iLvl Sensor

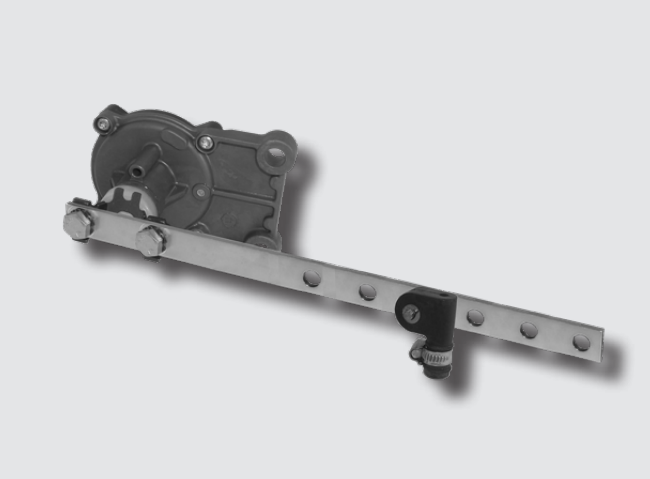
Level Sensor for use with iLvl

Function

The **iLvl Sensor** is used on trailers equipped with the TEBS brake system and iLvl air suspension control system. Using a linkage to the axles, the sensor measures the movement of the suspension and supplies this information as an electrical signal to the TEBS brake module which controls the iLvl system.

The Level Sensor K025259 [1)] is used together with a flat lever and rubber links to connect to the axle. The connection between the rubber links is not supplied and must be produced separately.

For detailed information on the Level Sensor K025259 see PD-264-100, Document No. Y160684.



Technical Features

Weight:	0.38 kg approx.
Level sensor	
Nominal input voltage:	5 V ± 0.5 V DC
Nominal output voltage:	5 V at -45°
	0 V at +45°
Nominal operating angle:	-40° to +40°
Operating Temperature Range:	-45 °C to +85 °C

Range Overview

Part No.	Type No.	Description
K025259 [1)]	–	Level Sensor
K095917 [1)]	–	Sensor Linkage Kit (Lever with Rubber Link) - lever lengths 120 - 240 mm
K132615 [1)]	–	Sensor Linkage Kit (Lever with Rubber Link) - lever lengths 120 - 312 mm
K000239	–	Rubber Link (included in Sensor Linkage Kit)
K193629	–	Axle Joint Kit (Rubber Link with axle attachment)
K097070	–	In-Out Cable for connecting Sensor to TEBS G2.2 Module
K208326	–	In-Out Cable for connecting Sensor to iTEBS X Module
K002277	–	In-Out Cable for connecting the Sensor to iTEPM Module

1) The part number will carry a suffix "N00" which defines that it is supplied without packaging.

