

Warning device

The warning device function depends on the ISO 7638 power supply used:

A warning device located on the driver's console of the towing vehicle is operated from the ISO 7638 power cable only when the EB+ Gen3 is powered by the ignition switch.

If a dedicated power source is unavailable to the EB+ Gen3 from the ISO 7638 connector then system integrity will not be indicated by the cab mounted warning device.

As an option to the cab warning device a trailer mounted warning lamp may be provided as an auxiliary function. This lamp mimics the signal to the cab warning device but will only function if the ISO 7638 power is connected.

The signal produced by the trailer warning lamp may be different to that produced by the cab device due to possible modification of the cab device by the towing vehicle.

A trailer-mounted warning lamp is not allowed in some countries

System check procedure

1. On power up of the system, the warning device must indicate one of the following sequences in order to show a fault free system:

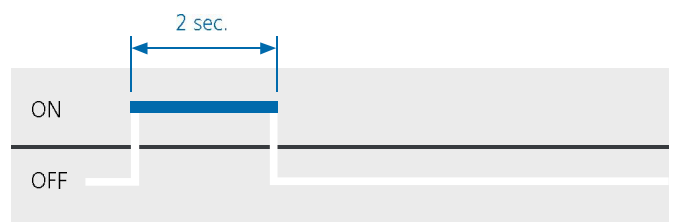
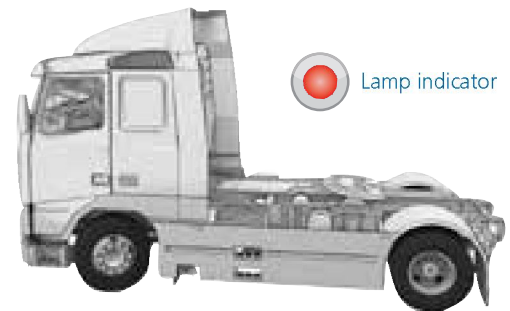
Option 'A'

Option 'B'

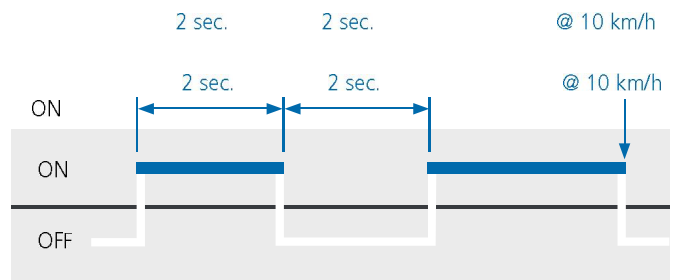
2. During the self-check procedure, the system cycles the EPRV's. With foot brake applied one exhaust of air from each EPRV will be audible.

Once these two checks are made with correct results, no further checks are required.

If the results are not satisfactory, Haldex DIAG+ or EB+ Info Centre should be used to establish the diagnosis.



Option A	
On for 2 seconds	Warning device OK and system self-checking
Off	System self-checked (not sensors)



Option B	
On for 2 seconds	Warning device OK and system self-checking
Off for 2 seconds	System self-checked and preparing to check sensors
On until moving	System waiting for vehicle to move above 10 km/h in order to check that sensors are working
Off	Once the vehicle is moving above 10 km/h and the warning device clears, the electronic system is fully checked



Power up modes

The EB+ Gen3 system has two power up modes to aid in system testing. With switching the Ignition 'On' (B+ applied) the following occurs:

With no yellow line pneumatic pressure (i.e. brakes 'Off').

The system adopts load sensing mode when the brakes are applied. This load sensing mode is limited to 2 minutes for any single brake application, after which it returns to a push-through condition (approx 1:1).

The push-through condition is cancelled on vehicle movement above 10 km / h returning the system to load sensing operation.

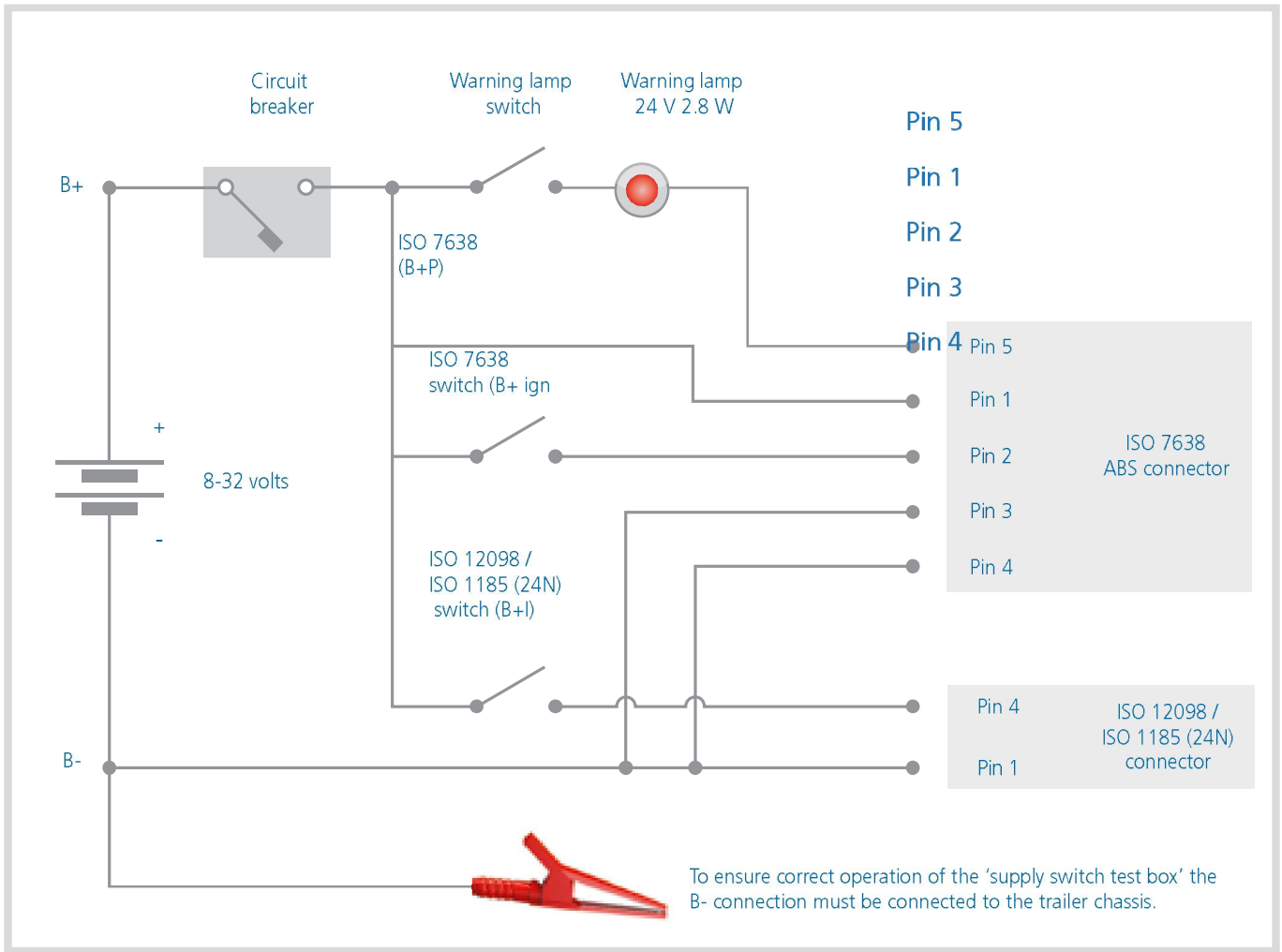
With yellow line pneumatic pressure (i.e. Brakes 'On', park on air).

Apply foot brake, switch Ignition 'On'.

