



AUTO POLAR

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POLARFIS

USER MANUAL FOR

RED DOT FIS CLUSTER



INDEX

1.	INTRODUCTION	4
2.	CONFIGURATION MENU	5
2.1.	SCREEN.	6
2.1.1.	SCREEN-VISUALIZATION.	6
2.1.1.1.	SCREEN->VISUALIZATION->PARAMETERS	6
2.1.1.1.1	SCREEN->VISUALIZATION->PARAMETERS->SCREEN x	7
2.1.1.2.	SCREEN->VISUALIZATION->ADVANCED	8
2.1.1.3.	SCREEN->VISUALIZATION->NAME.	10
2.1.1.4.	SCREEN->VISUALIZATION->LANGUAGE	11
2.1.2.	SCREEN->POLAR BUTTONS.	11
2.1.3.	SCREEN->AUDIO BUTTONS.	12
2.2.	TVFREE	13
2.3.	STOPWATCH	13
2.4.	COMFORT.	15
2.4.1.	COMFORT->MIRRORS	16
2.4.2.	COMFORT->TURN SIGNALS.	17
2.4.3.	COMFORT->PARKTRONIC FIS.	18
2.4.4.	COMFORT->WINDOWS.	19
2.4.5.	COMFORT->PARKTRONIC RNS	19
2.4.6.	COMFORT->CLIMATRONIC.	20
2.5.	DIAGNOSTICS	20
2.6.	VERSION.	21
2.7.	INFO.	22
2.8.	UPDATE.	22
2.9.	RESET.	23
2.10.	SWITCH OFF.	23



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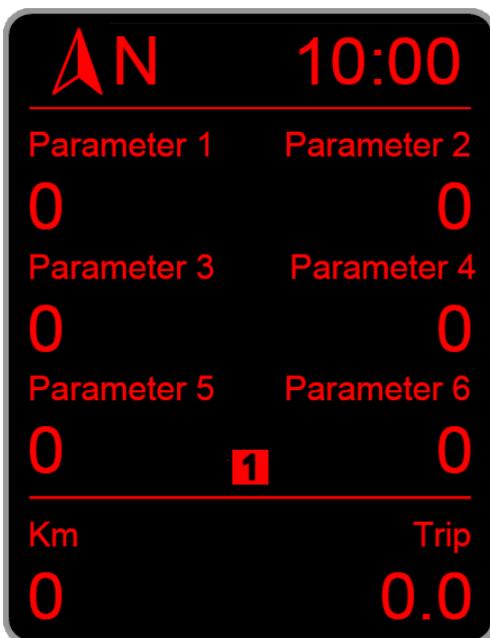
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2.11.	FACTORY SETTINGS.	23
3.	NOTES	24
4.	ANNEX 1: PARAMETER LIST.	25

1. INTRODUCTION

Thanks for purchasing Polar FIS, along this manual; you will learn all functions of your new PolarFIS box.

After install Polar FIS, you will see that a new menu entry is created in the instruments cluster FIS screen, called **POLARFIS**, later you can change that name following this manual. After enter in that menu, you'll see the next screen:

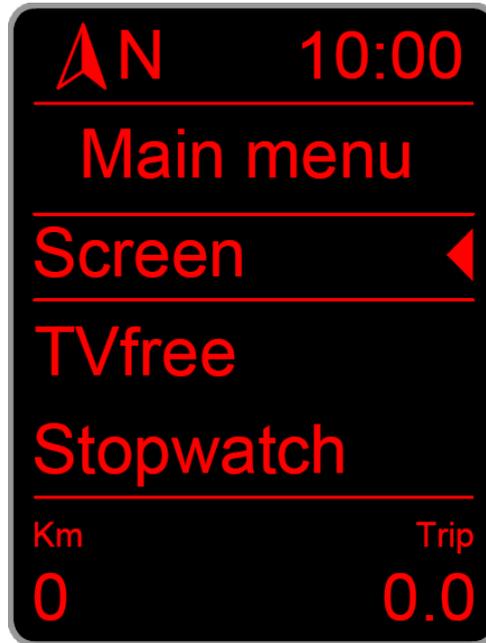


This is the PolarFIS main screen, where you can see all parameter readings, that screen is fully configurable, you can select the desired parameters as well as modify the composition of it.

Centred in the bottom of the screen, you can see a shadowed "1", than indicate the desktop that is selected and showed in the FIS screen, later you will learn how to configure desktops.

2. CONFIGURATION MENU

To Access PolarFIS configuration menu, press and hold the OK button in the multifunction steering Wheel or wiper stalk, and after a few seconds, the next screen will be displayed in FIS:



In the top of the screen is always signaled the menu name, in this example, you can read **Main menu**, this means we are in the main screen of the PolarFIS configuration menu.

