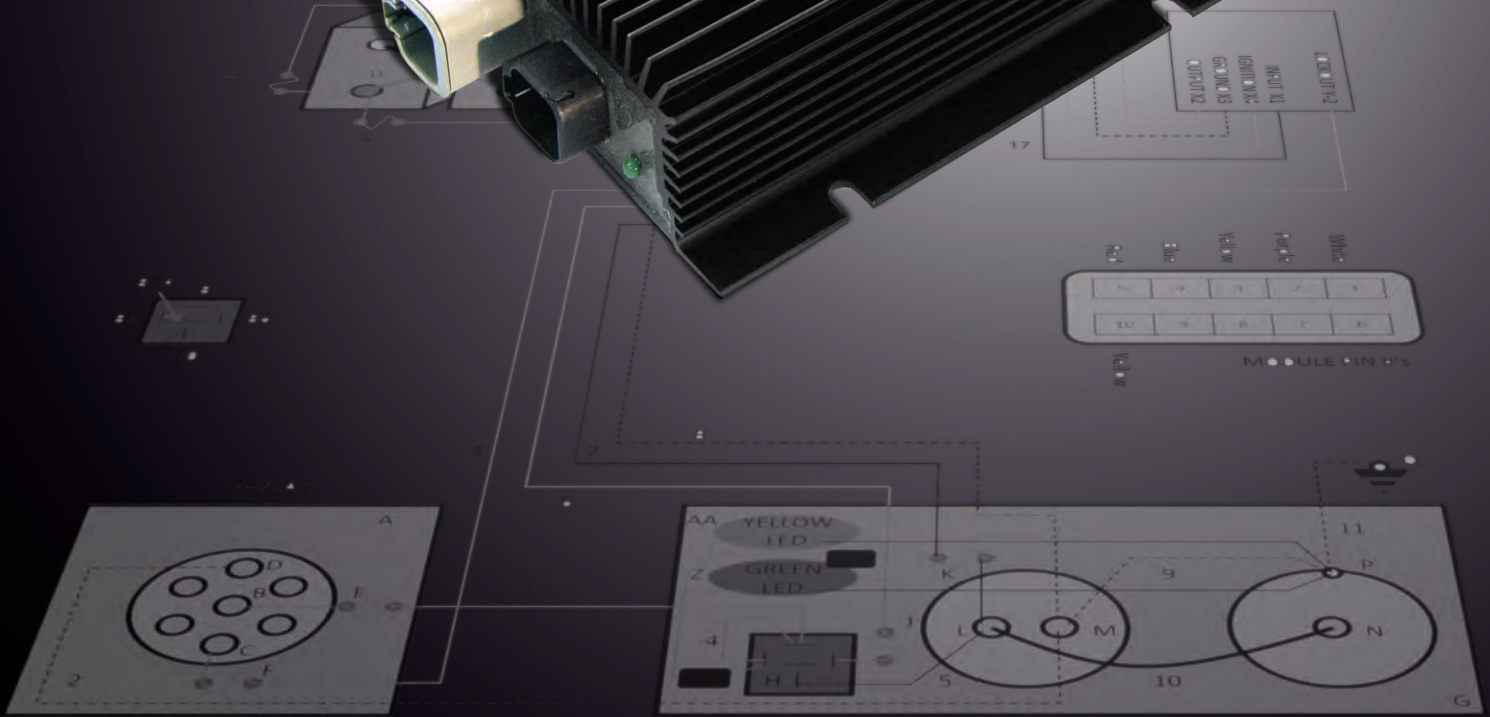
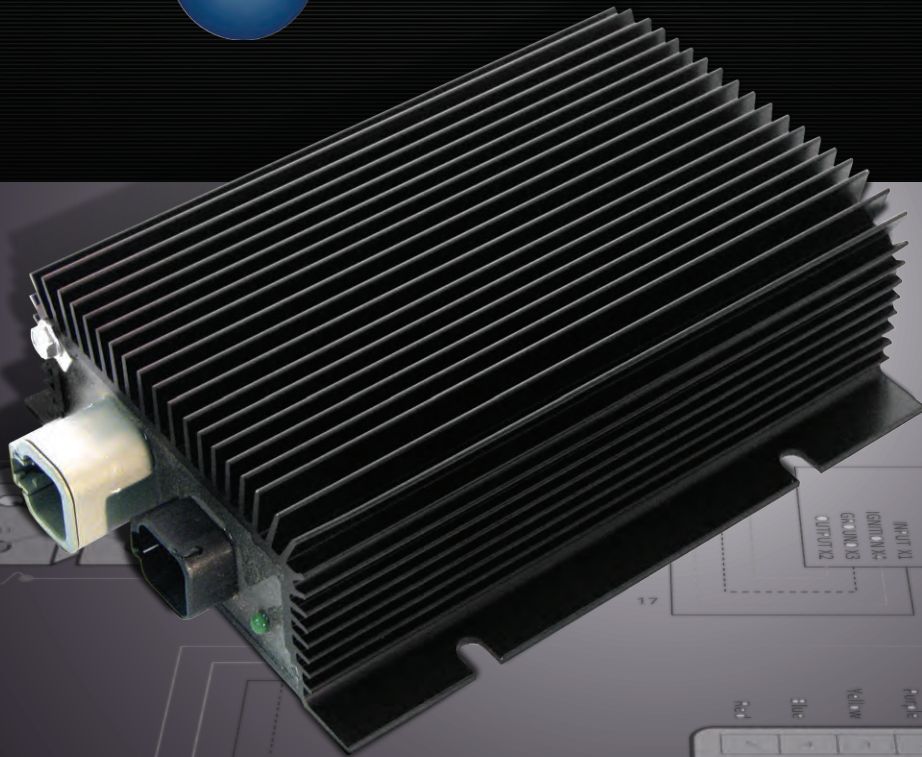




