Syvecs LTD

V1.2

R8 / Huracan AWD Controller

This document is intended for use by a technical audience and describes a number of procedures that are potentially hazardous. Installations should be carried out by competent persons only.

Syvecs and the author accept no liability for any damage caused by the incorrect installation or configuration of the equipment.

Please Note that due to frequent firmware changes certain windows might not be the same as the manual illustrates. If so please contact the Syvecs Tech Team for Assistance.

Support@Syvecs.com

Contents

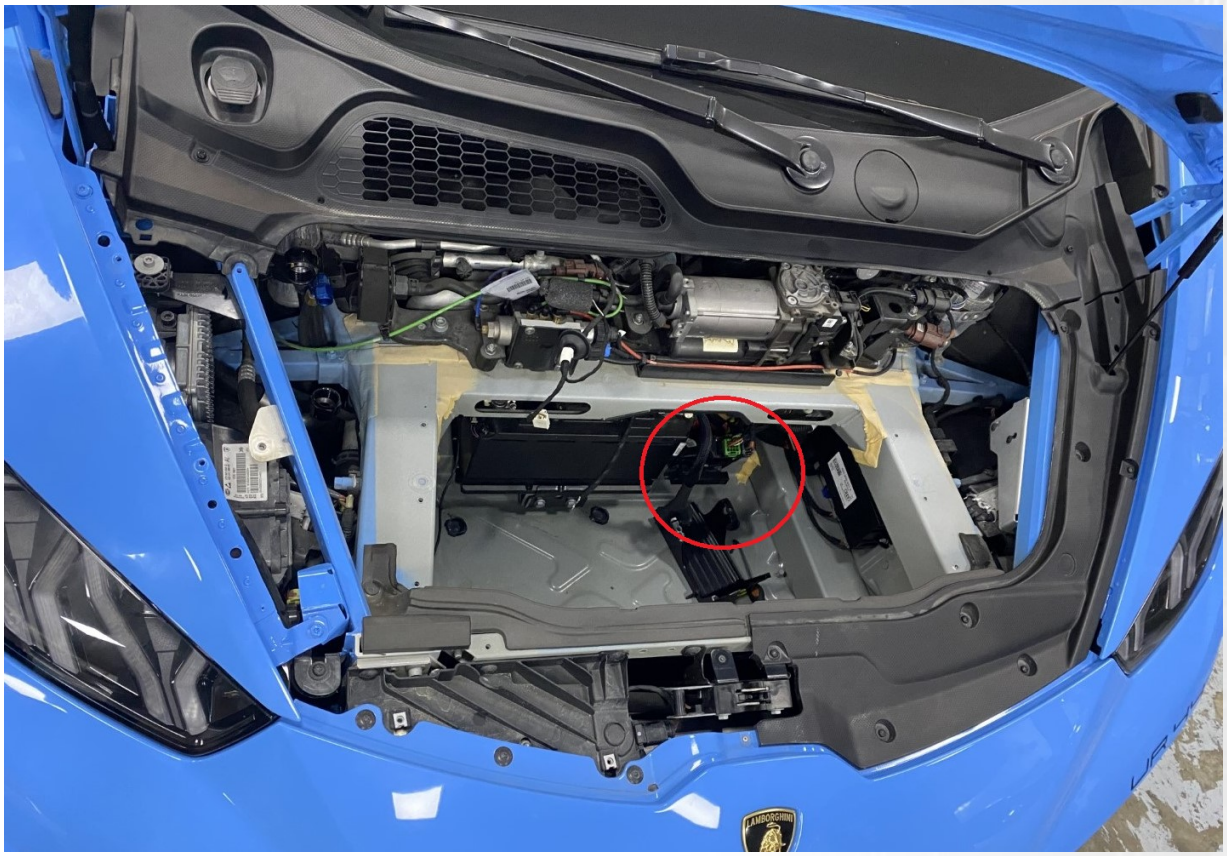
1 x Syvecs AWD Ecu
1 x USB Cable
1 x BurnOut Switch **(Optional Extra)**
1 x 20k Rotary Potentiometer**(Optional Extra)**

