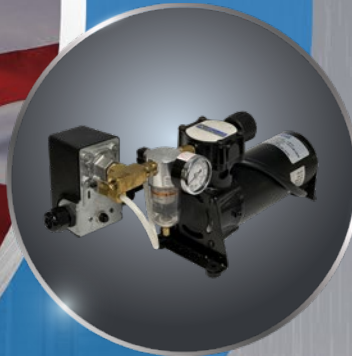




KUSSMAUL[™]
ELECTRONICS

A MISSION CRITICAL ELECTRONICS BRAND



2026 **ENERGIZED AND READY
WHEN SECONDS COUNT**



Learn about our cost-saving
energy solutions inside

COMPANY HISTORY & MILESTONES

1967

Ernest A. (Ernie) Kussmaul founded Kussmaul Electronics. A solution-oriented company that eventually became the standard for power products in the emergency vehicle market.

1975

The first Kussmaul Battery Charger was born.



1985

The first Auto and Air Eject was introduced.



1990's

The first Automatic Load Shedding System was designed.



2000's

The 30 Amp Auto Eject was introduced. The 2000 decade brought the Digital Status Center.



2015

The first battery chargers with patented parasitic load compensation (PLC) were developed.



2018

Dashboard accessories, Solar Panels expand the line Super Auto Eject Deluxe Covers were introduced.



2020

Advancements in PCL and smart charging technologies for a new generation of Low Profile Battery Chargers.



2022

Innovative technologies developed to reduce carbon emissions and vehicle overhead with new Green Power Systems for emergency vehicles.

FREEDOMeGEN
 BY MISSION CRITICAL ELECTRONICS

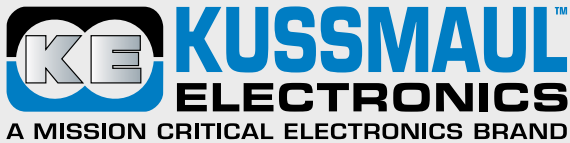
ZERO RPM
 A MISSION CRITICAL ELECTRONICS BRAND



00

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To all our valued customers,

Please contact us with any questions or clarifications regarding product selection, installation, function, warranty, et al. Our knowledgeable and experienced staff is well versed in emergency vehicle electrical systems, components, and product applications. If you experience issues with our products, below is a brief and simplified summary of how you can depend on us to support in-service products. Our complete warranty statement can be accessed via kussmaul.com/warranty-policy.

Call us at **800-346-0857** if you experience problems with any of our products. In many cases, we can troubleshoot and resolve the issue over the phone. If sending the unit in is required, please visit our **CUSTOMER SUPPORT** section on our website, kussmaul.com and click on the **RETURNS** link. Once the return part is received, our staff is committed to repairing and returning it within 3 business days. If you need it sooner, we can arrange same day turn around with expedited shipping.

Battery Chargers:

If your Charger has been in service for less than 3 years, we will perform the repairs with return shipping at no charge. If your charger is more than 3 years old, we have a flat rate repair cost and support our repair work with a 6-month warranty. We have been producing chargers for over 50 years and replacement parts are no longer available for some models. In which case we will offer you a trade-in allowance towards a new unit.

Auto Ejects:

If your Auto Eject is in service for less than 2 years, we will perform the repairs with return shipping at no charge. If your Auto Eject is more than 2 years old, we have a flat repair fee and we support our repair work with a 6-month warranty.

Air Compressor Pumps:

If your air compressor is in service for less than 2 years, we will perform the repairs with return shipping at no charge. If your compressor is more than 2 years old, we have a flat rate repair fee and we support our repair work with a 3-month warranty. These pumps can be rebuilt by either our technical support staff or we can supply you with a rebuild kit.

Electronic Displays and Accessories:

Displays and indicators use long life LED's and thus rarely need replacement. If a malfunction does occur, some units can be repaired while others need to be replaced. Contact us and we will advise the best course of action. If a malfunction occurs within 3 years of installation, we will replace or repair it free of charge. Other accessory products contain relays, which may wear overtime and can be repaired. These too will be repaired at no charge within 3 years.

We remain faithfully in your service,

Dale Tompkins

President, Vehicle Power

01

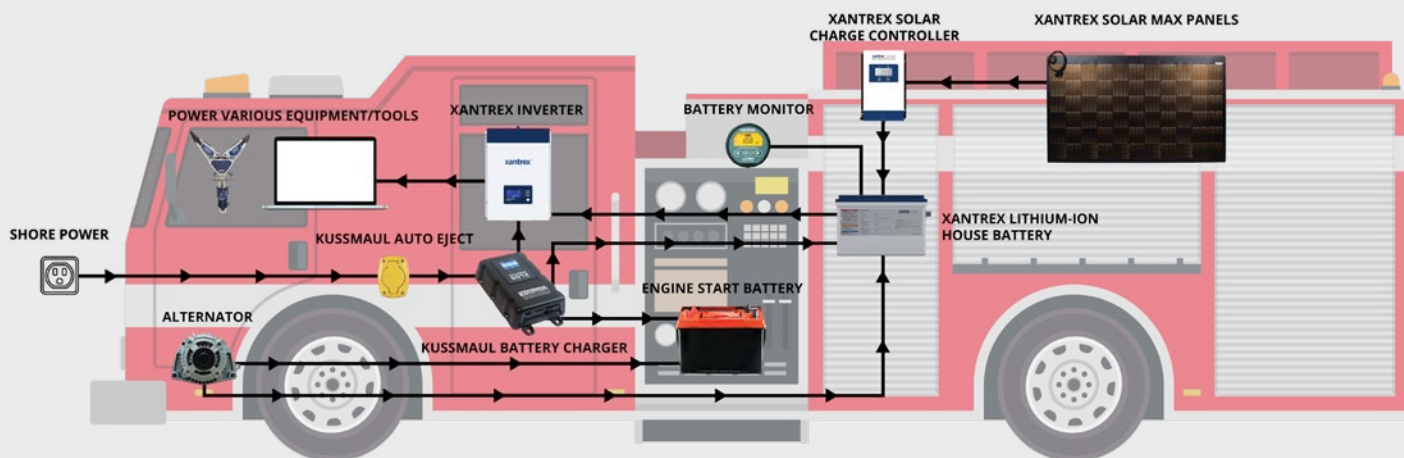
GREEN SOLUTIONS



FREEDOM eGEN

BY MISSION CRITICAL ELECTRONICS

PROTECT AND EXTEND THE SERVICE LIFE OF YOUR EMERGENCY VEHICLE



Clean, quiet, self-contained power system with multiple charging options.
Our lithium-ion technology is safe, powerful and efficient with ROI in less than 3 years.

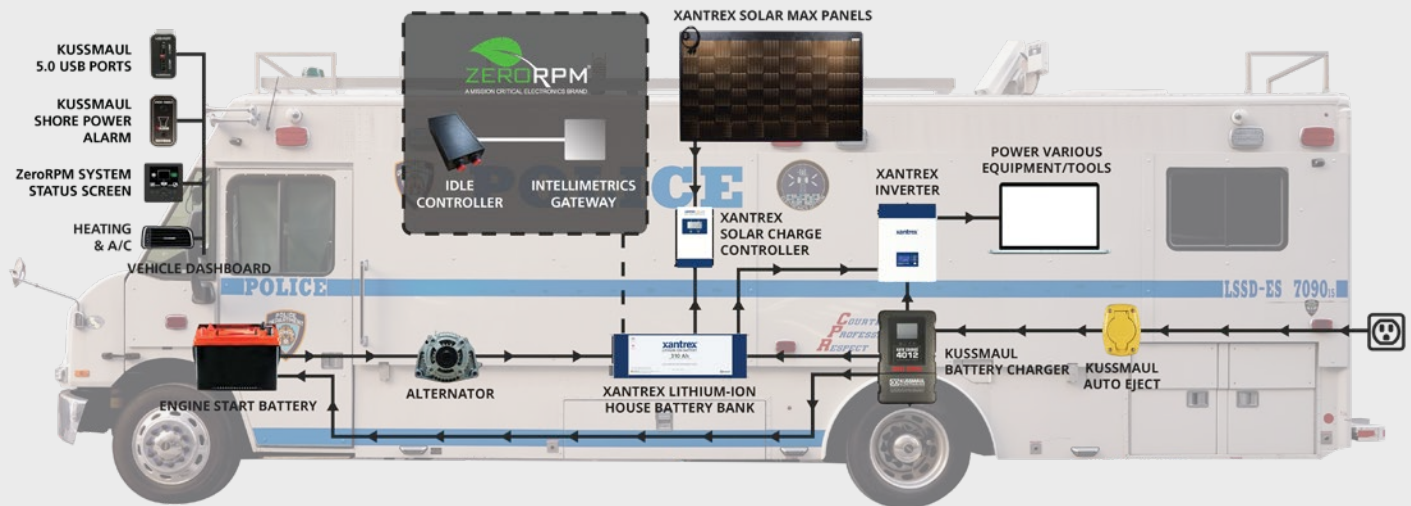
- The heart of the FREEDOM eGEN system is a dedicated high power density lithium-ion battery to run auxiliary tools and critical components.
- The lithium-ion battery pack delivers 6-8X life cycle of traditional batteries.
- The battery pack may be replenished via multiple sources including high output auxiliary alternator, solar, and shore power when plugged in.
- The system may be used in conjunction with a generator but it significantly reduces generator runtime or may eliminate its use altogether.
- System is customizable to the needs of your fleet.



**See how much you could save with
 FREEDOM eGEN and ZeroRPM!**



ACCESS FULL POWER REQUIREMENTS WHILE YOUR ENGINE IS OFF



Transform your vehicle into a hybrid unit and save thousands on fuel and operating costs.

- Lithium-ion battery powered solution delivers power for climate control, onboard electronics and tools.
- The system integrates with a vehicle's electrical and engine system to provide engine off A/C and heating plus power for all onboard electronics.
- Once the vehicle is in park mode, the system shuts down the engine and provides all required power from lithium-ion battery source.
- For extended stationary use of vehicle, the system manages engine start/stop to recharge batteries as needed.
- System is customizable to the needs of your fleet.

How Does ZeroRPM® Work?

The ZeroRPM® system integrates seamlessly with a vehicle's engine and existing electrical system. Place your vehicle in park and ZeroRPM® turns off the engine, switching to a lithium-ion power system to power all vehicle electronics, including HVAC. Tap the brake and ZeroRPM® starts the engine and switches back to engine power.

The system captures all data utilizing Intellimetrix® software to give users detailed insight into how the system performs. A secure portal provides customized reports and graphs of fuel savings, emissions reduction, and vehicle usage.

Start recouping your investment on day 1.



CHIEF SERIES CHARGER | 40 & 60 AMPS

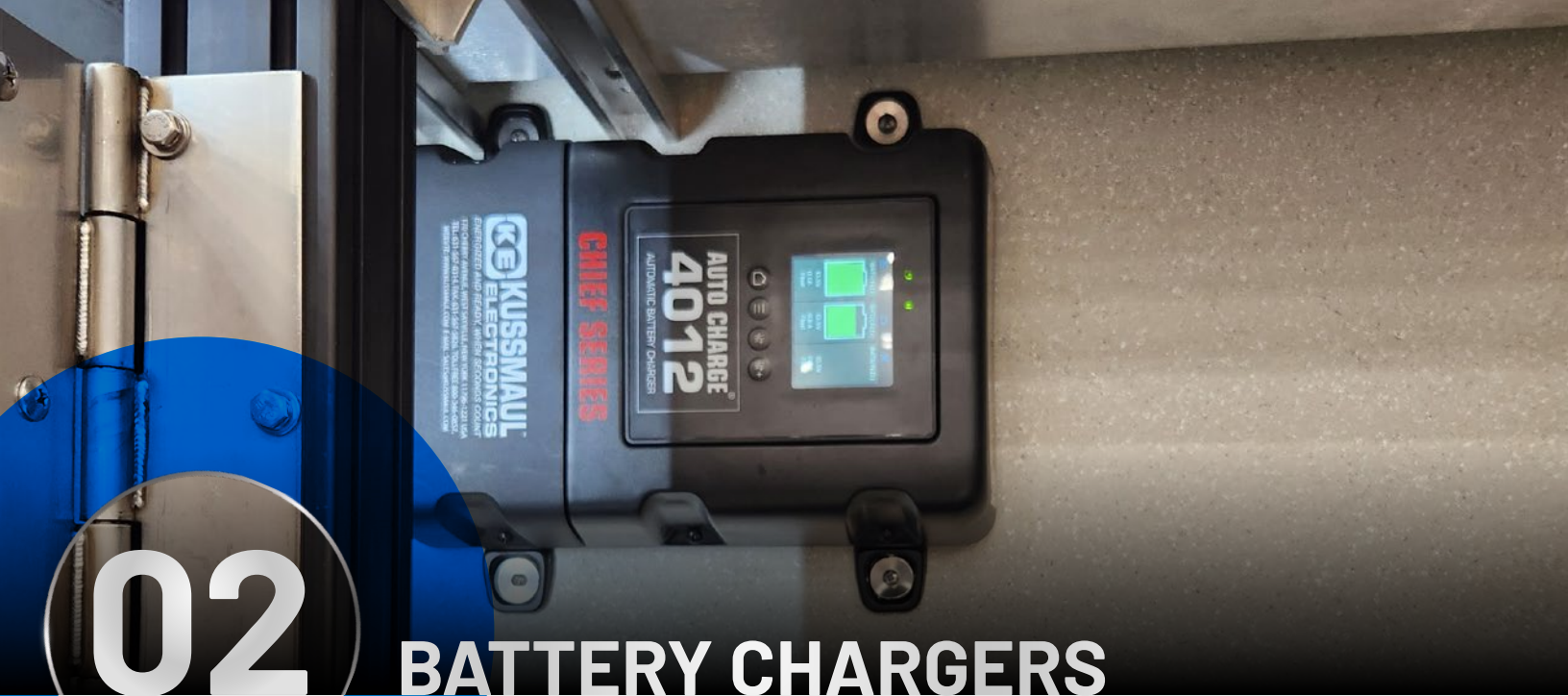
Multi-bank, Dual Chemistry Battery Charger

SEE PAGE 12 FOR MORE DETAILS

















- Single, dual, or triple bank charger
- IP32 rated for greater ingress protection
- Configurable for 3 step or float charging
- Built-in touch screen display
- Parasitic Load Compensation (PLC)
- Optional remote Touch display available
- Dual chemistry battery technology
- CAN Bus enabled connectivity
- Pump Plus feature included



Scan QR Code to learn more



BATTERY CHARGERS

	Battery Charger Selection Guides	8-9		EV Charger Series	18
	Low Profile Charger Series	10-11		Auto Charge 11 Series	19
	Chief Series	12		Auto Charge 2000 PLC	20
	Auto Charge 12 Series	13		Auto Charge 20	21
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	Auto Charge 20/20	15		Euro Charger I & II	23
	Auto Charge 35/10	16		Euro Charger III	24
	Auto Charge 40/20	17		Battery Saver Low Ripple Series	25

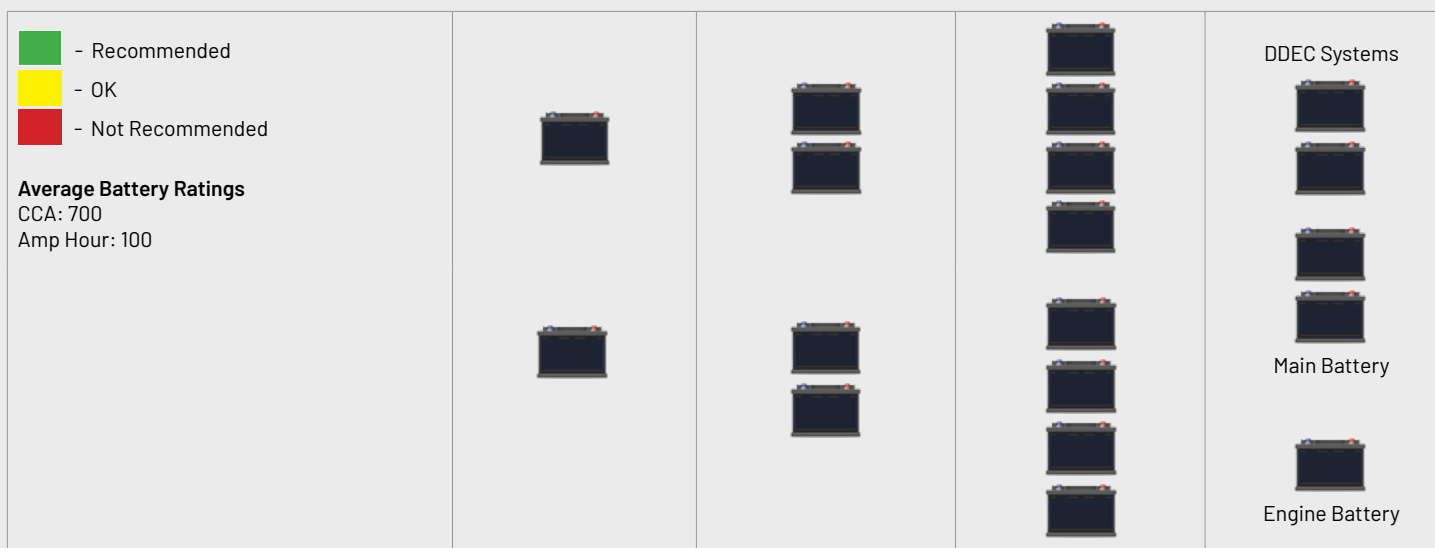
Single Battery Bank Systems Selection Chart

	DDEC Systems	Main Battery	Engine Battery
- Recommended			
- OK			
- Not Recommended			
Average Battery Ratings CCA: 700 Amp Hour: 100			

[illegible]

These chargers are for average recharge rates and average sized batteries. For specific applications, please contact our sales or engineering department with battery size, parasitic loads and required recharge time.

Dual Battery Bank Systems Selection Chart



			PARASITIC LOADS IN AMPS											
Charger Series	Amps	Page	0	5	10	0	5	10	0	5	10	0	5	10
AUTO CHARGE CHIEF SERIES														
Chief Series 4012	40	12												
Chief Series 6012	60	12												
AUTO CHARGE														
Auto Charge 11	10	19												
Auto Charge 11H0	10	19												
AUTO CHARGE - BATTERY SAVER														
Auto Charge 2000 PLC	18	20												
EURO														
Euro II	12	23												
Euro II VH0	40	23												
Euro III	9 & 18	24												
PUMP PLUS														
Pump Plus H0	11	52												
Pump Plus 2000 PLC	18	51												

These chargers are for average recharge rates and average sized batteries. For specific applications, please contact our sales or engineering department with battery size, parasitic loads and required recharge time.

LOW PROFILE CHARGER 7

Single Battery Bank

For Power Sensitive Electronics.
Low Profile Case Fits in Tight Locations.

- 7A for charging a single battery bank
- Three step charging: bulk, absorption, and float
- Lightweight, small low profile size
- Clean output poses no interference with radios and other mobile devices
- Gel Cell/Lead-Acid switch selects the optimum charge/float voltages based on the battery type
- Included Charger Status indicator light changes color according to the output
- Current limiting prevents damage from an overload
- Load activated cooling fan allows for continuous operation at full-rated output
- A Float/3 Step selector switch protects the batteries when charging under a continuous load
- Meets CE requirements
- Includes a heavy duty stainless steel case designed for emergency vehicle use



Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	L	W	H	Weight
445-4290-5	LPC 7	12	7	120 / 240	2.0 / 1.0	8.62"	4.93"	2.47"	3

LOW PROFILE CHARGER 20 & 80

Single Battery Bank

**For Power Sensitive Electronics.
The Low Profile Case Fits in Tight Locations.**

- 20A and 80A for charging a single battery bank
- Clean output poses no interference with radios and other mobile electronics
- Includes a 15A auxiliary output circuit with power source selector switch for operating accessory loads (i.e., air compressor pumps, hand lights or handheld radios)
- Front panel connections for remote display and auxiliary loads
- Includes a heavy duty aluminum case designed for emergency vehicle use



Remote Display Options

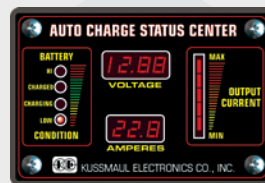


Bar Graph Display
091-200-IND



**Super Auto Eject
Deluxe Covers Available**

See page 30



Status Center Display

LPC 20: 091-194B-IND
LPC 80: 091-194C-IND



**Status Center Display
in Watertight Case**

LPC 20: 091-194B-IND
LPC 80: 091-194C-IND-WT-XX

See page 28 for color options

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	L	W	H	Weight
091-206-12	LPC 80, w/ Bar Graph Display	12	80	120	13	13.75"	7.00"	4.09"	10
091-206-12-194C	LPC 80, w/ Status Center	12	80	120	13	13.75"	7.00"	4.09"	10
091-206-12-194C-WT-XX	LPC 80, w/ Watertight Display	12	80	120	13	13.75"	7.00"	4.09"	10
091-207-12	LPC 20, w/ Bar Graph Display	12	20	120	7.0	13.25"	6.80"	3.30"	7
091-207-12-194B	LPC 20 w/ Status Center	12	20	120	7.0	13.25"	6.80"	3.30"	7
091-207-12-194B-WT-XX	LPC 20 w/ Watertight Display	12	20	120	7.0	13.25"	6.80"	3.30"	7
091-200-EZM	EZ Slide Mount Plate for LPC 20 (see page 80)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

All units also available in 240 VAC Input, contact the sales department for part number

24 VDC version available, see Page 22 for details



CHIEF SERIES™ SMART CHARGER

High Power Single, Double, or Triple Bank Charger

With Built-In Touch Display and Communications.

