



# tbs electronics TBS DC Modular Remote Battery Switch Installation Guide

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**tbs electronics TBS DC Modular Remote Battery Switch**



## Product Information

The DC Modular is a 48V 350A Remote Battery Switch (RBS) that allows for remote control of your battery's power supply. It has a maximum switching capacity of 60V/100mA (Ruit 10) and comes with a fuse holder that supports a 2A-3A fuse. It also includes an external momentary switch (TBS art.no. 5095000-1) that requires an external 2k2..4k7/1W resistor for operation.

## Main Cable Installation

To install the main cable, use the following assembly sequence:

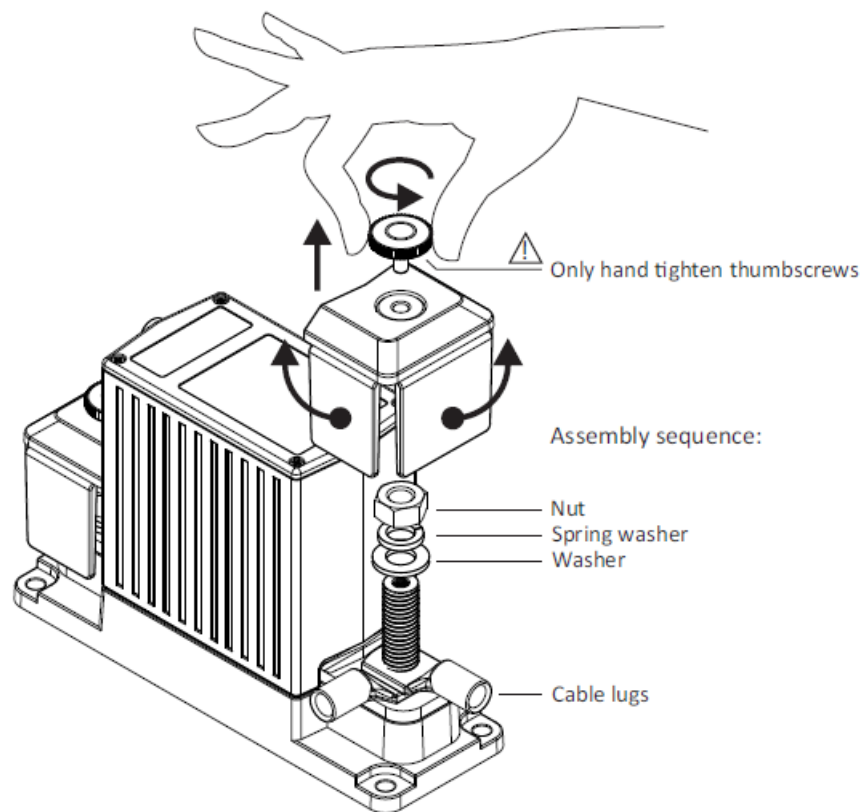
1. Nut
2. Spring washer
3. Washer
4. Cable lugs

Make sure to only hand-tighten the thumbscrews and take note of the dimensions: R = 5mm (x4), 38.0mm, 138.0mm, 150.0mm, 64.5mm, 94.0mm, and 50.0mm.

