

ML-Series

Remote Battery Switches (with manual control)

PN 7700 / PN 7702

Solenoid Switches (without manual control)

PN 7701 / PN 7703

- Magnetic Latch—draws no current in ON or OFF state, only draws current when changing state of switch
- Silver alloy contacts provide high reliability for switching live loads
- Manual control override knob provides an added level of safety allowing control with or without power, and offering LOCKED OFF capability for servicing (Remote Battery Switch ONLY)
- LED output to remotely indicate switch state
- Tin-plated copper studs for maximum conductivity and corrosion resistance
- Label recesses for circuit identification

| Specifications | 12V DC | 24V DC |
|----------------------------------|---|---|
| Cranking Rating | See table below | See table below |
| Intermittent Rating | See table below | See table below |
| Continuous Rating | See table below | See table below |
| ML-Coil Function | Bi-Stable | Bi-Stable |
| Operating Voltage (contacts) | 0-64V | 0-64V |
| Control Voltage | 9-16V DC | 18-32V DC |
| Amperage Operating Current | 0 mA continuous | 0 mA continuous |
| | <7A when changing state (20 ms) | <4A when changing state (20 ms) |
| Terminal Stud Size | 3/8"-16 | 3/8"-16 |
| Maximum Terminal Stud Torque | 140 in-lb (15.8 N•m) | 140 in-lb (15.8 N•m) |
| Ring Terminal Size | 3/8" (M10) | 3/8" (M10) |
| Terminal Ring Diameter Clearance | 1.18" (30 mm) | 1.18" (30 mm) |
| Live Current Switching | 10,000 @ 12V, 300A 10,000 @ 24V, 150A 2,000 @ 48V, 100A | 10,000 @ 12V, 300A 10,000 @ 24V, 150A 2,000 @ 48V, 100A |
| Mechanical Switching | 100,000 Cycles | 100,000 Cycles |

Remote Switch PN 2145

| | |
|---------------|---------------------------------------|
| Action | Momentary SPDT (ON)-OFF-(ON) |
| Seals | Internal & External Gasket Panel Seal |
| Mounting Hole | 0.83"x 1.45" (21.08 mm x 36.83 mm) |
| LED Rating | 100,000 hours half-life |

Regulatory Meets ISO 8846 and SAE J1171 external ignition protection requirements, CE marked, Rated IP66

Wire Size and Current Ratings

| Wire Size | Cranking 30 sec. | Intermittent 5 min. | Continuous (UL 1107) |
|--------------------------------------|---------------------|------------------------|-------------------------|
| 2/0 AWG (70 mm ²) | 1,000A | 400A | 225A |
| 4/0 AWG (120 mm ²) | 1,100A | 400A | 300A |
| 2x 4/0 AWG (2x 120 mm ²) | 1,450A | 700A | 500A |

| Solenoid Switch | | | |
|-----------------|--------------|----------------|-----------------|
| PN | Termination | Manual Control | Control Circuit |
| 7701 | Tinned Wires | No | 12V DC |
| 7703 | Tinned Wires | No | 24V DC |

| Remote Battery Switch | | | |
|-----------------------|--------------|----------------|-----------------|
| PN | Termination | Manual Control | Control Circuit |
| 7700 | Tinned Wires | Yes | 12V DC |
| 7702 | Tinned Wires | Yes | 24V DC |

Overview of Application

The ML-Series Remote Battery Switch/Solenoid Switch provides high-current carrying and switching under load. The Remote Battery Switch/Solenoid Switch is installed close to the battery banks. A single pole double throw (SPDT) Control Switch Panel, or two momentary push button switches, operate the Remote Battery Switch/Solenoid Switch. Control Switches are installed in a convenient location near other electrical controls or companionway (see Illustrations on reverse).

The Manual Control Override Knob provides (Remote Battery Switch Only):





- an added level of safety that allows manual ON-OFF control with or without power
- LOCK OFF for servicing the electrical system

A remote LED (sold separately) indicates a closed connection between battery bank and load, or between two battery banks when used as an emergency cross-connect.

