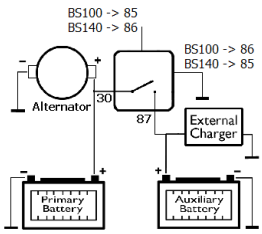
Series iesy BS/BSW

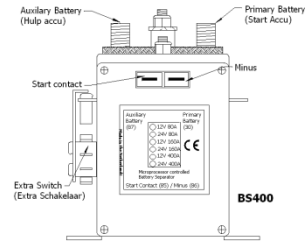
Battery **S**eparator / combiner: the 10 bits microprocessor-controlled battery connect- and disconnect relay

- intelligent self switching split charge relay -

BS 140, LIR 250 & BS 500 IP54/67 Univ. (140A, 250 & 500A/12-24V auto Voltage detect). LIR 250/BS 500 IP IP54/67 =>control board IP54/Relay gastight!

BS 400/24 NEW: BSW 160 IP67 Univ. (160A/12-24V auto.); NEW: BSW 750 IP67 & BSW 250 IP67 with USB





2 batteries not necessarily needed!

UBS: Easy installation; Fully programmable, Very low power consumption; 12V/24V Automatic voltage detection, output relay status indicator LED; emergency activation function, small size; software completely customizable to customers' needs (regardless of the number)

Ø 45mm H=20mm IP67

New: UBS IP67 **U**niversal **B**attery **S**eparator

New: Universal Battery Separator UBS IP67, is a separate relay control board with 5 programs

The UBS can easily be connected to a normal relay, to make a microprocessor controlled battery relays (Battery separator). Voltage depend switching and start help also possible.

Because the switching process takes place without signal lines from the vehicle, iesy BS relays can easily be connected, even in modern vehicles with CAN-BUS system is possible!

No voltage loss! (universal=> auto voltage detection 12/24V)

The iesy Battery Separator/combiner (BS) is a microprocessor controlled battery connect- and disconnect-relay for use in systems with more than one battery for example in boats, caravans and campers. It safely charges the auxiliary battery and prevents starting problems.

Also the BS can be used as a voltage dependent switch, connected on only one (start) battery.

The BS is a microprocessor controlled high power mechanical switch. The BS waits until the battery connected to the active charging source reaches 13.2V (26,4V) for at least 7 seconds before paralleling and charging the auxiliary batteries. Normally the accessories are connected to the auxiliary battery. The system disconnects if the battery voltage reaches 12.8V (25,6V) for at least 60 seconds. This way the starter battery stays charged. The Battery Separator is an excellent alternative for a diode or FET (battery) isolator.

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. Another advantage is that the Battery Separator can be mounted without changing the existing circuit. That makes the Battery Separator not only very easy to install, but is sometimes the only option because some alternators do not accept a Battery Isolator between itself and the the battery.

New: intelligent battery monitoring to prevent unwanted switching (preventing of flip-flop effect)

The iesy BS 100/140/160IP/500IP Universal automatically detects the system voltage (12V or 24V). To prevent that this relay is switching by a short voltage drop or a voltage spike, is built a small delay between switching "on" and "off". By switching "on" the relay remains at least 60 sec. "on" (charging), to prevent the flip-flop (on/off/on etc.) effect by a deep discharged second (auxiliary) battery.

Prioritising the starter battery

In a typical setup the alternator is directly connected to the starter battery. The accessory (auxiliary)battery, and possibly also a bow thruster and other batteries are each connected to the starter battery with iesy battery separators/combiners (BS). When a BS senses that the starter battery has reached the connect voltage it will engage, to allow for parallel charging of the other batteries.

Bipolar-switching (Bidirectional voltage sensing and voltage supply from all batteries)

The iesy Battery Separator/combiner (BS) has a second unique feature. If a charger is connected to the second battery, for example in boats and campers, and the battery reaches 13,2V (26,4V) for at least 7 seconds the switch will connect the starter battery, so this will be charged also. This is an advantage if you lie/stand still for a longer time. This way the starter battery also stays in optimal condition. As the charger is removed and the voltage drops to 12,8V (25,6V), for at least 60 seconds, the switch will open again.

iesy Start help (*Parallel connection in an emergency)*

The iesy Battery Separator / combiner (BS) has an extra connection for the optional start help. If this connection is connected to the starter contact, the Battery Separator will switch on and the second battery will assist starting the engine. But be aware that large diesel engines can have very high start currents which can damage the switch. Use for this feature the BS500.

iesy battery / equipment / accessories protection

All the types have a protection of the second battery and it's connected equipment of over voltage due to a damaged voltage regulator of the alternator. If the voltage will become too high the Battery Separator switch will open immediately and connected equipment is saved.

Voltage dependent switch (user can be switched via relay)

In some cases it is desirable to have a connector that is only powered when the vehicle is running. For this kind of application the BS is also useful. Connect the primary battery connection to the starter battery and the other connection to the equipment. If now the engine is started the starter battery will reach 13,2V (26,4V) and the Battery Separator will connect the equipment to the battery. So, you don't need necessarily 2 batteries!

NEW: LIR 250 IP universal (**L**arge **I**nput **R**elais) is a power relay with a wide input voltage range.

Battery Separator/Combiner type	*BS 100 / 140	*BSW160 IP67	BSW250 IP67	BS400 12 / 24	BS500 IP	BSW750 IP67	LIR250 IP uni.
Continuous current (A)	100 / 140	160	250	400	500	750	250
Connect voltage (V)	13,2 / 26,4	13,2 / 26,4	13,2 / 26,4	13,2 / 26,4	13,2 / 26,4	13,2 / 26,4	U_{in}=9-36VDC
Disconnect voltage (V)	12,8 / 25,6	12,8 / 25,6	12,8 / 25,6	12,8 / 25,6	12,8 / 25,6	12,8 / 25,6	
Standby current	<3 mA	<3 mA	<5 mA	<5 mA	<2 mA	<5 mA	<2 mA
Connection for remote on / off	√	√	√	√	√	√	
Micro switch for remote status indication		LED	(LED UBS)	√	LED	(LED UBS)	
Weight kg (lbs)	0,11(0.24)/0,13(0.28)	0,47 (1.04)	0,42 (0.94)	0,9 (2.0)	0,42 (0.94)	0,8 (1.78)	0,42 (0.94)
Dimension T x W x H in mm	46 x 46 x 80	108 x 72 x 58	90 x 65 x 60	78 x 102 x 110	80 x 70 x 72	132 x 75 x 71	80 x 70 x 72

* Automatic Voltage Detection 12/24V; BSW=> Waterproof IP67 (BSW 250 & BSW 750 with UBS)

Specials and/or private label on request / For more information see Manuals