

REDARC
GROUP

PRODUCT CATALOGUE 2023



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REDARC Electronics reserves the right to change specifications without notice. All information contained in this catalogue was correct at the time of printing. Catalogue issue October 2022.

LETTER FROM THE MANAGING DIRECTOR.



Established in 1979, REDARC Group is a private, family-owned, Australian, innovative electronics company that employs over 350 people and provides mobile, off-grid energy and safety management solutions to customers worldwide via leading brands: REDARC Electronics, Hummingbird and REDARC Defence & Space.

Our in-house design, production and technical support capability gives our customers the confidence to explore life and operate safely in remote and harsh conditions. We are for adventurous spirits; those that like to push boundaries which often land them in mission critical situations where equipment must work.

We test our products in some of the toughest environments on the planet and believe that products designed and made in Australia is a competitive advantage.

The most important factor in REDARC Group's continual success is you, the customer. Thank you for your ongoing support of REDARC and Australian manufacturing. It's because of you that we continue to not only survive but thrive as a business through challenging times.

We believe that the 'customer is king' and practice this total customer satisfaction by offering:

- Technical advice, free of jargon and free of charge
- Prompt turnaround of orders throughout Australia and globally
- Friendly, personalised and professional service and product support
- A hassle-free replacement warranty

REDARC's goal is to ensure that our products and services continue to be the benchmark by which our competition is measured. Our quality before and after sales service will help resolve any technical problem, quickly, efficiently and economically.

Anthony Kittel
Managing Director

ABOUT REDARC GROUP.



REDARC Group is an Australian owned, technology based group of brands comprising of REDARC Electronics (REDARC), Hummingbird Electronics and REDARC Defence & Space.

REDARC has grown from humble beginnings to become a world-class, advanced electronics manufacturer, designing and manufacturing advanced integrated vehicular power solutions for defence, automotive, recreational, mobile living, transport and logistics, marine, medical, mining, and industrial applications.

With an unrelenting focus on quality, performance and customer centric after sales service, we have developed in house design, production and technical support capabilities that extend across domestic and international markets.

Our products are tested in some of the toughest environments on the planet, and we believe that products designed and made in Australia offer a competitive advantage. This mindset gives our customers the confidence to explore life and operate safely away from the grid.

Our team based philosophy encourages our staff to be the best they can, ensuring we maintain our leading edge in the research, design, development, manufacture and customer support of market leading products across multiple sectors.

REDARC Group employs more than 350 people, 90 of which are dedicated to engineering design and innovation. Our staff are based across Australia, New Zealand, North America and Europe. REDARC Group's fully integrated in house resources feature advanced manufacturing and testing equipment that help us build proven, patented and award-winning products which are recognised around the globe.

We are for adventurous spirits; those that like to push boundaries which often land them in mission critical situations where equipment must work.

That's the power of REDARC!

THE BRANDS.



REDARC ELECTRONICS.

THE POWER OF **REDARC**

Based in Lonsdale, South Australia, REDARC Electronics specialise in equipment that powers off grid adventure, designed and manufactured in a facility that features state-of-the-art advanced manufacturing and testing equipment.

Supported by a network of thousands of installers, stockists and technical experts across the country, REDARC back their customers with world class customer support.

REDARC gear is trusted to power adventure and industry in the world's most extreme environments.

HUMMINGBIRD.



The Hummingbird range is recognised for its ruggedised portfolio of sensing, monitoring, and measuring devices. Designed to influence operator behaviour, deliver real time feedback and safety interventions. Hummingbird works closely with the heavy vehicle, fleet management, mining and construction industries.

Hummingbird are recognised for their bespoke product development, unparalleled specialist knowledge and quality customer service in delivering a range of Australian made, market leading solutions.

REDARC DEFENCE & SPACE.

REDARC DEFENCE & SPACE

REDARC Defence & Space supply battery monitoring and power management solutions to defence vehicles within mission critical situations, both domestically and internationally.

Our blend of commercial and modified off-the-shelf, customised, and build-to-print electronic solutions improve the capability, safety and flexibility of a variety of defence vehicles and applications.

Through state-of-the-art manufacturing technology, REDARC Defence & Space can customise products to suit any specific requirements.

TESTIMONIALS.

“The REDARC brand and range of products adds significant value to our customer offering. They manufacture high quality products and provide second to none technical support to our branch network across Australia.”

Rob Cameron, Managing Director and CEO, GPC Asia Pacific

“Producing a multi award winning product and maintaining the expected level of build quality through our own processes and fitted products is not an easy task. Australian made and extensively tested equipment to suit our conditions ensure we maintain the level of quality our customers demand. For service, ease of use and reliability in all conditions, REDARC is our only choice.”

Justin Montesalvo, Patriot Campers

“I feel confident using and recommending all of the REDARC product range. I know the research and testing that goes into each item before it is released is extensive. REDARC’s ability to monitor and move with the local industry requirements is key to their success. Nationwide, queries can be promptly resolved over the phone, or in person by their own expert technical advice team.”

Tim Byrne, Owner, Belair Road Auto

“I prefer REDARC, as their industry-leading products are Australian designed and built. I have had a Tow-Pro Elite in multiple cars over the years and its ease of use and reliability are second to none. Buy quality the first time is what I’m about, so when it comes to 12V I’ll go with REDARC every time.”

Scott Jones, Tow-Pro User, Northern Territory



Tim Byrne

OUR SERVICE.

Our technical support staff – all qualified auto-electricians or electronics technicians – possess a working knowledge of all REDARC Group products and undergo continual training to offer the best solutions for your requirements.

We frequently engage in independent and collaborative consultation projects with a number of manufacturers.

Each project is tailored to exceed client expectations.

IN THE FIELD.

We have Area Sales Managers located across Australia and New Zealand, as well as on-the-ground staff who service the United States and Europe, all dedicated to servicing and keeping our strong customer base informed with all the latest product news and information from REDARC.

TECHNICAL SUPPORT LINE.

Our Technical Support Team are based in South Australia and have years of hands-on experience, they are available for any product-specific technical queries which you may have. They are available via phone or email from 6am to 6pm (ACDT), Monday to Friday.

Our website is packed with an extensive range of technical information on our products including wiring diagrams, user manuals and technical tips.

We also have a forum where you can post topics for discussion, ask our Technical Support Team questions, and view and upload your own REDARC installations

If you can’t find the information you’re looking for on our website you can contact us via email.

Email support

power@redarc.com.au

Tech support line

+61 1300 REDARC
(+61 1300 733 272)

REDARC REDNETWORK.

REDARC Group have extended their customer offering with the introduction of the REDARC RedNetwork; a group of professional auto electrical businesses certified by REDARC to install REDARC products, located throughout Australia and New Zealand.

Not only does using a REDARC RedNetwork member save customers time and hassle, it also provides customers with an extended warranty on REDARC products sourced and installed by our members.



WARRANTY.

The secret to success at REDARC Group is our philosophy: ‘The Customer is King’. We are committed to achieving 100% customer satisfaction through continuous improvement. We believe in total customer satisfaction and practice this by offering our customers a two-year hassle-free replacement warranty.

AFFILIATIONS.



CORE VALUES.



INNOVATION.

We will encourage the personal development of all REDARC team members to ensure we nurture our innovative company culture.



TEAMWORK.

Through excellence in cross functional integration we will guarantee high quality products delivered in a timely manner.



CUSTOMER SATISFACTION.

To be recognised as the best in our market we will deliver the highest quality products supported by exceptional after sales service.



INTEGRITY.

To enhance our current relationships with colleagues, customers, suppliers and the community and to forge strong relationships in the future, we will always act with the utmost integrity.



QUALITY.

We are committed to doing things right the first time as we see quality as key to delivering the customer value for money. We make quality the centrepiece in our work and interactions.



ENVIRONMENTAL AWARENESS.

We are committed to going beyond compliance and being socially responsible. We anticipate and address issues before they occur and operate to preserve the environment for future generations.



ACHIEVEMENTS.

REDARC is proud and humbled to have received a host of manufacturing, technology, industry and business awards both domestically and internationally. As we strive to improve and innovate it is a fitting reward for our valued staff that their endeavours are continually recognised as being world-class.

- 2004 Fast 100 Award by BRW (2001, 2002, 2003, 2004)
- 2004 Technology Fast 500 Asia Pacific Award by Deloitte
- 2005 National Finalist in the Telstra Australian Government's Small Business Awards
- 2009 Technology Application Award at the Manufacturers' Monthly Endeavour Awards
- 2013 Technology Fast 50 South Australia Award by Deloitte (2004, 2011, 2012, 2013)
- 2013 Safe2Start awarded the Design Award for Automotive and Transport at the Australian International Design Award
- 2014 South Australian Business of the Year at the Telstra Business Awards
- 2014 South Australian Medium Business of the Year at the Telstra Business Awards
- 2014 Business of the Year at the Telstra Business Awards
- 2014 Medium Business of the Year at the Telstra Business Awards
- 2015 Excellence in Innovation at the Technology Industry Association Achievement Awards (2009, 2011, 2015)
- 2016 Tow-Pro Elite awarded the Innovation Award by the Caravan and Camping Industries Association of South Australia
- 2017 Top 20 Business of Tomorrow Award by Westpac
- 2017 Global Supply Chain Integration of the Year at the Manufactures' Monthly Endeavour Awards
- 2017 Most Innovative Manufacturing Company at the Manufactures' Monthly Endeavour Awards
- 2018 Global Media Award by SEMA (Tow Pro Elite awarded in 2017, BCDC1225D and BCDC1240D awarded in 2018)
- 2018 Exporter of the Year at the Manufacturers' Monthly Endeavour Awards
- 2018 REDARC approved as an Accredited Supplier to the Australian Caravan and Camping Industry
- 2018 Design for Exporting – Design Strategy Award at the Business SA Export Awards
- 2018 Resilient and Adaptive Award by the Defence Teaming Centre
- 2019 Teaming Award awarded in collaboration with RSTEK by the Defence Teaming Centre
- 2019 RedVision awarded the Gerry Ryan OAM Award for Innovation by the Caravan Industry Association of Australia
- 2019 RedVision awarded the Australian Industrial Product of the Year at the Manufacturers' Monthly Endeavour Awards
- 2019 Excellence in Manufacturing at the Australian Automotive Aftermarket Awards
- 2019 Most Innovative New Aftermarket Product at the Australian Automotive Aftermarket Awards
- 2019 Excellence in Export at the Australian Automotive Aftermarket Awards
- 2019 Emerging Exporter Award at the Business SA Export Awards
- 2019 Hummingbird Electronics finalists in Excellence in Innovation at the Hunter Manufacturing Awards
- 2019 Hummingbird Electronics finalists in Excellence in Product Design at the Hunter Manufacturing Awards
- 2020 Global Supply Chain Integration of the Year at the Manufacturers' Monthly Endeavour Awards
- 2020 Manufacturer of the Year at the Manufactures' Monthly Endeavour Awards (2017, 2020)
- 2020 Anthony Kittel awarded the inaugural Colin J Peter AM Memorial Award by the Industry Leaders Fund
- 2020 Hummingbird Electronics finalists for the Collaboration Partnership Award at the Hunter Manufacturing Awards
- 2021 Gerry Ryan Award awarded to Pedders in partnership with REDARC Group by the Caravan Industry Association of Australia
- 2021 Award for Sustainability at the South Australian Premier's Export Awards
- 2021 South Australian Representative at the AUSTRADE Export & Investment Awards
- 2021 Shortlisted for the Growing & Emerging Award by the Defence Teaming Centre
- 2021 RedVision awarded a Good Design Award by Good Design Australia (RedVision awarded in 2018, GoBlock awarded in 2021)
- 2022 Excellence in Manufacturing Award by the Caravan Industry Association of Victoria
- 2022 Excellence in Manufacturing Award at the Australian Automotive Aftermarket Association Awards (2015, 2017, 2019, 2022)
- 2022 Anthony Kittel inducted into the Australian Automotive Aftermarket Association Hall of Fame
- 2022 South Australian Exporter of the Year at the South Australian Premier's Export Awards
- 2022 Award for Manufacturing Advanced Materials at the South Australian Premier's Export Awards
- 2022 Award for E-Commerce at the South Australian Premier's Export Awards
- 2022 Excellence in Growth at the Manufacturers' Monthly Endeavour Awards
- 2022 Award for Manufacturing and Advanced Materials at the Australian Export Awards

OUR CAPABILITIES.

REDARC Group has been designing and manufacturing electronic products for all types of vehicles and applications for the last 40 years. With our formidable engineering department, purpose-built design and manufacturing facility and a hand-picked production team, REDARC has the capability to conceptualise, design, test and manufacture products across the spectrum of vehicular electronic systems.

ENHANCED IN-HOUSE TEST CAPABILITIES.

REDARC offer an advanced in-house testing capability to ensure products that leave our facility meet the demanding needs of increased mission capability, decreased logistic burden and reduced life cycle costs.

REDARC's enhanced test capabilities are spearheaded by cutting-edge equipment and highly skilled engineers, whom have experience running certified test laboratories, giving them the skills and knowledge to test to international standards.

Our in-house testing capabilities consists of a comprehensive range of testing equipment which includes climatic chambers, ovens, a highly accelerated life testing chamber, a vibration and climatic chamber and an electromagnetic compatibility (EMC) laboratory.

From design inception through to manufacture, these capabilities offer customers the ability to reduce development risk, time and cost.

ACCELERATED TESTING.

Highly Accelerated Life Testing (HALT) compress the life of products and identify potential weaknesses in the initial design, stressing products to the point of failure using rapid thermal changes and random vibration.

These weak points are then improved during prototyping to ensure that any weaknesses are designed out of the final product before validation testing commences.

VIBRATION AND SHOCK TESTING.

Advisory Group on Reliability of Electronic Equipment (AGREE) testing couples an electromagnetic shaker with an environmental chamber, which simultaneously subjects products to mechanical shock in combination with hot, cold and humidity environmental cycles.

By exposing products to more severe levels than real life, one or two weeks of testing in the lab correspond to many years in the field.

EMC LABORATORY.

The electromagnetic compatibility (EMC) laboratory performs measurements of radiated radio frequency (RF) emission and immunity in a three metre semi-anechoic chamber.

This multi-functional EMC test facility ensures our products do not affect other nearby devices and are not affected when used in an RF rich environment, such as near mobile phones or when driving by radio or TV transmission towers.

REDARC's ability to evaluate EMC (pre)compliance on initial prototypes through to the final design means that regulatory compliance is assured.

ADVANCED MANUFACTURING.

Innovation has been always critical to REDARC's values and culture. To maintain this position, REDARC have heavily invested in employee training, and the best and highest spec equipment available. Exploring new technologies from around the globe allows us to maintain and grow upon our product design and production advantage within the manufacturing marketplace.

AUSTRALIAN MADE.

In 2019, REDARC partnered with the official Australian Made Campaign and adopted the iconic Australian Made logo.

Being Australian made represents an investment into the development of the business and its people, a commitment to quality, and shows that our products are made to survive Australia's unique landscapes and extreme conditions.



FORWARD-THINKING INVESTMENTS.

REDARC's investment in all aspects of Industry 4.0, future smart factory and business digitisation represents the next leap in technological prowess and competitiveness.

Collaborations with industry experts and education of our key supply chain partners, local suppliers and service providers lead to further investment in our workforce.

On top of this, REDARC has invested in Autonomous Intelligent Vehicles (AIV) and Universal Collaborative Robots (Cobots), allowing skilled assemblers to focus on the more intensive aspects of manufacturing, enabling a more effective, efficient and skilled workforce.

REDARC's unwavering commitment to Australian manufacturing ensures that REDARC products remain Australian Made, to a quality that our customers have become accustomed to.

STATE-OF-THE ART SURFACE MOUNT TECHNOLOGY.

At the heart of REDARC's advanced manufacturing capability is the Surface Mount Technology (SMT) line, which features a range of world-class technologies. The Selective-Through-Hole soldering machine improves first-time production quality in the assembly of complex and high voltage printed circuit boards in key products.

