

Terminal Selection Guide

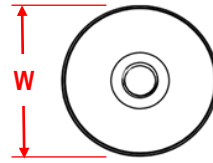
Your Application's Parameters					Rebling Terminal Selection Guide				Accessories				
Rated Current	Your Panel	Your Panel Thickness	Desired Panel Mounting	Connector Plating	Style	Insulator Color	P/N for bagged Kit	Advantages over other Styles	O-ring	Gasket	Flexible Cover	Long Rigid Cover	Short Rigid Cover
100 amps	Plastic or Metal	0.025 → 0.157" 0,64 → 4,0 mm	3 circular holes	Ni-plated Brass	TFT	Black Red Blue	TFT-P-B TFT-P-R TFT-P-E	Can be mounted on very thin or weak panels Mounting holes can be made with a hand drill	812A1925	-	815A1927-B (BLK) 815A1927-R (RED) 815A1927-E (BLU)	814A1926-B (BLK) 814A1926-R (RED) 814A1926-E (BLU)	-
250 amps	Plastic	0.025 → 0.220" 0,64 → 5,59 mm	3 circular holes	Ni-plated Brass	SFT	Black Red Blue	SFT-P-B SFT-P-R SFT-P-E	Can be mounted on very thin or weak panels Mounting holes can be made with a hand drill	-	716A1814	713A1806-B (BLK) 713A1806-R (RED) 713A1806-E (BLU)	698A1789-L-B (BLK) 698A1789-L-R (RED) 698A1789-L-E (BLU)	698A1789-S-B (BLK) 698A1789-S-R (RED) 698A1789-S-E (BLU)
		0.230 → 0.660" 5,84 → 16,76 mm	1 double-D hole	Ni-plated Brass	LFT	Black Red Blue	LFT-P-B LFT-P-R LFT-P-E	Smallest Footprint, Lowest Cost Simplest Environmental Seal	700A1799	-			
			3 circular holes	Ni-plated Brass	SFT	Black Red Blue	SFT-P-B SFT-P-R SFT-P-E	Can be mounted on very thin or weak panels Mounting holes can be made with a hand drill	-	716A1814			
	Metal	0.025 → 0.100" 0,64 → 2,54 mm	3 circular holes	Ni-plated Brass	SFT	Black Red Blue	SFT-P-B SFT-P-R SFT-P-E	Can be mounted on very thin or weak panels Mounting holes can be made with a hand drill	-	716A1814			
		0.110 → 0.660" 2,80 → 16,76 mm	1 double-D hole	Ni-plated Brass	LFT	Black Red Blue	LFT-P-B LFT-P-R LFT-P-E	Smallest Footprint, Lowest Cost Simplest Environmental Seal	700A1799	-			
			3 circular holes	Ni-plated Brass	SFT	Black Red Blue	SFT-P-B SFT-P-R SFT-P-E	Can be mounted on very thin or weak panels Mounting holes can be made with a hand drill	-	716A1814			
500 amps	Plastic or Metal	0.025 → 0.660" 0,64 → 16,76 mm	3 circular holes	Ni-plated Brass	MFT	Black Red Blue	MFT-P-B MFT-P-R MFT-P-E	Can be mounted on very thin or weak panels Mounting holes can be made with a hand drill	-	716A1815			
750 amps	Plastic	0.025 → 0.180"	3 circular holes	Ni-plated Brass	XFT	Black Red	XFT-P-B XFT-P-R	Can be mounted on very thin or weak panels Mounting holes can be made with a hand drill		720A1817	639A1830-B (BLK) 639A1830-R (RED)	-	
	Plastic	0.190 → 0.550" 4,83 → 13,97 mm	1 double-D hole	Ni-plated Brass	BFT	Black Red	BFT-P-B BFT-P-R	Smallest Footprint, Lowest Cost Simplest Environmental Seal		651A1811		648A1758 (BLK) 648A1779 (RED)	
			3 circular holes	Ni-plated Brass	XFT	Black Red	XFT-P-B XFT-P-R	Can be mounted on very thin or weak panels Mounting holes can be made with a hand drill		720A1817		-	
	Metal	0.025 → 0.070"	3 circular holes	Ni-plated Brass	XFT	Black Red	XFT-P-B XFT-P-R	Can be mounted on very thin or weak panels Mounting holes can be made with a hand drill		720A1817			
			0.080 → 0.550" 2,04 → 13,97 mm	1 double-D hole	Ni-plated Brass	BFT	Black Red	BFT-P-B BFT-P-R	Smallest Footprint, Lowest Cost Simplest Environmental Seal			651A1811	648A1758 (BLK) 648A1779 (RED)
				3 circular holes	Ni-plated Brass	XFT	Black Red	XFT-P-B XFT-P-R	Can be mounted on very thin or weak panels Mounting holes can be made with a hand drill			720A1817	-
1000 amps	Plastic	0.025 → 0.180"	3 circular holes	Ni-plated Copper	XFT	Black Red	XFT-N-B XFT-N-R	Can be mounted on very thin or weak panels Mounting holes can be made with a hand drill		720A1817	639A1830-B (BLK) 639A1830-R (RED)	-	
		0.190 → 0.550" 4,83 → 13,97 mm	1 double-D hole	Ni-plated Copper	BFT	Black Red	BFT-N-B BFT-N-R	Smallest Footprint, Lowest Cost Simplest Environmental Seal		651A1811		648A1758 (BLK) 648A1779 (RED)	
			3 circular holes	Ni-plated Copper	XFT	Black Red	XFT-N-B XFT-N-R	Can be mounted on very thin or weak panels Mounting holes can be made with a hand drill		720A1817		-	
	Metal	0.025 → 0.070"	3 circular holes	Ni-plated Copper	XFT	Black Red	XFT-N-B XFT-N-R	Can be mounted on very thin or weak panels Mounting holes can be made with a hand drill		720A1817			
			0.080 → 0.550" 2,04 → 13,97 mm	1 double-D hole	Ni-plated Copper	BFT	Black Red	BFT-N-B BFT-N-R	Smallest Footprint, Lowest Cost Simplest Environmental Seal			651A1811	648A1758 (BLK) 648A1779 (RED)
				3 circular holes	Ni-plated Copper	XFT	Black Red	XFT-N-B XFT-N-R	Can be mounted on very thin or weak panels Mounting holes can be made with a hand drill			720A1817	-

Dimensions & Specifications

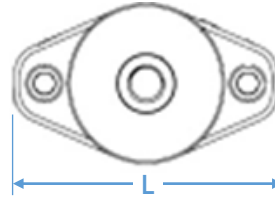
**100 amp
TFT**



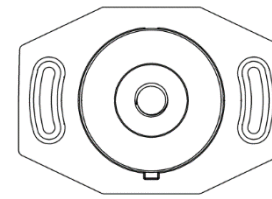
**250 amp
LFT**



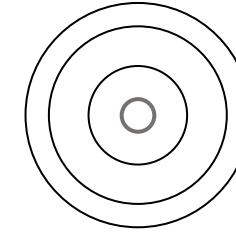
**250 amp
SFT & 500 amp
MFT**



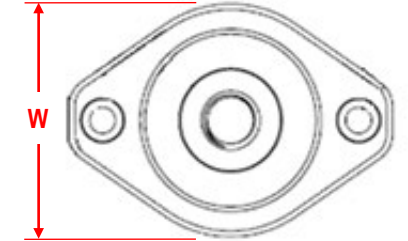
**250 or 500 amp
Top Seal**



**750 or 1,000 amp
BFT**



**750 or 1,000 amp
XFT**

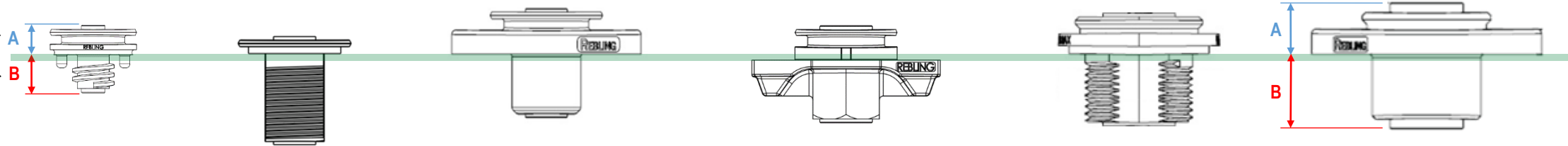


Distance from the external panel surface to the terminal's external contact surface

A

Distance from the external panel surface to the terminal's internal contact surface

B



Parameter	TFT	LFT	SFT	MFT	Top Seal	BFT	XFT
Rated Current (amps)	100	250	250	500	250 or 500	750 or 1,000	750 or 1,000
Peak Current (amps)	600	1,500	1,500	3,000	1,500 or 3,000	4,000 or 5,000	4,000 or 5,000
Electrical Connection Bolt Size	M5 or 10-32	M8	M8 or 5/16	M8 or 5/16	M8	5/16	M10 or 3/8
Dia of Terminal's Conductor	0.28" (7.1mm)	0.50" (12.7mm)	0.50" (12.7mm)	0.69" (17.5mm)	0.50" (12.7mm) or 0.69" (17.5mm)	0.88" (22.2mm)	0.88" (22.2mm)
"W" Dimension	1.03" (26.2mm)	1.34" (34.0mm)	1.34" (34.0mm)	1.34" (34.0mm)	1.74" (44.2mm)	1.96" (49.8mm)	1.95" (49.5mm)
"L" Dimension	1.03" (26.2mm)	1.34" (34.0mm)	2.25" (57.2mm)	2.25" (57.2mm)	2.47" (62.7mm)	1.96" (49.8mm)	2.75" (69.9mm)
"A" Dimension w No gasket	0.35" (8.9mm)	0.20" (5.1mm)	0.53" (13.5mm)	0.53" (13.5mm)	0.45" (11.4mm) – Panel Thickness	0.49" (12.5mm)	0.54" (13.7mm)
"B" Dimension w No gasket	0.46" (11.7mm)	1.07" (27.2mm)	0.74" (18.8mm)	0.74" (18.8mm)	0.82" (20.8mm) + Panel Thickness	0.86" (21.8mm)	0.95" (24.1mm)
"A" Dimension with gasket	0.35" (8.9mm)	0.28" (7.1mm)	0.61" (15.5mm)	0.61" (15.5mm)	0.45" (11.4mm) – Panel – Gasket(s)	0.57" (14.5mm)	0.62" (15.7mm)
"B" Dimension with gasket	0.46" (11.7mm)	0.99" (25.1mm)	0.66" (16.8mm)	0.66" (16.8mm)	0.82" (20.8mm) + Panel + Gasket(s)	0.78" (19.8mm)	0.87" (22.1mm)
IP Rating w Gasket or O-ring	IP68-watertight	IP68-watertight	IP68-watertight	IP68-watertight	IP68-watertight	IP68-watertight	IP68-watertight
Recommended Panel Material	Metal or Plastic	Metal	Metal or Plastic	Metal or Plastic	Metal or Plastic	Metal	Metal or Plastic
Min Panel Thickness	0.025" (0.6mm)	0.11" (2.8mm)	0.025" (0.6mm)	0.025" (0.6mm)	0.040" (1.0mm)	0.080" (2.1mm)	0.025" (0.6mm)
Max Panel Thickness	0.157" (4.0mm)	0.70" (17.8mm)	0.55" (14.0mm)	0.55" (14.0mm)	0.185" (4.7mm)	0.50" (12.7mm)	0.70" (17.8mm)
Panel Mounting Method	Panel Nut	Panel Nut	Panel Screws	Panel Screws	Flat Head Sheet Metal Screws	Panel Nut	Panel Screws
UL94 Flammability	V-0	5VA	V-0	V-0	V-0	5VA	V-0

Cable and Terminal Selection Guidelines						courtesy of Rebling.com				March 20, 2023			
Product Category	Industry Standard or Test Results	Product			Tool Required for Mating & Un-mating	Cross Sectional Area of Conductor mm ²	30° C Rise	60° Touch	45° C Rise	77° Brewed	60° C Rise	85° Touch	90° C Rise
						55° total		70° total		85° total	100° Boiling	115° total	
Connector	Test Results	Rebling	BFT or XFT	1,000 amp rating with one 380 mm ² cable per terminal	Wrench	390	1,020						
Connector	Test Results	Rebling	BFT or XFT	750 amp rating with one 380 mm ² cable per terminal	Wrench	390	900						
Connector	Test Results	Rebling	MFT or Top Seal	500 amp rating with one 230 mm ² cable per terminal	Wrench	240	520						
Connector	Test Results	Rebling	LFT, SFT, Top Seal	250 amp rating with one 105 mm ² cable per terminal	Wrench	130	280						
Connector	Test Results	Anderson	SB350	with one 105 mm ² cable per terminal	None	130	280						
Connector	Test Results	Rebling	7010+7020	with one 105 mm ² cable per terminal	None	75	270						
Connector	Test Results	Rebling	TFT	100 amp rating with one 32 mm ² cable per terminal	Wrench	40	115						
Cable	Test Results	750 MCM	Cable	7,600 strands of 30 gauge wire		380	1,010						
Cable	Test Results	450 MCM	Cable	4,500 strands of 30 gauge wire		230	550						
Cable	Test Results	250 MCM	Cable	2,500 strands of 30 gauge wire		130	360						
Cable	Test Results	4/0	Cable	2,060 strands of 30 gauge wire		105	290						
Cable	Test Results	3/0	Cable	1,590 strands of 30 gauge wire		80	260						
Cable	Test Results	2/0	Cable	1,280 strands of 30 gauge wire		65	240						
Cable	Test Results	1/0	Cable	1,000 strands of 30 gauge wire		50	230						
Cable	Test Results	2 AWG	Cable	625 strands of 30 gauge wire		32	120						
Cable	Test Results	4 AWG	Cable	375 strands of 30 gauge wire		19	90						
Cable	Test Results	6 AWG	Cable	260 strands of 30 gauge wire		13	80						
Cable	Test Results	8 AWG	Cable	160 strands of 30 gauge wire		8.1	75						
Cable	Test Results	10 AWG	Cable	105 strands of 30 gauge wire		5.3	50						
Cable	Test Results	12 AWG	Cable	65 strands of 30 gauge wire		3.3	35						
Cable	Test Results	14 AWG	Cable	40 strands of 30 gauge wire		2.0	20						
Cable	NEC/UL Std	4/0	Cable	2,060 strands of 30 gauge wire		105	195						
Cable	NEC/UL Std	2/0	Cable	1,280 strands of 30 gauge wire		65	145						
Cable	NEC/UL Std	1/0	Cable	1,000 strands of 30 gauge wire		50	125						
Cable	NEC/UL Std	2 AWG	Cable	625 strands of 30 gauge wire		32	95						
Cable	NEC/UL Std	6 AWG	Cable	260 strands of 30 gauge wire		13	55						

Cable and Connector Selection Guidelines: The cross sectional areas of the terminal and the cable attached to the terminal should be the same. Attaching a small cable to a large terminal is like attaching a 1 inch pipe to a 4 inch fitting, the size of the cable will limit the system's electrical and thermal performance, not the terminal. To select the optimal connector, follow the steps below:

Step 1: determine the temperature rise your equipment design can tolerate. The higher the temperature rise your equipment can tolerate, the lower the cost of cable and connectors.

Step 2: determine if your equipment needs to comply with UL, NEC, IEC or other standards

Step 3: determine the steady state current which your equipment must handle. If there are frequent or extended peaks of higher currents, use these peaks to estimate an average steady state current.

Step 4: select the smallest cable which can carry your steady state current which does not exceed the temperature rise you can tolerate and which conforms to the standard with which you wish to comply.

Step 5: determine if your equipment needs a separable electrical connection. Separable connections are more expensive and less reliable than permanent (soldered or welded) connections.

Step 6: determine if it is acceptable to use a tool to un-mate your electrical connection. Tool-less connectors are more expensive and less reliable than connectors which require tools but might be justifiable if: frequent un-matings occur, the installer is unskilled, a 20 second reduction in maintenance time is critical or lowered assembly labor costs offset the increased cost of the tool-less connector.

Step 7: select the lowest cost connector which: does not exceed the temperature rise your equipment can tolerate at your steady state current and meets your un-mating tool requirements.

Temperature Rise Values: the NEC (National Electrical Code) values are NEC's recommendations for typical thermoplastic insulated cables enclosed in a conduit which are close to other cables. UL has adopted NEC's 45° C rise values as their recommendations for current levels per cable size in UL 98. The values labeled "Test Results" were obtained from current vs temperature rise testing of individual cables and connectors suspended in air inside an 18" x 18" x 18" test chamber. Lithium battery system designers usually select components which keep the temperature rise to a maximum of 30° C due the sensitivity of lithium cells. It is wise to compare connectors based upon temperature rise test results since the rated currents and total allowable temperatures defined by standards like UL1977 and IEC 61984 can vary by a factor of 2.5. The current vs temperature rise characteristics of your application may be significantly different than the assumptions used in NEC, UL or IEC standards.

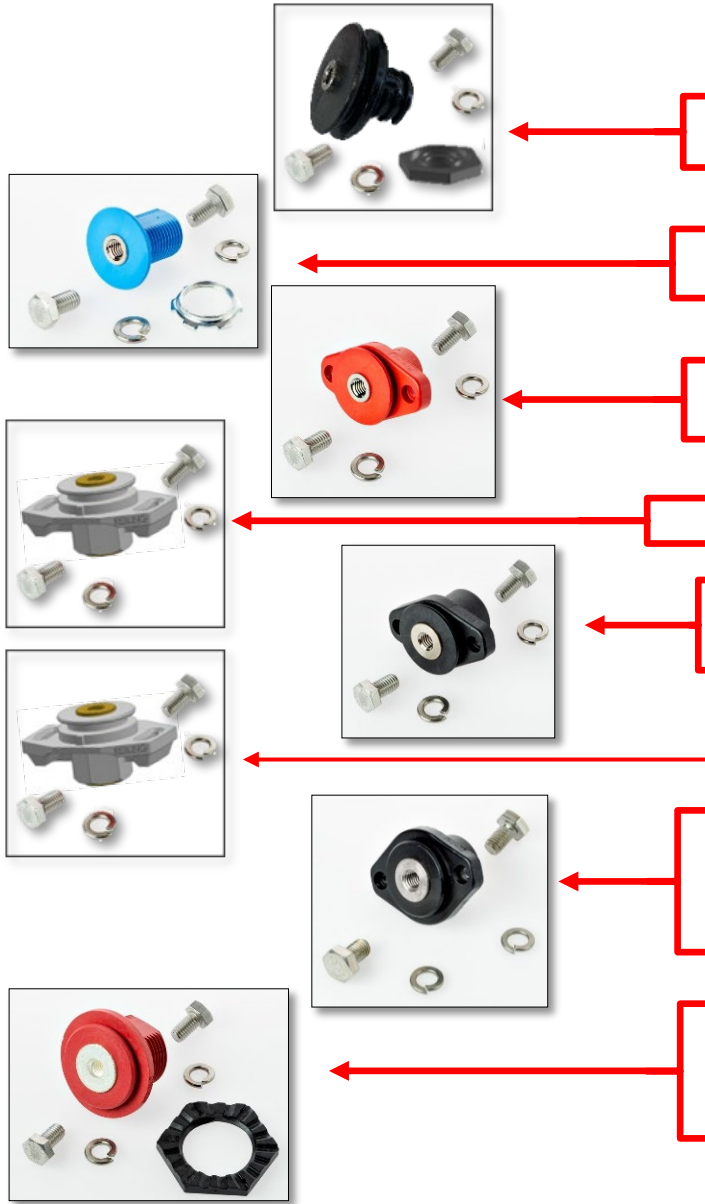
Touch Safe Temperatures: IEC/UL 60950-1 defines the maximum allowable temperature for 3 seconds of contact between a metal component and the human body as 60° C; for plastic it's 85° C.

Cross Sectional Area of Conductor: the cross sectional areas of the stranded cables shown above were calculated using the diameter of one 30 gauge wire = 0.01000 inches



Feed-through Terminals

Covers and Gaskets can be found on the Accessories Page



P/N	Description
TFT-P-B TFT-P-R TFT-P-E	100 amp Lithium Battery Terminal, Brass, Nickel plated w M5 bolts (Black, Red, Blue)
LFT-P-B LFT-P-R LFT-P-E	250 amp Lithium Battery Terminal, Brass, Nickel plated w M8 bolts (Black, Red, Blue)
SFT-P-B SFT-P-R SFT-P-E	250 amp Lithium Battery Terminal, Brass, Nickel plated w M8 bolts (Black, Red, Blue)
Top250-P-R Top250-P-B	250 amp Lithium Battery Terminal, Brass, Nickel plated w M8 bolts (Black, Red)
MFT-P-B MFT-P-R MFT-P-E	500 amp Lithium Battery Terminal, Brass, Nickel plated w M8 bolts (Black, Red, Blue)
Top500-P-R Top500-P-B	500 amp Lithium Battery Terminal, Brass, Nickel plated w M8 bolts (Black, Red)
XFT-P-B XFT-P-R	750 amp Lithium Battery Terminal, Brass, Nickel plated w M10 bolts (Black or Red)
XFT-N-B XFT-N-R	1000 amp Lithium Battery Terminal, Copper, Nickel plated w M10 bolts (Black or Red)
BFT-P-B BFT-P-R	750 amp Lithium Battery Terminal, Brass, Nickel plated w 5/16 bolts (Black or Red)
BFT-N-B BFT-N-R	1,000 amp Lithium Battery Terminal, Copper, Nickel plated w 5/16 bolts (Black or Red)

Pricing and Delivery
 please contact these
 Authorized Distributors

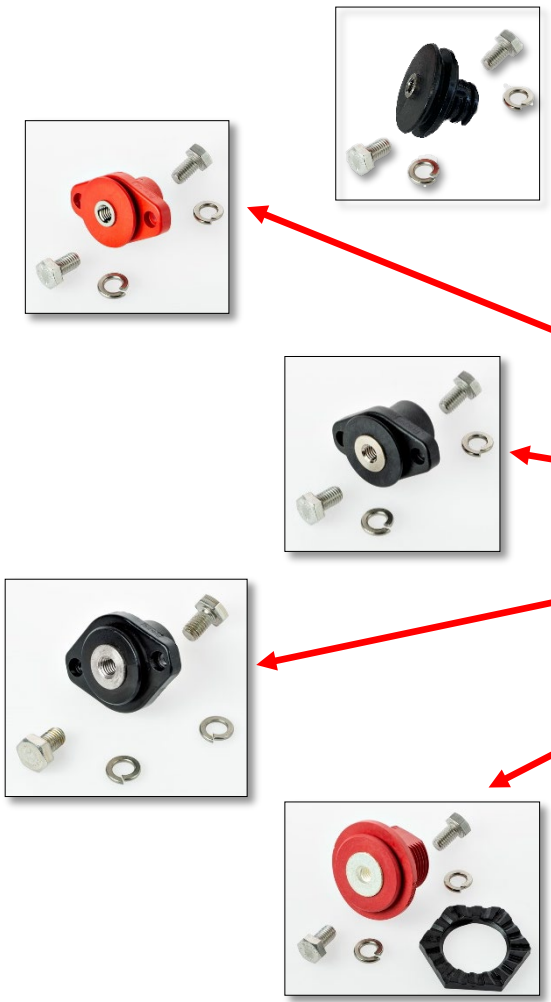
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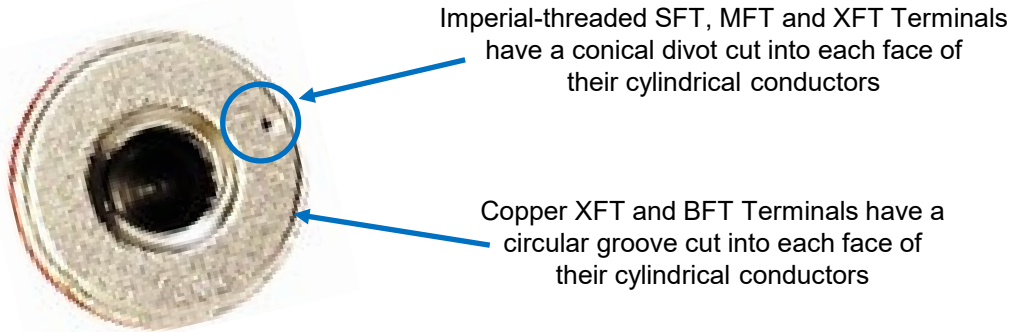
Imperial-threaded Feed-through Terminals

Imperial-threaded fasteners have been the standard on military and civilian aircraft worldwide for over 100 years
 These Terminals are used on Avionics Power Distribution Panels, Power Conditioning Modules, UAVs and EV Passenger Planes

Imperial-threaded Terminals have the same Performance Characteristics and accept the same Covers and Gaskets as their metric-threaded equivalents



P/N	Description	Pricing
TFT-P-B-070 TFT-P-R-070 TFT-P-E-070	250 amp Lithium Battery Terminal, Brass, Nickel plated w 5/16 bolts (Black, Red, Blue)	<p>Pricing and Delivery</p> <p>Imperial-threaded Terminals are available Worldwide exclusively through Rebling's Authorized Distributor</p> <p>Flame Enterprises at FlameCorp.com</p>
SFT-P-B-516 SFT-P-R-516 SFT-P-E-516	250 amp Lithium Battery Terminal, Brass, Nickel plated w 5/16 bolts (Black, Red, Blue)	
MFT-P-B-516 MFT-P-R-516	500 amp Lithium Battery Terminal, Brass, Nickel plated w 5/16 bolts (Black or Red)	
XFT-N-B-38 XFT-N-R-38	1000 amp Lithium Battery Terminal, Copper, Nickel plated w 3/8 bolts (Black or Red)	
BFT-P-B BFT-P-R	750 amp Lithium Battery Terminal, Brass, Nickel plated w 5/16 bolts (Black or Red)	
BFT-N-B BFT-N-R	1,000 amp Lithium Battery Terminal, Copper, Nickel plated w 5/16 bolts (Black or Red)	



Imperial-threaded SFT, MFT and XFT Terminals have a conical divot cut into each face of their cylindrical conductors

Copper XFT and BFT Terminals have a circular groove cut into each face of their cylindrical conductors

Fixed-Orientation Terminals

Some applications, especially automotive, require that a cable be attached to a terminal in a specific orientation. This terminal has orientation ridges that allow a cable lug to only be attached to the terminal perpendicular to the centerline of the mounting holes. A Fixed-orientation Terminal assures that a complex automotive cable harness, which might be 12 feet in length and have 20 different power and signal connectors attached, can only be installed on the vehicle in one of two orientations. See datasheets for orientation ridge dimensions.