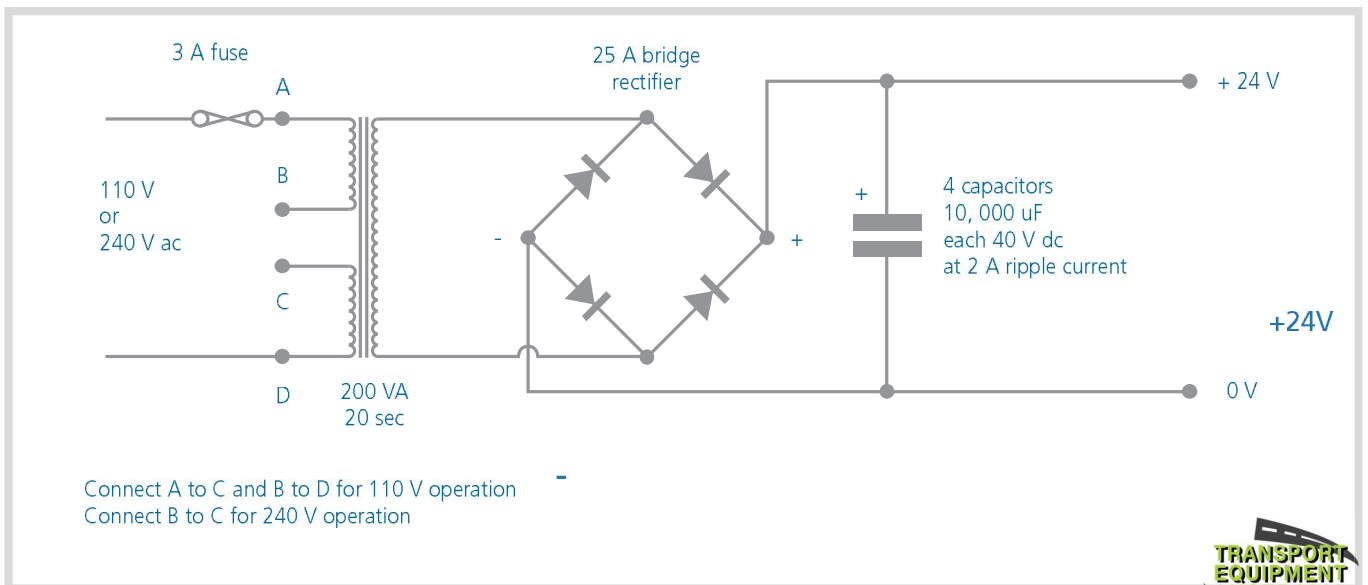
The system adopts a push-through (approx 1:1) condition. When the brakes are released and re-applied the system remains in push-through unless the brakes are released for longer than 2 minutes, after which it returns to load sensing operation.

This condition is cancelled on vehicle movement above 10 km / h returning the system to load sensing operation.

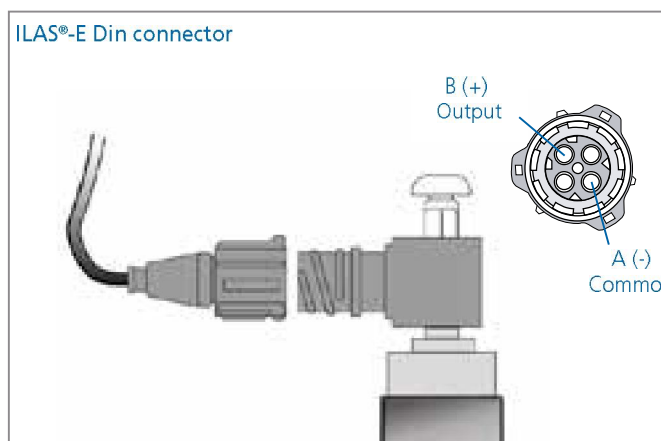
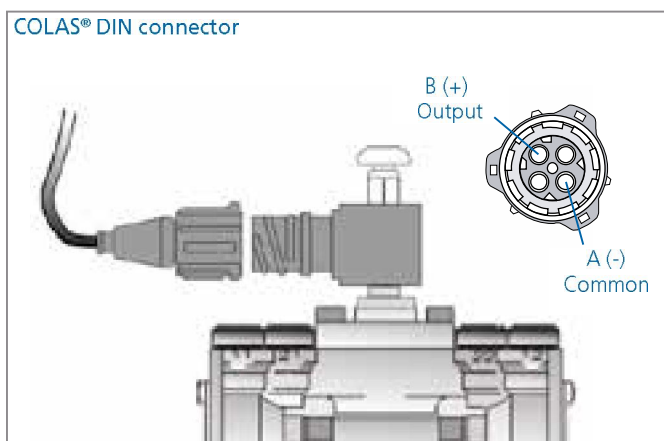
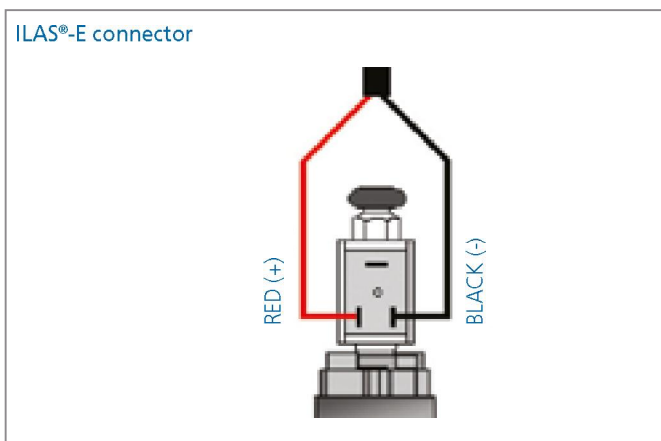
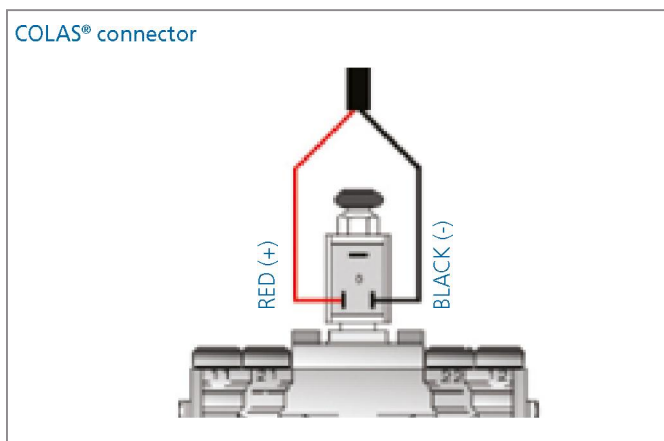
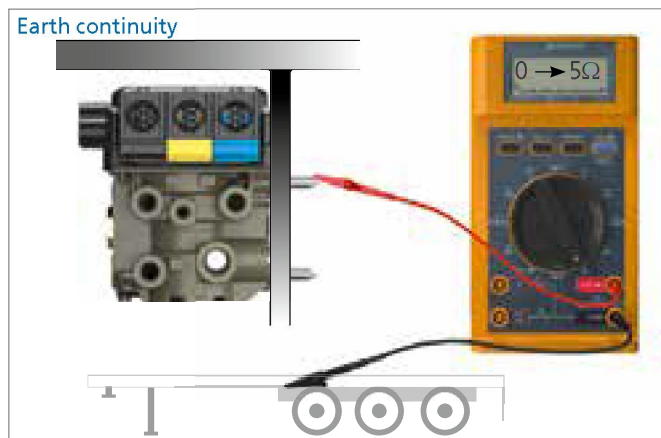
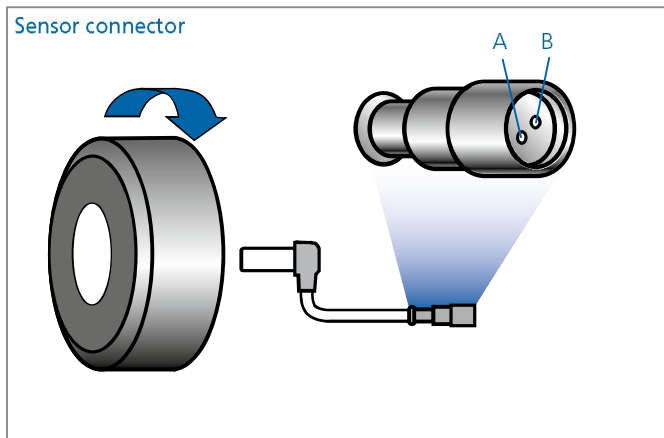
Supply switch test box circuit diagram



