

Full Line Product Catalog



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MARINCO & power products

Dear Partners & Customers,

It gives us great pleasure to introduce the new Marinco Power Products Catalog. We have taken great care to provide you with a reference tool that organizes products clearly to make selection and comparison easier.

Marinco Power Products History

Marinco purchased Advanced Devices to complement their industrial connector product offering. Following the acquisition, Marinco and Advanced Devices were uni ed to create Marinco Power Products to support the growing needs of the industrial and entertainment power connectivity markets.

Our breadth of products allows us to be the most Eexible power connectivity provider in the marketplace. We are focused on providing our customers with a broad selection of products, enhanced customer service, and continued product innovation to better serve their needs.

We invite you to reach out and work with us to develop new products or market opportunities.

We welcome your feedback on the new Marinco Power Products Catalog, and we look forward to serving you in the years ahead.

Sincerely,

Your Marinco Power Products Team

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#### The Marinco Difference

Marinco offers a full line of industry speci c products with the Marinco tradition of innovative design and customer response. The Marinco products include 15, 20, 30 and 50 amp devices, both straight blade and locking. Many features and bene ts are universal to all Marinco brand products:

- UEBevel housing prevents snagging nearby equipment
- U Dust seals keep foreign materials from terminals
- UInternal cord clamp limits wear and prevents cord from loosening
- UA variety of cord clamp inserts to grip most cord sizes securely
- UERedundant color-coded terminal markings add to wiring ease and safety
- UITerminal screws are installed in open position to speed assembly
- U\(\text{Wire}\) entry holes are located close together to ease insertion of wires
- U⊡Spacious housings for faster assembly, easy clamping to cable and convenient wire stripping
- U Speed style screws for faster assembly









#### Clamp-Lock ☐ Termination System

The Clamp-Lock□ termination system provides a maintenance-free connection. This revolutionary system actually gets stronger as the cable is pulled, which provides peace of mind knowing this durable trouble-free solution can handle heat, shock and vibration. Most important, Clamp-Lock□ enables wiring termination up to 50% faster than conventional screw termination products resulting in a more cost-effective process.

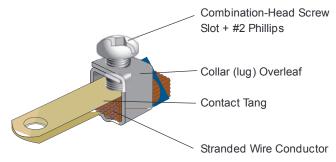


#### How Does it Work?

Use the built-in gauge to measure how much wire casing should be stripped. Then, to connect the three wires, simply open the color-coded green, white and black cam levers, insert the wires and close the cam levers on tools are needed. The compression of the receptor bites into the wire and doesn't let go. Slide the housing over the connection and lock it positively in place with two captive screws.

#### Exclusive Perma-Lock Terminal Tightening

As the screw goes down, the collar locks up: As the terminal screw tightens down on the contact tang, it compresses the wire underneath the tang, causing the screw to exert an upwards lift on the collar overleaf. This lifting action  $\square$ ocks up $\square$ the screw's threads. Heat cycling and vibration cannot loosen the screw, and stress relief is virtually eliminated.



# **OEM Packaging Option**

Devices are available bulk packed with assembly screws backed out and without individual packaging. Add suf □x □OEM □to the item number.

#### Customization

We would be glad to discuss any product customization, custom color, custom logos, printing or engraving. Contact your sales representative for more information.

#### Selection Guide

These blanks were left in the selection guide to notate our ability to provide these con gurations if you need one of these unlisted products. Please call customer service or contact your sales rep for more information.



# 15 & 20 Amp Straight Blade & 15 Amp Locking Devices

#### Plugs & Connectors

UAdjustable cord clamp provides superior strain relief

UClose-in wire entrance holes and generous wiring space make it easy to wire

UTwo assembly screws make for fast assembly

UTerminals are open, ready to wire for quickest assembly

UCord clamp insert allows use of greatest range of cord sizes

UBeveled housing so device won't get caught on stairs, equipment, etc

UDust seal keeps contaminants out of wiring chamber

UAII-nylon construction for durability

#### Receptacles

UHeavy-duty, extremely durable nylon face

UtOptional back or side wiring for on-the-job versatility and easy installation

U⊥arge #8 captive screws assure easy, ef⊏cient installation

UCaptive self-grounding clip eliminates the need for a bonding jumper [NEC Section 250-146(B)]

UTriple-wipe copper alloy power contacts assure long-life contact pressure

#### Flanged Inlets & Outlets

UPerma-Lock wire terminals for secure easy to wire connections
UFlanged housing allows mounting in a panel without access from the rear
UAll-nylon construction for durability



#### Corrosion-Resistant Devices

#### Plugs & Connectors

U¹Independent lab certi⊡ed corrosion-resistant devices in a 240-hour 5% salt-spray test in accordance with ASTM B117

UCorrosion resistant, marine grade construction with 5 Year Warranty. UNickel plated contacts

U:Thumbprint locator on cover makes it easy to align the ground blade for easier hook-up

UAccepts any 10/3 S-type (STW, STOW) cable up to 3/4" in diameter

UClear terminal cover allows for easy inspection of wiring connection

UPlug and Connector accepts #10 through #16 gauge wires

UExclusive cover provides superior waterproof seal

U Stainless Steel Fasteners for corrosion resistance

Powerful strain relief with stainless screws

U'Exclusive Marinco□ cover provides superior waterproof seal

UContoured weatherproof cover allows better grip







## Hospital-Grade Devices

These green dot devices have been rigorously tested for grounding reliability, assembly integrity, strength and durability.

Includes 15A and 20A straight blade connectors, plugs, and single and duplex receptacles.

Available in clear or black housing

Meets or Exceeds Hospital Grade UL Tests

All devices conform to UL Standards for hospital equipment #498 and #544, including:

UAbrupt plug removal (parallel to wall) test U

U Ground pin retention tests UFault current tests

UTerminal strength test

UFace impact test

U Ground contact temperature test

U Ground resistance test

UAssembly security test

UMold stress relief test

U Crush test

UCord grip strain relief tests

U Static cord pull test

URotary cord pull test



Exclusive Marinco Mag-Vu□ Windows makes visual verication of condition of terminal connections fast and easy.

#### ConnectGlow ☐ Illuminated Devices

Connectors light when a circuit is energized

Users of ConnectGlow devices know immediately if a circuit is energized because the neon bulb is energized, rather than having to perform time-consuming circuit testing. You can easily see the circuit status and determine whether there is a problem with the circuit or with the apparatus that is being connected. This is particularly helpful in applications where it is difcult to get to the connection point, such as drop cords or extension cords, or where users might not be proceint in circuit testing.

Another function is for monitoring connection status. With ConnectGlow devices, you can visually monitor a connection to assure it is maintained.

#### Features

U15-, 20- and 30-amp 3-wire plugs and connectors

UBright Neon bulb with full 360 □visibility

UMag-Vu□ window magni⊡es bulb and terminal for easy inspection

U5-year limited warranty

**Applications** 

UPower-driven hand tools

U Electrical industrial equipment

UManufacturing plants

UBroadcast studio equipment

UStaging & entertainment equipment

UFire-protection equipment

UHospital/healthcare equipment

UTemporary taps at construction sites



# Isolated Ground Devices for Noise Sensitive Applications

All Marinco IG devices are orange, with an orange triangle-indicating isolated ground. Equipment requiring an isolated ground should use an isolated ground plug (orange housing) to show that the equipment should be connected to an isolated ground receptacle.

Conventional receptacles have grounding contacts that are connected to the box, <a href="Lttings">Lttings</a>, conduit and all other building ground system components, which can act as a large antenna for EMI and RFI.

The ground terminals on Marinco IG-receptacles are designed to directly connect only to the service entrance grounding system, per NEC Article 250.146(D).







# Straight Blade

Amps	Poles/ Wires	Voltage	NEMA Config.	Body Color	Housing Color	Connector	Plug	Duplex Receptacle
Standard	d							
15	2P 3W	125	5-15R 5-15P	WT	ВК	5269	5266	5252
15	2P 3W	125	5-15R 5-15P	ВК	ВК	5269BL	5266BL	
15	2P 3W	250	6-15R 6-15P	WT	ВК	5669	5666	
20	2P 3W	125	5-20R 5-20P	WT	ВК	5369	5366	5352
20	2P 3W	250	0 6-20R 6-20P	WT	BK	5469	5466	5462





Clamp-l	Lock□							
15	2P 3W	125	5-15R 5-15P	WT	ВК	CL5269	CL5266	
15	2P 3W	125	5-15R 5-15P	ВК	ВК	CL5269BL	CL5266BL	
15	2P 3W	250	6-15R 6-15P	WT	ВК	CL5669	CL5666	
20	2P 3W	125	5-20R 5-20P	WT	ВК	CL5369	CL5366	





Hospita	Hospital Grade											
15	2P 3W	125	[] 5-15R	5-15P	WT	ВК	8219	8215				
15	2P 3W	125	[] 5-15R	5-15P	WT	TP	8219T	8215T				

WT=white BK=black TP=transparent YL=yellow OR=orange

# Straight Blade





_								
Amps	Poles/ Wires	Voltage	NEMA Config.	Body Color	Housing Color	Connector	Plug	Duplex Receptacle
Hospital	Grade Cla	mp-Lock□						
15	2P 3W	125	5-15R 5-15P	WT	BK	CL8219	CL8215	
15	2P 3W	125	5-20R 5-20P	WT	TP	CL8219T	CL8215T	







Corrosi	ion Resistan	ıt						
15	2P 3W	125	5-15R 5-15F	) WT	YL	5269CR	5266CRS	5262CRR
20	2P 3W	125	5-15R 5-15F	) WT	YL	5369CR		





Connec	Connect Glow											
15	2P 3W	125	[] 5-15R	5-15P	WT	TP	5269L	5266L				
15	2P 3W	125	[ <sup>0</sup> ] 5-15R	5-15P	WT	TP	8219TL Hospital Grade	8215TL Hospital Grade				

WT=white BK=black TP=transparent YL=yellow OR=orange

#### Inlets & Outlets









Amps	Poles/ Wires	Voltage	NEMA Config.	Body Color	Housing Color	Flanged Inlet	Flanged Outlet	Dust Resistant Inlet	Dust Resistant Outlet
15	2P 3W	125	5-15R 5-15P	WT	ВК	5278	5279	5278DRI	5279DRO
15	2P 3W	125	5-15R 5-15P	BK	ВК	5278BL	5279BL	150BBI	
15	2P 3W	250	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	WT	ВК	5678	5679	5678DRI	
20	2P 3W	125	5-20R 5-20P	WT	ВК	5378	5379	200BBIW	5379DRO
20	2P 3W	250	0 6-20R 6-20P	WT	ВК	5478	5479		

WT=white BK=black TP=transparent YL=yellow OR=orange

#### Right Angle Devices

Amps	Poles/ Wires	Voltage	NEMA Config.	Plug
15	2P 3W	125	5-15P	5266RA
Hospital	Grade			
15	2P 3W	125	5-15P	8215TRA



# Right-Angle Adapter with Cord Grip

Available in black

Item # 15RA

Fits 15 and 20 amp straight blade devices. Compatible with the following devices:



Item # 45WRA.OEM

Fits 20 and 30 amp 4 wire and 5 wire locking devices.

Accomodates .456" to 1.150" cords.

OEM Available: Add suf  $\square$ x  $\square$ OEM $\square$ to the item number for bulk packaging. Quantities vary. See your sales rep for quantity details.









# Locking

Amps	Poles/ Wires	Voltage	NEMA Config.	Body Color	Housing Color	Connector	Plug	Single Receptacle	Duplex Receptacle
Standard	d								
15	2P 3W	125	L5-15R L5-15P	WT	ВК	4729	4720	4710	4700
15	2P 3W	125	L5-15R L5-15P	ВК	ВК	4729BL	4720BL		
15	2P 3W	250	L6-15R L6-15P	WT	ВК	4579	4570	4560	4550
15	2P 3W	277	L7-15R L7-15P	WT	ВК	4779	4770	4760	







Corrosi	on Resistan	t						
15	2P 3W	125	5 15P	WT	BK	4731CR	4721CR	4700CR





Connec	t Glow								
15	2P 3W	125	L5-15R L5-15P	WT	ВК	4729L	4720L		





# Inlets & Outlets

Amps	Poles/ Wires	Voltage	NEMA Config.	Body Color	Housing Color	Flanged Inlet	Flanged Outlet
15	2P 3W	125	L5-15R L5-15P	WT	ВК	4716	4715
15	2P 3W	250	L6-15R L6-15P	WT	ВК	4586	4585
15	2P 3W	277	L7-15R L7-15P	WT	BK	4786	4785

WT=white BK=black TP=transparent YL=yellow OR=orange

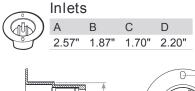
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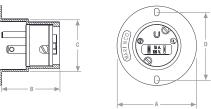
# Specications

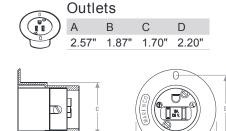
Agency Listings	U.L. Listed File E57672 C.S.A. Certi⊡ed File LR81290
Dielectric Withstand Voltage	>3,000V
Heat Rise	Maximum 30 ℃ after 100 cycles at 150% of rated current
Current Interrupting	Yes
Terminal Accommodation	#18=10
Plugs & Connectors	
Front & Rear Housing	Nylon □Tough and resistant to a wide range of chemicals. U.L. Recognized for 125 □C continuous use. U.L. 94V-2 Flammability Index.
Cord Clamp	Nylon
Terminals & Contacts	Perma-Lock□ lug-type terminals provide superior wire holding. Clamp-lock provides quick, reliable, toolless assembly
Terminal Clamps & Screws	#8 solid brass for excellent conductivity. Combo head (#2 Phillips and Slot or #1 Robertson and Slot).
Terminal Cover	Clear polycarbonate
Cord Accommodation	.300"□655"
Receptacles	
Face and Housing	Glass-□led nylon □ Tough and resistant to a wide range of chemicals. U.L. 94V-2 Flammability Index. Meets Fed Spec WC-596F. Mounting straps, rivets and grounding strip are solid brass.
Terminal Clamps & Screws	#8 solid brass for excellent conductivity.
Terminals & Contacts	Clamp-type terminals provide superior wire holding. Rivetless, one-piece contacts eliminate joint resistance.
Flanged Inlets & Outlets	
Flange & Housing	Nylon
Blades (Inlet)	Solid brass
Contacts (Outlet)	Solid brass
Terminal Screws	Solid brass
Terminal Clamps	Solid brass
Terminal Cover	Clear polycarbonate

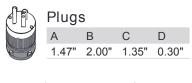
# Wiring Devices: 15 & 20 Amp Straight Blade & 15 Amp Locking Dimensions

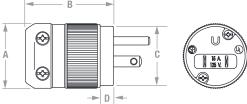
# **Dimensions**

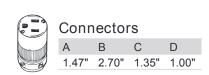


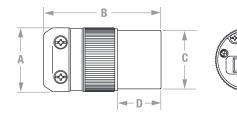


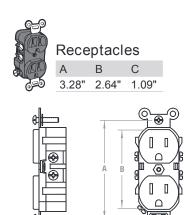


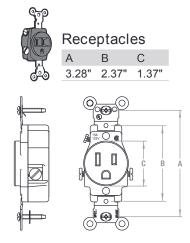














# IEC 320 Speci □cation-Grade Connectors

Rugged Connectors for Industrial Computers, Servers, Peripherals, Utility Vehicles, Stage Lighting, Broadcast Sound & Video

UPremium IEC 320 connectors designed for critical applications perfect for harsh handling and harsh environments

UTEC 320 is the International standard for appliance power connectors

URugged and rewirable connectors are used to supply power to a wide range of electronic equipment

U.Shock-absorbing design is less vulnerable to shattering or cracking when abused

UExclusive Perma-Lock□ terminals for secure, easy to wire connections

UDeep funnel wire pockets to easily guide wire insertion

UAdjustable cord clamp provides superior strain relief

UCord clamp insert allows for greatest range of cord sizes





# **Speci** Cations

Amps	Poles/ Wires	Voltage	IEC Config.	Connector
15	2P 3W	120		320IEC13
15	2P 3W	120		320IEC15
20	2P 3W	120		320IEC19

The Marinco 320IEC13 is rated for service where maximum pin temperature of mating inlet does not exceed 70 ℂC. U.L. and C.S.A. allow its use at 15 amps, while European agencies permit 10 amps (220-240VAC).

The Marinco 320IEC15 is rated for service where maximum pin temperature of mating inlet does not exceed 120 □C. U.L. and C.S.A. allow its use at 15 amps, while European agencies permit 10 amps (220-240VAC).

The Marinco 320IEC19 is rated for service where maximum pin temperature of mating inlet does not exceed 70 °C. U.L. and C.S.A. allow its use at 20 amps, while European agencies permit 16 amps (250VAC).

OEM Available: Add suf \( \times \) OEM \( \times \) the item number for bulk packaging.







#### Plugs & Connectors

U⊞Rear housing key ts into front portion for ease of assembly

URibbed housing allows for secure gripping

UCord clamp screws are recessed in housing for neat, clean appearance

UAdjustable cord clamp provides superior strain relief

UClose-in wire entrance holes and generous wiring space make it easy to wire

UExclusive Perma-Lock terminals for secure, easy to wire connections

UTerminals are open, ready to wire for quickest assembly

UBeveled housing so device won't get caught on stairs, equipment, etc

UDust seal keeps contaminants out of wiring chamber

U:Thick walled nylon housing resists abuse, corrosion and most chemicals U:Devices are clearly marked with amperage, voltage, rating, and NEMA con:guration

UU.L. Listed and C.S.A. Certi ed for make or break under load

#### Receptacles

UGlass-□led nylon body and face provides excellent impact, heat and chemical resistance

UBoss diameter is 1.56" for 20 and 30 amp devices

UAll-brass mounting strap and grounding system provides low resistance ground path and superior corrosion resistance

UTerminal combo head screws are clearly marked in accordance with the National Electrical Code

U¹U.L. Listed and C.S.A. Certi ed for make or break under load

#### Flanged Inlets and Outlets

U.Similar design features as plugs and connectors

UMounted in a canged nylon housing that allows mounting in a panel without access from the rear

UClean design eliminates assembly screws from the front of the Inlets & Outlets







#### Cord Grip

Powerful mechanical clamp is located inside the housing resulting in a neat, compact design. The clamp traps the cord against the rear of the housing for a superior cord grip, preventing strain on terminals. Internal cord clamp accommodates the widest range of cord sizes and shapes.



#### **Terminals**

The clear terminal cover allows visual inspection of the terminal area. Large terminals with solid brass clamps bundle the wires for a neat, secure connection. Terminals are clearly marked in accordance with the National Electrical Code.



#### Single-Piece Connector Contacts

A Marinco exclusive feature! Longer beam provides more contact pressure. One-piece design eliminates the rivet found on many NEMA locking devices. All of the above features provide for a lower resistance connection and reduce the chance of heat rise that damages devices.



#### One-Piece All-Brass Receptacle Contacts

Sturdy one-piece design eliminates the rivet found in conventional contacts. No rivet means less chance for resistance and heat rise. The sturdy design provides greater contact pressure over the life of the device, and is found in all 20 and 30 amp receptacles.



#### Receptacle Clamp Terminals

The clamp is barbed to hold the conductor in place and cut oxide build-up. The entire terminal is securely held in place by the body of the device.









# Locking

	0									
Amps	Poles/ Wires	Voltage	NEMA Config.	Body Color	Housing Color	Connector	Plug	Receptacle	Flanged Inlet	Flanged Outlet
Standa	rd NEMA									
20	2P 3W	125	L5-20R L5-20P	WT	ВК	205C	205P	205R	205FI	205FO
20	2P 3W	125	L5-20R L5-20P	BK	ВК	205CBL	205PBL			
20	2P 3W	250	L6-20R L6-20P	WT	BK	206C	206P	206R	206FI	206FO
20	2P 3W	250	L6-20R L6-20P	BK	BK	206CBL	206PBL			
20	2P 3W	277	L7-20R L7-20P	WT	BK		207P			
20	3P 4W	125/250	[] [] L14-20R L14-20P	WT	BK	2014C	2014P	2014R	2014FI	2014FO
20	3P 4W	3□ 250	L15-20R L15-20P	WT	BK	2015C	2015P	2015R	2015FI	2015FO
20	3P 4W	3□ 480	L16-20R L16-20P	WT	ВК	2016C	2016P	2016R		
20	4P 5W	3□Y 120/208	[] L21-20R L21-20P	WT	BK	2021C	2021P	2021R		2021FO
Non-NE	EMA									
20	4P 4W	3□Y 120/208	Replacement use only	WT	ВК	7413C	7411C			







#### Corrosion Resistant





# Connect Glow



Isolate	ed Ground							
20	2P 3W	125	L5-20R L5-20P	OR	OR		205RIG	
20	2P 3W	250	L6-20R L6-20P	OR	OR		206RIG	

WT=white BK=black TP=transparent YL=yellow OR=orange











# Locking

Amps	Poles/ Wires	Voltage	NEMA Config.	Body Color	Housing Color	Connector	Plug	Receptacle	Flanged Inlet	Flanged Outlet
Standa	rd NEMA									
30	2P 3W	125	L5-30R L5-30P	WT	ВК	305C	305P	305R	305FI	305FO
30	2P 3W	250	L6-30R L6-30P	WT	ВК	306C	306P	306R	306FI	306FO
30	3P 4W	125/250	L14-30R L14-30P	WT	BK	3014C	3014P	3014R	3014FI	3014FO
30	3P 4W	3□ 250	L15-30R L15-30P	WT	BK	3015C	3015P	3015R	3015FI	3015FO
30	3P 4W	3□ 480	L16-30R L16-30P	WT	BK	3016C	3016P	3016R		3016FO
30	4P 5W	3□Y 120/208	((o) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	WT	ВК	3021C	3021P	3021R		3021FO







Corros	sion Resist	ant								
30	2P 3W	125	L5-30R	L5-30P	WT	ВК	305BC	305BP	305CRRB	
30	2P 3W	125	(F) L5-30R	L5-30P	WT	YL	305CRCN	305CRPN	305CRR	



Isolate	ed Ground									
30	2P 3W	125	L5-30R	L5-30P	OR	OR		305RIG		
30	2P 3W	250	L6-30R	L6-30P	OR	OR		306RIG		

WT=white BK=black TP=transparent YL=yellow OR=orange

 ${\tt ACCESSORIES} \overset{\text{on page}}{25}$ 

OEM Available: Add suf  $\square$ x  $\square$ OEM $\square$ to the item number for bulk packaging. Quantities vary. See your sales rep for quantity details.

# Specications

Dielectric Withstand Voltage	>3,000V
Heat Rise	Maximum 30 C after 100 cycles at 150% of rated current.
Current Interrupting	Yes
Plugs & Connectors	
Front & Rear Housing	Nylon □Tough and resistant to a wide range of chemicals. U.L. Recognized for 125 □C continuous use. U.L. 94V-2 Flammability Index.
Cord Clamp	Nylon
Terminals & Contacts	Perma-Lock□ terminals provide superior wire holding.
Terminal Clamps & Screws	#10 solid brass for excellent conductivity.
Terminal Cover	Clear polycarbonate
Agency Listings	U.L. Listed File E57672 C.S.A. Certi ⊑ed File LR81290
Cord Accommodation	3-wire: .275"□780" 4 & 5-wire: .456"□1.150"
Terminal Accommodation	3-wire: #16□10 4 & 5-wire: #14□8
Receptacles	
Face and Housing	Glass-□led nylon □ Tough and resistant to a wide range of chemicals. U.L. Recognized for 130 ℂ continuous use. U.L. 94V-O Flammability Index. Mounting straps, rivets and grounding strip are solid brass.
Terminal Clamps & Screws	#10 solid brass for excellent conductivity. Can accept up to a #6 ring terminal.
Agency Listings	U.L. Listed File E111198 C.S.A. Certi⊡ed File LR81290
Terminals & Contacts	Clamp-type terminals provide wire holding. Rivetless, one-piece contacts eliminate joint resistance.
Terminal Accommodation	<b>#14</b> □8
Flanged Inlets & Outlets	
Flange & Housing	Nylon
Blades (Inlet)	Solid brass
Contacts (Outlet)	Solid brass
Terminal Screws	Solid brass
Terminal Clamps	Solid brass

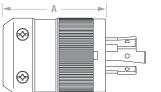
# Wiring Devices: 20 & 30 Amp Locking Dimensions

# **Dimensions**



# Plugs

	Α	В	
3 Wire	2.54"	1.84"	
4 & 5 Wire	3.04"	2.11"	

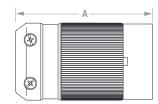






#### Connectors

	Α	В
3 Wire	3.55"	1.84"
4 & 5 Wire	4.10"	2.11"

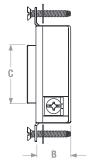






# Receptacles

	Α	В	С	D	E
3 Wire	3.28"	.97"	1.56"	3.63"	2.38"
4 & 5 Wire	3.28"	.97"	1.56"	3.63"	2.38"



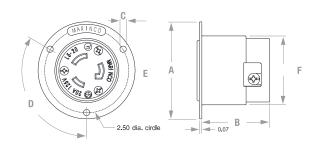






# Inlets & Outlets

			_	_	D	_	F
)	3 Wire	2.88"	2.00"	.185"	120□	1.25"	2.04"
	4 & 5 Wire	3.02"	1.93"	.185"	120□	1.35"	2.19"







## 50 Amp Locking Devices

#### Plugs & Connectors

URear housing key ts into front portion for ease of assembly

URibbed housing allows for secure gripping

UStainless steel plug sleeve provides greater strength and protection

UNon-metallic shell around the plug sleeve eliminates exposed metal parts

UCord clamp screws are recessed in housing for neat, clean appearance UAdjustable cord clamp provides superior strain relief

UClose-in wire entrance holes and generous wiring space make it easy to wire

U'Exclusive Perma-Lock□ terminals for secure, easy to wire connections

UTerminals are open, ready to wire for quickest assembly

UColor coded wire entrance holes make devices simple and easy to wire

UBeveled housing so device won't get caught on stairs, equipment, etc

UNeoprene Dust seal keeps contaminants out of wiring chamber

 $\ensuremath{\mathsf{UT}}\xspace hick walled nylon housing resists abuse, corrosion and most chemicals$ 

U¹Devices are clearly marked with amperage, voltage, rating, and NEMA con ☐guration

#### Receptacles

U'Glass-⊟led nylon body provides excellent impact, heat and chemical resistance UMounts in standard FD box

UHeavy-duty brass mounting strap and ground system provide a low resistance ground path and superior corrosion resistance

UTerminals are clearly marked in accordance with the National Electrical Code

#### Terminal

Marinco's unique Perma-Lock tempered brass lug with nickel plated screw completely captures and compresses the wire. As the Perma-Lock terminal screw tightens down on the contact tang, it compresses the wire underneath the tang, causing the screw to exert an upwards lift on the collar overleaf. This lifting action locks up the screw's threads. Heat-cycling and vibration cannot loosen the screw and stress-relieving is virtually eliminated.















