Operation Manual

F87 – M2

F87DGA Table of contents

Modell support

F87DGA 2 F-Series

F87- M2

All models with following engines are supported: Turbo- Gasoline engine

F87DGA Product desription

Measurement data display:

- Boost pressure
- Tourque
- Performance
- Performance chart
- Lateral and Longitudinal accelaration
- Sprint
- Quarter of a mile
- Lambda values and exhaust gas temperature
- Rail pressure and fuel pressure
- Maximum values

Visually, the display fits perfectly into the Interior. The monitor, which is equipped with latest OLED technology is incorporated into the existing ventilation shaft. Thus, no external holders are necessary, and you have a good view of the displays while driving.

To operate the Displaysystem, you just have to use the steering wheel buttons. Thus, control of the vehicle by the driver is always maintained.

System components

Boost pressure display

1 Battery voltage
2 Boost pressure bar
3 Peek holder bar
4 Boost pressure
5 Cooling water temperature
6 Temperature of the gear

1. Indicates the current battery voltage
2. Graphically represents the boost pressure, between 0 and 1.35 bar, and is equipped with a towing pointer
3. Holds the early maximum of loading pressure for 2 seconds
4. Indicates the charging pressure digital, between 0 and 1.35 bar
5. Specifies the current cooling temperature in °C
6. Specifies the temperature of the gear, between - 40 °C and 150 °C

Torque display

1 Battery voltage
2 Torque bar
3 Peek holder bar
4 Torque
5 Cooling water temperature
6 Temperature of the gear

1. Indicates the current battery voltage
2. Graphically represents the torque between 0 and 650 Newton Mertes, and is equipped with a towing pointer
3. Holds the early maximum of loading pressure for 2 seconds
4. Indicates digital torque between 0 and 650 Newton metres
5. Specifies the current cooling temperature in °C
6. Specifies the temperature of the gear, between - 40 °C and 150 °C

System components

Performance display

1 Battery voltage

2 Power bar

3 Peek holder bar

4 Power

5 Cooling water temperature

6 Temperature of the gear

1. Indicates the current battery voltage
2. Represents the power between 0 and 400 PS and is equipped with a peek holder bar
3. Holds the early maximum of loading pressure for 2 seconds
4. Specifies the power digital between 0 to 400 PS
5. Specifies the current cooling temperature in °C
6. Specifies the temperature of the gear, between - 40 °C and 150 °C

Performace chart

1 Power

2 Power

3 Torque graph

4 Torque

1. Graphically represents the power
2. Specifies the power digital between 0 and 500 hp; the provisional maximum value is kept
3. Graphically represents the torque
4. Specifies the torque digital between 0 an 600 Nm; the provisional maximum value is kept

System components

Lateral and Longitudinal accerlaration

1 Longitudinal acceleration

2 Longitudinal acceleration bar

3 Peek holder bar

4 Lateral accelaration

5 Lateral accelaration

1. Specifies the longitudinal acceleration in G (G= 9,81 m/s²)
2. Graphically represents the longitudinal acceleration, between 0,8G backwards and 0,8G forwards and is equipped with a drag indicator (G= 9,81 m/s²)
3. Hold for 2 seconds the provisional maximum of longitudinal acceleration
4. Specifies the lateral acceleration in G (G= 9,81 m/s²)
5. Graphically represents the lateral acceleration between 2,0G to the left and 2,0G to the right, and is equipped with a towing pointer (G= 9,81 m/s²)

Sprint display

1 Speed

2 Stopwatch

4 Sprintzeiten

6 Elastizitätsmessung

3 max. Speed

5 GPS- Speed

1. Specifies currently speed in km/h according to the speedometer
2. Specifies the time depending on the current speed
3. Indicates the ever reached maximum speed in km/h
4. Specifies the best Sprint time from 0 to 100 km/h or 0-200 km/h
5. Specifies the GPS- Speed (only displayed if original BMW navigation device is installed)
6. Displays the elasticity of the engine, in the range of 80 km/h to 120 km/h,

System components

Quarter mile - Display

1 Stopwatch

2 Maximum values

3 Light countdown

1 Measures the time up to reach the quarter mile

2 Shows the maximum values of the last ride; the values are overwritten at the next race

3 Light countdown to the start of the quarter mile race

Quarter mile- Maximum values

1 Maximum values

1 Specifies the maximum value of the quarter mile race; When the switch off the ignition deletes these values

System components

Wideband oxygen and exhaust temperature

1 wideband oxygensensor Bank

2 waste gas temperature

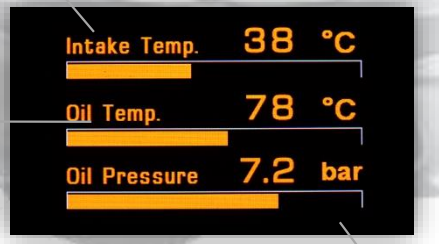
3 Rail pressure

1. Specifies the current value of wideband oxygen sensor Bank 1; measures the residual oxygen content in the exhaust gas; λ > 1 = lean mixture; λ < 1 = oily mixture; Range is between 0.65 and 2.5
2. Specifies the current exhaust gas temperature between 0 ° C and 130 ° C
3. Displays the current rail pressure, from 0 to 1000 bar (Pressure after the high pressure pump)