- Dual Battery Type Technology – allows for two dissimilar battery chemistry charging at the same time
- IP32 rated for greater ingress protection
- CAN Bus enabled connectivity
- Parasitic Load Compensation (PLC) – allows for user input of total accessory load amps on the vehicle enabling the charger to shift the absorption stage set point so the battery voltage drops to the float voltage when desired current is reached
- Configurable for 3 step or float charging
- Accommodates Flooded, Gelled Electrolyte, AGM, Odyssey®, Lithium Iron Phosphate (LFP), and customized
- Pump Plus feature included
- Optional remote touch display available
- Built with rotating mounting feet

Information Screens



Remote Display Options



Remote Control Panel
091-266-RCP-BLK



**Super Auto Eject
OLED Cover**
091-55-266-XXX



1236/1564

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	L	W	H	Weight
091-266-12-40	Charger with Integrated Display	12	40	120-240	6-3	16.5"	9.0"	3.7"	8.4
091-266-12-40-RCP	Charger with Integrated Display + Remote Control Panel	12	40	120-240	6-3	16.5"	9.0"	3.7"	8.4
091-266-12-60	Charger with Integrated Display	12	60	120-240	9-5	16.5"	9.0"	3.7"	8.4
091-266-12-60-RCP	Charger with Integrated Display + Remote Control Panel	12	60	120-240	9-5	16.5"	9.0"	3.7"	8.4
091-266-RCP-BLK	Remote Control Panel	-	-	-	-	5.0"	4.2"	0.75"	1.3

AUTO CHARGE® 12 SERIES

Single Battery Bank

**Provides Power for Onboard Electronics.
With Front Panel Amp Meter.**

- 12 and 20A models available for charging a single battery bank
- Automatic operation regulates the output to a single battery bank
- Front panel amp meter indicates the output current (Optional vehicle side mount indicator available)
- Includes a heavy duty aluminum case with a protective front panel and wire strain relief designed for emergency vehicle use
- Auto Charge 12 is UL recognized



Model Shown is UL Recognized

Optional Configurations



Dual Voltage Input

Selector switch on front panel for 120 or 240V, 50-60 hz input (DV)

Remote Display Options



**Bar Graph
Display**
091-200-IND



**LED Display
Model 12**
091-11-102-12

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	L	W	H	Weight
091-165-12	Auto Charge 12	12	12	120	2.5	11.00"	5.50"	4.50"	12
091-165-12-DV	Auto Charge 12 DV	12	12	120/240	2.5/1.3	11.00"	5.50"	4.50"	12
091-170-12	Auto Charge 12 H0	12	20	120	4.7	12.75"	6.75"	4.25"	16
091-170-DV-12	Auto Charge 12 H0-DV	12	20	120/240	4.7/2.3	12.75"	6.75"	4.25"	16

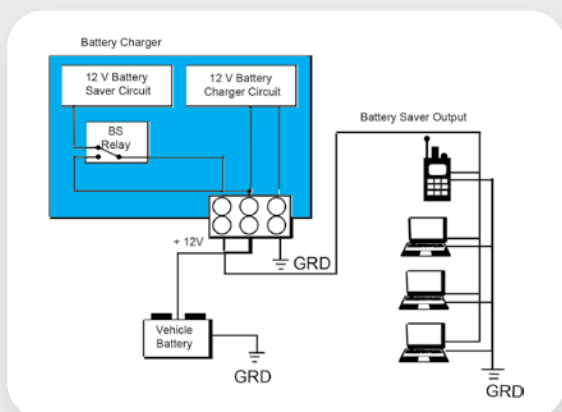


AUTO CHARGE® 1000 PLC

Single Battery Bank At 15 Amps

**Power Auxiliary Loads with 3 Amp Battery Saver.
Remote Display Included.**

- Microprocessor controlled, completely automatic operation regulates the output to a single battery bank
- Precision voltage controller senses the battery voltage, eliminating the need for sense wires
- Parasitic Load Compensation (PLC) – allows for user input of total accessory load amps on the vehicle enabling the charger to shift the absorption stage set point so the battery voltage drops to the float voltage when desired current is reached
- Battery selection switch to select Gel Cell, Lead-Acid, AGM or Odyssey
- Float/3-Step Charge Mode Selection Switches
- Automatic current limit
- Battery Saver On/Off switch is used to bypass the Battery Saver and apply all 18A to charge the battery
- Patented



Battery Saver Operation: When the battery charger is operating, the vehicle's accessories are powered by the 12V battery saver circuit, internal to the charger. When the charger is powered off, a relay inside the charger switches the vehicle accessories directly to the battery.

Remote Display Options

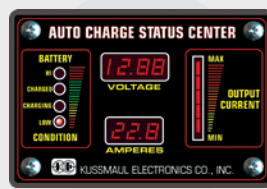


Bar Graph Display
091-199-001



**Super Auto Eject
Deluxe Covers Available**

See page 30



Status Center Display
LPC 20: 091-194B-IND



**Status Center Display
in Watertight Case**

LPC 20:091-194B-IND
LPC-80:091-194C-IND-WT-XX
See page 28 for color options

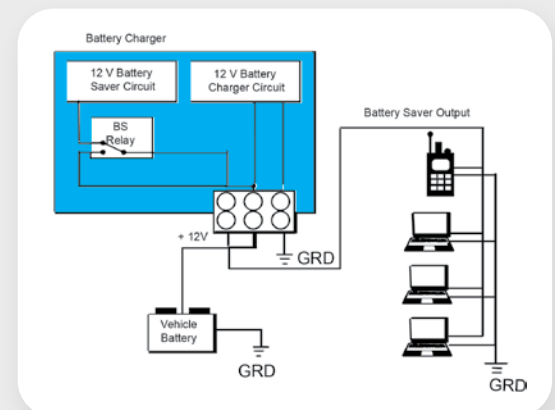
Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	H	W	L	Weight
091-215-12	Auto Charge 1000 PLC, w/ Bar Graph Display	12	15 / 3	120	3.5	4.725"	5.90"	9.35"	11
51-01-3100	Auto Charge 1000 PLC, w/ Status Center	12	15 / 3	120	3.5	4.725"	5.90"	9.35"	11
51-01-410X	Auto Charge 1000 PLC, w/ Watertight Display	12	15 / 3	120	3.5	4.725"	5.90"	9.35"	11

AUTO CHARGE® 20/20

Single Battery Bank At 20 Amps

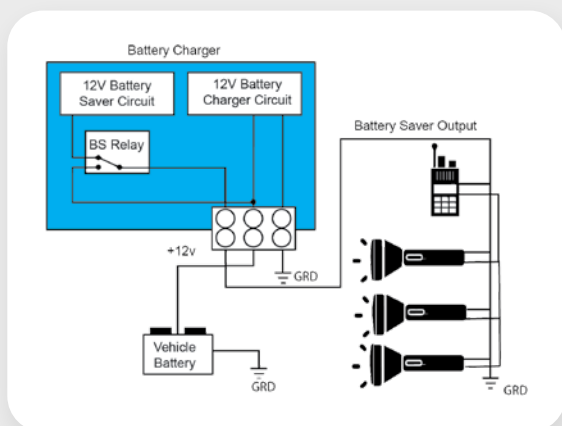
Power Auxiliary Loads with 20 Amp Battery Saver.
Front Panel Amp Meters.

- Automatic operation regulates output to a single battery bank
- Separate 20A ATC fuse protected Battery Saver output eliminates any drain on the vehicle battery when in the station
- Automatically disconnects auxiliary vehicle loads from battery when the charger is energized and powers them from the internal power supply
- Clean output poses no interference with radios and other mobile devices
- 20A output with automatic overload current limit
- Dual cooling fans
- Reverse polarity protected
- AC input circuit breaker protection
- Includes a heavy duty aluminum case designed for emergency vehicle use



Battery Saver Operation: When the battery charger is operating, the vehicle's accessories are powered by the 12V battery saver circuit, internal to the charger. When the charger is powered off, a relay inside the charger switches the vehicle accessories directly to the battery.

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	H	W	L	Weight
091-216-20/20	Auto Charge 20/20	12	20 / 20	120	8.5	5.233"	8.250"	13.125"	13



Battery Saver Operation: When the battery charger is operating, the vehicle's accessories are powered by the 12V battery saver circuit, internal to the charger. When the charger is powered off, a relay inside the charger switches the vehicle accessories directly to the battery.

AUTO CHARGE® 35/10

Single Battery Bank at 35 Amps

Power Auxiliary Loads with 10 Amp Battery Saver. Remote Display Included.

- Automatic operation regulates the output to a single battery bank
- A patented built-in sense circuit checks the battery voltage 120 times per second to compensate for a voltage drop in the charging wires providing a quick re-charge and avoiding overcharging
- A separate 10A Battery Saver output eliminates any drain on the vehicle battery when in the station
- Automatically disconnects any auxiliary vehicle loads from the battery when the charger is energized
- Ideal for charging handheld lights and portable radios
- 10A output with automatic overload current limit
- Not recommended for powering highly sensitive electronic loads
- Front panel LED displays AC power applied and Battery Saver circuit overload
- Includes a heavy duty aluminum case with a protective front panel plate and wire strain relief designed for emergency vehicle use

Remote Display Options



Bar Graph Display
091-199-001



Super Auto Eject
Deluxe Covers Available

See page 30

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	H	W	L	Weight
091-35/10	AC 35/10 w/ Bar Graph Display	12	35	120	10	14.00"	5.50"	5.25"	26

AUTO CHARGE® 40/20

Single Battery Bank At 40 Amps

Power Auxiliary Loads with 20 Amp Battery Saver.
Front Panel Amp Meters.

- Automatic operation regulates the output to a single battery bank
- Separate 20A ATC fuse protected battery saver output, eliminating any drain on the vehicles battery when in the station
 - Clean output poses no interference with radios and other mobile devices
- Gel Cell, Lead-Acid, and AMG switch selects the optimum charge/float voltages based on the battery type
- 1-hour "boost" voltage for rapid battery recovery
- Automatic current limit
- Reverse polarity protected
- AC input circuit breaker protection



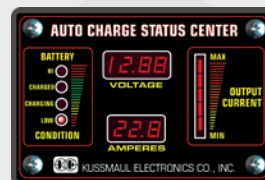
Remote Display Options



Bar Graph Display
091-199-001



Super Auto Eject
Deluxe Covers Available
See page 30



Status Center Display
0091-194B-IND



Status Center Display
in Watertight Case
091-194C-IND-WT-XX
See page 28 for color options

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	H	W	L	Weight
091-216-40/20	Auto Charge 40/20 w/ Bar Graph Display	12	40 / 20	120	8.5	5.25"	7.13"	13.25"	13
091-216-40/20-194	Auto Charge 40/20 w/ Status Center	12	40 / 20	120	8.5	5.25"	7.13"	13.25"	13
091-216-40/20-194-WT-XX	Auto Charge 40/20 w/ Watertight Display	12	40 / 20	120	8.5	5.25"	7.13"	13.25"	13



EV CHARGER SERIES

Single Battery Bank

Auxiliary Output for Electronics with Low Profile Design.

- 40 A model available for charging a single battery bank
- Low profile design saves valuable space in compartments and/or under the seat
- Clean output poses no interference with radios and other mobile electronics
- A 15A auxiliary output circuit with a power source selector switch for operating accessory loads
- Durable powder coat finish
- Available as a kit with a remote battery meter
- Includes a heavy duty aluminum case designed for emergency vehicle use
- An optional mounting plate features slide-in and lock design for easy installation/removal under seats and other hard to access locations

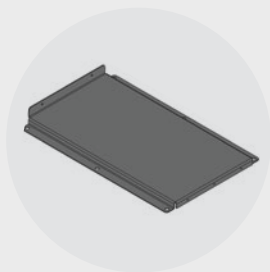
Optional Accessories



Bar Graph Display

023-5353-1

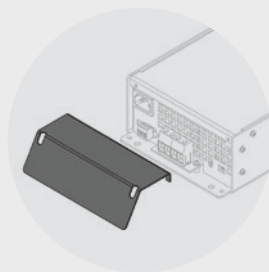
- Charger "On" LED
- Bar graph battery condition
- Operates when charger is not powered



Slide-in Mounting Plate Assembly

444-5279-0

Easy installation under seats and hard to access locations



Kick Plate

444-5280-0

Protects front panel connections

EV-40 Features

- Fast 3 step charging: Produces up to 40A output to quickly replenish batteries, then switches to lower float voltage maintenance mode to avoid overcharging
- Includes a battery type selector switch to program use with Gel Cell, Flooded Lead Acid, and AGM batteries
- Operates on 90-250V input, auto range

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	H	W	L	Weight
445-5262-0	EV-40, Charger	12	40	120/240	6.2	3.13"	6.80"	13.12"	7
445-5265-0	EV-40, Charger & Single Display	12	40	120/240	6.2	3.13"	6.80"	13.12"	8
444-5279-0	Mounting Plate – EV40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
444-5280-0	Kick Plate Guard – EV40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

AUTO CHARGE® 11 SERIES

Dual Battery Banks

Power for Onboard Electronics. Front Panel Amp Meter.

- 10 and 20A models are available
- Automatically charges dual battery banks utilizing independent sense circuits that control voltage and current to each battery. Parasitic loads on one battery do not affect the second
- Full amperage output is available to either battery if the adjacent bank does not require charging, optimizing the use of available power when charging banks with differing parasitic load rates
- Front panel amp meter indicates the total output current
- Optional Remote Bar Graph display or LED indicator
- Includes a heavy duty aluminum case with a protective front panel plate and wire strain relief designed for emergency vehicle use
- Model 11, UL recognized



Remote Display Options



Dual Bar Graph Display
091-11-127



LED Display
091-11-102-12

Optional Configurations



Dual Voltage Input

Selector switch on front panel for 120 or 240V, 50-60 hz input (DV)



Super Auto Eject Deluxe Covers Available

See page 30

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	H	W	L	Weight
091-11-12	Auto Charge 11	12	10	120	2.5	11.375"	5.50"	4.375"	12
091-11DV-12	Auto Charge 11 DV	12	10	120/240	2.5/1.3	11.375"	5.50"	4.375"	12
091-11HO-12	Auto Charge 11 HO	12	20	120	4.7	12.75"	6.75"	4.25"	19
091-11HO-DV-12	Auto Charge 11 HO-DV	12	20	120/240	4.7/2.4	12.75"	6.75"	4.25"	19

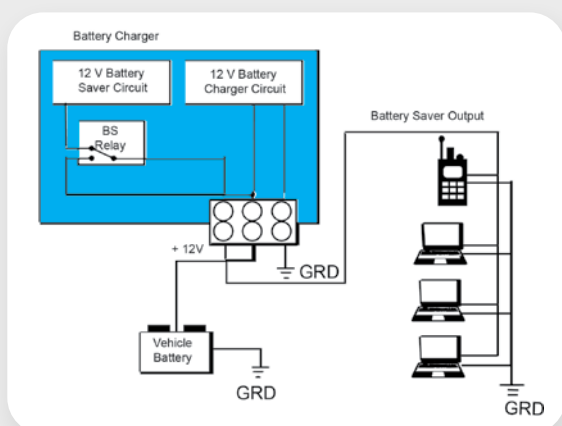


AUTO CHARGE® 2000 PLC

Dual Battery Banks at 15 Amps

Power Auxiliary Loads with 3 Amp Battery Saver.
Remote Display Included.

- Automatically charges dual battery banks utilizing independent sense circuits that control the voltage and current to each battery. Parasitic loads on one battery do not affect the second
- Precision voltage controller senses the battery voltage which eliminates the need for sense wires
- Full amperage output is available to either battery bank if the adjacent bank does not require charging, optimizing the use of available power when charging banks with differing parasitic load rates
- Parasitic Load Compensation (PLC) – allows for user input of total accessory load amps on the vehicle enabling the charger to shift the absorption stage set point so the battery voltage drops to the float voltage when desired current is reached
- Separate 3A Battery Saver output eliminates any drain from auxiliary loads on the vehicle battery when in the station
 - Automatically disconnects auxiliary vehicle loads from the battery when the charger is energized and powers them from the internal power supply
- Includes a heavy duty aluminum case designed for emergency vehicle use



Battery Saver Operation: When the battery charger is operating, the vehicle's accessories are powered by the 12V battery saver circuit, internal to the charger. When the charger is powered off, a relay inside the charger switches the vehicle accessories directly to the battery.

Optional Accessory



Super Auto Eject Deluxe Cover

091-55-239-XXX

Includes a bar graph display and dual LED indicator

See page 30

Included Accessory



Remote Bar Graph Display

091-39-IND

- Provides state of charge status when in the station
- Indicates charger "On" and operating

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	H	W	L	Weight
091-237-12	AC 2000 PLC, w/ Dual Bar Graph	12	15 / 3	120	3.5	4.725"	5.90"	9.35"	17

AUTO CHARGE® 20

Triple Battery Banks at 20 Amps

Power Onboard Electronics. Front Panel Amp Meter.

- Automatically charges three battery banks utilizing independent sense circuits that control the voltage and current to each battery. Parasitic loads on one battery do not affect the others
- Full amperage output is available to any battery if the adjacent banks do not require charging, optimizing the use of available power in charging banks with differing parasitic load rates
- Front panel amp meter indicates total output current
- Optional remote display
- Includes a heavy duty aluminum case with a protective front panel plate and wire strain relief designed for emergency vehicle use



Remote Display Options



Dual Bar Graph Display
091-11-127



LED Display
091-11-102-12



Dual Voltage Input

Selector switch on front panel for 120 or 240V, 50-60 hz input (DV)



Super Auto Eject Deluxe Covers Available

See page 30

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	H	W	L	Weight
091-10-12	Auto Charge 20	12	20	120	4.7	12.75"	6.75"	4.25"	22
091-10-24	Auto Charge 20, 24 Volt	24	10	120	4.7	12.75"	6.75"	4.25"	22
091-10-DV-12	Auto Charge 20 DV	12	20	120/240	4.7/2.3	12.75"	6.75"	4.25"	22



Colour options available:



LOW PROFILE CHARGER LPC 45

Single Battery Bank at 24 Volts

**Power Sensitive Electronics.
Low Profile Case Fits in Tight Locations.**

- 45A charger for 24VDC vehicle configurations
- Light weight, small low profile size
- Clean output poses no interference with radios and other mobile devices
- 15A, 24VDC auxiliary output circuit with a power source selector switch for operating accessory loads i.e., air compressor pumps, handheld lights or handheld radios
- Front panel connections for a remote display and auxiliary loads
- Includes a heavy duty aluminum case designed for emergency vehicle use
- Remote battery sensing output to compensate for longer charging cables

Remote Display Options

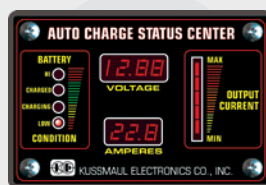


Bar Graph Display
091-200-IND



**Super Auto Eject
Deluxe Covers Available**

See page 30



Status Center Display
091-194C-24-IND



**Status Center Display
in Watertight Case**

091-194C-24-IND-WT-XXX

See page 28 for color options

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	H	W	L	Weight
091-206-24	LPC 45, w/ Bar Graph Display	24	45	120	13	4.09"	7.00"	13.75"	10
091-206-24-194C	LPC 45, w/ Status Center	24	45	120	13	4.09"	7.00"	13.75"	10
091-206-24-194C-WT-XX	LPC 45, w/ Watertight Display	24	45	120	13	4.09"	7.00"	13.75"	10

12 VDC version available, see page 10 for details

EURO CHARGER I & II

Multiple Battery Banks

Charge Single or Dual Battery Banks.
120/240V Source Front Panel Amp Meter.

- 12 and 40A models available
- Wide variety of input/output options to meet various international applications
- Automatically charges battery banks utilizing independent sense circuits that control the voltage and current to each battery. Parasitic loads on one battery do not affect the others
- Automatically charges and supports parasitic DC loads
- Full amperage output is available to any battery if the adjacent banks do not require charging
- Front panel amp meter indicates the total output
- Meets CE requirements
- Includes a heavy duty aluminum case with a protective front panel plate and wire strain relief designed for emergency vehicle use



Remote Display Options



LED Display

091-90-012-12

For all models



Single Bar Graph Display

091-94-12E

For Euro Charger I & I VHO



Dual Bar Graph Display

091-11-127-12

For Euro Charger II & II VHO

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	H	W	L	Weight
091-90-12	Euro Charger I	12	12	120/240	2.6/1.3	4.375"	5.50"	11.375"	12
091-90-24	Euro Charger I, 24 Volt	24	6	120/240	2.6/1.3	4.375"	5.50"	11.375"	12
091-162-12	Euro Charger I VHO	12	40	120/240	10/5	9.25"	9.375"	14.00"	33
091-162-24	Euro Charger I VHO, 24 Volt	24	20	120/240	10/5	9.25"	9.375"	14.00"	33
091-117-12	Euro Charger II	12	12	120/240	2.6/1.3	4.375"	5.50"	11.375"	17
091-117-24	Euro Charger II, 24 Volt	24	6	120/240	2.6/1.3	4.375"	5.50"	11.375"	17
091-143-12	Euro Charger II VHO	12	40	120/240	10/5	9.25"	9.375"	14.00"	39
091-143-24	Euro Charger II VHO, 24 Volt	24	20	120/240	10/5	9.25"	9.375"	14.00"	39



EURO CHARGER III

Triple Battery Banks

Euro Charger Powers Triple Battery Banks.