# Locking

Amps	Poles/ Wires	Voltage	Config.	Body Color	Housing Color	Connector	Plug	Receptacle	Flanged Inlet	Flanged Inlet w/spring loaded lid
Standa	ırd									
50	2P 3W	125	Calif. Standard	WT	BK	CS6360N	CS6361N	CS6370		
50	2P 3W	250	R P P	WT	ВК	CS8264N	CS8265N	CS8269	CS8275	
50	2P 3W	250 DC 600 AC	Replacement use only	WT	ВК	3762N	3763N	3771	3777	
50	2P 3W	480	R Calif. Standard	WT	ВК	CS8464N	CS8465N	CS8469		
50	3P 4W	125/250	R P	WT	ВК	CS6364N	CS6365N	CS6369	CS6375	CS6375FL
50	3P 4W	3□ 250	R Calif. Standard	WT	BK	CS8364N	CS8365N	CS8369	CS8375	
50	3P 4W	250 DC 600 AC	R P Replacement use only	WT	ВК	3764N	3765N	3769	3775	
50	3P 4W	250 DC 600 AC	Replacement use only	WT	ВК	7764N	7765N		7958	
50	3P 4W	3□ 480	R P	WT	ВК	CS8164N	CS8165N	CS8169	CS8175	







Corre	osion Resis	stant							
50	2P 3W	125	R P SS-1	WT	YL	6360CRN	6361CRN	6370CR	
50	3P 4W	125/250	R P SS-2	WT	YL	6364CRN	6365CRN	6369CRS	

WT=white BK=black TP=transparent YL=yellow OR=orange

Note: 50A corrosion resistant devices are not CS (California Standard).

 ${\sf ACCESSORIES} \overset{{\sf on page}}{25}$ 

OEM Available: Add suf  $\square$ x  $\square$ OEM $\square$ to the item number for bulk packaging. Quantities vary. See your sales rep for quantity details.

# Specications

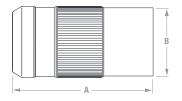
•	
Dielectric Withstand Voltage	>3,000V
Heat Rise	Maximum 30 ℂ after 100 cycles at 150% of rated current.
Current Interrupting	Yes
Plugs & Connectors	
Gasket	Neoprene
Assembly Screws	Stainless steel
Body	Nylon
Cord Clamps	Glass-□lled nylon
Plug Shroud	Stainless steel with PVC exterior
Blades	Solid brass (plugs)
Contacts	Copper alloy (connectors)
Terminal Clamps & Screws	Brass
Agency Listings	U.L. Listed File E57672 C.S.A. Certi⊏ed File LR81290
Cord Accommodation	.680"[1.125]
Terminal Accommodation	<b>#10</b> □ <b>4</b>
Receptacles	
Body	Glass-□lled nylon
Ground Strap	Brass
Contacts	Brass
Terminal Screws	Brass
Terminal Clamps	Brass
Terminal Accommodation	<b>#</b> 10□6
Flanged Inlets & Outlets	
Flange Housing	Nylon
Insulator	Nylon
Blades	Brass
Terminal Clamps	Brass
Terminal Accommodation	<b>#10</b> □ <b>4</b>

# Wiring Devices: 50 Amp Locking Dimensions

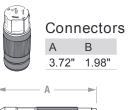
# **Dimensions**

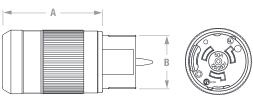






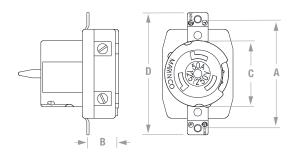


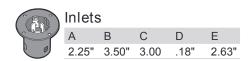


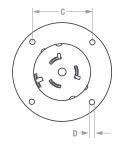


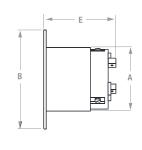


# Receptacles A B C D 3.28" 1.08" 1.98" 3.68"









#### One-Piece Adapters

These adapters do not have covers and are not recommended for use in wet locations.

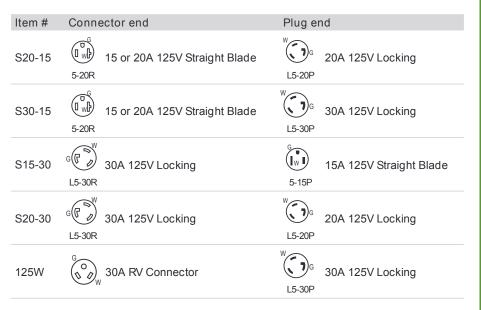




	MARINCO	
7	8	MARINOO

## Pigtail Adapters

These adapters are equipped with covers and sealing collars (where indicated), and are for use in wet locations. Marinco's unique sealing collar system with MarineGuard II cover joins the adapter to the cordset with a positive, mechanical connection which provides maximum moisture protection.



Item #	em # Connector end			Plug end		
104SPP	G (₹ ) W L5-30R	30A 125V Locking with Sealing Collar System	G [w] 5-15P	15A 125V Straight Blade with Locking Screw		
105SPP	( w ) 5-15R	15A 125V Straight Blade	W G L5-30P	30A 125V Locking		



#### □Y □ Adapters

These adapters are equipped with covers and sealing collars (where indicated), and are for use in wet locations.



Item #	Connector er	nd	Plug end
152AY	G(P) G(P) C	2-30A 125V Locking w/ Sealing Collar System	G ↓ 50A 125V Locking
153AY	G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G ) G ( G	2-30A 125V Locking w/ Sealing Collar System	G X 50A 125/250V Locking
157AY	€ C C C C C C C C C C C C C C C C C C C	2-30A 125V Locking w/ Sealing Collar System	W 30A 125V Locking L5-30P

#### Connectors Plug Covers Plugs **Connector Covers** Cover for 15A & 20A straight 15A & 20A straight blade and 15A & 20A straight blade and Cover for 15A & 20A straight blade blade and 15A locking plugs 15A locking plugs 15A locking connectors and 15A locking connectors Plugs Waterproof Plug Covers Connectors Waterproof Connector Covers 6018Y Use with 5369CR, 5269CR or 4731CR 6017Y 15A & 20A straight blade and 15A & 20A straight blade and Use with 5266CR or 4721CR 15A locking plugs 15A locking connectors 103RN OEM# 103RN.OEM Cover for 20A & 102N 30A connectors Cover for 20A and 30A plugs 110R Use with Use with 305CRPN or 20A & 30A 3-wire 20A & 30A 3-wire locking 305CRCN or Sealing collar w/ 205CRPN locking plugs connectors 205CRCN ring for 20A & 30A 7715CRN 7717N (YELLOW) Cover for 50A 102182 (WHITE) connectors Cover for 50A plugs Use with 510R Use with 6361CRN or 50A 3- & 4-wire 50A 3- & 4-wire locking Sealing collar w/ 6360CRN or 6365CRN locking plugs connectors 6364CRN ring for 50A Inlet/Outlet Covers Inlets/Outlets Connectors **Charger Connector Covers** WP1 Raintight cover for 15A & 20A straight blade and 15A locking 15A & 20A 15A & 20A 1520BI.OEM inlets and straight blade and straight blade and Connector cover for charger inlet

outlets

15A locking inlets

15A locking connectors

Available only in .OEM packaging



Raintight Cover

Use with all Marinco 15A and 20A straight blade, as well as 15A locking, anged inlets and outlets. Standard: black.

Item # WP1



Weatherproof Cover

UYellow LEXAN □ polycarbonate cover with □ip lid
UFits 15A, 20A, & 30A single receptacles
Item # 7420CRS



#### Weather-resistant Cover

Low cost, quick assembly. Spring-loaded ip lid. Fits 3-, 4- and 5-wire, single receptacles. Black plastic. Item # 2030FL



#### Weatherproof Cover

UYellow LEXAN  $^\square$  polycarbonate cover with  $\square p$  lid

UFits 50A receptacles 6369CR & 6370CR Item # 7788CRS



#### Sealing Collar w/ Threaded Ring

UProvides maximum moisture protection between cordset & adapter UUse with 50 amp systems only

Item # 510R



#### Sealing Collar w/ Threaded Ring

U Provides maximum moisture protection between cordset & adapter

UUse with 20 & 30 amp locking systems

Item # 110R



Threaded Sealing Ring

U'Use with 30 amp systems

Item # 100R



# Threaded Locking Sealing Ring

UUse with 50 amp systems

Item # 500R



#### Watertight Connector Cap

U For use on 16 or 32 amp products for CE compliance

UFor use on 30 or 50 amp products to protect the connector when not in use (not compatible with California standard 50 amp devices)

Item # 199109PK 16A/30A

Item # 199110PK 32A/50A

CLS Series and CLM Series inline connectors have a non-conductive retaining screw which passes through the metal contact and fastens at both ends to the retaining ring, providing maximum resistance to excessive torque loading. Constructed of solid weatherproof materials, all CLS and CLM products are UL listed, CSA listed, NEMA 3R and NEMA 4 rated for wet locations.

All CL, CLS and CLM Series products mate precisely with all other manufacturers' cam products.

CL panel mount devices are constructed of super tough nylon housing which will not chip or crack under extreme temperatures and impact conditions. The unique mounting system permits the use of self tapping stainless screws. No lock washers or nuts to try and hold during assembly.





# **OEM Packaging Option**

Devices are available bulk packed with the components packed separately. Add suf \( \subseteq \text{OEM} \( \text{to the item number.} \)





#### CLM Mini Series 15 Inline

UNEMA 3R/4 U Santoprene boot U150A 600V

UAccepts #8 #2 wire

Wire Connection	M/F	Item #
#8 #2 AWG	Male	CLM2M
#0L#Z AVVG	Female	CLM2F





CLS Series 16 Inline UNEMA 3R/4

U Santoprene boot U400A 600V

UAccepts #6 4/0 wire

Wire Connection	M/F	Item #
#6 T#2 AWG	Male	CLS2MB
#OL#Z AVVG	Female	CLS2FB
#6 #2 AWG	Male	600100-2
brass contact with hardware	Female	600099-2
#2 2/0 AWG	Male	CLS20MB
#ZLZ/U AVVG	Female	CLS20FB
#2 2/0 AWG	Male	600100-20
brass contact with hardware	Female	600099-20
2/0 □4/0 AWG	Male	CLS40MB
Z/UL#/U AVVG	Female	CLS40FB
2/0 4/0 AWG	Male	600100-40
brass contact with hardware	Female	600099-40
Boot with	Male	600098
retaining screw	Female	600097





#### CL Series 16 Inline

USeries 16 Compatible Inline UNEMA 1

USuper Tough Nylon Housing

U400A 600V

UAccepts #6 - 4/0 Wire

U2 Piece shell makes it easy to assemble

Wire Connection	M/F	Item #
#6□#2 AWG	Male	CL2MB
#OL#Z AVVG	Female	CL2FB
#2 2/0 AWG	Male	CL20MB
#ZLZ/U AVVG	Female	CL20FB
2/0 □4/0 AWG	Male	CL40MB
ZIULHIU AVVG	Female	CL40FB







# CLS Series 18 Inline Ballnose

UNEMA 3R/4 U Santoprene boot

U400A 600V

UAccepts #6 4/0 wire

Wire Connection	M/F	Item #
#6   #2 AWG	Male	CLS182MB
#0_#2 AVVG	Female	CLS182FB
#6	Male	500107.1
brass contact with hardware	Female	500104A.1
#2 2/0 AWG	Male	CLS1820MB
#ZLZ/U AVVG	Female	CLS1820FB
#2 2/0 AWG	Male	500105A.1
brass contact with hardware	Female	500102A.1
2/0 □4/0 AWG	Male	CLS1840MB
Z/UL#/U AVVG	Female	CLS1840FB
2/0 4/0 AWG	Male	500106A.1
brass contact with hardware	Female	500103.1
Boot with	Male	203242
retaining screw	Female	203243

A B C D E

DRAWINGS 34

TECH on page



A B C D E F G H

Item #





.OEM = Ordering Number

Examples: CL20MB + -E + .OEM = CL20MB-E.OEM

CLM2F + -H = CLM2F-H







#### CLM Mini Panel Mounts

USuper Tough Nylon U150A 600V

UComes with qty (3) #8 Self Tapping Screws for Mounting Flange

U Optional drilled out version (X) for #10/32 nut and bolt

Wire Connection	M/F	Item #
#8 #2 AWG	Male	CLMMR2
double set screw	Female	CLMFR2
5/16" 18 threaded stud	Male	CLMMRS
3/4" long	Female	CLMFRS









#### **CLSM Mini Panel Mounts**

**U** Santoprene U150A 600V

UDrilled out for #10-32 nut and bolt (Not provided)

Wire Connection	M/F	Item #
#8 #2 AWG	Male	CLSMMR2
double set screw	Female	CLSMFR2
5/16"□18 threaded stud 3/4" long	Male	CLSMMRS
	Female	CLSMFRS









#### **CL Panel Mounts**

USuper Tough Nylon U400A 600V

UComes with qty (4) of #8 Plastite Self Threading Screw for Mounting Flange

UtOptional drilled out version (X) for #10-32 nut and bolt

M/F	Item #
Male	CL20MRB
Female	CL20FRB
Male	CL40MRB
Female	CL40FRB
Male	CL40MRB-BB*
Female	CL40FRB-BB*
Male	CL40MRSB
Female	CL40FRSB
Male	CL40MRSB2
Female	CL40FRSB2
	Male Female Male Female Male Female Male Female Male Female Male







#### **CLS Panel Mounts**

**U** Santoprene U400A 600V

UBrass threaded inserts for #10/32 bolt (Not provided) Utoptional drilled out version (X) for #10-32 nut and bolt

Wire Connection	M/F	Item #
2/0 4/0 AWG double set screw	Male	CLS40MRB
	Female	CLS40FRB
One hole bus bar 5/16" - 18 thread	Male	CLS40MRB-BB
	Female	CLS40FRB-BB
Two hole bus bar 5/16" - 18 thread	Male	CLS40MRB-BB2
	Female	CLS40FRB-BB2
1-1/8" threaded stud	Male	CLS40MRSB
	Female	CLS40FRSB





WHEN YOU ORDER

Item #

Color Letter A B C D E F G H

Mounting Holes + .OEM = Ordering Number

X = drill out

Examples: CL20MRB + -E + X(drill out) + .OEM = CL20MRB-EX.OEM

CLMFR2 + -H = CLMFR2-H



# CLS 45 Degree Panel Mounts

U Santoprene

U400A 600V

U One piece brass contact

UBrass eyelets for #10-32 through bolt (Not provided)

Wire Connection	M/F	Item #
1-1/8" threaded stud	Male	CLS45MRSB
	Female	CLS45FRSB
2/0 4/0 AWG	Male	CLS45MRB
double set screw	Female	CLS45FRB
2" threaded stud	Male	CLS45MR2SB
	Female	CLS45FR2SB
One hole bus bar 5/16" - 18 thread	Male	CLS45MRB-BB
	Female	CLS45FRB-BB



WHEN **ORDER** 

Item #

Color Letter A B C D E F G H

+ .OEM = Ordering Number

Examples: CLS45MRSB + -E = CLS45MRSB-E



Male ☐ Male Coupler U150A / 600V UMale-Male

Item # CLMMM





Male Female Female T

U150A / 600V UMale-Female-Female

Item # CLMTT





400A Female ☐ 150A Male Cam Reducer U400A / 600V

UFemale-Male

Item # CLMADFM





Soft 3Fer 400A Male to

Three 150A Female

U400A / 600V

UMale-Female-Female

Item # CLMAD3FST





Female Coupler

U150A / 600V UFemale-Female

Item # CLMFF

A B C D E



400A Female ☐150A Female Cam Reducer

U400A / 600V UFemale-Female

Item # CLMADFF

Α



400A Male ☐ 150A Male Cam Reducer

U400A / 600V

UMale-Male

Item # CLMADMM

A B C D E



Male Male Female T

U150A / 600V

UMale-Male-Female

Item # CLMPT





400A Male ☐ 150A Female Cam Reducer

U400A / 600V UMale-Female

Item # CLMADMF





#### Hard 3Fer 400A Male to Three 150A Females

U400A / 600V

UMale-Female-Female

Item # CLMAD3F





Item #

Color Letter

= Ordering Number

ABCDE

Examples: CLMMM + - E = CLMMM-E

CLMTT + -B = CLMTT-B

#### CL/CLS/CLM Adapters



Reverse Hard 3Fer U400A / 600V UFemale-Male-Male-Male Item # CA3M



Paralleling T U400A / 600V UMale-Male-Female

Item # CPT

ВЕ





Hard 3Fer

Tapping T U400A / 600V U'Male-Female-Female

Male Angle Panel

Item # CL40MR-ANGLE

A B C D E F G H

Item # CL40MR-OFFSET

Item # CTT

Mount

U400A / 600V





Male Male Coupler U400A / 600V UMale-Male

Item # CDMM





Ballnose Hard 3Fer U400A / 600V UMale-Female-Female

Item # CA318F



Mount

U400A / 600V



Female Coupler U400A / 600V U Female-Female Item # CDFF





Ballnose Tapping T U400A / 600V UMale-Female-Female

Item # CD18TT ABCDE



Soft Paralleling T U400A / 600V UMale-Male-Female

Item # CPTFST





Ballnose Male and Tapernose Female U400A / 600V UMale-Female

Item # CD1816MF





Soft Tapping T U400A / 600V UMale-Female-Female

Item # CTTFST



A B E

U400A / 600V UMale-Female-Male Item # CTTMST



Female Angle Panel

Item # CL40FR-ANGLE

A B C D E F G H

Item # CL40FR-OFFSET

Soft 3Fer Cam U400A / 600V UMale-Female-Female-Female Item # CA3FST

A B C D E



Reverse Soft 3Fer U400A / 600V Item # CA3MST

Е



Item #

Examples: CA3F + - E = CA3F-E



# CL/CLS/CLM Protective Covers & Caps

Manufactured in UV-resistant polycarbonate, all snap back plastic covers are made with stainless steel offset, spring and pin. Designed for surface mount, the new snap back plastic covers are fully gasketed and NEMA 3R rated for weathertight protection.



Now available in Clear(Z)

Mini CAM Cover UFor 150 amp panel mounts **UNEMA 3R UAII Plastic Construction** UComes with gasket pre-applied

Item # CLM3R











Now available in Clear(Z)

**CAM Cover** UFor 400 amp panel mounts **UNEMA 3R UAII Plastic Construction** UComes with gasket pre-applied















Through Mount Cover UFor 400 amp panel mounts UNEMA 1 UMetal Standoff with Plastic Lid UFor use with through mounted Panel Mounts

Item # CL40WTC-S-062 0.370" 400"

Item # CL40WTC-L-187 0.070" 0.090"

panel thickness





U Snap back cover









Surface Mount Cover UFor 400 amp panel mounts UNEMA 1 UMetal Standoff with Plastic Lid UFor use with surface mounted Panel Mounts

Item # CL40WTC-L-062 Item # CL40WTC-L-125



U Snap back cover



Santoprene Caps UProtective cap with lanyard

Item # CL40FC ☐ts female Item # CL40MC ☐ts male

Item # CLMMC mini ☐ Its male

A B C D E F G H

WHEN YOU ORDER Item #

Color Letter =

Ordering Number

ABCDEFGH

Examples: CLM3R + - E = CLM3R-E

CLL3R + -H = CLL3R-H



Come-along Tool Item # CLSPRESS



150A Connector Extractor

Item # 15CLM Item # 15CLF

Male Female



400A Connector Extractor

Item # 16CLM Item # 16CLF

Male Female



**CLS Female Reforming Tool** 400A

UCLS reforming tool restores damaged female cam-type contacts.

Item # 500072



Wire Shoe

UAvailable in standard pack only UQty 30

Item # 430130.1 #2 AWG Item # 430129.1 #6 AWG



Wire Shoe

UAvailable in standard pack only UCLM/CLSM mini panel mounts, 25mm U Qty 25

Item # 430131.1 #2 AWG



20A Stage Pin Wire Shoe UAvailable in standard pack only U Qty 300

Item # 430117.1 #12 AWG



#### Set Screw

UAvailable in standard pack only U Qty 50

Item # 500017PLT.1 CLS inline Item # 430171.1 **CLM** inline Item # 500032PLT.1 CL inline



#### Set Screw for #6 Wire

UAvailable in standard pack only UGroup 5 and Bates 100A UCLM/CLSM mini panel mounts UQty 60

Item # 430126.1



#### Retaining Screw

UReplacement screw made of Super Tough Nylon UAvailable in standard pack only

UQty 25

Item # 520710.1 CLS Item # 520730.1 CLM



CL/CLS Copper Shim

UAvailable in standard pack only UQty 25

Item # 430244.1



Strain Relief Wire

UAvailable in standard pack only U Qty 100

Item # 430245.1

CLS CLM

Item # 430246.1

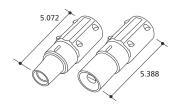
# **Dimensions**

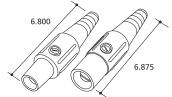
CL Series 16 Inline

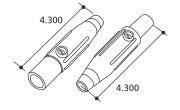
CLS Series 16 & 18 Inline

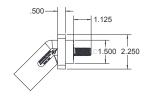
CLM Mini Series 15 Inlines

CLS45MRSB, CLS45FRSB







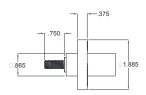


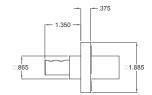
CLMMRS, CLMFRS, CLSMFRS

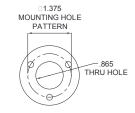
CLMMR2, CLMFR2, CLSMFR2

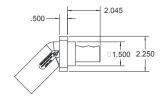
CLM Panel Mount Family Cut-out

CLS45MRB, CLS45FRB







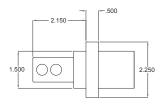


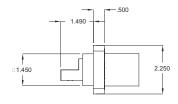
CL40MRB, CL40FRB, CL20MRB, CL20FRB, CLS40MRB, CLS40FRB

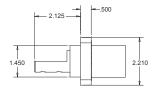
CL40MRB-BB, CL40FRB-BB, CLS40MRB-BB, CLS40FRB-BB

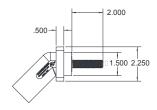
CLS40MRB-BB2, CLS40FRB-BB2

CLS45MR2SB, CLS45FR2SB







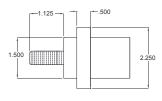


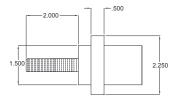
CL40MRSB, CL40FRSB, CLS40MRSB, CLS40FRSB

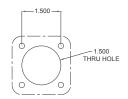
CL40MRSB2, CL40FRSB2

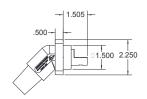
CL, CLS Panel Mount Family Cut-out

CLS45MRB-BB, CLS45FRB-BB









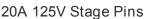


For 30 years bates stage pins have been the industry standard for stage lighting devices. Our Bates UltraDur connectors are manufactured from an extreme temperature tolerant nylon compound. This UltraDur Nylon performs in extreme temperatures to 500 deg F and is highly durable and resilient to punishing impacts. Bates stage pin connectors offer years of reliable service in the most demanding environments. Our pins are crafted from solid brass rod machined to +/- 0.0005" tolerance while allowing the pins to □oat which allows positive alignment and pin contact, which is critical to device life. Precision slotted and crimped female contacts are sized to provide constant spring contact pressure even when the pins are damaged. The 2 piece strain relief accommodates a wide range of wire sizes. All 20A bates stage pin inlines are available with clear or colored tops while the stage pin panel mounts can be ordered in speci □c colors. 100A 250V stage pins are available in yellow to denote the unique voltage rating.



# bates<sup>®</sup>





UMade from Thermal Resistant Nylon 500 F UAccepts #10 or #12 S Type Cable

Wire Connection	M/F	Item #
Set screw	Male	20M
	Female	20F
All white (cover and body)	Male	20M-AW
	Female	20F-AW
Ring terminal	Male	20M-RT
	Female	20F-RT
Clear cover	Male	20M-X
	Female	20F-X







#### **bates** \* TRIXFER □ Stage Pin Jumper Tap

The new Bates Trixfer stage pin jumper tap replaces cumbersome twofers, delivering grounded 20A power to multiple devices with faster, cleaner, simpler setup.

Item # TRIXFER Male□Female combo
Item # TRIXFER.FF Female□Female combo







#### 60A 125V Stage Pins

UMade from Thermal Resistant Nylon 500 ☐F
U#6 Type SC single conductor cable
U¹Or #6/3 or #8/3 Type W multiconductor cable

Wire Connection	M/F	Item #
Set screw	Male	60M
	Female	60F







0 00

0 00

#### 100A 125V Stage Pins

U¹Made from Thermal Resistant Nylon 500 □F
U¹Use #2 or #4 Type SC single conductor cable
U¹Or use #4/3 or #6/3 Type W multiconductor cable
U¹Black only to denote 125V

Wire Connection	M/F	Item #
Set screw	Male	100M
	Female	100F







 $\bullet \bullet \bullet$ 

#### 100A 250V Stage Pins

UMade from Thermal Resistant Nylon 500 F UUse #2 or #4 Type SC single conductor cable UOr use #4/3 or #6/3 Type W multiconductor cable UYellow only to denote 250V

Wire Connection	M/F	Item #
Set screw	Male	106M-H
	Female	106F-H



OEM Available: Add suf \( \times \) OEM \( \times \) to the item number for bulk packaging.

## **bates**®









## 20A 125V Stage Pin Panel Mount U™ade from Thermal Resistant Nylon 500 ☐F UAccepts #10 or #12 AWG

Wire Connection	M/F	Item #
Set screw	Male	20MR
	Female	20FR
Ring terminal	Male	20FR-RT





## 60A 125V Stage Pin Panel Mount UMade from Thermal Resistant Nylon 500 F UAccepts #6 or #8 AWG

Wire Connection	M/F	Item #
Ding terminal	Male	60MR
Ring terminal	Female	60FR
Double set serow	Male	60MR-DSS
Double set screw	Female	60FR-DSS



## 100A 125V Stage Pin Panel Mount U¹Made from Thermal Resistant Nylon 500 ☐F U Accepts #2 or #4 AWG UBlack only to denote 125V

Wire Connection	M/F	Item #
Dina terminal	Male	100MR
Ring terminal	Female	100FR
Double set screw	Male	100MR-DSS
Double set screw	Female	100FR-DSS



## 100A 250V Stage Pin Panel Mount UMade from Thermal Resistant Nylon 500 F UAccepts #2 or #4 AWG UYellow only to denote 250V

Wire Connection	M/F	Item #
Ring terminal	Male	106MR-H
	Female	106FR-H
Double set screw	Male	106MR-DSS-H
	Female	106FR-DSS-H



OEM Available: Add suf □x □OEM □ to the item number for bulk packaging.

## **GROUP 5®**





20A 125V Stage Pins UMade from Phenolic

UAccepts #10 or #12 S Type Cable

Wire Connection	M/F	Item #
Cot corour	Male	G20M
Set screw	Female	G20F
Internal fuse	Male	G20M-FU
	Female	G20F-FU







## 60A 125V Stage Pins

UMade from Phenolic

U#6 Type SC single conductor cable

U  $\!\!\!$  Or #6/3 or #8/3 Type W multiconductor cable

Wire Connection	M/F	Item #
Cot corour	Male	G60M
Set screw	Female	G60F
Internal free	Male	G60M-FU
Internal fuse	Female	G60F-FU
Two cable inlet (2FER)	Male	G60M-DB



## 100A 125V Stage Pins

UMade from Phenolic

UUse #2 or #4 Type SC single conductor cable UOr use #4/3 or #6/3 Type W multiconductor cable UBlack only to denote 125V

Wire Connection	M/F	Item #
Set screw	Male	G100M
Set screw	Female	G100F
Internal five	Male	G100M-FU
Internal fuse	Female	G100F-FU
Two cable inlet (2FER)	Male	G100M-DB



## 100A 250V Stage Pins

UMade from Phenolic

UUse #2 or #4 Type SC single conductor cable UOr use #4/3 or #6/3 Type W multiconductor cable UYellow only to denote 250V

M/F	Item #
Male	G106M-H
Female	G106F-H
Male	G106M-DB-H
	Male Female



OEM Available: Add suf □x □OEM □to the item number for bulk packaging.

