eSID 03-06

Generation 3

User Guide

extended Saab Information Display (eSID) for Saab 9-3 MY2003-2006

Change Log

2024-11-08 Software version: SR1.0.x (Gen3) SD1.6.x / SE1.6.x (Gen2)	• Initial Version • This manual is valid for all Gen3 HW • This manual is also valid for Gen2 HW if updated to software SD/SE 1.6.x or newer (check under Diagnostics group)

Introduction

eSID 03-06 Gen3 (here referred to as eSID) is an integrated add-on system to the Saab NG9-3 2003-2006 which gives the driver the possibility to read internal hidden performance data from the vehicle on the normal display (SID) together with additional functionality such as one-touch-three-blink-indications, a selectable manual wiper interval function, activation on exterior lights when unlocking the car, comfort mirrors (folding/unfolding with the remote) and the possibility to read all fault codes (not just the engine) in the vehicle and have them displayed on the integrated standard display.

The standard display, SID (Saab Information Display) is controlled by the Infotainment System (more specifically the Infotainment Control Module (ICM) and the SID control panel (SIDC).

The ICM exist in three-different equipment levels:

- ICM1 – No Display
- ICM2 – Monographic/Green Display
- ICM3 – LCD/Color Display

The figure below shows how these three components look like (Example picture equipped with ICM3):

Components related to the SID

The standard functionality is that the ICM unit reads the status of the switches/encoders from SIDC and then controls the output to the SID accordingly.

One of eSID main objectives is to be integrated with the original system and by installing it in between ICM and SID it's possible to switch between ICM and eSID control, making the two systems work side-by-side.

eSID components

The eSID 03-06 Gen3 consists of only one control unit, compared to Gen1/Gen2 which had two control units.

Generation 3:

The third-generation hardware is installed behind the ICM unit with the included adapter harness.

Generation 2:

The second-generation HW is installed behind SID by adding additional wiring in addition to adding one unit in the OBD connector.

This manual is only valid to Gen2 HW if software is 1.6.x or newer! (Released November 2024)

Quiescent current consumption

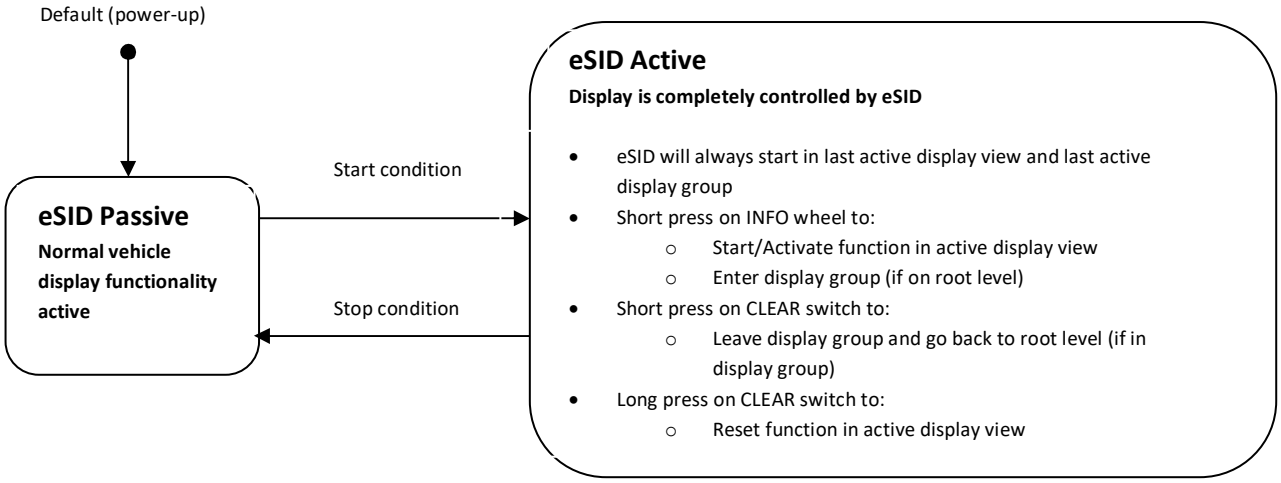
eSID consumes less than 2mA in sleep.

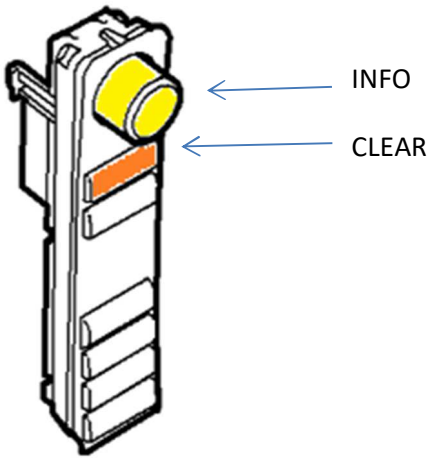
User Interface

Active/Passive state

eSID has two major function states:

1. Passive — Normal vehicle display functionality active
2. Active — Display is completely controlled by eSID





eSID Activation/Deactivation

Transition between Active and Passive state

Switching between the states occurs:

a) If the driver presses the INFO switch on the SIDC for more than 1.5 seconds a switch between active and passive state will occur.
Note! eSID can only go to active state if the Ignition Key is in ON.

b) If a popup warning is triggered to be shown to the driver (Icon and/or text) the standard system requests the information icon in the instrument cluster to be activated ( ). eSID will switch to passive state (if currently in active state) to show the message to the driver.

Example warning that will trigger eSID to go passive

c) When the driver door is opened and the conditions to trigger the welcome message is fulfilled it will switch from passive to active state (and show the welcome message). Welcome message condition is set when car is locked or when car has been standing still for a while and entered sleep mode.

d) If Auto start is enabled it can trigger eSID to go from passive to active state (see separate section)

e) If the Ignition key is removed from the Ignition switch, the eSID will be switched to passive state.

f) If Steering wheel button PHONE is pressed for longer than 1.5 seconds, eSID will switch between passive and active state

g) If vehicle is equipped with Parking Assistance, eSID will switch to active state when car is put in Reverse and all conditions are fulfilled (see separate section)

Auto start

The normal SID display will always be active (eSID passive) when the key is inserted into the Ignition Lock, this to ensure that all warning messages are taken care of before eSID is started.

If Auto start is enabled, eSID switches from passive to active state when vehicle speed goes above 20 km/h if:

- No active warning/icon on the SID
- Driver seatbelt attached
- eSID Intro finished (the first time eSID is inserted it must be activated manually)

Welcome Message

The welcome message consists of a 64x64 orange pixel icon and two rows of text. The text lines can be adjusted in the settings menu and the icon can be changed using an external tool together with a J2534 CAN-interface (can be downloaded from the website).

The welcome message will be shown when the driver door is opened if any of the following conditions has been fulfilled:

- eSID has been to sleep (car has been standing unlocked for a while)
- Driver door has been locked and unlocked.

