VOLKSWAGEN AG

Module-Balancer VAS 6910

Operating manual V17.00 06/22

Content

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KD-Werkstattausrüstung
D-38436 Wolfsburg

Manufacturer:

AVL DiTEST GmbH
Alte Poststrasse 156
8020 Graz
AUSTRIA

VAS 6910/5
ASE 447 231 00 000

AVL ID-Nr.: AT7784GB Rev. 17

Safety Instructions

Explanation of symbols

Symbols with the following meanings are used in the safety instructions of the operating manuals, unpacking, start-up and brief instructions or other documentation provided, in screen displays on the tester during operation and on the products themselves:

DANGER

Texts with this symbol contain information relating to your safety and how you can reduce the risk of serious or fatal injuries.

WARNING

Texts with this symbol contain information relating to your safety and how you can reduce the risk of serious injuries.

CAUTION

Texts with this symbol contain information on how you can avoid damage to the vehicle and the device.

Additional danger signal:

Danger due to electrical current.

Remarks:

NOTICE

Text with this symbol contains additional, useful information.

Information

This text indicates important information or instructions. Failure to comply with these instructions prevents or significantly hampers a successful finalization of the operations described in this documentation.

WARNING

Read all instructions.

WARNING

Requirements needed to operate this device:
- High-voltage technician (HVT)
- High-voltage expert (HVE)
- Electrically qualified person for high-voltage systems in vehicles
- Electrician for special tasks on high-voltage systems in vehicles.

If you don't have any of these qualifications please exit this application immediately.

WARNING

Danger of flashing arcs

Never disconnect wirings while charging or discharging.
Opening the cover stops charging / discharging immediately.

WARNING

Use only as described in this manual.
Use only the referenced accessories from AVL DiTEST. See chap. 2.2 and 2.4.

WARNING

Use the included mains cord set (power cord).

If the mains cord set has to be changed note the following requirements strictly.

On 240 V mains grid the mains cord set must be designed for a continuous current of 10 A, on 120V mains grid the mains cord set must be designed for a continuous current of 20 A. Maximum inrush current 100 A.
The mains cord set must have a C19 plug for the connection to the VAS6910 suitable for the above current ratings.

Connect VAS 6910 only to protective contact sockets.
Set up the VAS 6910 in a way that there is always free access to the power separator. (Power cord from the mains socket).

WARNING

Do not operate equipment with a damaged cord or if the equipment has been dropped or damaged – until it has been examined by a qualified service person.

WARNING

Do not let cord hang over edge of table, bench or counter, or come in contact with hot manifolds or moving fan blades.

WARNING

An extension cord is not allowed. For testing use only specified cables.

WARNING

To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids (gasoline).

WARNING

Risk of explosions

The VAS 6910 has internal parts which emit sparks and therefore must not be exposed to flammable fumes. The VAS 6910 should be operated at least 460 mm (18 inches) above the floor surface since fumes from fuels and other materials accumulate at floor level.

WARNING

Connecting non-VW HV-Modules

The VAS 6910 has been developed for vehicles from the Volkswagen group. Connecting the VAS 6910 directly to HV-Modules from other manufacturers can therefore result in damage to the modules and / or the VAS 6910.

WARNUNG

Set up the VAS 6910 so that adequate ventilation is guaranteed, fans and air vents are not obstructed and the air must circulate freely.

WARNUNG

When connecting the cell module, make sure the IR temperature sensor  is not covered and ensure direct visibility between the sensor and the module.

CAUTION

The VAS 6910 may only be used within the measurement ranges stipulated in the technical data and descriptions in the operating manual. Do not perform measurements on damaged leads.

CAUTION

Cleaning

Before cleaning the VAS 6910, pull out the USB cable and measuring cable.
Clean the VAS 6910 **only** with a dry cloth. Do **not** use cleaners or solvents.

READ ALL INSTRUCTIONS - SAVE THESE INSTRUCTIONS!

IMPORTANT SAFETY INSTRUCTIONS

1. Read all instructions.
2. Care must be taken as burns can occur from touching hot parts.
3. Do not operate equipment with a damaged cord or if the equipment has been dropped or damaged - until it has been examined by a qualified serviceman.
4. Do not let cord hang over edge of table, bench or counter or come in contact with hot manifolds or moving fan blades.
5. If an extension cord is necessary, a cord with a current rating equal to or more than that of the equipment should be used. Cords rated for less current than the equipment may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.
6. Always unplug equipment from electrical outlet when not in use. Never use the cord to pull the plug from the outlet. Grasp plug and pull to disconnect.
7. Let equipment cool completely before putting away. Loop cord loosely around equipment when storing.
8. To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids (gasoline).
9. Adequate ventilation should be provided when working on operating internal combustion engines.
10. Keep hair, loose clothing, fingers, and all parts of body away from moving parts.
11. To reduce the risk of electric shock, do not use on wet surfaces or expose to rain.
12. Use only as described in the manual. Use only manufacturer´s recommended attachments.
13. ALWAYS WEAR SAFETY GLASSES. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.

SAVE THESE INSTRUCTIONS

1 General Information

1.1 General Notes

The Module Balancer VAS 6910, here after named VAS6910, is able to charge and discharge single cell modules of high voltage batteries from E-cars and hybrid cars.

To guarantee an overall equal load of all cell modules on a HV-battery, the new cell module has to be charged / discharged to meet this load of the whole battery.

The conditioned „balanced“ cell module replaces the defect cell module.

The VAS6910 is designed to use in car shops which have to do HV battery repairs.

To use this device you must have a special qualification. See below.

Please follow the regulation valid to your country.
Read this operating manual and follow especially the safety hints.

1.2 Safety Notes

Please observe the safety instructions for the VAS 6910.
You can find them after the contents section.

1.3 Certificate of Calibration

The manufacturer hereby declares (Figure 1-1) that the device supplied with this operating manual does not require configuration in the first 36 months after delivery. Thereafter, the device must be calibrated every 24 months.
The device is calibrated for 36 months on delivery, ensuring a sufficient time window until the next follow-up calibration in case the device is stored for a long time.

PRÜFZERTIFIKAT
TEST CERTIFICATE

Modul-Balancer VAS 6910
Bestellnummer: VS9042

Das Modul-Balancer VAS 6910 wurde unter Einhaltung aller Vorgaben nach der jeweils gültigen Prüfvorschrift erfolgreich getestet und hat in einwandfreiem Zustand unser Haus verlassen.
In den ersten 24 Monaten nach der Auslieferung des Geräts ist keine Kalibrierung erforderlich.

The module balancer VAS 6910 was tested successfully with compliance to all specified values and under the actual test procedure and left our facilities in perfect condition.
During the first 24 month after delivery of the device, calibration is not required.

AVL DiTEST ist nach ISO 9001 zertifiziert!
AVL DiTEST is accredited according to ISO 9001!
AVL DiTEST GmbH - Alte Poststrasse 156 - 8020 Graz - AUSTRIA

Fig. 1-1 Certificate of initial calibration

1.4 Designated Use

It's only allowed to use the VAS 6910 in that way, described in this manual.

WARNUNG

The Housing should only be opened by service personal. See Service information, Chap. 3.1. Regional Service partners).

The product described has been developed, manufactured and checked according to the relevant safety standards. If the safety instructions are observed, the start-up is carried out as stipulated, the device is used for the intended purpose and the recommended maintenance and care is also observed, then in normal cases there is no danger regarding damages to property or for the health of persons associated with the VAS 6910.

1.5 Associated Documents

Along with this operating manual, which is to be used by the user in the workshop, there are also the following technical documents for the VAS 6910:

- Unpacking instructions, start-up, brief instructions VAS 6910
- Registration certificate
- Service information

1.6 Field of application

The VAS6910 is designed for charging / discharging of single cell modules of a HV battery to a certain load level.

2 Components

2.1 VAS 6910 Adapter and transport box

Adapter and transport box (top view)

Fig. 2-1 Adapter and transport box (top view)

(1) Window

Adapter and transport box (front view)

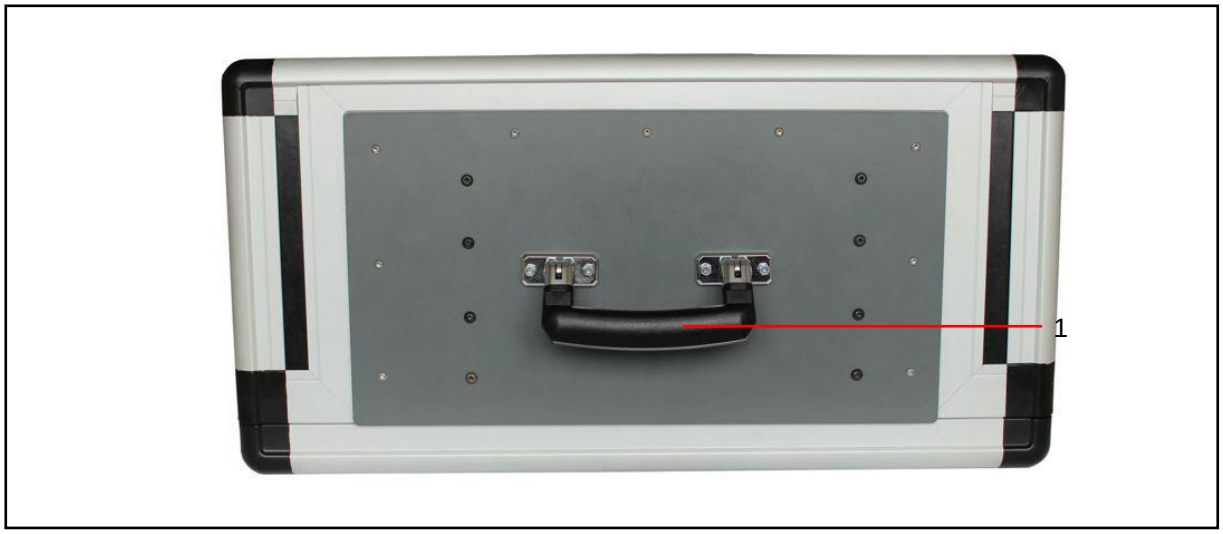


Fig. 2-2 Adapter and transport box (front view)

(1) Carrying handle

Adapter- and transportation box (side view left/right)

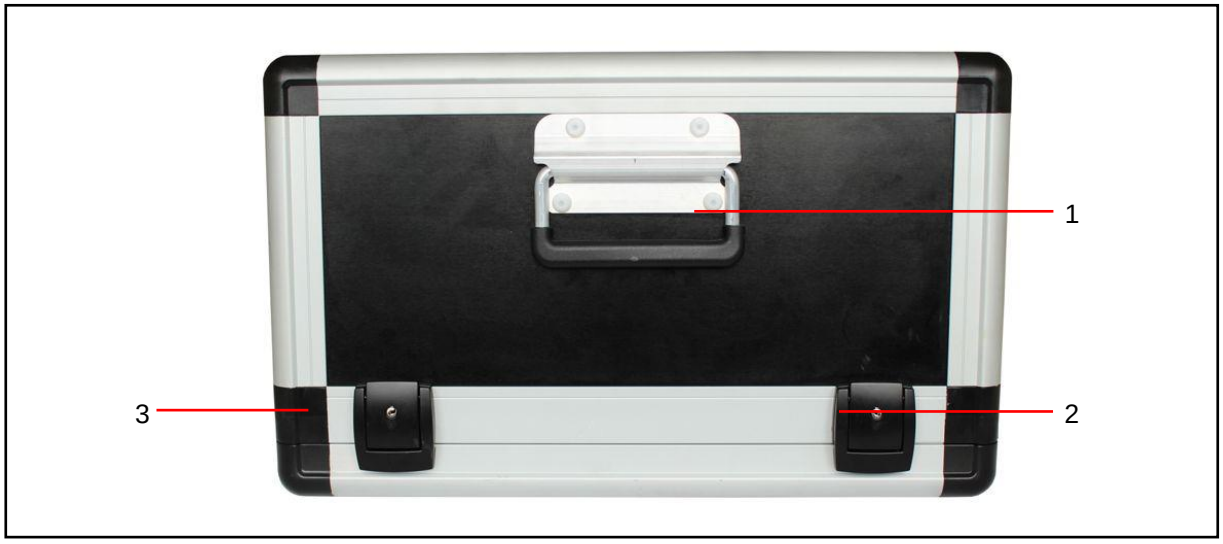


Fig. 2-3Adapter and transport box, closed (side view)

(1) Carrying handle
(2) Latch
(3) Latch

Adapter and transport box open with Module-Balancer (top-view)

Fig. 2-4 Adapter und transport box open (top view).

(1) Carrying handle
(2) Module-Balancer
(3) Adapter- and transportation box, (bottom part)

Adapter and transport box open, Module-Balancer mounted, no cell module (side view)

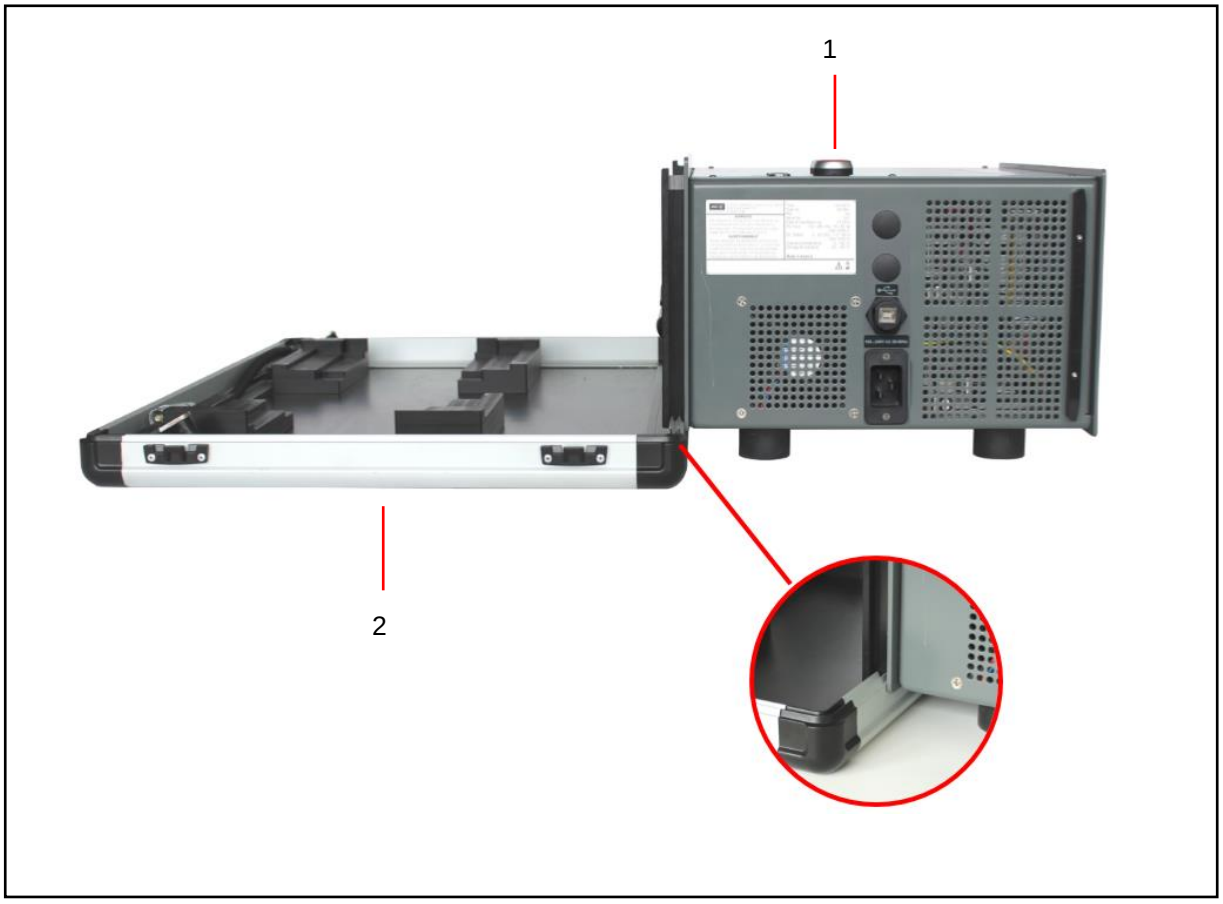


Fig. 2-5 Adapter and transportation box open, side view

(1) Module-Balancer
(2) Adapter- and transportation box, bottom part

Adapter und transport box open, Module-Balancer attached and cell module inserted, side view.

