A·B·R·I·T·E·S
automotive solutions

ABRITES DIAGNOSTICS FOR PSA ONLINE

User manual
version 1.2

Important notes

The Abrites software and hardware products are developed, designed and manufactured by Abrites Ltd. During the production process we comply to all safety and quality regulations and standards, aiming at highest production quality. The Abrites hardware and software products are designed to build a coherent ecosystem, which effectively solves a wide range of vehicle-related tasks, such as:

- Diagnostic scanning
- Key programming
- Service Intervals
- Configuration and coding
- DSG Mileage Calibration
- MMI Functions

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Each warranty claim is inspected individually by our team and the decision is based upon thorough case consideration.

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- Abrites assumes no responsibility for any damage resulting from the use, misuse, or negligent use of the hardware or any software application.

Safety information

The Abrites products are to be used by trained and experienced users in diagnostics and reprogramming of vehicles and equipment. The user is assumed to have a good understanding of vehicle electronic systems, as well as potential hazards while working around vehicles. There are numerous safety situations that cannot be foreseen, thus we recommend that the user read and follow all safety messages in the available manual, on all equipment they use, including vehicle manuals, as well as internal shop documents and operating procedures.

Some important points:
Block all wheels of the vehicle when testing. Be cautious when working around electricity.

- Do not ignore the risk of shock from vehicle and building-level voltages.
- Do not smoke, or allow sparks/flame near any part of the vehicle fuel system or batteries.
- Always work in an adequately ventilated area, vehicle exhaust fumes should be directed towards the exit of the shop.
- Do not use this product where fuel, fuel vapours, or other combustibles could ignite.

In case any technical difficulties occur, please contact the
Abrites Support Team by email at support@abrites.com.

Table of contents

1. Introduction

2. Installation

3. Using the Abrites diagnostics for Peugeot Online

- 3.1 Vehicle Identification
- 3.2 Scanning for Modules
- 3.3 Diagnostic Trouble Codes
- 3.4 Monitoring live values
- 3.5 Actuator testing

4. Key learning and PIN code reading

- 4.1 Read keys
- 4.2 Key programming wizard
- 4.3 2021+ Delphi BSI
- 4.4 Peugeot 308 III, Citroen C5 III, DS4, Opel Astra L (2021+)

5. Cluster calibration

6. BSI Exchange

7. Coding

- 7.1 Config
- 7.2 Additional features to configure on a “per module” basis

8. Read PIN from ECU

- 8.1 Read PIN from ECU via OBD
- 8.2 Read PIN from ECU on Bench

List of revisions

Date	Chapter	Description	Revision
11.08.2022	ALL	Document created.	1.0
25.11.2022	8	PIN from ECU created	1.1
25.11.2022	4.3	BSI Delphi 2021+	1.1
28.06.2023	4	4.3 revised; 4..4 added	1.2

1. Introduction

"ABRITES Diagnostics for Peugeot/ Citroen (PSA) " is one of the latest Abrites developments in terms of PSA diagnostics. With the help of this tool you can perform reading and clearing of diagnostic trouble codes as well as operations unsupported by other diagnostic tools with the electronic modules inside the vehicle such as replacement and coding of control units, programming keys, as well as mileage calibration.

The functionality of your software depends on the purchased licenses for your interface. Please check the "License Viewer" installed on your computer for your unique interface ID number.

Abrites Diagnostics for Peugeot/ Citroen (PSA) is part of the next generation of Abrites diagnostic software designed to work together with the Abrites AVDI interface and is meant to be installed on a Windows 7 (or higher version Microsoft Operating System) in order to perform standard and advanced diagnostics on Peugeot/ Citroen/ DS (PSA) vehicles.

The system requires Internet connection in order to operate correctly.

The Abrites diagnostics for Peugeot/ Citroen (PSA) is able to perform the following standard diagnostic features:

- Vehicle identification – determining the vehicle model, year and specification
- Module Identification – determining the modules that make up the electronic components of said vehicle
- Diagnostic Trouble Codes reading (DTC)
- DTC Identification (extended information about the DTCs where available)
- DTC Clearing – removal of DTCs from the modules within the vehicles
- Live value monitoring from the vehicles
- Actuator testing

Abrites diagnostics for Peugeot/ Citroen (PSA) is able to perform the following advanced diagnostic features:

- Key programming and PIN code reading– Both adding keys and all keys lost are supported
- BSI Exchange – the ability to exchange BSI modules if the old one is faulty (second hand modules also supported)
- Programming – allows you to program a previously saved flash to the BSI. Described in more details under key programming
- Cluster calibration – allows to adjust the traveled distance values in different modules
- Coding - allows to set/modify the functionality (coding parameters) of existing modules within the vehicles

2. Installation

The "ABRITES Diagnostics for Peugeot/ Citroen (PSA) Online" is installed together with the rest of the Abrites diagnostic software applications when the installation files are received.

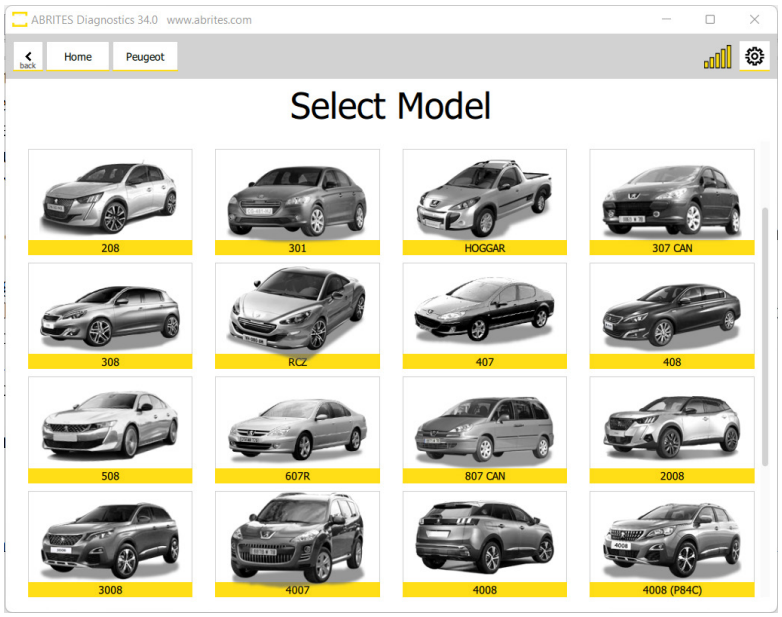
You could easily identify and access it it by entering the Audi, Volkswagen or Skoda buttons with the Internet connectivity symbol as shown below:

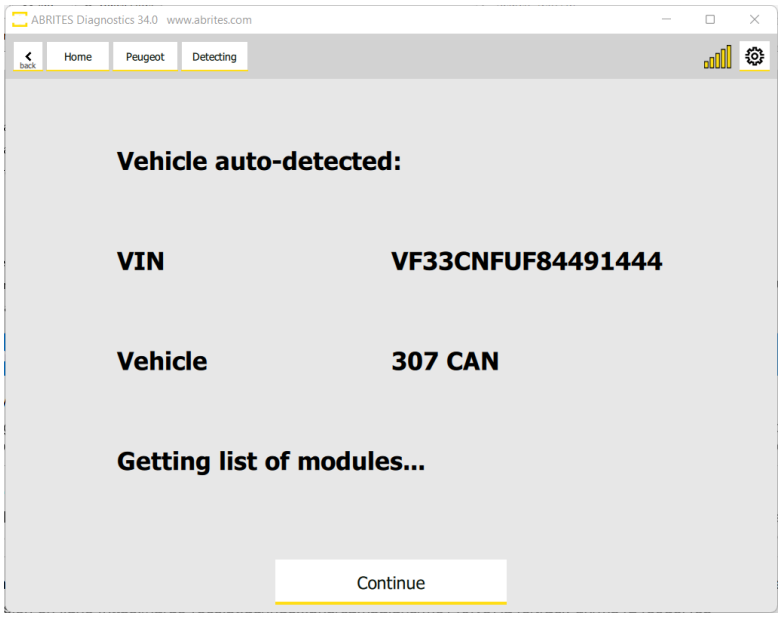
3. Using the Abrites diagnostics for Peugeot Online

When starting the software it is recommended to have the vehicle connected to an external power source in order to be sure that the vehicle does not lose power during the time spent working on it.

3.1 Vehicle Identification

Once you connect the Abrites diagnostics for PSA Online to a vehicle you can select the model and the vehicle and then you will see the full identification of said vehicle once the reading process concludes:

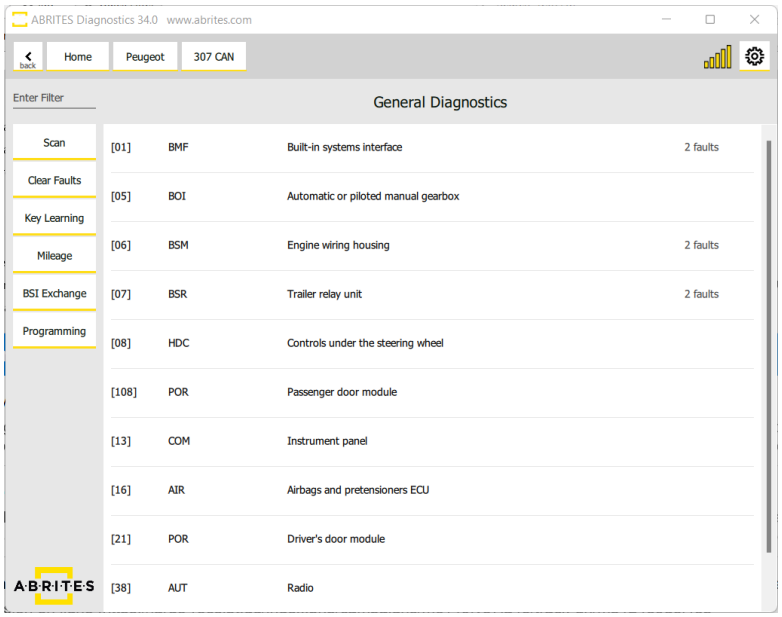


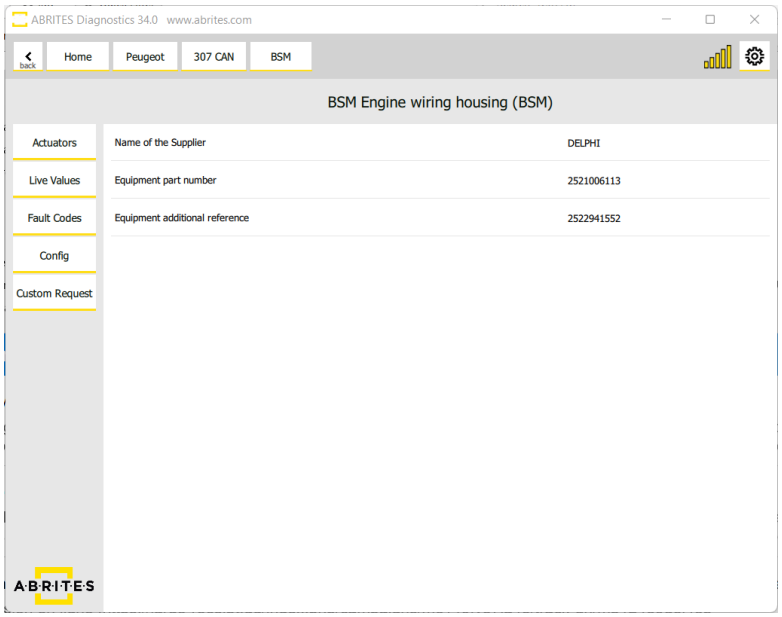


3.2 Scanning for Modules

Once you press Continue to list on the vehicle Identification screen you will see the list of modules installed in the vehicle on the main screen and the number of diagnostic codes in them.