The main menu screen has the next options:

- **Screen:** Use it to configure your Polar FIS.
- **Tvfree:** Access to enable or disable the video in motion activation function.
- **Stopwatch:** Access to the stopwatch functions.
- **Comfort:** Comfort functions.
- **Diagnosis:** Access to the diagnostic coding functions.
- **Version:** Shows Hardware and Software version number as well as of your PolarFIS serial number.
- **Info:** Show the information about your vehicle Electronic Control Units.
- **Update:** Enter PolarFIS into update mode.
- **Reset:** Perform a reset of Polar FIS.
- **Switch off:** Switch off Polar FIS.
- **Fact. settings:** Restore PolarFIS settings to factory.
- **Back:** Exit from menu screen to the PolarFIS main screen.



2.1. SCREEN.

Inside this screen you can configure the options of Polar FIS, this screen consists in the next options:

- **Visualization.**
- **Polar buttons.**
- **Audio buttons.**

Choose the option **Visualization** to select the parameters that you desire to show in the PolarFIS main screen, as well as to access advanced configuration or change the PolarFIS menu name.

Choose **Polar keys** to switch the function of each key while FIS is displaying the PolarFIS screen.

With **Audio keys**, you can choose the functions of each key while FIS is displaying the Audio screen.

2.1.1. SCREEN-VISUALIZATION.

In this screen, you will find the next options:

- **Parameters.**
- **Name.**
- **Advanced.**
- **Language.**

Choose **Parameters** to select the parameters that you desire to show in the PolarFIS main screen.

Name will let you to change the PolarFIS menu name in the FIS screen.

Select **Advanced** to access advanced configuration of Polar FIS.

Language allows you to select the desire language for Polar FIS.

2.1.1.1. SCREEN->VISUALIZATION->PARAMETERS

Inside this menu, you can configure each parameter displayed in each PolarFIS desktop, as well as set the number of desired desktops.



To a better understanding of it, PolarFIS has from 1 to 10 configurable desktops, each one with a configurable parameter set, once configured desktop parameters, number of desktops, and a button to switch between them, you can switch quickly from one desktop to another from the PolarFIS menu using the programmed button.

In the **parameters** screen, you will have the next options:

- **Screen 1**
- **Screen 2**
- **Screen....**
- **Screen qty.**

The number of **Screen ...** options depends on how many desktops you have configured. To configure the desired number of desktops, enter in **Screen qty.** and select the desired number of desktops.

To modify the parameter set of one desktop, select the option **Screen** followed by the number of desktop that you want to configure, in example, to modify the desktop 1, choose **Screen 1**.

2.1.1.1.1 SCREEN->VISUALIZATION->PARAMETERS->SCREENx

Inside this menu, you can configure the desired parameters to show in the selected desktop.

Depending on the desktop configuration, you will see the next options:

- **Parameter 1.**
- **Parameter 2.**
- **Parameter 3.**
- **Parameter 4.**
- **Parameter 5.**
- **Parameter 6.**
- **Parameter qty.**

Please note, that parameter are numbered from left to right and from up to down, it means that parameter in top left position of the screen is **Parameter 1**, parameter at the top right position is **Parameter 2**, and so on.

If you want to modify the displayed parameter of one position, simply choose the selected position (**parameter 1, parameter 2,...**) and the available parameters list will be displayed to select the desired value.

At last, it is possible to switch the parameter quantity per screen, and with it, the representation of them, entering **Parameter qty.**, 4, 5 or 6 parameters configurations are allowed:



6 Parameter configuration

5 Parameter configuration

4 Parameter configuration

IMPORTANT INFORMATION:

When a desktop is configured to show 5 parameters, the top parameter cannot be configured and always be set to vehicle speed, only the other 4 parameters can be configurable.

In some values, the parameter text starts with the !Character, this means that this is a requested or calculated value.

Not all parameters are available for all engine ecus, to know which parameters will be available for your engine ecu, please contact with us at: info@autopolar.net

2.1.1.2. SCREEN->VISUALIZATION->ADVANCED

From this screen, you can access to the advance characteristics of Polar FIS, the next options are available:

- **Boost options.**



- **!Boost options.**
- **Oil options.**
- **Tank capacity.**
- **Press. units.**
- **Torque adj..**
- **Lambda opt.**
- **Emul. BT.**

Boost options: From this screen you can select the desired bus to read the boost pressure, there are 4 options available:

- **Automatic:** PolarFIS will switch the optimal bus to read it.
- **Infort x1:** PolarFIS will use the infortainment bus for read boost pressure.
- **Infort. x2:** PolarFIS will use the infortainment bus, but reading will be multiplied by 2.
- **Diagnostic:** Reading will be done from the diagnostics bus.