Languages

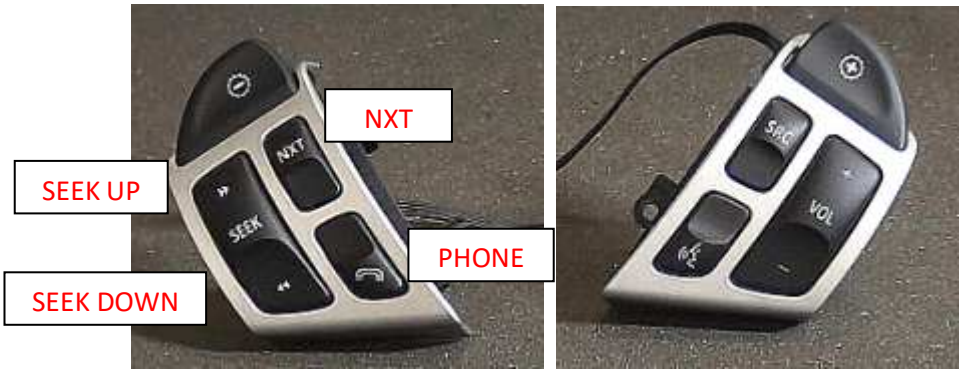
eSID supports the following languages:

- English
- French
- German
- Spanish
- Swedish

All languages are built-in and the default setting is to follow the ICM selected language but can be overridden in the eSID settings.

Steering Wheel Control

It's possible to control the eSID using the steering wheel buttons. In eSID Settings it's possible to select which buttons to use, and if it's always possible or only when AUX audio source is active (to not interfere with radio functionality).



Option	Function
Inactive (default)	No eSID steering wheel control (only controlled using the SIDC Control Panel)
Seek_Nxt	Seek Up (Short Press) – Next View Seek Down (Short Press) – Previous View Nxt (Short Press) – Enter Display Group Nxt (Long Press) – Exit Display Group
Seek_Nxt (Aux)	Same as "Seek_Nxt" but only when AUX is active
Nxt	Nxt (Short Press) – Next View Nxt (Long Press) – Enter/Exit Display Group
Nxt (Aux)	Same as "Nxt" but only when AUX is active
Phone	Phone (Short Press) – Next View

Special Functions

This is a category of features that doesn't use the display to show information but rather improving and/or adding additional features to the vehicle.

Unlock Light

This function will activate exterior light when unlocking the car (instead of the normal "two-blink" on the turn indicators) if all the following conditions are fulfilled:

- Unlock Light Logic value in "eSID Settings" != 0
- All doors are closed
- Vehicle is unlocked with Remote (single press)

Function will deactivate unlock light and re-activate normal exterior light if any of the following conditions are fulfilled:

- Any door is opened
- Vehicle is locked with Remote (single press)
- "Unlock Light Time" activation timer has expired.

It is possible to configure which lights should be activated (Unlock Light Logic) and how long they shall be activated (Unlock Light Time)

Comfort Mirrors

This function enables the mirrors to fold/unfold when locking/unlocking the vehicle (if the vehicle has foldable mirrors). Originally this function only works on long press on Lock on the remote and manual unfold with the switch in the door (or automatic unfold by vehicle speed). With eSID, it is possible to select if the mirrors shall fold on short press or long press when locking the vehicle and they will also unfold when the vehicle is unlocked.

<u>The mirrors will fold if the following conditions are fulfilled:</u>

- Vehicle is locked with Remote (single press or long press depending on eSID Settings)
- All doors are closed
- eSID has learned the mirror positions
  (driver must use the fold/unfold once manually first using the switch in the driver door)

<u>The mirrors will unfold if the following conditions are fulfilled:</u>

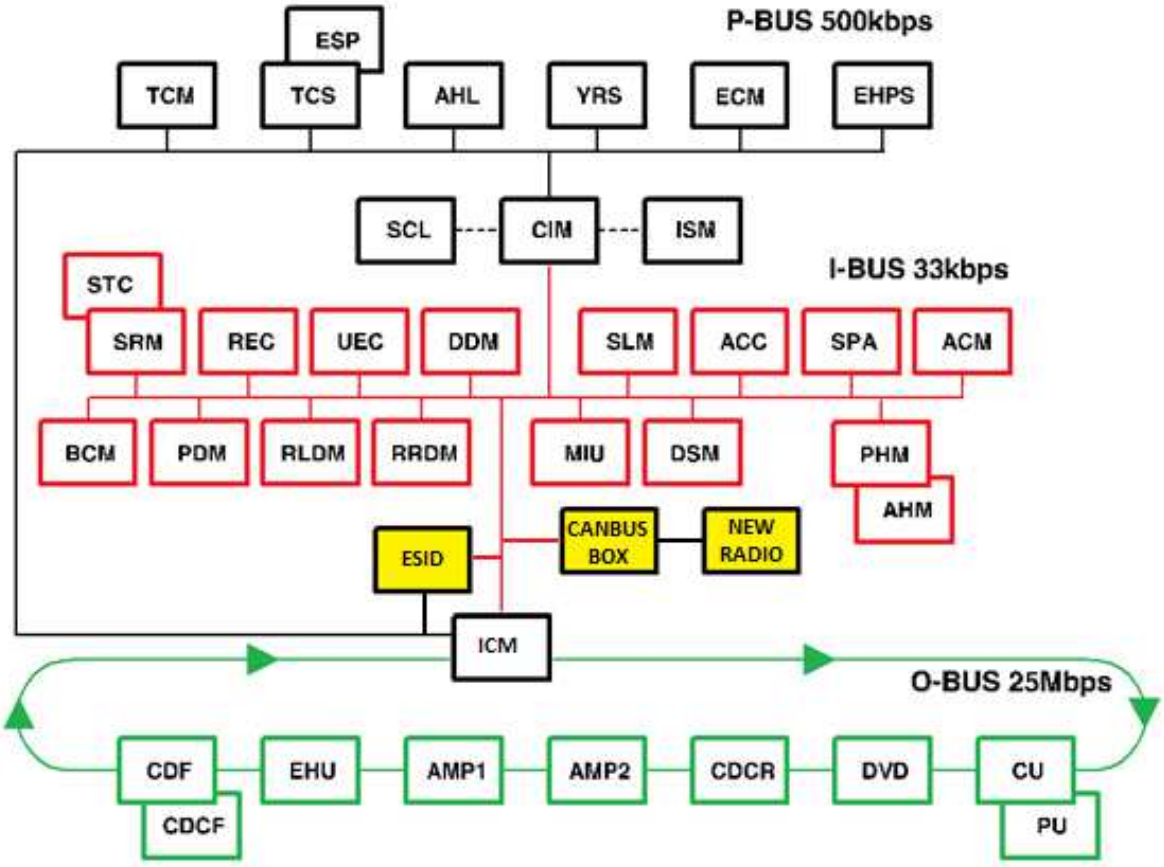
- Vehicle is unlocked with Remote (single press)
- Mirrors was folded by eSID

Radio Interface

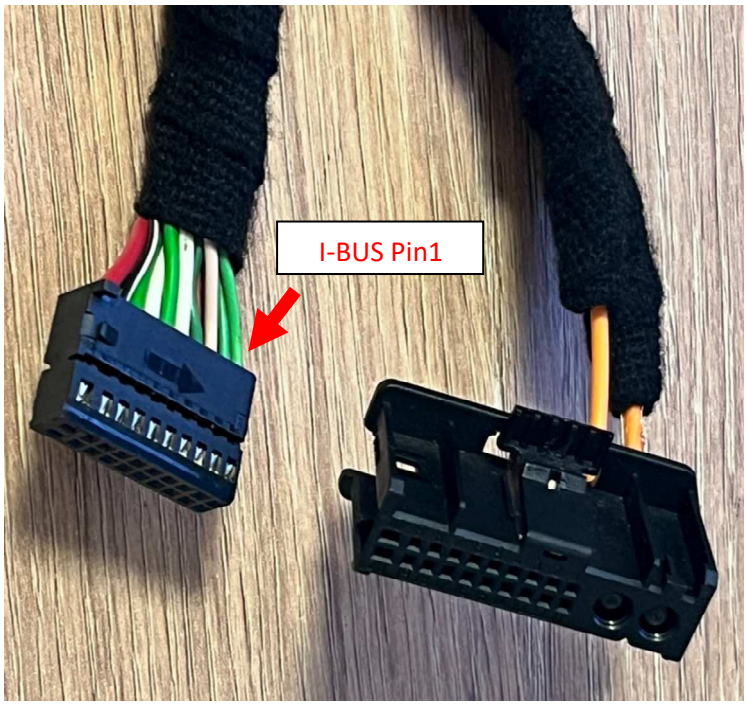
The early Saab NG9-3 (2003-2006) is complicated to install an aftermarket radio in due to the fiber optic infotainment system. There are no “plug-and-play” solutions sold on the market and the customers that wants an aftermarket stereo often install it in parallel with the original system and re-wire almost all the speaker cables to the new system. This solution often lacks steering wheel control.