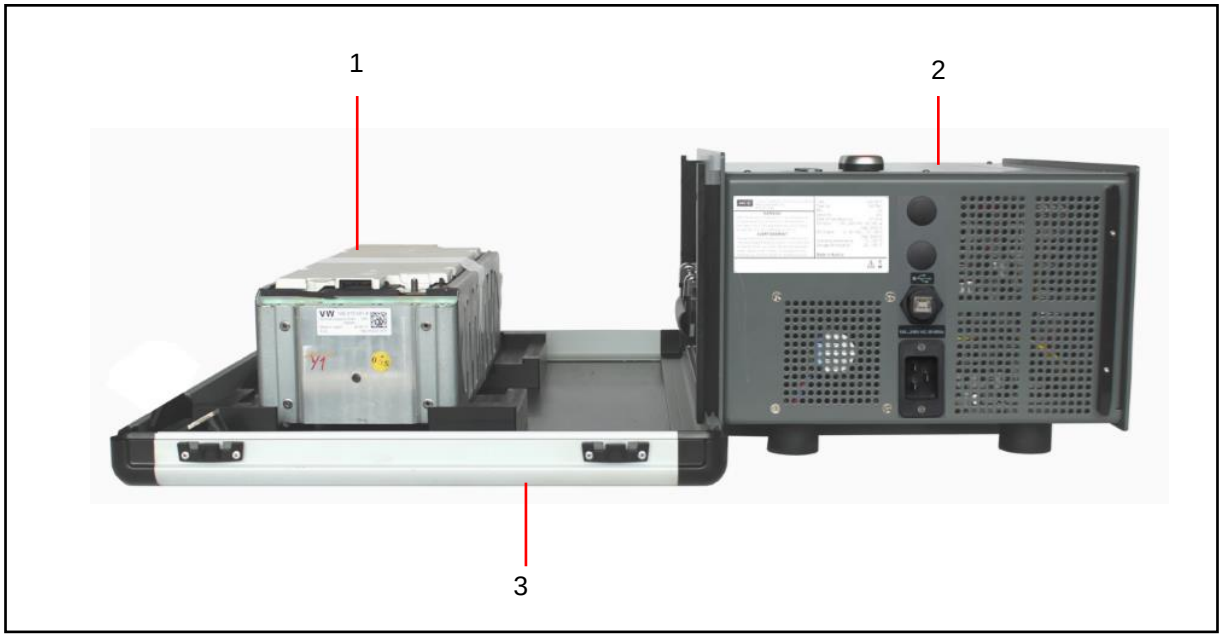


Fig. 2-6 Adapter and transport box open with cell module inserted, side view

(1) Cell module
(2) Module-Balancer
(3) Adapter and transport box (bottom part)

2.2 VAS 6910 Module-Balancer

VAS 6910 Module-Balancer, rear view

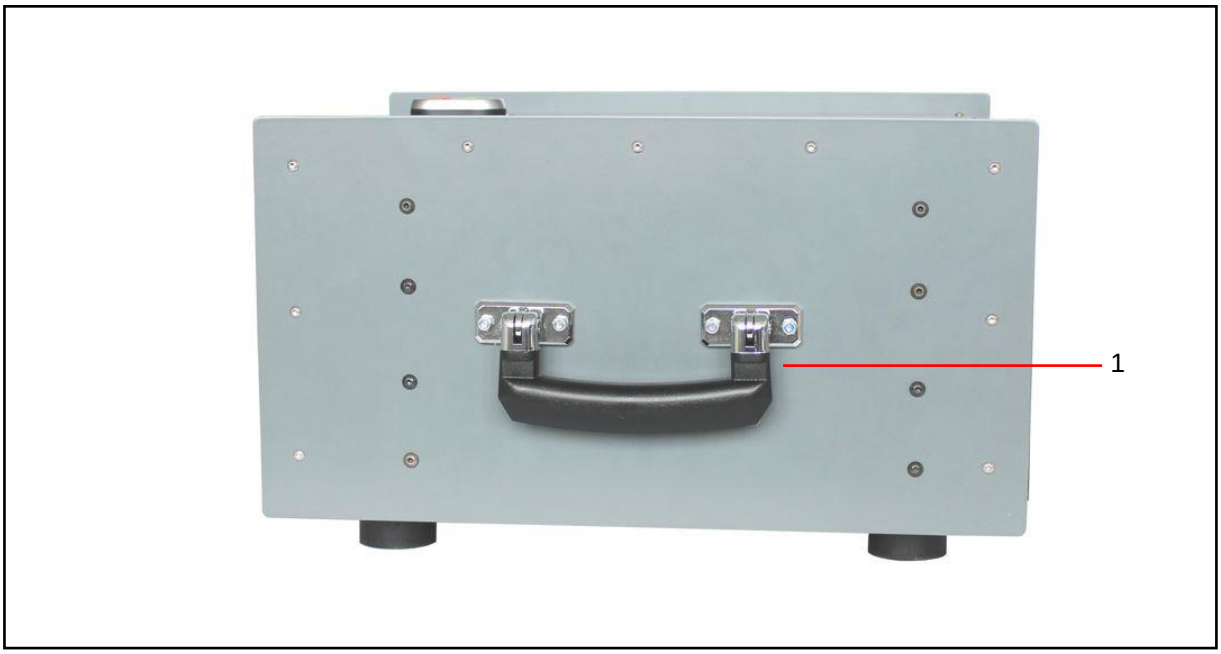


Fig. 2-7 VAS 6910 Module-Balancer, rear view

(1) Carrying handle

VAS 6910 Module-Balancer, side view right

Fig. 2-8 Electronic box, side view right

(1) Specification plate
(2) USB-connector (rugged) for connection of the USB cable
(3) Air inlet grill
(6) Power supply inlet. Connection for power cord

WARNING

Set up the VAS 6910 so that adequate ventilation is guaranteed, fans and air vents are not obstructed and the air must circulate freely.

WARNING

Use the included mains cord set (power cord).

If the mains cord set has to be changed note the following requirements strictly.

On 240 V mains grid the mains cord set must be designed for a continuous current of 10 A, on 120V mains grid the mains cord set must be designed for a continuous current of 20 A.

The mains cord set must have a C19 plug for the connection to the VAS6910 suitable for the above current ratings.

Connect VAS 6910 only to protective contact sockets.
Set up the VAS 6910 in a way that there is always free access to the power separator. (Power cord from the mains socket).

VAS 6910 Module-Balancer, side view left

Fig. 2-9 VAS 6910 Module-Balancer, side view left

(1) Air inlet grill

WARNING

Set up the VAS 6910 so that adequate ventilation is guaranteed, fans and air vents are not obstructed and the air must circulate freely.

VAS 6910 Module-Balancer, front view

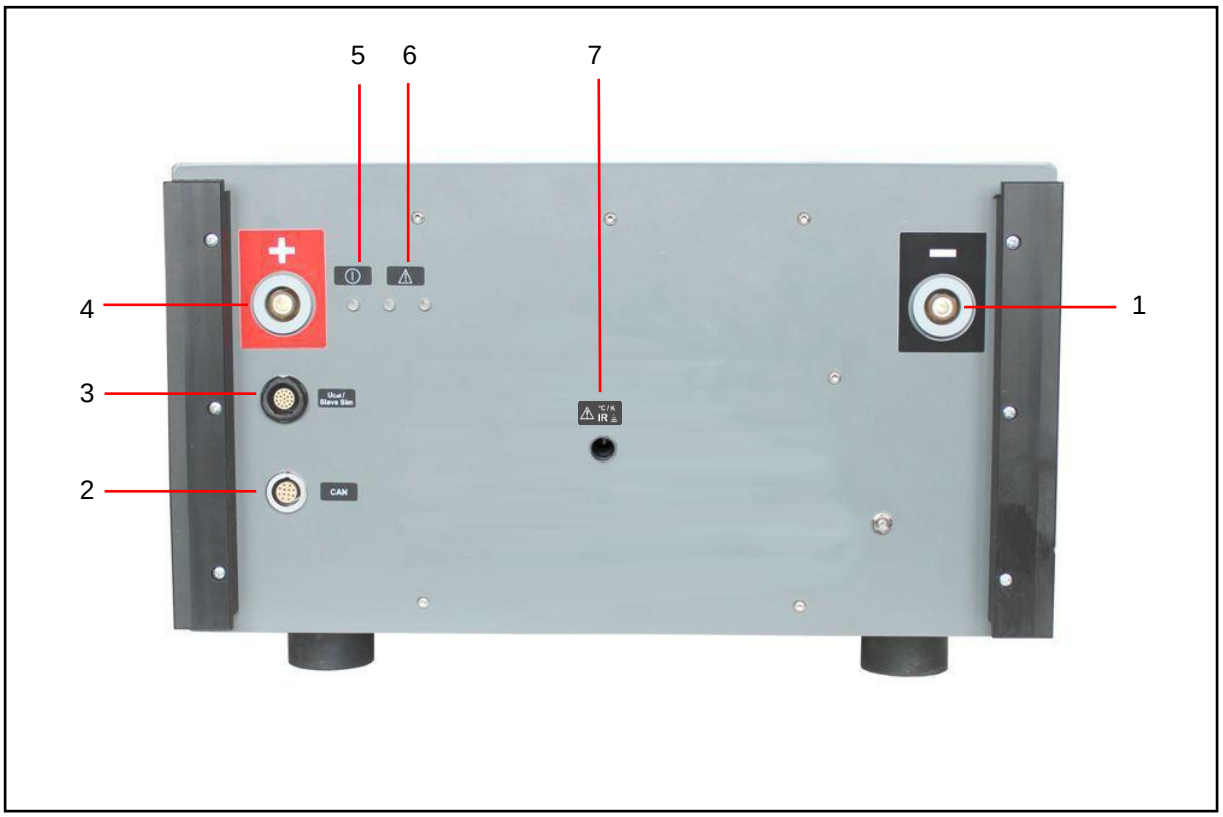


Fig. 2-10 VAS 6910 Module-Balancer, front view

(1) Connector „Minus“ (black)
(2) Connector „CAN“
(3) Connector „U Slave/Sim“
(4) Connector „Plus“ (red)
(5) LED blue ⇨ Device on and ready
blue flashing ⇨ Device is idle
(6) LED red ⇨ Charging / discharging is running
green ⇨ No charging / discharging active
(7) IR temperature sensor

VAS 6910 Module-Balancer, top view

Fig. 2-11 Module-Balancer, top view

(1) Carrying handle
(2) On / Off button
green Power module ON (active mode)
red Power module OFF (idle mode)

(3) LEDs
blue ⇨ Device is on and ready
blue blinking ⇨ Stand-by / idle mode
green ⇨ No Charging / discharging is running
red ⇨ Charging / discharging is active or an error has happened.

2.3 2D-Barcodescanner VAS 6161/1 ASE 447 043 00 000

The scanner is used to scan the bar code attached to the cell modules. The canner has an USB-Type A connector and has to be connected to the VW Diagnostic system (VAS 6150A / VAS 6051B / VAS 6160).

Fig. 2-12 2D-Barcodescanner

2.4 Cable sets

2.4.1 USB-Cable (USB 2.0 Fischer to USB 2.0 B Rugged) BV8139, VAS 611003, ASE 611 003 00 000

This USB cable connects the Module Balancer VAS 6910 to the VW Diagnostic system. Free Fischer connector is needed.

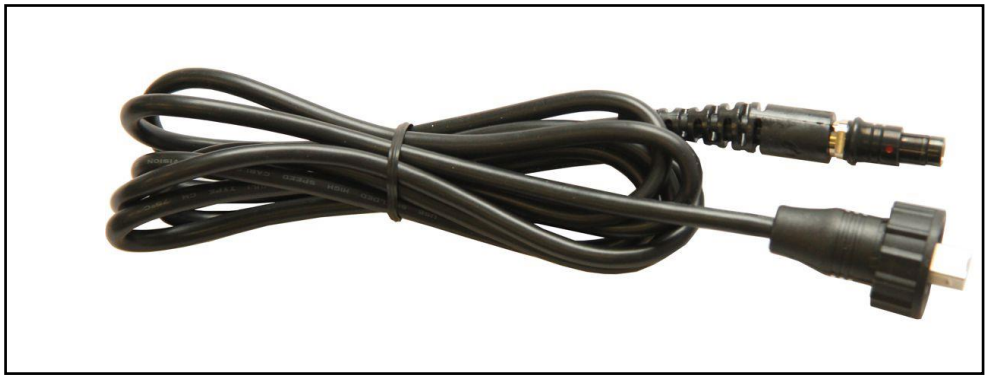


Fig 2-13 USB-cable USB 2.0 Fischer to USB 2.0 B Rugged

2.4.2 USB-cable (USB 2.0 A to USB 2.0 B Rugged) EX7069, VAS 611001 ASE 611 001 00 000

This cable is used if no Fischer connector is available at the VW Diagnostic system.

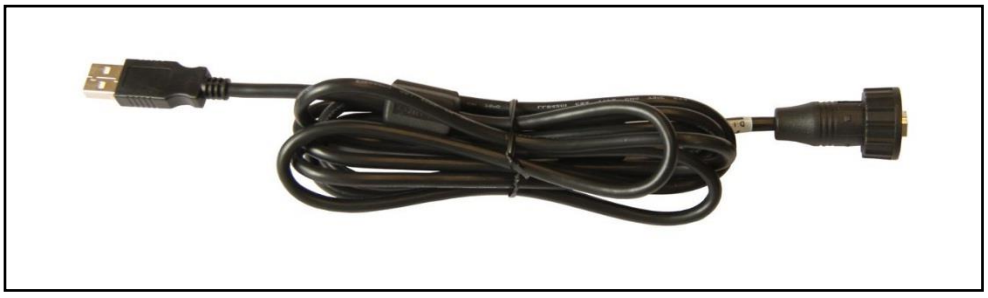


Fig 2-14 USB-Cable USB 2.0 A to USB 2.0 B Rugged

2.4.3 Basic cable set Module adaption 1 (e-up!) VAS 6910/10 ASE 447 240 00 000 BO7852

This cable set consists of 6 cables:

1. VAS 6910/10-1 ASE 447 246 00 000 BV8190
   Cable for „Plus“-Pol
   First usage:
   - VW e-Up! 2014>
   - Audi Q5 e-tron 2015>
   - Porsche Panamera 2017>
2. VAS 6910/10-2 ASE 447 247 00 000 BV8191
   Cable for „Minus“-Pol
   First usage:
   - VW e-Up! 2014>
   - Audi Q5 e-tron 2015>
   - Porsche Panamera 2017>
3. VAS 6910/10-3 ASE 447 248 00 000 BV8140
   Analog-Meas. lead for module variant 12E.915.591
   First usage: VW e-Up! 2014>
4. VAS 6910/10-4 ASE 447 249 00 000 BV8141
   Analog-Meas. lead for module variant 12E.915.592
   First usage: VW e-Up! 2014>
5. VAS 6910/10-5 ASE 447 250 00 000 BV8142
   Analog-Meas. lead for module variant 12E.915.591.A
   First usage: VW e-Up! 2014>
6. VAS 6910/10-6 ASE 447 251 00 000 BV8143
   Analog-Meas. lead for module variant 12E.915.592.A
   First usage: VW e-Up! 2017>

Usage is on e-UP! 2014>

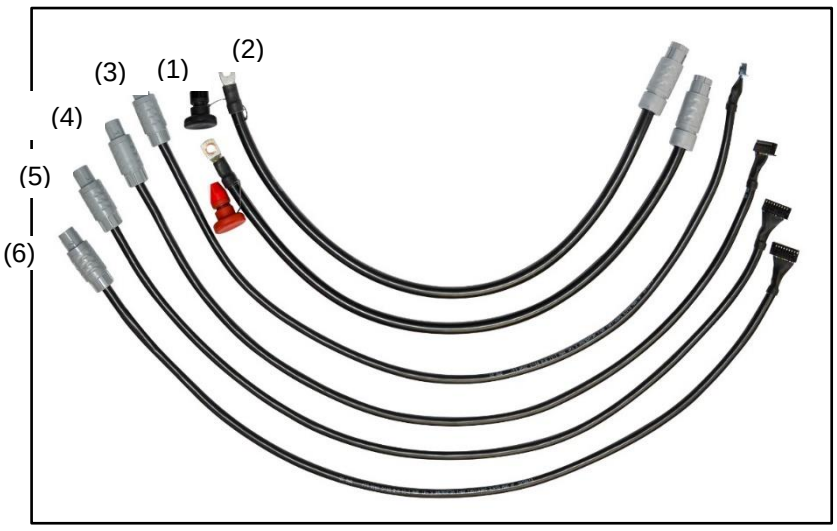


Fig 2-15 Basic cable set Module adaption 1 (e-up!)

2.4.4 Extension cable set Module adaption A (e-Golf) VAS 6910/11 ASE 447 241 00 000 BO7853

Set consists of:

1. VAS 6910/11-1 ASE 447 257 00 000 BV8145
   Slave Simulation cable for Master-Modules
2. VAS 6910/11-2 ASE 447 258 00 000 BV8146
   Analogue meas. cable for Slave-Modules

For Volkswagen e-Golf cable sets VAS6910/11 (this one) and the VAS6910/12A are necessary.
Start of usage is at e-Golf from 2014>.