- 9 and 18A models available
- Wide variety of input/output options to meet various international applications
- Automatically charges battery banks utilizing independent sense circuits that control the voltage and current to each battery. Parasitic loads on one battery do not affect the others
- Automatically charges and supports parasitic DC loads
- Full amperage output is available to any battery if the adjacent banks do not require charging
- Front panel amp meter indicates the total output
- 120/240V operation
- Meets CE requirements
- Includes a heavy duty aluminum case with a protective front panel plate and wire strain relief designed for emergency vehicle use

Remote Display Options



LED Display

091-90-012-12

For All Models



Bar Graph Display

091-118-022-12

For Euro Charger III

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	H	W	L	Weight
091-118-12	Euro Charger III	12	18	120/240	4.7/2.4	4.25"	6.75"	12.75"	19
091-118-24	Euro Charger III, 24 Volt	24	9	120/240	4.7/2.4	4.25"	6.75"	12.75"	19

BATTERY SAVER®

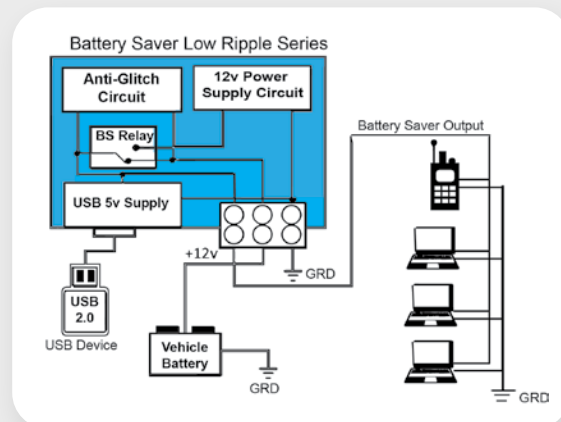
Low Ripple Series

**Automatically Power Onboard Computers and MDT's.
When AC Line is Applied it Preserves Vehicle Battery.**

- 20A 12V battery saver
- Relay removes auxiliary loads from the vehicle battery and connects to the battery saver preventing the battery from discharging when it's in the station
- Clean, low ripple output causes no interference with sensitive electronics
- Fast acting relay ensures "glitch" free power transfer
- Current limiting prevents an overload
- Factory set to 13.2V
- Front panel "Power On" indicator
- Designed for rigors of emergency vehicle use; heavy duty case and components



Battery Saver Low Ripple, H0



Battery Saver Operation: When the battery charger is operating, the vehicle's accessories are powered by the 12V battery saver circuit, internal to the charger. When the charger is powered off, a relay inside the charger switches the vehicle accessories directly to the battery.

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	H	W	L	Weight
091-295-12	Battery Saver Low Ripple, H0	12	20	120	4.5	2.50"	5.50"	13.625"	5

03

INDICATORS / METERS



Engine Monitor (VOTT)

27



Generator Monitors (VAAFH)

27



Status Center Digital Display with Bar Graph, Watertight

28



Status Center Digital Display with Bar Graph, Standard

28



Status Center Digital Display, Single Battery

28



Status Center Digital Display, Dual Battery

28



Auto Pump Status Center Digital Display, PSI Only

28



Auto Pump Status Center Digital Display, Voltage & PSI

28



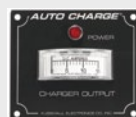
Remote Bar Graph Displays: Single, Dual & Triple

29



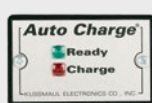
Super Auto Eject Deluxe Covers with Battery Charger Indicators

30



DC Ammeter (IN-3-XX)

30



LED Display (IN-4)

30



LED Display

30



Vertical Display Mount

30



Display Panel Rear Seal

30



TG-3: Temperature Display

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DCE: DC Energy Display

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DCV: Voltmeter Display

31

DIGITAL DISPLAYS

Engine Monitor

Digital read out of vital engine data: DC Voltage, Oil Pressure, Temperature, and Tachometer. Audio and visual alarm for out of limit conditions operates from the J1939 can bus input.

- Programmable alarm set points for Oil, Temp, Voltage, and RPM
- Internal audio alarm with a remote alarm output signal
- Input signal wire assembly with a waterproof Deutsch connector
- 4"x4" low profile display
- Waterproof meter face
- User Selectable Baud Rate (50, 125, 250, 500 or 1000k bits)



Generator/AC System Monitor

Digital read out of vital generator data: AC Voltage, Frequency, Amperage of two 120V legs of 240V circuit, Engine hours. Audio and visual alarm for out of limit conditions.

- 4 functions, all display simultaneously on one screen: Volts, (2) Amps, and Frequency
- Hour meter displays when the generator is off
- Programmable alarms: HIGH/LOW for Volts/Frequency and HIGH alarm for Amps (2 lines)
- Alarm modes: Red warning color with a built in 85db audible alarm, with an output signal for an external alarm relay
- User programmable service hour interval settings and notification
- Waterproof meter face



Generator AC/DC System Monitor

6 functions, all display simultaneously on one screen: Volts, Amps, Frequency, DC Volts, and DC Amps. Audio and visual alarm for out of limit conditions.

- Programmable alarms: HIGH/LOW for AC Volts and Frequency and HIGH alarm for Amps (2 lines). HIGH/LOW for DC Volts and HIGH alarm for DC Amps
- Alarm Modes: Red warning color visual indication, plus built in 85db audible, with output signal for external alarm relay.
- User programmable service hour interval settings and notification
- Waterproof meter face



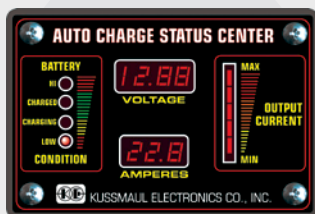
Part Number	Description	Input Volts	Input Signal	Operating Voltage	Sense Voltage	Max. Power	L	W	H	Weight
023-4400-0	VOTT, Engine Monitor	9-33VDC	J 1939	N/A	N/A	N/A	4.3"	4.3"	3.5"	2
023-4500-0	VAAFH, Generator/AC System Monitor	N/A	N/A	9-33VDC	120/240VAC	36kW	4.3"	4.3"	3.5"	2
091-247	VAAFH AC/DC, Generator AC/DC System Monitor	9-33VDC	0.100A	N/A	N/A	N/A	4.3"	4.3"	3.5"	2

DIGITAL DISPLAYS

Status Center Digital Displays With Bar Graph



091-194X-IND-WT-XX
Watertight Heavy Duty Housing
Size: 5.45" x 3.95"



091-194X-IND
Standard Housing
Size: 3.2" x 4.7"

- Digital Voltage and Ampere readouts
- 5-segment bar graph for output current
- 4 LEDs indicate battery condition
- Two housing types: standard and watertight
- Watertight housing available in multiple colors
- Compatible with the following battery chargers: Auto Charge 1000, Auto Charge 1200, Auto Charge 1200 Remote, LPC 20, LPC 40, LPC 80, Pump Plus 1000 and Pump Plus 1200

Colour options available:



Status Center Digital Displays



091-189-12
(1 decimal place accuracy)

091-189-12-3.5D
(2 decimal place accuracy)

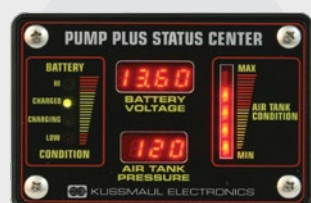
Size: 3.2" x 4.7"

- Universal single battery displays compatible with all vehicles, with or without Kussmaul chargers
- Digital voltage readout
- LEDs indicate battery condition
- LEDs flash when high or low voltage is detected
- Available in: 1 or 2 battery bank models, 1 or 2 decimal accuracy, and 12V or 24V systems

Status Center Digital Displays With Bar Graph



091-198-12-AP
PSI Only
Size: 3.2" x 4.7"



091-198-12-PP
Voltage & PSI
Size: 3.2" x 4.7"

- These displays are an air pressure sensor with an indicator that displays in PSI that can be mounted on the exterior of a vehicle to easily view
- The "AP" display contains a numerical display for PSI and a bar graph.
- The "PP" display contains a numerical display, a bar graph for PSI, and a 3.5-digit display for battery voltage.

REMOTE BAR GRAPH DISPLAYS



Single Universal Display
091-94-XX

This universal single battery bank voltage display may be installed in any 12/24V system.



Triple Bar Graph Display
091-74-IND

This charger specific three bank voltage display is normally supplied with: Auto Charge D2.



Dual Universal Display
091-76-XX

This universal dual battery bank voltage display may be installed in any 12/24V system (negative ground only).



LPC Bar Graph Display
091-200-IND

This charger specific single battery condition bar graph display is normally supplied with these chargers: LPC 20, LPC 45, LPC 40, LPC 80.



Triple Universal Display
091-118-022-XX

This universal three battery bank voltage display may be installed in any 12/24V system (negative ground only).



Dual Bar Graph Display
091-66-IND

This charger specific dual bar graph battery condition display is labeled "Vehicle" and "Engine" and is normally supplied with these chargers: Auto Charge D, Auto Charge D Pump Plus.



Single Bar Graph Display
091-199-001

This charger specific single battery condition bar graph display is normally supplied with these chargers: Auto Charge 1000 PLC, Auto Charge 35/10, Auto Charge 1200 Remote, Pump Plus 1000 PLC, Pump Plus 1200.



Mini Bar Graph Display
091-234-XX

This charger specific single battery condition mini bar graph display is an option for the following chargers: Auto Charge 1000 PLC, Auto Charge 1200 Remote, Pump Plus 1000 PLC, Pump Plus 1200, Auto Charge 35/10.



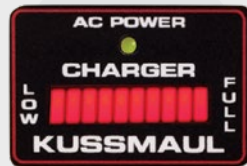
Dual Bar Graph Display
091-39-IND

This charger specific dual bar graph battery condition display is normally supplied with these chargers: Auto Charge 2000 PLC, Auto Charge 4000, Pump Plus 2000 PLC.

Voltage display may be installed in any 12/24V system (Represented with "XX" in part number).

ANALOG AND LED DISPLAYS

Super Auto Eject Deluxe Covers with Battery Charger Indicators



Bar Graph Display

091-55-234-XXX



Digital Display

091-55-194X-XXX



Bar Graph Display with Dual LED Display

091-55-239-XXX

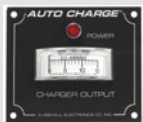
Incorporates the Auto Eject and Indicator into one product. An extreme duty cover with either a Bar Graph or Digital Display compatible with select single Kussmaul battery chargers or Bar Graph Display with Dual LED Indicator for the AC2000 battery charger. For more information see page 20.



LED Display

IN-4

This display is for the Pump Plus HO Battery Charger/Air Compressor system. It will not operate with other chargers.



DC Ammeter

IN-3-XX

Compatible with any charger. Neon pilot light shows when power is applied to the vehicle. DC ammeter measures the battery charger's output current. **Specify ammeter current (15, 20, or 25) when ordering.**



LED Display

091-11-102-12

A remotely mounted LED battery condition display. This display is used with: Auto Charge 12, Auto Charge 12HO, Auto Charge 11, Auto Charge 11HO, Auto Charge 20



Vertical Display Mount

091-91-013

An ABS plastic housing designed specifically for any Kussmaul bar graph display. The housing lets you mount your bar graph on the dashboard or anywhere else inside your vehicle. Display sold separately.



Display Panel Rear Seal

091-39-109

This rubber watertight seal was designed for any Kussmaul bar graph display, protecting the rear.

TEST EQUIPMENT AND DIGITAL DISPLAYS



**TG-3:
Temperature Display**

023-4350-0

- Sensor range: -20 to 160° F (-29 to 71° C)
- 3 Zone input
- Full-scale LCD read out accurate within 1% $\pm 1^\circ$
- Five level back lighting "On" LED display
- Programmable HIGH/LOW temperature alarm, activates 85db warning alarm
- Programming via instrument front buttons
- Waterproof face fits a standard 2.125" instrument hole
- Includes 1 remote temperature sensor with 20' cable



**DCE:
DC Energy Display**

023-4346-0

Displays volts, amps, energy used, and remaining for 12/24V, up to 500A and 3,000Ah capacity.

Monitor voltage on up to three separate banks:

- Charge/discharge amperage
- Total energy: amp-hours or percent-of-charge
- Alarms: HIGH/LOW voltage and low
- Amp-hours remaining



**DCV:
Voltmeter Display**

023-4348-0

- Three battery bank digital read out for 12/24V battery systems
- Includes a HIGH/LOW Voltage alarm built-in.
- Wires directly to the batteries, no charger connection required
- Push button selection of battery bank reading
- Size: 2 1/2" square face, 2 1/8" diameter mounting hole, 2 3/8" rear meter projection



Optional Add-on for Auto Level:

**Level Alarm with
High Decibel Audible Alarm**

091-260-S (12V) | 091-260-S-24 (24V)

04

CORD EJECT SYSTEMS



Auto Eject WP

33



Dynamic Disconnect

33



Rear Enclosure

33



EZ Mounting Plate with Power Indicator (for Auto Eject WP)

33



Super Auto Eject

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EZ Mounting Plate with Power Indicator

34



Super Trailer Auto Eject

35



Super 30 Auto Eject

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Super 30 Auto Eject - Air / Electric

37



Super 16 Auto Eject

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Super Auto Eject with Deluxe Cover

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Air Eject & HP Air Eject

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Weatherproof Adapter Kit

40



EZ Mounting Plate with "Connected" Indicator

40



Auto Clean

40



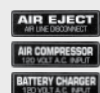
Super Auto Eject Deluxe Covers

41



Weatherproof Covers

41



Name Plates

41



Wiring Kits & Accessories

42



Receptables & Connectors

42

AUTO EJECT WP

Eject Plug from Shore Power on Engine Start.

- 15/20A AC, or 15A DC receptacle
- Upon sensing the engine starting, the plug ejects from receptacle and away from the vehicle which eliminates cord hazards
- After ejection a weatherproof cover snaps into position over the inlet
- 3.4" rear projection installs in the vehicle side walls with a limited depth clearance

System includes: Auto-Eject, Cover and Plug

Optional Accessories



Dynamic Disconnect

091-18-098

Sequences energizing of the Auto Eject which eliminates terminal arcing when connecting and disconnecting to the receptacle



Rear Enclosure

091-18CP

For installations that expose the rear of the Auto Eject to outside elements



EZ Mounting Plate with Power Indicator

091-185-010

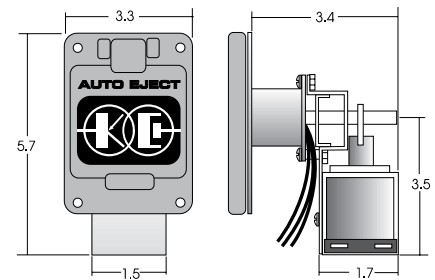
Assemble and pre-wire the Auto Eject in this stainless steel plate, then mount to the vehicle wall. A green indicator light confirms the inlet is energized.



Color options available:



Auto Eject WP Dimensions



OUTLINE 011

Other Accessories: Retractable Cord, Wiring Kits, and Rubber Plug Protectors (See page 42)

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	D	W	H	Weight
091-18WP-120	WP Auto Eject	12	N/A	120	15	3.40"	3.30"	5.70"	2
091-20WP-120	WP Auto Eject	12	N/A	120	20	3.40"	3.30"	5.70"	2
091-18WP-012	WP Auto Eject (12V/240V)	12	15	240	15	3.40"	3.30"	5.70"	2

When ordering specify: Cover color code • 24V for 24 volt actuator operation



SUPER AUTO EJECT

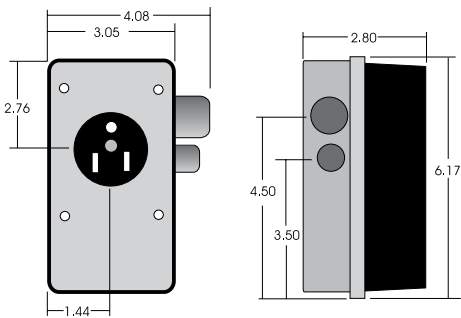
Eject Plug from Shore Power on Engine Start.

- 15/20A AC, or 15A DC receptacle
- The plug ejects from the receptacle and away from vehicle which eliminates cord hazards and upon engaging brake pedal prior to vehicle going into gear
- Sequences energizing of the Auto Eject which eliminates terminal arcing when connecting and disconnecting to the receptacle
- After ejection a weatherproof cover snaps into position over the inlet
- A weatherproof back enclosure with a watertight cable fittings protects the mechanism from road contamination
- Pre-wired with a 3' AC cord and an eject sense wire. Entry of the unit is on the side in the standard configuration, a back entry is also available on request.

Weatherproof Cover Color Options



Super Auto Eject Dimensions



System includes: Auto-Eject, Cover, Plug, 3' AC power (pre-wired) and an Eject Sense Wire

Optional Accessories



EZ Mounting Plate with Power Indicator
091-185-009

Assemble and pre-wire the Auto Eject in this stainless steel plate, then mount to the vehicle wall. A green indicator light confirms the inlet is energized.

Optional Configuration



Back Wire:
For installations with rear rather than side wire orientation, specify **BW** when ordering

Other Accessories:
Retractable Wiring Kits, and Rubber Plug Protectors (page 42)

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	D	W	H	Weight
091-55-15-120	Super 15 Auto Eject	12	N/A	120	15	2.80"	4.08"	6.17"	4
091-55-20-120	Super 20 Auto Eject	12	N/A	120	20	2.80"	4.08"	6.17"	4
091-55-15-DC	Super 15 Auto Eject - DC	12	15	240	15	2.80"	4.08"	6.17"	4

SUPER TRAILER EJECT

Eject Plug from Trailer Shore Power Upon Depressing Brake Pedal.

- 15 or 20A AC, or 15A DC receptacle
- Plug eject mechanism wires to foot brake pedal, dislodging plug prior to vehicle being put in gear
- Upon depressing vehicle brake pedal, plug ejects from receptacle and away from trailers path
- Sense circuit sequences energizing of Auto Eject eliminating terminal arcing when connecting and disconnecting
- After ejection a weatherproof cover snaps into position over the inlet
- Weatherproof back enclosure with watertight cable fittings protects mechanism from road contamination
- Pre-wired with 3' AC cord and eject sense wire, side case entry standard, back case entry optional

System includes: Auto-Eject, Cover, Plug, and pre-wired with 3' AC power and Eject Sense Wire

Optional Accessories



EZ Mounting Plate with Power Indicator
091-185-009

Assemble and pre-wire the Auto Eject in this stainless steel plate, then mount to the vehicle wall. A green indicator light confirms the inlet is energized.

Other Accessories:

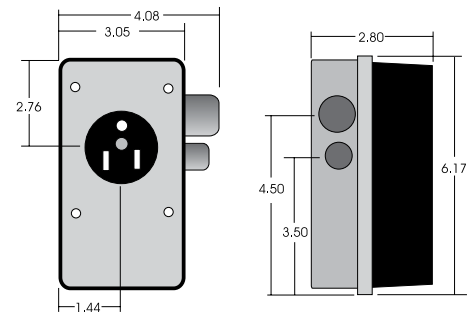
Retractable Cord, and Rubber Plug Protectors (page 42)



Weatherproof Cover Color Options



Super Trailer Eject Dimensions



Optional Configuration



Back Wire:

For installations with rear rather than side wire orientation, specify **BW** when ordering

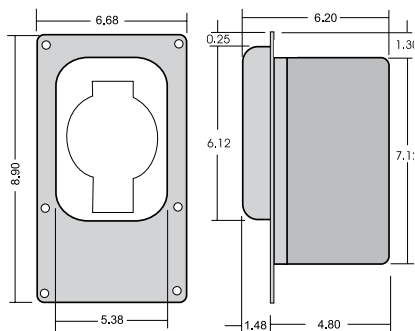
Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	D	W	H	Weight
091-55-15-120T	Super 15 Trailer Eject	12	N/A	120	15	2.80"	4.08"	6.17"	4
091-55-20-120T	Super 20 Trailer Eject	12	N/A	120	15	2.80"	4.08"	6/17"	4
091-55-15-DCT	Super Trailer 15 Eject - DC	12	15	240	15	2.80"	4.08"	6/17"	4



Weatherproof Cover Color Options



Super 30 Auto Eject Dimensions



SUPER 30 AUTO EJECT

Eject 30 Amp Plug from Shore Power On Engine Start.

- 30A, heavy duty pin and sleeve contacts provide a reliable connection over years of insertion/eject cycles
- Three/four pin 120/240V configurations
- Smooth sculpted cover, no sharp edges
- Upon sensing the engine starting, the plug ejects from the receptacle and away from the vehicle which eliminates cord hazards
- Auto Eject energizing is delayed until the detector pin senses the plug is inserted, which eliminates terminal arcing
- After ejection, a weatherproof cover snaps into position over the inlet
- A weatherproof back enclosure with a watertight cable fittings protects the mechanism from road contamination

System includes: Auto-Eject, Cover, and Plug



30A, 120V Plug
091-159-CON-3P-120



30A, 120V Plug
z091-159-CON-3P-250

Optional Accessory



EZ Mounting Plate with Power Indicator

Model # 091-159-081-120, 120 Vac

Model # 091-159-081-240, 240 Vac

Assemble and pre-wire the Auto Eject in this stainless steel plate, then mount to the vehicle wall. A green indicator light confirms the inlet is energized.

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	D	W	H	Weight
091-159-30-120	Super 30 Auto Eject - 3 Pin	12 / 24	1.6	120	30	6.20"	6.68"	8.90"	8
091-159-30-250	Super 30 Auto Eject - 3 Pin	12 / 24	1.6	240	30	6.20"	6.68"	8.90"	8
091-159-430-250	Super 30 Auto Eject - 4 Pin	12 / 24	1.6	240	30	6.20"	6.68"	8.90"	8
091-159-430-480	Super 30 Auto Eject - 4 Pin	12/24	1.6	480	30	6.20"	6.68"	8.90"	8

When ordering specify: Cover color code • BW for back wire option

SUPER 30 AUTO EJECT - AIR / ELECTRIC

Eject 30 Amp Plug from Shore Power On Engine Start.