Fixed-Orientation TFT & SFT Terminals have the same Performance Characteristics and accept the same Flexible Covers and Gaskets as their Standard Terminal Counterparts



P/N	Description	Pricing
TFT-P-B-070	100 amp Fixed-orientation Terminal, Brass, Nickel plated w M5 Bolts, Black	<p style="color: red; text-align: center;">Please contact these Authorized Distributors</p> <p style="text-align: center;">Flame Enterprises FlameCorp.com</p>
TFT-P-R-070	100 amp Fixed-orientation Terminal, Brass, Nickel plated w M5 Bolts, Red	
TFT-P-E-070	100 amp Fixed-orientation Terminal, Brass, Nickel plated w M5 Bolts, Blue	
SFT-P-B-087	250 amp Fixed-orientation Terminal, Brass, Nickel plated w M8 Bolts, Black	
SFT-P-R-087	250 amp Fixed-orientation Terminal, Brass, Nickel plated w M8 Bolts, Red	
SFT-P-E-087	250 amp Fixed-orientation Terminal, Brass, Nickel plated w M8 Bolts, Blue	



Available Sept 2023

Top Seal Terminal

The 250 and 500 amp **Top Seal Terminals** use the same nickel-plated brass conductor, accept the same rigid and flexible covers and have the same performance characteristics as Rebling's 250 amp SFT and 500 amp MFT feed-through terminals. They are intended for lithium battery OEMs which are packaging their cell packs inside molded plastic or aluminum cases that are 1 to 20 times the size of an automotive starter battery.

The Top Seal Terminal enables the OEM to attach the terminal to the lithium cell pack first, place the cell pack into the battery case, place the lid onto the battery case (allowing the terminals to poke through clearance holes in the lid), attach the lid to the terminals with flat-head sheet metal screws then screw, glue or weld the battery lid to the battery case.

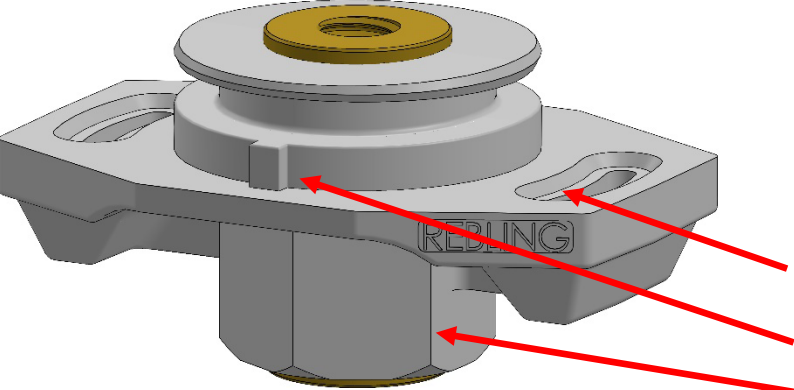
The Top Seal Terminal reduces the amount of labor and eliminates two cables which the OEM previously used to attach the terminals (already attached to the battery lid) to the cell pack (already inside the battery case). The Top Seal is intended for OEMs which are graduating from producing hundreds of batteries per year to tens of thousands or hundreds of thousands per year.

Includes an "Arc of Forgiveness" feature, allowing the terminal to be mis-rotated by 30 degrees (+ or - 15°) and still align the terminal's pilot hole slot with the flat-head screw mounting holes in the battery lid. OEMs wishing to take advantage of the Arc of Forgiveness need to cut their battery lid's mounting hole pattern to allow the "Orientation Key" to rotate through an arc.

Includes an "Orientation Key" that stands proud of the centering collar, allowing high precision OEMs to better align the terminal.

Includes a hex section to facilitate tightening the terminal to the cell pack's bus bar/ bus plate.

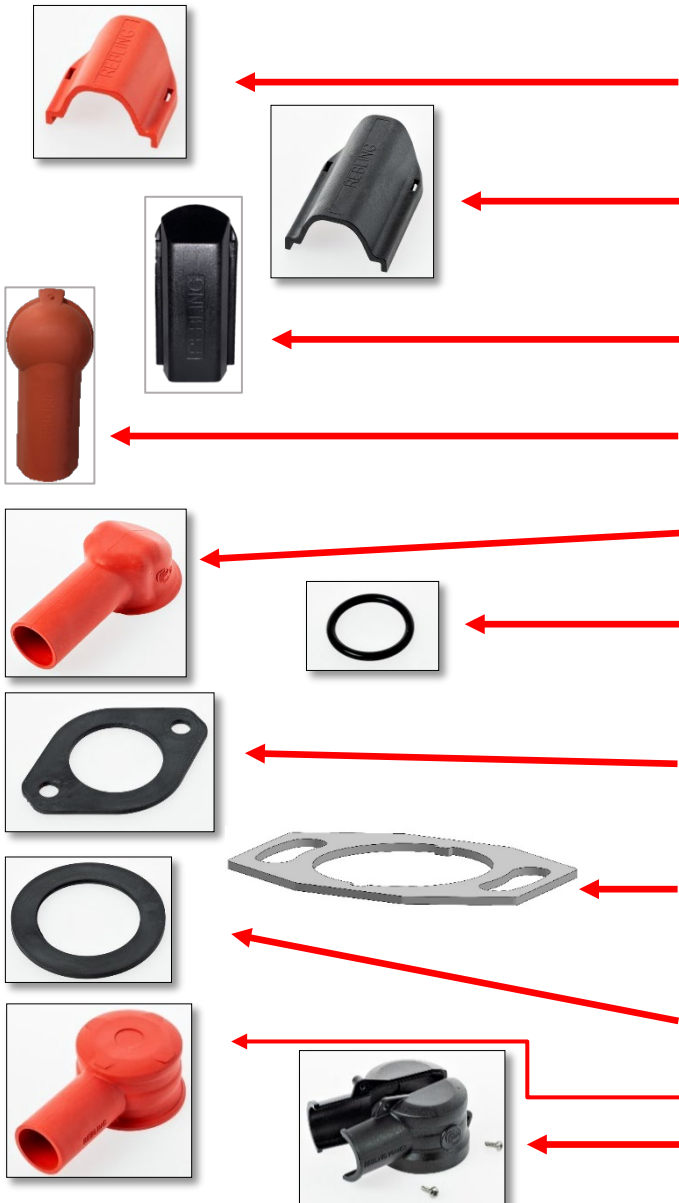
The optional 0.060" (1.5mm) thick gasket is placed on top of the terminal's flange to seal between the battery lid and the terminal. Up to 3 gaskets can be stacked to achieve the terminal-to-lid dimension desired by the OEM.



P/N	Description	Pricing
Top250-P-B	250 amp Top Seal Terminal Kit, Brass, Nickel plated w M8 Bolts, Black	<p>Please contact these Authorized Distributors</p> <p>Flame Enterprises FlameCorp.com</p>
Top250-P-R	250 amp Top Seal Terminal Kit, Brass, Nickel plated w M8 Bolts, Red	
Top500-P-B	500 amp Top Seal Terminal Kit, Brass, Nickel plated w M8 Bolts, Black	
Top500-P-R	500 amp Top Seal Terminal Kit, Brass, Nickel plated w M8 Bolts, Red	
821A1951	Gasket for 250 amp & 500 amp Top Seal Terminal	

Accessories for Feed-through Terminals

The Accessories shown below fit all Metric-threaded and Imperial-threaded Terminals



P/N	Description
698A1789-S-B 698A1789-S-R 698A1789-S-E	Short Rigid Cover for LFT, SFT, MFT or Top Seal terminals (1.44" OAL) (Black, Red or Blue)
698A1789-L-B 698A1789-L-R 698A1789-L-E	Long Rigid Cover for LFT, SFT, MFT or Top Seal terminals (2.23" OAL) (Black, Red or Blue)
814A1926-B 814A1926-R 814A1926-E	Rigid Cover for TFT terminal (Black, Red or Blue)
815A1927-B 815A1927-R 815A1927-E	Flexible Cover for TFT terminal (Black, Red or Blue)
713A1806-B 713A1806-R 713A1806-E	Flexible Cover for LFT, SFT, MFT or Top Seal terminals (3.70" OAL, 0.82" ID) (Black, Red or Blue)
812A1925	O-Ring for TFT terminal
700A1799	O-Ring for LFT terminal
716A1814	Gasket for SFT terminal
716A1815	Gasket for MFT terminal
821A1951	Gasket for 250 or 500 amp Top Seal Terminals
720A1817	Gasket for XFT terminal
651A1811	Gasket for BFT terminal, 1.95" OD
639A1830-B 639A1830-R	Flexible Cover for BFT or XFT terminals (3.50" OAL, 0.82" ID) (Black or Red)
648A1758 (Black) 648A1779 (Red)	Rigid, 2 piece, Outer Cover for BFT terminal (3.85" OAL, 1.05" ID) (Black or Red)

Pricing and Delivery
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Distributors

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FlameCorp.com

Rebling Datasheet: 100 amp TFT-style Feed-through Terminal

Our TFT-style terminal provides 100 amp continuous current performance, can be mounted to metal or plastic panels from 0.03" to 0.16" (0.6 to 4.0 mm) thick, it exhibits the same 2,000 volt rating and water-tight properties as the other members of our feed-through terminal family. The TFT's innovative design eliminates the need for auxiliary panel-mounting hardware and accepts optional rigid and flexible covers. Equipping your smaller lithium battery modules or power conditioning modules with the TFT enables your product to fit into the tight spaces allocated by your end users.

Electrical

Current each current profile causes a max 30° C temperature rise when tested per IEC 61984

Current Profile #1	Continuous Rated Current (CRC)	-----	100 amps
Current Profile #2	50% CRC for 60min + 1 sec peak + 50% CRC for 60 min		600 amps
Current Profile #3	50% CRC for 60min + 10 sec peak + 50% CRC for 60 min	-----	400 amps
Current Profile #4	50% CRC for 60min + 30 sec peak + 50% CRC for 60 min		300 amps
Current Profile #5	50% CRC for 60min + 60 sec peak + 50% CRC for 60 min	-----	200 amps

Voltage & Resistance

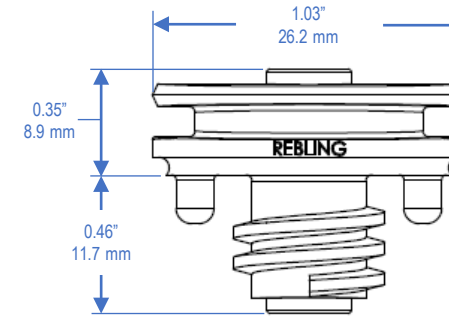
Continuous Rated Voltage	UL1977 Section 17	2,000 volts
Minimum Dielectric Withstanding Voltage	UL1977 Section 17	5,000 volts
Insulation Resistance	MIL-PRF-18148D Section 3.12.6	500 mega-ohms
Maximum Contact Resistance	MIL-STD-202H Method 307	150 micro-ohms

Mechanical & Environmental

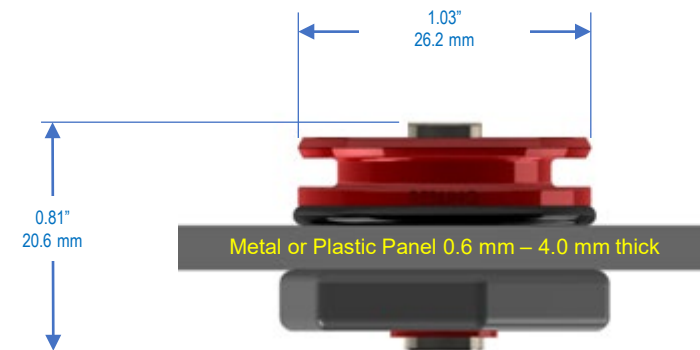
Flammability Rating:	Terminal and Covers	-----	UL 94	V-0
Environmental Sealing:	with Optional O-ring	-----	IEC 60529	IP68+ watertight
	without Optional O-ring		IEC 60529	IP65
Operating Temperature:	Terminal and Rigid Cover	-----		-40 to +125 C
	Flexible Cover			-40 to +90 C
Mechanical Shock		MIL-STD-202H Method 213 Condition A		50 Gs – 3 axes
Vibration		MIL-STD-202H Method 204 Condition A		10 Gs – 3 axes
Panel Thickness Required for Mounting –	Minimum	-----		0.025" (0.6 mm)
	Maximum			0.157" (4.0 mm)
Maximum Wire Size:	Terminal Only	-----		1 AWG (40 mm ²)
	with Rigid or Flexible Snap-On Cover			2 AWG (32 mm ²)

Compliance & Conformance

RoHS, REACH, CMRT/3TG	All parts listed on this datasheet are RoHS, REACH and CMRT/3TG Compliant
UL and CE Conformance	Declarations of UL and CE Conformity can be downloaded from Rebling.com



0.28" (7.1 mm) diameter nickel-plated brass conductor with two M5-0.8 tapped blind holes



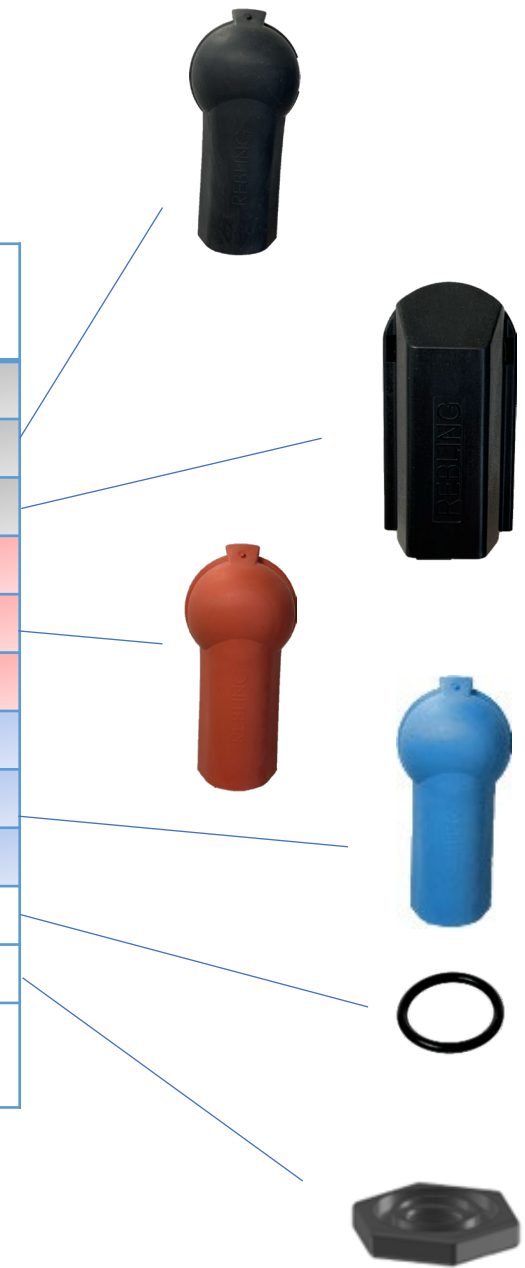
For complete dimensions, download 3D Step files of Terminal and Accessories at Rebling.com

Rebling Datasheet: 100 amp TFT-style Feed-through Terminal



P/N	Description	Plastic Color	Weight (Grams)	Min Thick (mm)	UL 94 Rating	UL Material Yellow Card # **
TFT-P-B	Terminal Kit*, Brass, Nickel plated	Black	17	1.5	V-0	E121562-220886
815A1927-B	Flexible Cover	Black	6	1.5	V-0	E121562-220886
814A1926-B	Rigid Cover	Black	7	1.5	V-0	E121562-220886
TFT-P-R	Terminal Kit*, Brass, Nickel plated	Red	17	1.5	V-0	E121562-220886
815A1927-R	Flexible Cover	Red	6	1.5	V-0	E121562-220886
814A1926-R	Rigid Cover	Red	7	1.5	V-0	E121562-220886
TFT-P-E	Terminal Kit*, Brass, Nickel plated	Blue	17	1.5	V-0	E121562-220886
815A1927-E	Flexible Cover	Blue	6	1.5	V-0	E121562-220886
814A1926-E	Rigid Cover	Blue	7	1.5	V-0	E121562-220886
812A1925	O-Ring for TFT Terminal	Black	0.2	1.5	V-0	Material = EPDM
813A1930	Panel Nut	Black	4	1.5	V-0	E121562-220886

*Terminal Kit = one Terminal + one Panel Nut + two Bolts + two Split Washers, all parts in a small poly bag
 **UL Material Yellow Cards can be downloaded from ULprospector.com



Mounting and Assembly

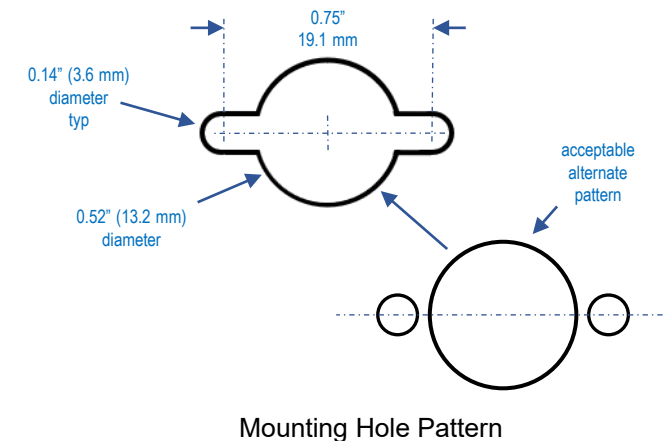
Panel Thickness - Minimum	0.025" (0.6 mm)	
Maximum	0.157" (4.0 mm)	
Torque on M5 Bolts:		
Recommended	15 in-lbs (1.7 Nm)	electrical performance does not get better or worse above 15 in-lbs (1.7 Nm)
Maximum Recommended	25 in-lbs (2.8 Nm)	a Grade 4, M5 stainless bolt will snap at 50 in-lbs (5.6 Nm),
Torque on Panel Nut (with or without O-Ring):		
Recommended	15 in-lbs (1.7 Nm)	all datasheet parameters were tested at this torque level
Maximum Recommended	25 in-lbs (2.8 Nm)	the panel nut will begin to deform at 40 in-lbs (4.5 Nm)
Maximum Crimp Lug Tongue Width:		
with Flexible Cover	0.90" (23 mm)	
with Rigid Cover	0.80" (20 mm)	



Application Notes

- Watertight is superior to IP68: Rebling terminals are completely watertight to a depth of 20 meters which is superior to any IP Rating. The definitions of IP67, IP68 and IP69k per IEC 60529 state that "water may penetrate the seal but shall do no harm", a condition that is unacceptable to lithium battery designers.
- Panel Nut Wrench: the hexagonal panel nut can be tightened using either a 27mm or 1 1/16" socket wrench.
- Minimum Separation between Adjacent Terminals: the minimum centerline to centerline distance between the mounting holes of adjacent TFT terminals is 1.36" (34.6mm). This is based upon the maximum outside dimension of the panel nut or flexible cover (1.22"), the outside diameter of a 27mm socket (1.42") and a reasonable clearance margin (0.040"). This separation distance is based upon the TFT's geometry and is not a requirement for any performance parameter.
- Recommended crimp lug P/Ns:

Mfg	2 AWG (32 mm ²)	4 AWG (19 mm ²)	6 AWG (13 mm ²)	8 AWG (8 mm ²)	10 AWG (5 mm ²)	12 AWG (3 mm ²)	14 AWG (2 mm ²)
TE	330301	33114	52197	31807	130191	130191	130106
T&B	G926	F10261	E10261	D10361	K10-10R		K14-10R
Panduit	P2-10R	P4-10R	P6-10R	P8-10R	P10-10R	P14-10R	
Burndy	----	YAD4CM5E10	YAD6CM5E10	YAD8CM5E10	YAV10H	YAV14H	



O-Ring Application Tool

To apply an O-Ring to the ultra-compact TFT Terminal:

1. Download the application tool's step file from our website then print the tool on a 3D printer
2. Place the tool onto the pins of the TFT terminal
3. Roll the O-Ring down the tool and into the O-Ring groove



REBLING About Us Electrical Connectors Custom Molding Molded Std Parts Admin

Lithium Battery Terminals

Wherever you find a battery module larger than a loaf of bread, you will find Rebling's terminals. Equipping your design with these watertight, single-pole, wrench disconnect battery terminals will enable system integrators to easily incorporate your power modules into the MicroGrid, Reserve Power, Vehicle Electrification or APU systems the end-user requires, regardless of battery chemistry. Whether you are coupling battery modules in series for a stationary power application, a liquid-cooled motive power system, a single SLI module, a telecom or data center reserve power system or simply bringing DC power from the inside to the outside of a panel, our terminals, covers and accessories are designed with your application in mind. Rebling Feed-throughs are the lowest cost terminals for 100 Ah to 10 kWh lithium batteries.

Resources

- Overview PDF of all Terminals
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- CE Approval Procedure

Lithium Battery Terminals Video

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Brainstorm with an engineer who's designed these terminals into 200 lithium battery applications

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Authorized Distributors

100 amp TFT-style Lithium Battery Terminal

Our TFT terminal (without mounting ears) which will be available in Red, Black, and Blue in Q4 2022. This 100 amp terminal will be available with or without Fixed-Orientation Ridges, can accommodate 8 AWG to 2 AWG (6 mm² to 34 mm²) cables, and will have snap-on flexible and rigid covers. Unlike our SFT style Terminal, the TFT-style Terminal does not require panel mounting screws, because it has molded-in

STP File Download

Terminal Covers, O-Rings, Tools, & Gaskets:

TFT MFT

LFT BFT

SFT XFT

DOWNLOAD STP FILES

Rebling Datasheet: 100 amp TFT-style Imperial Feed-through Terminal

Our Imperial TFT-style terminal has performance characteristics identical to our Metric-threaded TFT-style terminal but is specifically designed for applications which require Imperial Threads. The Imperial TFT-style terminal provides 100 amp continuous current performance, can be mounted to metal or plastic panels from 0.03" to 0.16" (0.6 to 4.0 mm) thick, it exhibits the same 2,000 volt rating and water-tight properties as the other members of our feed-through terminal family. The TFT's innovative design eliminates the need for auxiliary panel-mounting hardware and accepts optional rigid and flexible covers. Equipping your smaller lithium battery modules or power conditioning modules with the TFT enables your product to fit into the tight spaces allocated by your end users.

Electrical

Current each current profile causes a max 30° C temperature rise when tested per IEC 61984

Current Profile #1	Continuous Rated Current (CRC)	-----	100 amps
Current Profile #2	50% CRC for 60min + 1 sec peak + 50% CRC for 60 min		600 amps
Current Profile #3	50% CRC for 60min + 10 sec peak + 50% CRC for 60 min	-----	400 amps
Current Profile #4	50% CRC for 60min + 30 sec peak + 50% CRC for 60 min		300 amps
Current Profile #5	50% CRC for 60min + 60 sec peak + 50% CRC for 60 min	-----	200 amps

Voltage & Resistance

Continuous Rated Voltage	UL1977 Section 17	2,000 volts
Minimum Dielectric Withstanding Voltage	UL1977 Section 17	5,000 volts
Insulation Resistance	MIL-PRF-18148D Section 3.12.6	500 mega-ohms
Maximum Contact Resistance	MIL-STD-202H Method 307	150 micro-ohms

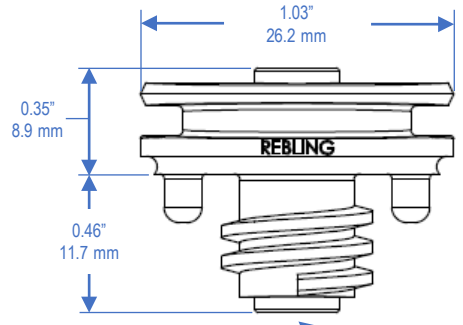
Mechanical & Environmental

Flammability Rating: Terminal and Covers	-----	UL 94	V-0
Environmental Sealing: with Optional O-ring	-----	IEC 60529	IP68+ watertight
Environmental Sealing: without Optional O-ring		IEC 60529	IP65
Operating Temperature: Terminal and Rigid Cover	-----		-40 to +125 C
Operating Temperature: Flexible Cover			-40 to +90 C
Mechanical Shock	MIL-STD-202H Method 213 Condition A		50 Gs – 3 axes
Vibration	MIL-STD-202H Method 204 Condition A		10 Gs – 3 axes
Panel Thickness Required for Mounting – Minimum	-----		0.025" (0.6 mm)
Panel Thickness Required for Mounting – Maximum			0.157" (4.0 mm)
Maximum Wire Size: Terminal Only	-----		1 AWG (40 mm ²)
Maximum Wire Size: with Rigid or Flexible Snap-On Cover			2 AWG (32 mm ²)

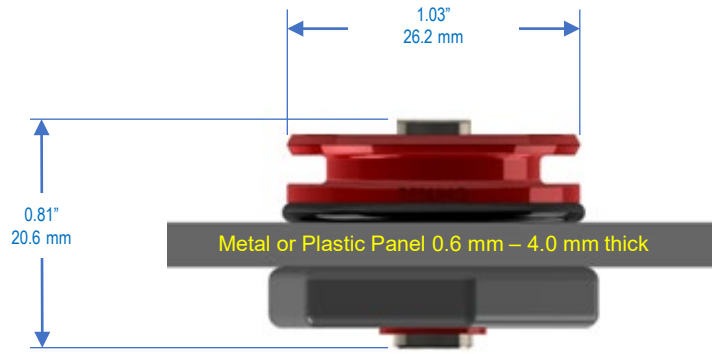
Compliance & Conformance

RoHS, REACH, CMRT/3TG
 UL and CE Conformance

All parts listed on this datasheet are RoHS, REACH and CMRT/3TG Compliant
 Declarations of UL and CE Conformity can be downloaded from Rebling.com



0.28" (7.1 mm) diameter nickel-plated brass conductor with two 10-32 tapped blind holes



For complete dimensions, download 3D Step files of Terminal and Accessories at Rebling.com

Rebling Datasheet: 100 amp TFT-style Imperial Feed-through Terminal



P/N	Description	Plastic Color	Weight (Grams)	Min Thick (mm)	UL 94 Rating	UL Material Yellow Card # **
TFT-P-B-1032	Terminal Kit*, Brass, Nickel plated	Black	17	1.5	V-0	E121562-220886
815A1927-B	Flexible Cover	Black	6	1.5	V-0	E121562-220886
814A1926-B	Rigid Cover	Black	7	1.5	V-0	E121562-220886
TFT-P-R-1032	Terminal Kit*, Brass, Nickel plated	Red	17	1.5	V-0	E121562-220886
815A1927-R	Flexible Cover	Red	6	1.5	V-0	E121562-220886
814A1926-R	Rigid Cover	Red	7	1.5	V-0	E121562-220886
TFT-P-E-1032	Terminal Kit*, Brass, Nickel plated	Blue	17	1.5	V-0	E121562-220886
815A1927-E	Flexible Cover	Blue	6	1.5	V-0	E121562-220886
814A1926-E	Rigid Cover	Blue	7	1.5	V-0	E121562-220886
812A1925	O-Ring for TFT Terminal	Black	0.2	1.5	V-0	Material = EPDM
813A1930	Panel Nut	Black	4	1.5	V-0	E121562-220886

