



Autodiagger AD100 + User Manual



The Autodiagger AD100+ is a handheld tester that is used to test and diagnose alternator charging problems by replicating the digital signals from a vehicle's ECU. The AD100+ tester can test an alternator while it is still installed on a vehicle or on a testbench.

The tester can provide information on whether the alternator's voltage regulator can communicate correctly with the vehicle's ECU and if the alternator responds correctly to the tester's simulated ECU input parameters.

The AD100+ can now be updated by NFC from a compatible Android mobile phone or by returning it to Wood Auto for the update procedure.

Regulator Testing Protocols:

COM, LIN, BSS(BSD)	Mercedes, Opel,Audi, BMW, Renault,VW, Ford
24V LIN GRC	Mercedes
SIG	Ford,Volvo, Mazda
P-D	Mazda
L-RVC	GM,Vauxhall, Opel
RLO	Toyota
iSTARS Combined Alternator-Starters	PSA *

** an optional software upgrade is required*



Lead Colour Code and Description

RC (Green)	COM signal connection.
M (Blue)	DFM digital field monitor.
B+ (Red)	Battery positive in tested circuit, tester power supply.
B- (Black)	Battery negative in tested circuit, tester ground.

Device Operation

The device powers on automatically after connecting power to the B+ and B- leads. The test subject selection menu will then appear. The desired parameter is selected by pressing the ▲ and ▼ buttons and confirmed by a short press on the OK button to enter the testing mode.

After pressing OK, the display will present the following information:

1. voltage of the tested circuit (large digits)
2. required voltage (small digits on the top of the display)
3. alternator load DF/DFM (%)

The green RC and blue M cables should be connected to the correct pins in the voltage regulator's socket. Some of the regulators may require connecting other signals (usually B+) with a separate cable to operate correctly.

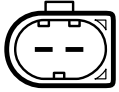
The blue M cable can be left disconnected when testing in COM mode.

In the testing mode, buttons ▲ and ▼ will change the required voltage value. It should be monitored whether changing the required voltage causes a corresponding change in the alternator/regulator output, and whether the DFM reading matches the actual state.

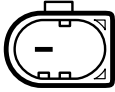
Press and hold the OK button to leave the testing mode and return to the selection menu.

COM, LIN, BSS Testing

Mercedes, Opel, Audi, BMW, Renault, VW, Ford



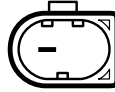
COM DFM



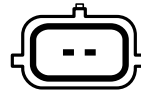
COM/LIN



COM/LIN2



LIN2



COM



LIN

Alternator Connection:

COM pin

RC (Green)

DFM pin

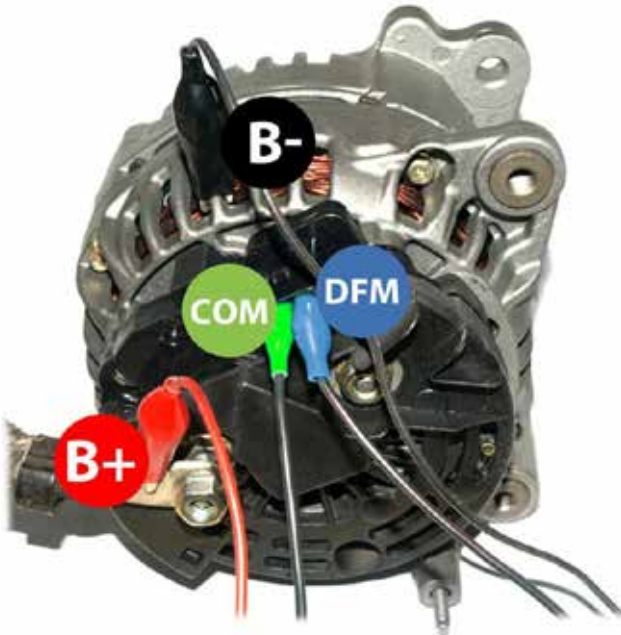
M (Blue)

B+ connector

B+ (Red)

Alternator bracket/casing

B- (Black)