A new automated in-line coating and curing conformal coating system provides the ability to coat printed circuit board assemblies with a high specification UV-cured coating, to protect sensitive components from dust and moisture contamination.

The In-line Optical Inspection System is a quality assurance tool which automatically inspects the coating coverage and thickness, and immediately identifies and corrects any process issues before the curing of the coating.

This technology helps REDARC extend the life and reliability of our products.

RELATED STANDARDS.

- MIL-STD-461G
- MIL-STD-810H
- UNECE Regulation 10
- ISO 7637-2
- ISO 11452-2,4
- ISO 10605
- ISO 16750 1,2,3,4
- ISO 16750-5
- CISPR 32, 25
- ISO 9001
- ISO 14001
- ISO 17025

CERTIFICATIONS.

REDARC Electronics, REDARC Technologies and REDARC Defence & Space each operate a quality management system in accordance with ISO9001:2015 standards, covering the design, manufacture, modification, repair and testing of power and electronic systems.

Each division of REDARC Group also operate environmental and safety management systems in accordance with ISO14001:2015 and ISO45001:2018, covering the same scope of activities.



PRODUCT RANGE.



VEHICLE MANAGEMENT.



Manage your power anywhere, anytime. REDARC's Vehicle Management range includes battery management and power distribution all controlled by RedVision.

Whether it's via the dedicated RedVision screen or Bluetooth connected mobile device, RedVision is the all seeing eye of your power setup.

Control multiple on-board devices, such as lights, inverters, water pumps, televisions, electric steps, compressors and fridges.

RedVision provides you with the ability to monitor water levels, temperatures, power consumption and storage, right at your fingertips.



POWER, MONITOR AND CONTROL LIKE NEVER BEFORE.

REDARC's game-changing RedVision delivers an unprecedented level of control and automation for a camper, caravan, trailer or 4x4, right to your fingertips. Thanks to the modular system, pick and choose from a variety of power, distribution and monitoring products to create a unique solution that suits your needs. Control and monitor your entire setup right from your iOS or Android device through the modern, and user-friendly interface.

ALL IN ONE PLACE.

Designed around the RedVision interface, get information and control straight to your fingertips thanks to the RedVision app, available on iOS and Android, that you can install on your smartphone or tablet.

TRADE BENEFITS.

- Expandability
- Easily up sell components
- Decreased installation time and complexity
- Reduced component weight
- Improved service and support

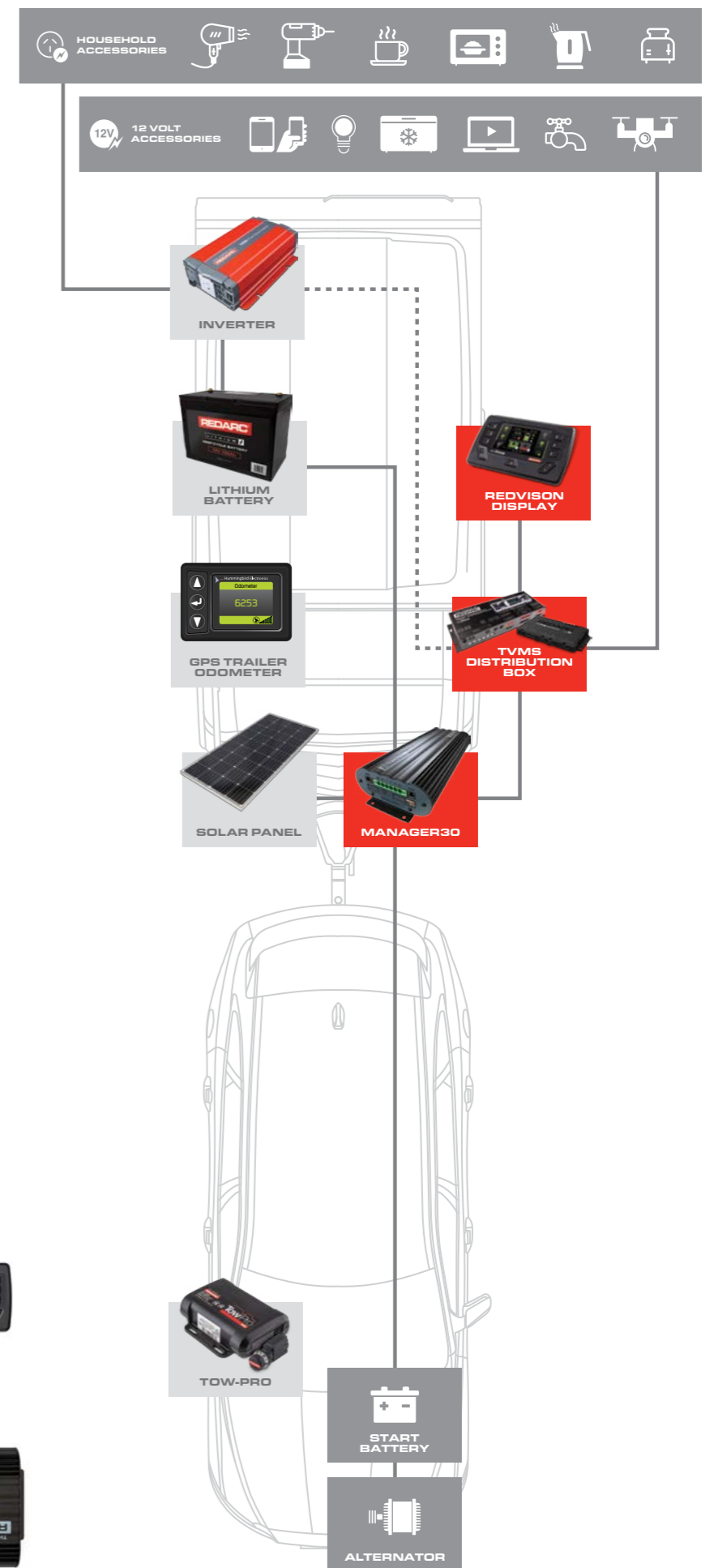
CUSTOMER BENEFITS.

- Modern, user-friendly interface
- Wireless information and control from mobile devices
- Easy to understand simple system layout
- Expandability
- REDARC quality

Design your RedVision System to suit your unique needs. Simply pick from REDARC's range of Distribution, Power and Display products, and through the RedVision interface, you'll have complete power and control of your on-board accessories.

This game-changing vehicle management system allows users to connect and operate a TVMS distribution box via the RedVision Display and Bluetooth app.

Switch things like lights, fridge, inverter, water pumps and more on or off, and monitor water levels, temperatures, power consumption and storage, using the wall display or the handy app on your phone.



REDVISION MANAGER30 KIT. TVMSKIT05

The RedVision Manager30 Kit combines the innovative, award-winning RedVision interface with the iconic 30A Manager30 Battery Management System, to provide full control and monitoring of a full range of devices in a convenient package.



CONFIGURABLE REDVISION SOFTWARE VIA DISPLAY.

- Displays auxiliary battery percentage
- Displays auxiliary battery voltage
- Measures up to two temperatures, plus battery temperature
- Displays charge stage
- Displays current flow (from multiple inputs including solar, alternator and battery)
- State of charge by day and hour
- Monitor and control devices through the 22 available channels (input and output) (TVMS1280-DBV2)
- Calculates days remaining until flat
- Displays up to six water tank levels

MONITOR.

Combine the RedVision Display and Manager30 to monitor auxiliary battery usage and charging information. Keep an eye on essentials in real time and remain on top of things.

CONTROL.

With REDARC's RedVision Display, Manager30 and a distribution box, you get control just the way you want it. RedVision lets you turn devices on or off, such as lights, water pumps, TVs, fridges, compressors, inverters and more all from the RedVision Display or app. This reduces the need for multiple switch panels, simplifying wiring and freeing up room in your vehicle.

AUTOMATE.

The RedVision system featuring a distribution box and Manager30 can be programmed to automatically control multiple devices, act as a master switch and even disconnect non-essential loads to preserve and protect your batteries. As an example, simply hit one button to turn everything off and just leave the fridge running.

REDVISION USER APP.

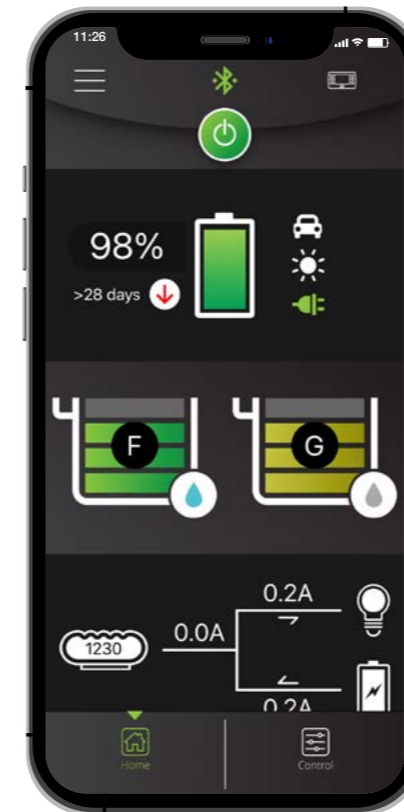


REDVISION CONFIGURATOR APP.

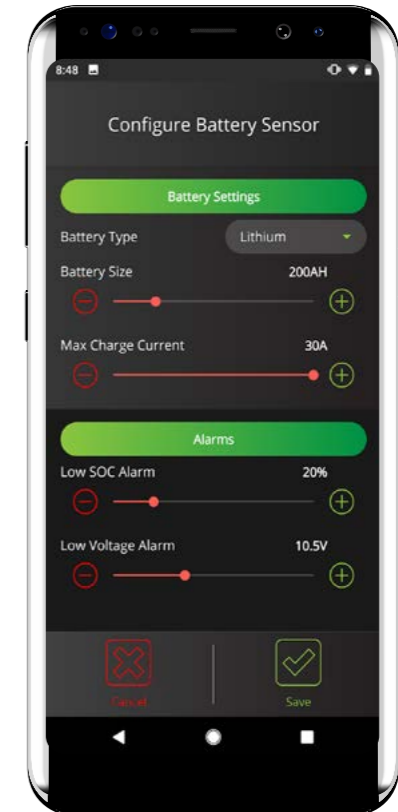


ALL IN ONE PLACE.

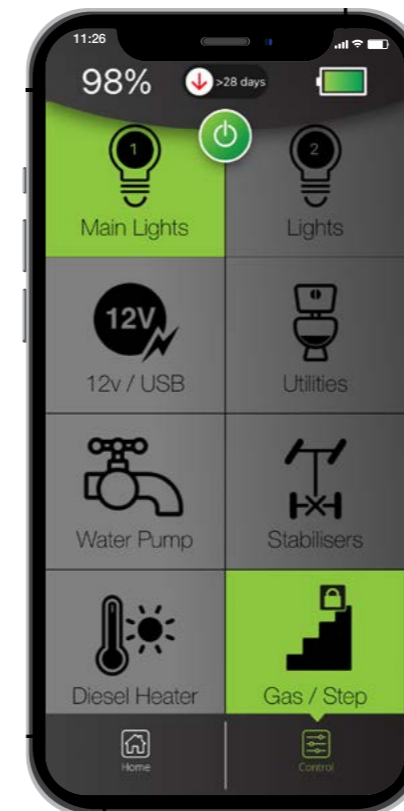
MONITOR YOUR VITALS.



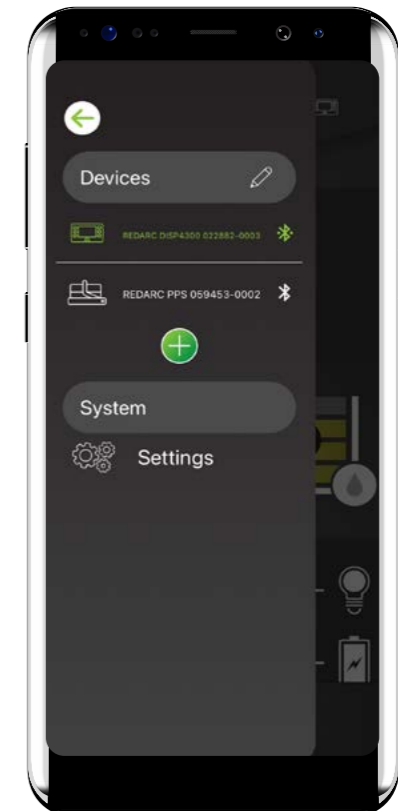
CONFIGURE YOUR SETUP.



CONTROL YOUR SYSTEM.



SWITCH BETWEEN YOUR DEVICES.



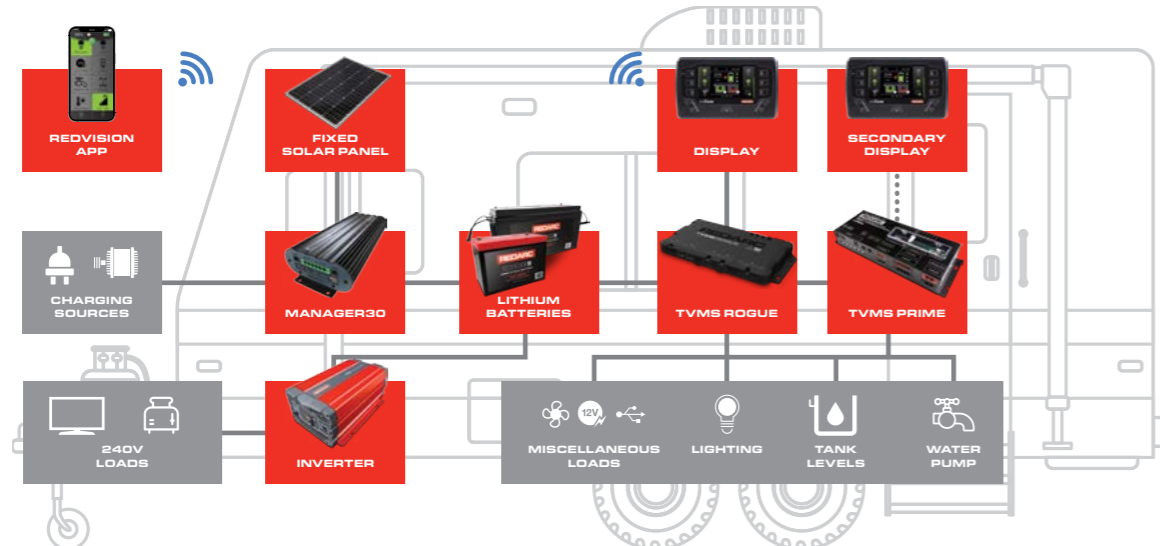
CAMPER TRAILER.



