



SmartMAP™ Model SM-300-xxx

Installation Instructions



Basch Acura Service
4202 E. McDowell
Phoenix, AZ 85008

Contact: Mark Basch
Office: (602) 244-8010
Email: baschacura@aol.com

Designed and manufactured by Zublin Engineering
16212 Paragon Mesa Road
Poway, CA 92064

Contact: Bryan Zublin
Email: bzublin@zublin.com Web page: www.zublin.com
Phone, night & weekends: (858) 391-1322
Phone, daytime: (858) 404-2724

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What is the SmartMAP™?

The SmartMAP™ model SS-300 replaces the check valve and restrictor assembly used by most Honda/Acura turbo and supercharger kits and prevents the engine computer (ECU) from shutting down the engine when the manifold pressure is above atmospheric (boost).

How does the SmartMAP™ work?

The SmartMAP™ connects inline with the stock (OEM) manifold absolute pressure (MAP) sensor and limits the MAP voltage that is applied to the ECU. The limit (clamp) voltage value is preset and can not be adjusted.

The stock Honda/Acura NSX MAP sensor has an output range of about 0.5V at high vacuum to about 2.7V at atmospheric pressure (wide open throttle for normally aspirated NSX's). With a turbo or supercharger installed, the manifold pressure will increase above atmospheric, and the MAP sensor voltage will rise above 2.7V. At some voltage above 2.7V, the NSX ECU will assume that there is a problem with the sensor and shut off the engine, since under normal conditions (without the turbo/SC), the MAP output will never exceed about 2.7V. The SmartMAP model SM-300-275 prevents the ECU from shutting down the engine by limiting the MAP sensor voltage to the ECU to 2.75V -0/+0.15V.

Application for the Acura/Honda vehicles

The SmartMAP™ model SM-300-275 was originally designed for the Acura/Honda NSX. It should also work on other Acura/Honda vehicles that have a MAP sensor with a similar output voltage as the one in the Acura/Honda NSX.

Features

- Replaces unreliable mechanical check valve / restrictor assembly with reliable solid state device.
- Clamp voltage preset and accurate – no adjustments needed.
- Fast response time – much faster than any mechanic device.
- Easy SmartMAP removal with the use of supplied shunt (bypass) connector.

Specifications

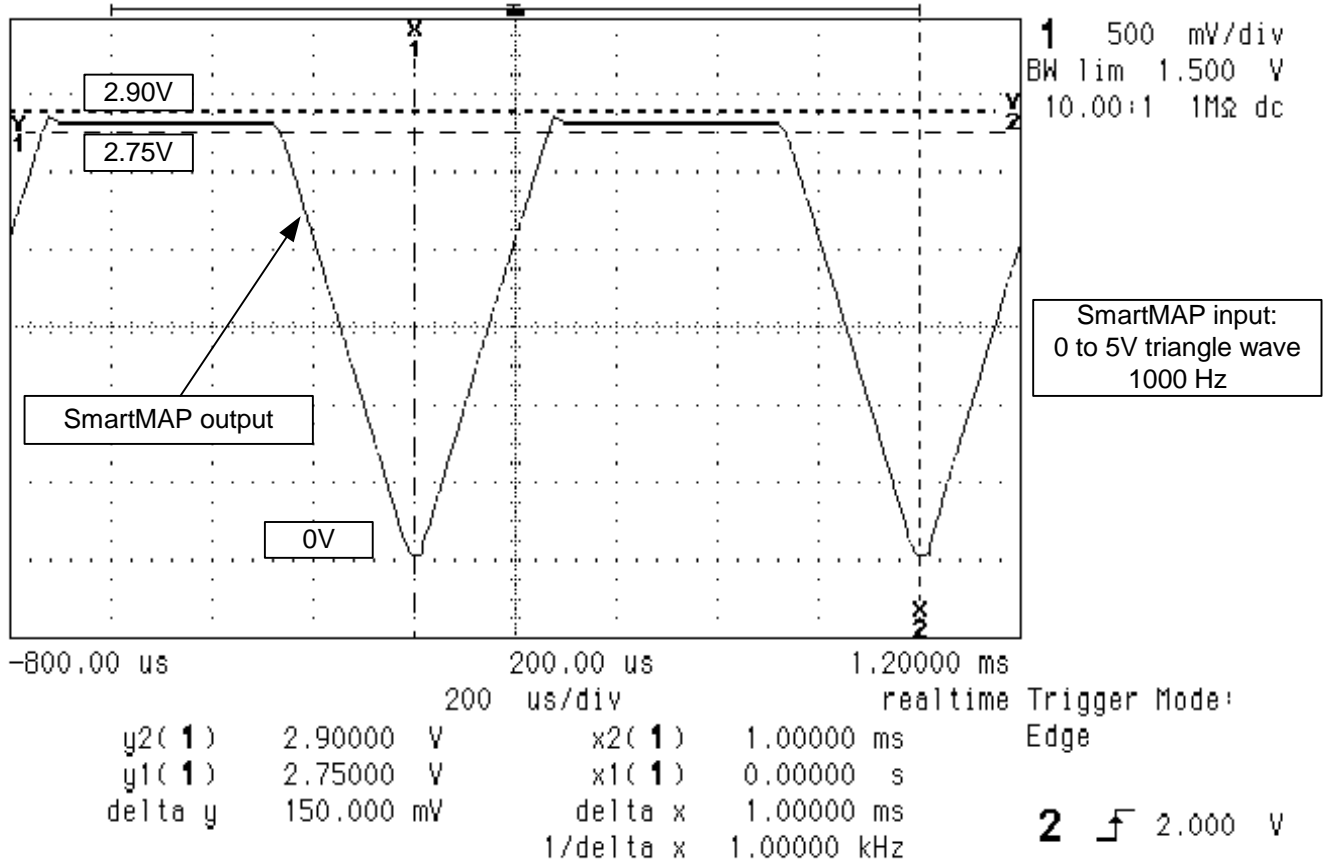
Parameter	Specification
Clamp voltage (model SM-300-275)	2.75V -0/+0.15V (2.75V to 2.90V)
Bandwidth	Greater than 1000 Hz
Power supply voltage	+10 to +20 Volts DC, negative ground
Current drain	Less than 0.01 amps
Ambient operating temperature	-20° C (-4° F) to +50° C (+122° F)
Dimensions	2.26 in. by 1.61 in. by 0.75 in.

