MFA XP Lite V2

Datasheet

Technical Data

Supported vehicle types

Pricelist

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Sven Kirchhoff	Sven Kirchhoff	Public
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List of Changes
Änderungsverzeichnis

Change **Änderung**	**Datum** **Date**	**Name**
Initial Release	2017-09-15	SK
New options, adaption to new software	2019-11-02	SK

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1 Overview

The MFA XP Lite V2 is an add-on control unit for VAG based vehicles. It can display up to 40 additional data values within the display of the instrument cluster.

Sensors for oil pressure, boost pressure and exhaust temperature can be connected, too. The MFA XP Lite V2 includes a echaust flap control for up to two electrical exhaust flaps or one pneumatic exhaust flap.

The MFA XP Lite V2 hardware is designed to work in VAG platforms starting at Golf MK5 up to MK7 as well as several Audi,Seat and Skoda derivates. Currently the software supports the MQB platform (i.e. Golf MK7).

This document gives an overview about all features of the MFA XP Lite V2 in detail. It does not cover the installation process. This will be decribed in a installation manual.

The collection of data is NOT done via OBD sessions. As a result, the diagnostic socket is not blocked at any time and control units are NOT running in diagnostic mode all the time.

2 Hardware

2.1 Main device

The MFA XP Lite V2 hardware controller contains all the required electronic components. It will be fitted nearby the CAN gateway.

The MFA XP Lite V2 supports the following inputs:

- Connectors for connecting the system to the CAN gateway.
- Input for oil pressure sensor (0-10bar).
- Input for boost pressure sensor.
- Input for exhaust temperature sensor (thermocouple type K).
- USB connector for configuration and software updates.
- Interface for exhaust flap control.

The basic installation of the device is Plug&Play. However, for available options like the exhaust flap control intervention of the stock wiring harness is required.

Adapter wiring harness for Plug&Play installation.

2.2 Optional add-on sensors / extended functions

2.2.1 Boost pressure sensor

It is possible to connect VW boost pressure sensors with 200,250 and 300kPa measurement range. Furthermore existing boost pressure sensors of the stock engine can be used by using a adapter wiring harness.

If the car is equipped with a turbo charged engine, this option might not be necessary. Please contact us for further information.

2.2.2 Oil pressure sensor

This input supports oil pressure sensors made by VDO with a measurement range of 0-10bar.

2.2.3 Exhaust temperature sensor

This input supports thermocouple type K probes only. The measurement range is -200°C to +1350°C.

2.2.4 Exhaust flap control

If the car is equipped with a exhaust flap control (i.e. Golf MK7 R-model), this system can be controlled using the MFA XP Lite V2. Three settings are available: Stock mode, always open, always closed. The default position after ignition on can be selected, too. Controlling the exhaust flap is possible using the buttons at the steering wheel or at the wiper lever (depends on fitted options). Furthermore the flap can be programmed to automatic switching depending on engine RPM, boost and vehicle speed.

The exhaust flap control supports electrical controlled exhaust flaps (i.e. Golf MK7 R-model) as well as pneumatic controlled systems (i.e. Golf MK5 R32).

There is a wiring harness available to allow easy installation.

3 Software

3.1 MQB

The MFA XP Lite uses the available audio menu within the instrument cluster for display of the data. Controlling the box is done by buttons at the steering wheel or the wiper lever (depending on options fitted to car).

The software supports the language english and german as well as all the basic types for physical units beeing used in several countries.

3.2 Supported vehicles

3.2.1 MQB

- MK7 platform and all derivates incl. active info display.
- VW Passat MQB incl. active info display
- Audi A3/RS3 MQB
- Audi TT MQB (only with special wiring harness, please contact us!)
- Several Skoda and Seat vehicles that are based on MQB platform.
- VW Atlas MQB.

Please not the car **MUST** be equipped with the so called "highline instrument cluster" or an active info display. Instrument cluster with smaller displays or non-graphical displays are not supported. Please contact us in case of questions.

All the vehicle listed above support simultaneos display of 4 data values except Audi A3/RS3. This vehicle supports only two values. The TT supports one line. The MFA XP Lite V2 has 10 pages for data display, each page capable of up to 4 data values (depends on car model, see above). In total up to 40 values can be displayed.

