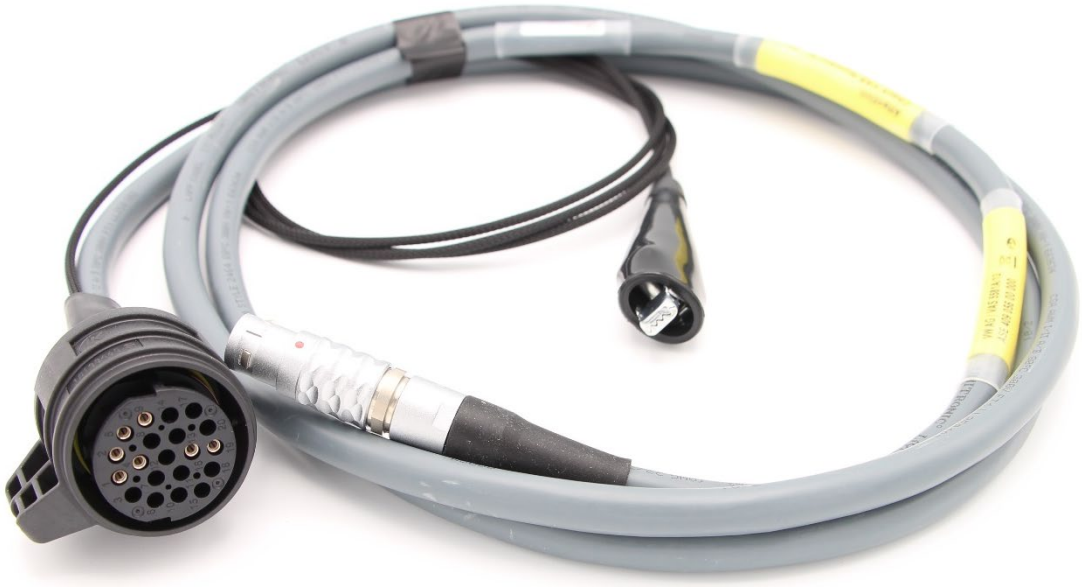
Operating manual

Adapter cable VAS 5581A/12



Adapter cable VAS 5581A/12
CAR-connect GmbH®

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Note/addition:	Application examples in which a vehicle or a vehicle-specific module is displayed are approved by the vehicle manufacturer.

Imprint

Title:	Adapter cable VAS 5581A/12
Order number:	ASE 409 056 00 000
Product manufacturer:	CAR-connect GmbH Celler Str. 117 D-38518 Gifhorn Phone: +49 (0) 5373 – 92197-0 Fax: +49 (0) 5373 – 92197-88 info@car-connect.cc www.car-connect.cc
Reproduction:	Reproduction or reprinting, even in part, always requires the written permission of the manufacturer.
Validity:	This operating manual is only applicable to the described product. The latest release for documentation is shown in revision management in the chapter “document identification”.
Place of storage:	The operating manual is an essential part of the product and is to be kept with the product in its transportation box or protective case. In addition to the paper forms, electronic delivery forms are also permitted.
Target group:	These operating instructions are intended for the trained electrician, who has received training in technical and supervisory responsibilities for working with high-voltage systems of motor vehicles.

Table of Contents

1 Concept

The adapter cable is designed as per the latest measurement and control technology regulations. The adapter cable corresponds with the state of the art and fulfils the manufacturer’s standards, the relevant European standards as well as partially fulfilling international standards for measuring equipment accessories.

Despite high standards for development, production and quality, only careful handling and proper use can ensure that there is no damage and resulting consequences. For this reason, this operating manual should be read and understood in full.

1.1 Read the operating manual

Read these operating instructions through carefully before using the product. The intended use and hazards of handling are described in this operating manual.

In addition to this operating manual, other regulations may be binding for diagnosis or troubleshooting of intrinsically safe high-voltage systems in road vehicles. These include, among other things, the manuals of the vehicle manufacturer as well as the instructions of the employers' liability insurance association.

Please ensure that all information on the product and its scope of application is available to you before you use the adapter cable. Please use the product only if you have fully understood all information pertaining to its use.