!Boost options: Configures the reading of the engine ecu demanded boost pressure, there are 2 options:

- **Absolute:** Reading will not be altered..
- **Relative:** Atmospheric pressure will be subtracted from the read value.

Oil options: Configures the bus from which the oil temperature will be read, there are 3 options:

- **Automatic:** PolarFIS will switch the optimal bus to read it.
- **Infort x1:** PolarFIS will use the infortainment bus for read.
- **Diagnostic:** Reading will be done from the diagnostics bus.

Tank capacity: Use it to obtain the best accuracy in the remaining fuel liters parameter. Due to the vehicle does not indicate readings of more than 52 liters, it is recommended that if your fuel tank exceed of 52 liters, you configure it.

Prior to make this adjustment, it is requested that fuel tank is full and you know the capacity of it in liters, due to this will be required in screen.

Press. units: From this screen you can choose the desired units for pressure readings from:

- **Mbar**(Millibar).
- **Bar.**
- **PSI.**

Torque adj.: Used in engine tuned vehicles in which the torque is rescaled and this results in wrong torque or power readings in Polar FIS. If you see that your vehicle does not show the maximum torque

or power values indicated by your engine tuner, use that option to introduce your stock and actual (tuned) torque in order to get a more exact reading of torque and power.

Lambda opt.: Configure the mode of Lambda value, there are 3 options available:

- **Standard:** The value is represented like read from engine ecu.
- **AFR:** The value showed is the result of multiply the engine ecu reading by 14,7.

Emul. BT: Here, you can enable or disable the function of White dot FIS hands free unit compatibility. If your vehicle has a BT handsfree unit for red dot FIS, you can see the **Telephone** menu in the FIS screen, but if you install a BT hands free unit for white dot FIS, this menu will not be available anymore, enabling that function, PolarFIS will make the needed conversions, to show the **Telephone** menu, with a White dot FIS unit installed.

2.1.1.3. SCREEN->VISUALIZATION->NAME.

Select this option to choose the desired PolarFIS screen name in the FIS. Once you enter, next screen will be shown:



Inside this screen, using the UP and DOWN buttons, you can modify each letter of the text, modify the first character, and after that make a short press of OK button, this will allow you to modify the next character, and each OK short press will change the character to edit. Once you have finished editing the text, press and holding OK button until a screen prompts asking you to change the name.

The maximum character number is 10, so once you are modifying the character number 10, a short press of the OK button will return to the first character.

2.1.1.4. SCREEN->VISUALIZATION->LANGUAGE

From this screen, you can select the desired language of PolarFIS screen. Before to explain how to configure, please note that there are 2 PolarFIS firmware versions for Red dot FIS, depending on language:

- **RZ1:** Contains the next languages:
 - **English.**
 - **French.**
 - **Spanish.**
 - **Italian.**
 - **Portuguese.**

- **RZ2:** Contains the next languages:
 - **German.**
 - **Czech.**
 - **Danish.**
 - **Romanian.**
 - **Slovak.**
 - **Polish.**

Once you enter to the language selection screen, you will see first the option **Automatic**, followed by the languages available for your firmware version. If **Automatic** is selected, PolarFIS language will be the same as configured in the FIS screen. If you choose other option than **Automatic**, that overrides the FIS language and switch the PolarFIS language to the selected one.

2.1.2. SCREEN->POLAR BUTTONS.

Access to this screen to modify the buttons functions while FIS screen is displaying Polar FIS.

Once you enter in that screen, you will see the list of configurable buttons, select which you desire to configure:



- **Up button.**
- **Down button.**
- **Ok button.**

After select the desired button, a list with all available functions for this button will be displayed:

- **Off:** No function for this button.
- **Screen -:** Switch desktop -.
- **Screen +:** Switch desktop +.
- **Voice control:** Voice control.
- **Volume -:** Decrease audio volume.
- **Volume +:** Increase audio volume.
- **Track -:** Previous audio track.
- **Track +:** Next audio track.

IMPORTANT INFORMATION:

Due to there are several models and possible coding for Radio/Navigation units, it's not possible to guarantee the VOLUME, TRACK and VOICE CONTROL functions will work in all vehicles.

However, it will work in most of the vehicles.

2.1.3. SCREEN->AUDIO BUTTONS.

Access to this screen to modify the buttons functions while FIS screen is displaying Audio menu.

Once you enter in that screen, you will see the list of configurable buttons, select which you desire to configure:

- **Up button.**
- **Down button.**
- **Ok button.**

After select the desired button, a list with all available functions for this button will be displayed:

- **Off:** No function for this button.
- **Voice control:** Voice control.
- **Volume -:** Decrease audio volume.
- **Volume +:** Increase audio volume.



- **Track -**: Previous audio track.
- **Track +**: Next audio track.

