

# Launchtech.co.uk - Procedures

**Manufacturer: BMW**

**System: Mass Airflow Sensor**

## How to Reset BMW Mass Airflow Sensor adaptation

### BMW Air-mass Flow Sensor Reset for Diesel Engine

In normal operation, the air mass flow meter is subject to effects such as soiling and aging. Those effects cause divergence between the stored characteristic and the specified status resulting in symptoms such as lack of power or black smoke. In order to prevent the effects of this problem, the Air mass flow meter adaptation function has been introduced on the DDE5.

Function: Air mass flow meter adaptation is performed by the DDE control unit at two operating points: when idling and under load in an operating range defined as follows:

- Engine speed = 1700 ... 3000 rpm
- Charge-air pressure = 1100 ... 2800 mbar
- Speed = 90 ... 160 km/h
- Change in intake-air temperature < 2 /s
- Change in injection rate < 2 mg/stroke/s
- Delay period = 3s

Adaptation sequence at each of those points:

The air mass flow meter adaptation uses certain operational data to calculate the theoretical air mass flow passing through the engine. The DDE control unit compares the figure obtained with the level measured by the air mass flow meter.

If the DDE control unit finds that the measured level differs by more than  $\pm 8\%$  from the theoretical figure, that difference is stored on the control unit as a compensation factor.

That compensation factor enables the control unit to adjust the measured levels before they are processed by the various functions.

Application: The service function "Air mass flow meter adaptation" must be performed after the air mass flow meter is replaced. The stored compensation factors are reset to 0 in the process.

Vehicle Use: The air mass flow meter adaptation is used as follows:

- E46 M47TU: as of volume production launch
- E46 M57TU: as of volume production launch
- E65 M57TU: as of 03/2003 with integration stage 6.108 and DDE software VQ5.7
- E60 M57TU: as of volume production launch

SELECT DIAG. SYSTEM			
DME (Engine)			
EGS (Transmission)			
ABS (Antilock brake)			
SRS (Air bag)			
IHKA/IHKB (AC/heater)			
IKE/IKI/ROMBI			
EWS (Elec. immobilize system)			
ZKE (Central body electronic)			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
(Start)			12:26

1. Select Engine system

ECU IDENTIFY	
<b>DDE Diesel Electronics DDE 5.0</b>	
Part number basic control	7793443
Coding index	16
Date of manufacture (D,M,Y)	24.10.2002
Diagnosis index	30
Hardware number	10
Function software	30.01.00
Message catalog	0B.01.06
Operating software	02.06.00
Variant index	0058
Chassis number	PD10599
Type approval number	7788338
OK	
(Start)	
	12:26

2. ECU identified as DDE5.0

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Data stream			
Component activation			
Air-mass flow sensor adjustment			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
(Start)			12:26

3. Read Fault memory

TROUBLE CODE			
4222	Glow plug,cylinder 2		
4232	Glow plug,cylinder 3		
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
(Start)			12:26

4. Fault codes present

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Data stream			
Component activation			
Air-mass flow sensor adjustment			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
(Start)			12:26

5. Clear Fault codes

SELECT DIAG. FUNCTION			
No Fault Code			
OK	PRINT		
(Start)			12:27




6. Fault codes cleared

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Data stream			
Component activation			
Air-mass flow sensor adjustment			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
(Start)			12:27




7. Select sensor adjustment

Air-mass flow sensor			
Fault codes are stored in the fault code memory. The faults should be corrected before resetting mass air flow sensor adaptation.			
YES	NO		
(Start)			12:30

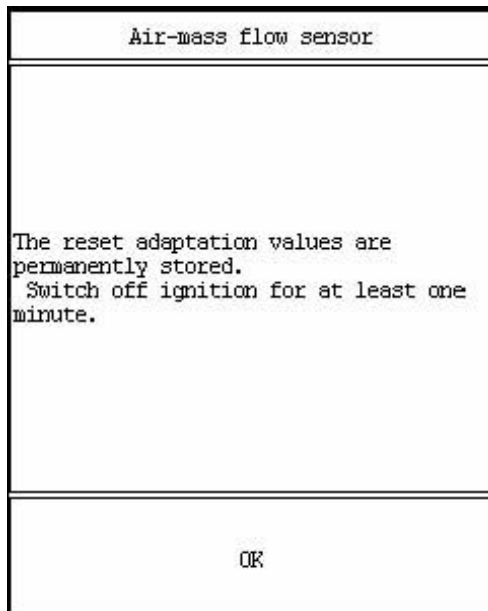
8. X431 checks for faults

Air-mass flow sensor	
<p>Stored values for mass air flow sensor adaptation:            Adaptation value, idle speed: <b>-39688.7</b>            Adaptation value, load: 0.0</p>	
YES	NO
<p>(Start)    12:28</p>	