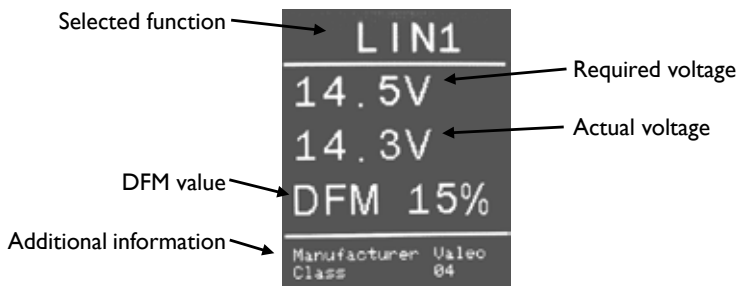


COM, LIN, BSS Testing

Select the COM function from the main menu and confirm by pressing the OK button:



The device will go into the COM testing mode and display the following information:

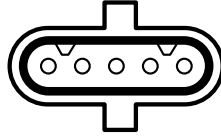


During the test, after starting the alternator drive, the actual voltage value should correspond to the required value and the DFM value should correspond to the current alternator load.

Some discrepancies between the voltage values are acceptable. What is important is the appropriate reaction of the alternator – increasing or decreasing the output voltage according to the required voltage.

LIN 24V Testing GRC

Mercedes

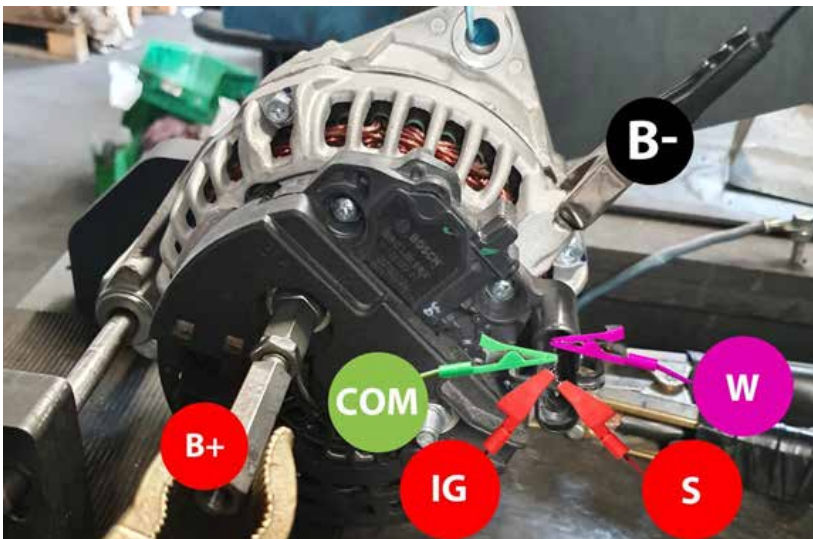


W LIN 15 S DFM

Alternator connection:

W pin	Existing tachometer connection.
LIN pin	RC (Green)
15 pin (IG)	Existing 15 / ignition connection.
S pin (Battery Sense)	Existing S / battery sense connection.
DFM pin	Leave disconnected.
B+ connection	24V B+ (Red)
Alternator bracket/casing	24V B- (Black)

The **M (Blue)** is left disconnected when testing.



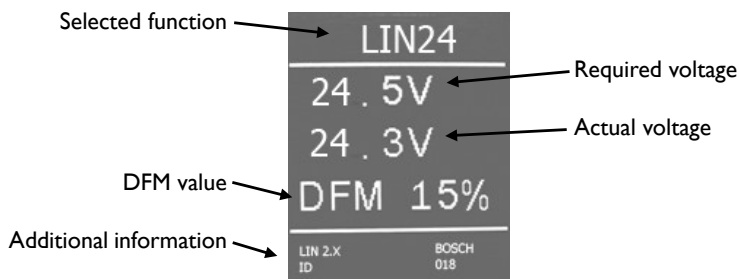
The connection of the S, 15(IG), and W pins are connected independently of the AD100+, by using the connectors located in the vehicle or on the testbench.

LIN 24V Testing

Select the LIN24 function from the main menu and confirm by pressing the OK button.



The device will go into the LIN24 testing mode and display the following information:

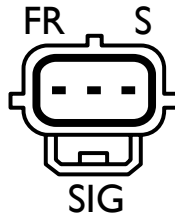


During the test, after starting the alternator drive, the actual voltage value should correspond to the required value and the DFM value should correspond to the current alternator load.