3.2.2 Further vehicle types

We are adding more vehicle types (i.e. MK5 and 6) in the future and update the software and this document.

3.3 Available data for display in MQB

Please note that some data might be missing. This depends on the options fitted in the car.

3.3.1 Temperature

- Engine oil temperature
- Engine intake manifold temperature
- Engine cooling liquid temperature
- Outside air temperature
- DSG oil temperature (not available on all DSG types, DQ250 is supported)
- Exhaust temperature (only via optional sensor)

3.3.2 Engine data

- RPM
- Oil pressure (only via optional sensor)
- Boost (Source: Optional external sensor or CAN, CAN not available on all models)

- Power engine
- Power loss (only with DSG)
- Power wheel (only with DSG)
- Engine torque
- Torque loss (only with DSG)
- Torque wheel (only with DSG)
- Accelerato pedal position
- Oil level in percent
- Diesel particulate filter regeneration status
- Ethanol value (only if engine is fitted with sensor by manufacturer)

3.3.3 ABS/ESP Data

- Speed of each wheel
- Brake pressure
- G across
- Gierrate
- Steering wheel angle
- Raw value of speed signal

3.3.4 Haldex / 4 motion

- Clutch open/closed
- Torque at rear axle

3.3.5 Differential lock for FWD cars

- Current lock value in percent of front differential. Only if FWD car is fitted with difflock.

3.3.6 Instrument cluster

- Raw value of speed signal
- Content of fuel tank

3.3.7 Miscellaneous information

- Voltage
- Battery state of charge (SoC, not for all model years)
- Vehicle speed (derived value; can be configured from two sources: ABS/ESP with optional fast reading or instrument cluster)
- Date
- Time

3.3.8 Data from the trip computer

- Current consumption
- Available range until fuel stop.
- Average consumption
- Driven range since engine start
- Time since engine start
- Average speed since engine start
- Average consumption since last refuel stop
- Average speed since last refuel stop

3.3.9 Data from original audio menu

- Audio info 1-4 contains metadata like station name, artist name and so on which was displayed in audio menu before the MFA XP Lite V2 was installed.

3.3.10 Statistical data

- VMAX
- Max. horse power
- Max. torque
- Max. boost.
- Max. exhaust temperature
- Max. oil temperature
- Max. cooling liquid temperature
- Max. intake temperature
- Acceleration time 0-100km/h (resolution 20Hz)
- Acceleration time 100-200km/h (resolution 20Hz)
- Acceleration time 0-200km/h (resolution 20Hz)
- Reset of statistic data possible by windows tool and button at steering wheel.

Note: Statistic data is always gathered in the background!

3.3.11 Individual text

Up to four lines of fixed text can be configured and displayed.