Mains power supply circuit diagram



Multimeter readings



Checking position	Measure between	Correct value	Remarks
Sensor output	A B	0.2 AC Min	Sensor 1A, 1B or 2A, 2B Sensor disconnected from ECU Wheel rotated at 1 rev / 2 sec.
Sensor resistance	A B	1.0 < AB < 2.4 K Ω	Sensor 1A, 1B or 2A, 2B Sensor disconnected from ECU
Earth continuity resistance	ECU / EPRV Bracket and chassis	0 Ω 0 < R < 5 Ω	
COLAS®	+ -	180 < R < 215 Ω	Cable disconnected
ILAS®-E solenoid resistance	+ -	180 < R < 215 Ω	Cable disconnected



Diagnostic trouble codes (DTC)

If a diagnostic trouble code displayed is not listed here, check for intermittent sensor and wiring faults.

Info Centre 1 displayed DTC	Possible causes
ECU TIME OUT or NO LINK	No supply on ignition switched line.
	Truck fuse blown, EB+ Gen3 Info Centre or cable fault., open circuit B - ISO 7638 not connected
Sensor group	
S1A CONT	1A sensor / wiring open or short circuit
S1B CONT	1B sensor / wiring open or short circuit
S2A CONT	2A sensor / wiring open or short circuit
S2B CONT	2B sensor / wiring open or short circuit
Intermittent low sensor output group	
S1A SIGNAL	1A sensor signal fault
S1B SIGNAL	1B sensor signal fault
S2A SIGNAL	2A sensor signal fault
S2B SIGNAL	2B sensor signal fault
	Loose sensor, connection, bracket or exciter. Damaged exciter. Maladjusted sensor or worn sensor cable insulation.
Low sensor output group	
S1A OUTPUT	1A sensor signal fault
S1B OUTPUT	1B sensor signal fault
S2A OUTPUT	2A sensor signal fault
S2B OUTPUT	2B sensor signal fault
	Sensor worn, maladjusted sensor, wiring open or short circuit.
Reservoir pressure transducer group	
RESR SC	Reservoir pressure transducer short circuit
RESR OC	Reservoir pressure transducer open circuit
Lateral accelerometer	
LAT ACC OC	Lateral accelerometer wiring open circuit
LAT ACC SC	Lateral accelerometer wiring short circuit
LAT ACC SIGNAL	Lateral accelerometer signal fault

Info Centre 1 displayed DTC	Possible causes
EPRV 21 hold and dump solenoid group	
EPRV 21 HOLD SC	Modulator 21 hold solenoid short circuit
EPRV 21 DUMP SC	Modulator 21 dump solenoid short circuit
EPRV 21 HOLD OC	Modulator 21 hold solenoid open circuit
EPRV 21 DUMP OC	Modulator 21 dump solenoid open circuit
EPRV 21 HOLD SC DRIVE	Modulator 21 hold solenoid short circuit permanently energised
EPRV 21 DUMP SC DRIVE	Modulator 21 dump solenoid short circuit permanently energised
EPRV 21 HOLD UNSPEC	Modulator 21 hold solenoid control circuit fault
EPRV 21 DUMP UNSPEC	Modulator 21 dump solenoid control circuit fault
One wheel with slow recovery group	
EPRV 21 SLOW REC	Slow recovery of one wheel of modulator 21
EPRV 22 SLOW REC	Slow recovery of one wheel of modulator 22
	Slow brake release, foundation brake mechanical faults, dry bearings, broken spring, restricted piping. Check for kinks and blockages etc. Incorrect piping, wiring. Modulator fault. Sensor wiring crossed across an axle
EPRV 22 hold and dump solenoid group	
EPRV 22 HOLD SC	Modulator 22 hold solenoid short circuit
EPRV 22 DUMP SC	Modulator 22 dump solenoid short circuit
EPRV 22 HOLD OC	Modulator 22 hold solenoid open circuit
EPRV 22 DUMP OC	Modulator 22 dump solenoid open circuit
EPRV 22 HOLD SC DRIVE	Modulator 22 hold solenoid short circuit permanently energised
EPRV 22 DUMP SC DRIVE	Modulator 22 dump solenoid short circuit permanently energised
EPRV 22 HOLD UNSPEC	Modulator 22 hold solenoid control circuit fault
EPRV 22 DUMP UNSPEC	Modulator 22 dump solenoid control circuit fault

Info Centre 1 displayed DTC	Possible causes
Delivery pressure transducer group	
EPRV 21 DEL SC	Modulator 21 delivery pressure transducer short circuit
EPRV 21 DEL OC	Modulator 21 delivery pressure transducer open circuit
EPRV 22 DEL SC	Modulator 22 delivery pressure transducer short circuit
EPRV 22 DEL OC	Modulator 22 delivery pressure transducer open circuit
Demand pressure transducer group	
DEMAND SC	Service line pressure transducer short circuit
DEMAND OC	Service line pressure transducer open circuit
Suspension pressure transducer group	
SUSP SC	Reservoir pressure transducer short circuit
SUSP OC	Reservoir pressure transducer open circuit
SUSP OUT OF RANGE	Suspension pressure values outside operating range
Pressure switch group	
REV SWITCH SC	Relay emergency valve pressure switch short circuit
REV SWITCH OC	Relay emergency valve pressure switch open circuit
REV SWITCH PNEUMATIC	Relay emergency valve pressure switch pneumatic fault
REV SWITCH SIGNAL	Relay emergency valve pressure switch failed to activate
Supply voltage group	
PWR ISO 7638 FAIL	Power loss on pin 1 or 2 (ISO 7638)
PWR LO VOLT	Supply voltage at ECU less than 8 V when brake apply solenoid energised
PWR HI VOLT	Supply voltage at the ECU greater than 32 V
PWR UNSPEC	Internal ECU fault
Lining wear group	
BRAKE PADS	Lining wear wiring open circuit
Brake apply solenoid group	
BRK APPLY SC	Brake apply solenoid short circuit
BRK APPLY OC	Brake apply solenoid open circuit
BRK APPLY SC DRIVE	Brake apply solenoid short circuit permanently energised
BRK APPLY UNSPEC	Brake apply solenoid short circuit

Info Centre 1 displayed DTC	Possible causes
Auxiliary components group	
AUX1	Auxiliary 1 system / wiring open or short circuit
AUX2	Auxiliary 2 system / wiring open or short circuit
AUX3	Auxiliary 3 system / wiring open or short circuit
AUX4	Auxiliary 4 system / wiring open or short circuit
AUX5	Auxiliary 5 system / wiring open or short circuit
Slave valve group	
SLAVE VALVE SENSOR	Pressure transducers open or short circuit
SLAVE VALVE MODULATOR	Hold, dump or brake apply solenoid open or short circuit
SLAVE VALVE CABLE	Link cable open or short circuit
SLAVE VALVE SLOW REC	Slow recovery of one wheel slave valve
SLAVE SUSP LOW	Suspension pressure values outside operating range
ISO 11992 (CAN) electrical signal group	
PNEUMATIC DEMAND LOSS	No corresponding pneumatic demand pressure
TOWED CAN DEMAND LOSS	CAN line (pin 6 and 7 on ISO 7638) fault
TOWED CAN CONTROL LOSS	CAN line (pin 6 and 7 on ISO 7638) data fault
ECU group	
ECU EE ERR	Internal ECU fault or ECU not programmed
ECU PARAM ERR	Internal ECU fault or ECU not programmed
ECU EE UNSPEC	Internal ECU fault or ECU not programmed

Note:

If a DTC is displayed and after following recommended procedure, as detailed in the service manual, no fault is found, the ECU should be replaced.

