



Syvecs LTD

V1.2

BMW E92 M3

This document is intended for use by a technical audience and describes a number of procedures that are potentially hazardous. Installations should be carried out by competent persons only.

Syvecs and the author accept no liability for any damage caused by the incorrect installation or configuration of the equipment.

Please Note that due to frequent firmware changes certain windows might not be the same as the manual illustrates. If so please contact the Syvecs Tech Team for Assistance.

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We recommend fitting a Bosch Knock sensor with the S7 Ecu for knock control as the factory ECU uses ion sensing. Knock control will not work unless a Bosch knock sensor is fitted.

Installation

- 1.) Remove the Negative Terminal from the battery on the Vehicle
- 2.) Remove the Window Scuttle Panel as shown below in Red



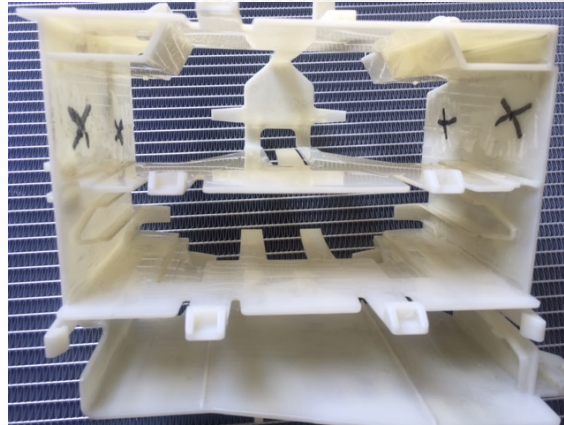
- 3.) You will then find two cream colour boxes underneath the panel, On a RHD the OEM DME is found on the Right hand side of the Engine Bay when looking at the engine from the front, LHD (USA, Middle East) its found on the Left .
- 4.) Remove the lid of the corresponding box to find the DME

RHD Below



5.) Unplug the 2 black connectors and remove OEM Computer

6.) Replace the OEM Computer with the Syvecs ECU in the location marked with Black X's, you will need to remove the centre plastic blade for it to fit



7.) Next you need to remove the sub-connector X60102 inside the smaller black ecu connector, this is done via using a small flat end screwdriver to lift the tab as shown below and then slide the two sub-connectors out.



8.) Now a Cat 5 Ethernet wire needs to have one end cut off and then the following wires need Crimping then populate inside the X60102 Sub connector but simply pushing the pins into the spare slots



| <u>BMW Pin</u> | | <u>Cat5</u> | <u>Colour</u> |
|------------------------|---|-------------|----------------|
| X60102 - Pin 10 | - | Cat5 pin 2 | - Orange/White |
| X60102 - Pin 11 | - | Cat5 pin 1 | - White/Orange |
| X60102 - Pin 12 | - | Cat5 pin 6 | - Green/White |
| X60102 - Pin 13 | - | Cat5 pin 3 | - White/Green |

Spare Outputs on the kit are found below

X60104 - Pin6 - Spare Output - Assigned to SlaveOut #1 in Scal -Pin Assignments
X60106 - Pin10 - Spare Output - Assigned to SlaveOut #2 in Scal -Pin Assignments
X60106 - Pin12 - Spare Output - Assigned to FuelOut #14 in Scal -Pin Assignments
X60106 - Pin6 - Spare Output - Assigned to FuelOut #15 in Scal -Pin Assignments

Spare Inputs on the kit are found below

Ecu Serial Numbers below 410

X60102 - Pin23 - Spare Input - Assigned to An01 in Scal -Pin Assignments
X60102 - Pin24 - Spare Input - Assigned to An04 in Scal -Pin Assignments
X60102 - Pin26 - Spare Input - Assigned to An16 in Scal -Pin Assignments
X60101 - Pin9 - Spare Input - Assigned to Slave1 An03 in Scal -Pin Assignments
X60101 - Pin22 - Spare Input - Assigned to Slave1 An04 in Scal -Pin Assignments