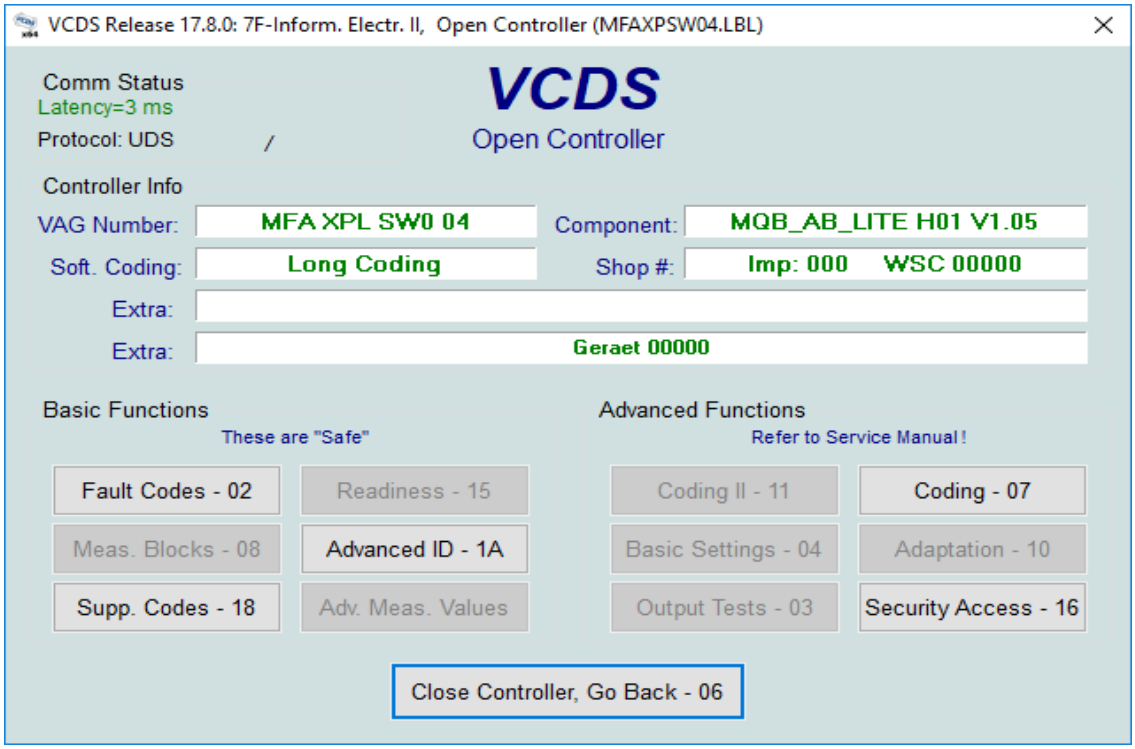
3.4 Display debouncing

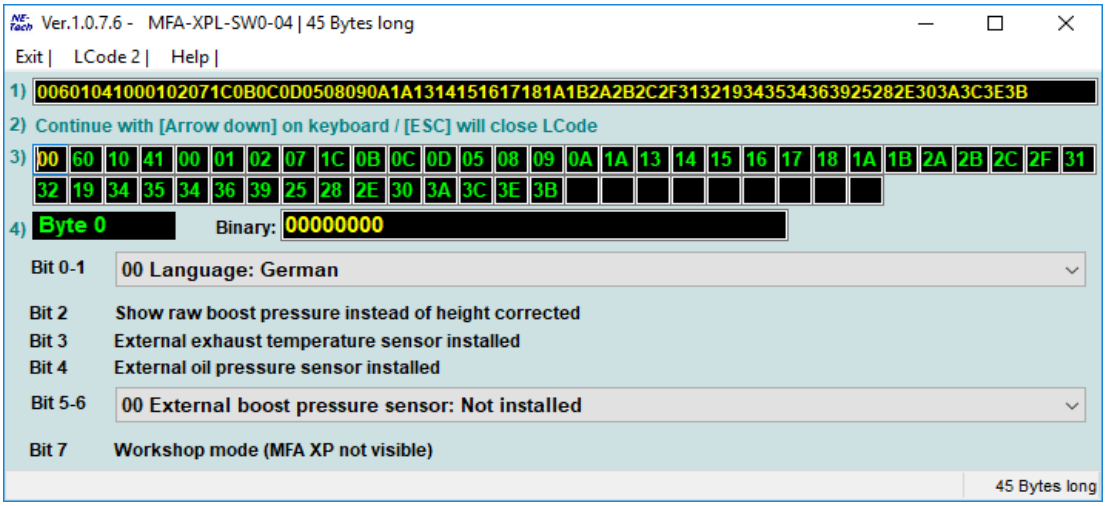
Due to fast changes of some data values this display might not be very good readable. This can be solved by activating the data hysteresis. This function will fit the data into a selectable raster resulting in much better readability of the display.

3.5 Diagnostic functions

The MFA XP Lite V2 is capable of diagnostic connection using the well known OBD software solutions.

All functions are constantly monitored. DTC will be set if there is an error detected. Furthermore the MFA XP Lite V2 can be coded using long coding feature, too.