Remote Operation. The momentary (SPDT) (ON)-OFF-(ON) Remote Control Contura Switch can provide cross connect and/or battery isolation. The Control Switch should be mounted in a convenient location near helm controls to allow for quick access.

| | |
|---|---|
| To connect battery bank to load, or combine battery banks | Momentarily depress control switch actuator to "ON". Remote LED indicates closed connection.* |
| To disconnect battery bank from load, or isolate battery banks that are connected | Momentarily depress control switch actuator to "OFF".* |

Emergency Manual Control Override Operations (Remote Battery Switch Only)

| | | |
|---|--|--|
| To connect battery bank to load, or combine battery banks | With Override Knob in (REMOTE position), push button until latched (Push to Latch On). |  |
| To disconnect battery bank from load, or isolate battery banks that are connected | Rotate Override Knob to right to release button from Latch On mode (button pops up). Rotate Override Knob to left (REMOTE position). |  |
| To prevent remote operation | Rotate Override Knob to right (LOCK OFF position). |  |
| To secure for servicing | With Override Knob in (LOCK OFF position), pass cable tie through hole. |  |

* If the Control Switch is held ON or OFF for 5 seconds, the internal coil protection will engage and the Remote Battery Switch/Solenoid Switch will not respond to further remote input for approximately 10 seconds.

⚠ CAUTION ⚠

- ✓ These instructions are intended to provide assistance with the installation of this product, and are not a substitute for a more comprehensive understanding of electrical systems. We strongly recommend that a competent electrical professional perform the installation of this product.
- ✓ The illustrated wiring diagram represents a common installation and is not meant to be a guide for wiring a specific vessel. The wiring diagram shows a single battery bank installation.
- ✓ Disconnect all negative battery connections before beginning the installation.
- ✓ All unused control wires should be carefully insulated from each other and from accidental contact using heat shrink tubing or electrical tape. External contact or shorting between control wires can lead to malfunction.

Installation Instructions

Mounting

Install as close as possible to battery bank. To avoid corrosion to connecting wires and terminals, mount in a dry and protected location. Avoid mounting directly above vented lead acid batteries so that the Remote Battery Switch/Solenoid Switch is not exposed to corrosive gasses expelled from the batteries.

High Current Primary Circuit Connections (stud terminals A and B)

For help selecting the appropriate wire size and circuit protection rating, go to www.bluesea.com and click the *Circuit Wizard* quick link.

NOTE: Stud terminals A and B are interchangeable. The load can be connected to A or B; the battery bank can be connected to A or B.

To connect high current circuit wires:

1. Connect the battery bank to one of the stud terminals marked A or B.
2. Connect the load to the other stud terminal marked B or A.
3. Torque the high current terminal stud nuts to 140 in-lbs (15.8 N·m) maximum.

NOTE: If switching an inverter, windlass, bow thruster, etc., the circuit wires must have circuit protection to comply with ABYC guidelines. Wires used for engine starting do not require circuit protection.

Control Circuit Connections (wires contained in the wire harness)

NOTE: The Remote Battery Switch/Solenoid Switch is designed to be controlled by momentary SPDT switch, (included), or two momentary push button switches. Use minimum 16 AWG wire for the Control Circuit.

To connect DC power to the Remote Battery Switch/Solenoid Switch Control Circuit:

1. Connect the red wire through a 10A (min) circuit protection device to DC+. The power source should be a direct connection to the battery.
2. Connect the black wire to DC ground.

To connect the momentary SPDT Contura Control Switch:

1. Connect the common load terminal of the Control Switch, pin 2, through a 2A (min) circuit protection device to DC+. Use a 24-hour power source (connected directly to the battery).
2. Connect the brown wire to the CLOSE side of the Control Switch, pin 3.
3. Connect the orange wire to the OPEN side of the Control Switch, pin 1.
4. Connect the LED power terminal of the Control Switch, pin 8, through 2A (min) circuit protection device to DC+. **Note: This connection can share the same wire/fuse as step #1 above, (see diagram).**
5. Connect the LED Ground terminal of the Control Switch, pin 7, to the yellow wire of the Remote Battery Switch.

Guarantee

Blue Sea Systems stands behind its products for as long as you own them.

Find detailed information at www.bluesea.com/about.

For customer service, call 800-222-7617.

Installation Instructions

