



Vehicle Based Equipment

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Discounted Bundle Packages

Bundle Packages of Ludoplug and Data Logging Battery Charger start from **£399***

Discounted Bundle Packages bring greatly enhanced discount with the reassurance that all the products will work together correctly. **5 year Warranty** on most products and excellent After Sales Support makes the Bundle Packages very attractive.



Our comprehensive range covers the 15A, 16A and 20A Ludoplugs, when combined with any one of the 10 variations of the LudoCharger range, grouped into Bundle A's (LudoPlug 15), Bundle B's (LudoPlug 16) and Bundle C's (LudoPlug 20)

In addition Bundle Packages can be further enhanced with Intelligent Split Charge Units, Load Shedders, Automatic Battery Isolators, Safety Isolation Transformers, AIRpower compressors and even Land/Estates department based equipment such as Auto-Safe units, drop cables and 110V transformers, all bringing about enhanced discount. Ideal if retro-fitting a fleet.

To highlight the importance of products working together with absolute parity;

The British designed and built LudoCharger 2 range has 2 truly dedicated outputs, there are several benefits of this;

- Prioritise the flatter battery bank, while still charging both battery banks at the same time.
- Vehicle may be fitted with batteries of differing construction (flooded/AGM/Gel) and the LudoCharger can be set to differing charge voltage per output.
- It allows one output to be a 3 stage charger and the other a 2 stage charger (essential where damaging Parasitic loads are present)

If a 3rd party Split Charge unit is fitted, when the voltage rises from the battery charger, the split charge will initiate, therefore losing the benefits that have been designed into the LudoCharger to optimise battery life expectancy. However, by using the Ludo McGurk Intelligent Split Charge range, which have been designed to only initiate from engine running voltage rise and not from the battery charger voltage rises. This ensures that any battery optimised, specific settings are not lost.



*contact for full details



Charge Master

All-in-one pre-wired Battery Charging and Management Module.

Charge Master was designed from the ground up to provide swift and reliable installation of AC Mains, DC Battery Charging and Battery Management.

Being a modular design, it allows the Charge Master to be equipped to your specification and ensure that all the equipment works together with absolute parity.

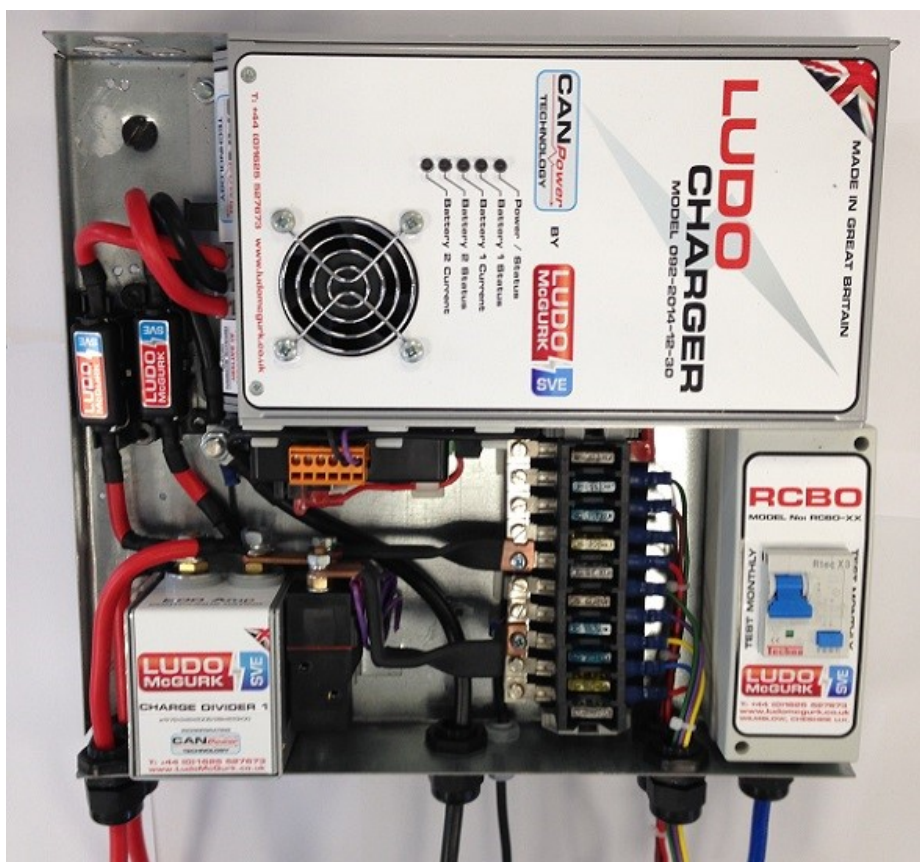
At the heart of the unit is our British built, market leading LudoCharger with built in Data Logging and user configurable settings, should you wish.

Our British built Intelligent Split Charge system is expandable no matter how many battery banks are fitted, with its specific settings that have been optimised to work with Intelligent ECU controlled Alternators and conventional Alternators alike. Seamless Emergency parallel feature of the batteries removes the additional need for a manual switch.

A optional Pulse Relay can be fitted, removing the need to cable back to the Starter Solenoid for an eject signal, greatly reducing installation time and cost.

High Quality Fuse Box has 5 of B+ and 5 of Ign+ supplies, along with a Double Pole RCBO unit complete the standard module.

Optional moulded lid is fitted with an LCD voltmeter and remote CANbus port to enable easy access to the Battery Charger Data Logging and system settings.



The Charge Master is available in several formats to suit many vehicle space allowances as well as differing equipment requirements.

We are also able to make bespoke units in short production runs.

- Available for 110V or 230V, 12V or 24V vehicles
- Pre-wired reducing installation time and cost
- All products designed to work together

Please contact us with your requirements



Safety Isolation Transformers

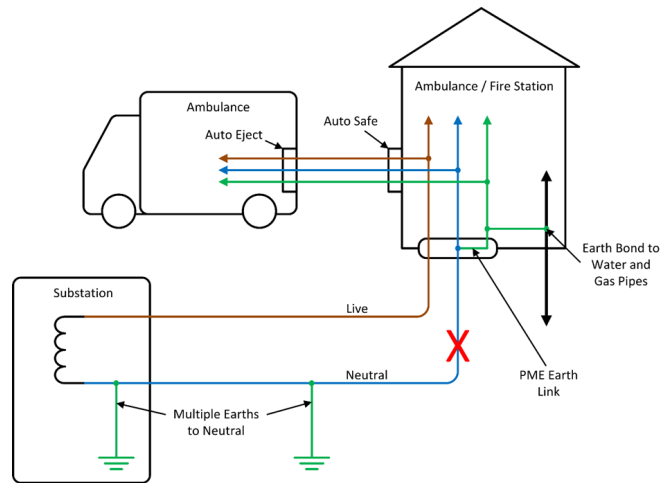
To meet requirements for Electrical Installations:

BS 7671:2008 Amendment 3:2015, January 2015.

In vehicle mounted Isolating Transformers available in 110V, 230V, Step Up, Step Down and Dual Voltage Input.

Safety Isolation Transformers, covered by Section 717 now places a greater emphasis on protecting crews. The regulations have highlighted potential issues with vehicle charging locations that have PME (Protective Multiple Earthing) - **indoors and outdoors**.

Should a break occur in the neutral conductor (X) the electrical system then has no earth, so anything connected to the earth wiring in the building e.g. the plumbing, would receive live mains potential. This would also include any vehicle connected because it is sharing the same earth connection, thereby rendering the vehicle body live to 230V, including vehicles that operate at 110V. Any person standing on the ground (earth) who then touches the vehicle could get a shock as they would form a new "path to ground" earth connection. With a wide variety of indoor, outdoor, permanent and temporary charging locations being utilised, it can be difficult to be 100% positive of the earthing arrangement at every location.



The solution however is quite simple and low cost; installing an Isolating Transformer in the vehicle.

This allows the vehicle to be connected to any supply type (including PME earthing), as the isolation transformer effectively means that the vehicle has a completely independent electrical supply. The vehicle earth will be part of the vehicle only. There will be no physical connection to the building supply at all, thus ensuring compliance and electrical safety for crews.

All units also incorporate input MCB, input rush protection and output double pole RCBO.

Our range of Isolating Transformers are available in various sizes to suit voltage applications:

Input 110V - Output 110V

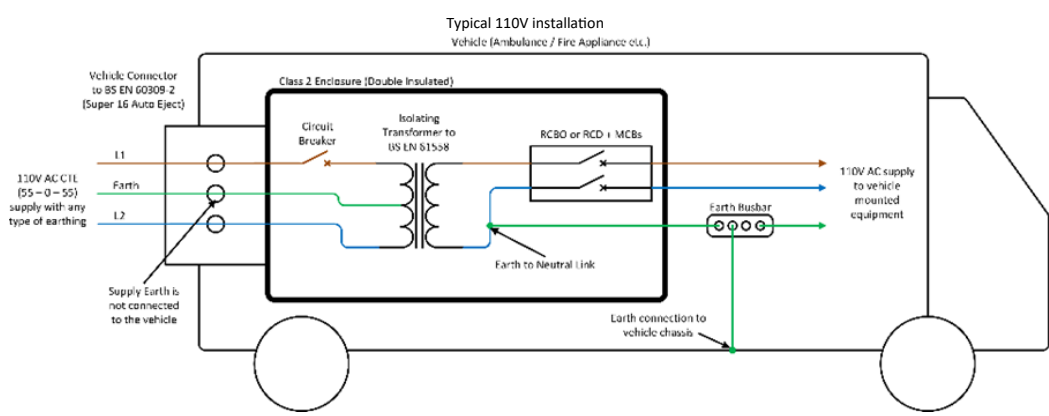
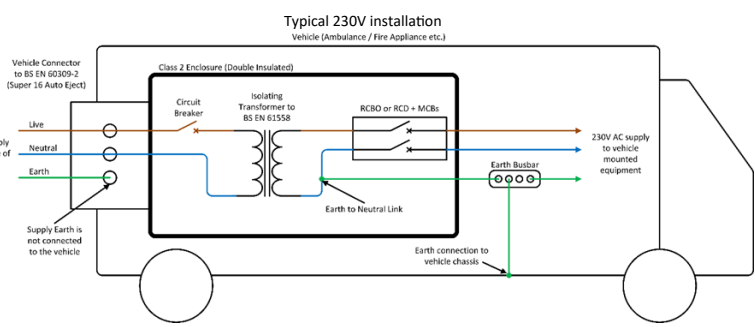
Input 230V - Output 230V