## **GROUP 5**<sup>®</sup>





100A 125V Stage Pin Panel Mount
U:Made from Phenolic
U:100A 125V
U:Accepts #2 or #4 AWG

N	1/F	Item #	
N	/lale	G100MR1-R5	
F	emale	G100FR1-R5	



NEW 60A 125V Stage Pin Panel Mount

UMade from Phenolic U60A 125V UAccepts #6 or #8 AWG UThrough panel mounting in 4"x1" cutout

M/F Item # Female G60FR-TH

# How much Amperage can a wire safely conduct?

The National Electrical Code publishes the following table showing how much amperage each size cable can carry:

AWG	AWG		2 Current	3 Current
Wire	cm	Ohms/	Carrying	Carrying
Size	Area	1000 ft	Conductors	Conductors
18	1,600	6.385	10	7
16	2,600	4.016	13	10
14	4,100	2.525	18	15
12	6,500	1.588	25	20
10	10,500	.9989	30	25
8	16,800	.6282	40	35
6	26,600	.3951	55	45
4	42,000	.2485	70	60
2	66,500	.1563	95	80

Ohms/1000 ft. can be used to calculate any voltage drop. The formula is: Voltage (drop in volts) = [1 (amperage) x circuit length in feet/1000 x Ohms/1000 ft.]

## Wire Speci □cations

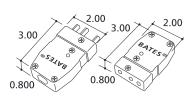
Diameter Ranges of Jacketed Cord in Accordance with Standard UL 62

AWG	2 Cond.	3 Cond.	4 Cond.	5 Cond.	
Type* \$	Type* SV, SVO, SVT, SVTO				
18	.220255"	.230-265"			
Type* \$	SJ, SJO, SJT, S	JTO			
18	.280-315"	.300335"	.325365"		
16	.305340"	.325360"	.350395"		
14	.335375"	.360395"	.390435"		
12	.405455"	.425475"	.465520"		
10	.540605"	.565635"	.625700"		
Type* \$	S, SO, ST, STO				
18	.340385"	.360400"	.385430"	.460510"	
16	.365410"	.385430"	.410-460"	.490550"	
14	.495550"	.520575"	.560620"	.630705"	
12	.565625"	.590655"	.640710"	.700770"	
10	.615685"	.650720"	.700775"	.760840"	
8	.780880"	.830930"	.925-1.050"	1.000-1.150"	
6	.920-1.050"	.970-1.100"	1.050-1.200"	1.180-1.330"	
4	1.060-1.210"	1.130-1.280"	1.250-1.450"		
2	1.210-1.400"	1.300-1.500"	1.450-1.650"		

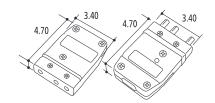
## **Dimensions**

# **bates**®

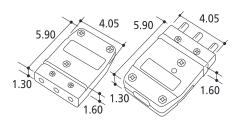
## 20A 125V Stage Pins



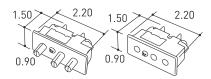
## 60A 125V Stage Pins



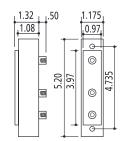
## 100A 125/250V Stage Pins



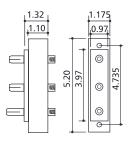
## 20A 125V Panel Mounts



## 60A 125V Panel Mounts

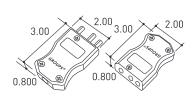


## 100A 250V Panel Mounts

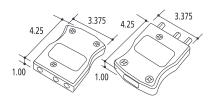


## **GROUP 5**<sup>®</sup>

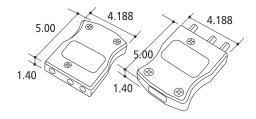
## 20A 125V Stage Pins



## 60A 125V Stage Pins



## 100A 125/250V Stage Pins



## Batteries for every challenge



Mastervolt batteries are:
UMaintenance-free
USafe (no gas formation)
UEasy to install
UDesigned for cyclic use (charge/discharge)
ULeak-proof

Issues to take into account:

U:Determining the correct battery capacity for your new battery/ batteries is very important.

UtChoosing the right battery charger lengthens the lifespan of your batteries considerably. Mastervolt's modern 3-step+ charge technology charges your batteries safely and quickly.

UA control panel is the best way to make the most of your batteries.

To choose the right battery, go to the table on the next page.

When choosing the right batteries for your system, the key issue is not what you need but what you wish to have left over.

Mastervolt makes selecting the right battery easy. Whether you choose a low priced battery such as the AGM or an innovative and technologically advanced Lithium Ion battery, Mastervolt has the power solution for every application.

What's more, our batteries are extremely safe (no gas formation), maintenance free and very easy to install.

To make the choice even simpler, Mastervolt has divided its entire battery range of 32 types into six series and four different battery technologies. Each series has speci c bene ts as well as variations in price, capacity, dimensions, volume and lifespan.

All Mastervolt batteries are equipped with shock-proof positive and negative battery plates with rubber separation, while the electrolyte is absorbed in gel or glass \( \text{bre}\) (AGM). A high-grade lead/calcium compound guarantees you a constant capacity and minimum self-discharging. Mastervolt has the right battery for every industrial application.

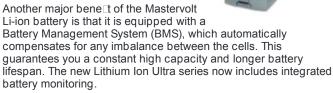


## Which battery is best for your application?

		1	2	3	4
	traditional open batteries	MLI Lithium Ion	MVG gel semi-traction	MVSV 2V gel traction	AGM semi-traction
Maintenance free	-	++++	++++	++++	++++
Gas formation during charging	+	+++++	+++	+++	+++
Self discharge while inactive	-	+++	++++	++++	+++
Lifespan with complete discharge	+	+++++	+++	++++	++
Lifespan with limited discharge	++	+++++	++++	++++	+++
Sensitivity to excessive charge voltage	++	+++++	+++	++++	++
Suitable for selection of battery bank with high capacity	+	++++	+++	++++	++
Starting motors	++	++++	+++	++	++++
Shock-resistance	+	++++	++++	++++	++++
Number of charge/discharge cycles	+	+++++	+++	++++	++
Temperature-resistance	+	++++	++++	++++	++
Installation/angle of inclination	-	++++	++++	++++	++++
Return on investment with limited use	+	+++	+++	++++	+++
Return on investment with intensive use	+	+++++	+++	++++	++
Product warranty	□ 1 year	2 year	2 year	7 year	2 year
Worldwide onboard service	+	++++	++++	++++	++++

## 1 Lithium Ion batteries (LIB)

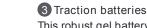
Lithium ion batteries have a high energy density and are perfect for cyclic applications. They offer savings of up to 70% in volume and weight compared to traditional lead-acid batteries, with three times as many charging cycles (2000 full cycles).



#### 2 Gel batteries

use, and can be charged very

In gel batteries, the electrolyte is absorbed by a gel. This type of battery is entirely maintenance-free and has no gas formation with normal use. As no extra ventilation is required, gel batteries can be installed anywhere. They are ideal as a service battery and for cyclical



This robust gel battery is designed for regular and deep discharging (1000 full cycles), and is ideal for large systems that require intensive use and a very long lifespan.



## 4 AGM battery

In AGM batteries, the electrolyte (mixture of water and sulphuric acid) is largely absorbed in glass 

bre. This type of battery is entirely maintenance-free and there is no gas formation with normal use. Not requiring any ventilation, these batteries can be installed anywhere. Their construction gives a very fast discharge at very high currents so AGM batteries are ideal for systems that require high currents (for instance when starting an engine). The battery poles can be unscrewed and this type of battery can be combined with every standard battery terminal.







quickly.

#### **AGM Series**

Uldeal universal battery

UExcellent starter function

UPerfect upgrade for wet lead acid batteries

USame initial power surge in an AGM 12/90 Ah as in a 180 Ah wet lead-acid battery

UGlass-ber technology ensures low internal resistance

UUse of thicker plates allows deep discharging

UAlso for cyclic use

UTwo year warranty

	Account to	American Maria Company	MASSERVENT AGAI	Antonoxy Age	AASTARVOU AGAI	AASTERVOIT AND ASSESSED OF THE SECOND OF THE	MASTONOUT AGE
	AGM 12/55	AGM 12/70	AGM 12/90	AGM 12/130	AGM 12/160	AGM 12/225	AGM 12/270
Item #	62000550	62000700	62000900	62001300	62001600	62002250	62002700
Nominal voltage	12V	12V	12V	12V	12V	12V	12V
Capacity C20*	55 Ah	70 Ah	90 Ah	130 Ah	160 Ah	225 Ah	270 Ah
CCA to DIN	300A	385A	535A	585A	630A	815A	1000A
CCA to SAE	480A	615A	850A	935A	1000A	1300A	1600A
Max. outer Dimensions** lxwxh	10.1x5.2x8.2" 257x132x207 mm	13.7x6.6x7.2" 348x167x183 mm	13x6.8x9.3" 330x173x237 mm	16.1x7x9" 410x177x228 mm	19.1x6.7x9.6" 485x170x245 mm	20.6x9.4x9.5" 522x240x241 mm	20.6x10.6x9.6" 522x268x243 mm
Weight	37.5 lbs / 17 kg	47 lbs / 21.5 kg	62 lbs / 28 kg	83 lbs / 37.6 kg	93 lbs / 42.3 kg	140 lbs / 63.5 kg	161 lbs / 73 kg

<sup>\*</sup> C20 = battery capacity at a discharge time of 20 hours, till 1.75V per cell. \*\*Including terminals and grip handles

## AGM SlimLine Series

Uldeal universal battery

U Good starter function

UCompressed AGM technology

U Saves up to 15% in volume

USaves up to 15% in weight

UMiniscule footprint; 2x 200 Ah for a 200 Ah battery footprint UTwo-year warranty





	AGM-SL 12/150	AGM-SL 12/200
Item #	63001500	63001851
Nominal voltage	12V	12V
Capacity C20*	150 Ah	200 Ah
CCA to DIN	610A	750A
CCA to SAE	1020A	1250A
Max. outer Dimensions** lxwxh	22x4.3x11 in 560x110x280 mm	22x5x11 in 560x126x280 mm
Weight	89 lbs / 40.5 kg	113 lbs / 51.2 kg

<sup>\*</sup> C20 = battery capacity at a discharge time of 20 hours, till 1.75V per cell.

## AGM 6 Volt Series

Uldeal solution for cyclic applications, such as electric propulsion, wheelchairs, golf carts, etc

UEasy con guration of 12/24/48V battery terminals, with high capacity

UDouble pole for easy installation

UNo gas formation with normal use

U:Two-year warranty





	AGM 6/260	AGM 6/400
Item #	61002600	61004000
Nominal voltage	6V	6V
Capacity C20*	260 Ah	400 Ah
Max. outer Dimensions** lxwxh	11.6x7.1x11.7 in 295x180x298 mm	11.6x7.1x16.9 in 295x180x428 mm
Weight	77.8 lbs / 35.3 kg	116.8 lbs / 53 kg

<sup>\*</sup> C20 = battery capacity at a discharge time of 20 hours, till 5.25V.

<sup>\*\*</sup>Including terminals and grip handles

<sup>\*\*</sup>Including terminals and grip handles

## Batteries, Chargers and Accessories: MVG Batteries

### MVG Gel Series

UPerfect service battery for medium and large 12V and 24V systems

UExtremely long lifespan

UNo gas formation with normal use

UFast recharge, high charge current possible

UFor intensive cycle use with a high number of charge/discharge cycles

UVery low self discharge

UTwo-year warranty





<sup>\*\*</sup>Including terminals and grip handles



#### MVSV 2 Volt Gel Series

ULong lifespan

UMany charging and discharging cycles

U Charges quickly

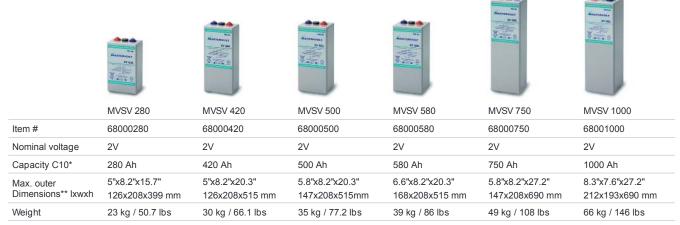
UExtremely sustainable battery for large installations

URobust build for longer lifespan

UDeep discharging without problems

UCan be installed horizontally or vertically

U Seven-year warranty (pro rate)



<sup>\*</sup> C10 = battery capacity at a discharge time of 10 hours, till 1.80V per cell. \*\*Including terminals and grip handles



<sup>\*</sup> C10 = battery capacity at a discharge time of 10 hours, till 1.80V per cell. \*\*Including terminals and grip handles

## Batteries, Chargers and Accessories: Lithium Ion Batteries

## Lithium Ion Ultra Series Battery



Having perfected the legendary Lithium Ion battery in a few key areas, Mastervolt has developed an unrivalled 5000 and 2500 Wh powerhouse. The MLI Ultra has an ultra-long lifespan that offers over 2000 cycles; a recharge time of less than an hour; active cell balancing for ef⊡cient and safe use of the eight Li-ion cells; and integrated battery monitoring to further simplify your system. What's more, the Ultra communicates directly with your Mastervolt battery charger via MasterBus to ensure the best possible recharging. Add in the fact that it takes up 70% less space and weight compared to lead acid batteries, and you'll see why this battery is the ultimate choice.

UHighly advanced technology

UMultifunctional battery of 5 kWh and 2.5 kWh

USaves up to 70% in space

USaves up to 70% in weight

UThree times the lifespan of traditional batteries (2000 cycles)

UUltra-fast charging and discharging

UHigh ef ciency

UMasterBus communication with every Mastervolt battery charger

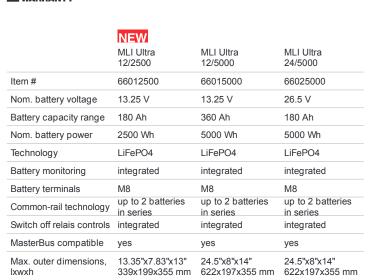
UIntegrated Battery Management System (BMS)

UCommon-rail technology optimizes series connection

U Safest Lithium Ion technology available

UIntegrated battery monitoring





63.93 lbs / 29 kg







Weight

123.5 lbs / 56 kg

123.5 lbs / 56 kg



Ease of use is ease of comfort. We understand that you want to enjoy your peace and freedom without a care in the world. From busbars to battery monitors, from switch panels to intelligent digital switching systems, Marinco components and Mastervolt systems support your industrial needs while requiring minimum attention.

Any system is only as strong as its weakest link so in order to build a strong foundation for your electrical system our distribution products are solidly engineered utilizing best quality materials to

withstand the demands imposed by a harsh industrial environment. Whether it's the use of ultra rexible tinned copper wire, or high temperature plastics in battery switch and busbar ranges, the result is a robust backbone for your electrical system, and your peace of mind.

The complete system builds on this backbone, with world leading options for control and monitoring. Conventional switch and circuit breaker panels provide installation options for wet or dry areas.



### Contour Battery Master Switch

This switch offers a number of unique features, the highlight being the patented Contour Locking System, allowing it to be a stand alone unit, or locked together with other switches.

UFeatures a control knob which can be removed by switching to a counter-clockwise 45□position. The control knob also features an interchangeable labeling system allowing a full range of applications

UThree removable side plates on sides for access of up to 1/0 cables plus a rear cover insulating the rear terminals against any short circuits

UCan be either surface or recess mounted by cutting a 2.1" (52 mm) hole

UAvailable with house knob (OEM # 701B-HB) or with chassis knob (OEM # 701B-CH)



## **Battery Selector Switch**

The 701S is the most compact selector switch available on the market. It has the same dimensions as the 701 and includes the same removable side plates and back cover. While BEP recommends isolated battery systems as outlined with our distribution clusters, the 701S offers a simple economical way of separating two batteries.

Please note selector switches will not separate electronics from harmful engine starting spikes.



### Easy □t □ Battery Switch

Created for installations where switches need to be recessed through varying thicknesses of panels. It achieves this through an easily removable threaded ring allowing for panel thicknesses up to 3/4" (19 mm). It uses the same features as the 701 with the removable key 45 past the off position, labelled handle and a removable back cover covering exposed terminals.

The switch can also be surface mounted offering a unique style compared to other switches available on the market.

The 700 Easy to switch can easily be retro - ted in place of most European post and lever type switches.

Now molded in high temperature, □ber reinforced plastics.

#### **BEP Battery Switch Test**

Procedures (UL 1107) Continuous (1 hour), intermittent (5 minutes) & Cranking (engine starting □10 seconds). The test is to determine the maximum current the switch can handle for the stated time, without the rear terminals exceeding 100 □C (212 □F) above the ambient temperature. The continuous and intermittent ratings are tested at 110% of speci □ed ratings. All BEP switches are tested Independently to this speci □cation by a 3rd party laboratory.

Speci Cations - All recessed or surface mount, tin-plated copper studs & nuts, ignition-protected

		in	mm	Rating (A DC)		Voltage		Stud size	
Item #	OEM#	LxWxH	LxWxH	Cont	Inter	Crank	(V DČ)	Operation	Studs x (in/mm)
700	700B	2.7"x2.7"x4.3"	68x68x110 mm	275	455	1250	48	On/Off	2 x (3/8" / 10 mm)
701	701B	2.75"x2.75"x3"	69x69x75 mm	275	455	1250	48	On/Off	2 x (3/8" / 10 mm)
701S	701S-B	2.75"x2.75"x3"	69x69x75 mm	200	300	1000	48	1-2-Both-Off	3 x (5/16" / 8 mm)

### Panel-Mounted Switches

Designed specically for panel mount applications. This range gives a very compact, versatile solution.

UCompact, lightweight

URemovable key on 701-PM

UCountersunk recesses for surface mount application

U Standard 2-1/16" (52 mm) hole cut out (same as standard gauge hole)

Ulinside: captive inserts for 3/16" (4.8 mm) nuts;

full access for cables - no restrictions

U Standard interchangable label system

Now molded in high temperature, Deer reinforced plastics.



## **Mounting Plates**

Single recessed. Supplied with all the mounting hardware and come in a matching grey □nish.

For	Item #	LxW
701	BSP-1	3.75"x3.75" / 95x95 mm

#### As shown in Contour Connect panels







701S-PM



#### Speci □ cations

		in	mm	Rating (A DC)		Voltage		Stud size	
Item #	OEM#	LxWxH	LxWxH	Cont	Inter	Crank	(V DČ)	Operation	Studs x (in/mm)
701-PM	701-PM-B	2.75"x2.75"x3"	69x69x67 mm	275	455	1250	48	On/Off	2 x (3/8" / 10 mm)
701S-PM	701S-PM-B	2.75"x2.75"x3"	69x69x67 mm	200	300	1000	48	1-2-Both-Off	3 x (5/16" / 8 mm)





## **Pro Installer Series Battery Switches**

A new range of premium quality battery switches that feature an industry standard mounting footprint. This enables easy mounting into existing or new installations. Improved design and ergonomics provide clear intuitive operation, while attention to all aspects of switch function and use has created superior installation options, high power capacity and improved reliability.



# NEW Pro Installer On/Off Battery Switch

A powerful new generation battery switch with outstanding performance and features for both the installer, and end user. Three mounting options: surface, rear panel, and front panel mounting, plus optimized cable access makes installation a breeze. Pro Installer switches set the new benchmark with outstanding ergonomics, intuitive look/ feel, and are engineered from the inest materials to withstand a harsh industrial environment.



# NEW Pro Installer Double Pole Battery Switch

Same industry standard mounting with On/Off operation. Used where positive and negative supplies must be isolated at the same time.

SAFETY NOTE: BEP does not recommend this for switching house and start battery systems at the same time, for safety reasons. You may need to isolate your engine battery in an emergency, but not your house battery which typically powers the communications. For this application please use the new Dual Bank Control Switch (772-DBC) or one of BEP's battery switch clusters.

Note: 770-DP is replacing 720-DP



# NEW Pro Installer Dual Bank Control Switch

This innovative (Patent Pending) switch combines the functions of 3 battery switches into one (House, Start, and Emergency Parallel) to intuitively manage 2 battery banks and 2 loads. A unique safety position isolates one load e.g. House □On□, Start □Off□in case of engine malfunction, so an emergency radio call can still be made. Signi□cant savings in both space and installation cost can be made, without compromising functionality or safety.

#### **Speci** cations

		in	mm	Ra	ting (A E	OC)	Voltage		
Item #	OEM#	LxWxH	LxWxH	Cont	Inter	Crank	(V DČ)	Operation	Stud Detail
770	770-B	3.85"x3.85"x3.62"	98x98x92 mm	400	600	1500	48	On/Off	2x (3/8" / 10 mm)
770-DP	770-DP-B	3.85"x3.85"x3.62"	98x98x92 mm	2x 400	2x 600	2x 1500	48	On/Off (x2)	4x (3/8" / 10 mm)
771-S	771-S-B	3.85"x3.85"x3.62"	98x98x92 mm	400	600	1500	48	1-2-Both-Off	3x (3/8" / 10 mm)
771-SFD	771-SFD-B	3.85"x3.85"x3.62"	98x98x92 mm	400	600	1500	48	1-2-Both-Off	3x (3/8" / 10 mm)
772-DBC	772-DBC-B	3.85"x3.85"x3.62"	98x98x92 mm	2x 400	2x 600	2x 1500	48	1, 1/2, Parallel, Off	4x (3/8" / 10 mm)

# NEW Pro Installer Selector (771-S) & Selector with Field Disconnect (771-SFD) Battery Switches

Power requirements for industrial applications have continued to increase. These two Selector switches offer high power capacity (400 amps continuous), the ability to easily  $\ensuremath{\square} t$  doubled cables, and conform to the industry standard mounting footprint.

Please note selector switches will not separate electronics from harmful engine starting spikes.

Speci⊡cations on previous page. Note: 771-S is replacing 721



## Heavy-duty Battery Switch

The 720 Heavy-duty Battery Switch ts into the same contour lock system as used on the battery distribution system. Rated at 600A continuous and 2500A cranking.

As with the 701, the 720 can be recessed or surface mounted. The 720 uses the same style of self cleaning sliding contact as used in the 701 and uses the same label sheet.



#### Speci Cations

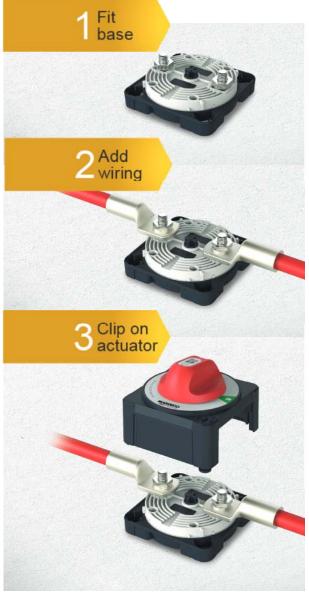
		in	mm	Rating (A DC)		Rating (A DC)		Rating (A DC)		Rating (A DC) Volta			
Item #	OEM#	LxWxH	LxWxH	Cont	Inter	Crank	(V DČ)	Operation	Stud Detail				
720	720B	4"x4"x3.5"	102x102x90 mm	600	800	2500	48	On/Off	2x (1/2" / 12 mm)				



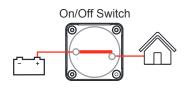
## **EZ-Mount Battery Switches**

Same great switch, even easier to install. These revolutionary battery switches allow you to wire from the front making cabling easy and accessible. With their shared interconnection height, EZ-Mount battery switches "cluster" directly with the Pro Installer Busbar Range, resulting in the fastest, most compact installations. All ratings, footprints and features of the EZ-Mount switch match the high quality of our standard switches.

## The EZ-Mount is as easy as 1, 2, 3.





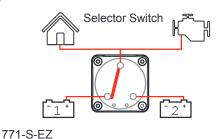


770-EZ

## NEW Pro Installer EZ-Mount On/Off Battery Switch

A powerful new generation battery switch with outstanding performance and features for both the installer, and end user. Optimized cable access makes installation a breeze. Pro Installer switches set the new benchmark with outstanding ergonomics, intuitive look/feel, and are engineered from the <code>\_nest</code> materials to withstand harsh industrial environments.





## NEW Pro Installer EZ-Mount Selector Battery Switch

Power requirements for industrial applications have continued to increase. This selector switch offers high power capacity (400 amps continuous), the ability to easily  $\Box$ t doubled cables, and conform to the industry standard mounting footprint (Guest, Perko, Blue Sea).

Please note selector switches will not separate electronics from harmful engine starting spikes.

#### Speci = cations

		in	mm	Rating (A DC)			Voltage		
Item #	OEM#	LxWxH	LxWxH	Cont	Inter	Crank	(V DČ)	Operation	Stud Detail
770-EZ	770-EZ-B	3.85"x3.85"x3.62"	98x98x92 mm	400	600	1500	12 48	On/Off	2x (3/8" / 10 mm)
771-S-EZ	771-S-EZ-B	3.85"x3.85"x3.62"	98x98x92 mm	400	600	1500	12 48	1-2-Both-Off	3x (3/8" / 10 mm)

## DVSR: Dual Battery Charging Made Easy

The Digital Voltage Sensing Relay (DVSR) allows the charging of a second battery bank from any single charging source. When the voltage on the charged bank rises sufciently, the DVSR engages allowing the 2nd battery bank to charge. When charging stops and voltage falls, the DVSR automatically isolates the battery banks, ensuring that engine start batteries are kept fully charged. Digital circuitry provides superior reliability and extremely low power consumption.

- USafely charge two or more independent battery banks from one charge source (alternator, battery charger | )
- U Charges engine starting batteries before combining auxiliary bank for charging
- UProtects start batteries from becoming □attened by domestic loads
- Ulsolates electronics from harmful electrical surges from starter motors
- U Simple to install 3 wire connection, leaves alternator wiring intact
- UNo volt drop vs. diode isolators
- Ulignition protected

START

The two battery

banks are isolated

USurface or panel mountable

- 2011 Digital enhancements:
- U:Multi voltage, auto selects between 12 and 24V DC operation
- UDigital circuits provide very low power consumption and enhanced performance
- URemote sensing circuitry allows optional connection from ignition switch, provides same functionality as single sense VSR and zero power consumption when engine is off
- UZero stand by current draw when remote sensing circuit utilized with storage mode switch 

  tted (switch in open position)
- URemote status LED output option



Replaces previous models 710-125A and 710-125A-DS

Charging begins

but batteries

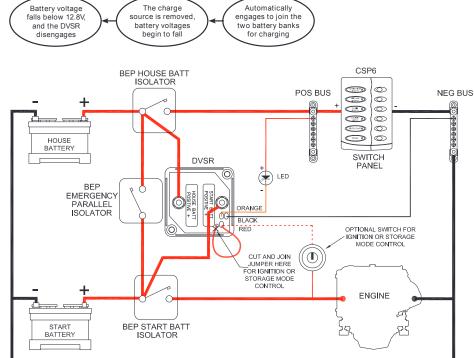
remain isolated

Item #	OEM#	in LxWxH	mm LxWxH		0 ( )	Rating (A) Intermittent	0 0	0 0
710-140A	710-140A-B	2.75"x2.75"x2"	69x69x50 mm	12/24	125	140	13.4/26.8	12.8/25.6

Battery voltage rises to 13.4V on

charging battery

#### DVSR Operation (shown for 12V system)



Wiring diagrams indicative of installation only.