IMPORTANT INFORMATION:

Due to there are several models and possible coding for Radio/Navigation units, it's not possible to guarantee the **VOLUME, TRACK and VOICE CONTROL** functions will work in all vehicles.

However, it will work in most of the vehicles.

2.2. TVFREE

Enable it to activate the video in motion playback.

Please note that if you do not go to play video, it is recommended to have Tvfree disabled, due to what this function do is disable the messages from the vehicle to the navigation unit indicating the vehicle speed. This means that it can affect to the navigation accuracy (in low satellite visibility areas)

Due to that reason, every time ignition is switched off, **Tvfree** option is disabled.

2.3. STOPWATCH

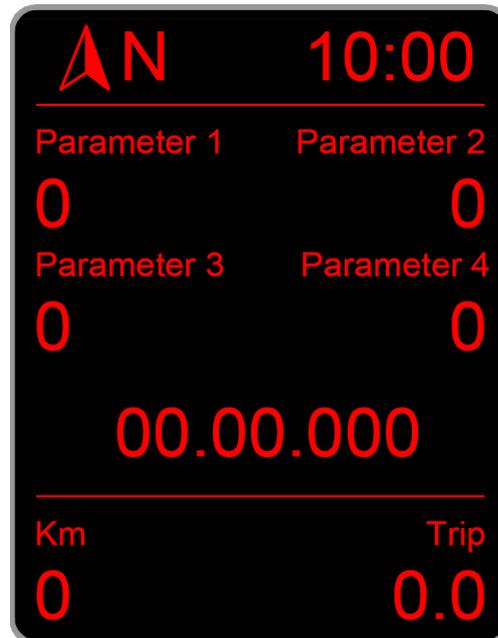
From this screen you will access to the available stopwatch modes.

- **Acceleration**: To measure time between 2 desired speeds.
- **Lap**: To measure lap times.

Acceleration stopwatch: This stopwatch has the next configuration options:

- **Start speed**: Introduce here the speed at which stopwatch start.
- **End speed**: Introduce here the speed at which stopwatch stops.
- **Start**: Start stopwatch.

Once you start the stopwatch, the acceleration stopwatch screen will be shown. The stopwatch does not start until the starting speed is not reached. If you want to measure from stopped vehicle, switch 0 as start speed, and the stopwatch will start once the vehicle start movement.

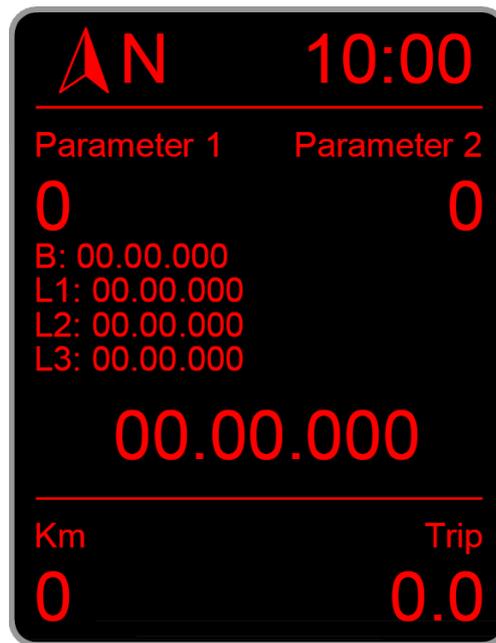


As can be seen in the picture, in the top of the screen, the first 4 parameters of the active desktop are shown, and in the bottom, the stopwatch time is indicated. If there is any key configured to switch desktop, it will change the desktop displayed.

If after a measure you want to do another one, it is not necessary to exit from stopwatch screen, simply press and hold the OK button unit stopwatch time resets to 00.00.000

To exit from stopwatch screen, press and hold the UP or DOWN button

Lap stopwatch:In this stopwatch mode, the next screen will be displayed:



As can be seen in the picture, in the top of the screen, the first 2 parameters of the active desktop are shown, and followed by the next data:

- B: 00.00.00 – Indicates the best lap time.
- L1: 00.00.000 – Indicatethe antepenultimate lap time.
- L2: 00.00.000 – Indicatethe penultimate lap time.
- L3: 00.00.000 – Indicatethe last lap time.

At last, in the bottom of the screen, the stopwatch time is shown.

To start the stopwatch, press the OK button, and time will start, after that, every OK button press will mean a lap. If you want to restart the stopwatch, like in acceleration mode, simply press and hold the OK button, and also to exit from stopwatch press and hold the UP or DOWN button.

2.4. COMFORT.

Inside this screen, you can configure the comfort options of Polar FIS, depending on your vehicle configuration, the next functions will be available:

- **Mirrors:** Configure the automatic mirror dipping function when parking.
- **Blinkers:**Configure the number of blinks for comfort turn signals.
- **Parktronic FIS:**Enable or disable the Parktronic sensor representation in FIS screen.