Step Up: Input 110V - Output 230V

Step Down: Input 230V - Output 110V

Dual Voltage Input 110V or 230v - Output 110V

Dual Voltage Input 110V or 230V - Output 230V



Continued over



Safety Isolation Transformers



Model	Voltage	Amps	Transformer Size	Warranty	Kg	LxWxH
110V to 110V						
LUD-119-110-10	110V to 110V	10A	1250VA	5 Years	8.0	289x200x107
LUD-119-110-16	110V to 110V	16A	1750VA	5 Years	15.0	331x240x133
LUD-119-110-20	110V to 110V	20A	2300VA	5 Years	15.0	331x240x133
LUD-119-110-32	110V to 110V	32A	3600VA	5 Years	28.0	365x280x145
230V to 230V						
LUD-119-230-5	230V to 230V	5A	1250VA	5 Years	8.0	289x200x107
LUD-119-230-10	230V to 230V	10A	2300VA	5 Years	15.0	331x240x133
LUD-119-230-16	230V to 230V	16A	3600VA	5 Years	28.0	365x280x145
110V to 230V						
LUD-119-110230-5	110V to 230V	5A	1250VA	5 Years	8.0	289x200x107
LUD-119-110230-8	110V to 230V	8A	1750VA	5 Years	15.0	331x240x133
LUD-119-110230-10	110V to 230V	10A	2300VA	5 Years	15.0	331x240x133
LUD-119-110230-16	110V to 230V	16A	3600VA	5 Years	28.0	365x280x145
230V to 110V						
LUD-119-230110-10	230V to 110V	10A	1250VA	5 Years	8.0	289x200x107
LUD-119-230110-16	230V to 110V	16A	1750VA	5 Years	15.0	331x240x133
LUD-119-230110-20	230V to 110V	20A	2300VA	5 Years	15.0	331x240x133
LUD-119-230110-32	230V to 110V	32A	3600VA	5 Years	28.0	365x280x145
Dual Input Voltage to 110V						
LUD-119-DV110-10	110V or 230V to 110V	10A	1250VA	5 Years	8.0	289x200x107
LUD-119-DV110-16	110V or 230V to 110V	16A	1750VA	5 Years	15.0	331x240x133
LUD-119-DV110-20	110V or 230V to 110V	20A	2300VA	5 Years	15.0	331x240x133
LUD-119-DV110-32	110V or 230V to 110V	32A	3600VA	5 Years	28.0	365x280x145
Dual Input Voltage to 230V						
LUD-119-DV230-5	110V or 230V to 230V	5A	1250VA	5 Years	8.0	289x200x107
LUD-119-DV230-8	110V or 230V to 230V	8A	1750VA	5 Years	15.0	331x240x133
LUD-119-DV230-10	110V or 230V to 230V	10A	2300VA	5 Years	15.0	331x240x133
LUD-119-DV230-16	110V or 230V to 230V	16A	3600VA	5 Years	28.0	365x280x145



LudoCharger Battery Charger range

- British designed, developed and built range of 12 advanced vehicle battery chargers.
- Specifically designed to meet the needs of the Emergency Services and Specialist Vehicle Builders
- Designed to manage the Parasitic loads to prevent overcharged batteries
- Built in Data Logging on all models
- Suitable for Traditional, AGM & Gel batteries
- Dual voltage mains input (110V or 230V)
- Quick and Easy install
- Alternative charging modes can be quickly accessed and changed in-situ if required
- Absolute parity with our other Battery Management products
- 24V Cell balance feature available
- 5 Year Warranty
- Vehicle mounted or wall mounted


LudoCharger Data Logging

In addition to being the only British designed and manufactured Emergency Services vehicle battery charger, the LudoCharger is leading the field in delivering information about its status and charging patterns, allowing vehicle builders and fleets alike to easily identify complicated charge related battery faults.

Batteries are expensive, but usually robust. They should have long lives, even with the demands of an Emergency Services vehicle.

If yours do not, the LudoCharger is the asset you need to charge them properly and monitor them. It will log the following information:

- Battery voltage before charging commences
- Changes of voltage and current through the charging cycle
- Maximum temperatures
- No battery connected
- Mains connected while engine still running
- Battery error



CANpower Programming Tool

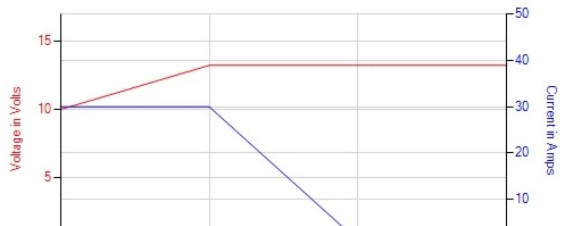
LudoCharger 2 12V 30A
Serial No: 00297 System ID: 001

Charger Information
Total Runtime: 237H 20M 32.0S Total Cycles: 24 Temperature: 24.00 C

Output 1

Status Settings Data Logging Data Logging Graph Calibration

Absorption Voltage: 13.25 V Max Output Current: 30.00 A
Float Voltage: 13.25 V Float Current: 1.00 A



Output 2

Status Settings Data Logging Data Logging Graph Calibration

Event_ID	Time_Stamp	Voltage	Current	Temperature
CHARGER CHARGING	00H 13M 50.0S	0	0	23
ABSORPTION CHARGING	00H 13M 52.0S	12.08	0	23
FLOAT CHARGING	00H 24M 02.0S	13.24	14.09	23
CHARGER POWER ON	02H 14M 04.5S	0	0	0
CHARGER CHARGING	02H 14M 06.0S	0	0	22
ABSORPTION CHARGING	02H 14M 08.0S	10.45	0	23
FLOAT CHARGING	02H 34M 38.0S	13.25	23.5	23
CHARGER POWER ON	32H 14M 23.0S	0	0	0
CHARGER CHARGING	32H 14M 24.5S	0	0	23
ABSORPTION CHARGING	32H 14M 26.5S	12.47	0	23
FLOAT CHARGING	32H 14M 36.5S	13.26	0.08	23

Save to CSV File...



LudoCharger Battery Charger range

Advanced range of Intelligent Data Logging Battery Chargers specifically designed for the Emergency Services and Specialist Vehicles



Wall mount option

LudoCharger range of 12 intelligent battery chargers are designed for the demanding environments endured by vehicles used in the Emergency Services and Specialist Vehicle applications.

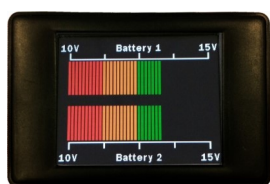
Available in 110V or 230V input, along with a special Dual Voltage 110V/230V input for dual voltage fleets.

With truly dedicated outputs, each battery is charged independently, this ensures correct charging with priority given to the flatter battery, this also allows charge voltage to be tailored to the battery chemistry if required.

Specific charging cycles ensure no battery gassing or overcharging is possible to ensure long battery life.

Optional Charge Indicators

Can be surface mounted in cab or mounted on the battery charger.



Model	Outputs	Current	Data Logging	Warranty	Weight Kg	LxWxH
LUD-2014-12	2 x 12V	30A	Yes	5 Years	5.85	300x151x75
LUD-2014-24	2 x 24V	15A	Yes	5 Years	5.85	300x151x75
LUD-2015-12	1 x 12V	30A	Yes	5 Years	5.85	300x151x75
LUD-2015-24	1 x 24V	15A	Yes	5 Years	5.85	300x151x75
LUD-2016 *	1 x 24V & 1 x 12V	15A (24v) & 10A (12v)	Yes	5 Years	5.85	300x151x75
LUD-2017-12	2 x 12V	50A	Yes	5 Years	8.85	341x186x80
LUD-2017-24	2 x 24V	25A	Yes	5 Years	8.85	341x186x80
LUD-2018-12	1 x 12V	50A	Yes	5 Years	8.85	341x186x80
LUD-2018-24	1 x 24V	25A	Yes	5 Years	8.85	341x186x80
LUD-2019*	1 x 24V & 1 x 12V	25A (24v) & 15A (12v)	Yes	5 Years	8.85	341x186x80
LUD-2015-12-WALL	1 x 12V	30A Wall Mounted Battery Charger	Yes	5 Years	6.80	420x151x75
LUD-2015-24-WALL	1 x 24V	15A Wall Mounted Battery Charger	Yes	5 Years	6.80	420x151x75
SHOW01	1 x 12V	50A Car Showroom Charger option	Yes	5 Years	8.85	341x186x90

*LUD-2016 & LUD-2019 are Fire Appliance specific battery chargers to provide both a 24V supply for the Chassis Battery along with a 12V supply for LPP/ Aux. battery



Ludoplug 16A IEC 'V3+'

Fully Type Approval & CEN Compliant Automatic Release Power Connector
Available in both 230V and 110V versions to suit 12V and 24V vehicles.



Automatic Release

- High intensity connect and charge indicator
- Voltage and current display
- Integrated pulse release relay
- Activation signal from any source
- Failed release warning alarm



Also available as black edition versions

Model	AC Voltage	DC Voltage	Current	Weight Kg	WxDxH
LUD-4000-110	110V	12-24V	16A	1.2	92x124x170
LUD-4001-110 (BASIC)	110V	12-24V	16A	1.2	92x124x170
LUD-4002-110 (REMOTE)	110V	12-24V	16A	1.2	92x124x170
LUD-4000-230	230V	12-24V	16A	1.2	92x124x170
LUD-4001-230 (BASIC)	230V	12-24V	16A	1.2	92x124x170
LUD-4002-230 (REMOTE)	230V	12-24V	16A	1.2	92x124x170

Easy Installation

Full Regulatory Compliance and Approval

Simple and Effective Features

- Easy, one person installation, unit fits from the outside.
- Slim fit, will mount into most B-pillars.
- Standard Ceeform connector to BSEN 60309-1 & BSEN 60309-2.
- Cannot be damaged by miswiring.

- Full CE/UK CA Certification.
- Fully meets EU Whole Vehicle Type
- Fully meets BS 7671 The Wiring Regulations.
- Fully meets IEC 60364 Electrical Installations.

- Displays voltage and current for each battery.*
- High intensity indicator for connection &
- Warning circuit for failed release alarm.
- Integral pulse relay for release.
- Activation signal can be taken from any source: starter motor, ignition etc.
- Available in 110V and 230V versions.
- Compatible with both 12V & 24V battery systems.
- Weather resistant.
- Pre-wired with 1 metre cables.

Options and Spares

Part Number	Item	Images
LUD-4000-3PY	110V 16A Connector	
LUD-4000-3PB	230V 16A Connector	
LUD-122	Approved Electrical Connector Lubricant 200ml	

*If used with the Ludocharger



Ludoplug NEMA 'V3+' 15A and now 20A

Automatic Release Power Connector. Compatible with existing 15A installations
Available in both 230V and 110V versions to suit 12V and 24V vehicles.