Info Centre 2 menu



Start Screen

The **Start Screen** menu allows the user to choose Info Centre functions to be displayed at start up, before the main menu.

- The user can choose 1 from 10 options available: (if selected there will be no start screen)
- None
 - Distance
 - DTC
 - AUX
 - Axle Load Sum
 - Language
 - Unlock
 - Tilt Angle
 - Tyre Pressure
 - User Defined (if selected go to user defined section below)

- The user defined start screen can display up to 5 of the following items:
- Odometer
 - Service
 - Service Interval
 - DTC
 - Stored DTCs
 - Lining Wear
 - Reservoir
 - Axle Load Sum



Settings

The **Settings** menu is used to set the configuration of the Service Interval, Info Centre 2, LED Settings and swap trailer fitted TPMS wheel sensors.

- Service Interval**
Used for altering the EB+ service indicator. Both days and distance (miles or km) can be altered. The entered durations will be added to the current odometer reading and only become active when the Service Reset is actioned.
- Service Reset**
Used for resetting the EB+ service indicator. Note: The amended duration will be the internally stored service interval.
- Info Centre Language**
The Info Centre 2 has multiple languages.
- Start Screen**
This menu allows the user to choose Info Centre functions to be displayed at start up, before the main menu.

- PIN**
A PIN is used to protect a number of the Info Centre menus.
- Unlock**
Use this menu to unlock the Info Centre via a valid PIN.
- Wheel Scale**
Displays the EB+ wheel scale and sensor teeth settings.
- Date Format**
Allows the user to set the date format.
- Date**
The time and date stored in the Info Centre is used to record the time and date at which EB+ faults occur.
- Time**
Used to set the 24hr clock time.
- Units**
Use to select metric or imperial units for the Info Centre.
- Contrast**
Use this menu to adjust the LCD screen contrast.
- Display**
Self test function for the Info Centre display.
- TPMS ID**
Displays a complete list of configured wheels and sensor IDs and allows the operator to swap over wheel sensors (WUS).
- LED Settings LED Flash B+**
Used to configure the action of the Service LED when the Info Centre is powered by the EBS.
- LED Flash Batt**
Used to configure the action of the Service LED when the Info Centre is battery powered.
- Tilt Angle**
Used to set the tilt angle before the Service LED flashes.



Test

The **Test** menu displays data and operates some of the auxiliary functions of the EBS.

- Load**
Displays the current trailer load.
- Tilt Angle**
Displays the angle of the trailer in degrees as read from the EBS.
- Air Pressure**
Displays the EBS air pressures.
- Wheels**
Displays the current trailer wheel speeds.
- Aux Test**
This menu is used to switch 'ON' or 'OFF' the EB+ auxiliary functions.
- Brake Test**
This menu is used to switch 'ON' or 'OFF' the EB+ load sensing function.

For more detailed information refer to the "Info Centre 2 Operators Guide" (reference no. 006 300 001) available from www.haldex.com



Information

The **information** menu displays data from the EBS.

- DTC**
Active
Displays up to 8 active DTCs
Stored
Displays up to 8 stored DTCs
Clear
Clears all DTCs from the EB+
Service Lamp
Displays the reason for the flashing trailer warning lamp
LED Flashing
Displays the reason for the flashing Info Centre service LED.
- Lining Wear**
Lining wear
Displays the brake lining wear status (OK or service) of the trailer
LWI Reset
Used to reset the lining wear status indicator following the replacement of the brake linings.
- Tyre Pressure**
Tyre Pressure
The tyre pressure monitoring system constantly measures the air pressure and temperature in the trailer tyres.
- Distance**
Odometer Data
Displays the mileage that is stored in the EB+. It can be configured to display in miles or km.
Trip 1 Data
Displays the mileage recorded by the EB+ since trip 1 was last reset.
Trip 2 Data
Displays the mileage recorded by the EB+ since trip 2 was last reset.
Service (km)
Displays the distance (Miles or km) until the next service.
Service (Days)
Displays the number of days until the next service.
- Trailer**
Load Plate
Displays the EB+ load plate info.
- Configuration**
Shows a graphic display of the EB+ configuration.
- VIN**
Displays the VIN from the EB+.
- ECU Version**
Displays the EB+ software version
Displays the EB+ serial number
Displays the Info Centre version
- Fleet+ Data**
The Fleet+ PC program enables the operator to view trailer information. The Info Centre extracts summary data to provide an understanding of recorded events.

Info Centre 2 / DIAG+ displayed DTC	Possible causes
Wheel sensor 1A or 1B continuity	1A or 1B wheel sensor / wiring open or short circuit
Wheel sensor 2A or 2B continuity	2A or 2B wheel sensor / wiring open or short circuit
Wheel sensor 1A or 1B signal integrity	1A or 1B wheel sensor signal fault
Wheel sensor 2A or 2B signal integrity	2A or 2B wheel sensor signal fault
Wheel sensor 1A or 1B output level	1A or 1B wheel sensor system fault
Wheel sensor 2A or 2B output level	2A or 2B wheel sensor system fault
Brake apply solenoid short circuit	Brake apply solenoid short circuit
Brake apply solenoid open circuit	Brake apply solenoid open circuit
Brake apply solenoid short circuit drive	Brake apply solenoid short circuit energised
Brake apply solenoid unspecified fault	Brake apply solenoid control circuit fault
EPRV 21 or 22 hold solenoid short circuit	Modulator 21 or 22 hold solenoid short circuit
EPRV 21 or 22 dump solenoid short circuit	Modulator 21 or 22 dump solenoid short circuit
EPRV 21 or 22 hold solenoid open circuit	Modulator 21 or 22 hold solenoid open circuit
EPRV 21 or 22 dump solenoid open circuit	Modulator 21 or 22 dump solenoid open circuit
EPRV 21 or 22 hold solenoid short to B+	Modulator 21 or 22 hold solenoid short circuit energised
EPRV 21 or 22 dump solenoid short to B+	Modulator 21 or 22 dump solenoid short circuit energised
EPRV 21 or 22 hold solenoid unspecified fault	Modulator 21 or 22 hold solenoid control circuit fault
EPRV 21 or 22 dump solenoid unspecified fault	Modulator 21 or 22 dump solenoid control circuit fault
EPRV 21 or 22 delivery sensor short circuit	Modulator 21 or 22 delivery transducer short circuit
EPRV 21 or 22 delivery open circuit	Modulator 21 or 22 delivery transducer open circuit
EPRV 21 or 22 slow wheel recovery	Modulator 21 or 22 slow recovery of one wheel
Reservoir sensor short circuit	Reservoir pressure transducer short circuit
Reservoir sensor open circuit	Reservoir pressure transducer open circuit
Excessive reservoir pressure	Reservoir pressure greater than 9.75 bar
Pneumatic demand loss	No corresponding pneumatic demand pressure
Suspension sensor short circuit	Suspension pressure transducer short circuit
Suspension sensor open circuit	Suspension pressure transducer open circuit
Suspension pressure low	Suspension pressure values outside operating range
Slave suspension pressure low	Suspension pressure values outside operating range
REV pressure switch short circuit	Relay emergency valve pressure switch short circuit
REV pressure switch open circuit	Relay emergency valve pressure switch open circuit
REV pressure switch pneumatic fault	Relay emergency valve pressure switch pneumatic fault
REV pressure switch signal fault	Relay emergency valve pressure switch no activation
Slave valve sensor	Pressure transducers open or short circuit
Slave valve modulator	Hold, dump or brake apply solenoid open or short circuit
Slave valve cable	Link cable open or short circuit
Slave valve slow recovery	Slow recovery of one wheel of slave valve

Info Centre 2 / DIAG+ displayed DTC	Possible causes
Towed CAN demand loss	CAN line (pin 6 and 7 on ISO 7638) fault
Towed CAN control loss	CAN line (pin 6 and 7 on ISO 7638) data fault
Power ISO 7638 fail	Power loss on pin 1 or 2 on ISO 7638
Power low voltage	Supply voltage at ECU < 19 V (brake apply solenoid on)
Power high voltage	Supply voltage at the ECU greater than 32 V
Power unspecified fault	Internal ECU fault
ECU EEprom error	Internal ECU fault
ECU configuration error	ECU not programmed
ECU EEprom unspecified error	Internal ECU fault
ECU shutdown FET	Internal ECU fault
Lateral accelerometer short circuit	Lateral accelerometer wiring short circuit
Lateral accelerometer open circuit	Lateral accelerometer wiring open circuit
Lateral accelerometer signal	Lateral accelerometer signal fault
AUX 1 / AUX 2 / AUX 3 / AUX 4 / AUX 5	Auxiliary system wiring open or short circuit
External TPMS	TPMS hardware fault (RCU, WUS etc)

Note:

If a DTC is displayed and after following recommended procedure, as detailed in the service manual, no fault is found, the ECU should be replaced.