Specifications subject to change without notice.



Figure 1 SmartMAP Output Waveform (model SM-300-275)

hp stopped





Installation Instructions

These instructions will show you how to install the SmartMAP™ in your vehicle.

Contents

Verify that the following items have been included in the package.

Item	Description	Quantity	Part Number
1	SmartMAP™ unit, Model SM-300-275	1	300024-001
2	SmartMAP™ wire harness	1	400030-005
3	SmartMAP™ shunt (bypass) connector	1	400030-006
4	SmartMAP™ Model SM-300-xxx Installation Instructions (this document)	1	900028

Tools & Materials Required

- Wire cutters
- Wire strippers
- Soldering iron & solder
- Electrical tape
- Small nylon wire ties
- Tools required to access ECU wire harness



BE SURE TO TURN THE IGNITION OFF BEFORE INSTALLATION!!

Note: The SmartMAP is not designed for wet locations or locations that are exposed to severe environments. Therefore, the **SmartMAP must NEVER be installed in the engine compartment**. It should be installed in the passenger compartment near the ECU.

Step 1 - Locate ECU and MAP Sensor Wires

Locate the engine computer (ECU) on your vehicle. On the NSX, it is located behind the passenger seat. Using the electrical service manual for your vehicle, locate the MAP sensor on the electrical wiring diagram. The MAP sensor typically has three wires with the following labels:

Reference Voltage (VREF or VCC)

MAP Sensor Output

Sensor Ground (GND)

Using the electrical service manual, locate and identify the MAP sensor wires that go to the ECU.

Step 2 - Connect SmartMAP Blue and Yellow Wires

The SmartMAP is connected inline with the MAP sensor output wire. Cut the **MAP Sensor Output** wire and connect the blue and yellow wires from the SmartMAP wire harness to the MAP sensor wires as shown in Figure 2. The connection should be made closed to the ECU in order to maintain signal quality. Lengthening the blue and yellow wires to the SmartMAP is not advised.

It is recommended that the blue and yellow wires be soldered to the vehicle wire harness instead of using solderless crimp connectors. A soldered connection will be a more reliable connection compared to a crimp connector made with a non-professional type crimper. After soldering the wires, wrap the connection with electrical tape and secure with the small nylon wire ties.

Step 3 - Connect SmartMAP Black Wire

Connect the black wire (ground) from the SmartMAP wire harness to the **MAP Sensor Ground** wire. Use the MAP sensor ground wire instead of the chassis ground to maintain the best signal quality. Lengthening the black wire to the SmartMAP is not advised.

It is recommended that the black wire be soldered to the vehicle wire harness instead of using a solderless crimp connector. A soldered connection will be a more reliable connection compared to a crimp connector made with a non-professional type crimper. After soldering the wires, wrap the connection with electrical tape and secure with the small nylon wire ties.