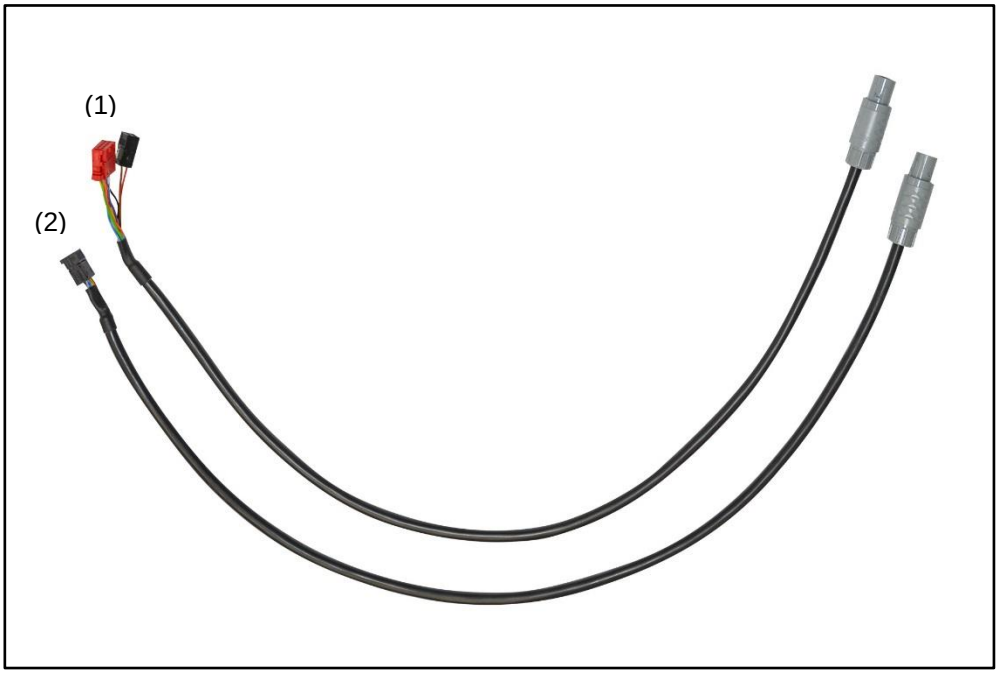


Fig 2-16 Cable Set e-Golf

2.4.5 Basic cable set Module adaption 2 (PHEV) VAS 6910/12B ASE 447 242 02 000 BO8018

The Basic Cable Set Module adaption (PHEV) consists of three cables:

1. VAS 6910/12B-1 ASE 447 252 01 000 BV8423
   Cable for “plus” with loose cable clips for use with PHEV modules.
   First usage:
   - VW Golf GTE 2014>
   - Audi A3 e-tron 2014>
   - Porsche Taycan 2020>
2. VAS 6910/12B-2 ASE 447 253 02 000 BV8424
   Cable for „minus“ with loose cable clips for use with PHEV modules.
   First usage:
   - VW Golf GTE 2014>
   - Audi A3 e-tron 2014>
   - Porsche Taycan 2020>
3. VAS 6910/12A-3 ASE 447 254 02 000 BV8265
   CAN cable for connecting to the module controller
   First usage:
   - VW Golf GTE 2014>
   - Audi A3 e-tron 2014>
   - Porsche Panamera 2017>

First usage: VW Golf GTE 2014> and Audi A3 e-tron 2014>.

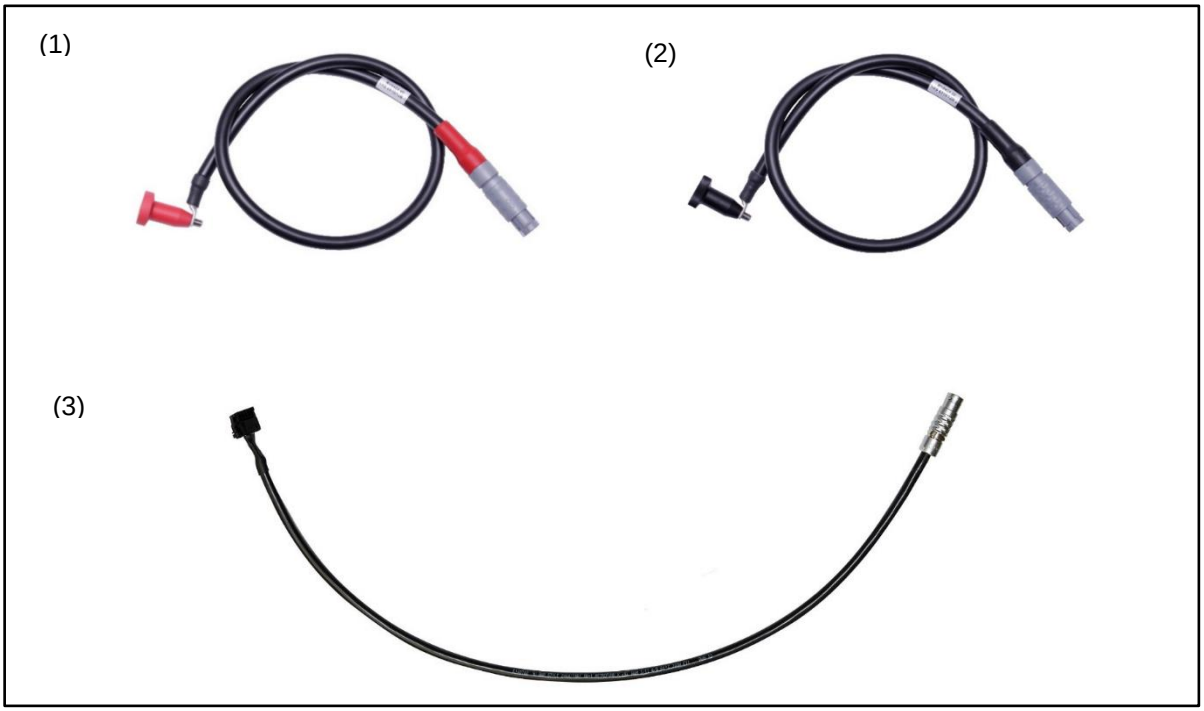


Fig: 2-17 Basic cable set Module adaption 3 (PHEV)

2.4.6 Basic cable set Module adaption 3
Adapter cable Porsche G1 II & E2 II PHEV
VAS 6910/13 485 160 00 000 BO8075

The Basic Cable Set Module adaption 3 consists of three cables:

1. Cable for „plus“
   Loose cable clip and M6 knurled nut VAS 6910/10-1
   ASE 447 246 00 000 BV8190
2. Cable for „minus“
   Loose cable clip and M6 knurled nut VAS 6910/10-2 ASE 447 247 00 000 BV8191
3. CAN cable for module VAS 6910/13-1 ASE 485 161 00 000 BV8200
   - Porsche G1 II PHEV 24 Ah
   - Porsche E2 II PHEV 28 Ah

First usage is on Porsche Panamera 2014>.

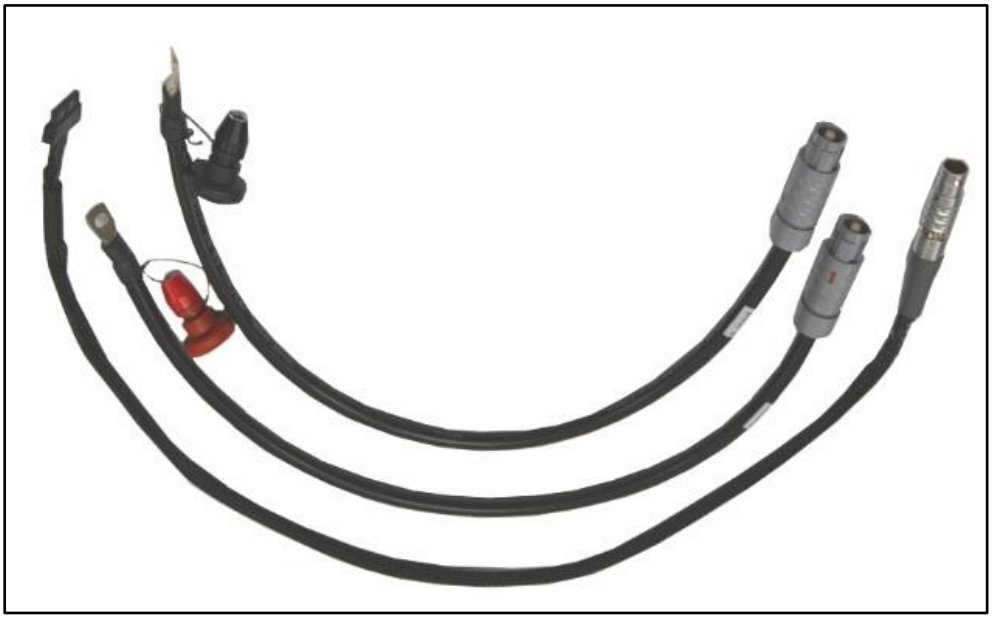


Fig 2-18 Adapter cable Porsche G1 II & E2 II PHEV

2.4.7 Basic cable set Module adaption 4 (XL1) VAS 6910/14 BO7865 Purchase via r XL1 After Sales Volkswagen AG

The Basic Cable Set XL 1 consists of three cables:

1. Cable for „plus“
   Loose cable clip and M6 knurled nut BV8190
2. Cable for „minus“
   Loose cable clip and M6 knurled nut BV8191
3. Analogue cable for XL 1 BV8193

Start of usage is on VW XL 1.

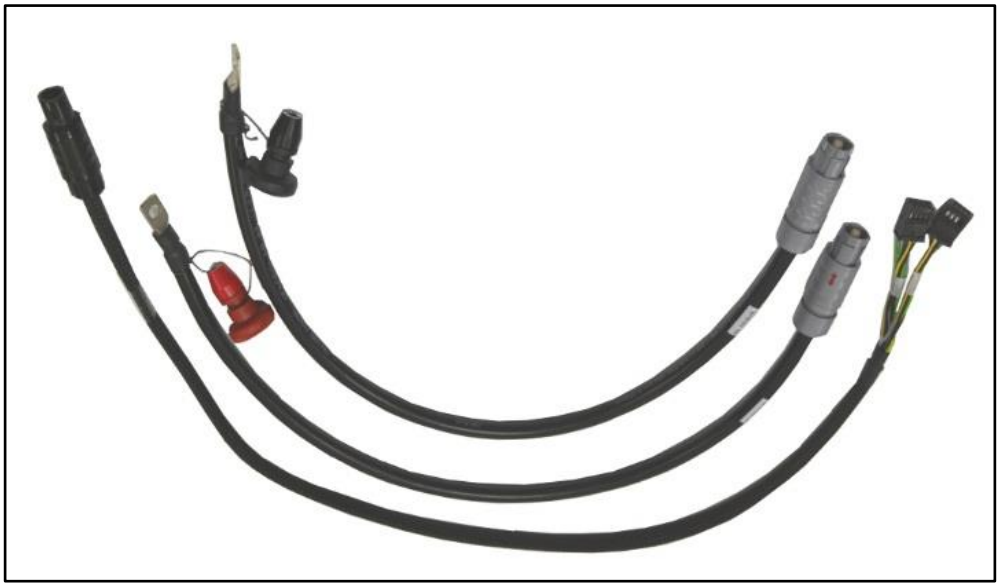


Fig 2-19 Basic Cable Set XL 1

2.4.8 Basic cable VAS 6910/15

1. VAS 6910/15-1 ASE 447 255 00 000 BV8294
   e - Up R Analog connection cable for module variant 12E.915.592.B/…..592.C

2. VAS 6910/15-2 ASE 447 256 00 000 BV8295
   e - Up L Analog Analog connection cable for module variant 12E.915.591.E/….591.F

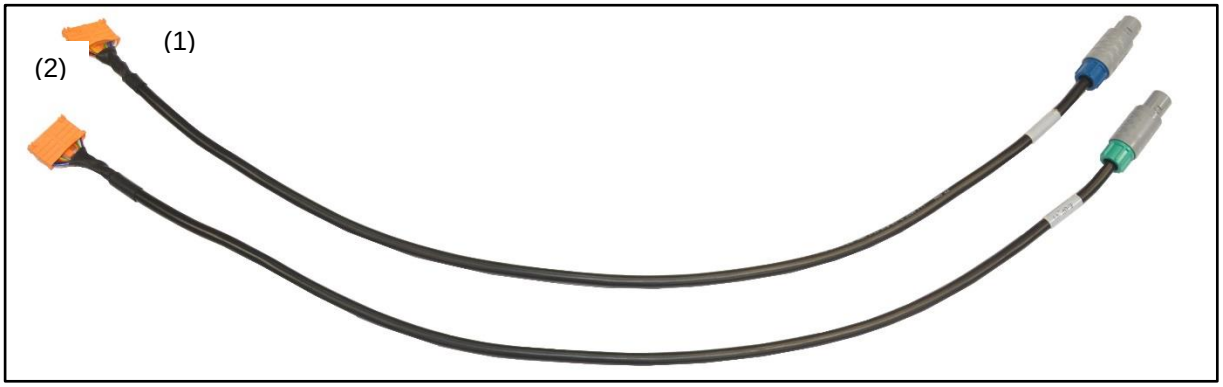


Fig 2-20 Basic Cable

First usage is on VW e-Up! 2014-05-25>.

2.4.9 Basic cable VAS 6910/16

1. VAS 6910/16-1 ASE 447 245 00 000 BV8296
   CCE Analog connection cable for slave modules

2. VAS 6910/16-2 ASE 447 259 00 000 BV8315
   CMC-CCE slave simulation e-Golf 300 GP

   First usage is on VW e-Golf 2016-12-12>.

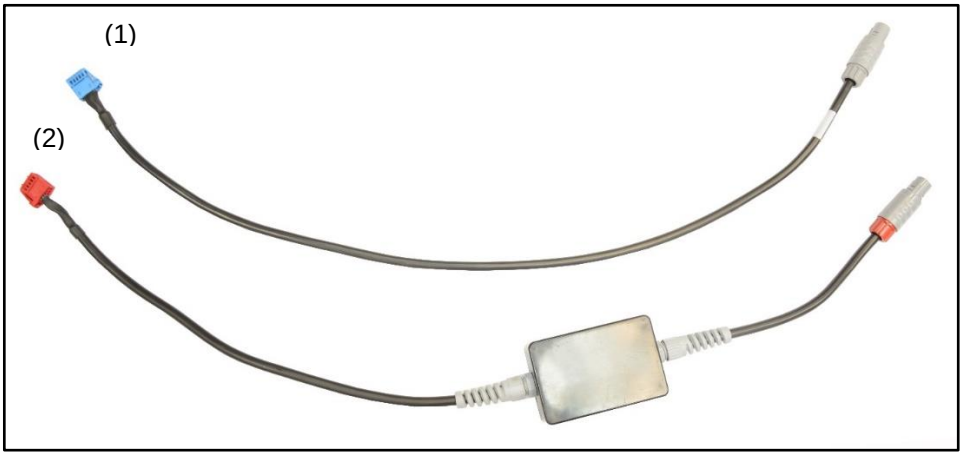


Fig 2-21 Basic Cable

2.4.10 Basic cable VAS 6910/17

1. VAS 6910/17-1 ASE 447 260 00 000 BV8317
2. VAS 6910/17-2 ASE 447 261 00 000 BV8318

First usage is on Audi e-tron 55 quattro LG 2019>.