TRAIL CHARGER BASED CHARGING SOLUTIONS



The Challenge – Keeping Auxiliary Liftgate Batteries Charged

The performance and proper function of a liftgate depends on an adequately charged auxiliary battery pack.

The issue:

On applications where auxiliary liftgate batteries are mounted a long distance from the primary vehicle's electrical system, voltage drop will occur. In order to charge auxiliary liftgate batteries, the correct voltage must be applied to these batteries. Without the correct voltage (i.e. electrical pressure) to push the available current through the liftgate batteries, inadequate recharging will occur and the batteries will run down.

The heavy-duty commercial vehicle alternator is normally set at 14.0 volts and flat compensated. The typical vehicle's primary battery pack is maintained at approximately 13.5 volts (the difference occurs because of the voltage drop between the battery and the alternator). With this fact in mind, the starting voltage for the liftgate batteries is 13.5 volts. The circuit to charge the auxiliary liftgate batteries can be well over 60 feet (on trailer applications). All of this length and connections (including fuses) create voltage drop in the system.

Under these circumstances it is impossible to have the correct level of voltage at the liftgate batteries. This reduced voltage results in an auxiliary battery pack that is not maintained at a proper state of charge which in turn results in shortened battery life, less operating time and possible damage to the liftgates electrical components (e.g. starter solenoid, motor, switches, etc.).

The Solution – Trail Charger Based Charging Solutions

A DC/DC converter (TRAIL CHARGER) eliminates the above problem by amplifying (boosting) any input voltage (9 to 14) to the correct voltage necessary to charge and maintain the liftgate batteries.

An electronic module (EXTENDER) allows for the Trail Charger to continue operating after the tractor is turned off for up to 30 minutes (note: this module also provides low voltage protection for the primary batteries).

Finally... harnesses, all necessary hardware, manuals and technical support that converts the individual components into sophisticated charging solution kits for different applications.

MAXON Lift Corp. and PURKEY Fleet Electric came together as the experts in their respective fields to create the here documented "Trail Charger Based Charging Solutions". We believe that these solutions will greatly enhance the performance and longevity of our liftgates in your fleets and that they represent the best the industry has to offer today.

