

DC Power Supply and Battery Operation R&S FSV-B30/-B32/-B34 Installation Manual



1176.8000.02 – 02



ROHDE & SCHWARZ

Test & Measurement

Installation Manual

This installation manual describes the following functions and options:

- DC Power Supply (R&S FSV-B30, Order no. 1310.9897.02)
- Li-Ion Battery Pack (R&S FSV-B32, Order no. 1321.3750.02)
- Battery Charger (R&S FSV-B34, Order no. 1321.3950.02)

© 2013 Rohde & Schwarz GmbH & Co. KG

Mühlhofstr. 15, 81671 München, Germany

Phone: +49 89 41 29 - 0

Fax: +49 89 41 29 12 164

E-mail: info@rohde-schwarz.com

Internet: www.rohde-schwarz.com

Subject to change – Data without tolerance limits is not binding.

R&S® is a registered trademark of Rohde & Schwarz GmbH & Co. KG.

Trade names are trademarks of the owners.

The following abbreviations are used throughout this manual: R&S®XXX is abbreviated as R&S XXX.

Contents

1 DC Power Supply	3
2 Li-Ion Battery Pack and Charger	12

1 DC Power Supply

Using the DC power supply (option R&S FSV-B30), the R&S FSV can be operated with a DC voltage of 10 V to 15 V.

• Preparing the DC Power Supply	3
• Installing the DC Power Supply	4
• Putting into Operation	10

1.1 Preparing the DC Power Supply

In the factory, the DC Power Supply (option R&S FSV-B30) is provided with a cigarette lighter plug (required to connect to older battery packs). Thus, in order to use the DC Power Supply with the new Li-Ion Battery Pack (option R&S FSV-B32), you must first remove the old plug and replace it by the one provided with the Li-Ion Battery Pack.

To prepare DC power supplies for installation

1. Remove the DC cable with the cigarette lighter plug from the DC power supply.
2. Connect the new DC cable to the DC power supply as shown in [figure 1-1](#). Be sure to connect the cables in the correct order!

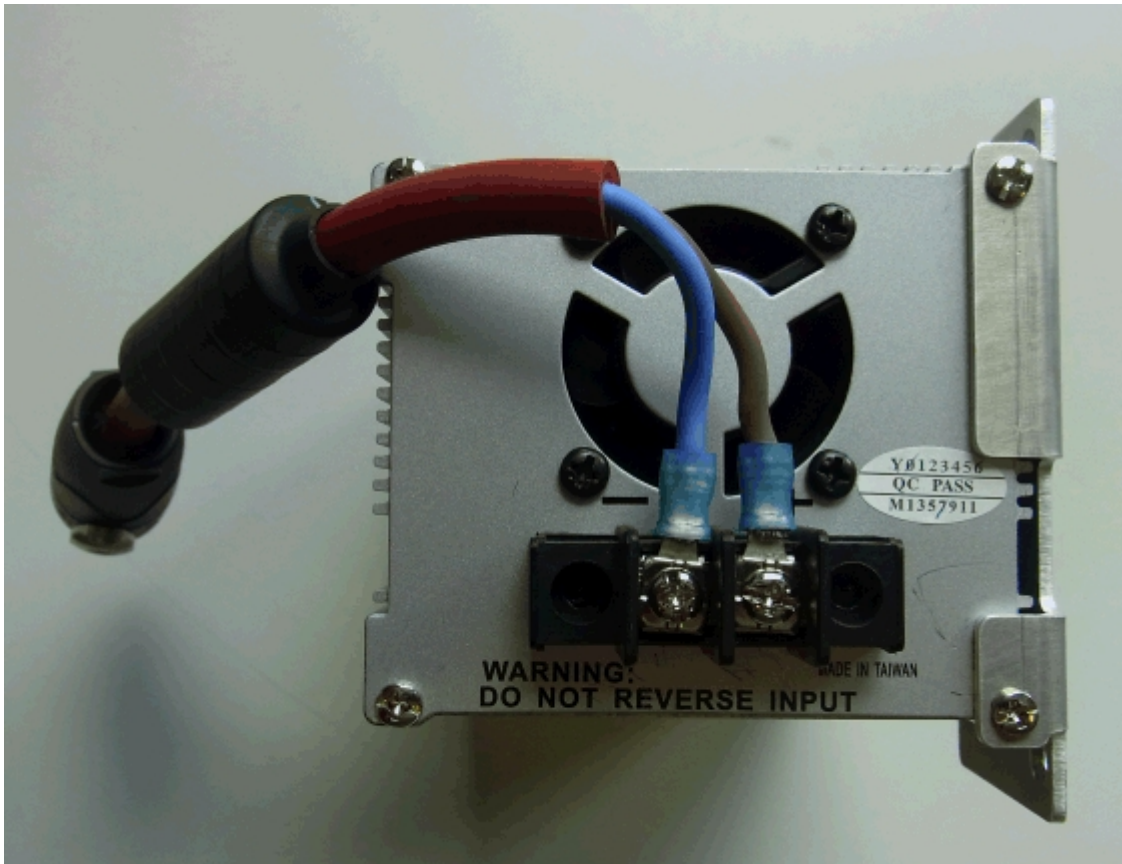


Fig. 1-1: Connecting the new DC power cable to the DC power supply

Blue = - terminal
Brown = + terminal

1.2 Installing the DC Power Supply

The DC power supply is attached to the rear panel of the R&S FSV.

