



NEXUS PLUG-IN

HONDA EP3 ECU

QUICK START GUIDE

Congratulations on your purchase of a Nexus Honda EP3 Plug-in ECU.

This vehicle-specific product allows you to seamlessly integrate a Nexus ECU into your vehicle without the complexity of wiring. With this hassle-free solution, you can start tuning right away.

Nexus ECUs are at the forefront of engine management systems, featuring cutting-edge technology and innovative features. Designed for the next generation of automotive enthusiasts and professionals, this state-of-the-art ECU combines powerful engine control with a range of additional functionalities, making it a versatile and comprehensive solution for everything from everyday driving to high-performance racing.

With full compatibility across a wide range of Haltech devices, it simplifies engine configuration and additional functionalities, all programmable through a single software platform.



Supported Models

- **Honda Civic EP3 (01-05)**
Manual transmission
- **Honda Integra / Acura RSX DC5 (02-04)**
Manual transmission



What's in the box?

- Nexus Honda EP3 Plug-in ECU
- Air temperature + wideband expansion harness
- Air temperature sensor (1/8 NPT)
- Aluminum weld on fitting 1/8 NPT -27 TPI for air temp sensor
- Mounting brackets and hardware
- 2.5m vacuum hose and T-piece
- Haltech USB-C cable
- Quick start guide

Optional Accessories (sold separately)

- HT-189002 - IO Expansion Harness 2.5m (8')
- HT-189003 - DBW Expansion Harness 2.5m (8')
- HT-010746 - LSU4.9 Wideband Hardware Pack



HT-010746

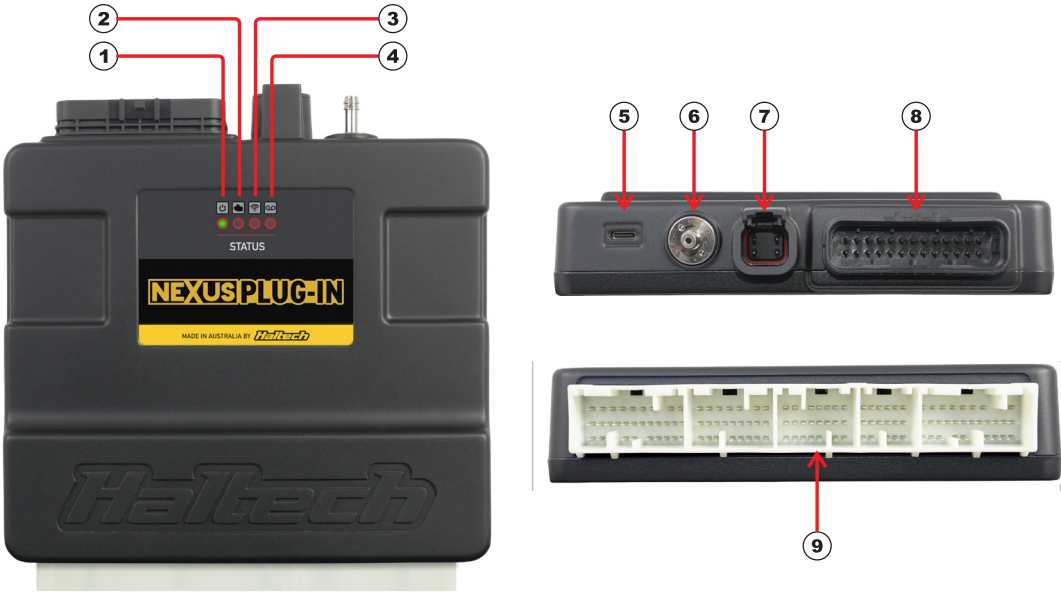


HT-189002



HT-189003

- 1 Power LED
- 2 DTC LED
- 3 Wireless LED
- 4 Datalog LED
- 5 USB-C Port (Comms)
- 6 Onboard MAP sensor (4 bar)
- 7 CAN Connector
- 8 Auxiliary Connector
- 9 Vehicle Connector



	LED	COLOR	CONDITION
	Power	Green	Normal operation (on main power or low power mode)
		Blue	Connect to unit and install firmware
		Red	Hardware fault
	DTC	None	DTCs not present
		Yellow	A DTC is present (of any kind, past/present/not severe/severe)
	Wireless	None	Wireless is disabled
		Green solid	Wireless is enabled
		Green flashing	Wireless is enabled and connected to NSP or Haltech Connect
	Datalog	None	Unit is not logging
		Yellow flashing	Unit is logging, unit is not looping or not full
		Yellow	Unit is logging, unit is looping or full

NEXUS PLUG-IN ECU SPECS



FEATURES		
Drive-By-Wire Throttle Support		1
Flex Fuel	YES	
Closed Loop O2 Control	YES	
Knock Control	YES	
Long Term Learning		Up to 4D
Data Logging		Laptop or Onboard
Anti-Lag	YES	
Rolling Anti-Lag	YES	
Rotational Idle	YES	
Launch Control	YES	
Traction Control	YES	
Flat Shift Control	YES	