- **Windows:** Configure all Windows related functions.
- **Parktronic RNS:** Enable or disable the Parktronic OPS emulation.
- **Climatronic:** Enable or disable the Climatronic information in RNS screen.

2.4.1. COMFORT->MIRRORS

Access this screen to configure the automatic mirror dipping function. Inside this screen, you will find the next options:

- **Mode:** Configure the mode of functioning.
- **Position adjust:** Configure the mirror *Driving* and *Parking* position.
- **Offset:** Positioning fine adjustment.
- **Offset mult.:** Positioning vast adjustment.

Mode: Inside this screen, you can configure the mode of mirror dipping feature, there are 3 possible configurations:

- **Off:** Deactivated.
- **Manual:** Enabled only when mirror switch is in R position.
- **Auto:** Available only when manoeuvre is signaled with the passenger side blinker, independently of the mirror switch position.

In Manual mode, it is required the mirrors switch in R position, in that case, when you engage the reverse gear, passenger mirror will go down to *Parking* position, and when reverse gear is disengaged, mirror will go up to the *Driving* position

Automatic mode, is similar to **Manual** mode, but, to enable it is required to signalize the manoeuvre of parking with the passenger side blinker, once you signalize with the blinker, the passenger mirror will go down to *Parking* position when reverse gear is engaged, and goes up to driving position when reverse gear is disengaged. This will be done automatically until the vehicle doesn't exceed 20 Km/h speeds, if you drive above that speed, PolarFIS will understand that the Parking manoeuvre is finished and you are on the road, and for the next Parking manoeuvre, you must signalize the manoeuvre with the blinker again.

NOTE: If you have installed PolarFIS in your vehicle, it will be not possible to configure the **Mode** until you do not configure the mirror *Driving* and *Parking* positions.

Position adjust.: From this option, you can configure the *Driving* and *Parking* mirror positions. To do it, enter in this screen and follow the next steps requested on screen.

- Select the R position in the mirror switch.



- Place the passenger mirror into *Driving* position (this is the mirror position that you use to drive).
- Place the passenger mirror into the *Parking* position (this is the desired position when you go to park your vehicle).
- Switch desired **Mode**: The previously described modes.

Offset: Due to vehicles that has no Factory fitted the automatic mirror dipping feature does not have encoder to indicate the mirror position, PolarFIS use time base to positioning the mirror. Unfortunately this is not the best mode for positioning, so this means that in some vehicles after an up and down mirror cycle it does not return to its original position

If you note that after some up and down mirror cycles mirror goes more and more lower, you must switch a positive offset value.

If you note that the mirror goes more and more higher, the offset value must be negative.

Unfortunately, there is not an exact value for all vehicles, so the best way is try to modify offset value one by one and test with some up and down cycles until you find the correct adjustment.

Offset mult.:In the rare case that you have reached the offset maximum value and the mirror still does not reach the original position, this value must be modified. This value is a multiplier for the offset value, which means, that in example if you have set the **Offset** value to 5, and **Offset mult.** Value to 1, the final offset value will be $5 \times 1 = 5$. If you change **Offset mult.** to 2, the final offset value will be $5 \times 2 = 10$.

IMPORTANT INFORMATION:

There is a minimum ecu numbers that are not compatible with the mirror dipping feature which can result in:

- **Automatic mode would not work if R position is not selected in the mirror switch.**
- **Full malfunctioning of mirror dipping feature.**

2.4.2. COMFORT->TURN SIGNALS.

From this screen you can select the number of blinks for the Comfort turn signals, the available configuration values are:

- **3 Blinks.**
- **4 Blinks.**
- **5 Blinks.**
- **6 Blinks.**



- **7 Blinks.**
- **8 Blinks.**
- **9 Blinks.**
- **10 Blinks.**

IMPORTANT INFORMATION:

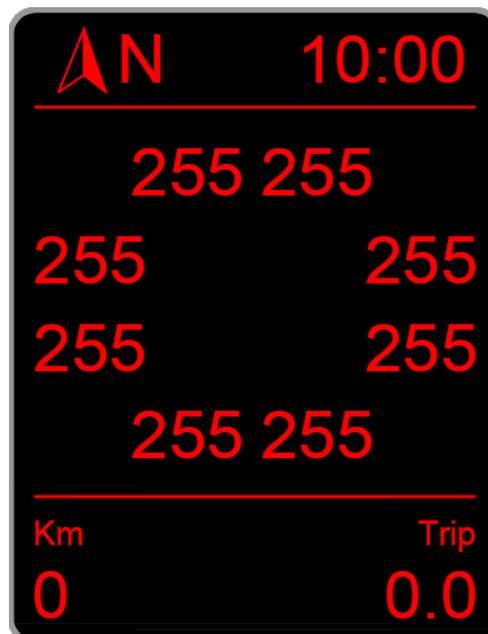
When more than 3 blinks are selected, PolarFIS disable the comfort turn signals option in the Bordnetzecu and start to manage the blinks by itself.