*Terminal Kit = one Terminal + one Panel Nut + two Bolts + two Split Washers, all parts in a small poly bag
 **UL Material Yellow Cards can be downloaded from ULprospector.com



Rebling Datasheet: 100 amp TFT-style Imperial Feed-through Terminal

Mounting and Assembly

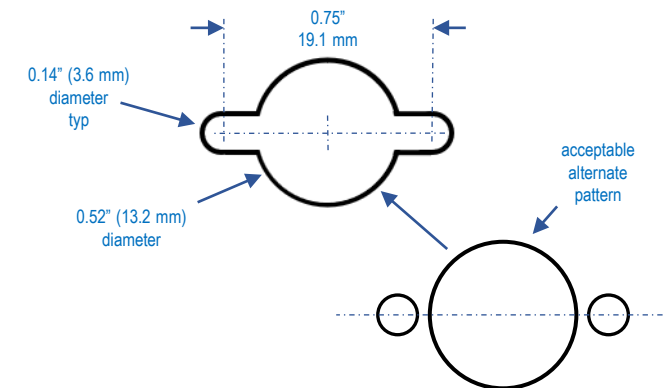
Panel Thickness - Minimum	0.025" (0.6 mm)	
Maximum	0.157" (4.0 mm)	
Torque on 10-32 Bolts:		
Recommended	15 in-lbs (1.7 Nm)	electrical performance does not get better or worse above 15 in-lbs (1.7 Nm)
Maximum Recommended	25 in-lbs (2.8 Nm)	a Grade 4, 10-32 stainless bolt will snap at 50 in-lbs (5.6 Nm)
Torque on Panel Nut With or without O-Ring:		
Recommended	15 in-lbs (1.7 Nm)	all datasheet parameters were tested at this torque level
Maximum Recommended	25 in-lbs (2.8 Nm)	the panel nut will begin to deform at 40 in-lbs (4.5 Nm)
Maximum Crimp Lug Tongue Width:		
with Flexible Cover	0.90" (23 mm)	
with Rigid Cover	0.80" (20 mm)	



Application Notes

- Watertight is superior to IP68:** Rebling terminals are completely watertight to a depth of 20 meters which is superior to any IP Rating. The definitions of IP67, IP68 and IP69k per IEC 60529 state that "water may penetrate the seal but shall do no harm", a condition that is unacceptable to lithium battery designers.
- Panel Nut Wrench:** the hexagonal panel nut can be tightened using either a 27mm or 1 1/16" socket wrench.
- Minimum Separation between Adjacent Terminals:** the minimum centerline to centerline distance between the mounting holes of adjacent TFT terminals is 1.36" (34.6mm). This is based upon the maximum outside dimension of the panel nut or flexible cover (1.22"), the outside diameter of a 27mm socket (1.42") and a reasonable clearance margin (0.040"). This separation distance is based upon the TFT's geometry and is not a requirement for any performance parameter.
- Recommended crimp lug P/Ns:**

Mfg	2 AWG (32 mm ²)	4 AWG (19 mm ²)	6 AWG (13 mm ²)	8 AWG (8 mm ²)	10 AWG (5 mm ²)	12 AWG (3 mm ²)	14 AWG (2 mm ²)
TE	330301	33114	52197	31807	130191	130191	130106
T&B	G926	F10261	E10261	D10361	K10-10R		K14-10R
Panduit	P2-10R	P4-10R	P6-10R	P8-10R	P10-10R	P14-10R	
Burndy	-----	YAD4CM5E10	YAD6CM5E10	YAD8CM5E10	YAV10H	YAV14H	



Mounting Hole Pattern

O-Ring Application Tool

To apply an O-Ring to the ultra-compact TFT Terminal:

1. Download the application tool's step file from our website then print the tool on a 3D printer
2. Place the tool onto the pins of the TFT terminal
3. Roll the O-Ring down the tool and into the O-Ring groove



REBLING About Us Electrical Connectors Custom Molding Molded Std Parts Admin

Lithium Battery Terminals

Wherever you find a battery module larger than a loaf of bread, you will find Rebling's terminals. Equipping your design with these watertight, single-pole, wrench disconnect battery terminals will enable system integrators to easily incorporate your power modules into the MicroGrid, Reserve Power, Vehicle Electrification or APU systems the end-user requires, regardless of battery chemistry. Whether you are coupling battery modules in series for a stationary power application, a liquid-cooled motive power system, a single SLI module, a telecom or data center reserve power system or simply bringing DC power from the inside to the outside of a panel, our terminals, covers and accessories are designed with your application in mind. Rebling feed-throughs are the lowest cost terminals for 100 Ah to 10 kWh lithium batteries.

100 amp TFT-style Lithium Battery Terminal

Our TFT terminal (without mounting ears) which will be available in Red, Black, and Blue in Q4 2022. This 100 amp terminal will be available with or without Fixed-Orientation Ridges, can accommodate 8 AWG to 2 AWG (6 mm² to 34 mm²) cables, and will have snap-on flexible and rigid covers. Unlike our SFT style Terminal, the TFT-style Terminal does not require panel mounting screws, because it has molded-in

Resources

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Terminal Covers, O-Rings, Tools, & Gaskets:

TFT MFT

LFT BFT

SFT XFT

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Rebling Datasheet: 100 amp TFT-style Fixed Orientation Feed-through Terminal

Our TFT-style terminal provides 100 amp continuous current performance, can be mounted to metal or plastic panels from 0.03" to 0.16" (0.6 to 4.0 mm) thick, it exhibits the same 2,000 volt rating and water-tight properties as the other members of our feed-through terminal family. The TFT's innovative design eliminates the need for auxiliary panel-mounting hardware and accepts optional flexible cover. Equipping your smaller lithium battery modules or power conditioning modules with the TFT enables your product to fit into the tight spaces allocated by your end users.

Electrical

Current each current profile causes a max 30° C temperature rise when tested per IEC 61984

Current Profile #1	Continuous Rated Current (CRC)	-----	100 amps
Current Profile #2	50% CRC for 60min + 1 sec peak + 50% CRC for 60 min		600 amps
Current Profile #3	50% CRC for 60min + 10 sec peak + 50% CRC for 60 min	-----	400 amps
Current Profile #4	50% CRC for 60min + 30 sec peak + 50% CRC for 60 min		300 amps
Current Profile #5	50% CRC for 60min + 60 sec peak + 50% CRC for 60 min	-----	200 amps

Voltage & Resistance

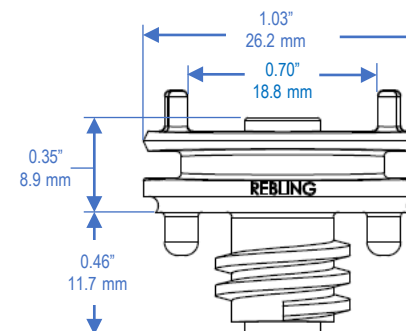
Continuous Rated Voltage	UL1977 Section 17	2,000 volts
Minimum Dielectric Withstanding Voltage	UL1977 Section 17	5,000 volts
Insulation Resistance	MIL-PRF-18148D Section 3.12.6	500 mega-ohms
Maximum Contact Resistance	MIL-STD-202H Method 307	150 micro-ohms

Mechanical & Environmental

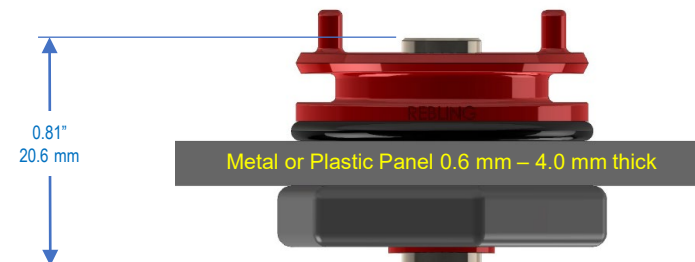
Flammability Rating:	Terminal and Covers	-----	UL 94	V-0
Environmental Sealing:	with Optional O-ring	-----	IEC 60529	IP68+ watertight
	without Optional O-ring		IEC 60529	IP65
Operating Temperature:	Terminal	-----		-40 to +125 C
	Flexible Cover			-40 to +90 C
Mechanical Shock		MIL-STD-202H Method 213 Condition A		50 Gs – 3 axes
Vibration		MIL-STD-202H Method 204 Condition A		10 Gs – 3 axes
Panel Thickness Required for Mounting –	Minimum	-----		0.025" (0.6 mm)
	Maximum			0.157" (4.0 mm)
Maximum Wire Size:	Terminal Only	-----		1 AWG (40 mm ²)
	with Flexible Snap-On Cover			2 AWG (32 mm ²)

Compliance & Conformance

RoHS, REACH, CMRT/3TG	All parts listed on this datasheet are RoHS, REACH and CMRT/3TG Compliant Declarations of UL and CE Conformity can be downloaded from Rebling.com
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0.28" (7.1 mm) diameter nickel-plated brass conductor with two M5-0.8 tapped blind holes

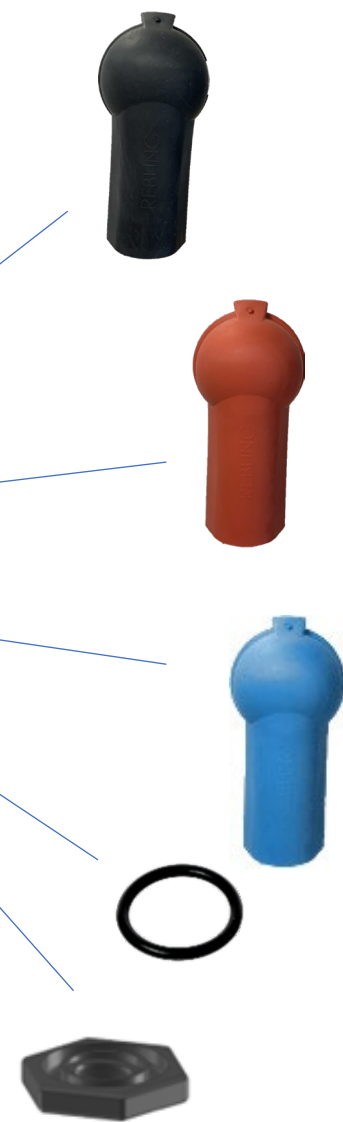


For complete dimensions, download 3D Step files of Terminal and Accessories at Rebling.com

Rebling Datasheet: 100 amp TFT-style Fixed Orientation Feed-through Terminal



P/N	Description	Plastic Color	Weight (Grams)	Min Thick (mm)	UL 94 Rating	UL Material Yellow Card # **
TFT-P-B-070	Terminal Kit*, Brass, Nickel plated	Black	17	1.5	V-0	E121562-220886
815A1927-B	Flexible Cover	Black	6	1.5	V-0	E121562-220886
TFT-P-R-070	Terminal Kit*, Brass, Nickel plated	Red	17	1.5	V-0	E121562-220886
815A1927-R	Flexible Cover	Red	6	1.5	V-0	E121562-220886
TFT-P-E-070	Terminal Kit*, Brass, Nickel plated	Blue	17	1.5	V-0	E121562-220886
815A1927-E	Flexible Cover	Blue	6	1.5	V-0	E121562-220886
812A1925	O-Ring for TFT Terminal	Black	0.2	1.5	V-0	Material = EPDM
813A1930	Panel Nut	Black	4	1.5	V-0	E121562-220886
<p>*Terminal Kit = one Terminal + one Panel Nut + two Bolts + two Split Washers, all parts in a small poly bag **UL Material Yellow Cards can be downloaded from ULprospector.com</p>						



Rebling Datasheet: 100 amp TFT-style Fixed Orientation Feed-through Terminal

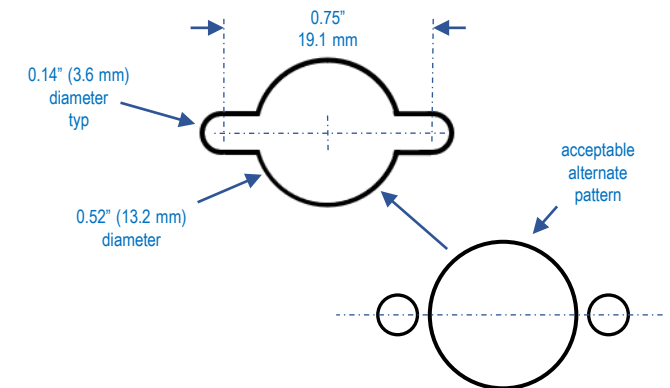
Mounting and Assembly

Panel Thickness - Minimum	0.025" (0.6 mm)	
Maximum	0.157" (4.0 mm)	
Torque on M5 Bolts:		
Recommended	15 in-lbs (1.7 Nm)	electrical performance does not get better or worse above 15 in-lbs (1.7 Nm)
Maximum Recommended	25 in-lbs (2.8 Nm)	a Grade 4, M5 stainless bolt will snap at 50 in-lbs (5.6 Nm)
Torque on Panel Nut With or without O-Ring		
Recommended	15-20 in-lbs (1.7-2.3 Nm)	all datasheet parameters were tested at this torque level
Maximum Recommended	25 in-lbs (2.8 Nm)	the panel nut will begin to deform at 40 in-lbs (4.5 Nm)
Maximum Crimp Lug Tongue Width:		
with Flexible Cover	0.90" (23 mm)	
with Rigid Cover	0.80" (20 mm)	

Application Notes

- Watertight is superior to IP68:** Rebling terminals are completely watertight to a depth of 20 meters which is superior to any IP Rating. The definitions of IP67, IP68 and IP69k per IEC 60529 state that "water may penetrate the seal but shall do no harm", a condition that is unacceptable to lithium battery designers.
- Panel Nut Wrench:** the hexagonal panel nut can be tightened using either a 27mm or 1 1/16" socket wrench.
- Minimum Separation between Adjacent Terminals:** the minimum centerline to centerline distance between the mounting holes of adjacent TFT terminals is 1.36" (34.6mm). This is based upon the maximum outside dimension of the panel nut or flexible cover (1.22"), the outside diameter of a 27mm socket (1.42") and a reasonable clearance margin (0.040"). This separation distance is based upon the TFT's geometry and is not a requirement for any performance parameter.
- Recommended crimp lug P/Ns:**

Mfg	2 AWG (32 mm ²)	4 AWG (19 mm ²)	6 AWG (13 mm ²)	8 AWG (8 mm ²)	10 AWG (5 mm ²)	12 AWG (3 mm ²)	14 AWG (2 mm ²)
TE	330301	33114	52197	31807	130191	130191	130106
T&B	G926	F10261	E10261	D10361	K10-10R		K14-10R
Panduit	P2-10R	P4-10R	P6-10R	P8-10R	P10-10R	P14-10R	
Burndy	----	YAD4CM5E10	YAD6CM5E10	YAD8CM5E10	YAV10H	YAV14H	



Mounting Hole Pattern

O-Ring Application Tool

To apply an O-Ring to the ultra-compact TFT Terminal:

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100 amp TFT-style Lithium Battery Terminal

Our TFT terminal (without mounting ears) which will be available in Red, Black, and Blue in Q4 2022. This 100 amp terminal will be available with or without Fixed-Orientation Ridges, can accommodate 8 AWG to 2 AWG (6 mm² to 34 mm²) cables, and will have snap-on flexible and rigid covers. Unlike our SFT style Terminal, the TFT-style Terminal does not require panel mounting screws, because it has molded-in

STP File Download

Terminal Covers, O-Rings, Tools, & Gaskets:

TFT MFT

LFT BFT

SFT XFT

DOWNLOAD STP FILES

Rebling Datasheet: 250 amp LFT-style Lithium Battery Terminal

Our LFT-style terminal is the most economical, smallest footprint, simplest environmental seal, battery terminal which can reduce connector costs on a single microgrid energy storage system by \$2,000 and offers a battery module designer the protection options of snap-on rigid or flexible covers. The brass core of our LFT is available with nickel plating for harsh environments and stays cool even at extreme charge or discharge rates. Equipping your design with these watertight, single pole, wrench disconnect terminals will enable system integrators to easily incorporate your power modules into the MicroGrid, Reserve Power, Vehicle Electrification or APU systems the end-user requires, regardless of battery chemistry. Whether you are coupling battery modules in series for a stationary power application, an immersion-cooled motive power system, a single SLI module, a telecom or datacenter reserve power system or simply bringing DC power from the inside to the outside of a metal panel which is at least 0.110" (2.8 mm) thick, our LFT-style 250 amp Terminals, Covers and Accessories were designed with your application in mind.



Electrical

Current each current profile causes a max 30° C temperature rise when tested per IEC 61984

Current Profile #1	Continuous Rated Current (CRC)	-----	250 amps
Current Profile #2	50% CRC for 60min + 1 sec peak + 50% CRC for 60 min		1,500 amps
Current Profile #3	50% CRC for 60min + 10 sec peak + 50% CRC for 60 min	-----	1,000 amps
Current Profile #4	50% CRC for 60min + 30 sec peak + 50% CRC for 60 min		750 amps
Current Profile #5	50% CRC for 60min + 60 sec peak + 50% CRC for 60 min	-----	500 amps

Voltage & Resistance

Continuous Rated Voltage	UL1977 Section 17	2,000 volts
Minimum Dielectric Withstanding Voltage	UL1977 Section 17	5,000 volts
Insulation Resistance	MIL-PRF-18148D Section 3.12.6	500 mega-ohms
Maximum Contact Resistance	MIL-STD-202H Method 307	70 micro-ohms

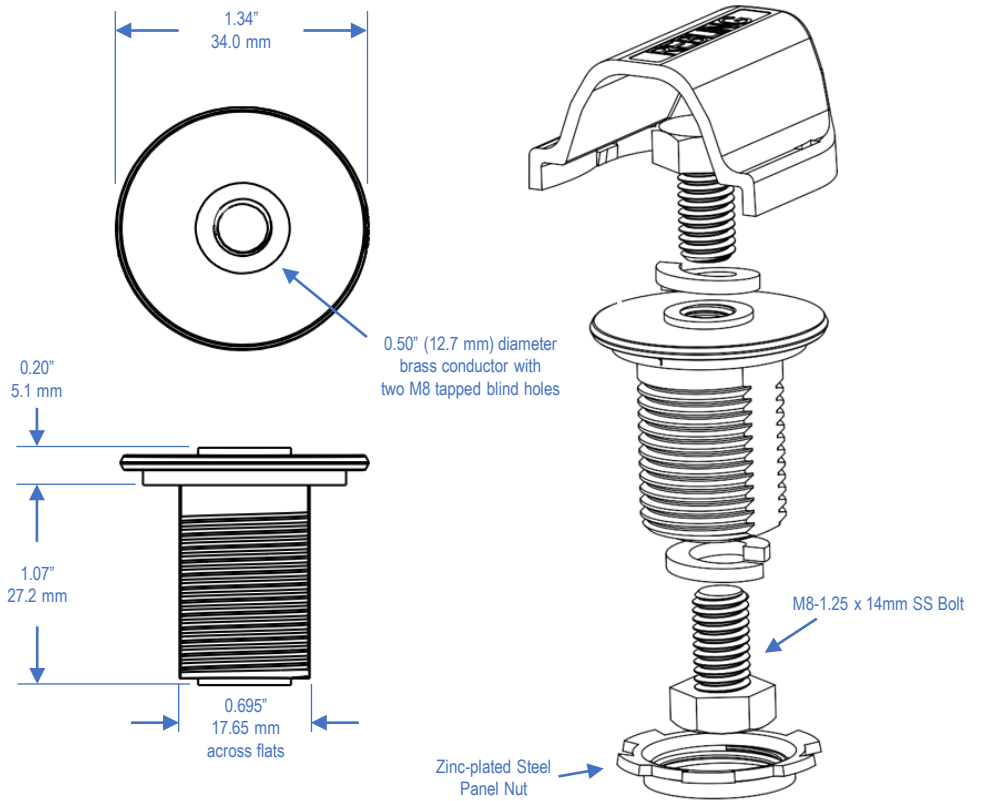
Mechanical & Environmental

Flammability Rating:	Terminal and Rigid Covers	-----	UL 94	5VA
	Flexible Cover		UL 94	V-0
Environmental Sealing:	with Optional Gasket	-----	IEC 60529	IP68+ watertight
	without Optional Gasket		IEC 60529	IP65
Operating Temperature:	Terminal and Rigid Covers	-----		-40 to +125 C
	Flexible Cover			-40 to +90 C
Mechanical Shock		MIL-STD-202H Method 213 Condition A		50 Gs – 3 axes
Vibration		MIL-STD-202H Method 204 Condition A		10 Gs – 3 axes
Minimum Metal Panel Thickness Required for Mounting				0.110" (2.8 mm)
Maximum Wire Size:	Terminal only or with Flexible Cover	-----		4/0 (110 mm ²)
	with Rigid Short Snap-On Cover			3/0 (80 mm ²)
	with Rigid Long Snap-On Cover			2 AWG (35 mm ²)

Compliance & Conformance

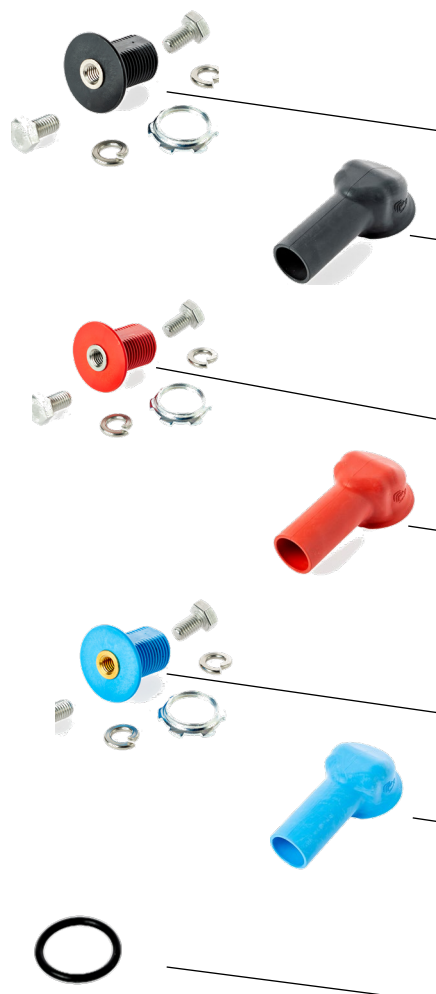
RoHS, REACH, CMRT/3TG
 UL and CE Conformance

All parts listed on this datasheet are RoHS, REACH and CMRT/3TG Compliant
 Declarations of UL and CE Conformity can be downloaded from Rebling.com



For complete dimensions, download 3D Step files of Terminal and Accessories at Rebling.com

Rebling Datasheet: 250 amp LFT-style Lithium Battery Terminal



P/N	Description	Plastic Color	Weight (Grams)	Min Thick (mm)	UL 94 Rating	UL Material Yellow Card # **
LFT-P-B	Terminal Kit*, Brass, Nickel plated	Black	75	2.1	5VA	E121562-101513781
LFT-B-B	Terminal Kit*, Brass, Unplated	Black	75	2.1	5VA	E121562-101513781
713A1806-B	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Black	26	2.0	V-0	E80017-250533
698A1789-S-B	Rigid Snap-On Cover, Short (1.44" OAL)	Black	9	2.0	5VA	E121562-101513781
698A1789-L-B	Rigid Snap-On Cover, Long (2.23" OAL)	Black	12	2.0	5VA	E121562-101513781
LFT-P-R	Terminal Kit*, Brass, Nickel plated	Red	75	2.1	5VA	E121562-101513781
LFT-B-R	Terminal Kit*, Brass, Unplated	Red	75	2.1	5VA	E121562-101513781
713A1806-R	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Red	26	2.0	V-0	E80017-250533
698A1789-S-R	Rigid Snap-On Cover, Short (1.44" OAL)	Red	9	2.0	5VA	E121562-101513781
698A1789-L-R	Rigid Snap-On Cover, Long (2.23" OAL)	Red	12	2.0	5VA	E121562-101513781
LFT-P-E	Terminal Kit*, Brass, Nickel plated	Blue	75	2.1	5VA	E121562-101513781
LFT-B-E	Terminal Kit*, Brass, Unplated	Blue	75	2.1	5VA	E121562-101513781
713A1806-E	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Blue	26	2.0	V-0	E80017-250533
698A1789-S-E	Rigid Snap-On Cover, Short (1.44" OAL)	Blue	9	2.0	5VA	E121562-101513781
698A1789-L-E	Rigid Snap-On Cover, Long (2.23" OAL)	Blue	12	2.0	5VA	E121562-101513781
700A1799	O-Ring for LFT Terminal	Black	0.5	2.5	V-0	Material = EPDM

*Terminal Kit = one Terminal + one Panel Nut + two Bolts + two Split Washers, all parts in a small poly bag
 **UL Material Yellow Cards can be downloaded from ULprospector.com

Rebling Datasheet: 250 amp LFT-style Lithium Battery Terminal

Mounting and Assembly

Minimum Panel Thickness (aluminum or steel) 0.110" (2.8 mm)

Mounting Hole Pattern (see diagram below) One Double-D Hole

Torque on M8 Bolts:

Recommended	50 to 60 in-lbs (5.6-6.8 Nm)	electrical performance does not get better or worse above 50 in-lbs (5.6 Nm) a Grade 4, M8 stainless bolt will snap at 330 in-lbs (37 Nm)
Maximum Recommended	240 in-lbs (27 Nm)	

Recommended Torque on Panel Nut

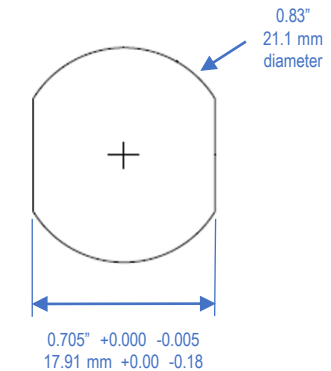
Without O-Ring	30-35 in-lbs (3.4-4.0 Nm)	1/6 turn after finger tight
With O-Ring	30-35 in-lbs (3.4-4.0 Nm)	4/6 turn after finger tight

Maximum Crimp Lug Tongue Width:

with Flexible Cover	1.10" (28 mm)
with Short Rigid Snap-on Cover	0.91" (23 mm)
with Long Rigid Snap-on Cover	0.70" (18 mm)

Application Notes

- Watertight is superior to IP68:** Rebling terminals are completely watertight to a depth of 20 meters which is superior to any IP Rating. The definitions of IP67, IP68 and IP69k per IEC 60529 state that "water may penetrate the seal but shall do no harm", a condition that is unacceptable to lithium battery designers.
- Cable Pulling Lubricant:** when using 4/0 (110 mm²) cable with the flexible cover, crimp the lug to the cable then push the lug into the cover using lubricant
- Panel Nut Wrench:** Gardner Bender wrench # LNW-500 is recommended for tightening the panel nut
- Customized Socket Wrench:** if space prohibits use of the LNW-500 wrench, a 1 1/16 inch, 12 point socket can be modified by grinding off the socket's lead-in bevel, enabling it to engage the teeth on the panel nut which enables tightening the panel nut with a socket wrench.