- 30A, 120V, 175PSI, heavy duty pin and sleeve contacts provide a reliable connection over years of insertion/eject cycles
- Air connection is made through a brass fitting containing a shut-off valve. Valve opens when the plug is inserted to supply air pressure to the vehicle and closes automatically when the plug is ejected, sealing off the air supply air
- Smooth sculpted cover with no sharp edges
- Upon sensing the engine starting, the plug ejects from receptacle and away from vehicle which eliminates cord hazards
- Air-Electric energizing is delayed until the detector pin senses the plug is inserted which eliminates terminal arcing
- A weatherproof back enclosure with watertight cable fittings protects the mechanism from road contamination

System includes: Air/Electric Auto-Eject, Cover, Plug, and 30' of Air Line



30A, 120V, 175 PSI Plug
091-169-CON-4P-120



30A, 240V, 175 PSI Plug
091-169-CON-4P-250

Optional Accessory



EZ Mounting Plate with Power Indicator

Model # 091-159-081-120, 120 Vac

Model # 091-159-081-240, 240 Vac

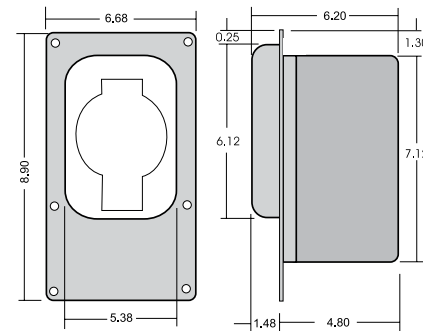
Assemble and pre-wire the Auto Eject in this stainless steel plate, then mount to the vehicle wall. A green indicator light confirms the inlet is energized.



Weatherproof Cover Color Options



Super 30 Auto Eject - Air / Electric Dimensions



Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	Max PSI	D	W	H	Weight
091-169-30-120	Super 30 Air-Electric Auto Eject	12 / 24	1.6	120	30	175	6.20"	6.68"	8.90"	8
091-169-30-250	Super 30 Air-Electric Auto Eject	12 / 24	1.6	240	30	175	6.20"	6.68"	8.90"	8

When ordering specify: Cover color code



SUPER 16 AUTO EJECT - EURO STYLE

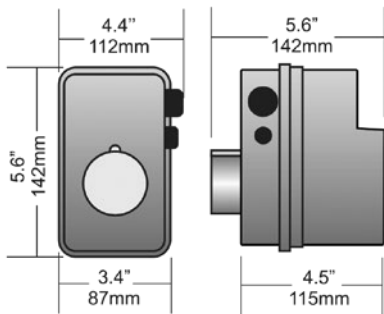
Eject European Configuration 16 Amp Plug 240V from Shore Power On Engine Start.

- 16A, heavy duty pin and sleeve contacts provide a reliable connection over years of insertion/eject cycles
- Three pin 240V configurations
- IEC 60309 standard European connector is provided
- 12/24V actuation voltages
- Smooth sculpted cover, no sharp edges
- Upon sensing the engine starting, the plug ejects from the receptacle and away from the vehicle which eliminates cord hazards
- Auto Eject energizing is delayed until the detector pin senses the plug is inserted,eliminating terminal arcing
- After ejection, a weatherproof cover snaps into position over the inlet
- A weatherproof back enclosure with a watertight cable fittings protects the mechanism from road contamination

Weatherproof Cover Color Options



Super 16 Auto Eject - Euro Style Dimensions



System includes: Auto-Eject, Cover, and Plug



16A, 240V Plug
091-182-CON-3P-230

Optional Accessory



EZ Mounting Plate with Power Indicator
Model # 091-182-027-120
Model # 091-182-027-240

Assemble and pre-wire the Auto Eject in this stainless steel plate, then mount to the vehicle wall. A green indicator light confirms the inlet is energized.

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	D	W	H	Weight
091-182-230-12	Super 16 Auto Eject	12	N/A	240	16	5.60"	4.40"	5.60"	5
091-182-230-24	Super 16 Auto Eject (24V)	24	N/A	240	16	5.60"	4.40"	5.60"	5

When ordering specify: Cover color code

SUPER AUTO EJECT WITH DELUXE COVER

Auto Eject and Charger Status In One Product.

- 15/20A AC, or 15A DC receptacle
- Auto Eject- senses the engine starting, the plug ejects from the receptacle and away from vehicle which eliminates cord hazards
- Indicator displays the battery charger status
- Deluxe Lid opens 180 degrees
- Works with Kussmaul Battery Chargers.
- Sequences energizing of the Auto Eject which eliminates terminal arcing when connecting and disconnecting to the receptacle
- A sealed weatherproof rubber gasket protects the mechanism from road contamination



Bar Graph Display

Has 10 RED LED bars

See page 41 for Color Cover Options, Configurations, Dimensions and Optional Accessories



Bar Graph Display with Dual LED

Compatible with the Kussmaul AC2000 Dual Battery Charger



Digital Display

Has 3 digit numerical GREEN LED display for amps and voltage. Works with many Kussmaul single Battery Chargers. Call for more information.

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	D	W	H	Weight	Color
61-11-2106	Super Auto Eject with Deluxe Cover, Bar Graph Display (234)	12	N/A	120	15	2.80"	4.08"	6.17"	4	YW
63-11-2106					20					
63-11-5106	Super Auto Eject with Deluxe Cover, Digital Display (194B) for single battery chargers with 20A output	12	N/A	120	20	2.80"	4.08"	6.17"	4	YW
61-11-3106	Super Auto Eject with Deluxe Cover, Digital Display (194), for single battery chargers with 40A output	12	N/A	120	15	2.80"	4.08"	6.17"	4	YW
63-11-3106					20					
61-11-6106	Super Auto Eject with Deluxe Cover, Digital Display (194C), for single battery chargers with 80A output	12	N/A	120	15	2.80"	4.08"	6.17"	4	YW
63-11-6106					20					
61-11-8106	Super Auto Eject with Deluxe Cover, Bar Graph Display (239), for AC 2000 dual battery chargers	12	N/A	120	15	2.80"	4.08"	6.17"	4	YW
63-11-8106					20					

Contact Sales Department for additional kit configurations and colors



AIR EJECTS

Eject Air Line From Vehicle Upon Engine Start

- 140/175 PSI models are available
- Truck side mount pneumatic connector accepts standard air hose adapters to maintain pressure on the vehicles brake system when in the station
- Upon engine start the coupler disconnects and ejects the air line, preventing any hazardous and damaging drive-off situations
- A minimum of 20 PSI required for ejection

System includes: Air Eject, Mating Connector

Optional Accessory



Weatherproof Adapter Kit
091-28AK-XX

Recess mounting bracket with weatherproof cover with choice of six color options



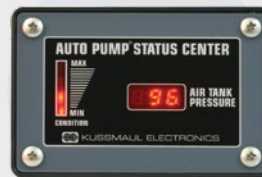
EZ Mounting Plate with "Connected" Indicator
091-185-011

Simplifies installation with an indicator light confirming proper connection



Auto Clean 091-9G-2

Assemble and pre-wire the Auto Eject in this stainless steel plate, then mount to the vehicle wall. A green indicator light confirms the inlet is energized.



Auto Pump Status Center
091-198-12-AP

An air pressure sensor that connects to an air supply to measure and display PSI with a numerical display and bar graph. It is designed for exterior mounting to view outside the vehicle.

Part Number	Description	DC Volts	DC Amps	Max PSI	D	W	H	Weight
091-28	Air Eject	12	N/A	140	1.70"	2.85"	3.60"	2
091-28-24	Air Eject (24V)	24	N/A	140	1.70"	2.85"	3.60"	2
091-28HP	HP Air Eject	12	N/A	175	1.70"	2.85"	3.60"	2
091-28HP-24	HP Air Eject (24V)	24	N/A	175	1.70"	2.85"	3.60"	2

COVERS AND NAME PLATES

Super Auto Eject Deluxe Covers



Bar Graph
091-55-234-XXX



**Bar Graph
with Dual Output**
091-55-239-XXX



**Digital Display
Amperage/Voltage**
091-55-194X-XXX

- Extreme duty cover with lid that opens 180 deg
- Merges Auto Eject and Indicator into one product
- Available in Bar Graph or Digital Display
- Works with Kussmaul chargers

Used With	Model	Type Of Display
Super 15 & 20 Auto Eject Air Eject WP Adapter Kit	091-55-234-XXX*	Bar Graph Display
Super 15 & 20 Auto Eject Air Eject WP Adapter Kit	091-55-239-XXX*	Bar Graph Display with Dual Output
Super 15 & 20 Auto Eject Air Eject WP Adapter Kit	091-55-194X-XXX*	Digital Display

Standard Weatherproof Covers



091-3XX



091-55XX



091-182XX



091-159XX

Weatherproof Cover Color Options



Used With	Model
WP Auto Eject, Wiring Kits, Receptacles	091-3XX*
Super 15 & 20, Auto Eject, Air Eject WP Adapter Kit	091-55XX*
Super 16 Auto Eject	091-182XX*
Super 30 Auto Eject	091-159XX*

Nameplates

Self adhesive nameplates fit into recess on Auto Eject Weatherproof covers



Used With	Model	Type Of Display
091-NP-01	Air Eject	091-3XX
091-NP-02	Air Compressor	091-3XX
091-NP-03	Battery Charger	091-3XX
091-NP-04	Block Heater	091-3XX
091-NP-05	Battery Charger, Block Heater	091-3XX
091-NP-06	Battery Charger, Air Compressor	091-3XX
091-NP-07	Batt. Chgr., Air Comp., B. Heater	091-3XX
091-NP-Kit	All Nameplates	091-3XX
091-55NP-Kit	All Nameplates	091-55XX
091-55NP-01	Air Ejects	091-55XX
091-55NP-02	Air Compressor	091-55XX
091-55NP-03	Battery Charger	091-55XX
091-55NP-04	Block Heater	091-55XX
091-55NP-05	Battery Charger, Block Heater	091-55XX
091-55NP-06	Battery Chatger, Air Compressor	091-55XX
091-55NP-07	Battery Charger, Air Compressor, Block Heater	091-55XX

WIRING ACCESSORIES AND KITS

Wiring Kits

Includes:

- 30', 3 conductor wire
- Receptacle & weatherproof cover (choice of color)
- Plug

Description Model

15A AC, 14 AWG	VW-7
20A AC, 12 AWG	VW-9
15A DC, 14 AWG	VW-8



Includes:

- Male receptacle
- Weatherproof cover (choice of color)
- Plug

Description Model

15A AC	VW-10
15A AC	VW-12
20A DC	VW-11



Wiring Accessories

Includes:

- 30', 3 conductor wire
- Male receptacle

Description Model

15A, AC, 14AWG	VW-4
20A, AC, 12 AWG	VW-5
15A, DC, 14 AWG	VW-2



Receptacles

Model 5278C

15A, 120V AC

Model 5378C

20A, 120V AC

Model 5678C

15A, 12V DC



Connectors

Model 5-15P-H

15A, 120V AC

Model 5-20P-H

20A, 120V AC

Model 6-15P-H

15A, 12V DC

Model 5366C

20A, Male

Model 5266C

15A, Male



Connector Protector

Model 091-55-069

Rubber Jacket fits over cord connectors, 1/8" wall thickness, protects against damage when connector drops to floor.



DC Connector 091-3-157



This 3 conductor, 15A, 12V, twist lock connector is moisture resistant and provides a connection that cannot be accidentally interchanged with any of the standard AC connectors. Ideally suited for coupling DC to portable equipment.

AC Connector WPR-1-XX



This kit contains a 120V, 20A power input receptacle, weatherproof cover, plastic water tight enclosure and a liquid tight connector for wire diameter 0.170 minimum to 0.470 maximum.

Color Options:





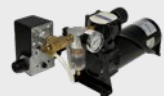
05

AIR COMPRESSORS



Auto Pump 12V

44



Auto Pump 12V HP

45



Auto Pump AC

46



Auto Pump HP

47



Auto Clean

48



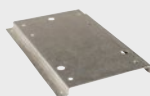
Auto Pump Tester

48



Auto Pump Timer

48



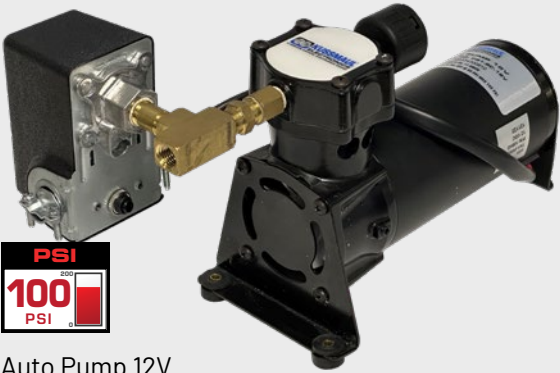
Vibration Dampening
Mounting Plates

48



Auto Drain

48



Auto Pump 12V



Auto Pump 12V
with Auto Drain

AUTO PUMP® 12V, 100 PSI

Maintains Air Brake System Pressure and
Compensates for System Leaks.

- Compact vehicle mount compressor ensures truck air brake system is properly pressurized for immediate dispatch from station
- Pressure switch regulated operation automatically senses low pressure in air system and restores proper pressure, preventing brake lock-up
- Factory set PSI actuation points: 75 "ON", 95 "OFF"
- Adjustment differential 20 PSI, 100 PSI max
- Output: 0.30 SCFM @ 80 PSI, 0.35 SCFM @ 60 PSI
- 12V, 11A system
- No interference with engine mounted air compressor
- Sealed ball bearings for long service life
- 15A circuit breaker installed in pressure switch

Optional Accessories

See page 48 for accessory details



Auto Drain
091-9-089



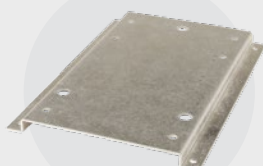
Auto Clean
091-9G, 091-9G-B1



Auto Pump Timer
091-150-115



Auto Pump
Status Center
091-198-12-AP



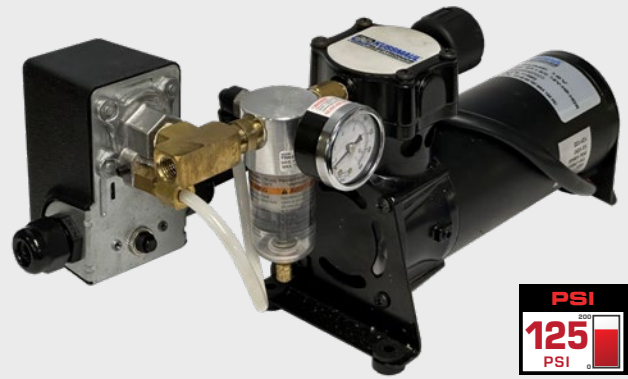
Vibration Dampening
Mounting Plate
091-12V-HP-H

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	H	W	L	Weight
091-9C-12V	Auto Pump 12V	12	11	N/A	N/A	12.0"	6.60"	7.30"	6
091-9C-12V-AD	Auto Pump 12V - Auto Drain	12	11	N/A	N/A	12.0"	6.60"	7.30"	6

AUTO PUMP® 12V HP, 125 PSI

Maintains Air Brake System Pressure and Compensates for System Leaks. Auto Drain System Built-in.

- Compact vehicle mount compressor ensures air brake system is properly pressurized for immediate truck departure from station
- Pressure switch regulated operation automatically senses low pressure in air system and restores proper pressure, preventing brake lock-up
- Factory set PSI actuation points: 105 on, 125 off
- Adjustment differential 20 PSI, 125 PSI max.
- Pressure gauge provides system status
- Output: 0.30 SCFM @ 80PSI, 0.35 SCFM @ 60PSI
- 12V, 11A system
- No interference with engine mounted air compressor
- Sealed ball bearings for long service life
- Vertical or horizontal model configurations
- 15A circuit breaker installed in pressure switch
- Auto Drain built-in to automatically purges the water separator bowl whenever the compressor cycles off, eliminating manual draining



Auto Pump 12V HP Horizontal



Auto Pump 12V HP Vertical

Optional Accessories

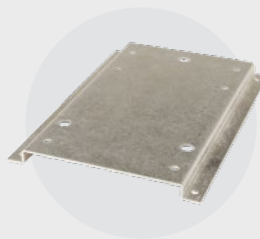
See page 48 for accessory details



Auto Pump Timer
091-150-115



Auto Pump Status Center
091-198-12-AP



Vibration Dampening Mounting Plate
091-12V-HP-H

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	H	W	L	Weight
091-9C-12V-HP-HOR	Auto Pump 12V HP - Horizontal	12	11	N/A	N/A	13.7"	6.60"	7.30"	6
091-9C-12V-HP-VER	Auto Pump 12V HP - Vertical	12	11	N/A	N/A	13.7"	6.60"	7.30"	6

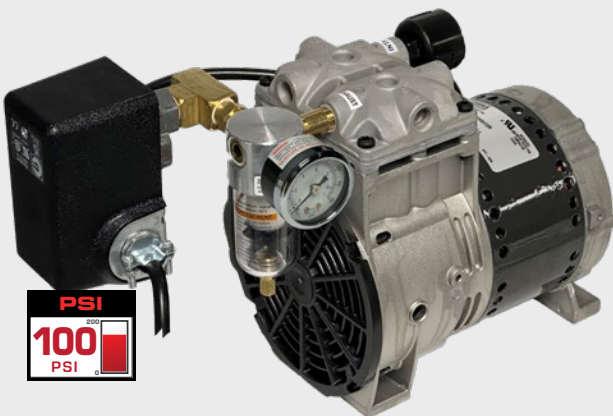
AUTO PUMP® AC, 100 PSI

**Maintains Air Brake System Pressure.
Compensates for System Leaks.**

- 120V, 4A, AC operation, 100 PSI Max Rating
- Vehicle mount compressor ensures the truck's air brake system is properly pressurized for immediate dispatch from the station
- Pressure switch regulated operation automatically senses low pressure in the air system and restores the proper pressure, preventing brake lock-up
- Pressure switch regulated operation
- Factory set PSI actuation points: 75 "ON", 95 "OFF"
- Adjustable, 20 PSI differential, 100 PSI max.
- No interference with an engine mounted air compressor
- Sealed ball bearings for long service life

Optional Accessories

See page 48 for accessory details



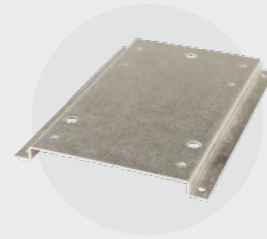
Auto Drain
091-9-089



Auto Pump Timer
091-150-115



**Auto Pump
Status Center**
091-198-12-AP



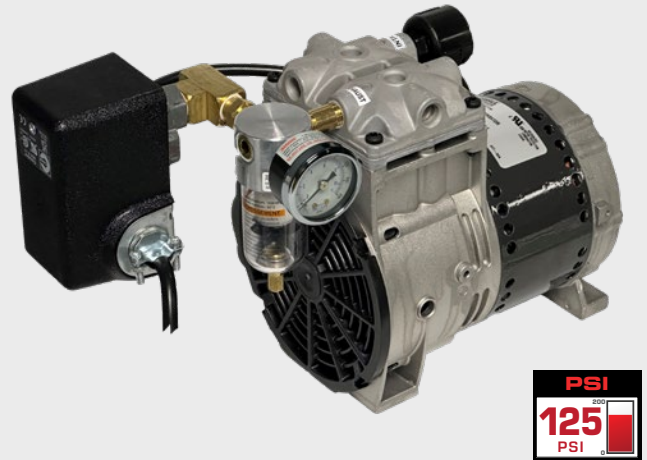
**Vibration Dampening
Mounting Plate**
091-9HP-H

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	H	W	L	Weight
091-9B-4	Auto Pump AC	N/A	N/A	120	4.2	7.78"	5.31"	7.44"	16
091-9B-4-AD	Auto Pump AC - Auto Drain	N/A	N/A	120	4.2	7.78"	5.31"	7.44"	16
091-9B-4-220	Auto Pump AC (240V)	N/A	N/A	240	2.1	7.78"	5.31"	7.44"	16

AUTO PUMP® HP, 125 PSI

**Maintains Air Brake System Pressure.
Compensates for System Leaks.**

- 120V, 3.5A AC operation, (240 Volt model available)
125 PSI Max Rating
- Vehicle mount compressor ensures the truck's air brake system is properly pressurized for immediate dispatch from the station
- Pressure switch regulated operation automatically senses low pressure in the air system and restores the proper pressure, preventing brake lock-up
- Factory set actuation points: 105 "ON", 125 "OFF"
- Adjustable, 20 PSI differential, 125 PSI max.
- Pressure gauge provides system status
- No interference with an engine mounted air compressor
- Sealed ball bearings for long service life



Optional Accessories

See page 48 for accessory details



Auto Drain
091-9-090



Auto Pump Timer
091-150-115



**Auto Pump
Status Center**
091-198-12-AP



**Vibration Dampening
Mounting Plate**
091-9HP-H

Part Number	Description	DC Volts	DC Amps	AC Volts	AC Amps	H	W	L	Weight
091-9HP	Auto Pump HP	N/A	N/A	120	4.2	7.78"	5.31"	7.44"	16
091-9HP-AD	Auto Pump HP - Auto Drain	N/A	N/A	120	4.2	7.78"	5.31"	7.44"	16
091-9HP-220	Auto Pump HP (240V)	N/A	N/A	240	2.1	7.78"	5.31"	7.44"	16

AIR COMPRESSOR ACCESSORIES



Auto Clean

The micron filter removes particulates and collects moisture in a bowl with a manual drain valve. Installs in the Auto Pump's 0.25" NPT female output line.



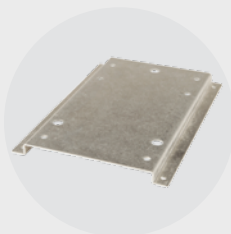
Auto Pump Tester

A 0.5-gallon tank with a pressure gauge, bleed valve, and airline reservoir, designed to test Auto Pumps in the field by simulating a vehicle's air system.



Auto Pump Timer

Simplifies installation with vibration-dampening shock mounts and cycles the compressor on a one-hour "ON/OFF" interval to conserve batteries, allow cooling, and extend component life. An indicator light shows when the pump is in "OFF" mode.



Vibration Dampening Mounting Plate

Simplifies the installation and provides vibration dampening shock mounts pressed into the plate at the pumps mounting points.

