

ML-Series

Remote Battery Switches (with manual override)

PN 7713 / PN 7713B / PN 7713100

PN 7717 / PN 7717B / PN 7717100

Solenoids (without manual override)

PN 7718 / PN 7718B / PN 7718100

PN 7719 / PN 7719B / PN 7719100

- Magnetic Latch (ML) - draws very low continuous current
- Silver alloy contacts provide high reliability for switching live loads
- Manual override provides LOCK OFF capability for servicing and ON/OFF control with or without power
- LED output to remotely indicate switch state
- Tin-plated copper studs for maximum conductivity and corrosion resistance
- Label recesses for circuit identification
- Retail units include a Remote Control Switch PN 2155

Specifications	12V DC	24V DC
Operating Current: Continuous	<13mA @ 25°C nominal voltage	<13mA @ 25°C nominal voltage
Changing Stage (20 ms)	<7A @ 25°C nominal voltage	<4A @ 25°C nominal voltage
Contact Circuit Voltage	16V DC Max.	32V DC Max.
Live Current Switching	300A @ 12V DC - 10,000 Cycles	150A @ 24V DC - 10,000 Cycles
Mechanical Endurance	100,000 Cycles	100,000 Cycles
Control Circuit Voltage	9-16V DC	18-32V DC
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)

Remote Control Switch PN 2155

Action	SPDT, ON-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
Harness Connector: (select models)	Deutsch DTM Series DTM 06-6S
Mating Part Requirements	See LADD Industries www.laddinc.com
Receptacle Shell	DTM-04-6P
Wedgelock	WM-6P
Terminal Pins	1060-20-0122
Sealing Plugs	0413-204-2005
Hand Crimp Tooling	DTT-20-0

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 mm²)	1,000A	400A	225A
4/0 AWG (120 mm²)	1,100A	400A	300A
2× 4/0 AWG (2x 120 mm²)	1,450A	700A	500A

PN	Termination	Control Circuit	Manual Control
7713	Tinned Wires	12V DC	Yes
7713B	Tinned Wires	12V DC	Yes
7713100	Deutsch Connector	12V DC	Yes
7717	Tinned Wires	24V DC	Yes
7717B	Tinned Wires	24V DC	Yes
7717100	Deutsch Connector	24V DC	Yes

PN	Termination	Control Circuit	Manual Control
7718	Tinned Wires	12V DC	No
7718B	Tinned Wires	12V DC	No
7718100	Deutsch Connector	12V DC	No
7719	Tinned Wires	24V DC	No
7719B	Tinned Wires	24V DC	No
7719100	Deutsch Connector	24V DC	No

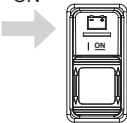
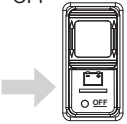
Overview of Application

The ML-Series Remote Battery Switch (RBS) provides high-current carrying and switching under load. The ML-RBS should be installed close to the battery to minimize voltage drop.

Install a single pole double throw (SPDT) or single pole single throw (SPST) control switch in a convenient location near other electrical controls or companionway to allow quick access in the event of an emergency (see Illustration on reverse).*

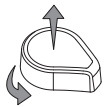
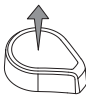
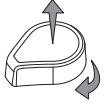
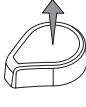
* A SPDT switch improves immunity to inadvertent switching if the switch terminals become damp.

Table 1 Remote Switch Operation (All Versions)

Remote Switch Position	Remote Control Switch LED	7713 / 7717	7718 / 7719
ON  To connect battery bank to load, or combine battery banks, press remote switch "ON"	ON	Contacts CLOSED 	Contacts CLOSED
	LED double blinking ON-OFF	Manual Override Active- see table 2	Remote switch and relay contacts are out of synchronization. Move remote switch to opposite position, then to desired position. *
OFF  To disconnect battery bank from load, or isolate battery banks that are connected, press remote switch "OFF"	OFF	Contacts OPEN 	Contacts OPEN

* low input voltage condition may cause this indication and preclude re-synchronization. Check that input voltage is >9V DC

Table 2 Manual Override Switch Operation (7713 / 7717 Only)

Manual Override Switch Position	Remote Control Switch LED (All Versions)	Override Knob State
 Rotate manual override knob counterclockwise to manually disconnect battery bank from load, or isolate battery banks that are connected.	LED double blinking ON-OFF	
 Rotate manual override knob clockwise and push down until latched to manually connect battery bank to load, or combine battery banks that are connected.	LED double blinking ON-OFF	
OFF  Restore remote switching operation by manually setting the RBS in the "Remote Enabled OFF" position and then switch remote switch to "OFF"	OFF	

⚠ 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 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.blueseas.com and click the *Circuit Wizard* quick link.