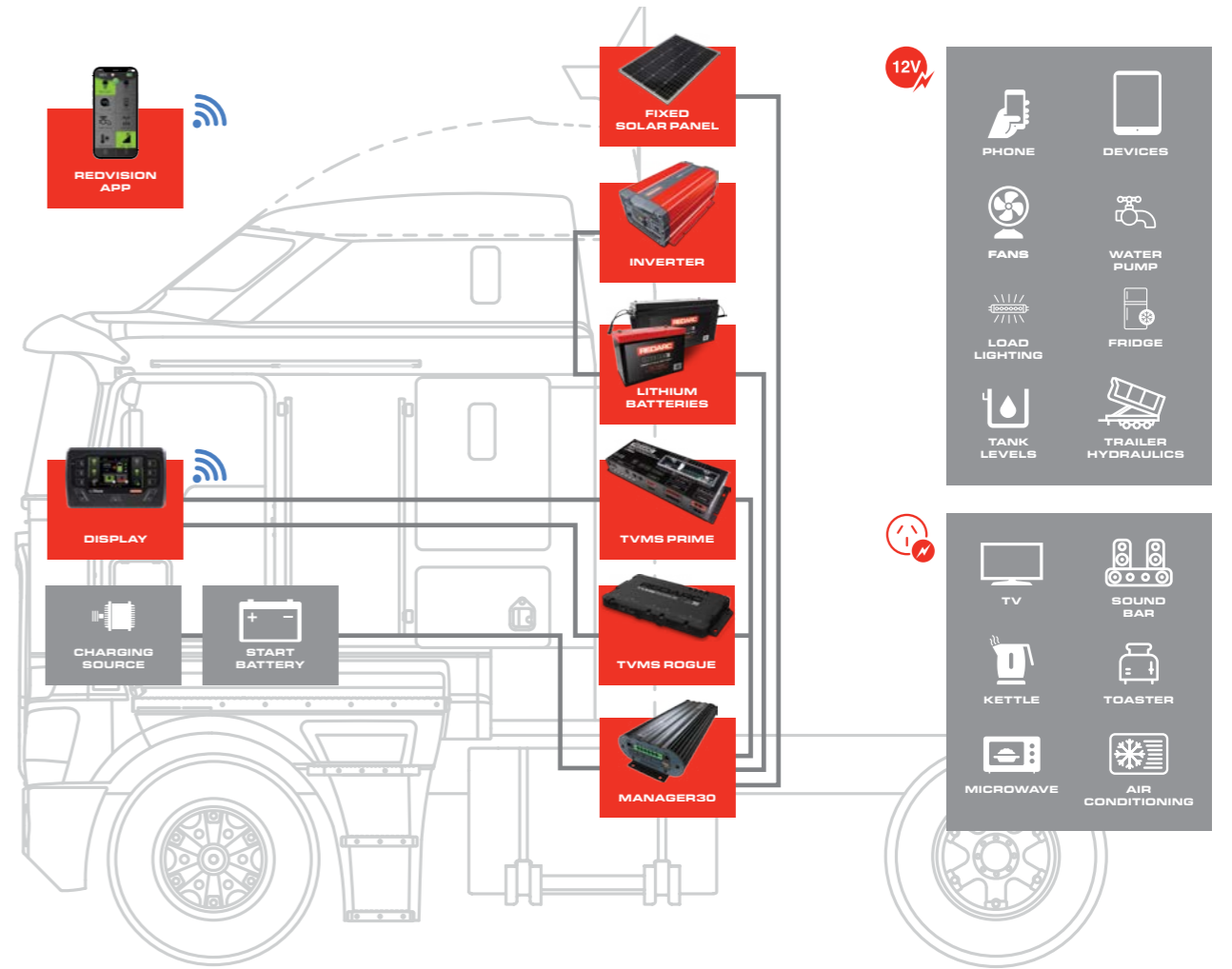
4WD CANOPY.



CARAVAN AND RV.



TRUCK AND TRANSPORT.



ADD A SAFETY SOLUTION TO YOUR SYSTEM.



BATTERY MASTER ISOLATION SWITCH.



ROLL OVER SENSOR.

In the event of a heavy vehicle rollover, the dangers extend beyond the initial impact. The vehicle's electrical system can spark, starting fires from leaking fuel or exposed dangerous goods. REDARC's Roll Over Sensor (ROS) works hand in hand with the Battery Master Isolation Switch (BMIS) to automatically shut down the vehicle's engine and all electrics when a dangerous angle of more than 45 degrees is reached, minimising the chance of a spark. When utilised in unison, the BMIS and ROS enabling heavy-duty vehicles to meet AS2809 roll-over sensing requirements.

The BMIS and ROS feature an ISO26262 rated dual redundancy system to avoid false triggering. In addition, they comply with stringent industry standards including the latest Australian Dangerous Goods Standard AS2809;2020.

Applications for the BMIS and ROS stretch far beyond dangerous goods vehicles, as any vehicle that rolls over whilst power is running has the risk of an electrical spark that could cause a fire. For more information see page 102 for BMIS, and page 130 for ROS.

DISPLAY.



TOTAL CONTROL AT YOUR FINGERTIPS.

RedVision by REDARC provides an unprecedented level of control and automation to your 4x4, caravan, camper, RV or work vehicle. Control accessories such as lights, fridges, TVs, inverters via the physical screen or your Bluetooth connected mobile device.

CONNECTIVITY WHEREVER YOU ARE.

The RedVision Display provides connectivity to the RedVision smartphone app, allowing monitoring of the battery state of charge from your mobile device.

OFF-GRID READY.

The robust display has been built and tested to withstand the toughest environmental conditions, allowing control of multiple on-board devices, anywhere, anytime.

ALL IN ONE AUTOMATION.

With programmable soft-key buttons, the RedVision Display automatically controls multiple devices, acts as a master switch and disconnects non-essential loads to preserve and protect your batteries.

REDVISION DISPLAY UNIT.
DISP4300-RC

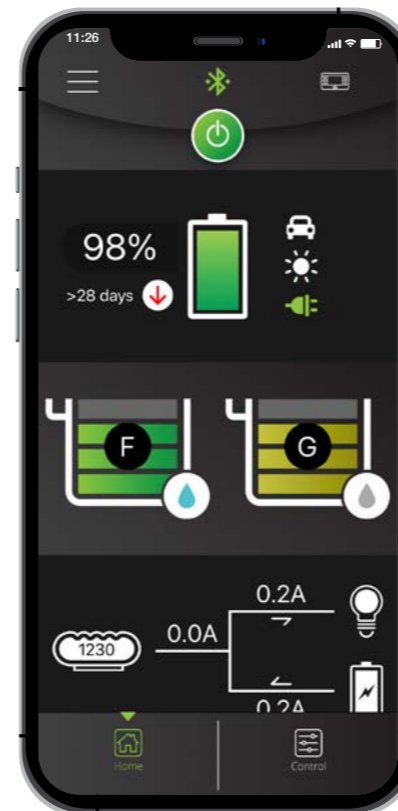
With a 4" colour LED display, programmable soft key buttons, and a user-friendly interface, the RedVision Display is the gateway to RedVision.

The robust display has been built and tested to withstand Australia's tough and varied environmental conditions and allows you to control multiple on-board devices as well as have visibility of water tank levels and battery power. You can add multiple displays to an existing RedVision system or upgrade your Manager30 to a coloured screen with the RedVision display.



DISP4300-RC

Operating temperature	-20° to 70°C
Storage temperature	-40° to 85°C
Weight	300g
Dimensions	178 x 108 x 26mm



REDVISION USER APP.

Designed with the end user in mind, the REDARC's RedVision interface is available on iOS and Android when you're away from the vehicle. Compatible with most phones and devices running iOS 12.0, Android 8.0 and Bluetooth 4.0 or later, the RedVision User app provides you with full access to control and monitor all your electrical on-board devices from the palm of your hand.



REDVISION CONFIGURATOR APP.

Designed with the installer in mind, the RedVision Configurator app allows you to fully customize your charger settings, distribution box inputs, output channels and control logic.

Fully configure your Battery Management System, TVMS Distribution Box and RedVision Display to exactly how you need it.





FLEXIBLE OFF-GRID CONTROL.

When paired with a Manager30 and RedVision Display, TVMS Prime and TVMS Rogue deliver complete control of multiple on-board devices. Control and program lights, fridges, inverters, water pumps, TVs and more, while monitoring temperatures as well as water and battery levels. With a robust display designed and tested for extreme conditions, the TVMS range is ready for whatever your next adventure throws at it.

INTUITIVE REDVISION CONNECTIVITY.

Integration of REDARC's TVMS into your setup allows for the use of REDARC's system control and monitoring interface, RedVision. Control is at your fingertips thanks to the iOS and Android ready, RedVision app.

OFF-GRID POWER PROTECTION.

Control your devices anywhere, anytime, and have the confidence that your system is safe. It's easier and quicker than ever to replace fuses and get your adventure back on, or off the track.

FLEXIBLE HARDWARE SOLUTIONS.

No build is too big or too small. REDARC's TVMS range has a solution for any size off grid setup. Expand your capabilities and combine both the TVMS Prime and Rogue in your build to get control like never before.



TVMS PRIME (AND REDVISION DISPLAY). TVMS1280

With 5x 30A and 5x 10A outputs and a maximum battery current of 80A, the TVMS Prime is the ideal power distribution solution when controlling a mix of low and high-powered devices.

On-board, easily accessible fuses make maintenance and troubleshooting easy while two digital tank level inputs are compatible with REDARC's own tank level sensors.

For the ultimate accessory control solution, combine the TVMS Prime and Rogue units together for a total of 20x output channels.

FEATURES:

- 5x 30A outputs for direct control of high powered devices
- 5x 10A outputs
- Easily accessible fuses
- Includes RedVision display
- Streamlined installation and configuration
- Fully programmable



TVMS ROGUE. TVMS1240

At just 25mm thick and with in-built smart fuses, the TVMS Rogue offers a compact and flexible centralised power control solution for caravan, camper and 4x4 applications.

Set the mood with 10x 10A dimmable outputs, the perfect solution for controlling and programming on-board lighting and low powered devices such as fridges, fans, water pumps and accessory sockets. 8x switch inputs allow physical switches to be easily installed around the vehicle.

Two analogue tank level inputs offer accurate tank level information and are compatible with common tank level sensors.

FEATURES:

- 10x 10A dimmable outputs
- 8x inputs allow for use with physical switches
- Compact size
- On-board smart fuses
- Streamlined installation and configuration
- Fully programmable
- Accurate analogue tank level inputs



TVMS1280



TVMS1240

Power input voltage	9 - 16V	9 - 16V
Maximum output current	80A	40A
Output channels	5 x 10A and 5 x 30A	10 x 10A
Sensor inputs	6 tank level , 2 temp, 1 voltage	2 configurable analogue inputs
Operating temperature	-20° to 60°C	-20° to 70°C
Storage temperature	-40° to 85°C	-40° to 80°C
4.3" display included	Yes	No
Temperature sensors included	Yes	No
Weight	2.0kg	0.43kg
Dimensions	385 x 138 x 58mm	250 x 130 x 25mm

Higher charge currents can be used but not run through the distribution box.



TVMS ROGUE.
TVMS1240

NEW.

REDARC's latest TVMS distribution box, TVMS Rogue, allows for centralised control and monitoring of multiple on-board devices in 4x4s, caravans, camper trailers, motorhomes and more.

TVMS Rogue can be installed as the central hub of a REDARC RedVision system.



DIMMABLE AND PHYSICAL SWITCHING.

With 10x 10A dimmable outputs and 8x inputs that allow for use with physical switches, TVMS Rogue integrates with both traditional physical toggle and dimmable wall mounted light switches.

The perfect solution for controlling and programming on-board lighting, TVMS Rogue allows for lights to be programmed to dim to a preset level.

All lighting connected to TVMS Rogue can be controlled via the RedVision App or RedVision Display.*

FLEXIBLE MOUNTING.

With its small footprint, inbuilt electronic fusing and four simple mounting points, the TVMS Rogue offers a compact power control solution that can be mounted out of sight and out of mind, whether that be under the seat, in the canopy, or almost anywhere it'll fit.

ANALOGUE SENSING.

TVMS Rogue offers more accurate and granular water tank level measurements thanks to its two analogue tank level inputs, which are compatible with common tank level sensors.

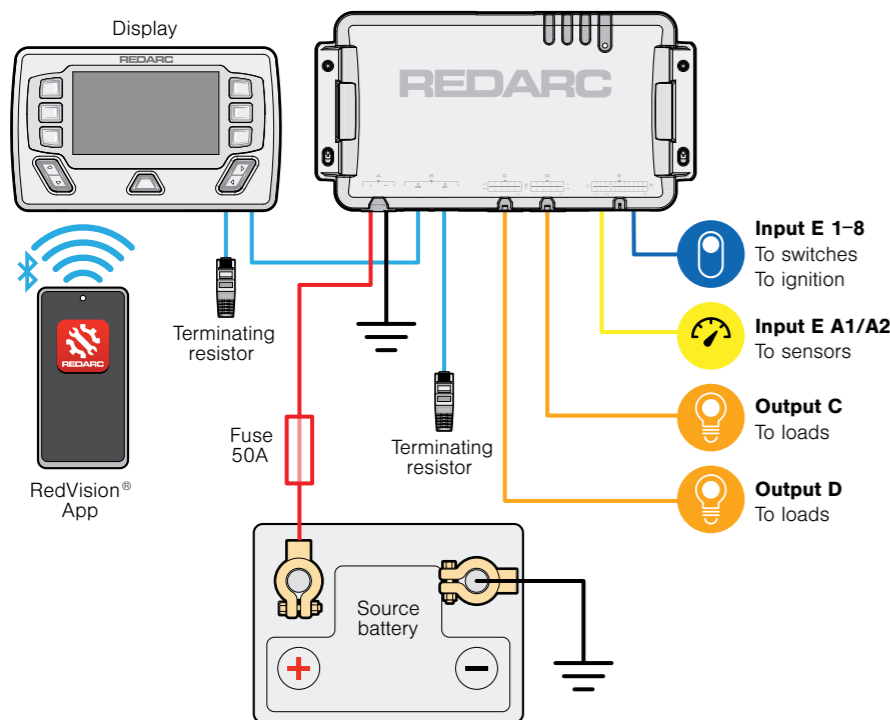
FEATURES:

- 10x 10A dimmable outputs
- 8x inputs allow for use with physical switches
- On-board smart fuses
- Streamlined installation and configuration
- Fully programmable
- Accurate analogue tank level inputs

APPLICATIONS:

- Provides dimmable switching to caravans and RVs
- Expand existing TVMS system to include more outputs
- Small footprint, perfect for vehicles with limited space, camper trailers and tiny homes

TYPICAL TVMS ROGUE INSTALLATION.



TVMS ROGUE ACCESSORIES.

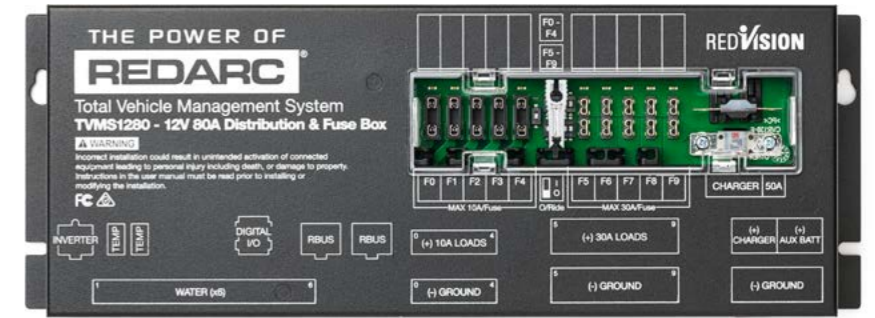
50A FUSE KIT.
FK50

Perfect for TVMS1240 installations.



* Sold separately. Compatible with DISP4300-RC models manufactured from January 2023, serial numbers beginning with 23. Displays manufactured from July 2022 to January 2023 (serial numbers 2207 - 2212) are upgradeable.

TVMS PRIME.
TVMS1280



ALL IN ONE PLACE.

When paired with Manager30, TVMS Prime provides an unprecedented level of control and automation for caravans, camper trailers, RVs, 4WDs, and light and heavy vehicles.

TVMS Prime and RedVision provides full control and monitoring in one location, allowing users to control, monitor and automate a range of on-board devices in real time, reducing the need for multiple switch panels, simplifying wiring and freeing up room in the vehicle.

EIGHT SENSOR INPUTS.

The TVMS Prime allows for up to two temperatures and six water tanks to be measured, and monitored through RedVision. Two 3 metre temperature sensors are included with TVMS Prime, and separate Water Tank Sensor Kits (sold separately) are required for measuring each tank.

MAINTENANCE MADE EASY.

Indicated by internal lights, easily swap out blown fuses via the TVMS Prime's accessible front panel.