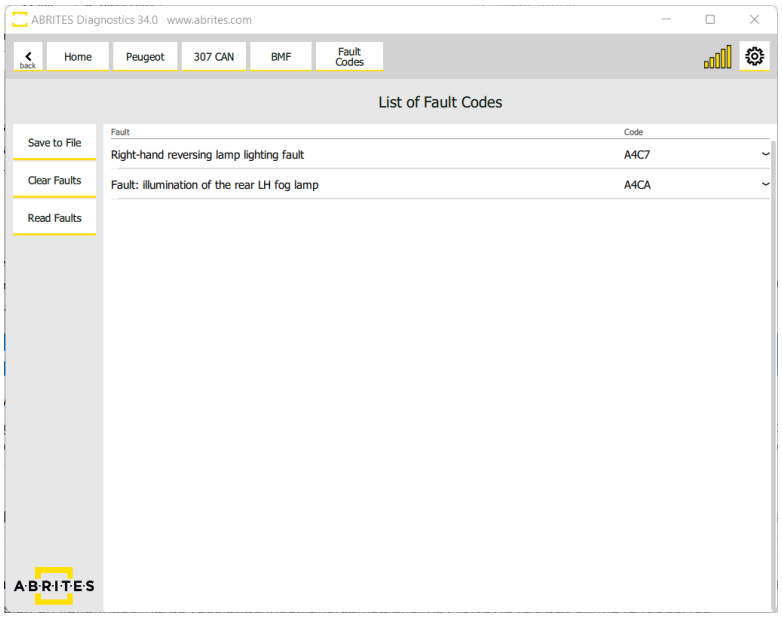
By clicking on the module you will see its extended identification.

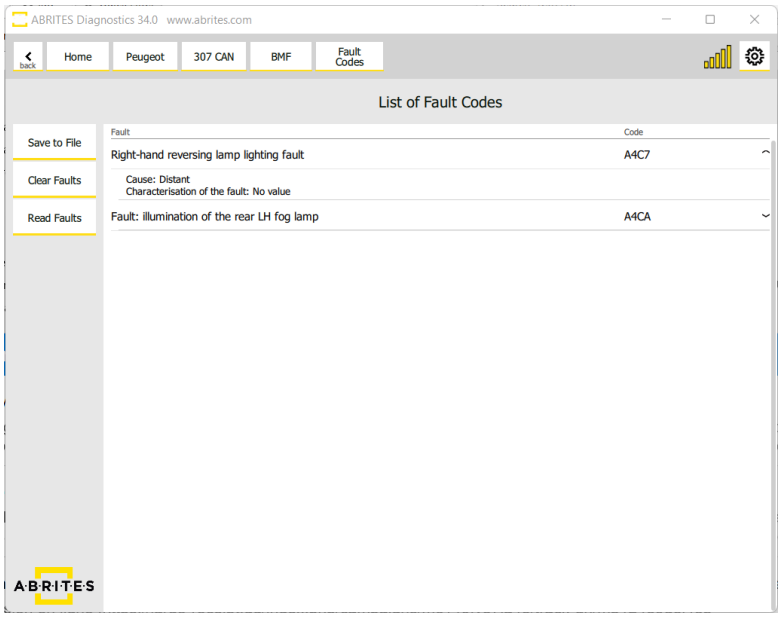




3.3 Diagnostic Trouble Codes

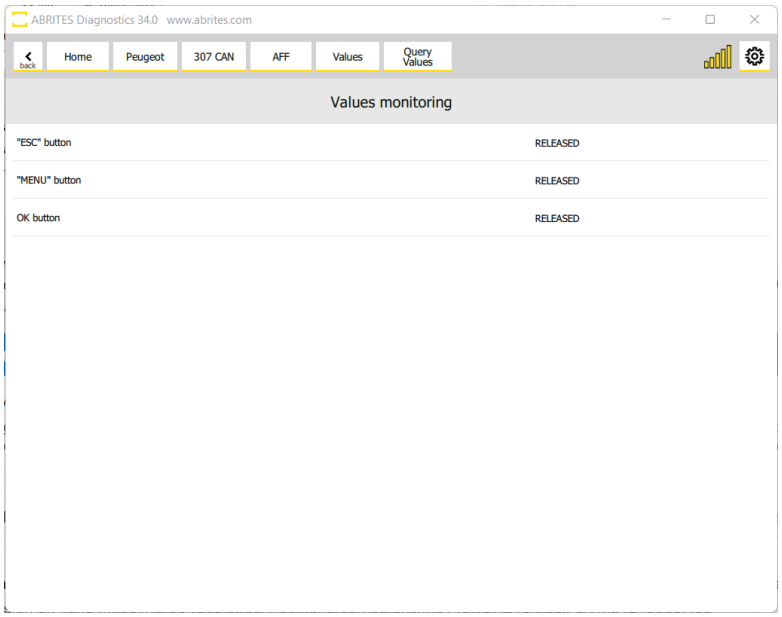
When you enter the module you will see the ability to read the trouble codes, clear them and save to file for later analysis. To read the trouble code press “Read”. To see more details about the trouble code press the arrow to expand the available information about it.
Once you have completed the work related to resolving the issue the fault code is generated by, you can press “Clear faults” and the fault code will be cleared.

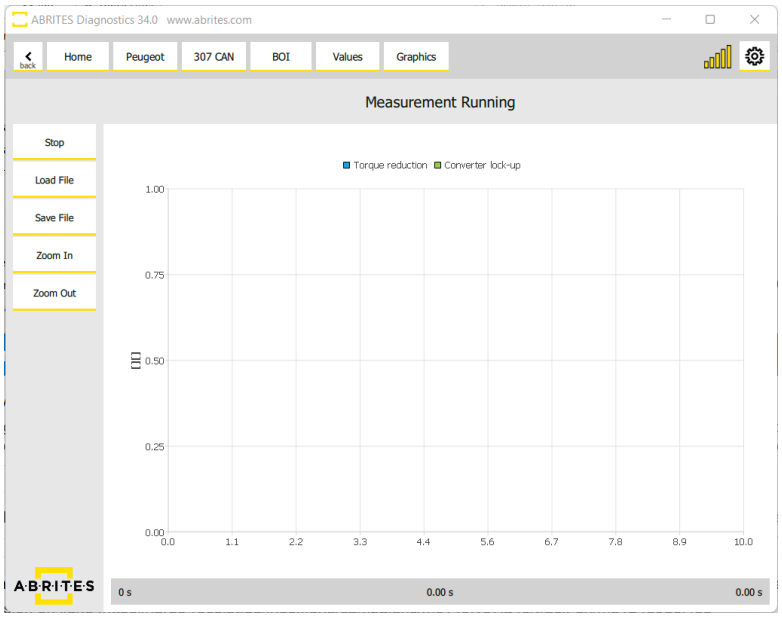




3.4 Monitoring live values

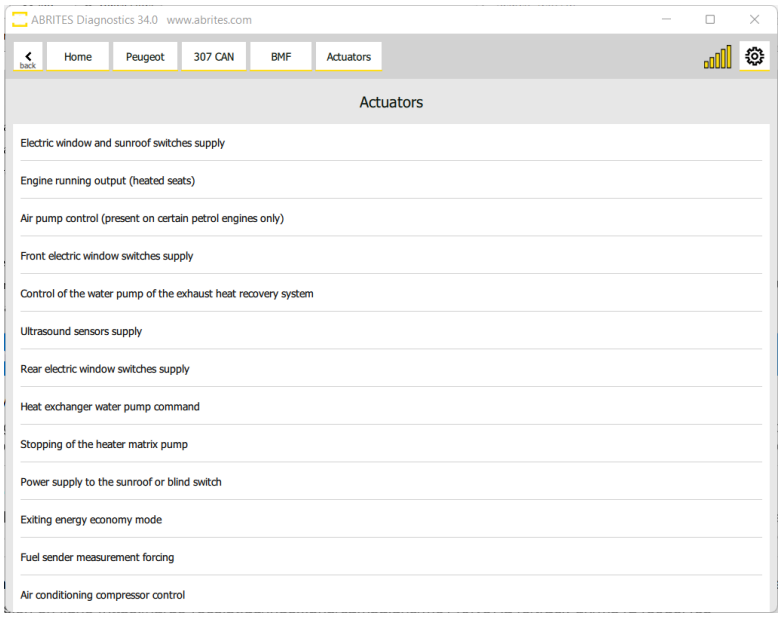
Using Abrites diagnostics for Peugeot/ Citroen (PSA) you can monitor all available live values from all available modules. This allows for easier diagnostics of any issue which may occur in the vehicle. The values may be monitored in a query or graph form depending on what is easier for you:

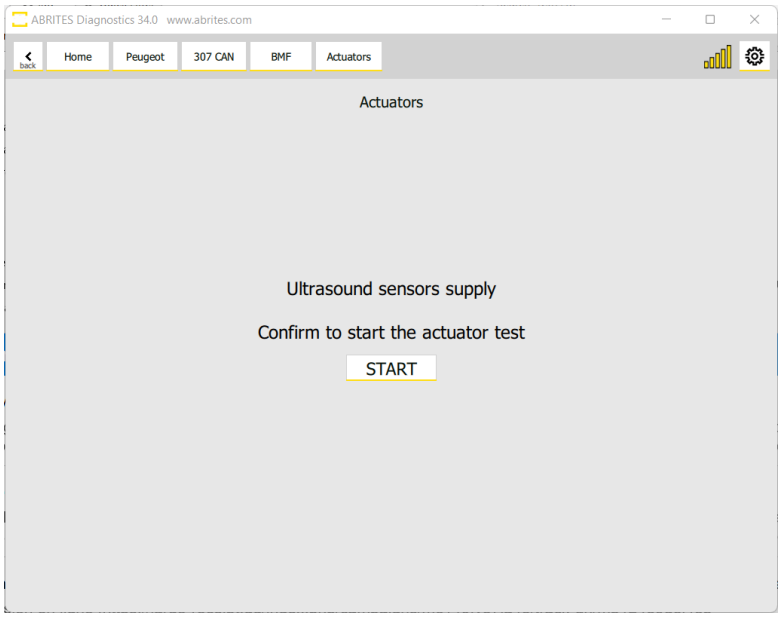




3.5 Actuator testing

Actuator testing is an essential part of diagnosing a vehicle, it allows you to activate any electronic actuator within the vehicle in order to determine the source of any fault you may come across during the diagnostic process.
In order to perform actuator testing you need to enter the module you are interested in from the main menu and select actuators. After that you will see a list of actuators you can activate.



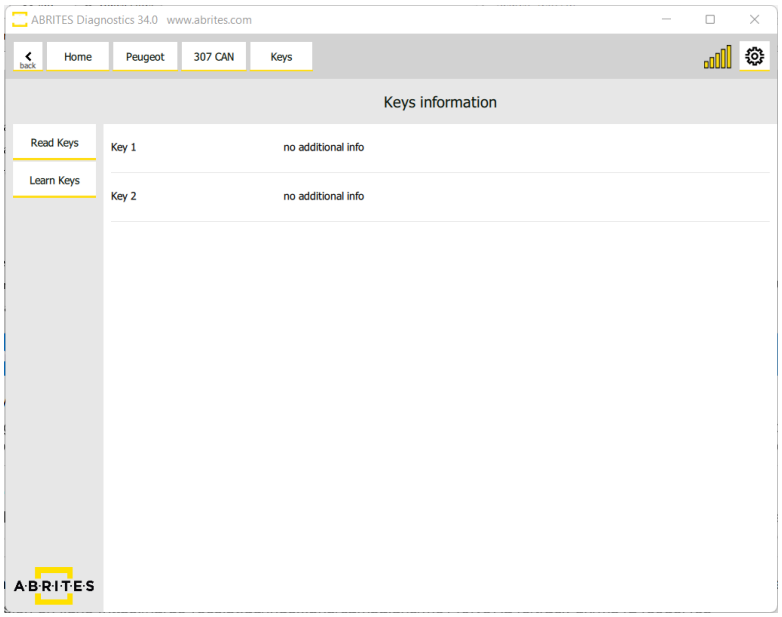


4. Key learning and PIN code reading

Using the Abrites diagnostics for Peugeot/Citroen (PSA) you can perform key programming for almost 100% of Peugeot/ Citroen (PSA) and DS vehicles available today. The procedure follows an easy to use linear process where the software first provides you with the following options once you press the “Key Programming” button.