On the Saab 9-3 2007-2012 it’s much easier on the other hand, no fiber optics and there are many possibilities to fit a double DIN radio with a variety of adapters available (For example: Connect2, InCarTec). These adapters connect to the Infotainment CAN-bus on these later cars and read Power mode, Steering wheel button status, Reverse Gear etc.

With the eSID connected it’s possible to connect these adapters (and also the original radio/nav units) designed for 9-3 2007-2012 to the I-Bus on 9-3 2003-2006 and get the same functions. This does however not solve the speaker wiring and the physical installation issues (and that the ICM must still be present somewhere in the vehicle for the eSID to work), but it for sure makes some parts easier.



The I-Bus to the radio adapter is easiest taken from Pin1 in the ICM connector.



12V Output driver

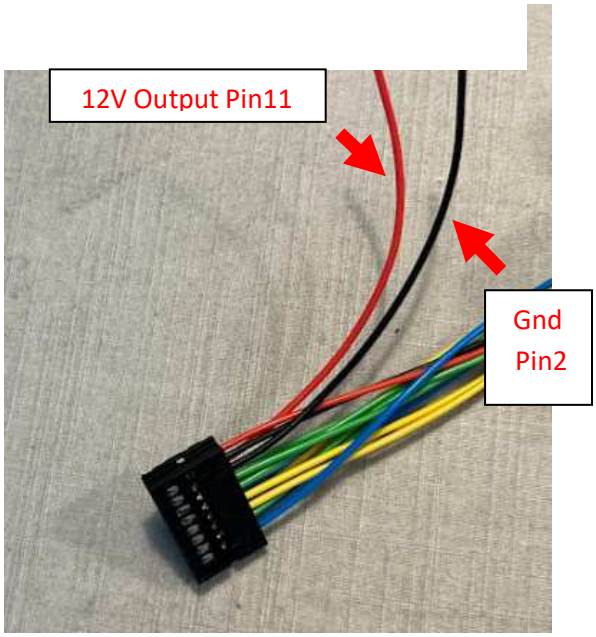
The purpose of this feature is to have a 12V controllable output where the user can configure eSID when to activate it. It can for instance be connected to Engine speed and to be used as a shift-up LED, to Reverse Gear and used for reverse camera input on aftersales stereo or connected to a relay that in turns powers something else (use your imagination). 12V and Ground cables can be found in the eSID Gen3 Adapter harness, see picture.

The different alternatives to control the output driver can be found in “Settings” part of this document.

Note: 12V output driver from eSID is only possible on Gen3 HW. However, it is also possible to control the auxiliary relay in the engine compartment instead of the built-in output driver on the eSID. The auxiliary relay was originally only intended to be used for extra main beam lights. This works on both Gen2 and Gen3 HW, see separate section.

Load (max 200mA)

LED or Relay
(with fly-wheel diode)

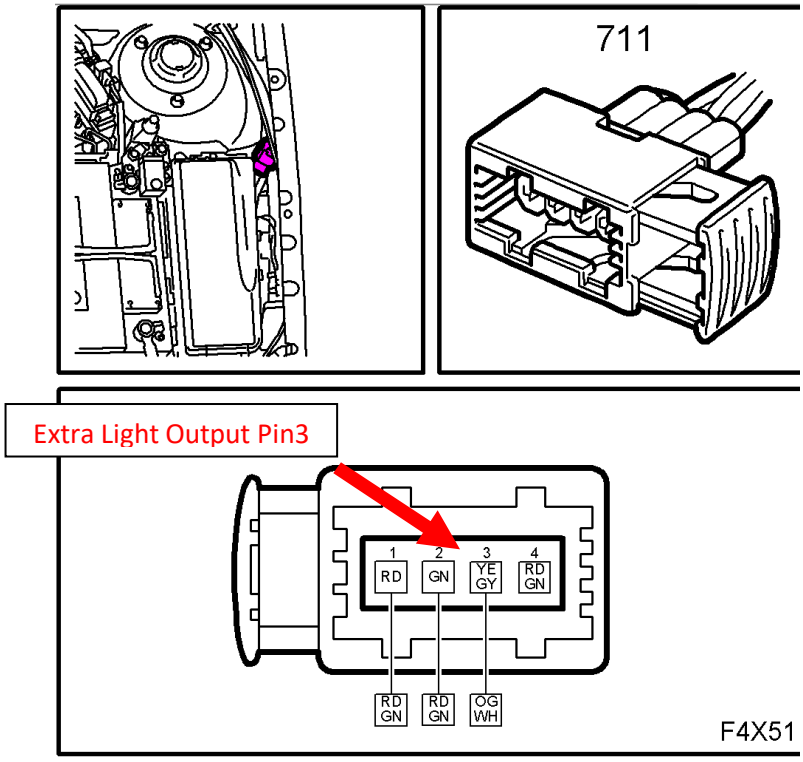


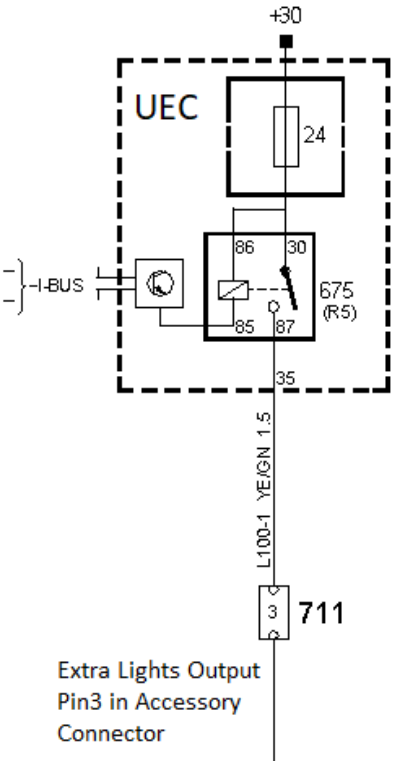
Extra Lights (Auxiliary/Spot Light) Relay

The Auxiliary relay is located in the engine bay by the left of the MacPherson strut tower. Originally this relay can only be activated together with the main beam (controlled by the activation switch on the SIDC panel). eSID can control it in many ways, including the main beam (and eSID also remembers the activation on SIDC from last driving cycle so its not needed to press it every time the car has been started).

It is recommended that the original extra light function is disabled with TECH2 (this is default from factory) so that the “normal control” doesn’t interfere with eSID functionality.

Note: Fuse 24 and Relay R5 must be mounted in the Under-hood Electrical Center (UEC) for the function to work





Turn Signal Three-Blink

When touching the direction indication stalk for a short amount of time (100-500ms), the eSID will give a selectable number of extra blinks in the same direction. If the stalk activation is too long or too short, the extra turn signals will not be activated. Number of blinks can be configured in eSID Settings.