Automatic Release

- High intensity connect and charge indicator
- Voltage and current display
- Integrated pulse release relay
- Activation signal from any source
- Extremely compact

Model	AC Voltage	DC Voltage	Current	Weight Kg	WxDxH
LUD-5000-110	110V	12-24V	15A	1.2	92x78x103
LUD-5000-110-20	110V	12-24V	20A	1.3	92x78x103
LUD-5001-110 (BASIC)	110V	12-24V	15A	1.2	92x78x103
LUD-5002-110 (REMOTE)	110V	12-24V	15A	1.2	92x78x103
LUD-5000-230	230V	12-24V	15A	1.2	92x78x103
LUD-5000-230-20	230V	12-24V	20A	1.3	92x78x103
LUD-5001-230 (BASIC)	230V	12-24V	15A	1.2	92x78x103
LUD-5002-230 (REMOTE)	230V	12-24V	15A	1.2	92x78x103

Easy Installation

- Easy, one person installation, unit fits from the outside.
- World's most compact automatic release power connector.
- Cannot be damaged by miswiring.

Full Regulatory Compliance and Approval

- Full CE/UK CA Certification.
- Standard NEMA connectors to ANSI/NEMA WD 6

Simple and Effective Features

- Displays voltage and current for each battery.*
- High intensity indicator for connection & charge status.
- Pre-wired with 1 metre cables.
- Integral pulse relay for release.
- Activation signal can be taken from any source: starter motor, ignition etc.
- Available in 110V and 230V versions.
- Compatible with both 12V & 24V battery systems.
- Weather resistant.








Options and Spares

Part Number	Item	Images
5-15P	110V 15A Connector	
6-15P	230V 15A Connector	
LUD-5000-BOOT	Rubber Boot for Connector (also available in Blue and Yellow)	
LUD-122	Approved Electrical Connector Lubricant 200ml	

*If used with the LudoCharger



Receptacles & Connectors

Part Number	Voltage	Current	Item	Images
5-15P	110V	15A	Ludoplug 15A - NEMA Female Connector	
6-15P	230V	15A	Ludoplug 15A - NEMA Female Connector	
LUD-5000-BOOT	N/A	N/A	Ludoplug 15A - Black Rubber Boot	
LUD-5000-BOOT-BL	N/A	N/A	Ludoplug 15A - Blue Rubber Boot	
LUD-5000-BOOT-YW	N/A	N/A	Ludoplug 15A - Yellow Rubber Boot	
LUD-4000-3PY	110V	16A	Ludoplug 16A BS EN60309-2 Connector	
LUD-4000-3PB	230V	16A	Ludoplug 16A - BS EN60309-2 Connector	
LUD-32-CON-3PY	110V	32A	BS EN60309-2 32A Connector	
LUD-32-CON-3PB	230V	32A	BS EN60309-2 32A Connector	
5278C	110V	15A	Power Inlet Receptacle	
5378C	110V	20A	Power Inlet Receptacle	
5678C	230V	15A	Power Inlet Receptacle	
HBL5266C	110V	15A	NEMA Male Plug	
HBL5666C	230V	15A	NEMA Male Plug	

Dual USB Charger

High quality dual USB socket.

Ideal for Apple and Android devices that require 5v, 2.1A output to charge correctly.

CE & E Approved

Dual USB Charger is a high quality unit that can be quickly and simply fitted in place of the existing 12V outlet, or surface mounted using its supplied mounting plate.

Output is 5V 2.1A making it suitable for Apple and Android devices.

Correctly CE & E marked, making it approved for fitment into vehicles as well as marine applications.



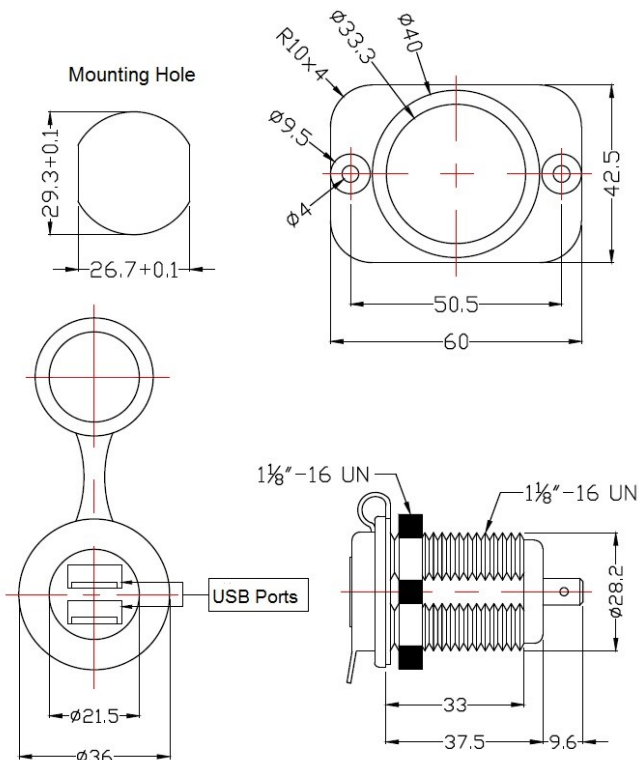
LUD-117

Universal Dual USB vehicle charger.



Specifications

Input Voltage	12V DC 24V DC
Input Voltage Range	9-32V DC
Output Voltage	5V DC +/-5%
Parasitic Current Draw	12mA DC
CE & E Approval	Yes
Reverse Polarity Protection	Yes
Short Circuit Protection	Yes
Thermal Overload Protection	Yes
Power on LED	Yes
Splash Proof Cover	Yes





Vehicle Battery Management

We developed a unique range of devices in response to a growing demand for vehicle auxiliary electronics that are simple to install and maintain, whilst complying with vehicle wiring regulations.



Advanced Split Chargers, Load Shedders, Time Delay Relays, Run-Lock Switches, and others, these units are very simple to install. They can be accurately set to suit your application, in situ or on the bench and consume extremely small amounts of power.

If required, the controllers can be daisy chained together to perform many battery management and electronic switching functions. The units communicate with each other using CANbus, which is a very widely used standard for connecting control units and subsystems in modern automotive applications.

All units come with default settings, suitable for general use and can be fitted directly to the vehicle. Because many users have their own specific requirements, which may change over time, the range also includes a simple-to-use PC/Laptop USB interface. Our purpose written free software means that all the units connected to the unique CAN bus system can be accessed using this single connection.

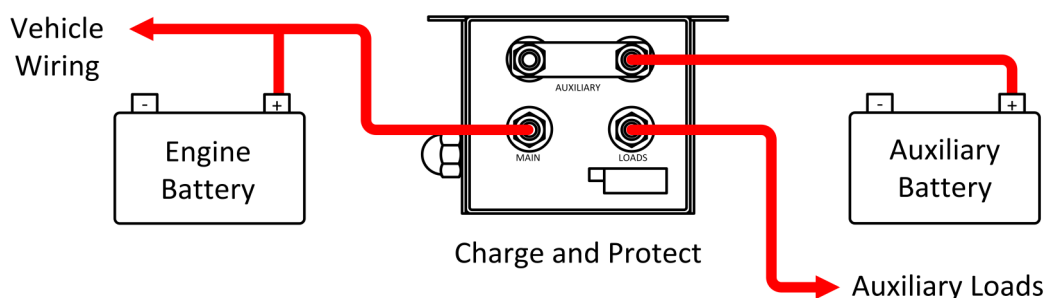
The units can therefore not only be set by the installer, but also changed later, with no need to remove them from the vehicle. This software is available free on our website. Alternatively we can provide an economical programming service if you would prefer not to do this yourself.

- 5 Year warranty
- Available in 12V & 24V versions
- Compact
- Designed and built in Great Britain
- Extremely reliable
- Expandable modular design
- Settings can be changed in-situ
- Simple to install
- Correctly E marked

Example of the popular Charge and Protect unit.

This advanced unit combines an Intelligent Split Charge, an Automatic Emergency Jump Start feature and Load Shedding, all built into a compact unit.

Should the Engine battery be discharged, the unit will perform an Automatic Jump Start, once the engine is running the Intelligent Split Charge ensures the Auxiliary receives charge. When the engine is off and the Auxiliary is providing power to equipment, the built in Load Shedder prevents the loads from over discharging and damaging the Auxiliary Battery.





Automatic Battery Isolator

British designed and manufactured Automatic Battery Isolator, to prevent equipment from over discharging the battery.



Automatic Battery Isolator is British designed and built to prevent connected equipment from over-discharging the vehicle battery and rendering it unable to start.

When the battery voltage has dropped to the predetermined level and remained there for a set time, it will isolate the battery from the loads, ensuring the vehicle is capable of restarting and helping to prevent life shortening damage to the battery.

The robust and compact unit has a built in digital controller and heavy duty contactor, a switch for mounting in the cab is also supplied to reset the Battery Isolator after isolation.

The switch can also be used to manually activate the Battery Isolator. Fitted with Ignition inhibit and voltage sensing to prevent accidental activation when the engine is running.

IP66 Version available.

Fully programmable in-situ, this allows the isolation voltage and/or the time delay to be adjusted to suit the vehicle application. This can be done using our Interface unit and FREE-to-download software.

Charge and Protect, a combined Automatic Battery Isolator and Intelligent Split Charge unit, see page 17 for more details

Model	Voltage	Current	Adjustable Voltage*	Adjustable Time Delay*	Data Logging	SMS Text	Warranty	Kg	WxDxH
LUD-2038-12	12V	200A	Yes	Yes	Yes	N/A	5 Years	0.7	90x65x105
LUD-2038-24	24V	200A	Yes	Yes	Yes	N/A	5 Years	0.7	90x65x105
LUD-2038-12-IP	12V	200A	Yes	Yes	Yes	Yes	1 Year	TBC	TBC
LUD-2038-24-IP	24V	200A	Yes	Yes	Yes	Yes	1 Year	TBC	TBC

* requires optional interface, page 25.



Intelligent Split Charge

British made, high quality, intelligent split charge activated by rising voltage.

Charge Divider models provide Automatic Jump Start Function, should the main battery become discharged.

Charge and Protect combines Intelligent Split Charge with Load Shedding function to prevent battery damage by over-discharging the Aux. battery

All units are suitable for vehicles equipped with ECU controlled/Regenerative/Smart Alternators



Charge Divider 2L is by far the most popular Split Charge system we manufacture.

Intelligent unit that works on voltage sensing, simplifying installation and reducing cable requirements.