Solution Selection Chart*

NAME	APPLICATION	POWER SOURCE	DESCRIPTION	PART NUMBER	PAGE
TC6-KIT	Trailer - Dry Freight	7-way aux pin circuit	Trail Charger based solution with ABS lock-out protection that is solely powered by the 7-way aux pin circuit. This kit includes all harnesses and necessary hardware.	283040-01	2
TC5-KIT	Trailer - Dry Freight	Dual pole	Trail Charger based solution with Extender module that extends the charge time and provides low voltage protection for the primary batteries. This system is powered solely from a dual pole nose box. This kit includes all harnesses and necessary hardware.	283531-01	3
TC7-KIT	Trailer - Dry Freight	Combo box – single and dual pole	Trail Charger based solution with Extender module that extends the charge time and provides low voltage protection for the primary batteries. This system is powered solely from a combination nose box that includes a single and a dual pole. This kit includes the nose box, harnesses and all necessary hardware.	284424-01	4
TC8-KIT	Trailer – Rental	Multiple power sources (seven way aux pin, single or dual pole)	Trail Charger based solution with ABS lock-out protection and an Extender module that extends the charge time and provides low voltage protection for the primary batteries that is powered by multiple sources (7-way aux pin, single or dual). This kit includes the single/dual combination nose box, all harnesses and necessary hardware.	283821-01	5
TC9-KIT	Trailer – Lease	Dual pole or 7-way aux pin circuit	Trail Charger based solution with ABS lock-out protection that is powered primarily by the dual pole but has a secondary back up power source from the 7-way aux pin circuit. It also features an Extender module that extends the charge time and provides low voltage protection for the primary batteries. This kit includes all harnesses and necessary hardware.	284585-01	6
TC4-KIT	Trailer – Reefer	Phillips Permalogic Selector™	Trail Charger based solution that is powered by the Phillips' Permalogic Selector™ box. This kit includes the harness to the Reefer unit and the harness from the Selector box to the Trail Charger and all necessary hardware.	284582-01	7
TC10-KIT	Straight Truck	Primary truck batteries	Trail Charger based solution with Extender module that extends the charge time and provides low voltage protection for the truck's primary batteries. This system is powered from the truck's primary batteries. This kit includes all harnesses and necessary hardware.	284550-01	8
TC11-KIT	Trailer – Dry Freight Retrofit (existing single/dual pole wiring)	Single or dual pole	Trail Charger based solution with Extender module that extends the charge time and provides low voltage protection for the tractor's primary batteries that is powered solely from a single or dual pole nose box. This kit includes a special adapter harness and necessary hardware.	284587-01	9

* Please refer to MAXON price book for standard charging solutions

TC6-KIT

Trail Charger with ABS lock-out protection (7-way aux. pin powered)



Kit Content

- 20 AMP TRAIL CHARGER WITH LOCK-OUT FEATURE
- TRAIL CHARGER HARNESS
- TRAIL CHARGER COVER
- HARDWARE KIT

Description:

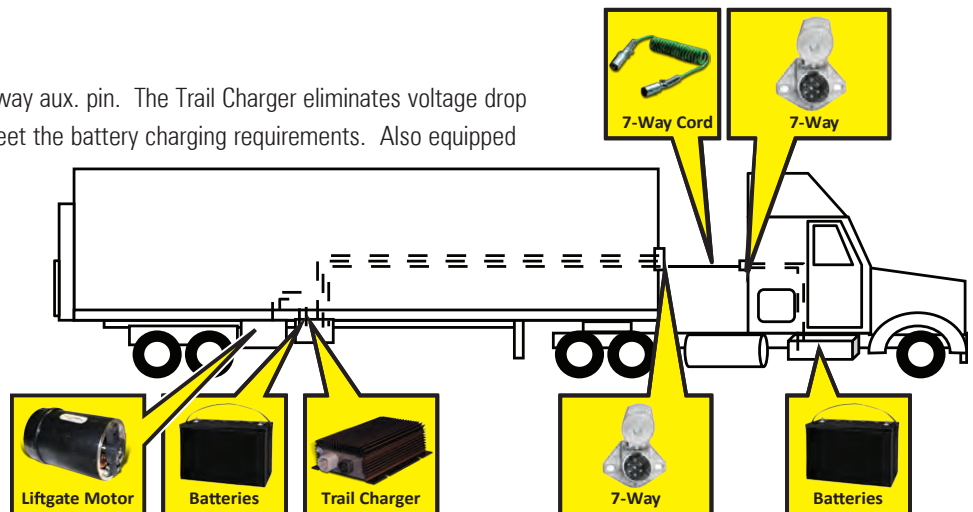
Trail Charger that is powered by the 7-way aux. pin circuit. Has additional wiring that is connected to the stop circuit. Converter is turned off whenever brakes are applied.

