TRAILERCAST

INSTALLATION GUIDE



TP19108

WABCO

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You will find the current edition at: https://zf.com/cvliterature

General Information

1 General Information

1.1 Symbols Used in this Document

Description of an immediate situation which may result in irreversible injury or death if the warning is ignored.

⚠ WARNING

Description of a possible situation which may result in irreversible injury or death if the warning is ignored.

A CAUTION

Description of a possible situation which may result in irreversible injury if the warning is ignored.

NOTICE

Description of a possible situation which may result in material damage if the warning is ignored.



Important information, notices and/or tips



Reference to information on the Internet

Descriptive text

- Action step
- 1. Action step 1 (in ascending order)
- 2. Action step 2 (in ascending order)
- Listing
- Indicating the use of a tool / WABCO tool

General Information

1.2 How to Obtain Additional Maintenance, Service and Product Information

If you have any questions about the material covered in this publication, or for more information about the WABCO product line, please contact WABCO Customer Care Center at 855-228-3203, by email at supportwabconacustomercare@zf.com, or visit our website: www.zf.com/cv.

Refer to the Society of Automotive Engineers (SAE) website to find all current SAE documents and standards applicable to WABCO products (such as SAE J447 and SAE J908 at www.sae.org).

Refer to the National Highway Traffic Safety Administration (NHTSA) website to find all current documents referenced in the manual at www.nhtsa.gov.

1.3 How to Obtain Parts and Kits

Contact the WABCO Customer Care Center at 855-228-3203 (United States and Canada); 800-953-0248 (Mexico). Email: supportwabconacustomercare@zf.com, supportwabconacustomercare@zf.com, supportwabconacustomercare@zf.com.

1.4 WABCO TOOLBOX PLUS™ Software

TOOLBOX PLUS™ Software provides PC diagnostic for WABCO products and can be purchased and downloaded from https://wabco.snapon.com.

The software User Guide, MM19047 can be obtained by visiting our Literature Center.



Purchase and Download TOOLBOX PLUS™ https://wabco.snapon.com



ZF Commercial Vehicle Literature Center https://zf.com/cvliterature

1.5 WABCO Academy



www.wabco-academy.com

General Information

WABCO Online Product Catalog 1.6



www.wabco-customercenter.com

1.7 **Your Direct Contact to ZF CVS**

ZF CV Systems North America LLC

1220 Pacific Drive Auburn Hills, MI 48326

Customer Care Center: (855) 228-3203

https://www.zf.com/products/en/cv/home/cv.html

Safety Information

2 Safety Information

2.1 Provisions for a safer work environment

- Only trained and qualified auto technicians and automotive mechanics may carry out work on the vehicle.
- Read this publication carefully
- Follow all warnings, notices and instructions to help avoid personal injury and property damage.
- Always abide by the vehicle manufacturer's specifications and instructions.
- Observe all accident regulations of the respective company as well as regional and national regulations.
- The workplace should be dry, sufficiently lit and ventilated.
- Use personal protective equipment if required (safety shoes, protective goggles, respiratory protection and ear protectors).

Read and observe all Danger, Warning and Caution hazard alert messages in this publication. They provide information that can help prevent serious personal injury, damage to components, or both.

⚠ WARNING

To help prevent serious eye injury, always wear eye protection when you perform vehicle maintenance or service.

⚠ WARNING

Park the vehicle on a level surface. Block the wheels to help prevent the vehicle from moving. Support the vehicle with safety stands. Do not work under a vehicle supported only by jacks. Jacks can slip and fall over. Serious personal injury and damage to components can result.

⚠ WARNING

This product can expose you to chemicals including Nickel, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

Important Information

3 Important Information

Use only genuine WABCO components. Other manufacturers' parts are not designed for use with a WABCO TRAILERCAST system and it may not function correctly.

Before Installation

4 Before Installation

This installation guide provides you with installation directives and procedures for the installation of TRAILERCAST.

4.1 Liability

The installation of TRAILERCAST can be carried out either by a ZF/WABCO Certified iABS Service Partner or by the customer (after ZF training/demo installation). Contact your service partner if the iABS/RSS*plus* data still needs to be activated.