Automatic Drain (Auto Drain)

These kits include all components needed to install a water separator on AUTO PUMP air compressors. A normally open solenoid valve automatically drains moisture from the separator bowl each time the compressor shuts down, eliminating manual draining. The AUTO DRAIN can be retrofitted or pre-installed on the AUTO PUMP.



091-9-131

Fits the Auto Pump 12V (091-9-12V)



091-9-089

Fits the Auto Pump AC (091-9B-4)



091-9-090

Fits the Auto Pump HP (091-9HP)

Part Number	Description	DC Volts	AC Volts	H	W	L	Weight
091-150	Auto Pump Timer (12V DC)	12	N/A	N/A	N/A	N/A	0.5
091-150-115	Auto Pump Timer (120V AC)	N/A	120	N/A	N/A	N/A	0.5
091-9-12V-HP-H	Mounting Plate - 12V & 12VHP (page 80)	N/A	N/A	N/A	N/A	N/A	0.2
091-9H-1	Mounting Plate - B1 (page 80)	N/A	N/A	N/A	N/A	N/A	0.2
091-9HP-H	Mounting Plate - HP (page 80)	N/A	N/A	N/A	N/A	N/A	0.2
091-9G	Auto Clean, 12V	N/A	N/A	N/A	N/A	N/A	0.2
091-9G-B1	Auto Clean, B1	N/A	N/A	N/A	N/A	N/A	0.2
091-205	Auto Pump Tester	N/A	N/A	7.5	7.5	10.0	9.0
091-9-131	Auto-Drain - 12V	12	N/A	N/A	N/A	N/A	1.0
091-9-089	Auto-Drain - B1	N/A	120	N/A	N/A	N/A	1.0
091-9-090	Auto-Drain - HP	N/A	120	N/A	N/A	N/A	1.0

DC and AC Amps not applicable values for these part numbers



KITS AND PACKAGES



Pump Plus 1000 PLC System

50



Charger - Auto Eject Kits

54



Pump Plus 2000 PLC System

51



Charger - Auto Pump AC Kits

55



Pump Plus H0 System

52



Charger - Auto Pump AC -
Auto Eject Kits

56



Pump Plus - Auto Eject Kits

53



PP PUMP PLUS 1000 PLC SYSTEM

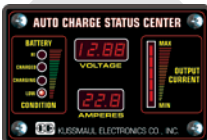
Package Includes: Air Compressor, Charger with Battery Saver, and Remote Display.
System Components Maintain Air Brake Pressure, Batteries, and Power Auxiliary Loads.

- System simplifies the complete installation. Package includes: **Pump Plus 1000 PLC with display** and a **12V Auto Pump**
 - 12V, 100 PSI Max, air compressor Auto Pump, see page 43 for specs and page 47 for optional accessories
 - 15A battery charger with a 3A battery saver
 - Microprocessor controlled, completely automatic operation regulates the output to a single battery bank
 - Precision voltage controller senses the battery voltage, eliminating the need for sense wires
 - Parasitic Load Compensation (PLC) – allows for user input of total accessory load amps on the vehicle enabling the charger to shift the absorption stage set point so the battery voltage drops to the float voltage when desired current is reached
 - Battery selection switch to select Gel Cell, Lead-Acid, AGM or Odyssey
 - Float/3-Step Charge Mode Selection Switches
 - Automatic current limit
 - Battery Saver On/Off switch is used to bypass the Battery Saver and apply all 18A to charge the battery
 - Patent pending
 - Optional remote displays available
 - Air Compressor power mode selector switch
 - DC Powered full time from the vehicle's battery
 - AC Powered only from the battery when the vehicle is plugged into the shore line
 - Automatically shuts off the compressor when disconnected from the shore line, taking the 12A load off the vehicle's battery

Remote Display Options



Bar Graph Display
091-199-001



Status Center Display
091-194B-IND



Status Center Display in Watertight Case
091-194B-IND-WT-XX
Color Options see page 28



Super Auto Eject Deluxe Covers Available
See page 41

Part Number Description

51-21-1100	Pump Plus 1000 PLC System with Bar Graph Display
51-21-3100	Pump Plus 1000 PLC System with Status Center
51-21-410X	Pump Plus 1000 PLC System with Watertight Status Center
091-215-12-PP	Pump Plus 1000 PLC Charger Only
51-21-3200	Pump Plus 1000 PLC Charger Only with Status Center
51-21-420X	Pump Plus 1000 PLC Charger Only with Watertight Status Center

PUMP PLUS 2000 PLC SYSTEM

Package Includes: Air Compressor, Charger with Battery Saver and Remote Display.
System Components Maintain Air Brake Pressure, Batteries, and Power Auxiliary Loads.

- System approach simplifies the complete installation
 Package includes: **Pump Plus 2000 PLC** and **12V Auto Pump**
 - 12V, 100 PSI Max, air compressor Auto Pump, see page 43 for specs and page 47 for optional accessories
 - 15A battery charger with a 3A battery saver
 - Microprocessor controlled, completely automatic operation regulates the output to a single battery bank
 - Precision voltage controller senses the battery voltage, eliminating the need for sense wires
 - Parasitic Load Compensation (PLC) – allows for user input of total accessory load amps on the vehicle enabling the charger to shift the absorption stage set point so the battery voltage drops to the float voltage when desired current is reached
 - Battery selection switch to select Gel Cell, Lead-Acid, AGM or Odyssey
 - Float/3-Step Charge Mode Selection Switches
 - Automatic current limit
 - Battery Saver On/Off switch is used to bypass the Battery Saver and apply all 18A to charge the battery
 - Patent pending
 - Remote Dual Bar Graph Display is included
 - Air Compressor power mode selector switch
 - DC Powered full time from the vehicle's battery
 - AC Powered only from the battery when the vehicle is plugged into the shore line
 - Automatically shuts off the compressor when disconnected from the shore line, taking the 12A load off the vehicle's battery



Included Remote Display Option



Bar Graph Display
091-199-001

Optional Accessory



Super Auto Eject Deluxe Cover with Bar Graph Display and LED Indicator Available
See page 30

Part Number	Description
53-21-1100	Pump Plus 2000 PLC System with Bar Graph Display
091-237-12-PP	Pump Plus 2000 PLC Charger Only



PUMP PLUS H0 SYSTEM

Package Includes: Air Compressor, Charger with Remote Display. System Components Maintain Air Brake Pressure, And Batteries.

- System simplifies the complete installation. Package includes: **Pump Plus H0** and **12V Auto Pump**
 - 12V, 100 PSI Max, air compressor Auto Pump, see page 43 for specs and page 47 for optional accessories
 - 11A charger Model Pump Plus H0 for charging a dual battery bank
 - Automatic operation regulates the output to dual battery banks
 - A patented built-in sense circuit checks the battery voltage 120 times per second to compensate for a voltage drop in charging wires providing a quick re-charge without overcharging
 - Optional LED display available
 - Air Compressor power mode selector switch
 - DC Powered full time from the vehicle's battery
 - AC Powered only from the battery when the vehicle is plugged into the shore line
 - Automatically shuts off the compressor when disconnected from the shore line, taking the 12A load off the vehicle's battery

Remote Display Option



**Auto Charge
LED Display
IN-4**

Part Number	Description
56-21-1100	Pump Plus H0 System
091-9C-H0-Charger	Pump Plus H0 Charger Only

PUMP PLUS - AUTO EJECT KITS

Includes Pump Plus Charger, Display, Auto Pump 12V and Auto Eject. Fully customizable or available in pre-packaged kits for installer convenience. Simplifies Ordering and Stockroom Handling.

Kit Configuration Options

1. Select Pump Plus Charger Model
2. Select Display
3. Select Display Bezel Color
4. Select Auto Pump, with or without Auto Drain
5. Select 15A or 20A Auto Eject
6. Specify Back Wire (BW)(Super Auto Eject Only)
7. Select Cover Option and Color for Auto Eject
8. Contact factory for your particular kit ordering information



**Super Auto Eject
Deluxe Covers
Available**

Contact Sales for Kit Part #



Pump Plus Charger



Display



Pump



Auto Eject WP

Part Number	Description	Charger	Pump	Display	Auto Eject	Color Cover
53-22-1106	Pump Plus 2000 Kit	Pump Plus 2000 PLC	Auto Pump 12V	Dual Bar Graph	Auto Eject 20WP	Yellow
51-22-1204	Pump Plus 1000 Kit	Pump Plus 1000 PLC	Auto Pump 12V	Single Bar Graph	Auto Eject 15WP	Red

Popular Kits listed, contact factory for all other kit configuration options



Pump Plus Charger



Display



Pump



Super Auto Eject

Part Number	Description	Charger	Pump	Display	Auto Eject	Color Cover
53-23-1106	Pump Plus 2000 Super Kit	Pump Plus 2000 PLC	Auto Pump 12V	Dual Bar Graph	Super Auto Eject 20	Yellow
51-23-1204	Pump Plus 1000 Super Kit	Pump Plus 1000 PLC	Auto Pump 12V	Single Bar Graph	Super Auto Eject 15	Red

Popular Kits listed, contact factory for all other kit configuration options

CHARGER - AUTO EJECT KITS

Includes Charger, Display and Auto Eject. Fully customizable or available in pre-packaged kits for installer convenience. Simplifies Ordering and Stockroom Handling.

Kit Configuration Options

1. Select Charger Model
2. Select Display
3. Select Display Bezel Color
4. Select 15A or 20A Auto Eject
5. Specify Back Wire (BW)(Super Auto Eject Only)
6. Select Cover Option and Color for Auto Eject
7. Contact factory for your particular kit ordering information



**Super Auto Eject
Deluxe Covers
Available**

Contact Sales for Kit Part #



Auto Charge Charger



Display



Auto Eject WP

Part Number	Description	Charger	Display	Auto Eject	Color Cover
53-02-1106	Auto Charge 2000 Kit	Auto Charge 2000 PLC	Dual Bar Graph	Auto Eject 20WP	Yellow
51-02-1204	Auto Charge 1000 Kit	Auto Charge 1000 PLC	Single Bar Graph	Auto Eject 15WP	Red

Popular Kits listed, contact factory for all other kit configuration options



Auto Charge Charger



Display



Super Auto Eject

Part Number	Description	Charger	Display	Auto Eject	Color Cover
53-03-1106	Auto Charge 2000 Super Kit	Auto Charge 2000 PLC	Dual Bar Graph	Super Auto Eject 20	Yellow
51-03-1204	Auto Charge 1000 Super Kit	Auto Charge 1000 PLC	Single Bar Graph	Super Auto Eject 15	Red

Popular Kits listed, contact factory for all other kit configuration options

CHARGER – AUTO PUMP AC KITS

Includes Charger, Display and AC Compressor. Fully customizable or available in pre-packaged kits for installer convenience. Simplifies Ordering and Stockroom Handling.

Kit Configuration Options

1. Select Charger Model
2. Select Charger Display
3. Select Display Bezel Color
4. Contact factory for your particular kit ordering information



Auto Charge Charger



Display



AC Compressor

Part Number	Description	Charger	Display	Pump
53-05-1100	Auto Charge 2000 Pump Kit	Auto Charge 2000 PLC	Dual Bar Graph	Auto Pump AC
51-13-1100	Auto Charge 1000 HP Pump Kit	Auto Charge 1000 PLC	Single Bar Graph	Auto Pump HP
Popular Kits listed, contact factory for all other kit configuration options				

CHARGER - AUTO PUMP AC - AUTO EJECT KITS

Includes Charger, Display, AC Compressor and Auto Eject. Pre-Packaged as a Kit for Installer Convenience. Simplifies Ordering and Stockroom Handling.

Kit Configuration Options

1. Select Charger Model
2. Select Display
3. Select Display Bezel Color
4. Select Auto Pump, with or without Auto Drain
5. Select 15A or 20A Auto Eject
6. Specify Back Wire (BW)(Super Auto Eject Only)
7. Select Cover Option and Color for Auto Eject
8. Contact factory for your particular kit ordering information



**Super Auto Eject
Deluxe Covers
Available**

Contact Sales for Kit Part #



Auto Charge Charger



Display



Pump



Auto Eject WP

Part Number	Description	Charger	Pump	Display	Auto Eject	Color Cover
53-06-1106	Auto Charge 2000 Pump WP Kit	Auto Charge 2000 PLC	Auto Pump AC	Dual Bar Graph	Auto Eject 20WP	Yellow
51-14-1204	Auto Charge 1000 HP Pump WP Kit	Auto Charge 1000 PLC	Auto Pump HP	Single Bar Graph	Auto Eject 15WP	Red

Popular Kits listed, contact factory for all other kit configuration options



Auto Charge Charger



Display



Pump



Super Auto Eject

Part Number	Description	Charger	Pump	Display	Auto Eject	Color Cover
53-07-1106	Auto Charge 2000 Pump Super Kit	Auto Charge 2000 PLC	Auto Pump AC	Dual Bar Graph	Super Auto Eject 20	Yellow
51-15-1204	Auto Charge 1000 HP Pump Super Kit	Auto Charge 1000 PLC	Auto Pump HP	Single Bar Graph	Super Auto Eject 15	Red

Popular Kits listed, contact factory for all other kit configuration options



07

SOLAR POWER CHARGING



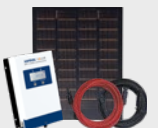
Solar DASH™ Charging System

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Solar DART™ Charging System

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Solar Max Flex Panel Kits

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SOLAR DASH™ CHARGING SYSTEM

Includes 20W Solar Panel, Conversion Controller, 12V Port Connection, Ring Terminals, and Battery Clips. Portable, Easy-to-use, and Prolongs Battery Life.

- Avoids jumpstarts by helping vehicle batteries maintain a high state of charge during vehicle inactivity
- Controller counteracts parasitic loads
- Plugs into a 12V power plug or connects to a battery with ring terminals or battery clips
- Transfers easily between vehicles
- Flexible solar panel



Part Number	Description	DC Volts	ISC Amps	L	W	D	Weight
9204-0003-A-A-20	Solar Dash, 20W, Power Plug, Eyelets, Battery Clips	12	1.06	18.5"	13.8"	0.15"	7
9204-0004-A-A-20	Solar Dash, 20W, Power Plug, Eyelets, Battery Clips, with Mastic	12	1.06	18.5"	13.8"	0.15"	7

SOLAR DART™ CHARGING SYSTEM

Includes 50W Solar Panel, Conversion Controller, 12V Port Connection, Ring Terminals, and Battery Clips. Portable, Easy-to-use, and Prolongs Battery Life.

- Avoids jumpstarts by helping vehicle batteries maintain a high state of charge during vehicle inactivity
- Controller counteracts parasitic loads
- Plugs into a 12V power plug or connects to a battery with ring terminals or battery clips
- Utilizes a 50W solar panel to keep batteries charged



Part Number	Description	DC Volts	ISC Amps	L	W	D	Weight
9103-0006-A-A-50	Solar Dart, 50W, Power Plug, Eyelets, Battery Clips	12	2.65	23.6"	20.0"	0.15"	9
9103-0005-A-A-50	Solar Dart, 50W, Power Plug, Eyelets, Battery Clips, with Mastic	12	2.65	18.5"	13.8"	0.15"	9

SOLAR MAX FLEX PANEL KITS

Includes Solar Panel, Charge Controller, Mounting Hardware, and Cable Kit.

- Keep up with vehicle loads without running the engine or plugging in
- Helps comply with anti-idle laws
- Saves fuel cost and engine maintenance
- Eliminate the need to jump start reserve vehicles
- Ideal for vehicles with mobile computers and radios
- Kit includes: MPPT Controller and Waterproof Fittings RA-2

Complete Heavy Duty Kits Designed for Emergency Vehicle Installation

Solar Panel

Either a 115W, 115W Slim, 220W or 345W solar panel with approximately 2000 points of contact per cell.



MPPT 30A Charge Controller

Enhances flexibility, simplicity, and efficiency in PV array designs, supporting higher voltage arrays up to 72V (nominal). It has dual charging ports for 12V house and starter batteries, top-tier PV array and battery protections, and an LCD display for real-time system data.



PV & Battery Cables

Weather-resistant, certified cables connect the solar panel to the charge controller and the charge controller to the battery. The PV and battery cables feature a built-in fuse, ring terminals, and ferrule terminations for quick connections.



Mounting Hardware

Mounting screws, cable clamps, and tie wraps are included.



Expansion Kits

Includes additional solar panel, mounting hardware and a pair of male and female branch connectors to connect solar panels in parallel.



Peel-and-Stick Installation



115W Option

Part Number	Description	DC Volts	ISC Amps	L	W	D	Weight
784-9115-01-MPPT	115W Solar Max Kit	12	5.6	37.5"	28.4"	0.12"	5.5
784-9115-02	115W Solar Max Expansion Kit	12	5.6	37.5"	26.4"	0.12"	4.0
784-9115S-01-MPPT	115W Solar Max Panel Slim Kit	12	5.6	70.3"	15.3"	0.12"	6.0
784-9220-01-MPPT	220W Solar Max Kit	12	11.2	76.6"	25.3"	0.12"	5.5
784-9220-02	220W Solar Max Expansion Kit	12	11.2	76.6"	25.3"	0.12"	4.0
784-9345-01-MPPT	345W Solar Max Kit	12	11.2	68.2"	43.2"	0.12"	5.5
784-9345-02	345W Solar Max Expansion Kit	12	11.2	68.2"	43.2"	0.12"	4.0



Auto Interlock II

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Auto Interlock III

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Auto Interlock IV

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FREEDOM X Inverter

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FREEDOM XC Inverter/Charger

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FREEDOM XC Pro Inverter/Charger

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POWER TRANSFER SWITCHES

Transfer Load from Shore Power to Generator. Automatic Operation.

AUTO INTERLOCK II

- 20A, double pole relay
- Rapid relay transfer time
- Hard wire installation
- Indicator lights activate to identify the transfer switch position source (shore line or generator)
- Available for 120V and 240V operation
- Steel powder coated case



AUTO INTERLOCK III

- 15A outlet
- Rapid relay transfer time
- Easy plug-in installation includes generator and shore input cables with molded plugs
- Indicator lights activate to identify transfer switch position source (shore line or generator)
- 120V operation
- PVC case



AUTO INTERLOCK IV

- 50A, four pole, double throw relay
- 120V, 3 wire or 240V, 4 wire compatible
- Can be used to transfer two separate shore/generator circuits
- Hard wire installation
- Adjustable transfer delay from 2 seconds to 10 minutes allows the generator to warm up and stabilize before load connection, default set at 24 seconds. Specify any modifications when ordering.



Part Number	Description	AC Volts	L	W	H	Weight
091-134	Auto Interlock II, 120VAC	120	4.5"	7.0"	3.5"	2
091-134-230	Auto Interlock II, 240VAC	240	4.5"	7.0"	3.5"	2
091-134A	Auto Interlock III	120	4.5"	7.0"	7.0"	2
091-197	Auto Interlock IV	120/240	4.25"	8.50"	8.50"	2



FREEDOM X INVERTER

Pure Sine Wave Output Inverters.

- Available in 1000W, 2000W, and 3000W
- Extended surge rating allows surges to 2X continuous power for 2 seconds for motor loads
- True sine wave AC power enables operation of sensitive and motor loads
- Ignition control allows users to turn the inverter on/off via a 12 VDC signal, minimizing battery drain by switching the inverter off when the ignition key is turned off
- Wide 10-18 VDC input range ensures inverter operation on high voltage alternators found on many new vehicle chassis
- Includes a built-in 30A AC transfer relay to sense when outside AC Power is present and transfers the load from the inverter to the source of incoming power (shore or generator).
- Huge wiring bay for easy access and quick connect AC in/out terminals for fast & easy wiring for quick installation



FREEDOM XC INVERTER/CHARGER

Pure Sine Wave Output Inverter/Chargers.

- Available in 1000W and 2000W in 12V and 24V options
- Includes all the benefits of the FREEDOM X Inverter
- Full rated performance in all climate temperatures
- Ideal upgrade for broken or end-of-life converter
- Charge dead batteries down to 0V
- Works with all battery types, including lithium-ion batteries
- Monitor and configure via Bluetooth app on iOS and Android
- Offer premium performance by delivering high-quality output in a lightweight, compact design
- Has a wide operating temperature range to provide full power in both invert and charge modes from -4 to 104°F (-20 to 40°C), making it suitable for all climate conditions
- Has an extended surge rating ideal for starting difficult loads such as refrigerators and microwaves

FREEDOM XC PRO INVERTER/CHARGER

Pure Sine Wave Output Inverter/Chargers with Built-in Communications Card.