Mounting Hole Pattern

Rebling Datasheet: 250 amp SFT-style Lithium Battery Terminal

Our SFT-style terminal has performance characteristics identical to our LFT-style terminal but is specially designed for mounting onto thin or weak panels. The SFT can also reduce the costs of a single microgrid energy storage system by \$2,000 and can accept the same snap-on rigid or flexible covers as our LFT-style terminal. The brass core is available with nickel plating for harsh environments and remains cool at extreme charge or discharge rates. Equipping your design with these watertight, single pole, wrench disconnect terminals will enable system integrators to easily incorporate your modules into the MicroGrid, Vehicle Electrification, Power Distribution Unit, or APU systems the end-user requires, regardless of battery chemistry. Whether you are coupling battery modules in series for a stationary power application, an immersion-cooled motive power system, a single SLI module, a telecom or datacenter reserve power system or simply bringing DC power from the inside to the outside of any panel of any material or thickness, our SFT-style 250 amp terminals, Covers and Accessories were designed with your application in mind.



Electrical

Current each current profile causes a max 30° C temperature rise when tested per IEC 61984

Current Profile #1	Continuous Rated Current (CRC)	-----	250 amps
Current Profile #2	50% CRC for 60min + 1 sec peak + 50% CRC for 60 min	-----	1,500 amps
Current Profile #3	50% CRC for 60min + 10 sec peak + 50% CRC for 60 min	-----	1,000 amps
Current Profile #4	50% CRC for 60min + 30 sec peak + 50% CRC for 60 min	-----	750 amps
Current Profile #5	50% CRC for 60min + 60 sec peak + 50% CRC for 60 min	-----	500 amps

Voltage & Resistance

Continuous Rated Voltage	UL1977 Section 17	2,000 volts
Minimum Dielectric Withstanding Voltage	UL1977 Section 17	5,000 volts
Insulation Resistance	MIL-PRF-18148D Section 3.12.6	500 mega-ohms
Maximum Contact Resistance	MIL-STD-202H Method 307	70 micro-ohms

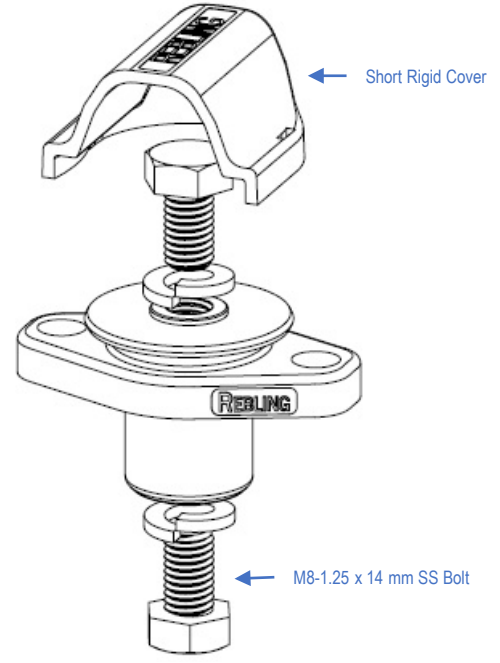
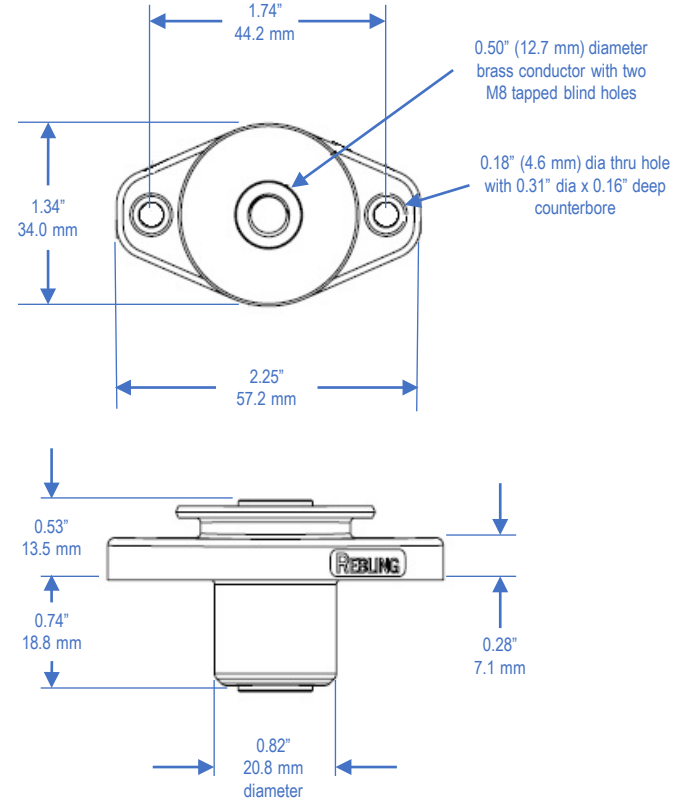
Mechanical & Environmental

Flammability Rating:	Terminal -----	UL 94	V-0
	Flexible Cover and Rigid Cover	UL 94	V-0
Environmental Sealing:	with Optional Gasket -----	IEC 60529	IP68+ watertight
	without Optional Gasket	IEC 60529	IP65
Operating Temperature:	Terminal and Rigid Covers -----		-40 to +125 C
	Flexible Cover		-40 to +90 C
Mechanical Shock	MIL-STD-202H Method 213 Condition A		50 Gs – 3 axes
Vibration	MIL-STD-202H Method 204 Condition A		10 Gs – 3 axes
Minimum Panel Thickness Required for Mounting			0.025" (0.64 mm)
Maximum Wire Size:	Terminal only or with Flexible Cover -----		4/0 (110 mm ²)
	with Short Rigid Snap-on Cover		3/0 (80 mm ²)
	with Long Rigid Snap-on Cover		2 AWG (35 mm ²)

Compliance & Conformance

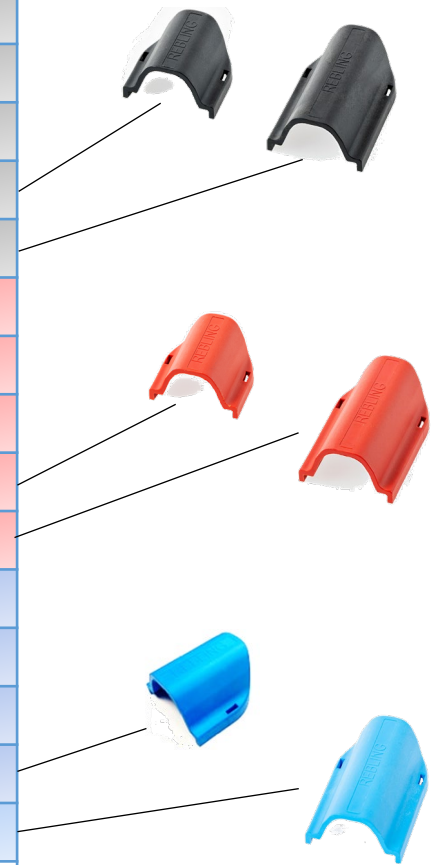
RoHS, REACH, CMRT/3TG
 UL and CE Conformance

All parts listed on this datasheet are RoHS, REACH and CMRT/3TG Compliant
 Declarations of UL and CE Conformity can be downloaded from Rebling.com



For complete dimensions, download 3D Step files of Terminal and Accessories at Rebling.com

Rebling Datasheet: 250 amp SFT-style Lithium Battery Terminal



P/N	Description	Plastic Color	Weight (Grams)	Min Thick (mm)	UL 94 Rating	UL Material Yellow Card # **
SFT-P-B	Terminal Kit*, Brass, Nickel plated	Black	66	2.1	V-0	E121562-220886
SFT-B-B	Terminal Kit*, Brass, Unplated	Black	66	2.1	V-0	E121562-220886
713A1806-B	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Black	26	2.0	V-0	E80017-250533
698A1789-S-B	Rigid Snap-On Cover, Short (1.44" OAL)	Black	9	2.0	V-0	E121562-101513781
698A1789-L-B	Rigid Snap-On Cover, Long (2.23" OAL)	Black	12	2.0	V-0	E121562-101513781
SFT-P-R	Terminal Kit*, Brass, Nickel plated	Red	66	2.1	V-0	E121562-220886
SFT-B-R	Terminal Kit*, Brass, Unplated	Red	66	2.1	V-0	E121562-220886
713A1806-R	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Red	26	2.0	V-0	E80017-250533
698A1789-S-R	Rigid Snap-On Cover, Short (1.44" OAL)	Red	9	2.0	V-0	E121562-101513781
698A1789-L-R	Rigid Snap-On Cover, Long (2.23" OAL)	Red	12	2.0	V-0	E121562-101513781
SFT-P-E	Terminal Kit*, Brass, Nickel plated	Blue	66	2.1	V-0	E121562-220886
SFT-B-E	Terminal Kit*, Brass, Unplated	Blue	66	2.1	V-0	E121562-220886
713A1806-E	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Blue	26	2.0	V-0	E80017-250533
698A1789-S-E	Rigid Snap-On Cover, Short (1.44" OAL)	Blue	9	2.0	V-0	E121562-101513781
698A1789-L-E	Rigid Snap-On Cover, Long (2.23" OAL)	Blue	12	2.0	V-0	E121562-101513781
716A1814	Gasket for SFT Terminal	Black	2.2	2.0	V-0	E80017-250535

*Terminal Kit = one Terminal + two Bolts + two Split Washers, all parts in a small poly bag
 **UL Material Yellow Cards can be downloaded from ULprospector.com

Rebling Datasheet: 250 amp SFT-style Lithium Battery Terminal

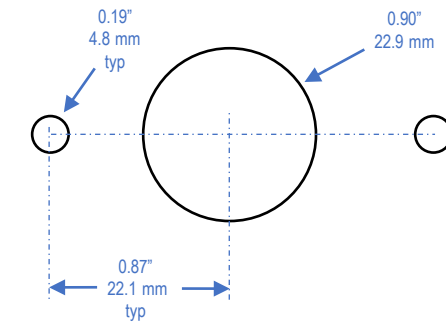
Mounting and Assembly

Minimum Panel Thickness	0.025" (0.64 mm)	
Mounting Hole Pattern (see diagram below)	Three Circular Holes	
Torque on M8 Bolts:		
Recommended	50 to 60 in-lbs (5.6-6.8 Nm)	electrical performance does not get better or worse above 50 in-lbs (5.6 Nm)
Maximum Recommended	240 in-lbs (27 Nm)	a Grade 4, M8 stainless bolt will snap at 330 in-lbs (37 Nm)
Torque on M4 panel mount screws		
Recommended	10 to 15 in-lbs (1.1 - 1.7 Nm)	mechanical performance does not improve above 10 in-lbs (1.1 Nm)
Maximum Recommended	22 in-lbs (2.5 Nm)	the terminal's mounting ear will begin to deform at 36 in-lbs (4.0 Nm)
Maximum Crimp Lug Tongue Width:		
with Flexible Cover	1.10" (28 mm)	
with Short Rigid Snap-on Cover	0.91" (23 mm)	
with Long Rigid Snap-on Cover	0.70" (18 mm)	



Application Notes

- Watertight is superior to IP68:** Rebling terminals are completely watertight to a depth of 20 meters which is superior to any IP Rating. The definitions of IP67, IP68 and IP69k per IEC 60529 state that "water may penetrate the seal but shall do no harm", a condition that is unacceptable to lithium battery designers.
- Interchangeability of 500 amp and 250 amp Terminals:** if you are uncertain whether your application needs a 250 amp or 500 amp terminal, cut your panel with the mounting hole pattern for the 500 amp MFT-style Terminal. This gives you the flexibility of choice. If a 250 amp SFT-style Terminal is mounted in the MFT Terminal's mounting holes, the SFT Terminal will achieve all of its performance parameters, including watertight sealing.
- Cable Pulling Lubricant:** when using 4/0 (110 mm²) cable with the flexible cover, crimp the lug to the cable then push the lug into the cover using lubricant
- Panel Mounting Hardware:** to achieve watertight sealing, the McMaster Carr P/Ns shown below can be used
92855A416 M4 stainless socket head screw
91828A231 M4 stainless nut
9452K15 M4 O-Ring



Mounting Hole Pattern

Rebling Datasheet: 250 amp SFT-style Imperial Feed-through Terminal

Our Imperial-threaded SFT-style terminal has performance characteristics identical to our Metric-threaded SFT-style terminal but is specially designed for applications which require Imperial Threads, including Avionics Power Distribution Units and Power Conversion Modules. The Imperial SFT can accept the same snap-on rigid or flexible covers as our metric terminals. The brass core is nickel plated for harsh environments and remains cool at extreme current levels. Equipping your design with these watertight, single pole, wrench disconnect terminals will enable OEMs to easily incorporate your modules into their Power Distribution System, Electric Propulsion Airframe or Power Conditioning Architecture. Whether you are coupling battery modules in series for a Jump Starter, Ground Power Unit, Airborne Motive Power Battery Pack or simply bringing DC power from the inside to the outside of any panel, our Imperial-threaded SFT-style 250 amp terminals, Covers and Accessories were designed with your application in mind.



Electrical

Current each current profile causes a max 30° C temperature rise when tested per IEC 61984

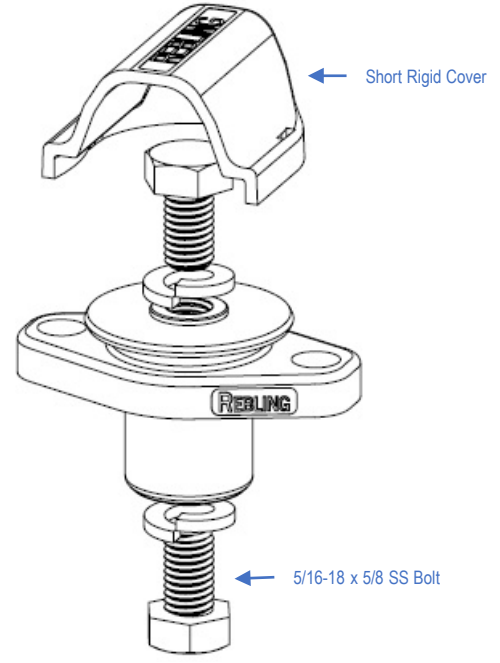
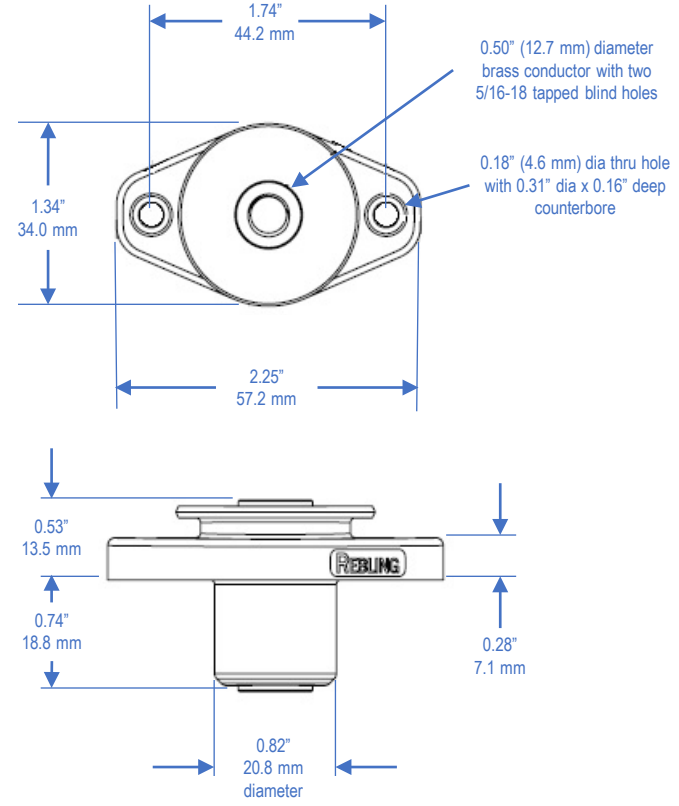
Current Profile #1	Continuous Rated Current (CRC)	-----	250 amps
Current Profile #2	50% CRC for 60min + 1 sec peak + 50% CRC for 60 min	-----	1,500 amps
Current Profile #3	50% CRC for 60min + 10 sec peak + 50% CRC for 60 min	-----	1,000 amps
Current Profile #4	50% CRC for 60min + 30 sec peak + 50% CRC for 60 min	-----	750 amps
Current Profile #5	50% CRC for 60min + 60 sec peak + 50% CRC for 60 min	-----	500 amps

Voltage & Resistance

Continuous Rated Voltage	UL1977 Section 17	2,000 volts
Minimum Dielectric Withstanding Voltage	UL1977 Section 17	5,000 volts
Insulation Resistance	MIL-PRF-18148D Section 3.12.6	500 mega-ohms
Maximum Contact Resistance	MIL-STD-202H Method 307	70 micro-ohms

Mechanical & Environmental

Flammability Rating:	Terminal -----	UL 94	V-0
	Flexible Cover and Rigid Cover -----	UL 94	V-0
Environmental Sealing:	with Optional Gasket -----	IEC 60529	IP68+ watertight
	without Optional Gasket -----	IEC 60529	IP65
Operating Temperature:	Terminal and Rigid Covers -----		-40 to +125 C
	Flexible Cover -----		-40 to +90 C
Mechanical Shock	MIL-STD-202H Method 213 Condition A		50 Gs – 3 axes
Vibration	MIL-STD-202H Method 204 Condition A		10 Gs – 3 axes
Minimum Panel Thickness Required for Mounting			0.025" (0.64 mm)
Maximum Wire Size:	Terminal only or with Flexible Cover -----		4/0 (110 mm ²)
	with Short Rigid Snap-on Cover -----		3/0 (80 mm ²)
	with Long Rigid Snap-on Cover -----		2 AWG (35 mm ²)



Compliance & Conformance

RoHS, REACH, CMRT/3TG
 UL and CE Conformance

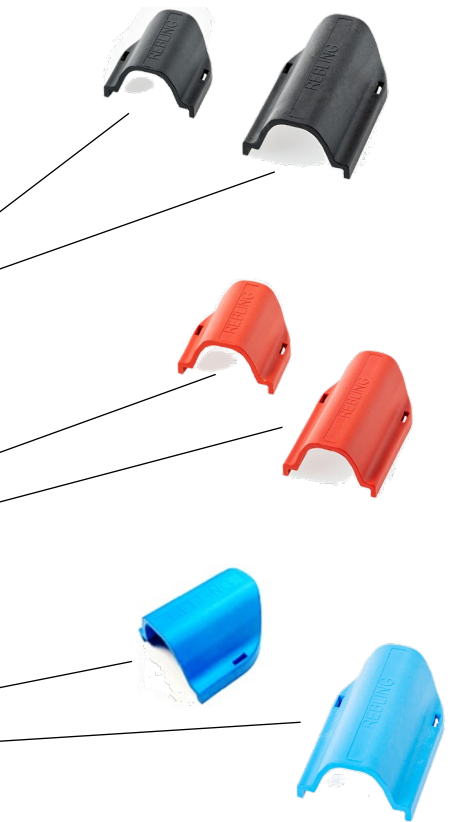
All parts listed on this datasheet are RoHS, REACH and CMRT/3TG Compliant
 Declarations of UL and CE Conformity can be downloaded from Rebling.com

For complete dimensions, download 3D Step files of Terminal and Accessories at Rebling.com

Rebling Datasheet: 250 amp SFT-style Imperial Feed-through Terminal



P/N	Description	Plastic Color	Weight (Grams)	Min Thick (mm)	UL 94 Rating	UL Material Yellow Card # **
SFT-P-B-516	Terminal Kit*, Brass, Nickel plated	Black	66	2.1	V-0	E121562-220886
713A1806-B	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Black	26	2.0	V-0	E80017-250533
698A1789-S-B	Rigid Snap-On Cover, Short (1.44" OAL)	Black	9	2.0	V-0	E121562-101513781
698A1789-L-B	Rigid Snap-On Cover, Long (2.23" OAL)	Black	12	2.0	V-0	E121562-101513781
SFT-P-R-516	Terminal Kit*, Brass, Nickel plated	Red	66	2.1	V-0	E121562-220886
713A1806-R	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Red	26	2.0	V-0	E80017-250533
698A1789-S-R	Rigid Snap-On Cover, Short (1.44" OAL)	Red	9	2.0	V-0	E121562-101513781
698A1789-L-R	Rigid Snap-On Cover, Long (2.23" OAL)	Red	12	2.0	V-0	E121562-101513781
SFT-P-E-516	Terminal Kit*, Brass, Nickel plated	Blue	66	2.1	V-0	E121562-220886
713A1806-E	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Blue	26	2.0	V-0	E80017-250533
698A1789-S-E	Rigid Snap-On Cover, Short (1.44" OAL)	Blue	9	2.0	V-0	E121562-101513781
698A1789-L-E	Rigid Snap-On Cover, Long (2.23" OAL)	Blue	12	2.0	V-0	E121562-101513781
716A1814	Gasket for SFT Terminal	Black	2.2	2.0	V-0	E80017-250535



*Terminal Kit = one Terminal + two Bolts + two Split Washers, all parts in a small poly bag
 **UL Material Yellow Cards can be downloaded from ULprospector.com

Rebling Datasheet: 250 amp SFT-style Imperial Feed-through Terminal

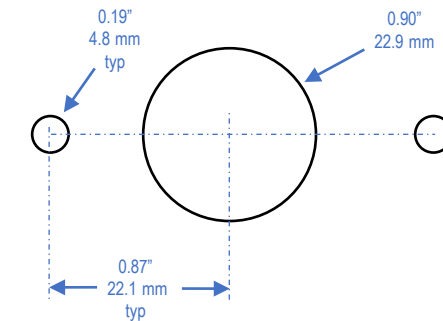
Mounting and Assembly

Minimum Panel Thickness	0.025" (0.64 mm)	
Mounting Hole Pattern (see diagram below)	Three Circular Holes	
Torque on M8 Bolts:		
Recommended	50 to 60 in-lbs (5.6-6.8 Nm)	electrical performance does not get better or worse above 50 in-lbs (5.6 Nm)
Maximum Recommended	240 in-lbs (27 Nm)	a Grade 4, M8 stainless bolt will snap at 330 in-lbs (37 Nm)
Torque on M4 panel mount screws		
Recommended	10 to 15 in-lbs (1.1 - 1.7 Nm)	mechanical performance does not improve above 10 in-lbs (1.1 Nm)
Maximum Recommended	22 in-lbs (2.5 Nm)	the terminal's mounting ear will begin to deform at 36 in-lbs (4.0 Nm)
Maximum Crimp Lug Tongue Width:		
with Flexible Cover	1.10" (28 mm)	
with Short Rigid Snap-on Cover	0.91" (23 mm)	
with Long Rigid Snap-on Cover	0.70" (18 mm)	



Application Notes

- Watertight is superior to IP68:** Rebling terminals are completely watertight to a depth of 20 meters which is superior to any IP Rating. The definitions of IP67, IP68 and IP69k per IEC 60529 state that "water may penetrate the seal but shall do no harm", a condition that is unacceptable to lithium battery designers.
- Interchangeability of 500 amp and 250 amp Terminals:** if you are uncertain whether your application needs a 250 amp or 500 amp terminal, cut your panel with the mounting hole pattern for the 500 amp MFT-style Terminal. This gives you the flexibility of choice. If a 250 amp SFT-style Terminal is mounted in the MFT Terminal's mounting holes, the SFT Terminal will achieve all of its performance parameters, including watertight sealing.
- Cable Pulling Lubricant:** when using 4/0 (110 mm²) cable with the flexible cover, crimp the lug to the cable then push the lug into the cover using lubricant
- Panel Mounting Hardware:** to achieve watertight sealing, the McMaster Carr P/Ns shown below can be used
92855A416 M4 stainless socket head screw
91828A231 M4 stainless nut
9452K15 M4 O-Ring



Mounting Hole Pattern

Rebling Datasheet: 250 amp Fixed-orientation SFT-style Feed-through Terminal

Some applications, especially automotive, require that a cable be attached to a terminal in a specific orientation. This terminal has orientation ridges that allow a cable lug to only be attached to the terminal perpendicular to the centerline of the mounting holes. A Fixed-orientation Terminal assures that a complex automotive cable harness, which might be 12 feet in length and have 20 different power and signal connectors attached, can only be installed on the vehicle in one orientation. The orientation ridges of this terminal are spaced 0.87" (22 mm) apart and are designed to accommodate standard ring lugs crimped to 1/0 or 2/0 (50 to 70 mm²) cable or narrow-tongue crimp lugs for 3/0 or 4/0 (80 to 110 mm²) cable. The nickel-plated brass conductor of this water-tight terminal has two blind M8 threaded holes which accept the stainless steel bolts and split washers included in the kit. The flexible cover and gasket which fit our standard SFT-style Terminal also fit this terminal.