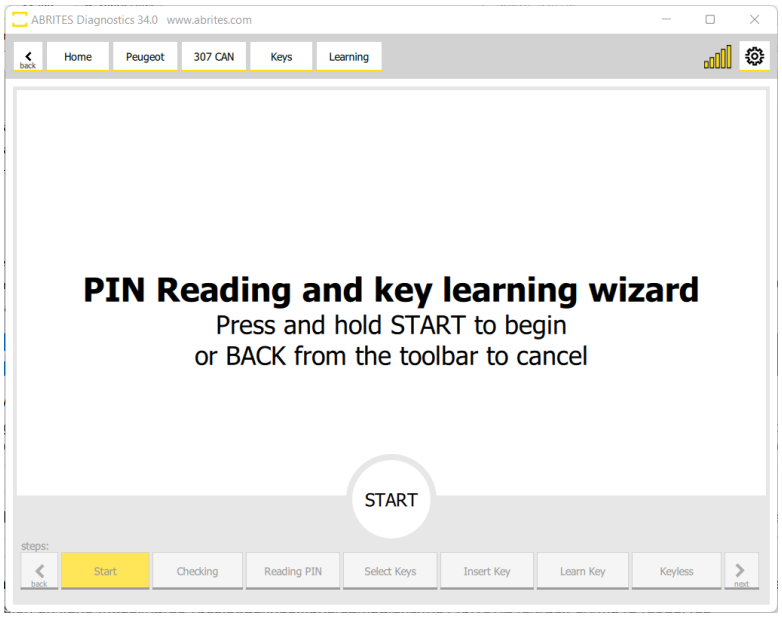
4.1 Read keys

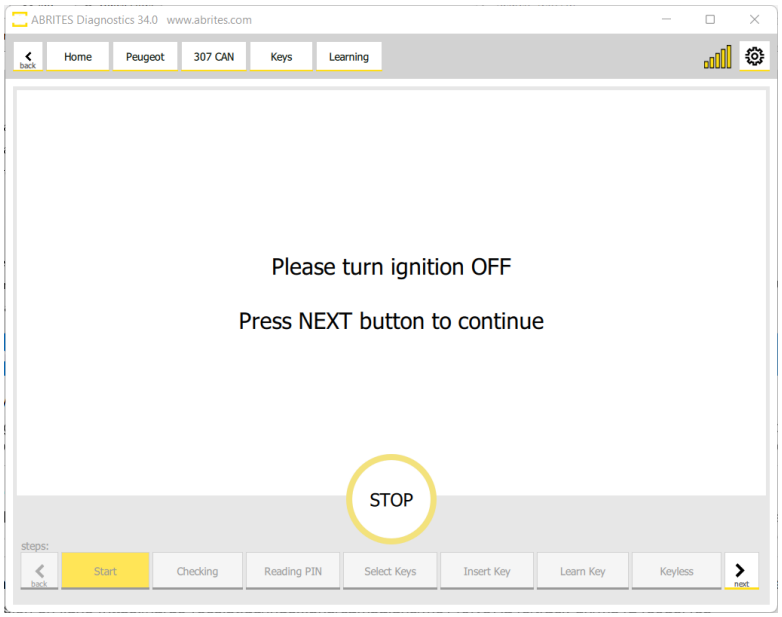
Here you can read the keys already programmed to the vehicle:

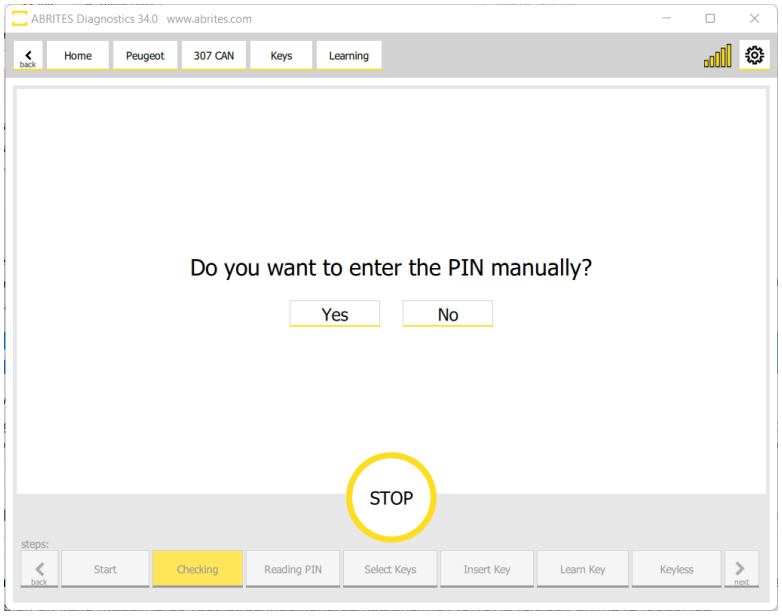


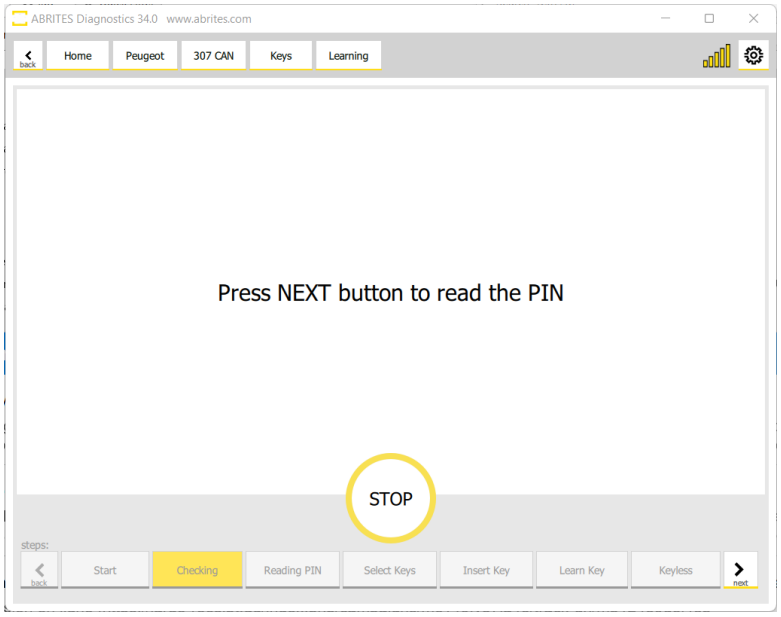
4.2 Key programming wizard

Once you have read the information about the keys in the vehicle you can enter the key programming wizard. The instructions you see are easy to follow and very clear.
Press and hold the start button until the yellow string fills the circle to begin the process.
Then press “Next” in the bottom right.

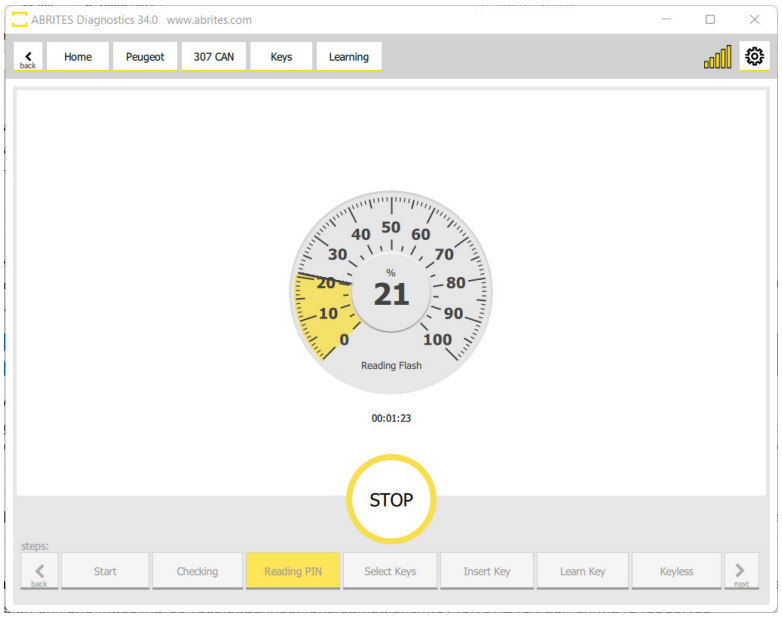


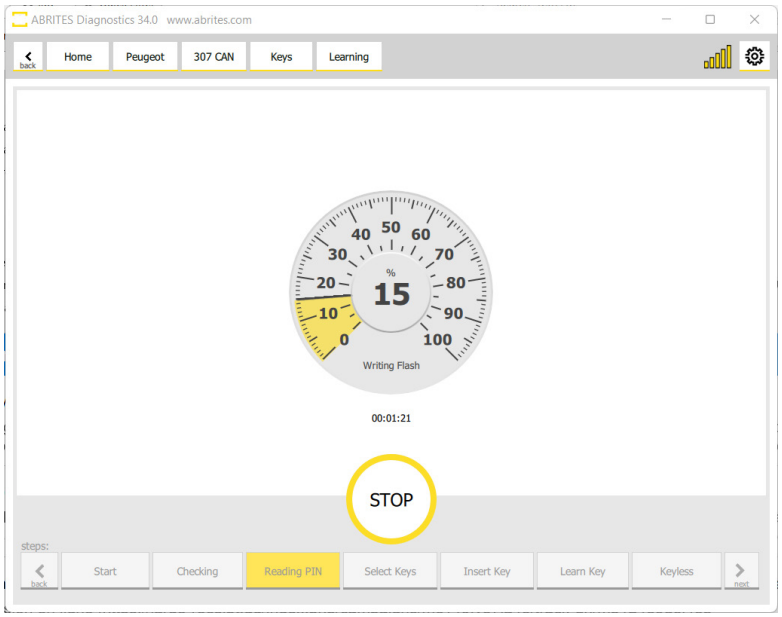


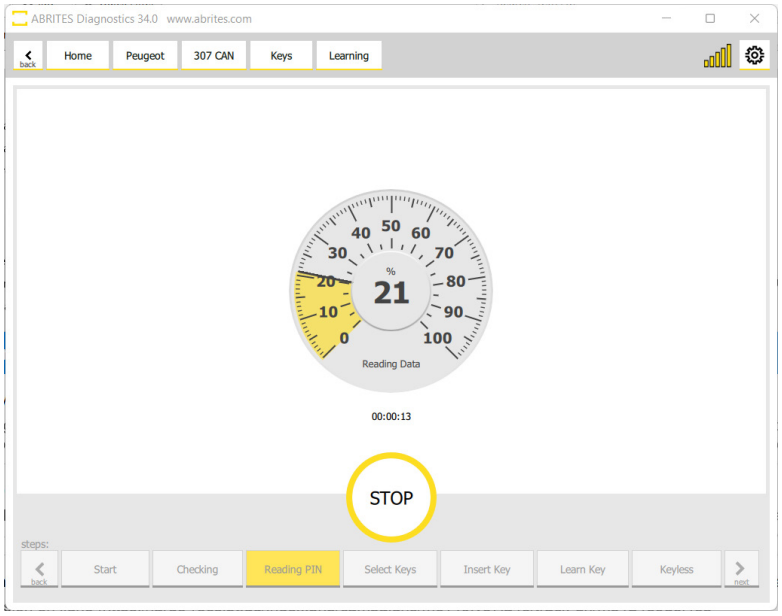

ABRITES Diagnostics 34.0 www.abrites.com
Home
Peugeot
307 CAN
Keys
Learning
Do you want to enter the PIN manually?
Yes
No
STOP
steps:
Start
Checking
Reading PIN
Select Keys
Insert Key
Learn Key
Keyless


ABRITES Diagnostics 34.0 www.abrites.com
Home
Peugeot
307 CAN
Keys
Learning
Press NEXT button to read the PIN
STOP
steps:
Start
Checking
Reading PIN
Select Keys
Insert Key
Learn Key
Keyless