To install the DC Power Supply on the R&S FSV

1. Disconnect the power cable from the R&S FSV.
2. Only for instruments with R&S FSV-B1 option (ruggedized housing):

Installing the DC Power Supply

- a) Unscrew and remove the corner protectors (1).

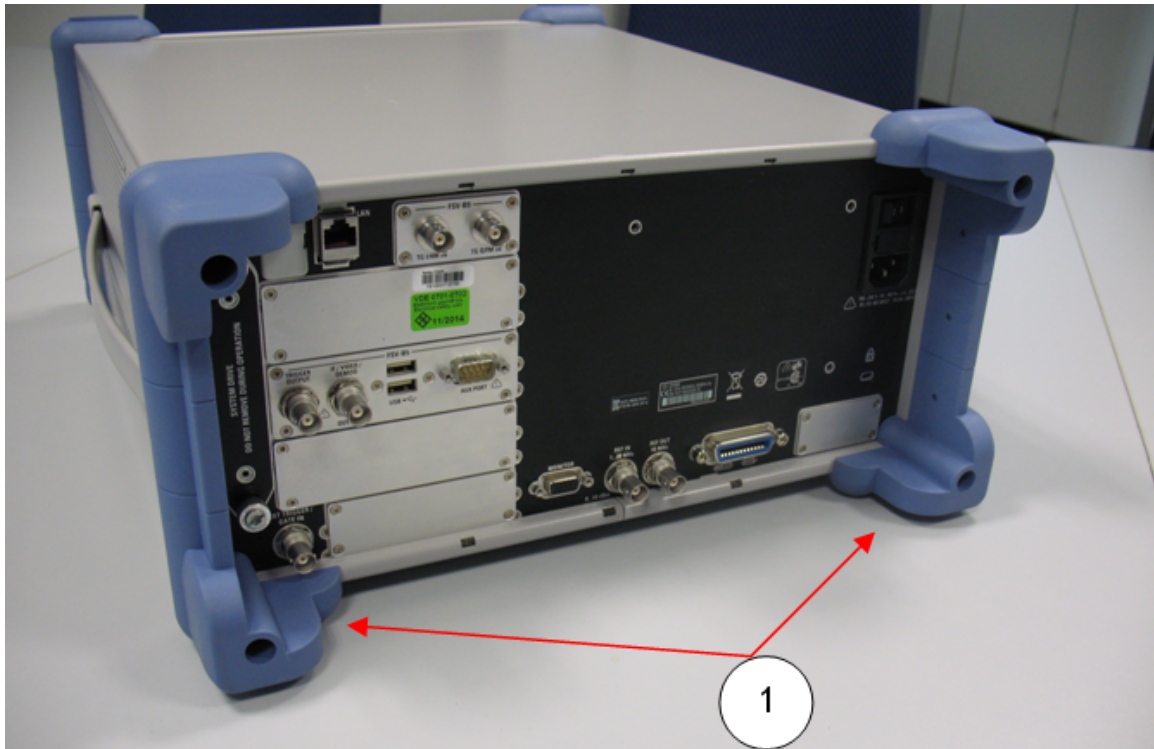


Fig. 1-2: Removing corner protectors

b) Screw in the pins (2).