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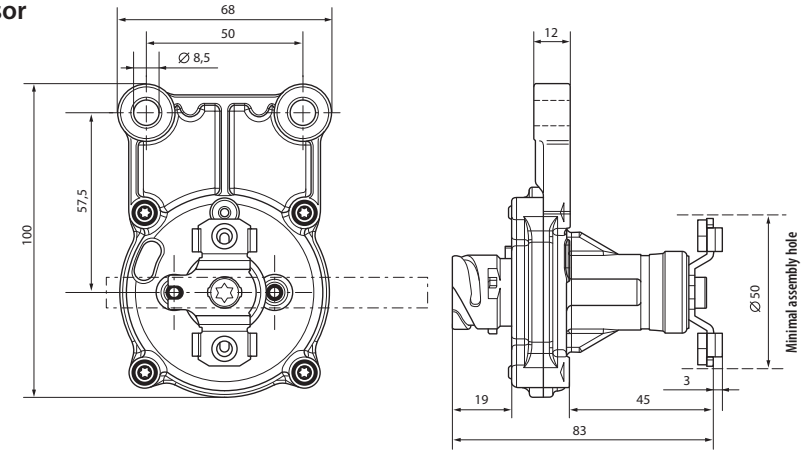
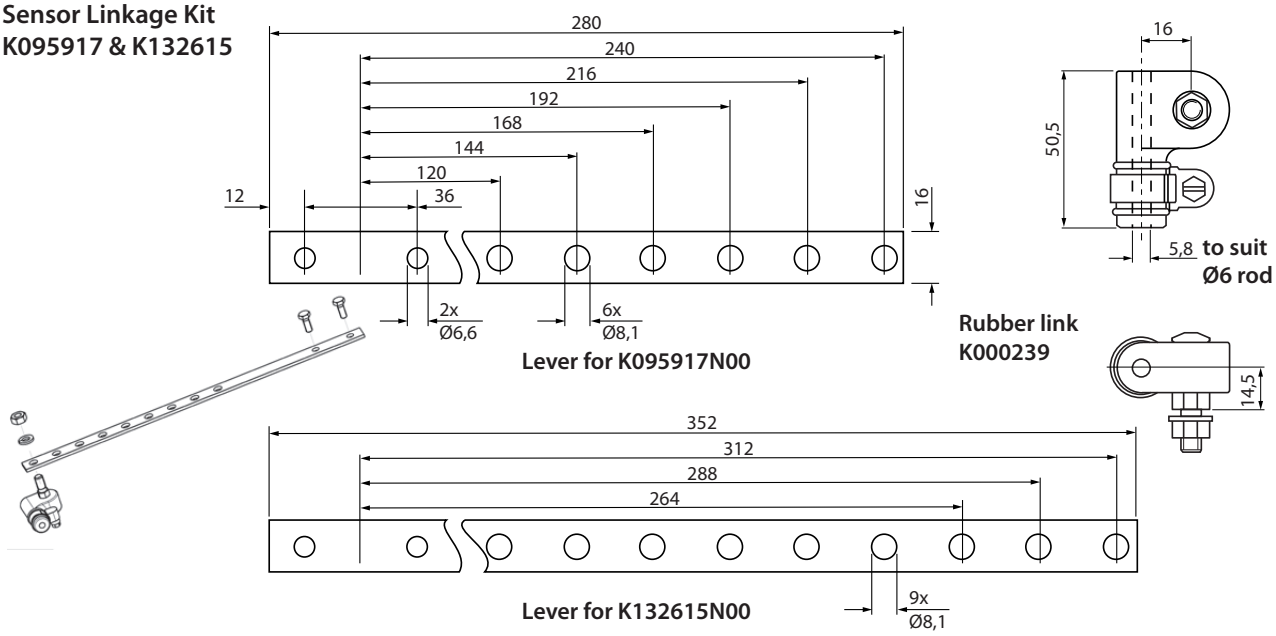
Dimensions