Maintenance schedule

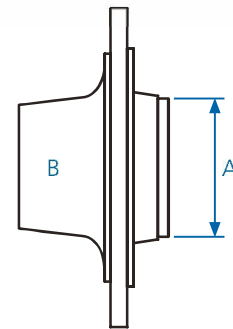
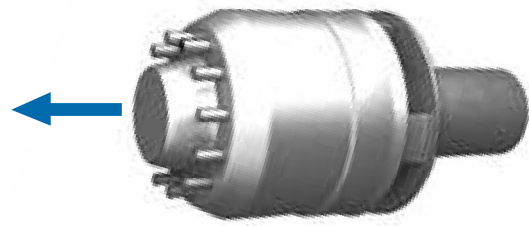
Recommend maintenance schedule

Time or milage (which ever occurs first)	Components	Operation
When hubs are removed	Exciter Sensor.	Check for damage Check for wear, clean and readjust
Every 3 months or 25,000 miles (40,000 Km)	Complete system	Perform system check out and air leakage test.
Annually or every 100,000 miles (160,000 km)	Complete system Sensor	Perform system check out and air leakage check. Check wiring and piping security and integrity Check for wear, clean and readjust

Sensor installation

Stripping of axle

See individual axle manufacturers information. Remove hub and drum assembly. Refer to individual ABS axle layout for details of the machine location area 'A' on hub 'B'.



Exciter (solid type)

Available in two sizes to suit differing diameters of wheel. Establish correct exciter teeth in relation to tyre size refer to GS0006.

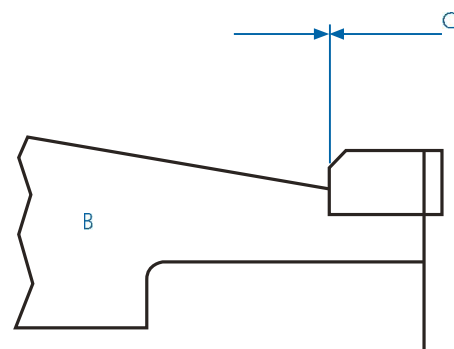
100 tooth exciter - dynamic effective rolling radius (rdyn) = 442 to 645 mm.

80 tooth exciter - dynamic effective rolling radius (rdyn) = 357 to 522 mm.

Heat exciter uniformly to required temperature.



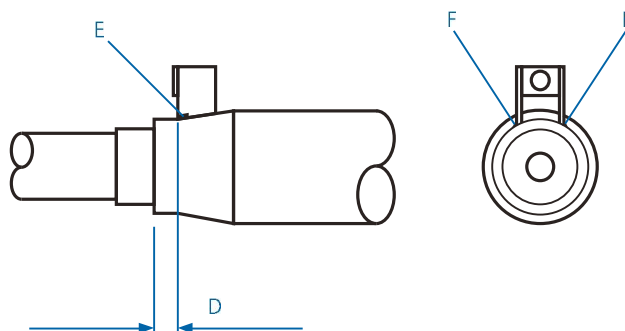
Fit to hub and ensure that it is fully seated on the location area machined on the hub 'B'. Dimension 'C' to be zero gap 0 to 360 degrees.



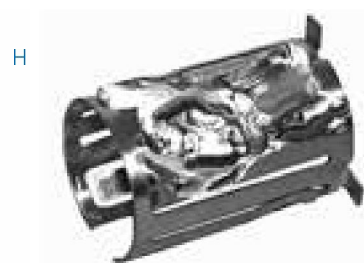
Sensor

Position sensor bracket as detailed on the ABS axle layout, reference dimension 'D'.

Tack weld bracket 'E' first. Recheck for position and squareness and complete weld 'F'.



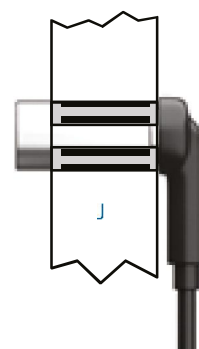
With grease provided liberally coat sensor 'I' steel casing and bore of bracket 'G'. Push the retaining clip 'H' fully home into the sensor bracket housing and insert sensor through the retaining clip pushing it firmly into place until the sensor abuts against the back face of the bracket housing 'J'.



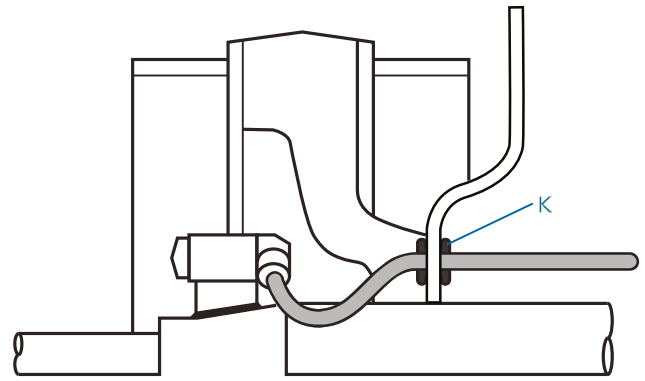
With a grease based corrosion inhibitor, recommended type - Molykote Cu 7439 Plus (Dow Corning) or from the 4g sachet, Haldex part number 042 5857 09, liberally coat sensor 'I' steel casing, retaining clip 'H' and bore of bracket / housing 'G'.



Push the retaining clip 'H' fully home into the sensor bracket housing and insert sensor through the retaining clip pushing it firmly into place until the sensor abuts the back face of the bracket / housing 'J'.



Layout the sensor cable route. Ensure sensor cable is not under tension and not fouling brake shoe. Avoid any sharp edges and moving parts. The cable exit from the brake torque plate or dirt shield should be via a grommet 'K'.



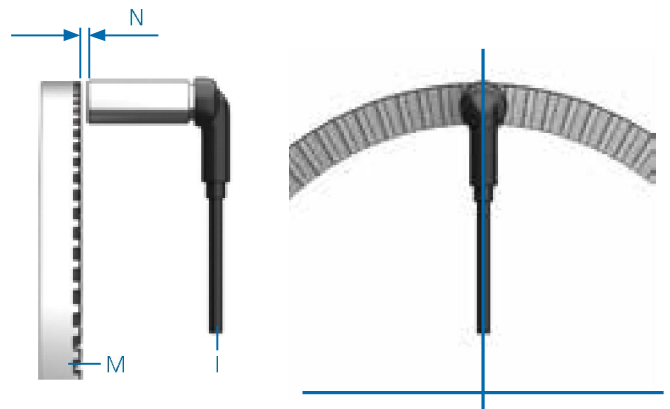
Reassemble hub assembly

Sensor must be central over the exciter teeth.

The gap between exciter 'M' and sensor 'I' must not exceed $N = 0.5 \text{ mm}$.

Maximum run out of 0.2 mm true indicator reading.