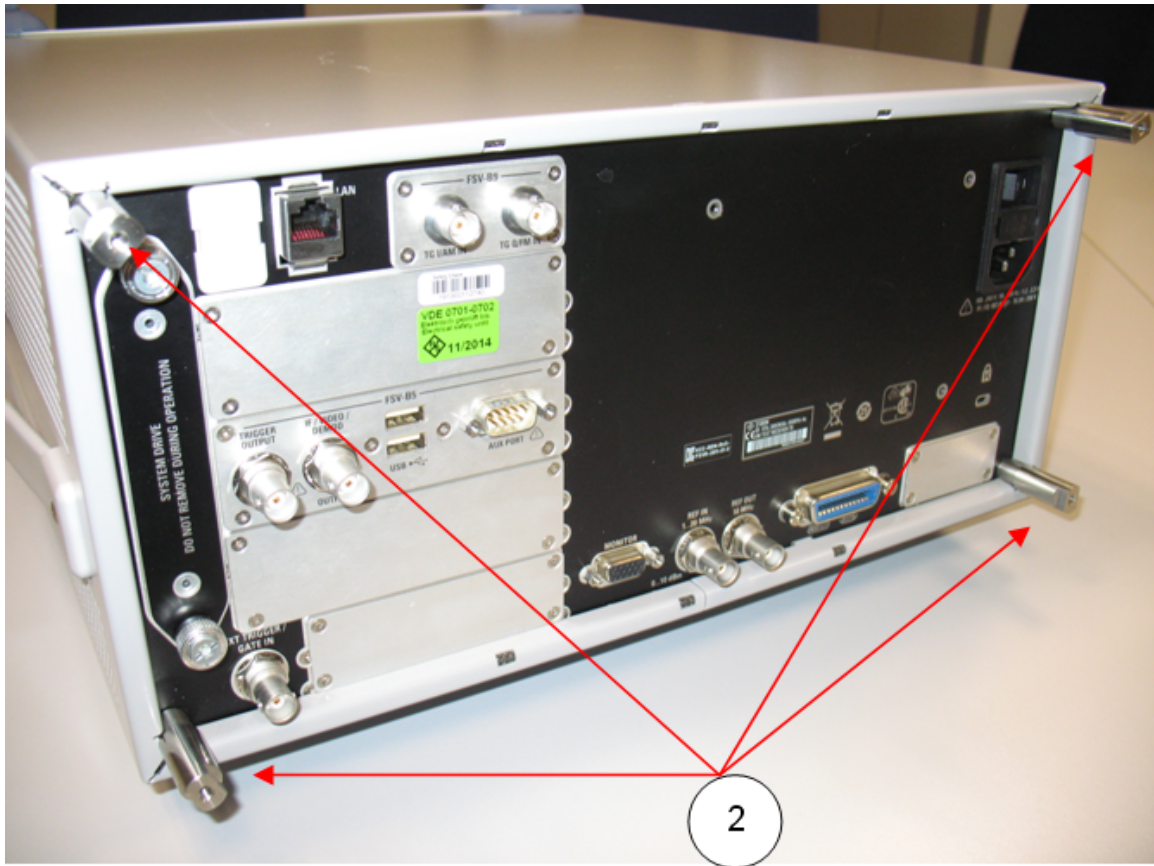


Fig. 1-3: Screwing in pins

c) Attach the housing extensions (3).