Many customers prefer to do the installation themselves: the building-in of the device can then be combined with regular trailer maintenance services, which helps customers use their time more efficiently. To this purpose, ZF provides training for the technical engineers of the installation company. The training consists of a theoretical part which can be illustrated with a demo installation, and further monitoring. Afterwards, the trainees will be qualified to autonomously assemble the other devices in the trailers.

The illustrations and specific data of non-WABCO products have been checked thoroughly and have been found correct at the time this manual was composed. However, ZF cannot accept any responsibility for possible adaptations by the manufacturer concerned. ZF aims for a continuous improvement of its products. For the purpose of technical progress, we reserve the right to implement changes at any time, without prior notice.

4.2 Approvals

4.2.1 FCC Approval **FC**

ZF hereby confirms that this wireless device complies with all requirements and other relevant provisions of the US Federal Regulations.

4.2.2 CE Approval **C E**

ZF hereby confirms that this wireless device complies with all requirements and other relevant provisions of the RED directive.

4.2.3 Mobile Phone Radiance

FREQUENCY	RF OUTPUT POWER
LTE-FDD B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28	23 dBm ± 2 dB (class 3)
LTE-TDD B39 (for Category M1 only)	23 dBm ± 2 dB (class 3)
GSM850 / EGSM900	33 dBm ± 2 dB
DCS1800 / PCS1900	30 dBm ± 2 dB

Before Installation

4.3 Best Practices in Installation

⚠ DANGER

During the entire connection procedure, the voltage must be turned off.



Vehicle electrical grounding guidelines are included in Appendix I.

4.3.1 Assembly

The assembly of the parts must be done using the accessories provided. ZF cannot be held responsible for any errors resulting from the use of other materials. ZF wishes to point out that activities which require welding to the trailer, can cause damage to the electronics of the device. It is imperative that the device is disconnected when carrying out such activities.

4.3.2 Wire Management

All the wire ways shall be smooth and free from sharp edges. Wires shall be protected, so they do not come in contact with burrs, cooling fins, moving parts, etc., which could cause damage to the insulation of the conductors.

4.3.3 Operating Conditions

Input voltage range: 10 - 32 V

Maximum current: 1.5 A

■ Operating temperature range: -40°C ~ +75° C

■ Storage temperature range: -40°C ~ +75° C

■ Nominal power consumption: 24 V x 25 mA = 0.6 W

■ Maximum power consumption: 24 V x 80 mA = 1.9 W

Ingress protection: IP6K6K / IP6K9K

■ Compliance with: ISO 16750 – E – K – E - D - D – IP6K6K / IP6K9K

Before Installation

4.3.4 Disposal



In case you no longer want to use the TRAILERCAST unit, it is prohibited to dispose of it together with domestic waste as the system components are electronic scrap. Dispose of hazardous waste in an environmentally friendly manner and in compliance with relevant local, state and federal regulations.

ZF strives to help protect the environment. As with other old devices, all components can be returned to ZF.

4.3.5 Improper Use

NOTICE

USE THE DEVICE ONLY FOR ITS INTENDED PURPOSE! DO NOT OPEN THE TRAILERCAST UNIT. DO NOT DRILL INTO THE DEVICE HOUSING!

In case of damage of any kind, which could affect the ingress protection/waterproofness of the device, the device must be immediately taken out of service.

The device safety may be endangered when:

- The device is not firmly fastened to the trailer
- The device has suffered from transportation damages
- The temperature limits are exceeded
- The device is visibly damaged.

NOTICE

IF THE DEVICE IS VISIBLY DAMAGED, IT MUST BE TAKEN OFF OF THE VEHICLE IMMEDIATELY AND SENT BACK TO ZF.

All other instructions, notes and regulations in this operation manual must be closely followed.

Introduction - Hardware Components

5 Introduction - Hardware Components

TRAILERCAST is a trailer tracking device with an embedded SIM card, GSM antenna and GPS antenna. It is designed for outside use. It is designed to be installed under the trailer. TRAILERCAST connects to the trailer's iABS or RSSplus.