### Universal Mount Switches

- Ullonger stud lengths for improved assembly and easier cable routing
- UBuilt with heavy-duty copper sweep contacts to ensure positive circuit control
- URugged internal components protected by a tough, impact resistant polycarbonate housing that is impervious to the elements

UCable Lug Size: 3/8"
UDimensions: 5.0"x2.75"

Selector Switch w/out AFD Continuous amps: 230



Item # 2111A



OEM # 2111A-B

BOTH

GUEST 2

Selector Switch with AFD

Continuous amps: 230

Momentary amps: 345

OEM # 2110A-B

Item # 2110A



On/Off Switch w/out AFD

Continuous amps: 230

Momentary amps: 345

OEM # 2112A-B

## Battery Selector Switches

UPolycarbonate case UFor 6, 12, 24 or 36V systems USurface mount UCable Lug Size: 3/8" UDimensions: 5.50"x2.63" Selector Switch with AFD Continuous amps: 230 Momentary amps: 345



Item # 2100 OEM # 2100-B

Selector Switch w/out AFD Continuous amps: 230 Momentary amps: 345



Item # 2101 OEM # 2101-B

On/Off Switch w/out AFD Continuous amps: 230 Momentary amps: 345



Item # 2102 OEM # 2102-B OEM # 2102-3-B black

## Heavy-duty Diesel Power Battery Switches

UFor 6, 12, 24 or 36V systems
UBuilt with heavy-duty copper
sweep contacts to ensure
positive circuit control

- URugged internal components protected by a tough, impact resistant polycarbonate housing that is impervious to the elements
- UFeatures Alternator Field Disconnect (AFD) allowing selection of any position, including □off□ without damage to alternator or electrical system

UCable lug size: 1/2" U2304A and 2304A-B have 3 studs Heavy-duty On/Off Switch Continuous amps: 450 Momentary amps: 800



Item # 2303A



OEM # 2303A-B

Extra-duty On/Off Switch Continuous amps: 600 Momentary amps: 1000



Item # 2304A



OEM# 2304A-B

Battery Selector Switch Continuous amps: 360 Momentary amps: 600

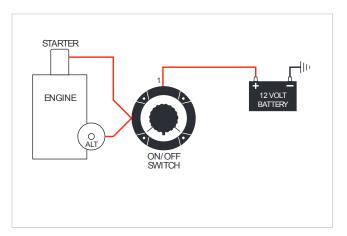


Item # 2300A



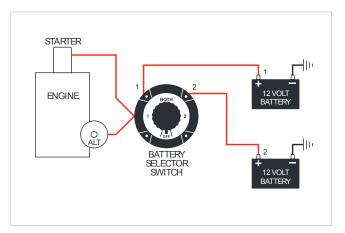
OEM # 2300A-B

As more and more electronics and electrical accessories are added to your vehicle or industrial application, the use of multi-batteries becomes a necessity. Guest components allow you to set up the system (from simple to complex) for your application. The following diagrams are for use in identi ying and designing the right system for your needs.



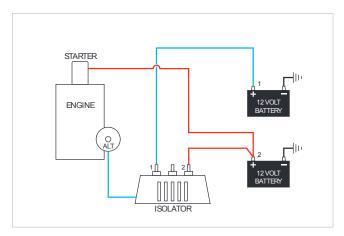
#### Single battery

Installation: To shut off all power at source. Recommended installation by approved authorities.



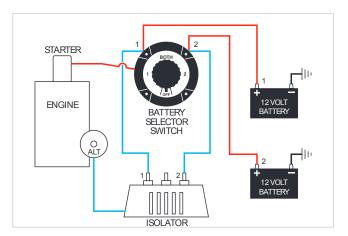
#### Two battery with out isolator

Installation: To select a starter battery and service battery. Manually isolates each battery, parallels both batteries for emergency start, master disconnect, manually selects batteries for charging.



#### Two battery with isolator

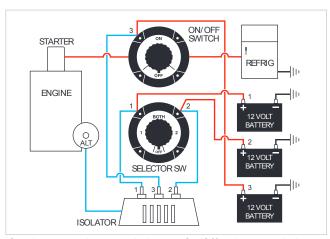
Installation: Isolator automatically selects lower charged battery to be charged  $\Box$ rst. Full battery can  $\Box$  discharge to drained battery. Dedicated system, no  $\Box$ exibility, no emergency parallel or disconnect function.



## Two battery with emergency parallel

Installation: An isolator automatically isolates each battery, lower charged battery will automatically be charged arst. Two different size batteries can be used, larger for services, smaller for engine cranking. Switch selects usage, master disconnect, emergency parallel function.

## Batteries, Chargers and Accessories: Battery Switch Installations

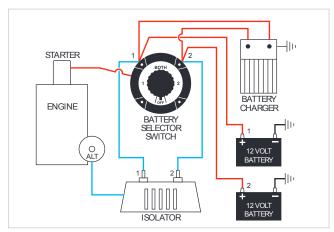


One battery selector switch, one On/Off selector switch automatic battery isolation and automatically charges three batteries

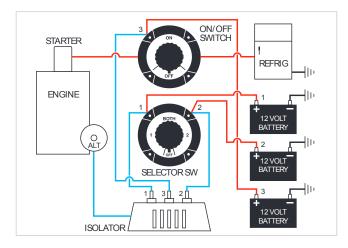
Installation: Third battery isolated from other circuits. All batteries being automatically charged while running through isolator. To be used for refrigeration or other heavy load devices. Isolator protects other batteries.

Switch selector usage:

1. Master disconnect 2. Emergency parallel function



Adding automatic battery charger/converters to system Installation: Multi-bank charger built in isolator which will automatically charge lower battery.



Three batteries, one battery selector switch, one On/Off or selector switch, two alternators, one isolator Installation: Isolator separates both alternators so both alternators will charge simultaneously. Automatically charges lowest battery  $\Box$ rst. All batteries can be used for start, third battery, or source.

## Alternator Field Disconnect (AFD)

Allows selection of any position, including Off, without damage to alternator or electrical system. AFD is required on some electrical systems.

UHeavy-duty copper sweep contacts

UPositive click-stop on all positions

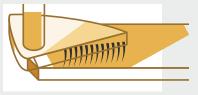
U≣Make before break □contacts allow selection of all positions except □Off□while engine is running

UNew design is easy to retro t into existing hole patterns

UUse with 6, 12, 24 or 36V systems

UBuilt-in skirt protects connections

USurface or rear panel mounting



Exclusive □at 360 □sweep □contact design provides up to 60% more contact area than other switch designs.

## **Battery Isolators**

Marinco offers a comprehensive line of Mastervolt battery isolators to compliment a complete 12 or 24V system. Battery isolators are an essential part of any DC system that increases battery lifespan, protects against battery discharge, and allows isolated charging of multiple battery banks.



## BI Battery Isolators

Mastervolt's BI battery isolators are based on conventional diode technology. The diode voltage drop (ca. 0.6V) can be compensated for by adapting the output voltage of the connected charger. Mastervolt battery chargers and Alpha Pro alternator regulators come as standard with automatic compensation for voltage drops.

	BI 702-S	BI 703	BI 1202-S	BI 1203-S
Item #	83007021	83007030	83012021	83012031
Max. output charger	25/50A	25/50A	80A	80A
Max. output alternator	70A	70A	120A	120A
Compensation diode	yes	no	yes	yes
Dimensions, hxwxd	6.2"x5.5"x3.2" 157x140x80 mm	8.2"x5.5"x3.2" 207x140x80 mm	8.2"x5.5"x3.2" 207x140x80 mm	8.2"x5.5"x3.2" 207x140x80 mm
Weight	1.3 lbs / 0.58 kg	2.4 lbs / 1.1 kg	2.65 lbs / 1.2 kg	2.9 lbs / 1.3 kg
# of battery banks	2	3	2	3

## **Battery Watch**

The Battery Watch is an essential element of any well-equipped battery system, offering you a 1.3 lb electronic watchdog that ensures a much longer lifespan for your batteries. The unit switches off loads when batteries are nearly empty, to keep your batteries in optimum condition. LED lights provide a clear read out and the undervoltage can be set using DIP switches.



	Battery Watch
Item #	83200150
Max. load	150A
Input voltage	8-32V DC
Switch off under voltage 12V	9-12V DC
Switch off under voltage 24V	18-24V DC
Dimensions, hxwxd	6.2"x5.5"x3.2" 157x140x80 mm
Weight	1.3 lbs / 0.6 kg

## **Battery Isolators**

U\*Optimized heat sink design for maximum performance

UMinimized voltage drop across isolation barrier using Schottky type diodes

UEach output individually capable of carrying the full alternator load

UFixed cable posts for secure connections

UFully potted, marine grade construction

UWaterproof components for harsh environment performance - year after year

NOTE: If used on a 24V system, vehicle must be equipped with 24V DC alternator

4				
Item #	2501	2502	2504	2532
Max. output alternator	70A	70A	70A	120A
Operation	12 48V	12 48V	12□48V	12 48V
Dimensions	5.4"x4.5"x2.6"	10"x5.5"x3.7"	5.4"x4.5"x2.6"	15"x5.5"x3.7"
# of alternators	1	2	1	2
# of battery banks	2	2	3	3



## **Battery Mate**

The Battery Mate is compatible with any type of alternator/battery charger, in both existing and new systems. As the voltage loss between the alternator and battery is negligible, the Battery Mate performs far better than conventional battery isolators. This ensures fast and complete charging of your batteries without having to make additional adjustments to the alternator.

	Battery Mate IG 1602	Battery Mate IG 1603	Battery Mate IG 2503
Item #	83116025	83116035	83125035
Max. output charger	120A	120A	200A
Max. output alternator	160A	160A	250A
Dimensions, hxwxd	8.2"x5.5"x3.2" 207x140x80 mm	8.2"x5.5"x3.2" 207x140x80 mm	8.2"x5.5"x3.2" 207x140x80 mm
Weight	2.2 lbs / 1 kg	2.2 lbs / 1 kg	2.2 lbs / 1 kg
# of battery banks	2	3	3

## NEW Heavy-duty Busbars

Pro Installer Heavy Duty Busbars provide a robust means to connect (bus) together the multitude large cables found in modern electrical installations. These offer unrivaled exibility to meet the requirements of any installation, saving signicant cost and space. Specications:

U4 Stud-500A busbar: 8 mm (5/16") stainless steel studs

U3, 5, and 8 stud-650A busbars: 10 mm (3/8") stainless steel studs UStuds treated with anti-seize lubricant

U 50 VDC

UTinned CDA102 Copper conductors

UStainless steel studs, washers and nuts for longevity in harsh industrial environments

U Generous stud lengths, metric threads

Description	Item #	Footprint*
3 Stud Busbar	777-BB3S-650	1 x
4 Stud Busbar	777-BB4S-500	1 x
5 Stud Busbar	777-BB5S-650	1.5 x
8 Stud Busbar	777-BB8S-650	2.5 x

<sup>\*</sup> See page 64 for Footprint details



## **NEW** Z Busbars

Marinco BEP Products have created a completely new concept for small cable termination with the Z-Bar range. These busbars maximize power density by utilizing high and low level bars to optimize cable runs, saving even more installation space.

Speci cations:

U10 Way and 18 Way versions

U4x 6 mm (1/4") studs with anti-seize lubricant

U4mm (5/32") terminals with captive lock washers

U200A maximum per bar (2x 200A)

U 50 VDC

UTinned CDA102 Copper conductors

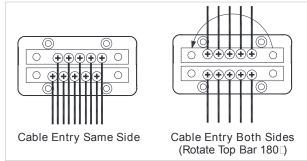
UStainless steel studs, washers and nuts for longevity in harsh industrial environments

UMetric threads

Description	Item #	Footprint*
10 way, Z Busbar	777-Z10W-200	1 x
18 way, Z Busbar	777-Z18W-200	1.5 x

<sup>\*</sup> See page 64 for Footprint details





## **NEW** ANL Fuse Holders

These ANL fuseholders offer unparalleled circuit protection choice for both the installer and end-user. The innovative Through-Panel fuseholder (778-ANLTP) provides superior access for fuse inspection and replacement. Small electrical loads are catered to with the compact 778-ANL unit while additional cable security and highest capacity is provided by the 778-ANL-2S, featuring additional studs for separate clamping of cables.

Speci cations:

UCable connection studs: Shared 8mm (5/16") on 778-ANL U10mm (3/8") studs on 778-ANL-TP and 778-ANL-2S

UFuse mounting studs: 8mm (5/16")

UDouble washers allow any ANL fuse brand to be Etted

UFuse type: ANL or ANN (fast blow)

U.Swinging fuse style allows changing fuse without removal of fastening nuts

UAmperage: determined by fuse sizing, 778-ANL: 35-300A, 778-ANL2S: 35-750A, 778-ANLTP, 35-500A

U50 VDC (or determined by fuse □tted)

UTinned CDA102 copper conductors 778-ANL-2S

UTinned CDA260 high conductivity brass conductors 778-ANLTP



<sup>\*</sup> See page 64 for Footprint details



See page 61 for ANL fuses.

## **NEW** Class-T Fuse Holders

Class-T fusing provides the ultimate protection for high power circuits, and where extremely fast fuse blow characteristics are required. Modern battery technologies such as Mastervolt Lithium Ion or AGM are capable of very high short circuit currents which may be beyond the interrupt rating of standard circuit breakers and other types of fuse. Two sizes of Pro Installer Class-T Fuseholder are available which accommodate fuses from 225-400 Amps, and 450-600 Amps respectively.

Speci cations:

UCable connection studs: 10 mm (3/8") studs

UFuse mounting studs: 10 mm (3/8") 225-400A holder, 12 mm (1/2")

450-600A holder

UFuse type: Class-T (JLLN / TJN / A3T)

UMaximum amperage: Determined by fuse sizing, either 400A

or 600A

UHigh temperature, □bre reinforced plastic base provides strength and chemical resistance

UClear polycarbonate cover

UTinned CDA102 Copper conductors

UStainless steel studs, washers and nuts for longevity in harsh industrial environments

UMetric threads

Description	Item #	Footprint*
Fuseholder, Class-T 225 □ 400A	778-T2S-400	1.5 x
Fuseholder, Class-T 450 600A	778-T2S-600	1.5 x

<sup>\*</sup> See page 64 for Footprint details



See page 61 for Class T fuses.



### ANL Fuses

Use with:



UNew Pro Installer ANL Fuse Holders (page 56)

UZANL Fuse Block below (Item # 607006)

Length: 3.23" (82 mm) Width: 0.88" (22 mm)

Stud Clearance: 0.43" (11 mm)

Rating	Qty/	
(A)	Pkg	Item #
40	1	77049040
50	1	77049050
63	1	77049063
80	1	77049080
100	1	77049100
125	1	77049125
160	1	77049160
175	1	77049175
200	1	77049200
250	1	77049250
300	1	77049300
355	1	77049355
400	1	77049400
425	1	77049425
500	1	77049500

## NEW Heavy-duty ANL Fuses

Use with:



U5/16" (8 mm) mounting studs UNew Pro Installer ANL Fuse Holders (page 60)

Rating	Qty/	
(A)	Pkg	Item #
600	5	FANL-600-B
675	5	FANL-675-B
750	5	FANL-750-B



#### ANL Fuse Blocks

U:Glass □lled nylon base for durability. U:Fits all ANL and ANN fuses up to 800 amps.

UUL approved

URating: 800 max amps

Item # 607006



## Maxi-Blade Fuses

Fuses available: 30-80A Interrupt capacity: 1000A DC Maximum voltage: 32V DC

Rating (A)	Qty/ Pkg	Item #	OEM#
30	1	BFHD-30A/DSP	BFHD-30A
40	1	BFHD-40A/DSP	BFHD-40A
50	1	BFHD-50A/DSP	BFHD-50A
60	1	BFHD-60A/DSP	BFHD-60A
70	1	BFHD-70A/DSP	BFHD-70A
80	1	BFHD-80A/DSP	BFHD-80A



#### Maxi Fuse Holder

An economical way of fusing heavy loads 30-80A. Ideal for battery charger outputs or mains feeds. 1/4" (6 mm) studs accept ring terminals and cables up to 25 mm<sup>2</sup> (4 gauge). Fuse is clamped between tinned brass clamps for positive connection. Covers enclose exposed terminals. 2.8"x2"x1.42" (71x53x36 mm)

Item # 702-MFH OEM # 702-MFH-B



## NEW Medium-duty Class T Fuses

Interrupt Capacity: 20,000A DC Maximum voltage: 160V DC Diameter: 1.34" (34 mm) Length: 2.77" (70mm)

Use with:

UNew Pro Installer
Class T Fuse Holders (page 60)

Rating (A)	Qty/ Pkg	Item #
225	1	FT-225-B
250	1	FT-250-B
300	1	FT-300-B
350	1	FT-350-B
400	1	FT-400-B



## NEW Heavy-duty Class T Fuses:

Interrupt Capacity: 20,000A DC Maximum voltage: 160V DC Diameter: 1.62" (41 mm) Length: 3.03" (77mm)

Use with:

UNew Pro Installer
Class T Fuse Holders (page 60)

Rating (A)	Qty/ Pkg	Item #
450	1	FT-450-B
500	1	FT-500-B
600	1	FT-600-B

## **NEW** Insulated Studs

Pro Installer Insulated studs are available in single and twin stud versions, featuring 8 mm (5/16") and 10 mm (3/8") variants. A double stud version with 10mm and 8mm studs is also included for extending cable lengths. The Power Tapping Plate single stud models provide convenient termination points for additional small cables. Pro Installer family features are replicated with these insulated studs, generous stud length, modular footprint, insulating covers with label recess and common interconnection height.

Speci cations:

UPower tapping plate: 4x 4 mm (5/16") terminals

UMaximum current through power tapping plate: 50A per terminal (4x 50A maximum)

UNote: no power passes through the stud so no amp rating is given U50 VDC

UHigh temperature, □bre reinforced plastic base provides strength and chemical resistance

UClear polycarbonate cover with snap-out extra cable access

UStainless steel studs, screws and nuts for longevity in harsh industrial environments

Ulinsert moulded studs with metric threads

UDouble studs feature `snap out' insulating partition, to allow linking of studs

Description	14 a ma #4	Faatarint*
Description	Item #	Footprint*
Single 8mm	IST-8MM-1S	0.5 x
Double 8mm	IST-8MM-2S	0.5 x
Double 10mm/8mm	IST-10MM-8MM	0.5 x
Single 10mm	IST-10MM-1S	0.5 x
Double 10mm	IST-10MM-2S	0.5 x
Single 8mm with power Tapping Plate	IST-8MM-1SPT	0.5 x
Single 10mm with power Tapping Plate	IST-10MM-1SPT	0.5 x

<sup>\*</sup> See page 60 for Footprint details

## Insulated Studs & Covers

UMade with high temperature plastic bases

UStud covers push securely over the threaded stud covering

UDual studs ideal for +ve / -ve connections, branch circuits, windlass or inverter installations.

UCovers supplied with display versions.







IST-10MM-8MM

IST-10MM

IS-6MM-2

#### Studs

Item #	OEM#	Stud Size	Polarity
Single Studs			
IS-6MM-1R/DSP*	IS-6MM-1R	1/4" / 6 mm	Positive
IS-6MM-1/DSP*	IS-6MM-1	1/4" / 6 mm	Negative
Dual Studs			
IS-6MM-2/DSP*	IS-6MM-2	2 x [1/4" / 6 mm]	

<sup>\*</sup>Item #s come with cover, OEM #s do not.

## Covers

Item #	Description
ISC-10R	Red positive 10 mm
ISC-10BK	Black negative 10 mm
ISC-6-2	Double 6 mm



ISC-10BK



IST-8MM-1SPT

3K



#### **Bus Bars**

UNow with easy- tovers with polarity ID

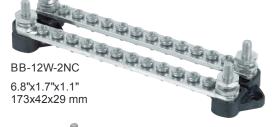
U.5/32" (4 mm) stainless steel screws with shakeproof washers U.2 x 1/4" (6 mm) input studs

U:Tin-plated, brass-insulated mounting bases with recessed mounting holes to avoid accidental shorts on aluminum surfaces U:Supplied standard with all BEP□ AC & DC control panels U:Display pack versions supplied with cover











Item #	OEM#	Bus Type	Output screws	Input studs	Rating (A)
BB-6W-2S/DSP	BB-6W-2S	Single	6	2	100
BB-12W-2S/DSP	BB-12W-2S	Single	12	2	100
BB-24W-2S/DSP	BB-24W-2S	Single	24	2	150
BB-12W-2NC/DSP	BB-12W-2NC	Double	2 x 12	2 x12 way	100
BB-4S-150A/DSP		4-way	1 x 4	4 x 6 mm (1/4 stud)	150

#### **Bus Bar Covers**

UFlame-resistant □exible plastic

UColor-coded for polarity

U'Unique push-on ☐

U:Supplied standard with bus bars when ordered in display packs (for bulk packaging ordered separately)







## Terminal Blocks

Ideal for isolated connections up to 30A. Suitable for connecting tails from AC and DC panels.

Base material: Phenolic; Current rating 30A; Max. voltage rating: 300V AC/DC; Screw size: 0.25" (6.3 mm)

Item #	Description
TB-118-6P	6 connections
TB-118-10P	10 connections



## Batteries, Chargers and Accessories: Battery Accessories

Product Footpri	nts	.5x	1x	1.5x	2.5x
Heavy-duty Bus	bars				
777-BB4S-500	4 Stud		4		
777-BB3S-650	3 Stud		4		
777-BB5S-650	5 Stud			4	
777-BB8S-650	8 Stud				4
Z Busbars					
777-Z10W-200	10 Way		4		
777-Z18W-200	18 Way			4	
ANL Fuseholder	'S	'			
778-ANL	ANL		4		
778-ANL2S	ANL with additional cable clamping studs			4	
778-ANLTP	ANL Through Panel		4		
Class-T Fusehol	ders				
778-T2S-400	225⊑400A			4	
778-T2S-600	450 600A			4	
Insulated Studs					
IST-8MM-1S	Single 8mm	4			
IST-8MM-2S	Double 8mm	4			
IST-10MM-8MM	Double 10mm/8mm	4			
IST-10MM-1S	Single 10mm	4			
IST-10MM-2S	Double 10mm	4			
IST-8MM-1SPT	Single 8mm with power tapping plate	4			
IST-10MM-1SPT	Single 10mm with power tapping plate	4			

## Battery Chargers: A long life for your battery!

Do you want to charge your batteries safely, reliably, and quickly, even when you have poor power or a limited power supply? Do you also value batteries that have a long lifespan while maintaining their capacity? Mastervolt offers you the best possible solution. The Mastervolt 3-step<sup>⑤</sup> charging method ensures more power and a longer life for your batteries. Our battery chargers integrate multiple functions, charging your battery safely and completely even when they are depleted. Fast battery charging is guaranteed by the ef⊡cient use of the available permanent or generator power (all Mastervolt battery chargers have a power factor correction). Mastervolt is Green by Heart.

Which battery charger best meets your needs? We offer three types of battery chargers:

Charge Pro : Range of waterproof battery chargers for recreational use and smaller industrial applications. Multiple outputs allow for Exibility.

ChargeMaster: Suitable for recreational and semi-professional use. Easy to install, it includes a detailed display and easy three-button controls. The ChargeMaster safely charges multiple battery banks at the same time.

Mass: For the toughest tasks in professional and semi-professional situations. With its integrated alarm functions and various certicates, the Mass is the best choice for professionals.

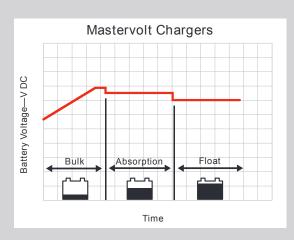
## 3-Stage Chargers Maximize Battery Life

More batteries are ruined by improper charging than by over-use. The safest, most ef cient way to charge batteries without making them too hot or boiling off electrolyte is in three distinct stages:

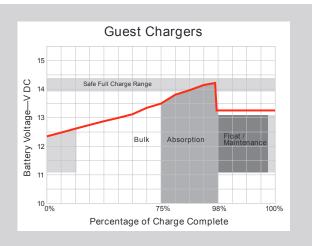
Bulk Stage: The charger uses its full amp output (constant current), while the battery voltage rises.

Absorption Stage: The charger regulates the battery voltage at a peak level (constant voltage) while the current □ow to the battery decreases.

Float or Maintenance Stage: Unlike some "trickle chargers", which apply a constant current to the battery, the Mastervolt oat-charge technology only supplies current at the rate it will be accepted by the battery.





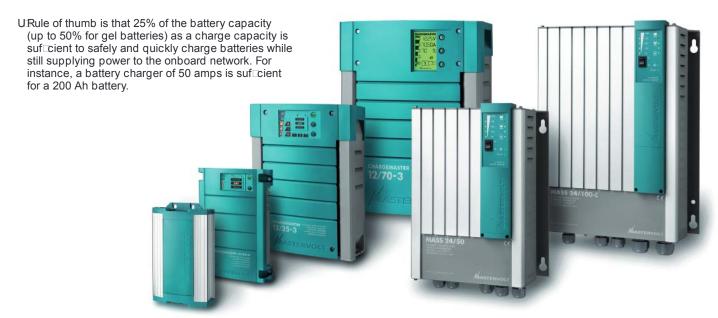


## Choosing your battery charger?

#### Determine:

UHow many battery banks do I want to charge?

UWhat voltage do I need to supply? The battery charger must have the same voltage as the battery bank.



The best battery charger for every application

The ChargeMaster can charge multiple battery banks at once, providing the ease and comfort of combined functionalities. The Mass battery charger has one main outlet to optimally charge a battery bank and guarantee a long lifespan for your batteries even with daily and intensive use. The second outlet is used for the maintenance charge of your starter battery.



Charging Lithium Ion batteries
Although Lithium Ion batteries
are increasingly popular, there
can be a lack of clarity when it
comes to the charging process.
This is not a problem with a
Mastervolt system as the
Mastervolt battery charger
communicates directly with
the Li-ion battery.



Robust connections Solid metal-to-metal connections prevent corrosion and/or overheating.



MasterBus compatible
All ChargeMaster & Mass
battery chargers can be easily
connected to a MasterBus
network with only one cable and
one connection. What's more,
you have the option for central,
local or remote monitoring,
con guration and control of
your system.