- Available in 2000W and 3000W
- Includes all the benefits of the FREEDOM XC Inverter/Charger
- Built-in communications card (RV-C, J1939)
- Highly configurable for OEM-specific settings
- Works with all battery types, including lithium-ion batteries
- 5 second power surge for motor loads
- Now Available with Built-in GFCI



Optional Control Display



FREEDOM X/XC Bluetooth Remote Panel
808-0817-02

Optional Accessories



Super Auto Eject Cover
091-55-817XC-XX

For FREEDOM XC and
FREEDOM XC Pro only



**Super 30 Auto Eject
OLED Cover**
091-159-818XC-XX

For FREEDOM XC and
FREEDOM XC Pro only

Part Number	Description	Input	AC Out Continuous	Charger Amp	AC Out Surge	L	W	D	Weight
817-1000-11	Freedom X 1000 Inverter w/GFCI	12V	1000 W @ 40°C	N/A	2000 W	13.4"	9.1"	3.7"	11.5
817-2000-11	Freedom X 2000 Inverter w/GFCI	12V	2000 W @ 40°C	N/A	4000 W	14.6"	10.8"	3.9"	14.7
817-3000-11	Freedom X 3000 Inverter w/GFCI	12V	3000 W @ 40°C	N/A	6000 W	15.4"	10.8"	4.0"	16.5
817-1050-11	Freedom XC 1000 Inverter/Charger w/GFCI	12V	1000 W @ 40°C	50A	2000 W	13.4"	9.1"	3.7"	11.5
817-2080-11	Freedom XC 2000 Inverter/Charger, 12V w/GFCI	12V	2000 W @ 40°C	80A	4000 W	14.6"	10.8"	3.9"	14.7
817-2040-21	Freedom XC 2000 Inverter/Charger, 24V	24V	2000 W @ 40°C	40A	4000 W	15.4"	10.8"	4.0"	16.5
818-2010-11	Freedom XC Pro 2000 Inverter/Charger, w/GFCI	12V	2000 W @ 40°C	100A	4000 W	15.4"	10.8"	4.9"	17.1
818-3010-11	Freedom XC Pro 3000 Inverter/Charger, w/GFCI	12V	3000 W @ 40°C	150A	6000 W	15.4"	10.8"	4.9"	18.6
808-0817-01	Freedom X/XC Remote Panel	N/A	N/A	N/A	N/A	5.0"	3.0"	2.0"	N/A
808-0817-02	Freedom X/XC Bluetooth Remote Panel w/25' Cable	N/A	N/A	N/A	N/A	5.0"	3.0"	2.0"	N/A



DC POWER MANAGEMENT



Mobile Data Power System (MDP-25) 65



NavPac™ 65



StartGuard™ 65



DC Power Conditioners & Converters 66



Auto Isolator Systems 67



Load Manager P 68



Power Timer 68



Load Manager 1H 69



Load Manager 1HP 69



Load Manager 70



Load Manager 2 70



Soft Start 71



Timer-X 71



Auto Current & Auto Current A 72



Auto Current F & Auto Current F - A 73



Over & Under Voltage Relays 74



Low Voltage Alarm 75



Alternate Action Relay 75



Time Delay Relay 76



Relay Board 2 & Relay Board 4 76



Power Distribution System (PDS-100) 77

MOBILE DATA POWER SYSTEM

- Protects mobile computers against a system crash, lengthy reboot sequences, and loss of data
- The internal battery provides extra 12V power to mobile devices when a low vehicle battery is detected: 5A for 60 minutes, 10A for 20 minutes, and 25A for 8 minutes. Has a timeout circuit to preserve battery life.
- Built-in multi-stage filter provides clean power required by mobile electronics
- Provides a low output warning signals to mobile computers (such as Motorola® MW 800 series work stations)
- Internal three stage, temperature compensated charger maintains an internal 9A/H back-up battery in a fully charged stand-by state
- Heavy duty aluminum case with an access door for easy battery removal



NAV-PAC™

- Provides long duration voltage stabilization, electronics on-line with internal battery which is maintained by vehicle battery
- Upon sensing low or loss of input, the internal battery continues to provide supplemental power: 8A for 15 mins., 12A for 8 mins., and 18A for 2 mins.
- Timer disconnects the output 15 minutes after the loss of the input
- Absorbs line "spikes" and filters out electrical interference
- Configuration with the front panel power switch optional



STARTGUARD™

- Provides momentary voltage stabilization to electronics during engine start
- Prevents programmed memory dump and re-booting of the microprocessor based voice and data transmitters
- Internal battery is switched on-line to the electronics when the starter solenoid is engaged
- When the engine is running, StartGuard™ goes off-line and the internal battery is re-charged by the alternator



Part Number	Description	Input Voltage	Output	Battery Voltage	L	W	H	Weight
425-5750-0	Mobile Data Power System, MDP-25.0	N/A	N/A	N/A	8.00"	6.00"	5.75"	10
425-2988-0	NAV-PAC™, NP-12, 20A	N/A	N/A	N/A	7.40"	6.20"	5.25"	6
426-3222-0	StartGuard™, NS-12-20	13.8–14.8VDC nominal, 15.5VDC max.	20A max. for 1 min., 18A for 2 mins.	2VDC, sealed rechargeable 5A/H with a 5–7 year life (typical)	3.50"	4.90"	8.25"	6

ISOLATED DC CONVERTER STABILIZER

- Provides constant output voltage from variable input.
- Operate electronics at an optimal input voltage, even nearly drained batteries
- Boost load voltage to compensate for any voltage drop in long wire runs from batteries
- Prevents voltage drops during high current drains (e.g., engine start), fluctuations from charging sources, and overshoot from disconnecting high current loads



Brand Conversion From NEWMAR

NOISE FILTER

- Filters and regulates DC output to a constant 12V to power sensitive electronic equipment assuring noise free operation
- Regulated output is ideal for powering voltage sensitive loads that have difficulty operating from battery saver outputs



DC CONVERTER

- Convert a 20-50V input to a 12V output for powering communication equipment, on negative ground systems
- Ideal for powering voice and data electronics
- Rugged anodized aluminum case designed to survive in a high vibration environment onboard emergency and off-road vehicles
- 12V to 24V step-up converters also available



Brand Conversion From NEWMAR

Part Number	Description	Input Volts	Output Volts	Output Amps	L	W	H	Weight
460-0123-0	Isolated DC Converter Stabilizer, 12-12-3I	10-16	13.6	3	1.75"	3.5"	3.5"	1
460-1212-0	Isolated DC Converter Stabilizer, 12-12-6I	10-16	13.6	6	1.75"	3.5"	3.5"	1
460-0610-0	Isolated DC Converter Stabilizer, 12-12-12I	10-16*	13.6	12	14.0"	5.9"	4.25"	6
460-0617-0	Isolated DC Converter Stabilizer, 12-12-35	10-16*	13.6	35	16.5"	6.8"	6.0"	12
091-137	Battery Saver Filter	12-15	13.8	3	5.10"	2.95"	1.55"	1
380-2010-1	Noise Filter, PC-10	12/24	12/24	10	1.38"	3.49"	2.99"	1
380-1258-1	Noise Filter, PC-25	12/24	12/24	25	2.08"	4.20"	3.23"	2
420-2403-0	DC Converter, 24-12-3	17-32	13.6	3	1.75"	3.50"	3.50"	1
420-3826-0	DC Converter, 32-12-6	20-50	13.6	6	10.40"	4.20"	2.80"	3
420-3550-0	DC Converter, 32-12-10	20-50	13.6	10	11.00"	5.90"	4.50"	4
420-3535-0	DC Converter, 32-12-15	20-50	13.6	15	11.00"	5.90"	4.50"	5
420-3544-0	DC Converter, 32-12-25	20-50	13.6	25	14.00"	4.70"	6.00"	8
420-3545-0	DC Converter, 32-12-35	20-50	13.6	35	16.00"	4.70"	6.00"	12
420-3536-0	DC Converter, 32-12-50	20-50	13.6	50	18.10"	6.80"	6.20"	16

*11.5V minimum start-up voltage, then operates @ 10-16V from 1A minimum to full load, 24V models available, contact factory

AUTO ISOLATOR I SYSTEM

High Efficiency, No Diode Drop. Eliminates Diode Isolator in a 2 or 3 Battery System.

- System consists of a controller that detects when a vehicle's alternator is charging the main battery and then closes a solenoid to tie-in charge to an auxiliary battery
- When the engine is off or the charge voltage is no longer present, the solenoid opens to isolate the batteries
- Upon "cranking" the engine with a charged auxiliary battery, the solenoid is energized to parallel the batteries and provide a starting boost
- If the auxiliary battery is low, the controller senses that condition and the batteries are not paralleled
- Uses a solenoid rather than an isolation diode which typically causes a 0.7V drop, thus auxiliary battery receives full charge voltage
- The starting boost provided by the paralleled batteries is especially useful in cold weather or when the battery is low



AUTO ISOLATOR 3 SYSTEM

High Efficiency, No Diode Drop. Eliminates Diode Isolator in a 2 or 3 Battery System.

- System consists of a controller and two separate solenoids, for switching the batteries
- Allows a three battery system to be isolated from each other
- The system receives its power from the Battery one input or it can be switched ON/OFF
- When any of the three batteries go above 13.2V all three batteries are paralleled by the solenoids being energized, charging all three batteries and will disconnect the batteries when the voltage drops below 12.6V



Part Number	Description	Actuation Voltage	Battery Load	Output Current	Volts to Parallel	Hysteresis	L	W	H	Weight
091-139-CONT-12	Auto Isolator I Controller	< 13.3 V*	0.000125 A	3 A	N/A	N/A	5.10"	2.95"	1.55"	0.5
091-208-CONT-12	Auto Isolator 3 Controller	N/A	0.020 A	3 A	13.2 V	0.60 V (13.2 V on; 12.6 V off)	5.10"	2.95"	1.55"	0.5

* Field adjustable **Normal operation

Part Number	Description	Volts	Coil Current	Contact Rating	L	W	H	Weight
091-139-SOL-12HO	Auto Isolator I & 3 Solenoid	12 V	0.65 A	200 A continuous; 600 A surge	3.60"	3.30"	2.80"	2.0

LOAD MANAGER P

- Preserves the charge in the vehicle battery by two functions:
 - Timer disconnects the electronic loads after the engine shuts down
 - Battery condition sensor disconnects the loads when critical low voltage is sensed
- Timer and low voltage activation set points are user adjustable
- Prevents total discharge of the vehicle batteries caused by electronic loads left on after the vehicle is parked
- After the engine shuts down, the timer disconnects radios and computers after 1 - 2 hours (user selectable)
- Low voltage sense circuit activates the disconnect anytime critical low voltage is detected
- Sense circuit prevents nuisance disconnects caused by low voltage during the engine start sequence
- 30A high capacity disconnect relay manages multiple electronic loads



POWER TIMER

- Prevents dead batteries due to any accessories being left on and forgotten
- Programmable disconnect time limit: 15 minutes to 8 hours.
- Weatherproof enclosed case
- Dip switches on the top of the unit control time out programming
- LED's indicate output status
- 30A rating controls multiple auxiliary loads on the vehicle
- High and low voltage disconnect built-in
- Rugged construction; components epoxy potted for survival in vibration
- Optional ignition sense wiring restores the power immediately to radios when the ignition is activated, rather than having to start the engine



Part Number	Description	DC Volts	DC Amps	Load Shed Set-Point Range	Time Out Range	L	W	H	Weight
091-141	Load Manager P	12	30	11.00V to 12.85V*	N/A	1.55"	5.10"	2.95"	0.5
091-141-24	Load Manager P, 24 Volt	24	30	21.25V to 24.75V*	N/A	1.55"	5.10"	2.95"	0.5
390-0030-5	Power Timer	12	30	N/A	15 Min. to 8 Hrs.	3.7"	4.30"	2.13"	0.5

*Factory Set to 11.00V / 22.00V

LOAD MANAGER 1H

- Monitors a 12V system and when detecting low voltage set-point, disconnects the load
- Automatically reconnects the load when the battery recovers 1.4V above disconnect set-point
- Preserves battery which prevents total discharge
- Preserves the batteries from totally discharging by disconnecting loads when the critical low voltage is sensed
- Reconnect sequence requires 1.4V recovery above the disconnect set point ensuring the battery condition improves before the loads are re-applied
- Field adjustable set and reconnect points for specific vehicle configuration
- Green/Red LED's indicate normal or low voltage conditions
- Easy to install compact case



LOAD MANAGER 1HP

- Low voltage disconnect preserves the batteries from totally discharging by disconnecting loads when the critical low voltage is sensed
- Engine start sensor prevents nuisance disconnection due to low voltage occurring during the engine start
- Monitors the battery and de-energizes up to a 75A load when the voltage drops to 11.5V
- Automatically reconnects when the battery recovers above 12.8V, ensuring the battery condition improvement before any loads are re-applied
- Encapsulated components for survival in high vibration and wet area applications



Part Number	Description	Input Voltage	Amperage	Set Point	Adj. Range	L	W	H	Weight
091-96-12	Load Manager 1H, 12V	12	30	12.0 \pm 0.05V	10.5 to 13V	2.63"	4.00"	1.50"	0.25
091-96-24	Load Manager 1H, 24V	24	30	24.0 \pm 0.05V	21 to 26V	2.63"	4.00"	1.50"	0.25
091-167-12	Load Manager 1HP	12	75	11.5 \pm 0.05V	10.5 to 13V	2.35"	3.10"	4.00"	0.5

LOAD MANAGER

- Sends output signals in half-second sequences to control up to seven relays (five programmable)
- Applies loads gradually, allowing voltage stabilization as equipment is added
- Automatically sheds loads in sequence when low voltage is detected, maintaining power for high-priority equipment
- Smooths voltage variations to prevent damage to sensitive loads
- Activates sequential load control when the master switch is turned on; deactivates loads in sequence when the switch is turned off
- Monitors vehicle for low voltage and disconnects up to five low-priority loads to protect critical equipment
- Manual override input provides a 12V, 80-ohm signal output for standard vehicle lamp and auxiliary relays (lamp not included)
- Monitor panel alerts operators when load shedding occurs due to low voltage



LOAD MANAGER 2

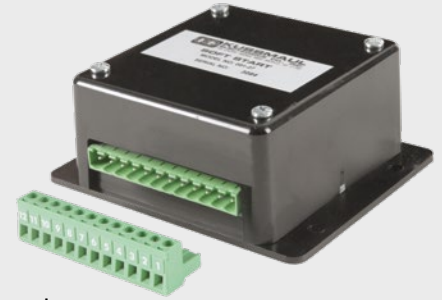
- Prioritized sequential load shedding of two circuits as battery voltage decays
- Dedicates battery power to critical equipment under low voltage conditions
- Ensures the most essential equipment has power priority over the other loads when the batteries are low
- Sequential circuit sheds the low priority loads first, ensuring longer run time for any critical equipment. This unit automatically resets when the voltage recovers and reconnects the high priority load first
- Prevents total discharge of the battery by disconnecting all the loads at critical low voltage set points
- Adjustable disconnect activation voltage set point
- 30A rating per circuit, 60A total (12V/24V)



Part Number	Description	DC Volts	DC Amps	Load Shed Factory Set Point	L	W	H	Weight
091-32	Load Manager, with Indicator	12	30	11.5V	1.63"	4.75"	3.50"	0.5
091-79	Load Manager 2, 12V	12	30	11.5V	1.63"	4.25"	3.50"	0.5
091-79-24	Load Manager 2, 24V	24	30	12.0V	1.63"	4.25"	3.50"	0.5

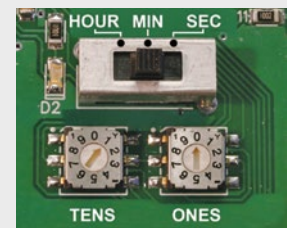
SOFT START

- Automatically sequences lights ON/OFF in half-second intervals
- Eliminates power surges and sags in the electrical system
- Controls lamp relays with precision solid-state technology
- Built-in plug-in connector for easy installation
- Allows individual control of each output with user-provided switches, enabling any combination of lights to be on or off
- "Master Control" switch activates sequential switching when turned on and deactivates loads in sequence when turned off
- Prevents voltage dips and spikes, protecting sensitive electronics in vehicles with many lights
- Gradually applies and removes loads to smooth voltage changes and safeguard equipment



TIMER-X

- Operates on DC or AC power in three modes:
 - Delay-on-Pull-In relay, DOPI
 - Delay-on-Drop-Out relay, DODO
 - Duty Cycle-Timer relay, CYCLE
- Timer utilizes switches for precise settings from 1 second to 99 hours
 - Intervals are easily set in the field using switches and a small screwdriver
- 30A relay switches AC or DC loads
- Flexible triggering either +12V or ground
- Heavy-duty 30A output relay with normally OPEN and CLOSED contacts
- Red LED indicator shows when the relay is energized



Part Number	Description	L	W	H	Weight
091-27	Soft Start	4.25"	3.50"	1.50"	2.0
091-214-12	Universal Timer, 12V	4.75"	3.50"	1.60"	0.5
091-214-24	Universal Timer, 24V	4.75"	3.50"	1.60"	0.5
091-214-120/240	120/240 VAC Adapter	N/A	N/A	N/A	0.5

AUTO CURRENT

- Senses current flow and provides remote indication that a load is operating
- Simplifies vehicle wiring by activating a single indicator from multiple inputs
- Detects current and closes a relay to provide a remote indication
- Ideal for applications needing a remote indicator or warning light when multiple loads are energized
- Illuminates the indicator whenever any connected lamp or load is active
- Indicator circuit can be isolated from the sensed circuit or powered by the same battery
- Standard unit supplies +12V to the indicator; available in -G model for ground-based operation



AUTO CURRENT A

- Simplifies vehicle wiring by activating a single indicator from multiple inputs
- Senses current and includes auxiliary input, which operates when grounded
 - Auxiliary input can connect to multiple parallel switches, activating the unit when any switch is closed
- Auto Current A cycles output relay ON and OFF when activated, creating a signal
- Current sensing allows use as an open-door detector
- Ideal for applications like a "DO NOT MOVE VEHICLE" indicator
- Sense terminals are wired in series with power to compartment lights
- Standard unit provides +12V to indicator; available in -G model for ground-based operation



Part Number	Description	Resistance Ohms	Min. Operating Amps	Max. Operating Amps	Switch Rating 12V	L	W	H	Weight
091-22-2	Auto Current -2	0.01	1.0	30	5A	2.63"	4.00"	1.50"	0.25
091-22-3	Auto Current -3	0.01	0.5	30	5A	2.63"	4.00"	1.50"	0.25
091-22-5	Auto Current -5	0.02	0.25	10	5A	2.63"	4.00"	1.50"	0.25
091-22-6	Auto Current -6	0.02	0.10	4	5A	2.63"	4.00"	1.50"	0.25
091-22-100	Auto Current -100	0.0003	4.0	100	5A	2.63"	4.00"	1.50"	0.25
091-22-A	Auto Current -A	0.01	1.0	30	5A	2.63"	4.00"	1.50"	0.25
091-22-A-6	Auto Current -A-6	0.2	0.10	4	5A	2.63"	4.00"	1.50"	0.25

AUTO CURRENT F

- Senses current flow and provides remote indication
- Simplifies vehicle wiring by operating a single indicator from multiple loads
- Produces a flashing output signal to an indicator light
- Auto Current F detects current and closes a switch to activate the indicator
- Designed for applications needing a remote indicator when multiple lights or loads are energized
- Illuminates the indicator whenever any connected lamp or load is active
- Indicator circuit can be isolated from the sensed circuit or powered by the same battery
- Built-in timer flashes the indicator lamp at one-second intervals for high visibility
- Standard unit supplies +12V to the indicator; available in -G model for ground-based operation



AUTO CURRENT F - A

- Senses current and includes auxiliary input, which operates when grounded
- Provides remote indication and simplifies vehicle wiring
- Produces flashing output to a warning indicator light
- Operates a single indicator from multiple inputs
- Auto Current F-A is an Auto Current F with auxiliary input, activating the output relay to cycle ON and OFF, creating a flashing signal
- Current sensing allows use as an open-door detector
- Auxiliary input can connect to multiple parallel switches, activating the unit with any switch closure or current sensing
- Ideal for a "DO NOT MOVE VEHICLE" door-open indicator
- Sense terminals are wired in series with power to compartment lights
- Standard unit supplies +12V to the indicator; available in -G model for ground-based operation



Part Number	Description	Resistance Ohms	Min. Operating Amps	Max. Operating Amps	Switch Rating 12V	L	W	H	Weight
091-22F-2	Auto Current F-2	0.01	1.0	30	5A	2.63"	4.50"	1.50"	0.25
091-22F-3	Auto Current F-3	0.01	0.5	30	5A	2.63"	4.50"	1.50"	0.25
091-22F-5	Auto Current F-5	0.02	0.25	10	5A	2.63"	4.50"	1.50"	0.25
091-22F-6	Auto Current F-6	0.02	0.10	4	5A	2.63"	4.50"	1.50"	0.25
091-22-100-F	Auto Current F-100	0.0003	4	100	5A	2.63"	4.50"	1.50"	0.25
091-22F-A	Auto Current F-A	0.01	1.0	30	5A	2.63"	4.50"	1.50"	0.25
091-22F-A-6	Auto Current F-A-6	0.2	0.10	4	5A	2.63"	4.50"	1.50"	0.25

OVER & UNDER VOLTAGE RELAYS

UV OV Relay

- Monitors system battery voltage and detects under and over voltage conditions
- Warns of possible dead battery with under voltage detection and possible battery boil-over with over voltage detection
- Programmable dip switches set under voltage trip point (11.44V to 13.01V) and over voltage trip point (13.66V to 15.06V)
- Relay contacts provided for both under and over voltage conditions to connect warning devices
- Easy-access dip switches under a snap-on cover for trip point settings
- Includes three LED indicators (yellow for under voltage, green for normal, red for over voltage) for system troubleshooting



Part Number	Description	DC Volts	Under Voltage Program Range	Over Voltage Program Range	L	W	H	Weight
091-45	UV OV Relay	10 to 17	11.44 to 13.01V	13.66 to 15.06V	1.50"	3.50"	4.25"	0.5

OV Relay

- Monitors battery system voltage and detects over voltage to warn of potential overcharge or boil-over
- Relay contacts close upon over voltage detection, triggering an alarm
- Easy installation
- Factory set to actuate at 17V and reset at 14V, with adjustable trigger points
- Output relay can switch 30A, with both "Normally Open" and "Normally Closed" contacts provided



Part Number	Description	DC Volts	DC Amps	Input Amps Relay ON	Input Amps Relay OFF	L	W	H	Weight
091-108-012	OV Relay	12	30	.08	.015	1.55"	4.50"	2.95"	0.25

LOW VOLTAGE ALARM

NFPA 1901 compliant

- Detects low battery voltage with a 120-second delay before activation
- High current 30A relay operates an indicator or alarm
- Complies with NFPA 1901 requirements (paragraph 9-3-3)
- Activates a low voltage indicator or alarm when voltage drops below set-point for 120 seconds
- Compatible with 12V or 24V systems, featuring LED indicators for installation and testing
 - Green LED shows normal voltage
 - Red LED illuminates after 120 seconds of low voltage, replacing green LED
- Adjustable voltage set-point to meet specific needs
- Simple installation with two wires for battery voltage sensing
- 30A relay contacts provide ample capacity for alarms and indicators
- Includes both normally open and normally closed contacts for flexible load circuit connections