FEATURES continued		
Boost Control		4D Closed Loop
Nitrous Control		6 Stages
Intake Air Bleed Control		YES
Race Timer		YES
Advanced Torque Management		YES
Shock Travel & Ride Height		YES
Engine Protection		Multi Level
Onboard Wideband Control		Single Channel LSU 4.9 / NTK
Cam Control (VTC)		YES
Cam Control Switched (VTEC)		YES
Dual Intake Runner System Control (IMRC)		YES
Alternator Control		YES

OUTPUTS		
Ignition		4
Injection (peak and hold)		4
Digital Pulsed Outputs (User-defineable functions, DPO 1-8)		8
Fixed Function DPOs (Low current)		9
Half Bridge Outputs (User-defineable functions, HBO 1-2)		2
Fixed Function HBOs		2
CAN / AUX Power Output		1
Engine Control Relay (ECR) output		1
5V Sensor Supply		1

INPUTS		
Onboard MAP sensor (4 bar)		1
Analog Voltage Inputs (AVI)		15
Engine Position Inputs		2 (Trigger and Home)
Synchronised Pulsed Inputs (SPI)		6
Knock Inputs		1
Onboard Wideband Controller (LSU 4.9 / NTK)		1
Ignition Switch Input		1

OTHER		
4 Channel Oscilloscope	50kSa/s per channel, 2ms/Div limit, optional external trigger, supports logging to PC	

COMMUNICATIONS		
CAN Bus Networks 1000, 500 or 250 kbit/s		1
High Speed USB 2.0 (USB-C interface) 480 Mbit/s connection		1
Power up over USB	Datalogging, settings and firmware upgrade available	
Wi-Fi	900 kB/s datalog extraction. Hardware lockout for security	
Multiplex Serial Communications		1
Immobiliser Serial Communications		1

DATA LOGGING		
Location		Onboard
Storage		128 MB
Max sampling frequency		1kHz
Maximum channels per log		300

DIMENSIONS		
Enclosure		160 x 140 x 35.5 mm (6.3 x 5.5 x 1.4 in)
Overall (inc. connector protrusion)		160 x 160 x 35.5 mm (6.3 x 6.3 x 1.4 in)
Weight		0.57 kg (1.26 lbs)
Operating Temperature (ambient)		-40 to 85°C (-40 to 185°F)

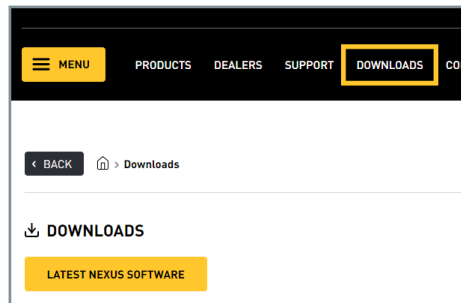
ELECTRICAL		
Power Supply (across power terminals)		8 to 22V
No output static current draw		< 1A
Low Power Mode (USB)		4 to 5.5V
Static current draw from USB port		< 500mA

NEXUS SOFTWARE PROGRAMMER

Installing the NSP software

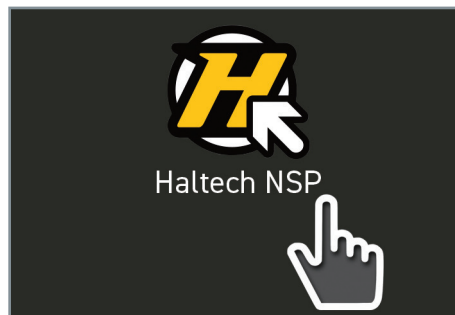
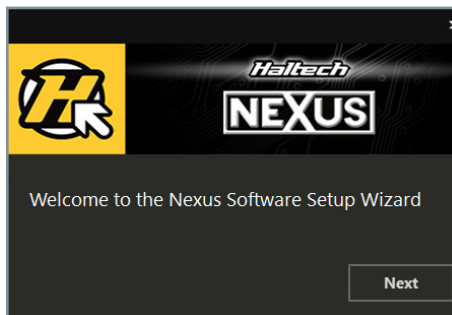
Haltech NSP (Nexus Software Programmer) is the software used for tuning and programming Nexus Plug-in ECUs. Follow these steps to install the Haltech NSP software:

1. Download the NSP installer - Go to the Haltech website (www.haltech.com), navigate to the 'Downloads' section, and click on the download link.



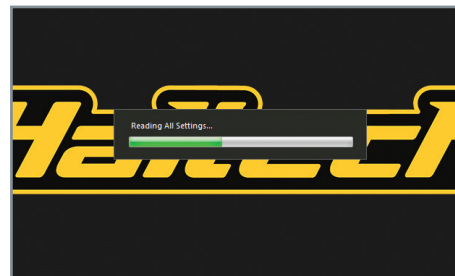
2. Run the installer file - Once the download is complete, locate the downloaded file (usually in the 'Downloads' folder of your computer) and double-click on the file to run the Nexus Software Setup Wizard.

3. Launch Haltech NSP - Once the installation is complete, you can launch the Haltech NSP software from the Windows 'Start' menu or using the desktop shortcut that was created.