If the driver interrupts the Three Blink function by using the stalk in the opposite direction, then the function is terminated and disabled for three seconds.

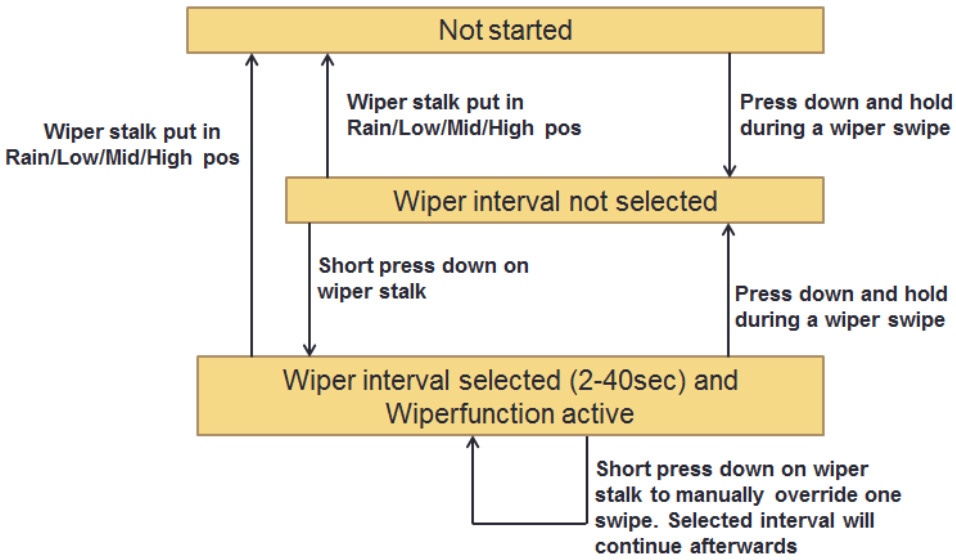
Manual Interval Wiper

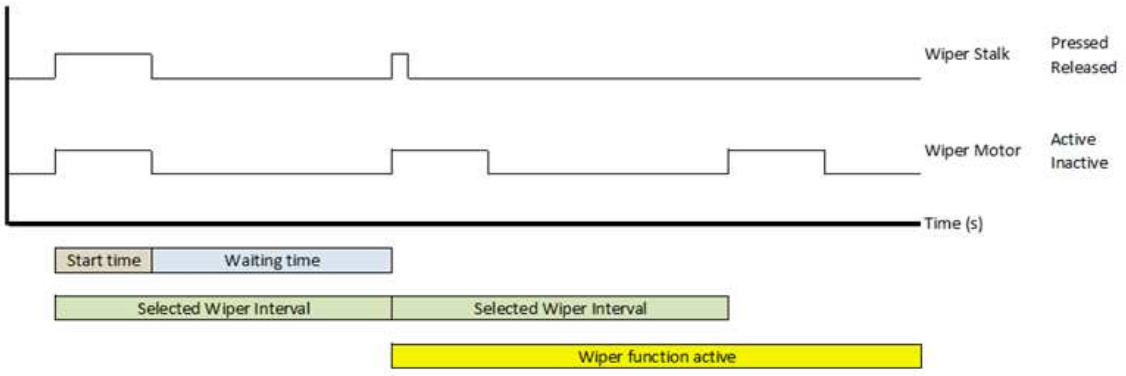
eSID adds a specialized wiper function that lets the user adjust the swipe interval. This works on cars with and without rain sensor, and the sequence is:

1. Press and hold down the wiper stalk during an entire “swipe”. This will reset the interval time
2. When there is enough water on the windscreen to swipe again, do a single press on the wiper stalk (a.k.a. single swipe). Now eSID will hold this interval since the first step above.

When the time has been set, the windscreen wiper will continue to run until the driver moves the wiper stalk upwards into any other position than ”idle” or if the ignition is turned off.

If a vehicle travelling in the opposite direction passes by and totally “splashes” the windscreen, it is just to activate a single swipe to clean the windscreen and the function is still activate and maintains the selected interval.





Automatic Fog Light activation

This function activates the front fog-lights automatically when turning the Main Light Switch to Park position or/and when activating the main beam

Normally the driver needs to manually switch the light switch to ”Park” and press the fog light switch. eSID helps with the activation so the driver only needs to turn the light switch to ”Park”.

When turning to ”Park” from ”Off” or ”Low beam” (and the fog Lights are off), then they will be activated (if configured)

When activating main beam (and the fog lights are off) the fog lights will activated (if configured)

Main Light Switch

Note: Automatic fog light activation in Park is not possible on USA/Canada-vehicles

Automatic Hazard activation

This function activates the hazard light automatically if the driver does a hard deceleration a.k.a. “panic brake”.

Every time the brake pedal is pressed and the speed is greater than 30 km/h, the retardation is calculated and if it is greater than a defined threshold the car will automatically activate the hazard lights. Its possible to change the automatic hazard sensitivity in the eSID Settings.

The hazard lights will be deactivated when the accelerator pedal is pressed more than 25% or any turn indicator is activated.

Note: This function is deactivated if braking starts below 30 km/h or if any turn indicator is activated.

Parking Assistance

When parking assistance is activated and all conditions are fulfilled, eSID will switch to a special parking assistance view and show the measured distance.

Conditions to activate:

- No active warning/icon on the SID
- Driver seatbelt attached
- eSID Intro finished (the first time eSID is inserted it must be activated manually)

Parking distance will be displayed in this order:

- Rear Left
- Rear Middle
- Rear Right

Distance unit is meters or feet depending on Units.

Note! The value from the PAS unit is never lower than 30 centimeters (constant beep). The driver must always ensure a safe distance to other vehicles and objects.

Welcome Message

eSID has a customizable 2-row welcome text + icon, shown when the driving door is opened after the vehicle has been locked or standing still unlocked for a while and entered sleep mode.

The text is possible to configure in the eSID Settings and the icon using a CAN dongle and a utility found on www.esid.se.

Actual Gear

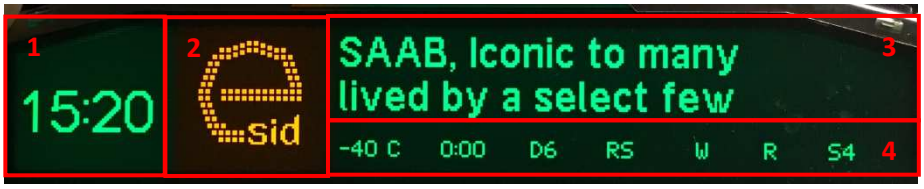
eSID shows the actual gear in the status view on the display on vehicles with automatic transmission. It also shows if the transmission is currently performing an upshift, downshift or when the transmission is in lock-up. Example:

Gear	Explanation
5	Transmission is currently in fifth gear
5<	Transmission is currently in fifth gear but a downshift is in progress
3>	Transmission is currently in third gear but a upshift is in progress
4L	Transmission is in fourth gear in lock-up (this clutch is forced against the front of the converter creating a direct drive from engine to transmission, reduced fuel consumption)

Display

The display is divided into four different segments:

1) Clock Segment – Shows the clock (12H/24H depending on Units configuration)
2) Icon Segment – Shows yellow or red icon
3) Main Segment – Here all the display groups/functions will be showed
4) Status bar Segment – Here some extra useful information will be visible to the driver at all times



Main View

The display views in the are structured in five display groups:

- Favorites
  - 5 selectable favorite display views
- Powertrain
  - Engine and transmission related display views
- Vehicle
  - Non-powertrain related display views
- Diagnostics
  - Diagnostic related display views (Read/Clear fault codes, Force DPF Regen etc.)
  - Internal eSID debug data
  - Software versions
- eSID Settings
  - The settings are saved every time the user leaves the eSID Settings and return to the root level. The values will then be remembered if the battery voltage to eSID is removed.
  - This display group is only available when the vehicle is standstill

Status View

The status view is always visible when eSID is active and is intended to show information to the driver that is always of interest, information that typically has a slow update rate.

