

Stand Alone OBD-2 Analyser

Operators manual

Begin by plugging the supplied OBD-2 interface cable into the OBD-2 connector mounted inside the vehicle. The connector will be situated within 1 m of the driver's seat.

The OBD-2 connector pin assignment (see box).

Does the car diagnostic connector fitted to your car comply with the OBD-2 standard? Use internet data bases to determine if your vehicle is compatible. A good example is hosted by Florian Schäffer at:

www.blafusel.de/misc/OBD-2_scanned.php

Display Contrast setting:

The display contrast can be changed when the unit is powered up. The contrast has a preset level but can be altered by holding down both keys A and B and then plugging the unit into the OBD-2 connector. The contrast can now be changed by pressing **A(+)**.

The contrast changes with every key press. When the desired contrast is found release **A** and



BL10 W256100113
Contrast setup
+- [] OK

Confirm with **B (OK)**

The Start-up display with version number:



ELEKTOR
EOBD
v1.4

Start Menu:



Select with key A	Confirm with key B	Action
Start Diagnosis	The selected protocol will be used.	Next menu option
Protocol	0 = auto 1 = J1850 – PWM 2 = J1850 – VPWM 3 = ISO9141-2 4 = KWP2000 5 baud init 5 = KWP2000 fast init 6 = CAN 11bit / 500 kB 7 = CAN 29bit / 500 kB 8 = CAN 11bit / 250 kB 9 = CAN 29bit / 250 kB	Automatic search (recommended)
Language	<ul style="list-style-type: none"> • Deutsch • English 	

Automatic Protocol scan:

Test Protocol

The manually selected protocol from the previous list (or choose 0 = auto to search for correct protocol)

Type of Protocol is displayed or error message – ‘Protocol not recognised’ indicating the vehicle connector is not OBD-2 compatible.

Show Status MIL / DTC – Display depends on vehicle status:



Select with key A	Confirm with key B	Action
Live Data	Enter PID Menu	Show parameters (PIDs)
Vehicle ID		Show Chassis No (if supported)
Show protocol	The interface protocol is shown (Press B to return)	
Rescan	Start rescan	The vehicle is rescanned

PID Menu:

MAF: 82.24g/s
 ▶PID:10 <<<<

Select with key A	Confirm with key B	Example of live data values
PID 0D	Return to last menu	VSS: 147 km/h
PID 0F	Return to last menu	IAT: +80°C
PID 10	Return to last menu	MAF: 82.24g/s
PID 11	Return to last menu	TPS: 40%
PID 14	Return to last menu	O2S11: 0.64V Shrft11: 0%
PID 1C	Return to last menu	OBDSupport: EOBD
PID 03	Return to last menu	Fuelsy1: 0L Fuelsys2: 0L
PID 04	Return to last menu	Load_PCT: 44%
PID 05	Return to last menu	ECT: +95°C
PID 0A	Return to last menu	FRP: 384kPa
PID 0B	Return to last menu	MAP: 128kPa
PID 0C	Return to last menu	RPM: 823 min ⁻¹

MIL:AN DTC: 4
 ▶Fehlercodes

Any trouble codes stored in the equipment will be displayed:

Select with key A	Confirm with key B	Action
Trouble codes	Selects Trouble code menu.	
Freeze Frame	Selects Freeze Frame Menu.	
Live Data	Selects PID Menu	Show parameters (PIDs)
Show Protocol	Display which Protocol is used. (Press B to return)	
ReScan	Start	The vehicle is rescanned.

Trouble code Menu:

Display DTC: <Error number> / <Total number of errors stored> <Actual Trouble code of error>

erkannter Fehler
 zwei von vier

Fehlercode zwei

Klartext Fehler zwei
 Laufschrift

Fehler drei anwählen
 mit Taste **B**

DTC: 2/4 P0230
 rpumpe Primärkre
 ▶Nächster Code

Fehlercodes
 löschen?
 JA NEIN

Running text description of displayed trouble code. N.B. Over 500 trouble codes are stored. Not all the possible trouble codes are described.

Select with key A	Confirm with key B	Action
Next Code	Advance to next code	
Clear Codes	Erase Trouble codes	Key A = YES Key B = NO
Back	Return to menu	

Select Freeze Frame Trouble codes menu:

UMGEB.: 000
 FEHLER: P0115
 ▶Daten Anzeigen

When a failure is registered by the vehicles on-board computer it performs a freeze frame operation which takes a snapshot of all sensor values at the time the failure occurred. These readings are useful to identify the source of failure and greatly simplify the process of trouble-shooting.

In the previous menu a description of the failure is given together with the actual trouble code. The trouble code can now be selected and the freeze frame data displayed.

Use keys **A** and **B** in the menu <<-1 or +1>> to show the selected failure.

Select 'Show Data' with key **A** and confirm with **B**.

Select with key A	Confirm with key B	Action
Show data	Freeze frame data for the trouble code selected	Enter Freeze Frame menu
Freeze frame +1	Select next failure	
Freeze frame -1	Select previous failure	
Back	Return to Trouble code Menu	

Select Freeze Frame PIDs Menu:

VSS: 149km/h
 ▶F000:P0D <<<<

The selected sensor reading at the time the error occurred. The example here is '0' – PID 0D = speed measured at 149 km/h. Pressing key **A** will display the next sensor stored value.

Select with key A	Confirm with B	Freeze Frame display (example)
Select parameter: P0D	Back	VSS 163km/h
Select parameter: P04	Back	Load_PCT: 44%
Select parameter: P05	Back	ECT: +95°C
Select parameter: P0C	Back	RPM 2881 min ⁻¹

Construction and soldering tips:

We have chosen to avoid the use of SMD components to give the home constructor a better chance of producing a high quality, reliable product. Pay attention to the correct mounting and soldering of all the components, any mistake could prove to be expensive.

Soldering the components onto the PCB shouldn't be too much of a problem thanks to the gold plated PCB. Rule No 1: Avoid making solder bridges between tracks and pads! Experienced technicians will set the iron temperature to 350°C (450°C for lead-free) press the iron tip onto the pad and component lead and feed in some 0.5 mm gauge resin-cored solder. The aim is to produce a clean joint with no flux spatters. The use of any additional flux is to be strongly discouraged!