Installation

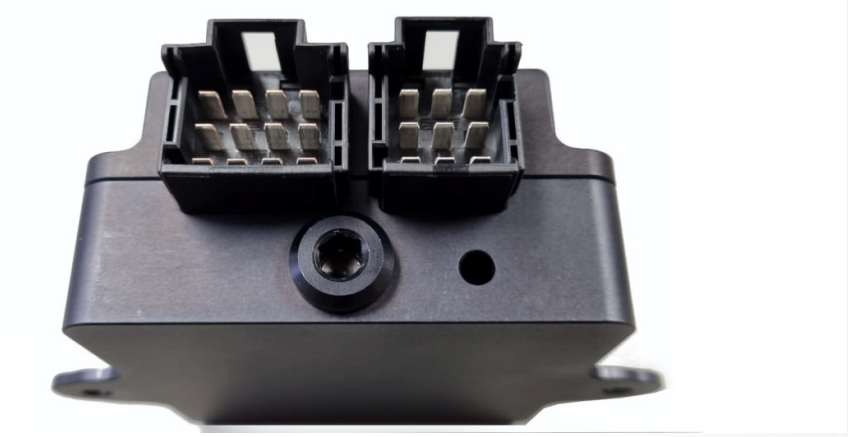
First you need to locate the OEM 4WD Ecu on the R8 and Huracan, this is found in the front trunk of the car next to the battery.

To access it you need to remove the Carpet bucket which is held in with Torque screws

Once removed, you will see the OEM AWD Ecu which is marked below in Red. It has a plastic cover which Is held in place with 2 torque screws that need to be removed



When mounting the Syvecs AWD Ecu it's best to plug in the USB Cable at the same time and route the cable into the trunk if you are planning to do live communication with the Unit. The USB port is found by removing the plug on the front of the unit as marked below.



The AWD Unit will come pre loaded with a base calibration that has default values which simulate an OEM Haldex unit. Use Syvecs Scal software to adjust

Controls

RWD Drive Mode / BurnOut

1 .) First method is via activating the Hazard switch. This as default will bring on a 4wd light on the dash to illustrate that RWD Drive mode is active. To switch it back to 4WD just turn off the hazards. (Done for safety to warn driver in 2wd)

Please Note: If the 4WD Light is present on the dash it will not allow the car to go in launch mode, users will need to disable the 4wd light option in Scal via a USB connect (see page 7). Calibration to change is shown on the right ->

2.) Second Option is via wiring in a Burnout Switch to AN01 Input on the Syvecs Awd controller . AN01 has a internal 5v pull-up set so the input will sit at 5v, the other side of the Switch needs to be connected to Ground on the chassis or via Ground Pins on the Syvecs AWD Controller.

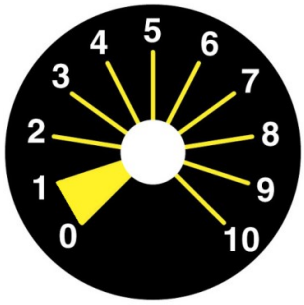
AN01, AN02, 5V and Ground are available on the External 4 way DTM connector

When AN01 is less than 3v it will activate 2WD Mode / Burnout Mode.

After preforming a burnout the ignition key will need to be cycled, this will allow another launch, we have tried to clear the DTC in the ABS module but the diagnostic communications are done via FlexRay which is not supported.

Live Adjustment Potentiometer

Users can have the ability to adjust the AWD Duty live via a laptop or with a external potentiometer with the Syvecs AWD Unit. A 20K Rotary Potentiometer can be wired to the AN2 input of the Syvecs Controller and it will apply a multiplier to the Duty. Wiring for the Pot is here --- >



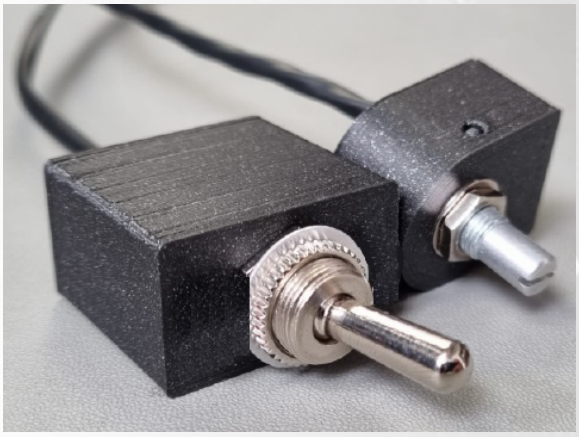
0 -1 = No Adjustment (Logic Off)
1 -2 = 0.6 Multiplier (Less Duty)
2 -3 = 0.7 Multiplier
3 -4 = 0.8 Multiplier
4 -5 = 0.9 Multiplier
5 -6 = 1.0 Multiplier (No Adjustment)
6 -7 = 1.1 Multiplier
7 -8 = 1.2 Multiplier
8 -9 = 1.3 Multiplier
9-10 = 1.4 Multiplier (More Duty)

External DTM4 Pinout

DTM4:

Pin 1 – Ground (Black)
Pin 2 - AN2 (Blue) – AWD 20k Pot
Pin 3 – 5v Out (Red)
Pin 4 - AN01 (Yellow) - Burnout Switch

Burnout Switch – ON = AWD / OFF = 2WD



AutoShift Output

The Syvecs AWD unit has a spare output which can be used for sending an output signal (lowside) to a Shift light or a Up-Paddle lever.