If you remove PolarFIS from the vehicle with more than 3 blinks configured, this will result that comfort turn signals is deactivated and you will only have one blink, so if you want to remove PolarFIS from your vehicle, we recommend to select 3 Blinks prior to remove Polar FIS.

2.4.3. COMFORT->PARKTRONIC FIS.

From this screen you can activate or deactivate the function to show the Parktronic sensor measurement in FIS screen.

With that feature activated, every time you switch on Parktronic and FIS is displaying the PolarFIS main screen, it will turn to the Parktronic visualization screen which is as follows:





In that screen, are shown all distances expressed in millimetres that are measured by each Parktronic sensor. As can be seen in the sample picture, the first text line (top) shows the value for left and right front centre sensors. The next line shows the left and right front sensors. Next line shows left and right rear sensors, and the last one (bottom) shows the left and right centre rear sensors. In this picture you can see the distance set to 255mm. which is the maximum value measured by the Parktronic sensors, this means that no obstacles are seen,

2.4.4. COMFORT->WINDOWS.

From this screen, you can enable or disable all functions related with vehicle windows, there are two features:

- **One touch open.**
- **Auto. closing.**

One touch open:When you unlock your car using the remote, if hold pressed the open button, after a time, the windows will start to go down, but if you release the open button, windows will stop. Enabling this feature, windows will reach the full open position even if you release the button

Auto. closing:If you activate this featured, all Windows will be closed automatically after a period of pre-programmed time, once you closet he car with the remote. That time will be requested you to configure after enable the feature.

2.4.5. COMFORT->PARKTRONIC RNS

In vehicles equipped with Parktronic PDC and RNS navigation unit, Parktronic screen cannot be visualized in RNS screen. Activating this feature, PolarFIS will emulate the Parktronic OPS ecu to enable the display of Parktronic in RNS screen.

IMPORTANT INFORMATION:

This feature requires a diagnostics communication active in all non-Skoda Brand vehicles. Because that, it is not recommended to use any diagnostic tool in the vehicle OBD-II port, such as VCDS during Parktronic screen is shown in the RNS display or this will cause communication issues and a PolarFIS reset can be necessary .



2.4.6. COMFORT->CLIMATRONIC.

In vehicles with RNS fitted, the Climatronic adjustments are not displayed in the RNS display, enabling this feature, Climatronic adjustments will be displayed in RNS navigation unit screen.

IMPORTANT INFORMATION:

This feature is only compatible with Skoda Brand vehicles.

Due to Climatronicecu technical limitations, the next adjustments cannot be displayed:

- Heated seats.
- Deactivation of clappers

2.5. DIAGNOSTICS

From this screen, you can do the most common coding tasks, like with a diagnostics tool. Please note that only thing that PolarFIS do is modify the ecu coding and if function is not supported by your ecu, it will be not possible to enable the feature

The available options are:

- **Rain sensor:**Modify the automatic rain sensor sensibility percentage.
- **Lights sensor:** Modify the automatic lights sensor percentage.
- **DRL lights:** Enable or disable the Daytime Running Lights, depending on the vehicle configuration, may be up to 4 available options:
 - o **Off:** Deactivated.
 - o **Position lights:** Position lights are used.
 - o **Fog lights:** Front fog lights are used.
 - o **On w/turn sign.:**Indicate if lights can be active with turn signals active.
- **Turn lights:**enable or disable the cornering lights, depending on vehicle configuration, may be up to 3 options;
 - o **Off:** Deactivated.
 - o **Fog lights:** Front fog lights are used.
 - o **Off w/reverse:** Indicate if lights can be active while reverse gear is engaged.



- **American DRL.:** Activate and deactivate American Daytime Running Lights and modify its brightness.
- **2nd Fog light:** Activate or deactivate second rear fog light if car has it equipped.
- **Warning lights:** activate or deactivate the warning lights in case of hard braking:
 - o **Off:** Deactivated.
 - o **Brake:** Active using rear braking lights.
 - o **Turn signals:** Active using turn signal lights.
- **Rain closing:** Activate or deactivate the automatic rain closing feature
 - o **Off:** Deactivated.
 - o **Single:** Feature is active, but must be confirmed from the FIS configuration menu in each ignition switch on.
 - o **Permanent:** Feature permanently activated.
- **10Kmh closing:** Activate or deactivate the automatic door closing when vehicle reach 20 Km/h of speed:
 - o **Auto-Lock:** When vehicle reach 20 Km/h door locks will be automatically closed.
 - o **Auto-Unlock:** When vehicle key is removed from the key fob, door lock will be automatically opened.
- **One touch closing:** Activate or deactivate the automatic window closing with the remote.
- **RNS510 menu:** Activate or deactivate the RNS-510 navigation unit hidden menu.