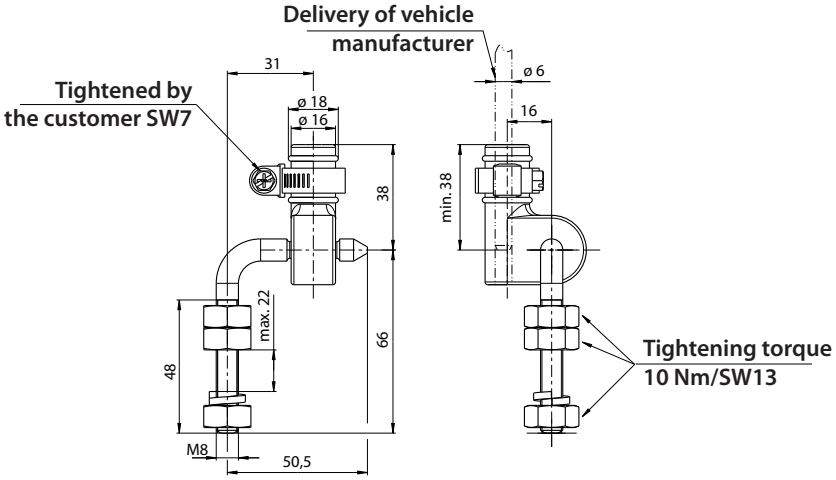
Level Sensor
K025259



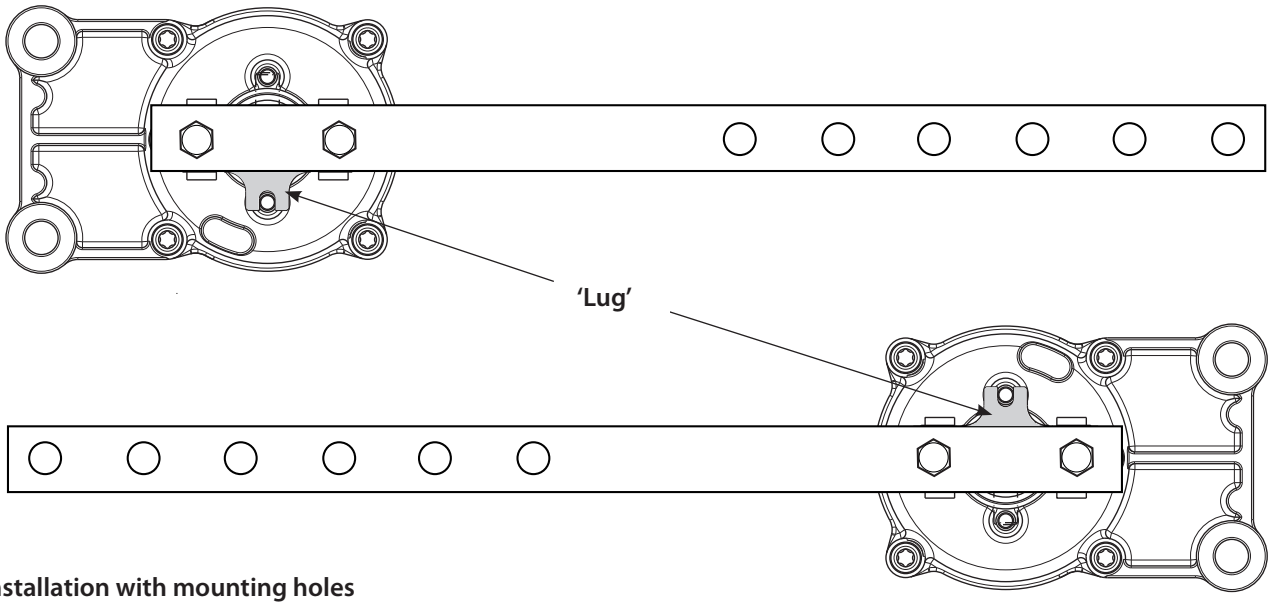
Sensor Linkage Kit
K095917 & K132615



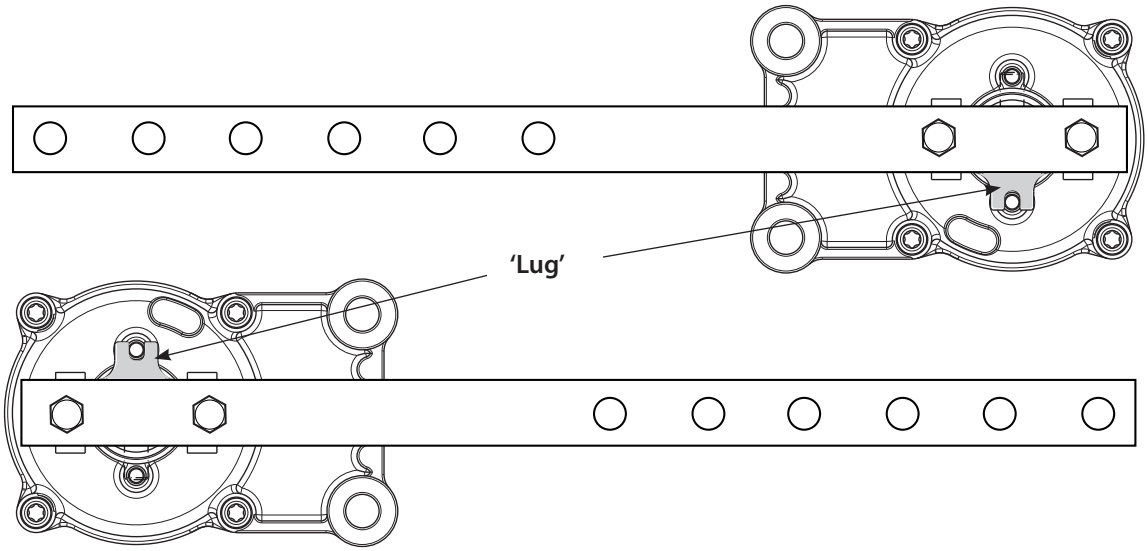
Axle Joint Kit
K193629



Mounting Positions with 'flat' lever



Installation with mounting holes oriented vertically



Installation of the iLvl Sensor

The iLvl Sensor must be installed with the mounting holes vertical. It can be mounted either way round as the system will respond to either increasing or decreasing voltage from the sensor.