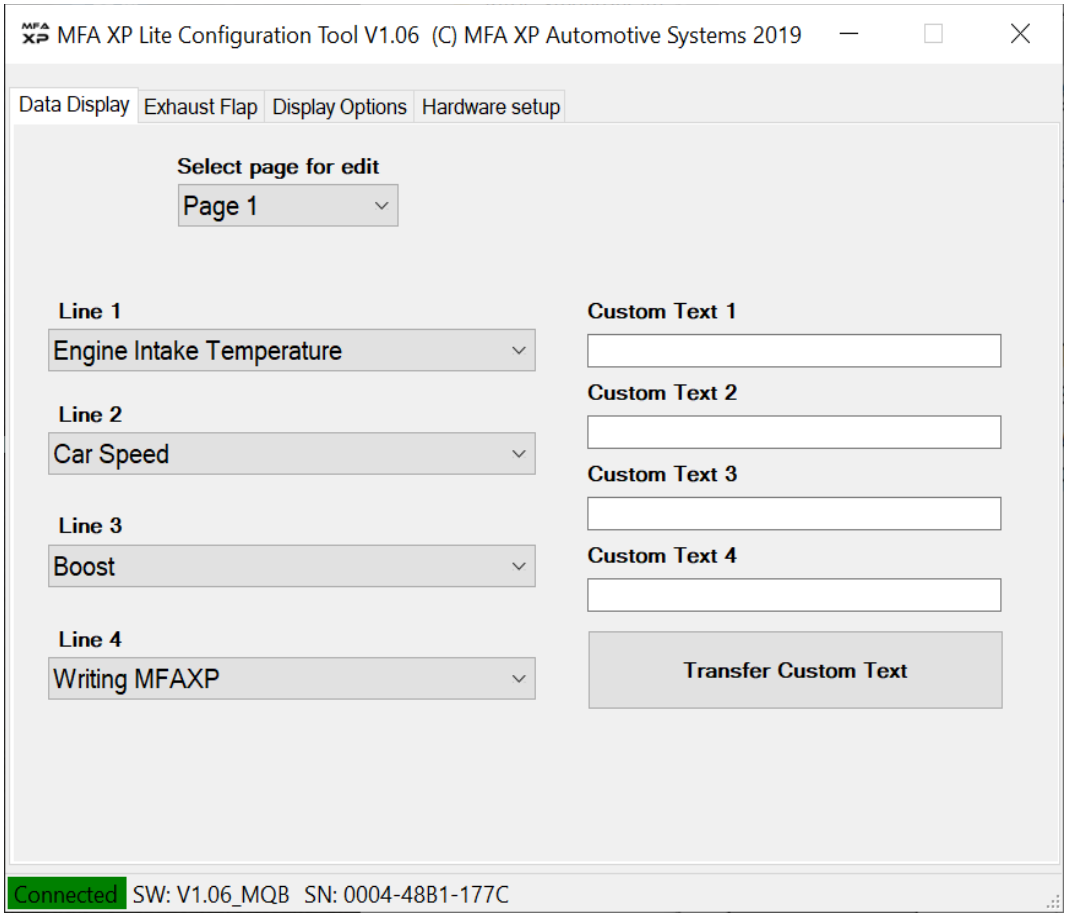


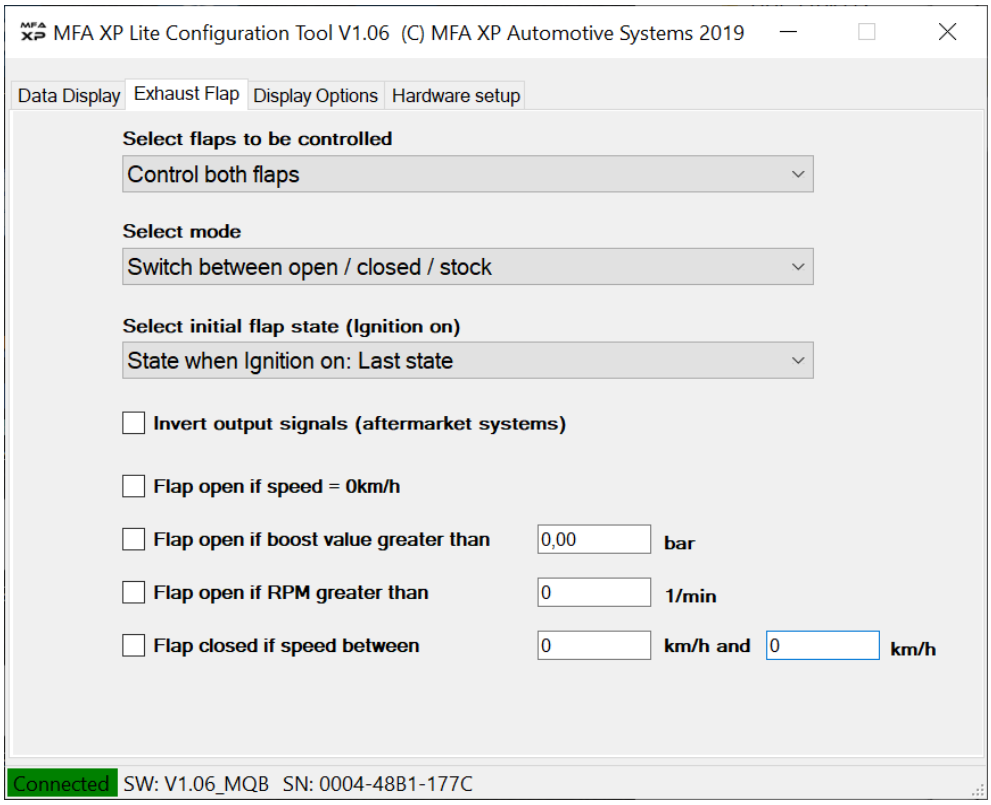