Some discrepancies between the voltage values are acceptable. What is important is the appropriate reaction of the alternator – increasing or decreasing the output voltage according to the required voltage.

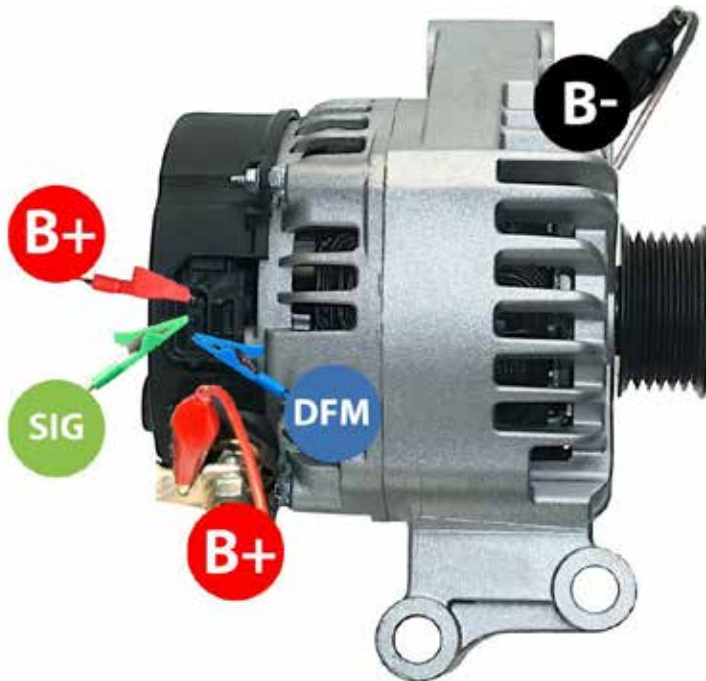
Ford SIG Testing

Ford, Mazda, Volvo



Alternator connection:

FR pin	M (Blue)
SIG pin	RC (Green)
S pin	Existing S / battery sense connection
B+ connection	B+ (Red)
Alternator bracket/casing	B- (Black)



The connection of the S pin is connected independently of the AD100+, by using the connectors located in the vehicle or on the testbench.

Ford SIG Testing

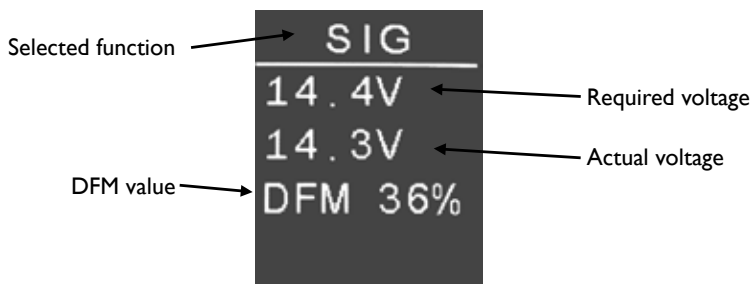
During the test, after starting the alternator drive, the actual voltage value should correspond to the required value and the DFM value should correspond to the current alternator load.

Some discrepancies between the voltage values are acceptable. What is important is the appropriate reaction of the alternator – increasing or decreasing the output voltage according to the required voltage.

After connecting the testing device, the main menu will appear on the display:



Select the SIG function and confirm by pressing the OK button. The device will go into the SIG testing mode and display the following information:

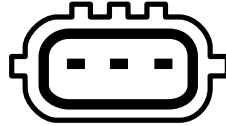


Mazda P-D Testing

Mazda



D P



D P

Alternator connection:

D pin

RC (Green)

P pin

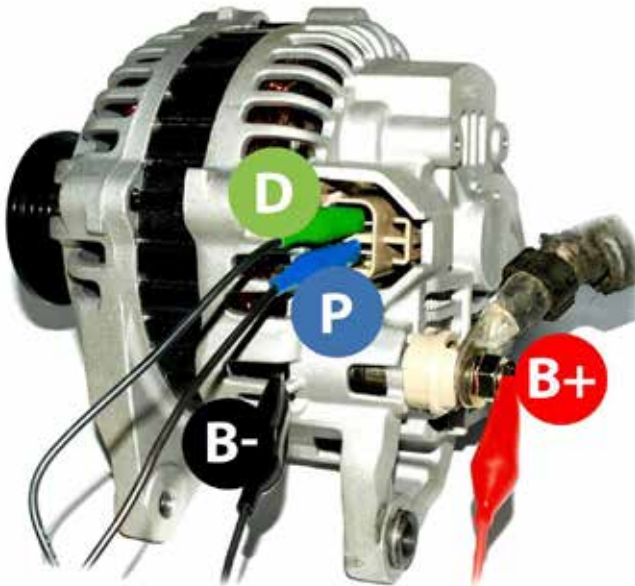
M (Blue)