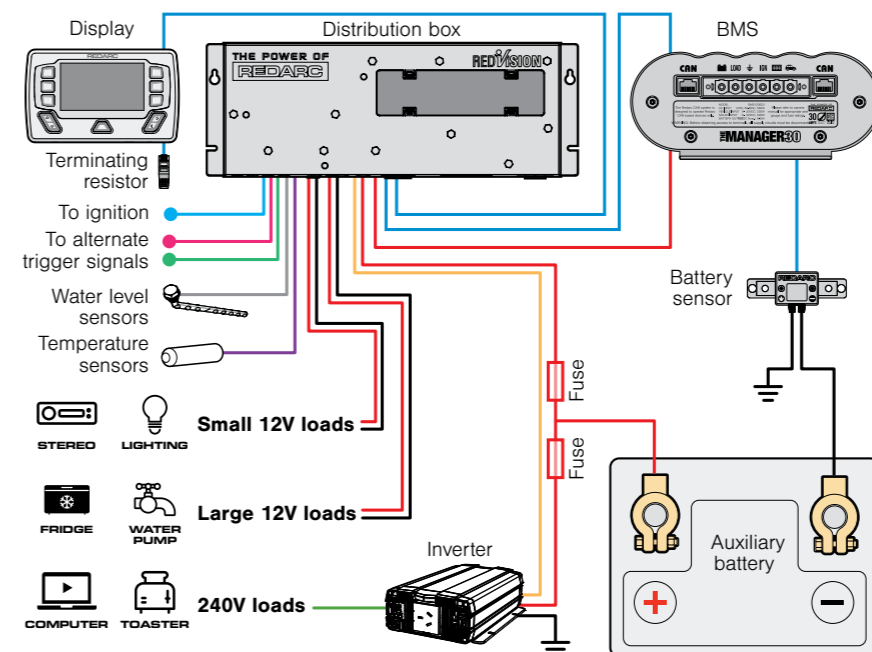
FEATURES:

- 5x 30A outputs for direct control of high powered devices
- 5x 10A outputs
- Easily accessible fuses
- Includes RedVision display
- Streamlined installation and configuration
- Fully programmable

APPLICATIONS:

- 'All-in-one' control for 4x4, camper, RV and camping devices
- Manage portable home offices
- Perfect for trucks and emergency service vehicles
- Control the portable work-site

TYPICAL TVMS PRIME INSTALLATION.



TVMS PRIME ACCESSORIES.

WATER TANK SENSOR KIT.
TVMSDBWK-001



Plugs directly into the TVMS Prime and can report five states: empty, one-quarter, one-half, three-quarters and full.

WATER TANK SENSOR WIRING LOOM.
TVMSDBWK-002



A cable that is intended to be connected to existing probes already in the water tank.

POWER.



POWER FOR ANY ADVENTURE.

Keep your battery charged and the adventure going by adding a REDARC power solution to your system.

Get live state of charge information with the Manager30's RedVision screen, add a REDARC Pure Sine Wave Inverter to use 240V devices, have unrivalled power storage with lithium batteries or add solar for unlimited power from the sun.

UNIQUE CHARGING PROFILES.

With optimised charging profiles to ensure your batteries are charged at the correct voltage and current levels, REDARC's Manager30 and BCDC range will keep your adventure going.

GREEN POWER PRIORITY.

If 12V solar power is available, the Manager30 and BCDC range will charge using solar power before topping up the output charging current from another source such as mains power or DC vehicle power.

FLEXIBLE HARDWARE SOLUTIONS.

With DC to DC charging, AC charging, solar solutions, inverters and more, whatever your needs are, there's a REDARC power solution that integrates smoothly with RedVision.

MANAGER30.

BMS1230S3R

With AC, DC and solar charging as well as both the RedVision screen and mobile phone connectivity via Bluetooth, the Manager30 offers the complete battery management solution.

The Manager30 operates like six products in one - it charges auxiliary battery from the vehicle while on the move, it's an AC charger, a solar regulator, a battery isolator, load disconnect controller and battery monitor via the RedVision screen.

For specifications and more information, see page 72.

SOLAR RANGE.

Harness the power of the sun with flexible solar blankets, portable folding panels and permanent fixed panels available in 50 to 300W capacities.

For specifications and more information, see page 88.

BCDC RANGE.

Compact and reliable DC to DC battery chargers suitable for most battery types including lithium.

Featuring a Maximum Power Point Tracking (MPPT) solar regulator, dual input models can charge from both solar and the alternator simultaneously.

Choose the BCDC Classic for rugged under-bonnet installations or the BCDC Core for in-cabin installations where waterproofing isn't a necessity.

For specifications and more information, see page 48.

INVERTER RANGE.

Use your 240V devices with the addition of a REDARC Pure Sine Wave Inverter to the RedVision ecosystem. Pure sine wave ensures a smoother, more efficient running of appliances including laptops, power tools, kettles and more. Take electrical devices anywhere and get the same type of 240V power you get at home.

For specifications and more information, see page 80.

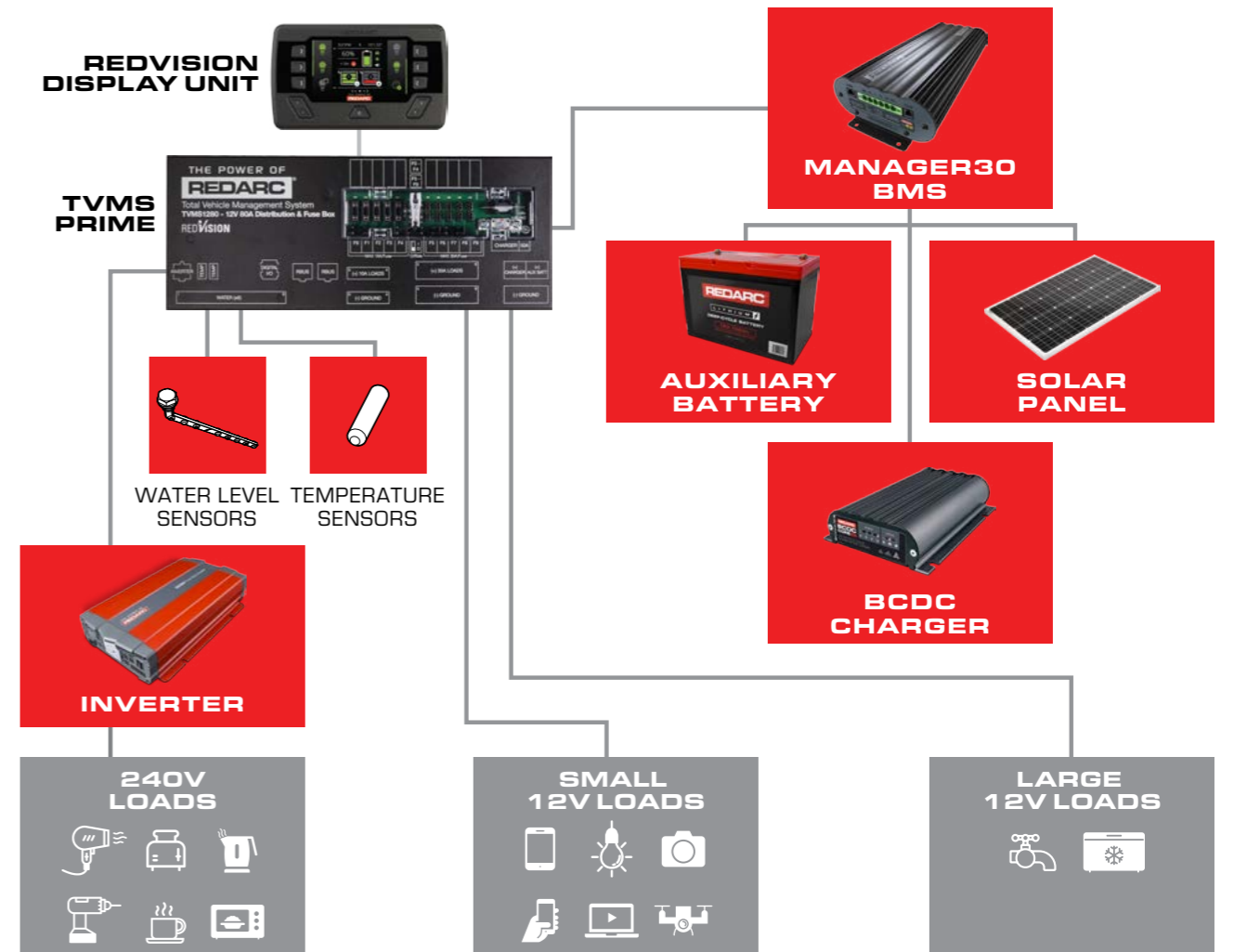
LITHIUM BATTERY RANGE.

12V systems are only as good as their batteries, and REDARC Lithium Deep Cycle Batteries are the ultimate in deep-cycle battery technology delivering unrivalled performance and battery life.

Featuring fast charging, a long lifespan and zero maintenance.

REDARC's LiFePO₄ batteries are available in capacities ranging from 60Ah to 200Ah and include an internal Battery Management System.

For specifications and more information, see page 76.



BRAKING AND TOWING.



REDARC's range of electric brake controllers and towing products provide the ultimate in safety when towing, offering smooth trailer braking for 12 or 24V vehicle systems.

When you're towing tonnes of weight behind you, it's important to ensure the safety of yourself and others with an effective and controlled braking system in place.

With a wide range of proportional and user-controlled braking systems, as well as wiring kits, switch inserts and other accessories, no matter what you're towing, and the conditions you're towing in, REDARC has towing safety sorted.

TOW-PRO ELECTRIC BRAKE CONTROLLERS.



STOPPING POWER ON YOUR OWN TERMS.

There's only one real choice when it comes to electric braking for your caravan or trailer. Tow Pro is Australia's most popular electric brake controller, setting the benchmark for easy-to-use, safe braking on caravans, trailers, camper trailers and boat trailers.

SMOOTH BRAKING CAPABILITY.

The Tow-Pro is designed to provide smooth safe braking regardless of the trailer or the terrain on which it is being towed. You can rest assured that you're in control.

COMPATIBLE WITH ALL MODERN VEHICLES.

Used with the recommended REDARC wiring kits, Tow-Pro Elite ensures compatibility with all new technologies. It works in 12 and 24V vehicles to control electric and electric/hydraulic braking systems.

EASY TO INSTALL BRAKE CONTROLLER.

The Tow-Pro Elite remote head is designed to be mounted at a distance from the main unit, allowing for a neat, convenient installation without impeding on lower leg airbags or driver leg room.

REDARC's range of Tow-Pros can be seamlessly mounted in a switch-bank or dashboard, overcoming the possible interference that traditional brake controllers have with lower airbags, and the intrusion on the driver's leg space.



TOW-PRO ELITE V3. EBRH-ACCV3

The Tow-Pro Elite provides users with the ability to swap between Proportional mode (inertia sensing) for highway driving conditions and User-controlled mode, popular for off-road driving. The main unit is installed behind the dash, providing a subtle, factory finish to match your interior.



TOW-PRO CLASSIC. EBRHV2

The Tow-Pro Classic Electric Brake Controller offers a single User-controlled braking mode. At the turn of a dial, the Tow-Pro Classic gives the driver complete control of the brake level whether the foot brake or override is applied.

FEATURES:

- Smooth trailer braking response
- Proportional and User-controlled braking modes
- Factory look remote head
- AL-KO ESC and Dexter Sway Control System compatible
- Electric or electric/hydraulic operation
- Safe braking at your fingertips
- The main unit is installed out of sight

LED DIAL.

The illuminated LED dial shows you the current status at a glance, so you can keep your eyes on the road.



BLUE LED - PROPORTIONAL

Trailer brakes are applied proportional to the vehicle. The harder you brake, the harder the trailer brakes.



GREEN LED - USER-CONTROLLED

Trailer brakes will be applied at the level set. 0 is no trailer braking, 10 is full trailer braking.



RED LED - BRAKES APPLIED

Braking force is indicated by the LED changing to different shades of red when the brakes are applied.

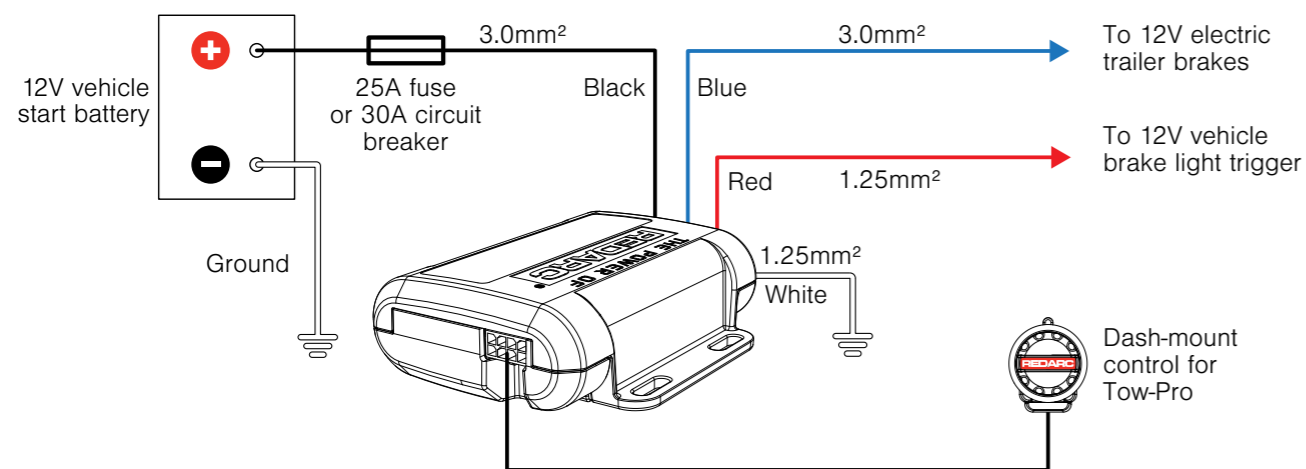
APPLICATIONS.

- Electric brakes required for trailers over 750kg (Aus)
- Smoother trailer braking
- Two modes of braking, perfect for towing vehicles that are used both on and off road, such as 4WDs

	ELITE V3	CLASSIC
Proportional Mode (inertia-sensing)	✓	
Off-road mode - User-controlled Mode	✓	✓
Active Calibration	✓	
Dash-mounted control knob	✓	✓
Control knob meets ADR21 safety standards	✓	
Suitable for 12V systems	✓	✓
Suitable for 24V systems	✓	
Operates electric and electric/hydraulic brakes	✓	✓
AL-KO ESC & Dexter Sway Control System approved	✓	✓
Australian made and designed	✓	✓



TYPICAL TOW-PRO INSTALLATION.



All wire ratings refer to the minimum required cross sectional area of copper only (not including insulation). Always use a wire gauge equal to or greater than that specified in this guide.

TOW-PRO SPARE PARTS.



TOW-PRO ELITE BRAKE CONTROLLER REMOTE HEAD.

EBRH-ACCV3-RH

The EBRH-ACCV3-RH is a replacement remote head for the Tow-Pro Elite V3 Electric Brake Controller.



EBRH-ACCV3



EBRHV2

	EBRH-ACCV3		EBRHV2
Nominal input system voltage	12V	24V	12V
Operating voltage	9 - 32V		9 - 16V
Nominal brake input signal voltage	Off - 0V On - 12V	Off - 0V On - 24V	Off - 0V On - 12V
Brake coil voltage	12V		12V
Maximum trailer axles	3		3
Nominal current draw	18A		18A
Maximum rated current	25A	30A	25A
Standby current	<5mA		<10mA
Operating temperature	-20° to 60°C		-20° to 60°C
Weight	200g		200g
Dimensions	80 x 100 x 30mm		85 x 100 x 30mm
Warranty	Two years		Two years

TOW-PRO ACCESSORIES.

REDARC has a comprehensive range of accessories for the Tow-Pro range of Electric Brake Controllers, designed to simplify the installation of the unit into vehicles.

TOW-PRO WIRING KITS.



Used in conjunction with a Tow-Pro, the Tow-Pro wiring kits are vehicle-ready, with all hardware, wiring and mounting instructions included. This ensures the best possible installation for the vehicle.

TPWKIT-012	Ranger and Everest Wiring Kit
TPWKIT-013	Universal Wiring Kit
TPWKIT-014	Universal Extended Wiring Kit

TOW-PRO ELITE REMOTE HEAD WIRING KITS.