Before fitment of hub cap / cover check sensor output.



General information

Braking with EB+ Gen3

In an emergency apply full force on the brake pedal.

The EB+ Gen3 will be activated immediately when you fully apply the brakes and will assist you to retain steering control of your vehicle according to the road surface conditions.

Do not apply and release the brakes by pumping the brake. This is known as 'cadence braking' and can have a detrimental effect on vehicle braking.

Lining wear system (LWS)

EB+ Gen3 lining wear system is a device that allows multiple lining wear indicators (LWI) to be connected to a single analogue input 'AUX 4' on the EB+ Gen3 ECU. The EB+ Gen3 lining wear device can be installed on all types of towed vehicles where provisions are made in the brake pads. The product provides lining wear indication on disc brakes without the need to remove wheels via the EB+ Gen3 diagnostic tools Info Centre 2 or DIAG+. The device connects to specified sensors from the brake pads and when a brake lining has reached its wear limit the sensor signals the EB+ Gen3 Lining wear device which activates the EBS warning lamp indicating a fault.

EB+ Gen3 stability

EB+ Gen3 Stability is an advanced roll-over control function that senses when the trailer is near to a rollover condition and automatically applies the trailer brakes to slow the vehicle combination down. It will help to reduce the likelihood of trailer rollover but it will not prevent rollover and should be used as an aid to normal good driving practice. The stability function is a safety back up system, like the anti-lock braking function. It uses a lateral accelerometer to determine the level of cornering and as part of its operation it applies brief pulses of brake pressure during normal cornering, below a level at which a rollover may occur. These pulses may be noticeable to a driver but will reduce in number after the system has learnt the vehicle combinations roll characteristics and are part

of the normal operation. This learning process will be repeated every ignition cycle, if the load is changed or if an axle is lifted or lowered.

Traction assist using ILAS®-E

Traction assist is made operative by a 24 v (constant or intermittent) supply to the yellow wire in the 3-core auxiliary cable connected to AUX 2 or AUX 3 and programmed as ILAS®-E Front. On request for traction assist, the front axle lifts.

The front axle drops when either:

- › The vehicle speed exceeds 30 kph.
- › The suspension pressure reaches more than 130 % of the laden bag pressure.

Soft Docking

Soft Docking, when linked to the Haldex EB+ Gen3 system will apply brakes automatically when reversing into a loading bay. The system will reduce vehicle speed to prevent significant damage to the vehicle and the dock by timely application of the brake pressure when reversing. The braking is initiated by sensing of 1 metre distance from the loading bay.

Info Point

With an illuminated spot the Info Point will instantly show if the trailer has a fault in the braking system. The Info Point connects to the EB+ Gen3 auxiliary. It is dedicated to alert fault in lining wear, sensors, COLAS® etc. It is ADR approved.

TPMS

Haldex TPMS is a tire pressure monitoring system for any commercial vehicle trailer equipped with EB+. The EB+ shall facilitate the transmission of pressure and temperature for each wheel via ISO 11992 CAN to the towing vehicle and the Info Centre 2 can be used locally to display the pressure and temperature of the trailer. The wheel unit sensor (WUS) measures the pressure and temperature inside the tire and transmits all the measurements by radio frequency (RF) to the receiver control unit (RCU). The RCU then determines the system status and sends it to the electronic braking system (EBS) on the trailer CAN bus. The EBS then transmits this information to the dashboard which can display the required information of pressure, warning, alerts and system status for the vehicle driver.

The system is configured and diagnosed through CAN communication using DIAG+. The TPMS trigger uses low frequency (LF) to communicate with the wheel unit (WUS) and is used to force the WUS to send it's unique identification code (ID) to the RCU.

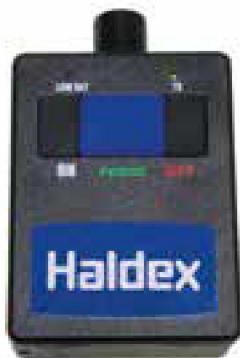
TPMS components



Wheel unit sensor (WUS)



Receiver control unit (RCU)

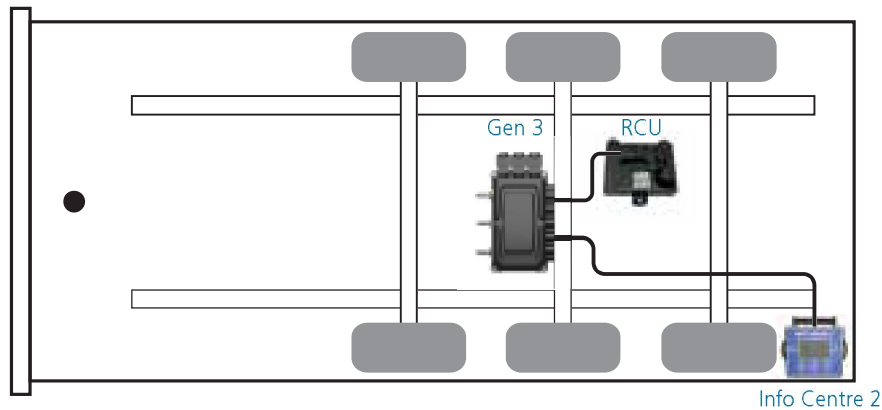


TPMS trigger



DIAG+ setup screen (example)

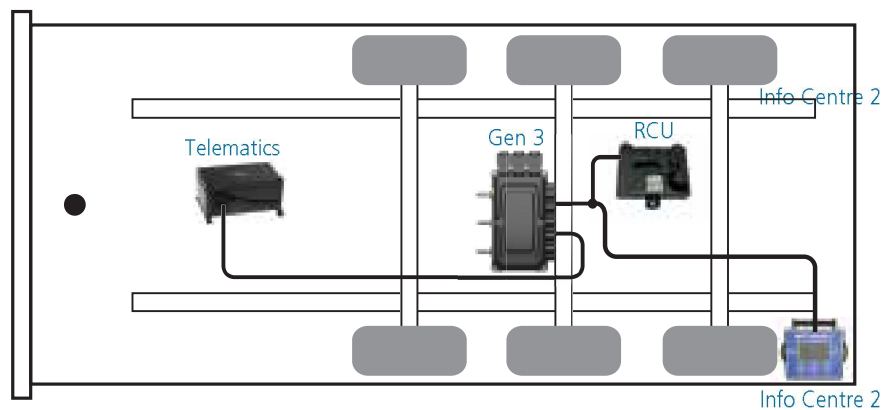
Semi trailer - standard installation



Cable description	Part number
RCU cable (rear, unterminated)	814 040 101

Telematics Gen 3 RCU

Semi trailer - complex installation (example)

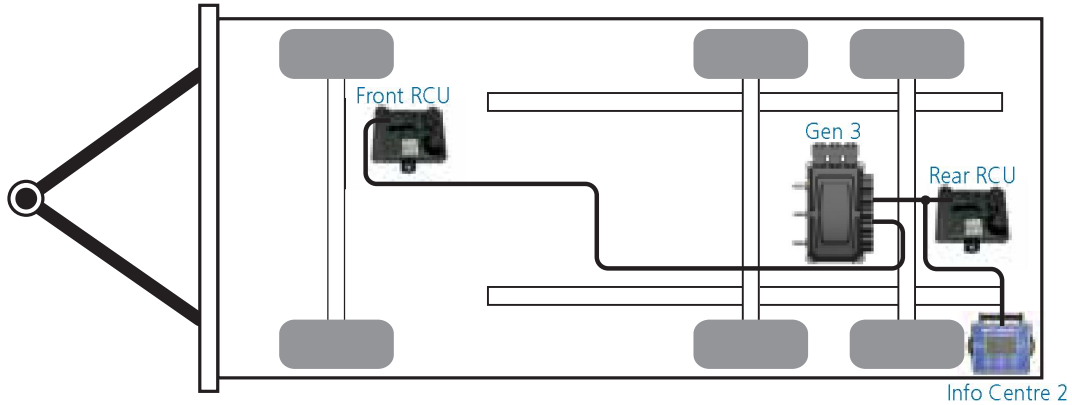


Cable description	Part number
RCU cable (rear, unterminated)	814 040 001
Splitter cable	814 038 001
DIN telematics cable	814 033 0xx

Program Gen3 via DIAG+ without CAN termination (Gen3 tab in auxiliary setup) if telematics unit has CAN termination.