Ecu Serial Numbers Above 410

X60101 - Pin18 - Spare Input - Assigned to An01 in Scal -Pin Assignments
X60101 - Pin17 - Spare Input - Assigned to An03 in Scal -Pin Assignments
X60102 - Pin26 - Spare Input - Assigned to An16 in Scal -Pin Assignments
X60102 - Pin25 - Spare Input - Assigned to Slave1 An03 in Scal -Pin Assignments
X60101 - Pin19 - Spare Input - Assigned to Slave1 An04 in Scal -Pin Assignments

5v Output wires - (T into for supplying power to external sensors)

X60101 - Pin11 - 5v Out
X60101 - Pin24 - 5v Out

Spare CANbus - CAN2 (S7Plus)

X60101 - Pin11 - 5v Out
X60101 - Pin24 - 5v Out

Sensor Ground wires - (T into for supplying ground to external sensors)

X60107 - Pin20 - CAN2L
X60107 - Pin19 - CAN2H

Knock Sensor Inputs for Bosch sensors

X60107 - Pin21 - Knock1 Signal
X60107 - Pin5 - Knock1 Ground

X60107 - Pin22 - Knock2 Signal
X60107 - Pin18 - Knock2 Ground

E92 M3 Kit FAQ and Help

Q) Can you Clear the Error Codes on the DSG from the Syvecs

A) Yes, See Cal - Comments in the Base map, Need to go to I/O Configuration at the bottom of Scal - Tree - Car Coding. Click on Car Coding 2 then enter the number 5 and back to 0.

Q) Do you use the Ion detection still for Knock Control

A) No we allow you to wire in 2 x Bosch Donut knock sensors (Part number - 0261231110 / Cross-Reference: 0031538628) which are already calibrated and setup in the base maps for doing knock control and monitoring each individual cylinder.

Q) Can you log clutch pressures from the TCM

A) Yes, the Syvecs communicates with the DSG Trans Computer and requests the data, this is then sent back to the Syvecs, Under User Defined Sensors - Clutch 1 Pressure and Clutch 2 Pressure. Add these in Scfg to your logging config to monitor in datalogs.



Q) What of the original features will now not work?

A) All original features will function properly

Q) Can we use the OBD port still to Log, Read Codes and Clear them on other ecus on the car like ABS?

A) Yes via any BMW Tools but Make sure Car Code 2 is set to 0

Q) How do we change Calibrations switch positions on the kit

A) This is done via the Cruise Control lever, pushing up changes the Calibration Select up 1 position at a time, then pressing down makes it go down, The current Calibration Select position then gets shown on the RPM Counter on the dash. Pressing the M Button on the Steering wheel activates the Cal Override switch which makes the Calibration Jump to Cal 9, this will invoke a Rolling Antilag limiter. You may add another rotary switch into one of the Spare inputs on the kit for Traction Switch Adjustments but if not the Traction Switch position will follow Cal Switch Position meaning you can change Traction levels via the Cruise Switch also

Q) I am wanting to TurboCharge the Engine how do i trim the Ignition and Fueling for this?

A) Because the Base map is designed for a Stock engine based on Alpha N tuning its really simple to add addition fueling for a Turbo or remove Ignition. You need to add a Map Sensor on the engine and wire into a Spare input above as shown. Then under Run-Mode Fueling - Corrections - Simple Manifold Pressure Multiplier.. add addition fueling based on Map Signal.... Same goes for trimming Ignition timing under under Run-Mode Ignition - Corrections - Simple Manifold Pressure adder.

Q) Can you do a Gearbox Adaption with the Syvecs on the DSG Gearbox?

Indeed we can, Its explained in the Cal - Comments of the Ecu base map but you need to go to I/O Configuration - Car Coding 2 - Then Set the Value at 7 BUT ONLY WHEN THE FOLLOWING IS DONE, Engine is fully warmed up and used for a least 10mins of driving so Gearbox is up to temp, Car is in Park and Brake is pressed.