Going online with the ECU

With the NSP software open, connect the supplied Haltech USB cable between your laptop and the USB-C port on the front of the Nexus Plug-in ECU.



The USB connection allows the NSP software to automatically recognize the ECU and activate it in low-power mode. This enables you to start setting up the ECU using the Setup Wizard before installing the ECU in the vehicle. In low-power mode, the ECU's inputs and outputs are disabled, allowing you to safely configure your vehicle setup before installation and full power activation.

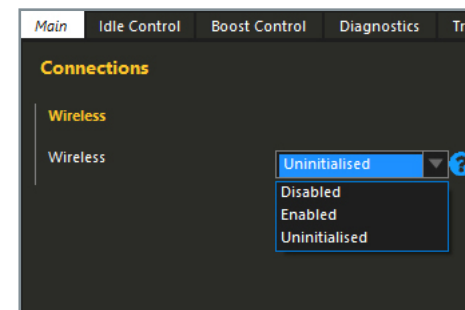
Setting up Wireless communications

Wireless communication is another method for connecting the Nexus Plug-in ECU to your laptop or mobile device (see Haltech Connect App), serving as an alternative to a USB connection once the Wireless module is enabled.

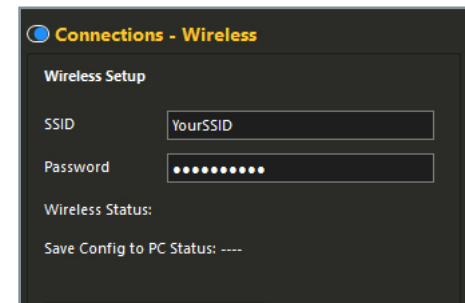
To set up your Wireless connection follow these steps:

1. Open NSP and connect your Nexus Plug-in ECU using the provided USB-C cable.

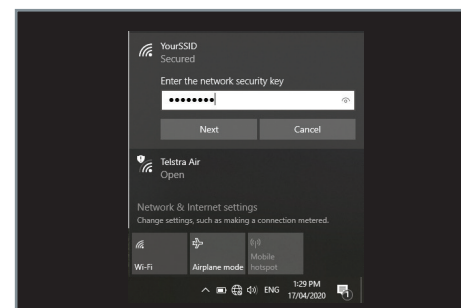
2. Click on 'Connections' in the navigation tree and enable the Wireless module.



3. Under 'Connections', select 'Wireless' to set up your SSID and password. Note that your SSID must be at least 1 character long, and your password at least 8 characters. Click 'Apply'.



4. Power up the ECU using main power (ignition switch on), then go to your computer's Network settings. Connect to your Nexus Plug-in ECU by selecting your chosen SSID and entering your password.



NOTE: The Wireless antenna is internal on the Nexus Plug-in ECU. The unit must be powered by the main power source for Wireless communication. Up to two computers can connect to the ECU via Wireless, and one via USB-C, at any given time. When the Wireless module is disabled, it is completely inactive and held in an OFF state.

Haltech Connect App

The Haltech Connect App enables you to connect wirelessly to and interact with your Haltech Nexus Plug-in ECU via your smartphone or tablet. View real-time data from the ECU, set up basic gauges, clear DTCs, assign wiring, and adjust select parameters. Available for free on Google Play (Android) and the Apple App Store (iOS).



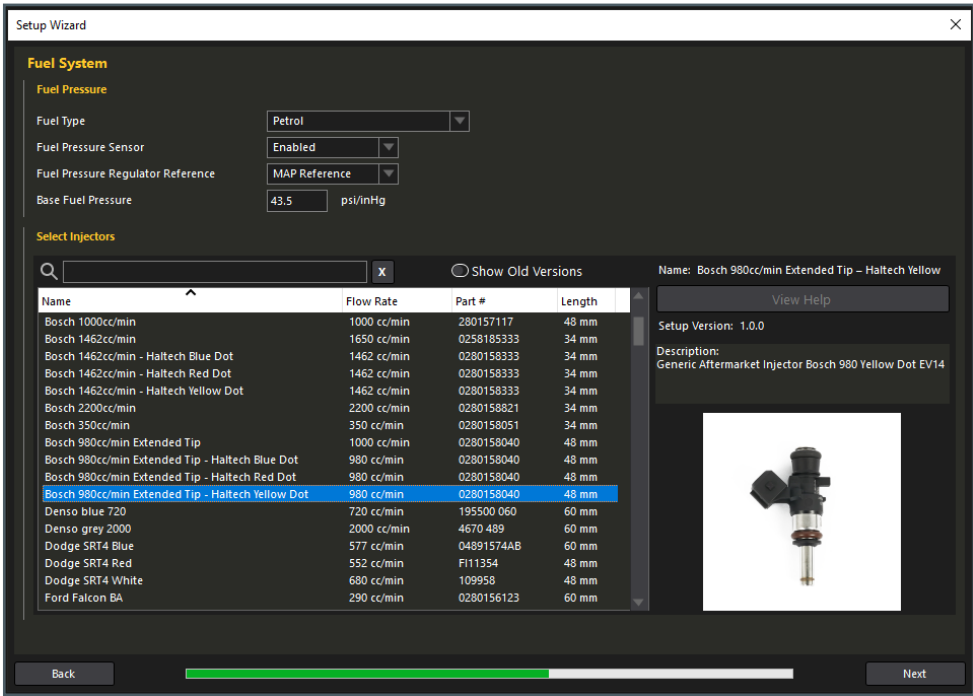
The NSP software, when used with a Nexus Plug-in ECU, features a comprehensive setup wizard designed to create a basemap tailored for your specific application.