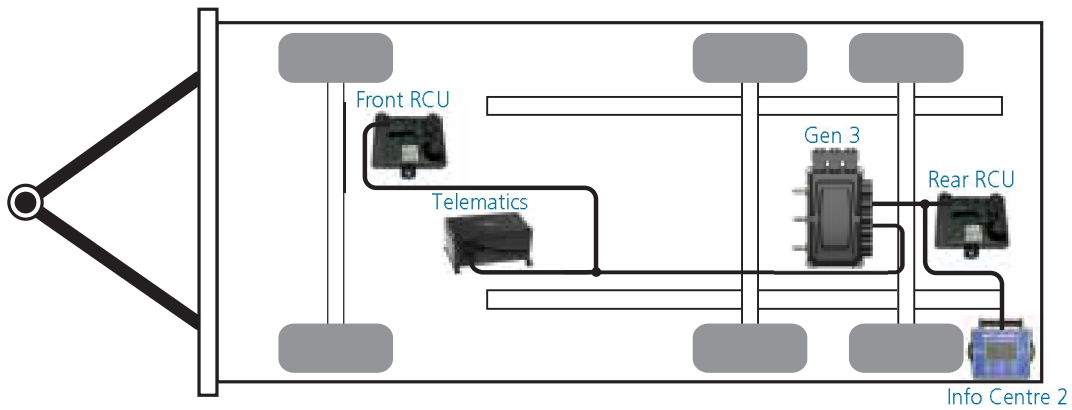
Full trailer - standard installation



Cable description	Part number
RCU cable (unterminated)	814 040 001
Splitter cable	814 038 001
Front RCU cable (terminated)	814 040 2xx

Program Gen3 via DIAG+ without CAN termination (Gen3 tab in auxiliary setup).

Full trailer - complex installation (example)



Cable description	Part number
RCU cable (unterminated)	814 040 001
Splitter cable (Qty 2)	814 038 001
DIN telematic cable	814 033 0xx
Front RCU cable (terminated)	814 040 2xx

Program Gen3 via DIAG+ without CAN termination (Gen3 tab in auxiliary setup).

Part reference

These available service parts can be obtained from Haldex service centres or distributors.

EB+ Gen3 electronic control unit (ECU)							
	2M	3M	DCV	QRV	STAB	S AUX	P AUX
823 008 xxx	✓		✓	✓	✓	✓	
823 034 xxx	✓	✓	✓	✓	✓	✓	✓
950 823 008	✓		✓	✓	✓	✓	
950 823 034	✓	✓	✓	✓	✓	✓	✓



See page 130 for a complete list of Gen3 assembly part numbers.

EB+ Gen3 1M Slave	Part number
Gen3 1M Slave	810 023 001

The EB+ Gen3 Slave assembly (ECU + valve) is only supplied as one complete unit that cannot / should not be separated.



EB+ Gen3 label	Part number
Label	028 5262 09



Sensor kit	Part number
Angled (inc. retaining clip)	950 364 503
Straight (inc. retaining clip)	950 364 506



EB+ Info Centre 2	Part number
Haldex Info Centre 2	815 041 001
Haldex Info Centre 2 ADR	815 046 001



COLAS ⁺	Part number
Raise and lower valve with reset to ride	338 061 xxx
Raise and lower valve with reset to ride	338 062 xxx
Raise and lower valve with reset to ride	338 071 xxx



ILAS [®] -E	Part number
Lift axle valve	352 061 xxx
Lift axle valve	352 062 xxx
Lift axle valve	352 070 xxx



TrCM ⁺	Part number
With / without safe parking	352 067 xxx



TEM [®]	Part number
With safe parking	352 075 xxx



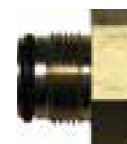
REV	Part number
With port for control line sensor	351 033 xxx



Control line sensor	Part number
M16 x 1.5 thread for REV port	815 022 001



Main assembly service kits	Part number
QRV service kit	950 800 307
DCV service kit	950 800 905



Info Point	Part number
Info Point with 7 m cable	815 021 001
Info Point with 18 m cable	815 021 011



Soft Docking	Part number
Complete system with acoustic and optical aids	815 024 001
Kit without optical aid	815 025 001
Kit without acoustic aid	815 026 001
Basic kit	815 027 001
Lite kit	815 051 001
Sensor adjusting tool	042 708 309



TPMS	Part number
Receiver control unit (RCU)	815 052 001
Wheel unit sensor (WUS)	042 727 209
Cable / clamp assembly	003 951 709
Cable stretcher tool	042 727 309
Wheel unit sensor indicator label	006 700 021_M
TPMS trigger (hand unit)	815 053 001



Lining wear system	Part number
L = 2 m AUX cable - standard	815 015 001
Blanking plug (std version)	027 5260 09
Sensor extension cable (5 m)	814 007 111



EB+ Gen3 stability	Part number
External lateral accelerometer	815 012 011



Electronic height sensor	Part number
Electronic height sensor	815 030 001
Sensor cable (4 m)	814 020 001
Linkage (vertical)	612 025 001
Linkage (horizontal)	003 575 709



DIAG+	Part number
EB+ Gen3 diagnostic cable kit	950 800 912
Kit contents:	
ECU / pc interface cable (6.5 m)	814 036 001
EB+ ISO diagnostic cable	815 018 001
EB+ SOV / pc interface cable (6.5 m)	814 011 001
Transit case	042 623 719

EB+ interface	Part number
EB+ interface kit	950 800 909
Kit contents:	
USB pc interface (DIAG+)	815 023 001
USB cable	042 707 309



Haldex Fleet+ is the winner of the Trailer Innovation Award 2013 in the 'Smart Trailer' category. This pan-European awards scheme involving leading road transport magazines from ten European countries is held every two years, to tie in with IAA (Internationale Automobil-Ausstellung) commercial vehicles show in Hannover, Germany.



Fleet+	Part number
Fleet+ interface kit	950 800 910
Kit contents:	
USB pc interface (Fleet+)	815 023 011
USB cable	042 707 309

EB+Gen3 ISO cables

ISO 7638 socket (unfused)	Length
814 003 102	12 m
814 003 112	16 m
814 003 122	18 m
814 003 132	9 m
814 003 142	14 m
814 003 152	6 m



ISO 7638 plug (unfused)	Length
814 004 102	9 m
814 004 112	12 m
814 004 122	15 m
814 004 132	18 m



Power A	Length
814 009 101	16 m
814 009 111	14 m
814 009 121	12 m
814 009 131	5 m
814 009 141	1.5 m
814 009 151	4.5 m



ISO 7638 to 7-pin DIN connector	Length
814 003 201	1 m
814 003 211	12 m



ISO cable assembly male / female	Length
814 022 001	30 m



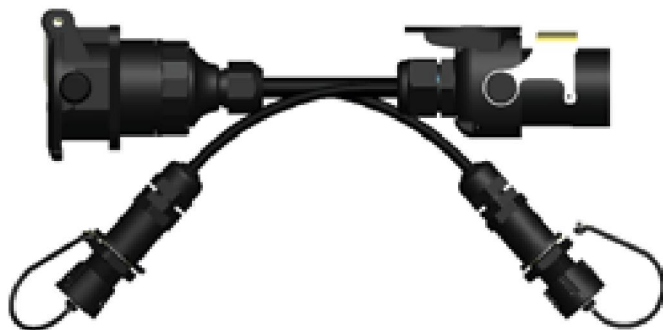
ISO power A to 7-pin connector	Length
814 026 001	1.5 m
814 026 011	4.5 m
814 026 021	12 m