IMPORTANT INFORMATION.:

The features described on this section are not available on all ecus, it depend on the vehicle ecu versions.

2.6. VERSION.

Inside this screen, you the Hardware and Software version numbers as well as the box serial number are displayed.

The screen shown will be similar to the next picture:



Press any key to exit to main menu

2.7. INFO.

In this screen, you can see information about car ecus:

- **Engine ECU:**Shows the information about the Engine ecu.
- **BordnetzECU:**Shows the information about the Bordnetzecu.
- **Comfort ECU:**Shows the information about the Comfort ecu.
- **Gateway ECU:**Shows the information about the Gateway ecu.
- **Debug:**Internal box debug information only useless in case of technical assistance needed.

2.8. UPDATE.

Use that option to update you PolarFIS firmware, prior to choose **update**, connect PolarFIS to your computer using a USB cable and then select **Update** from the PolarFIS configuration menu, you will observe that PolarFIS menu will disappear from FIS screen, do not worry, this is normal.

Now, using Internet Explorer x86 (x64 version is not compatible), enter in the next link:



<http://www.auto-polar.com/index-load-support.htm>

In the link there are also instructions to configure Internet Explorer in the case that you experience issues updating.

Once you have finished updating the box, simply disconnecting the USB cable and PolarFIS menu will be available again in the FIS screen.

2.9. RESET.

Use that option to reset your PolarFIS in case of any issue, or if it is indicated by our technical service. Do not worry about your adjustments, due to they will be loaded again, because are stored in the PolarFIS internal memory.

2.10. SWITCH OFF.

Use that option to switch off PolarFIS and remove PolarFIS menu from FIS screen. After choose, a message requesting confirmation will be shown, choose **Yes**, and then switch off the ignition and remove the key from the key fob. At last, close the car with the remote and wait for approximately 2 minutes. After that, you can switch ignition on again and PolarFIS menu will disappear from FIS screen.

To recover PolarFIS menu, simply switch on ignition and press and hold OK button during 20 seconds, with it, PolarFIS menu will be available again.

2.11. FACTORY SETTINGS.

Use that option to restore all PolarFIS settings to Factory defaults, please note that this will reset all adjustments that you have done in you Polar FIS.



3. **NOTES**

PolarFIS will register itself automatically into the Gateway module, so it is not necessary to do it with any diagnostics tool.

Due to some parameters are read using diagnostics communication, please do not connect any diagnostics tool or gauge to the vehicle OBD-II port while FIS screen is displaying PolarFIS menu. In case that you want to use OBD-II port, please prior to do that exit from PolarFIS screen in example to MFD screen, if you do not do that, it will resume in communication faults in diagnostics tool as well as in Polar FIS, and a reset can be necessary, also diagnostics tool will be unable to connect to vehicle.

Due to hardware requisites, PolarFIS is placed between gateway and Infortainment bus, so if you want to remove PolarFIS from your vehicle, be sure to remove its cable as well, or it can cause battery drainages.

**4. ANNEX 1: PARAMETER LIST.**

TEXT	MEANING
Km/h	Vehicle real speed
Out. °C	Vehicle outside temperature
RPM	Engine rpms
Batt. V.	Battery voltage
Fuel Lit.	Fuel liters in fuel tank
!Oil °C	Calculated engine oil temperature
Oil °C	Measured engine oil temperature
Amb. °C	Ambient (engine bay) temperature
Intake °C	Intake temperature
Coolant °C	Engine coolant temperature
Motor °C	Coolant temperature at the engine outlet
Radiat. °C	Coolant temperature at the radiator outlet
Fuel °C	Fuel temperature
!Boostmb	Requested boost pressure
Boost mb	Measured boost pressure
Atm. mb	Atmospheric pressure
Intake mb	Intake manifold pressure
!Fuel bar	Requested fuel pressure
Fuel bar	Measured fuel pressure
F. rail bar	Fuel rail pressure
Brake bar	Brake pressure
Brake b. bar	Brake booster pressure
!Load %	Calculated engine load
Load %	Measured engine load
M.A.F. 1	Mass Air Flow Bank 1
M.A.F. 2	Mass Air Flow Bank 2
Pedal 1	Accelerator pedal sensor 1
Pedal 2	Accelerator pedal sensor 2
Valve 1	Accelerator valve sensor 1
Valve 2	Accelerator valve sensor 1
Torq. nm	Engine actual torque
Power CV	Engine actual power
Oil level	Engine oil level in mm. above alarm level
M. oil lev.	Engine minimum oil level reached in mm. above alarm level
Inj. tim.	Injection timing
A. °BTDC	Ignition angle+B52
Mis.	Misfire sum in all cylinder
Mis. 1	Misfire sum cylinder 1
Mis. 2	Misfire sum cylinder 2