The process begins with naming your vehicle, which creates a dedicated folder on your laptop for saving maps and datalog files. You also have the option to add a vehicle description—a useful feature for quickly identifying different map versions.

Next, select your vehicle and engine type from the list of models supported by the ECU. Then, configure application-specific options such as fuel injectors and ignition systems.

The following steps involve selecting the auxiliary harness you're using, which allows the ECU to assign I/Os to specific sensors, including a wideband O2 sensor, pressure sensors, a flex-fuel sensor, and more.

After completing these steps, NSP presents a summary of your selections for confirmation, allowing any necessary adjustments before finalizing the setup. This thorough process ensures that the Nexus Plug-in ECU is optimally configured to start and run the engine with your own base tune.



Application Specific Notes

This Nexus Plug-in ECU is compatible with the following vehicles:

- **Honda Civic EP3 (01-05)**
K20A and K20Z engine variants
Manual transmission only
- Honda Integra / Acura RSX DC5 (02-04)**
K20A and K20Z engine variants
Manual transmission only

NOTE: The ECU will also support a K24A engine swap, provided that the factory 01-05 EP3 or 02-04 DC5 harness is used to ensure correct ECU pinout assignments.

- 1. Wizard setup** - Ensure that the ECU is correctly set up using the NSP software setup wizard before powering the unit through the vehicle. Please note that the setup wizard serves only as a starting point, and the ECU will require appropriate tuning. Haltech is not responsible for any engine damage resulting from the improper use of base maps.
- 2. Air Temperature Sensor** - The factory air temperature sensor can be used, or replaced with the one included in the kit.

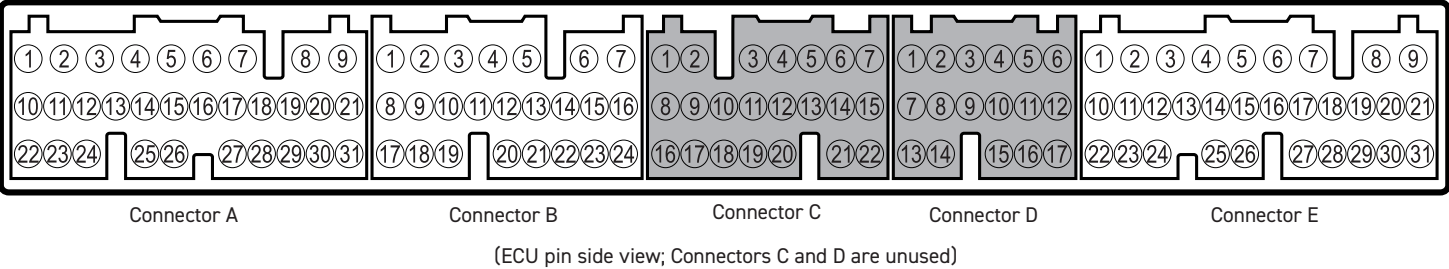
- 3. Forced Induction** - This Nexus Plug-in ECU supports engine modifications to accommodate forced induction (e.g. boost control) using the available outputs in the auxiliary connector.
- 4. Wideband O2** - The factory wideband O2 sensor (4-wire) is not supported. Instead, a Bosch LSU 4.9 or NTK sensor must be used via the auxiliary port connector.
- 5. MAP Sensor** - The factory Manifold Absolute Pressure (MAP) sensor can be used or replaced with the ECU's onboard 4-bar MAP sensor for boosted applications. The ECU's onboard MAP sensor barb must be physically connected to a vacuum port on the intake manifold using the included vacuum hose for the sensor to read vacuum and boost.
- 6. Flex Fuel System** - The Nexus Plug-in ECU directly supports adding a flex fuel sensor by wiring it to one of the SPIs on the auxiliary connector. A flex fuel sensor allows the ECU to adjust the tune based on the ethanol percentage in the fuel system.
- 7. Multiplex Control Unit** - This Nexus Plug-in ECU supports the OEM Multiplex Control Unit communication signals used by the vehicle,

- enabling the ECU to control the coolant temperature display and battery warning light on the dash, as well as communicate with the climate control system for an A/C request signal.
- 8. Immobilizer system** - This Nexus Plug-in ECU bypasses the factory immobilizer system regardless of status, and will automatically clear the immobilizer dash light on startup.