- Outside Temperature (C/F °)
- Drive Time (HH:MM)
- Actual Gear *(only Automatic Gearbox, when in Drive)*
- Rain sensor active/inactive (RS)
- eSID Wiper function active (W)
- DPF Regeneration Active (R) *(only 1.9 diesel engines with DPF)*
- Active favorite display view *(F1-F5)*
- Active ICM Audio Source (AUX, FM1, CD, etc)

Display Units

eSID supports three sets of display units (it is not possible to mix between them):

- **Metric**
  - Torque (Nm)
  - Distance (km)
  - Temperature (Celsius)
  - Fuel (Litre)
  - Fuel Consumption (L/100km)
  - Boost (bar/bar)
  - Clock (24H)
  - Pressure (bar)

- **Imperial UK**
  - Torque (Lbft)
  - Distance (miles)
  - Temperature (Celsius)
  - Fuel (Litre)
  - Fuel Consumption (MPG UK)
  - Boost (bar/InHg)
  - Clock (12H)
  - Pressure (bar)

- **US**
  - Torque (Lbft)
  - Distance (miles)
  - Temperature (Fahrenheit)
  - Fuel (US Gallon)
  - Fuel Consumption (MPG US)
  - Boost (psi/InHg)
  - Clock (12H)
  - Pressure (psi)

The display units are changed in the normal SID settings (“Customize” -->)

Display Illumination

eSID reads the status on the built-in light sensor inside the SID and sends this to the ICM. The ICM system believe its communicating with the real SID and send a display illumination request, which eSID in turns passes to the SID. In summary: The display intensity works exactly as usual. This is done automatically and it is not possible to manually override the intensity value when eSID is active.

On some vehicles the ICM software will get “lost” and transmit a too low display illumination when eSID is activated (more common when outside light is very low), then the driver needs to enter night panel mode and then directly exit night panel mode.

If Night Panel is active at the same time as the eSID, then the illumination will be fixed to an extra low intensity value independent on the light sensor status (only visible in the night).

If the real night panel is requested (display completely off), then eSID must first be turned to passive state before activating Night Panel

Display Group: Favorites

The favorites group consists of five selectable views, configurable in “eSID Settings” group. All views found in the other display groups can be configured as favorite. On top of that, it is also possible to configure up to four special views as favorite views, see below. It’s only possible to configure valid display views for the vehicle, for instance it’s not possible to select Diesel Particle Filter views on a vehicle with gasoline engine.

Special Views

The special views consist of four parameters in each view that can be configured in the Settings group, for instance it’s possible to see Torque, Airmass, Power and Battery Voltage together in one special view and four different parameters in another one. In total 16 parameters (4 parameters x 4 special views). It is only possible to select valid parameters for the vehicle, for example it’s not possible to select Lambda on B207 engine (only valid for B284 engine)

Note: There are parameters that are only available in the special views and not in any normal view.

See all the possible parameters in the Settings section of this document.

Display Group: Powertrain

Momentary Fuel

Description

Momentary fuel consumption is calculated every two seconds. If vehicle is standstill with engine running the consumption is extrapolated to one hour.

Enable Criteria

- All Vehicles

Units

- Liter/100km (Metric)
- Liter/hour (Metric)
- Mpg (Imperial UK, US)
- Gal/hour (Imperial UK, US)

User Inputs

N/A

Accumulated Fuel Consumption

Description

The accumulated fuel consumption has two counters, one that resets every trip and one that counts since last time the counter was manually cleared.

A new trip starts when Ignition key has been removed and inserted.

Enable Criteria

- All Vehicles

Units

- Liter (Metric, Imperial UK)
- Gal (US)

User Inputs

- CLEAR resets total accumulated fuel value.

Average Fuel Consumption

Description

The average fuel consumption has one counter and it counts since last time the counter was manually cleared.

Enable Criteria

- All Vehicles

Units

- Liter/100km (Metric)
- Mpg (Imperial UK, US)

User Inputs

- CLEAR resets total average fuel value.

Torque/Power

Description

The actual engine torque is read from the engine controller and the actual power is calculated from the engine torque and the engine speed.

On cars with B207 engines, eSID uses the air mass signal to estimate the torque instead of using the torque signal due to it often being saturated on tuned cars.

The estimated torque is calculated using this formula:

$$Estimated\ Torque\ [Nm] = \frac{Airmass}{Torque\ Factor}$$

Typical torque factor value is 3.1 for gasoline and 2.9 for E85.

It's possible to deactivate the torque estimation in eSID Settings

Enable Criteria

- All Vehicles

Units

- Nm/Hp (Metric)
- Lbft/Hp (Imperial UK, US)

User Inputs

- N/A

Intake Air Temperature / Coolant Temperature

Description

The intake air temperature and coolant temperature are read from the engine controller.

Enable Criteria

- All Vehicles

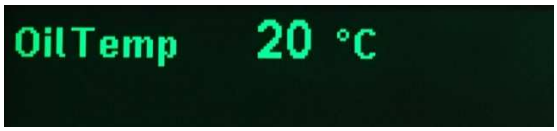
Units

- $^{\circ}C$ (Metric, Imperial UK)
- $^{\circ}F$ (US)

User Inputs

- N/A

Transmission Oil Temperature



Description

The transmission oil temperature is read from the automatic gearbox controller.

Enable Criteria

- All Vehicles with Automatic Transmission

Units

- $^{\circ}C$ (Metric, Imperial UK)
- $^{\circ}F$ (US)

User Inputs

- N/A

Engine Speed / Vehicle Speed

Description

Unfiltered engine speed (Engine management system does already filter it internally though) and unfiltered/uncompensated vehicle speed (the instrument cluster adds a few percentages to always show a higher value than the actual vehicle speed)

Enable Criteria

- All Vehicles

Units

- rpm / kmh (Metric)
- rpm / mph (Imperial UK / US)

User Inputs

- N/A

Maximum Torque / Power

Description

The maximum measured torque and power values since last cleared. The values to the right shows at which engine speed the value was measured.

Enable Criteria

- All Vehicles

Units

- Nm / Hp (Metric)
- Lbft/Hp (Imperial UK / US)

User Inputs

- CLEAR resets both values

Airmass (all except B207)

Description

The actual engine intake air mass is read from the engine controller. The maximum air mass value is the maximum values the eSID has been registered (only D233L in this view)

Enable Criteria

- Vehicle with Engine B284, Z19DTx or D223L

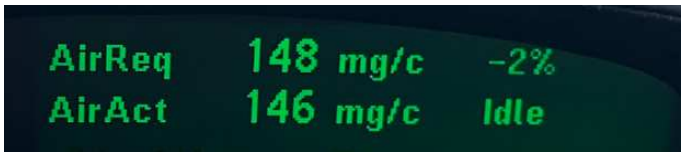
Units

- mg/c (2.2L Diesel)
- g/s (B284, Gasoline turbocharged engines 2.8L)
- kg/h (Z19DTx, Diesel turbocharged engines, 1.9L)

User Inputs

- CLEAR resets maximum air mass value.