The iLvl Sensor should be positioned as close to the centre line of the trailer as possible and above the axle being monitored. In the case of a bogie, ensure that the Level Sensor is connected to a non-lifting axle.

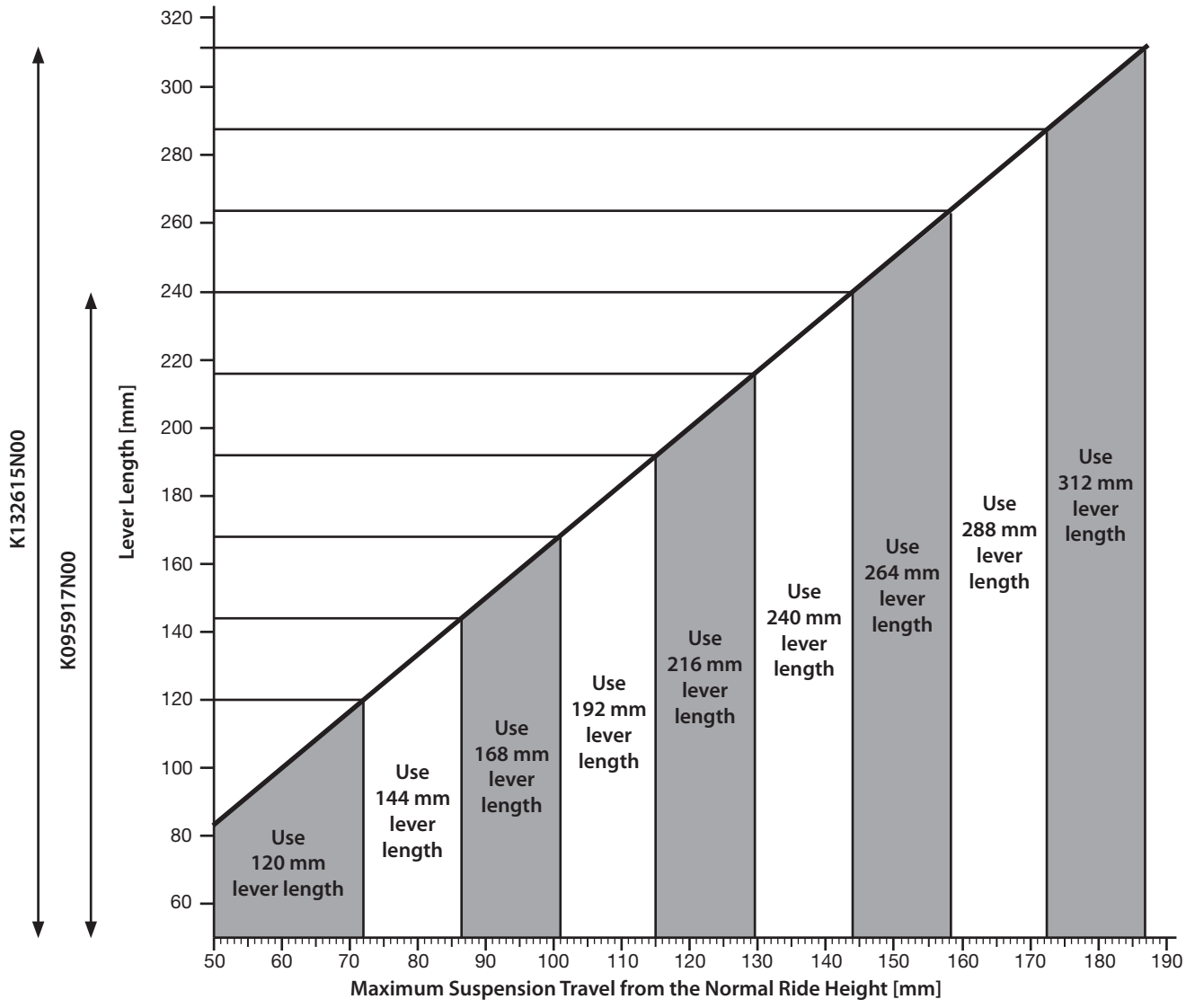
The Axle Joint Kit must be attached to the axle by means of a suitable bracket (not supplied) welded to the axle casing.

