

L-Series Solenoid Switch with Coil Economizer

PN 9012

Features

- Hermetically sealed contacts • Vaporproof • Function as a remote battery switch
- Ignition protected - safe for installation aboard gasoline powered boats
- Pulse circuit requires low current draw when contact is closed
- UL Recognized - UL 508 Industrial Control Equipment
- Meets SAE J1171 - external ignition protection requirements
- Activated by an ON-OFF switch mounted anywhere
- Used as a manual battery paralleling switch • CE marked for EC applications
- Integrated coil control minimizes heating and amperage draw

Specifications

Coil Circuit:

Input Voltage:	9 to 36 Volts Maximum
Power Consumption:	
Inrush, 130ms:	3.8 Amperes@12-36 VDC
Holding 12 Volts:	0.13 Amperes@12 VDC
	0.07 Amperes@24 VDC

Main Power Contacts:

Voltage Rating	60 Volts DC
Stud Terminal Size	M8 (accepts 5/16" terminals)
Contact Form	SPST-NO
Inrush Rating: 0.25sec. (10 repeats)*	2000 Amperes
Mechanical Life	1 Million Cycles
Make Current@10,000 Cycles:	2000 Amperes@28V
Break Current@10,000 Cycles:	2000 Amperes@28V

Wire Size	Cranking Rating 9.75 sec. (10 repeats)*	Intermittent Rating 5 min. (UL 1107)	Continuous Rating (UL 1107)
1/0	500A	275A	250A
2/0	500A	400A	300A
2x2/0	800A	600A	450A

* Blue Sea Systems Engine Starting Standard

Switch Ratings

The issue of switch ratings for engine starting is a tricky one. The reason is that Underwriter's Laboratories (UL), the only agency that establishes standards for marine battery switch ratings, does not establish a standard appropriate to engine starting situations. There are two ratings in the UL marine battery switch standard, Intermittent and Continuous. Intermittent is a 5 minute rating and is based on temperature rise of various sections of the switch as the rated current is applied over a 5 minute period. The Continuous rating is the same, but the time period is 1 hour.

As these standards demonstrate, there are three variables involved in rating battery switches: time, current and temperature. For any given switch the relationship of the variables is TEMPERATURE = TIME x CURRENT. Clearly, neither of these ratings is applicable to engine starting situations where the current draw is very high but the time period is very short, typically 10 seconds or less. You will see some manufacturers rating their switches at very high amperages, but close inspection will show that they either fail to specify the time period or the time period is very short.

To correct this problem Blue Sea Systems has created an additional standard to which its battery switches are rated. This standard is called the Engine Start Standard and consists of ten 10-second cycles with a 2 second rest between each cycle. The first .25 seconds of the cycle is the Inrush Current and the last 9.75 seconds of the cycle is the Cranking Current. The Engine Start Standard is designed to represent a worst case engine starting event in which the engine is cranked for 10 seconds, the ignition switched off for 2 seconds to rest the battery and then repeated another 9 times.

Guarantee

Any Blue Sea Systems product with which a customer is not satisfied may be returned for a refund or replacement at any time.

Blue Sea Systems Inc.
425 Sequoia Drive
Bellingham, WA 98226 USA

Phone (360) 738-8230
Fax (360) 734-4195
E-mail conductor@blueseas.com
www.blueseas.com

8703 Rev. 010

Installation

Electrical Connections

- 1 Disconnect the positive battery connection before beginning the installation. The wiring diagram is general in nature and is not meant to be a guide for the wiring of any specific vessel. There are a wide range of wiring configurations possible. Consult your marine electrical professional for the wiring system applicable to your boat.
- 2 Make electrical connections based on the wiring diagram. Consult a wire sizing chart to determine the appropriate wire sizes.

Main Disconnect and Starting Solenoids

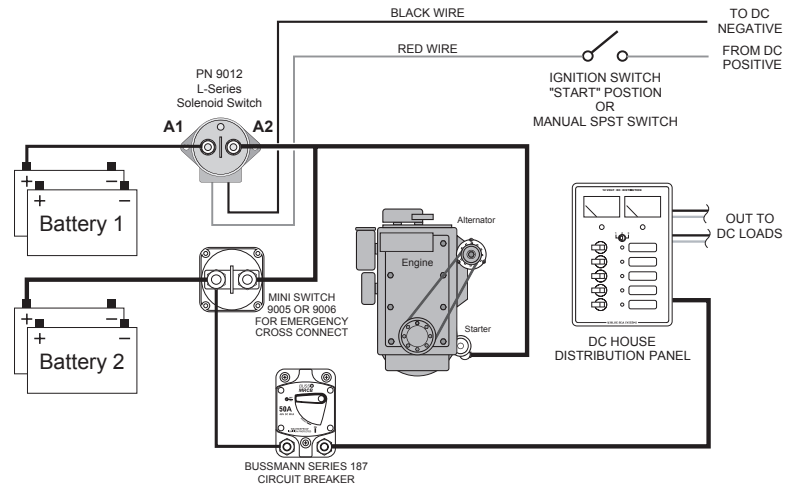
High amperage electronic solenoid switches allow heavy cable runs to be shortened dramatically by eliminating the need to route cables for convenient operator access for manual switching operations. Shortened cable runs save labor and material costs, reduce weight, conserve space, reduce exposure to short circuits, and deliver higher circuit voltages. Solenoid switches also allow high amperage switching operations to be automated, allowing high amperage circuits to be completely disconnected when not in use.

These switches can be used for:

1. Starting Circuit Disconnects
2. Main Distribution Panel Disconnects

Electrical Connection Illustration

This schematic is to illustrate the general placement of the switch in a circuit. It is not meant to provide detailed wiring instructions for any particular boat.



Wiring Diagram
PN 9012 L-Series Solenoid Switch with Coil Economizer