ALTERNATE ACTION RELAY

- Remotely controls a load from multiple locations
- 30A contacts with signal output to indicate relay position
- Easy installation
- Allows ON/OFF control by grounding an input
 - First ground input energizes relay, turning load "ON"
 - Second ground input de-energizes relay, turning load "OFF"
- Supports multiple switches in parallel, allowing load to be turned ON at one location and OFF at another
- Output signal operates a remote indicator to show when the load is energized



Part Number	Description	DC Volts	DC Amps	Load Shed Factory Set Point	L	W	H	Weight
091-85-12	Low Voltage Alarm, 12V	12	30	11.8V	2.95"	5.10"	1.55"	0.25
091-85-24	Low Voltage Alarm, 24V	24	30	23.6V	2.95"	5.10"	1.55"	0.25
091-85-12/24	Low Voltage Alarm, 12V/24V	12/24	30	11.6V/23.2V	2.95"	5.10"	1.55"	0.25
091-98-12	Alternate Action Relay	12	30	N/A	2.63"	4.00"	1.50"	0.25

TIME DELAY RELAY, DODO

- 30A contacts with both normally open and closed output options
- Relay closes immediately when signal is applied and stays closed for a set time after de-energization
- Field adjustable time delay, with five models available from 2 seconds to 60 minutes
- Easy installation with three input connections: +12V power, ground, and a +12V signal
- Ideal for applications like keeping vehicle interior lighting on for maintenance
- Time delay can be adjusted within a defined range for specific needs



Part Number	Description	DC Volts	DC Amps	Min	Max	Set Point	L	W	H	Weight
091-103-012-A	Time Delay Relay - A	12	30	1.5 min.	6 min.	3 min.	2.63"	4.50"	1.50"	0.25
091-103-012-B	Time Delay Relay - B	12	30	6 min.	27 min.	15 min.	2.63"	4.50"	1.50"	0.25
091-103-012-C	Time Delay Relay - C	12	30	12 min.	60 min.	30 min.	2.63"	4.50"	1.50"	0.25
091-103-012-D	Time Delay Relay - D	12	30	4 sec.	15 sec.	10 sec.	2.63"	4.50"	1.50"	0.25
091-103-012-E	Time Delay Relay - E	12	30	2 sec.	3.3 sec.	2 sec.	2.63"	4.50"	1.50"	0.25
091-103-012-F	Time Delay Relay - F	12	30	.5 sec.	1.8 sec.	1 sec.	2.63"	4.50"	1.50"	0.25

RELAY BOARD 2 & RELAY BOARD 4

- Available with two or four relays, each with 30A contacts
- LED indicators show when each relay is energized
- Provides both normally closed and open contacts
- Compatible with Load Manager for easy installation
- Simplifies installation and wiring by combining multiple relays in one assembly
- Relays mounted individually and powered through a terminal strip
- Load circuits connect directly to relays using 1/4" quick disconnect terminals
- Reduces the need for mounting multiple relays, minimizes wiring to relay coils
- Operates by either supplying voltage or grounding the relay coil
- Models available in 12V and 24V



Relay Board 2



Relay Board 4

Part Number	Description	# of Relays	DC Volts	DC Amps	Com Connection	Input to Operate	L	W	H	Weight
091-32-029N-12	2 Relay Board	2	12	30 per relay	12V	Ground	1.45"	3.75"	2.60"	0.25
091-32-029P-12	2 Relay Board	2	12	30 per relay	Ground	12V	1.45"	3.75"	2.60"	0.25
091-32-029N-24	2 Relay Board	2	24	30 per relay	24V	Ground	1.45"	3.75"	2.60"	0.25
091-32-029P-24	2 Relay Board	2	24	30 per relay	Ground	24V	1.45"	3.75"	2.60"	0.25
091-32-024N-12	4 Relay Board	4	12	30 per relay	12V	Ground	1.55"	3.50"	4.75"	0.5
091-32-024P-12	4 Relay Board	4	12	30 per relay	Ground	12V	1.55"	3.50"	4.75"	0.5
091-32-024N-24	4 Relay Board	4	24	30 per relay	24V	Ground	1.55"	3.50"	4.75"	0.5
091-32-024P-24	4 Relay Board	4	24	30 per relay	Ground	24V	1.55"	3.50"	4.75"	0.5

POWER DISTRIBUTION SYSTEM

100A Power Distribution System. Simplifies Wiring of Electronic Accessories .

- Quick and easy way to connect, protect, and program power to emergency vehicle accessories
- Provides six dedicated fused circuits configured in three load groups to power radios, emergency lights, sirens, video, MDT, radar, and more
- Flexible circuit activation/deactivation allows installer to set battery power use priority independently per two circuit load group:
 - Powered only with ignition
 - Timed disconnect
 - Always ON, with load group LVD
 - Always ON, with NO load group LVD
- Each circuit is fuse protected with a LED indicator which identifies the blown fuse position, simplifying troubleshooting
- Master low voltage disconnect protects batteries from an extreme discharge
- Heavy duty studs for battery connections
- Screw terminals for secure load connections
- Increase circuit capacity by wiring multiple PDS using parallel busing kit
- Case is powder-coated aluminum and Bus is nickel-plated cooper
- Protective cover has top panel connections and switches



Part Number	Description	Input	Circuits	Power Consumption	Max. Load per PDS	Max. Load per System	Disconnect Range	Master LVD*	L	W	H	Weight
390-5711-0	PDS-100	12V	6	Idle: 8mA Active: 180mA/circuit	100A Total, 20A Per Position	3 PDS wired in parallel, 18 circuits	11.8-10.6VDC	@10.5V**	6.20"	5.20"	2.00"	2

*LVD: Low Voltage Disconnect **Factory programmable 10.0-11.8V

10

INSTALLATION ACCESSORIES



Mounting Plate for Auto Eject WP 79



Mounting Plate for Super Auto Eject 79



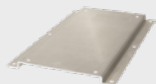
Mounting Plate for Air Eject, 12V 79



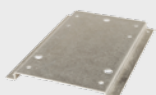
Mounting Plate for Super 30 Auto Eject 79



Mounting Plate for Super 16 Auto Eject 79



Charger Mounting Plates 80



Air Compressor Mounting Plates 80



Waterproof Circuit Breakers 81



High Current ANL Fuses & Fuse Blocks 81



Waterproof Junction Boxes - PX 82



Weatherproof Junction Boxes - BX 82



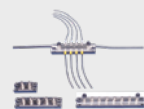
Waterproof Fittings RA Series 83



Waterproof Fittings CCX Series 83



Bus Bars 83



Terminal Strips 83

AUTO & AIR EJECT MOUNTING PLATES

- Simplifies installation of cord and air ejects
- Green light indicates when inlet is energized
- Heavy duty stainless steel plate, paint to match vehicle



091-185-010
For Auto Eject WP



091-185-009
For Super Auto Eject



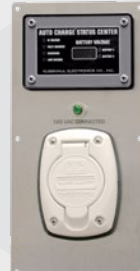
091-185-011
For Air Eject 12V
091-185-013
For Air Eject 24V



091-182-027-120
For Super 16 Auto Eject 120VAC
091-182-027-240
For Super 16 Auto Eject 240VAC



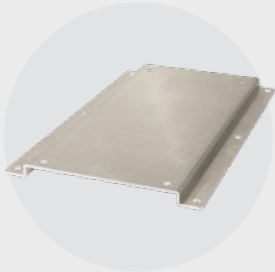
091-159-081-120
For Super 30 Auto Eject 120VAC
091-159-081-240
For Super 30 Auto Eject 240VAC



091-228-002-120
For Indicator and
Super Auto Eject 120V
091-228-002-240
For Indicator and
Super Auto Eject 240V

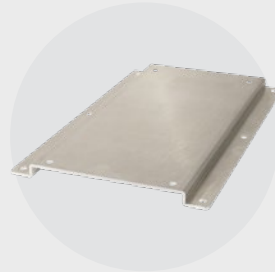
CHARGER/PUMP MOUNTING PLATES

- Simplifies installation and removal
- Pump plates have integral vibration mounts 1/8"
- Aluminum with charger and vehicle mounting holes



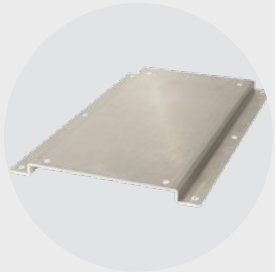
E-Z Mounting Plate Small
091-185-006

Auto Charge 11, Auto Charge 12,
Euro Charge I, Euro Charge II,
Pump Plus H0



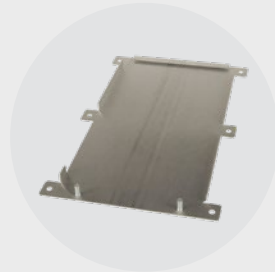
E-Z Mounting Plate Large
091-185-008

LPC 20, Auto Charge 1200,
Auto Charge 1200 Remote,
Auto Charge D, Auto Charge D2,
Auto Charge 4000, Pump Plus
1200, Auto Charge D Pump Plus



E-Z Mounting Plate Medium
091-185-007

Auto Charge 20, Auto Charge 12 H0,
Auto Charge 12 PIM, Euro Charge III

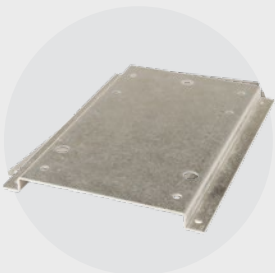


E-Z Slide Mount Plate Large
091-200-EZM

LPC 20, Auto Charge 1200,
Auto Charge 1200 Remote,
Auto Charge D, Auto Charge D2,
Auto Charge 4000, Pump Plus
1200, Auto Charge D Pump Plus

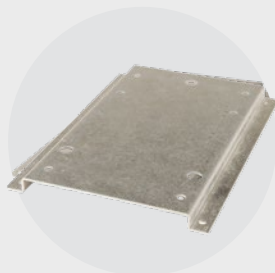
AIR COMPRESSOR MOUNTING PLATES

- Simplifies installation and removal
- Pump plates have integral vibration mounts 1/8"
- Aluminum with charger and vehicle mounting holes



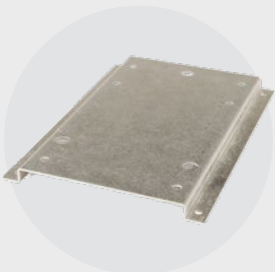
**Auto Pump AC
Mounting Plate**
091-9H-1

Old Style AC Pump



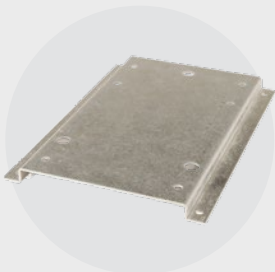
**Auto Pump 12V & 12V HP
Mounting Plate**
091-9-12V-HP-H

Old Style DC Pump



**Auto Pump AC HP
Mounting Plate**
091-9HP-H

New AC Pumps, HP Pumps



**Vibration Dampening
Mounting Plate**
091-9C-12V-HP-H

New Style DC Pump

CIRCUIT PROTECTION

Waterproof Circuit Breakers

- Combines switching and a circuit breaker function in one unit
- Compact size and surface mount configuration protects high amperage circuits
- Trip delay curve accommodates high surge amperage from motor start
- Push to disconnect button de-energizes the circuit for maintenance
- Latch arm resets the breaker after overload, but cannot be held in the "ON" position if a short remains on the circuit
- 1/4" terminal studs with protective covers
- Waterproof - ideal for marine and truck applications
- Ignition is protected for safe use in gasoline powered applications
- High impact plastic molded case with two 1/4" holes, mounting hardware not provided
- Thermal trip sensing



High Current ANL Fuses & Fuse Blocks

- Essential safety item for all inverter installations and other high amperage DC circuit, over-current protection.
- Heavy duty 500A, insulated, compact fuse block with corrosion resistant 5/16" studs
- Secures to the surface with two #10 flat head screws or bolts (not included)
- Clear Lexan® cover insulates the conductive parts
- Accepts industry standard ANL tin-plated copper fuses, purchase separately. 80-500A ratings
- See through mica element in the fuse body for easy identification of a blown link
- Case Sizing: 6.25" x 3.00" x 2.00"



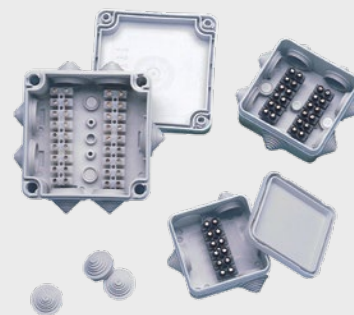
Part Number	Description	Volts	Amps	Max Interrupt Current	L	W	H	Weight
090-0030-0	WBS-30	42V	30A	3000A	2.88"	1.88"	1.75"	0.25
090-0040-0	WBS-40	42V	40A	3000A	2.88"	1.88"	1.75"	0.25
090-0050-0	WBS-50	42V	50A	3000A	2.88"	1.88"	1.75"	0.25
090-0060-0	WBS-60	42V	60A	3000A	2.88"	1.88"	1.75"	0.25
090-0080-0	WBS-80	42V	80A	3000A	2.88"	1.88"	1.75"	0.25
090-0100-0	WBS-100	42V	100A	3000A	2.88"	1.88"	1.75"	0.25
090-0120-0	WBS-120	42V	120A	3000A	2.88"	1.88"	1.75"	0.25
090-0150-0	WBS-150	42V	150A	3000A	2.88"	1.88"	1.75"	0.25
100-4407-5	AFB-500, Fuse Block							
100-0XXX-0	ANL Fuse, specify amperage: 80, 100, 150, 200, 250, 300, 350, 400, 500*							

*All ANL fuses rated to 80VDC

JUNCTION BOXES

PX Series Waterproof Junction Boxes

- Ideal for wiring connections onboard emergency vehicles where wire connections are subject to outside conditions
- Made from rugged, non-corrosive, high impact polypropylene
- Snap-on cover provides a watertight seal
- "Universal" cut-to-fit (see diagram) cable entries accommodate a wide cable range
- Multiple connect strips with "captive" screw compression wire terminals installed
- Multiple knockouts provided for conduit access (in addition to cable entries)
- IP54 IEC Waterproof Rating



Part Number	007-3001-0	007-3002-0	007-3003-0
Description	PX-1	PX-2	PX-3
Number of Connector Strips	1	2	2
Positions per Strip	6	6	9
Max Wire Gauge	16	16	16
Number of Cable Entry Points	5	7	7
Number of Cable Entries Installed	3	7	7
Spare Cable Entries Provided	2	0	0
Cable Diameter Range	0.14 - 0.81" (3.5 - 20.5mm)	.014 - 0.81 (3.5 - 20.5mm)	0.14 - 0.99 (3.5 - 25.5mm)
Box Size	2.95" x 2.95" x 1.66"	3.35" x 3.35" x 1.66"	4.45" x 4.45" x 2.29"

BX Series Weatherproof Junction Boxes

- Provides secure, weatherproof protection of the wiring connections
- Rugged cast aluminum box with white enamel finish
- Easy wiring access through multiple grommeted cable entries
- Removable connector strips secure conductors with compression screws
 - No terminals required, see the matrix below for the number of connector positions and wire gauges



Part Number	007-6001-0	007-6002-0	007-6003-0
Description	BX-1	BX-2	BX-3
Number of Connector Strips	1	1	2
Positions per Connector Strip	6	12	11
Max Wire Gauge	16	16	14
Max Amps (per position)	6	6	10
Cable Entry Points	2	8	2
Max Cable Diameter	0.25"	0.37"	0.59"
Box Size	2.0" x 2.0" x 1.2"	4.4" x 2.4" x 1.2"	4.7" x 3.7" x 1.3"

TERMINAL STRIPS

Waterproof Fittings - RA Series Right Angle

- Route cables at a 90° angle through vertical and horizontal surfaces. A low profile design keeps the cable secured and close to the surface
- Molded of nylon, the sculpted shape doesn't have sharp edges and provides a radiused 90° feed-thru bend in the cables without damage
- Easy installation: slide the silicone compression rings on the cable, mount the base piece with the waterproof gasket, then attach the sealing end cap to create an IP 65 waterproof seal



Part Number	Description	Volts	Amps
007-2010-0	RA-1	0.1" - 0.25"	2.17 x 1.65 x 0.63
007-2020-0	RA-2	0.27" - 0.35"	3.23 x 2.44 x 0.95
007-2030-0	RA-3	0.39" - 0.47"	3.23 x 2.44 x 0.95
007-2040-0	RA-7	(2 x) 0.1" - 0.23"	3.23 x 2.44 x 0.95

Waterproof Fittings - CCX Series

- Create a 100% waterproof seal when routing cables through vehicle roofs
- Allowing installation/removal with a connector still attached
- Entry hole is pre-drilled in a seal with a slit to edge allowing feed-thru of the cable with a factory installed connector attached

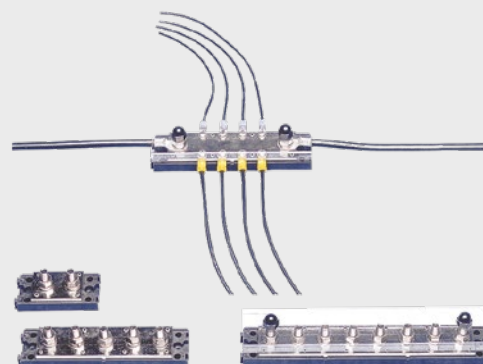
Part Number	Description	Cable Diameter Range	Max Connector Diameter	Diameter	Height
007-2003-0	CCX-R	0.47"-0.59"	1.57"	2.59"	0.83"
007-2004-0	CCX-S	0.35"-0.55"	0.83"	1.77"	0.83"
007-2005-0	CCX-T	0.18"-0.35"	0.83"	1.93"	0.75"



Bus Bars

- Heavy duty, 500A bar, with 5/16" studs, on 1" centers, in 1/4" thick nickel plated copper bar
- A clear insulating protective cover is provided

Part Number	Description	Quantity of 5/16" Studs	L	W
002-3595-2	BB-2, Bus Bar	2	3.063"	1.50"
002-3595-0	BB-2/8, Bus Bar	2 plus 8 - #8 screws	6.063"	1.50"
002-3595-5	BB-5, Bus Bar	5	6.063"	1.50"
002-3595-8	BB-8, Bus Bar	8	9.063"	1.50"



Terminal Strips

- 100A Dual terminal strips with #8 screws on 3/4" centers

Part Number	Description	# of Terminals	L	W
064-3589-1	TS-2x4, Terminal Strip	8	3.00"	1.50"
064-3589-2	TS-2x8, Terminal Strip	16	6.00"	1.50"



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ENGINE/VEHICLE ACCESSORIES



Power Cord Reel

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Air Line Reel

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R.F. Control

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Safety Locks

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Auto Throttle 1

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Radio Battery Charging Solutions

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USB Dual Ports

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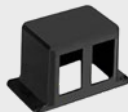
Data & Telephone Ports

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USB/USB-C EZ Mount Assembly

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Switch Enclosure

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AUX/USB Pass Through

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10 & 7 Door Displays

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Remote Audible Alarm Relay Panel

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In-Dash Audible Alarm Panel

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Temperature Monitor

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Mini Battery Voltage Meter

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Shoreline/Air/Level Alarms

91



Bluetooth Module

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CORD REELS

Power Cord Reel

- NEMA 5-20P connector attached, mates with 20A Auto Eject
- Spring retractable with latch
- Wall or ceiling mount
- 45 foot, #12 AWG 3 conductor cord
- Adjustable cord stop

Part Number	Description	Weight
L4545 12 3 3	Power Cord Reel	28



Air Line Reel for Air Ejects

- Female coupler supplied to mate with Air Eject
- Spring retractable with latch
- Wall or ceiling mount
- 50 foot, 1/4 inch, 300 PSI hose
- Adjustable cord stop

Part Number	Description	Weight
RT450-OLP	Air Line Reel	25



R.F. CONTROL

- Control up to 4 in-building functions from the vehicle: garage doors, exhaust fans, lighting, and traffic lights.
- Vehicle transmitters send 4 unique signals with a range of 155 feet.
- AC-powered receivers operate up to 4 systems/accessories.
- Supports unique codes for up to 32 vehicles, allowing custom controls for specific bays or areas.



Part Number	Description	Input Power	Frequency	Output Channels	Trans. Codes	L	W	H	Weight
091-133-T	Transmitter	12V, 0.015A	418 MHz	120	4	2.95"	4.5"	1.55"	1
091-133-R	Receiver	12V, 50/60 Hz, 0.015A	418 MHz	120	4	4.75"	3.5"	1.55"	1

SAFETY LOCKS

Permits Running Engine with Ignition Key Removed.

- Safety lock activates when the ignition key is removed and deactivates when the key is inserted.
- Engine stays on but shuts down if controls are manipulated to move the vehicle.
- Models support one or multiple ignition outputs: foot brake, parking brake, gear shift, or custom kill switch.



AUTO THROTTLE 1

High Idle Control Automatically Increases Alternator Output.

- Prevents cycling with a time delay and works with any throttle actuator.
- Detects low alternator output to boost engine speed when battery voltage drops.
- Activates high idle for 5 minutes if voltage falls below 12.5V for 15 seconds.
- High idle stops when voltage exceeds 13.4V or after 5 minutes.
- Monitors battery voltage and sends control signals for engine speed adjustment (installer provides speed mechanism).



Part Number	Description	DC Volts	DC Amps	Outputs	High Idle Factory Set Point	L	W	H	Weight
091-148-12	Safety Lock	12	N/A	1	N/A	2.63"	4.50"	1.50"	0.25
091-155	Safety Lock 3	12	N/A	3	N/A	4.25"	3.50"	1.63"	0.25
091-160	Safety Lock 4	12	N/A	4	N/A	3.00"	5.25"	1.50"	0.25
091-174	Safety Lock D	12	N/A	*	N/A	2.95"	5.10"	1.55"	0.25
091-84	Auto Throttle 1	12	30	N/A	12.5	5.10"	1.55"	2.95"	0.25

CHARGING SOLUTIONS FOR RADIO BATTERIES

In-Vehicle Charging Solutions for Two-Way Radio Batteries.