Intake temperature, oil temperature and oil pressure (only for gasoline engines)

1 Intake temperature

2 Oil temperature



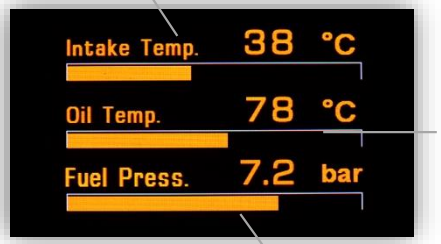
3 Oil pressure

1. Specifies the intake temperautre from 0 bis 130 °C
2. Specifies the current oil temperature from 0 to 130 °C
3. Shows the current oil pressure from 0 to 5 bar

System components

Intake temperature, oil temperature, fuell pressure (only for diesel engines)

1 Intake temperature



2 Oil temperature

3 Fuel pressure

1 Specifies the intake temperautre from 0 bis 130 °C

2 Specifies the current oil temperature from 0 to 130 °C

3 Specifies the current fuel pressure from 0 to 10 bar

Maximum values Page 1

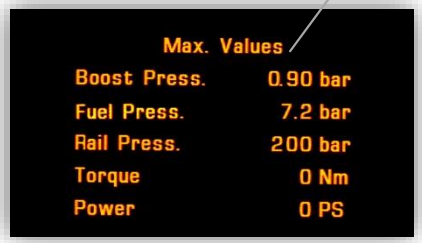
1 Maximum values

1 Specifies the maximum value of the current drive; When the switch off the ignition deletes these values

System components

Maximum values Page 2
(only for diesel engines)

1 Maximum values



1 Specifies the maximum value of the current drive; When the switch off the ignition deletes these values

Maximum values Page 2
(only for gasoline engines)

1 Maximum values

1 Specifies the maximum value of the current drive; When the switch off the ignition deletes these values

System components

Maximum values Page 3

1 Maximum values

1 Shows the maximum values of reached longitudinal and lateral acceleration of the current drive; when the switch off the ignition deletes these values

Switch off display

1 Switch off display

1 During the brief wait about 2 seconds, the display turns off; by pressing the wheel button it is possible to turn the display back

F87DGA Key functions

The display F2xDGA is operated above the already existing rocker switch on the steering wheel of speed control. If the cruise control is switched off, you can switch back and forth between the individual system components.
When the cruise control is on, the display remains in the last active screen and the rocker switch assumes their original function. This allows an easy handling and ensures the control of the vehicle by the driver.

Changing of system components:
To switch between the individual system components suffice a light tap on the rocker switch up or down. This allows a scroll forwards and backwards.

To enter the settings menu, press the rocker switch fully upwards and hold this position for 2 seconds (see next page).

F87DGA Key function

To change settings, move the rocker switch to bottom until one has arrived at the desired setting. Move the rocker switch above to confirm or to change the setting.(E.g. switching from km/h to mph).

Move the rocker switch on “Back” to exit the setting menu, and confirm again.

Change options:

- Volume
- Dimming
- German to Englisch
- km/h to mph
- °C / bar to °F / psi

F87DGA Sprint function

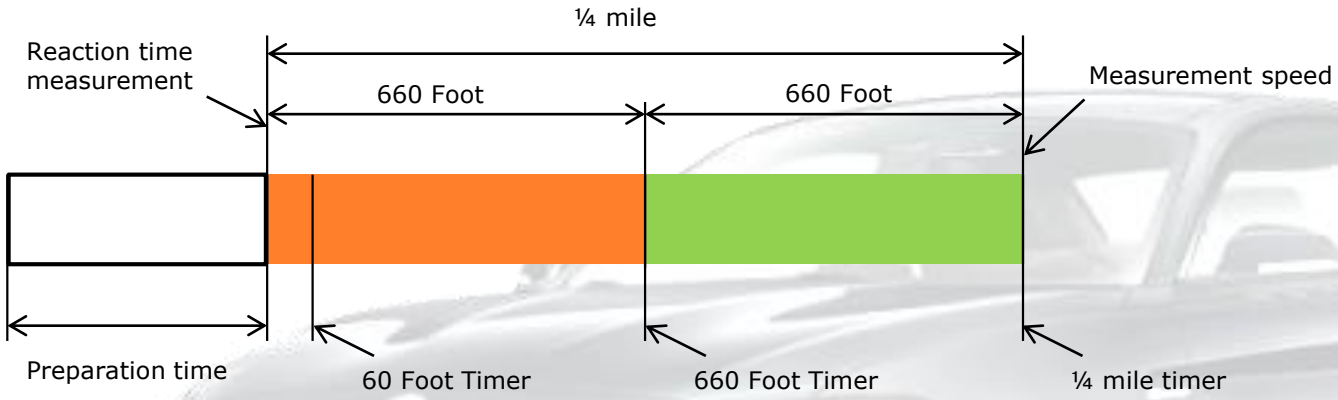
The sprint display is operated only by the driving style of the driver. So they are not any external buttons for the operation necessary.