Electrical

Current each current profile causes a max 30° C temperature rise when tested per IEC 61984

Current Profile #1	Continuous Rated Current (CRC)	-----	250 amps
Current Profile #2	50% CRC for 60min + 1 sec peak + 50% CRC for 60 min	-----	1,500 amps
Current Profile #3	50% CRC for 60min + 10 sec peak + 50% CRC for 60 min	-----	1,000 amps
Current Profile #4	50% CRC for 60min + 30 sec peak + 50% CRC for 60 min	-----	750 amps
Current Profile #5	50% CRC for 60min + 60 sec peak + 50% CRC for 60 min	-----	500 amps

Voltage & Resistance

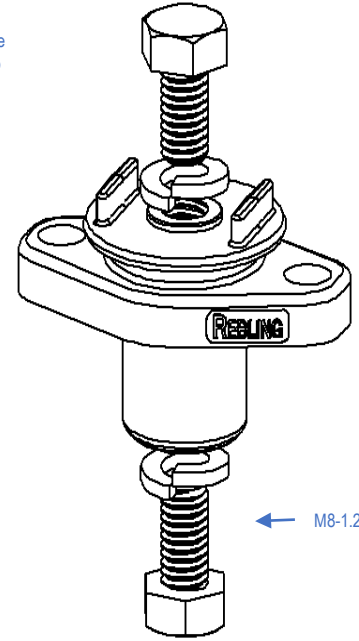
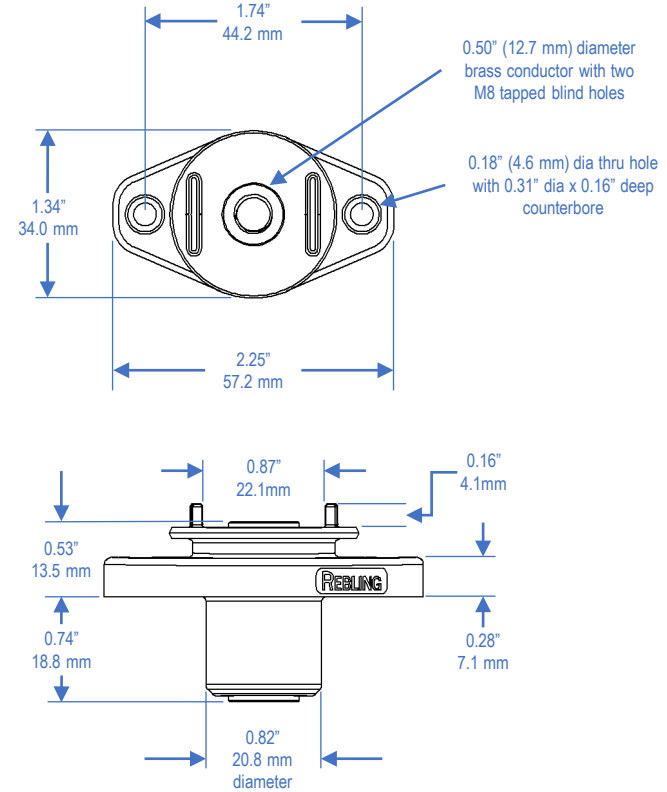
Continuous Rated Voltage	UL1977 Section 17	2,000 volts
Minimum Dielectric Withstanding Voltage	UL1977 Section 17	5,000 volts
Insulation Resistance	MIL-PRF-18148D Section 3.12.6	500 mega-ohms
Maximum Contact Resistance	MIL-STD-202H Method 307	70 micro-ohms

Mechanical & Environmental

Flammability Rating:	Terminal -----	UL 94	V-0
	Flexible Cover	UL 94	V-0
Environmental Sealing:	with Optional Gasket -----	IEC 60529	IP68+ watertight
	without Optional Gasket	IEC 60529	IP65
Operating Temperature:	Terminal -----		-40 to +125 C
	Flexible Cover		-40 to +90 C
Mechanical Shock	MIL-STD-202H Method 213 Condition A		50 Gs – 3 axes
Vibration	MIL-STD-202H Method 204 Condition A		10 Gs – 3 axes
Minimum Panel Thickness Required for Mounting			0.025" (0.64 mm)
Maximum Wire Size:	Terminal only or with Flexible Cover -----		4/0 (110 mm ²)

Compliance & Conformance

RoHS, REACH, CMRT/3TG All parts listed on this datasheet are RoHS, REACH and CMRT/3TG Compliant
 UL and CE Conformance Declarations of UL and CE Conformity can be downloaded from Rebling.com



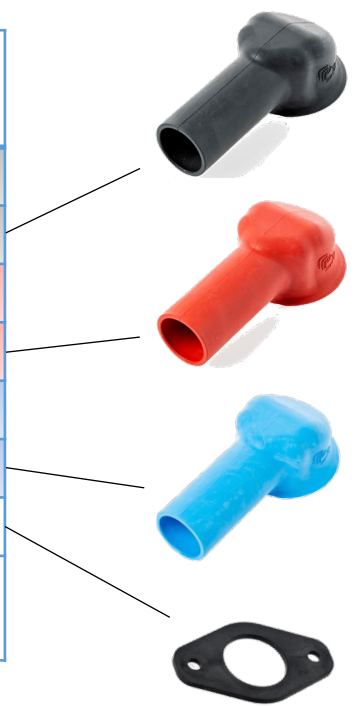
For complete dimensions, download 3D Step files of Terminal and Accessories at Rebling.com

Rebling Datasheet: 250 amp Fixed-orientation SFT-style Feed-through Terminal



P/N	Description	Plastic Color	Weight (Grams)	Min Thick (mm)	UL 94 Rating	UL Material Yellow Card # **
SFT-P-B-087	Terminal Kit*, Brass, Nickel plated	Black	66	2.1	V-0	E121562-220886
713A1806-B	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Black	26	2.0	V-0	E80017-250533
SFT-P-R-087	Terminal Kit*, Brass, Nickel plated	Red	66	2.1	V-0	E121562-220886
713A1806-R	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Red	26	2.0	V-0	E80017-250533
SFT-P-E-087	Terminal Kit*, Brass, Nickel plated	Blue	66	2.1	V-0	E121562-220886
713A1806-E	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Blue	26	2.0	V-0	E80017-250533
716A1814	Gasket for SFT Terminal	Black	2.2	2.0	V-0	E80017-250535

*Terminal Kit = one Terminal + two Bolts + two Split Washers, all parts in a small poly bag
 **UL Material Yellow Cards can be downloaded from ULprospector.com



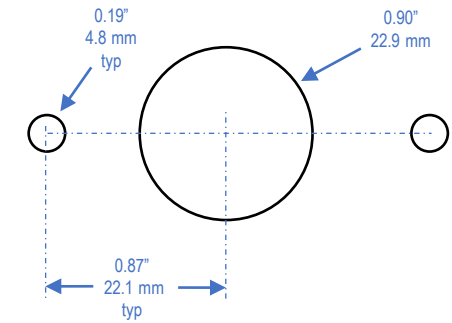
Rebling Datasheet: 250 amp Fixed-orientation SFT-style Feed-through Terminal

Mounting and Assembly

Minimum Panel Thickness	0.025" (0.64 mm)	
Mounting Hole Pattern (see diagram below)	Three Circular Holes	
Torque on M8 Bolts:		
Recommended	50 to 60 in-lbs (5.6-6.8 Nm)	electrical performance does not get better or worse above 50 in-lbs (5.6 Nm)
Maximum Recommended	240 in-lbs (27 Nm)	a Grade 4, M8 stainless bolt will snap at 330 in-lbs (37 Nm)
Torque on M4 panel mount screws		
Recommended	10 to 15 in-lbs (1.1 - 1.7 Nm)	mechanical performance does not improve above 10 in-lbs (1.1 Nm)
Maximum Recommended	22 in-lbs (2.5 Nm)	the terminal's mounting ear will begin to deform at 36 in-lbs (4.0 Nm)
Maximum Crimp Lug Tongue Width:		
with Flexible Cover	1.10" (28 mm)	
with Short Rigid Snap-on Cover	0.91" (23 mm)	
with Long Rigid Snap-on Cover	0.70" (18 mm)	

Application Notes

- Watertight is superior to IP68:** Rebling terminals are completely watertight to a depth of 20 meters which is superior to any IP Rating. The definitions of IP67, IP68 and IP69k per IEC 60529 state that "water may penetrate the seal but shall do no harm", a condition that is unacceptable to lithium battery designers.
- Interchangeability of 500 amp and 250 amp Terminals:** if you are uncertain whether your application needs a 250 amp or 500 amp terminal, cut your panel with the mounting hole pattern for the 500 amp MFT-style Terminal. This gives you the flexibility of choice. If a 250 amp SFT-style Terminal is mounted in the MFT Terminal's mounting holes, the SFT Terminal will achieve all of its performance parameters, including watertight sealing.
- Cable Pulling Lubricant:** when using 4/0 (110 mm²) cable with the flexible cover, crimp the lug to the cable then push the lug into the cover using lubricant
- Panel Mounting Hardware:** to achieve watertight sealing, the McMaster Carr P/Ns shown below can be used
 - 92855A416 M4 stainless socket head screw
 - 91828A231 M4 stainless nut
 - 9452K15 M4 O-Ring



Mounting Hole Pattern

Rebling Datasheet: 500 amp MFT-style Lithium Battery Terminal

Our MFT-style terminal provides 500 amp continuous current performance, the ability to be mounted to panels of any material or thickness and retains the same 2,000 volt rating, IP68 sealing capability and nickel plating option as the lower power members of our feed-through terminal family. The MFT can accept the same snap-on rigid or flexible covers as our LFT and SFT-style terminals. Equipping your design with these watertight, single pole, wrench disconnect battery terminals will enable system integrators to easily incorporate your modules into the MicroGrid, Reserve Power, Vehicle Electrification or APU systems the end-user requires, regardless of battery chemistry. Whether you are coupling batteries or power conversion modules together for a reserve power or motive power system or making internal connections for an AC power distribution installation, our 500 amp MFT-style terminals, Covers and Accessories were designed with your application in mind.



Electrical

Current each current profile causes a max 30° C temperature rise when tested per IEC 61984

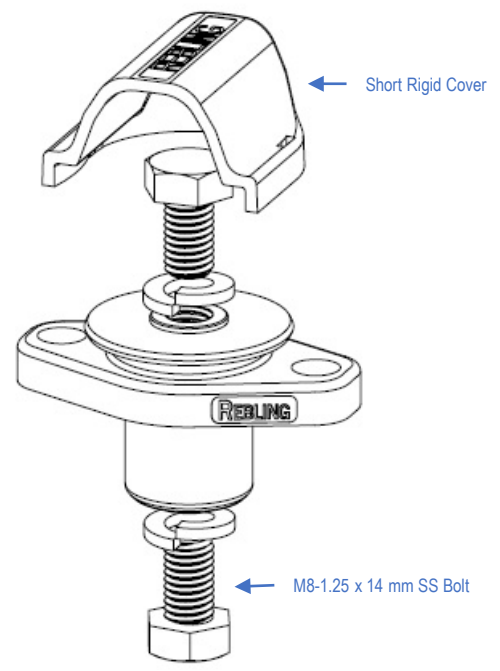
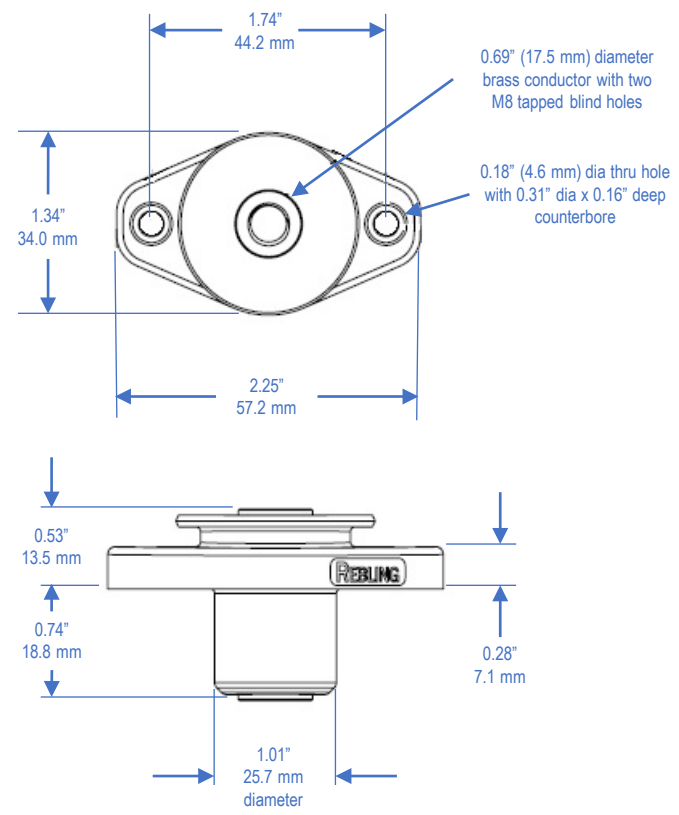
Current Profile #1	Continuous Rated Current (CRC)	-----	500 amps
Current Profile #2	50% CRC for 60min + 1 sec peak + 50% CRC for 60 min		3,000 amps
Current Profile #3	50% CRC for 60min + 10 sec peak + 50% CRC for 60 min	-----	2,000 amps
Current Profile #4	50% CRC for 60min + 30 sec peak + 50% CRC for 60 min		1,250 amps
Current Profile #5	50% CRC for 60min + 60 sec peak + 50% CRC for 60 min	-----	1,000 amps

Voltage & Resistance

Continuous Rated Voltage	UL1977 Section 17	2,000 volts
Minimum Dielectric Withstanding Voltage	UL1977 Section 17	5,000 volts
Insulation Resistance	MIL-PRF-18148D Section 3.12.6	500 mega-ohms
Maximum Contact Resistance	MIL-STD-202H Method 307	70 micro-ohms

Mechanical & Environmental

Flammability Rating:	Terminal -----	UL 94	V-0
	Flexible Cover and Rigid Cover	UL 94	V-0
Environmental Sealing:	with Optional Gasket -----	IEC 60529	IP68+ watertight
	without Optional Gasket	IEC 60529	IP65
Operating Temperature:	Terminal and Rigid Covers -----		-40 to +125 C
	Flexible Cover		-40 to +90 C
Mechanical Shock	MIL-STD-202H Method 213 Condition A		50 Gs – 3 axes
Vibration	MIL-STD-202H Method 204 Condition A		10 Gs – 3 axes
Minimum Panel Thickness Required for Mounting			0.025" (0.64 mm)
Maximum Wire Size:	Terminal only -----		450 MCM (230 mm ²)
	with Flexible Cover		4/0 (110 mm ²)
	with Short Rigid Snap-on Cover		3/0 (80 mm ²)
	with Long Rigid Snap-on Cover		2 AWG (35 mm ²)



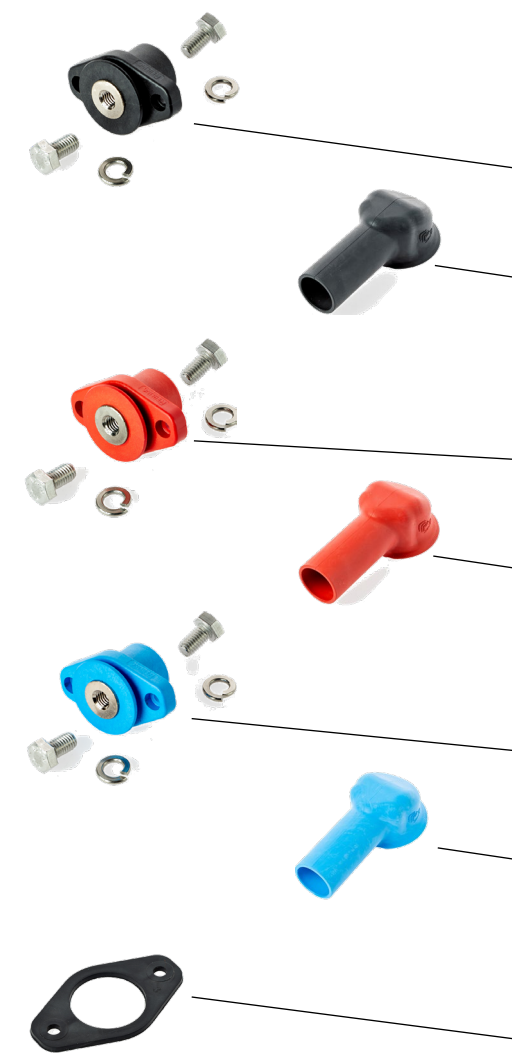
For complete dimensions, download 3D Step files of Terminal and Accessories at Rebling.com

Compliance & Conformance

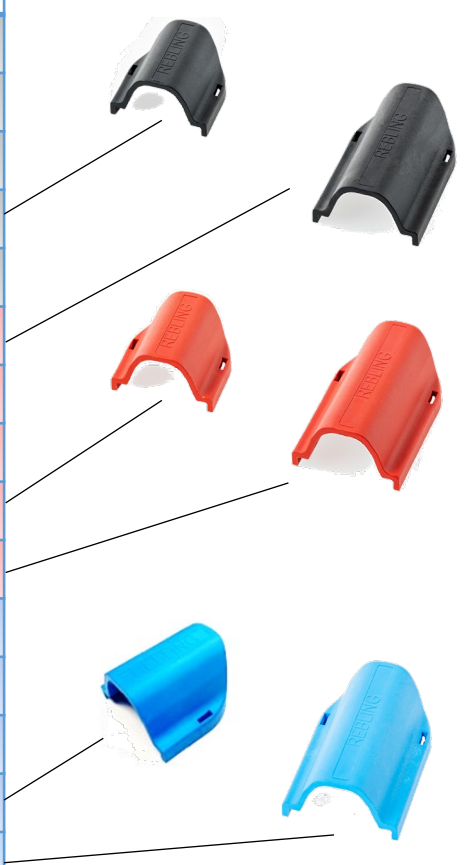
RoHS, REACH, CMRT/3TG
 UL and CE Conformance

All parts listed on this datasheet are RoHS, REACH and CMRT/3TG Compliant
 Declarations of UL and CE Conformity can be downloaded from Rebling.com

Rebling Datasheet: 500 amp MFT-style Lithium Battery Terminal



P/N	Description	Plastic Color	Weight (Grams)	Min Thick (mm)	UL 94 Rating	UL Material Yellow Card # **
MFT-P-B	Terminal Kit*, Brass, Nickel plated	Black	98	2.1	V-0	E121562-220886
MFT-B-B	Terminal Kit*, Brass, Unplated	Black	98	2.1	V-0	E121562-220886
713A1806-B	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Black	26	2.0	V-0	E80017-250533
698A1789-S-B	Rigid Snap-On Cover, Short (1.44" OAL)	Black	9	2.0	V-0	E121562-101513781
698A1789-L-B	Rigid Snap-On Cover, Long (2.23" OAL)	Black	12	2.0	V-0	E121562-101513781
MFT-P-R	Terminal Kit*, Brass, Nickel plated	Red	98	2.1	V-0	E121562-220886
MFT-B-R	Terminal Kit*, Brass, Unplated	Red	98	2.1	V-0	E121562-220886
713A1806-R	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Red	26	2.0	V-0	E80017-250533
698A1789-S-R	Rigid Snap-On Cover, Short (1.44" OAL)	Red	9	2.0	V-0	E121562-101513781
698A1789-L-R	Rigid Snap-On Cover, Long (2.23" OAL)	Red	12	2.0	V-0	E121562-101513781
MFT-P-E	Terminal Kit*, Brass, Nickel plated	Blue	98	2.1	V-0	E121562-220886
MFT-B-E	Terminal Kit*, Brass, Unplated	Blue	98	2.1	V-0	E121562-220886
713A1806-E	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Blue	26	2.0	V-0	E80017-250533
698A1789-S-E	Rigid Snap-On Cover, Short (1.44" OAL)	Blue	9	2.0	V-0	E121562-101513781
698A1789-L-E	Rigid Snap-On Cover, Long (2.23" OAL)	Blue	12	2.0	V-0	E121562-101513781
716A1815	Gasket for MFT Terminal	Black	2.2	2.0	V-0	E80017-250535



*Terminal Kit = one Terminal + two Bolts + two Split Washers, all parts in a small poly bag
 **UL Material Yellow Cards can be downloaded from ULprospector.com

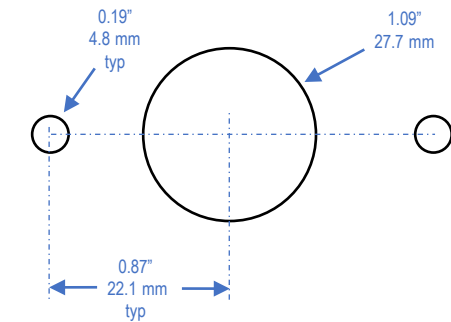
Rebling Datasheet: 500 amp MFT-style Lithium Battery Terminal

Mounting and Assembly

Minimum Panel Thickness	0.025" (0.64 mm)	
Mounting Hole Pattern (see diagram below)	Three Circular Holes	
Torque on M8 Bolts:		
Recommended	50 to 60 in-lbs (5.6-6.8 Nm)	electrical performance does not get better or worse above 50 in-lbs (5.6 Nm)
Maximum Recommended	240 in-lbs (27 Nm)	a Grade 4, M8 stainless bolt will snap at 330 in-lbs (37 Nm)
Torque on M4 panel mount screws		
Recommended	10 to 15 in-lbs (1.1 - 1.7 Nm)	mechanical performance does not improve above 10 in-lbs (1.1 Nm)
Maximum Recommended	22 in-lbs (2.5 Nm)	the terminal's mounting ear will begin to deform at 36 in-lbs (4.0 Nm)
Maximum Crimp Lug Tongue Width:		
with Flexible Cover	1.10" (28 mm)	
with Short Rigid Snap-on Cover	0.91" (23 mm)	
with Long Rigid Snap-on Cover	0.70" (18 mm)	

Application Notes

- Watertight is superior to IP68:** Rebling terminals are completely watertight to a depth of 20 meters which is superior to any IP Rating. The definitions of IP67, IP68 and IP69k per IEC 60529 state that "water may penetrate the seal but shall do no harm", a condition that is unacceptable to lithium battery designers.
- Interchangeability of 500 amp and 250 amp Terminals:** if you are uncertain whether your application needs a 250 amp or 500 amp terminal, cut your panel with the mounting hole pattern for the 500 amp MFT-style Terminal. This gives you the flexibility of choice. If a 250 amp SFT-style Terminal is mounted in the MFT Terminal's mounting holes, the SFT Terminal will achieve all of its performance parameters, including watertight sealing.
- Cable Pulling Lubricant:** when using 4/0 (110 mm²) cable with the flexible cover, crimp the lug to the cable then push the lug into the cover using lubricant
- Panel Mounting Hardware:** to achieve watertight sealing, the McMaster Carr P/Ns shown below can be used
 - 92855A416 M4 stainless socket head screw
 - 91828A231 M4 stainless nut
 - 9452K15 M4 O-Ring



Mounting Hole Pattern

Rebling Datasheet: 500 amp MFT-style Imperial Feed-through Terminal

Our Imperial-threaded MFT-style terminal has performance characteristics identical to our Metric-threaded MFT-style terminal but is specially designed for applications which require Imperial Threads, including Avionics Power Distribution Units and Power Conversion Modules. The Imperial MFT can accept the same snap-on rigid or flexible covers as our metric terminals. The brass core is nickel plated for harsh environments and remains cool at extreme current levels. Equipping your design with these watertight, single pole, wrench disconnect terminals will enable OEMs to easily incorporate your modules into their Power Distribution System, Electric Propulsion Airframe or Power Conditioning Architecture. Whether you are coupling battery modules in series for a Jump Starter, Ground Power Unit, Airborne Motive Power Battery Pack or simply bringing DC power from the inside to the outside of any panel, our Imperial-threaded MFT-style 500 amp terminals, Covers and Accessories were designed with your application in mind.



Electrical

Current each current profile causes a max 30° C temperature rise when tested per IEC 61984

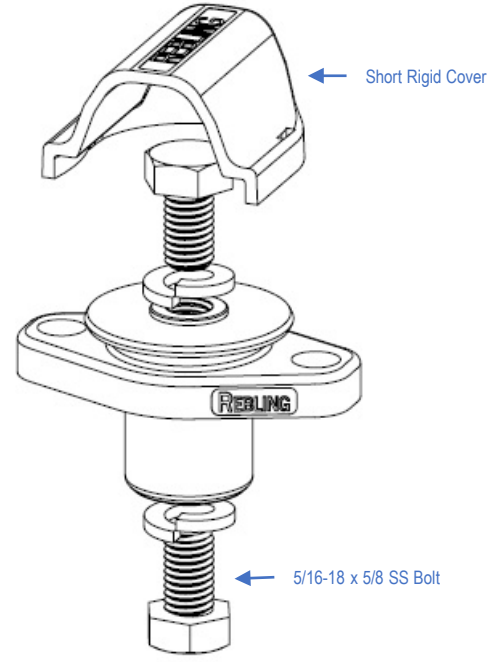
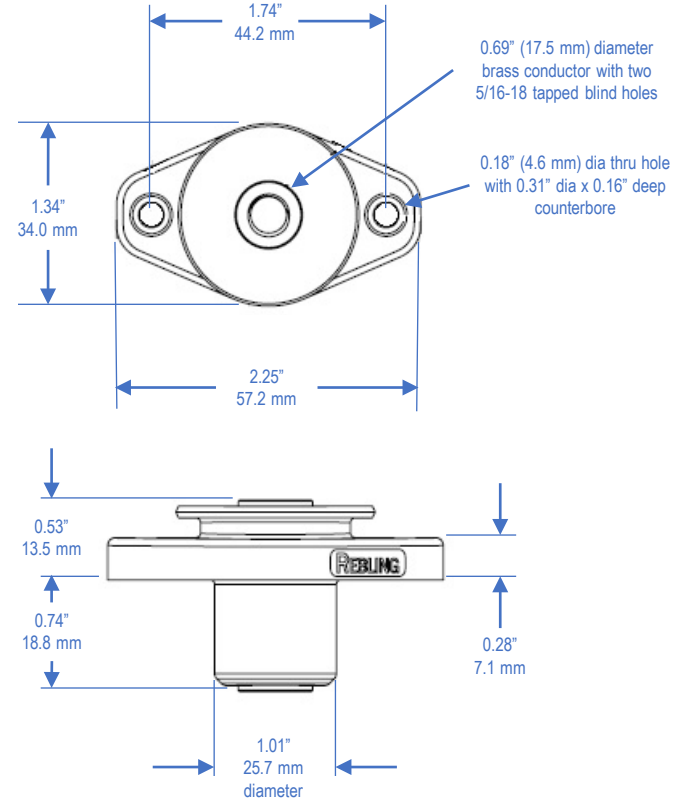
Current Profile #1	Continuous Rated Current (CRC)	-----	500 amps
Current Profile #2	50% CRC for 60min + 1 sec peak + 50% CRC for 60 min	-----	3,000 amps
Current Profile #3	50% CRC for 60min + 10 sec peak + 50% CRC for 60 min	-----	2,000 amps
Current Profile #4	50% CRC for 60min + 30 sec peak + 50% CRC for 60 min	-----	1,250 amps
Current Profile #5	50% CRC for 60min + 60 sec peak + 50% CRC for 60 min	-----	1,000 amps

Voltage & Resistance

Continuous Rated Voltage	UL1977 Section 17	2,000 volts
Minimum Dielectric Withstanding Voltage	UL1977 Section 17	5,000 volts
Insulation Resistance	MIL-PRF-18148D Section 3.12.6	500 mega-ohms
Maximum Contact Resistance	MIL-STD-202H Method 307	70 micro-ohms

Mechanical & Environmental

Flammability Rating:	Terminal -----	UL 94	V-0
	Flexible Cover and Rigid Cover	UL 94	V-0
Environmental Sealing:	with Optional Gasket -----	IEC 60529	IP68+ watertight
	without Optional Gasket	IEC 60529	IP65
Operating Temperature:	Terminal and Rigid Covers -----		-40 to +125 C
	Flexible Cover		-40 to +90 C
Mechanical Shock	MIL-STD-202H Method 213 Condition A		50 Gs – 3 axes
Vibration	MIL-STD-202H Method 204 Condition A		10 Gs – 3 axes
Minimum Panel Thickness Required for Mounting			0.025" (0.64 mm)
Maximum Wire Size:	Terminal only or with Flexible Cover -----		4/0 (110 mm ²)
	with Short Rigid Snap-on Cover		3/0 (80 mm ²)
	with Long Rigid Snap-on Cover		2 AWG (35 mm ²)



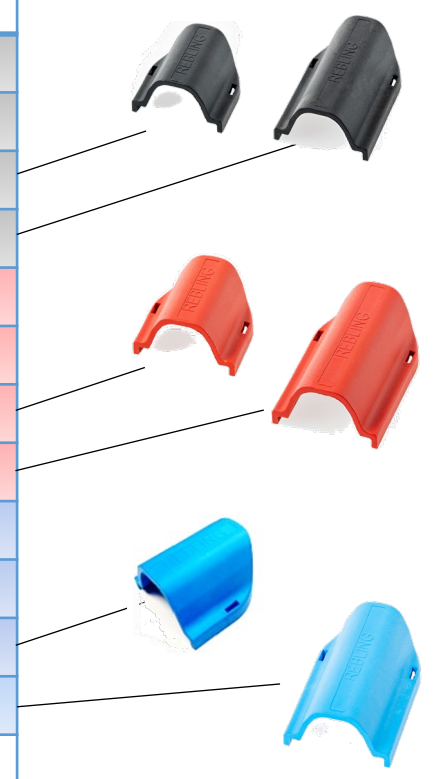
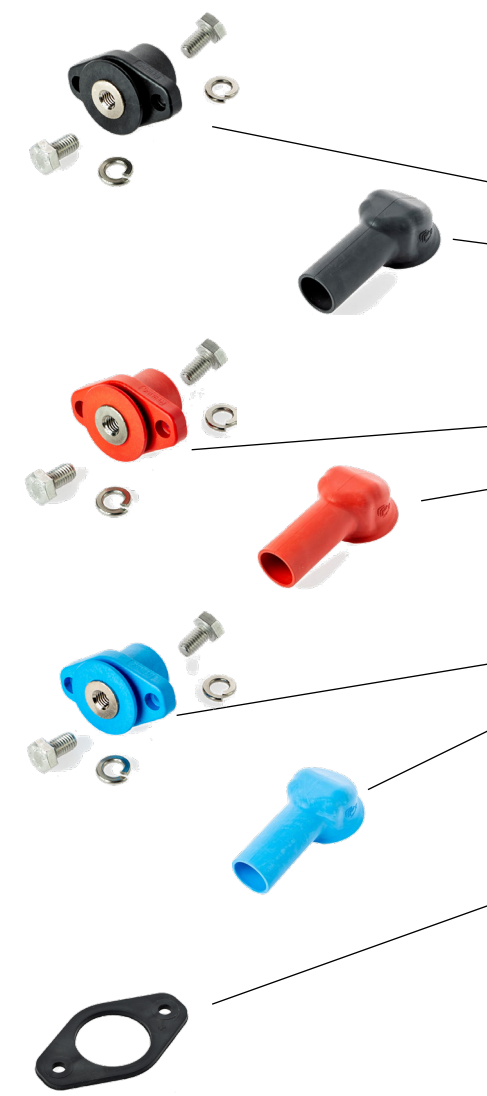
Compliance & Conformance

RoHS, REACH, CMRT/3TG
 UL and CE Conformance

All parts listed on this datasheet are RoHS, REACH and CMRT/3TG Compliant
 Declarations of UL and CE Conformity can be downloaded from Rebling.com

For complete dimensions, download 3D Step files of Terminal and Accessories at Rebling.com

Rebling Datasheet: 500 amp MFT-style Imperial Feed-through Terminal



P/N	Description	Plastic Color	Weight (Grams)	Min Thick (mm)	UL 94 Rating	UL Material Yellow Card # **
MFT-P-B-516	Terminal Kit*, Brass, Nickel plated	Black	98	2.1	V-0	E121562-220886
713A1806-B	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Black	26	2.0	V-0	E80017-250533
698A1789-S-B	Rigid Snap-On Cover, Short (1.44" OAL)	Black	9	2.0	V-0	E121562-101513781
698A1789-L-B	Rigid Snap-On Cover, Long (2.23" OAL)	Black	12	2.0	V-0	E121562-101513781
MFT-P-R-516	Terminal Kit*, Brass, Nickel plated	Red	98	2.1	V-0	E121562-220886
713A1806-R	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Red	26	2.0	V-0	E80017-250533
698A1789-S-R	Rigid Snap-On Cover, Short (1.44" OAL)	Red	9	2.0	V-0	E121562-101513781
698A1789-L-R	Rigid Snap-On Cover, Long (2.23" OAL)	Red	12	2.0	V-0	E121562-101513781
MFT-P-E-516	Terminal Kit*, Brass, Nickel plated	Blue	98	2.1	V-0	E121562-220886
713A1806-E	Flexible Snap-On Cover (3.75" OAL, 0.82" ID)	Blue	26	2.0	V-0	E80017-250533
698A1789-S-E	Rigid Snap-On Cover, Short (1.44" OAL)	Blue	9	2.0	V-0	E121562-101513781
698A1789-L-E	Rigid Snap-On Cover, Long (2.23" OAL)	Blue	12	2.0	V-0	E121562-101513781
716A1815	Gasket for MFT Terminal	Black	2.2	2.0	V-0	E80017-250535
*Terminal Kit = one Terminal + two Bolts + two Split Washers, all parts in a small poly bag **UL Material Yellow Cards can be downloaded from ULprospector.com						

Rebling Datasheet: 500 amp MFT-style Imperial Feed-through Terminal

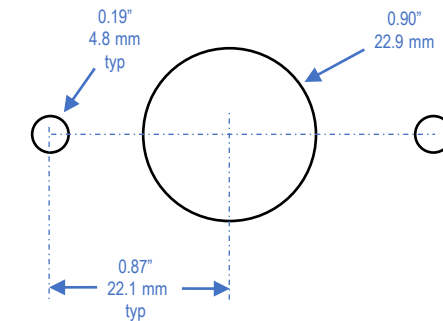
Mounting and Assembly

Minimum Panel Thickness	0.025" (0.64 mm)	
Mounting Hole Pattern (see diagram below)	Three Circular Holes	
Torque on M8 Bolts:		
Recommended	50 to 60 in-lbs (5.6-6.8 Nm)	electrical performance does not get better or worse above 50 in-lbs (5.6 Nm)
Maximum Recommended	240 in-lbs (27 Nm)	a Grade 4, M8 stainless bolt will snap at 330 in-lbs (37 Nm)
Torque on M4 panel mount screws		
Recommended	10 to 15 in-lbs (1.1 - 1.7 Nm)	mechanical performance does not improve above 10 in-lbs (1.1 Nm)
Maximum Recommended	22 in-lbs (2.5 Nm)	the terminal's mounting ear will begin to deform at 36 in-lbs (4.0 Nm)
Maximum Crimp Lug Tongue Width:		
with Flexible Cover	1.10" (28 mm)	
with Short Rigid Snap-on Cover	0.91" (23 mm)	
with Long Rigid Snap-on Cover	0.70" (18 mm)	



Application Notes

- Watertight is superior to IP68:** Rebling terminals are completely watertight to a depth of 20 meters which is superior to any IP Rating. The definitions of IP67, IP68 and IP69k per IEC 60529 state that "water may penetrate the seal but shall do no harm", a condition that is unacceptable to lithium battery designers.
- Interchangeability of 500 amp and 250 amp Terminals:** if you are uncertain whether your application needs a 250 amp or 500 amp terminal, cut your panel with the mounting hole pattern for the 500 amp MFT-style Terminal. This gives you the flexibility of choice. If a 250 amp SFT-style Terminal is mounted in the MFT Terminal's mounting holes, the SFT Terminal will achieve all of its performance parameters, including watertight sealing.
- Cable Pulling Lubricant:** when using 4/0 (110 mm²) cable with the flexible cover, crimp the lug to the cable then push the lug into the cover using lubricant
- Panel Mounting Hardware:** to achieve watertight sealing, the McMaster Carr P/Ns shown below can be used
 - 92855A416 M4 stainless socket head screw
 - 91828A231 M4 stainless nut
 - 9452K15 M4 O-Ring



Mounting Hole Pattern

Rebling Datasheet: 750 amp XFT-style Lithium Battery Terminal

Our 750 amp XFT-style terminal has performance characteristics identical to our BFT-style 750 amp terminal but is specially designed for mounting onto thin or weak panels. The XFT-style 750 amp terminal's nickel-plated brass core stays cool at 750 amps of continuous current or short term peaks of 4,000 amps. These terminals are designed for the temperature sensitive environment of lithium battery cells, the charging rates of ultracapacitors and supercapacitors or installation in power distribution units. Equipping your power module with these watertight, single pole, wrench disconnect brass terminals will facilitate the incorporation of your modules into cutting edge GenSet, APU or Vehicle Electrification systems. Whether you are designing a liquid-cooled, pressurized battery pack for EV Mobility, a hazardous environment Generator Set or are simply bringing high current through a panel of any thickness, our XFT-style 750 amp terminals, Covers and Accessories were designed with your application in mind.



Electrical

Current each current profile causes a max 30° C temperature rise when tested per IEC 61984

Current Profile #1	Continuous Rated Current (CRC)	-----	750 amps
Current Profile #2	50% CRC for 60min + 1 sec peak + 50% CRC for 60 min		4,000 amps
Current Profile #3	50% CRC for 60min + 10 sec peak + 50% CRC for 60 min	-----	3,000 amps
Current Profile #4	50% CRC for 60min + 30 sec peak + 50% CRC for 60 min		1,800 amps
Current Profile #5	50% CRC for 60min + 60 sec peak + 50% CRC for 60 min	-----	1,500 amps

Voltage & Resistance

Continuous Rated Voltage	UL1977 Section 17	2,000 volts
Minimum Dielectric Withstanding Voltage	UL1977 Section 17	5,000 volts
Insulation Resistance	MIL-PRF-18148D Section 3.12.6	500 mega-ohms
Maximum Contact Resistance	MIL-STD-202H Method 307	70 micro-ohms

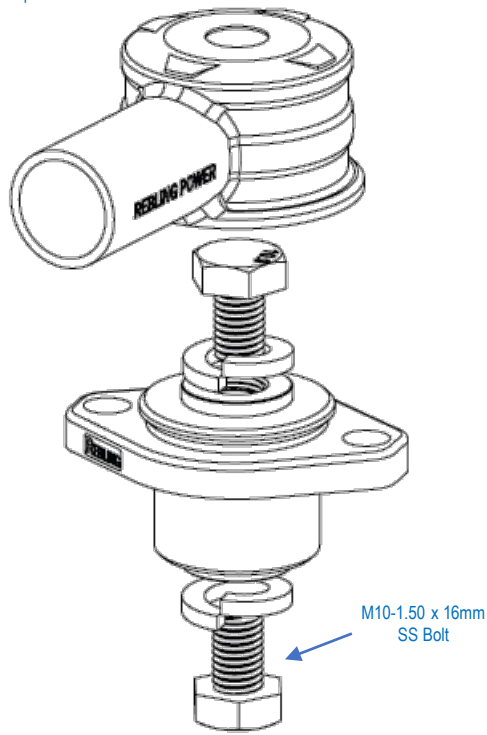
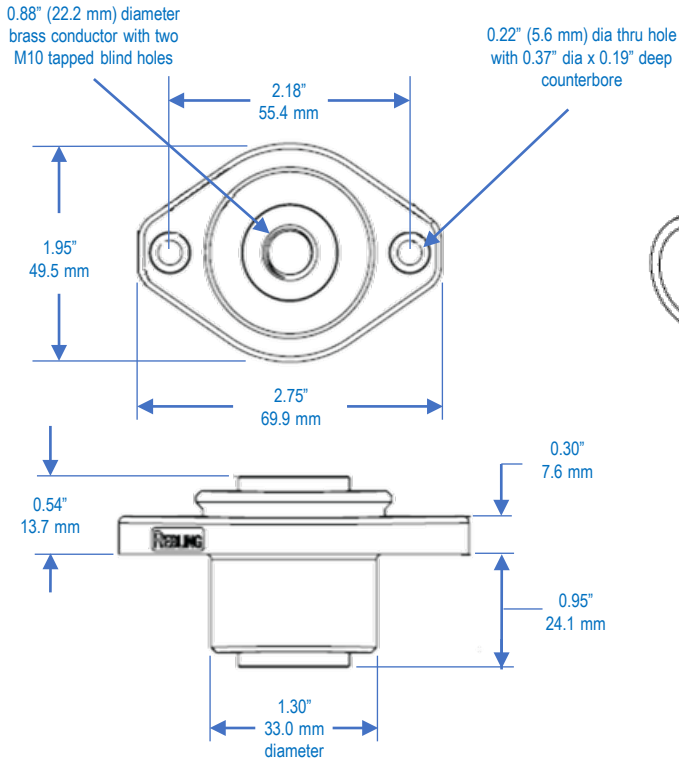
Mechanical & Environmental

Flammability Rating:	Terminal -----	UL 94	V-0
	Flexible Cover	UL 94	V-0
Environmental Sealing:	with optional gasket -----	IEC 60529	IP68+ watertight
	without gasket	IEC 60529	IP65
Operating Temperature:	Terminal -----		-40 to +125 C
	Flexible Cover		-40 to +90 C
Mechanical Shock	MIL-STD-202H Method 213 Condition A		50 Gs – 3 axes
Vibration	MIL-STD-202H Method 204 Condition A		10 Gs – 3 axes
Minimum Panel Thickness Required for Mounting			0.025" (0.64 mm)
Maximum Wire Size:	Terminal only -----		750 MCM (380 mm ²)
	with Flexible Cover		4/0 (110 mm ²)

Compliance & Conformance

RoHS, REACH, CMRT/3TG
 UL and CE Conformance

All parts listed on this datasheet are RoHS, REACH and CMRT/3TG Compliant
 Declarations of UL and CE Conformity can be downloaded from Rebling.com



For complete dimensions, download 3D Step files of Terminal and Accessories at Rebling.com

Rebling Datasheet: 750 amp XFT-style Lithium Battery Terminal



P/N	Description	Plastic Color	Weight (Grams)	Min Thick (mm)	UL 94 Rating	UL Material Yellow Card # **
XFT-P-B	Terminal Kit*, Brass, Nickel Plated	Black	198	2.5	V-0	E121562-220886
639A1830-B	Flexible Cover (3.50" OAL, 0.82" ID)	Black	25	2.0	V-0	E80017-250533
XFT-P-R	Terminal Kit*, Brass, Nickel Plated	Red	198	2.5	V-0	E121562-220886
639A1830-R	Flexible Cover (3.50" OAL, 0.82" ID)	Red	25	2.0	V-0	E80017-250533
720A1817	Gasket for XFT Terminal	Black	4	2.0	V-0	E80017-250535

*Terminal Kit = one Terminal + two Bolts + two Split Washers, all parts in a small poly bag
 **UL Material Yellow Cards can be downloaded from ULprospector.com

Mounting and Assembly

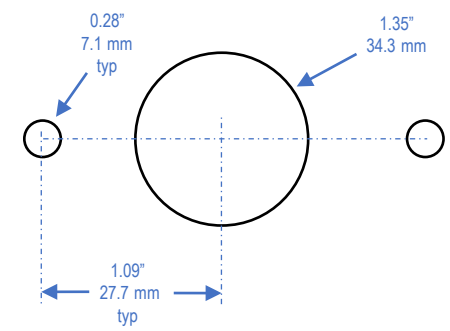
Minimum Panel Thickness	0.025" (0.64 mm)	
Mounting Hole Pattern (see diagram below)	Three Circular Holes	
Torque on M10 Bolts:		
Recommended	60 to 80 in-lbs (6.8-9.1 Nm)	electrical performance does not get better or worse above 60 in-lbs (6.8 Nm)
Maximum Recommended	320 in-lbs (36 Nm)	a Grade 4, M10 stainless bolt will snap at 490 in-lbs (55 Nm)
Torque on M5 panel mount screws:		
Recommended	10 to 15 in-lbs (1.1 - 1.7 Nm)	mechanical performance does not improve above 10 in-lbs (1.1 Nm)
Maximum Recommended	22 in-lbs (2.5 Nm)	the terminal's mounting ear will begin to deform at 36 in-lbs (4.0 Nm)



Application Notes

- Watertight is superior to IP68: Rebling terminals are completely watertight to a depth of 20 meters which is superior to any IP Rating. The definitions of IP67, IP68 and IP69k per IEC 60529 state that "water may penetrate the seal but shall do no harm", a condition that is unacceptable to lithium battery designers.
- Cable Pulling Lubricant: when using 4/0 (110 mm²) cable with the flexible cover, crimp the lug to the cable then push the lug into the cover using lubricant
- Panel Mounting Hardware: to achieve watertight sealing, the McMaster Carr P/Ns shown below can be used

92855A516	M5 stainless socket head screw
91828A241	M5 stainless nut
9452K16	M5 O-Ring



Mounting Hole Pattern

Rebling Datasheet: 1,000 amp XFT-style Lithium Battery Terminal

Our 1,000 amp XFT-style terminal has performance characteristics identical to our 1,000 amp BFT-style terminal but is specially designed for mounting onto thin or weak panels. The 1,000 amp XFT-style terminal's nickel-plated copper core stays cool at 1,000 amps of continuous current or at short term peaks of 5,000 amps. These terminals are designed for the temperature sensitive environment of lithium battery cells and the charging rates of ultracapacitors and supercapacitors. Equipping your power module with these watertight, single pole, wrench disconnect copper terminals will facilitate the incorporation of your modules into cutting edge EV, APU, Fuel Cell and Weapons Systems. Whether you are designing a liquid-cooled, pressurized battery pack for EV Mobility, Regenerative Braking, Rail Gun or Laser Weapon applications or are simply bringing high current through a panel of any material or thickness, our XFT-style 1,000 amp terminals, Covers and Accessories were designed with your application in mind.



Electrical

Current each current profile causes a max 30° C temperature rise when tested per IEC 61984

Current Profile #1	Continuous Rated Current (CRC)	-----	1,000 amps
Current Profile #2	50% CRC for 60min + 1 sec peak + 50% CRC for 60 min		5,000 amps
Current Profile #3	50% CRC for 60min + 10 sec peak + 50% CRC for 60 min	-----	4,000 amps
Current Profile #4	50% CRC for 60min + 30 sec peak + 50% CRC for 60 min		2,500 amps
Current Profile #5	50% CRC for 60min + 60 sec peak + 50% CRC for 60 min	-----	2,000 amps

Voltage & Resistance

Continuous Rated Voltage	UL1977 Section 17	2,000 volts
Minimum Dielectric Withstanding Voltage	UL1977 Section 17	5,000 volts
Insulation Resistance	MIL-PRF-18148D Section 3.12.6	500 mega-ohms
Maximum Contact Resistance	MIL-STD-202H Method 307	70 micro-ohms

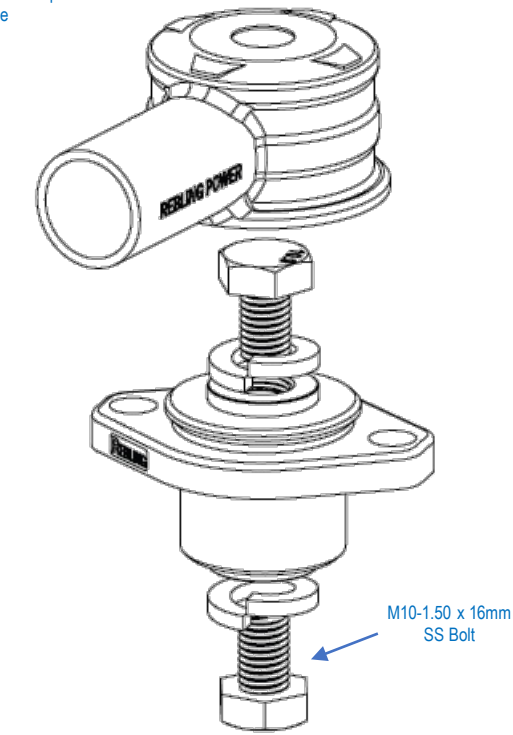
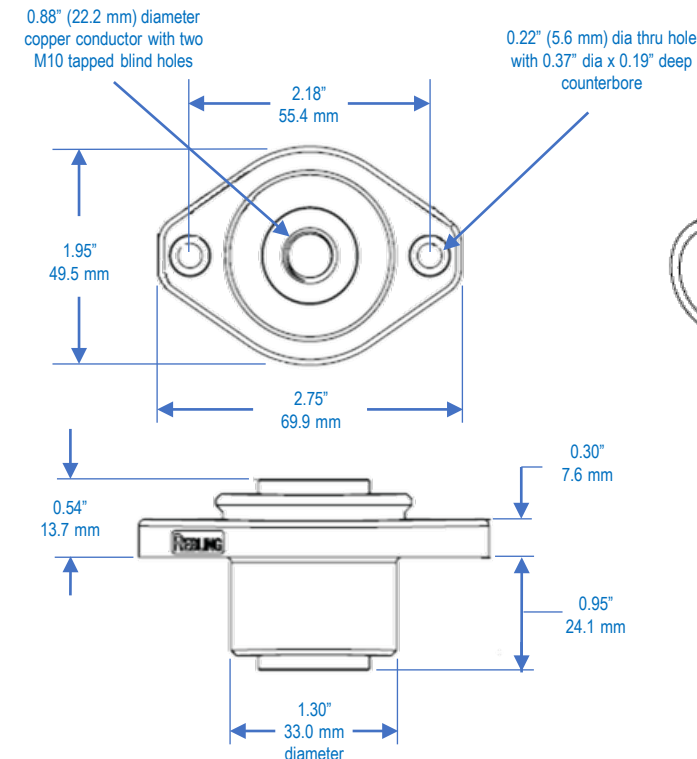
Mechanical & Environmental

Flammability Rating:	Terminal -----	UL 94	V-0
	Flexible Cover	UL 94	V-0
Environmental Sealing:	with optional gasket -----	IEC 60529	IP68+ watertight
	without gasket	IEC 60529	IP65
Operating Temperature:	Terminal -----		-40 to +125 C
	Flexible Cover		-40 to +90 C
Mechanical Shock		MIL-STD-202H Method 213 Condition A	50 Gs – 3 axes
Vibration		MIL-STD-202H Method 204 Condition A	10 Gs – 3 axes
Minimum Panel Thickness Required for Mounting			0.025" (0.64 mm)
Maximum Wire Size:	Terminal only -----		750 MCM (380 mm ²)
	with Flexible Cover		4/0 (110 mm ²)

Compliance & Conformance

RoHS, REACH, CMRT/3TG
 UL and CE Conformance

All parts listed on this datasheet are RoHS, REACH and CMRT/3TG Compliant
 Declarations of UL and CE Conformity can be downloaded from Rebling.com



For complete dimensions, download 3D Step files of Terminal and Accessories at Rebling.com

Rebling Datasheet: 1,000 amp XFT-style Lithium Battery Terminal



P/N	Description	Plastic Color	Weight (Grams)	Min Thick (mm)	UL 94 Rating	UL Material Yellow Card # **
XFT-N-B	Terminal Kit*, Copper, Nickel Plated	Black	198	2.5	V-0	E121562-220886
639A1830-B	Flexible Cover (3.50" OAL, 0.82" ID)	Black	25	2.0	V-0	E80017-250533
XFT-N-R	Terminal Kit*, Copper, Nickel Plated	Red	198	2.5	V-0	E121562-220886
639A1830-R	Flexible Cover (3.50" OAL, 0.82" ID)	Red	25	2.0	V-0	E80017-250533
720A1817	Gasket for XFT Terminal	Black	4	2.0	V-0	E80017-250535

*Terminal Kit = one Terminal + two Bolts + two Split Washers, all parts in a small poly bag
 **UL Material Yellow Cards can be downloaded from ULprospector.com

Mounting and Assembly

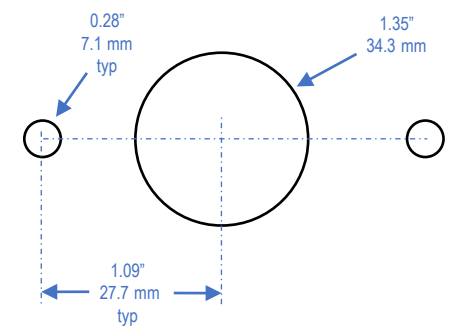
Minimum Panel Thickness	0.025" (0.64 mm)	
Mounting Hole Pattern (see diagram below)	Three Circular Holes	
Torque on M10 Bolts:		
Recommended	60 to 80 in-lbs (6.8-9.1 Nm)	electrical performance does not get better or worse above 60 in-lbs (6.8 Nm)
Maximum Recommended	320 in-lbs (36 Nm)	a Grade 4, M10 stainless bolt will snap at 490 in-lbs (55 Nm)
Torque on M5 panel mount screws:		
Recommended	10 to 15 in-lbs (1.1 - 1.7 Nm)	mechanical performance does not improve above 10 in-lbs (1.1 Nm)
Maximum Recommended	22 in-lbs (2.5 Nm)	the terminal's mounting ear will begin to deform at 36 in-lbs (4.0 Nm)



Application Notes

- Watertight is superior to IP68: Rebling terminals are completely watertight to a depth of 20 meters which is superior to any IP Rating. The definitions of IP67, IP68 and IP69k per IEC 60529 state that "water may penetrate the seal but shall do no harm", a condition that is unacceptable to lithium battery designers.
- Cable Pulling Lubricant: when using 4/0 (110 mm²) cable with the flexible cover, crimp the lug to the cable then push the lug into the cover using lubricant
- Panel Mounting Hardware: to achieve watertight sealing, the McMaster Carr P/Ns shown below can be used

92855A516	M5 stainless socket head screw
91828A241	M5 stainless nut
9452K16	M5 O-Ring



Mounting Hole Pattern

Rebling Datasheet: 1,000 amp XFT-style Imperial Feed-through Terminal

Our Imperial-threaded XFT-style terminal has performance characteristics identical to our Metric-threaded XFT-style terminal but is specially designed for applications which require Imperial Threads, including Avionics Power Distribution Units and Power Conversion Modules. The Imperial XFT can accept the same snap-on flexible covers as our metric terminals. The brass core is nickel plated for harsh environments and remains cool at extreme current levels. Equipping your design with these watertight, single pole, wrench disconnect terminals will enable OEMs to easily incorporate your modules into their Power Distribution System, Electric Propulsion Airframe or Power Conditioning Architecture. Whether you are coupling battery modules in series for a Jump Starter, Ground Power Unit, Airborne Motive Power Battery Pack or simply bringing DC power from the inside to the outside of any panel, our Imperial-threaded XFT-style 1,000 amp terminals, Covers and Accessories were designed with your application in mind.