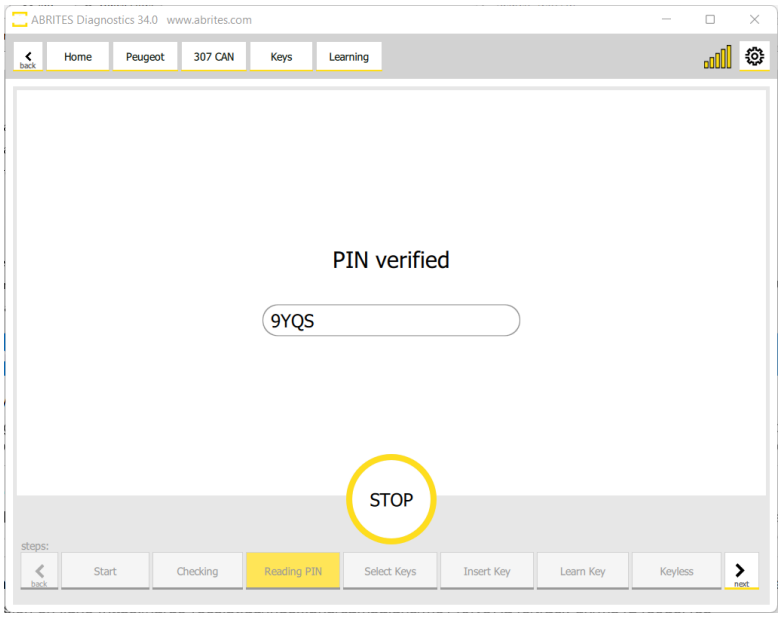
At this point you will see that the Abrites diagnostics for Peugeot/ Citroen (PSA) will start reading the PIN CODE of the vehicle. There are two ways in which the software would do this – either from the ECU or from the BSI. BSI reading is always the preferred method. During the reading of the PIN code from the BSI we have re-programming which may take up to 10 or so minutes. We strongly suggest that you have an external power supply connected to the vehicle's battery in programming mode (Abrites BSU001 is suggested) because the process of programming is extremely energy consuming as the BSI activates lights, wipers, heater, A/C… and this will drain the power of the battery in a matter of minutes.

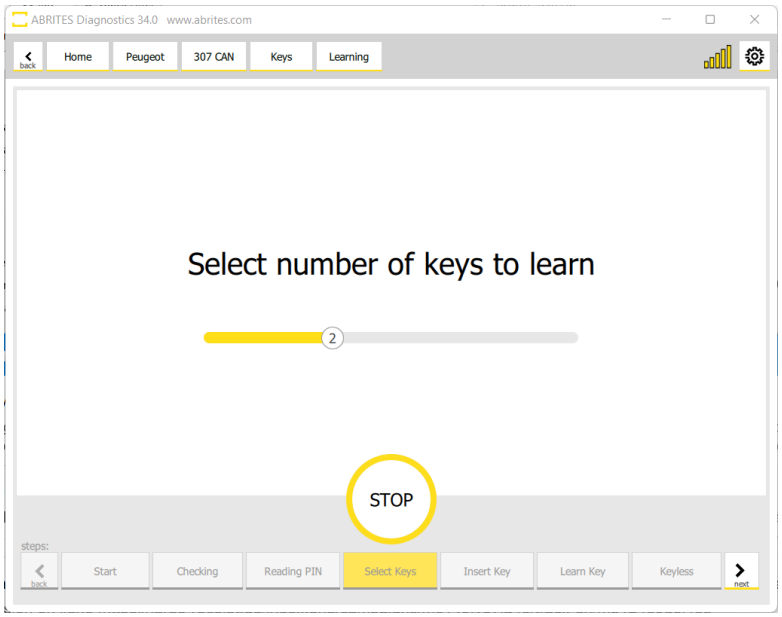




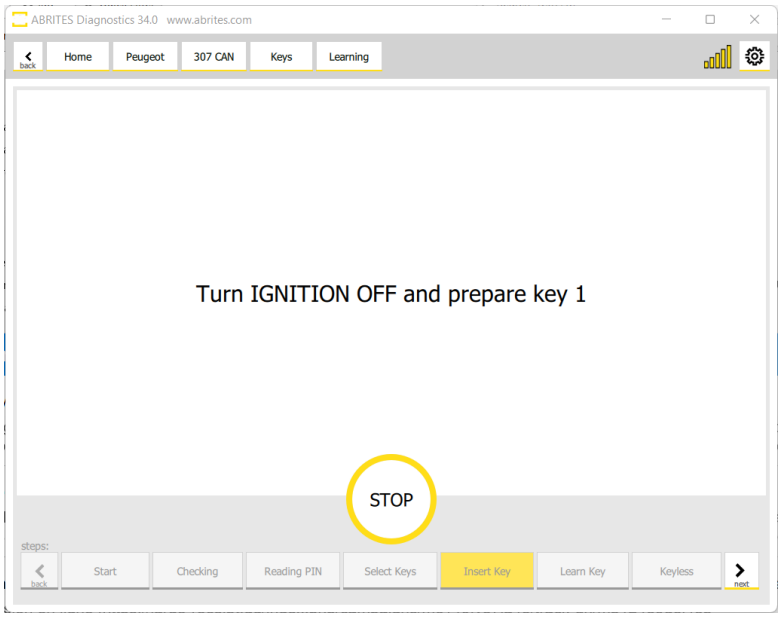

ABRITES Diagnostics 34.0 www.abrites.com
back
Home
Peugeot
307 CAN
Keys
Learning
40
50
60
30
70
20
%
21
80
10
90
0
100
Reading Data
00:00:13
STOP
steps:
back
Start
Checking
Reading PIN
Select Keys
Insert Key
Learn Key
Keyless
next

After the procedure for reprogramming the BSI is completed you will see the pin code.
The PIN is now read and ready to select the amount of keys you need to program. Use the slider to choose how many keys you would like to program.





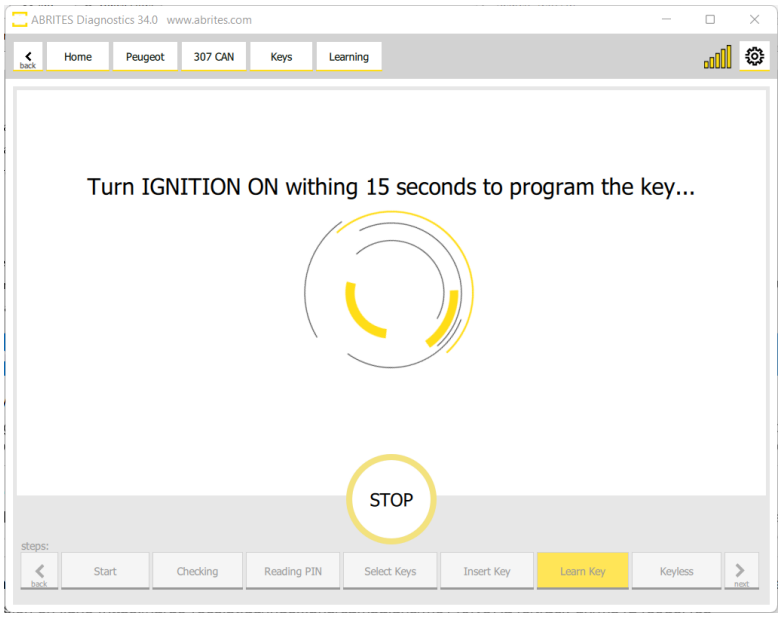
The Software will now allow you some time to prepare the key in your hand so that you are ready

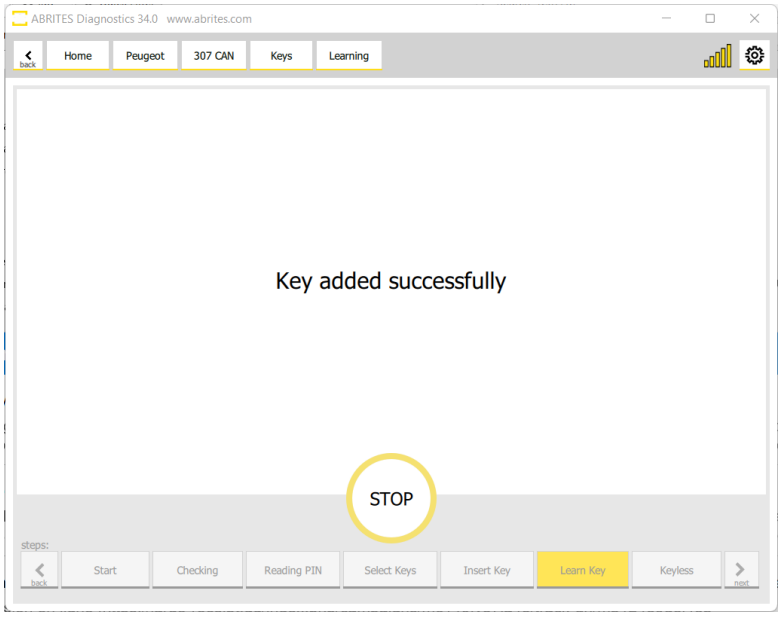


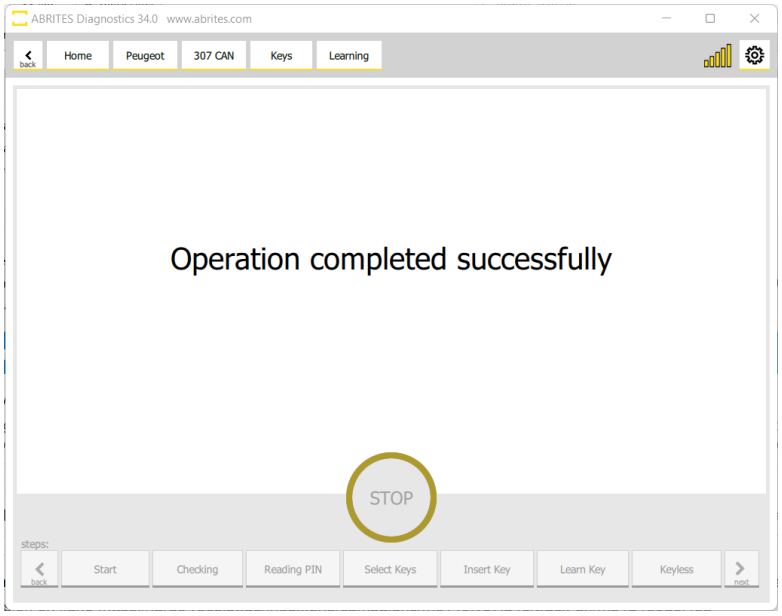
Now you will see that you have to turn the ignition ON with the prepared key.

If the car is keyless you will see that the software will prompt you to touch the start stop button with the key.

This procedure often is time bound so you will have a limited amount of time to complete the procedure with each key you want to program. The instructions prepare you before each step which requires your input.






ABRITES Diagnostics 34.0 www.abrites.com
back
Home
Peugeot
307 CAN
Keys
Learning
Operation completed successfully
STOP
steps:
back
Start
Checking
Reading PIN
Select Keys
Insert Key
Learn Key
Keyless
next

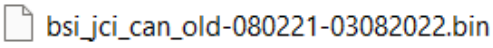
Important troubleshooting steps you need to be aware of should the procedure for PIN code reading happens to fail.

The two main causes of failure are interruption of the internet connection or voltage drop. Please make sure you have a strong internet connection and power supply. Please note that while using our phones as Hotspot devices for Internet, we have had interruptions by incoming calls which is one of the risks. A steady connection and power supply will all but eliminate the risk.

In case something happens to the BSI during key programming and there is no connection with it anymore, we have provided you with a backup. In the LOG folder installed on your computer under
C:\Users\Your User Name\Documents\ABRITES software for ID 17XXXX\PSA
you will have a backup of the flash of the BSI.