Installation - TRAILERCAST Position

6 Installation – TRAILERCAST Position



All WABCO component part number information can be found in Appendix II.

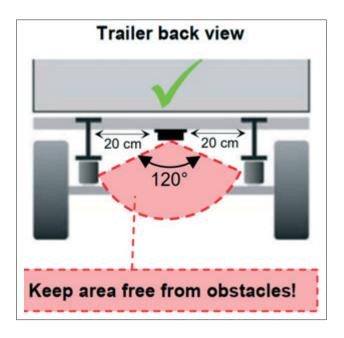
6.1 General Recommendations

- When installing TRAILERCAST, keep the area around the antennas away from metal or other obstructions as much as possible to help avoid signal disturbance.
- As ZF cannot document all different trailer configurations, we recommend validating the installation of the unit with a ZF technician before deploying on a large scale.
- Make sure that the unit will not be continuously exposed to direct sunlight.
- Make sure that the label of the unit is always visible.
- The installation technician remains responsible at all times for the correct installation and connection of the hardware unit.
- Always verify that sufficient GPS coverage is guaranteed during installation, and a good GPS position has been received via https://install.us.wabco-fleet.com/search/?device=trailercast. Check this for every installation.

6.2 Preferred Installation (Standard Trailer With Fixed Trailer Bed)

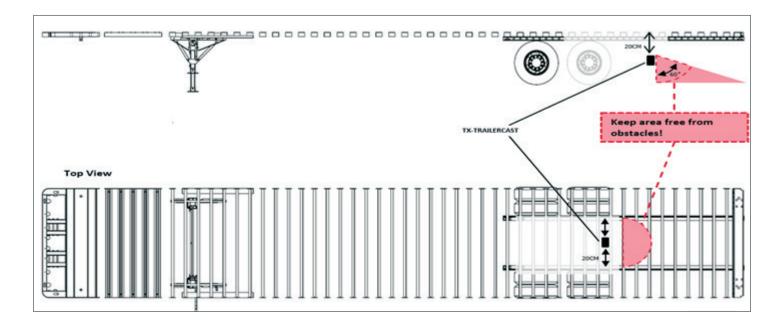
- The unit must be installed below the trailer bed with the front of the TRAILERCAST unit directed to the ground.
- Make sure that the front of the unit has a clear view to the ground (not obstructed by other components).
- Keep the sides of the unit at a minimum distance of 20 cm from obstacles.
- Always verify that sufficient GPS coverage is guaranteed and a good GPS position has been received using https://install.us.wabco-fleet.com/search/?device=trailercast (Section 11 Checking the Installation, page 24).

Installation - TRAILERCAST Position



6.3 Alternative Installation (in Case of Trailer Without Fixed Trailer Bed)

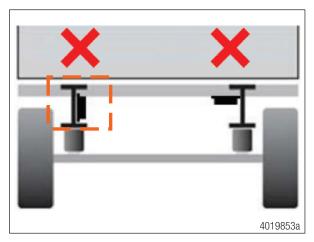
- Find a suitable location and make sure that the front of the unit has a **clear view** as much as possible (min. 150 cm).
- Keep the sides of the unit at a minimum distance of 20 cm from obstacles (also keep a minimum distance of 20 cm above the unit).
- Always verify that sufficient GPS coverage is guaranteed and a good GPS position has been received using https://install.us.wabco-fleet.com/search/?device=trailercast (Section 11 Checking the Installation, page 24).



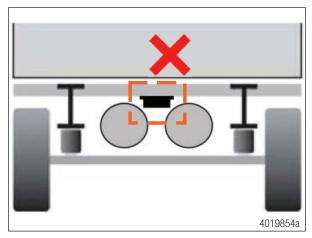
Installation – TRAILERCAST Position

6.3.1 Incorrect Installation

INCORRECT: Do NOT install the unit on or inside the trailer beams.



INCORRECT: Do NOT install the unit above other components (e.g., air tanks ...). The unit requires a clear view to the ground.



6.3.2 Installation Instructions for Cables

The general installation instructions to be observed for cables and connectors can be downloaded from: http://inform.wabco-auto.com/intl/drw/9/4490000000.pdf.