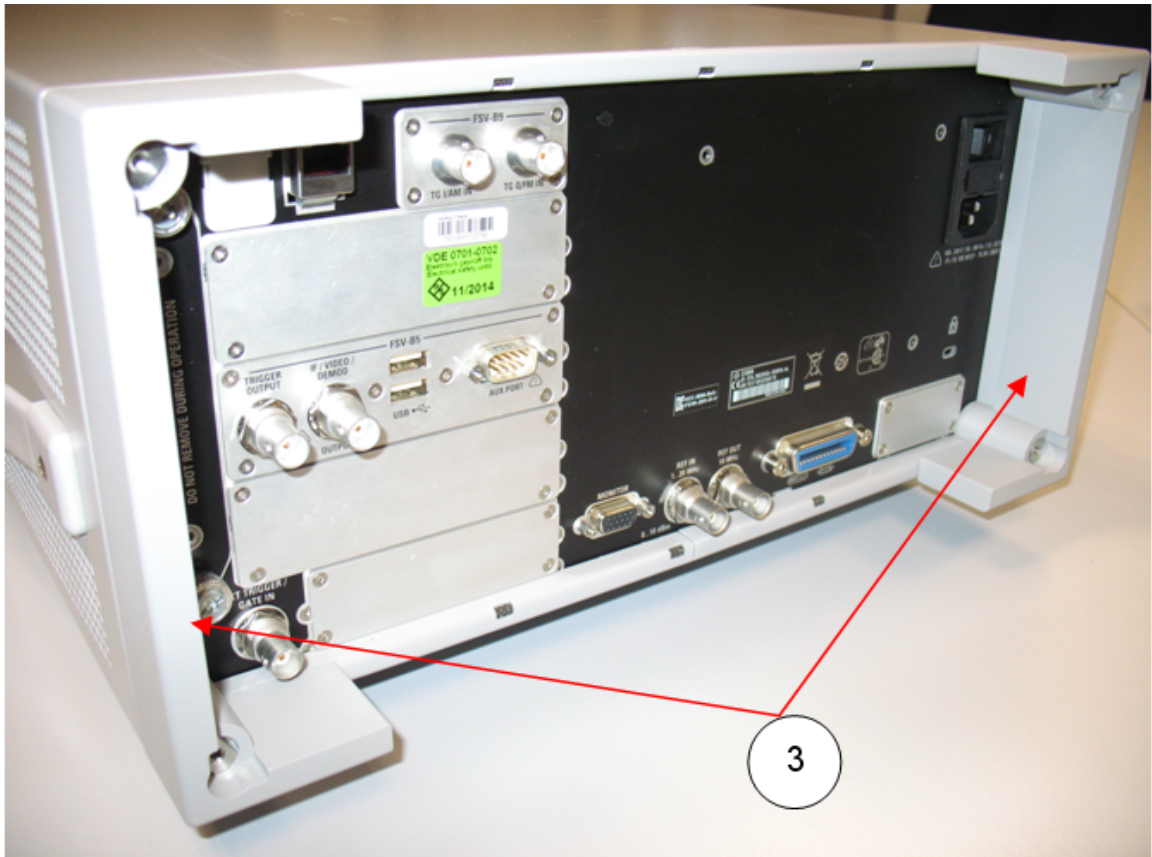


Fig. 1-4: Attaching housing extension

Installing the DC Power Supply

- d) Screw the corner protectors (1) back on.

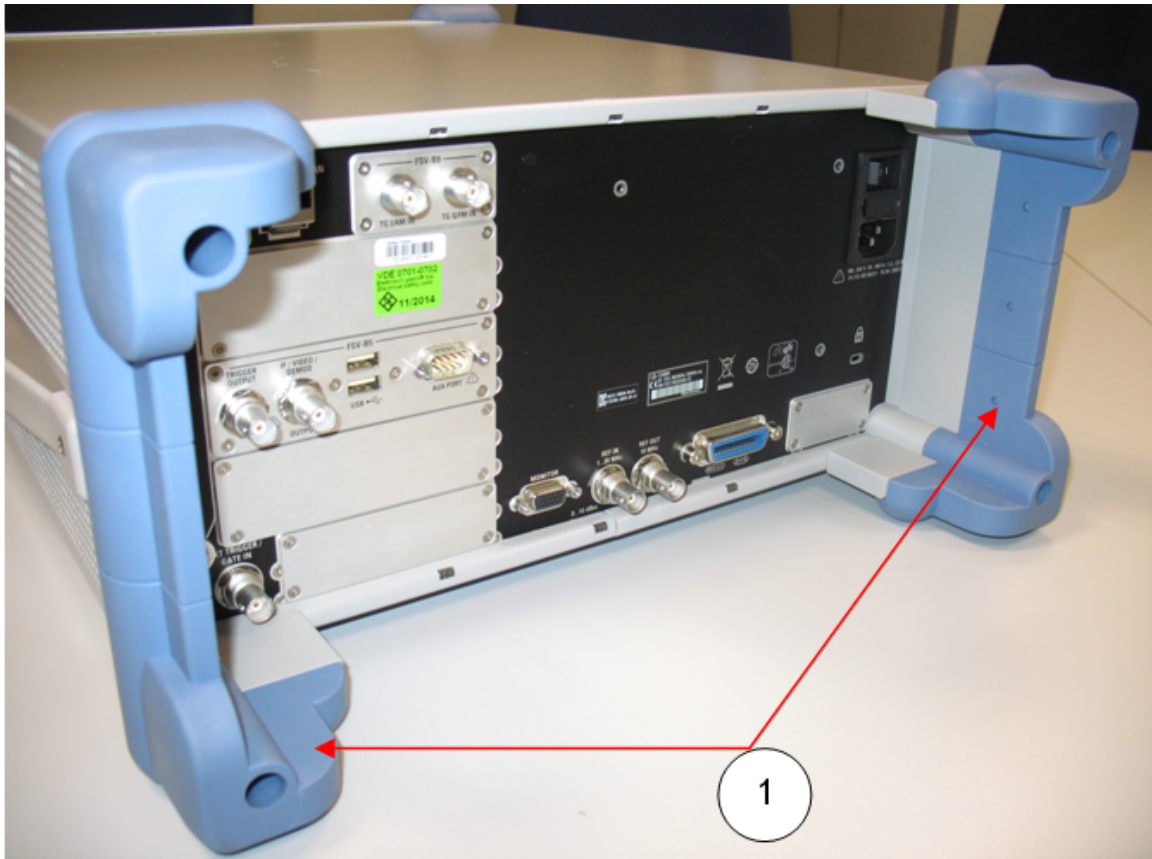


Fig. 1-5: Attaching corner protectors

3. Remove the three screws (5) from the rear panel and secure the DC power supply (4) to the rear panel using three screws (5).