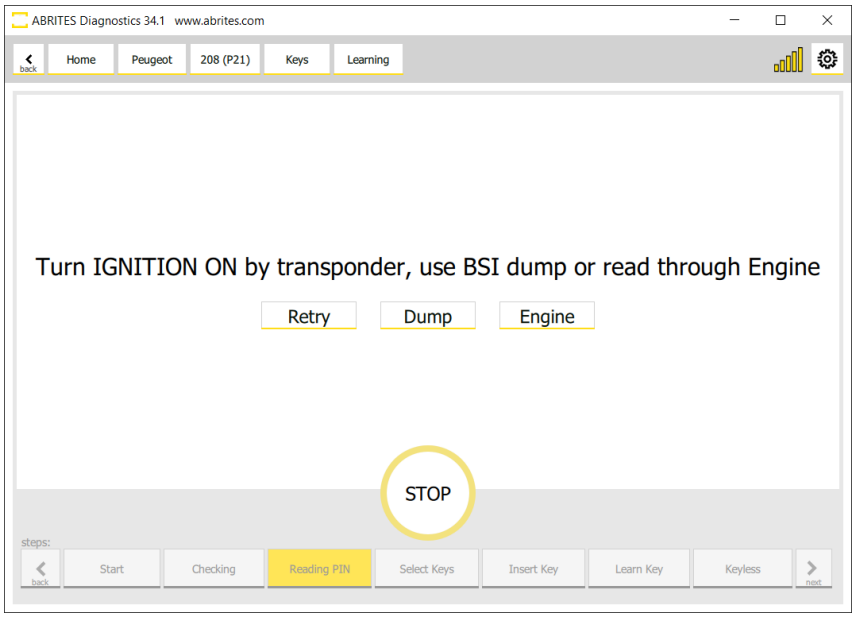
Even when you have no diagnostic connection to the vehicle because of the of the BSI, you still have access to the "Programming" menu. In it you can go, select the BSI, write its flash and the BSI will be restored to its original state. Here is an example of what the file looks like. It is date and time coded and easy to determine if you have multiple files in your backup.

This is an example of a backup file:



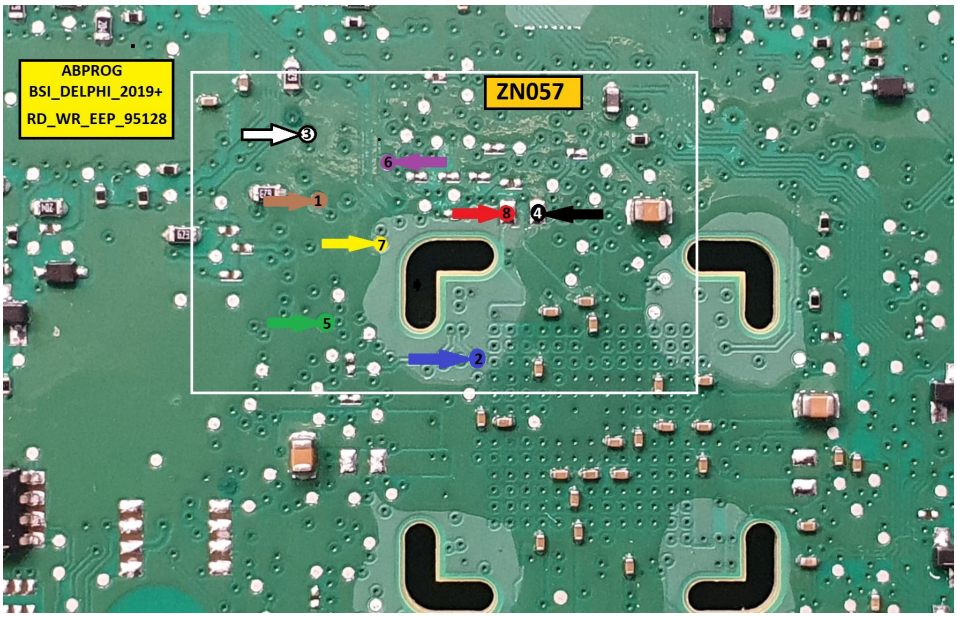
4.3 2021+ Delphi BSI

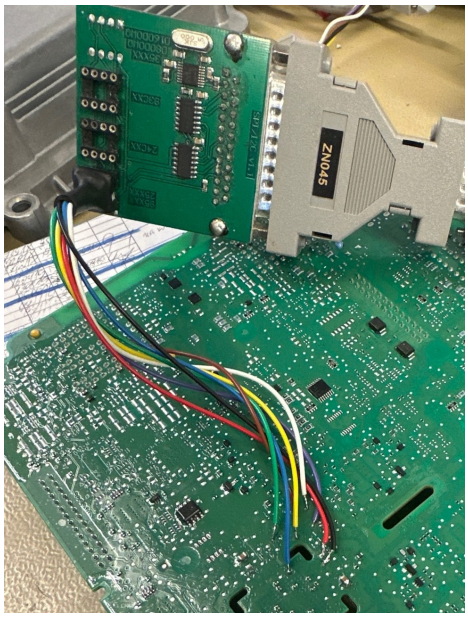
Our new development lets you program keys in all keys lost situation for the latest 2021+ Delphi BSI. Once in the key learning wizard, you will get to the point where you cannot contunie as in the steps described in section 4.2 of this manual and you will see a message that gives you 2 options: Load a dump from the "Dump" button, or read the PIN from the ECU.



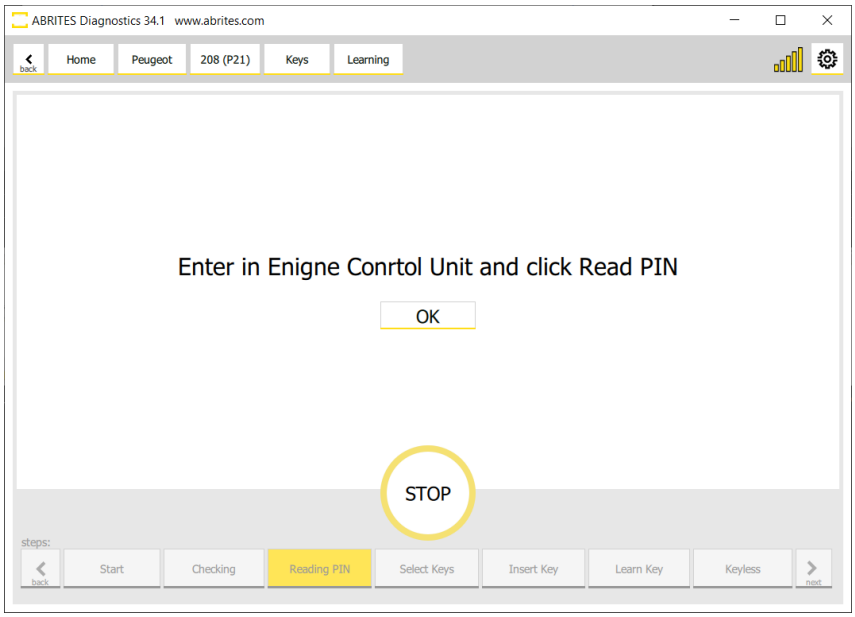
If you decide to load a dump of the BSI, you can read it by soldering to specific points of the unit, and reading it on bench. You will need an ZN030 Abprog programmer, and a ZN057 Wire Extender for Abprog

Below you may find the connection diagrams and the way the whole set-up should look lile:





If you choose the other option “Engine” to read the PIN from the Engine Control Unit, please check the dedicated section in this user manual for reading PIN from ECU - Section 8



4.4 Peugeot 308 III, Citroen C5 III, DS4, Opel Astra L (2021+)

Key Learning for this platform is available and we now introduce the solution - you need to read the PIN of the ECU and there are 2 cases:

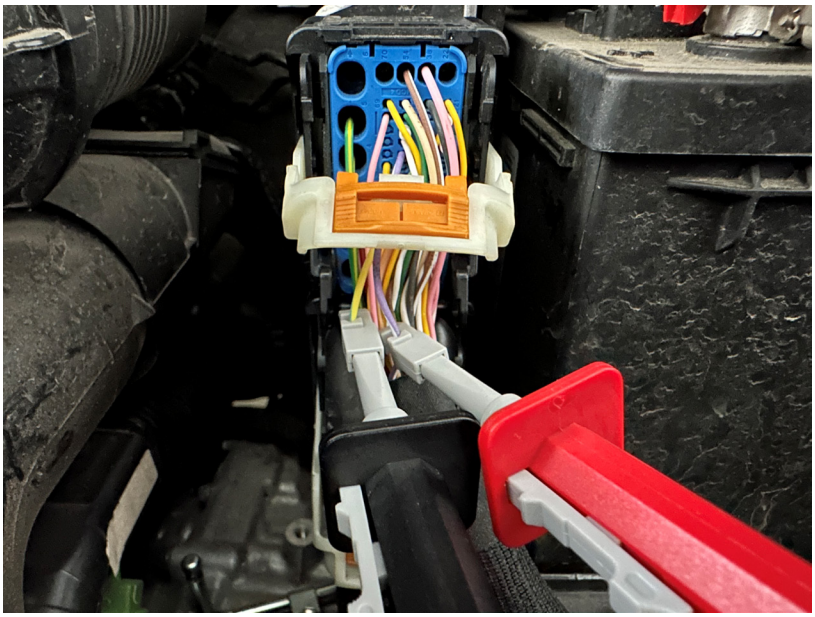
4.4.1 Additional Key Learning

Rrequires direct internal CAN Connection with the use of CB012 - convenient place for connecting the needle pinches is behind the ECU connector (check ECU pinout)
CAN H (Red needle) - Purple wire (pin 49 ECU connector)
CAN L (Black needle) - Yellow/Green wire (pin 33 ECU Connector)
Example in the picture below.

After the appropriate connection is made, you can proceed with the Key Learning procedure normally, followin the on-screen instructions.

NB: Please note that CAN wires positions and colors may vary for different modifications

ECU Connection diagrams fron ECU Programming Tool User Manual



4.4.2 All Keys Lost

ECU needs to be read on bench to obtain the PIN.

CB013 is needed in order to connect and reat the ECU on bench, as well as power supply (ZN074). ECU needs to be dismounted from the vehicle, connected on bench as per the pinout from the "ECU Programming Tool User Manual. "

Once the ECU is wired and powered up, you need to ofollow these steps:

1. Open the software and select the vehicle
2. After the scan is complete, select the ECU module
3. Open the module via the diagnostic menu and select the ECU type from the menu
4. Select "Read PIN" menu on the left hand side and follow the onscreen instructions
5. You will be asked to select the "AKL" option if no working keys are present, make sure you do that
6. The procedure may take up to 1 hour to obtan the PIN
7. Once you have the PIN, please make sure you save it for later use.

After you have obtained and saved the PIN, you can install the ECU back into the vehicle and start the normal Key Learning procedure and manually input the PIN to program keys to the vehicle.

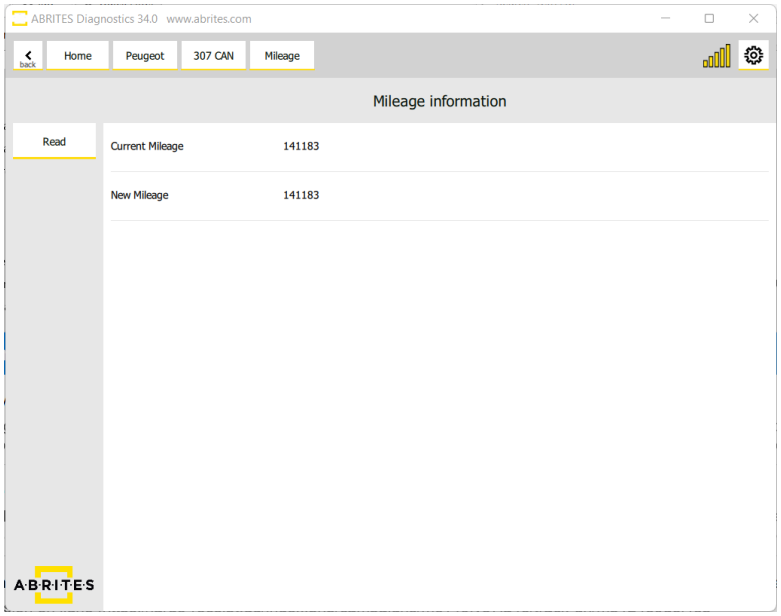
ECU Connection diagrams fron ECU Programming Tool User Manual

5. Cluster calibration

The cluster calibration feature is used when the displayed value does not match the requirements for the rest of the vehicle.