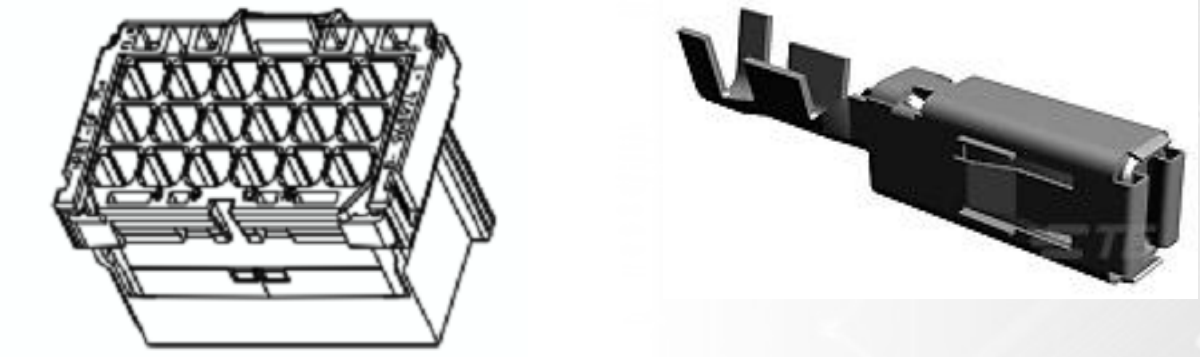
This is particularly useful with high power applications as drivers wont pull the paddle quick enough in the lower gears and miss the optimal shift point or hit the rev-limiter.

On Firmware level 1.15 + , a change light strategy is present which can be used to replicate a Upshift paddle on the car. This can be done based on speed, tps and rpm.

R8 and later spec Huracans which require an additional canbus message sent on upshift are also supported

Output4 on the R8/Huracan unit is the pin for the Changelight and it is found on the 12way Oem Connector - Pin 4

This pin slot will be empty at the moment so a new pin is required from TE - 1-968853-3



Calibrations of the AWD ECU

Users have the ability to adjust all the controls of the Syvecs AWD Unit via our Scal program that's part of SSuite. This can be downloaded from https://www.syvecs.com/software/

The USB port for communication is found either by removing a Allen key plug on the Gen1 controllers or at the back on the Gen2 X4 versions. Connect a Micro USB Cable on Gen1 to the AWD Unit or USBC on Gen2. The other side to a Windows Laptop or PC.

Open the Scal software and select **Device - Connect** Tab at the top. This will connect to the device and grab the calibration from it. If the unit has just been updated then no Cal will be present and Users need to program defaults or load a base map.

IMPORTANT:
The AWD Ecu can be connected to and programmed outside of the car as it will power up of the USB cable alone. PLEASE NOTE: If you are connecting the Usb to an Awd Ecu before the Unit is powered up from the car power systems it will enter a bootloader state until a **Device** –**Connect** is preformed. If wanting to connect to the unit in the car then connect the USB after the Ignition is **ON** or perform a **Device** –**Connect** first to bring the unit into main code.

Green Maps can be changed live, Blue maps require a **Device** – **Program** for the calibration change to be flashed into the device.

When all calibration work is done, users must do a **Device** – **Program** so the green maps which have been changed get flashed and stored in memory.