Scan this QR code to access more information about the Nexus Honda EP3 Plug-in ECU

ECU PINOUT INFORMATION



PIN	ECU CONNECTION	FUNCTION
A1	Unused	No connection
A2	+12V ECU power	ECU switched power supply
A3	+12V ECU power	ECU switched power supply
A4	Power ground	Battery ground
A5	Power ground	Battery ground
A6	Unused	No connection
A7	Trigger	Crank sensor
A8	AVI 12	Dual intake runner position input
A9	Knock 1	Knock sensor
A10	Sensor ground	Sensor ground
A11	Sensor ground	Sensor ground
A12	DPO 6	Idle control
A13	Unused	No connection
A14	Unused	No connection
A15	AVI 10	Throttle position sensor
A16	Unused	No connection

PIN	ECU CONNECTION	FUNCTION
A17	Unused	No connection
A18	SPI 5	Vehicle speed sensor
A19	AVI 9	MAP sensor
A20	+5V DC	+5V sensor supply
A21	+5V DC	+5V sensor supply
A22	Unused	No connection
A23	Power ground	Battery ground
A24	Power ground	Battery ground
A25	SPI 6	Intake cam sensor
A26	Home	Exhaust cam sensor
A27	Ignition 4	Ignition output for cylinder 4
A28	Ignition 3	Ignition output for cylinder 3
A29	Ignition 2	Ignition output for cylinder 2
A30	Ignition 1	Ignition output for cylinder 1
A31	Unused	No connection

PIN	ECU CONNECTION	FUNCTION
B1	HBO 3	Intake VTC solenoid control
B2	Injector 4	Injector output for cylinder 4
B3	Injector 3	Injector output for cylinder 3
B4	Injector 2	Injector output for cylinder 2
B5	Injector 1	Injector output for cylinder 1
B6	DPO 10	Thermofan relay output
B7	DPO 8	Reverse lockout solenoid
B8	AVI 8	Coolant temperature sensor
B9	AVI 13	Oil pressure switch (VTEC)
B10	AVI 16	Alternator L
B11	Unused	No connection
B12	Unused	No connection
B13	AVI 17	Alternator FR
B14	Unused	No connection
B15	HBO 4	VTEC solenoid
B16	Unused	No connection
B17	AVI 7	Intake air temperature sensor
B18	DPO 17	Alternator control output
B19	Unused	No connection
B20	Unused	No connection
B21	DPO 12	Evap purge valve solenoid
B22	DPO 5	Dual intake runner system (IMRC)
B23	Power ground	Battery ground
B24	Unused	No connection
E1	DPO 11	Fuel pump relay output
E2	AVI 6	Narrowband O2 sensor input
E3	Power ground	Immobilizer ground
E4	Sensor ground	Sensor ground

PIN	ECU CONNECTION	FUNCTION
E5	+5V DC	+5V sensor supply
E6	DPO 7	O2 sensor heater output
E7	ECR	Engine control relay output
E8	Unused	No connection
E9	Ign SW Input	Ignition switch
E10	DPO 11	Fuel pump relay output
E11	Unused	No connection
E12	Unused	No connection
E13	Unused	No connection
E14	AVI 14	Fuel tank pressure sensor
E15	AVI 15	Electrical load detector input
E16	AVI 11	Power steering switch input
E17	Unused	No connection
E18	DPO 14	A/C relay output
E19	Unused	No connection
E20	DPO 16	Evap bypass solenoid
E21	DPO 13	Evap vent shut valve
E22	AVI 5	Brake pedal switch input
E23	Unused	No connection
E24	Multiplex serial comms	Multiplex serial communications
E25	Unused	No connection
E26	DPO 15	Tachometer output
E27	Immobilizer comms	Immobilizer serial communications
E28	Unused	No connection
E29	Unused	No connection
E30	Unused	No connection
E31	DPO 9	Check engine light

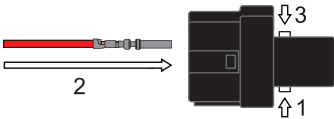
AUXILIARY CONNECTOR

Nexus Plug-in ECUs are fitted with a 26-pin auxiliary connector that can be used to wire in sensors or devices not available in the vehicle from the factory.

The ECU also includes an expansion harness that plugs into the auxiliary connector and can be conveniently routed into the engine bay. The included expansion harness (HT-189000) provides a connector for a Haltech air temperature sensor, which can be used in place of the factory sensor. A wideband O2 sensor plug is also included and is controlled directly by the ECU's onboard wideband O2 controller, allowing direct connection to a wideband hardware pack. A set of spare pins is also provided for the 26-pin connector, enabling the addition of sensors such as fuel and oil pressure sensors, flex fuel sensors, or custom DPO functions (e.g. boost control) that can be configured in the NSP software.