## Batteries, Chargers and Accessories: Mass Battery Chargers

	Mass 24/15-2	Mass 24/25-2	Mass 24/50-2	Mass 24/75
Item#	40020156	40020256	40020506	40020756
General Speci □cations				
Nominal output voltage	24V	24V	24V	24V
Total charge current	15A at 28.5V	25A at 28.5V	50A at 28.5V	75A at 28.5V
Number of battery outlets	2	2	2	1
Charge current second output	3A	3A	3A	n.a.
Recommended battery capacity	30⊡150 Ah	50 □250 Ah	100⊡500 Ah	150□ <b>7</b> 50 Ah
Nominal input voltage	230V (180□265V) □50/60Hz	Z		
Supplies your system without battery	yes	yes	yes	yes
Display/read-out	LED display	LED display	LED display	LED display
	12.8'x8.7'x4.4"	12.8'x8.7'x4.4"	13.4'x10.3'x5.1"	13.4'x10.3'x5.1"
Dimensions, hxwxd	325x220x111 mm	325x220x111 mm	340x261x130 mm	340x261x130 mm
Weight	3.3 kg / 7.3 lbs	3.3 kg / 7.3 lbs	4.6 kg / 10.1 lbs	7.7 kg / 17 lbs
Approvals	CE, E-mark, ABYC A-31 / R	RR, RS	CE, E-mark, ABYC A-31 / RRR, RS	CE, E-mark, ABYC A-31 / RRR, RS, Lloyds, Bureau Veritas, Germanische Lloyds
Technical Speci⊡cations				
Charge characteristic**	IUoUo, automatic / 3-step ⊕	for gel/AGM/wet/Lithium Ion		
Charge voltage Bulk (25 ©)***	28.5V (8 hours)	28.5V (8 hours)	28.5V (8 hours)	28.5V (8 hours)
Charge voltage Absorption (25 ℂ)***	28.5V (4 hours)	28.5V (4 hours)	28.5V (4 hours)	28.5V (4 hours)
Charge voltage Float □wet (25 IC)***	26.5V	26.5V	26.5V	26.5V
Charge voltage Float □gel/AGM (25 □C)***	27.6V	27.6V	27.6V	27.6V
Temperature compensation	-33 mV/⊡F -60 mV/⊡C	-33 mV/IF -60 mV/IC	-33 mV/□F -60 mV/□C	-33 mV/□F -60 mV/□C
Voltage compensation	voltage drop compensation	in DC cables up to 3 volt		
DC consumption	<1 mA	<1 mA	<1 mA	<1 mA
Full load consumption (230V AC)	550 W	880 W	1800 W	2600 W
Cos phi	>0.95	>0.95	>0.95	>0.95
Temperature range (ambient temp.)	-25 C 80 C, >45 C derating	g		-25 C 80 C, >45 C derating
Cooling	vario fan	vario fan	vario fan	vario fan
Sound level	<48 dBA at 1 mtr	<48 dBA at 1 mtr	<48 dBA at 1 mtr	<48 dBA at 1 mtr
Protection degree	IP23	IP23	IP23	IP23
Protections	over temperature, over load	, short circuit, high battery, low	battery	
MasterBus compatible	yes	yes	yes	yes
CSI/DC alarm (Charger Status Interface)	integrated in the battery cha	arger as standard		
GMDSS function	GMDSS panel is available for	or all models		
Options				
MasterView Read-out 77010050	Remote panel for reading the charge status of your battery charger, including error notications.			
MasterView Easy 77010305	Touch screen panel for reading charge status, current fold-back and/or Power Sharing setting.			
MasterShunt 77020100	MasterBus integrated shunt, with detailed information on the status of your batteries for a optimized charging process, incl. voltage, current, remaining time and consumption capacity in percentage.			
MasterBus USB Interface 77030100	Communication port between MasterBus and the USB port of your PC; makes possible reading and con guration of your MasterBus system on the PC when combined with MasterView System software (free to download).			
MasterVision panels	Model C3-RS 70403040	`	Masterlink MICC 70403105	es protes in

<sup>\*\*</sup> The charge characteristic can be set to your requirements.

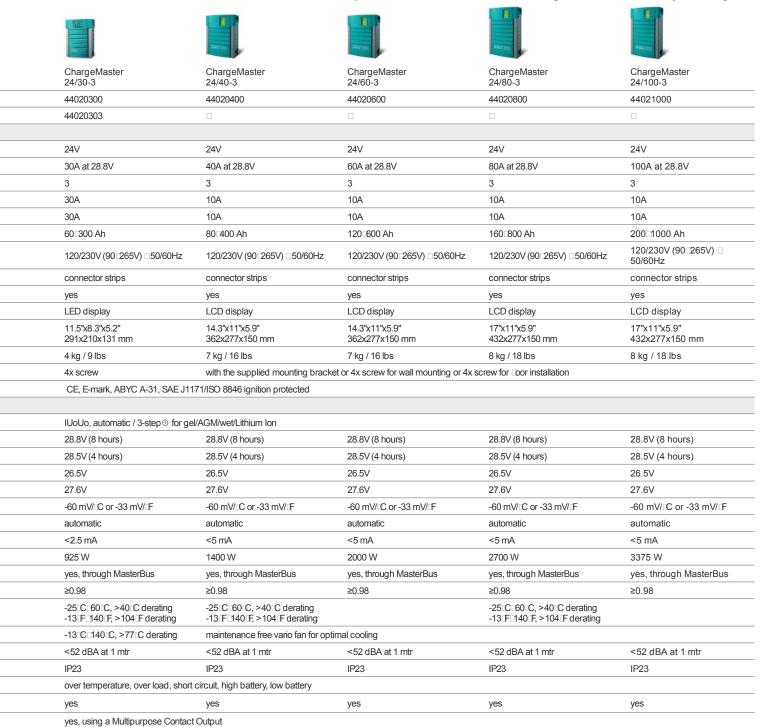
<sup>\*\*\*</sup> The battery charge current can sometimes be speciced at 20 °C/68 °F, so take temperature compensation into account.

## Batteries, Chargers and Accessories: ChargeMaster Battery Chargers

	Terran			
	ChargeMaster 12/35-3	ChargeMaster 12/50-3	ChargeMaster 12/70-3	ChargeMaster 24/20-3
Item#	44010350	44010500	44010700	44020200
UL APPROVED ITEM #***	44010353	44010503		44020203
General Speci □cations				
Nominal output voltage	12V	12V	12V	24V
Total charge current	35A at 14.4V	50A at 14.4V	70A at 14.4V	20A at 28.8V
Number of battery outlets	3	3	3	3
Charge current second output	35A	50A	10A	20A
Charge current third output	35A	50A	10A	20A
Recommended battery capacity	70⊑350 Ah	100⊑500 Ah	140□700 Ah	40⊑200 Ah
Nominal input voltage	120/230V (90□265V) □50/60Hz			z 120/230V (90 265V) 350/60Hz
AC connection	connector strips	connector strips	connector strips	connector strips
Supplies your system without battery	yes	yes	yes	yes
Display/read-out	LED display	LED display	LCD display	LED display
Dimensions, hxwxd	11.5"x8.3"x5.2" 291x210x131 mm	11.5"x8.3"x5.2" 291x210x131 mm	14.3'x11'x5.9" 362x277x150 mm	11.5"x8.3"x5.2" 291x210x131 mm
Maight				
Weight Fastening	4 kg / 9 lbs	4 kg / 9 lbs	7 kg / 16 lbs	4 kg / 9 lbs 4x screw
	with the supplied mounting brack			
Approvals  Technical Checiliantians	J1171/ISO 8846 ignition protected	l	CE, E-Mark, ABTC A-31, SAE	J1171/ISO 8846 ignition protected
Technical Speci □cations	III al la contacación / 2 atan 2 fan ac	I/A CA At their		
Charge characteristic*	IUoUo, automatic / 3-step ⊕ for ge		44.4)//0	00.01/(0.5
Charge voltage Bulk (25 °C)**	14.4V (8 hours)	14.4V (8 hours)	14.4V (8 hours)	28.8V (8 hours)
Charge voltage Absorption (25 ©)**	14.25V (4 hours)	14.25V (4 hours)	14.25V (4 hours)	28.5V (4 hours)
Charge voltage Float □wet (25 □C)**	13.25V	13.25V	13.25V	26.5V
Charge voltage Float □gel/AGM (25 □C)**	13.8V	13.8V	13.8V	27.6V
Temperature compensation	-30 mV/□C or -17 mV/□F	-30 mV/IC or -17 mV/IF	-30 mV/IC or -17 mV/IF	-60 mV/ℂC or -33 mV/ℂF
Voltage compensation	automatic	automatic	automatic	automatic
DC consumption	<5 mA	<5 mA	<5 mA	<2.5 mA
Full load consumption (230V AC)	575 W	825 W	1200 W	660 W
Current Control function	yes, through MasterBus	yes, through MasterBus	yes, through MasterBus	yes, through MasterBus
Cos phi	≥0.98	≥0.98	≥0.98	≥0.98
Temperature range (ambient temp.)		-25 C 60 C, >40 C derating -13 F 140 F, > 104 F derating		-25.C:60.C, >40.C derating -13.F:140.F, >104.F derating
Cooling	maintenance vario fan to ensure o	ptimized cooling		-13 C 140 C, >77 C derating
Sound level	<52 dBA at 1 mtr	<52 dBA at 1 mtr	<52 dBA at 1 mtr	<52 dBA at 1 mtr
Protection degree	IP23	IP23	IP23	IP23
Protections	over temperature, over load, short	circuit, high battery, low battery		
MasterBus compatible	yes	yes	yes	yes
CSI/DC alarm	yes, using a Multipurpose Contac	t Output (Item # 77030500)		
Options				
MasterView Read-out 77010050	Remote panel for reading the cha	rge status of your battery charge	er, including error noti⊏cations.	
MasterView Easy 77010305	Touch screen panel for reading charge status, current fold-back and/or Power Sharing setting.			
MasterShunt 77020100	MasterBus integrated battery monitor, with detailed information on the status of your batteries for a optimized charging process, incl. voltage, current, remaining time and consumption capacity in percentage.			
MasterBus USB Interface 77030100	Communication port between MasterBus and the USB port of your PC; makes possible reading and con: guration of your MasterBus system on the PC when combined with MasterView System software (free to download).			
Multipurpose Contact Output 77030500	MasterBus controllable potential-free contact, with alarm noti⊡cation on the onboard system (low voltage or no AC), replacement of the CSI alarm contact.			
* The charge characteristic can be set to ** The battery charge current can somet		so take temperature compens	sation into account.	

<sup>68</sup> 

## Batteries, Chargers and Accessories: ChargeMaster Battery Chargers



#### \*\*\* UL Approved chargers



## Charge Pro ☐ Battery Chargers

Guest Charge Pro battery chargers are built to provide fast, ef⊑cient charging in harsh environments. These are proven designs with many years of satisfying owners by charging their batteries quickly and keeping their batteries in excellent shape. Guest chargers are epoxy □lled to resist water and dust from damaging the electrical components and extend the charger life in harsh environments.

UFast charging

ULED's indicates charge status

UEpoxy □led to resist water and dust

UNot recommended for use with Mastervolt Lithium Ion batteries









	6 Amp Single Output	6 Amp Dual Output	10 Amp Dual Output
Item #	2608A-B 2608A-B-01 W/SJTW Cord (-40°C)	2607A-B	2610A
Total Amps	6	6	10
Outputs	1	2	2
Amps per out	6	3/3	5/5
Battery System	12V	12V+12V or 24V	12V+12V
Input Voltage	100□130V AC / 60Hz	100 130V AC / 60Hz	100□130V AC / 60Hz
Output Voltage	12V	12V	12V
AC	6⊡cord w/ ConnectCharge plug	6⊏cord w/ ConnectCharge plug	Studs
DC	4⊡with ring terminals	4⊡with ring terminals	Studs
Dimensions	3.50" x 6.40" x 2.25" 89x163x57 mm	3.50" x 6.40" x 2.25" 89x163x57 mm	5.50" x 7.75" x 2.42" 140x197x61 mm
Weight	4.0 lbs	4.0 lbs	5.6 lbs









	LISTED	1 1	T 1 1
	10 Amp Dual Output	15 Amp Triple Output	20 Amp Dual Output
Item #	2611A-B	2613A	2620A
Total Amps	10	15	20
Outputs	2	3	2
Amps per out	5/5	5/5/5	10/10
Battery System	12V+12V or 24V	12V+12V+12V or 24V+12V	12V+12V or 24V
Input Voltage	100 130V AC / 60Hz	100 \( \text{130V AC } \) 60Hz	100□130V AC / 60Hz
Output Voltage	12V	12V	12V
AC	6⊡cord w/ ConnectCharge plug	6⊏cord w/ ConnectCharge plug	6⊡cord w/ ConnectCharge plug
DC	4⊡with ring terminals	4∄4∄6⊡with ring terminals	6⊡with ring terminals
Dimensions	5.50" x 7.75" x 2.42" 140x197x61 mm	7.0" x 9.60" x 2.60" 178x244x66 mm	7.0" x 9.60" x 2.60" 178x244x66 mm
Weight	5.6 lbs	8.0 lbs	8.0 lbs







Name:	2 Amp Battery Charger	2 Amp Battery Charger	5 Amp Battery Charger
Item#	2602A-12-B	2602A-24-B	2605A-1-24RT-01
Total Amps:	2	2	5
Outputs:	1	1	1
Amps per out:	2	2	5
Battery System:	12V	24V	24V
Input Voltage:	100□130V AC/60Hz	100 □130 V AC / 60Hz	100 □130V AC
Output Voltage:	12V	24V	24V
AC:	6□cord with ConnectCharge plug	6□AC cord with standard plug	6⊑cord with ConnectCharge plug
DC:	4⊡with ring terminals	4⊡with battery clips	6⊡with ring terminals
Dimensions:	2.75" x 4.50" x 1.50" 70x114x38 mm	2.75" x 4.50" x 1.50" 70x114x38 mm	7.40" x 6.30" x 2.40" 188x160x61 mm
Weight:	2.0 lbs / 0.9 kg	2.0 lbs / 0.9 kg	4.5 lbs / 2.0 kg



## Batteries, Chargers and Accessories: Charge Pro□ Battery Chargers



#### ConnectCharge ☐ Inlets



#### **Universal Mount**

UMount to dash or panel from rear with threaded locking ring or from the front with three screws through the face plate

Item # 150CCI



#### Rear Mount

UMounts to dash or panel from rear with threaded locking ring

UEliminates rewiring, plug snaps into Inlet locking tab

UWatertight lid protects AC plug

OEM # 150CCTM.OEM



#### Front Mount

UMounts to panel from front with three screws through the face plate

OEM # 150CC.OEM

For use with Battery chargers with ConnectCharge Plug only!

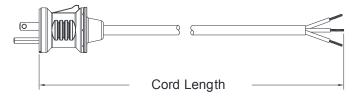
Exclusive molded notch on plug locks into ConnectCharge ☐ inlet



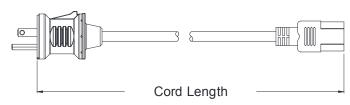
#### ConnectCharge $^\square$ Cords

14/3SJTW Cord Length	Amps	Voltage	Nema Configuration	Cord Termination	Item Number
24"	15	125		Strip & Retain	152400-01
24	15	125	5-15P	IEC320 C15 Connector	152400-03
48"	15	125		Strip & Retain	154800-01
40	15	125	5-15P	IEC320 C15 Connector	154800-03
70"	45	405		Strip & Retain	157200-01
72"	15	125	5-15P	IEC320 C15 Connector	157200-03

#### Strip and Retain



#### IEC320 C15 Connector



#### Hard Wired Charger Inlets

U15A or 20A 125V straight blade inlet

U¹Low pro ☐e cap

U Perma-Lock ☐ terminals and color coded wire entrance holes make wiring a snap

UUV resistant housing/cap

UNickle-Plated contacts

U Stainless steel screws



Amp	Color	Universal Mount Item #	Front Mount OEM#	Rear Mount OEM#
15	Black	150BBI	150BBI.OEM	150BBI-TM
15	White	150BBIW	150BBIW.OEM	
20	White	200BBIW	200BBIW.OEM	
	15	15 Black 15 White	Mount Item # 15 Black 150BBI 15 White 150BBIW	Amp         Color         Mount Item #         Mount OEM #           15         Black         150BBI         150BBI.OEM           15         White         150BBIW         150BBIW.OEM





#### Batteries, Chargers and Accessories: Sine Wave Inverters

#### **NEW** Sine Wave Inverters

Clean, true sinewave inverter technology that delivers AC power to onboard devices.

UFor sensitive onboard electronics such as monitors, TV and entertainment centers.

UPrevents draining the battery: low battery alarm and low battery shutdown.

UProtected against: Over-current, low voltage, reverse polarity and temperature

UEasy to install and operate

Utoptional remote control panel. INVR-1

U120V models comply to FCC class A & meet UL458

U230V models comply to e-13 / CE

**OEM Version** 

U Quick connect solution

UWAGO AC Connector, Contra part can be integrated in wireloom

UIDC Connector, upgraded to Twin Insulated stud (IS-10MM-2) + covers

UEasy to upgrade. Same connections for all OEM Inverters

UTOEM versions include WAGO Plug (770-103) and twin inlsulated stud (IS-10MM-2)





Output			Input				
Continuous	Surge Capacity	Hz	Volts	Range	Output Receptacle Type	Item #	OEM#
120V AC Outp	ut						
700W	1400W	60Hz	12V DC	10.5-15.0V DC	NEMA 5-15R w/GFCI	INV20120700	INV20120700.OEM
70077	110011	00112	24V DC	21.0-30.0V DC	NEMA 5-15R w/GFCI		INV20240700.OEM
1000W	2000W	60Hz	12V DC	10.5-15.0V DC	NEMA 5-15R w/GFCI	INV20121000	
1500W	3000W	60Hz	12V DC	10.5-15.0V DC	NEMA 5-15R w/GFCI	INV20121500	
2000W	4000W	60Hz	12V DC	10.5-15.0V DC	NEMA 5-15R w/GFCI	INV20122000	INV20122000.OEM
2000	4000	00112	24V DC	21.0-30.0V DC	NEMA 5-15R w/GFCI		INV20242000.OEM
230V AC Outp	ut						
			12V DC	10.5-15.0V DC	Schuko	INV10120700	INV10120700.OEM
		50Hz	24V DC	21.0-30.0V DC	Schuko	INV10240700	INV10240700.OEM
700W	1400W		12V DC	10.5-15.0V DC	Schuko	INV30120700	INV30120700.OEM
		60Hz	24V DC	21.0-30.0V DC	Schuko		INV30240700.OEM
			12V DC	10.5-15.0V DC	Schuko	INV10121000	
1000W	2000W	50Hz	24V DC	10.5-15.0V DC	Schuko	INV10241000	
			12V DC	10.5-15.0V DC	Schuko	INV10121500	
		50Hz	24V DC	21.0-30.0V DC	Schuko	INV10241500	
1500W	3000W		12V DC	10.5-15.0V DC	Schuko	INV30121500	
		60Hz	24V DC	21.0-30.0V DC	Schuko	INV30241500	
			12V DC	10.5-15.0V DC	Schuko		INV10122000.OEM
		50Hz	24V DC	21.0-30.0V DC	Schuko		INV10242000.OEM
2000W	4000W		12V DC	10.5-15.0V DC	Schuko		INV30122000.OEM
		60Hz	24V DC	21.0-30.0V DC	Schuko		INV30242000.OEM

5-15R w/GFCI



Schuko

#### MasterBus Communication System

MasterBus is the proprietary communication platform for Mastervolt products. It uses high-speed CanBus technology with a proprietary overlay. MasterBus is safe, reliable and easy to install. A single CAT5 MasterBus cable is all that is needed to connect various Mastervolt devices together; no additional power supply is needed. Once connected, an integrated MasterBus system allows a user to change settings or control various systems and sub systems of the network. Everything from integrated power management, power monitoring, load management, Digital Switching, and security can be easily operated using a remote panel or a computer. Remote monitoring and control is even available via cellular phones.

The MasterBus system offers a number of basic components to compliment a complete MasterBus system.

#### MasterShunt 500

This ultra-modern battery monitor provides detailed information on the status of the system batteries. The intelligent connection system allows the device to automatically control systems, such as starting a generator automatically when the batteries are depleted by 95%. The MasterShunt also has a built-in robust main fuse that can safely break short-circuit currents up to 50,000 Amps.





#### DC Distribution 500

The DC Distribution 500 is the smallest distribution model available. It connects up to four DC devices to the DC groups, such as a battery charger, inverter, alternators and solar panels. The included plug and play cable makes connection to the MasterBus network a breeze.







# Simple yet effective touchscreen control panel to monitor and control all the devices on the MasterBus network. The panel is easy to read and even easier to operate. The panel uses the same MasterBus cable as all the other MasterBus devices. This cable is used for data transfer and as a power supply for the display.

#### MasterView System

This 10.4 inch color touch screen is the smartest solution for intelligent MasterBus control. This system provides all the essential information on your MasterBus system and organizes it in a friendly fashion. The interactive touchscreen can be programmed to display any speci c part of your electrical system. Each and every MasterBus device can be accessed with the tap of the screen and modi can be accessed with the tap of the screen and modi dashed. It can be organized in a graphical fashion or displayed in various tables or lists. This panel completes a fully integrated MasterBus system.

#### MasterBus and Digital Switching Components

The list of auxiliary interface modules for the MasterBus system continues to grow. Every day we strive to add new devices, new applications, and new interface protocols to the MasterBus system. Below are a few of the recent additions to the MasterBus line:

USB Interface ☐ Interfacing between the MasterBus system and a PC/Laptop

MODBus Interface ☐ Interfacing between the MasterBus system and PLC's

GPRS Interface Allows the MasterBus system to communicate with cellular phones and laptops

NMEA 2000 Interface □ Allows communication between MasterBus systems and NMEA 2000 devices

Tank Level Interface □Converts analog sensor input signals to MasterBus data (4 to 20 mA, 0 □10 V, 0 □180 □)

Multipurpose Contact Output □Potential-free contact can be customized and programmed for external control

Inverter Interface □ Allows Mastervolt Mass Sine Inverters to be monitored and controlled from the MasterBus system Combi Interface □Allows Mastervolt Mass Combi to be monitored and controlled from the MasterBus system

Serial Interface □Connects existing Mastervolt products to the MasterBus system

Digital Input □Allows for connection of up to four switches to the MasterBus network

Repeater Double the maximum length of your MasterBus network

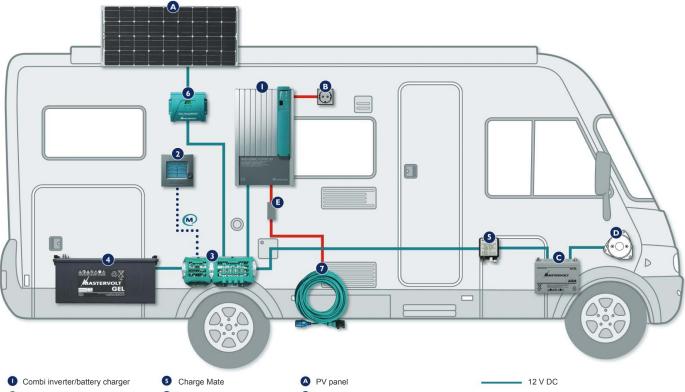








#### Complete MasterBus System Example



- MasterView Easy
- 3 MasterShunt & DC Distribution
- Service battery
- Solar ChargeMaster
- Power cord
- B 120 V or 230 V outlet
- C Vehicle starter battery
- Vehicle engine alternator
- Earth leakage switch
- 120 V or 230 V AC





## Mass Combi: Charging, inverting and power support in one device

The Mastervolt Mass Combi combines the best of both worlds with an advanced battery charger and a silent inverter rolled into one compact device.

#### Modern technology

The design of the Mass Combi is both unique and characteristic of Mastervolt. Rather than installing heavy transformers, our lightweight, high-frequency switch mode technology offers major bene to in terms of size, weight and sound (no hum!). The technology also ensures an exceptionally high ef ciency with a minimal conversion loss and a low no-load consumption. The Mass Combi meets all your requirements and more!

#### Versatility in power supply

One of the key reasons for the Mass Combi's popularity is its versatile power supply. The starter and service batteries are charged quickly and completely. The inverter provides a silent and clean power supply. The Combi also has two separate AC outputs for light and heavy equipment.



Perfect in a MasterBus system



The Mastervolt Mass Combi □ts perfectly within a MasterBus system. The platform allows all components to be connected easily, provides a simple and intuitive operation, and requires far fewer cables for installation. The system can be combined with a MasterView Easy, MasterShunt or decentralized Digital Switching system for instance.



Intuitive operation

Each Mass Combi can be operated easily and intuitively. The Mass Combi includes LED indication of charging phase and charge current, the 230/120V system load and 12/24 or 48V

system, 'yes/no' availability of 120/230V and 'failure'. It features an on/off switch with a 'charge only' position when the vehicle is in storage. Mastervolt also offers a complete selection of control panels, ranging from the compact 3.5 inch panel called MasterView Easy (picture) to a large 10.4-inch touchscreen panel.



Not just any charger
The built-in battery charger
uses Mastervolt's proven
3-step⊕ charging
technology to allow easy
charging of all battery
types, including MLI Ultra.
The battery charger

supplies a maximum charge current, even with a higher charge voltage, and speeds up the recharging of your batteries. The Mass Combi also functions as DC supply if there is no battery.

#### Combined functionality

UPower boost from battery when off-board power is limited (plug-in/generator support)

UCharging two individual battery terminals

Ulinvert to 120V/60Hz or 230V/50Hz pure sine wave voltage

USupplies 12, 24 or 48 volt onboard power

UMultiple distribution and switching systems

UTwo Combis parallel switched for more power

Utvery low amp draw with no load present

UKey hole slots allow for quick installation

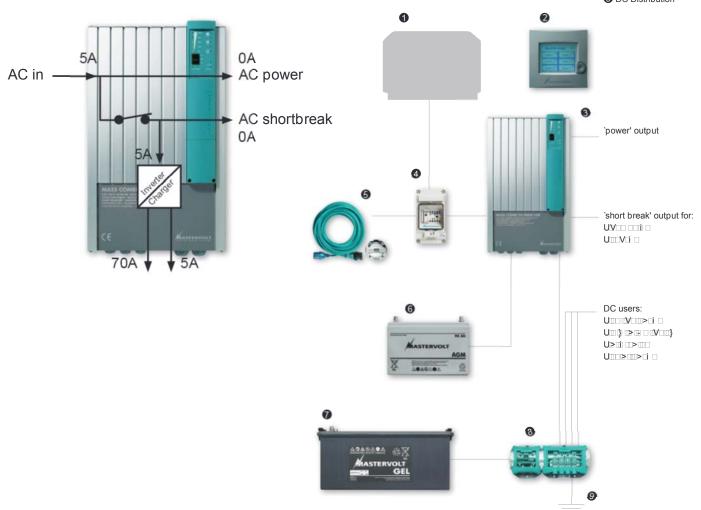
UCompact and lightweight

#### Mastervolt Mass Combi in a MasterBus System

The Mastervolt Mass Combi st perfectly within a MasterBus system. The system allows all components to be connected easily, provides a simple and intuitive operation and requires far fewer cables for installation. One MasterView Easy touch screen panel controls the entire system, displays information about the Combi as well as the batteries (via the MasterShunt) and operates the generator. The system can also be combined with Mastervolt's decentralized Digital Switching system.

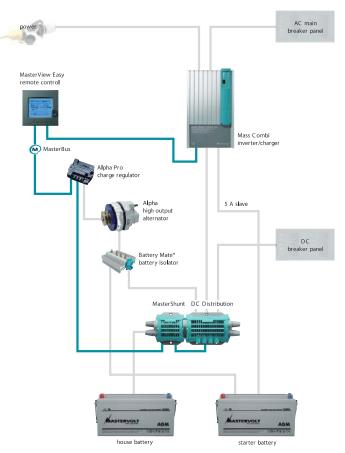
Output Voltage	DC Voltage	General Specifications	Item Number
	12 V -	2500 W - 100A Charger	37012505
120V - 60Hz	12 V	4000 W - 200A Charger	37014005
1200 - 0002	24 V -	2500 W - 60A Charger	37022505
	24 V	4000 W - 120A Charger	37024005
		1200 W - 60A Charger	36011205
	12 V	2000 W - 100A Charger	36012005
	12 V	2500 W - 100A Charger	36012505
230V - 50Hz		4000 W - 200A Charger	36014005
2300 - 5002		1200 W - 35A Charger	36021205
		2000 W - 60A Charger	36022005
	24 V	2500 W - 60A Charger	36022505
	-	4000 W - 120A Charger	36024005

- 1 3 kW generator
- MasterView Easy
- 3 Mass Combi
- 4 Masterswitch5 Power connection
- 6 AGM starter battery
- MVG gel batteryMasterShunt
- DC Distribution









## Alternators and Charge Regulators: For rapidly recharged batteries

The already present alternator on the main engine is designed to charge the starter battery. As a result the combination is not ideal for fast and full charging of other batteries such as the service battery. Especially if you want to charge the batteries over a short time or when the batteries and onboard network require a little more power.