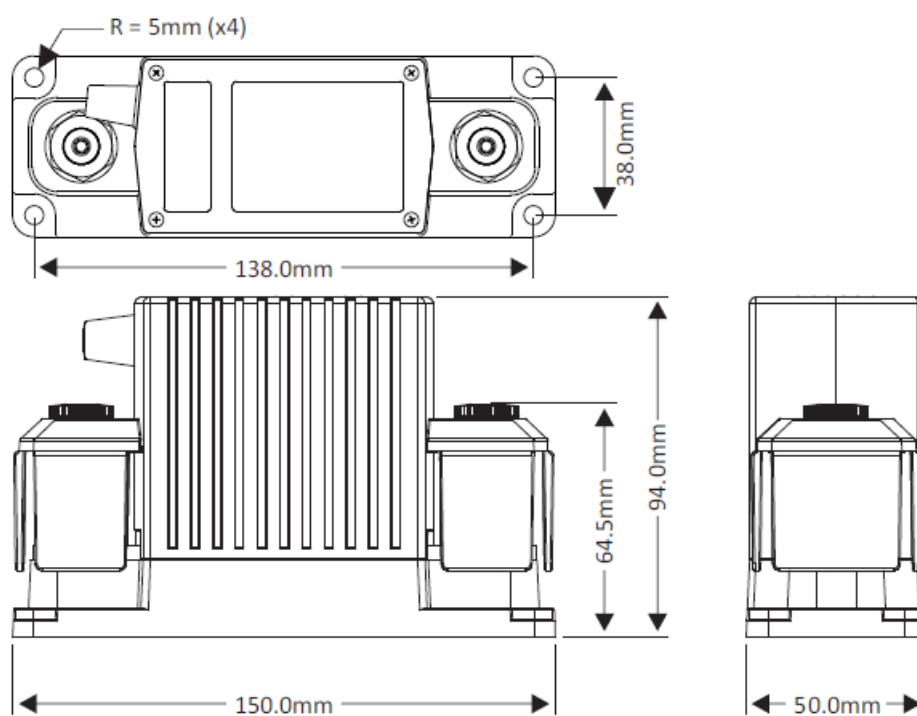
## Product Usage Instructions

1. To change the control mode, press all three buttons simultaneously for three seconds to enter setup mode.
2. Step through the control modes by pressing the OPEN (up) or CLOSE (down) buttons.
3. Refer to the control mode table for information on each mode.