REDARC offer six Remote Head Wiring Kits between 1 and 6 metres for the Tow-Pro Elite, that interconnects the remote head to the main unit. This cable has automotive-style connectors, increasing the durability of the Tow-Pro Elite.

RHWK-001	1 metre
RHWK-002	2 metre
RHWK-003	3 metre
RHWK-004	4 metre
RHWK-005	5 metre
RHWK-006	6 metre

TOW-PRO ELITE SWITCH INSERTS.



Aids in the installation of the Tow-Pro Elite remote head and allows for an OE-look whilst maintaining ADR21 compliance. They are also available in packs of ten.

TPSI-001	Universal model
TPSI-002	Toyota HiLux, Mitsubishi Triton
TPSI-003	Holden Colorado
TPSI-005	Isuzu D-MAX SX and Mazda BT50 (2020-current)
TPSI-006	Isuzu D-MAX SX and Mazda BT50 (2020-current)
TPSI-007	70 Series Toyota
TPSI-008	Nissan Pathfinder R52 (2013-current) and Mercedes-Benz X Class (2018-current)
TPSI-009	Mazda BT50 (2011-2020)
TPSI-010	Universal Remote Head Kit
TPSI-011	Toyota (2019-current)
TPSI-012	Remote housing replacement



TOW-PRO WIRING HARNESSES TO SUIT IMPORTED US VEHICLES.

REDARC offer a range of US vehicle-specific wiring harnesses that offer the ability to connect the market-leading Tow-Pro Elite V3 and Tow-Pro Classic Electric Brake Controllers directly to factory towing package connectors, behind a vehicle dash.

Scan the QR code to see specification tables.



30A CIRCUIT BREAKER KIT.

CBK30-EB

The 30A Circuit Breaker Kit includes a sealed 30A circuit breaker with wiring and connections to suit up to a three axle Electric Trailer Brake Controller setup.



ENCAPSULATED PROTECTION DEVICE.

EPDK-001

Rated at 7A, for both 12 and 24V applications, the Encapsulated Protection Device totally encapsulates sealed connections for superior weather protection.



ELECTRIC TRAILER BRAKE ADAPTER FOR 24V VEHICLES.

EB24A

The EB24A is an adaptor to operate a 12V brake controller in a 24V vehicle. Required when using on 24V vehicle towing e/h trailers.



12V USER-CONTROLLED TRAILER BRAKE CONTROLLERS.

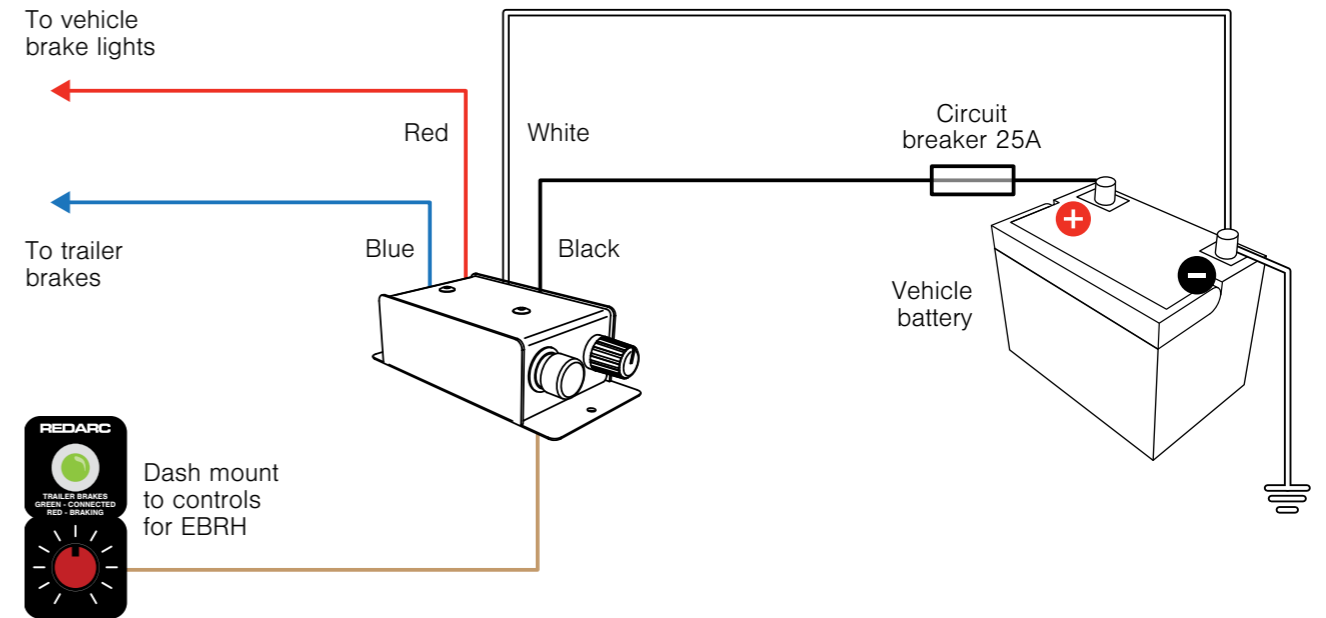


TAKE CONTROL OF YOUR TRAILER BRAKES.

The User-Controlled 12V Trailer Brake Controller offers a 12V self-contained and easy-to-use method of controlling the electric brakes on a one to three axle trailer. The LED indicator on the trailer brake controller glows green when connected to a trailer, turning red when the brakes are applied, with the shade of red indicating the braking force.

For 24V systems, incorporate the EB24A, designed to operate a 12V brake controller in a 24V vehicle. For a trailer-mounted brake controller option, the EBTM is completely potted in silicone elastomer to ensure protection against vibration and weather.

TYPICAL EB INSTALLATION.



FEATURES:

- Compact size
- LED status and braking force indication
- Override button for independent trailer brake activation
- Simple gain adjust for variation in braking force
- May be installed at any angle without affecting performance

APPLICATIONS:

- Trailer mounting allows for towing from multiple tow vehicles
- Control heavy trailer loads with adjustable braking force
- Perfect for 12 or 24V (EB24A needed for 24V system)*

* Before purchasing, check for compliance with your state laws.



EB



EBTM

Operating Voltage	12V	12V
Brake Coil Voltage	12V	12V
Max. Trailer Axles	3 (18A)	3 (18A)
Max. Rated Current	25A	25A
Standby Current	<10mA	<10mA
Operating Temp	0°C to 60°C	0°C to 60°C
Weight	200g	300g
Dimensions	50 x 100 x 30mm	50 x 100 x 30mm
Warranty	Two years	Two years

Confirm with local transport authorities regarding the usage of trailer mount electric trailer brake controllers in your state.



BREAK-SAFE BREAK-AWAY CONTROLLER.



SECURITY AGAINST A RUNAWAY TRAILER.

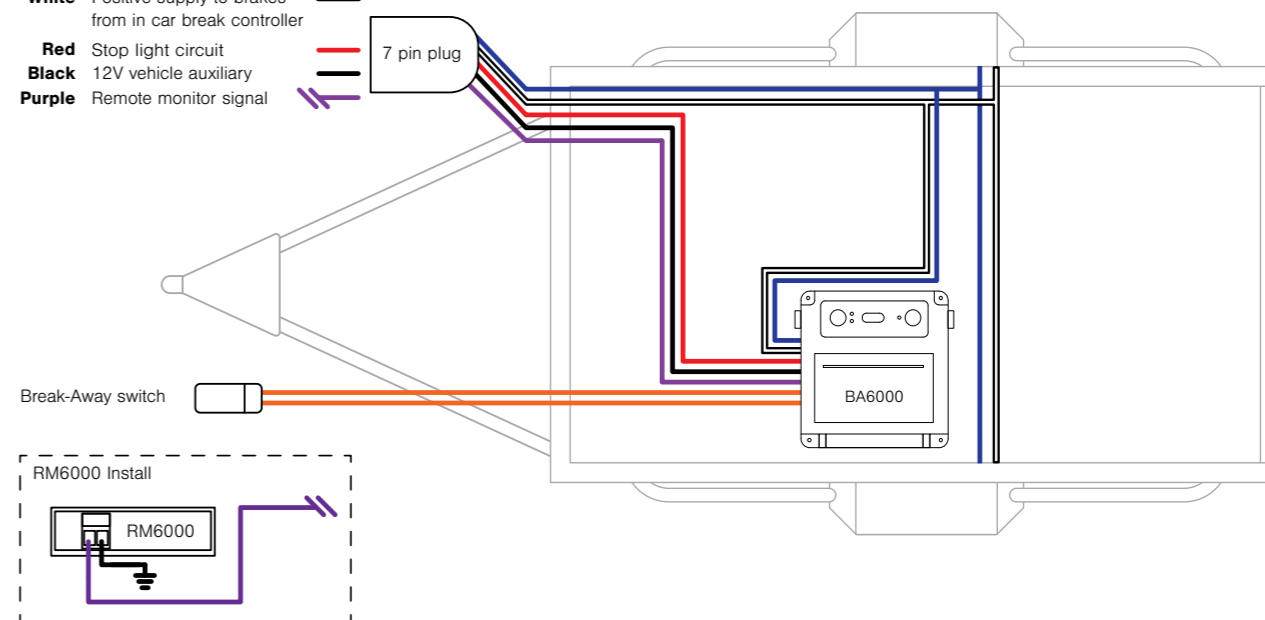
Designed for one and two axle trailers, the Break-Safe Break-Away System offers security against a runaway trailer.

The Break-Safe Break-Away system applies the brakes and brake lights on a trailer or caravan should it accidentally separate from the tow vehicle. The system features a test button and has a built-in battery that can be charged from the auxiliary battery, solar panels or mains. The Remote Battery Monitor is available to provide an audible and visual indication if the Break-Away Controller's internal battery state of charge falls below the acceptable levels.



TYPICAL BA6000 INSTALLATION.

- Blue** Earth return from brakes
- White** Positive supply to brakes from in car break controller
- Red** Stop light circuit
- Black** 12V vehicle auxiliary
- Purple** Remote monitor signal



In the event of a breakaway incident, the Break-Safe Break-Away system will not only apply the trailers electric brakes and brake lights but will keep them applied for over 15 minutes.

This enables the user to secure the trailer when it has come to a stop. Break Safe Break-Away comes complete with its own power supply, coil cable breakaway switch and all mounting hardware.

FEATURES:

- Has a built in battery
- Can be charged from the tow vehicle's axillary line or by a battery charger
- Includes test button to indicate level of charge in the battery

APPLICATIONS:

- Suits all electric brakes, and perfect for caravans, trailers, horse floats and campers
- Ensures compliance with most state laws
- Set and forget solution that recharges from the car battery



BA6000



RM6000

Description	For 2 or 4 wheel trailer brakes	Remote monitor
Dimensions	170 x 160 x 90mm	80 x 59 x 29mm
Weight	3.6kg	0.1kg



TRAILER LIGHTING REDUCERS.



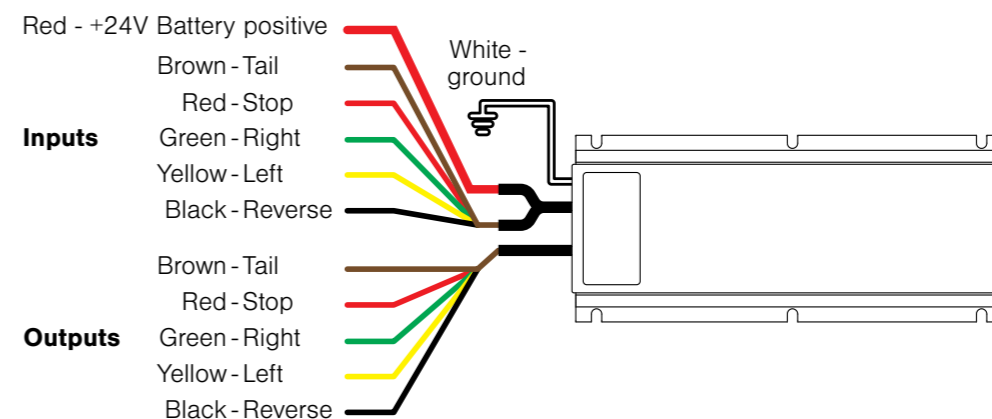
CORRECT VOLTAGE FOR YOUR TRAILER LIGHTING.

REDARC Trailer Lighting Voltage Reducers provide a 12V circuit for brake, tail and indicator lighting on 12V trailers being towed by a 24V vehicles.

These reducers feature a fully-encapsulated, robust construction and are protected against overloads and short circuits.



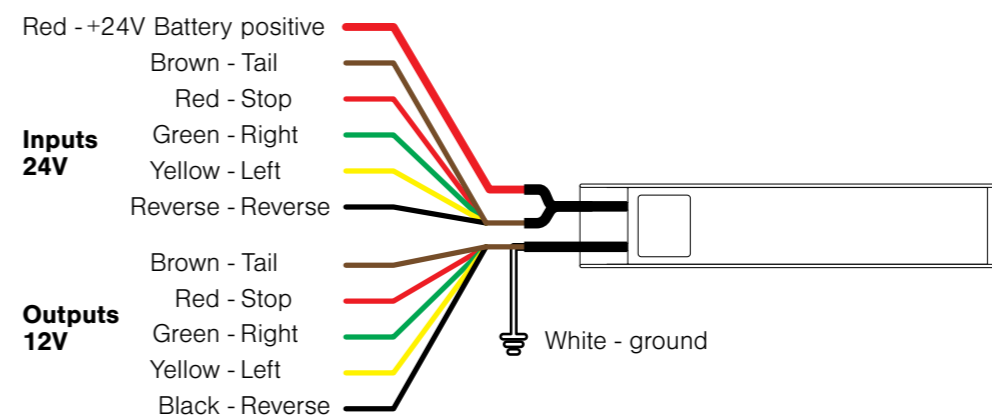
TYPICAL VRB5C INSTALLATION.



- FEATURES:**
- Fully encapsulated and robust
 - Protected against overload and short circuit
 - 2x 360W and 3x 180W channels (VRB5C)

- APPLICATIONS:**
- Run 12V trailer lights from 24V vehicles
 - Suitable for installations exposed to the elements, e.g. on the chassis rail
 - Works with most incandescent and LED lamps

TYPICAL VRM/VRL/VRS INSTALLATION.



	VRM(REV)	VRL(REV)	VRS(REV)	VRB5C
Supply range	20 - 33V	20 - 33V	20 - 33V	18 - 32V
Number of circuits	4 or (5)	4 or (5)	4 or (5)	5
Max. load current (total)	10A	20A	30A	75A
Brake light circuit	40W	80W	120W	360W
Tail/clearance circuit	40W	80W	120W	360W
Right indicator circuit	20W	40W	60W	180W
Left indicator circuit	20W	40W	60W	180W
Reverse circuit (rev only)	20W	40W	60W	180W
Ambient temp. range	-10° to 50°C	-10° to 50°C	-10° to 50°C	-20° to 50°C
Dimensions	44 x 30 x 210mm	44 x 30 x 210mm	44 x 30 x 210mm	75 x 135 x 295mm
Weight	0.5kg	0.5kg	0.5kg	2.3kg
Warranty	Two years	Two years	Two years	Two years



TRAILER LIGHTING INTERFACES.