After connecting all hardware to TRAILERCAST, ZF recommends using cable ties to relieve tension from the connectors.

Fastening TRAILERCAST

7 Fastening TRAILERCAST

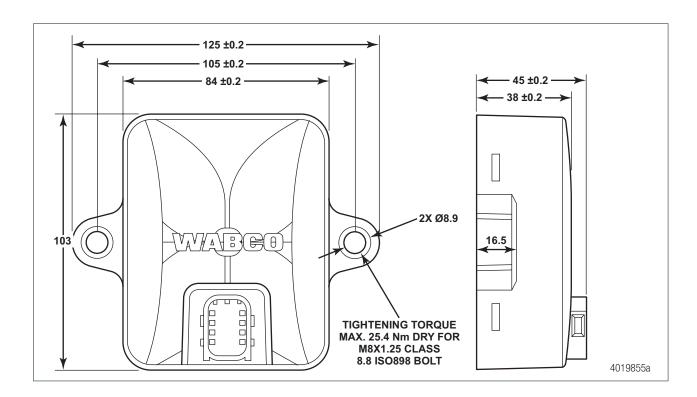
The 2 fixing points have a diameter of 8.8 mm. ZF recommends using M8 bolts or screws to mount the TRAILERCAST unit.

When fastening TRAILERCAST on the vehicle, use 2 hexagon head bolts M8 x 1.25, class 8.8 and tighten the bolts with a maximum torque of 25.4 Nm (dry).

Make sure that TRAILERCAST is mounted on a rigid, flat surface. Use both fixing points to fasten the TRAILERCAST device.

A CAUTION

DO NOT DRILL INTO THE CHASSIS/FRAME OF THE TRAILER!



Connecting Hardware

8 Connecting Hardware

8.1 Hardware Activation

The TRAILERCAST unit is preactivated and will start sending positions as soon as the unit is connected to a power source (iABS system or RSS*plus*).

8.2 Connection to TRAILERCAST for iABS or RSSplus

The connector on the specific iABS or RSS*plus* connection cable is connected to the iABS or RSS*plus* port of the TRAILERCAST unit.

All iABS and RSS*plus* connection cables use the same type of connector. Always make sure that all connectors are correctly plugged in to help ensure a waterproof connection. The TRAILERCAST unit can be powered by the iABS or RSS*plus*.

All iABS and RSS*plus* connection cables use the same type of connector.





Connecting Hardware

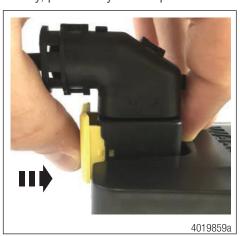
1. Plug the connector into the port. The design of the connector will help prevent you from plugging it in incorrectly.



2. Press down the connector. By pressing down the connector, the yellow clip will automatically move down.



3. Finally, press the yellow clip to lock the connection. A distinct "click" should be heard.



Connecting Hardware

4. The connector has been plugged in correctly.



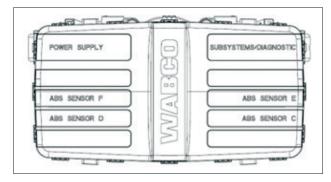
WABCO iABS Subsystems

9 WABCO iABS Subsystems

9.1 Hardware Connection

9.1.1 iABS 1M Premium/2M Standard/2M Premium

In case of a modulator 1M premium ($400\ 500\ 350\ 0$) or 2M standard ($400\ 500\ 420\ 0$ / $400\ 500\ 425\ 0$) or 2M premium ($400\ 500\ 430\ 0$), you can connect TRAILERCAST to the modulator SUBSYSTEMS port using the iABS connection cable.