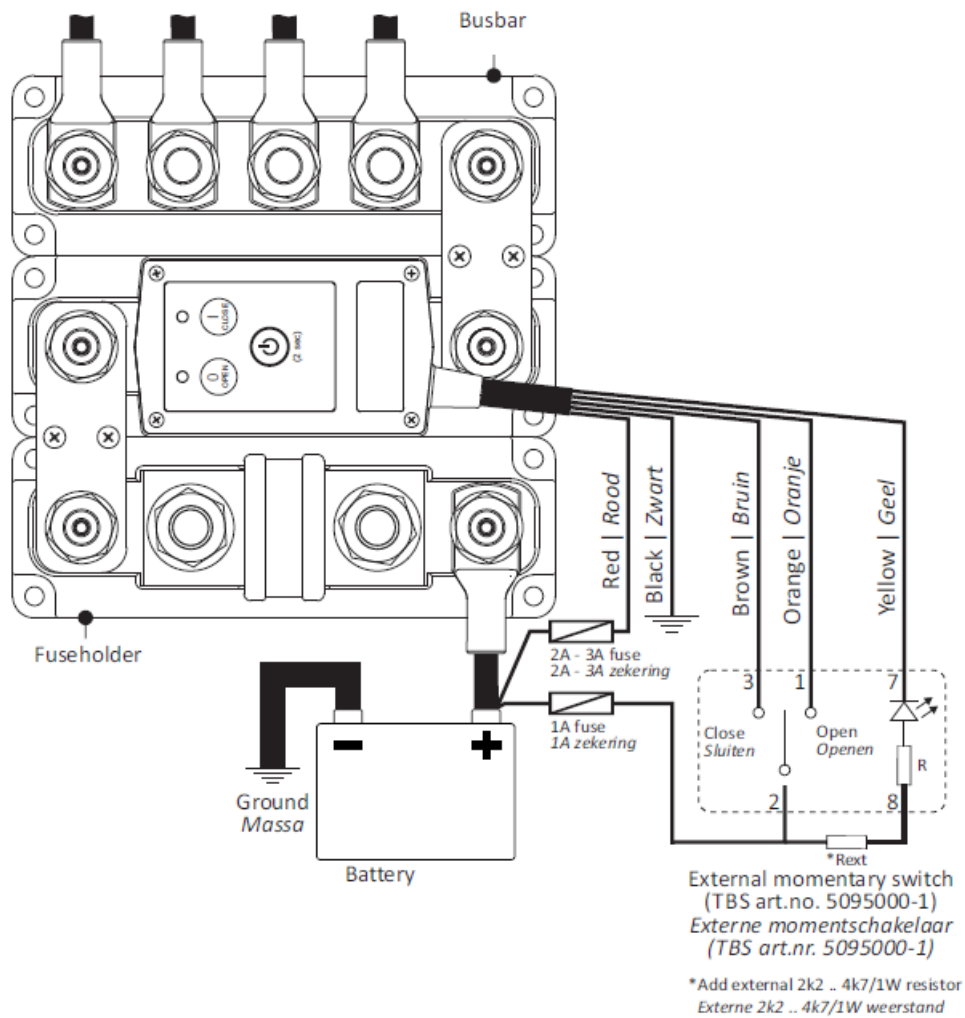
## Main cable installation



## Dimensions



## Wiring example



### Wiring Example

Use the following wire table for standard function:

Wire Color	Function
Red	+Vdc continuous supply
Black	Ground
Brown	+Vdc pulse closes contact
Orange	+Vdc pulse opens contact
Yellow	Fuseholder

### Error Table

If you encounter any issues, refer to the following error table:

	Error Message
Both flashing red	Supply voltage too low or too high, or RBS temperature too high. If contacts are welded, replace RBS.
OPEN flashing red	Contact fails to open. Check if supply voltage is within range. Otherwise, return RBS for service.
CLOSE flashing red	Contact fails to close. Check if supply voltage is within range. Otherwise, return RBS for service.

## Change control mode

When in off mode, press all three buttons simultaneously for three seconds to enter the setup mode:



Step through the control modes by pressing the OPEN (up) or CLOSE (down) buttons

Control mode table   <i>Stuurmodus tabel</i>			
Mode no.	Open LED	Close LED	Control mode
1	○	ⓐ	2-wire, no contact change at power-up
2	ⓐ	ⓐ	2-wire, contact closes at power-up
3	ⓐ	○	2-wire, contact opens at power-up
4	○	ⓐ	single-wire, normally open contact
5	ⓐ	ⓐ	single-wire, normally closed contact

○ = LED off  
ⓐ = LED green  
ⓐ = LED orange

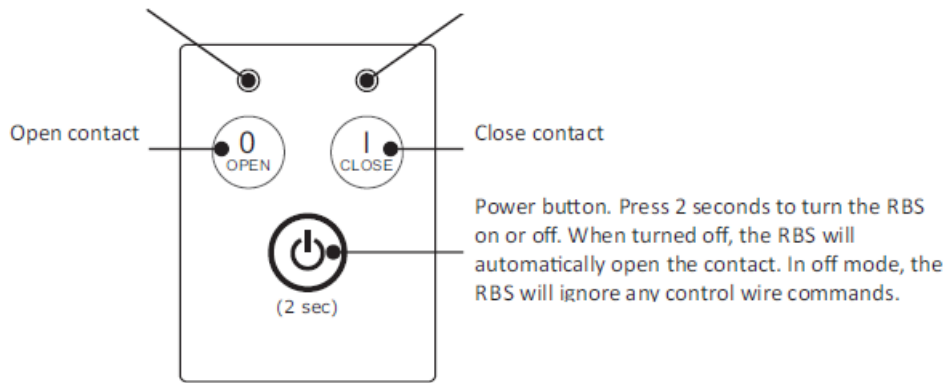
When the desired control mode is selected, press the Power button for 2 seconds to save the setting. Press the Power button again for 2 seconds to activate the RBS with the new control mode.

- **Modes 1, 2 & 3:** +Vdc pulse on brown wire to close, +Vdc pulse on orange wire to open.
- **Mode 4:** +Vdc continuous on brown wire to close, OVdc on brown wire to open. Orange wire not used.
- **Mode 5:** +Vdc continuous on brown wire to open, OVdc on brown wire to close. Orange wire not used.