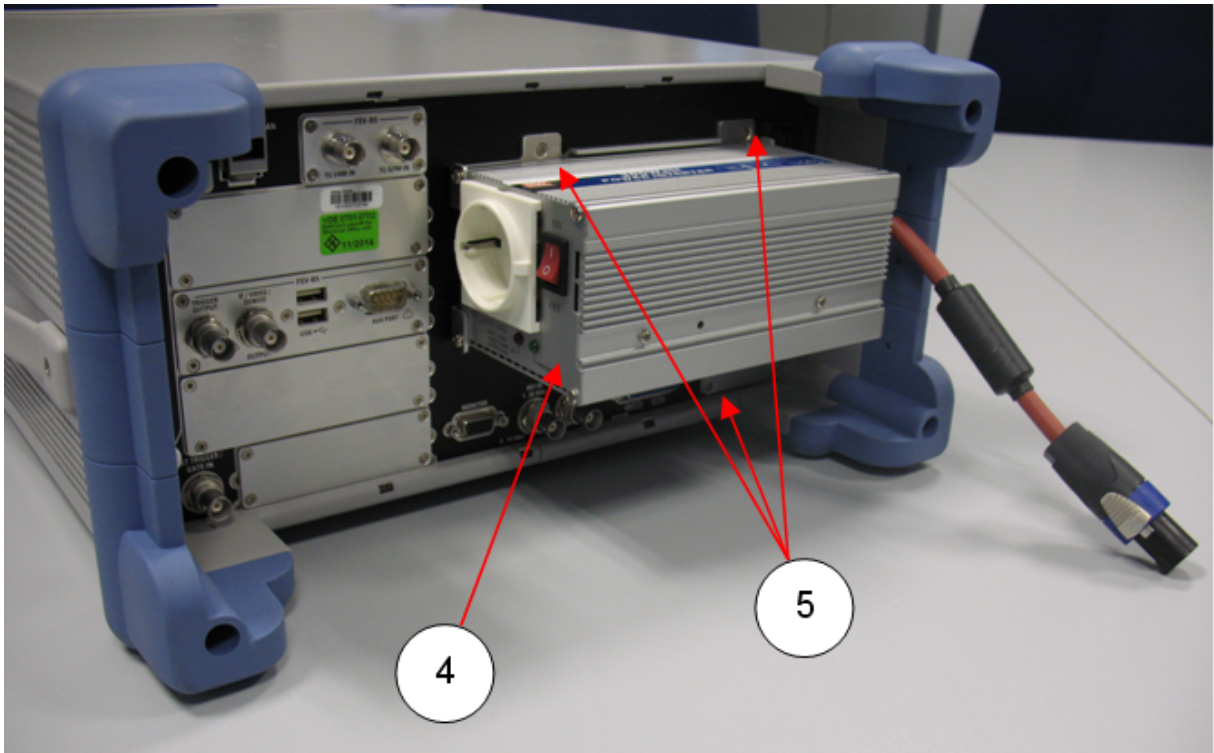


Fig. 1-6: Attaching DC power supply

4. Connect the power output of the DC power supply to the power input of the R&S FSV.

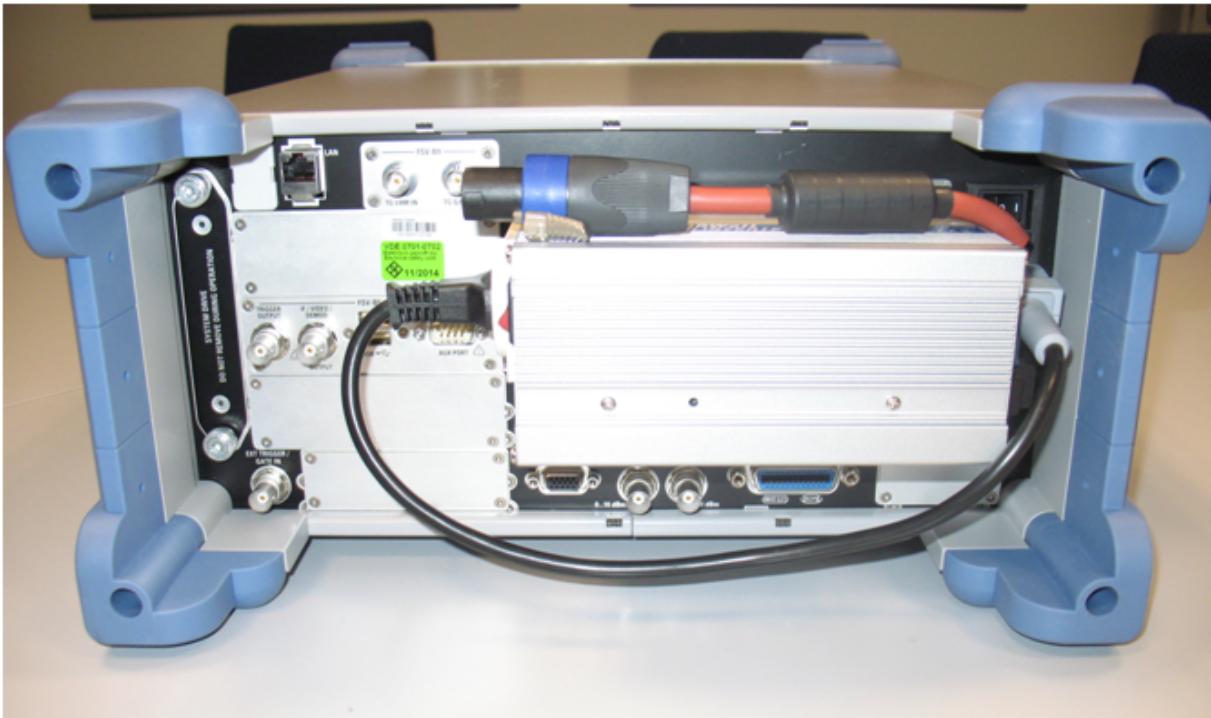


Fig. 1-7: Power connection

1.3 Putting into Operation

⚠ WARNING

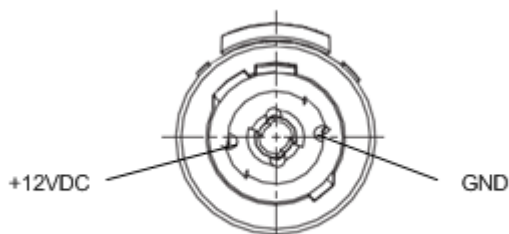
Risk of electric shock!

If external power supply units for supplying safety extra-low DC voltage (SELV) to the R&S FSV are used, the requirements for reinforced/double insulation in accordance with DIN/EN/IEC 61010 (UL 3111, CSA C22.2 No. 1010.1) or DIN/EN/IEC 60950 (UL 1950, CSA C22.2 No. 950) must be met. Current limitation must be provided in accordance with DIN EN 61010-1 Appendix F2.1.

There is otherwise a risk of electric shock.

1.3.1 DC Connection

- ▶ Connect the DC power supply to the DC source.



- 1 = GND
- 2 = +12 V DC

1.3.2 Switching the R&S FSV On and Off

Switching On the R&S FSV

1. Set the switch on the DC power supply to "I". A green LED indicates that the DC power supply is ready for operation.
2. In the case of overvoltage or undervoltage, the DC power supply switches off automatically. This state is indicated by means of a red LED and a buzzer.
3. Set the power switch on the rear panel to "I".
4. Press the ON/OFF key on the front panel. A green LED above the ON/OFF key indicates that the R&S FSV is ready for operation.

Switching Off the R&S FSV

1. Press the ON/OFF key on the front panel and wait until the R&S FSV has shut down.
2. Switch off the power switch on the rear panel.
3. Switch off the DC power supply.

2 Li-Ion Battery Pack and Charger

With the Li-ion battery pack (option R&S FSV-B32), the R&S FSV together with the DC power supply (R&S FSV-B30) can be operated independently of an AC power supply. The R&S FSV-B32 option contains 4 Li-ion rechargeable batteries.

The rechargeable batteries can be charged externally using the R&S FSV-B34 charger.

2.1 Installing the Battery Pack

1. The battery pack (6) is attached to the top of the R&S FSV. To do so, the battery pack must be placed on the R&S FSV and pushed forward so that it engages. The battery pack must then be secured to the side panels using two knurled screws (7).