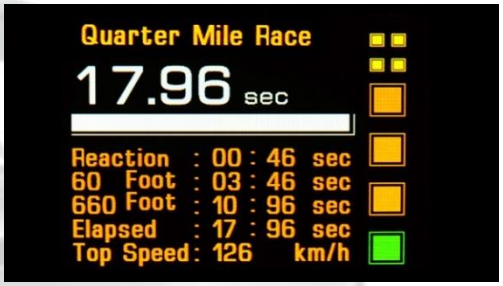
In the stand is the stopwatch, as well as the speed to 0.
As soon as the driver accelerated the timing begins.
For the first measurement, from 0 to 100 km/h, the driver will have 15 seconds. If the driver is not able to accelerate to 100 km/h, the measurement stops and the timer goes back to 0.
Is the driver able to accelererate to 100 km/h, the second measurement from 0 to 200 km/h begins.
For this speed the driver has 10 more seconds, so 25 seconds to speed up to 200 km/h.
In addition conducted an elasticity measurement between 80 km/h and 120 km/h. The time reached at full throttle are indicative of the elasticity of the motor.

The maximum achieved times are stored and displayed at the bottom of the display. As well the reached maximum speed is shown in the upper right area of the screen.
These stored maximum values are automatically replaced by new highs. If an original BMW navigation system is installed, the current GPS-speed is represented in the lower-right corner of the screen.

To clear the peak values, only the option “Memory delete” must be selected in the Setup menu.

F87DGA Quarter mile display





The quarter mile display of F2xDGA serves the riders to perform a drag racing with exact measurements. Due to a short preparation time of 10 seconds, the driver can prepare for the race. The traffic light in the right pane indicates the start time. In the light of the last green signal timing begins.

60 Foot timing (18.2 m)
- Measures the time it takes the car to cross the first 60 feet of the track
- Shows you how well the car launches, which affects your elapsed times.

660 Foot timer (201,2 m)
- Measures elapsed time at the halfway point of a quarter – mile track.

¼ mile timer (402.4 m)
- Measures the time it takes the car to cross the whole ¼ mile
- Measures the ever reached top speed

F87DGA Quarter mile display

Preparation phase

the quarter mile screen can be operated not through additional buttons, but by the speed of the vehicle by the driver.

The preparation time is indicated by the white bars, which gradually disappear. Then follow the traffic light - countdown.

Traffic lights - countdown

The small yellow upper lights signal the driver that he is just before the start of the race. Within 0.5 seconds the light switches the 3 orange lights one by one, and finally the Green start signal added. When the light turns green, the driver has 3 seconds to start to the race, otherwise the measurement will be canceled.

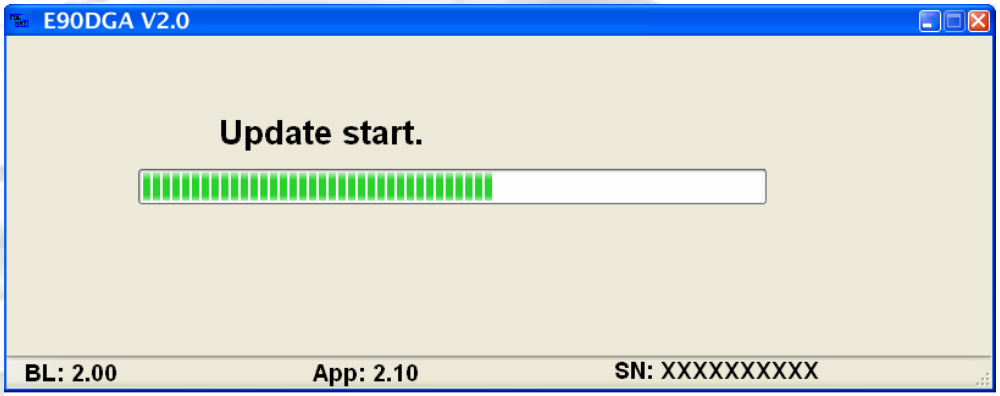
Measurement

The stored path is symbolized by a white bar witch current with.
The measured times are shown one after the other, and persisted until the start of the new measurement.

F87DGA Software update

Software updates are available for the operating systems Windows XP and Windows 7.
Required software is available for download at Awron.de. Then the computer has to be connected with the display system via USB and the required driver software installs itself automatically.

The software file must only be opened, and the update starts automatically.



F87DGA Purchased parts package

Purchased parts package

- Display system
- Cable harness incl. USB connection
- Operating instructions

This purchased parts package ensures an assembly true the motto of „plug and play".

The wiring harness is connected directly to the can bus, which ensures a precise data transmission.

F87DGA Technical data

Display

- OLED display 320 x 240

Cutting point

- CAN – Bus 500 KBit
- USB cutting point for Software update

Case

- Plastic, original BMW air grille

Size (length x width x depth)

- 350 mm x 100 mm x 90 mm

Weight

- 290g