

BATTERY SEPARATORS



BATTERY SEPARATOR (ISOLATOR) WITH MICROPROCESSOR BS Series

MODELS: **BS80-12**
 BS80-24
 BS160-12
 BS160-24
 BS400-12
 BS400-24

INSTALLATION & OPERATING MANUAL

Please read this manual before operating your battery separator.

DESCRIPTION

BS Series Battery Separator (Isolator) is designed for use in situations where two sets of batteries are used; for example in boats, campers and caravans.

BS Series Battery Separator (Isolator) is a microprocessor controlled heavy duty relay that automatically connects auxiliary batteries in parallel when the primary battery has reached a preset voltage (indicating that the primary battery is charged), and disconnects the auxiliary batteries when the primary battery voltage decreases below float level (indicating that the primary battery is discharged).



BS80



BS160



BS400

The Battery Separator (Isolator) is an excellent alternative to a diode-based battery isolator and is sometimes the only option because some alternators do not accept a diode-based battery isolator between itself and the battery. The main feature is that there is virtually no voltage loss so that the output voltage of alternators or battery chargers does not need to be increased. It is recommended that Battery Separators (Isolators) be used in conjunction with inverters when an auxiliary battery is being used.

Priority

In a circuit with the Battery Separator (Isolator) the battery with the alternator (starter battery) will be charged first before the second battery (auxiliary battery) will be connected. When a Battery Separator (Isolator) senses that the starter battery has reached its connect voltage it will engage, to allow for parallel charging of the other batteries.

Bidirectional

The Battery Separator (Isolator) senses the voltage of both connected batteries. It will therefore also engage if for example the auxiliary battery is being charged by a battery charger.

Parallel

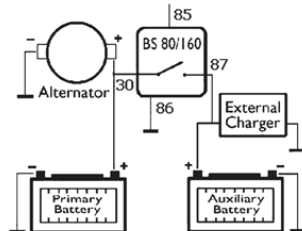
The Battery Separator (Isolator) - BS160 and BS400 - can also be engaged with a switch to connect batteries in parallel manually. This is especially useful in case of emergency when the starter battery is discharged or damaged.

FEATURES

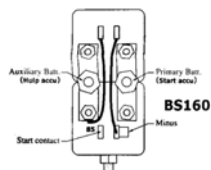
- Waits until the battery connected to the active charging source reaches 13.2V (26.4V) before paralleling and charging the auxiliary batteries. The system disconnects at 12.8V (25.6V).
- Provides priority for charging only the starter battery first
- Microprocessor controls the switching times to prevent unauthorized on/off switching.
- Protects auxiliary battery against over voltage from the charging source (16V/32V).
- Prevents excessive discharging of the starter battery
- BS160 and BS400 allow forced engaging of the auxiliary battery through external switch to enable paralleling with the starter battery if the starter battery is discharged or damaged
- BS400 has auxiliary dry contact for signalling engaging of the auxiliary battery
- Provides better performance than a diode-based battery isolator
- Easy to install as it does not require changing the existing circuit of the alternator.
- Is suitable for motor homes, boats and trucks and wherever an extra battery is needed.

INSTALLATION

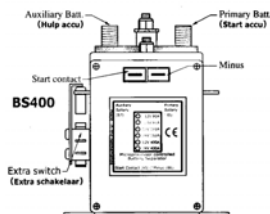
The Battery Separator (Isolator) is easy to install.



1. First disconnect the plus and minus of both batteries. The BS has 2 brass bolts as connectors for the batteries.
2. Connect the plus connection of the starter battery (primary) to connection 30 and the plus connection of the auxiliary battery to connection 87.
3. If you want to use the starting contact you can connect, via a fuse, a wire to connection 85 that becomes 12V (24V) as long as you activate the starter. This will connect both batteries together to make starting easier.
4. Connect at last the minus to connection 86.
5. If this is all secure you can connect the minus of both batteries again.



ATTENTION! Short-circuit of the plus and minus of the battery can damage your system! So make sure the connections are secure!



Between the on/off switching is a delay to prevent the relay from switching in a short dip or rise of the battery voltage. The relay switches off at a over voltage of 16V (32V) to prevent damage of the battery and equipment.

| | |
|----------------------|------------------------------------|
| Connection batteries | M6 |
| Other connections | 6.3 mm faston |
| Cable suggestion | BS80 20 mm ² |
| | BS160 25 mm ² |
| | BS400 60 mm ² |

- 30 Primary/start Battery Plus connection.
 85 Start contact (Only when start help used).
 86 Minus. (Attention! This should always be connected).
 87 Auxiliary Battery connection.

| | |
|---------------------------|-----------------------------|
| Primary battery 12V (24V) | Auxiliary battery 12V (24V) |
| 13.2V relay on (26.4V) | 13.2V relay on (26.4V) |
| 12.8V relay out (25.6V) | 12.8V relay out (25.6V) |

SPECIFICATIONS

| Model | BS80-12 | BS80-24 | BS160-12 | BS160-24 | BS400-12 | BS400-24 |
|---|--------------------|----------|--------------------|----------|--------------------|----------|
| Continues current | 80 A | 80 A | 160 A | 160 A | 400 A | 400 A |
| Connect voltage | 13.2 VDC | 26.4 VDC | 13.2 VDC | 26.4 VDC | 13.2 VDC | 26.4 VDC |
| Disconnect voltage | 12.8 VDC | 25.6 VDC | 12.8 VDC | 25.6 VDC | 12.8 VDC | 25.6 VDC |
| Standby current | < 5mA | < 5mA | < 5mA | < 5mA | < 5mA | < 5mA |
| Start contact | No | No | Yes | Yes | Yes | Yes |
| Micro switch for remote status indication | No | No | No | No | Yes | Yes |
| Voltage stability | +/- 2% | | +/- 2% | | +/- 2% | |
| Weight | 0.11 Kg / 0.24 lb | | 0.3 Kg / 0.7 lb | | 0.9 Kg / 2.0 lbs | |
| Dimensions (H x W x D) mm | 46 x 46 x 80 mm | | 46 x 93 x 96 mm | | 78 x 102 x 110 mm | |
| Dimensions (H x W x D) inches | 1.8" x 1.8" x 3.2" | | 1.8" x 3.7" x 3.8" | | 3.1" x 4.0" x 4.4" | |

Note: The above specifications are subject to change without notice



SAMLEX AMERICA®

Thank you purchasing a Samlex power supply product!

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