1.2 Document structure

For a better understanding of the information contained in this operating manual, additional descriptive pictograms are used. These markings indicate particularly relevant information and the images indicate the significance within a description or an operation step.

Therefore, please follow the instructions and information in this operating manual, so that there is no bodily injury or property damage when used in the high-voltage section of the vehicle.

The following table contains all the pictograms, warning symbols and symbols that may appear in this manual.

	**INFORMATION:** Follow the operating manual.		**DANGER!** Fatal hazard! High voltage.
	**NOTE:** Follow general instructions.		**WARNING!** Warning of dangerous electrical voltage. There is a risk of fatal hazard!
	**PROHIBITED!** For people with a pacemaker or defibrillator. There is a risk of fatal hazard!		**ATTENTION!** Please note the following:

2 Safety instructions

The basic safety instructions given below must be followed to avert bodily injury to people and property damage while using the product or the accessories.

2.1 General safety instructions

Most incidences of damage to property and personal injury are primarily due to ignorance or negligence and can be avoided from the outset if the following general safety instructions are observed:

- Read the operating manual carefully before use.
- Only people who can provide valid proof of technical knowledge of working on high-voltage systems in motor vehicles may perform measurements on high-voltage systems.
- Follow the instructions given in the vehicle manufacturer’s guided troubleshooting such as the application description in PIWIS Tester.
- Use the product **only** in closed and dry spaces.
- Follow the instructions of the employer's liability insurance association or government institutions for the repair of hybrid- and all-battery electric vehicles.
- Check the product regularly before use, as per the vehicle manufacturer’s instructions.
- Use the adapter cable **solely** for the intended use — as specified by the vehicle manufacturer.
- Use the product **solely** for its intended purpose.
- **Immediately** replace a defective or damaged product.
- **Never** attempt to modify or manipulate the product.
- Do not use aggressive liquids to clean the product.
- Prevent the adapter cable from coming in contact with aggressive operating fluids such as brake fluid and coolant.

2.2 Proper use

Adapter cable is an accessory cable and is used along with the diagnosis box VAS 5581A for troubleshooting of high-voltage batteries in Porsche vehicles. The relevant work instructions for the application must be inferred from the guided troubleshooting and implemented accordingly.

2.3 Improper use

Any use of the product deviating from the intended use is considered improper use. Use of a manipulated or defective adapter cable will be considered in exactly the same way as disregarding or disobeying the instructions of the operating manual. This behaviour, in addition to limiting the guarantee and the loss of warranty claims, can also lead to bodily injury to people or damage to property under certain circumstances.

2.4 Obligations of the operator

The operator must ensure that appropriate and capable staff is appointed by them to work on vehicle-specific high-voltage system. The proof of qualification required for this is based on successful participation in appropriate training. The operator must ensure that the measuring equipment and accessories are in a faultless condition and they do not have any defects.

Regular inspection periods for the measuring equipment, accessories and testing adapters are set out in an instruction manual. Also, it is the operator’s responsibility to record the replacement of the article on reaching the number of operation cycles. The operator must ensure that servicing staff regularly participate in refresher training courses for repairs of high-voltage systems and pass these successfully as well.