B+ connection

B+ (Red)

Alternator bracket/casing

B- (Black)

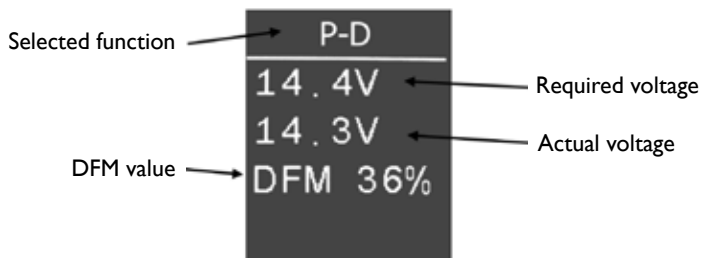


Mazda P-D Testing

After connecting the testing device, the main menu will appear on the display:



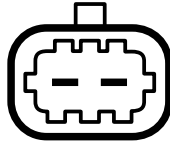
Select the P-D function and confirm by pressing the OK button.



During the test, after starting the alternator drive, the actual voltage value should correspond to the required value. Some discrepancies between the voltage values are acceptable. What is important is the appropriate reaction of the alternator – increasing or decreasing the output voltage according to the required voltage.

General Motors L-RVC Testing

General Motors, Opel, Vauxhall



F(RVC) L(PCM)

Alternator connection:

L(PCM) pin

RC (Green)

F(RVC) pin

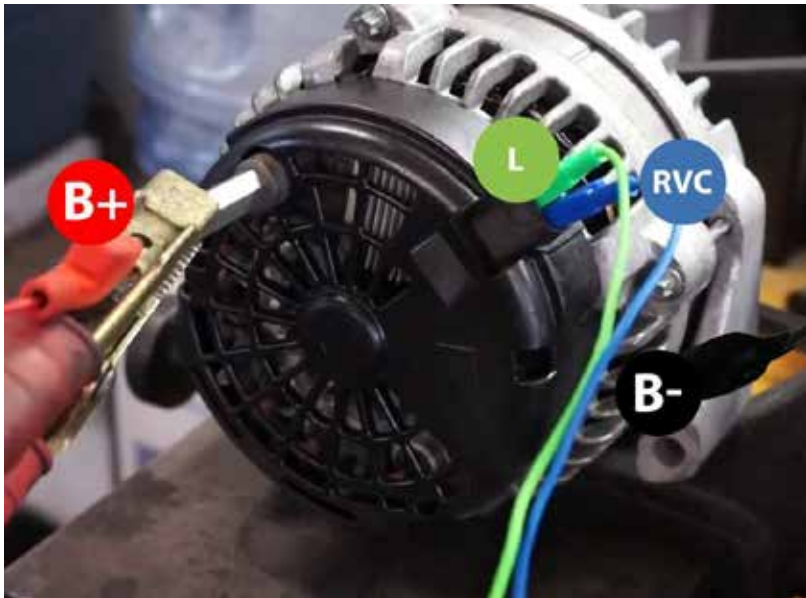
M (Blue)

B+ connection

B+ (Red)

Alternator bracket/casing

B- (Black)

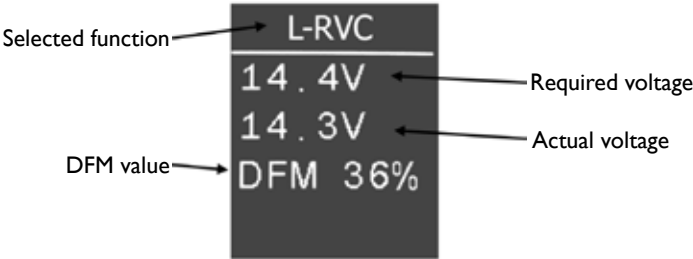


General Motors L-RVC Testing

After connecting the testing device, the main menu will appear on the display:



Select the L-RVC function and confirm by pressing the OK button. The device will go into the L-RVC testing mode and display the following information:

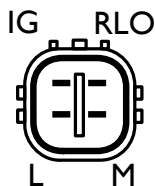


During the test, after starting the alternator drive, the actual voltage value should correspond to the required value and the DFM value should correspond to the current alternator load.