Automatic Jump Start—Should the main battery be more discharged than the auxiliary battery, the unit will sense this and will perform an automatic Jump Start function, this removes the need for a battery parallel switch on the dash. Further reducing installation time, this can be de-selected if not required.

Over-Voltage protection to help protect sensitive electronics connected to the auxiliary battery from high voltages that can be seen on modern Alternators.

Intelligent ECU controlled Alternators, by using specific settings that are more suitable for modern alternators, prevents premature disconnection when the alternator goes into lower voltage running.

Fitted in a compact and robust powder coated case, making install much quicker and ideal for limited space applications.

All units feature our CANpower Technology, this enables changes to be made to the Voltages, Sampling times, Over-Voltage settings or Jump Start time without removing the unit or messing about with trim pots. This quick and simple method just requires our optional Interface unit and Free to download software

Model	Voltage	Aux. Banks	Current	Adj. Settings*	Warranty	Weight Kg	WxDxH
LUD-2022-12-200	12V	1	200A	Yes	5 Years	0.70	90x65x105
LUD-2022-24-200	24V	1	200A	Yes	5 Years	0.70	90x65x105

Split Charge Relay is a simple to fit, advanced digital unit that will control up to 30A constant. Voltage sensing requires only 3 wires to install with no Alternator feed required. Adjustable pull in and drop out voltage makes the unit suitable for many Emergency, Military, Leisure and Marine applications.

Model	Voltage	Aux. Banks	Current	Adj. Settings*	Warranty	Weight Kg	WxDxH
LUD-2008-12	12V	1	30A	Yes	5 Years	0.15	110x55x35
LUD-2008-24	24V	1	30A	Yes	5 Years	0.15	110x55x35



Intelligent Split Charge



Charge and Protect is an Intelligent Split Charge unit, combined with an Automatic Auxiliary Battery Protect. It has all the features of the Charge Divider such as Rising Voltage activation, Automatic Jump Start and adjustable voltage settings. In addition it features a 200A Load Shedder to protect the Auxiliary battery from being over discharged all in one compact power coated case. Quick and easy to install.

Model	Voltage	Aux. Banks	Current	Adj. Settings*	Warranty	Weight Kg	WxDxH
LUD-2042-12-200	12V	1	2x 200A	Yes	5 Years	1.10	120x80x105
LUD-2042-24-200	24V	1	2x 200A	Yes	5 Years	1.10	120x80x105

Charge Divider S have been designed to prevent a split charge system artificially activating when on shore line charging, this is especially important in vehicles that are utilising batteries of differing construction and/or float voltage. Any benefit in battery charger voltage optimisation would be negated without this. Users of the LudoCharger battery charger range and Charge Divider already have this feature enabled when the 2 units are connected via the CAN lead between Battery Charger and Split Charge unit. This is achieved by engine start signal, rather than by rising voltage.

Model	Voltage	Aux. Banks	Current	Adj. Settings*	Warranty	Weight Kg	WxDxH
LUD-2007-12-200	12V	1	200A	Yes	5 Years	0.88	180x60x120
LUD-2007-24-200	24V	1	200A	Yes	5 Years	0.88	180x60x120

Charge Divider 3L is specifically designed for vehicles with 2 auxiliary battery banks. The great advantage of this product, is you are able to time delay or have differing pull in voltages for the 1st and 2nd auxiliary bank. This prevents the vehicle Alternator being suddenly subjected to 3 discharged battery banks by delaying in bank 2 and bank 3. Over-voltage protection ensure sensitive electronics are not damaged by high voltages from modern Alternators. Automatic Jump Start function can be utilised across all battery banks, or one can be deselected, for example a small Comms. battery.

Model	Voltage	Aux. Banks	Current	Adj. Settings*	Warranty	Weight Kg	WxDxH
LUD-2023-12-200	12V	2	2x 200A	Yes	5 Years	1.10	120x80x105
LUD-2023-24-200	24V	2	2x 200A	Yes	5 Years	1.10	120x80x105

Charge Divider 2SL and 3SL have been designed to prevent a split charge system artificially activating when on shore line charging, this is especially important in vehicles that are utilising batteries of differing construction and/or float voltage. Any benefit in battery charger voltage optimisation would be negated without this. Users of the LudoCharger battery charger range and Charge Divider already have this feature enabled when the 2 units are connected via the CAN lead between Battery Charger and Split Charge unit. This is achieved by engine start signal, rather than by rising voltage.

Model	Voltage	Aux. Banks	Current	Adj. Settings*	Warranty	Weight Kg	WxDxH
LUD-2024-12-200	12V	1	200A	Yes	5 Years	0.70	90x65x105
LUD-2024-24-200	24V	1	200A	Yes	5 Years	0.70	90x65x105
LUD-2025-12-200	12V	2	2x 200A	Yes	5 Years	1.10	120x80x105
LUD-2025-24-200	24V	2	2x 200A	Yes	5 Years	1.10	120x80x105

* requires optional interface, page 25.



Battery Load Shedding

Automatically detects low battery voltage and isolates the load to prevent further battery discharge.

Range includes units that have Load Shedding with adjustable sampling time and Load Shedding with Time Delay function. Simple 3 wire installation.

Optional Alarm Function allows an audible or visual pre-warning of disconnection.



A comprehensive range of Load Shedding devices to cover many differing installations.

Load Shedding is a simple and cost effective way of preventing connected equipment from over-discharging a vehicle battery. Due to its modular design, if required, several can also be used on a vehicle to prioritise critical equipment to be powered for longer, rather than a complete shutdown of all electrical equipment.

Load Shedder 1 isolates the connected equipment when the voltage reaches 12.0V or 24.0V, the equipment is automatically reconnected when the voltage climbs to 13.5V or 27.0V (12V & 24V units respectively). A factory 2 second sampling time prevents load cycling. Voltages are adjustable in-situ if required.

Model	Voltage	Current	Adjustable*	Adjustable * Time Delay / Sampling	Warranty	Kg	WxDxH
LUD-2001-12	12V	30A	Voltage	Sampling, fixed 2 seconds	5 Years	0.15	110x55x35
LUD-2001-24	24V	30A	Voltage	Sampling, fixed 2 seconds	5 Years	0.15	110x55x35

Load Shedder 1T has all the features of Load Shedder 1, with the addition of adjustable Sampling Time is ideal where several units are daisy chained.

Model	Voltage	Current	Adjustable*	Adjustable * Time Delay / Sampling	Warranty	Kg	WxDxH
LUD-2002-12	12V	30A	Voltage	Sampling time adjustable	5 Years	0.15	110x55x35
LUD-2002-24	24V	30A	Voltage	Sampling time adjustable	5 Years	0.15	110x55x35

Load Shedder 1TO with Time Out is by far the most popular unit, this allows a Time Delay to be set for the equipment to turn off, however, if the battery falls below voltage threshold in that time, the equipment will be isolated. Pull in and Drop out voltages are adjustable, as are the Time delays which can be set from 0.5s to 9 hours in 0.5s increments. **SMS-Text** unit sends an SMS-Text message when the Load Shedder activates, this can be sent to (up to) 4 mobile 'phones.

Model	Voltage	Current	Adjustable*	Adjustable * Time Delay / Sampling	Warranty	Kg	WxDxH
LUD-2003-12	12V	30A	Voltage	Sampling & Time Delay	5 Years	0.15	110x55x35
LUD-2003-24	24V	30A	Voltage	Sampling & Time Delay	5 Years	0.15	110x55x35
LUD-2003-12-SMS	12V	30A	Voltage	Sampling & Time Delay	1 Year	0.35	220x120x40
LUD-2003-24-SMS	24V	30A	Voltage	Sampling & Time Delay	1 Years	0.35	220x120x40

* requires optional interface, page 25.

Range continued on P18



Battery Load Shedder Models

Load Shedder Plus range units are designed for heavier duty applications and come with a 200A latching relay, including a Tail Lift specific model. All mounted in a compact powder coated case.



Load Shedder 1L isolates the connected equipment when the voltage drops to 12.0V or 24.0V, the equipment is then automatically reconnected when the voltage climbs to 13.5V or 27.0V (12V & 24V units respectively). A factory 2 second sampling time prevents load cycling. Voltages are adjustable in-situ if required.

Model	Voltage	Current	Adjustable*	Adjustable * Time Delay / Sampling	Warranty	Kg	WxDxH
LUD-2026-12-200	12V	200A	Voltage	Sampling, fixed 2 seconds	5 Years	0.70	90x65x105
LUD-2026-24-200	24V	200A	Voltage	Sampling, fixed 2 seconds	5 Years	0.70	90x65x105

Load Shedder 1LA has all the features of the Load Shedder 1L, with the addition of a time adjustable Alarm output that can signal an audible or visual warning prior to the load disconnection.

Model	Voltage	Current	Adjustable*	Adjustable * Time Delay / Sampling	Warranty	Kg	WxDxH
LUD-2027-12-200	12V	200A	Voltage & Alarm	Sampling, fixed 2 seconds	5 Years	0.70	90x65x105
LUD-2027-24-200	24V	200A	Voltage & Alarm	Sampling, fixed 2 seconds	5 Years	0.70	90x65x105

Load Shedder 1TL has all the features of Load Shedder 1L, with the addition of adjustable Sampling Time it is ideal where several units are daisy chained, sampling time can be adjusted from 0.5s to 9 hours in 0.5s increments.

Model	Voltage	Current	Adjustable*	Adjustable * Time Delay / Sampling	Warranty	Kg	WxDxH
LUD-2029-12-200	12V	200A	Voltage	Sampling time adjustable	5 Years	0.70	90x65x105
LUD-2029-24-200	24V	200A	Voltage	Sampling time adjustable	5 Years	0.70	90x65x105

Load Shedder 1TLA in addition to the features of the Load Shedder 1L, the Load Shedder 1TLA features adjustable Sampling time along with time adjustable Alarm output that can signal a buzzer or warning lamp prior to the load disconnecting.

Model	Voltage	Current	Adjustable*	Adjustable * Time Delay / Sampling	Warranty	Kg	WxDxH
LUD-2030-12-200	12V	200A	Voltage & Alarm	Sampling time adjustable	5 Years	0.70	90x65x105
LUD-2030-24-200	24V	200A	Voltage & Alarm	Sampling time adjustable	5 Years	0.70	90x65x105

Load Shedder 1TOL in addition to the features of the Load Shedder 1L, the Load Shedder 1TOL features a Time Delay to be set for the equipment to turn off, however, if the battery falls below voltage threshold within that time, the equipment will be isolated. Adjustable Sampling time gives further flexibility.