Recommended for:

This system is recommended for all normal-duty applications where auxiliary battery re-charging can be accomplished through the 7-way auxiliary pin circuit when connected to the tractor unit. There is no single or dual pole charge line requirement for this system.

Operation:

Trail Charger that is powered by the 7-way aux. pin. The Trail Charger eliminates voltage drop issues by stepping up the voltage to meet the battery charging requirements. Also equipped with temperature compensation, the Trail Charger will adjust the charge voltage depending on the ambient temperature. The "lock-out" feature connects to the stop light circuit of the 7-way which allows the Trail Charger to turn itself off whenever the brakes are applied, providing full power to the trailer's ABS.



Trailer – Dry Freight

TC5-KIT

Trail Charger with Extender module (dual pole powered)



Kit Content

- 20 AMP TRAIL CHARGER
- EXTENDER MODULE
- TRAIL CHARGER HARNESS
- DUAL POLE NOSE BOX
- TRAIL CHARGER COVER
- HARDWARE KIT

Description:

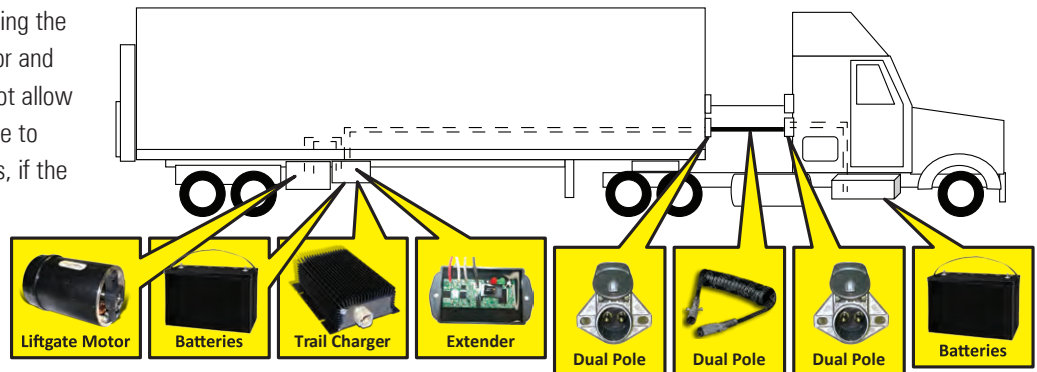
Trail Charger that is powered by a dual pole connector with an Extender module that allows the converter to have extended run time when the tractor is turned off. The electronic module extends the charge time and provides low voltage protection for the tractor's primary batteries.

Recommended for:

Dry Freight Trailer applications that use a dual pole circuit as its power supply.

Operation:

Trail Charger that is powered by a dual pole connector. The Trail Charger eliminates voltage drop issues by stepping up the voltage to meet the battery charging requirements. Extender module controls the Trail Charger allowing extended run time while the tractor is turned off while maintaining the balance between the tractor and trailer. The Extender will not allow the Trail Charger to continue to charge the liftgate batteries, if the tractor batteries are at a low state of charge.



Trailer – Dry Freight

TC7-KIT

Trail Charger with Extender (single and/or dual pole combination nose box powered)



Kit Content

- 20 AMP TRAIL CHARGER
- EXTENDER MODULE
- TRAIL CHARGER HARNESS
- SINGLE AND/OR DUAL POLE COMBO NOSE BOX
- TRAIL CHARGER COVER
- HARDWARE KIT

Description:

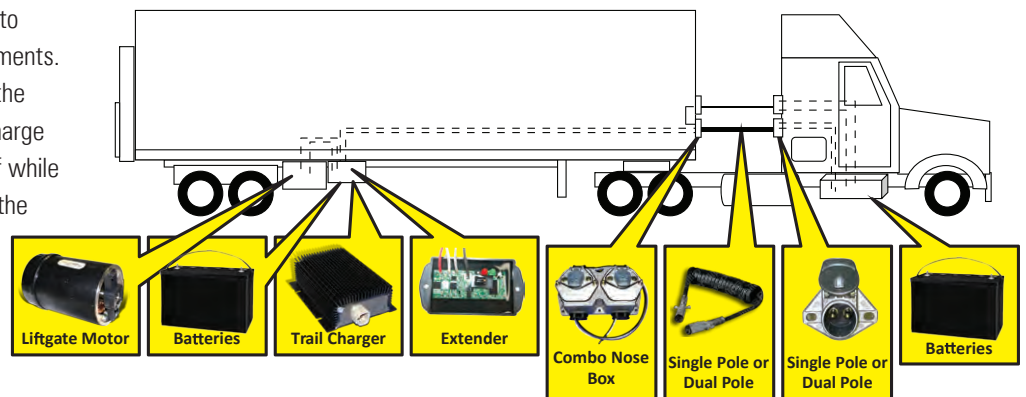
Trail Charger that is powered by a single and/or dual pole combo nose box with an Extender module that allows the Trail Charger to have extended run time when the tractor is turned off. The Extender extends the charge time and provides low voltage protection for the tractor's primary batteries.

Recommended for:

Dry Freight Trailer applications that can use either a single or dual pole circuit as its power supply.

Operation:

Trail Charger that is powered by a dual or single pole connector from a combo nose box. The Trail Charger eliminates voltage drop issues by stepping up the voltage to meet the battery charging requirements. Extender control module controls the Trail Charger allowing extended charge time while the tractor is turned off while maintaining the balance between the tractor and trailer batteries. The Extender will not allow the Trail Charger to continue to charge the liftgate batteries, if the tractor batteries are at a low state of charge.



Trailer – Dry Freight

TC8-KIT

**Trail Charger with ABS lock-out protection and Extender module
(powered by multiple sources)**



Kit Content

- 20 AMP TRAIL CHARGER WITH LOCK-OUT FEATURE
- EXTENDER MODULE
- TRAIL CHARGER HARNESS
- SINGLE AND/OR DUAL POLE COMBO NOSE BOX
- TRAIL CHARGER COVER
- HARDWARE KIT

Description:

Allows the user to connect any tractor with one of these three options to power the Trail Charger: single pole, dual pole, or the 7-way aux. pin. The Extender module allows the Trail Charger to have extended run time when the tractor is turned off and provides low voltage protection for the tractors primary batteries.

Recommended for:

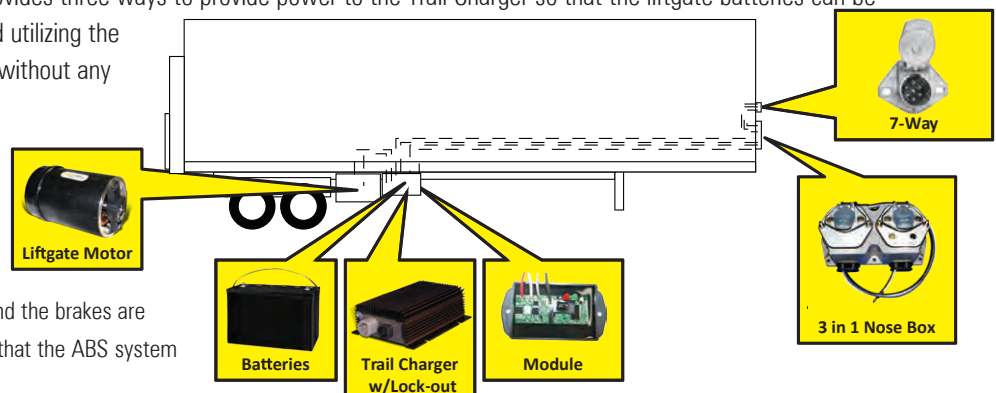
Trailer Leasing Companies.

Operation:

The 3 in 1 was designed for trailer rental or leasing companies that never know for sure what type of charging cables the tractor will have (if any). The system provides three ways to provide power to the Trail Charger so that the liftgate batteries can be charged by electronically sensing and utilizing the best of the following power sources without any driver involvement.