The connector on the iABS unit remains the same for all cables.



iabs standard or iabs premium 400 500 350 0/ 480 500 420 0/ 480 500 425 0/ 480 500 430 0						
Configuration	Cable(s)		Connections		iABS port	
1. iABS Premium/ Standard 2. TRAILER- CAST	449 943 050 0	e innere o		4019761a	Subsystems	Avera axxxx Avera

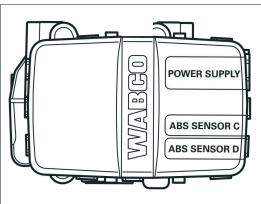
WABCO iABS Subsystems

9.1.2 iABS 1M standard (400 500 320 0)

In case of a modulator 1M standard (400 500 320 0), since SUBSYSTEMS port is not available on the modulator, a power hub cable (894 600 151 2) which includes POWER and SUBSYSTEMS ports, can be used while connecting it to the power port of the modulator.

You can connect the TRAILERCAST to the SUBSYSTEMS port on the hub cable using the iABS connection cable.





iABS STANDARD OR iABS PREMIUM 400 500 320 0					
Configuration	Cable(s)		Connections	iABS port	
1. iABS Premium/ Standard	894 600 151 2		4019764a	Power Hub Cable goes to Power port	Waned
2. TRAILER- CAST	449 943 050 0	4		TRAILER- CAST cable goes to hub cable SUB- SYSTEM port	Coorn surre

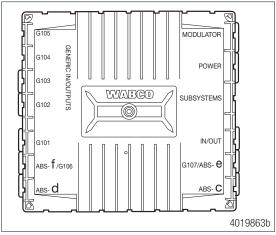
WABCO RSSplus Subsystems

10 WABCO RSS*plus* Subsystems

10.1 Hardware Connection

In case of RSS*plus* 2M (480 107 001 0)] modulator, you can connect TRAILERCAST to the modulator SUBSYSTEMS port using the RSS*plus* adapter cable (449 913 050 0) and TRAILERCAST connection cable (894 600 001 2).





	RSS <i>plus</i> 480 107 001 0					
Configuration	Cable(s)	Connections	RSS <i>plus</i> port			
1. RSSplus	449 913 050 0		Subsystems			
2. TRAILER- CAST	894 600 001 2					

11 Checking the Installation

The TRAILERCAST installation can be verified using a smartphone.



Navigate to https://fleetinstaller.eu1.scalar.zf.com/search/?device=trailercast.

OR

Scan the following QR code with your smartphone (a QR code reader app installed on your smartphone is required):



2. On the WABCO Fleet Installer page, tap Scan QR code and scan the QR code on the TRAILERCAST device label (back/top side).





Or, you can also enter the 15-digit device serial number manually in the input field: The serial number can be found on the device label: for example, TPU1-123456789012345





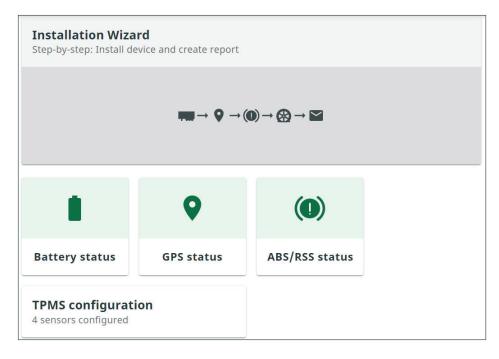
This procedure requires an active Internet connection on your smartphone.

3. Before checking the data with WABCO Fleet Installer:

Make sure iABS or RSS*plus* is not connected to the TOOLBOX PLUS™ software. Turn ON the vehicle contact.

Select the Installation Wizard.

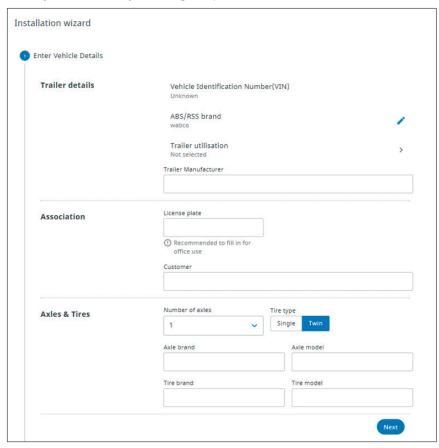
Installation wizard: step-by-step wizard for the first installation.