TEXT	MEANING
Mis. 3	Misfire sum cylinder 3
Mis. 4	Misfire sum cylinder 4
Mis. 5	Misfire sum cylinder 5
Mis. 6	Misfire sum cylinder 6
Mis. 7	Misfire sum cylinder 7
Mis. 8	Misfire sum cylinder 8
Mis. 9	Misfire sum cylinder 9
Mis. 10	Misfire sum cylinder 10
Mis. 11	Misfire sum cylinder 11
Mis. 12	Misfire sum cylinder 12
D. 1 °KW	Angle delay cylinder 1
D. 2 °KW	Angle delay cylinder 2
D. 3 °KW	Angle delay cylinder 3
D. 4 °KW	Angle delay cylinder 4
D. 5 °KW	Angle delay cylinder 5
D. 6 °KW	Angle delay cylinder 6
D. 7 °KW	Angle delay cylinder 7
D. 8 °KW	Angle delay cylinder 8
D. 9 °KW	Angle delay cylinder 9
D. 10 °KW	Angle delay cylinder 10
D. 11 °KW	Angle delay cylinder 11
D. 12 °KW	Angle delay cylinder 12
Exh. 1 °C	Exhaust gas temperature bank 1
Exh.2 °C	Exhaust gas temperature bank 2
Catal. °C	Catalyst temperature
Lambda 1	Lambda factor bank 1
Lambda 2	Lambda factor bank 2
LTFT1-3	Fuel trim bank 1
LTFT2-4	Fuel trim bank 2
IN75 %	Requested N75 valve duty cycle
N75 %	Measured N75 valve duty cycle
Inj. m/str	Injection quantity
St. °BTDC	Injection start
Dur. °KW	Injection duration
St. q. nm	Injection Start quantity
D.1 m/str	Injection quantity cylinder 1
D.2 m/str	Injection quantity cylinder 2
D.3 m/str	Injection quantity cylinder 3
D.4 m/str	Injection quantity cylinder 4
D.5 m/str	Injection quantity cylinder 5
D.6 m/str	Injection quantity cylinder 6
D.7 m/str	Injection quantity cylinder 7
D.8 m/str	Injection quantity cylinder 8



TEXT	MEANING
D.9 m/str	Injection quantity cylinder 9
D.10 m/str	Injection quantity cylinder 10
D.11 m/str	Injection quantity cylinder 11
D.12 m/str	Injection quantity cylinder 12
EGR1m/str	EGR valve duty cycle bank 1
EGR2m/str	EGR valve duty cycle bank 2
!Control %	Requested charge pressure control
Control %	Measured charge pressure control
EGT °C	Exhaust gas temperature
DPF1 °C	Diesel particle filter temperature bank 1
DPF2 °C	Diesel particle filter temperature bank 2
DPF1 Ash L.	Diesel particle filter oil ash volume bank 1
DPF2 Ash L.	Diesel particle filter oil ash volume bank 2
DPF %	Diesel particle filter filling level
Regen.	Diesel particle filter regeneration counter
DPF in °C	Diesel particle filter input temperature
DPF out °C	Diesel particle filter output temperature
Side G	Vehicle side G force
DPF Km.	Distance driven since last DPF regeneration
AdB tank	AD-BLUE Filling level
AdB used	AD-BLUE grams used
!F. rail bar	Requested fuel rail pressure
!Dur. °KW	Requested injection duration
!St. °BTDC	Requested injection start
!Lambda	Calculated lambda factor
!DPF g.	calculated DPF filling
DPF status	DPF regeneration status
DPF mb	DPF differential pressure
Lambda I 1	Lambda adaptation at idle bank 1
Lambda I 2	Lambda adaptation at idle bank 2
Lambda P 1	Lambda adaptation partial bank 1
Lambda P 2	Lambda adaptation partial bank 2
!Torq. nm	calculated engine actual torque
Torque DSG nm	DSG torque reduction
Torque red.	Torque reduction
EGT S1 °C	Exhaust gas temperature sensor 1
EGT S2 °C	Exhaust gas temperature sensor 2
EGT S3 °C	Exhaust gas temperature sensor 3
EGT S4 °C	Exhaust gas temperature sensor 4
Gen. load	Generator load
Alt. power W	Alternator power
HVAC nm	HVAC compressor torque
HVAC bar	HVAC compressor pressure



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TEXT	MEANING
Long. G	Vehicle longitudinal G force