- Single Pole
- Dual Pole
- Aux. pin (blue wire in the 7-way)

Note: When operating on the aux. pin and the brakes are applied the Trail Charger is turned off so that the ABS system on the trailer gets first priority.



Trailer – Rental

TC9-KIT

**Trail Charger with ABS lock-out protection and Extender module
(dual pole or seven-way aux pin circuit powered)**



Kit Content

- 20 AMP TRAIL CHARGER WITH LOCK-OUT FEATURE
- DUAL POLE NOSE BOX
- TRAIL CHARGER HARNESS
- EXTENDER MODULE WITH HARNESS
- TRAIL CHARGER COVER
- HARDWARE KIT

Description:

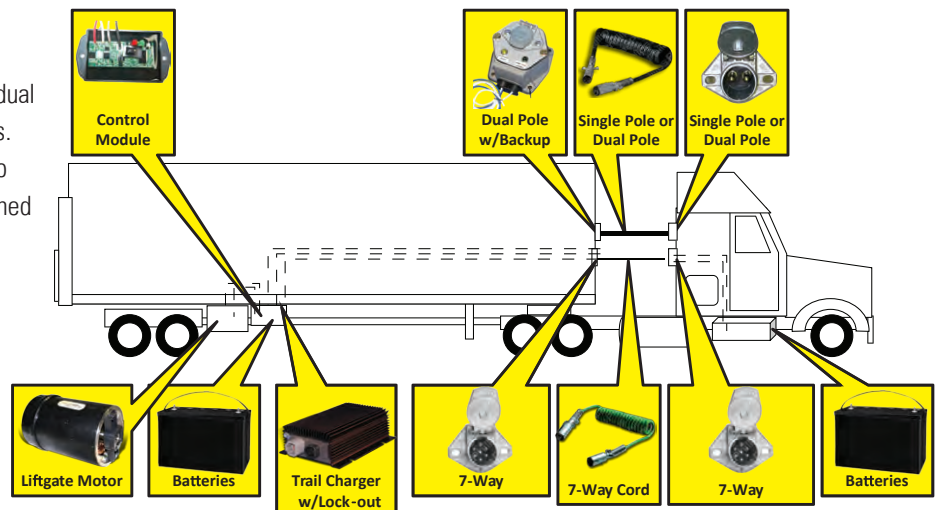
Trail Charger with lock-outs that has an electronically controlled relay switch that will connect to either the 7-way auxiliary circuit or dual pole source for re-charging the liftgate batteries. The Extender module allows the Trail Charger to have extended run time when the tractor is turned off and provides low voltage protection for the tractor's primary batteries.

Recommended for:

Special Applications that demand highest flexibility such as a trailer fleet for lease.

Operation:

The TC9-KIT is designed to allow the maximum flexibility for trailer fleets that are equipped with liftgates. By utilizing the Dual Pole with the Aux pin circuit as backup, there are now two power source options to re-charge the liftgate batteries from the tractor. The preferred option is to use a dual pole stinger cord. Whenever a dual pole stinger cord is connected, a yellow LED light will illuminate on the dual pole nose box indicating the system is operational and that power is being directed to the liftgate batteries. If the tractor is not equipped with a dual pole stinger cord, or the stinger cord is not functioning properly, the 7-way auxiliary circuit will be used as the power source. When power from the aux circuit is available a green LED light will illuminate on the dual pole nose box. In this charging mode a control module will automatically turn off the Trail Charger when the brakes are applied (ABS lock-out protection).



Trailer – Lease

TC4-KIT

Trail Charger (Permalogic Selector™ powered)



Kit Content

- 20 AMP TRAIL CHARGER
- SELECTOR NOSE BOX
- TRAIL CHARGER HARNESS
- SELECTOR TRAIL CHARGER HARNESS
- TRAIL CHARGER COVER
- HARDWARE KIT

Description:

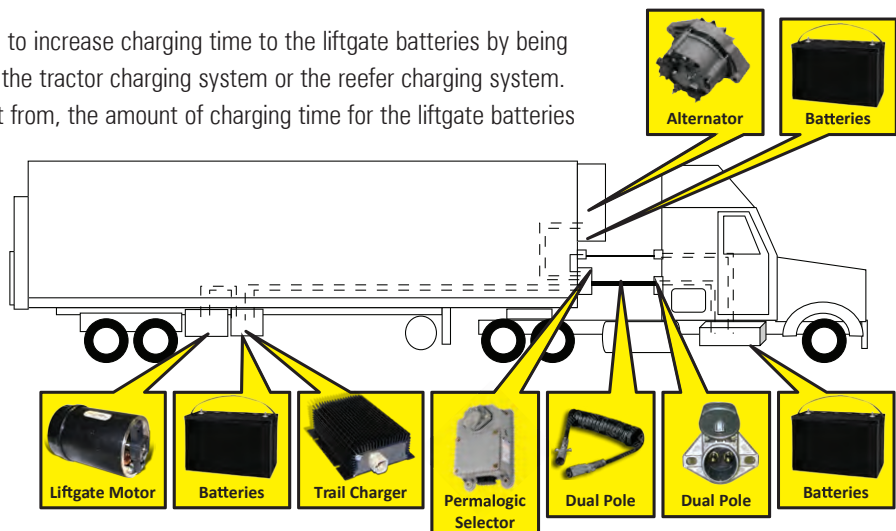
The Permalogic Selector™ chooses its power source from either the tractor (dual pole) or the reefer alternator/battery.

Recommended for:

Severe-duty liftgate application on reefer trailers.

Operation:

The Permalogic Selector™ was designed to increase charging time to the liftgate batteries by being able to power the Trail Charger by either the tractor charging system or the reefer charging system. With having two power sources to select from, the amount of charging time for the liftgate batteries is increased. The tractor is the primary source of power as long as the tractor's batteries are above 13.2 volts. If the tractor's batteries are not above 13.2 volts, or the tractor is not connected, the Permalogic Selector will use the reefer unit as the power source as long as the reefer's battery voltage is above 12.9 volts.



Trailer – Reefer

TC10-KIT

Trail Charger with Extender module (primary truck batteries powered)



Kit Content

- 20 AMP TRAIL CHARGER
- EXTENDER MODULE WITH HARNESS
- TRAIL CHARGER HARNESS
- TRAIL CHARGER COVER
- HARDWARE KIT

Description:

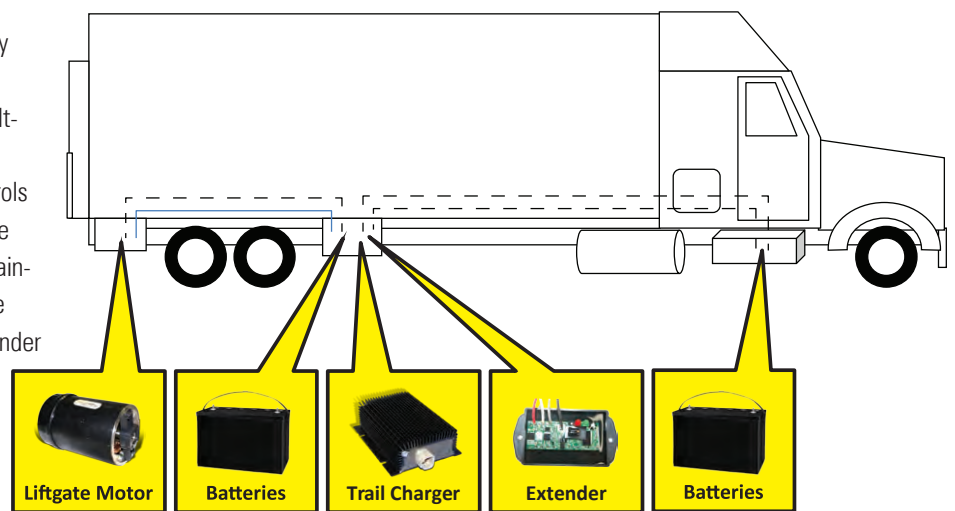
Trail Charger that is powered from the trucks primary batteries with an Extender module that allows the Trail Charger to have extended run times without impairing the trucks ability to start.

Recommended for:

Straight truck applications using an auxiliary battery source for powering the liftgate.