11.1 Installation Wizard

1. Identify the vehicle.

Identify the vehicle by entering the parameters below:



- Vehicle Identification Number (VIN)
- iABS/ RSS Brand
- Trailer Utilization
- Trailer Manufacturer
- License Plate*
- Customer
- Number of axles
- Axle Brand
- Axle Model
- Tire Type
- Tire Brand
- Tire Model

*Mandatory input field

Press Next to continue.

ABS/RSS status: OK/Not OK.



Verify the iABS/ RSS connection status:

In case the iABS/ RSSplus status is not OK, verify all cable connections.

- Axle load
- Mileage/Odometer
- Speed
- EBS/iABS/RSS Brand
- EBS/iABS/RSS Model
- History: Last received valid status.

Press Next to continue.

3. GPS status: OK/Not OK.

Verify the GPS status:



In case the GPS status is not OK, make sure that the position of TRAILERCAST meets the requirements (Step 6 - TRAILERCAST position).

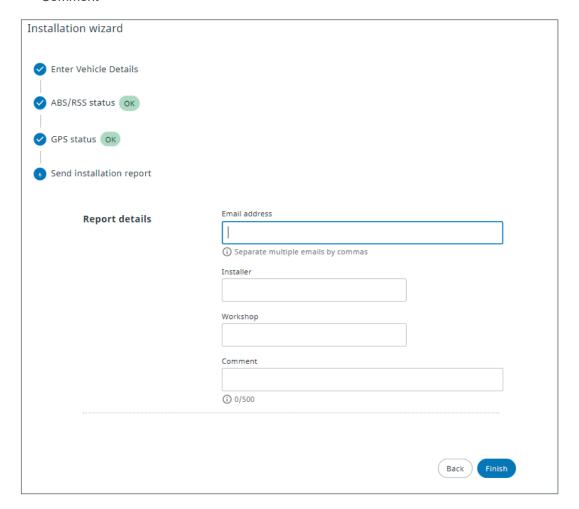
- Satellites: Number of satellites covering the trailer. A minimum of 3, but preferably 5 satellites are necessary for a good GPS position.
- History: Last received valid position.

Press Next to continue.

4. Create and send a report Email.

Send a report via email to confirm the installation. Enter the required parameters:

- Email address
- Installer
- Workshop
- Comment



Press **Send** to complete the process.

Appendix I

12 Appendix I

12.1 Vehicle Electrical Grounding Guidelines

Ensure that the vehicle includes a correct common chassis ground point. A common chassis ground point connects the trailer frame/chassis to the ground pin of the J560 seven-way connector and will help protect the vehicle electrical system from unwanted electrical noise.

Common chassis ground can be verified by measuring the resistance between the J560 ground pin and the vehicle chassis (or frame) and confirming that the resistance is less than 10 Ohm (<10 Ω). If this is not the case, the electrical contact at the common chassis ground point is not sufficient or not present. If a common chassis ground point is present, but not sufficient, ensure that there is no paint or debris inhibiting electrical contact at the ground point. If a common chassis ground point is not present, ZF recommends adding one.



Do not add more than one common chassis ground point (connecting the J560 ground pin to the chassis) to help avoid potential ground shifts within the vehicle electrical system.

Additionally, all standard trailer components, such as axles, should also be electrically connected to the common chassis ground. If the axles are not correctly grounded to the chassis, a ground strap electrically connecting the axle to the chassis may be added to provide protection from unwanted electrical noise. This can be verified by measuring the resistance between the vehicle chassis/frame and the other trailer component, then confirming that the resistance is less than 10 Ohm (< 10 Ω).

For more details concerning correct vehicle grounding, reference SAE standard J1908.

Note during welding work on the trailer:

- Disconnect power to the trailer.
- Disconnect all cable connections to devices and components and protect the plug-ins and connections from contamination and humidity.
- Always connect the grounding electrode directly with the metal next to the welding position when welding, to help prevent magnetic fields and current flow via the cable or components.
- Make sure that grounding connections are robust by removing paint or rust at the connection points.
- Prevent heat influences from the welding activity on devices and cabling when welding.

Note during electrostatic painting the trailer frame or bogie:

Disconnect all cable connections to devices and components and protect the plug-ins and connections from contamination and humidity.