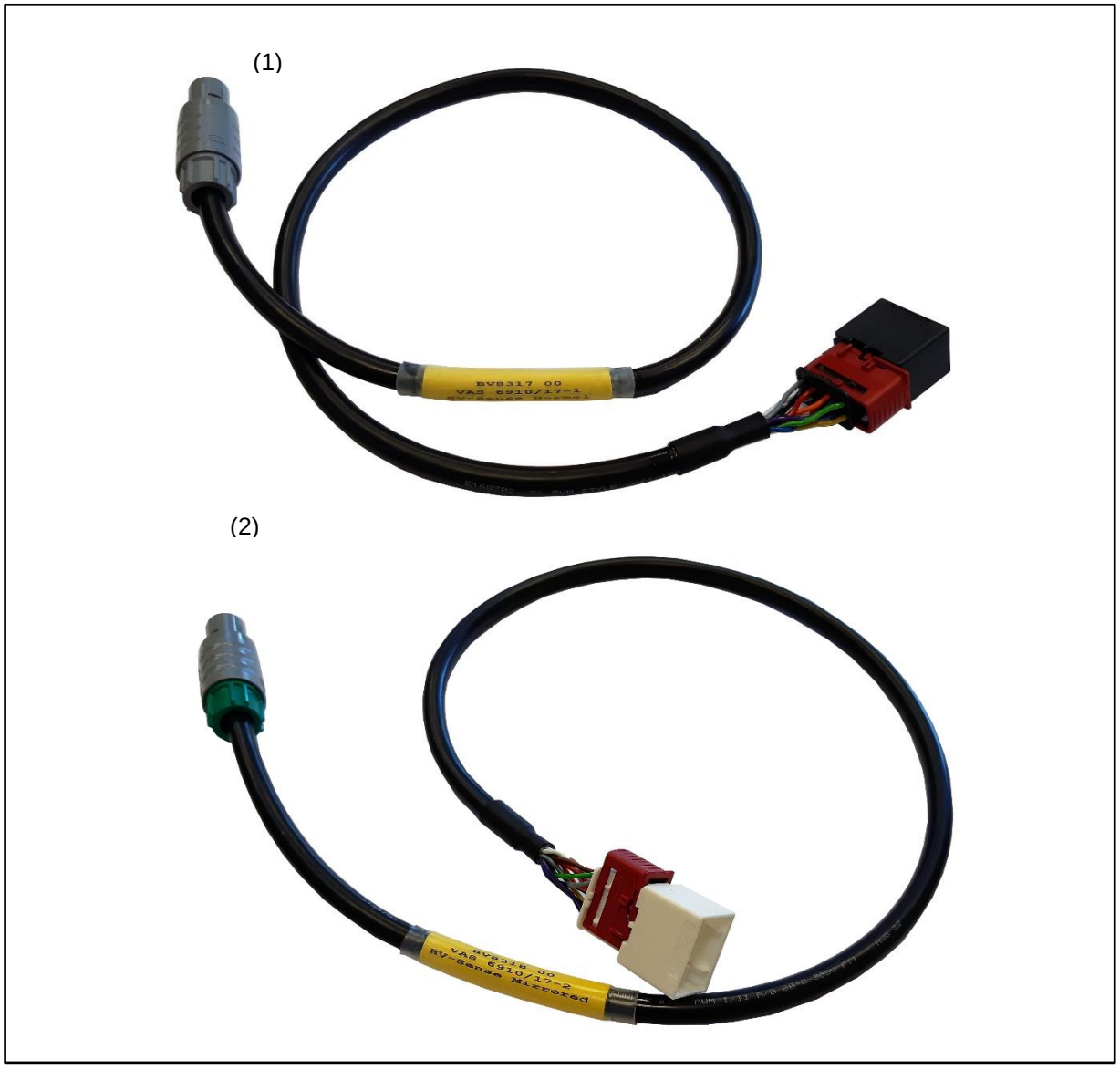


Fig 2-22 Basic cable VAS 6910/17

2.4.11 Basic cable VAS 6910/18

Audi e-tron quattro Einsteiger

1. VAS 6910/18-1 ASE 447 263 00 000, BV8362
2. VAS 6910/18-2 ASE 447 264 00 000, BV8363
   First usage is on Audi e-tron 50 quattro 2019>

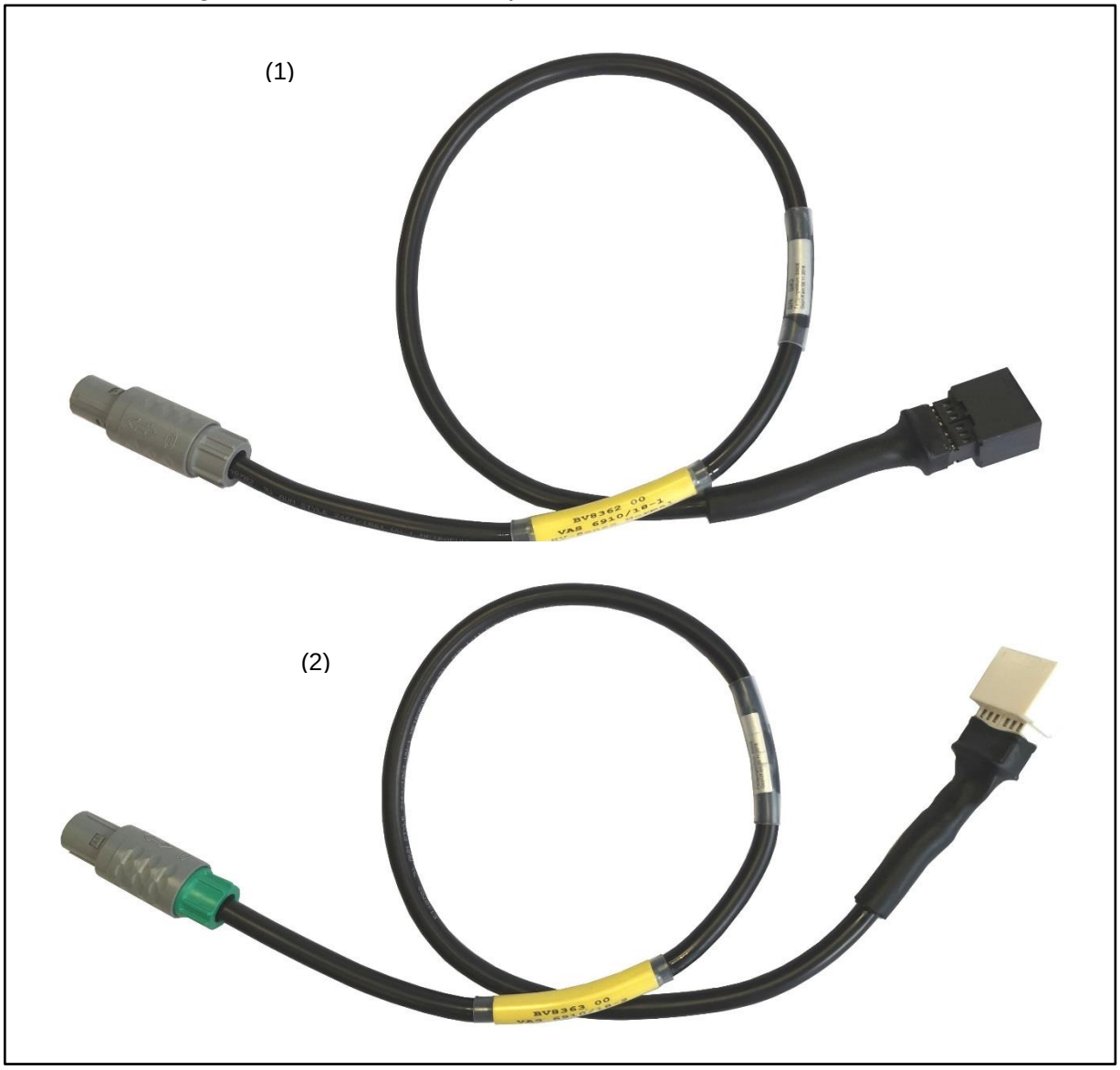


Fig. 2-23 Basic cable VAS 6910/18

2.4.12 Basic cable VAS 6910/19

VAS 6910/19 ASE 447 265 00 000, BO8001
For connecting modules of the Premium Platform Electromobility with TPL communication. First use: Porsche Taycan from 2020> and Audi e-tron GT 2022>.

Fig 2-24 Basic cable VAS 6910/19

2.4.13 Basic cable VAS 6910/20

VAS 6910/20 ASE 447 266 00 000, BO8020
for connection to Volkswagen Lavida BEV, e-Golf, ABT e-Caddy, Audi Q2,

1. VAS 6910 / 20-1 ASE 447 267 00 000, BO8030
   4 x plastic position blocks with screws and instructions
2. VAS 6910 / 20-2 ASE 447 268 00 000, BV8415
   Analog connection lines
3. VAS 6910 / 12B-1 ASE 447 252 02 000, BV8423
   see section "Basic cable set Module adaptation 2 (PHEV) VAS 6910 / 12B ASE 447 242 02 000, BO7854 "
4. VAS 6910 / 12B-2 ASE 447 253 02 000, BV8424
   see section "Basic cable set Module adaptation 2 (PHEV) VAS 6910 / 12B ASE 447 242 02 000, BO7854"

First usage:

- VW Lavida (China) 2019>
- VE e-Up! 2019>
- Audi Q2 e-tron (China) 2019>

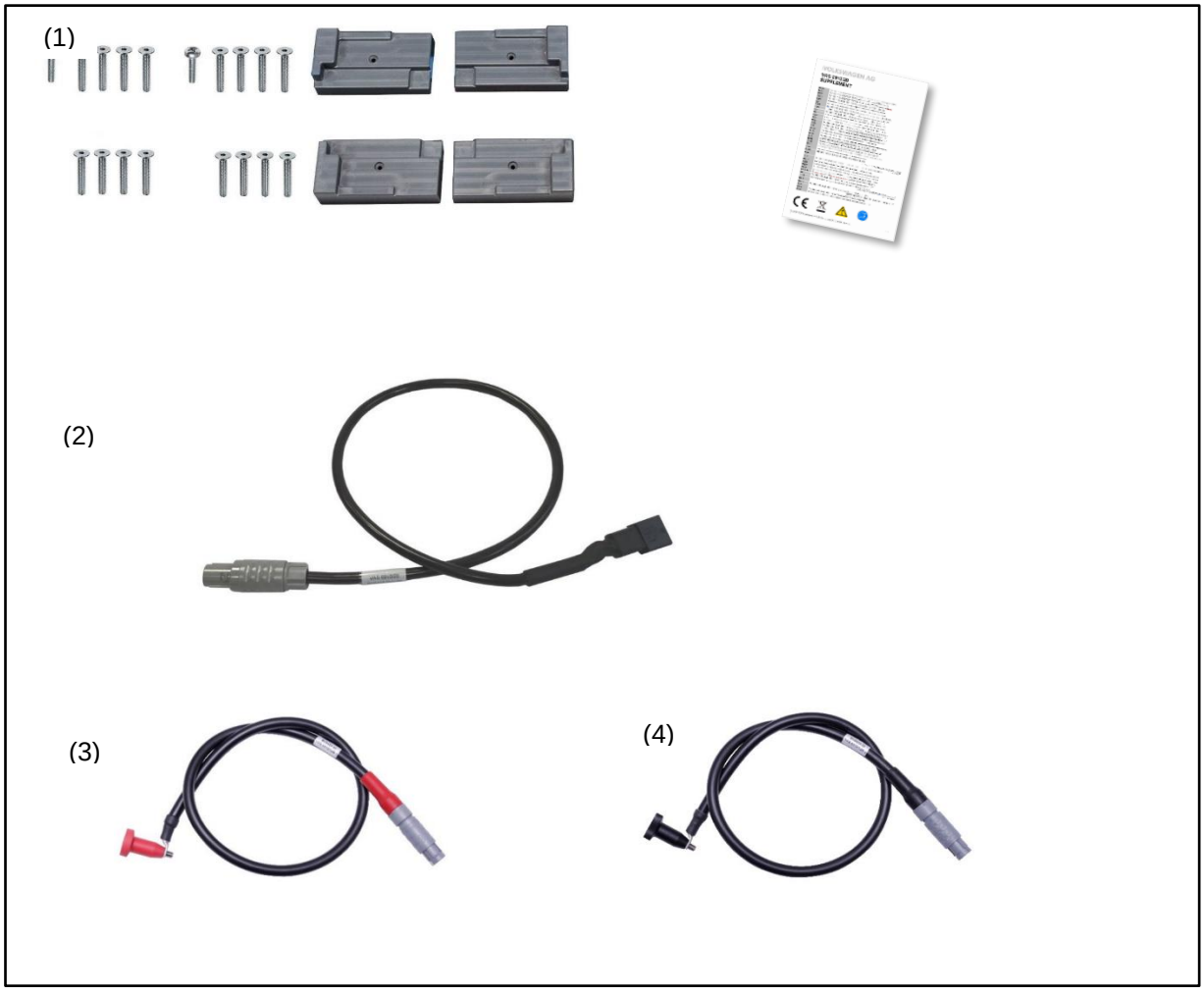


Fig 2-25 Basic cable VAS 6910/20

2.4.14 Basic cable VAS 6910/21

VAS 6910/21, ASE 447 300 00 000, BO8021
Connection to VOLKSWAGEN, cell modules MEB

1. VAS 6910/21-1 ASE 447 301 00 000, RM7557
   Covering hood
2. VAS 6910/21-3 ASE 447 303 00 000, MR7497
   Insulating mat
3. VAS 6910/21-2 ASE 447 302 00 000, BV8427
   Analog connection cable
4. VAS 6910/12B-1 ASE 447 252 02 000, BV8423
   see section "Basic cable set Module adaptation 2 (PHEV) VAS 6910 / 12B ASE 447 242 02 000, BO7854"
5. VAS 6910/12B-2 ASE 447 253 02 000, BV8424
   see section "Basic cable set Module adaptation 2 (PHEV) VAS 6910 / 12B ASE 447 242 02 000, BO7854"

First usage:

- VW ID.3 2021>
- Audi Q4 e- 2022>

Fig. 2-26 Basic cable VAS 6910/21

2.4.15 Basic cable VAS 6910/22

VAS 6910/22, ASE 447 306 00 000, BO8076

1. VAS 6910/22-1, BV8501, cable Audi SDI
2. VAS 6910/22-2, BV8502, cable Audi SDI

First usage: Audi e-tron 55 quattro SDI 2019>.

Fig. 2-27 Basic cable VAS 6910/22

2.5 Scope of delivery

Table 2-1 scope of delivery

Components	System-delivery	Accessories
VAS 6910 **VAG-No.: ASE 447 230 00 XXX**[1] **AVL-No.:** Module-Balancer VAS 6910 incl. power cord incl. Unpacking und Start Up Manual (printed copy)	•	
VAS 6910/1 **VAG-No.: ASE 447 231 00 000** **AVL-No.: BG7455** Adapter- und Transport box	•	
VAS 6910/2 **VAG-No.: ASE 447 232 00 000** **AVL-No.: BO7841** Module-Balancer incl. power cord	•	
VAS 611003 **VAG-No.: ASE 611 003 00 000** **AVL-No.: BV8139** USB-cable (USB 2.0 Fischer to USB 2.0 B Rugged)	•	
VAS 611001 **VAG-No.: ASE 611001 00 000** **AVL-No.: EX7069** USB-cable (USB 2.0 A to USB 2.0 B Rugged)	•	
VAS 6910/5 **AVL-No.: BO7859** Operating manuals and software on CD	•	

Components	System-delivery	Accessories
VAS 6910/10 **VAG-N0.: ASE 447 240 00 000** **AVL-No: BO7852** Basic cable set module adaption 1: e-up (VW120/7) 1. VAS 6910/10-1 ASE 447 246 00 000 BV8190 Cable for „Plus“-Pol 2. VAS 6910/10-2 ASE 447 247 00 000 BV8191 Cable for „Minus“-Pol 3. VAS 6910/10-3 ASE 447 248 00 000 BV8140 Analog-Meas. lead for module variant 12E.915.591 4. VAS 6910/10-4 ASE 447 249 00 000 BV8141 Analog-Meas. lead for module variant 12E.915.592 5. VAS 6910/10-5 ASE 447 250 00 000 BV8142 Analog-Meas. lead for module variant 12E.915.591.A 6. VAS 6910/10-6 ASE 447 251 00 000 BV8143 Analog-Meas. lead for module variant 12E.915.592.A		●
VAS 6910/11 **VAG-Nr.: ASE 447 241 00 000** **AVL-Nr.: BO7853** Extension cable set module adaption A: E-Golf (VW370/7) Set consists of 1. VAS 6910/11-1 ASE 447 257 00 000 BV8145 Slave Simulation cable for Master-Modules 2. VAS 6910/11-2 ASE 447 258 00 000 BV8146 Analogue meas. cable for Slave-Modules For VOLKSWAGEN E-Golf both cable VAS 6919/11 and VAS 6910/12A are necessary.		●

VAS 6910/12B **VAG-Nr.: ASE 447 242 02 000** **AVL-Nr.: BO8018** Basic cable set module adaption 2 (PHEV): 1. VAS 6910/12B-1 ASE 447 252 02 000 BV8423 Cable for “plus” with loose cable clips for use with PHEV modules, AUDI A3 e-tron, e-Golf and Golf GTE. 2. VAS 6910/12B-2 ASE 447 253 02 000 BV8424 Cable for „minus“ with loose cable clips for use with PHEV modules, AUDI A3 e-tron, e-Golf and Golf GTE. 3. VAS 6910/12A-3 ASE 447 254 00 000 BV8265 For: e-Golf, Group module (PHEV) CAN cable for connecting to the module controller For PHEV module and for AUDI A3-e-tron		●
VAS 6161/1 **VAG-Nr.: ASE 447 043 00 000** **AVL-Nr.:** 2D-bar code reader with USB cable. **Distribution Volkswagen AG only.**		●
VAS 6910/13 **VAG-Nr.: ASE 485 160 00 000** **AVL-Nr.: BO8075** Basic cable set module adaption 3 Adapter cable Porsche G1 II & E2 II PHEV 1. VAS 6910/10-1 cable for „plus“ loose cable clip and M6 knurled nut ASE 447 246 00 000 BV8190 2. cable for „minus“ loose cable clip and M6 knurled nut ASE 447 247 00 000 BV8191 3. CAN cable ASE 485 161 00 000 BV8200		●
VAS 6910/14 **Purchase via r XL1 After Sales Volkswagen AG** **AVL-Nr.: BO7865** Basic cable set module adaption 4 Adapter cable XL 1 1. cable for „plus“ loose cable clip and M6 knurled nut BV8190 2. cable for „minus“ loose cable clip and M6 knurled nut BV8191 3. Analogue cable for module XL 1 BV8193		●