2.5 User’s qualifications

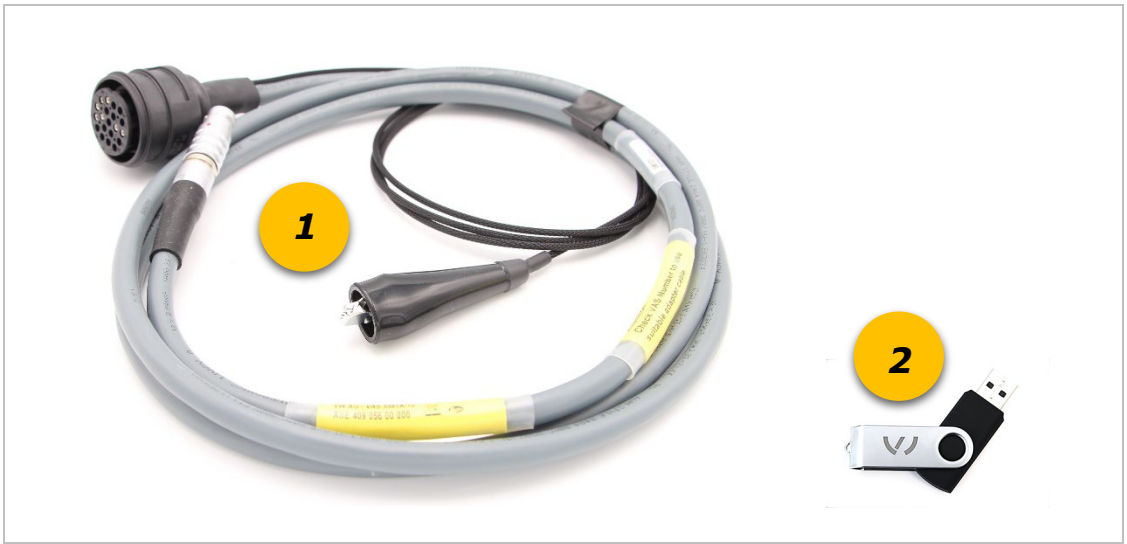
The user has proven expertise to carry out work on high-voltage systems of fully battery-operated, plug-in hybrid or e-traction road vehicles. In addition, the user should have experience in taking cascade measurements, whereby active and passive measurements are taken simultaneously.

3 Transport

The product comes in recyclable disposable packaging, which is **not suitable for storage**.

3.1 Unpacking and checking for completeness

Check the condition and completeness of the contents based on the shipping documents and the delivery note. In case of any damage or defective goods, contact the manufacturer immediately.



Item	Name
1	Adapter cable VAS 5581A/12
2	USB-stick with operating manuals in EU national languages

Fig. 1: Scope of supply of VAS 5581A/12

3.2 Transport during normal working hours

The adapter cable VAS 5581A/12 is used along with the diagnosis box VAS 5581A as a set and should be transported after diagnosis in a suitable transport container. Please ensure that moisture and dirt do not enter the container.

3.3 Safekeeping and storage

In order to avoid damage to the article or to prevent the loss of article, always keep the cable in a transport case.

This procedure gives you a quick overview and the assurance that the step is complete in all respects. The diagnosis is complete when all the parts that belong to a set or a function group are returned to the appropriate place in the case.

4 The adapter cable

Adapter cable VAS 5581A/12 is an accessory cable for the diagnosis box VAS 5581A, with which the self-contained high-voltage batteries in Porsche vehicles can be checked.

