



Power Programmer Instructions

CAUTION: It is imperative to follow all of the instructions completely and correctly or you may damage your BMW's Engine Control Unit (ECU).

NOTE: Before obtaining any service on your BMW, you should restore the stock settings on your ECU. If your dealer/service tech restores the settings to stock (which they often do during service upgrades) the Power Programmer will no longer work on your BMW.

NOTE: The Power Programmer is designed to work only on BMWs that are US or Canadian spec; it will not work on BMWs built for Europe, Asia, etc.

Various OBD-II equipped BMW's

PART NUMBER:

BAVPP4

IMPORTANT NOTES:

Do not even think about beginning this procedure without reading all of these instructions first.

The Power Programmer can only function on a stock ECU. If your BMW has a performance programmed ECU, the Power Programmer will not work.

99 thru 00 models - Please ensure that you have previously had the "00E-A01 Fault Readiness/O2 Readiness Codes Not Set" emissions recall update performed by your dealer, if applicable. See Appendix B for a list of the BMW models affected by this recall. Failure to have the recall update performed prior to using the Power Programmer may cause a "Software Unknown" failure (code 147).

M3 (with SMG transmission) 01 on - Disconnect fuse #33,56 and 61 in the glove box fuse panel prior to using the Power Programmer.

528i and 540i 99 on - Disconnect fuses #17 and #31 in the glove box fuse panel prior to using the Power Programmer.

740i 99 on - Disconnect fuse #17 in the engine compartment fuse panel prior to using the Power Programmer.

PROCEDURE:

1. Locate the rectangular 16-pin OBD-II port in the interior of your BMW. It will generally be found in the driver's under-dash area, or in the forward end of the passenger side of the transmission tunnel. The port is protected by a flip-open plastic cover with the word "OBD" on it. In some cases there is a second removable trim cover over the actual plug assembly. Remove the trim cover if necessary and open the flip-top cover to gain access to the diagnostic port.

NOTE: The direction in which the LEDs on the end of the Power Programmer will point when inserted into the OBD-II port. You will need to see these LEDs for guidance from outside the vehicle. In many cases, a mirror will be required to allow you to see the LEDs from outside the vehicle.

2. Lower the driver and passenger windows, ensuring that you have the ability to reach the OBD-II port.
3. Make sure that the ignition is off and the key is temporarily removed.
4. To ensure a constant voltage for proper operation of the Power Programmer, attach a high-quality battery charger to the vehicle, at the battery, observing all safety precautions such as the wearing of safety goggles.
5. Turn the charger on at a minimum of the 10 amp setting (20 amp setting if your vehicle is equipped with Daytime Running Lights-DRLs) and ensure that charging is occurring. Wait a minimum of 20 minutes for the vehicle battery to charge with ample reserve power.



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NOTE: The importance of proper battery voltage cannot be emphasized enough. Failure to maintain proper battery voltage throughout the procedure may result in an inoperable vehicle, where the only solution would be the physical replacement of control modules at owner expense. Voltage below 12.5v as a minimum can cause permanent failure. Evaluate the age and condition of your BMW's battery before proceeding.

6. Open the door nearest to the OBD-II port, and insert the Power Programmer into the OBD-II diagnostic port making sure not to depress the button while doing so. Note that the port is keyed and the power programmer will positively snap or click into the port when fully seated. At this time, the green LED should now be illuminated solid green. If the green LED or red LED is flashing or pulsing, remove the Power Programmer, count to 10, and reinsert it into the port without depressing the button. The button must not be depressed during insertion into the port. The Power Programmer will be powered via the OBD-II port, even when the vehicle ignition (and ECU) is switched off.
7. If necessary, position the mirror so you can see both the green and red LEDs from outside the vehicle. Test close the doors and ensure that you can see the LEDs through a window.
8. Turn the ignition switch to the ON position but do not start (check engine lamp must light up).
9. Assure that all electrical loads are off (radio, climate control, courtesy lamps, etc.) and that those capable of turning themselves on (cell phone) are temporarily disabled. The climate control in many vehicles can be turned off by lowering the fan speed past its lowest setting.
10. Exit the vehicle at this time and close all doors. **NOTE:** No one is to remain inside the vehicle during use of the Power Programmer. Wait at least 30 seconds, then press the button. Within in 3 seconds, the green LED will begin to pulsate, indicating the transfer of programming data between the vehicle's ECU and the Power Programmer's internal electronics package.
11. Sit back, relax, watch, but DO NOT TOUCH the Power Programmer or anything inside the vehicle under any circumstances. DO NOT OPEN THE DOORS as this can disturb the programming.
12. In approximately 1 to 6 minutes, the red LED will turn on while the green LED continues to pulsate indicating that the Power Programmer is entering the Reprogramming phase.
13. In approximately another 1 to 3 minutes, the red LED will turn off, while the green LED will continue to pulsate; this is the final Check phase of reprogramming your vehicle.
14. Finally in about 1 to 3 minutes, the green LED will stop pulsating and illuminate solid; this is your indication that the upgrade has been successfully completed and verified. (If you see a solid green AND a solid red LED, this indicates that a Restore to Stock program was successfully completed and verified.
15. You may now open the vehicle door and turn the ignition completely off. Wait at least 30 seconds, but DO NOT remove or disconnect your Power Programmer at this time.
16. If you previously removed fuses, you should reinstall them before proceeding.
17. With the Power Programmer still connected, turn the ignition switch to the ON position but DO NOT start; the Check Engine lamp must light up.
18. Wait at least 30 seconds, then press the button on your Power Programmer. The green LED will begin to pulsate indicating the transfer of some final information to the vehicle's ECU. This phase lasts about 10-15 seconds before the green LED illuminates solid green. (Again, if you are performing the Restore function, you will see a solid green AND a solid red LED as in step 14 above.)
19. You may now turn the ignition completely off. Wait at least 30 seconds, then remove the Power Programmer from the OBD-II port, and recap the port.
20. Turn off and remove the battery charger and enjoy your upgraded BMW.