Airmass (B207)



Description

The following parameters are read from the engine controller:

- Requested Air mass
- Measured Air mass
- Estimated Air mass

Only two of the parameters can be shown at a time. The difference between requested air mass (in percentage) and the other parameter will be shown if it is active.

Air mass limiter is also shown (great feature when tuning):

- Idle
- Pedal map
- Cruise Control
- Knock Limitation
- Traction
- Manual Gearbox Limit
- Automatic Gearbox Limit
- Max Torque
- Max Turbo Speed
- Max Engine Speed
- Max Vehicle Speed
- Minimum Load (Engine braking)

The maximum read air mass value is shown in a separate view.

Enable Criteria

- Vehicle with Engine B207

Units

- mg/c

User Inputs

- INFO changes which two parameters to see
- CLEAR resets maximum air mass value (if active on display).

Boost Pressure

Description

The actual engine boost/inlet pressure is read from the engine controller. The second value in this view is the Wastegate PWM percentage.

Enable Criteria

- Vehicle with Engine B207, B284 or Z19DTx

Units

- bar (Metric)
- bar/InHg (Imperial UK)
- psi/InHg (US)
- % (percentage)

User Inputs

- CLEAR resets maximum boost value

Ethanol Blend

Description

The estimated ethanol blend is read from the engine controller. BioPower was not officially introduced on MY2003-2006, but it is quite common to install a BioPower firmware if the engine software is tuned, so it has been added as well.

Enable Criteria

- Vehicle with Engine B207 and BioPower firmware

Units

- % (percentage of ethanol in the fuel, 0-85)

User Inputs

- N/A

Diesel DPF Status

Description

This view shows Diesel Particle Filter (DPF) status to know more about regeneration when the engine controller determines when to perform regeneration.

- Soot = Soot mass ratio in DPF, mass per filter volume (%)
- MR = Mileage since last regeneration (km)
- Regeneration Active (0-100%) is shown in the upper right corner and also on the status view.

Enable Criteria

- Vehicle with Engine Z19DTx

Units

- Km (Metric)
- Miles (Imperial UK, US)

User Inputs

- N/A

Diesel DPF Exhaust Temperatures

Description

This view shows the Exhaust Gas temperatures before and after the Diesel Particle Filter (DPF)

Enable Criteria

- Vehicle with Engine Z19DTx

Units

- ^{o}C (Metric, Imperial UK)
- ^{o}F (US)

User Inputs

- N/A

Diesel DPF Diff. Pressure

Description

This view shows the difference pressure over the Diesel Particle Filter (DPF)

Enable Criteria

- Vehicle with Engine Z19DTx

Units

- kPa

User Inputs

- N/A

Diesel EGR / Swirl

Exhaust Gas Recirculation (EGR) is a system that allows the exhaust gases to be recirculated back into the intake manifold. This process leads to a significant reduction in NOx emissions because it reduces the two elements underlying its production: oxygen in excess and combustion temperature.

Swirl flaps produce a swirl alongside the cylinder axle. They are used in diesel vehicles to improve the mixing of the fuel-air mixture at low engine speeds.

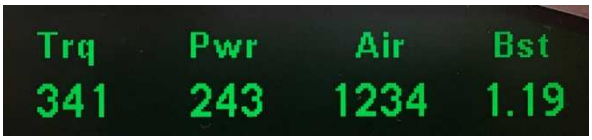
Enable Criteria

- Vehicle with Engine Z19DTx

Units

- Percentage (PWM signals)

Performance



Description

The performance view shows the actual torque, power, air mass and turbo boost. Since it is rather dangerous to look at the display while performing a full pedal acceleration, the values will reset to zero when accelerator pedal is pressed more than 80% and directly after it will show the maximum read value until the accelerator pedal is below 30% for more than 10 seconds, then it will again show the actual value. This means it is possible to perform acceleration and then afterwards look at the maximum values during that acceleration.

Enable Criteria

- All Vehicles

Units

- Same units as in Torque/Power/Air mass/Boost display views.

User Inputs

- N/A

Lambda/AFR

Description

This display view shows the actual Lambda/AFR value (for gasoline).

Enable Criteria

- Vehicle with Engine B284

Units

- N/A

User Inputs

- N/A

Engine Oil Pressure

Description

This display view shows the actual engine oil pressure.

Enable Criteria

- Vehicle with Engine B284

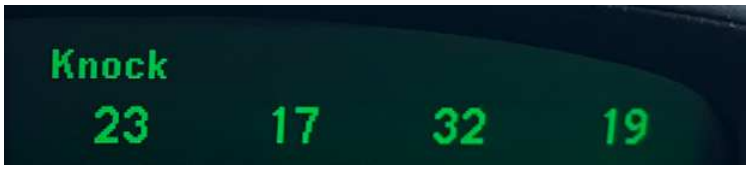
Units

- bar (Metric)
- bar (Imperial UK)
- psi (US)

User Inputs

- N/A

Knock



Description

This display view shows the accumulated number of knocking on each cylinder.

Enable Criteria

- Vehicle with Engine B207

Units

- N/A

User Inputs

- CLEAR resets the both misfire and knock values in the engine controller (B207)

Misfire

Description

This display view shows the:

- Accumulated number of misfires on each cylinder (B207).
- Current number of misfires on each cylinder split into two views one for 1-3 and one for 4-6 (B284)

Enable Criteria

- Vehicle with Engine B207 or B284

Units

- N/A

User Inputs

- CLEAR resets the both misfire and knock values in the engine controller (B207)

Fuel Rail Pressure

Description

This display view shows the actual fuel rail pressure.

Enable Criteria

- Vehicle with Engine Z19DTx

Units

- bar (Metric)
- bar (Imperial UK)
- psi (US)

User Inputs

- N/A

Fuel Pressure

Description

This display view shows the actual fuel pressure and the PWM control signal from the engine controller to the fuel pump (constantly regulated, return-less fuel system)

Enable Criteria

- Vehicle with Engine B284

Units

- bar (Metric, Imperial UK)
- psi (US)

User Inputs

- N/A

Display Group: Vehicle

Drive Time

Description

Drive Time shows the accumulated driving since last reset. When the key is removed from the Ignition Lock the Drive Time will reset, or it can be reset manually.

This value is the same as shown in the Status View, but is possible to reset it in this display view.

Enable Criteria

- All Vehicles

Units

- Hour:Minutes

User Inputs

- CLEAR resets Drive Time to zero.

Temperatures

Description

This display shows the outside temperature and the interior temperature (measured in the roof)

Enable Criteria

- All Vehicles

Units

- $^{\circ}C$ (Metric, Imperial UK)
- $^{\circ}F$ (US)

User Inputs

- N/A

Acceleration

Description

Acceleration shows the time from “Start” to “Stop” which is selected before it is started. “Stop” is either a speed or a distance (201meter / 402meter). Acceleration has the following states:

1. Inactive – Idle/Finished. Function needs to be started to run again
2. Red.Spd – Function is started but speed is too high to start counting, please reduce it first.
3. Go! – Function is running and the clock is ticking.

Enable Criteria

- All Vehicles

Units

- Seconds
- Meter (Metric)
- Miles (Imperial UK, US)

User Inputs

- INFO – Changes “Start/Stop” values. Will force the function to Inactive state
- CLEAR – Resets the old acceleration time and restarts the function with the “Start/Stop” values that are selected.

Battery Voltage

Description

This display view shows the current battery voltage and the lowest registered battery voltage during the last engine start (crank voltage). eSID reads the voltage when the starter is engaged, which gives a good hint about the condition of the battery.