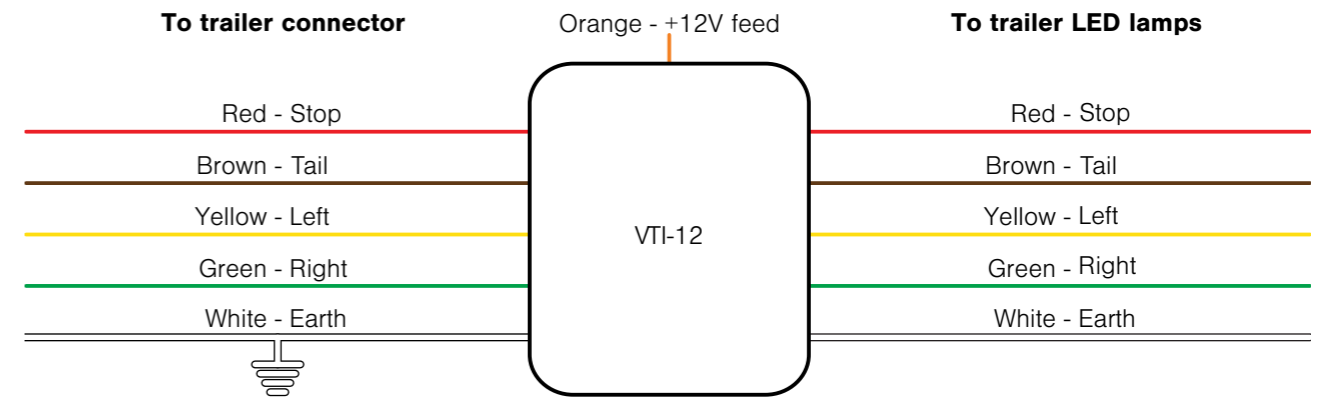


DETECT AND SENSE TRAILERS WITH LED LIGHTING.

REDARC's Trailer Light Interface allows late model vehicles to tow a trailer with LED lamps or incandescent globes by sensing the vehicle lighting signals without loading the vehicle lighting circuit or control module.



TYPICAL VTI-12 INSTALLATION.



TRAILER LIGHT INTERFACE.

The Trailer Lighting Interface draws the power for the trailer lighting directly from the vehicle battery and switches it to the trailer light circuit based on the input signals received.

FEATURES:

- Up to 42W per circuit
- Protects vehicle lighting circuits and control module
- Compatible with LED lamps and incandescent globes

MOUNTING.

The module is designed to be mounted inside the rear of the vehicle with the trailer lighting harness before the trailer plug.

If the vehicle has a genuine trailer lighting kit the Trailer Lighting Interface must be installed on the vehicle light side, not the output side of the kit.

APPLICATIONS:

- Allows late model vehicles to tow trailers with LED Lights
- Rear vehicle mounted
- Compatible with LED lamps and incandescent globes



VTI-12

Circuits	4 circuit
Operating voltage	12V
Enclosure	ABS Plastic
Cable length	1500mm
Dimensions	80 x 40 x 20mm
Weight	170g
Warranty	Two years



POWER.



The last thing anyone wants when they're out on the road is a dead battery.

Give yourself peace of mind and the freedom to drive as far as your journey takes you with REDARC's range of power products.

REDARC's advanced selection of dual battery isolators and DC to DC battery chargers won't just keep your batteries charged, but will also protect them from excessive discharging.

Whether you're on the road, or off it, get the same type of power you get at home with REDARC's Pure Sine Wave Inverters.

Power up your 240V devices from home, and when it's time to top up your battery, harness the energy of the sun with REDARC's innovative and state of the art solar panels and blankets.

Your adventures aren't limited to the vehicle, so why should your power be? Pick up your 12V power and bring it with you thanks to GoBlock. Then, when you get home, use an AC charger to trickle charge the batteries, ready for the next adventure.

No matter your battery type, or what you want to power, REDARC's range of power products will have you charged and ready for adventure. Whether it's taking all the comforts of home with you, keeping your gadgets charged or topping up your battery, power your adventure with REDARC.

DC TO DC CHARGING RANGE.



CHARGED AND READY FOR ADVENTURE.

No matter the battery type, REDARC have the ideal charging solution for your auxiliary battery with an advanced range of DC to DC battery chargers. Compact in size, REDARC's BCDC charging range suit a variety of applications, from engine bay to cabin, or in a caravan or trailer.

These chargers are designed to protect your start battery from excessive discharging during multi-battery systems, and are perfect for both commercial and recreational applications.

COMPACT AND RELIABLE.

The extensive BCDC range is designed and manufactured in Australia for Australian conditions and features the high quality and reliability that comes with every REDARC product.

ALL THE VERSATILITY YOU NEED.

The BCDC range can source power from 12 and 24V alternators plus 12V nominal solar panels and is compatible with all common 12V lead acid or LiFePO₄ lithium auxiliary batteries.

CHARGE FROM MULTIPLE SOURCES.

The Green Power Priority Technology allows dual input models to charge from the vehicle's alternator and solar simultaneously. Your batteries will always be fully charged.

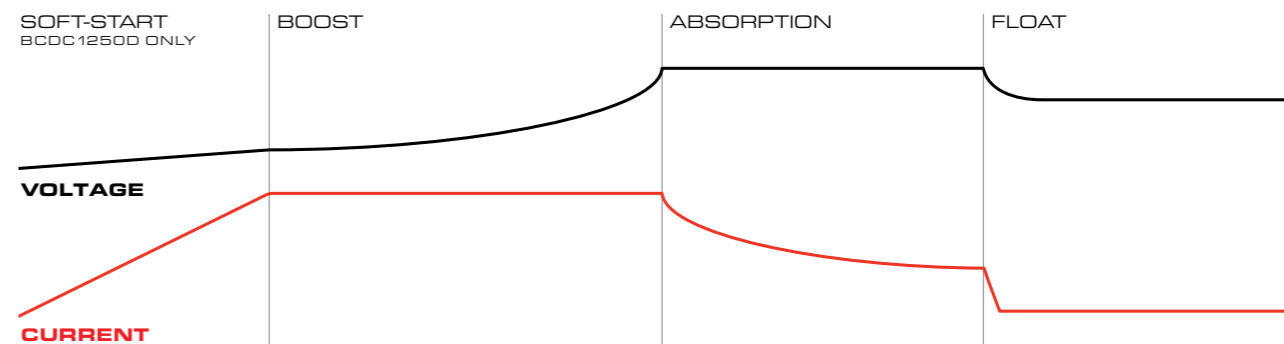
MULTI-STAGE CHARGING PROCESS.

The BCDC range of DC to DC chargers feature a multi-stage charging process designed to charge batteries to 100%, regardless of their type. By providing unique charging profiles to each specific battery type, these DC to DC chargers are able to achieve and maintain an optimal charge in auxiliary batteries at all times.

For the BCDC1250D, this process begins with an additional stage. 'Soft-Start' turns the charger on slowly, providing an increased current flow to the auxiliary battery over a short period. From there, the charging process is the same for all BCDCs.

The 'Boost' stage provides maximum current until the battery reaches its predetermined 'Absorption' voltage. The BCDC will then remain in the 'Absorption' stage, holding its voltage until the battery is 100% charged. From there, the BCDC enters the 'Float' stage, where it retains a full charge until the auxiliary battery voltage falls below a predetermined threshold. It will then recommence the 'Boost' stage.

Throughout the charging process, the BCDC constantly monitors the main vehicle battery. During these charging stages (including 'Float') the BCDC can supply loads (up to the maximum current output) without necessarily switching back to the 'Boost' stage, protecting the battery from overcharging.



Large capacity battery banks may require a few cycles to fully charge.

THE BCDC DUAL BATTERY CHARGER RANGE.

The extensive range of BCDC Dual Battery Chargers are designed and manufactured in Australia for Australian conditions. Regardless of which charger you choose, you'll be assured of the high quality and reliability that comes with every REDARC product.

BCDC CORE DUAL INPUT.

Page 50



CORE25
BCDCN1225



CORE40
BCDCN1240

BCDC CLASSIC DUAL INPUT.

Page 52



CLASSIC25
BCDC1225D



CLASSIC40
BCDC1240D



CLASSIC50
BCDC1250D

BCDC 24V SINGLE INPUT.

Page 56



BCDC2420



BCDC2420-LV



LFP2420



LFP2420-LV

BCDC DC ONLY.

Pages 58-62



BCDC1212T



BCDC1220
BCDC1220-IGN



BCDC1206



BCDC CORE RANGE.



POWERED ADVENTURE AT ITS CORE.

Power up for less with the BCDC Core. Featuring REDARC's pioneering charging tech, and simultaneous solar and DC charging, lithium compatibility and a MPPT regulator, BCDC Core is the perfect DC to DC charger for your canopy or cabin build.



COMPACT AND SILENT.

Don't ruin the look of your interior with bulky electronics. With no loud fans or relays and a small form factor, the BCDC Core can be tucked away, leaving room in the cabin for more important things.

Hide it under the rear floor, behind a side panel or under the seats and make your power setup look like it was meant to be there.

SMART AND EFFICIENT.

Featuring an ultra efficient MPPT solar regulator, the BCDC Core will charge from the vehicle and solar simultaneously. By charging your batteries more quickly, you can keep the adventure going for longer. Built-in Green Power Priority will prioritise solar input, minimising the load on your alternator and saving fuel.

PROVEN PERFORMANCE.

The BCDC Core is the next evolution of proven REDARC BCDC platform, that has been powering off-grid adventure for over ten years.

With the BCDC Core, you'll have the confidence that your batteries are charged and your fridge stays cold.

BCDC MODEL	CORE	CLASSIC
Suitable for Lithium charging (LiFePO ₄)	✓	✓
Silent, fanless operation	✓	✓
Simultaneous DC and solar charging (Green Power Priority)	✓	✓
MPPT solar regulator	✓	✓
Easy installation	✓	✓
Compact design	✓	✓
Suits 12/24V standard and variable/smart alternators	✓	✓
Water and dust resistant		✓
Fully sealed electronics		✓
Tough powder-coated finish		✓
Chemical resistant, industrial strength decals		✓
Suitable for engine bay installation		✓
Connector kit included		✓
Australian made and designed	✓	✓
Legendary BCDC reliability	✓	✓



BCDCN1225



BCDCN1240

	BCDCN1225	BCDCN1240
Input voltage range	9 - 32V	9 - 32V
Solar range	9 - 32V	9 - 32V
Solar switch on voltage	9V	9V
Output power	375W	600W
Output current	25A	40A
No load current	<100mA	<100mA
Standby current	<8mA	<8mA
Recommended input fuse	40A	60A
Recommended output fuse	40A	60A
MPPT solar regulator	Yes	Yes
Operating temperature	-10° to 80°C	-10° to 80°C
Dimensions	165 x 120 x 37mm	165 x 120 x 37mm
Weight	900g	900g
Warranty	Two years	Two years

FEATURES:

- Lithium ready
- Simultaneous DC and solar charging
- Built-in MPPT solar regulator
- Compact form factor
- Silent, fan-less operation
- Compatible with 12 and 24V alternators
- Australian made

APPLICATIONS:

- In-cabin and canopy battery charging
- Perfect for 4WD, caravans and RVs
- Suitable for AGM, GEL, standard lead acid, calcium and lithium batteries
- Works on vehicles with conventional alternator charging systems



BCDC CLASSIC RANGE.



THE ONLY 'EVERYTHING PROOF' DC TO DC CHARGER.

Water, mud, dust, heat and corrugated roads are no match for the BCDC Classic. It's the DC to DC charger to have when failure is not an option.

The BCDC Classic is not afraid to get dirty and is suitable for under-bonnet installations. Simultaneous solar and DC charging, lithium compatibility, MPPT solar regulator - all in a compact form factor.



LITHIUM AND SOLAR READY.

Featuring an ultra efficient MPPT solar regulator, the BCDC Classic will charge from the vehicle and solar simultaneously. Plug in a panel and the built in Green Power Priority will prioritise solar input, minimising the load on your alternator and saving fuel.

The BCDC Classic also features chemistry specific charging profiles, including lithium.

FEATURES:

- Separate DC and solar charging inputs
- Simultaneous DC and solar charging with Green Power Priority
- Perfect for engine bay installations, with fully-sealed electronics
- Compatible with 12 and 24V standard and variable voltage/ smart alternators
- Suitable for AGM, GEL, standard lead acid, calcium and lithium (LiFePO4) batteries
- Suitable for use with conventional alternator charging systems

SMART AND RELIABLE.

REDARC's DC to DC chargers are compatible with both fixed, temperature compensating alternators and variable voltage (smart) alternators.

The range also provides your batteries with incorporated dual battery isolation and fault detection for protection against voltage spikes, overheating and reverse polarity connection.

APPLICATIONS:

- Perfect for engine bay or exposed installations, with fully-sealed electronics
- Overcome voltage drop caused by long cable runs
- Suits 4WDs, campers, boats and trucks
- Ideal for both commercial and recreational applications
- Protect the start battery from excessive discharge
- Keep your auxiliary battery charged to power your devices and comforts from home

THE POWER OF PARALLEL.

For batteries that require a higher charge rate than 25, 40 and 50A, the BCDC range can be connected in parallel. Pending the alternator size, connect up to four BCDCs for a higher charge rate and power large battery banks via the alternator input.

CHARGING STATUS LEDS.

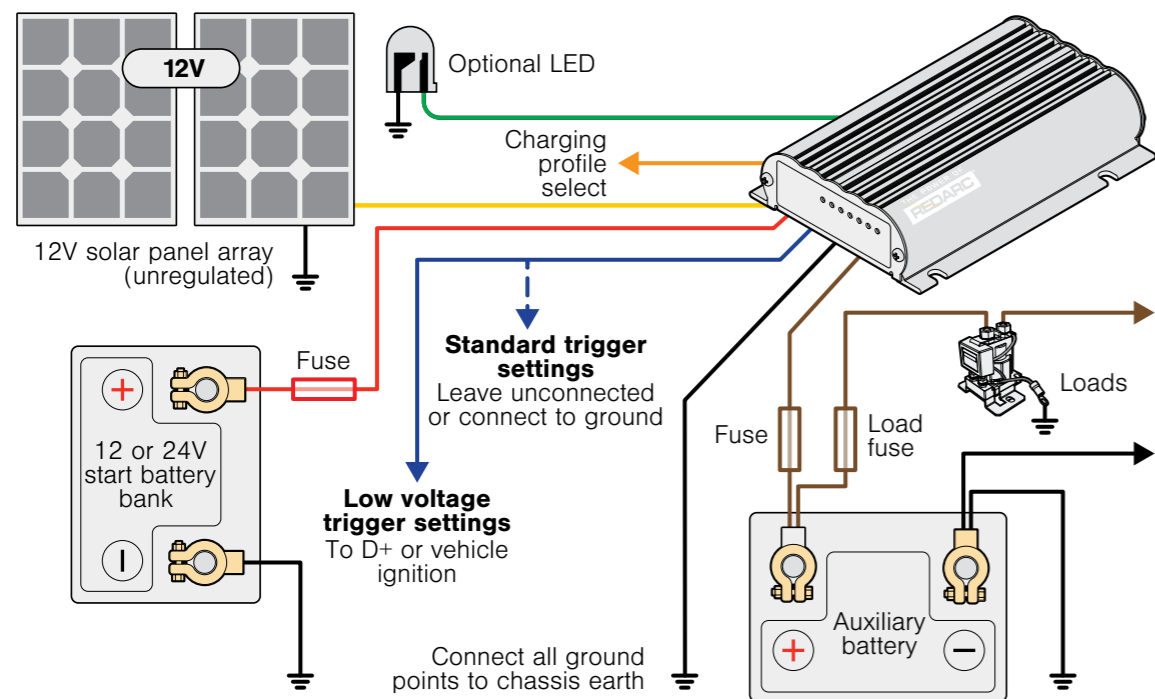
The charging status LEDs indicate to the user which inputs are available and what stage of the charge process the unit is currently in. With any profile selected the BCDC1225D/BCDC1240D charger will output a three stage charging profile with boost, absorption and float stages. The BCDC1250D charger will output a four stage charging profile with soft-start, boost, absorption and float stages.