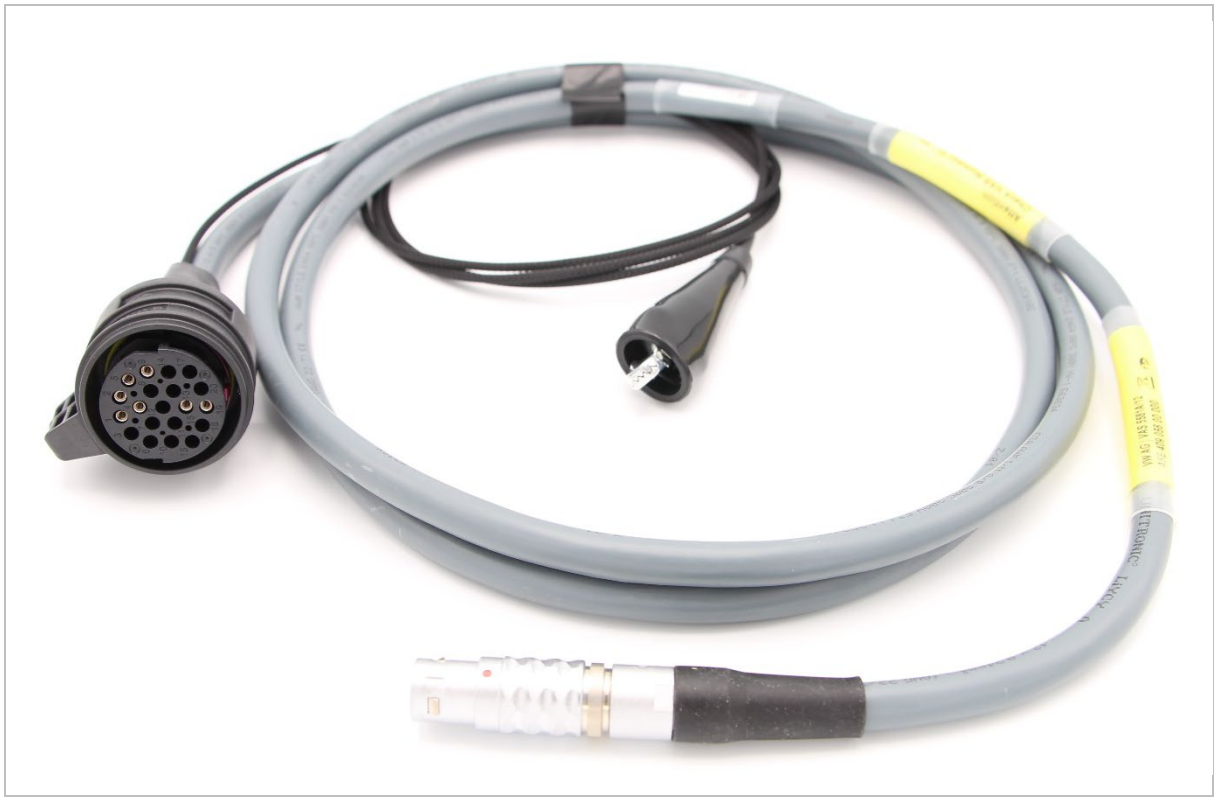


Fig. 2: Adapter cable VAS 5581A/12

The adapter cable has a length of 2 meters, three contact options and is mechanically robust for workshop use.

The connector housings are encoded to prevent polarity reversal at the interfaces. The seven-core adapter cable has a black bayonet socket connector on one side, which comes in contact with the high-voltage battery interface via an external anti-rotation device and is locked at the same time by the rotation of the retaining ring.

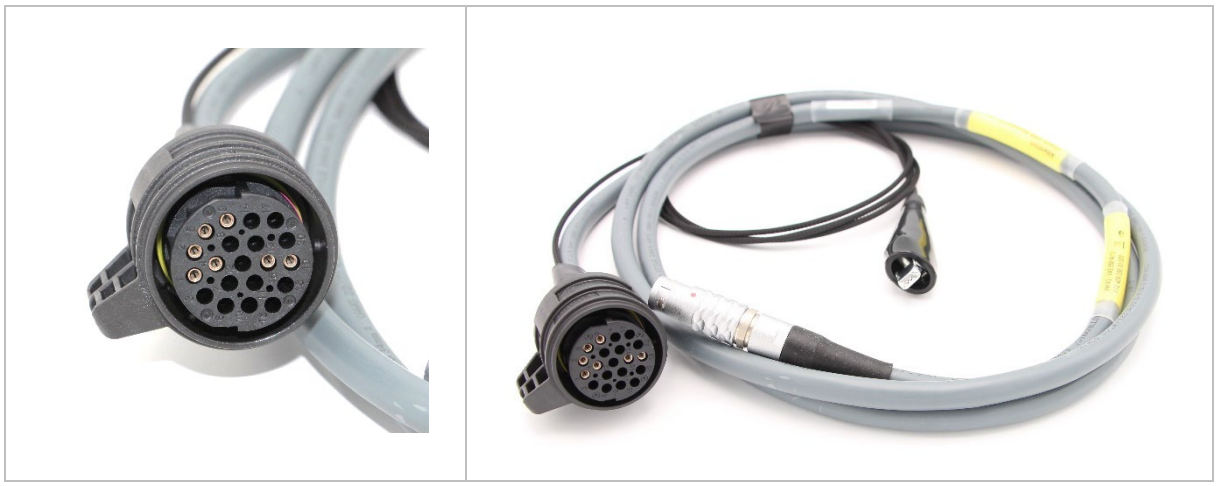


Fig. 3: Adapter cables with special connectors

The diagnosis box VAS 5581A is connected using the pin housing (ODU-Stecker® brand) at the opposite end of the cable. The coding is in a half-shell cable, paired with an outer push-pull sleeve, which is a special locking feature provided by the manufacturer.