When you select the “Mileage” button you will see the mileage screen.

In order to recalibrate the mileage go to the “New Mileage” tab and click on the value. Modify it, update it and you will see the same displayed in the vehicle.



6. BSI Exchange

BSI Exchange is the ability to replace one of the most common failing points in modern PSA vehicles.

BSI stands for Built In Interface and the purpouse of this module is to control most secondary features of the vehicle. This means that most non- essential functions of the vehicle are controlled by the BSI.

The BSI also has responsibilities regarding the anti theft protection of the vehicle.

All this makes it one of the most important modules in modern PSA vehicles. Considering they are so common to fail, this feature is essential because it allows you to replace the prone to failiure BSI module with a used module from a donor vehicle (read the whole content of one BSI and transfer it to another one). It is very important to note that the BSI you are going to exhange must be exactly the same part number as the one currently in the car you are working on.

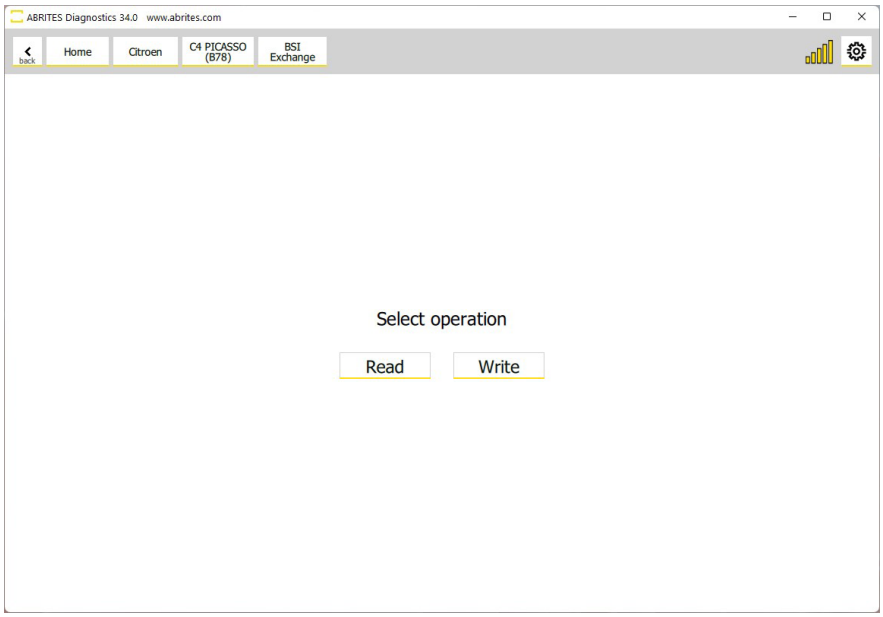
The function should be entered from the main diagnostics menu, there is a "BSI Exchange button ".

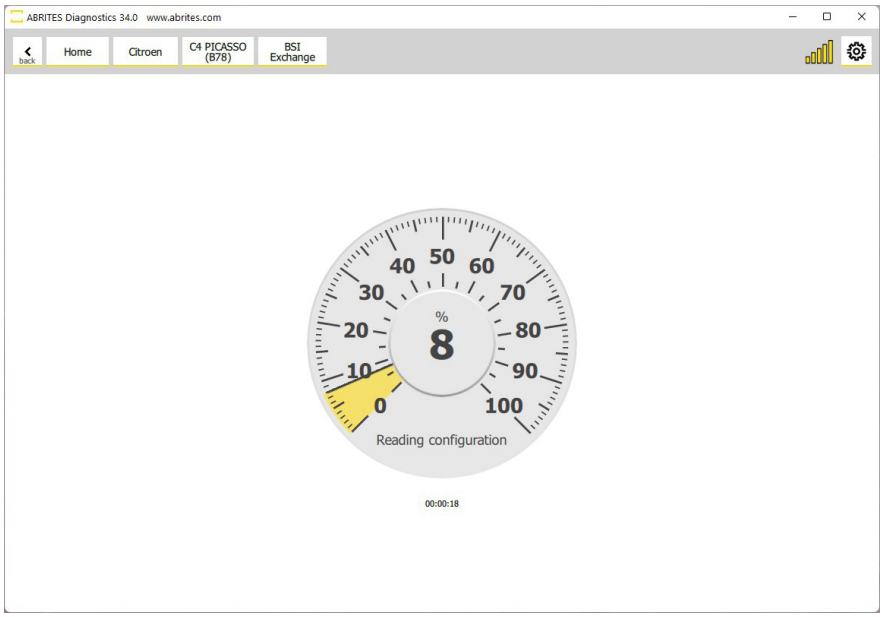
The following BSI modules are supported for exchange:

- Delphi BSI 2010-2016
- Delphi BSI 2016+
- JCI BSI 2008+
- JCI BSI 2004-2008
- JCI BSI 2015+
- Siemens BSI 2000-2004
- Siemens BSI 2004- 2006
- Valeo BSI 2008+
- Valeo BSI 2004- 2008
- Valeo BSI 2012+
- VDO BSI 2010-2015
- VDO BSI 2015+

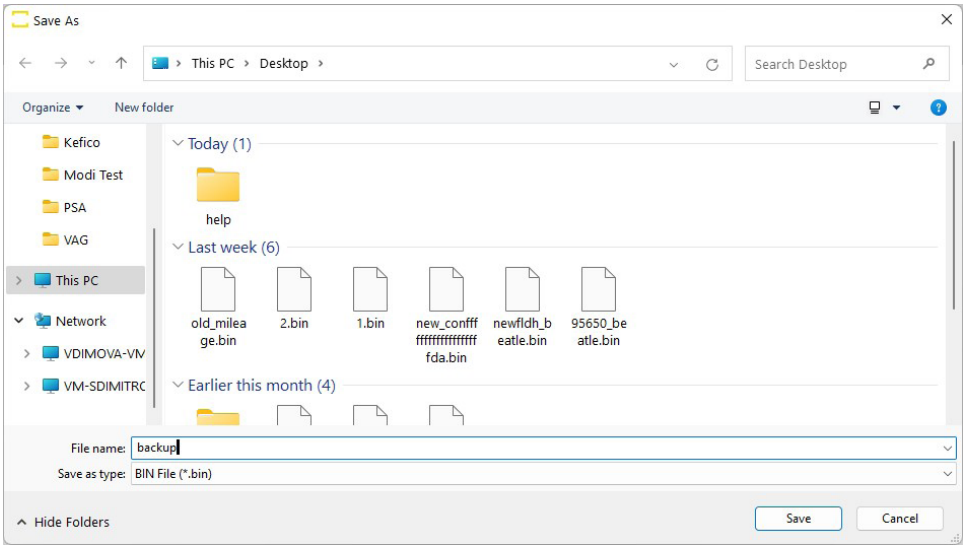
The BSI Exchange procedure is easy to follow, each of the steps has a timer so that you know how long it takes. The procedure goes through in the following way:

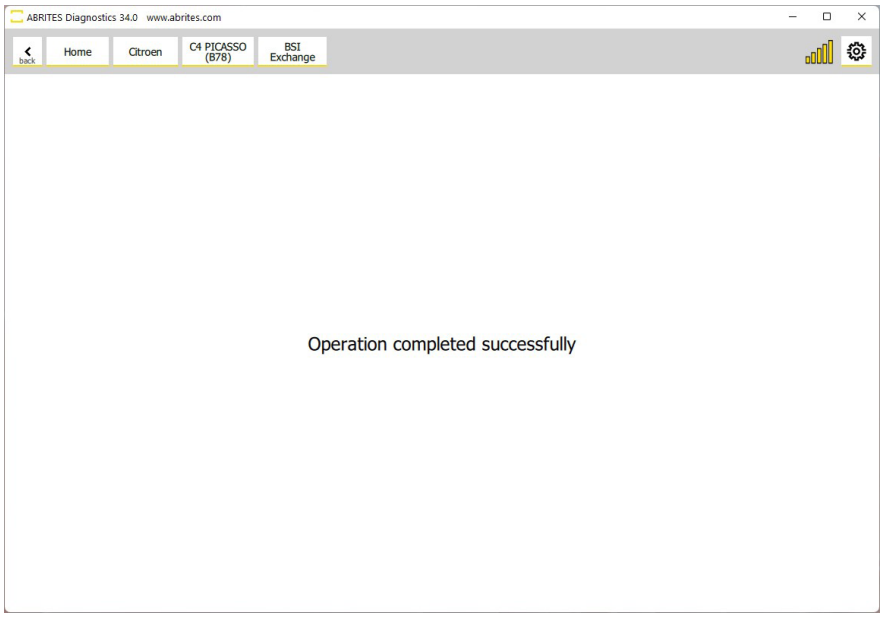
1. Open the BSI exchange button and you will see two options - “Read” and “Write”. While you have the old BSI in the vehicle you need to read it
2. Press “Read” and you will see that the software reads the configuration of the existing BSI.



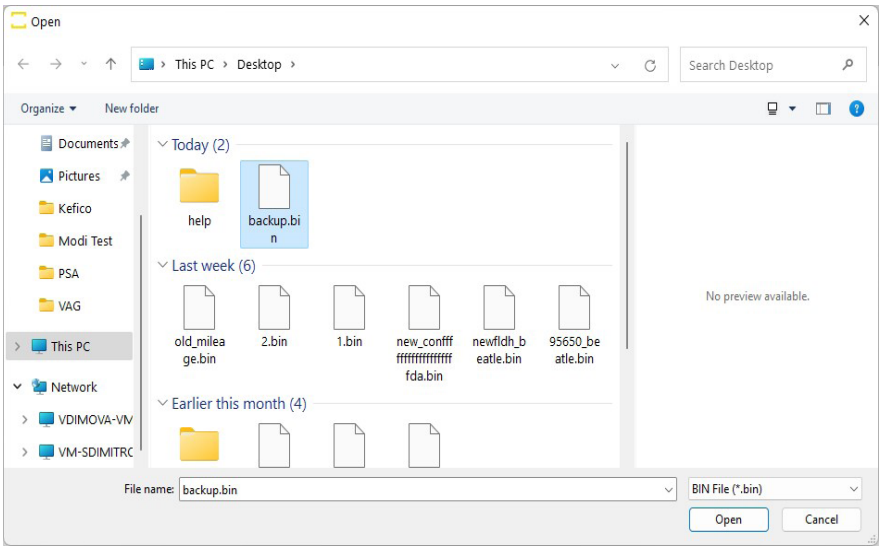


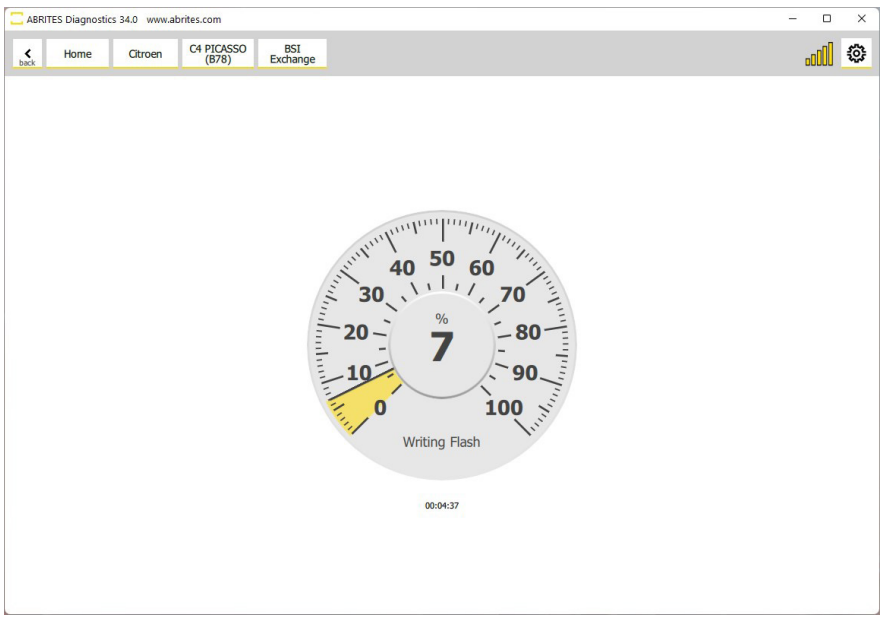
3. Once the first part of the process is complete the software will generate a backup file, save this backup on your PC.