After installation the rod (not supplied) connecting the Sensor Link and the Axle Link should be as close to vertical as possible when the trailer is at its normal ride height.

Setting up the iLvl Sensor

Determining the Lever Length

Use the diagram below to determine the lever length required.



Measure or calculate the maximum suspension travel from the normal ride height.

Example:

Normal ride height = 1120 mm

Minimum height (laden vehicle on bump stops) = 1000 mm. This is 120 mm below normal ride height

Height with air bags at maximum extension = 1230 mm. This is 110 mm above normal ride height.

Take the higher suspension travel, i.e 120 mm.

Read the corresponding lever length required from the graph (216 mm in the example).

Two levers are available with holes at:

120 mm, 144 mm, 168 mm, 192 mm, 216 mm and 240 mm

or 120 mm, 144 mm, 168 mm, 192 mm, 216 mm, 240 mm, 264 mm, 288 mm and 312 mm

If the suspension travel falls on the line between two bands, use the higher value (longer lever length).

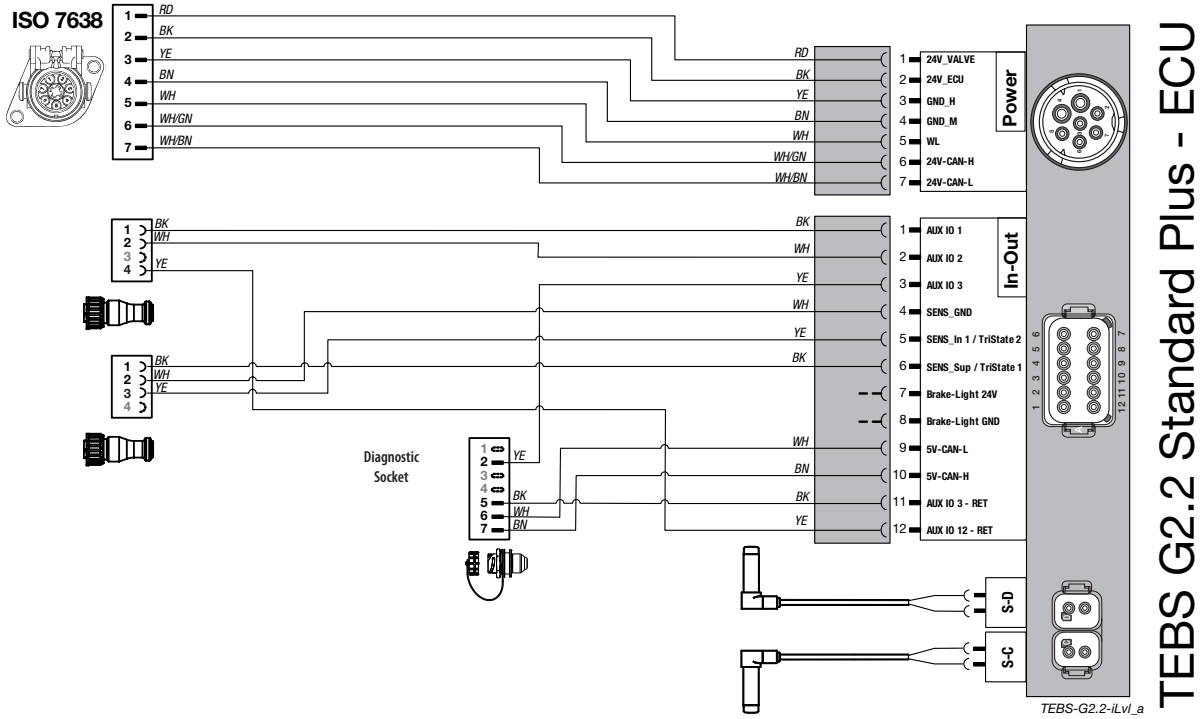
Assembly and Connecting Procedure

1. Assemble the sensor operating lever from the sensor linkage kit K095917 to the sensor using the two screws supplied in the kit. Apply a good quality, propriety thread lock to the screw threads before assembly. Tighten to 10 Nm.
2. Install the rubber joint from the sensor linkage kit K095917 into the hole determined above. **Note**: The lever length is measured from the centre line of the sensor to the fixing bolt of the rubber joint.