Electrical

Current each current profile causes a max 30° C temperature rise when tested per IEC 61984

Current Profile #1	Continuous Rated Current (CRC)	-----	1,000 amps
Current Profile #2	50% CRC for 60min + 1 sec peak + 50% CRC for 60 min		5,000 amps
Current Profile #3	50% CRC for 60min + 10 sec peak + 50% CRC for 60 min	-----	4,000 amps
Current Profile #4	50% CRC for 60min + 30 sec peak + 50% CRC for 60 min		2,500 amps
Current Profile #5	50% CRC for 60min + 60 sec peak + 50% CRC for 60 min	-----	2,000 amps

Voltage & Resistance

Continuous Rated Voltage	UL1977 Section 17	2,000 volts
Minimum Dielectric Withstanding Voltage	UL1977 Section 17	5,000 volts
Insulation Resistance	MIL-PRF-18148D Section 3.12.6	500 mega-ohms
Maximum Contact Resistance	MIL-STD-202H Method 307	70 micro-ohms

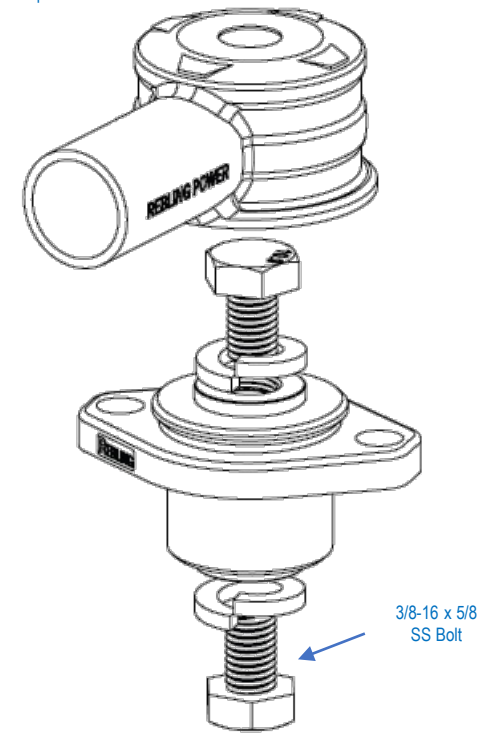
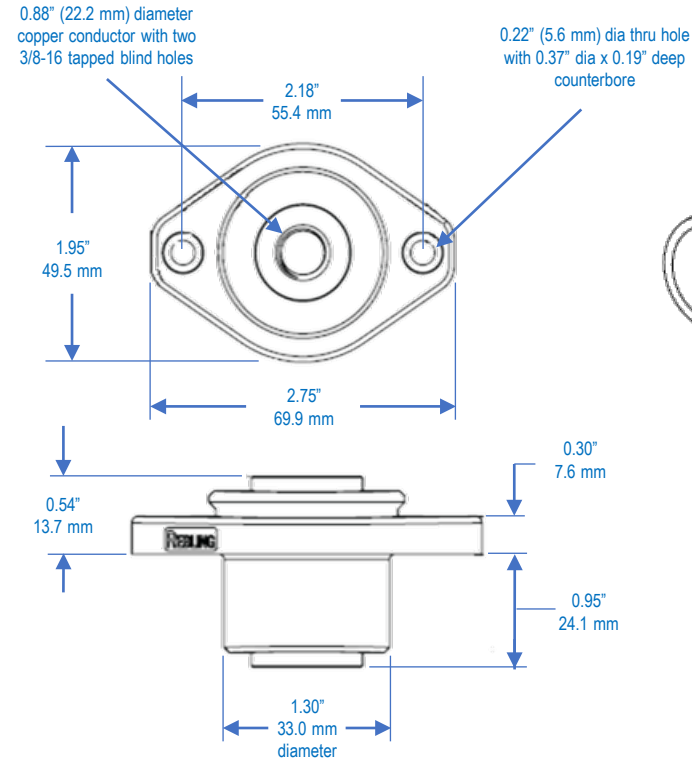
Mechanical & Environmental

Flammability Rating:	Terminal -----	UL 94	V-0
	Flexible Cover	UL 94	V-0
Environmental Sealing:	with optional gasket -----	IEC 60529	IP68+ watertight
	without gasket	IEC 60529	IP65
Operating Temperature:	Terminal -----		-40 to +125 C
	Flexible Cover		-40 to +90 C
Mechanical Shock	MIL-STD-202H Method 213 Condition A		50 Gs – 3 axes
Vibration	MIL-STD-202H Method 204 Condition A		10 Gs – 3 axes
Minimum Panel Thickness Required for Mounting			0.025" (0.64 mm)
Maximum Wire Size:	Terminal only -----		750 MCM (380 mm ²)
	with Flexible Cover		4/0 (110 mm ²)

Compliance & Conformance

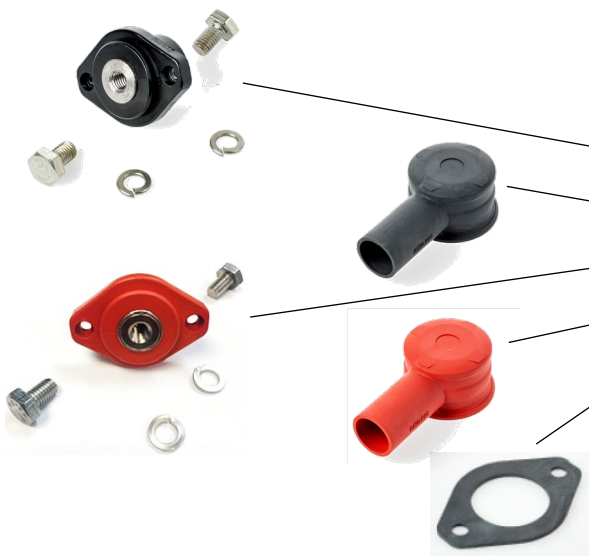
RoHS, REACH, CMRT/3TG
 UL and CE Conformance

All parts listed on this datasheet are RoHS, REACH and CMRT/3TG Compliant
 Declarations of UL and CE Conformity can be downloaded from Rebling.com



For complete dimensions, download 3D Step files of Terminal and Accessories at Rebling.com

Rebling Datasheet: 1,000 amp XFT-style Imperial Feed-through Terminal



P/N	Description	Plastic Color	Weight (Grams)	Min Thick (mm)	UL 94 Rating	UL Material Yellow Card # **
XFT-N-B-38	Terminal Kit*, Copper, Nickel Plated	Black	198	2.5	V-0	E121562-220886
639A1830-B	Flexible Cover (3.50" OAL, 0.82" ID)	Black	25	2.0	V-0	E80017-250533
XFT-N-R-38	Terminal Kit*, Copper, Nickel Plated	Red	198	2.5	V-0	E121562-220886
639A1830-R	Flexible Cover (3.50" OAL, 0.82" ID)	Red	25	2.0	V-0	E80017-250533
720A1817	Gasket for XFT Terminal	Black	4	2.0	V-0	E80017-250535

*Terminal Kit = one Terminal + two Bolts + two Split Washers, all parts in a small poly bag
 **UL Material Yellow Cards can be downloaded from ULprospector.com

Mounting and Assembly

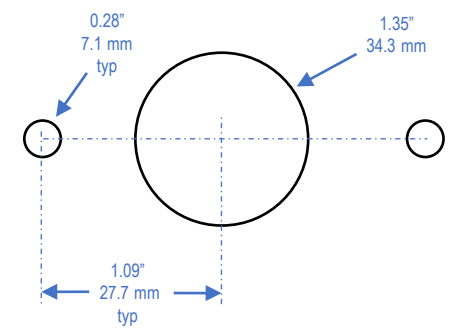
Minimum Panel Thickness	0.025" (0.64 mm)	
Mounting Hole Pattern (see diagram below)	Three Circular Holes	
Torque on M10 Bolts:		
Recommended	60 to 80 in-lbs (6.8-9.1 Nm)	electrical performance does not get better or worse above 60 in-lbs (6.8 Nm)
Maximum Recommended	320 in-lbs (36 Nm)	a Grade 4, M10 stainless bolt will snap at 490 in-lbs (55 Nm)
Torque on M5 panel mount screws:		
Recommended	10 to 15 in-lbs (1.1 - 1.7 Nm)	mechanical performance does not improve above 10 in-lbs (1.1 Nm)
Maximum Recommended	22 in-lbs (2.5 Nm)	the terminal's mounting ear will begin to deform at 36 in-lbs (4.0 Nm)



Application Notes

- Watertight is superior to IP68:** Rebling terminals are completely watertight to a depth of 20 meters which is superior to any IP Rating. The definitions of IP67, IP68 and IP69k per IEC 60529 state that "water may penetrate the seal but shall do no harm", a condition that is unacceptable to lithium battery designers.
- Cable Pulling Lubricant:** when using 4/0 (110 mm²) cable with the flexible cover, crimp the lug to the cable then push the lug into the cover using lubricant
- Panel Mounting Hardware:** to achieve watertight sealing, the McMaster Carr P/Ns shown below can be used

92855A516	M5 stainless socket head screw
91828A241	M5 stainless nut
9452K16	M5 O-Ring



Mounting Hole Pattern

Rebling Datasheet: 750 amp BFT-style Lithium Battery Terminal

Our 750 amp BFT-style terminal consists of a nickel-plated brass core which stays cool at 750 amps of continuous current or when charge and discharge currents hit short term peaks of 4,000 amps. These small footprint terminals are designed for the temperature sensitive environment of lithium battery cells and the charging rates of ultracapacitors and supercapacitors. Equipping your power module with these watertight, single pole, wrench disconnect brass terminals will facilitate the incorporation of your modules into cutting edge GenSet, APU or Vehicle Electrification systems. Whether you are designing a liquid-cooled, pressurized battery pack for EV Mobility, a hazardous environment Generator Set or are simply bringing high current through a metal panel that's at least 0.080" (2.1 mm) thick, our BFT-style 750 amp terminals, Covers and Accessories were designed with your application in mind.



Electrical

Current each current profile causes a max 30° C temperature rise when tested per IEC 61984

Current Profile #1	Continuous Rated Current (CRC)	-----	750 amps
Current Profile #2	50% CRC for 60min + 1 sec peak + 50% CRC for 60 min	-----	4,000 amps
Current Profile #3	50% CRC for 60min + 10 sec peak + 50% CRC for 60 min	-----	3,000 amps
Current Profile #4	50% CRC for 60min + 30 sec peak + 50% CRC for 60 min	-----	1,800 amps
Current Profile #5	50% CRC for 60min + 60 sec peak + 50% CRC for 60 min	-----	1,500 amps

Voltage & Resistance

Continuous Rated Voltage	UL1977 Section 17	2,000 volts
Minimum Dielectric Withstanding Voltage	UL1977 Section 17	5,000 volts
Insulation Resistance	MIL-PRF-18148D Section 3.12.6	500 mega-ohms
Maximum Contact Resistance	MIL-STD-202H Method 307	70 micro-ohms

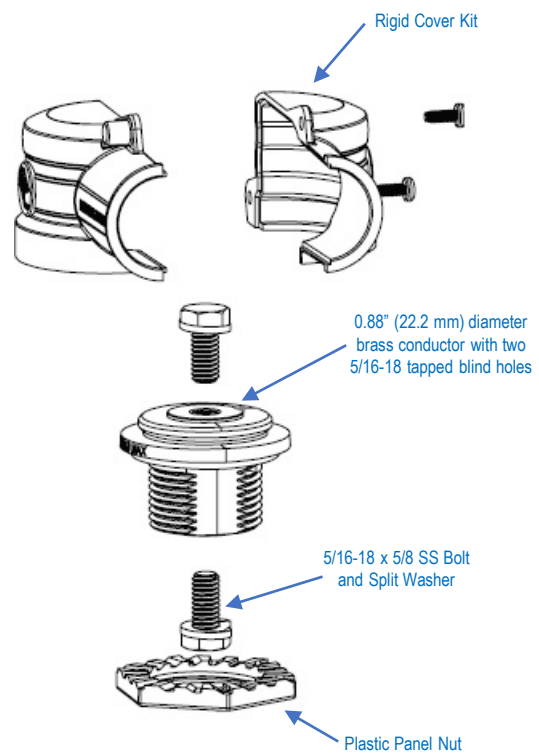
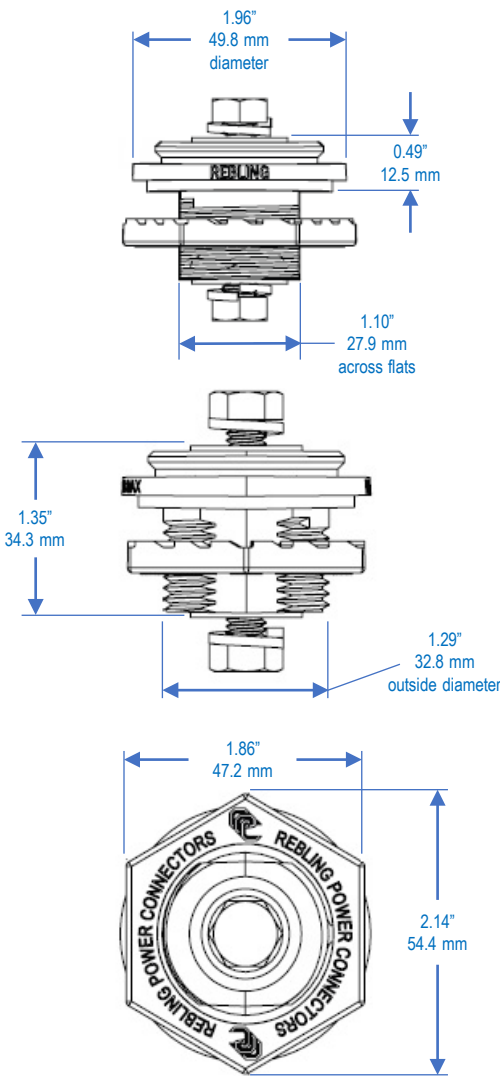
Mechanical & Environmental

Flammability Rating:	Terminal -----	UL 94	5VA
	Flexible and Rigid Covers	UL 94	V-0
Environmental Sealing:	with Optional Gasket -----	IEC 60529	IP68+ watertight
	without Optional Gasket	IEC 60529	IP65
Operating Temperature:	Terminal and Rigid Cover -----		-40 to +125 C
	Flexible Cover		-40 to +90 C
Mechanical Shock	MIL-STD-202H Method 213 Condition A		50 Gs – 3 axes
Vibration	MIL-STD-202H Method 204 Condition A		10 Gs – 3 axes
Minimum Metal Panel Thickness Required for Mounting			0.080" (2.1 mm)
Maximum Wire Size:	Terminal only -----	-2.00" (50.8 mm) OD	750 MCM (380 mm ²)
	with Rigid Cover	1.02" (25.9 mm) OD	250 MCM (130 mm ²)
	with Flexible Cover	0.80" (20.3 mm) OD	4/0 (110 mm ²)

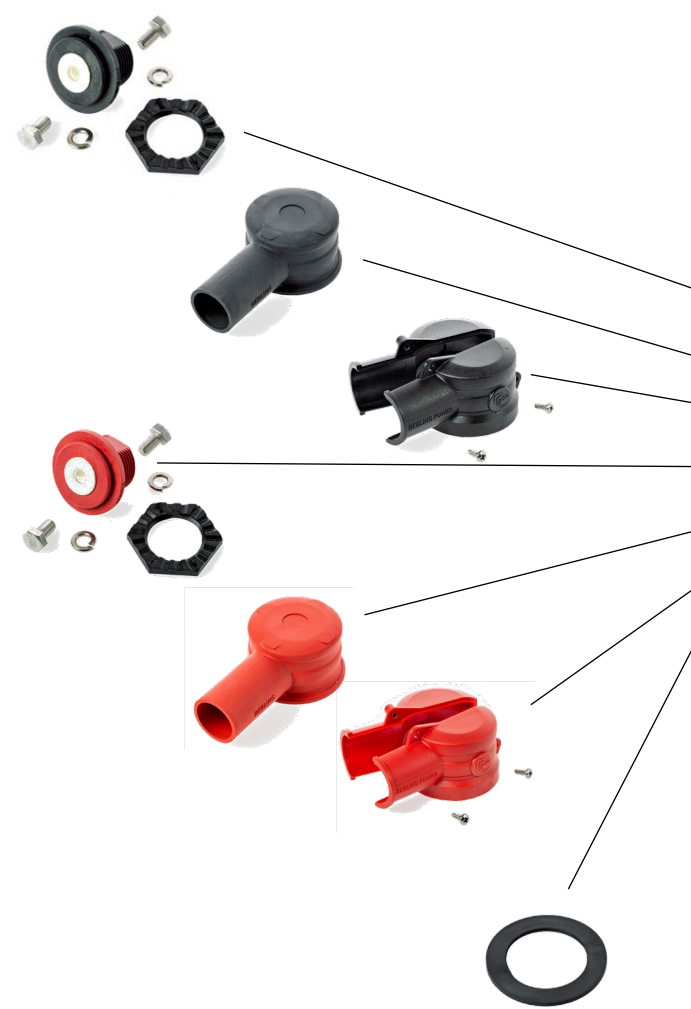
Compliance & Conformance

RoHS, REACH, CMRT/3TG
 UL and CE Conformance

All parts listed on this datasheet are RoHS, REACH and CMRT/3TG Compliant
 Declarations of UL and CE Conformity can be downloaded from Rebling.com



For complete dimensions, download 3D Step files of Terminal and Accessories at Rebling.com



P/N	Description	Plastic Color	Weight (Grams)	Min Thick (mm)	UL 94 Rating	UL Material Yellow Card # **
BFT-P-B	Terminal Kit*, Brass, Nickel plated	Black	155	2.1	5VA	E121562-101513781
639A1830-B	Flexible Cover (3.50" OAL, 0.82" ID)	Black	25	2.1	V-0	E80017-250533
648A1758	Rigid Cover Kit (3.85" OAL, 1.05" ID)	Black	50	2.0	V-0	E121562-220886
BFT-P-R	Terminal Kit*, Brass, Nickel plated	Red	155	2.1	5VA	E121562-101513781
639A1830-R	Flexible Cover (3.50" OAL, 0.82" ID)	Red	25	2.1	V-0	E80017-250533
648A1779	Rigid Cover Kit (3.85" OAL, 1.05" ID)	Red	50	2.0	V-0	E121562-220886
651A1811	Gasket for BFT Terminal	Black	4	2.0	V-0	E80017-250535
656A1686	Plastic Panel Nut for BFT Terminal	Black	8	2.0	V-0	E121562-220886
*Terminal Kit = one Terminal + one Panel Nut + two Bolts + two Split Washers, all parts in a small poly bag **UL Material Yellow Cards can be downloaded from ULprospector.com						



The BFT Terminal can be used by itself or...



...with only the flexible cover or ...



... with only the rigid cover or...



... with the rigid cover surrounding the flexible cover



Rebling Datasheet: 1,000 amp BFT-style Lithium Battery Terminal

Our 1,000 amp BFT-style terminal consists of a nickel-plated copper core which stays cool at 1,000 amps of continuous current or when charge and discharge currents hit short term peaks of 5,000 amps. These small footprint terminals are designed for the temperature sensitive environment of lithium battery cells and the charging rates of ultracapacitors and supercapacitors. Equipping your power module with these watertight, single pole, wrench disconnect copper terminals will facilitate the incorporation of your modules into cutting edge EV, APU, Fuel Cell and Weapons Systems. Whether you are designing a pressurized battery pack for EV Mobility, Regenerative Braking, Rail Gun or Laser Weapon applications or are simply bringing high current through a metal panel that's at least 0.080" (2.1 mm) thick, our BFT-style 1,000 amp terminals, Covers and Accessories were designed with your application in mind.



Electrical

Current each current profile causes a max 30° C temperature rise when tested per IEC 61984

Current Profile #1	Continuous Rated Current (CRC)	-----	1,000 amps
Current Profile #2	50% CRC for 60min + 1 sec peak + 50% CRC for 60 min	-----	5,000 amps
Current Profile #3	50% CRC for 60min + 10 sec peak + 50% CRC for 60 min	-----	4,000 amps
Current Profile #4	50% CRC for 60min + 30 sec peak + 50% CRC for 60 min	-----	2,500 amps
Current Profile #5	50% CRC for 60min + 60 sec peak + 50% CRC for 60 min	-----	2,000 amps

Voltage & Resistance

Continuous Rated Voltage	UL1977 Section 17	2,000 volts
Minimum Dielectric Withstanding Voltage	UL1977 Section 17	5,000 volts
Insulation Resistance	MIL-PRF-18148D Section 3.12.6	500 mega-ohms
Maximum Contact Resistance	MIL-STD-202H Method 307	70 micro-ohms

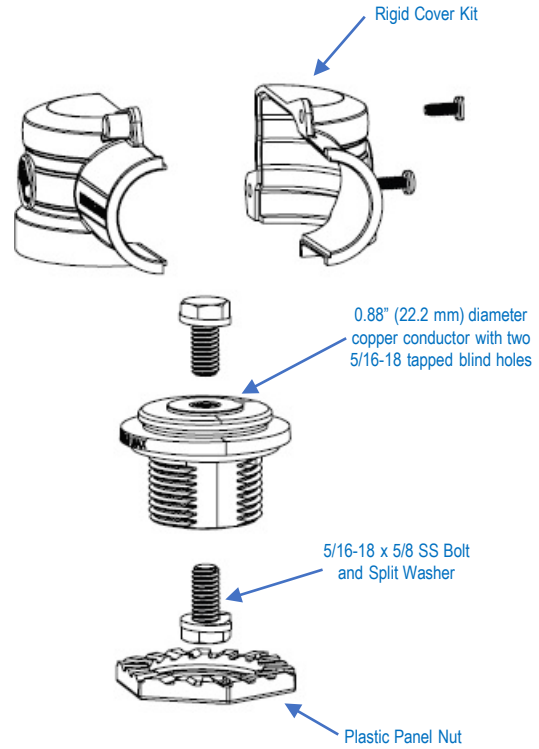
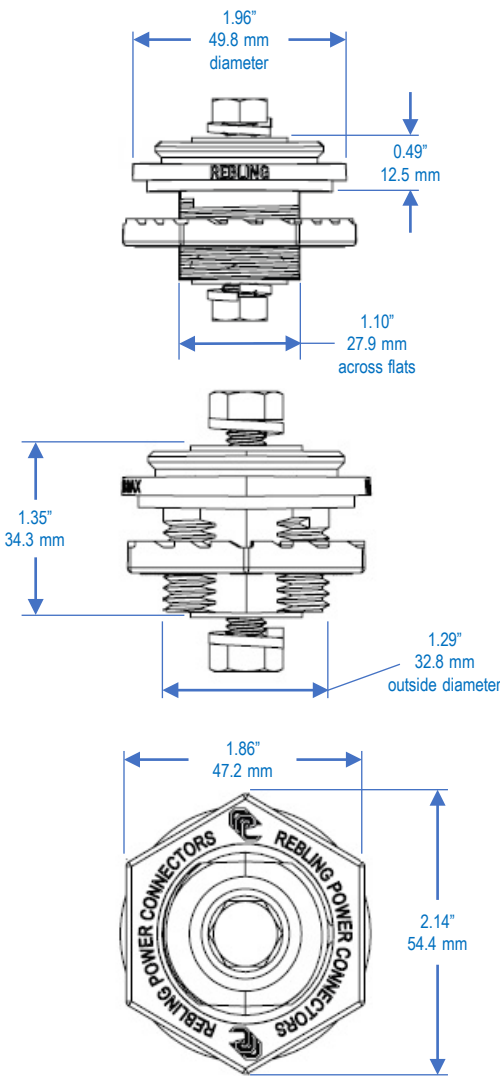
Mechanical & Environmental

Flammability Rating:	Terminal -----	UL 94	5VA
	Flexible and Rigid Covers	UL 94	V-0
Environmental Sealing:	with Optional Gasket -----	IEC 60529	IP68+ watertight
	without Optional Gasket	IEC 60529	IP65
Operating Temperature:	Terminal and Rigid Cover -----		-40 to +125 C
	Flexible Cover		-40 to +90 C
Mechanical Shock	MIL-STD-202H Method 213 Condition A		50 Gs – 3 axes
Vibration	MIL-STD-202H Method 204 Condition A		10 Gs – 3 axes
Minimum Metal Panel Thickness Required for Mounting			0.080" (2.1 mm)
Maximum Wire Size:	Terminal only -----	-2.00" (50.8 mm) OD	750 MCM (380 mm ²)
	with Rigid Cover	1.02" (25.9 mm) OD	250 MCM (130 mm ²)
	with Flexible Cover	0.80" (20.3 mm) OD	4/0 (110 mm ²)

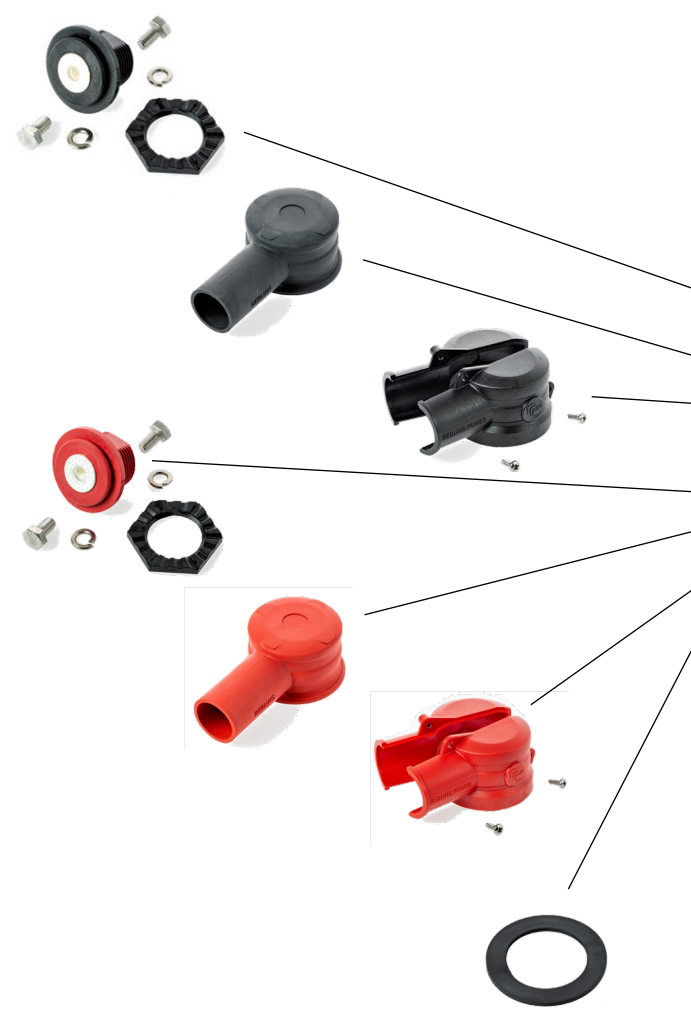
Compliance & Conformance

RoHS, REACH, CMRT/3TG
 UL and CE Conformance

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 Declarations of UL and CE Conformity can be downloaded from Rebling.com



For complete dimensions, download 3D Step files of Terminal and Accessories at Rebling.com



P/N	Description	Plastic Color	Weight (Grams)	Min Thick (mm)	UL 94 Rating	UL Material Yellow Card # **
BFT-N-B	Terminal Kit*, Copper, Nickel plated	Black	155	2.1	5VA	E121562-101513781
639A1830-B	Flexible Cover (3.50" OAL, 0.82" ID)	Black	25	2.1	V-0	E80017-250533
648A1758	Rigid Cover Kit (3.85" OAL, 1.05" ID)	Black	50	2.0	V-0	E121562-220886
BFT-N-R	Terminal Kit*, Copper, Nickel plated	Red	155	2.1	5VA	E121562-101513781
639A1830-R	Flexible Cover (3.50" OAL, 0.82" ID)	Red	25	2.1	V-0	E80017-250533
648A1779	Rigid Cover Kit (3.85" OAL, 1.05" ID)	Red	50	2.0	V-0	E121562-220886
651A1811	Gasket for BFT Terminal	Black	4	2.0	V-0	E80017-250535
656A1686	Plastic Panel Nut for BFT Terminal	Black	8	2.0	V-0	E121562-220886

*Terminal Kit = one Terminal + one Panel Nut + two Bolts + two Split Washers, all parts in a small poly bag
 **UL Material Yellow Cards can be downloaded from ULprospector.com

The BFT Terminal can be used by itself or...