## General operation

Green flash - contact open  
Red flash - error mode

Green flash - contact closed  
Red flash - error mode



## Installation details

### Precautions

- Please install this product in a dry indoor location, as close as possible to the battery. To be installed only by qualified technicians.
- To avoid fire hazards, use correctly sized cables which are suitable to carry the expected load currents in your application. The maximum continuous RBS current rating of 500A is only valid when a total cable size of at least 200mm. is connected to the M10 studs. Or when the RBS is part of a DC Modular system containing large busbars and fuse holders.
- To avoid fire hazards or damaging the RBS, please make sure that all nuts are securely tightened. Please apply our recommended torque rating of 22Nm for the M10 nuts.
- To avoid fire hazards or damaging the RBS, please make sure that spring- and flat washers are always placed directly below the nut. Never place washers between: busbar and cable lug, multiple cable lugs on the same stud, busbar and linkplate or cable lug and linkplate.
- Please make sure that all connection cables are properly strain relieved, to avoid excessive mechanical stress on the RBS.

### RBS features

- Smart high current magnetic latching relay, draws virtually no current in On (Close) or Off (Open) state.
- Silver alloy contacts and silver-plated copper busbars, for maximum conductivity and high reliability when switching live loads.
- Local Open and Close buttons on top, to manually override the switch state.
- 5 wire interface cable for external control by panel switch, battery monitor or BMS. Compatible with two-wire or single-wire On/Off control. Includes status wire for controlling indicator light or providing feedback to BMS.
- Stainless steel studs, washers and nuts for optimal corrosion resistance.
- Unique grid-optimized footprint allows space-saving arrangements with other DC Modular products.
- Special fiber-reinforced plastic housing offers excellent high-temperature properties, good chemical resistance, and high strength.

- Robust transparent covers with breakouts to allow wire access from any direction.
- The smart terminal design allows dual mirrored cable lug connections.

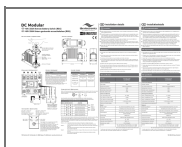
## RBS specification

Parameter	DCM-RBS-48-350 (art# 5074540)
<b>Contact circuit (electrical)</b>	
Rated voltage	60Vdc
Nominal current @ 25°C	500A (see Precaution #2)
Cranking current (1 minute)	1000A
Nominal make / break current	350A
Peak make / break current <sup>1)</sup>	1200A
<b>Control circuit (electrical)</b>	
Coil / supply voltage (+Vdc)	34 .. 68Vdc
Coil / supply current (idle state)	< 100µA
Coil / supply current (state change)	< 1.5A
Control wire supply current @ 60V	< 2.5mA (when active)
Control wire threshold voltage	> 5Vdc
<b>General</b>	
Remote control <sup>2)</sup>	By control wires (length 40cm, max. 15m)
Local control	On/Standby, Close contact, Open contact
Indicators	Contact open, Contact close, Error and Setup
Protected against	High temperature, High/Low supply voltage, Ignition (ISO 8846)
Mechanical life	100000 cycles
Electrical life	10000 cycles (@ 350A/48V/resistive)
Operating temperature range	-20 .. +60°C
Connection studs / DCM grid size	M10 / 1 x 3
Protection class / weight	IP 65 / 800 grams
Standards	EMC: 2014/30/EU & UNECE Regulation 10, Low voltage Directive: 2014/35/EU, RoHS: 2011/65/EU, ISO 8846

**Note:** the given specification

1. Install proper pre-charge circuit to keep peak make current significantly below this value
2. Panel switch with LED indicator optionally available (Art. no. 5095000-1)

## Documents / Resources



[tbs electronics TBS DC Modular Remote Battery Switch](#) [pdf] Installation Guide  
TBS, TBS DC Modular Remote Battery Switch, DC Modular Remote Battery Switch, Remote B  
attery Switch, Battery Switch

## References

-  [Home - TBS Electronics EN](#)

Manuals+.