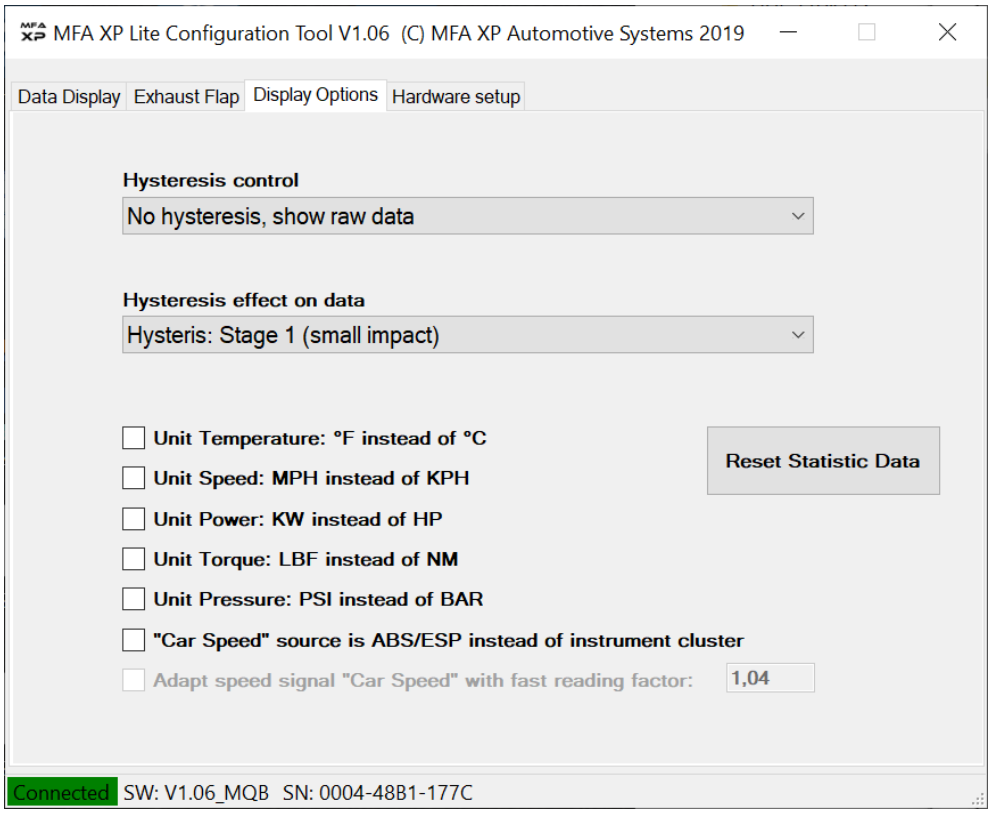
Die genauen Funktionen sind in einem getrennten Dokument beschrieben.

