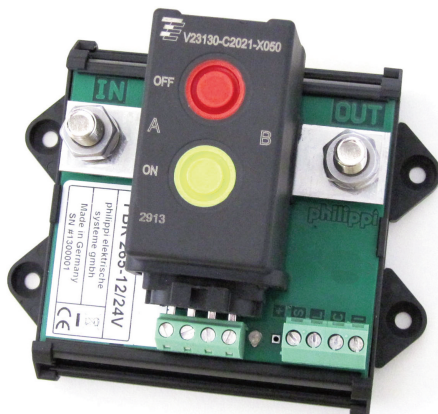


OPERATING MANUAL



GENERAL INFORMATION

The remote controllable battery main switch FBR 265 enables the convenient remote-controlled switching on and off of DC wiring or individual consumers/loads in 12V and 24V vehicle networks from any location.

The models TSA 265-12V (-24V) also protect the battery against harmful deep discharge or overvoltage by the devices connected to the deep discharge protection TSA 265.

By connecting the remote control panel FAR or the RCS control switch, the FBR / TSA can be operated and you can get a feedback via the control LED via the switching state.

The manual emergency override (red and yellow button) integrated in the relay allows switching on and off by push-button pressure in the event of a fault/emergency.

The FBR / TSA remote-controlled battery main switches are designed for use on yachts or in mobile homes and are designed for connection to DC low voltage 8 - 30V and may only be used in confined areas protected from rain, moisture, dust and condensation and are not suitable for outdoor installation.

Never use the equipment in locations where there is a risk of gas or dust explosion.

WARRANTY

philippi elektrische systeme gmbh grants a two year limited and non-transferable warranty for the first buyer of this equipment, commencing on the date of purchase and covers defects in manufacturing, parts and materials.

Production or material defects will be corrected without costs if:

- the equipment is sent to us at the expense of the sender
- an Invoice or proof of purchase (copy) is included
- the equipment was used for its intended purpose
- no unauthorized parts were added, and the equipment was not exposed to extreme conditions

Not included in the warranty are damages from:

- overvoltage on the inputs or reverse polarity
- ingress of liquids, vapors, condensation, etc.
- lightning



Follow-up costs and normal wear and tear are not covered under warranty.

In case of warranty the defect must be clearly specified. A detailed description of the defect will help to speed up the repair.

Please note that we cannot accept carriage forward deliveries.

EXCLUSION OF LIABILITY

Both adherence to the operating instructions, and the conditions and methods used during installation, use and maintenance of the FBR/TSA, cannot be supervised by philippi electrical systems gmbh.

Therefore we do not take any responsibility for loss, damage or costs, which develop due to incorrect installation and/or inappropriate use..

SAFETY REFERENCES



- unauthorized changes to the equipment will invalidate the CE sign
- the installation of the FBR/TSA may be made only by electrical specialists.
- Important! Pay attention to the correct polarity of the batteries!

The assembly and operating instruction is a component of the BCM package. It must be kept (for reference). Importantly: - for later maintenance work - and for the use of subsequent owners of the equipment.

OPTIONAL ACCESSORIES (NOT INCLUDED IN PACKAGE)

- | | |
|---|------------------------|
| ● FAR: Remote control panel for the main switch relay | Order No.: 0 8000 9127 |
| ● RCS: Operating switch for the main switch relay | Order No.: 7 0010 2155 |

INSTALLATION

- Install the device near the battery / battery bank easily accessible to ensure a manual emergency actuation if needed
- Where possible the installation location should be cool and dry
- Provide strain relief of the cables (at a maximum distance of 30 cm)

INSTALLATION

- Before installation, the batteries must be disconnected!
- The line cross-section of the connection lines to the battery or battery bank and the loads should be between 10 - 95 mm² depending on the maximum consumption current.



The dissipation of the heat loss and thus the max. load-bearing capacity of the relay is done via the connected cables. Therefore pay attention to the dimension of the cable cross-section of the cables. They should be at least as follows:

until 65A / 16 mm²

until 120A / 35 mm²

until 210A / 70 mm²

until 90A / 25 mm²

until 150A / 50 mm²

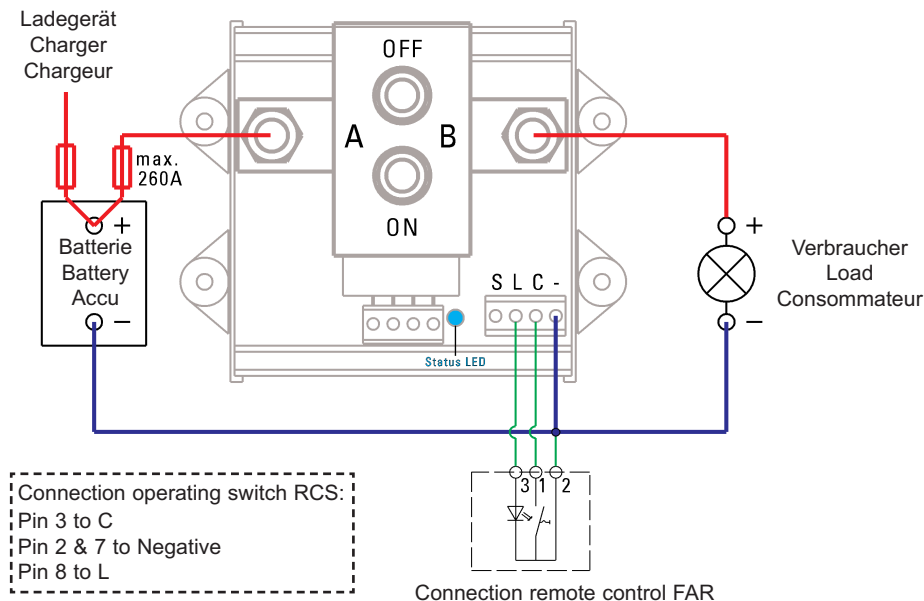
until 265A / 95 mm²

Please pay attention to install a correct cable fuse near the battery!

- **Bolt A (IN):** Positive pole of the battery
- **Bolt B (OUT):** Loads/Consumers

The cable cross section of the operating lines of the remote control panel FAR or RCS have to be at least 1 mm².

- **Terminal Negative:** has to be connected to the on-board negative busbar and the negative of the remote control panel FAR (Pin 2) or RCS (Pin 2 & 7).
- **Terminal C:** Connection of the switch of the remote control panel FAR (Pin 1) or RCS (Pin 3).
- **Terminal L:** Connection of the control-LED of the remote control panel FAR (Pin 3) or RCS (Pin 3).
- **Terminal S:** Without function




TSA 265 -please take care:

Loads, which are not connected to the deep discharge protection TSA 265 are able to discharge the battery furthermore! If no remote operating switch is used, the terminal C also needs to be connected to the common negative.

OPERATION

The internal LED indicates that the unit is ready to operate due to short flashing. When the relay is switched on, the internal LED and the LED light of the remote control panel are continuously illuminated.

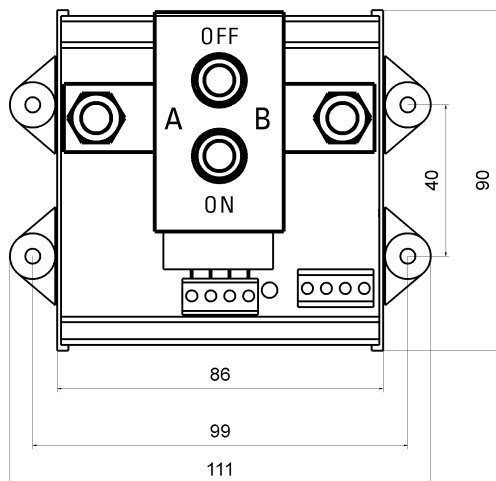
While the delay time for shutdown is running, the internal LED & LED light of the remote control panel flashes on the TSA models. If the main switch has been switched off because of under- or overvoltage, the main switch can be switched on again by switching on the control panel again. If the voltage is still outside the valid range, the relay is switched off again after the delay time.

 **Attention:** the manual operation is not recognized by the control electronics!

TECHNICAL DATA

Model		FBR	TSA 12V	TSA 24 V
Rated voltage:		8-30 V	8 - 16 V	8 - 30 V
Switch off voltage (undervoltage)	T = 300s	--	11,2V	22,4V
Switch on voltage (after undervoltage)	T = 10s	--	12,5V	25V
Switch off voltage (overvoltage)	T = 60s	--	15,6V	31,2V
Switch on voltage (after overvoltage)	T = 10s	--	14,5V	29V
(T = delay time)				
Current capacity		260 A at cable cross section 95 mm ² @ 20°C		
Überlaststrom 5s		400 A (5s), 1500 A (0,2s)		
Current consumption		Stand by: 1,5 mA @ 13 V, 3 mA @ 26 V		
		Relais ON: 2,5 mA @ 13 V, 5,5 mA @ 26 V		
Terminals		M 8		
Protection		IP 20		

Dimensions: L 111 x W 90 x H 60 mm



DECLARATION OF CONFORMITY

This device fulfills the requirements of the European regulations:

2004/108/EG "ElectroMagnetic
Compatibility"
Immunity EN 61000-6-1
Emission EN 61000-6-3



The conformity to this regulation is certified by the CE - sign.

DISPOSAL NOTE



Please take care of your local directives on waste electrical and electronic equipment. Please use collection points for waste electrical and electronic equipment.