Some discrepancies between the voltage values are acceptable. What is important is the appropriate reaction of the alternator – increasing or decreasing the output voltage according to the required voltage.

Toyota RLO Testing

Toyota



Alternator connection:

IG pin

Existing IG connection.

RLO pin

RC (Green)

L pin

Existing L (Control Lamp) connection.

M pin (DFM)

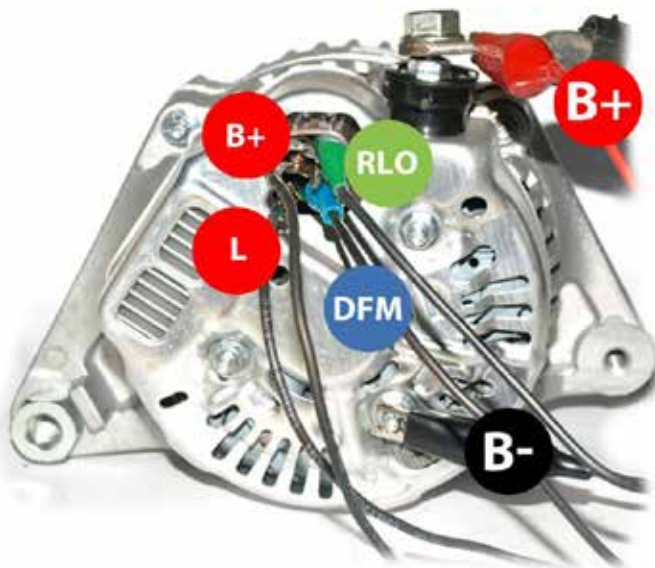
M (Blue)

B+ connection

B+ (Red)

Alternator bracket/casing

B- (Black)



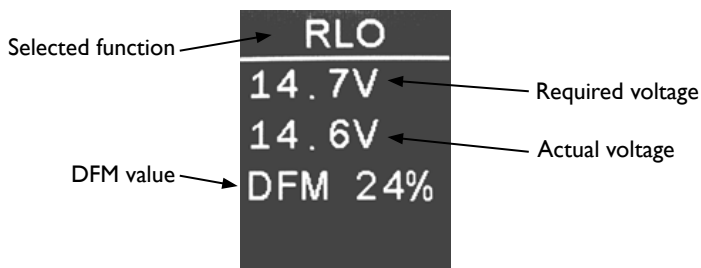
The connection of the L and IG pins are implemented independently of the AD100+, by using the connectors located in the vehicle or on the testbench.

Toyota RLO Testing

After connecting the testing device, the main menu will appear on the display:



Select the RLO function and confirm by pressing the OK button. The device will go into the RLO testing mode and display the following information:

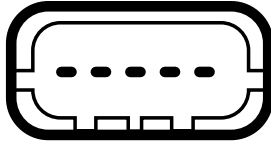


During the test, after starting the alternator drive, the actual voltage value should correspond to the required value and the DFM value should correspond to the current alternator load.

Some discrepancies between the voltage values are acceptable. What is important is the appropriate reaction of the alternator – increasing or decreasing the output voltage according to the required voltage.

i-STARS Testing

PSA



B+ D D LIN GND

i-STARS connections:

Plug:

B+ connection

Existing alternator battery positive.

LIN pin

RC (Green)

GND pin

Existing alternator ground.