There are two options to solve this issue:

Equip the standard alternator with a Mastervolt Alpha Pro MB charge regulator. This will ensure that the existing alternator works in accordance with the 3-step charge technology instead of its standard 1-step method, and that the batteries are charged faster within a shorter period.

You can also choose a powerful second Mastervolt Alpha alternator with Alpha Pro MB charge regulator. This combination was speci□cally designed for charging service batteries, and allows you to charge quickly during normal operation.

Alpha alternator series

UFast & complete charging of starter/service batteries

UPower supply for all consumers

U12V and 24V versions

U75A to 150A charge current

UStandard delivered with Alpha Pro MB charge regulator for an optimal performance and longer-lasting batteries

Alpha Pro MB charge regulators

U Suitable for 12 and 24 V

U¹ncluding plug & play connection cable, also for Bosch alternators

UAutomatic voltage and temperature compensation UMasterBus compatible

The charge voltage is automatically adjusted if there is any risk of gas formation. Electronics permanently regulate the voltage, ensuring that the battery is always kept in good condition.

#### Batteries, Chargers and Accessories: Alternators & Charge Regulators

Fast charging, even at a stationary rpm
Standard alternator only supply the speciced capacity at a high rpm.
The Mastervolt Alpha generator was specically designed to charge powerfully, even with a low engine rpm.





For all engine types
Alpha alternators are equipped
with several □xations for
customized alternator brackets,
available from your installer or
engine supplier. Some engine
brands come with Mastervolt
alternator brackets as an option.



Multi-groove pulley
The 12/130 and 24/75 models
are also available with a
multi-groove pulley.



Performs above 40°C
Forced cooling via the ventilator action of the pulley provides a lot of power in higher temperatures, even in enclosed engine rooms where the temperature can easily rise above 40°C.



Easy to install
The Alpha Pro MB charge
regulator is designed as a `□t all'
solution, just one unit is needed

Alpha Pro MB charge regulator:

regulator is designed as a Lt all' solution, just one unit is needed for both 12 and 24 V applications, with a simple selector switch to set the regulator to the right voltage. The unit can also be used on any other brand of alternator that has a standard Bosch connector, with a cable supplied as standard in the box. Easy operation LEDs on the body of the regulator indicate the charge phase.

#### Alpha Alternator Speci □cations

			510 Ju		
	12/90	12/130*	24/75*	24/110	24/150
Item#	48512090	48512130	48524075	48524110	48524150
Type cabinet	А	В	В	В	С
Charge current	90A	130A	75A	110A	150A
Alpha Pro charge regulator	standard	standard	standard	standard	standard
Charge voltage absorption	14.25V	14.25V	28.5V	28.5V	28.5V
Charge voltage ⊡oat	13.25V	13.25V	26.5V	26.5V	26.5V
Cable length regulator/alternator	1.5 meter / 4.9 ft, oil re	sistant marine con	nection cable   delivere	ed as standard	
Pulley (double) diameter	□ 73 mm	□ 88 mm	□ 88 mm	□ 88 mm	□ 92 mm
Belt section	2xA	2xA	2xA	2xA	2xA
Isolated from mass	yes	yes	yes	yes	yes
Directions of revolutions	2	2	2	2	2
Weight	12.1 lbs 5.5 kg	22.3 lbs 10.1 kg	22.3 lbs 10.1 kg	22.3 lbs 10.1 kg	28.9 lbs 13.1 kg
Dimensions	contact Marinco techn	ical support for dra	awings		
Mounting	□ve to six, six o'clock & □ve past six	six o'clock	six o'clock	six o'clock	□ve to six, six o'clock & ⊡ve past six
Charge regulation	the Alpha Pro regulato	r is standard with a	all models, see table belo	ow	

<sup>\*</sup> Available with multi-groove pulley (12/130 model = 48512131, 24/75 model = 48524076).

#### Alpha Pro MB Charge Regulator





Connection cable delivered as standard



Plus connection cable for Bosch alternator

Link to MasterShunt	yes
Connection to Mastervolt alternator	yes
Connection to Bosch alternator	yes
Cooling	fanless
Nominal output voltage	12 V / 24 V
Cable length regulator/alternator	5 (1.5 m) oil resistant connection cable
Cable length temperature sensor	20□(6 m)
Connection plug regulator/alternator	Alpha/Mastervolt
Display/read-out	LED display
Dimensions, hxwxd	3.5"x4.3"x1.2" (90x109x30 mm)
Weight	0.88 lbs (0.4 kg)
Approvals	CE
Charge characteristic	IUoUo, automatic / 3-step+ for gel/AGM/ wet/Lithium Ion
Charge voltage bulk	14.25 V / 28.5 V
Charge voltage absorption	14.25 V / 28.5 V
Absorbtion time	4 hours, adjustable from 2 minutes to 12 hours
Charge voltage □oat	13.25 V / 26.5 V
Temperature compensation	-22 mV / □F (-30 mV / □C)
Voltage compensation	voltage drop compensation in DC cables up to 3 V
Alternator type	various
Protection degree	IP65
MasterBus compatible	yes



#### The sun as extra energy source

As photovoltaic cells generate energy when exposed to sunlight, they can provide a sustainable energy source and charge your batteries.

All Mastervolt's know-how in the □eld of solar power has been included in the Solar ChargeMaster, which offers maximum ef □ciency from the often irregular availability of sunlight. Power electronics provide a pure charge current in all conditions while the 3-step charging method ensures a safe charging process and a longer lifespan for your batteries.

#### Features

UWorks with nearly all solar panels (PV-modules)

U Suitable for 12V and 24V

UClear LCD display and graphics

U3-Step charging method adjustable for all battery types

UAutomatic night detection

UExtensive alarm system (buzzer)

U:Automatically switches off load when battery current is low

UComes as standard with temperature sensor for batteries

U Optional PC-Link for PC and laptop

#### Solar ChargeMaster Speci □cations





	SCM-N 20	SCM-N 40
Item #	131802000	131804000
Charge current	20A	40A
Max. DC load	20A	40A
Solar input voltage window	12 50V DC	12 50V DC
System voltage (battery)	12/24V auto detect	12/24V auto detect
No load	< 4 mA	< 4 mA
Functions LCD display	battery status/V/A/charge &	& discharge
Connections	screw terminal	screw terminal
Settings	load/disconnect, 3-step ch	arge characteristic
Dimensions, hxwxd	5.5"x4.1"x1.6" 140x105x41 mm	5.5"x4.1"x1.6" 140x105x41 mm
Protection degree cabinet	IP20	IP20
Weight	2 lbs / 189 gr	2 lbs / 189 gr
PC-Link	21730400 option	21730400 option

## Mastervolt DC-DC converters: For 12, 24 and 48V

The voltage required for direct current (DC) can vary considerably in many applications. Many devices may require 24 V, while navigation and communication equipment often requires 12V. By using a DC-DC converter, other voltages than applied in your basic system can be reached. They also ensure that all your onboard equipment has a stable power supply with the right voltage.

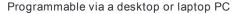
#### DC Master series

URecreational and semi-professional use
UEasy to install using included mounting bracket
UExcellent price/performance ratio
UMore power available for two minute intervals

Mac & Magic series
UProfessional use
UBattery charger and dimmer function
UParallel connection
UAdjustable output voltage

 $\label{thm:continuous} \mbox{UVoltage stabilization for a longer lifespan of halogen lights, etc.}$ 

The Magic models can regulate the voltage both up and down to ensure an optimal voltage stabilization, even when the battery voltage \( \text{uctuates} \) due to heavy loads. The galvanic isolation between input and output prevents disruptions to, for instance, communication equipment.



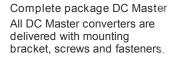
Remotely control the Mac or Magic via your laptop or PC or con gure your personal preferences. The device has a communication port and easy installation with a PC-Link and MasterAdjust software.

#### 3-Step⊕ battery charger

Connected to the 24V main battery, the converter can also be used as an advanced 3-step⊕ chargers for 12/24V gel, AGM, wet or Lithium Ion batteries (Mac & Magic models only).

#### Over 90% ef □ciency

Advanced high-frequency technology with modern microprocessors ensures minimum power loss when switching from 24 to 12V and vice versa. If you have many power-consuming devices, the parallel use of several units allows capacities of 40, 60 or more amps.







Solid connections Chrome-plated brass connection block with screw terminal or chrome-plated fast-on for DC in/out.

#### Masterstrokes

UNo unnecessary heat development due to the use of smart electronics.

U Continuous output voltage.

UEasy to install.

#### Please note:

U Choose the right input/output voltage.

UDo you require galvanic isolation?

UDesired capacity.

## Batteries, Chargers and Accessories: DC Master Speci Cations

	Figure 1	Marian III	Control of the Contro	
	24/12-3A	24/12-6A	24/12-12A	24/12-24A
Item #	81400100	81400200	81400300	81400330
Input Speci□cations				
Nominal input voltage	24V	24V	24V	24V
nput range	20 32V DC	20 32V DC	20 32V DC	20 \( \text{32V DC} \)
Output Speci □cations	20.027.00	20.024.00	20.02.4.00	201327 20
Nominal output voltage	13.6V	13.6V	13.6V	13.6V
Maximum power	82 W	136 W	245 W	408 W
waxiinani powei	02 VV	100 VV	240 **	400 VV
Nominal power	41 W	82 W	164 W	326 W
Current max. 2 minutes / continuous	6A / 3A	10A / 6A	18A / 12A	30A / 24A
DC consumption	<10 mA	<10 mA	<10 mA	<10 mA
General Speci□cations				
Dimensions, hxwxd	2.6"x3.4"x2" 67x87x50 mm	3.5"x3.4"x2" 89x87x50 mm	5"x3.4"x2" 127x87x50 mm	5"x3.4"x2" 167x87x50 mm
Weight	225 gr / 0.5 lbs	270 gr / 0.6 lbs	405 gr / 0.9 lbs	635 gr / 1.4 lbs
Approvals	CE, E-mark	CE, E-mark	CE, E-mark	CE, E-mark
Galvanic isolation	no	no	no	no
Stabilized	yes	yes	yes	yes
Connections input/output	fast-on	fast-on	fast-on	fast-on
Temperature range (ambient temp.)	-25 C 80 C, >30 C dera	ating / -13 F 176 F, >86 F derat	ing	
Cooling	natural cooling	natural cooling	natural cooling	natural cooling
•				
Sound level	<30 dBA at 1 mtr	<30 dBA at 1 mtr	<30 dBA at 1 mtr	<30 dBA at 1 mtr
Sound level Protection degree	<30 dBA at 1 mtr	<30 dBA at 1 mtr	IP53	IP53
	IP53	IP53	IP53	IP53
Protection degree	IP53	1P53	IP53 24/12-3A	IP53 24/12-6A
Protection degree	IP53	1P53	IP53 24/12-3A	IP53 24/12-6A
Protection degree	IP53 12/12-3A 81500600	12/12-6A 81500700	24/12-3A 81500100	IP53 24/12-6A 81500200
Protection degree	12/12-3A 81500600	12/12-6A 81500700	24/12-3A 81500100	24/12-6A 81500200
Protection degree  Item # Input Speci cations Nominal input voltage Input range	12/12-3A 81500600	12/12-6A 81500700	24/12-3A 81500100	24/12-6A 81500200
Protection degree  Item # Input Speci □cations Nominal input voltage Input range Output Speci □cations	12/12-3A 81500600 12V 10□15.5V DC	12/12-6A 81500700 12V 10□15.5V DC	24/12-3A 81500100 24V 20 32V DC	24/12-6A 81500200 24V 20□32V DC
Protection degree  Item # Input Speci cations  Nominal input voltage Input range  Output Speci cations  Nominal output voltage	12/12-3A 81500600 12V 10□15.5V DC	12/12-6A 81500700 12V 10_15.5V DC	24/12-3A 81500100 24V 20:32V DC	24/12-6A 81500200 24V 20□32V DC
Protection degree  Item # Input Speci cations Nominal input voltage Input range Output Speci cations Nominal output voltage Maximum power	12/12-3A 81500600 12V 10□15.5V DC	12/12-6A 81500700 12V 10□15.5V DC	24/12-3A 81500100 24V 20_32V DC	24/12-6A 81500200 24V 20□32V DC
Protection degree  Item # Input Speci cations Nominal input voltage Input range Output Speci cations Nominal output voltage Maximum power Nominal power	12/12-3A 81500600 12V 10□15.5V DC 13.6V 54 W 41 W	12/12-6A 81500700 12V 10□15.5V DC 13.6V 108 W 81 W	24/12-3A 81500100 24V 20 32V DC 13.6V 82 W 41 W	24/12-6A 81500200 24V 20 32V DC 13.6V 136 W 82 W
Protection degree  Item #  Input Speci cations  Nominal input voltage  Input range  Output Speci cations  Nominal output voltage  Maximum power  Nominal power  Current max. 2 minutes/ continuous	12/12-3A 81500600 12V 10□15.5V DC 13.6V 54 W 41 W 3A / 4A	12/12-6A 81500700 12V 10□15.5V DC 13.6V 108 W 81 W 8A / 6A	24/12-3A 81500100 24V 20 32V DC 13.6V 82 W 41 W 6A / 3A	24/12-6A 81500200 24V 20 32V DC 13.6V 136 W 82 W 10A / 6A
Protection degree  Item # Input Speci cations Nominal input voltage Input range Output Speci cations Nominal output voltage Maximum power Nominal power Current max. 2 minutes/ continuous DC consumption	12/12-3A 81500600 12V 10□15.5V DC 13.6V 54 W 41 W 3A / 4A	12/12-6A 81500700 12V 10□15.5V DC 13.6V 108 W 81 W 8A / 6A	24/12-3A 81500100 24V 20 32V DC 13.6V 82 W 41 W 6A / 3A	24/12-6A 81500200 24V 20 32V DC 13.6V 136 W 82 W 10A / 6A
tem # Input Speci cations Nominal input voltage Input range Output Speci cations Nominal output voltage Maximum power Nominal power Current max. 2 minutes/ continuous DC consumption General Speci cations Dimensions, hxwxd	12/12-3A 81500600 12V 10□15.5V DC 13.6V 54 W 41 W 3A / 4A <100 mA	12/12-6A 81500700  12V 10□15.5V DC  13.6V 108 W 81 W 8A / 6A <100 mA	24/12-3A 81500100 24V 20 32V DC 13.6V 82 W 41 W 6A / 3A <10 mA	24/12-6A 81500200 24V 20\(\text{32V}\) DC 13.6V 136 W 82 W 10A / 6A <10 mA
tem # Input Speci cations Input Speci cations Input range Input range Input range Input range Input speci cations Input voltage Input speci cations Input speci cation	12/12-3A 81500600  12V 10□15.5V DC  13.6V 54 W 41 W 3A / 4A <100 mA  3.5"x3.4"x2" 89x87x50 mm	12/12-6A 81500700  12V 10 15.5V DC  13.6V 108 W 81 W 8A / 6A <100 mA  8.5"x3.4"x2" 217x87x50 mm	24/12-3A 81500100 24V 20 \(\text{232V DC}\) 13.6V 82 W 41 W 6A / 3A <10 mA	24/12-6A 81500200  24V 20 \( \text{32V DC} \)  13.6V  136 W  82 W  10A / 6A <10 mA  5'\( \text{3.4'\( \text{2''}\)} \) 127x87x50 mm
tem #  Input Speci cations  Nominal input voltage Input range  Output Speci cations  Nominal output voltage  Maximum power  Nominal power  Current max. 2 minutes/ continuous  DC consumption  General Speci cations  Dimensions, hxwxd  Weight  Approvals	12/12-3A 81500600  12V 10□15.5V DC  13.6V 54 W 41 W 3A / 4A <100 mA  3.5"x3.4"x2" 89x87x50 mm 290 gr / 0.6 lbs	12/12-6A 81500700  12V 10□15.5V DC  13.6V 108 W 81 W 8A / 6A <100 mA  8.5"x3.4"x2" 217x87x50 mm 820 gr / 1.8 lbs	24/12-3A 81500100  24V 20	24/12-6A 81500200  24V 20
Protection degree  Item # Input Speci cations Nominal input voltage Input range Output Speci cations Nominal output voltage Maximum power Nominal power Current max. 2 minutes/ continuous DC consumption General Speci cations	12/12-3A 81500600  12V 10□15.5V DC  13.6V 54 W 41 W 3A / 4A <100 mA  3.5"x3.4"x2" 89x87x50 mm 290 gr / 0.6 lbs CE, E-mark	12/12-6A 81500700  12V 10□15.5V DC  13.6V 108 W 81 W 8A / 6A <100 mA  8.5"x3.4"x2" 217x87x50 mm 820 gr / 1.8 lbs CE, E-mark	24/12-3A 81500100  24V 20 32V DC  13.6V 82 W 41 W 6A / 3A <10 mA  3.5"x3.4"x2" 89x87x50 mm 290 gr / 0.6 lbs CE, E-mark	24/12-6A 81500200  24V 20 \( \text{32V DC} \)  13.6V 136 W 82 W 10A / 6A <10 mA  5"x3.4"x2" 127x87x50 mm 410 gr / 0.9 lbs CE, E-mark
Protection degree  Item # Input Speci cations Nominal input voltage Input range Output Speci cations Nominal output voltage Maximum power Nominal power Current max. 2 minutes/ continuous DC consumption General Speci cations Dimensions, hxwxd Weight Approvals Galvanic isolation	12/12-3A 81500600  12V 10□15.5V DC  13.6V 54 W 41 W 3A / 4A <100 mA  3.5"x3.4"x2" 89x87x50 mm 290 gr / 0.6 lbs CE, E-mark yes	12/12-6A 81500700  12V 10□15.5V DC  13.6V 108 W 81 W 8A / 6A <100 mA  8.5"x3.4"x2" 217x87x50 mm 820 gr / 1.8 lbs CE, E-mark yes	24/12-3A 81500100  24V 20 32V DC  13.6V 82 W 41 W 6A / 3A <10 mA  3.5"x3.4"x2" 89x87x50 mm 290 gr / 0.6 lbs CE, E-mark yes	24/12-6A 81500200  24V 20□32V DC  13.6V 136 W 82 W 10A / 6A <10 mA  5''x3.4''x2" 127x87x50 mm 410 gr / 0.9 lbs CE, E-mark yes
Protection degree  Item # Input Speci cations Nominal input voltage Input range Output Speci cations Nominal output voltage Maximum power Nominal power Current max. 2 minutes/ continuous DC consumption General Speci cations Dimensions, hxwxd Weight Approvals Galvanic isolation Stabilized	12/12-3A 81500600  12V 10□15.5V DC  13.6V 54 W 41 W 3A / 4A <100 mA  3.5"x3.4"x2" 89x87x50 mm 290 gr / 0.6 lbs CE, E-mark yes yes fast-on	12/12-6A 81500700  12V 10□15.5V DC  13.6V 108 W 81 W 8A / 6A <100 mA  8.5"x3.4"x2" 217x87x50 mm 820 gr / 1.8 lbs CE, E-mark yes yes	24/12-3A 81500100  24V 20 32V DC  13.6V 82 W 41 W 6A / 3A <10 mA  3.5"x3.4"x2" 89x87x50 mm 290 gr / 0.6 lbs CE, E-mark yes yes fast-on	24/12-6A 81500200  24V 20□32V DC  13.6V 136 W 82 W 10A / 6A <10 mA  5"x3.4"x2" 127x87x50 mm 410 gr / 0.9 lbs CE, E-mark yes yes
Item # Input Speci cations Nominal input voltage Input range Output Speci cations Nominal output voltage Maximum power Nominal power Current max. 2 minutes/ continuous DC consumption General Speci cations Dimensions, hxwxd Weight Approvals Galvanic isolation Stabilized Connections input/output	12/12-3A 81500600  12V 10□15.5V DC  13.6V 54 W 41 W 3A / 4A <100 mA  3.5"x3.4"x2" 89x87x50 mm 290 gr / 0.6 lbs CE, E-mark yes yes fast-on	12/12-6A 81500700  12V 10□15.5V DC  13.6V 108 W 81 W 8A / 6A <100 mA  8.5"x3.4"x2" 217x87x50 mm 820 gr / 1.8 lbs CE, E-mark yes yes fast-on	24/12-3A 81500100  24V 20 32V DC  13.6V 82 W 41 W 6A / 3A <10 mA  3.5"x3.4"x2" 89x87x50 mm 290 gr / 0.6 lbs CE, E-mark yes yes fast-on	24/12-6A 81500200  24V 20□32V DC  13.6V 136 W 82 W 10A / 6A <10 mA  5"x3.4"x2" 127x87x50 mm 410 gr / 0.9 lbs CE, E-mark yes yes
Protection degree  Item # Input Speci cations Nominal input voltage Input range Output Speci cations Nominal output voltage Maximum power Nominal power Current max. 2 minutes/ continuous DC consumption General Speci cations Dimensions, hxwxd Weight Approvals Galvanic isolation Stabilized Connections input/output Temperature range (ambient temp.)	12/12-3A 81500600  12V 10□15.5V DC  13.6V 54 W 41 W 3A / 4A <100 mA  3.5"x3.4"x2" 89x87x50 mm 290 gr / 0.6 lbs CE, E-mark yes yes fast-on -25□C□80□C, >30□C dera	12/12-6A 81500700  12V 10	24/12-3A 81500100  24V 20 32V DC  13.6V 82 W 41 W 6A / 3A <10 mA  3.5"x3.4"x2" 89x87x50 mm 290 gr / 0.6 lbs CE, E-mark yes yes fast-on ing	24/12-6A 81500200  24V 20□32V DC  13.6V 136 W 82 W 10A / 6A <10 mA  5'\x3.4'\x2" 127x87x50 mm 410 gr / 0.9 lbs CE, E-mark yes yes fast-on

## Batteries, Chargers and Accessories: DC Master Speci Cations

		Datto::00, 0::0	. 9 0 . 0 0	00011001 20 11101	oto: opoo:=out.ono
24/12-50A	12/24-3A	12/24-7A	48/12-6A	48/12-9A	48/12-20A
81400350	81400400	81400500	81400600	81400700	81400800
24V	12V	12V	48V	48V	48V
20 \( \text{32V DC}	10□15.5V DC	10□15.5V DC	40□62V DC	40 62V DC	40 62V DC
13.6V	27.2V	27.2V	13.6V	13.6V	13.6V
720 W	109 W	245 W	109 W	132 W	326 W
500 W	82 W	191 W	82 W	108 W	272 W
60A / 50A	4A / 3A	9A / 7A	8A / 6A	11A / 9A	24A / 20A
<10 mA	<110 mA	<120 mA	<15 mA	<15 mA	<15 mA
11.8"x3"x4.3" 300x76x110 mm	3.5"x3.4"x2" 89x87x50 mm	6.6"x3.4"x2" 167x87x50 mm	3.5"x3.4"x2" 89x87x50 mm	5"x3.4"x2" 127x87x50 mm	5"x3.4"x2" 217x87x50 mm
1.2 kg / 2.6 lbs	290 gr / 0.6 lbs	610 gr / 1.3 lbs	415 gr / 0.9 lbs	415 gr / 0.9 lbs	765 gr / 1.7 lbs
CE, E-mark	CE, E-mark	CE, E-mark	CE, E-mark	CE, E-mark	CE, E-mark
no	no	no	no	no	no
yes	yes	yes	yes	yes	yes
fast-on	fast-on	fast-on	fast-on	fast-on	fast-on
-25 C 80 C, >30 C derat	ting / -13 F 176 F, >86 F d	erating			
natural cooling	natural cooling	natural cooling	natural cooling	natural cooling	natural cooling
<30 dBA at 1 mtr	<30 dBA at 1 mtr	<30 dBA at 1 mtr	<30 dBA at 1 mtr	<30 dBA at 1 mtr	<30 dBA at 1 mtr
IP53	IP53	IP53	IP53	IP53	IP53
				A.M.	

24/12-12A	24/12-24A	24/24-3A	24/24-7A
81500300	81500350	81500400	81500500
24V	24V	24V	24V
20 32V DC	20 \( \begin{aligned} 20 \( \ext{32V DC} \)	20 \( 32 \text{V DC} \)	20 32V DC
13.6V	13.6V	27.2V	27.2V
245 W	408 W	109 W	245 W
164 W	326 W	82 W	191 W
18A / 12A	24A / 30A	4A / 3A	9A / 7A
<10 mA	<10 mA	<25 mA	<25 mA
6.6"x3.4"x2" 167x87x50 mm	8.5"x3.4"x2" 217x87x50 mm	5"x3.4"x2" 127x87x50 mm	7"x3.4"x2" 185x87x50 mm
590 gr / 1.3 lbs	850 gr / 1.9 lbs	590 gr / 1.3 lbs	820 gr / 1.8 lbs
CE, E-mark	CE, E-mark	CE, E-mark	CE, E-mark
yes	yes	yes	yes
yes	yes	yes	yes
fast-on	fast-on	fast-on	fast-on
natural cooling	natural cooling	natural cooling	natural cooling
<30 dBA at 1 mtr	<30 dBA at 1 mtr	<30 dBA at 1 mtr	<30 dBA at 1 mtr
IP53	IP53	IP53	IP53

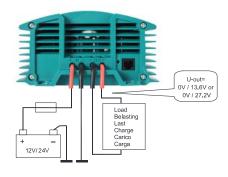
## Batteries, Chargers and Accessories: Mac & Magic Speci □cations

	Mag 24/42 20	Magic 24/42 20	Magic 24/24 20
Item#	Mac 24/12-20 81200100	Magic 24/12-20 81300100	Magic 24/24-20 81300200
	81200100	81300100	81300200
Speci cations Input	241/	24\/	241/
Nominal input voltage	24V	24V	24V
Input range	20 32V DC	19 32V DC	19□32V DC
Input range, 3-step charge mode	24 32V DC	24 32 V DC	24 \(\tag{2}\) DC
Lower input set point	20V DC*	20V DC*	20V DC*
Delay lower input set point	30 sec.*	30 sec.*	30 sec.*
Speci □cations Output			
Factory setting	13.6V DC*	13.6V DC*	27.2V DC*
Voltage adjustable*	10⊡15V DC	10 □15V DC	20 □28.5V DC
Output voltage dimmer*	4⊡13V DC	4□13V DC	8□26V DC
Stabilized	2% at extremes of temperature	s, load and input	
Ripple	max. 1% peak peak	max. 1% peak peak	max. 1% peak peak
Power (max./nominal)	300 / 270 W	300 / 300 W	580 / 580 W
Max. current	20A	20A	20A
Charge current □3-step mode	16A	16A	16A
General Speci □cations			
Galvanic isolation	no	yes	yes
Voltage limited	yes	yes	yes
Ef⊡ciency	>90% (at nominal input voltage	e, full load); 92% peak	
Protected against over load	yes	yes	yes
Protected against over temperature	yes	yes	yes
Dimmer function	yes, by external momentary sw	ritch via fast-on connection, to be activa	ated by DIP-switch setting
Alarm contact	no	yes (fast-on connector)	yes (fast-on connector)
Dimensions, hxwxd	7.5"x5.1"x2.4" 190x130x61 mm	8.9"x6.1"x3.2" 227x154x81 mm	8.9"x6.1"x3.2" 227x154x81 mm
Weight	1.0 kg / 2.2 lbs	1.8 kg / 4 lbs	1.8 kg / 4 lbs
Approvals	CE	CE	CE
Technical Speci□cations			
3-Step charge option	yes (DIP switch settings)	yes (DIP switch settings)	yes (DIP switch settings)
DC consumption	<30 mA	<115 mA	<115 mA
Connections input/output	screw terminals, maximum wire	e size 16 mm <sup>2</sup> / AWG5	
Temperature range (ambient temp.)	-25 C 80 C, >40 C derating / -	-13 F 176 F, > 104 F derating	
Cooling	natural cooling	maintenance free vario fans	
Sound level	<30 dBA at 1 mtr	<48 dBA at 1 mtr	<48 dBA at 1 mtr
Protection degree	IP21	IP21	IP21
MasterBus compatible	yes, by means of MasterBus Se	erial Interface (Item # 77030450)	
Options		<u> </u>	
MasterView Easy 77010305	Touch screen panel for reading	status and dimmer function settings.	
MasterBus Serial Interface 77030450	Integrates the Mac & Magic co	nverters in a MasterBus network.	