Operation:

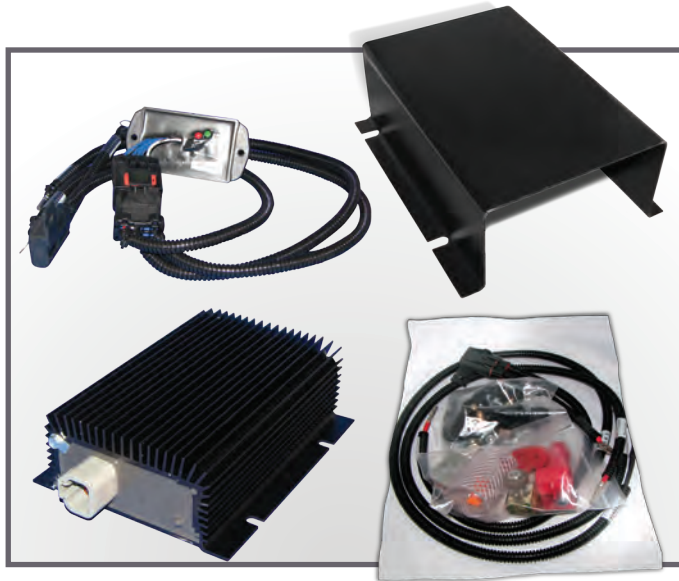
Trail Charger powers off the trucks primary battery pack. The Trail Charger eliminates voltage drop issues by stepping up the voltage to meet the battery charging requirements. The Extender charge module controls the Trail Charger allowing extended charge time while the truck is turned off while maintaining the balance of energy between the truck and auxiliary battery pack. The Extender module will not allow the trail charger unit to continue to charge the liftgate auxiliary batteries if the truck batteries are at a low state of charge.



Straight Truck

TC11-KIT

Trailer – Dry Freight Retrofit (existing single and/or dual pole wiring powered)



Kit Content

- 20 AMP TRAIL CHARGER
- EXTENDER MODULE WITH HARNESS
- TRAIL CHARGER COVER
- HARDWARE KIT

Description:

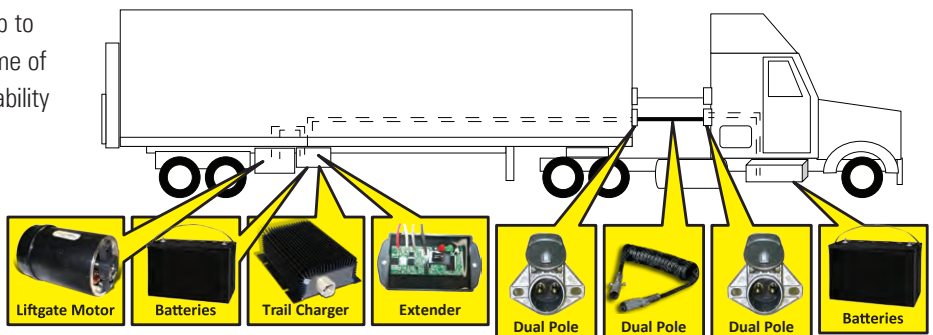
Trail Charger based solution with Extender module that extends the charge time and provides low voltage protection for the primary batteries that is powered solely from an existing single and/or dual pole nose box. This kit includes a special adapter harness and necessary hardware

Recommended for:

Existing single and/or dual pole trailer applications that want to add the benefits and features of a Trail Charger based recharge system with an Extender charge control module.

Operation:

The system allows the fleet to convert trailers with either an existing single and/or dual pole “stinger” cord to a Trail Charger based recharging system. This system also includes the Extender control module. The module allows for the Trail Charger to continue operating after the tractor is turned off for up to 30 minutes. This results in more charging time of the liftgate batteries without impacting the ability to start the tractor.



Trailer – Dry Freight Retrofit (existing single and/or dual pole wiring)



MAXON LIFT CORP.
11921 Slauson Avenue
Santa Fe Springs, CA 90670

www.maxonlift.com
1.800.227.4116

PURKEYS FLEET ELECTRIC
221 N. 14th Street
Rogers, AR 72756

www.purkeysfleetelectric.com
1.479.621.8282

DISTRIBUTED BY:

