coil #2. If there is a wire in A22, Coil #1 will not work and there will be no output to the igniter (see diagram).

A1	A3	A5	A7	A9	A11	A13	A15	A17	A19	A21	A23	A25	B1	B3	B5	B7	B9	B11	B13	B15	C1	C3	C5	C7	C9	C11	D1	D3	D5	D7	D9	D11	D13	D15	D17	D19	D21
A2	A4	A6	A8	A10	A12	A14	A16	A18	A20	A22	A24	A26	B2	B4	B6	B8	B10	B12	B14	B16	C2	C4	C6	C8	C10	C12	D2	D4	D6	D8	D10	D12	D14	D16	D18	D20	D22

Connector A Connector B Connector C Connector D

Please visit the AEM EMS Tech Forum at <http://www.aempower.com> and register. We always post the most current strategy release, PC Software and base calibrations online. On the forum, you will find many helpful hints/tips to make your EMS perform it's best.

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

1) Removing the Stock Engine Control Unit

- a) Access the stock Engine Control Unit (ECU). The location of the ECU on the 1992-1995 Civic / Del Sol / Integra is behind the right side kick panel.
- b) Carefully disconnect the wiring harness from the ECU. Avoid excessive stress or pulling on the wires, as this may damage the wiring harness. Some factory ECU's use a bolt to retain the factory connectors, and it must be removed before the harness can be disconnected. There may be more than one connector, and they must all 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.
- c) Remove the fasteners securing the ECU to the car body, and set it aside. Do not destroy or discard the factory ECU, as it can be reinstalled easily for street use and troubleshooting.

2) Install the AEM Engine Management System.

- a) Plug the factory wiring harness into the AEM ECU, and position it so that the wires are not pulled tight or stressed. Secure it with the provided Velcro fasteners.
- b) Plug the comms cable into the EMS and into your PC.
- c) Turn your ignition on but do not attempt to start the engine.
- d) Upload the base calibration file (.cal) that most closely matches your vehicle's configuration. (These files can be found in the AEMPro | Base Calibrations | Honda/Acura folder on your computer's hard drive)
- e) Set the throttle range: Select the *Configure* drop down menu, then *ECU Setup | Set Throttle Range* and then follow the direction given on the screen.
- f) Verify the ignition timing by selecting the *Configure* drop down menu, then *ECU Setup | Set Ignition*. Use a timing light and compare the physical timing numbers to the Parameter *Ignition Timing* displayed. Use the *Advance/Retard* buttons to make the timing number match.

3) You are now ready to begin tuning your vehicle.

- a) Note: This calibration needs to be properly tuned and is not recommended for street use. **NEVER TUNE YOUR VEHICLE WHILE DRIVING.**

Application Notes for EMS P/N 30-1000

1992-1995 Civic / Del Sol / Integra

Make:	Acura/Honda
Model:	Integra/Civic
Years Covered:	* 1992-1995
Engine Displacement:	1.5-1.8L
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:	1
Ignition driver type:	0-5V Low Switch High
How to hook up MSD:	Wire after Igniter
# Injectors:	4 (Inj 1-4)
Factory Injectors:	190-240cc Saturated
Factory Inj Resistors:	No
Injection Mode:	Sequential
Knock Sensors used:	1
Lambda Sensors used:	1
Idle Motor Type:	PW
Main Relay Control:	No
Crank Pickup Type:	Mag
Crank Teeth/Cycle:	24
Cam Pickup Type:	Mag
Cam Teeth/Cycle:	1
Transmissions Offered:	M/T, A/T
Trans Supported:	M/T Only
Drive Options:	FWD
Supplied Connectors:	Plug C with Connectors