...with only the flexible cover or ...



... with only the rigid cover or...

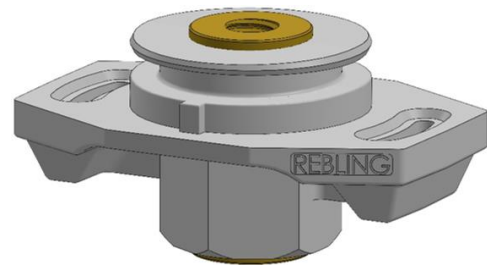


... with the rigid cover surrounding the flexible cover



Rebling Datasheet: 250 amp Top Seal Lithium Battery Terminal

The 250 amp Top Seal Terminal uses the same nickel-plated brass conductor, accepts the same rigid and flexible covers and has the same performance characteristics as Rebling's 250 amp SFT-style feed-through terminal. This terminal is intended for lithium battery OEMs which are packaging their cell packs inside molded plastic or aluminum cases that are 1 to 20 times the size of an automotive starter battery. The Top Seal Terminal enables the OEM to attach the terminal to the lithium cell pack first, place the cell pack into the battery case, place the lid onto the battery case (allowing the terminals to poke through clearance holes in the lid), attach the lid to the terminals with flat-head sheet metal screws then screw, glue or weld the battery lid to the battery case. The Top Seal Terminal reduces the amount of labor and eliminates two cables which the OEM previously used to attach the terminals. The Top Seal is intended for OEMs which are graduating from producing hundreds of batteries per year to tens or hundreds of thousands per year. The "Arc of Forgiveness" feature allows the terminal to be mis-rotated by 30 degrees and still align with the screw holes in the battery lid. It also includes an "Orientation Key" feature which high precision OEMs can use to aid in alignment.



Electrical

Current each current profile causes a max 30° C temperature rise when tested per IEC 61984

Current Profile #1	Continuous Rated Current (CRC)	-----	250 amps
Current Profile #2	50% CRC for 60min + 1 sec peak + 50% CRC for 60 min	-----	1,500 amps
Current Profile #3	50% CRC for 60min + 10 sec peak + 50% CRC for 60 min	-----	1,000 amps
Current Profile #4	50% CRC for 60min + 30 sec peak + 50% CRC for 60 min	-----	750 amps
Current Profile #5	50% CRC for 60min + 60 sec peak + 50% CRC for 60 min	-----	500 amps

Voltage & Resistance

Continuous Rated Voltage	UL1977 Section 17	2,000 volts
Minimum Dielectric Withstanding Voltage	UL1977 Section 17	5,000 volts
Insulation Resistance	MIL-PRF-18148D Section 3.12.6	500 mega-ohms
Maximum Contact Resistance	MIL-STD-202H Method 307	70 micro-ohms

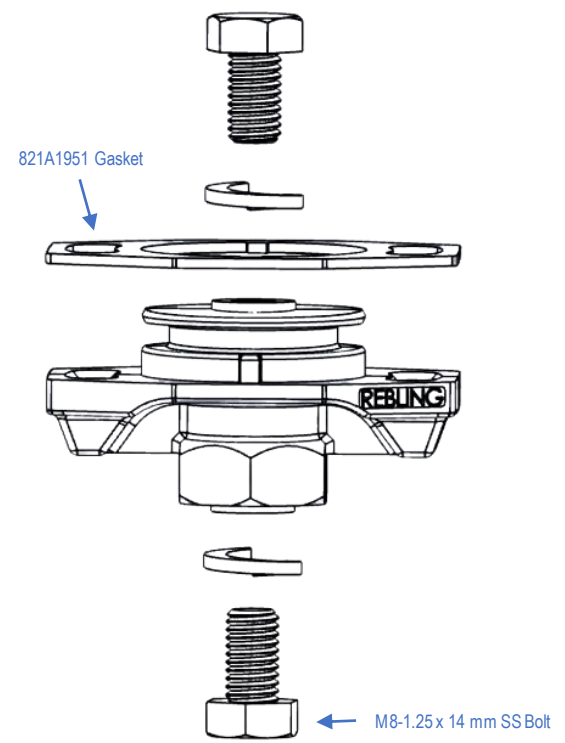
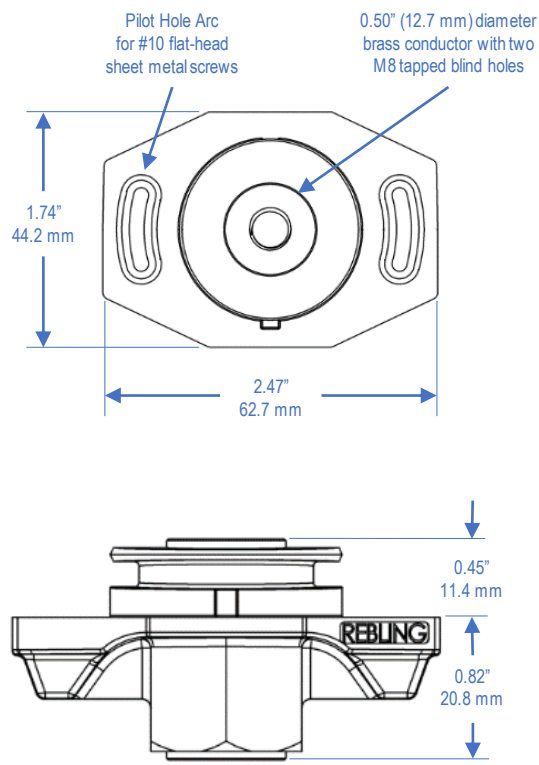
Mechanical & Environmental

Flammability Rating:	Terminal -----	UL 94	V-0
	Flexible Cover and Rigid Cover	UL 94	V-0
Environmental Sealing:	with Optional Gasket -----	IEC 60529	IP68+ watertight
	without Optional Gasket	IEC 60529	IP65
Operating Temperature:	Terminal and Rigid Covers -----		-40 to +125 C
	Flexible Cover		-40 to +90 C
Mechanical Shock	MIL-STD-202H Method 213 Condition A		50 Gs – 3 axes
Vibration	MIL-STD-202H Method 204 Condition A		10 Gs – 3 axes
Minimum Panel Thickness Required for Mounting			0.040" (1.0 mm)
Maximum Wire Size:	Terminal only or with Flexible Cover -----		4/0 (110 mm ²)
	with Short Rigid Snap-on Cover		3/0 (80 mm ²)
	with Long Rigid Snap-on Cover		2 AWG (35 mm ²)

Compliance & Conformance

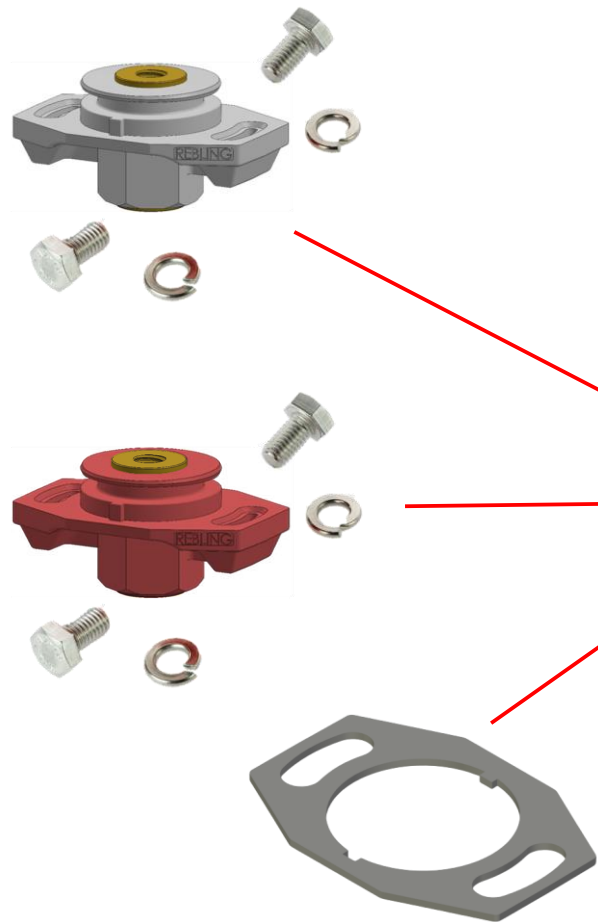
RoHS, REACH, CMRT/3TG
 UL and CE Conformance

All parts listed on this datasheet are RoHS, REACH and CMRT/3TG Compliant
 Declarations of UL and CE Conformity can be downloaded from Rebling.com



Coming Soon

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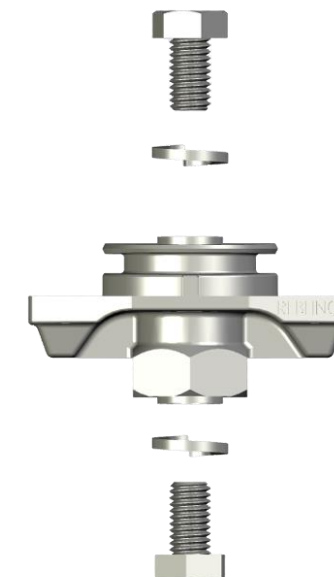


P/N	Description	Plastic Color	Weight (Grams)	Min Thick (mm)	UL 94 Rating	UL Material Yellow Card # **
Top250-P-B	Terminal Kit*, Brass, Nickel plated	Black	75	2.0	V-0	E121562-220886
Top250-P-R	Terminal Kit*, Brass, Nickel plated	Red	75	2.0	V-0	E121562-220886
821A1951	Top Seal Gasket	Black	3	1.5	V-0	E80017-250535
*Terminal Kit = one Terminal + two Bolts + two Split Washers, all parts in a small poly bag **UL Material Yellow Cards can be downloaded from ULprospector.com						

Preliminary Datasheet

Mounting and Assembly

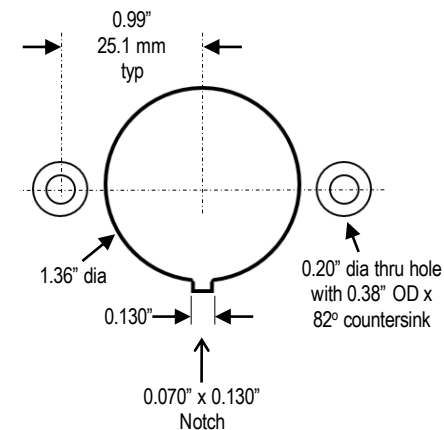
Minimum Panel Thickness	0.040" (1.00 mm)	
Mounting Hole Pattern	See Diagrams Below	
Torque on M8 Bolts:		
Recommended	50 to 60 in-lbs (5.6-6.8 Nm)	electrical performance does not get better or worse above 50 in-lbs (5.6 Nm)
Maximum Recommended	240 in-lbs (27 Nm)	a Grade 4, M8 stainless bolt will snap at 330 in-lbs (37 Nm)
Torque on #10 flat-head sheet metal screws		
Recommended	25 in-lbs (2.8 Nm)	mechanical performance does not improve above 20 in-lbs (2.3 Nm)
Maximum Recommended	40 in-lbs (4.5 Nm)	a #10 flat-head sheet metal screw will snap at 60 in-lbs (6.8 Nm)
Maximum Crimp Lug Tongue Width:		
with Flexible Cover	1.10" (28 mm)	
with Short Rigid Snap-on Cover	0.91" (23 mm)	
with Long Rigid Snap-on Cover	0.70" (18 mm)	



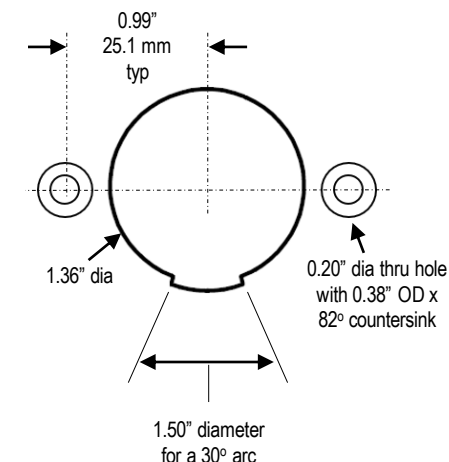
Application Notes

- Watertight is superior to IP68: Rebling's Top Seal terminal is not only IP68, it is watertight which is superior to any IP Rating. The definitions of IP67, IP68 and IP69k per IEC 60529 state that "water may penetrate the seal but shall do no harm", a condition that is unacceptable to lithium battery designers.
- Interchangeability of 250 amp and 500 amp Terminals: if you are uncertain whether your application needs a 250 amp or 500 amp Top Seal Terminal, not a problem; the mounting hole patterns for the 250 amp and 500 amp are identical.
- Flat Head Mounting Screws:

Rebling Top Seal Terminal Recommended Mounting Screw Types and Lengths					
Battery Lid Thickness		# of stacked Gaskets	Screw Length inches	Standard #10	Undercut #10
inches	mm			82° Flat-head Wood Screw	82° Flat-head Sheet Metal Screw
0.039	1.0	0	0.38	Amazon PTM.10X3/8-100	McMaster 90065A240
0.039	1.0	1	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.039	1.0	2	0.63	McMaster 90294A244	McMaster 98903A308
0.051	1.3	0	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.051	1.3	1	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.051	1.3	2	0.63	McMaster 90294A244	McMaster 98903A308
0.063	1.6	0	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.063	1.6	1	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.063	1.6	2	0.63	McMaster 90294A244	McMaster 98903A308
0.079	2.0	0	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.079	2.0	1	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.094	2.4	0	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.094	2.4	1	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.106	2.7	0	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.106	2.7	1	0.63	McMaster 90294A244	McMaster 98903A308
0.125	3.2	0	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.125	3.2	1	0.63	McMaster 90294A244	McMaster 98903A308
0.185	4.7	0	0.63	McMaster 90294A244	McMaster 98903A308



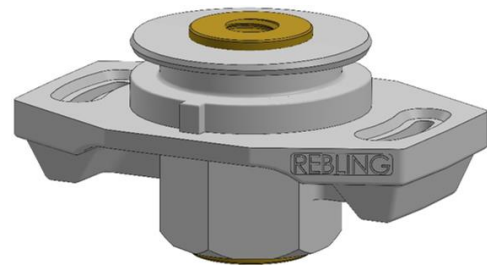
Mounting Hole Pattern for High Precision



Mounting Hole Pattern for Arc of Forgiveness

Rebling Datasheet: 500 amp Top Seal Lithium Battery Terminal

The 500 amp Top Seal Terminal uses the same nickel-plated brass conductor, accepts the same rigid and flexible covers and has the same performance characteristics as Rebling's 500 amp MFT-style feed-through terminal. This terminal is intended for lithium battery OEMs which are packaging their cell packs inside molded plastic or aluminum cases that are 1 to 20 times the size of an automotive starter battery. The Top Seal Terminal enables the OEM to attach the terminal to the lithium cell pack first, place the cell pack into the battery case, place the lid onto the battery case (allowing the terminals to poke through clearance holes in the lid), attach the lid to the terminals with flat-head sheet metal screws then screw, glue or weld the battery lid to the battery case. The Top Seal Terminal reduces the amount of labor and eliminates two cables which the OEM previously used to attach the terminals. The Top Seal is intended for OEMs which are graduating from producing hundreds of batteries per year to tens or hundreds of thousands per year. The "Arc of Forgiveness" feature allows the terminal to be mis-rotated by 30 degrees and still align with the screw holes in the battery lid. It also includes an "Orientation Key" feature which high precision OEMs can use to aid in alignment.



Electrical

Current each current profile causes a max 30° C temperature rise when tested per IEC 61984

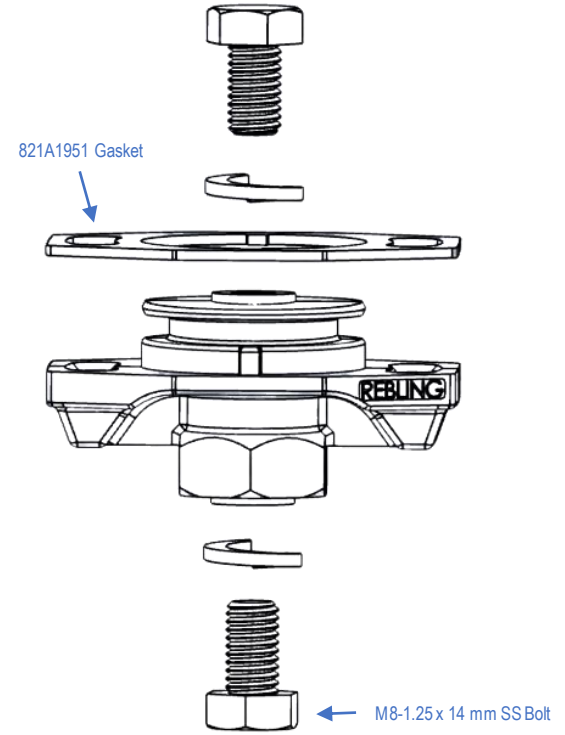
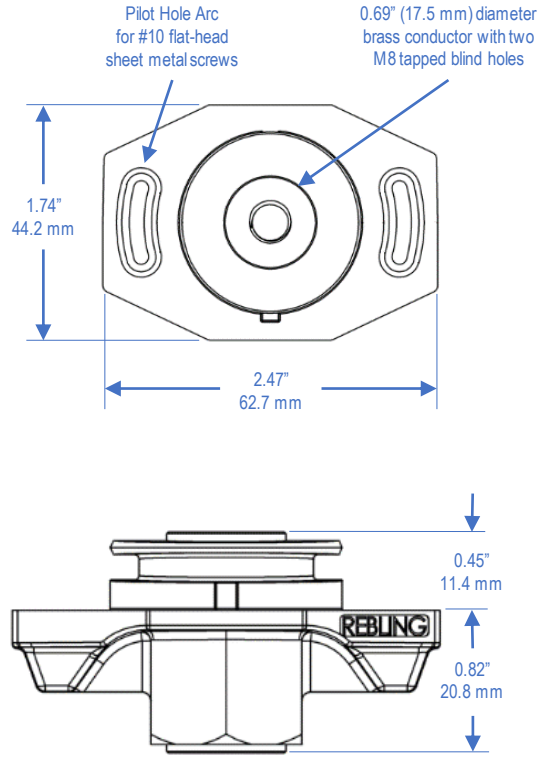
Current Profile #1	Continuous Rated Current (CRC)	-----	500 amps
Current Profile #2	50% CRC for 60min + 1 sec peak + 50% CRC for 60 min	-----	3,000 amps
Current Profile #3	50% CRC for 60min + 10 sec peak + 50% CRC for 60 min	-----	2,000 amps
Current Profile #4	50% CRC for 60min + 30 sec peak + 50% CRC for 60 min	-----	1,250 amps
Current Profile #5	50% CRC for 60min + 60 sec peak + 50% CRC for 60 min	-----	1,000 amps

Voltage & Resistance

Continuous Rated Voltage	UL1977 Section 17	2,000 volts
Minimum Dielectric Withstanding Voltage	UL1977 Section 17	5,000 volts
Insulation Resistance	MIL-PRF-18148D Section 3.12.6	500 mega-ohms
Maximum Contact Resistance	MIL-STD-202H Method 307	70 micro-ohms

Mechanical & Environmental

Flammability Rating:	Terminal -----	UL 94	V-0
	Flexible Cover and Rigid Cover -----	UL 94	V-0
Environmental Sealing:	with Optional Gasket -----	IEC 60529	IP68+ watertight
	without Optional Gasket -----	IEC 60529	IP65
Operating Temperature:	Terminal and Rigid Covers -----		-40 to +125 C
	Flexible Cover -----		-40 to +90 C
Mechanical Shock	MIL-STD-202H Method 213 Condition A		50 Gs – 3 axes
Vibration	MIL-STD-202H Method 204 Condition A		10 Gs – 3 axes
Minimum Panel Thickness Required for Mounting			0.025" (0.64 mm)
Maximum Wire Size:	Terminal only -----		450 MCM (230 mm ²)
	with Flexible Cover -----		4/0 (110 mm ²)
	with Short Rigid Snap-on Cover -----		3/0 (80 mm ²)
	with Long Rigid Snap-on Cover -----		2 AWG (35 mm ²)



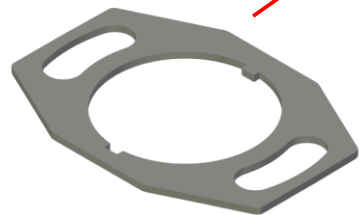
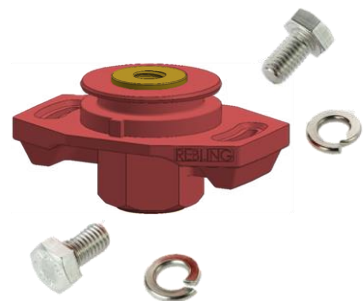
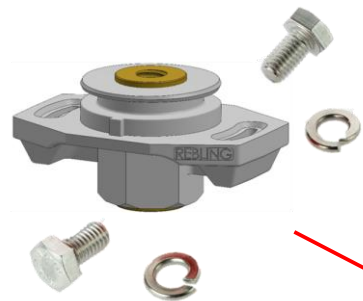
Compliance & Conformance

RoHS, REACH, CMRT/3TG
 UL and CE Conformance

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Coming Soon

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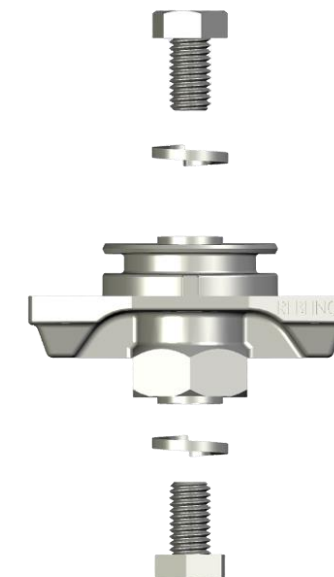


P/N	Description	Plastic Color	Weight (Grams)	Min Thick (mm)	UL 94 Rating	UL Material Yellow Card # **
Top500-P-B	Terminal Kit*, Brass, Nickel plated	Black	107	2.0	V-0	E121562-220886
Top500-P-R	Terminal Kit*, Brass, Nickel plated	Red	107	2.0	V-0	E121562-220886
821A1951	Top Seal Gasket	Black	3	1.5	V-0	E80017-250535
*Terminal Kit = one Terminal + two Bolts + two Split Washers, all parts in a small poly bag **UL Material Yellow Cards can be downloaded from ULprospector.com						

Preliminary Datasheet

Mounting and Assembly

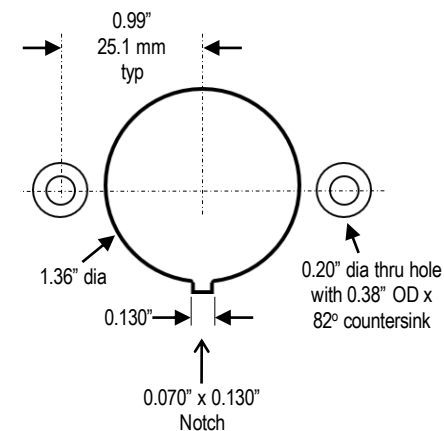
Minimum Panel Thickness	0.040" (1.00 mm)	
Mounting Hole Pattern	See Diagrams Below	
Torque on M8 Bolts:		
Recommended	50 to 60 in-lbs (5.6-6.8 Nm)	electrical performance does not get better or worse above 50 in-lbs (5.6 Nm)
Maximum Recommended	240 in-lbs (27 Nm)	a Grade 4, M8 stainless bolt will snap at 330 in-lbs (37 Nm)
Torque on #10 flat-head sheet metal screws		
Recommended	25 in-lbs (2.8 Nm)	mechanical performance does not improve above 20 in-lbs (2.3 Nm)
Maximum Recommended	40 in-lbs (4.5 Nm)	a #10 flat-head sheet metal screw will snap at 60 in-lbs (6.8 Nm)
Maximum Crimp Lug Tongue Width:		
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with Long Rigid Snap-on Cover	0.70" (18 mm)	



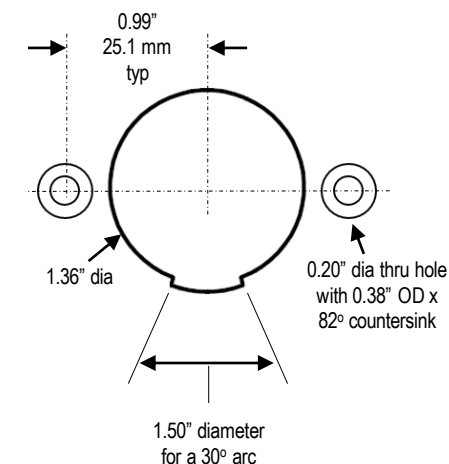
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0.039	1.0	1	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.039	1.0	2	0.63	McMaster 90294A244	McMaster 98903A308
0.051	1.3	0	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.051	1.3	1	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.051	1.3	2	0.63	McMaster 90294A244	McMaster 98903A308
0.063	1.6	0	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.063	1.6	1	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.063	1.6	2	0.63	McMaster 90294A244	McMaster 98903A308
0.079	2.0	0	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.079	2.0	1	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.094	2.4	0	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.094	2.4	1	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.106	2.7	0	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.106	2.7	1	0.63	McMaster 90294A244	McMaster 98903A308
0.125	3.2	0	0.50	Amazon PTM.10X1/2-100	McMaster 90065A242
0.125	3.2	1	0.63	McMaster 90294A244	McMaster 98903A308
0.185	4.7	0	0.63	McMaster 90294A244	McMaster 98903A308



Mounting Hole Pattern for High Precision



Mounting Hole Pattern for Arc of Forgiveness