<sup>\*</sup> Adjustable with MasterAdjust software.

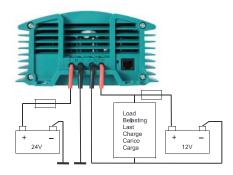
#### Batteries, Chargers and Accessories: Mac & Magic Speci Cations

Magic 12/12-20	Magic 12/24-10
81300400	81300300
12V	12V
11⊡16V DC	11□16V DC
12⊡16V DC	12□16V DC
10V DC*	10V DC*
30 sec.*	30 sec.*
13.6V DC*	27.2V DC*
10⊡15V DC	20 28.5V DC
4⊡13V DC	8 26 V DC
max. 1% peak peak	max. 1% peak peak
300 / 300 W	300 / 300 W
20A	10A
16A	8A
yes	yes
yes	yes
yes	yes
yes	yes
yes (fast-on connector)	yes (fast-on connector)
8.9"x6.1"x3.2" 227x154x81 mm	8.9"x6.1"x3.2" 227x154x81 mm
1.8 kg / 4 lbs	1.8 kg / 4 lbs
CE	CE
yes (DIP switch settings)	yes (DIP switch settings)
<115 mA	<115 mA
maintenance free vario fans	;
<48 dBA at 1 mtr	<48 dBA at 1 mtr
IP21	IP21



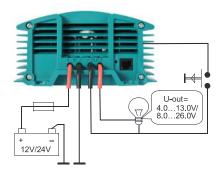
#### Magic as power supply

The Magic models can be fully used as a stabilized power supply: From 12 24V, from 24 12V or from 24 24V. Inputs and outputs are galvanically isolated.



#### Mac & Magic as battery charger

A 12V starter or emergency power battery can be charged as well as maintained by Mac or Magic units. The charging method is identical to the Mass 3-step with voltage levels adjustable by means of MasterBus PC-Link/MasterAdjust software.



#### Mac & Magic as dimmer

Light can be dimmed by means of a push button or plus switch, with a maximum load of 250 Watt for the Mac. A second Mac can be installed if there are multiple lamps.



#### Plugs & Receptacles

Delivers More Power to Equipment

UPremium-quality DC Plugs & Receptacles

UExpanded product life and superior electrical conductivity for accessories

UPatented locking blades and a large contact area which reduces the temperature of the devices

ULeaf-spring contacts give longer life when repeated disconnects are required

UConnectPro connections are weather resistant and corrosion resistant

USuitable for on and off road vehicles in construction, farming, industrial or utility applications

UAll electrical components are plated brass

UThe receptacle ts into a standard 1-1/8" diameter mounting hole

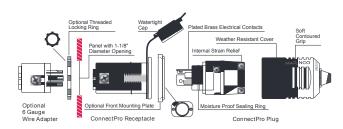
UAccepts 2- or 3-wire con gurations, up to 8 gauge

UWith the 12VBRAD adapter, it can accept up to 6 gauge wire

UReceptacle is easy to install using the supplied mounting plate for front panel installation

U Optional locking-ring for rear access installation

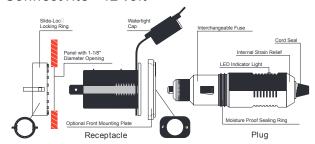
#### ConnectPro Charging & Trolling



ConnectPro

system has superior electric current carrying capacity. It features locking plug and receptacle with spring clamping connections which provide a secure electrical contact.

#### ConnectTite 12 Volt



Exclusive to ConnectTite products is a unique interconnecting system that securely locks the plug into the receptacle resulting in a positive and moisture-proof connection.

#### 2-Wire ConnectPro Charging or Accessory



#### ConnectPro Receptacle

UWorks with 12, 24, or 36 volt 2-wire systems

U For front mount panel installations U Weather resistant sealing cap

UDrain holes in receptacle keep water away from electrical components

UPerma-Lock ☐ screw terminals will not loosen under extreme hull vibration

UFits standard 1-1/8" diameter mounting hole

UAccepts up to 10 gauge wire

Item # 12VBRS2 OEM # 12VBRS2.OEM



#### ConnectPro Plug

UO-ring seal for waterproof connections

UWeather resistant plug cover

U Corrosion resistant, plated brass electrical components

UAccepts 16 to 8 gauge wire

UErgonomic contoured grip for easy hook-up and ground blade alignment

UMax. rating is 40 amps

Item # 12VBPS2 OEM # 12VBPS2.OEM 5 YEAR WARRANTY



#### ConnectPro □ Receptacle & Plug

Ulincludes 12VBRS2 and 12VBPS2 packaged together

Item # 12VCPS2

#### 3-Wire ConnectPro Charging / Trolling System



#### ConnectPro Receptacle

UtUniversal design for 2 or 3-wire con guration 12, 24, 12/24, 24/36 or 36 volt systems

U\Watertight sealing cap

U Corrosion resistant, plated brass electrical components

UDrain holes in receptacle keep water away from electrical components

U:Perma-Lock□ screw terminals will not loosen under extreme vibration

UStandard 1-1/8" diameter mounting hole

UEasy to install, with supplied mounting plate for front panel installation, or locking ring for rear access installation

UAccepts 10 and 8 gauge wire

UEasily replaces other trolling motor plugs and receptacles

Item # 12VBR

Item # 12VBR.PG

w/ gasket

OEM # 12VBR.OEM

Item # 12VBRO

w/ Old Style Ring

Mounting plate not included with 12VBR.OEM



#### ConnectPro Plug

U.O-ring seal for waterproof connections

U™eather resistant plug cover

UCorrosion resistant, plated brass electrical components

UAccepts 16 to 8 gauge wire

UErgonomic contoured grip for easy hook-up and ground blade alignment

Item # 12VBPS OEM # 12VBPS.OEM



## 6 Gauge ConnectPro ☐ Wire Receptacle Adapter

U'Allows 6 gauge wire connection to ConnectPro□ receptacle

U Corrosion resistant, plated brass electrical components

Item # 12VBRAD OEM # 12VBRAD.OEM



## ConnectPro<sup>□</sup> Receptacle, Plug & 6 Gauge Adapter

UIncludes 12VBR and 12VBP and 12VBRAD packaged together

UMax. rating is 40 amps

Item # 12VCP6



## ConnectPro<sup>□</sup> Receptacle & Plug

Ulincludes 12VBR and 12VBP packaged together

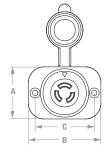
Item # 12VCP

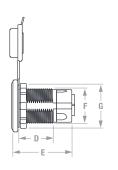
#### **Dimensions**



#### 12VBR & 12VBRS2

Α	В	С	D	Е	F	G
1.68"	2.34"	1.91"	1.11"	1.90"	1.12"	1.44"





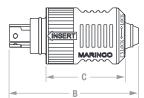




#### 12VBPS & 12VBPS2

Α	В	С
1.42"	3.30"	2.00"







#### DC Devices: ConnectTite Plugs & Receptacles



#### 12V Receptacle

U\Watertight sealing cap

UEasy to install, use supplied mounting plate (Not included with 12VRC.OEM) for front panel installation, or Slide-Loc ☐ for rear access installation

Item # 12VRC OEM # 12VRC.OEM



#### 12V Snap-in Receptacle

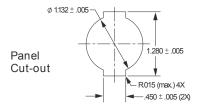
USnap-in design, ts a wide variety of panel thicknesses

UTabs mate with standard Packard terminals and connector bodies

UUnique punch/cut-out design eliminates device turning or twist-out when removing plug

UFits standard hole pattern
UIncludes ConnectTite locking feature

OEM # 12VRCSP.OEM





#### Deluxe 12 Volt Receptacle w/ Old Style Ring

U:Watertight sealing cap

UEasy to install, with locking ring for rear access installation

U Compatible with standard 12V plugs

OEM # 12VRCO OEM #12VRCO.PG w/ gasket



#### Receptacle Mounting Bracket

UBracket mounts under the panel or on any at surface for simple OEM installation or retroat

U2" wide x 2.5" tall
UMounting screws included
UEasy to install or retro□t
UUse with 12VRC.OEM, 12VRCO or
12VBR.OEM

Item # 12BKT



#### Mounting Plate

UEasy to install or retro⊡t UEUse with 12VRC.OEM, 12VRCO or 12VBR.OEM

OEM # 12MP.OEM



#### 12V Plug

UMoisture-proof sealing ring
UGreen LED power indicator light
UInterchangeable 10 amp fuse
UInternal strain relief and cord seal
UGlass-Illed nylon housing
UCurrent-carrying parts and knurl nut are nickel-plated copper alloy
UCompatible with standard 12V receptacle
UMax rating is 10 amps

Item # 12VPG OEM # 12VPG.OEM



## Speci □cation-Grade 6 □ 12V Extension Cord

U.6 of super caxible 18 guage cable
U.Receptacle is fully-enclosed in soft PVC with a watertight sealing cap

U:Plug features an LED indicator light, moisture-proof sealing ring, strain relief and built-in 10A fuse

U10A rated, 10A fused Item # 12VXT



## Speci □cation-Grade Dual Outlet Extension Cord

U Dual outlets, each on its own one foot super □exible 18 gauge cable

UReceptacle is fully-enclosed in soft PVC with a watertight sealing cap

UPlug features an LED indicator light, moisture-proof sealing ring, strain relief and built-in 10A fuse

U10A rated, 10A fused

Item # 12VAD



## Direct Connect Multi Connection Battery Terminals

UWire electronic instruments directly to the battery maximizing clarity by virtually eliminating interference

UTerminate up to four electronic instruments on each set of terminals

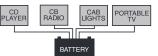
UComes complete with quick-connect terminals

UAll one piece, no screws or parts to lose

UNo tools necessary

UCover snaps tight when closed

Item # 12VTR OEM # 12VTR.OEM







#### Boot UFor use with 12V products UCreates a weatherproof seal Item # 300275

## Cross Reference: Wiring Devices

COOPER	LEVITON	HUBBELL	MARINCO	COOPER	LEVITON	HUBBELL	MARINCO
CS6360EX	CS63-60C	CS6360C	CS6360N	CWL1520P	2421	HBL2421	2015P
CS6361EX	CS63-61C	CS6361C	CS6361N	CWL1520R	2420	HBL2420	2015R
CS6364EX	CS63-64C	CS6364C	CS6364N	CWL1620C	2433	HBL2433	2016C
CS6365EX	CS63-65C	CS6365C	CS6365N	CWL1620P	2431	HBL2431	2016P
CS6369	CS63-69	CS6369	CS6369	CWL1620R	2430	HBL2430	2016R
CS6370	CS63-70	CS6370	CS6370	CWL2120C	2513	HBL2513	2021C
CS6375	CS63-75	CS6375	CS6375	CWL2120FO	2516	HBL2516	2021FO
CS6376			CS6375FL	CWL2120P	2511	HBL2511	2021P
CS8164EX	CS81-64C	CS8164C	CS8164N	CWL2120R	2510	HBL2510	2021R
CS8165EX	CS81-65C	CS8165C	CS8165N				2030FL
CS8169	CS81-69	CS8169	CS8169	CWL530C	2613	HBL2613	305C
CS8175	CS81-75	CS8175	CS8175	CWL530FI	2615	HBL2615	305FI
CS8264EX	CS82-64C	CS8264C	CS8264N	CWL530FO	2616	HBL2616	305FO
CS8265EX	CS82-65C	CS8265C	CS8265N	CWL530P	2621	HBL2621	305P
CS8269	CS82-69	CS8269	CS8269	CWL530R	2610	HBL2610	305R
CS8275	CS82-75	CS8275	CS8275	IGL530R	2610-IG	IG2610	305RIG
CS8364EX	CS83-64C	CS8364C	CS8364N				320IEC13
CS8365EX	CS83-65C	CS8365C	CS8365N				320IEC15
CS8369	CS83-69	CS8369	CS8369			H320C	320IEC19
CS8375	CS83-75	CS8375	CS8375	CWL1430C	2713	HBL2713	3014C
CS8464EX	CS84-64C	CS8464C	CS8464N	CWL1430FI	2715	HBL2715	3014FI
CS8465EX	CS84-65C	CS8465C	CS8465N	CWL1430FO	2716	HBL2716	3014FO
CS8469	CS84-69	CS8469	CS8469	CWL1430P	2711	HBL2711	3014P
WP1	WP1	WP1	WP1	CWL1430R	2710	HBL2710	3014R
			15RA	CWL1530C	2723	HBL2723	3015C
			103RN	CWL1530FI	2725	HBL2725	3015FI
			110R	CWL1530FO	2726	HBL2726	3015FO
			152AY	CWL1530P	2721	HBL2721	3015P
			153AY	CWL1530R	2720	HBL2720	3015R
			157AY	CWL1630C	2733	HBL2733	3016C
CWL520C	2313	HBL2313	205C	CWL1630FO	2736	HBL2736	3016FO
CWL520CBK	2313-B	HBL2313BK	205CBL	CWL1630P	2731	HBL2731	3016P
			205CL	CWL1630R	2730	HBL2730	3016R
CWL520FI	2315	HBL2315	205FI	CWL2130C	2813	HBL2813	3021C
CWL520FO	2316	HBL2316	205FO	CWL2130FO	2816	HBL2816	3021FO
CWL520P	2311	HBL2311	205P	CWL2130P	2811	HBL2811	3021P
CWL520PBK	2311-B	HBL2311BK	205PBL	CWL2130R	2810	HBL2810	3021R
			205PL	3762EX	3762-C	HBL3762C	3762N
CWL520R	2310	HBL2310	205R	3763EX	3763-C	HBL3763C	3763N
IGL520R	2310-IG	IG2310	205RIG	3764EX	3764-C	HBL3764C	3764N
CWL620C	2323	HBL2323	206C	3765EX	3765-C	HBL3765C	3765N
	2323-B	HBL2323BK	206CBL	3769	3769	HBL3769	3769
CWL620FI	2325	HBL2325	206FI	3771	3771	HBL3771	3771
CWL620FO	2326	HBL2326	206FO	3775	3775	HBL3775	3775
CWL620P	2321	HBL2321	206P	3777	3777	HBL3777	3777
	2321-B	HBL2321BK	206PBL	6580	4550	HBL4550	4550
CWL620R	2320	HBL2320	206R	CWL615R	4560	HBL4560	4560
IGL620R	2320-IG	IG2320	206RIG	CWL615P	4570-C	HBL4570C	4570
CWL720P	2331	HBL2331	207P	CWL615C	4579-C	HBL4579C	4579
CWL1420C	2413	HBL2413	2014C	CWL615FO	4585-C	HBL4585C	4585
CWL1420FI	2415	HBL2415	2014FI	CWL615FI	4586-C	HBL4586C	4586
CWL1420FO	2416	HBL2416	2014FO	4700	4700	HBL4700	4700
CWL1420P	2411	HBL2411	2014P	CR4700		HBL47CM00	4700CR
CWL1420R	2410	HBL2410	2014R	CWL515R	4710	HBL4710	4710
0145 45000							. — . —
CWL1520C	2423	HBL2423	2015C	CWL515FO	4715-C	HBL4715C	4715
CWL1520C CWL1520FI CWL1520FO		HBL2423 HBL2425 HBL2426	2015C 2015FI 2015FO	CWL515FO CWL515FI CWL515P	4715-C 4716-C 4720-C	HBL4715C HBL4716C HBL4720C	4715 4716 4720

Chart is for reference only. User is responsible to verify form,  $\Box$ t and function with actual application.

COOPER	LEVITON	HUBBELL	MARINCO
	4720-CB	HBL4720CBK	4720BL
			4720L
CWL515C	4729-C	HBL4729C	4729
-	4729-CB	HBL4729CBK	4729BL
			4729L
CWL715R	4760	HBL4760	4760
CWL715P	4770-C	HBL4770C	4770
CWL715C	4779-C	HBL4779C	4779
CWL715FO	4785-C	HBL4785C	4785
CWL715FI	4786-C	HBL4786C	4786
	510-R		510R
AH5262	5262	HBL5262	5252
	52CM-62	HBL52CM62	5262CRR
6266	5266-C	HBL5266C	5266
6266BLK	5266-CB	HBL5266EBK	5266BL
	52CM-66C	HBL52CM66C	5266CRS
			5266L
6265	5266-CA	HBL5266CA	5266RA
6269	5269-C	HBL5269C	5269
6269BLK	5269-CB	HBL5269EBK	5269BL
	52CM-69C	HBL52CM69C	5269CR
			5269L
5278C	5278-C	HBL5278C	5278
			5278BL
			5278DRI
5279C	5279-C	HBL5279C	5279
			5279BL
			5279DRO
AH5362	5362	HBL5362	5352
6766	5366-C	HBL5366C	5366
6769	5369-C	HBL5369C	5369
	53CM-69C	HBL53CM69C	5369CR
5778C	15378-C	HBL5378C	5378
5779C	15379-C	HBL5379C	5379
5462			5462
6866	5466-C	HBL5466C	5466
6869	5469-C	HBL5469C	5469
5878C	5478-C	HBL5478C	5478
5879C	5479-C	HBL5479C	5479
6666	5666-C	HBL5666C	5666
6669	5669-C	HBL5669C	5669
5678C	15678-C	HBL5678C	5678
			5678DRI
	15679-C	LIDI F670C	
5679C		HBL5679C	5679
D04	6017	HBL6017	6017
BS1	6017-Y	HBL60CM17	6017Y
	6018	HBL6018	6018
BS2	6018-Y	HBL60CM18	6018Y
63CR60EX	6360-CR		6360CRN
63CR61EX	6361-CR		6361CRN
63CR64EX	6364-CR		6364CRN
63CR65EX	6365-CR		6365CRN
7413C	7411-C	HBL7411C	7411C
7411C	7413-C	HBL7413C	7413C
77CR15	7715-CR	HBL77CM15	7715CRN
7717	7717-CR	HBL7717C	7717N
7764EX	7764-C	HBL7764C	7764N

COOPER	LEVITON	HUBBELL	MARINCO
7765EX	7765-C	HBL7765C	7765N
7958		HBL7958	7958
6266HG	8215-C	HBL8215C	8215
6266HGC	8215-CT	HBL8215CT	8215T
	8215-PLC		8215TL
6265HGC	8215-CAT	HBL8215CAT	8215TRA
6269HG	8219-C	HBL8219C	8219
6269HGC	8219-CT	HBL8219CT	8219T
	8219-PLC		8219TL

Chart is for reference only. User is responsible to verify form,  $\Box$ t and function with actual application.

CL, CLS Series Inline Devices

Description N	M/F	Color	Leviton	Cooper Crouse-Hinds	Hubbell	Marinco CL Series (2 pc Hard Shell)	Marinco CLS Series NEMA 3R & 4 (Rubber)
•	Male	Black				CL2MB-A	CLS2MB-A
Cam Connector	IVIGIO	White				CL2MB-B	CLS2MB-B
		Red				CL2MB-C	CLS2MB-C
		Blue				CL2MB-D	CLS2MB-D
		Green				CL2MB-E	CLS2MB-E
		Brown				CL2MB-F	CLS2MB-F
						CL2MB-F	
		Orange					CLS2MB-G
_		Yellow				CL2MB-H	CLS2MB-H
F	Female	Black				CL2FB-A	CLS2FB-A
		White				CL2FB-B	CLS2FB-B
		Red				CL2FB-C	CLS2FB-C
		Blue				CL2FB-D	CLS2FB-D
		Green				CL2FB-E	CLS2FB-E
		Brown				CL2FB-F	CLS2FB-F
		Orange				CL2FB-G	CLS2FB-G
		Yellow				CL2FB-H	CLS2FB-H
#2 2/0 Inline Cam	Male	Black	16D22-E	E1016-8350	HBL300MBK	CL20MB-A	CLS20MB-A
Connector		White	16D22-W	E1016-8355	HBL300MW	CL20MB-B	CLS20MB-B
		Red	16D22-R	E1016-8352	HBL300MR	CL20MB-C	CLS20MB-C
		Blue	16D22-B	E1016-8356	HBL300MBL	CL20MB-D	CLS20MB-D
		Green	16D22-G	E1016-8354	HBL300MGN	CL20MB-E	CLS20MB-E
		Brown	16D22-H	E1016-8357	HBL300MBN	CL20MB-F	CLS20MB-F
		Orange	16D22-O	E1016-8353	HBL300MO	CL20MB-G	CLS20MB-G
		Yellow	16D22-Y	E1016-8351	HBL300MY	CL20MB-H	CLS20MB-H
	Female	Black	16D31-E	E1016-8375	HBL300FBK	CL20FB-A	CLS20FB-A
'	Ciliale	White	16D31-W	E1016-8380	HBL300FW	CL20FB-B	CLS20FB-B
		Red	16D31-R	E1016-8377	HBL300FR	CL20FB-C	CLS20FB-C
		Blue	16D31-R	E1016-8381	HBL300FBL	CL20FB-D	CLS20FB-D
		Green	16D31-G	E1016-8379	HBL300FGN	CL20FB-E	CLS20FB-E
		Brown	16D31-G	E1016-8382	HBL300FBN	CL20FB-F	CLS20FB-F
						CL20FB-G	
		Orange	16D31-O	E1016-8378	HBL300FO		CLS20FB-G
		Yellow	16D31-Y	E1016-8376	HBL300FY	CL20FB-H	CLS20FB-H
	Male	Black	16D24-E	E1016-8362	HBL400MBK	CL40MB-A	CLS40MB-A
Connector		White	16D24-W	E1016-8367	HBL400MW	CL40MB-B	CLS40MB-B
		Red	16D24-R	E1016-8364	HBL400MR	CL40MB-C	CLS40MB-C
		Blue	16D24-B	E1016-8368	HBL400MBL	CL40MB-D	CLS40MB-D
		Green	16D24-G	E1016-8366	HBL400MGN	CL40MB-E	CLS40MB-E
		Brown	16D24-H	E1016-8369	HBL400MBN	CL40MB-F	CLS40MB-F
		Orange	16D24-O	E1016-8365	HBL400MO	CL40MB-G	CLS40MB-G
_		Yellow	16D24-Y	E1016-8363	HBL400MY	CL40MB-H	CLS40MB-H
F	Female	Black	16D33-E	E1016-8387	HBL400FBK	CL40FB-A	CLS40FB-A
		White	16D33-W	E1016-8392	HBL400FW	CL40FB-B	CLS40FB-B
		Red	16D33-R	E1016-8389	HBL400FR	CL40FB-C	CLS40FB-C
		Blue	16D33-B	E1016-8393	HBL400FBL	CL40FB-D	CLS40FB-D
		Green	16D33-G	E1016-8391	HBL400FGN	CL40FB-E	CLS40FB-E
		Brown	16D33-H	E1016-8394	HBL400FBN	CL40FB-F	CLS40FB-F
		Brown Orange	16D33-H 16D33-O	E1016-8394 E1016-8390	HBL400FBN HBL400FO	CL40FB-F CL40FB-G	CLS40FB-F CLS40FB-G

Chart is for reference only. User is responsible to verify form,  $\ \square t$  and function with actual application.

#### **CLS Panel Mounts**

				Cooper		
Description	M/F	Color	Leviton	Crouse-Hinds	Hubbell	Marinco
1-1/4" Panel	Male	Black	16R23-E	E1016-1600S	HBLFRSBK	CLS40MRSB-AX
Mount Threaded		White	16R23-W	E1016-1605S	HBLFRSW	CLS40MRSB-BX
Stud		Red	16R23-R	E1016-1602S	HBLFRSR	CLS40MRSB-CX
		Blue	16R23-B	E1016-1612S	HBLFRSBL	CLS40MRSB-DX
		Green	16R23-G	E1016-1604S	HBLFRSGN	CLS40MRSB-EX
		Brown	16R23-H	E1016-1619S	HBLFRSBN	CLS40MRSB-FX
		Orange	16R23-O	E1016-1603S	HBLFRSO	CLS40MRSB-GX
		Yellow	16R23-Y	E1016-1601S	HBLFRSY	CLS40MRSB-HX
	Female	Black	16R24-E	E1016-1631S	HBLMRSBK	CLS40FRSB-AX
		White	16R24-W	E1016-1636S	HBLMRSW	CLS40FRSB-BX
		Red	16R24-R	E1016-1633S	HBLMRSR	CLS40FRSB-CX
		Blue	16R24-B	E1016-1643S	HBLMRSBL	CLS40FRSB-DX
		Green	16R24-G	E1016-1635S	HBLMRSGN	CLS40FRSB-EX
		Brown	16R24-H	E1016-1687S	HBLMRSBN	CLS40FRSB-FX
		Orange	16R24-O	E1016-1634S	HBLMRSO	CLS40FRSB-GX
		Yellow	16R24-Y	E1016-1632S	HBLMRSY	CLS40FRSB-HX
Panel Mount	Male	Black	16R21-E	E1016-1700	HBLFRBK	CLS40MRB-AX
Double Set		White	16R21-W	E1016-1705	HBLFRW	CLS40MRB-BX
Screw		Red	16R21-R	E1016-1702	HBLFRR	CLS40MRB-CX
		Blue	16R21-B	E1016-1706	HBLFRBL	CLS40MRB-DX
		Green	16R21-G	E1016-1704	HBLFRGN	CLS40MRB-EX
		Brown	16R21-H	E1016-1707	HBLFRBN	CLS40MRB-FX
		Orange	16R21-O	E1016-1703	HBLFRO	CLS40MRB-GX
		Yellow	16R21-Y	E1016-1701	HBLFRY	CLS40MRB-HX
	Female	Black	16R22-E	E1016-1725	HBLMRBK	CLS40FRB-AX
		White	16R22-W	E1016-1730	HBLMRW	CLS40FRB-BX
		Red	16R22-R	E1016-1727	HBLMRR	CLS40FRB-CX
		Blue	16R22-B	E1016-1731	HBLMRBL	CLS40FRB-DX
		Green	16R22-G	E1016-1729	HBLMRGN	CLS40FRB-EX
		Brown	16R22-H	E1016-1732	HBLMRBN	CLS40FRB-FX
		Orange	16R22-O	E1016-1728	HBLMRO	CLS40FRB-GX
		Yellow	16R22-Y	E1016-1726	HBLMRY	CLS40FRB-HX

#### **Busbar Mounts & Adapters**

Description	M/F	Color	Leviton	Cooper Crouse-Hinds	Hubbell	Marinco
Angle Terminal	Female	Black*	16F21-E	E1016-575		CL40FR-ANGLE-A
Panel Mount	Male	Black*				CL40MR-ANGLE-A
Offset Terminal	Female	Black*	16F22-E	E1016-625		CL40FR-OFFSET-A
Panel Mount	Male	Black*				CL40MR-OFFSET-A
Paralleling T	-	Black*	16A21-E	E1016-2324	HBLPTBK	CPT
Tapping T	Female	Black*	16A22-E	E1016-2312	HBLTBK	CTT
3fer	-	Black*	16A23-E	E1016-9500	HBLM3FBK	CA3F
Turnaround	Female to Female	Black*	16A24-E	E1016-2352	HBLDFBK	CDFF
	Male to Male	Black*	16A25-E	E1016-2382	HBLDMBK	CDMM