Spare Injector Drivers:	Inj #7, Pin A16
Spare Injector Drivers:	Inj #8, Pin A14
Spare Injector Drivers:	Inj #9, Pin A8
Spare Injector Drivers:	Inj #10, Pin A11
Spare Injector Drivers:	---
Spare Injector Drivers:	---
Spare Coil Drivers:	Coil #3, Pin B3
Spare Coil Drivers:	---
Spare Coil Drivers:	---
Spare Coil Drivers:	---
Boost Solenoid:	PW #2, Pin C10
EGT #1 Location:	---
EGT #2 Location:	Pin D2
EGT #3 Location:	Pin D10
EGT #4 Location:	Pin D9
Spare 0-5V Channels:	ADR13, Pin B7
Spare 0-5V Channels:	ADR03, Pin D8
Spare 0-5V Channels:	---
Spare Low Side Driver:	Low Side #1, Pin C6
Spare Low Side Driver:	Low Side #2, Pin A10
Spare Low Side Driver:	Low Side #7, Pin C3
Spare Low Side Driver:	Low Side #8, Pin A18
Spare Low Side Driver:	Low Side #9, Pin C4
Spare Low Side Driver:	** Idle #2, Pin A17
Spare Low Side Driver:	Idle #4, Pin A19
Spare Low Side Driver:	Idle #6, Pin D18
Spare Low Side Driver:	Idle #8, Pin C8
Check Engine Light:	Low Side #10, Pin A13
Spare High Side Driver:	High Side #2, Pin C11
Spare Switch Input:	Switch #2, Pin C12
Spare Switch Input:	Switch #3, Pin B5
Spare Switch Input:	Switch #6, Pin C5
A/C Switch Input:	Switch #3, Pin B5

Notes:

* Honda made a wiring revision in mid 1994 where they stopped using Pin A22 completely. Basically, A22 was spliced together with A21 for the Ignition Control Module signal and was never necessary. Pin A22 on the EMS, however, is not used. If there is a wire in A22, Coil #1 will not work and there will be no voltage output to the igniter. If a yellow/green or red/green wire is in A22 on the factory engine harness, depin it.

** Does not apply to vehicles equipped with an intake air bypass (IAB) solenoid for the intake manifold.

PnP	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	The function is not currently allocated and is available for use
Dedicated	The location is fixed and cant be changed

Pin #	1992-95 Civic / Del Sol / Integra (M/T Only)	AEM PEMS P/N 30-1000	I/O	Availability
A1	Injector 1	Injector #1	Output	PnP for Injector 1
A2	Injector 4	Injector #4	Output	PnP for Injector 4
A3	Injector 2	Injector #2	Output	PnP for Injector 2
A4	VTEC Solenoid Valve	High Side Driver #1	Output	PnP for VTEC Solenoid
A5	Injector 3	Injector #3	Output	PnP for Injector 3
A6	Primary O2 Heater Control	Injector #6	Output	PnP for O2 Sensor
A7	Fuel Pump Relay	Low Side Driver #11	Output	Dedicated
A8	---	Injector #9	Output	Avail, Injector Gnd, 1.5A max
A9	Idle Air Control Valve	PW #1	Output	PnP for Idle Air Control Valve
A10	---	Low Side Driver #2	Output	Avail, Switched Gnd, 1.5A max
A11	EGR Control Solenoid Valve (D15Z1 Only)	Injector #10	Output	Avail, Injector Gnd, 1.5A max
A12	Radiator Fan Control	Low Side Driver #12	Output	PnP for Radiator Fan
A13	Malfunction Indicator Light	Low Side Driver #10	Output	Avail, Switched Gnd, 1.5A max
A14	---	Injector #8	Output	Avail, Injector Gnd, 1.5A max
A15	A/C Clutch Relay	Low Side Driver #6	Output	PnP for A/C Clutch Relay
A16	Alternator Control	Injector #7	Output	Avail, Injector Gnd, 1.5A max
A17	IAB Control Solenoid Valve	Idle #2	Output	Avail, Ground / +12V, 1.5A max
A18	---	Low Side Driver #8	Output	Avail, Switched Gnd, 1.5A max
A19	---	Idle #4	Output	Avail, Ground / +12V, 1.5A max
A20	EVAP Purge Control Solenoid	Low Side Driver #4	Output	Avail, Switched Gnd, 1.5A max
A21	Ignition Control Module	Coil #1	Output	PnP for Ignition Control Module
A22	*REMOVE* ICM2 (Early Production Only)	---	N/U	Not Used
A23	Power Ground 1	Power Ground	Input	Dedicated
A24	Power Ground 2	Power Ground	Input	Dedicated
A25	Power Source 1	+12 Volt Switched	Input	Dedicated
A26	Logic Ground 1	Sensor Ground	Output	Dedicated

B1	Power Source 2	+12 Volt Switched	Input	Dedicated
B2	Logic Ground 2	Sensor Ground	Output	Dedicated
B3	---	Coil #3	Output	Avail, Switched Gnd, 1.5A max
B4	---	Coil #1	Output	Avail, same as pin A21
B5	A/C Switch Signal	Switch #3	Input	PnP for A/C Switch Signal
B6	---	---	N/U	Not Used
B7	M/T Clutch Switch (D15 Only)	ADR13	Input	Avail, 0-5 Volt Input
B8	Power Steering Pressure Switch	---	N/U	Not Used
B9	Starter Switch Signal	Switch #1	Input	Dedicated
B10	Vehicle Speed Sensor	Vehicle Speed	Input	PnP for Vehicle Speed Sensor
B11	CYP +	Cam Sensor	Input	Dedicated
B12	CYP -	Sensor Ground	Output	Dedicated
B13	TDC +	Spare Speed	Input	Dedicated
B14	TDC -	Sensor Ground	Output	Dedicated
B15	CKP +	Crank Sensor	Input	Dedicated
B16	CKP -	Sensor Ground	Output	Dedicated

C1	---	+12 Volt Switched	Input	Dedicated
C2	---	Vehicle Speed	Input	Avail, same as pin B10
C3	---	Low Side Driver #7	Output	Avail, Switched Gnd, 1.5A max
C4	---	Low Side Driver #9	Output	Avail, Switched Gnd, 1.5A max
C5	---	Switch #6	Input	Avail, Switched Input
C6	---	Low Side Driver #1	Output	Avail, Switched Gnd, 1.5A max
C7	---	Switch #1	Input	Dedicated
C8	---	Idle #8	Output	Avail, Ground / +12V, 1.5A max
C9	---	---	N/U	Not Used
C10	---	PW #2	Output	Avail, Pulse Width Out
C11	---	High Side Driver #2	Output	Avail, +12V, 1.5A max
C12	---	Switch #2	Input	Avail, Switched Input

D1	Voltage Back Up	Permanent +12V	Input	Dedicated
D2	Brake Switch	EGT #2	Input	Avail, RTD Temp
D3	Knock/Label (D15Z1 Only)	Knock #1	Input	PnP for Knock Sensor
D4	Service Check Connector	Knock #2	Input	Avail, Knock Input
D5	---	EGT #1	Input	Avail, RTD Temp
D6	VTEC Pressure Switch	Switch #4	Input	Avail, Switched Input
D7	Data Link Connector	High Side Driver #1	Output	Avail, same as pin A4
D8	VS + (D15Z1 Only)	ADR03	Input	Avail, 0-5 Volt Input
D9	Alternator FR Signal	EGT #4	Input	Avail, RTD Temp
D10	Electronic Load Detector	EGT #3	Input	Avail, RTD Temp
D11	Throttle Position Sensor	TPS	Input	Dedicated
D12	EGR Valve Lift Sensor (D15Z1 Only)	ADR11	Input	Avail, 0-5 Volt Input
D13	Engine Coolant Temperature Sensor	Coolant	Input	Dedicated
D14	Primary O2 Sensor	Lambda #1	Input	PnP for O2 Sensor
D15	Intake Air Temperature Sensor	AIT	Input	Dedicated
D16	IP -, VS - (D15Z1 Only)	Lambda #2	Input	Avail, Lambda Input
D17	MAP Sensor	MAP	Input	Dedicated
D18	Shift Up Indicator Light (D15 only)	Idle #5	Output	Avail, Ground / +12V, 1.5A max
D19	Sensor Voltage 1	+5V Sensor	Output	Dedicated
D20	Sensor Voltage 2	+5V Sensor	Output	Dedicated
D21	Sensor Ground 1	Sensor Ground	Output	Dedicated
D22	Sensor Ground 2	Sensor Ground	Output	Dedicated

A1	A3	A5	A7	A9	A11	A13	A15	A17	A19	A21	A23	A25	B1	B3	B5	B7	B9	B11	B13	B15	C1	C3	C5	C7	C9	C11	D1	D3	D5	D7	D9	D11	D13	D15	D17	D19	D21
A2	A4	A6	A8	A10	A12	A14	A16	A18	A20	A22	A24	A26	B2	B4	B6	B8	B10	B12	B14	B16	C2	C4	C6	C8	C10	C12	D2	D4	D6	D8	D10	D12	D14	D16	D18	D20	D22

Connector A

Connector B Connector C

Connector D