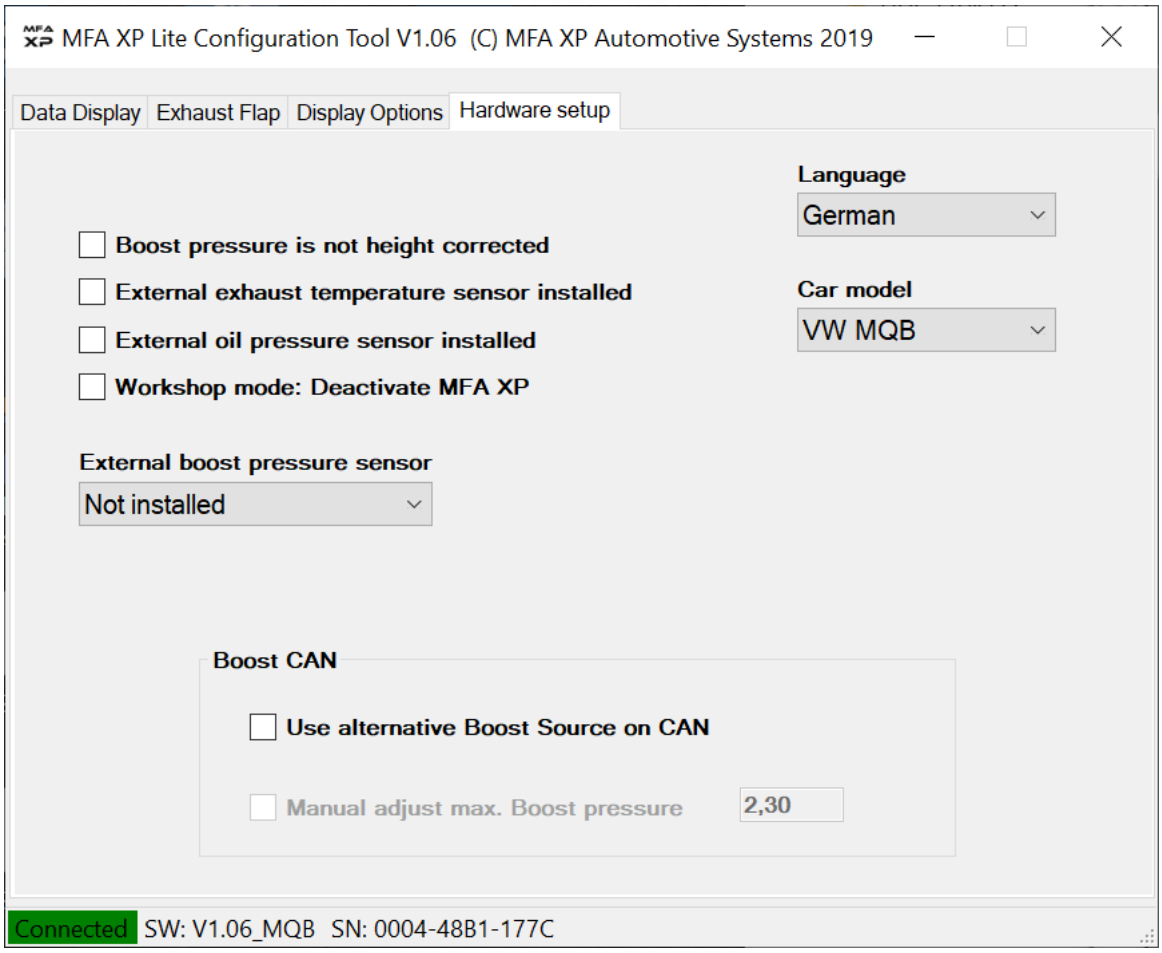
3.6 Windows based configuration tool

As an alternative to the OBD based coding a windows based configuration tool is available. USB connection is required.