Enable Criteria

- All Vehicles

Units

- Voltage

User Inputs

- N/A

Accumulated Distance

Description

The accumulated distance has two counters, one that resets every trip and one that counts since last time the counter was manually cleared.

A new trip starts when Ignition key has been removed and inserted.

Enable Criteria

- All Vehicles

Units

- km (Metric)
- miles (Imperial UK, US)

User Inputs

- CLEAR resets total accumulated distance value.

Brakes

Description

This function runs in the background always and will record and show the last event where the driver pressed the brake pedal with a vehicle speed higher than 20 km/h. The display will show the duration of the braking, how long brake distance it was and from what speed the braking began and ended.

In the example above it took 25.5 meters and 3.3 seconds to go down from 120 km/h to standstill.

Enable Criteria

- All Vehicles

Units

- meter
- seconds

User Inputs

- N/A

AC Pressure / Fuel Level

Description

This display view shows the actual AC pressure and the measured fuel level in the tank (in percentage).

Typical AC pressure is around 8-12 bar (even higher when started on a very warm day)

Enable Criteria

- All Vehicles

Units

- bar (Metric)
- bar (Imperial UK)
- psi (US)

User Inputs

- N/A

Tire Pressure

Description

This display view shows the actual tire pressure. Only works on vehicles equipped with TPMS (2004 or 2008 system)

It's possible to retrofit the 2008 system on the older cars, see www.esid.se for more details

Enable Criteria

- Vehicles with TPMS

Units

- bar (Metric)
- bar (Imperial UK)
- psi (US)

User Inputs

- N/A

Tire Temperature

Description

This display view shows the actual tire temperature. Only works on vehicles equipped with TPMS 2008 system.

It's possible to retrofit the 2008 system on the older cars, see www.esid.se for more details

Enable Criteria

- Vehicles with TPMS

Units

- ^{o}C (Metric, Imperial UK)
- ^{o}F (US)

User Inputs

- N/A

Automatic Hazard

Description

This view shows the current automatic hazard percentage (while braking) and the maximum measured value. 100% = Hazard lights will be activated.

Enable Criteria

- All vehicles

Units

- % (percentage)

User Inputs

- CLEAR resets maximum value

Display Group: Diagnostics

Read DTC

Description

Read DTC function is able to read all the fault codes in the entire vehicle. The result is a list of codes with ECU and code number. This code number is then needed to look up in Saab WIS (Workshop Instruction System) before start of fault tracing.

This display view has the following states:

1. Disabled – When engine is running or when Ignition is not in RUN the function is disabled
2. Ready – When engine is turned off and Ignition Key is in RUN position the functions is Inactive and ready to be started
3. Running – eSID is reading all the fault codes in all nodes.
4. XXX Codes – eSID finished reading codes and found X number of codes to be displayed.

Note! eSID might find more codes then Tech2 (Genuine Saab dealers analyzing tool), and this is due to the fact that Tech2 is hiding a large amount of fault codes from the customer due to various reasons (might not work so well, or is unreliable). Please inform the eSID developers if such codes are found.

Enable Criteria

- All Vehicles (when the Ignition is On and the Engine is Off)

Units

- N/A

User Inputs

- INFO Short press – Start reading codes (if function is not disabled)
- INFO +/- shows the next/previous code after it is finished

Clear DTC

Description

Clear DTC function is able to clear/erase all the fault codes in the entire vehicle.

This display view has the following states:

1. Disabled – When engine is running or when Ignition is not in RUN the function is disabled
2. Ready – When engine is turned off and Ignition Key is in RUN position the functions is Inactive and ready to be started
3. Running – eSID is erasing all the fault codes
4. Completed – eSID has successfully erased all codes.

Enable Criteria

- All Vehicles (when the Ignition is On and the Engine is Off)

Units

- N/A

User Inputs

- INFO Short press – Start clearing codes (if function is not disabled)

Note: Its normal to get an Airbag warning lamp while clearing the codes.

Force DPF Regeneration

Description

eSID can force a DPF regeneration to start if the normal regen for some reason hasn't been able to complete (too many short driving cycles for instance). This shall be used as a last measure, always use the normal regeneration function if possible and let it finish correctly once started (keep an eye on the "R" in the status view)

eSID will show disable condition if it's not possible to start the Regen, for instance if clutch is applied, brake is applied or vehicle speed is too high.

Note: This function shall only be performed standing still on a flat surface outside, the Engine will run at 3500 rpm constant for over 5 minutes and the DPF will get very warm.

Once the force regen function is finished the soot level will be fixed set to 70% in the engine controller (this is per design) and will trigger the engine controller to perform a normal regen as soon as it can.

Enable Criteria

- Z19DTx Diesel Engine with DPF

User Inputs

- INFO Short press – Start clearing codes (if function is not disabled)

Display Group: Settings

Turn Indications

Description

When touching the direction indication stalk for a short amount of time (100-500ms), eSID will give a selectable number of extra blinks in the same direction.

If the stalk activation time is shorter than 100ms or longer than 500ms, the function will not start.

If the driver interrupts the Three Blink function by using the stalk in left or right direction while its active, then the function is disabled for three seconds (to avoid blinking back and forth)

Enable Criteria

- All Vehicles

Units

- N/A

User Inputs

- INFO – Triggers change to next settings (0=Off, 3-7 Blinks)

Manual wiper interval

Description

The manual wiper function can be configured active or inactive

Enable Criteria

- All Vehicles

User Inputs

- INFO – Triggers change to next settings (Inactive/Active)

Automatic Fog Light activation

Description

Configure the Automatic Fog light function: Inactive, Park, Main beam or Park + Main beam.

Enable Criteria

- All Vehicles

User Inputs

- INFO Press - Enter or Exit Edit mode (***)
- INFO Wheel - Change Setting in Edit mode.

Welcome Message

Description

This view shows the current status of the Welcome message and the welcome message text is adjustable here.

Enable Criteria

- All Vehicles

Change Icon

It is possible to change the welcome icon using a separate utility program found on www.esid.se together with a J2534 compatible CAN dongle.

Change Text

Its possible to change the text using the SIDC and Steering Wheel Control (SWC). Its also possible to change the text using the same utility as for the icon (see above). Press SIDC Info button to start.

Input	Function
SIDC Info (Short Press)	Switch Edit mode Active/Inactive
SIDC Clear (Short Press)	Erase active character
SIDC Clear (Long Press)	Erase all characters on both rows
SIDC Info (Rotate Right) SWC Seek Up	Next Value
SIDC Info (Rotate Left) SWC Seek Down	Prev Value
SIDC Rheo+ SWC Nxt	Next Char
SIDC Rheo- SWC Phone	Prev Char
SWC SRC	Shift entire row to the right (The current active row, values outside will be erased)
SWC TALK	Shift entire row to the left (The current active row, values outside will be erased)

Fuel correction factor

Description

Used to trim the measured fuel values (to add a correction the eSID values compared to the fuel station for example)

Example: 1.053 means increase the measure value with 5.3%
0.987 means decrease the measured value with 1.3%

Enable Criteria

- All Vehicles

User Inputs

- INFO Press - Enter or Exit Edit mode (***)
- INFO Wheel - Change Setting in Edit mode.

Distance correction factor

Description

Used to trim the measured distance values

Example: 1.032 means increase the measure value with 3.2%
0.995 means decrease the measured value with 0.5%

Enable Criteria

- All Vehicles

User Inputs

- INFO Press - Enter or Exit Edit mode (***)
- INFO Wheel - Change Setting in Edit mode.