NOTE: Stud terminals A and B are interchangeable. A battery connection is required on one terminal for device operation

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 (15.5 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.

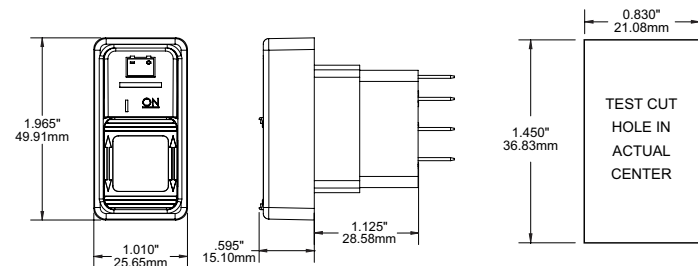
Control Circuit Connections (wires contained in the wire harness)

NOTE: The Remote Battery Switch is designed to be controlled by a SPDT or SPST switch.

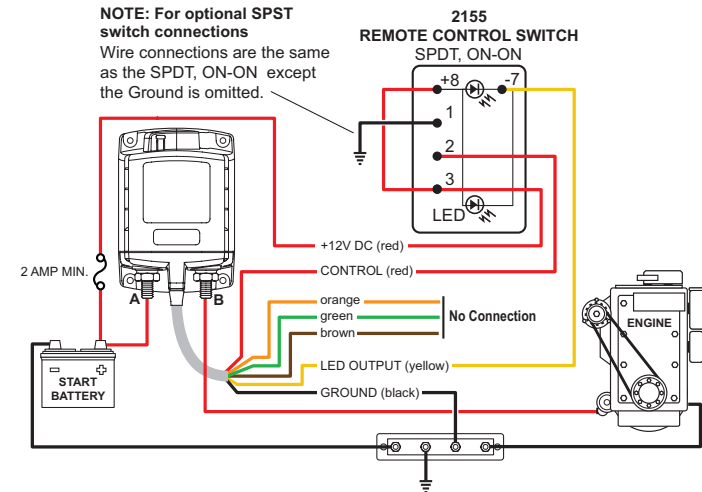
Use minimum 16 AWG wire for the Control Circuits. For help selecting the appropriate wire size for the load cables, go to www.blueseas.com and click the *Circuit Wizard* quick link.

To connect the SPDT Remote Control Switch 2155:

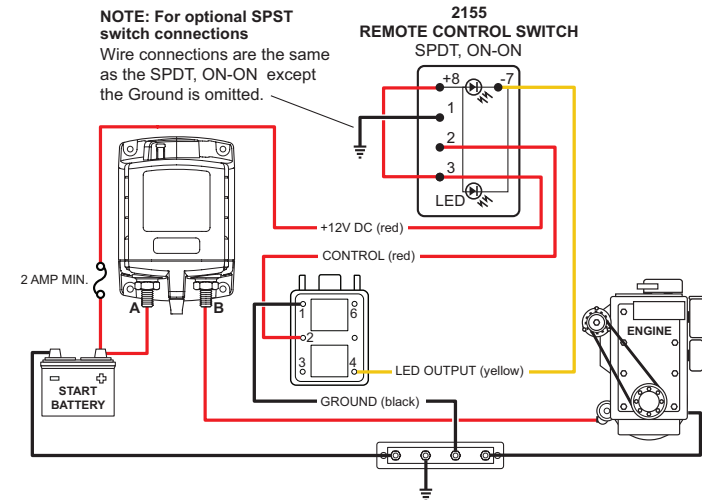
1. Connect pin 3 and pin 8 to +12V or +24V Power available when Remote Battery Switch is OFF. (fused)
2. Connect the red control wire to switch pin 2.
3. Connect pin 7 to yellow wire.
4. Connect pin 1 to ground or negative.



Installation Instructions



Tinned Wire Termination



Deutsch DTM Connector Termination