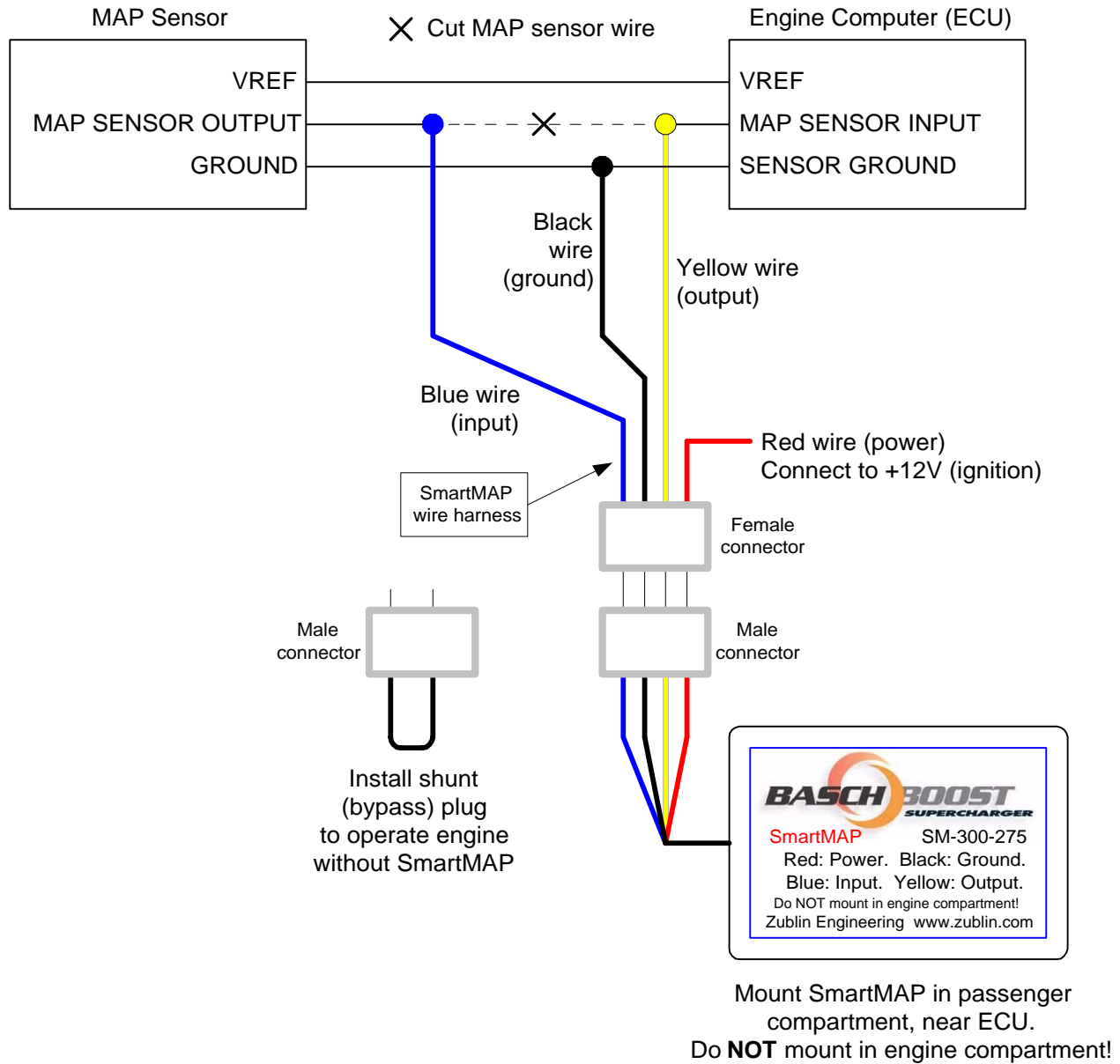
Step 4 - Connect SmartMAP Red Wire

Connect the red wire (power) from the SmartMAP wire harness to a source of +12V power that is ON when the ignition key is in the ignition and start positions. Do not connect to the “accessory” +12V power since the accessory power is usually turned OFF when the key is in the start position.

It is OK to lengthen the red wire from the SmartMAP wire harness if necessary.



Figure 2 SmartMAP Wiring Diagram





Step 5 - Connect SmartMAP Connectors

Insert the male connector from the SmartMAP into the female connector of the SmartMAP wire harness. You should hear a definite “click” sound when the two connectors are properly mated.

Step 6 - Secure the SmartMAP

The SmartMAP is supplied with an adhesive foam backing that should be used to secure the SmartMAP housing to a flat surface. As an alternative, the housing can be secure to any other surface using a large nylon wire tie.

Secure the SmartMAP wires to the vehicle using small nylon wire ties. Trim all excess nylon wire ties with the wire cutters.

HOW TO BYPASS THE SMARTMAP

If the SmartMAP needs to be bypassed (disabled) at any time, it is easily achieved by unplugging the SmartMAP male connector from the SmartMAP wire harness female connector. Then, insert the supplied shunt plug (male connector) into the SmartMAP wire harness female connector.