Pinout information for these connections is provided on the next page. To place pins into the auxiliary connector:

1. Push bottom tabs to unlock
2. Insert pin into harness side of connector
3. Push top tabs to lock

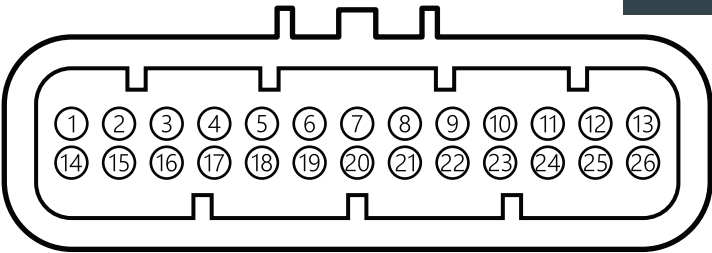


HT-010206 - Air Temperature Sensor (Included)

HT-189000 - Air Temp and Wideband Expansion Harness 2.5m (Included)

HT-010746 - LSU4.9 Wideband Hardware Pack (Sold Separately)

AUXILIARY CONNECTOR PINOUT



ECU Auxiliary Connector
Pin Side View

PIN	HALTECH CONNECTION	WIRE COLOR	PIN	HALTECH CONNECTION	WIRE COLOR
1	DPO 1	Violet / Blue	14	DPO 2	Violet / Brown
2	DPO 3	Violet / Red	15	DPO 4	Violet / Orange
3	Aux power (12V switched)	Red	16	Aux power (12V switched)	Red
4	Sensor ground	Black / White	17	Sensor +5V DC	Orange
5	SPI 1	Gray / Brown	18	SPI 2	Gray / Red
6	SPI 3	Gray / Orange	19	SPI 4	Gray / Yellow
7	HBO 1	Brown / Black	20	HBO 2	Brown/Red
8	AVI 1	White	21	AVI 2	White / Yellow
9	AVI 3	White / Gray	22	AVI 4	White / Violet
10	Sensor ground	Black / White	23	Sensor +5V DC	Orange
11	WBI 1 Heater +	Gray	24	WBI 1 Nernst	Black
12	WBI 1 Input	Yellow	25	WBI 1 Heater -	White
13	WBI 1 Pump	Red	26	WBI 1 Cal	Green

NOTE: The switched 12V pins on the onboard CAN and auxiliary connectors can supply a total of 8A, shared across the three pins.

IO AND DBW EXPANSION HARNESSES

In addition to the basic expansion harness included, Haltech offers optional expansion harnesses (sold separately) to conveniently support common sensor upgrades for your Nexus Plug-in ECU:

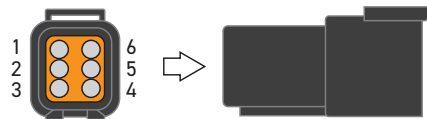
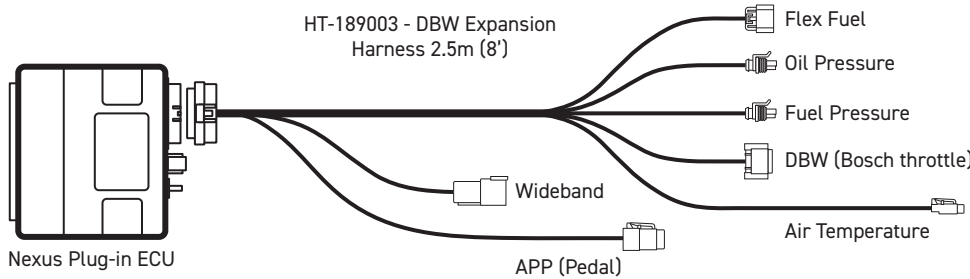
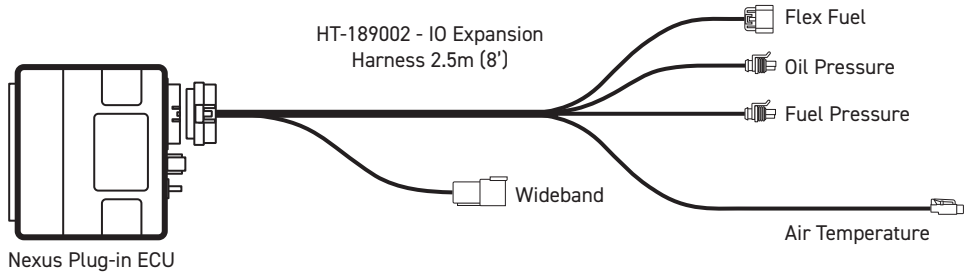
HT-189002 - IO Expansion Harness 2.5m (8')

This expansion harness adds connections for sensors such as a wideband O2 sensor, flex fuel composition sensor, oil pressure sensor, fuel pressure sensor, and air temperature sensor. It also includes spare pins for connecting to additional outputs available on the 26-pin connector.

HT-189003 - DBW Expansion Harness 2.5m (8')

This expansion harness adds connections for sensors such as a wideband O2 sensor, flex fuel composition sensor, oil pressure sensor, fuel pressure sensor, air temperature sensor, a Bosch DBW throttle plug, and a universal plug for an Accelerator Pedal Position (APP) sensor. This connector can be used to wire an APP sensor of your choice, and the pinout information for the opposing connector is shown on the right.

Similar to the IO Expansion Harness, it also includes spare pins for connecting to additional outputs available on the 26-pin connector.