Power cables:

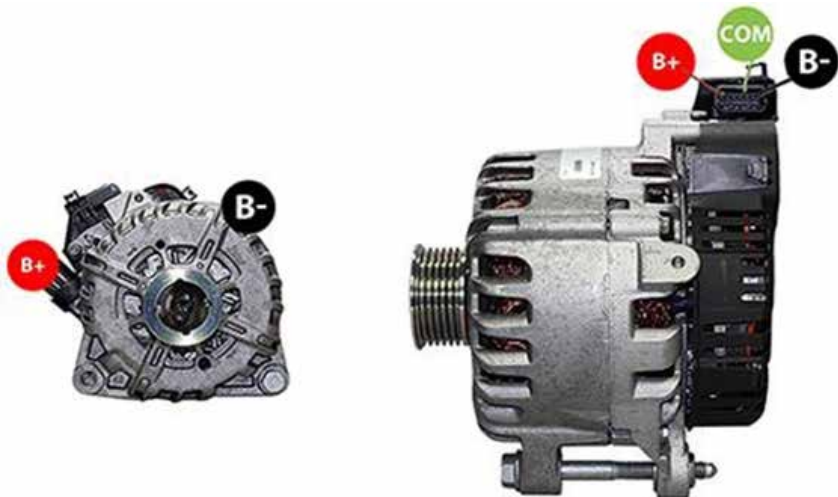
B+ connection

B+ (Red)

Alternator bracket/casing

B- (Black)

The **M (Blue)** is left disconnected when testing.



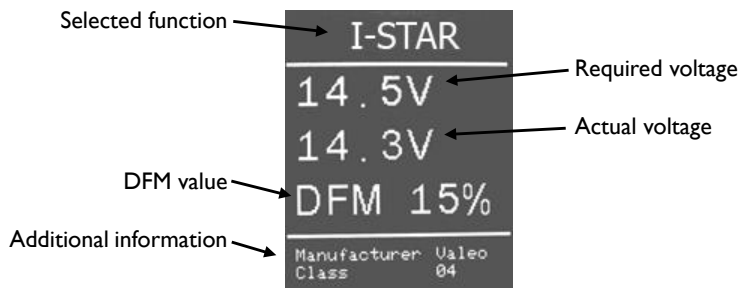
The connection of the B+ and GND pins are implemented independently of the AD100+, by using the connectors located in the vehicle or on the testbench.

i-STARs Testing

Select the COM function from the main menu and confirm by pressing the OK button.



The device will go into the COM testing mode and display the following information:



During the test, after starting the alternator drive, the actual voltage value should correspond to the required value and the DFM value should correspond to the current alternator load. Some discrepancies between the voltage values are acceptable. What is important is the appropriate reaction of the alternator – increasing or decreasing the output voltage according to the required voltage.

Frequently Asked Questions

Can the device be damaged due to improper connection?

The device is resistant to connection errors from typical applications and voltage ranges.

Can the device damage connected units?

The device cannot directly damage any connected units, however the range of voltage sent to the alternator is very broad and includes prohibited values (over 15V), which can result in electrical system errors if the alternator is tested without removing it from the vehicle.

Can the device or connected units be damaged by selecting an improper testing function?

The only consequence of selecting an improper testing mode is the lack of a response from the connected alternator.

Does the blue M connector have to be connected at all times?

Some alternators with a COM interface do not have an analogue DFM output. In this case, the M wire is left unconnected.

Is it possible to use longer wires to connect units?

The device works with wires up to 5 metres long.

Can the testing device be used for 24V systems?

Yes.

After connecting the device, the display does not illuminate, show the start screen, or the main menu – what should I do?

In this case, check if the testing device is properly connected, if the voltage of the connected system is correct, and if yes, check the continuity of the connection wires.

How to store the testing device?

The device is best stored in a warm, dry place.

How to remove stains from the enclosure?

The device should be protected against exposure to any liquids or other substances that can penetrate the enclosure. Stains are to be removed with a soft, moist cloth and a mild detergent. Do not use naphtha, paint thinners, or solvents as they may lead to fogging of the display and damaging the coating.

Can the testing device be mounted on a testing table?

Yes, if it can be done without damaging the device's enclosure. Do not drill any holes or put any screws through the enclosure.

Why does the device display an error in the COM mode when the alternator stops revolving?

Digitally controlled voltage regulators generate error information, displayed on the testing device, upon detecting parameters outside the allowable range. In the case of alternator stoppage, this is a simply a lack of revolutions error which should disappear once the rotor starts spinning again. This type of behaviour is standard and confirms the alternator is working properly.

Frequently Asked Questions

Why does an alternator with a COM interface start working only after I change the required voltage for the first time?

This is due to the alternator voltage regulator function. This type of behaviour is standard and confirms the alternator is working properly.

Can the testing device be used to test alternators with a F1 – F2 connector?

Such alternators work with an external voltage regulator and require a different testing methodology.