Main Code Updates

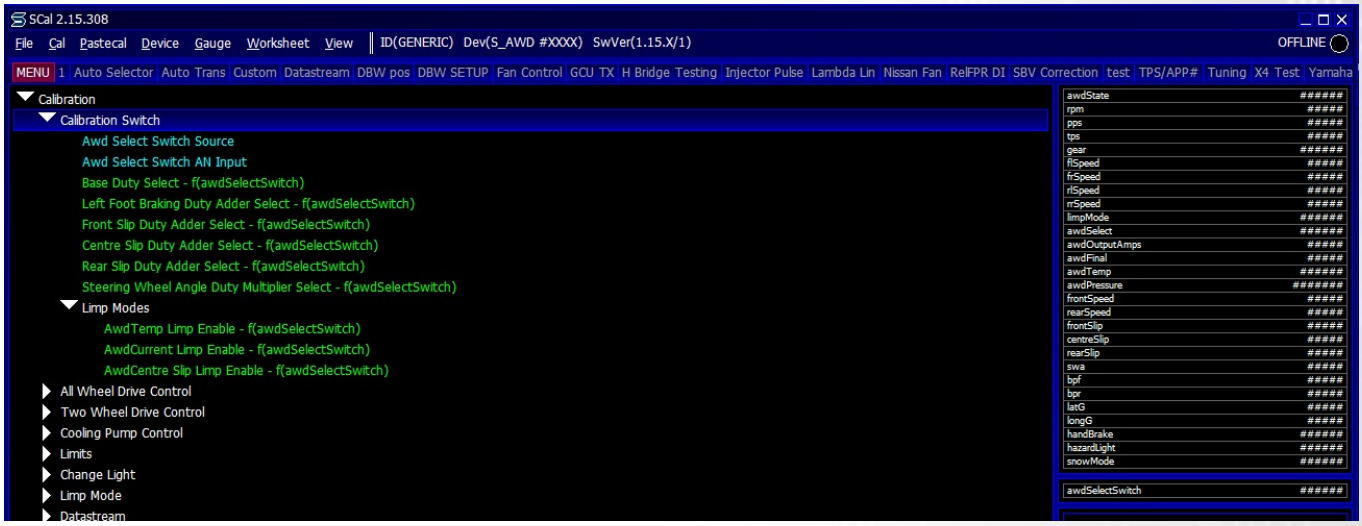
Please watch the help video here - https://youtu.be/RuXkm_9gBRU

Calibration Switching on the AWD ECU

The Syvecs AWD Unit allows for users to be able to adjust many aspects of the control strategies inside the AWD Ecu via either an external switch or via OEM controls / buttons with plug in AWD units.

At the top of the Scal AWD Calibration tree you will find the Calibration Switch section which list all the maps that can be adjusted based on awdSelect position. There is 4 positions available which can be used to adjust multiple duty maps or if limp modes are active.

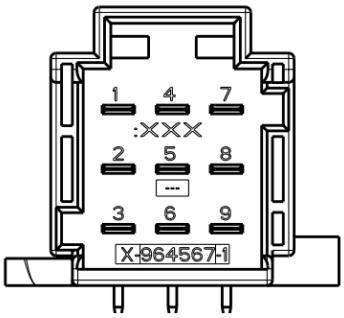
Users are able to see the active awdSelect position by viewing it via the right item list. Double clicking on the item will bring up a larger gauge.

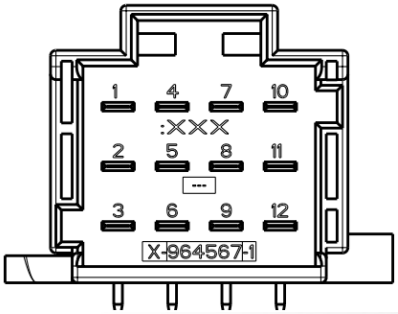


The Huracan / R8 AWD unit sets the awdSelect position based on the follow OEM Drive Modes:

awdSelect 1 = Normal Mode / Strada
awdSelect 2 = Sport
awdSelect 3 = Dynamic Mode / Corsa

AWD Controller Pinout





Term 30	T9 – 1	Battery 12v
	T9 – 2	
OEM Can H	T9 – 3	Syvecs Can1 H
Syvecs Can0 H	T9 – 4	Syvecs Can0 H
Syvecs Can0 L	T9 – 5	Syvecs Can0 L
OEM Can L	T9 – 6	Syvecs Can1 L
Term 31	T9 – 7	Ground
NC	T9 – 8	
Term 15	T9 – 9	Ignition Switch

Oem Description	***T12 Pinout***	***Function***
	T12 – 1	
Haldex Temp Ground	T12 – 2	
Haldex Temp	T12 – 3	
NC	T12 – 4	
	T12 – 5	
Pressure Signal	T12 – 6	
NC	T12 – 7	
Pressure Ground	T12 – 8	
Pressure Supply	T12 – 9	
NC	T12 – 10	
Pump Positive	T12 – 11	
Pump Negative	T12 – 12	