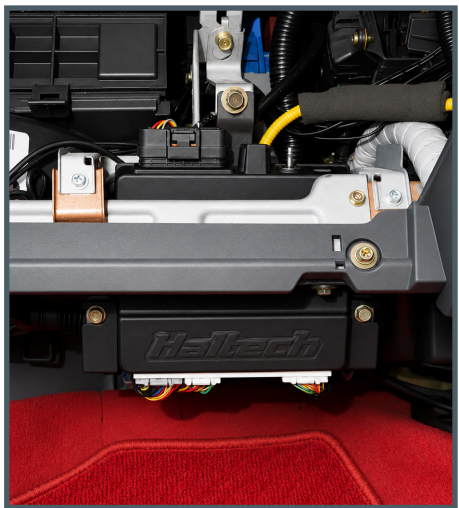
APP Opposing Connector Pinout Wire Side View

PIN	FUNCTION
1	Sensor ground
2	AVI 3
3	5V
4	5V
5	AVI 4
6	Sensor ground

Honda EP3 ECU Installation

The Nexus Honda EP3 Plug-in ECU replaces the factory unit, which is located behind the glove box. To access this location, the glove box must be removed. The included brackets allow the Nexus Honda EP3 Plug-in ECU to be installed using the factory bracket bolts and bolt locations.

The glove box may be reinstalled after the installation is complete and the ECU has been configured using the NSP Setup Wizard.



Honda 02-04 DC5 ECU Installation

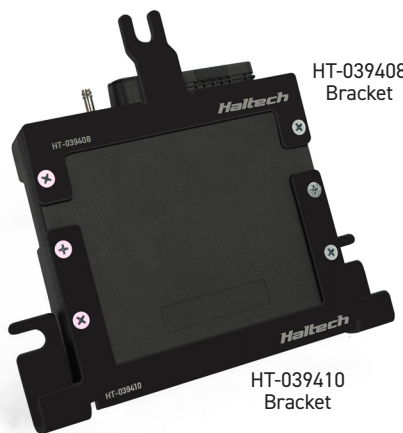
The Nexus Honda EP3 Plug-in ECU also supports the 02-04 DC5 Integra/RSX. The Nexus ECU replaces the factory unit, which is located under the glove box near the blower motor. To access this location, the underdash cover must be removed. The included brackets allow the Nexus ECU to be installed using the factory bracket bolts and bolt locations.

The underdash cover may be reinstalled after the installation is complete and the ECU has been configured using the NSP Setup Wizard.

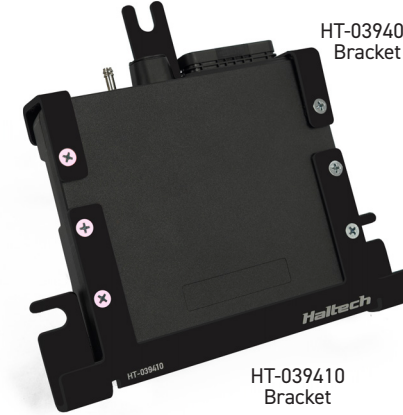


NEXUS PLUG-IN ECU INSTALLATION

EP3 Installation:



DC5 Installation:



HALTECH CAN SYSTEM

The Nexus Plug-in ECU is equipped with an onboard CAN connector for direct connection to a wide range of Haltech CAN expansion products.



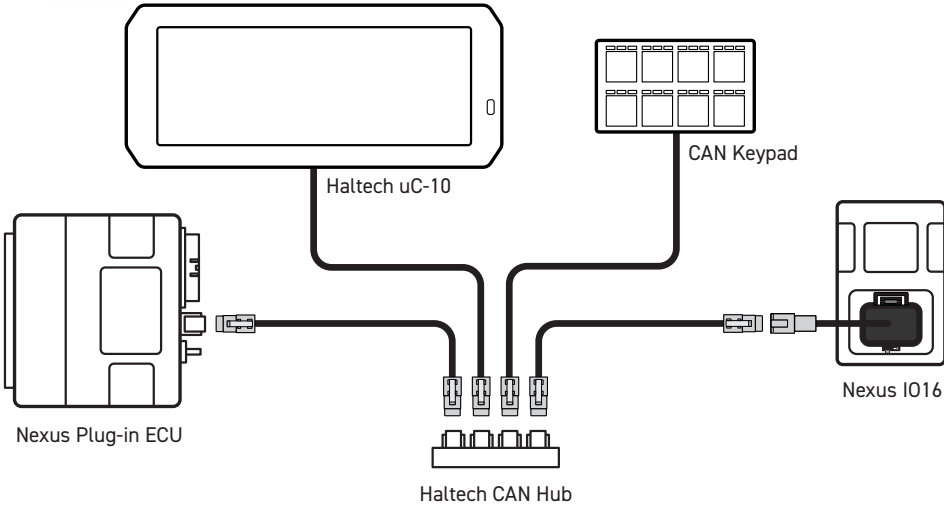
CAN Connector

Multiple CAN devices can be used simultaneously by linking them together using Haltech CAN cables and a Haltech CAN hub. Examples of Haltech CAN devices include the Haltech uC-10 display dash and the Haltech CAN keypad. The dash allows user-selected ECU or engine parameters to be displayed on a customizable screen, while the keypad enables you to scroll through multiple screens or control other functions managed by the ECU.