Model	Voltage	Current	Adjustable*	Adjustable * Time Delay / Sampling	Warranty	Kg	WxDxH
LUD-2032-12-200	12V	200A	Voltage	Sampling & Time Delay	5 Years	0.70	90x65x105
LUD-2032-24-200	24V	200A	Voltage	Sampling & Time Delay	5 Years	0.70	90x65x105

* requires optional interface, page 25.

Range continued on P19



Battery Load Shedder Models



Load Shedder Plus range, continued from page 18

Tail Lift Load Shedder 1TOLA has been specifically designed for Tail Lift applications, to ensure that use of the vehicle tail lift does not over discharge the battery and prevent the engine from re-starting after deliveries and collections. When the unit senses the voltage dropping below its threshold, it automatically initiates a countdown. If after 2 minutes the voltage has not recovered a alarm signal is triggered (audible or visual), if the voltage remains under for a further 2 minutes the Tail Lift motor will be isolated. When the engine is restarted and the voltage climbs the Load Shedder will Automatically reset and the Tail Lift operation can continue.

Model	Voltage	Current	Adjustable*	Adjustable * Time Delay / Sampling	Warranty	Kg	WxDxH
LUD-2033-12-200	12V	200A	Voltage & Alarm	Sampling & Time Delay	5 Years	0.70	90x65x105
LUD-2033-24-200	24V	200A	Voltage & Alarm	Sampling & Time Delay	5 Years	0.70	90x65x105

Load Shedder 2 range have two heavy duty relays built in, for applications that have separate high amperage loads that need managing as individual loads. Each load has its own settings to allow one circuit to be prioritised over the other.

Load Shedder 2L isolates the connected equipment when the voltage reaches 12.2V & 12.0V or 24.4V & 24.0V.

The equipment is automatically reconnected when the voltage climbs to 13.5V & 13.7V or 27.0V & 27.4V (12V & 24V units respectively). A factory 2 second sampling time prevents load cycling. Voltages are adjustable in-situ if required.

Model	Voltage	Current	Adjustable*	Adjustable * Time Delay / Sampling	Warranty	Kg	WxDxH
LUD-2028-12-200	12V	2x 200A	Voltage	Sampling, fixed 2 seconds	5 Years	1.10	120x80x105
LUD-2028-24-200	24V	2x 200A	Voltage	Sampling, fixed 2 seconds	5 Years	1.10	120x80x105

Load Shedder 2TL has all the features of Load Shedder 2L, with the addition of adjustable Sampling Time is ideal where several units are daisy chained, sampling time can be adjusted from 0.5s to 9 hours in 0.5s increments.

Model	Voltage	Current	Adjustable*	Adjustable * Time Delay / Sampling	Warranty	Kg	WxDxH
LUD-2031-12-200	12V	2x 200A	Voltage	Sampling time adjustable	5 Years	1.10	120x80x105
LUD-2031-24-200	24V	2x 200A	Voltage	Sampling time adjustable	5 Years	1.10	120x80x105

Load Shedder 2TOL in addition to the features of the Load Shedder 2L, the Load Shedder 2TOL features a Time Delay to be set for the equipment to turn off, however, if the battery falls below voltage threshold in that time, the equipment will be isolated. Adjustable Sampling time gives further flexibility.

Model	Voltage	Current	Adjustable*	Adjustable * Time Delay / Sampling	Warranty	Kg	WxDxH
LUD-2034-12-200	12V	2x 200A	Voltage	Sampling & Time Delay	5 Years	1.10	120x80x105
LUD-2034-24-200	24V	2x 200A	Voltage	Sampling & Time Delay	5 Years	1.10	120x80x105

Adjustments to all the Load Shedder and Load Shedder Plus units can be quickly and easily made, even while mounted in the vehicle. By using the optional Interface and Free to download software it can allow you to fine tune the settings of your bespoke application. We also offer a service of pre-programming your bespoke settings, please contact us for further details.

* requires optional interface, page 25.



Load Shedder 2+1

2 Channel Load Shedder with an Alarm Function.

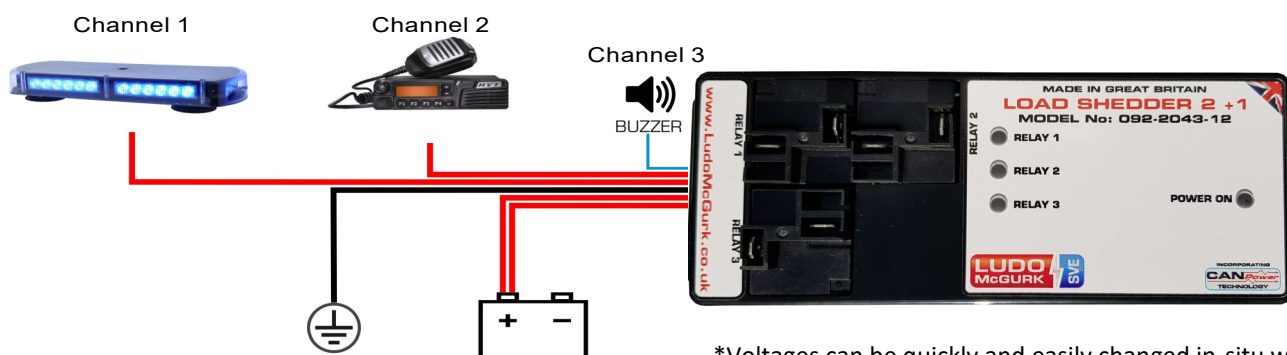
Optional Key Switch To De-Activate all Loads.

Load Shedder 2+1 not only protects the auxiliary battery from being permanently damaged by over discharging, it also allows loads to be split over 2 Channels to avoid sudden and total power loss while at scene without the engine running.

Example application

Channel 1 (RELAY 1) connected to less critical loads, Channel 2 (RELAY 2) connected to more critical loads that need to be kept on for longer or require long boot up times to start back up (devices such as radios or control systems). When the voltage drops to 12.2V/24.4V* the loads connected to Channel 1 shut off. At the same time Channel 3 (RELAY 3 or Internal Buzzer) Switches on as a warning that the voltage is becoming low. If the voltage continues to drop and reaches 12.0V/24.0V* Channel 2 (RELAY 2) will shut off the loads connected to it and also Channel 3 (RELAY 3 or Buzzer) will turn off.

In this configuration, as Channel 1 shuts off Light Bar and less important equipment and activates the Audible warning output or internal buzzer, a user sitting in or near to the vehicle should hear the warning. If they are away from the vehicle, but in line of sight, they should see a reduction in flashing lights and be aware they need to take action before the voltage drops further. If no action is taken the more important loads shut off when the voltage finally drops to 12.0V/24.0V*, preventing damage to the battery.



*Voltages can be quickly and easily changed in-situ with optional Interface and FREE to download software



Advanced low voltage protection of the Auxiliary battery.

- 2 separate low voltage Load Shedding channels.
- First channel loads shed at 12.2V/24.4V*
- Advisory Audible/Visual warning Relay or Internal Buzzer begins as the first channel de-activates.
- Second channel load sheds at 12.0V/24.0V*
- Auto reconnects loads when the engine is started.
- 60amps capability
- Inexpensive and very easy to fit.
- Can be pre-programmed with your preferred voltage settings.
- British Designed and Built.

Load Shedder 2+1 is ideal for many vehicle battery load management applications, where loads can be split to extend the operating time of more critical equipment.

Model	Voltage	Current	Warranty	Weight Kg	Case Dimensions
LUD-2043-12	12V	2x 30A	5 Years	0.25	190x70x40mm
LUD-2043-24	24V	2x 30A	5 Years	0.25	190x70x40mm



Under-Voltage Detector

The Under-Voltage Detector is used to warn of a discharging battery.

Standard unit can trigger a warning light or buzzer/alarm.

State of the art Under-Voltage Detector SMS-Text sends an SMS-Text message to mobile phones to warn of the under-voltage situation, then sends a further SMS-text to alert when the voltage has been restored.



Under-Voltage Detector 1 can be used in any application where there is a risk of a battery becoming over-discharged.

This can be a vehicle out on location with parasitic loads discharging the battery or a vehicle returned to base that has not been connected to the shore line to recharge the batteries. **Under-Voltage Detector 2** allows two different battery banks to be managed, at different voltages if required.

Standard units can be used to activate an Audible or Visual warning.

Model	Voltage	Current	Inputs	Adjustable*	SMS-Text	Warranty	Kg	WxDxH
LUD-2006-12	12V	1A	Single	Voltage	N/A	5 Years	0.15	110x55x35
LUD-2006-24	24V	1A	Single	Voltage	N/A	5 Years	0.15	110x55x35
LUD-2040-12	12V	1A	Dual	Voltage	N/A	5 Years	0.15	110x55x35
LUD-2040-24	24V	1A	Dual	Voltage	N/A	5 Years	0.15	110x55x35
LUD-2006-12-30	12V	30A	Single	Voltage	N/A	5 Years	0.15	110x55x35
LUD-2006-24-30	24V	30A	Single	Voltage	N/A	5 Years	0.15	110x55x35

Under-Voltage Detector SMS-Text unit was designed to send an SMS-Text message to (up to) 4 mobile or landline 'phones to warn that a battery is going under-voltage; this allows crews or a Control Room to inform crews that the vehicle needs either starting or mains charging to restore the voltage. When the voltage climbs and the Under-Voltage Detector de-activates, a further text message is sent to the 'phones to inform them that the request has been actioned.

Under-Voltage Detector 2 SMS-Text has all the benefits of the standard SMS-Text unit, but will manage two separate battery banks and alert as either (or both) go under voltage.

Each bank can be set to send the SMS-Text at different voltages, if required.

Model	Voltage	Current	Inputs	Adjustable*	SMS-Text	Warranty	Kg	WxDxH
LUD-2006-12-TEXT	12V	N/A	Single	Voltage	Yes	1 Year	0.35	220x120x40
LUD-2006-24-TEXT	24V	N/A	Single	Voltage	Yes	1 year	0.35	220x120x40
LUD-2040-12-TEXT	12V	N/A	Dual	Voltage	Yes	1 Year	0.35	220x120x40
LUD-2040-12-TEXT	24V	N/A	Dual	Voltage	Yes	1 year	0.35	220x120x40

*Optional antenna available as shown.

* requires optional interface, page 25.



Time Delay Controller

Flexible Time Delay unit, can be used to Time Delay equipment on, Time Delay equipment off, or both.



Time Delay 1, quick and simple to install. Ideal for turning equipment off, such as a radio or CCTV camera after a given time period to prevent the vehicle battery becoming over discharged. Can also be used to Delay Start power hungry equipment to allow the Alternator to achieve full output before going under load.