<sup>\*</sup>Other colors available

#### "Mini" Inline Cam Adapters

Description	M/F	Color	Leviton	Cooper Crouse-Hinds	Hubbell	Marinco
Paralleling T		Black*	15A21-E	E1015-2324	HBL15PTBK	CLMPT-A
Tapping T	Female	Black*	15A22-E	E1015-2312	HBL15TBK	CLMTT-A
Turnaround	Female to Female	Black*	15A23-E	E1015-2352	HBL15DFBK	CLMFF-A
	Male to Male	Black*		E1015-2362	HBL15DMBK	CLMMM-A

<sup>\*</sup>Other colors available

#### CLM ☐Mini☐Inline Devices & Panel Mounts

Description	M/F	Color	Leviton	Cooper Crouse-Hinds	Hubbell	Marinco CLM Mini Series (hard plastic)	Marinco CLM Mini Series (rubber)
150A Mini Inline	Male	Black	15D21-E	E1015-8306	HBL15MBK		CLM2M-A
		White	15D21-W	E1015-8311	HBL15MW		CLM2M-B
		Red	15D21-R	E1015-8308	HBL15MR		CLM2M-C
		Blue	15D21-B	E1015-8313	HBL15MBL		CLM2M-D
		Green	15D21-G	E1015-8310	HBL15MGN		CLM2M-E
		Brown	15D21-H	E1015-8314			CLM2M-F
		Orange	15D21-O	E1015-8309			CLM2M-G
		Yellow	15D21-Y	E1015-8307			CLM2M-H
	Female	Black	15D22-E	E1015-8331	HBL15FBK		CLM2F-A
	remaie	White	15D22-W	E1015-8336	HBL15FW		CLM2F-B
		Red	15D22-R	E1015-8333	HBL15FR		CLM2F-C
		Blue	15D22-B	E1015-8338	HBL15FBL		CLM2F-D
		Green	15D22-G	E1015-8335	HBL15FGN		CLM2F-E
		Brown	15D22-H	E1015-8339			CLM2F-F
		Orange	15D22-O	E1015-8334			CLM2F-G
		Yellow	15D22-Y	E1015-8332			CLM2F-H
50A Mini Panel	Male	Black	15R21-E	E1015-1600	HBL15MRSBK	CLMMRS-A	CLSMMRS-A
Nount Threaded	iviale	White	15R21-W	E1015-1605	HBL15MRSW	CLMMRS-B	CLSMMRS-B
Stud		Red	15R21-R	E1015-1602	HBL15MRSR	CLMMRS-C	CLSMMRS-C
		Blue	15R21-R	E1015-1606	HBL15MRSBL	CLMMRS-D	CLSMMRS-D
		Green	15R21-G	E1015-1604	HBL15MRSGN	CLMMRS-E	CLSMMRS-E
		Brown	15R21-H	E1015-1607		CLMMRS-F	CLSMMRS-F
		Orange	15R21-0	E1015-1603		CLMMRS-G	CLSMMRS-G
		Yellow	15R21-Y	E1015-1601		CLMMRS-H	CLSMMRS-H
	Female	Black	15R22-E	E1015-1625	HBL15FRSBK	CLMFRS-A	CLSMFRS-A
		White Red	15R22-W	E1015-1630 E1015-1627	HBL15FRSW	CLMFRS-B CLMFRS-C	CLSMFRS-B CLSMFRS-C
			15R22-R		HBL15FRSR		
		Blue	15R22-B	E1015-1631	HBL15FRSBL	CLMFRS-D	CLSMFRS-D
		Green	15R22-G	E1015-1629	HBL15FRSGN	CLMFRS-E	CLSMFRS-E
		Brown	15R22-H	E1015-1632		CLMFRS-F	CLSMFRS-F
		Orange	15R22-O	E1015-1628		CLMFRS-G	CLSMFRS-G
		Yellow	15R22-Y	E1015-1626		CLMFRS-H	CLSMFRS-H
50A Mini Panel	Male	Black			HBL15MRBK	CLMMR2-A	CLSMMR2-A
Mount Double Set Screw		White			HBL15MRW	CLMMR2-B	CLSMMR2-B
bel Sciew		Red			HBL15MRR	CLMMR2-C	CLSMMR2-C
		Blue			HBL15MRBL	CLMMR2-D	CLSMMR2-D
		Green			HBL15MRGN	CLMMR2-E	CLSMMR2-E
		Brown				CLMMR2-F	CLSMMR2-F
		Orange				CLMMR2-G	CLSMMR2-G
		Yellow				CLMMR2-H	CLSMMR2-H
	Female	Black			HBL15FRBK	CLMFR2-A	CLSMFR2-A
		White			HBL15FRW	CLMFR2-B	CLSMFR2-B
		Red			HBL15FRR	CLMFR2-C	CLSMFR2-C
		Blue			HBL15FRBL	CLMFR2-D	CLSMFR2-D
		Green			HBL15FRGN	CLMFR2-E	CLSMFR2-E
		Brown				CLMFR2-F	CLSMFR2-F
		Orange				CLMFR2-G	CLSMFR2-G
		Yellow				CLMFR2-H	CLSMFR2-H

100FR	100F	36	12VPG	90	2014C	15	206R	15
100M_   36	100FR	37	12VPG.OEM	90	2014FI	15	206RIG	15
100MR_DSS	100FR-DSS	37	12VRC	90	2014FO	15	207P	15
100MR-DSS	100M	36	12VRC.OEM	90	2014P	15	20F	36
100R	100MR	37	12VRCO	90	2014R	15	20F-AW	36
102182         24         12VTR         91         2015FO         15         20FR         37           102N         24         12VTROEM         91         2015P         15         20FR-RT         37           103RN         24         12VXT         91         2016R         15         20M         36           103RN OEM         24         131802000         82         2016C         15         20M-AW         36           104SPP         23         13604000         82         2016P         15         20M-AW         36           105SPP         23         150BBI         9,73         2016R         15         20M-X         36           106FH         36         150BBICM         73         2021C         15         20MR         37           106FR-DSS-H         37         150BBIW         73         2021FO         15         2100         54           106MR-H         38         150BBIW         73         2021R         15         2100-B         54           106MR-H         37         150CC OEM         73         2030FL         25         2101-B         54           106MR-H         37         150CCI	100MR-DSS	37	12VRCO.PG	90	2015C	15	20F-RT	36
102N         24         12VTR OEM         91         2015P         15         20FR-RT         37           103RN         24         12VXT         91         2015R         15         20M         36           103RN OEM         24         131804000         82         2016C         15         20M-AW         36           104SPP         23         13604000         82         2016P         15         20M-RT         36           105SPP         23         150BBI         9,73         2016R         15         20M-X         36           106F-H         36         150BBIOEM         73         2021FO         15         20M-X         36           106FR-DSSH         37         150BBIW         73         2021FO         15         2100-B         54           106M-H         36         150BBIW.OEM         73         2021F         15         2100-B         54           106MF-DSS-H         37         150CCI         73         2036FL         25         2101-B         54           106MF-L         37         150CCI         73         203242         27         2102-B         54           110R         24,25         150CCTIM.O	100R	25	12VRCSP.OEM	90	2015FI	15	20F-X	36
103RN         24         12VXT         91         2015R         15         20M         36           103RN.OEM         24         131802000         82         2016C         15         20M-AW         36           104SPP         23         131804000         82         2016P         15         20M-RT         36           105SPP         23         150BBI         9,73         2016R         15         20M-X         36           106F-H         36         150BBI-M         73         2021C         15         20MR         37           106FR-DSS-H         37         150BBI-M         73         2021F0         15         2100-B         54           106M-H         36         150BBIWCEM         73         2021R         15         2100-B         54           106M-H         36         150BBIWCEM         73         2021R         15         2101-B         54           106MR-DSS-H         37         150CCL         73         2030FL         25         2101-B         54           106MR-DSS-H         37         150CCL         73         203242         27         2102         54           110R         24, 25         150CCT	102182	24	12VTR	91	2015FO	15	20FR	37
103RN.OEM         24         131802000         82         2016C         15         20M-AW         36           104SPP         23         131804000         82         2016P         15         20M-RT         36           105SPP         23         150BBI         9,73         2016R         15         20M-X         36           106FH         36         150BBI-M         73         2021C         15         20MR         37           106FR-DSS-H         37         150BBI-M         73         2021FO         15         2100         54           106M-H         36         150BBIW.DEM         73         2021R         15         2100-B         54           106M-H         36         150BBIW.DEM         73         2021R         15         2101-B         54           106MR-DSS-H         37         150CCI         73         2030FL         25         2101-B         54           106MR-DSS-H         37         150CCI         73         203242         27         2102         54           110R         24, 25         150CCTM.OEM         73         2036FL         25         2101-B         54           125W         23 <t< td=""><td>102N</td><td> 24</td><td>12VTR.OEM</td><td> 91</td><td>2015P</td><td> 15</td><td>20FR-RT</td><td> 37</td></t<>	102N	24	12VTR.OEM	91	2015P	15	20FR-RT	37
104SPP       23       131804000       82       2016P       15       20M-RT       36         105SPP       23       150BBI       9, 73       2016R       15       20M-X       36         106F-H       36       150BBI.OEM       73       2021C       15       20MR       37         106FR-DSS-H       37       150BBI.TM       73       2021P       15       2100       54         106FR-I       37       150BBIW.OEM       73       2021P       15       2100-B       54         106M-H       36       150BBIW.OEM       73       2021R       15       2101-B       54         106MR-DSS-H       37       150CC.OEM       73       2030FL       25       2101-B       54         106MR-DSS-H       37       150CCI       73       203242       27       2102-B       54         110R       24, 25       150CCTM.OEM       73       203242       27       2102-3-B       54         125W       23       152AY       23       205C       15       2102-B       54         125W       23       152AY       23       205C       15       2102-B       54         125W	103RN	24	12VXT	91	2015R	15	20M	36
105SPP         23         150BBI         9, 73         2016R         15         20M-X         36           106F-H         36         150BBI.OEM         73         2021C         15         20MR         37           106FR-DSS-H         37         150BBI-TM         73         2021FO         15         2100         64           106FR-H         37         150BBIW         73         2021P         15         2100-B         54           106FR-H         36         150BBIW.OEM         73         2021P         15         2100-B         54           106MR-DSS-H         37         150CCI         73         2030FL         25         2101-B         54           106MR-DSS-H         37         150CCIM.OEM         73         203242         27         2102-3-B         54           106MR-H         37         150CCIM.OEM         73         203242         27         2102-3-B         54           110R         24, 25         150CCTM.OEM         73         205CL         15         2102-B         54           125W         23         152AY         23         205C         15         2102-B         54           12WHOEM         91	103RN.OEM	24	131802000	82	2016C	15	20M-AW	36
106F-H         36         150BBI-OEM         73         2021C         15         20MR         37           106FR-DSS-H         37         150BBI-TM         73         2021FO         15         2100         54           106FR-H         37         150BBIW         73         2021P         15         2100-B         54           106M-H         36         150BBIW.OEM         73         2021R         15         2101         54           106MR-DSS-H         37         150CC.OEM         73         2030FL         25         2101-B         54           106MR-H         37         150CCI         73         203242         27         2102-B         54           110R         24, 25         150CCTM.OEM         73         203243         27         2102-B         54           128W         23         152AY         23         205C         15         2102-B         54           128KT         90         1520BLOEM         24         205CBL         15         2110A-B         54           12WPOEM         90         152400-01         73         205CR         15         2110A-B         54           12VBPS         89         1	104SPP	23	131804000	82	2016P	15	20M-RT	36
106FR-DSS-H         37         150BBI-TM         73         2021FO         15         2100         54           106FR-H         37         150BBIW         73         2021P         15         2100-B         54           106M-H         36         150BBIWOEM         73         2021R         15         2101         54           106MR-DSS-H         37         150CC OEM         73         2030FL         25         2101-B         54           106MR-H         37         150CCI         73         203242         27         2102         54           110R         24, 25         150CCTM.OEM         73         203243         27         2102-3-B         54           125W         23         152AY         23         205C         15         2102-B         54           125W         23         152AY         23         205C         15         2102-B         54           12KT         90         1520BI.OEM         24         205CBL         15         2110A-B         54           12MPOEM         90         152400-01         73         205CL         15         2110A-B         54           12WBP         89         153AY <td>105SPP</td> <td> 23</td> <td>150BBI</td> <td> 9, 73</td> <td>2016R</td> <td> 15</td> <td>20M-X</td> <td> 36</td>	105SPP	23	150BBI	9, 73	2016R	15	20M-X	36
106FR-H         37         150BBIW         73         2021P         15         2100-B         54           106M-H         36         150BBIWOEM         73         2021R         15         2101         54           106MR-DSS-H         37         150CC OEM         73         2030FL         25         2101-B         54           106MR-H         37         150CCI         73         203242         27         2102         54           110R         24, 25         150CCTM.OEM         73         203243         27         2102-3-B         54           125W         23         152AY         23         205C         15         2102-B         54           125W         23         152AY         23         205C         15         2102-B         54           125WT         90         1520BI.OEM         24         205CBL         15         2110A-B         54           12WDO         91         152400-01         73         205CL         15         2110A-B         54           12VBPS         89         153AY         23         205CRN         15         2111A-B         54           12VBPS.OEM         89         154800-01 </td <td>106F-H</td> <td> 36</td> <td>150BBI.OEM</td> <td> 73</td> <td>2021C</td> <td> 15</td> <td>20MR</td> <td> 37</td>	106F-H	36	150BBI.OEM	73	2021C	15	20MR	37
106M-H       36       150BBIW.OEM       73       2021R       15       2101       54         106MR-DSS-H       37       150CC.OEM       73       2030FL       25       2101-B       54         106MR-H       37       150CCI       73       203242       27       2102       54         110R       24, 25       150CCTM.OEM       73       203243       27       2102-B       54         125W       23       152AY       23       205C       15       2102-B       54         12BKT       90       1520BI.OEM       24       205CBL       15       2110A       54         12WAD       91       152400-01       73       205CL       15       2110A-B       54         12VAD       91       152400-03       73       205CRCN       15       2111A-B       54         12VBPS       89       163AY       23       205CRPN       15       2111A-B       54         12VBPS.OEM       89       154800-01       73       205CRR       15       2112A-B       54         12VBPS.OEM       89       154800-03       73       205FR       15       21730400       82         12VBPS.OEM	106FR-DSS-H	37	150BBI-TM	73	2021FO	15	2100	54
106MR-DSS-H       37       150CC.OEM       73       2030FL       25       2101-B       54         106MR-H       37       150CCI       73       203242       27       2102       54         110R       24, 25       150CCTM.OEM       73       203243       27       2102-3-B       54         125W       23       152AY       23       205C       15       2102-B       54         12BKT       90       1520BI.OEM       24       205CBL       15       2110A       54         12MPOEM       90       152400-01       73       205CRCN       15       2110A-B       54         12VAD       91       152400-03       73       205CRCN       15       2111A-B       54         12VBPS       89       153AY       23       205CRCN       15       2111A-B       54         12VBPS.OEM       89       154800-01       73       205CRR       15       2111A-B       54         12VBPS.OEM       89       154800-01       73       205CRR       15       2112A-B       54         12VBPS.OEM       89       154800-03       73       205FI       15       2173040       82 <td< td=""><td>106FR-H</td><td> 37</td><td>150BBIW</td><td> 73</td><td>2021P</td><td> 15</td><td>2100-B</td><td> 54</td></td<>	106FR-H	37	150BBIW	73	2021P	15	2100-B	54
106MR-H         37         150CCI         73         203242         27         2102         54           110R         24, 25         150CCTM.OEM         73         203243         27         2102-3-B         54           126W         23         152AY         23         205C         15         2102-B         54           12BKT         90         1520BI.OEM         24         205CBL         15         2110A         54           12MPOEM         90         152400-01         73         205CL         15         2110A-B         54           12VAD         91         152400-03         73         205CRCN         15         2111A-B         54           12VBPS         89         153AY         23         205CRPN         15         2111A-B         54           12VBPSOEM         89         153AY         23         205CRPN         15         2111A-B         54           12VBPSOEM         89         154800-01         73         205CRR         15         2112A-B         54           12VBPSOEM         89         154800-03         73         205FI         15         21730400         82           12VBPSOE         88	106M-H	36	150BBIW.OEM	73	2021R	15	2101	54
110R       24, 25       150CCTM.OEM       73       203243       27       2102-3-B       54         125W       23       152AY       23       205C       15       2102-B       54         12BKT       90       1520BI.OEM       24       205CBL       15       2110A       54         12MPOEM       90       152400-01       73       205CCL       15       2110A-B       54         12VAD       91       152400-03       73       205CRCN       15       2111A-B       54         12VBPS       89       153AY       23       205CRPN       15       2111A-B       54         12VBPS.OEM       89       154800-01       73       205CRR       15       2112A-B       54         12VBPS.OEM       89       154800-03       73       205FR       15       2112A-B       54         12VBPS2.OEM       88       157AY       23       205FO       15       21730400       82         12VBR       89       157200-01       73       205P       15       2300A-B       54         12VBRAD       89       157200-03       73       205PBL       15       2300A-B       54         12VB	106MR-DSS-H	37	150CC.OEM	73	2030FL	25	2101-B	54
125W       23       152AY       23       205C       15       2102-B       54         12BKT       90       1520BI.OEM       24       205CBL       15       2110A       54         12MP.OEM       90       152400-01       73       205CL       15       2110A-B       54         12VAD       91       152400-03       73       205CRCN       15       2111A       54         12VBPS       89       153AY       23       205CRPN       15       2111A-B       54         12VBPS.OEM       89       154800-01       73       205CRR       15       2112A-B       54         12VBPS.OEM       89       154800-03       73       205CRR       15       2112A-B       54         12VBPS2.OEM       88       154800-03       73       205FI       15       2112A-B       54         12VBPS2.OEM       88       157AY       23       205FO       15       21730400       82         12VBR       89       157200-01       73       205P       15       2300A-B       54         12VBRAD       89       157200-03       73       205PBL       15       2300A-B       54         12VBR,	106MR-H	37	150CCI	73	203242	27	2102	54
12BKT       90       1520BI.OEM       24       205CBL       15       2110A       54         12MP.OEM       90       152400-01       73       205CL       15       2110A-B       54         12VAD       91       152400-03       73       205CRCN       15       2111A       54         12VBPS       89       153AY       23       205CRPN       15       2111A-B       54         12VBPS.OEM       89       154800-01       73       205CRR       15       2112A       54         12VBPS2       88       154800-03       73       205FI       15       2112A-B       54         12VBPS2.OEM       88       157AY       23       205FO       15       21730400       82         12VBR       89       157200-01       73       205P       15       2300A       54         12VBRAD       89       157200-03       73       205PBL       15       2300A-B       54         12VBRAD.OEM       89       15CLF       33       205PL       15       2303A-B       54         12VBR.OEM       89       15CLM       33       205R       15       2303A-B       54         12VBR.OE <td>110R</td> <td>24, 25</td> <td>150CCTM.OEM</td> <td> 73</td> <td>203243</td> <td> 27</td> <td>2102-3-B</td> <td> 54</td>	110R	24, 25	150CCTM.OEM	73	203243	27	2102-3-B	54
12MP.OEM       90       152400-01       73       205CL       15       2110A-B       54         12VAD       91       152400-03       73       205CRCN       15       2111A       54         12VBPS       89       153AY       23       205CRPN       15       2111A-B       54         12VBPS.OEM       89       154800-01       73       205CRR       15       2112A       54         12VBPS2       88       154800-03       73       205FI       15       2112A-B       54         12VBPS2.OEM       88       157AY       23       205FO       15       21730400       82         12VBR       89       157200-01       73       205P       15       2300A       54         12VBRAD       89       157200-03       73       205PBL       15       2300A-B       54         12VBRAD OEM       89       15CLF       33       205PL       15       2303A-B       54         12VBR.OEM       89       15CLM       33       205R       15       2303A-B       54         12VBR.OE       89       15RA       9       205RIG       15       2304A-B       54         12VBRO	125W	23	152AY	23	205C	15	2102-B	54
12VAD       91       152400-03       73       205CRCN       15       2111A       54         12VBPS       89       153AY       23       205CRPN       15       2111A-B       54         12VBPS.OEM       89       154800-01       73       205CRR       15       2112A       54         12VBPS2       88       154800-03       73       205FI       15       2112A-B       54         12VBPS2.OEM       88       157AY       23       205FO       15       21730400       82         12VBR       89       157200-01       73       205P       15       2300A       54         12VBRAD       89       157200-03       73       205PBL       15       2300A-B       54         12VBRAD.OEM       89       15CLF       33       205PL       15       2303A-B       54         12VBR.OEM       89       15CLM       33       205R       15       2303A-B       54         12VBR.PG       89       15RA       9       205RIG       15       2304A-B       54         12VBRS2       88       16CLF       33       206C       15       2304A-B       54         12VBRS2.OEM	12BKT	90	1520BI.OEM	24	205CBL	15	2110A	54
12VBPS       89       153AY       23       205CRPN       15       2111A-B       54         12VBPS.OEM       89       154800-01       73       205CRR       15       2112A       54         12VBPS2       88       154800-03       73       205FI       15       2112A-B       54         12VBPS2.OEM       88       157AY       23       205FO       15       21730400       82         12VBR       89       157200-01       73       205P       15       2300A       54         12VBRAD       89       157200-03       73       205PBL       15       2300A-B       54         12VBRAD.OEM       89       15CLF       33       205PL       15       2303A-B       54         12VBR.OEM       89       15CLM       33       205PL       15       2303A-B       54         12VBR.PG       89       15RA       9       205RIG       15       2304A-B       54         12VBRS2       88       16CLF       33       206C       15       2304A-B       54         12VBRS2.OEM       88       19109PK       25       206FO       15       2501       58         12VCP       <	12MP.OEM	90	152400-01	73	205CL	15	2110A-B	54
12VBPS.OEM       89       154800-01       73       205CRR       15       2112A       54         12VBPS2       88       154800-03       73       205FI       15       2112A-B       54         12VBPS2.OEM       88       157AY       23       205FO       15       21730400       82         12VBR       89       157200-01       73       205P       15       2300A       54         12VBRAD       89       157200-03       73       205PBL       15       2300A-B       54         12VBRAD.OEM       89       15CLF       33       205PL       15       2303A       54         12VBR.OEM       89       15CLM       33       205R       15       2303A-B       54         12VBR.PG       89       15RA       9       205RIG       15       2304A-B       54         12VBRO       89       16CLF       33       206C       15       2304A-B       54         12VBRS2       88       16CLM       33       206CBL       15       2304A-B       54         12VBRS2.OEM       88       199109PK       25       206FI       15       2502       58         12VCP	12VAD	91	152400-03	73	205CRCN	15	2111A	54
12VBPS2       88       154800-03       73       205FI       15       2112A-B       54         12VBPS2.OEM       88       157AY       23       205FO       15       21730400       82         12VBR       89       157200-01       73       205P       15       2300A       54         12VBRAD       89       157200-03       73       205PBL       15       2300A-B       54         12VBRAD.OEM       89       15CLF       33       205PL       15       2303A       54         12VBR.OEM       89       15CLM       33       205R       15       2303A-B       54         12VBR.PG       89       15RA       9       205RIG       15       2304A       54         12VBRO       89       16CLF       33       206C       15       2304A-B       54         12VBRS2       88       16CLM       33       206CB       15       2304A-B       54         12VBRS2.OEM       88       199109PK       25       206FI       15       2502       58         12VCP       89       199110PK       25       206FO       15       2504       58         12VCP6       89	12VBPS	89	153AY	23	205CRPN	15	2111A-B	54
12VBPS2.OEM       88       157AY       23       205FO       15       21730400       82         12VBR       89       157200-01       73       205P       15       2300A       54         12VBRAD       89       157200-03       73       205PBL       15       2300A-B       54         12VBRAD.OEM       89       15CLF       33       205PL       15       2303A       54         12VBR.OEM       89       15CLM       33       205R       15       2303A-B       54         12VBR.PG       89       15RA       9       205RIG       15       2304A       54         12VBRO       89       16CLF       33       206C       15       2304A-B       54         12VBRS2       88       16CLM       33       206CBL       15       2304A-B       54         12VBRS2.OEM       88       199109PK       25       206FI       15       2502       58         12VCP       89       199110PK       25       206FO       15       2504       58         12VCP6       89       200BBIW       9, 73       206P       15       2532       58	12VBPS.OEM	89	154800-01	73	205CRR	15	2112A	54
12VBPS2.OEM       88       157AY       23       205FO       15       21730400       82         12VBR       89       157200-01       73       205P       15       2300A       54         12VBRAD       89       157200-03       73       205PBL       15       2300A-B       54         12VBRAD.OEM       89       15CLF       33       205PL       15       2303A       54         12VBR.OEM       89       15CLM       33       205R       15       2303A-B       54         12VBR.PG       89       15RA       9       205RIG       15       2304A       54         12VBRO       89       16CLF       33       206C       15       2304A-B       54         12VBRS2       88       16CLM       33       206CBL       15       2304A-B       54         12VBRS2.OEM       88       199109PK       25       206FI       15       2502       58         12VCP       89       199110PK       25       206FO       15       2504       58         12VCP6       89       200BBIW       9, 73       206P       15       2532       58	12VBPS2	88	154800-03	73	205FI	15	2112A-B	54
12VBRAD       89       157200-03       73       205PBL       15       2300A-B       54         12VBRAD.OEM       89       15CLF       33       205PL       15       2303A       54         12VBR.OEM       89       15CLM       33       205R       15       2303A-B       54         12VBR.PG       89       15RA       9       205RIG       15       2304A       54         12VBRO       89       16CLF       33       206C       15       2304A-B       54         12VBRS2       88       16CLM       33       206CBL       15       2501       58         12VBRS2.OEM       88       199109PK       25       206FI       15       2502       58         12VCP       89       199110PK       25       206FO       15       2504       58         12VCP6       89       200BBIW       9, 73       206P       15       2532       58			157AY	23	205FO	15	21730400	82
12VBRAD.OEM       89       15CLF       33       205PL       15       2303A       54         12VBR.OEM       89       15CLM       33       205R       15       2303A-B       54         12VBR.PG       89       15RA       9       205RIG       15       2304A       54         12VBRO       89       16CLF       33       206C       15       2304A-B       54         12VBRS2       88       16CLM       33       206CBL       15       2501       58         12VBRS2.OEM       88       199109PK       25       206FI       15       2502       58         12VCP       89       199110PK       25       206FO       15       2504       58         12VCP6       89       200BBIW       9, 73       206P       15       2532       58	12VBR	89	157200-01	73	205P	15	2300A	54
12VBR.OEM       89       15CLM       33       205R       15       2303A-B       54         12VBR.PG       89       15RA       9       205RIG       15       2304A       54         12VBRO       89       16CLF       33       206C       15       2304A-B       54         12VBRS2       88       16CLM       33       206CBL       15       2501       58         12VBRS2.OEM       88       199109PK       25       206FI       15       2502       58         12VCP       89       199110PK       25       206FO       15       2504       58         12VCP6       89       200BBIW       9, 73       206P       15       2532       58	12VBRAD	89	157200-03	73	205PBL	15	2300A-B	54
12VBR.PG       89       15RA       9       205RIG       15       2304A       54         12VBRO       89       16CLF       33       206C       15       2304A-B       54         12VBRS2       88       16CLM       33       206CBL       15       2501       58         12VBRS2.OEM       88       199109PK       25       206FI       15       2502       58         12VCP       89       199110PK       25       206FO       15       2504       58         12VCP6       89       200BBIW       9, 73       206P       15       2532       58	12VBRAD.OEM	89	15CLF	33	205PL	15	2303A	54
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