Basic Cable VAS 6910/15: 1. VAS 6910/15-1 ASE 447 255 00 000 BBV8294 e - Up R Analog connection cable for module variant 12E.915.592.B/…..592.C 2. VAS 6910/15-2 ASE 447 256 00 000 BV8295 e - Up L Analog Analog connection cable for module variant 12E.915.591.E/….591.F		●
Basic Cable VAS 6910/16 1. VAS 6910/16-1 ASE 447 245 00 000 BV8296 CCE Analog connection cable for slave modules 2. VAS 6910/16-2 ASE 447 259 00 000 BV8315 CMC-CCE slave simulation e-Golf 300 GP		●
Basic Cable VAS 6910/17 Audi e-tron quattro VAS 6910/17-1 ASE 447 260 00 000 BV8317 1. VAS 6910/17-2 ASE 447 261 00 000 BV8318		●
VAS 6910/18 Audi e-tron quatro Einsteiger 1. VAS 6910/18-1 ASE 447 263 00 000 BV8362 2. VAS 6910/18-2 ASE 447 264 00 000 BV8364		●
VAS 6910/19 ASE 447 265 00 000 BO8001 For connecting modules of the Premium Platform Electromobility with TPL communication..		●
VAS 6910/20 ASE 447 266 00 000 BO8020 Volkswagen: Lavida BEV, e-Golf, ABT e-Caddy, AUDI Q2, module MQB BEV CATL 1. VAS 6910 / 20-1 ASE 447 267 00 000, BO8030 4 x plastic position blocks with screws and instructions 2. VAS 6910 / 20-2 ASE 447 268 00 000, BV8415 Analog connection lines 3. VAS 6910 / 12B-1 ASE 447 252 02 000, BV8423 4. VAS 6910 / 12B-2 ASE 447 253 02 000, BV8424		●

VAS 6910/21 ASE 447 300 00 000 BO8021 Volkswagen, cell modules MEB 1. VAS 6910/21-1 ASE 447 301 00 000, RM7557 Covering hood 2. VAS 6910/21-3 ASE 447 303 00 000, MR7497 Insolating mat 3. VAS 6910/21-2 ASE 447 302 00 000, BV8427 Analog connection cable 4. VAS 6910/12B-1 ASE 447 252 02 000, BV8423 see section "Basic cable set Module adaptation 2 (PHEV) VAS 6910 / 12B ASE 447 242 02 000, BO7854" 5. VAS 6910/12B-2 ASE 447 253 02 000, BV8424 see section "Basic cable set Module adaptation 2 (PHEV) VAS 6910 / 12B ASE 447 242 02 000, BO7854"		•
Basic cable VAS 6910/22 VAS 6910/22, ASE 447 306 00 000, BO8076 1. VAS 6910/22-1, BV8501, cable Audi SDI 2. VAS 6910/22-2, BV8502, cable Audi SDI		•

[1] table: country variants

country/Region	**ASE number**
Europe	ASE 447 230 00 000
USA	ASE 447 230 00 023
Netherlands	ASE 447 230 00 032
Norway	ASE 447 230 00 036
Sweden	ASE 447 230 00 037
France	ASE 447 230 00 040
Italy	ASE 447 230 00 050
Korea	ASE 447 230 00 056
Spain	ASE 447 230 00 060
Japan	ASE 447 230 00 070
People's Republic of China	ASE 447 230 00 074

WARNING

Use only the referenced accessories from AVL DiTEST.

WARNING

Use the included mains cord set (power cord).

If the mains cord set has to be changed note the following requirements strictly.

On 240 V mains grid the mains cord set must be designed for a continuous current of 10 A, on 120 V mains grid the mains cord set must be designed for a continuous current of 20 A.

The mains cord set must have a C19 plug for the connection to the VAS 6910 suitable for the above current ratings.

Connect VAS 6910 only to protective contact sockets.
Set up the VAS 6910 in a way that there is always free access to the power separator. (Power cord from the mains socket).

3 Commissioning

Use the “*Unpacking- Start-up and brief instructions*” manual for the VAS6910.

3.1 Firmware-Update

To do an update of the VAS 6910 firmware proceed as follows:

1. Start the update program by click on
   Start | All programs | DiTEST | VAS6910 | VAS 6910 Firmware Update.

2. Click the **OK** Button twice.

   The newest program version and the actual installed version are shown.

   If a newer version is available please start the update process by clicking on the then enabled **Start** button.

3. Follow the instructions on the screen.

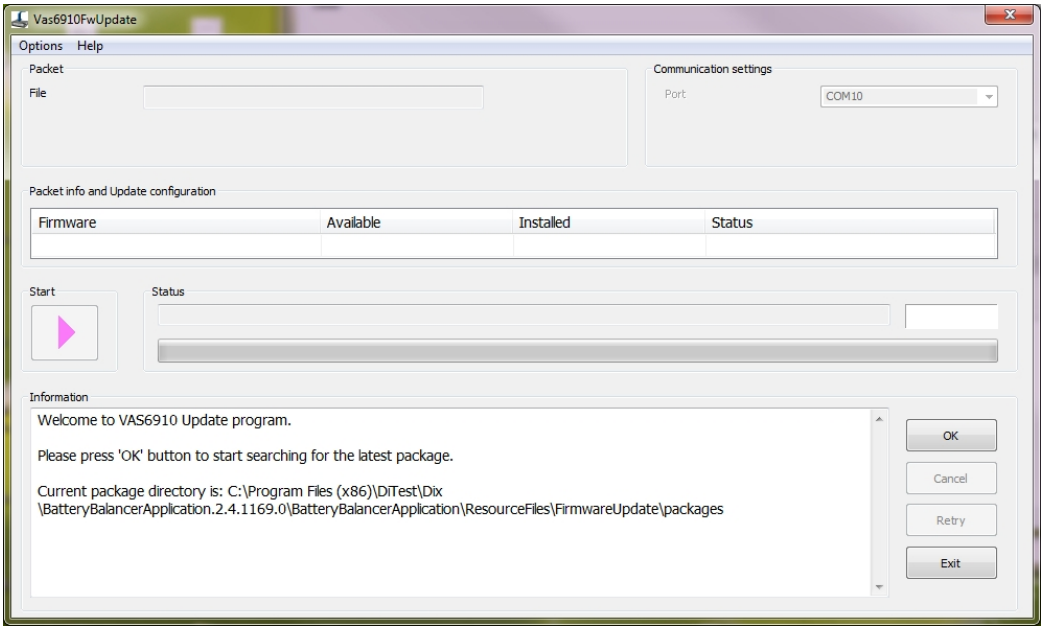


Fig. 3-1 Firmware Update

4 Operation

4.1 Preparation

Prepare the VAS 6910 for operation. (⇨ chapter. 3 „*Commissioning*“).

4.1.1 Charging / Discharging

1. Put the cell module (1) to charged/discharged into the adaption box of the VAS6910.

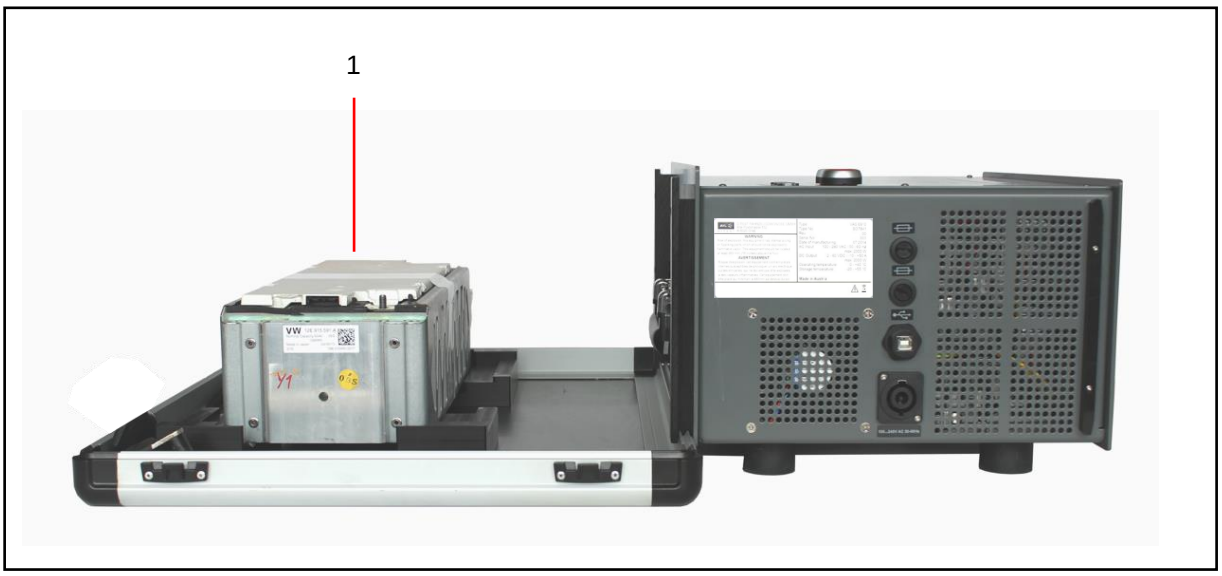


Fig. 4-1 Cell module inserted

2. Start the VAS Manager by selecting: **Start | Programs | DiTEST | VAS DSS**.
3. Select **Diagnose | Module Balancer**.

Fig. 4-2 DSS Manager

4. The start screen appears:
   Select **Charge/Discharge**.

Fig. 4-3 Start screen

5. A screen with safety instructions is shown next.

WARNING

Read and follow the safety instructions carefully.

6. Please read the instructions and confirm by clicking **F8 Next**.

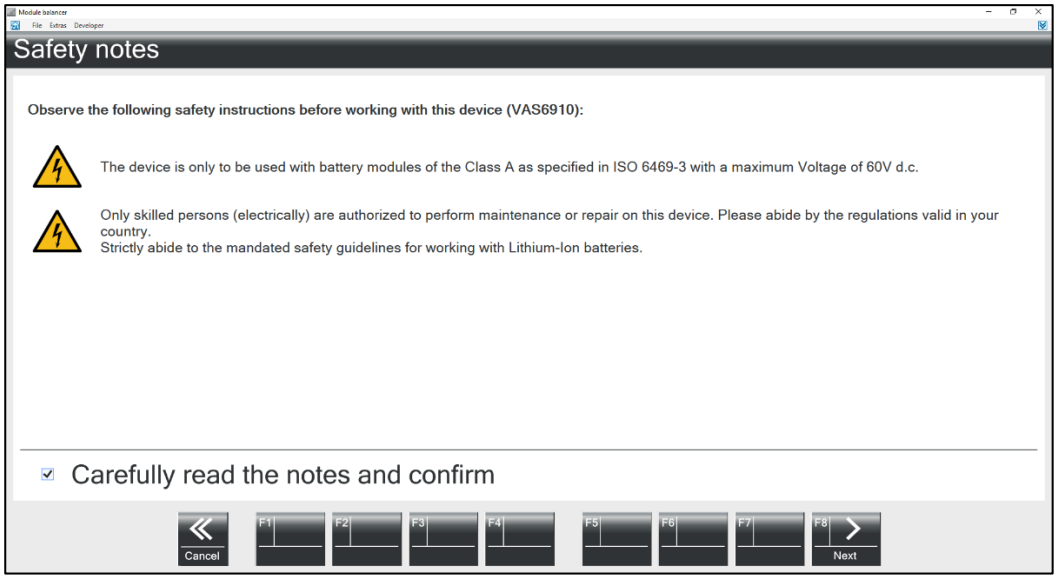


Fig. 4-4 Screen with safety instructions

7. Please enter your name. (Input user name, see chapter 4.1.6 “*Input user name*“).
8. Continue by clicking **F8 Next**.

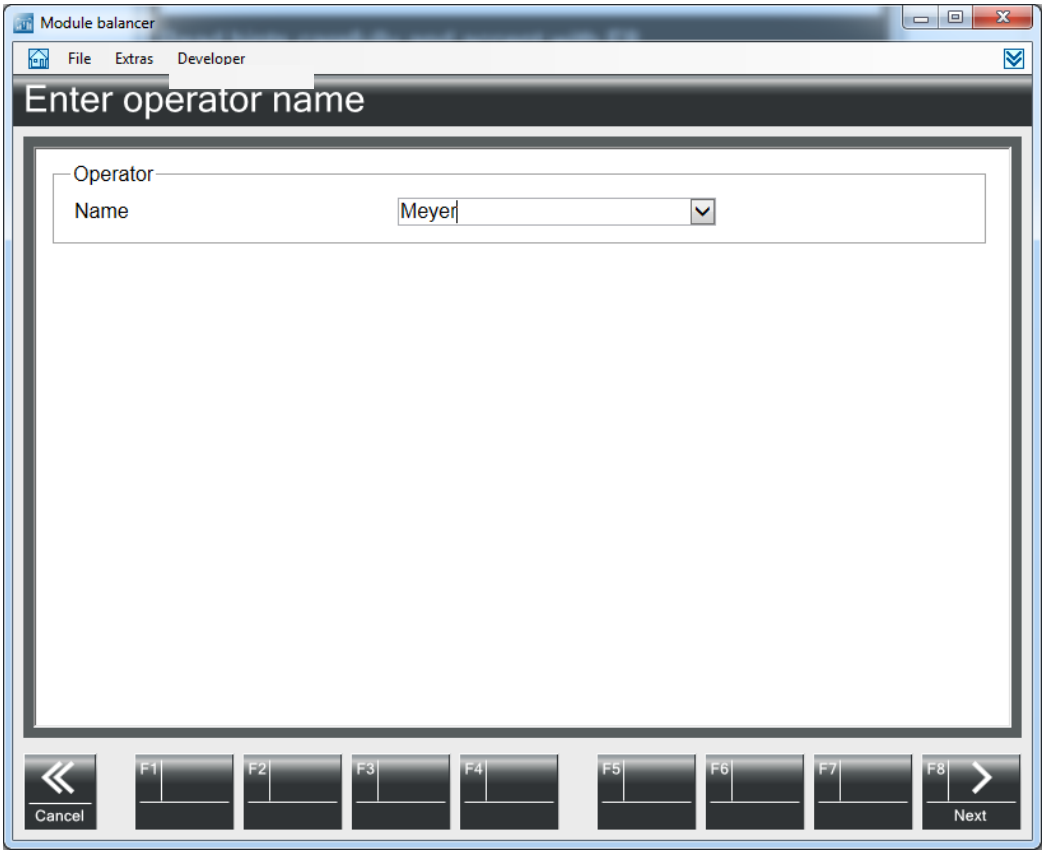


Fig. 4-5 Screen „Enter operator name“

9. Scan the bar code label attached to the cell module.
   Field „*Scan-code*“ (1) shows the scanned cell module information data.
   Module type (2) and the serial (3) are filled in automatically.

   If no bar code reader is available:
   Choose a cell module type from the drop down list (2) and enter a serial number (3).

   Input the avg. cell voltage (4).
   This value is given by the VW Off-board diagnostic system.