Model	Voltage	Current	Outputs	Adjustable*	Warranty	Kg	WxDxH
LUD-2004-12	12V	30A	Single	Time Delay	5 Years	0.15	110x55x35
LUD-2004-24	24V	30A	Single	Time Delay	5 Years	0.15	110x55x35

Time Delay 1L, in addition to all the features of the Time Delay 1, the 1L version is supplied in a durable powder coated case fitted with a Heavy Duty 200 A relay, ideal for higher amperage loads that require Time Delay management.

Model	Voltage	Current	Outputs	Adjustable*	Warranty	Kg	WxDxH
LUD-2035-12	12V	200A	Single	Time Delay	5 Years	0.70	90x65x105
LUD-2035-24	24V	200A	Single	Time Delay	5 Years	0.70	90x65x105

Time Delay 1LA, in addition to all the features of the Time Delay 1L, the 1LA version also features an adjustable time Alarm output to allow an audible or visual signal that the unit is going to be shut down.

Model	Voltage	Current	Outputs	Adjustable*	Warranty	Kg	WxDxH
LUD-2036-12	12V	200A	Single	Time & Alarm	5 Years	0.70	90x65x105
LUD-2036-24	24V	200A	Single	Time & Alarm	5 Years	0.70	90x65x105

Time Delay 2L is fitted with two 200A relays, this allows two separate high amperage loads to be timed off (or on) independently, ideal for delay starting power hungry equipment, by allowing the Alternator to achieve full output before going under additional load.

Model	Voltage	Current	Outputs	Adjustable*	Warranty	Kg	WxDxH
LUD-2037-12	12V	2x 200A	Dual	Time Delay	5 Years	1.10	120x80x105
LUD-2037-24	24V	2x 200A	Dual	Time Delay	5 Years	1.10	120x80x105

All units feature CANpower Technology that enables units to be daisy chained together and/or settings to be changed, quickly and easily with the optional CANpower interface and free software.

* requires optional interface, page 25.

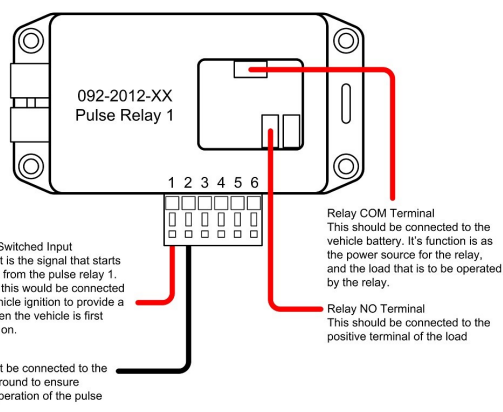


Pulse Relay

Supplies a momentary pulse signal, Ideal solution where an Auto Eject signal is not possible from the starter solenoid



092-2012-XX Pulse Relay 1
Wiring Diagram



Pulse Relay is most useful for providing a pulsed signal for an Auto Eject where one is not normally available.

Normally an Auto-Eject would be driven from the vehicle's starter circuit, but where this is not possible this allows it to be driven from any signal, such as the vehicle's ignition. Quick and simple to fit.

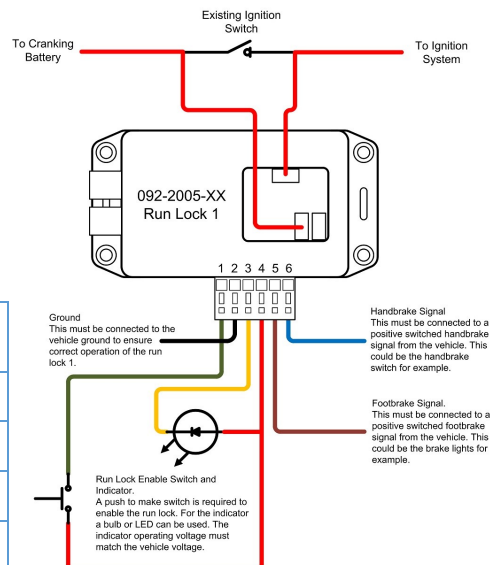
Model	Voltage	Current	Warranty	Kg	WxDxH
LUD-2012-12	12V	30A	5 Years	0.15	110x55x35
LUD-2012-24	24V	30A	5 Years	0.15	110x55x35

Run-Lock

Allows the engine to run with the ignition key removed



092-2005-XX Run Lock 1
Wiring Diagram



Run Lock allows secure, unattended engine operation whilst preventing the vehicle from being driven.

Once activated, the ignition key can be removed, and the engine stays running. If the handbrake is released, or the footbrake is used, the engine stops. The key must then be used to restart the vehicle. This prevents unauthorised use of the vehicle. Additional relays can be added for multi-input vehicles.

Model	Voltage	Current	Warranty	Weight Kg	WxDxH
LUD-2005-12	12V	30A	5 Years	0.15	110x55x35
LUD-2005-24	24V	30A	5 Years	0.15	110x55x35
LUD-2005-SW12	12V	Optional pre-wired Activation Switch			
LUD-2005-SW24	24V	Optional pre-wired Activation Switch			



Controller Interface

The Controller Interface allows users to access the Data Logging information stored in the LudoCharger range of battery chargers, make changes to the Battery Management units and more



The advanced range of LudoCharger battery chargers and Battery Management units were designed from the outset to allow users to review information and make changes to suit bespoke applications that were outside of the default settings.

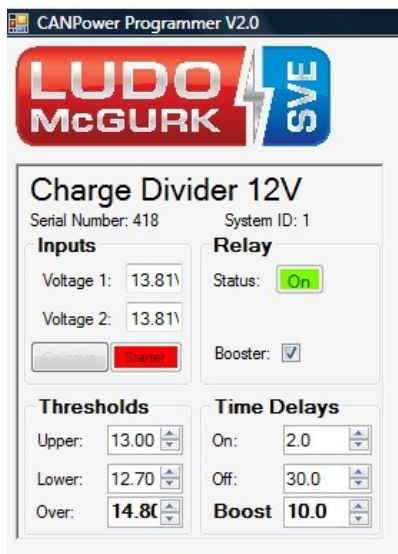
To access the information the optional Controller Interface is required, along with a Windows based Laptop/PC.

The software is free to download from our website and is regularly updated.

With the interface, it allows the Data Logging information stored in the LudoCharger range of battery chargers to be reviewed and downloaded. It also enables the user to tailor the battery charger to specific float voltages and/or change the charging algorithm, all without removing the units from the vehicle.

The Battery Management range can also be modified to suit differing application, this can be just changing Pull In and Drop Out voltages, changing Time Delays or Sampling times.

Very simple to use, full on-site training available for fleet users.



CANpower Programming Tool

LudoCharger 2 12V 30A
Serial No: 00297 System ID: 001

Charger Information
Total Runtime: 237H 20M 32.0S Total Cycles: 24 Temperature: 24.00 C

Output 1

Status Settings Data Logging Data Logging Graph Calibration

Absorption Voltage: 13.25 V Max Output Current: 30.00 A
Float Voltage: 13.25 V Float Current: 1.00 A

Output 2

Status Settings Data Logging Data Logging Graph Calibration

Event_ID	Time_Stamp	Voltage	Current	Temperature
CHARGER CHARGING	00H 13M 50.0S	0	0	23
ABSORPTION CHARGING	00H 13M 52.0S	12.08	0	23
FLOAT CHARGING	00H 24M 02.0S	13.24	14.09	23
CHARGER POWER ON	02H 14M 04.5S	0	0	0
CHARGER CHARGING	02H 14M 06.0S	0	0	22
ABSORPTION CHARGING	02H 14M 08.0S	10.45	0	23
FLOAT CHARGING	02H 34M 38.0S	13.25	23.5	23
CHARGER POWER ON	32H 14M 23.0S	0	0	0
CHARGER CHARGING	32H 14M 24.5S	0	0	23
ABSORPTION CHARGING	32H 14M 26.5S	12.47	0	23
FLOAT CHARGING	32H 14M 36.5S	13.26	0.08	23

Save to CSV File...

Model	Warranty	Weight Kg	WxDxH
LUD-3000	5 Years	0.15	87x25x57



Power Transfer Switches

Ideal for Command and Control vehicles, Support Vehicles and other vehicles with an on-board Generator, removing the need for a manual change over.



Power Transfer Switch range of 2 input and 3 input units, removing the need for a manual change over switch between Mains Shore Line and Generator. Connection of the mains shoreline automatically switches the contact over from the generator to the external mains supply, isolating the generator from the load and also from the supply. When the Mains Shore Line is disconnected, the load automatically reverts to the Generator position.

The 3 input version is for vehicles with On-Board Generator, Mains Shore Line and Inverter. Starting the generator automatically switches over the contacts from inverter to generator. Connection of the mains shoreline automatically switches all contacts over to the external supply, isolating both other supplies from the load and also from the shoreline supply. All units are "Break-before-make"

Model	Inputs	Voltage	Current	Warranty	Kg.	LxWxH
LUD-108-2-115-20	2	110V	20A	5 Years	0.95	130x100x130
LUD-108-2-115-40	2	110V	40A	5 Years	0.95	180x90x255
LUD-108-2-230-20	2	230V	20A	5 Years	0.95	130x100x130
LUD-108-2-230-40	2	230V	40A	5 Years	0.95	180x90x255
LUD-108-3-115-20	3	110V	20A	5 Years	0.95	180x90x255
LUD-108-3-115-40	3	110V	40A	5 Years	0.95	180x90x255
LUD-108-3-230-20	3	230V	20A	5 Years	0.95	180x90x255
LUD-108-3-230-40	3	230V	40A	5 Years	0.95	180x90x255



DC-DC Converters

DC-DC converters are highly efficient switchmode units, suitable for running 12V DC equipment from a 24V battery set. Avoiding the potential damage and charging imbalance caused by connection of a 12V load to one of the 2 batteries.

Model	Input Volt	Output Volt +/- 20%	Load Continuous Amps	Load Intermittent Amps	Warranty	Kg.	LxWxH
LUD-114-2412-06	20-32V	13.6V	6A	10A	5 Years	0.26	88x87x50
LUD-114-2412-12	20-32V	13.6V	12A	18A	5 Years	0.41	126x87x50
LUD-114-2412-24	20-32V	13.6V	24A	30A	5 Years	0.60	166x87x50



AIRpower Compressor 'V2'

Air Brake System top-up Compressor. Designed to maintain air pressure in the vehicle air brake system to above the release pressure.



AIRpower air system top-up compressor uses high quality components in a compact and easy to install format

Low in maintenance, it incorporates its own automatic draining moisture trap and filter, non-return valve, adjustable pressure switch, pressure gauge, and decompressor valve.