The third contacting possibility between the diagnosis box and high-voltage battery of the vehicle is the earth terminal. In the present form, it is designed as a touch-protected crocodile clamp and is positioned near the high-voltage battery interface according to the information given in the guided troubleshooting.

4.1 Product labelling

Product labels are attached to the article on two plastic shrink-tubing. The following tables show the characters and texts and explain them if necessary.

Product labelling 1	
VW AG|VAS 5581A/12	Product name
ASE 405 056 00 000	VW order number
	Disposal instructions (WEEE)
	Read the operating manual

Fig. 4: Marking 1

Product labelling 2
Attention. Check the VAS number to use the appropriate adapter cable.

Fig. 5: Marking 2 - in original, in english language

4.2 Technical specifications

Voltage range:	<15 VDC
Cable length:	2000 mm
Earth cable length:	1500 mm²
Type of cable:	FLRY
Cable cross-section:	0.5 mm²

Area of application:	Use only in dry and closed rooms.
Conditions of use:	The product can be used up to a temperature of 50°C. The product can be used up to a relative humidity of 85%. The product is designed for storage in the temperature range from -20°C to 60°C.
Cleaning:	Clean the product only with a dry cloth.

5 Operation

Before you can start testing the high-voltage components, ensure that the vehicle is de-energised. Follow the guidelines given in the guided diagnostics. Additionally, observe the following safety rules.

	**PROHIBITED!** Heart pacemakers and implanted defibrillators may be rendered inoperable by strong magnetic fields or high currents. People with these implanted devices should **not** carry out any work on high-voltage systems.
	**DANGER!** When working on high-voltage systems of the vehicle, direct voltage can lead to short circuits and voltage flash-overs. **FATAL HAZARD!** Carry out work on HV-systems **only** in the absence of voltage.
	**WARNING!** Live high-voltage or low-voltage cables represent a source of danger that **should not be underestimated**. **Never** touch live wires and cable connections. This can lead to **life-threatening** situations.

	**ATTENTION!** Before beginning work, check if the adapter cable is functioning properly.
	**INFORMATION:** Before beginning work, read all maintenance and repair information from the vehicle's manufacturer.
	**NOTE:** While working on the high-voltage system, avoid static discharges, as they may lead to damaging the electronic components.

5.1 Insert the product

The product is inserted and used as per the vehicle manufacturer's specifications. Please follow the instructions in the guided vehicle diagnostics.

6 Maintenance/Care

The device manufacturer does not provide maintenance.

	**INFORMATION:** In addition to this operating manual, also read the operating instruction from the vehicle manufacturer and operator.

6.1 Clean the product

The product should **only** be cleaned with a dust-absorbing cloth made of antistatic material. The product or the accessory must **never** come into contact with liquid cleaners, aggressive cleaning agents or water in any form (splash water, dripping water, high-pressure cleaning water).

7 Disposal

	**Note:** The product must **not** go into domestic waste at the end of its working life. The operator is the owner responsible for disposal according to the applicable European law and bears the responsibility for appropriate disposal. If other laws governing the disposal or recycling of electrical appliances have priority regarding validity and application, these country-specific regulations are binding for the process.

7.1 Product life cycle

	**DANGER:** The product life cycle of the adapter cable is coupled with the operating cycles in which it is adapted in the high-voltage system. With more than 2000 cycles, the adapter cable must be replaced and must **not** be used any longer.

7.2 Environmentally responsible waste disposal

If the product's life cycle has come to an end, the adapter cable must be taken away for sorted disposal. The adapter cable operator bears the responsibility for this as the owner responsible for disposal. The sale or gratuitous licensing for the purpose of disposal must be documented.

8 Customer service

If you have any questions about the product or need additional service information, then you can contact Customer Service at:

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