Duration	LED flash sequence	Profile stage
Continuous		Off/no output
2 seconds		Off with output
2 seconds		Soft-start (BCDC1250D only)
Continuous		Boost (constant current)
2 seconds		Absorption (constant voltage)
2 seconds		Float

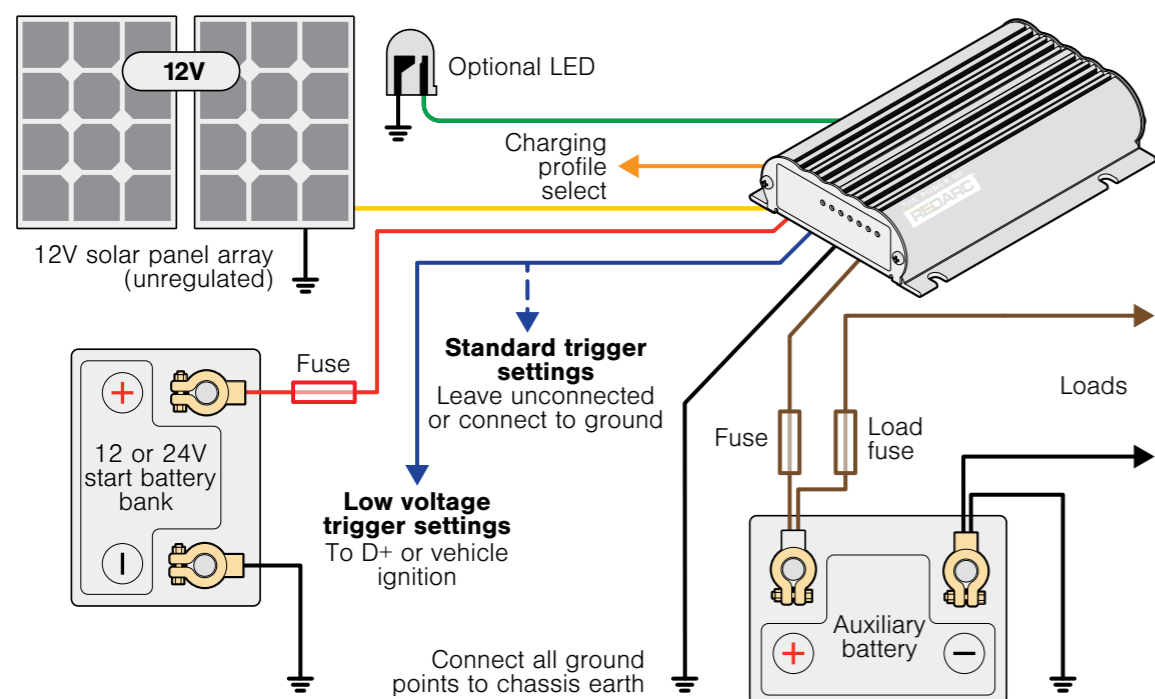
POWER THESE AND MORE.



TYPICAL BCDC CLASSIC RANGE LITHIUM BATTERY INSTALLATION.



TYPICAL BCDC CLASSIC RANGE LEAD ACID BATTERY INSTALLATION.

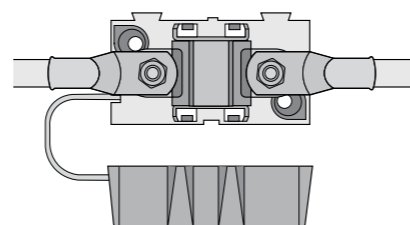


FUSING.

REDARC recommends using MIDI style bolt down fuses as they ensure a low resistance connection. The REDARC FK40 and FK60 fuse kits are recommended.

Blade type fuses are not recommended as they can result in a high resistance connection which causes excess heat and may damage the fuse holder and/or the wiring.

Self-resetting circuit breakers are not recommended as they may trip prematurely due to the heat generated by the current flowing through the wires.



MARINE POWER SETUP.



CHARGING PROFILE SELECTION.

Connect the blue wire to switch the vehicle input turn-on-trigger mode between:

- Standard trigger (for fixed voltage or temperature compensating alternators)
- Low voltage trigger (for variable voltage alternators)



STANDARD TRIGGER.

Leave and tape over the disconnected blue wire, or connect to ground.



LOW VOLTAGE TRIGGER.

Connect the blue wire to D+ for idle-stop vehicles, or ignition for continuous idle vehicles.

Input mode	Blue wire connection	12V mode		24V mode	
		On above	Off below	On below	Off below
Standard trigger	Not connected or connected to ground	12.9V	12.7V	25.8V	25.4V
Low voltage trigger	D+ for idle-stop or ignition for continuous idle	12.0V	11.9V	24.0V	23.8V



BCDC1225D



BCDC1240D



BCDC1250D

	BCDC1225D	BCDC1240D	BCDC1250D
Input voltage range	9 - 32V	9 - 32V	9 - 32V
Solar range	9 - 32V	9 - 32V	9 - 32V
Solar switch on voltage	9V	9V	9V
Output power	375W	600W	750W
Output current	25A	40A	50A
No load current	<100mA	<100mA	<100mA
Standby current	<8mA	<8mA	<8mA
Recommended input fuse	40A	60A	60A
Recommended output fuse	40A	60A	60A
MPPT solar regulator	Yes	Yes	Yes
Operating temperature	-10° to 80°C	-10° to 80°C	-10° to 80°C
Dimensions	165 x 120 x 37mm	165 x 120 x 37mm	165 x 120 x 37mm
Weight	1kg	1kg	1kg
Warranty	Two years	Two years	Two years



24V BCDC RANGE.



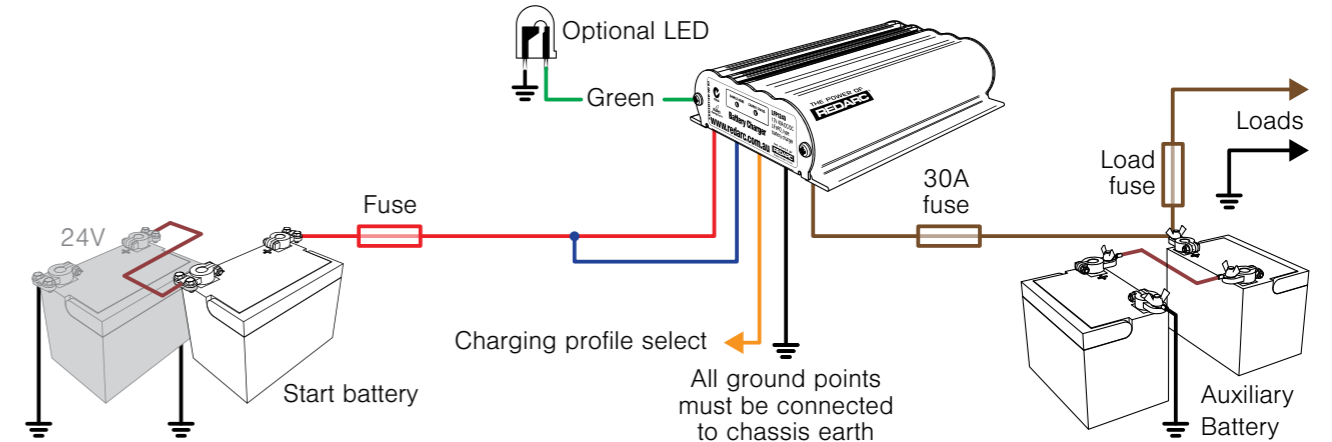
POWER FOR THE LONG HAUL.

The 24V DC to DC Battery Chargers are designed to charge 24V battery banks used for powering electric hydraulic pumps, tailgate lifters, spreader decks, ramps and sleeper cab air conditioning systems.

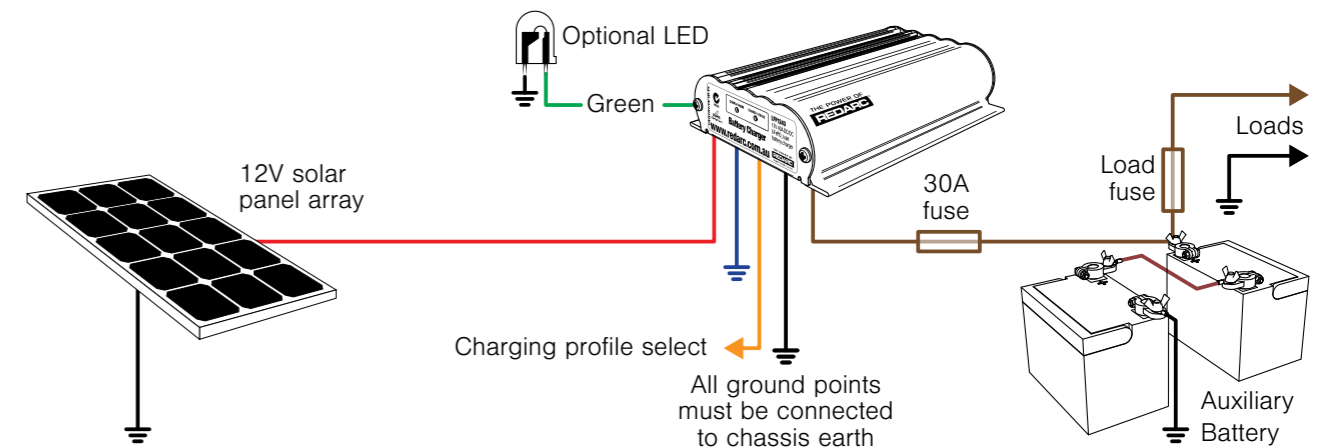
The BCDC2420 charges AGM, gel, calcium content, VRLA and standard lead acid batteries, the LFP2420 and LFP2420-LV are designed to charge lithium batteries, and the LV model features a lower voltage setting so it can operate with variable voltage alternators. All chargers in this range feature a fully-integrated MPPT solar regulator.



TYPICAL BCDC2420 INSTALLATION.



TYPICAL BCDC2420 SOLAR INSTALLATION.



	BCDC2420/BCDC2420-LV	LFP2420/LFP2420-LV
Input voltage range	9 - 32V	9 - 32V
Solar range	9 - 32V	9 - 32V
Solar switch on voltage	17.5V	17.5V
Output power	600W	600W
Output current	20A	20A
No load current	<100mA	<100mA
Standby current	<8mA	<8mA
Recommended input fuse	60A	60A
Recommended output fuse	30A	30A
MPPT solar regulator	Yes	Yes
Operating temperature	-20° to 80°C	-20° to 80°C
Dimensions	165 x 120 x 37mm	165 x 120 x 37mm
Weight	680g	680g
Warranty	Two years	Two years

FEATURES:

- Multi-stage charging helps maximise battery life
- Proven to charge an auxiliary battery to 100% state of charge*
- Allows for flexible installation in 24V vehicles

APPLICATIONS:

- Charge 24V auxiliary battery banks and increase battery life
- Overcomes voltage drop caused by long cable runs
- Increase run time of loads like fridges and lights

* Large capacity battery banks may require a few cycles to fully charge.



12A DC TO DC TRAILER BATTERY CHARGER.



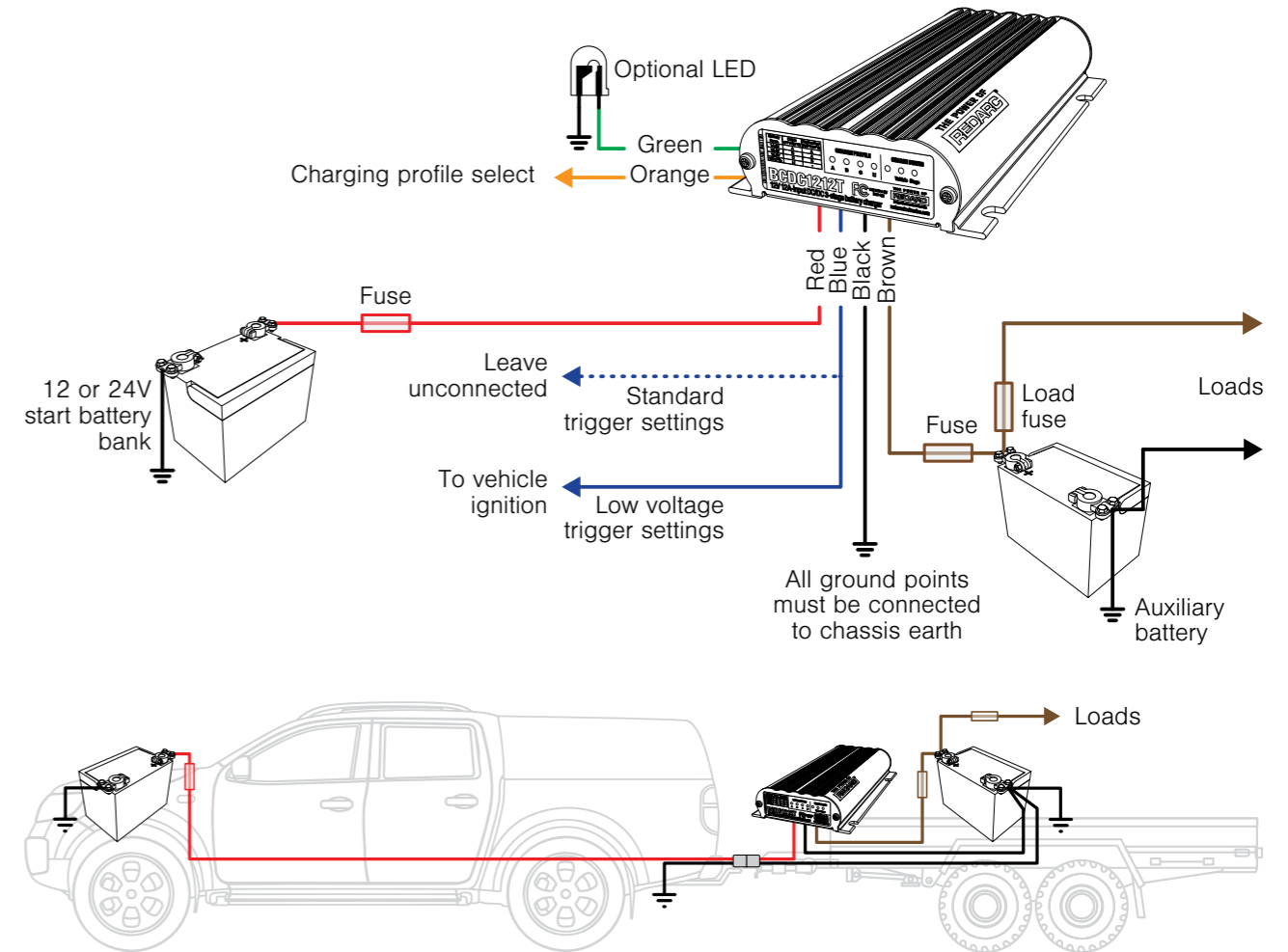
ALWAYS CHARGED AND READY TO WORK.

This input current-limited DC to DC battery charger features a current limited input making it suitable for charging auxiliary batteries in a trailer via an existing spare trailer plug wire, minimising the need for extra wiring and connectors.

Designed for easy and fast install, it can charge standard lead acid, calcium content, gel, AGM or LiFePO₄ batteries. The BCDC1212T is perfect for dump trailers, boat dump trailers, boat trailers and liftgate trucks, with on-board electrical equipment and accessories (for example, hydraulic pumps, winches and fridges).



TYPICAL BCDC1212T LEAD ACID INSTALLATION.



BCDC1212T

Input voltage range	9 - 32V
Solar range	N/A
Solar switch on voltage	N/A
Output power	147W (12V) - 294W (24V)
Output current	11A (12V) - 20A (24V)
No load current	<100mA
Standby current	<8mA
Recommended input fuse	15 - 23A
Recommended output fuse	30A
MPPT solar regulator	No
Operating temperature	-15° to 80°C
Dimensions	165 x 120 x 37mm
Weight	850g
Warranty	Two years

FEATURES:

- Input current-limited
- Multi-stage charging helps maximise battery life
- Proven to charge an auxiliary battery to 100% state of charge*
- Designed for tough conditions

APPLICATIONS:

- Ideal battery charger for trailers with electrical equipment and accessories such as dump trailers, boat trailers, car trailers, liftgate trucks and camper vans
- Perfect for both commercial and recreational application

* Large capacity battery banks may require a few cycles to fully charge.



20A IN-VEHICLE DC TO DC BATTERY CHARGER.