The AD100+ is equipped with NFC (Near Field Communication) that enables wireless software updates. Updates are safe and the device always holds both the new and last version of the software for easy rollback.

Device Serial Number

Every AD100+ device has a unique serial number. This number is required to get update information and to purchase new software updates. Please record your AD100+ serial number and store in a safe place.

To view the AD100+ serial number:

1. Power up the device.
2. While in the main menu press the ▲ button together with the OK button. [1]
3. Keep them pressed until the update menu appears on the screen. [2]

You will then be able to read your serial number and your current software version.



[1]



[2]



Software Update Requirements

12V power source (e.g. vehicle battery, bench power supply).

Android mobile phone with NFC, Internet WiFi, and installed AD100+ updater app.

Software Update

Software Update Procedure

1. Power up AD100+.
2. While in main menu press UP arrow and while holding press OK button, keep buttons pressed until the update menu appears on screen. [1]
3. Release buttons.
4. Acknowledge update by pressing OK button. [2]



5. On phone please enable flight mode, after that please enable WiFi and NFC. [3]
6. Check that you have Internet connection on the phone.
7. Run AD100+ updater app on your phone. [4]



8. Place phone on the AD100+ (AD100+ NFC antenna is located at the bottom, the phone NFC antenna is usually located under the battery).
9. The application will automatically start to update the software when NFC antennas are aligned. [5]
10. After the software is transferred press OK button on AD100+. [6]



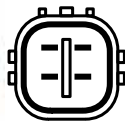
11. Turn off the device.
12. While powered off press and hold the OK button. [7]
13. With OK button pressed, power on the device.
14. From the menu choose "IMAGE UPDATE" and press OK. [8]
15. Press OK to accept the update.
16. After an update is done, turn off the power and turn back on again.



Test Plugs



EC5725
Ford Alternator Plug
3 Pin with 300mm lead



EC5758
Denso Alternator Plug
4 Pin with 150mm lead



EC5755
Denso / Mitsubishi Plug
3 Pin Oval with 150mm lead



EC5756
Hitachi / Mitsubishi Alternator Plug
2 Pin with lead



EC5760
Denso Alternator Plug
3 Pin with 150mm lead



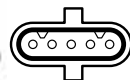
EC5803
Denso Alternator Plug
4 Pin with 150mm lead



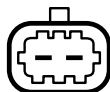
EC5804
Hitachi Alternator T-Plug
With lock tab and 150mm lead



EC5750
Mitsubishi / Mando Alternator Plug
2 Pin with 300mm lead



EC5759
Bosch NCB2 / Mitsubishi 24V Alternator Plug
5 Pin with lead



EC5753
Bosch / Delphi Alternator Plug
2 Pin with 150mm lead



EC5757
Hitachi / Mitsubishi Alternator Plug
4 Pin with 150mm lead



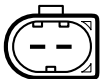
EC5779
Bosch / Valeo Alternator Plug
2 Pin with 300mm lead



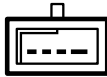
EC5782
Bosch / Valeo Alternator Plug
2 Pin with 2 leads



EC5784
Bosch / Valeo Alternator Plug
2 Pin with 300mm lead



EC5786
Bosch / Valeo Alternator Plug
2 Pin with 300mm lead



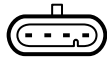
EC5791
Delco Alternator Plug
4 Pin with 4 x 200mm leads



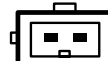
EC5764
Bosch / Valeo Alternator Plug
2 Pin with 300mm lead



EC5754
Bosch / Valeo Alternator Plug
3 Pin with 300mm lead



EC5762
Delco Alternator Plug
4 Pin with 4 leads



EC5800
Bosch / Valeo Alternator Plug
2 Pin with 150mm lead



EC5797
Ford US D-Type Alternator Plug
3 Pin with 300mm leads



EC5829
Bosch/Valeo Universal Testing Plug (no locating pegs)
2 Pin with 2 leads.

Alternator Plug Set

EC5827: 20pc Alternator Plug Set

The EC5827 is a 20 piece alternator plug set which is an ideal addition for alternator test benches or regulator testers. Please note the kit does not include the 5-pin Bosch/Mitsubishi plug (EC5759) as standard.



WA Ref	Description
EC5827	20 Piece Alternator Plug Set.