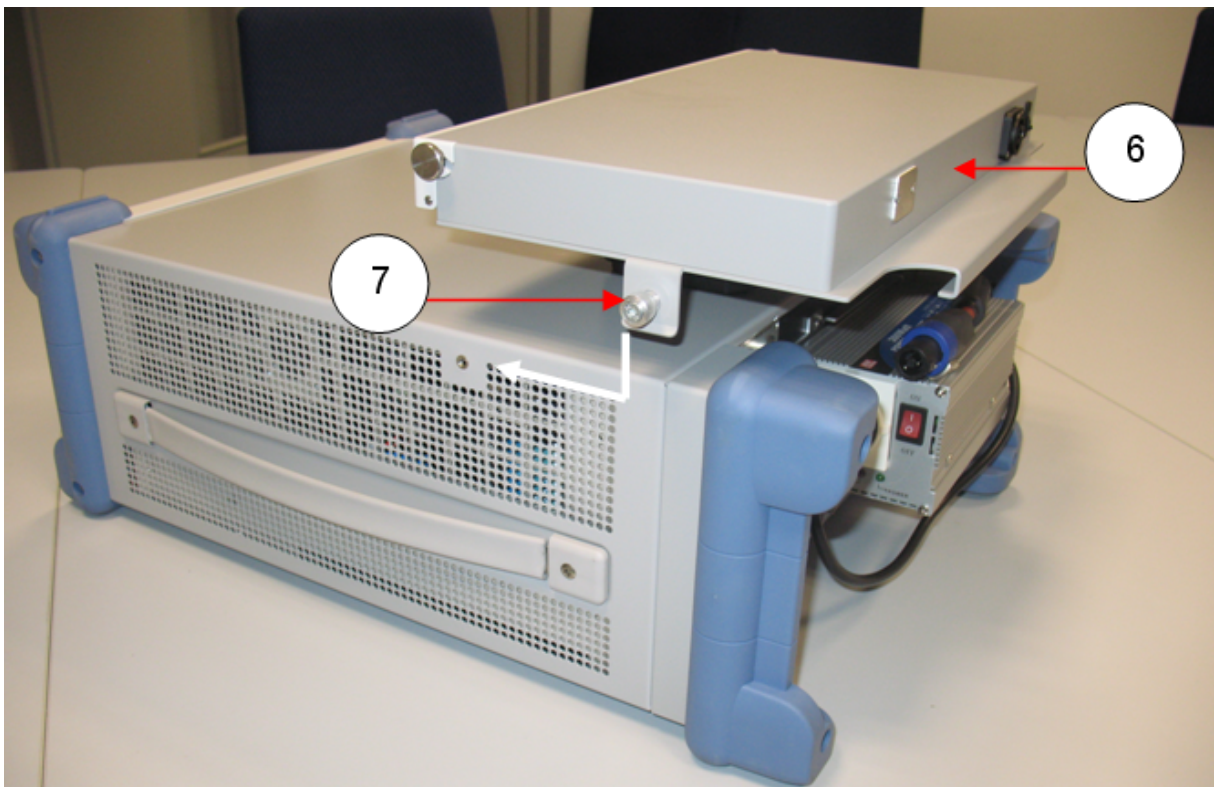


Fig. 2-1: Installing battery pack

2. Connect the DC cable to the battery pack.

figure 2-2 shows the rear of the R&S FSV-B32 battery pack.

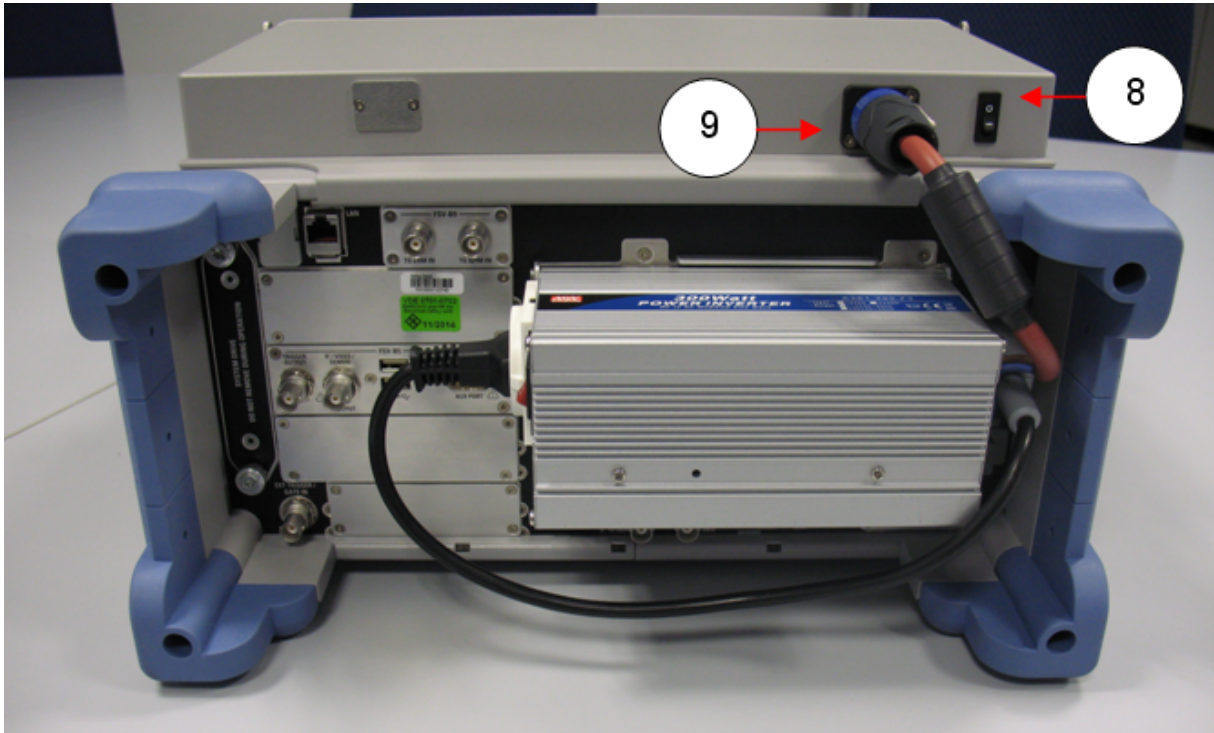


Fig. 2-2: Rear view of R&S FSV-B32

8 = ON/OFF switch

9 = DC output

2.2 Putting into Operation

2.2.1 Charging the Battery

The R&S FSV-B34 charger is a standalone charging device which can be used to charge all four rechargeable batteries of the R&S FSV-B32 battery pack simultaneously. The rechargeable batteries can be charged at ambient temperatures of 0 °C to +45 °C.