It also has a manual override on-off switch.

Suited for use with modern fire appliances with air-brake systems where fast activation time is essential, it will keep the brake system pressure above "release pressure" thus allowing for instant driving.

Also suitable for use in air suspension systems which have to be kept pressurised.

Fitted with a 6mm push fit connection and 8mm push fit adaptor.

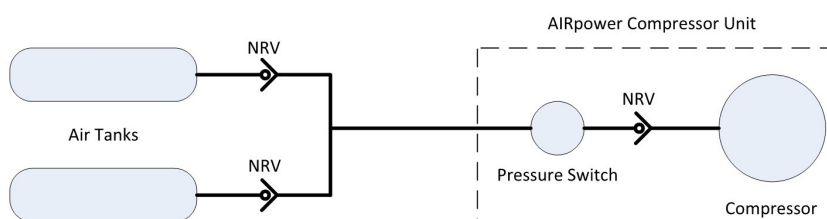


2.5Ltr Test Tank

AIRpower Test Tank allows quick and easy performance testing of the AIRpower on-board air brake system top-up compressor without removing the compressor from the vehicle.

Model	Voltage In	Current In	Compressor Output	Warranty	Kg	WxDxH
LUD-113-110	110V	4.8A	8.78 Bar/125psi	1 Year	7.90	240x200x212
LUD-113-230	230V	2.4A	8.78 Bar/125psi	1 Year	7.90	240x200x212
LUD-113-TEST	2.5Ltr Portable Test Tank for testing AIRpower pumps					

Typical installation



RCBO

Combined RCD & Breaker unit for in-vehicle mounting.

RCBO range of high quality C rated double pole RCBO units. These are a legal requirement in vehicles that have AC electrical supplies. Mounted in a compact housing, suitable for bulkhead mounting. Suitable for 110V or 230V.



Part Number	RCD Rating	Breaker Rating	WxDxH
RCBO-06	30mA	6A	45x85x130
RCBO-10	30mA	10A	45x85x130
RCBO-16	30mA	16A	45x85x130
RCBO-25	30mA	25A	45x85x130
RCBO-32	30mA	32A	45x85x130



Breaker Box 'V2'

Circuit Breaker Box, designed for use with Dräger™ BA equipment and Entry Control Boards



Breaker Box designed for electrical supplies to Dräger™ equipment.

5 resettable circuit breakers, one 3A for the ECB and four 1A for the BA sets, removing the need for individual fuses and make resetting quick and easy should one trip. (These units can be tailored to suit more outputs where necessary)

Units are supplied ready to be wired to the BA set supply cable by means of a cage-lock design connector block.

Standard units are designed for a 12V or 24V supply from the BA set power supply.

Bespoke versions and front panel wording also available, please contact us for more details.

Made in Great Britain

Model	Voltage	Current	Warranty	Weight Kg	Dimensions WxDxH
LUD-105-5-12	12V	5A	5 Years	0.40	165x80x65
LUD-105-5-24	24V	5A	5 Years	0.40	165x80x65



Ludo-B.A. Charger

Purpose designed solution for charging Dräger™ B.A. sets and E.C.B. batteries while on station

Ludo-B.A. Charger range has been designed to simplify the charging of Dräger type B.A. and E.C.B rechargeable batteries while on station.

Each unit features a high quality mains power supply, individual resettable circuit breakers, each with its own “power on” LED.

Utilising the popular Dräger “in-cab chargers” mounted within the case makes the unit more versatile, by not having to remove the batteries from the B.A. sets or E.C.B. The “in-cab chargers” are typically supplied to us by the Fire and Rescue Service on a “free issue” basis for us to install, alternatively we can supply the Dräger units as a cost option.

Ludo-B.A. Charger 1 features a high quality mains power supply, with one 1amp resettable breaker for charging one B.A. set.

Ludo-B.A. Charger ECB1 features a high quality mains power supply, with one 3amp resettable breaker for charging one Entry Control Board.

Ludo-B.A. Charger 1+1 features a high quality mains power supply, one 1amp resettable breaker and one 3amp. For charging one BA set and one Entry Control Board at the same time

Ludo-B.A. Charger 5 features a high quality mains power supply, five 1amp resettable breakers, for charging up to 5 B.A. sets at the same time

Ludo-B.A. Charger 6 features a high quality mains power supply, six 1amp resettable breakers, for charging up to 6 B.A. sets at the same time

Ludo-B.A. Charger 6+1 features a high quality mains power supply, six 1amp and one 3amp resettable breakers. For charging up to 6 B.A. sets and an Entry Control Board at the same time



Ideal for wall mounting or mobile trolley mounting. Also available mounted on a portable stand

The versatile design allows variations to be supplied depending on individual requirements, please contact us.



Model	BA 1 amp breakers	ECB 3 amp breakers	Warranty	Dimensions WxDxH
LUD-120-BA1	1	N/A	3 years	204x122x284
LUD-120-ECB1	N/A	1	3 years	204x122x284
LUD-120-B1E1	1	1	3 years	204x122x284
LUD-120-BA5	5	N/A	3 years	300x190x501
LUD-120-BA6	6	N/A	3 years	300x190x501
LUD-120-B6E1	6	1	3 years	300x190x501
LUD-120-ECB1BA4	4	1	3 years	300x190x501



Auto-Safe

The established Health & Safety Standard for shore lines to Standby and Emergency Vehicles—Provides absolute electrical safety for staff & crews



The Auto-Safe range of No-Load Dropout Switches are the established standard in Health & Safety for mains shoreline connections to vehicles.

When the connector is ejected from the vehicle it renders the cable Double-Pole Dead, therefore providing absolute electrical safety for users. All units have a built in RCD & Circuit Breaker and are built into an IP rated case

Auto-Safe B3 unit is available for 230V or 110V applications.

Auto-Safe TX110 has a built in Constant Duty Rated, CTE, Isolating transformer for 110V applications, this makes it ideal for reducing space and cabling of a separate Transformer and AutoSafe.

Auto-Safe B3-Text has all the features of the B3 with the addition of an SMS Text message function that will inform up to 4 mobile phones if the mains power has been interrupted.

Model	Voltage In	Voltage Out	Current	Ingress Protection	Warranty	Weight Kg	Dimensions WxDxH
LUD-B3-10-110	110V	110V	10A	IP67	3 Years	1.72	204x122x284
LUD-B3-10-230	230V	230V	10A	IP67	3 Years	1.72	204x122x284
LUD-B3-16-110	110V	110V	16A	IP67	3 Years	1.72	204x122x284
LUD-B3-16-230	230V	230V	16A	IP67	3 Years	1.72	204x122x284
LUD-B3-32-110	110V	110V	32A	IP67	3 Years	1.72	204x122x284
LUD-B3-32-230	230V	230V	32A	IP67	3 Years	1.72	204x122x284
LUD-TX110	230V	110V	16A	IP66	3 Years	15.4	200x120x400

Options and Test Tools

Part Number	Item
LUD-B3—Text	SMS Text Function
LUD-B3S-xxx-xx	Additional IP67 Outlet Socket
LUD-129-CAP-4	Latching Capacitor (vehicle mounted, to suit spurious battery chargers)
LUD-B3-MET	Electricity Meter fitted to Auto Safe
LUD-B3-REMSW	Remote Switch for AutoSafe
LUD-111-xxx-xx	AutoSafe Testing Unit





Porto-Safe

For charging vehicles at temporary locations.



- Available in 230V and 110V.
- Ready to use, no installation or assembly required.
- Indoor or outdoor use.
- Stable and Sturdy design.



Porto-Safe is a pre-wired, ready to use, highly visible, portable unit fitted with the Auto-Safe in either B3 (230V) or TX110 (110V) with built in CTE, constant duty rated transformer.

Each Porto-Safe is supplied with 4m of supply cable with an RCD mains plug (230V). The Auto-Safe no load drop out switch (Auto-Safe B3 for 230V applications and Auto-Safe TX110 for 110V applications) and 8m of output cable fitted with the appropriate vehicle connector.

Part Number	Item	Total Kg	WxDxH
LUD-PORTO-TX	110V PortoSafe Option	26.0	300x325x620
LUD-PORTO-B3	230V PortoSafe Option	12.5	300x325x620
LUD-PORTO-WHEELS	Wheel kit Option*		

110V Transformers

High Efficiency range of Constant Duty rated, CTE Transformers.



110V Transformer range of High Efficiency and Low Off-Load Current Draw units. Constant Duty Rated, CTE, for Emergency and Standby Vehicles.

Surge Limited and mounted in a steel case for floor or wall mounting. BS3535 and EN61558-2-23

Part Number	Continuous	Kg	WxDxH
LUD-102-1750	1.75KVA	12.5	280x180x250
LUD-102-4003	4.0KVA	28.6	350x260x360

Other sizes available on request.

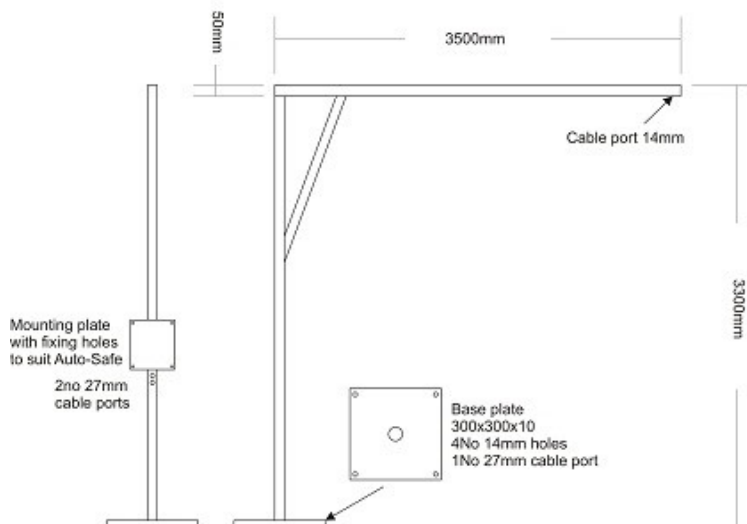
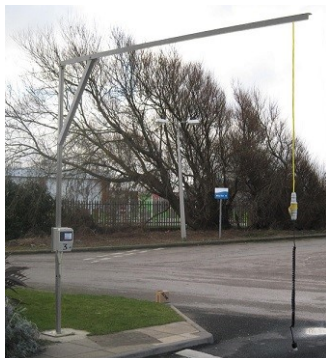
Auto-Safe Gantry

Purpose designed Charging Gantry

Auto-Safe Charging Gantry has been purpose designed for emergency and standby vehicle charging applications.