- K-Line chargers designed for in-building or in-vehicle with available accessories
- Models are available for charging one (K1M), two (K2M), six (K6M) or 12 (K12M) batteries and the battery may be charged while on or off the radio
- K-Line chargers can be powered by AC as well as 12 or 24 volt DC power
- Available for popular radios including Motorola, Kenwood, Harris, Tait, Hytera, Icom, and others
- Two year warranty



500-K12M-XX



500-K6M-XX



500-K2M-XX



500-K1M-XX



Optional:
Mounting Bracket for
K-Line Models. Call
for more Information

Part Number	Description	Input AC	Input DC	Charge Rate	Compatible With	W	L	H	Weight
500-K1M-XX	One Unit Charger	N/A	12V-24V 1.0A (min)	up to 900 mA	Li-Io / LiPo NiMH / NiCd	3.8"	5.2"	3.0"	0.6
500-K2M-XX	Two Unit Charger	100-240 VAC .058A	12V-24V 1.8A (min)	up to 900 mA	Li-Io / LiPo NiMH / NiCd	3.9"	5.4"	3.2"	0.7
500-K6M-XX	Six Unit Charger	100-240 VAC 2A	12V-24V 5.4A (min)	up to 900 mA	Li-Io / LiPo NiMH / NiCd	20"	5.8"	3.6"	3.1
500-K12M-XX	Twelve Unit Charger	100-240 VAC 2.2A	12V-24V 12.5A (min)	up to 900 mA	Li-Io / LiPo NiMH / NiCd	20"	5.8"	3.6"	3.6

(XX) Indicates pod

Vehicle Only Chargers

- Ultra-rugged for Motorola APX6000 / 7000 / 8000 radios
- Includes USB port for charging a mobile phone or tablet
- Variety of mounting options
- Models are available for charging one battery (500-KVOAPX1) and 4 batteries (500-KVOAPX4)
- Chargers can be powered by 12 or 24VDC power
- Two year warranty



500-KVOAPX4



500-KVOAPX1
(Radio not included)

Part Number	Description	Input	Charge Rate	Battery Voltage Range	DC Power Cable	W	L	H	Weight
500-KVOAPX1	One Unit Charger with Secure 4-pin Connector Cable	12-24V 1.0A (min)	up to 800 mAh	7.2-10.8V	18 AWG	2.6"	5.3"	3.1"	0.6
500-K2M-XX	Four Unit Charger with Locking XLR Connector Cable	12-24V 4.0A (min)	up to 800 mAh	7.2-10.8V	16 AWG	3.9"	10.0"	5.0"	7.3

USB DUAL PORTS

USB-A (QC 18V) & USB-C (PD 45W) Outputs in a Single Switch Allows Max Output Power to Charge Phones, Tablets and Laptops at the Same Time.

- 63 watt max output; USB A, (18 watts) and USB-C (45 watts)
- Quick and easy way to recharge electronic devices in a vehicle
- Built-In LED Indicator indicates device is powered
- Designed for easy installation in vehicle switch panels
- Reverse polarity protected
- All USBs can be connected to 12 or 24V switched ignition or directly to battery, and can charge phone and tablet or USB-C equipped laptop simultaneously



091-219-5-WP 091-280 091-264
(Weatherproof door)

Part Number	Description	Input Volts	Output Volts	Output Amps	L	W	H	Weight
091-264	Dual Port USB-C & USB-A, SVR	10-30VDC	USB-A 3.6-12VDC	5.5	1.73"	0.98"	1.73"	0.25
			USB-C 3.3-21VDC					
091-264-N	Dual Port USB-C & USB-A, NGR	10-30VDC	USB-A 3.6-12VDC	5.5	1.97"	1.02"	1.97"	0.25
			USB-C 3.3-21VDC					
091-219-5	USB Dual Port 4.8 with terminal connectors	10-30VDC	4.8-5.2VDC	4.8	1.73"	0.98"	1.73"	0.25
091-219-5-010	USB Dual Port 4.8 with wires (pigtail lead)	10-30VDC	4.8-5.2VDC	4.8	1.73"	0.98"	1.73"	0.25
091-219-5-WP	USB Dual Port 4.8 with weatherproof door	10-30VDC	4.8-5.2VDC	4.8	1.73"	0.98"	1.73"	0.25
091-280	Dual USB-C Charging Port, 12V/24A	10-30VDC	USB-C 3.3-2.1BDC	3.0(max) per port	1.73"	0.98"	1.73"	0.25

DATA PORT

Provides Access To Router.

- Designed for easy installation in the vehicle's switch panel
- Standard RJ45 connector
- Category 3, 5E, 6, & 6A performance
- EIA/TIA 568A/B compliant ensuring compatibility and reliability
- Fully stamped shielding offers isolation from EMI/RFI



Data Port

Telephone Port

TELEPHONE PORT

Provides Access To Telephone Line.

- Designed for easy installation in the vehicle's switch panel
- Standard RJ11 Connector
- Fully stamped shielding offers isolation from EMI/RFI

Part Number	Description	Connectors	Category	Temperature Range	L	W	H	Weight
091-227	Data Port	RJ45	3, 5E, 6, 6A	-50-150°F	1.73"	0.98"	1.73"	0.25
091-227-RJ11	Telephone Port	RJ11	N/A	-50-150°F	1.73"	0.98"	1.73"	0.25

DASHMOUNT ACCESSORIES

USB/USB-C EZ Mount Assembly Switch Enclosure



- Dual USB Charging Port with 12V accessory output
- 4.8 Amps allows charging of both smart phone and tablet at same time
- Can be connected to 12V or 24V switched ignition or direct to battery



- Heavy duty enclosure
- SVR switches snap in (accepts switches with pigtail leads only)
- Easy to mount
- Mounts on top or underneath dashboard
- Choice of 3 colors

AUX / USB Pass Through



- Front Panel - USB Type-A Receptacle (4 pin), 3.5 Stereo Jack (3 pin)
- Back Panel - 6' USB Type-A plug, 6'.3 Stereo plug

Part Number	Description	W	L	H	Weight
091-219-5-038-1	USB EZ Mount Assembly	3.1"	7.5"	5.5"	1.5
091-264-038-1	USB-C With Terminals, Mounted on Plate and 12V Outlet	3.1"	7.5"	5.5"	1.5
091-255	Switch Enclosure	3.72"	2.06"	2.18"	0.10
091-249	Audio / USB Pass Through	1.73"	0.98"	1.73"	0.25
092-249-WP	Audio / USB Pass Through with Weatherproof Door	1.73"	0.98"	1.73"	0.25

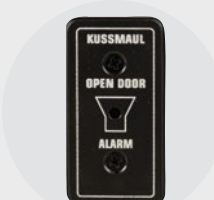
Open Door Indicator Panels



10 Door Panel & 7 Door Panel

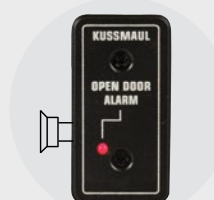
- Choose 10 or 7 door LED display
- Door/compartament mounted switches feed signal to display (switches installer provided)
- Audible alarm options
- In-dash buzzer
- In-dash panel with relay for remote high decibel warning device (3A max.)

Optional Audible Alarms



In-Dash Audible Alarm Panel

- Wires to open door indicator panel
- Contains audible buzzer



Remote Audible Alarm Relay Panel

- Wires to open door indicator panel
- Contains relay that actuates remote audible alarm, installer provided

Part Number	Description	Input Power	W	L	H	Weight
091-178-10A	10 Door Display	12V	1.98"	1.02"	0.45"	1
091-178-7A	7 Door Display	12V	1.98"	1.02"	0.45"	1
091-178-8	In-Dash Audible Alarm Panel	12V	1.98"	1.02"	0.45"	1
091-178-9	Remote Audible Alarm Relay Panel	12V	1.98"	1.02"	0.45"	1

DASHMOUNT ACCESSORIES



Temperature Monitor

- Designed for easy installation in the vehicle's switch panel
- Large 7 segment green LED display
- Reverse polarity protected
- Easy connection to a 12V or 24V switched ignition
- Temperature monitor blinks at 32° F and below to indicate roads may be icy
- Remote Sensor with 16' cable included



Mini Battery Voltage Meter

- Monitors battery voltage
- Large 3 digit green LED display
- Reverse polarity protected
- Easy connection to a 12V or 24V switched ignition

Part Number	Description	DC Volts	DC Amps	L	W	H	Weight
091-224	Temperature Monitor °F	12	0.25A	1.73"	0.98"	1.73"	0.25
091-224C	Temperature Monitor °C	12	0.25A	1.73"	0.98"	1.73"	0.25
091-250-12	Mini Voltage Battery Meter, 12V	12	0.4A	1.73"	0.98"	1.73"	0.25
091-250-24	Mini Voltage Battery Meter, 24V	24	0.5A	1.73"	0.98"	1.73"	0.25

DASHMOUNT ACCESSORIES



Shore Power Alarm

- Alerts driver to disconnected shore line

Air Alarm

- Alerts driver to disconnected air line

All Alarms Offer:

- 85dB alarm with built-in illuminated LED indicator
- Designed for easy installation in the vehicle's switch panel
- Reverse polarity protected

Part Number	Description	DC Volts	DC Amps	L	W	H	Weight
091-231-E	Shore Power Alarm, Eaton Euro	10-16	30mA	1.98"	1.02"	0.45"	0.25
091-231-N	Shore Power Alarm, Eaton NGR	10-16	30mA	1.98"	1.02"	0.45"	0.25
091-231-S	Shore Power Alarm, Eaton SVR	10-16	30mA	1.73"	0.98"	1.73"	0.25
091-248-E	Air Line Alarm, Eaton Euro	10-16	30mA	1.98"	1.02"	0.45"	0.25
091-248-N	Air Line Alarm, Eaton NGR	10-16	30mA	1.98"	1.02"	0.45"	0.25
091-248-S	Air Line Alarm, Eaton SVR	10-16	30mA	1.73"	0.83"	1.73"	0.25



Bluetooth Module

- Fully integrated solution for high-quality stereo audio in a compact form
- Bluetooth version 3.0 audio module, compatible with Bluetooth 2.1+EDR, 1.2, and 1.1
- Dual-channel, differential audio output for top audio quality
- FCC and Bluetooth SIG certified
- Supports HSP/HFP, A2DP, AVRCP, SPP, and iAP profiles
- 10-meter (33 feet) operation range
- Designed for easy installation in a vehicle's switch panel
- Connects easily to a 12V switched ignition
- Optional microphone available

Part Number	Description	DC Volts	DC Amps	L	W	H	Weight
091-226	Bluetooth Module	11-16V	0.25A	1.73"	0.98"	1.73"	0.25
091-226-007	Optional Mic	N/A	N/A	N/A	N/A	N/A	N/A

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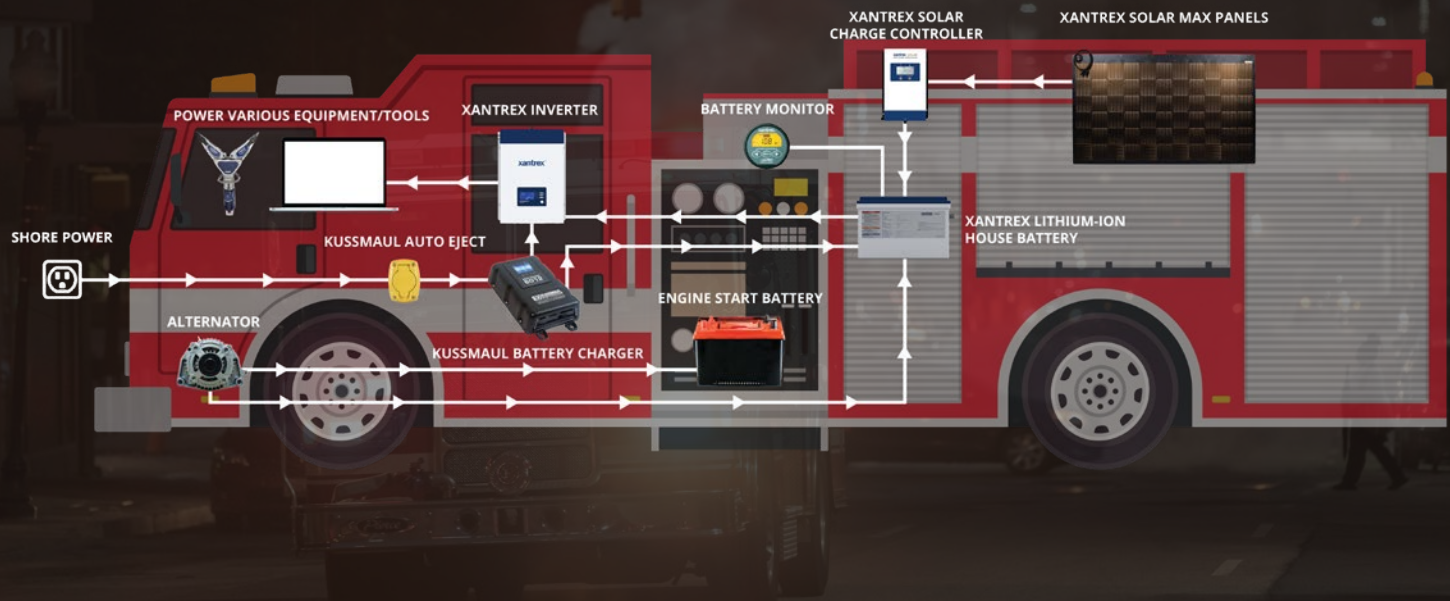


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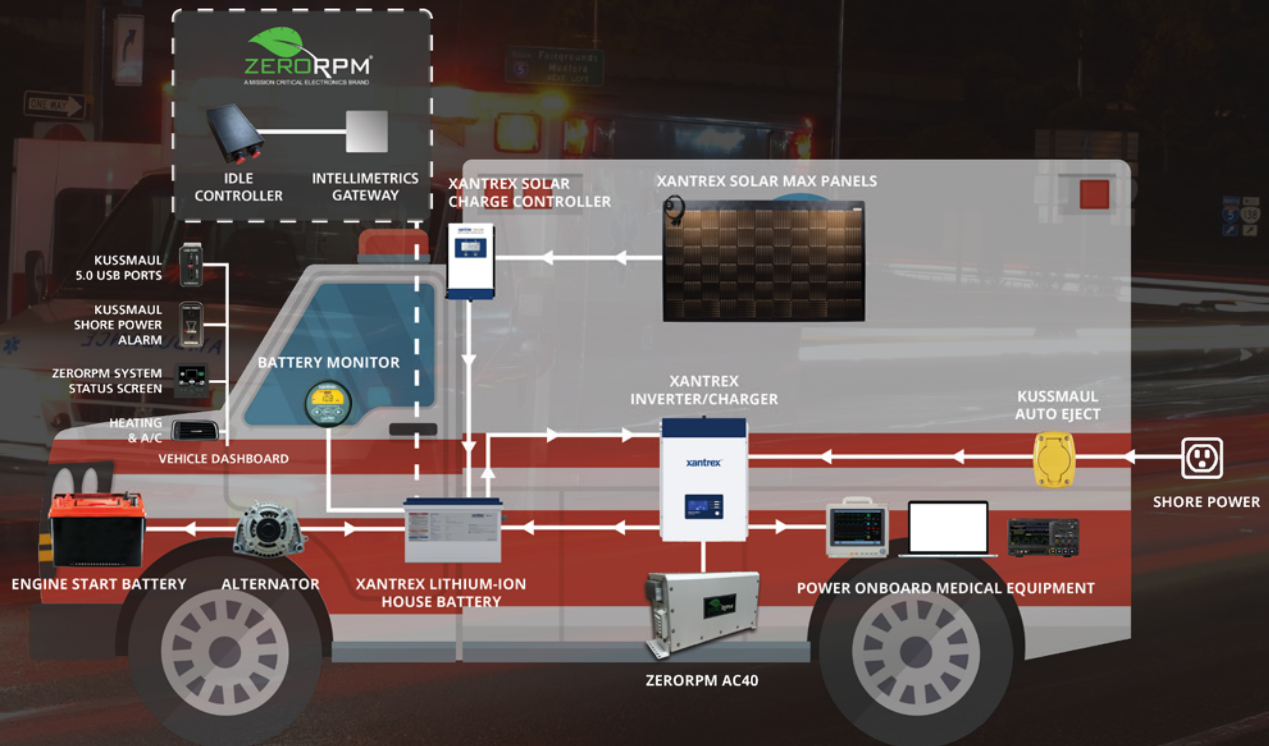
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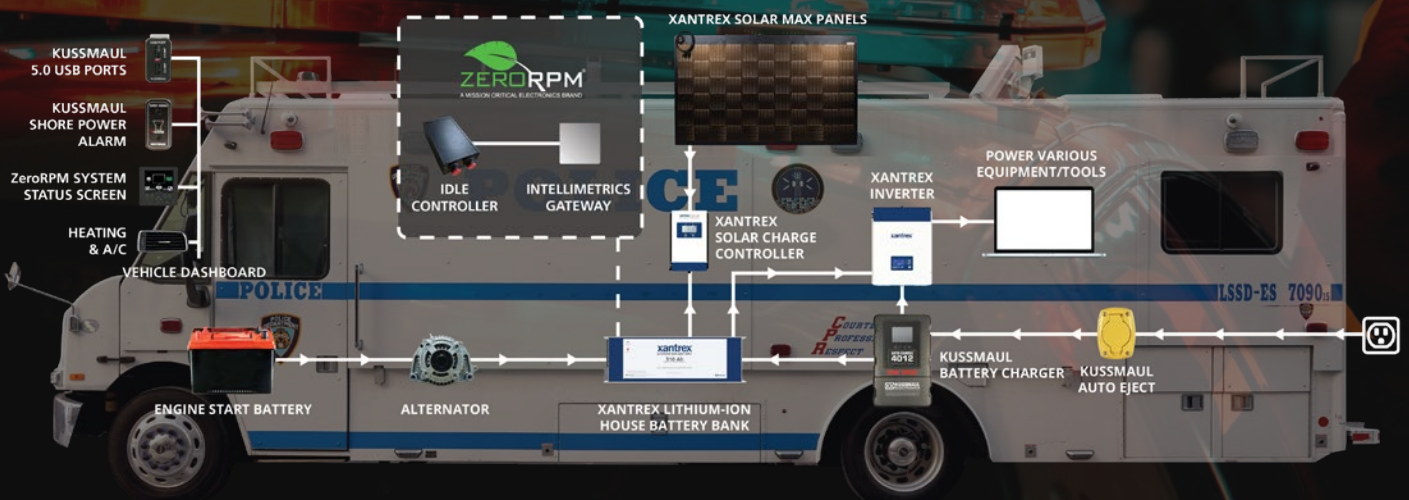


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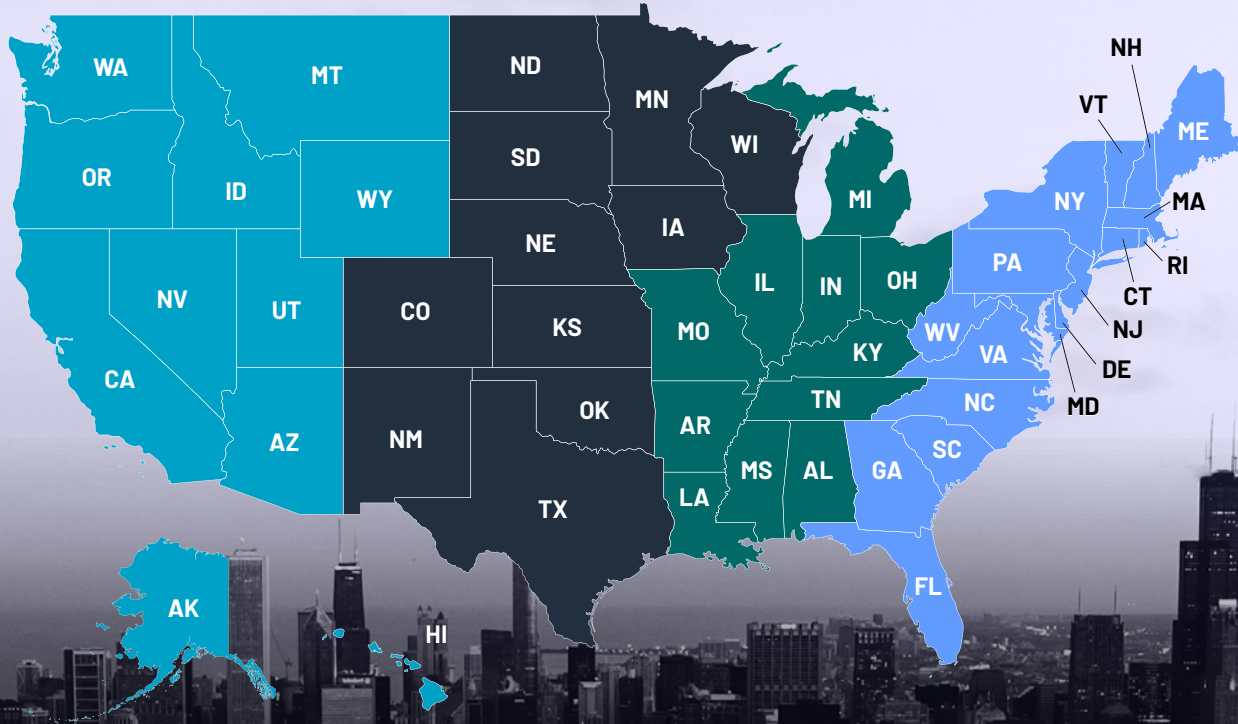
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