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Should the Power Programmer encounter any exceptions or difficulties, the red LED will flash out a 3 digit code at a pace of one flash every half-second, with 2 seconds between digits. All codes begin with a single flash, and none of the digits will repeat. The following codes indicate that your vehicle is drivable, but could not be successfully programmed. Follow the advice to correct the situation. If you must return the Power Programmer for analysis, please contact Bavarian Autosport Customer Service first for shipping instructions.

CODE	DESCRIPTION
123	Vehicle voltage too low – You must maintain at least 12.5 volts for programming! The vehicle battery is not sufficiently charged or is beyond its serviceable life - or the charger is not working or has insufficient output.
124	Programming voltage too low – Battery voltage has dropped during the programming process. You must insure a sufficient charge for programming! The vehicle battery is not sufficiently charged or is beyond serviceable life, or the charger is not working or has insufficient output.
125	Programming voltage needed, not present – contact Bavarian Autosport Customer Service.
142	ECU hardware unknown – Return ECU and Power Programmer for analysis.
143	ECU contents not stock – Your existing ECU programming is not stock (original). The Power Programmer can only function on a stock programmed ECU.
147	ECU software unknown – Return Power Programmer for analysis.
152	Injector stock storage failure – Return Power Programmer for analysis.
153	Injector not prepared – Return Power Programmer for analysis.
162	Vehicle mismatch – Power Programmer was previously used, or attempted to be used, on a different BMW. The unit will only work on one car.
163	Bad user request – You have attempted to install the upgrade when the ECU has already been upgraded, or attempting to restore the stock programming when the ECU has already been restored to stock or has not been upgraded at all.

The following codes indicate that your BMW could not be successfully programmed for some reason and that its drivability is in question due to the failure. Please note when and/or where this failure occurred in the process and the state of the red “ACTIVE” and green “STATUS” LEDs. Contact Bavarian Autosport Customer Service immediately!

132	ECU NOT RESPONDING
134	ECU MESSAGE VERIFY ERROR
135	PROTOCOL ERROR BUSY
136	PROTOCOL ERROR REJECTED
137	PROTOCOL ERROR PARAMETER
138	PROTOCOL ERROR FUNCTION
139	ECU REPLY IS NOT KNOWN
145	ECU FINAL VERIFY FAILURE
146	ECU ERASE FAILURE



Power Programmer Instructions - Appendix B

Voluntary Emissions Recall 00E-A01 Fault Access / O2 Readiness Codes

PART NUMBERS

BAVPP4

In an August 2000 letter, BMW notified customers that certain 1999 & 2000 model year automobiles (listed below) equipped with 2.5 liter and 2.8 liter engines may not fully meet EPA and CARB on-board diagnostic requirements. They suggested that the owners of the affected automobiles contact their Authorized BMW center to schedule the repair, a reprogramming of the ECU. Depending on the original "level" of the software in the vehicle, this update can also have other beneficial effects. Because of this, we have chosen this "software level" as the base level needed for our Power Programmer performance upgrades. If this recall is applicable to your BMW and you have not yet had it performed, please do so before attempting to upgrade for the first time.

If for some reason you are unable or unwilling to obtain this update, please note that it is very likely that your first upgrade session will fail with a "Code 147" and you will need to then return your Power Programmer for an analysis of your current software level. This will not affect the drivability of your BMW; it will merely delay your upgrade.

The following vehicles are listed as being possibly affected:

SERIES	PRODUCTION DATES
528i, 528iA, 528iT, 528iAT	2/99 thru 7/99
328i, 328iA, 323i, 323iA	3/98 thru 7/99
328Ci, 328CiA, 323Ci, 323CiA	3/99 thru 7/99
328iC, 328iCA, 323iC, 323iCA	2/99 thru 7/99
Z3 Roadster/Coupe 2.8, 2.8A	4/99 thru 7/99
Z3 Roadster 2.3, 2.3A	9/98 thru 7/99

If your BMW is listed above, please verify that this recall has been performed or if necessary have it performed prior to using the Power Programmer. If your vehicle was produced after 7/99, this recall is inapplicable and you may perform the Power Programmer upgrade without delay.



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