Constructed of galvanised steel, designed to suspend the shore-line cable in the appropriate position for electrical power inlets on ambulances and other small to medium sized emergency vehicles,

The column features a pre-drilled mounting plate for the Auto-Safe unit



Part Number	Item
LUD-103-FL	Auto-Safe B3 Charging Gantry c/w mounting plate
LUD-103-FLTX	Auto-Safe TX110 Charging Gantry c/w mounting plate
LUD-103-129PLATE	Pre-drilled B3 mounting plate for 3rd party gantries
LUD-103-TXPLATE	Pre-drilled TX110 mounting plate for 3rd party gantries

The gantry requires a minimum 600x600x600mm poured concrete base.



Auto-Safe Testers

Instant check of Auto-Safe latching function.

Checks full installation wiring integrity.

Easy to use, no skilled personnel required for use.

Auto-Safe Testers, in a single operation this product gives quick and positive testing of the Auto-Safe's latching function by skilled or unskilled personnel. It also verifies the installation's wiring integrity, correct polarity, and earth bonding.

Part Number	Voltage	Current	Item	Images
LUD-111-115-15	110V	15A	Auto-Safe Testing Unit	
LUD-111-230-15	230V	15A	Auto-Safe Testing Unit	
LUD-111-115-16	110V	16A	Auto-Safe Testing Unit	
LUD-111-230-16	230V	16A	Auto-Safe Testing Unit	
LUD-111-115-32	110V	32A	Auto-Safe Testing Unit	
LUD-111-230-32	230V	32A	Auto-Safe Testing Unit	





Mains Cables

A comprehensive range of ready made cables to suit 110V & 230V applications



Shoreline/Drop Cable range of ready made cables are designed for use with the Ludoplug. The Short Recoil & Long Recoil leads have a coiled section, especially designed to dampen the swing of the line when the connector is ejected. (These cables are no longer compliant with BS 7671)

The short recoil lead is usually supplied with a connector at both ends and allows a quick change of lead should it become worn or damaged. The Long Recoil has a 4 metre straight section for longer applications.

We now supply all straight cable in the latest specification H07RN-F 2.5mm² as per BS 7671 the Wiring Regulations.

We can make the cables to suit your application with a large range of male and female connector options.

Please contact us for a quote on your cable requirements.



Customer Support

Technical Advice

As the designer and the manufacturer, we have comprehensive understanding of all the products we supply and the environments they perform in.

We have an extensive knowledge base on Emergency Vehicle installations, the “best practice” for installations and how to avoid potentially costly mistakes.

A sound understanding of the various wiring regulations for vehicles, projections on vehicles and mains wiring enables us to give honest and comprehensive advice and led us to write several technical articles that have been published over the years.

Please contact us with any technical or support enquiry you may have.

Repairs Service

Our in-house repair program supports fleet cost saving and recycling, with a typical repair being up to 75% less than when compared to a new unit.

We don't stop there as we actively recycle the old components we remove too.

Whether a product fails to function due to wear and tear, water ingress, accident damage or abuse it can be repaired and returned to perform many more years of service. We only use Original Equipment parts in our repairs.

All of our products are designed to offer long and reliable service for many years.

Many now come with a 5 year warranty against manufacturing defects although they are designed to continue to work for many years beyond that.

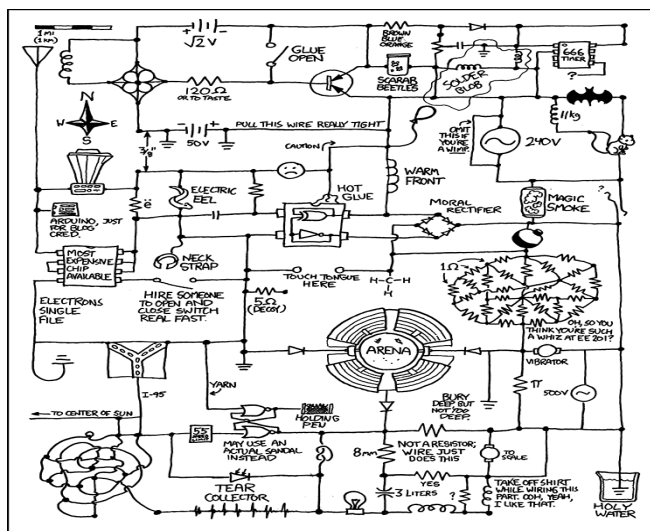
If one of our products fails to work, we can repair it !

The Repairs returns form can be downloaded from our website or contact us for an e-mailed copy.



Special Projects/R&D

Having our own in-house R&D we are always interested in special projects. If you have a particular battery charging or battery management issue that you are not able to see a solution to in our product line, contact us.



We look upon Special Projects that, if you have a particular battery related challenge, others may have that same challenge to overcome and there will be a demand for the solution.

Products such as the Under-Voltage SMS Text unit was the result of such an enquiry. This unit will detect a battery voltage dropping and send an SMS-Text message to mobile phones to alert of the issue, it also sends a subsequent SMS -Text message once the voltage has risen to confirm the issue has been resolved.

Please contact us to discuss your requirements.

Battery Connections

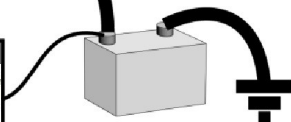
Single Battery Systems

1 BATTERY SINGLE SYSTEM

12V OUTPUT TO VEHICLE



LUDOCHARGER 1
092-2015-12

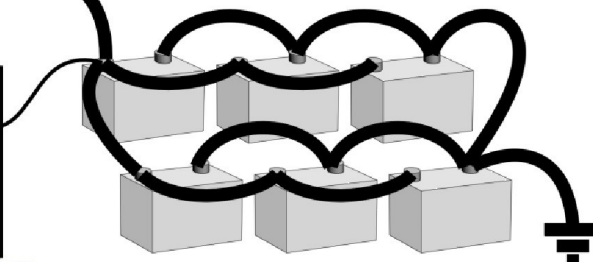


6 BATTERY SINGLE SYSTEM

12V OUTPUT TO VEHICLE



LUDOCHARGER 1 PLUS
092-2018-12

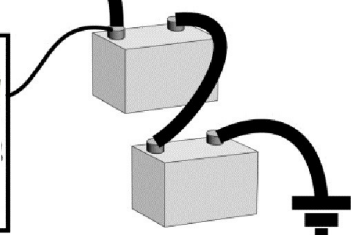


2 BATTERY SINGLE SYSTEM

24V OUTPUT TO VEHICLE



LUDOCHARGER 1
092-2015-24

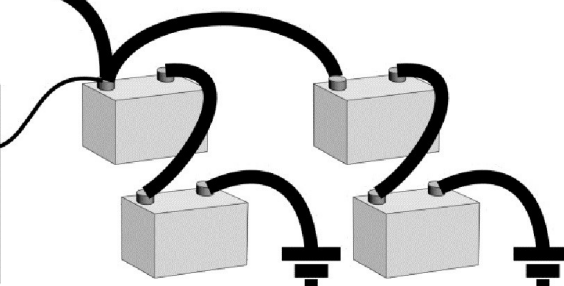


4 BATTERY SINGLE SYSTEM

24V OUTPUT TO VEHICLE



LUDOCHARGER 1 PLUS
092-2018-24

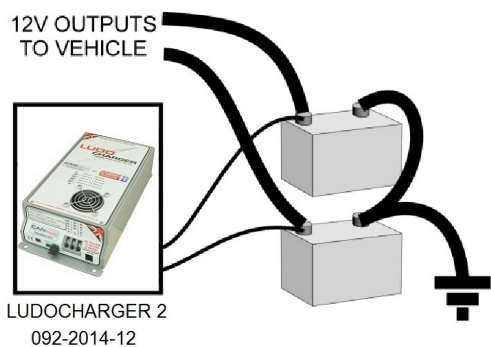




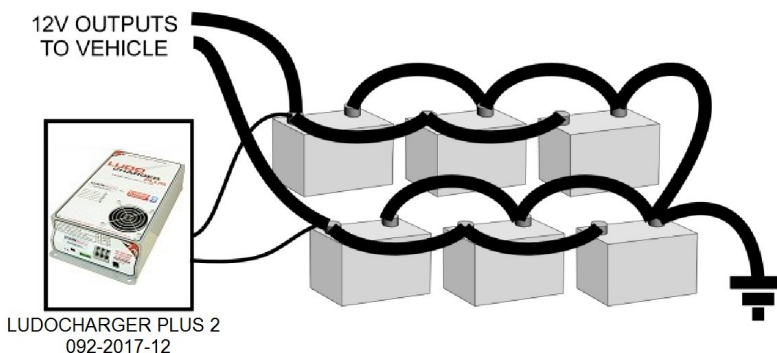
Battery Connections

Dual Battery Systems

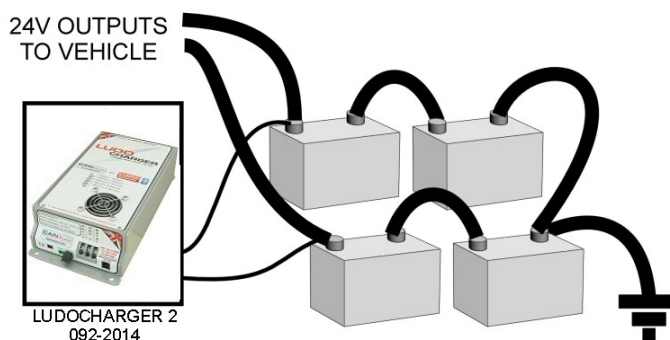
2 BATTERY DUAL SYSTEM



6 BATTERY DUAL SYSTEM

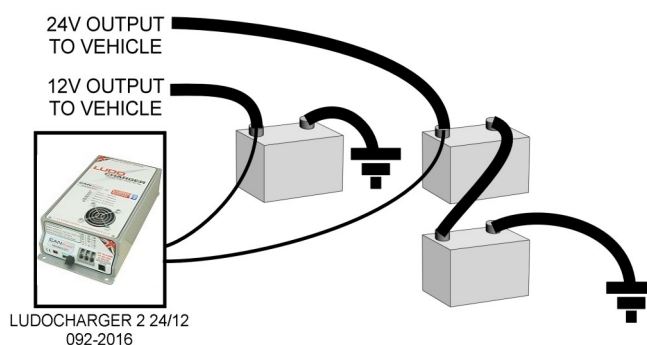


4 BATTERY DUAL SYSTEM



Dual Battery Systems—Single 24v Single 12v System

SINGLE 24V & SINGLE 12V BATTERY SYSTEM



Battery Equalisation—Cell Balance System

SINGLE 24V BATTERY SYSTEM WIRED IN EQUALISING MODE