10. Confirm by clicking **F8 Next**.

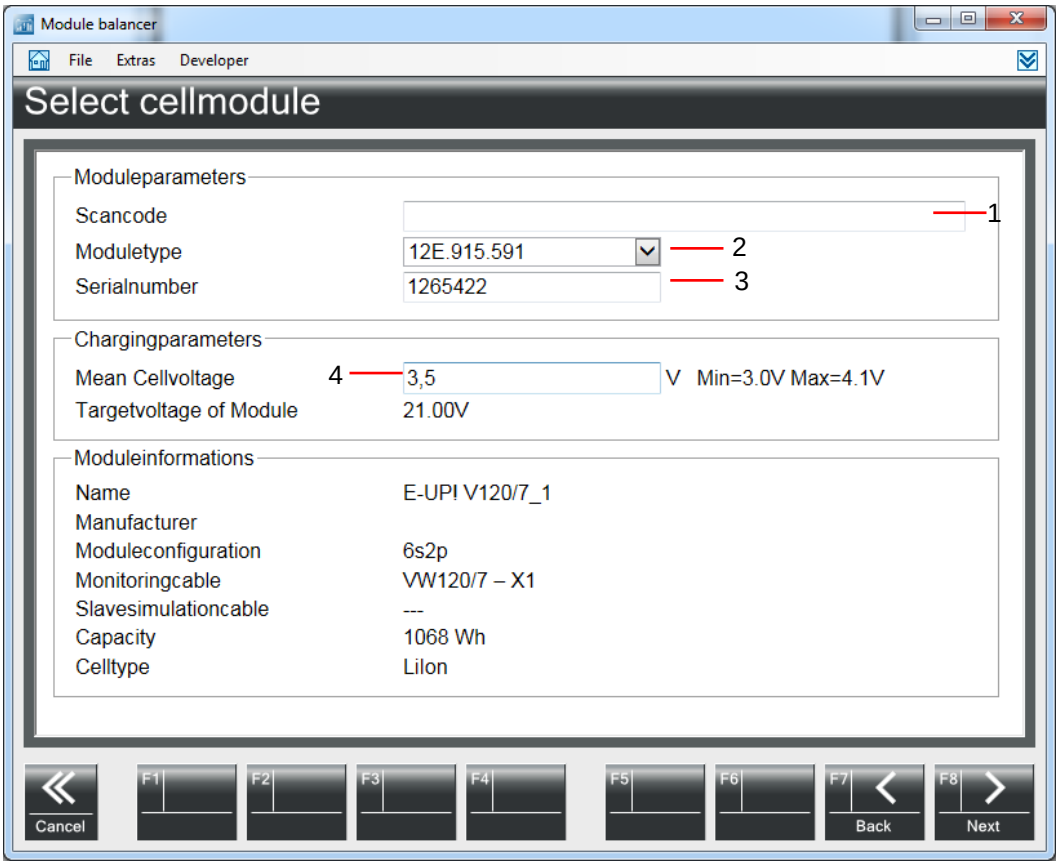


Fig. 4-6 Screen „Select cell module“

11. The next screen guides you through the connection process.
    It is important to do all connecting work in the shown order.

WARNING

Execute pt. 3 and 4 in the shown order.

WARNUNG

When connecting the cell module, make sure the IR temperature sensor °C / K IR is not covered and ensure direct visibility between the sensor and the module.

12. Continue by clicking **F8 Next**. Click on the button to get a picture schowing where to connect the cable

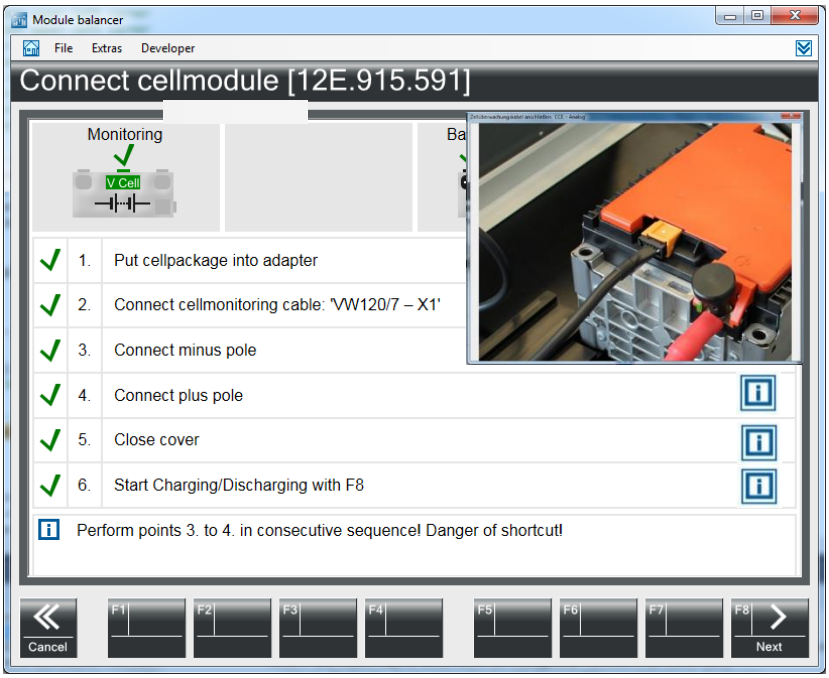
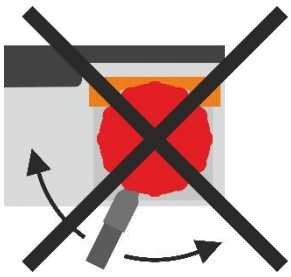


Fig. 4-7 Screen „Connecting the Cell module“

WARNING

Caution, all contact surfaces must be clean.
After connecting, ensure that all cables are firmly fixed.



13. The cell module gets charged/discharged now.
    Section 1 shows all relevant data.
    By clicking **F6 Stop** you can stop the charging / discharging process.

14. After the charging / discharging is finished please click **F8 Next**.

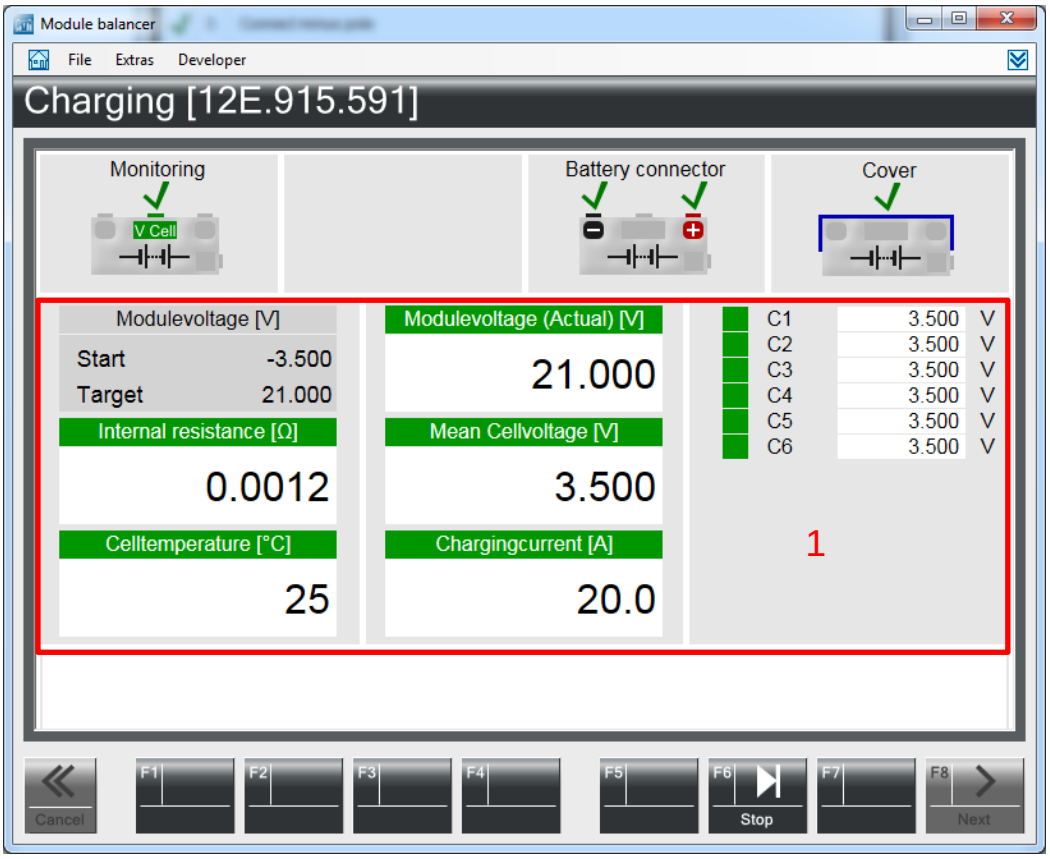


Fig. 4-8 Screen „Charging/ discharging“

15. A screen appears which shows you how to disconnect the charged / discharged cell module.
    Please follow the exact order shown.

16. Continue with **F8 Next**.

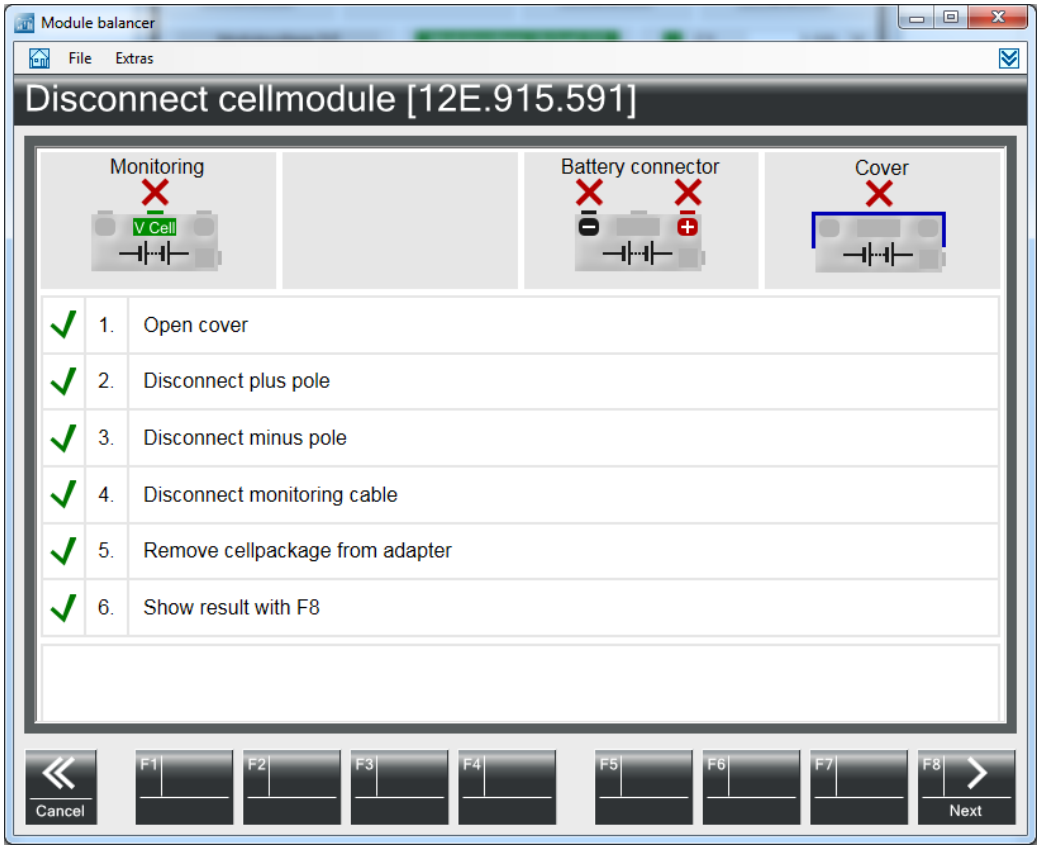


Fig. 4-9 Screen „Disconnect cell module“

17. On this screen the result protocol is shown.

F4 Print	Starts a print out of the protocol.
F5 Edit	The protocol can be edited.

18. By pressing **F8 Next** the charge / discharge process is finished.

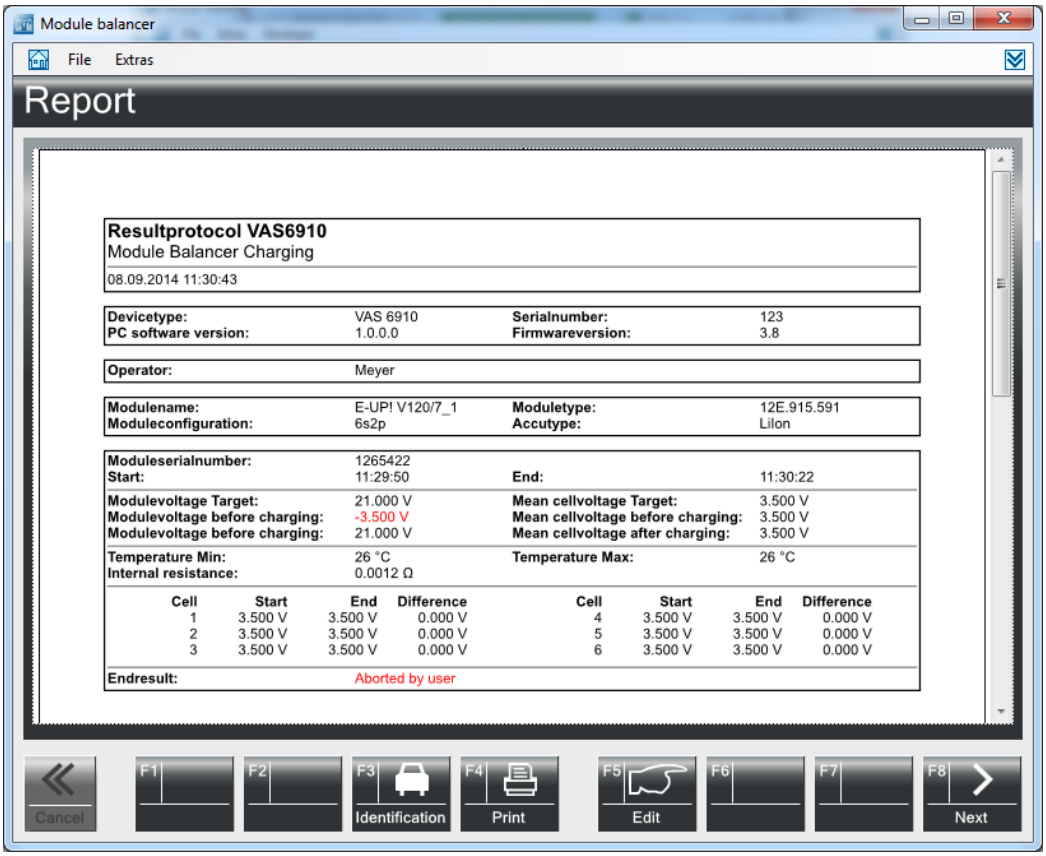


Fig. 4-10 Screen „Report“

4.1.2 Measuring Cell Voltages

1. Start the software by clicking on: **Start | Programs | DiTEST | VAS DSS**.
2. Click on **Diagnose | Module Balancer**.

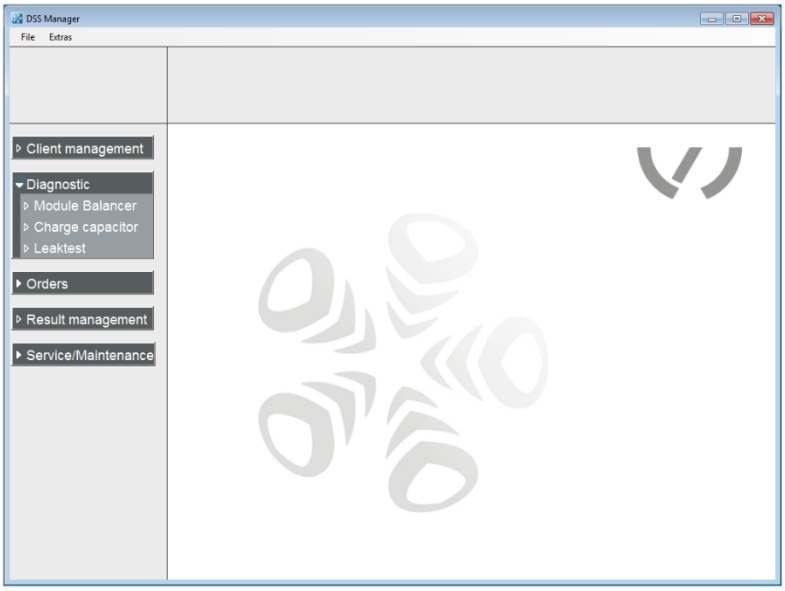


Fig. 4-11 DSS screen

3. The start screen appears.
   Click on **Measure cell voltages**.

Fig. 4-12 DSS Manager

4. A window with safety precautions appears.

WARNING

Read and follow the safety precautions on the screen.