Language

Description
Used to select language (default = AUTO)

Enable Criteria
- All Vehicles

User Inputs
- INFO Press - Enter or Exit Edit mode (***)
- INFO Wheel - Change Setting in Edit mode.

Engine type

Description
Used to select engine type (default = AUTO)

Enable Criteria
- All Vehicles

User Inputs
- INFO Press - Enter or Exit Edit mode (***)
- INFO Wheel - Change Setting in Edit mode.

Auto Start

Description
This setting enables / disables the Auto Start function.

Enable Criteria
- All Vehicles

User Inputs
- INFO Press – Triggers change to next settings (Inactive/Active)

Comfort Mirrors

Description

This setting enables / disables the Comfort Mirrors function.

Enable Criteria

- All Vehicles

User Inputs

- INFO Press - Enter or Exit Edit mode (***)
- INFO Wheel - Change Setting in Edit mode.

Unlock Light

Description

This setting enables / disables the Unlock Light function. If the value is non-zero the eSID will suppress the two indicator blinks when performing an unlock lock command with the remote and instead activate exterior light. “Unlock Light Time” is defined as the maximum number of seconds the light will be on. If the unlock button is pressed again while the unlock lights are on, the timer is reset

Unlock Light Logic is a bit-coded parameter which has 127 different combinations of lights. Use the table below and summarize the value of all the lights to be activated.

Light source	Parameter Value
Front: Position Light + Side markers	1
Front: Fog lights	2
Front: Low beam	4
Rear: Position Light	8
Rear: Brake Light	16
Rear: License Plate	32
Front + Rear: All Turn Indicators	64

Example:

Front Position Light, Side markers, Fog lights and Rear Position Light and License plate:

1 + 2 + 8 + 32 = **43**

User Inputs

- INFO Press - Enter or Exit Edit mode (***)
- INFO Wheel - Change Setting in Edit mode.

Special View Parameters

Description

These settings select which four favorite display parameters to be shown in the Special Views.

Long Name	Short Name	Enable Conditions
Torque	Torq	
Power	Powr	
Intake Air Temp	IAir	
Engine Coolant Temp	Clnt	
Transmission Oil Temp	OilT	AT
Lambda	Lmda	B284
AFR	A/FR	B284
Oil Pressure	OilP	B284
Momentary Fuel	MFue	
Engine Speed	EngS	
Vehicle Speed	VehS	
Airmass	AirA	!= Z18XE
DPF Soot	DPFS	Z19DTx
DPF Regen Active (%)	DPFR	Z19DTx
Battery Voltage	VBat	
Boost Pressure	Bost	!= Z18XE
Fuel (Avg)	FueØ	
Ignition Angle	IgnA	B207, B284
Fuel Pressure	FuPr	B284
AC Pressure	ACPr	
Ethanol Blend	E85	
Cruise Set Speed	CrsS	B207, B284, Z19DTx
Knock (total all cylinders)	Knck	B207
Misfire (total all cylinders)	Misf	B207, B284
Crank Voltage	CrkV	
Distance (this cycle)	Dist	
Fuel (this cycle)	Fuel	
Automatic Hazard	Ahaz	
EGR	EGR	Z19DTx
Swirl	Swrl	Z19DTx
Fuel Rail Pressure	FuPr	Z19DTx

User Inputs

- INFO Press - Enter or Exit Edit mode (***)
- INFO Wheel - Change Setting in Edit mode.

Automatic Hazard Sensitivity

Description

This is the configuration of the automatic hazard sensitivity

Enable Criteria

- All Vehicles

Configuration Options

- Inactive
- Low sensitivity (need to brake harder to activate)
- Medium sensitivity
- High sensitivity (need to brake less to activate)

User Inputs

- INFO Press - Enter or Exit Edit mode (***)
- INFO Wheel - Change Setting in Edit mode.

Digital Output Logic/Threshold/Source

Description

This is the configuration of the 12V Digital Output.

Enable Criteria

- eSID 12V output only on Gen3 HW
- Output logic enabled on all vehicles
- Threshold setting is only enabled if the selected logic has a threshold

Configuration Options

Option	Threshold Unit
Disabled	
Output is active when Key is inserted into the Ignition Switch	
Output is active when Ignition Key is in OFF and ON	
Output is active when Ignition Key is in ON	
SAAB Extra Light Switch[1] – Output changes state on Switch Push/Release. Output is always inactive on next Key Cycle	
SAAB Extra Light Switch[1] – Output changes state on Switch Push/Release. Output remembers the previous state on next Key Cycle.	
Output is active when Reverse Gear is active	
Output is active when the Engine Speed is above threshold	Rpm
Output is active when the Vehicle Speed is above threshold	km/h
Output is active when High beam is Active	
Output is active when Low beam is Active	
Output is active when Unlock Light is active	

[1] The Extra Light switch is the one normally used for extra headlight. No separate wiring needed.

User Inputs

- INFO Press – Enter or Exit Edit mode (***)
- INFO Wheel – Change Setting in Edit mode.

Source

The eSID supports the option to select output source. eSID can control the internal 12V Digital Output and/or the Extra Light Relay output in the engine compartment.

The reason for this can be many and opens up many possibilities. For instance, control “under floor lightning” based on vehicle speed, or only when unlock light active.

Limitations

There are some limitations when using this eSID and all the limitations are due to how the Saab infotainment system is designed.

Some are understandable but it is not obvious why certain functions stops working but it is due to how the supplier of the system divided the software modules/functions between the internal components.

ICM system freezes and does not go to sleep or deactivate illumination (ICM: ALL)

There is a probability that the ICM can "freeze" while removing the key from Ignition Lock when eSID is active and then it will not go to sleep or turn off the interior illumination when locking the car.

This is a known ICM issue but just much more likely to occur when eSID is active and ICM does not have any connection to the SID. If this happens one must **remove and re-insert the Fuse 14 in the fuse box next to the steering wheel.**

Saab identified this issues (and many other issues) and made an aftermarket software release but only for 2005-2006 (available in TIS and called "field fix" from 2008). I recommend that this field fix is installed if possible.

For 2003-2004 there is unfortunately no solution except install a newer ICM with the field fix already installed, manually turn-off the eSID before removing the key from the Ignition Lock when leaving the car, or be aware of it and remove and insert the fuse whenever it happens. Some customers has it twice per month others only once in a 3 month period.

Long press on SIDC INFO is used to configure SID (ICM: ALL)

Long press on SIDC Info wheel is also used to set SID parameters like Speed Limiter. In order to do this with eSID installed, hold down the accelerator pedal more than 90% while pressing the SIDC Info wheel.

Not possible to see Navigation directions (ICM: 3)

ICM is unable to print navigation direction on the SID while eSID is active. It is possible to select in the menus to see them on half the ICM3 screen.

TECH2 operations on the vehicle (ICM: ALL)

eSID must be turned off (passive state) when TECH2 or any other diagnostic equipment is used.

Different ICM view when eSID is going passive (ICM: ALL)

ICM is still reading the SIDC at all times, even when eSID is active and the ICM cannot show anything on the SID. When returning to ICM it might be in a different view compared to when eSID was started.

It might also have detected a long press on INFO as a valid command to change Speed limit for instance.

It has been found that ICM can fail to print out all the data on the display when eSID is going from Active to Passive, but it is usually corrected by turning the SIDC. This is erratic fault handling in the ICM and only a consequence when using eSID, not eSID's fault.

Note! Avoid pressing "Customize" when eSID is active as one might change the ICM Settings without knowing/seeing it.