ISO 12098 / ISO 1185 (24N)	Length
814 002 301	6 m
814 002 311	12 m
814 002 321	9 m
814 002 331	4 m
814 002 341	1 m



ISO 7638 Diagnostic	Length
815 018 001	0.5 m



EB+Gen3 auxiliary cables

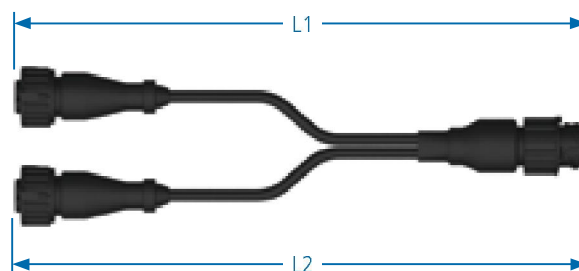
Auxiliary cable	Length
814 001 302	7 m
814 001 312	18 m
814 001 322	2 m
814 001 332	4 m
814 001 342	1 m
814 001 352	12 m
814 001 372	10 m



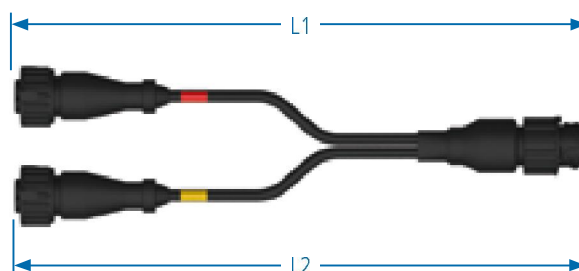
Auxiliary cable to DIN connector	Length
814 012 201	7 m
814 012 211	18 m
814 012 221	1 m
814 012 231	2 m
814 012 241	5 m
814 012 251	3 m
814 012 261	4 m
814 012 271	10 m



Male to female to female (2x2x2 way)	L1	L2
814 027 001	0.5 m	0.5 m



Male to female to female (3x2x2 way)	L1	L2
814 028 011	4 m	2 m
814 028 001	0.5 m	0.5 m



Auxiliary (3 pole) to auxiliary (3 pole)	Length
814 032 001	1 m
814 032 011	4 m
814 032 021	7 m
814 032 031	18 m



Y-splitter 3x2x2 way	Length
814 039 001	0.5 m



Y-splitter 3x3x3 way	Length
814 039 101	0.5 m



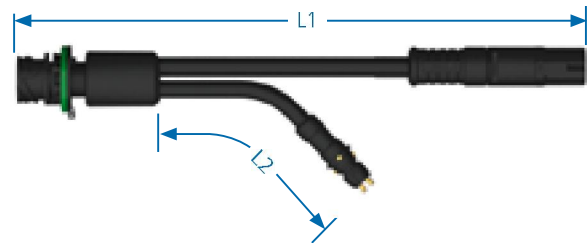
Super AUX cable	Length
814 002 301	6 m
814 002 311	12 m
814 002 321	9 m
814 002 331	4 m
814 002 341	1 m



Power B to ISO 15170 Super AUX	Length
814 004 301 (4 pole)	1 m
814 004 311 (4 pole)	6 m



Power B to ISO 15170 Super AUX	L1	L2
814 029 001 (4 pole)	1 m	1 m
814 029 011 (4 pole)	6 m	5 m
814 029 021 (4 pole)	6 m	1 m



Sensor cable	Length
814 004 401	3 m
814 004 411	6 m
814 004 421	2 m
814 004 431	10 m
814 004 441	14 m
814 004 451	8 m
814 004 461	12 m
814 004 471	4 m



EB+Gen3 diagnostic cables

Info Centre 2 to side of vehicle	Length
814 025 001	1 m



Side of vehicle (SOV) to ECU	Length
814 030 001	6.5 m
814 030 011	2.5 m
814 030 021	5 m
814 030 031	15 m



Vehicle to pc interface (dongle)	Length
814 011 001	6.5 m
814 011 011	15 m



4-pole AUX to DIN	Length
814 033 001	1 m
814 033 011	12 m



4-pole AUX to pc interface (dongle)	Length
814 036 001	6.5 m
814 036 011	15 m
814 036 021	20 m



4-pole AUX to 4-pole AUX	Length
814 037 001	6.5 m
814 037 011	0.5 m
814 037 021	8 m
814 037 031	14 m



Y-splitter 4x4x4 way	Length
814 038 001	0.5 m



4-pole AUX to female FCI connector	Length
814 040 001 (rear RCU unterminated)	1.2 m
814 040 101 (front RCU unterminated)	1.2 m
814 040 201 (front RCU terminated)	1.2 m
814 040 211 (front RCU terminated)	6 m
814 040 221 (front RCU terminated)	10 m



3M Link cable

Sensor cable	Length
814 041 001	12 m
814 041 011	2 m
814 041 021	5 m
814 041 031	14 m
814 041 041	10 m
814 041 051	8 m



Gen3 part numbers (including pipe fittings)



Part No	Variants				Port 4 Side / 22				Front face				Port 41 Side / 21								
	DCV	QRV	STAB	S AUX	P AUX	4	1	Test	22	23	22	21	21	23	23	23	21	23	Test	41	1
823 008 001	✓	✓	✓	✓		M16	M22	M12	M16	M16	M16	M16	M16	M16	M16	M16	M16	M16	M12	M16	M22
823 008 101	✓	✓	✓	✓		8x1	15x1.5	Plug	12x1.5	8x1	12x1.5	12x1.5	12x1.5	12x1.5	Plug	8x1	12x1.5	8x1	8x1	8x1	15x1.5
823 008 111	✓	✓	✓	✓		8x1	15x1.5	8x1	12x1.5	10x1	12x1.5	12x1.5	10x1	8x1	8x1	8x1	12x1.5	Plug	Plug	8x1	15x1.5
823 008 213	✓	✓	✓	✓		8x1	16x2	Plug	12x1.5	8x1	12x1.5	12x1.5	Plug	8x1	Plug	12x1.5	12x1.5	8x1	Plug	8x1	16x2
823 008 291	✓	✓	✓	✓		8x1	15x1.5	Plug	12x1.5	8x1	12x1.5	12x1.5	8x1	8x1	8x1	8x1	12x1.5	8x1	Plug	8x1	15x1.5
823 034 001	✓	✓	✓	✓	✓	M16	M22	M12	M16	M16	M16	M16	M16	M16	M16	M16	M16	M16	M12	M16	M22
823 034 101	✓	✓	✓	✓	✓	8x1	15x1.5	Plug	12x1.5	8x1	12x1.5	12x1.5	8x1	8x1	Plug	8x1	12x1.5	8x1	8x1	8x1	15x1.5
823 034 111	✓	✓	✓	✓	✓	8x1	15x1.5	8x1	12x1.5	10x1	12x1.5	12x1.5	10x1	8x1	8x1	8x1	12x1.5	Plug	Plug	8x1	15x1.5
823 034 213	✓	✓	✓	✓	✓	8x1	16x2	Plug	12x1.5	8x1	12x1.5	12x1.5	8x1	8x1	Plug	8x1	12x1.5	8x1	Plug	8x1	16x2
823 034 291	✓	✓	✓	✓	✓	8x1	15x1.5	Plug	12x1.5	8x1	12x1.5	12x1.5	8x1	8x1	8x1	8x1	12x1.5	8x1	Plug	8x1	15x1.5
950 823 008	✓	✓	✓	✓		M16	M22	M12	M16	M16	M16	M16	M16	M16	M16	M16	M16	M16	M12	M16	M22
950 823 034	✓	✓	✓	✓	✓	M16	M22	M12	M16	M16	M16	M16	M16	M16	M16	M16	M16	M16	M12	M16	M22

DCV = Double check valve STAB = Stability (roll-over) P AUX = Premium AUXQRV = Quick release valve S AUX = Super AUX