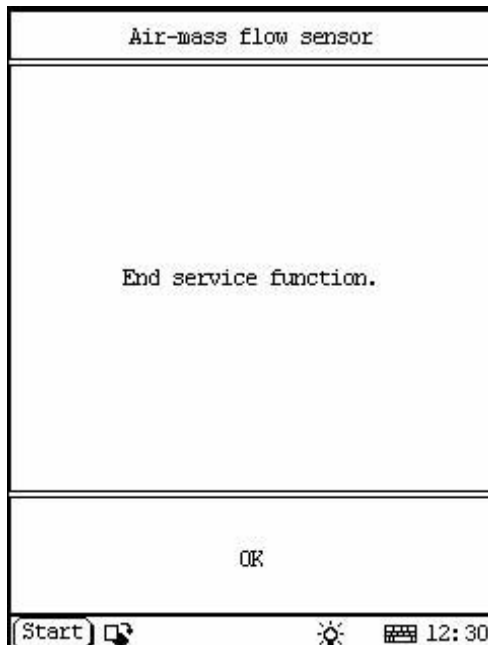
9. Current Stored information about idle speed and load for the adaptation value. Select "YES" to continue.

Air-mass flow sensor	
<p>Do you wish to reset mass air flow sensor adaptation?            Selection:            [YES]:Reset adaptation (the reset values are permanently stored).            [NO]:End with no change (the old values are retained).</p>	
YES	NO
<p>(Start)    12:29</p>	

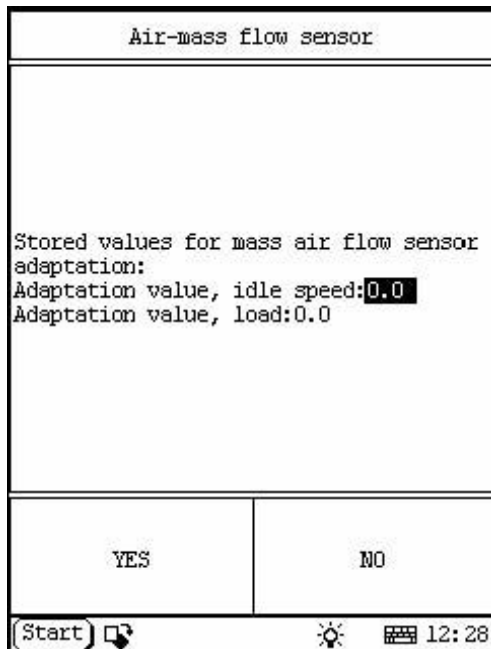
Select "YES" to reset adaptation.



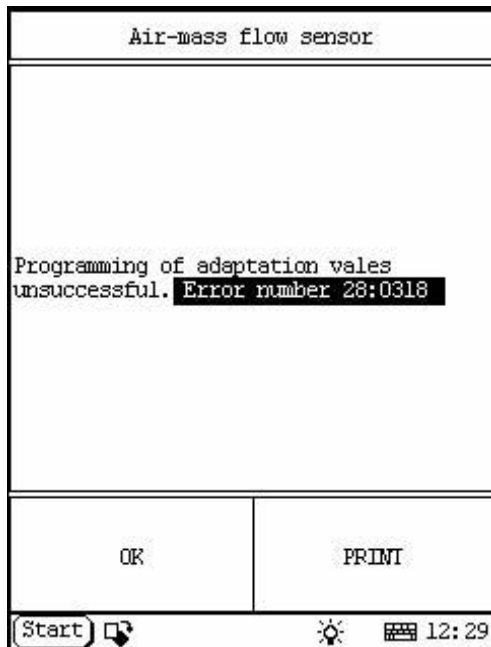
Switch off Ignition for at least one minute and Select "OK"



End of Reset Procedure Select "OK" to go back to Engine Menu



To check if Air-Mass has been reset Select “Air-Mass Flow Sensor Adjustment” again and stored information should be 0.0 as above.  
To exit Select NO



If Error occurs as above please report this number to Launchtech UK Ltd

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