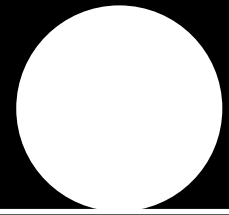


BS - Battery Saver

SPECIALTY CONCEPTS, INC.

LOW VOLTAGE LOAD DISCONNECT / GENERATOR START DEVICE



DESCRIPTION

The BATTERY SAVER (BS) is a versatile device for the protection of batteries from low-voltage damage. It is available in two models. One can be used in systems to disconnect a load and the other can start a generator. The BATTERY SAVER is available for 12, 24, 36 and 48 volt systems.

The BATTERY SAVER consists of a relay with a voltage sensing circuit and a red light to indicate operation. It is housed in an anodized aluminum chassis suitable for wall mounting with a terminal block for up to 10 gauge wire or spade connector, providing simple installation.

FEATURES

Low-Voltage Load Disconnect (BS1)
or

Low-Voltage Generator Start (BS6)

- 20 amp load, 12 volt
- 15 amp load, 24, 36 or 48 volt

Design Features

- Indicator light
- Input noise suppression
- Reverse polarity protection
- Adjustability; set-point and span
- Indoor wall mount chassis

APPLICATIONS

Deep discharge damage to lead acid battery banks is often a major concern, both as a system reliability issue and an economic issue relating to replacement costs of batteries and cycle life based on depth of discharge. The BATTERY SAVER can reduce damage to expensive batteries by controlling deep discharge.

The BS1 can be used as a low-voltage load disconnect (LVD) to automatically turn lights or other non-essential loads off when battery voltage drops too low. These loads are reconnected as the battery voltage rises. Loads can be staged for disconnect, turning off the least useful ones first and leaving the essential loads on, by using multiple BATTERY SAVERS.

The BS6 can be used to signal the start of a stand-by generator or other auxiliary charger to recharge the battery, avoiding deep discharge without temporarily losing the loads.



Battery Saver

The BATTERY SAVER can be used as the only control in a small stand alone system, or as one of many control elements in a large, modular control system for multi-kilowatt applications. In many small applications charge regulation is not as much as a concern as deep discharge damage. In these cases LVD can be the only type of control electronics needed. Some systems that already have charge regulation may need the addition of a LVD circuit. The BS1 can be added to existing systems without requiring a complete new control.

OPERATION

**BATTERY SAVER 1 (BS1)-
Low-Voltage Load Disconnect (LVD)**

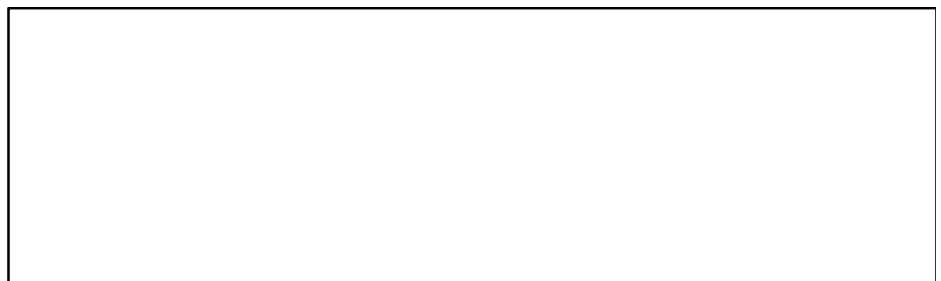
When battery voltage reaches the low-voltage threshold, the normally closed relay will energize and open. The red light on the front panel will go on and the load will be disconnected. When battery voltage rises, indicating charging has occurred, the load will be automatically reconnected.

**BATTERY SAVER 6 (BS6)-
Low-Voltage Generator Start**

For systems designed with stand-by generator back-up, the BATTERY SAVER can signal when low batteries need additional charging. When battery voltage reaches the low-voltage threshold, the normally open relay will energize, closing the contacts and lighting the red light on the panel. When battery voltage rises to the reconnect threshold, indicating charging has occurred the contacts will open.

ADJUSTABILITY (BS1, BS6)-

The low-voltage set-point and reconnect span can be adjusted externally via two adjustment pots.



Block Diagram - BS1

BATTERY SAVER

PARAMETERS	UNITS	NOMINAL VOLTAGES			
		12 v	24 v	36 v	48 v
Load Current, Continuous (1)	(Amps)	25	25	15	15
Load Current, Max (60 seconds) (2)	(Amps)	30	30	19.5	19.5
Operating Voltage @ Battery, Minimum	(Volts)	9.6	9.6	19.2	19.2
Quiescent Current (3)	(Milliamps)	8.2	12	10	10
Current Consumption, Energized (Load Disconnected / Gen Start) (4)	(Milliamps)	107	116	75	75
Voltage Drop, Typ. (Battery to Load)	(Volts)	.03	.03	.03	.03
Low-voltage Setpoint, Factory Set					
Load Disconnect , (BS1)	(Volts)	11.5 ± .3	23.0 ± .6	34.5 ± .9	46.0 ± 1.2
GeneratorStart , (BS6)	(Volts)	11.5 ± .3	23.0 ± .6	34.5 ± .9	46.0 ± 1.2
Adjustable Low-voltage Set-point Range (5)	(Volts)	10.5 to 12.5	21.0 to 25.0	31.5 to 37.5	42.0 to 50.0
Resumption Voltage, Factory Set					
Load Reconnect (BS1)	(Volts)	13.0 ± .3	26.0 ± .6	39.0 ± .9	52.0 ± 1.2
Generator Stop (BS6)	(Volts)	13.0 ± .3	26.0 ± .6	39.0 ± .9	52.0 ± 1.2
Adjustable Resumption Range, Typ. (5)	(Volts)	12.2 to 14.0	24.4 to 28.0	36.6 to 42.0	48.8 to 56.0
Time Delay, Typ. (6)	(Seconds)	2	2	2	2
Operating Temp. Range	(°C)	-20 to 50	-20 to 50	-20 to 50	-20 to 50
Storage Temp. Range	(°C)	-55 to 85	-55 to 85	-55 to 85	-55 to 85

Notes:

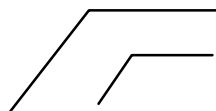
- (1) Non-inductive.
- (2) Carry only, Non-switching
- (3) Relay unenergized, red L.E.D. off, typical value.
- (4) LVD/Gen. start relay energized, red L.E.D. on, typical value.
- (5) Higher and lower settings can be reached but are not recommended.
- (6) Prevents nuisance disconnects.

PART NUMBERING KEY

DIMENSIONS

In Inches (cm)

EXAMPLE:



Model
Nominal Voltage

BS1 - 12

MODEL	NOMINAL VOLTAGE
BS1 - (Low-voltage Load Disconnect)	12
BS6 - (Generator Start)	24
	36
	48

Specifications and product availability subject to change without notice.

Shipping weight: .75 lbs. (.3 Kgs.)

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