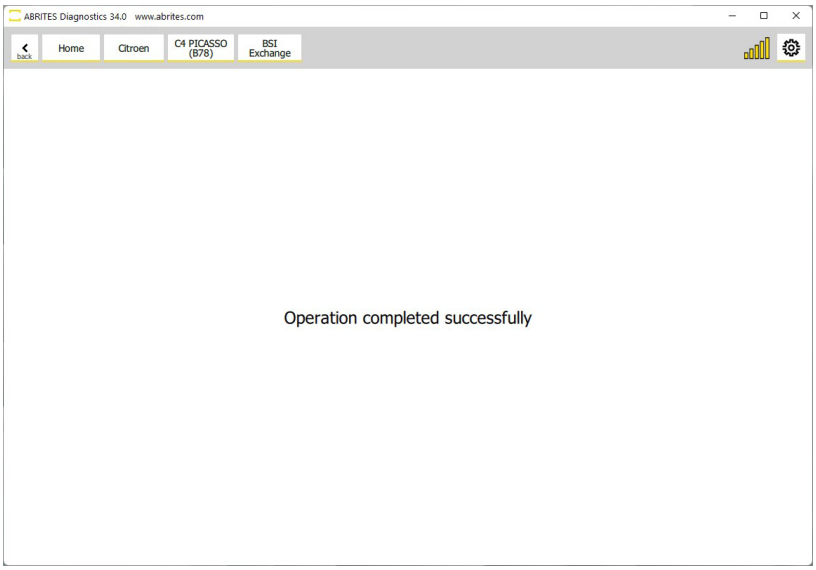


4. After the file is saved you are done with the old BSI module and you can install the new one in the vehicle.
5. Close the Abrites software during the installation of the other BSI
6. When the other BSI is installed in the car, start the Abrites software again and go to “BSI exchange”.
7. Click “Write” after opeining the BSI Exchange function and the software will open the file selection window.
8. Select the backup file you saved in the previous step and the software will write the backup you saved onto the new BSI.





Wait for the procedure to finish and you will see the message that the exchange is complete once again:



7. Coding

7.1 Config

Since version 34.0 the Abrites Diagnostics for PSA Online is able to provide you full configuration or coding options.

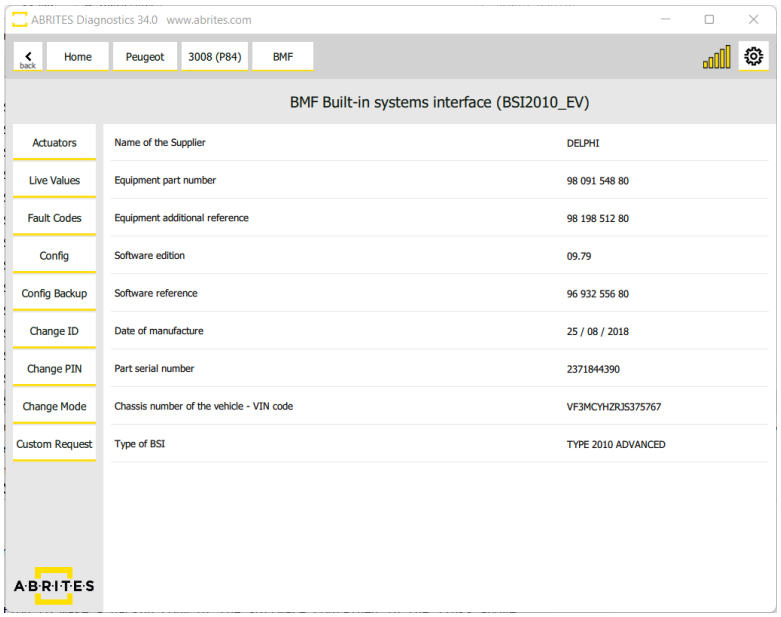
These configurations are made for almost all modules installed in modern PSA vehicles.

The Config options allow you to change the configuration within the modules by changing the values within them. The system has been designed in such a way that is very understandeable and easy to use.

You can set modules in such a way so as to change their current configuration with alternative available.

You can use it to perform retrofit and will allow the modules to be programmed in such a way that the car will behave as if your modifications have been there from factory.

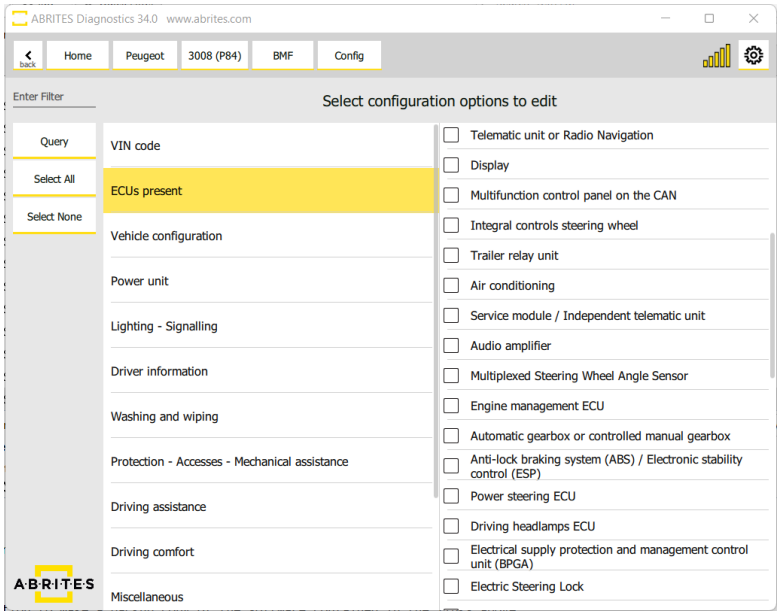
Our procedure goes in the following way. Enter the module you are interested in and press the Config button:



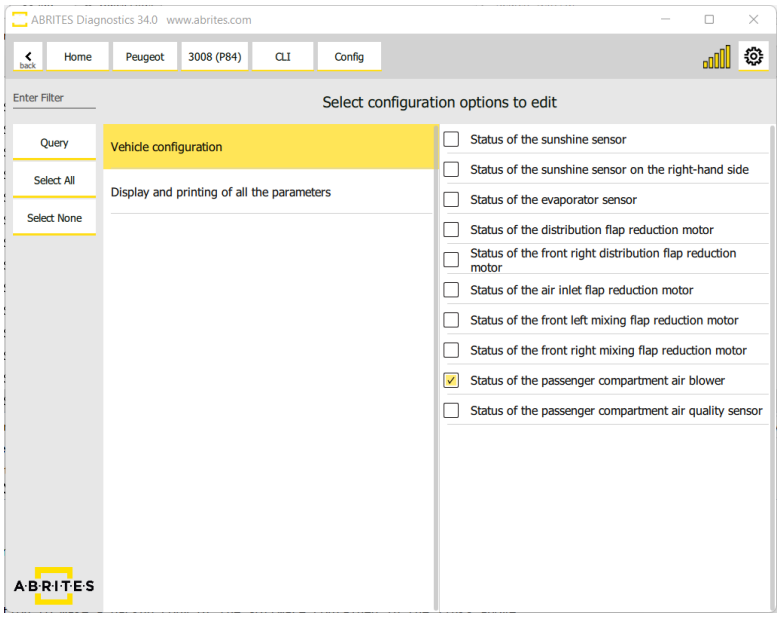
On the left side of the screen you will see a list of groups of functionalities operated by the confguration of this module and once you select one of them - on the right side you will see a detailed list of what exact features you can configure.

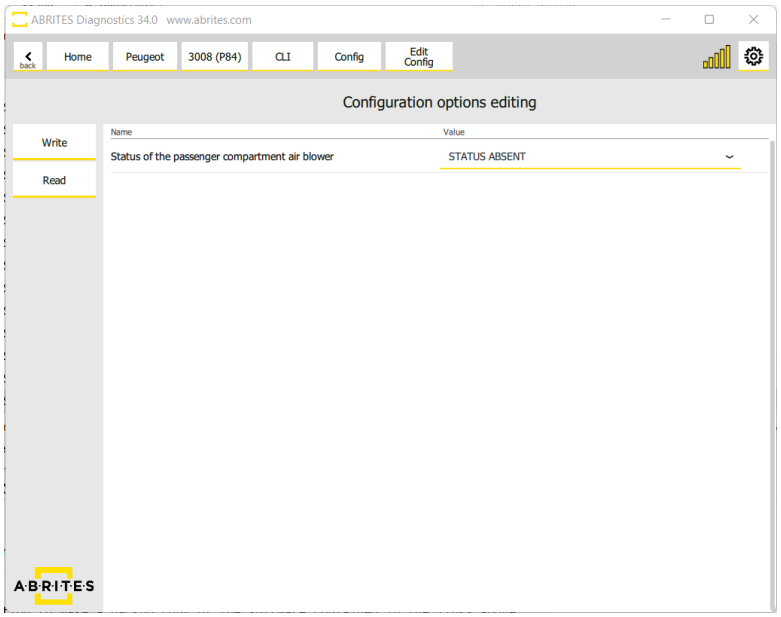
Once you select “Query” you will see the options on the right side of the screen, it will give you the drop down menu from where you can change the selection. For example from Active to Not active, from enabled to disabled and vice versa.

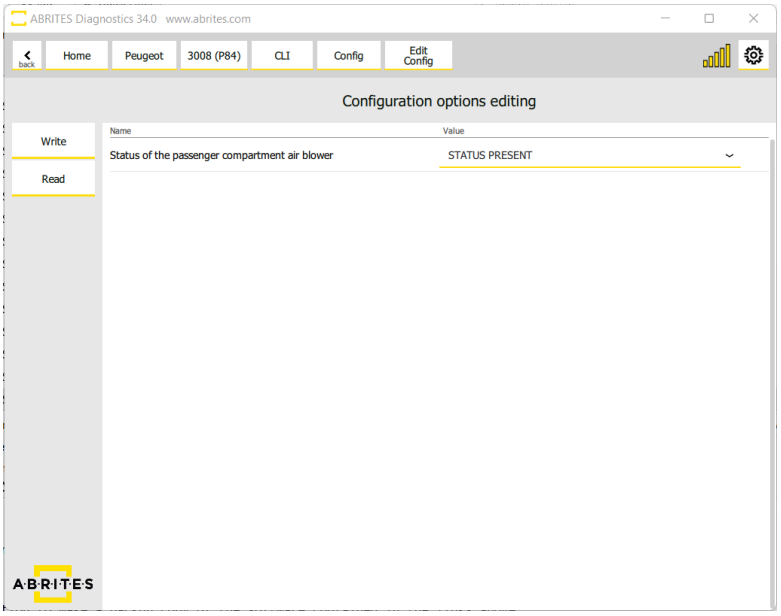
Once you are happy that the configuration is correct from what you would like to do you can press “Write” and the software will make the neccessary changed.