The rechargeable batteries must be charged before they are used for the first time.

1. Undo the knurled screws (10) on the front of the battery pack and open the flap (11).
2. Pull the rechargeable batteries (12) by the tab out of the housing.

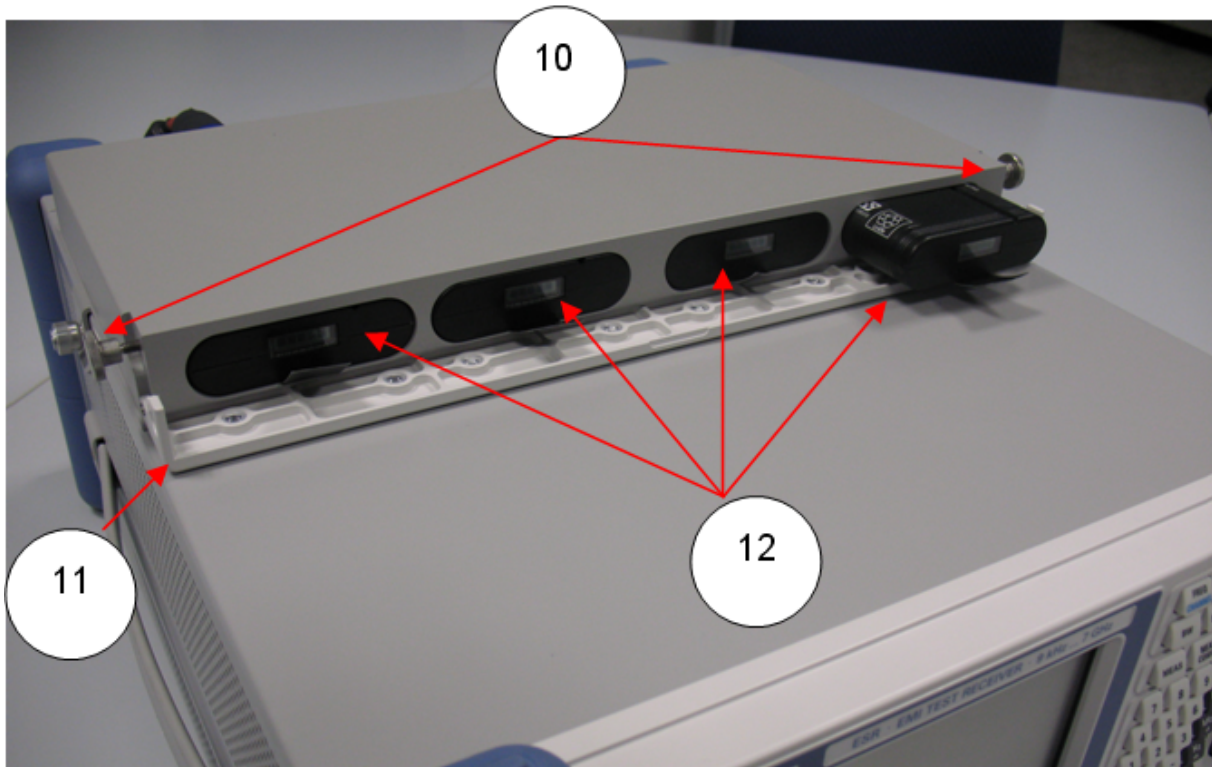


Fig. 2-3: Battery compartment

3. Connect the power cable to the charger.
4. Insert the rechargeable batteries into the charging slots of the charger.



Fig. 2-4: R&S FSV-B34 charger

LEDs indicate the operating state of each charging slot:

- Charging
Green LED flashes
- Charging completed
Green LED remains lit
- Fault
Red LED lights up

5. When charging has been completed, the rechargeable batteries can be removed from the charger. The LCD on the front of the rechargeable battery indicates the charge level in increments of 20 %.
6. Insert the rechargeable batteries into the battery pack and close the flap on the front. Secure the flap using the two knurled screws.

2.2.2 Switching the R&S FSV On and Off

Switching On the R&S FSV

1. Set the switch on the battery pack to "I".
2. Set the switch on the DC power supply to "I". A green LED indicates that the DC power supply is ready for operation.
3. In the case of undervoltage, the DC power supply switches off automatically. This state is indicated by means of a red LED and a buzzer.
4. Set the power switch on the rear panel to "I".
5. Press the ON/OFF key on the front panel. A green LED above the ON/OFF key indicates that the R&S FSV is ready for operation.

Switching Off the R&S FSV

1. Press the ON/OFF key on the front panel and wait until the R&S FSV has shut down.
2. Switch off the power switch on the rear panel.
3. Switch off the DC power supply.
4. Switch off the battery pack.