MFA XP Lite Configuration Tool V1.06 (C) MFA XP Automotive Systems 2019
Data Display
Exhaust Flap
Display Options
Hardware setup
Select flaps to be controlled
Control both flaps
Select mode
Switch between open / closed / stock
Select initial flap state (Ignition on)
State when Ignition on: Last state
Invert output signals (aftermarket systems)
Flap open if speed = 0km/h
Flap open if boost value greater than
0,00
bar
Flap open if RPM greater than
0
1/min
Flap closed if speed between
0
km/h and
0
km/h
Connected
SW: V1.06_MQB SN: 0004-48B1-177C


MFA XP Lite Configuration Tool V1.06 (C) MFA XP Automotive Systems 2019
Data Display
Exhaust Flap
Display Options
Hardware setup
Hysteresis control
No hysteresis, show raw data
Hysteresis effect on data
Hysteris: Stage 1 (small impact)
Unit Temperature: °F instead of °C
Unit Speed: MPH instead of KPH
Unit Power: KW instead of HP
Unit Torque: LBF instead of NM
Unit Pressure: PSI instead of BAR
"Car Speed" source is ABS/ESP instead of instrument cluster
Adapt speed signal "Car Speed" with fast reading factor:
1,04
Reset Statistic Data
Connected
SW: V1.06_MQB SN: 0004-48B1-177C



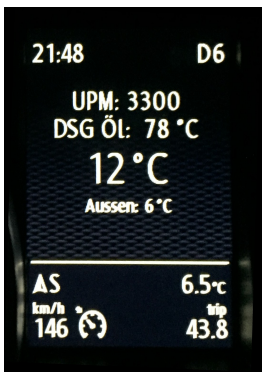
3.7 Softwareupdates

Softwareupdates are made available for free and must be installed using USB connection.

3.8 Pictures

This chapters shows some impressions of the MFA XP Lite V2 in action. (Currently the pictures are taken on german cars and are therefore in german language)

Examples Golf MK 7:



0:43
D6
Motor: 80 NM
Verlust: 6 PS
220 NM
UPM: 1800
AN
21.0°c
6.3

0:44
D6
Motor: 40 PS
Verlust: 6 PS
33 PS
Tank: 54 L
AN
21.0°c
6.5

NO
16:35
6.0°c
Boost: 0.00 bar
Motoröl: 43 °C
0 KMH
HGP-Turbo.de
trip 17.9 km
17 km
40 km
P
0
km/h

0.00 bar
330 km
FM
0.00 bar
HGP-Turbo.de
Leistung
Drehmoment
RS 3
km/h
0
P
AUTO
20:16
+19,5°c
MIN
BOOST
MAX
50
90
130
1/2
1/1
0.0

4 Price list

All prices are net prices plus additional taxes! Currency: EURO.

Product	Part number	Price
MFA XP Lite V2 for MQB platform consisting of: - MFA XP Lite hardware MFAXPHW004 - Adapter wiring harness for Plug&Play install - USB cable length 1,5m	MFAXP-LITE-KIT-MQB	299,00 EUR
Wiring harness for electrical exhaust flaps MQB	MFAXP-LITE-KIT-AGK-MQB	49,00 EUR
Adapter wiring harness for boost pressure sensor of EA888GEN3 engine (only required if not available via CAN)	MFAXP-LITE-KIT-BST-MQB	59,00 EUR
Shipping costs to germany	VERSAND-DE	5,00 EUR
Shipping costs inside EU	VERSAND-EU	16,00 EUR
Shipping costs swiss	VERSAND-CH	27,00 EUR

More prices (i.e. discount in case of omnibus order), individual adaptions, shipping costs in other countries as listed above on request.

Please not that we are not delivering add-on sensors like exhaust temperature sensors. We are happy to help you out in case of technical questions.

Errors and prices changes are reserved.

Please place your orders and/or questions by sending a mail to info@mfaxp.de.

5 Legal restrictions

The MFA XP does not have any approval mark. Usage of the box within traffic is not allowed. The integrator must obtain a permit to operate the box.

The CE and WEEE approval marks are not relevant for the MFA XP. This regulations are not usable within automotive equipment.