Appendix II

13 Appendix II

13.1 Parts and Variant List

ABS VARIANT LIST						
Variants	2S/1M Standard	2S/1M Premium	2S/2M Standard	2S/2M Pull Trailer	2S/2M to 4S/3M Premium	
Part Number	400 500 320 0	400 500 350 0	400 500 420 0	400 500 425 0	400 500 430 0	
CAN Capable	Yes	Yes	Yes	Yes	Yes	
Subsystems Port	No	Yes	Yes	Yes	Yes	

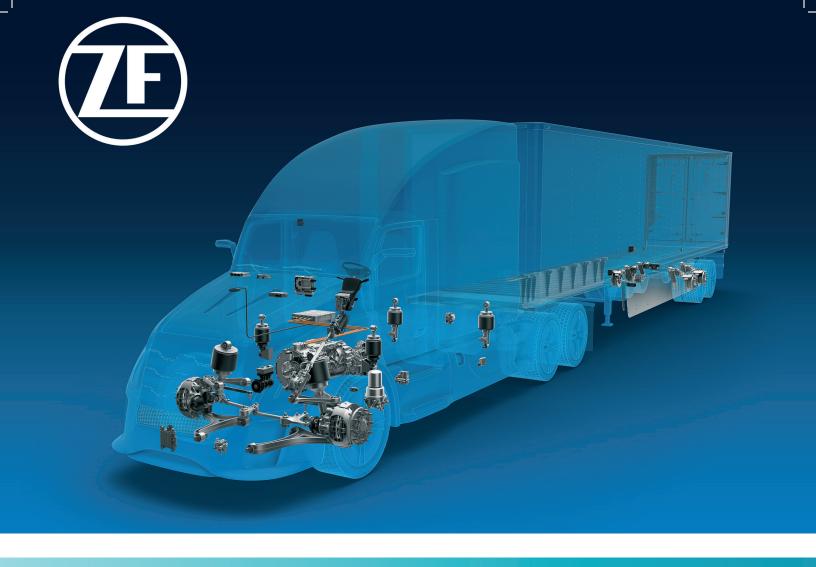
PARTS LIST					
Slot on RSS <i>plus</i> Modulator	Application	Part Number	Length		
Power	Power Cable	449 306 005 0 449 306 010 0 449 306 030 0 449 306 047 0	0.5 M 1 M 3 M 4.7 M		
Power		894 600 151 2	0.5 M		
	Power HUB Cable				
Subsystem		449 943 050 0	5 M		
	Subsystem Cable (TRAILERCAST)				

Appendix II

RSS <i>plus</i> VARIANT LIST		
	0000	
Variants	RSSplus 4S/2M	
Part Number	480 107 001 0	
CAN Capable	Yes	
Subsystems Port	Yes	

PARTS LIST					
Slot on RSS <i>plus</i> Modulator	Application	Part Number	Length		
Power		449 351 010 0 449 351 047 0	1 M 4.7 M		
	Power Cable				
Subsystem	TRAILER CAST – RSS Subsystem Cable	449 913 050 0	5 M		
RSS Subsystem Cable Socket	TRAILERCAST – RSS Cable	894 600 001 2	0.15 M		





For further details, contact the WABCO Customer Care Center at 855-228-3203.

About CVS Division

ZF's Commercial Vehicle Solutions (CVS) division is helping shape the future of commercial transportation ecosystems. Our mission is to be the preferred global technology partner to the commercial vehicle industry. Powerfully combining ZF's commercial vehicle systems expertise, extensive technology portfolio and global operations, the division serves the full commercial vehicle industry value chain. As the automotive industry progresses towards an increasingly autonomous, connected, and electrified (ACE) future, ZF's CVS division innovates, integrates and supplies components and advanced control systems that help make commercial vehicles and fleets operate more safely and sustainably. CVS unites ZF's former Commercial Vehicle Technology and Commercial Vehicle Control Systems divisions, the latter being formed following ZF's acquisition of WABCO in Spring 2020.

For more information, visit: www.zf.com/cv