5. Follow the safety precautions carefully and click **F8 Confirm**.

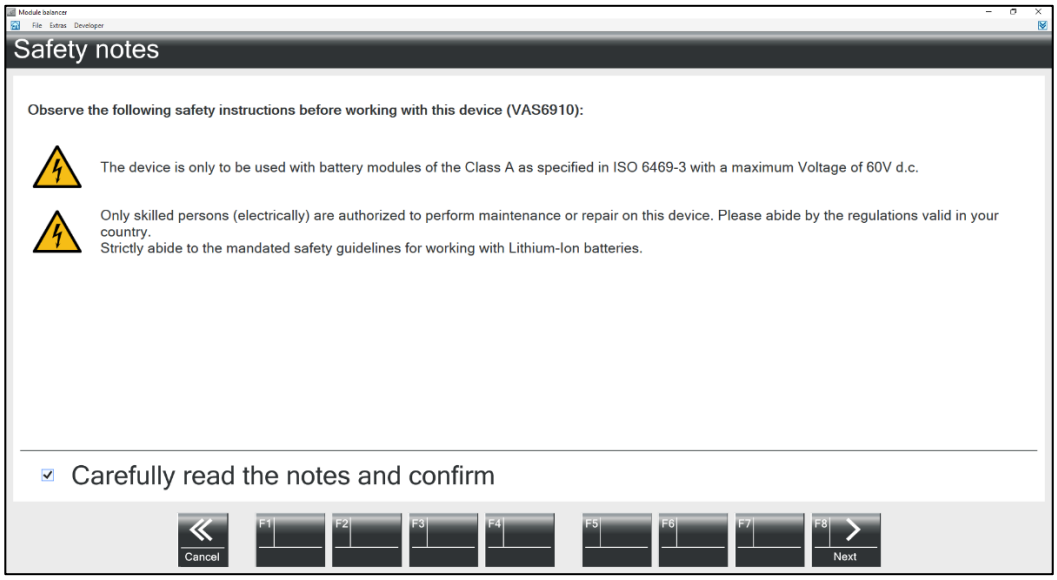


Fig. 4-13 Safety notes

6. Select the name. (Enter the names, see *Entering a list of operator names*
7. Click **F8 Next**.

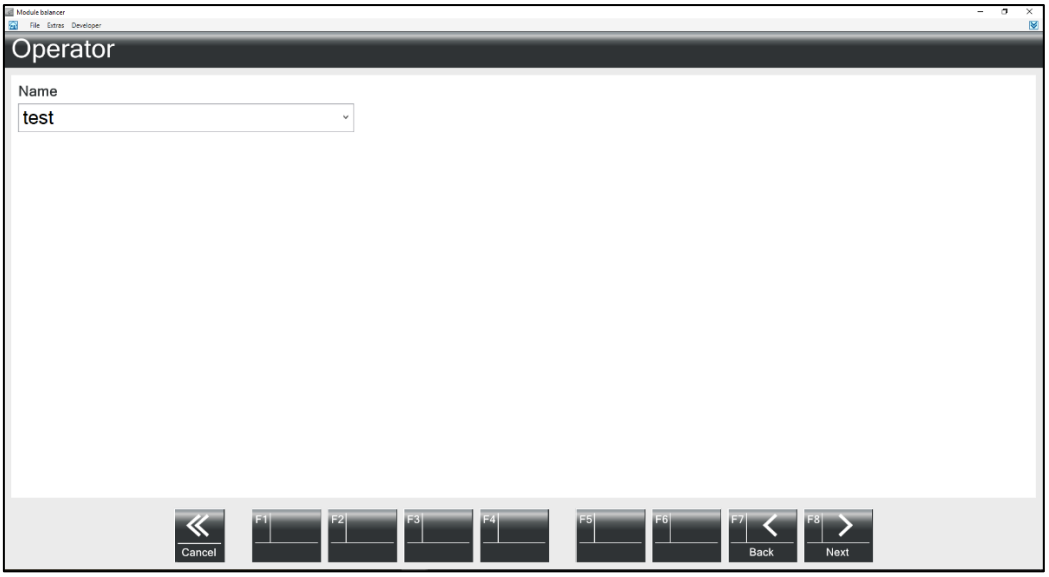


Fig. 4-14 Operator

8. Scan the barcode on the battery module.
   The scanned module information appears in the "*Scancode*" field (1).
   Module type (2) and serial number (3) are applied automatically.

9. Click **F8 Next**.

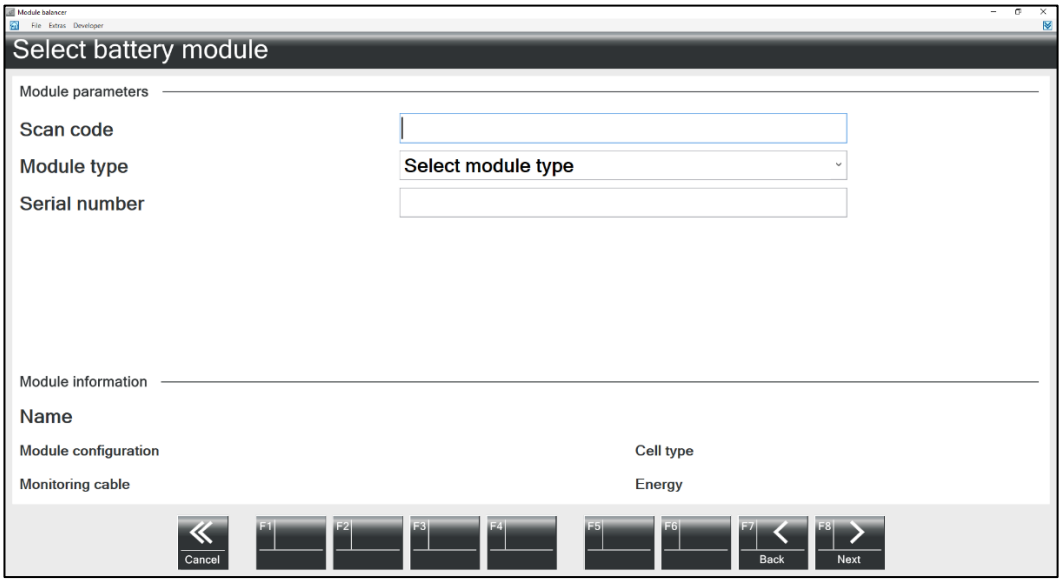


Fig. 4-15 Select battery module

10. The screen for connecting the battery module appears.
    Carry out all work in the order specified.

WARNING

When connecting the cell module, make sure that the IR temperature sensor °C / K IR is not covered and has a clear "view" of the module.

11. Click on **Next**. By clicking on ⓘ, the photo matching this line appears as a connection aid.

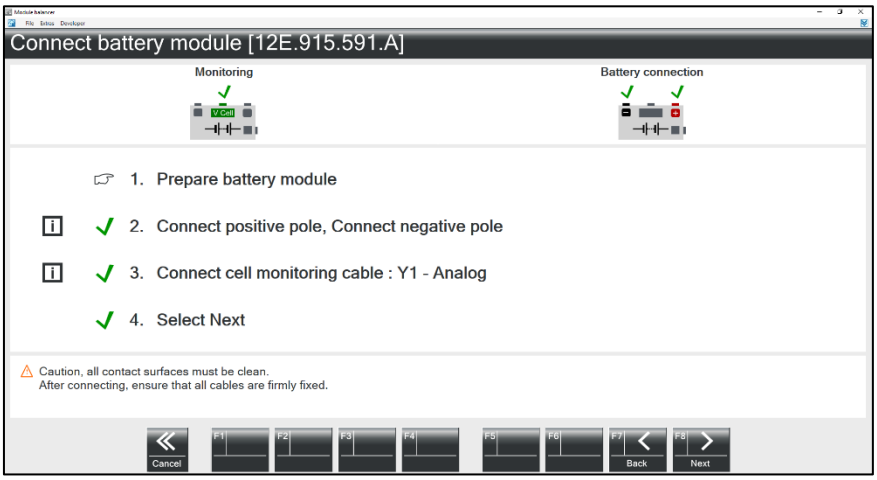
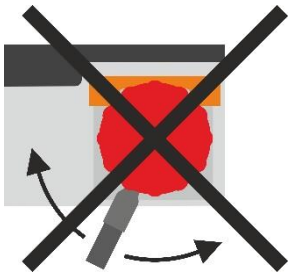


Fig. 4-16 Connect battery module

WARNING

All contact surfaces must be clean.
Check all cables for tightness after connecting.



12. The cell voltages are measured.

13. After the measurement is completed, click **F8 Next**.

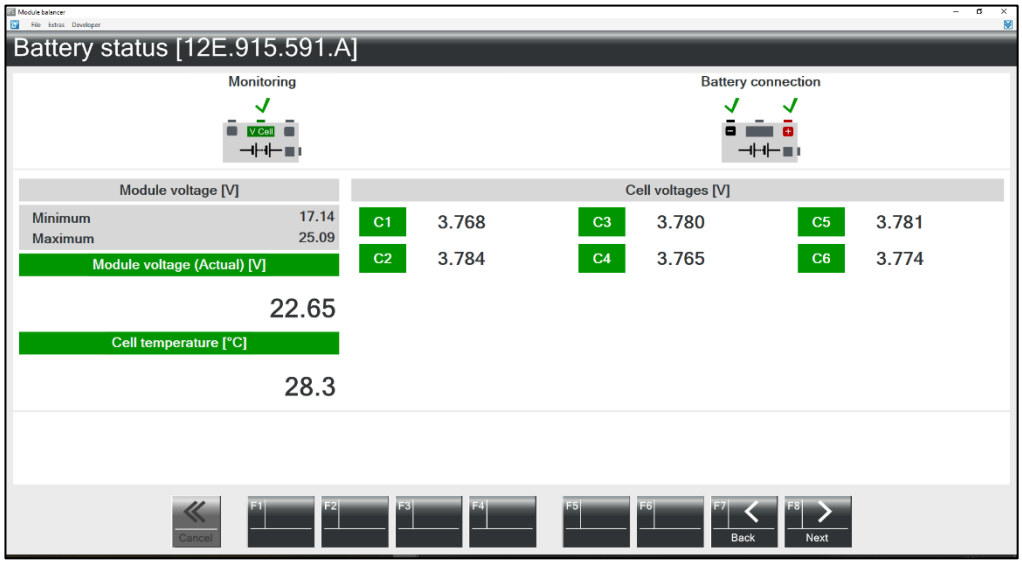


Fig. 4-17 Measuring cell voltages

14. The screen for disconnecting the battery module appears.
    Carry out all work in the order specified.

15. Click **F8 Next**.

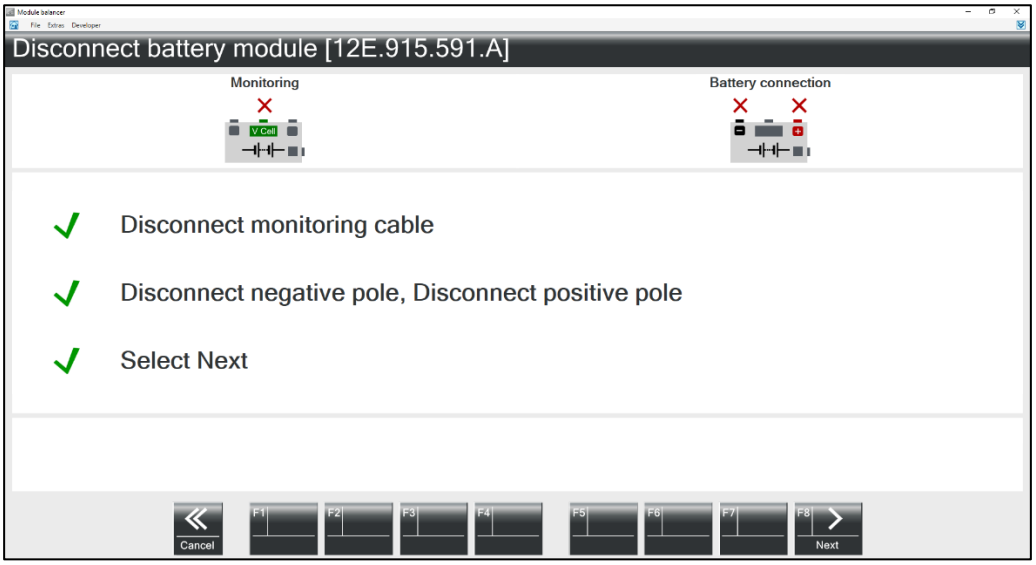


Fig. 4-18 Disconnect battery module

16. The screen with the result log appears.

F3 Identification	The vehicle data is displayed in the log.
F4 Print	A dialogue for printing the log appears.
F5 Edit	The log can be edited.

17. Click **F8 Next**. VAS 6910 is terminated.

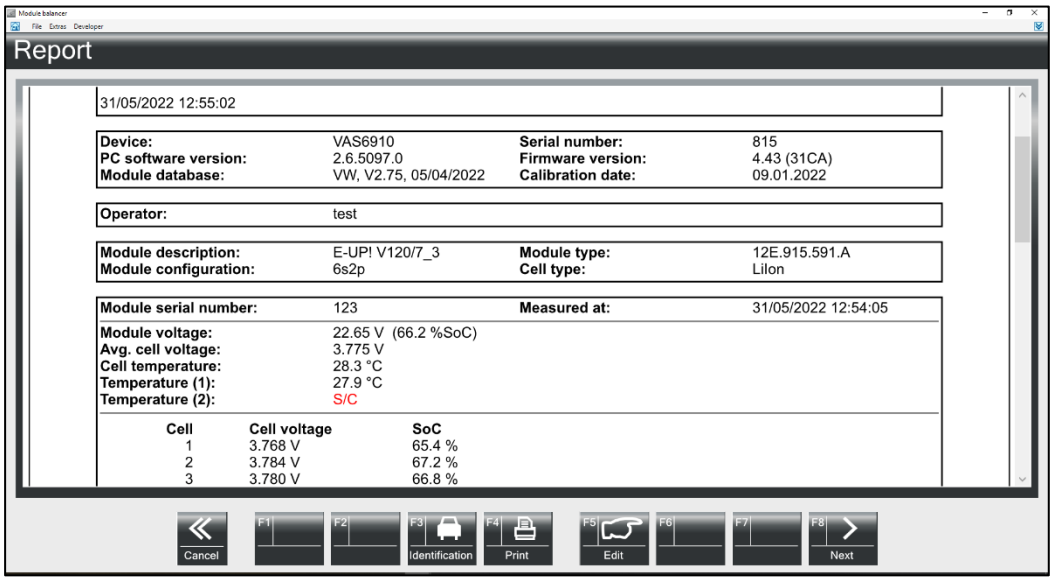


Fig. 4-19 Report

4.1.3 Safety test

1. Start the VAS Manager by selecting: **Start | Programs | DiTEST | VAS DSS**.
2. Select **Diagnose | Module Balancer**.

Fig. 4-20 DSS Manager

3. The start screen appears: Select **Safetytest**.

Fig. 4-21 Start screen

4. Follow the on-screen instructions.
   Continue with **F8 Next**.

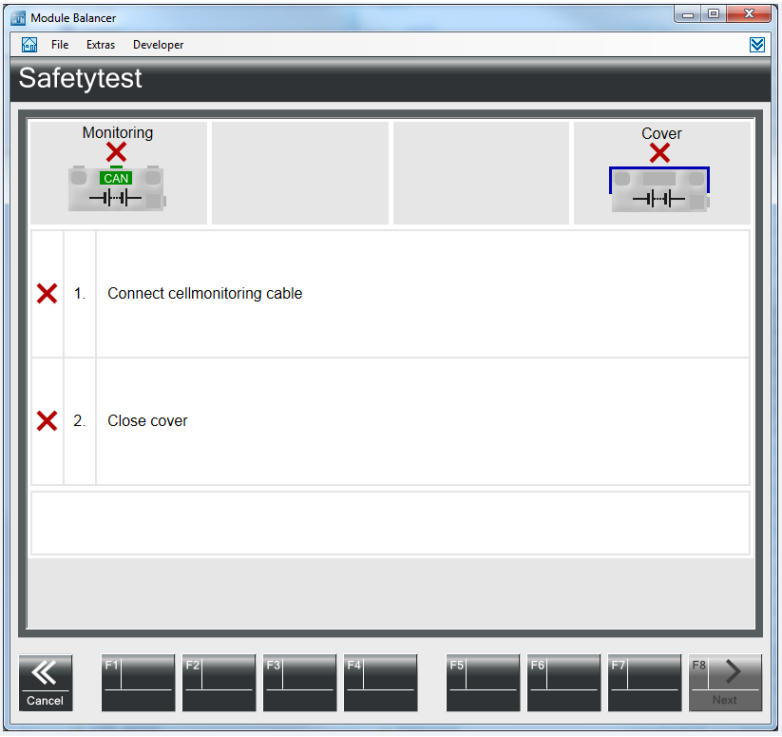


Fig. 4-22 Safetytest

4.1.4 Self-test

1. Start the VAS Manager by selecting: **Start**|**Programs**|**DiTEST**|**VAS DSS**.
2. Select **Diagnose**|**Module Balancer**.