3. Attach a suitable bracket (not supplied) to the centre of the axle being monitored. Fix the axle joint kit to this bracket and tighten the locking nuts to 10 Nm.
4. Attach the sensor assembly to the trailer chassis (bracket may need to be used - not supplied) in a position above the monitored axle such that the vertical link between the two rubber joints is as vertical as possible at the normal ride height.
5. Use a 6 mm o/d rod or tube (not supplied) to create the vertical link between the two rubber joints. With the trailer at its normal ride height hold the sensor operating lever horizontal (the sensor can be temporarily fixed in this position by using a 4 mm o/d pin through the lug into one of the two datum holes in the body of the sensor) and clamp the vertical link in both rubber joints. Ensure that any excess length of the vertical link beyond the rubber joints is removed. Remove the pin in the lug (if used). **Note**: It is recommended that the vertical link should not be shorter than 200 mm.

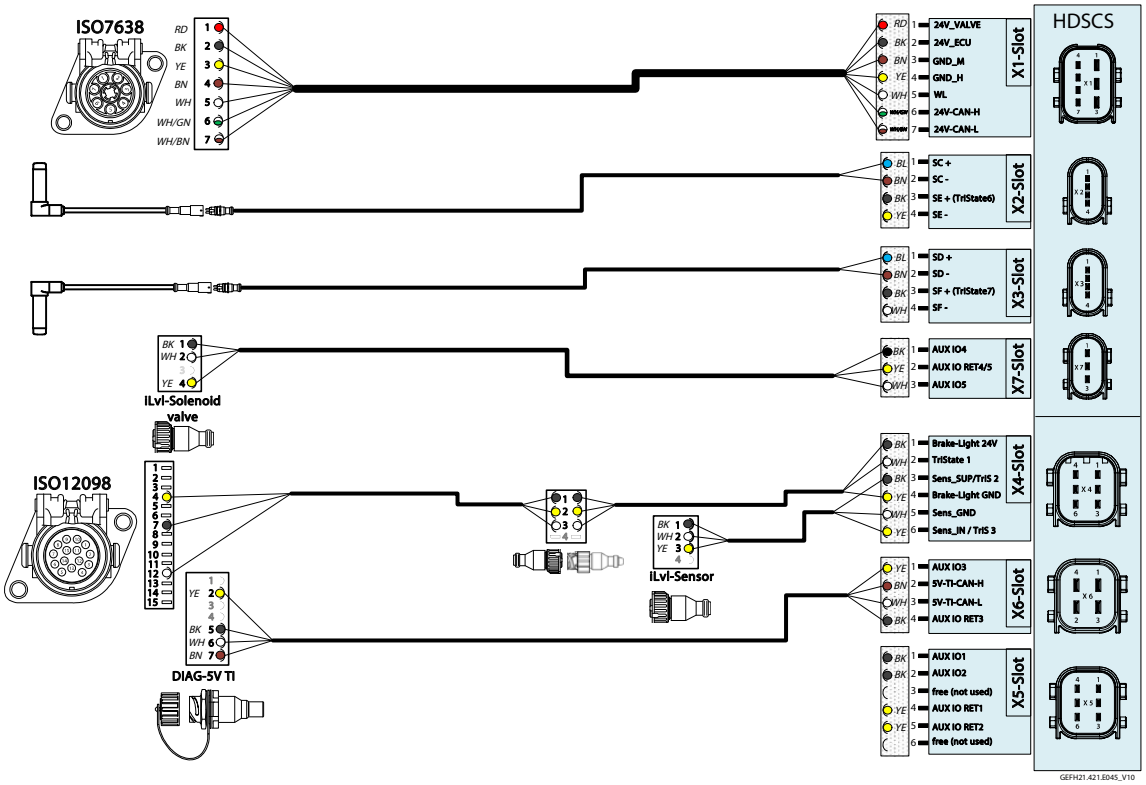
6 Connect the sensor to the TEBS brake module using cable K097070 (for TEBS G2.2) or K208326 (for iTEBS X). The cable marked “Sens” must be connected to the sensor.

Typical Wiring Diagrams

TEBS G2.2 semi-trailer with iLvl and Diagnostic Socket



iTEBS® X Semi-Trailer with iLvl and Diagnostic Socket



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Revision Details		
Rev. 003	January 2019	New Layout
Rev. 004	August 2022	Product range change
Rev. 005	June 2023	New iTEBS information and Wiring Diagram

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