

APPLICATION NOTE

Application note #	AN19-EN-144		
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Subject	DCM Remote Battery Switch behavior under different circumstances		
Related product(s)	TBS DC Modular Remote Battery Switch		
No. of pages	5		

Description :

The TBS DCM Remote Battery Switch (RBS) is an intelligent remote controlled high current latching contactor. The added intelligence provides a wide range of features and safety protections that cannot be offered by simple mechanical solutions that are also offered in the market. Some of these are:

- Show the main contact status by front panel LEDs
- Under/overvoltage protection
- High temperature (overload) protection
- Automatic anti contact welding function
- Force 'open-contact' command at startup

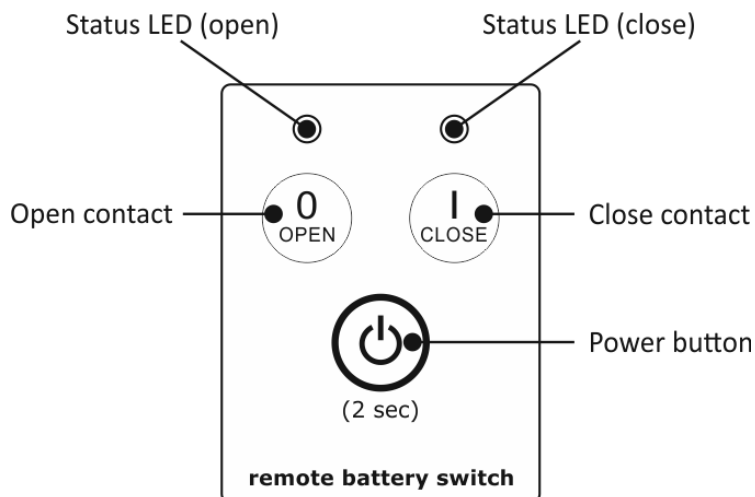
This document explains the behavior and functionality of the RBS under different circumstances.

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Normal operation

The front panel of the RBS contains three switches and two LEDs as you can see in the image below:



When the RBS is powered up, you can open and close the main contact by using the OPEN and CLOSE buttons. The respective LEDs will indicate the state of the main contact. Besides the front panel switches, the main contact can of course also be controlled by an external switch connected to the RBS cable loom.

The power button allows the RBS to be turned off completely. This means that when pressed for 2 seconds, the main contact will open and the LEDs will dim. In this mode the local OPEN and CLOSE buttons as well as the external switch will be ignored completely.

The RBS can be turned on again by pressing the Power button for 2 seconds. After this, the local OPEN and CLOSE buttons, as well as the external switch will be active again.

Procedure when servicing the DC system

When the DC system needs to be serviced or a battery needs to be replaced, it is important to make sure that the RBS cannot accidentally close the main contact while servicing is taking place.

For this, the RBS can be turned off completely by pressing the Power button for 2 seconds. The main contact will open and all commands coming from the OPEN and CLOSE front panel buttons, as well as the external switch connected to the cable loom, will be ignored.

After the servicing has been completed, the RBS can be turned on again by pressing the Power button for two seconds. Now the local and the external switched are in control of the main contact again.

RBS behavior when supply power is removed and reconnected

When the supply power to the RBS is removed, for example if a fuse blows or if the battery is disconnected on purpose, the RBS main contact remains in it's last state.

When the supply power is reconnected again, the RBS turns on automatically and immediately opens the main contact. Now the user (or external control system) can take over command again and close the main contact when desired.

RBS operation under low battery conditions

The RBS is equipped with a specially developed solenoid which allows reliable contact operation under extremely low battery voltage conditions. In fact, in most cases the RBS can even be switched off while being powered from a defect battery. For 12V systems the operating voltage stretches down to 7V. For 24V systems this level is set to 14V. This way the RBS can always be controlled, even on deeply discharged batteries.

If the switched battery bank can reach voltage levels that are even lower than the above mentioned minimum values, the RBS offers the convenience of having a separate supply wire. This allows the RBS to be powered from a difference source, like another battery bank in the system.

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