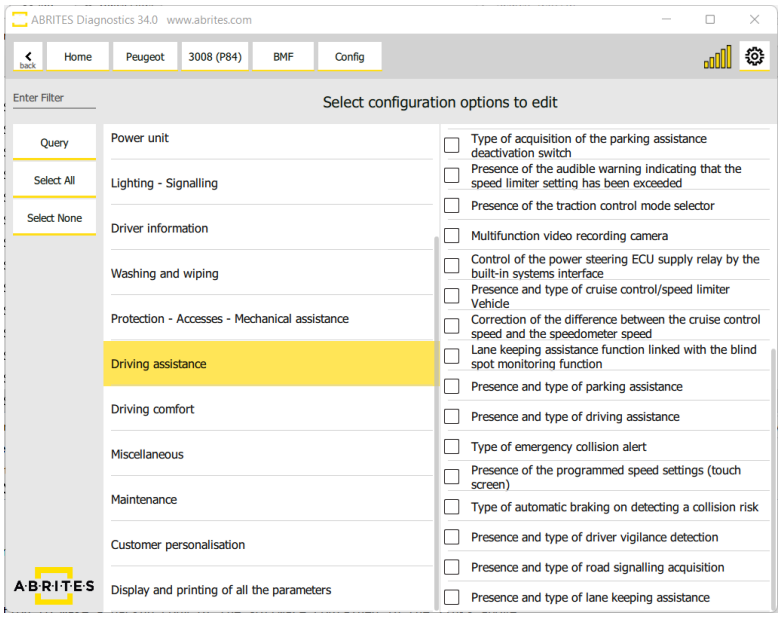
In this particular case we can add a passenger compartment air blower to be added to the passenger compartment of the this P84 3008

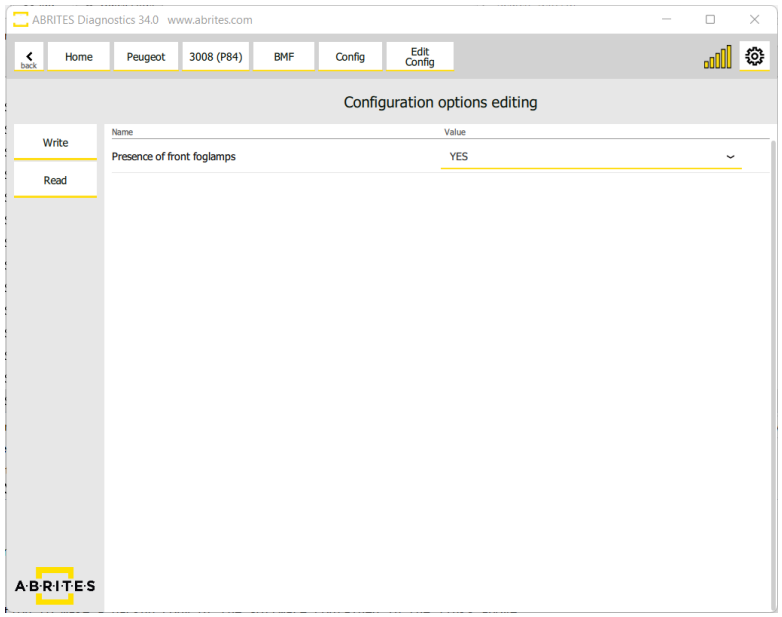





ABRITES Diagnostics 34.0 www.abrites.com
back
Home
Peugeot
3008 (P84)
CLI
Config
Edit Config
Configuration options editing
Write
Read
Name
Value
Status of the passenger compartment air blower
STATUS PRESENT
ABRITES

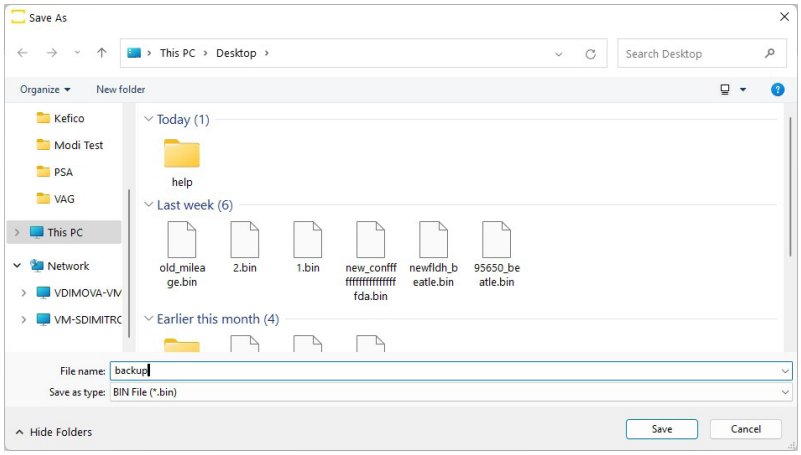
In the same vehicle we also tested the activation of the front running lights as you can see below:





Of course, as with all Abrites coding and configuration functionality you will be able to save the data to a file from the very beginning.

We suggest you always do that so as to have a backup, you just save the current config before starting the procedure (to a file on your PC) and if something goes wrong you can always just select the file for the particular module and restore it to its previous state.



There are two very important factors we need to remember. Always save the backup per module, there is no general configuration you can save. This means that every module you enter must be saved and configured separately.

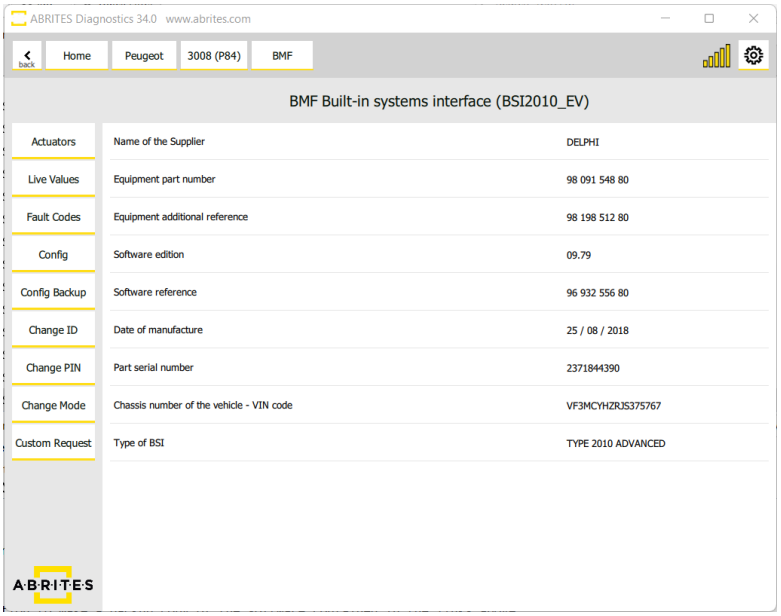
Another very important thing is that there may be coding that requires you to modify the configuration of two or more modules separately, we still do not have fast coding functions for PSA Config.

It is safe to assume that you must really know what you want to configure since you are reading this but please do as much research as possible. We provide the tool to perform configuration but it is easy to make a mistake so please be very careful and take your time with doing as much research as possible.

7.2 Additional features to configure on a “per module” basis

With the help of the additional buttons when you enter each module you can configure other options such as:

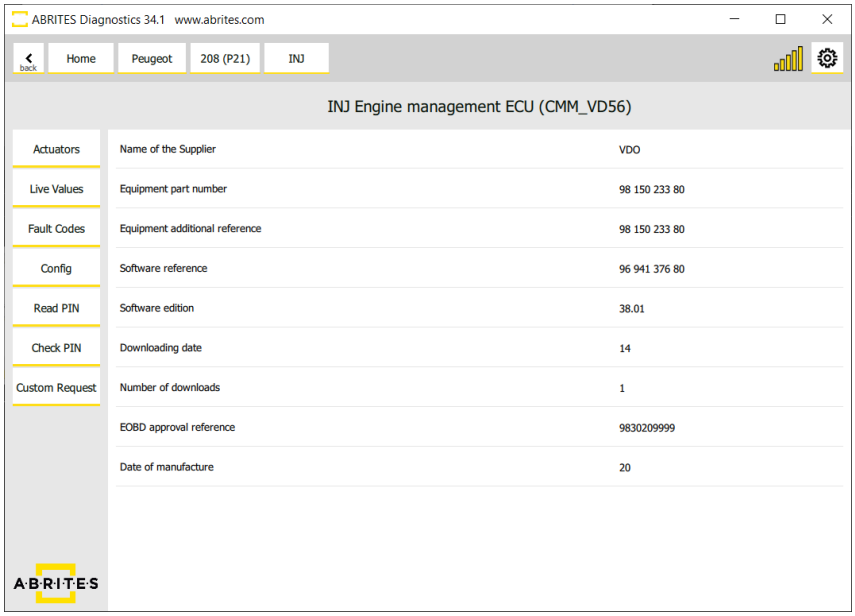
- Chaging the VIN using the Change ID button.
- Changing the PIN in the BSI or other modules which support it.
- Others. Depending on the availability per modules.

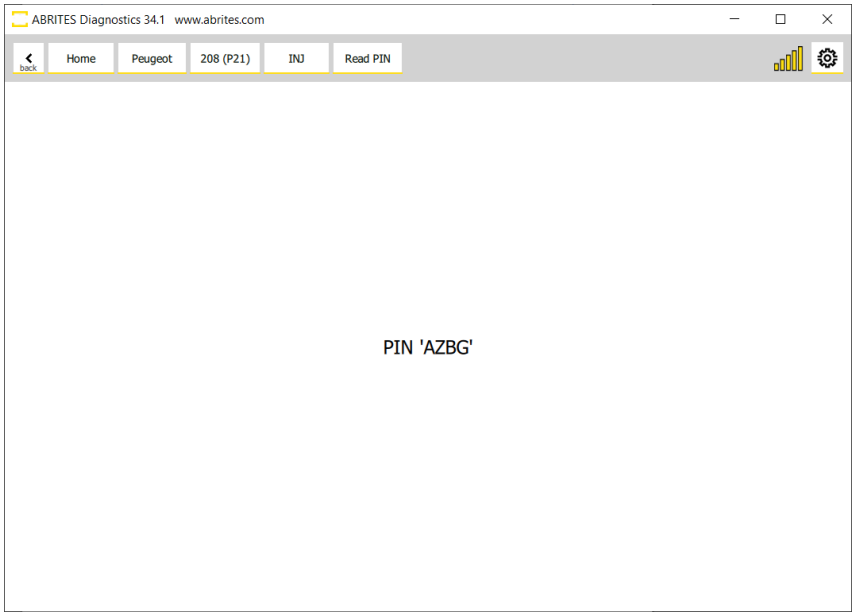


8. Read PIN from ECU

8.1 Read PIN from ECU via OBD

Our software gives you the possibility to read the PIN code from Electronic Control Units when the key lerning procedure could not be completed as it normally would. This procedure is executed by OBDII, it may take about an hour, but it is a great back-up when you are not able to read the PIN Code from the BSI unit. The procedure is executed trough the diagnostic menu, by entering the ECU module, and the Read PIN option.

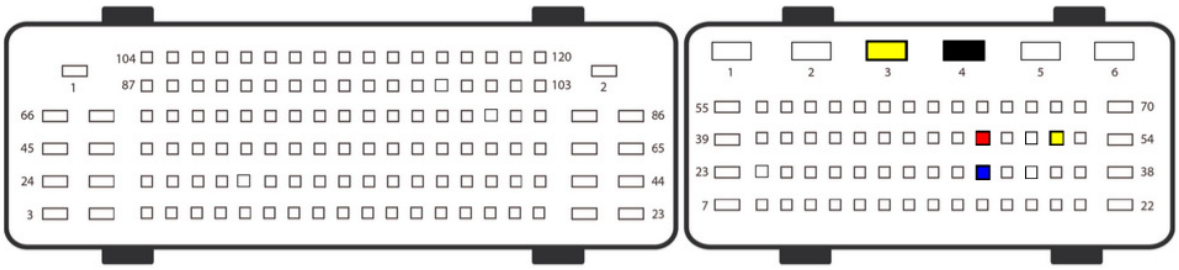




8.2 Read PIN from ECU on Bench

In order to read the PIN from ECU on bench you can use the “CB013” cable and the following pinout Power supply needs to be provided and you can use the power adapter from the ZN074 set for that job.

Once the ECU is wired and powered up, you need to follow these steps:

1. Open the software and select the vehicle
2. After the scan is complete, select the ECU module
3. Open the module via the diagnostic menu and select the ECU type from the menu
4. Select “Read PIN“ menu on the left hand side and follow the on-screen instructions
5. You will be asked to select the “AKL“ option if no working keys are present, make sure you do that
6. The procedure may take up to 1 hour to obtain the PIN
7. Once you have the PIN, please make sure you save it for later use.

Connection diagram for Continental VD56.1