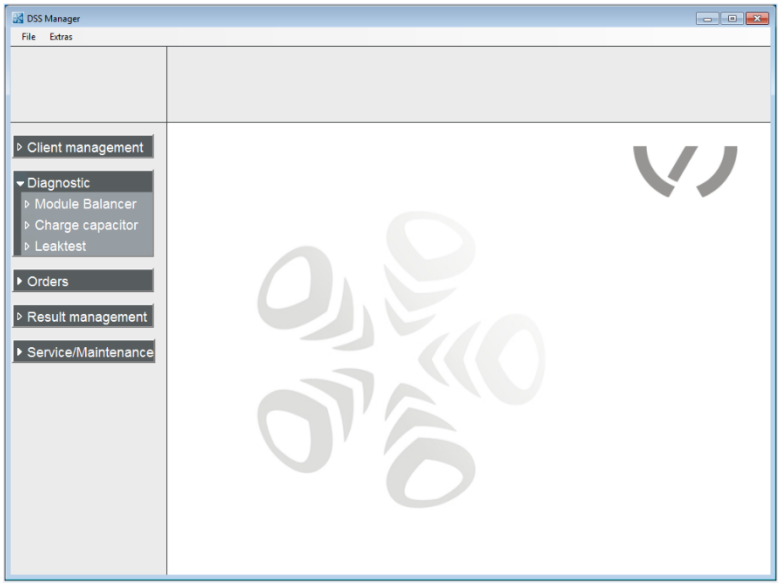


Fig. 4-23 DSS Manager

3. The start screen appears: Select **Selftest**.

Fig. 4-24 Start screen

4. The self-test is performed and the result displayed.
   Return to the Start screen with **F8 Nex**t.

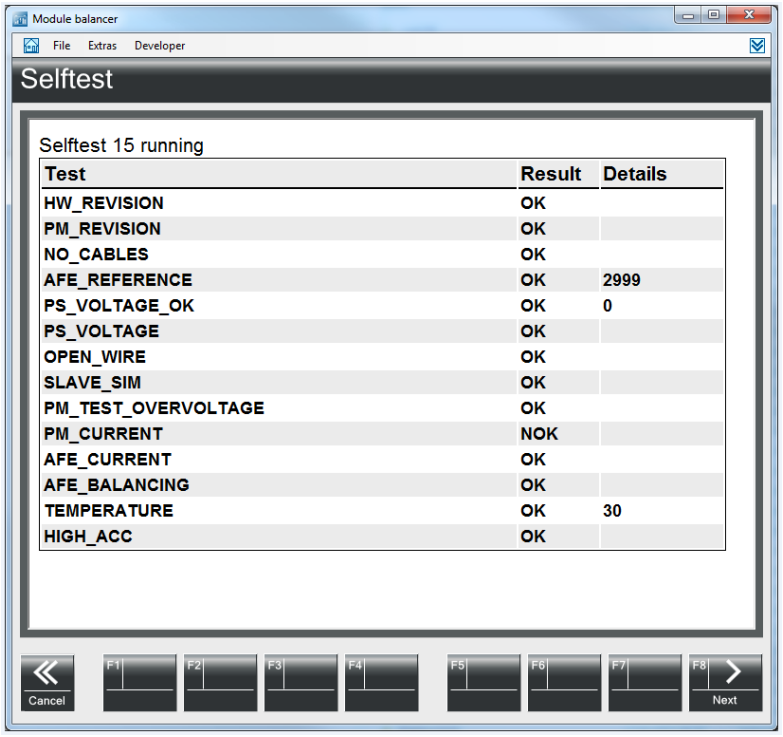


Fig. 4-25 Selftest

4.1.5 Deviceinfo

1. Start the VAS Manager by selecting: **Start | Programs | DiTEST | VAS DSS**.
2. Select **Diagnose | Module Balancer**.

Fig. 4-26 DSS Manager

3. The start screen appears: Select **Deviceinfo**.

Fig. 4-27 Start screen

4. A screen appears with the device data.
   With **F8 Next** to the home screen.

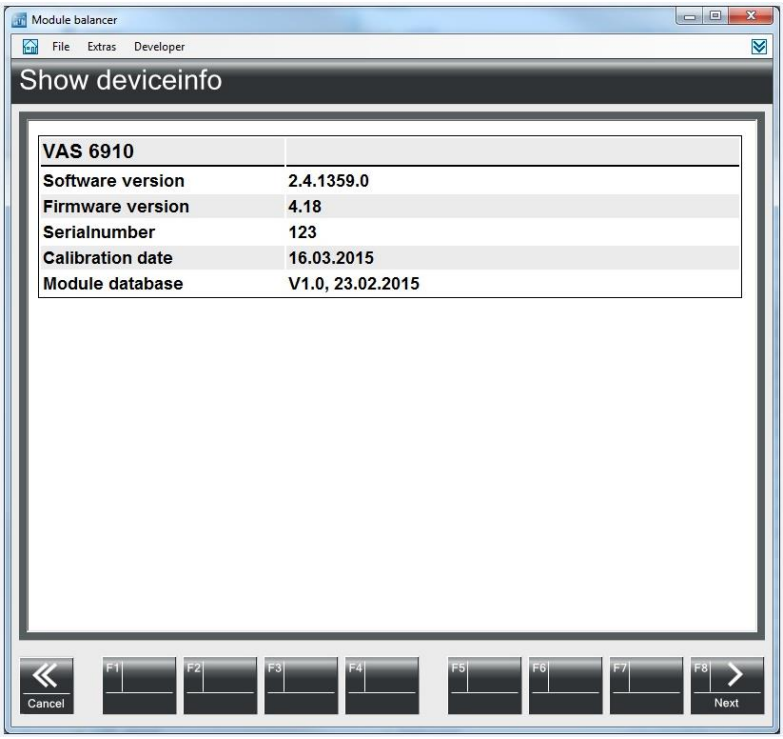


Fig. 4-28 Deviceinfo

4.1.6 Viewing all reports

With this function you can manage the result protocols.
Click on **Result Management**.

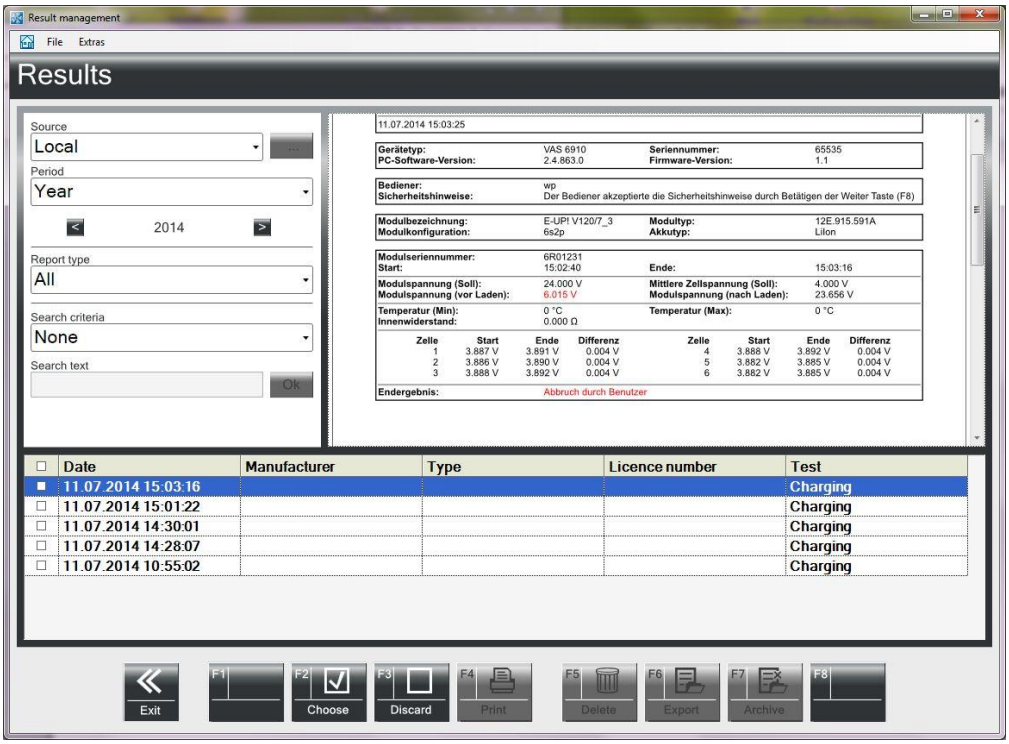


Fig. 4-10 Result management

Source

Select Local / Network / Saved Results.

Period

Select Day, Week, Month, Year or All.
You can flip forwards and backwards using the arrows.

Report type

Select Proof / Diagnosis Logs etc.

Search text

Choose between “None”, “Manufacturer” or “Licence number”.
In the Search text field, you can narrow the selection down further.

Return to “*Results Management*” with **Quit**.

☑ Individual logs can be selected by checking a box.

F2 Choose Selects all logs.

F3 Discard Discards the log selection.

F4 Print Prints the selected logs.

F5 Delete Deletes the selected logs.

F6 Export Exports the selected logs.

- **F5 Directory** Opens a window to choose the save location. Choose a location and then click **OK**.
- **F8 Next** Starts the export.

F7 Archive Archives the selected logs.
The archived logs will be deleted from the internal database.

- **F5 Directory** Opens a window to choose the save location. Choose a location and then click **OK**.
- **F8 Next** Starts the archiving.

<< Cancel Quits the results display.

4.1.7 Result report directory

Result protocols are stored for future use at the default location:
“*C:\Users\Public\Documents\xxxx*“.

This location can be changed:
Click on **Extras | Settings | AVL DiGate480**.

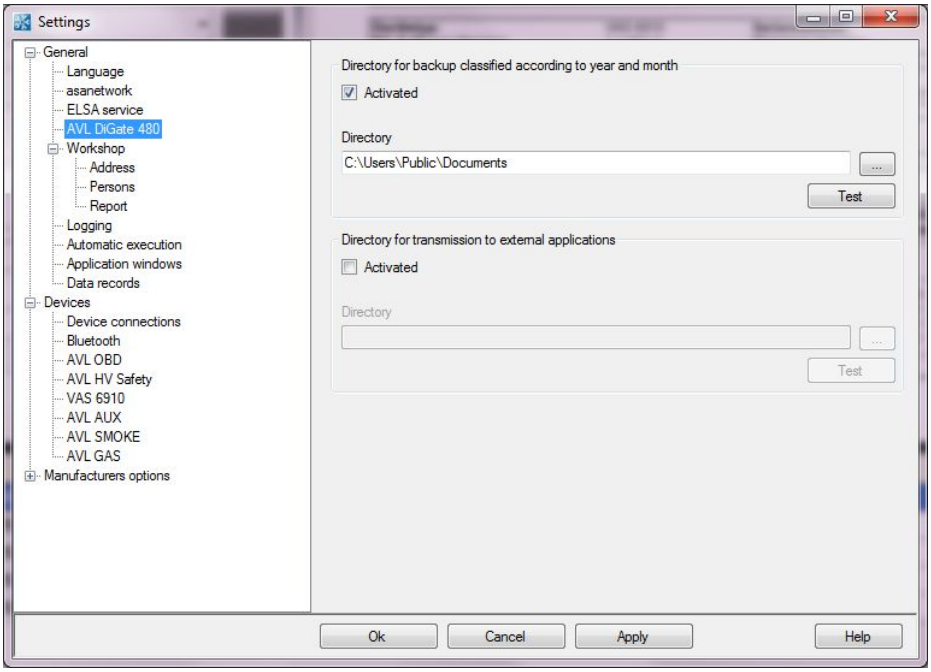


Fig. 4-11 Changing the Report protocol directory

4.1.8 Entering a list of operator names

Using this function you can manage a list of operator names.
The list appears in operation mode charge/discharge, see Fig.4-5.

Click on **Extras** | **Settings** | **Persons** (see chapter 4-11).

Clicking **New** opens an input window into which you can enter the name of a new tester.
Return to *"Tester"* with **OK**.

Clicking **Delete** deletes the blue-highlighted operator name.

Clicking **Edit** opens an input window in which you can edit the blue-highlighted tester name.
Return to *"Tester"* with **OK**.

Clicking **Current Operator** selects the blue-highlighted operator name (or clicking the desired operator name).

Clicking **Responsible Operator** selects the blue-highlighted tester name (or clicking the desired operator name).

4.1.9 Switch off

The VAS 6910 has no on/off switch.
With the button, see fig. 2-8, only the power modules are switched off. The VAS 6910 enters Idle, Sleep mode.
To disconnect the VAS 6910 from the power grid press the red button (Power module off) and disconnect the power cable from the wall outlet.

5 Troubleshooting

Maintenance

DANGER

Danger to life by electrical shock

Maintenance is only allowed by service staff.
Do not open the VAS 6910, because exposed parts can have dangerous voltages.

6 Maintenance and care

6.1 Optical check

Carry out a regular optical check of the VAS 6910, USB cable and measuring cables with the test adapters.
Check for damage and dirt.

CAUTION

Damaged Parts (power cord, adapter and US cables) have to be exchanged immediately.

6.2 Cleaning

If the housing is dirty and you want to clean it, please use a dry cloth.

CAUTION

Before cleaning the VAS 6910, switch off the Power module and remove the mains plug. Remove all adapter cables.
Be sure that no liquid is flowing into the housing of the VAS 6910.

7 Technical data

7.1 Operating data

AC-Power grid **Nominal voltage range** Power supply Frequency Power consumption		100 … 240 V~ 50 ... 60 Hz 2,15 kW
Charging power		max. 2 kW (max. Current: 50 A)
Discharging power		max. 400 W (max. Current: 10 A)
Cell monitoring (charge/Discharge)		Depends on type of cell module: - Analogue meas. of cell voltages and temperatures - Monitoring via CAN bus to the cell module controller Monitored values are Voltages, currents and temperatures.
External interface USB		USB 2.0-Rugged
Ambient conditions Operating	Ambient temperature Relative humidity	0 to +40 °C at max. +25 °C 10 to 80 % non condensing
Transport and storage	Ambient temperature Relative humidity	-20 to +55 °C at max. +20 °C 10 to 80 %, non condensing
Electrical protection and storage		**Safety regulations** Measurement device: DIN EN 61010-1 (VDE 0411 part 1) IEC 1010-1 Garage equipment: UL 201 GARAGE-EQUIPMENT - Protection class I - Degree of protection IP30 - Degree of contamination II
Certificates		This product complies with all relevant directives and standards. The full text of the EU Declaration of Conformity can be found on the Internet at: https://www.avlditest.com/index.php/en/downloads-en.html

8 Fault report

Please fill in the relevant sections completely (if possible in English, or German) and mail it to the relevant regional service centre, see Service information, chapt. 3-1 Regional service centres.

An: / *To:* **AVL DiTEST GmbH** **Schwadermühlstraße 4** **D-90556 Cadolzburg Deutschland** **Fax : +49 9103 7131 277** **E-Mail: avlditest.repairorder@avl.com**	Bitte auswählen: / *Please choose:* ☐ **Austausch** / ***Exchange*** zu den gültigen Konditionen / *under current conditions* ☐ **Reparatur** / ***Repair Order*** ☐ mit Kostenvoranschlag*: / *with cost estimate*:* *Bei Ablehnung des Kostenvoranschlags fällt eine Bearbeitungsgebühr an. **If a cost estimate is declined a shipping and handling fee will apply.*
Besteller: / *Customer:*	Kundennummer: / *Customer No.:*
Firma: / *Company:*	Ansprechpartner (bitte leserlich): / *contact person: (print):*
Abteilung: / *Department:*	E-Mail Ansprechpartner / *E-mail contact person:*
Straße: / *Street:*	Fax: / Tel. / *phone:*
PLZ/Ort: / *Zip Code+City:*	**Datum, Unterschrift** (obligatorisch) ***Date, signature*** *(mandatory)*
Land: / *Country:*	

Artikelnummer Gerät / *Item No. of device*	**Beschreibung des Gerätes / *device description***	**Seriennr. / *Serial No.***	**Auslieferdatum / *delivery date***

Bei Einsendung eines Bauteils müssen obige Informationen über das Ursprungs-Gerät ebenfalls ausgefüllt sein. /
If a single part is sent the information of the original device is needed as reference.

Artikelnummer Bauteil / *Item No. of part*	**Beschreibung des Bauteils / *Part description***	**Seriennr. / *Serial No.***	**Auslieferdatum / *delivery date***

Fehlerbeschreibung und Bemerkung: / *Failure description and comments:*
ggf. Rückseite nutzen: / *use back side if necessary*

☐ **Gewährleistungsprüfung** / ***Warranty Claim***
Wichtig: ohne Lieferschein oder Rechnungskopie kann keine Gewährleistung eingeräumt werden, bitte unbedingt beilegen.
Important: *a copy of the delivery note or invoice is required in order to proceed.*

Bitte für jede Gewährleistungsprüfung ein separates Formular nutzen.
/ please use a separate form for each warranty claim

Von AVL DiTEST auszufüllen: / To be completed by AVL DiTEST:

SAT: _____

Gewährleistung: / *Warranty:*
☐ genehmigt / *granted* ☐abgelehnt / *declined*

Grund der Ablehnung: / *reason for declining:*
☐ fehlender Anhang / *missing delivery note or invoice*
☐ fehlende Informationen / *missing information*
☐ außerhalb des Gewährleistungszeitraumes / *out of warranty*
☐ Sonstiges / *other* _____

Datum + Unterschrift AVL DiTEST: / date + signature AVL DiTEST

9 Index

VOLKSWAGEN AG

We have checked the contents of the documentation to ensure they correspond to the status described. Nevertheless deviations cannot be entirely excluded and we cannot therefore guarantee complete agreement. The information in this documentation is however regularly reviewed and any corrections necessary will be incorporated in the next edition. We will be grateful to receive suggestions for improvement.

VOLKSWAGEN AG
KD-WERKSTATTAUSRÜSTUNG
D-38436 Wolfsburg

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8020 Graz
AUSTRIA