Additionally, a Nexus IO16 can be added to expand input and output functionality via the Haltech CAN system, supplementing the onboard capabilities of the ECU.

The diagram on the right illustrates an example of how to connect these Haltech CAN devices (sold separately).

NOTE: The switched 12V pins on the onboard CAN and auxiliary connectors can supply a total of 8A, shared across the three pins.



WARRANTY CERTIFICATE

At Haltech we make every effort to design and manufacture fault-free products that perform up to or above the market expectations. All our products are covered by a Limited 12 Month Warranty.

Haltech Limited Warranty

Unless specified otherwise, Haltech warrants its products to be free from defects in material or workmanship for a period of 12 months from the date of purchase.

If the Haltech product is found to be defective as mentioned above, it will be replaced or repaired if returned prepaid along with proof of purchase. Proof of purchase in the form of a copy of the original purchase invoice, receipt or bill of sale which indicates that the product is within the warranty period, must be presented to obtain warranty service.

Replacement or repair of a defective product shall constitute the sole liability of Haltech. To the extent permitted by law, the foregoing is exclusive and in lieu of all other warranties or representations, either expressed or implied, including any implied warranty of merchantability or fitness. In no event shall Haltech, be liable for special or consequential damages.

Product Returns

Please include a copy of the original purchase invoice, receipt or bill of sale along with the unused, undamaged product and its original packaging. Any product returned with missing accessory items or packaging will incur extra charges to return the item to a re-saleable condition.

All product returns must be sent via a freight method with adequate tracking, insurance and proof of delivery services. Haltech will not be held responsible for product returns lost during transit.

Returns of Products Supplied in Sealed Packaging

The sale of any sensor or accessory supplied in sealed packaging is strictly non-refundable if the sealed packaging has been opened or tampered with. This will be clearly noted on the product packaging. If you do not accept these terms please return the sensor in its original unopened packaging within 30 days for a full refund.

A sensor or accessory product may be returned after 30 days of purchase (with its sealed packaging intact) for credit only (no refunds given) and will be subject to a 10% restocking fee.

Installation of Haltech Products

No responsibility whatsoever is accepted by Haltech for the fitment of Haltech Products. The onus is clearly on the installer to ensure that both their knowledge and the parts selected are correct for that particular application. Any damage to parts or consequential damage or costs resulting from the incorrect installation of Haltech products are totally the responsibility of the installer.

Always disconnect the battery when doing electrical work on your vehicle. Avoid sparks, open flames or use of electrical devices near flammable substances. Do not run the engine with a battery charger connected as this could damage the ECU and other electrical equipment.

Do not overcharge the battery or reverse the polarity of the battery or any charging unit. Disconnect the Haltech ECU from the electrical system whenever doing any welding on the vehicle by unplugging the wiring harness connector from the ECU.

After completing the ECU installation, make sure there is no wiring left un-insulated. Uninsulated wiring can cause sparks, short circuits and in some cases fire. Before attempting to run the engine ensure there are no leaks in the fuel system.

All fuel system components and wiring should be mounted away from heat sources, shielded if necessary and well ventilated. Always ensure that you follow workshop safety procedures. If you're working underneath a jacked-up car, always use safety stands!

Haltech Off-Road Usage Policy

In many states it is unlawful to tamper with your vehicle's emissions equipment. Haltech products are designed and sold for sanctioned off-road/competition non-emissions controlled vehicles only and may never be used on a public road or highway.

Using Haltech products for street/road use on public roads or highways is prohibited by law unless a specific regulatory exemption exists (more information can be found on the SEMA Action Network website www.semanet.com/emissions for state by state details in the USA).

It is the responsibility of the installer and/or user of this product to ensure compliance with all applicable local and federal laws and regulations. Please check with your local vehicle authority before purchasing, using or installing any Haltech product.



Haltech Australia

17 Durian Place,
Wetherill Park NSW 2164
Australia
Phone: +61 2 9729 0999
Email: sales@haltech.com

Haltech USA East

750 Miles Point Way,
Lexington, KY USA 40510
Phone: (888) 298 8116
Email: usa@haltech.com

Haltech UK

Unit 1, Miras Business Estate,
Keys Park Road, Hednesford,
WS12 2FS
Phone: +44 121 285 6650
Email: uk_sales@haltech.com

Haltech New Zealand

9/B Weza Lane, Kumeu
0810 New Zealand
Phone: +64 988 706 16
Email: nz_sales@haltech.com

Haltech USA West

Race Winning Brands,
10800 Valley View Street,
Cypress, CA 90630
Phone: (888) 298 8116
Email: usa@haltech.com

Haltech Europe (RWB-EU)

Pesetaweg 27,
2153 PJ Nieuw-Vennep,
The Netherlands
Phone: +31 252 687 713
Email: europe@haltech.com



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youtube.com/haltechecu



instagram.com/haltechecu