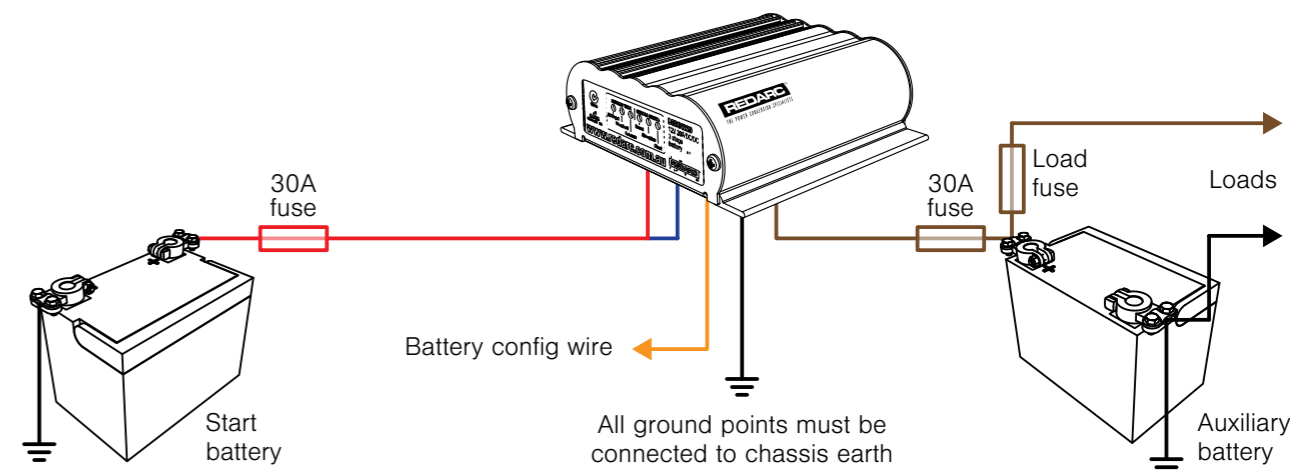
CHARGE YOUR AUXILIARY BATTERIES WHILE YOU DRIVE.

The BCDC1220 is designed for installation in the engine bay, to charge AGM, gel, calcium content, VRLA and standard lead acid batteries while driving.

Featuring multi stage battery charging, the system charges your auxiliary battery from your vehicle to a proven 100%*. The BCDC charger will work from a wide operating range of 9 to 32V, providing the ability to charge from 12 and 24V vehicle systems. The IGN model is suitable for vehicles with an ECU-controlled, variable voltage alternator.

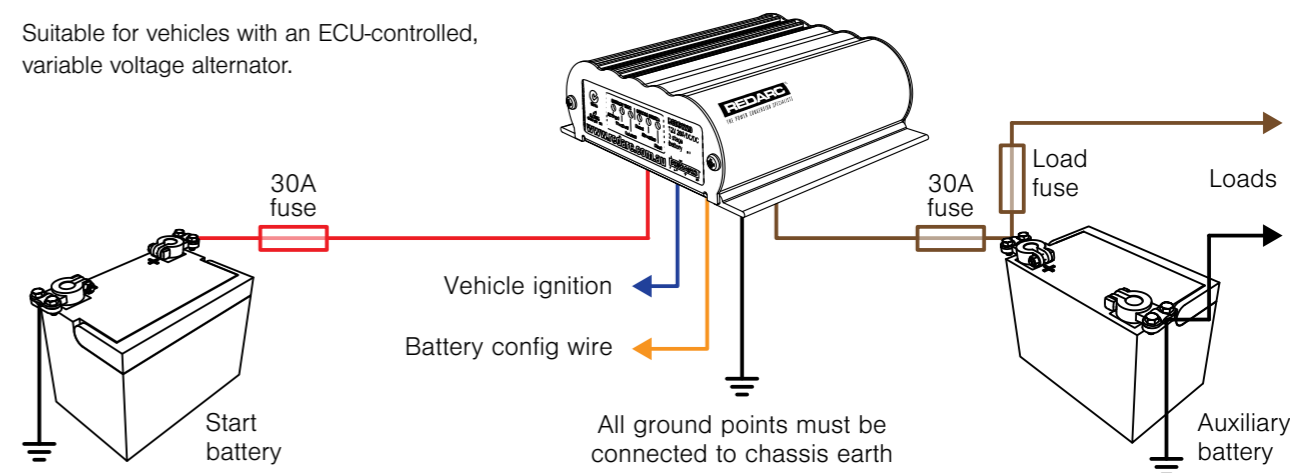


TYPICAL BCDC1220 INSTALLATION.



TYPICAL BCDC1220-IGN INSTALLATION.

Suitable for vehicles with an ECU-controlled, variable voltage alternator.



BCDC1220/BCDC1220-IGN

Input voltage range	9 - 32V
Solar range	N/A
Solar switch on voltage	N/A
Output power	300W
Output current	20A
No load current	<100mA
Standby current	<5mA
Recommended input fuse	40A
Recommended output fuse	40A
MPPT solar regulator	No
Operating temperature	-20° to 80°C
Dimensions	100 x 120 x 37mm
Weight	450g
Warranty	Two years

FEATURES:

- Multi-stage DC to DC battery charger
- Start battery isolator
- Fully sealed
- No fan for super-quiet operation
- Charges AGM, gel, calcium content, VRLA and standard lead acid batteries

APPLICATIONS:

- Perfect for engine bay installations, with fully-sealed electronics
- Overcome voltage drop caused by long cable runs
- Protect the start battery from excessive discharge

* Large capacity battery banks may require a few cycles to fully charge.



6A DC TO DC BATTERY CHARGER.

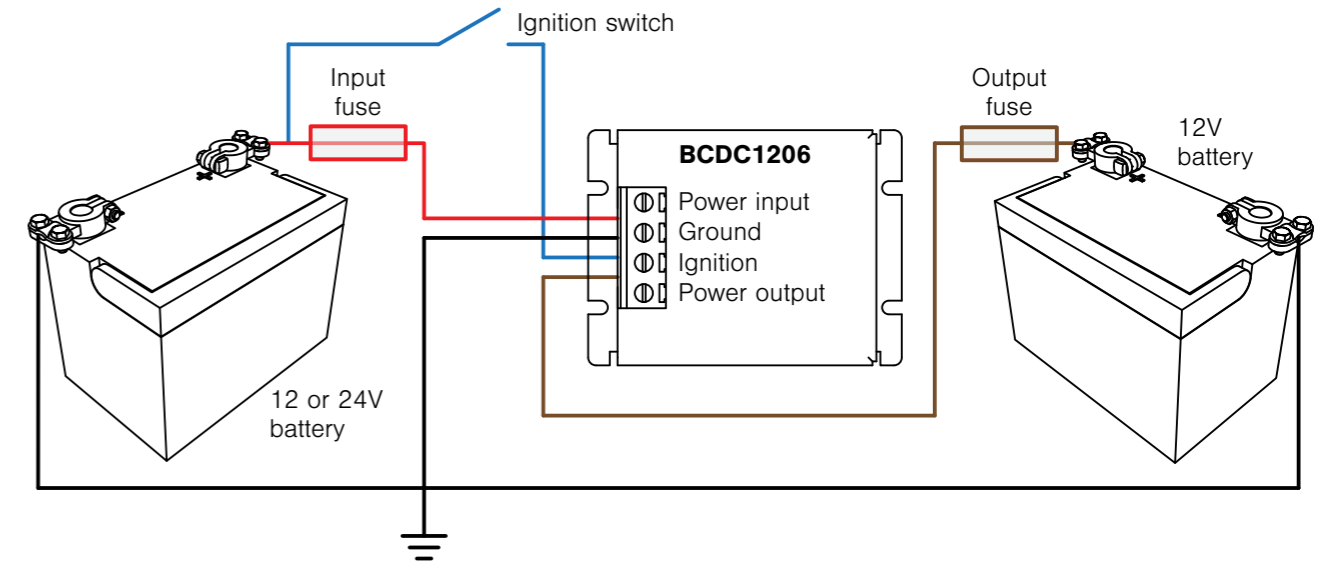


OVERCOME VOLTAGE DROP.

This three-stage, 6A 12V DC to DC battery charger operates from an input of between 9 and 32V. The input voltage of the BCDC1206 can be above, below or equal to the output voltage, making it ideal for charging an auxiliary 12V battery where the distance from the main battery can cause a significant voltage drop.



TYPICAL BCDC1206 INSTALLATION.



BCDC1206

Input voltage	9 - 32V
Absorption voltage	14.5V
Float voltage	13.7V
Boost commencement voltage	12.2V
Current limit (input voltage dependent)	3.5 - 6.5A
Efficiency at rated load (typical)	>90%
No load current (ignition ON)	<100µA
Standby current (ignition OFF)	150A
Recommended I/P fuse	10A
Recommended O/P fuse	10A
Operating temperature (100% load)	-20° to 50°C
Protection	IP40
Standards	UNECE Regulation 10: revision 5
Weight	200g
Dimensions	80 x 60 x 20mm
Warranty	Two years

Approved for use in Australia and New Zealand only.

FEATURES:

- Compact size
- Over current and short circuit protection
- High operating temperature range up to 70°C
- Over temperature protection
- Input under-voltage shut-down
- Input over-voltage shut-down
- Output mode LED indicator

APPLICATIONS:

- Overcome voltage drop caused by long cable runs
- Perfect for smaller batteries (for example batteries powering tarp motors)



BCDC ACCESSORIES.

BCDC WIRING KITS.

With kits to suit all installation requirements, the BCDC wiring kits are non-vehicle specific and available in three different configurations depending on the installation and battery locations. Available in two current ratings - 25 and 50A - each kit contains all the cables, fuses, fuse holders and connectors required to install a BCDC between batteries and features pre-terminated, 'cut-to-length' cables.



BCDC 25A SIDE BY SIDE ENGINE BAY WIRING KIT.
BCDCWK-001

Designed for BCDC1220, BCDC1220-IGN, and BCDC1225D, when the start battery and auxiliary battery are in close proximity, within the engine bay (less than 0.6m/2' apart).



BCDC 25A ACROSS THE ENGINE BAY WIRING KIT.
BCDCWK-002

Designed for BCDC1220, BCDC1220-IGN, and BCDC1225D, when the start battery and auxiliary battery are at opposite ends of the engine bay (more than 0.6m/2', but less than 3.5m/11').



BCDC 25A REAR INSTALL WIRING KIT.
BCDCWK-003

Designed for BCDC1220, BCDC1220-IGN, BCDC1225D, and BCDCN1225* when the start battery and auxiliary battery are at opposite ends of the vehicle (more than 8.5m/28').



BCDC 50A SIDE BY SIDE ENGINE BAY WIRING KIT.
BCDCWK-004

Designed for BCDC1240D and BCDC1250D, when the start battery and auxiliary battery are in close proximity within the engine bay (less than 0.6m/2' apart).



BCDC 50A ACROSS THE ENGINE BAY WIRING KIT.
BCDCWK-005

Designed for BCDC1240D and BCDC1250D, when the start battery and auxiliary battery are at opposite ends of the engine bay (more than 0.6m/2', but less than 3.5m/11').



BCDC 50A REAR INSTALL WIRING KIT.
BCDCWK-006

Designed for BCDC1240D, BCDC1250D and BCDCN1240*, when the start battery and auxiliary battery are at opposite ends of the vehicle (more than 8.5m/28').

* **NOTE:** BCDC Core models (BCDCN1225 and BCDCN1240) are suitable for in-cabin installations only (do not install them in an engine bay or in other harsh environments).

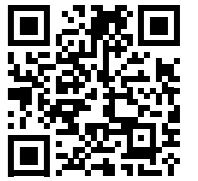
	Brown cable		Black cable		Red cable		Blue cable		Fuse type
	Length	Gauge	Length	Gauge	Length	Gauge	Length	Gauge	
BCDCWK-001	600mm (23.6")	7.7mm ² (8 AWG)	600mm (23.6")	7.7mm ² (8 AWG)	600mm (23.6")	7.7mm ² (8 AWG)	3.5m (11'5")	0.52mm ² (20 AWG)	40A
BCDCWK-002	2.5m (8'2")	13.3mm ² (6 AWG)	2.5m (8'2")	13.3mm ² (6 AWG)	3.5m (11'5")	13.3mm ² (6 AWG)	3.5m (11'5")	0.52mm ² (20 AWG)	40A
BCDCWK-003	600mm (23.6")	7.7mm ² (8 AWG)	600mm (23.6")	7.7mm ² (8 AWG)	600mm (23.6")	13.3mm ² (6 AWG)	8.5m (27'9")	0.52mm ² (20 AWG)	40A
BCDCWK-004	600mm (23.6")	7.7mm ² (8 AWG)	600mm (23.6")	7.7mm ² (8 AWG)	8.5m (27'9")	13.3mm ² (6 AWG)	3.5m (11'5")	0.52mm ² (20 AWG)	60A
BCDCWK-005	2.5m (8'2")	21.2mm ² (4 AWG)	2.5m (8'2")	13.3mm ² (6 AWG)	3.5m (11'5")	21.2mm ² (4 AWG)	3.5m (11'5")	0.52mm ² (20 AWG)	60A
BCDCWK-006	600mm (23.6")	13.3mm ² (6 AWG)	600mm (23.6")	7.7mm ² (8 AWG)	8.5m (27'9")	21.2mm ² (4 AWG)	8.5m (27'9")	0.52mm ² (20 AWG)	60A



MOUNTING BRACKETS.

Our vehicle-specific mounting brackets aid engine-bay installations of our BCDC range, allowing installation in the front of the vehicle. Constructed from 304 stainless steel they are designed to fit existing mounting points in the engine bay.

These mounting brackets improve the installation process, making it easier and quicker to wire your DC to DC charger. Designed to be used with all REDARC BCDC variants, each bracket is vehicle specific, ensuring that the bracket size and mounting location is tailored for secure fitment within the engine bay.



BCDCMB-001
Suitable for Toyota LandCruiser 200 (11/2008 onwards)



BCDCMB-002
Suitable for Toyota LandCruiser 70 (3/2007 onwards)



BCDCMB-003
Suitable for Toyota LandCruiser Prado 150 (10/2009 onwards)



BCDCMB-004
Suitable for Toyota HiLux (3/2005 - 9/2015)



BCDCMB-005
Suitable for Toyota HiLux (10/2015 onwards)



BCDCMB-006
Suitable for Isuzu D-MAX (6/2012 - MY19) and Holden Colorado RG (10/2015 onwards)



BCDCMB-007
Universal Mounting Kit



BCDCMB-008
Suitable for Toyota LandCruiser 100, J100 Series (1998-2007), J105 Series (1998-2007)

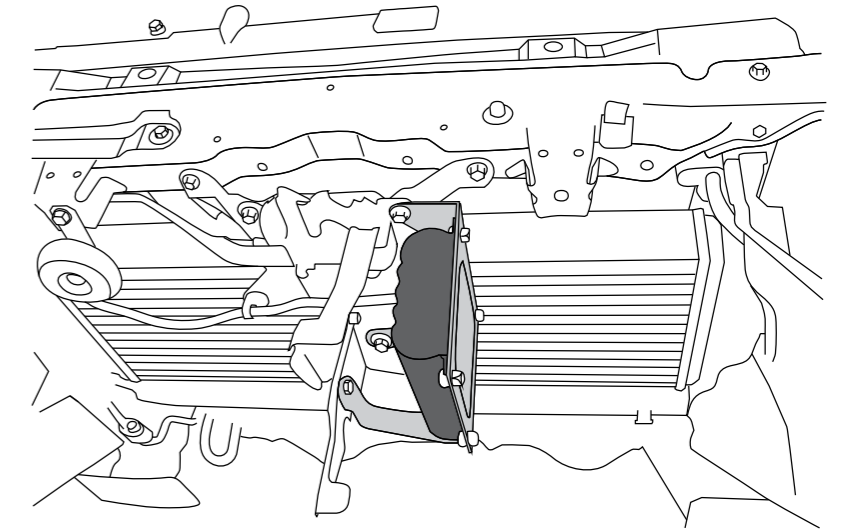


BCDCMB-009
Mitsubishi Triton MR Diesel & Pajero QE/QF (2019-on)

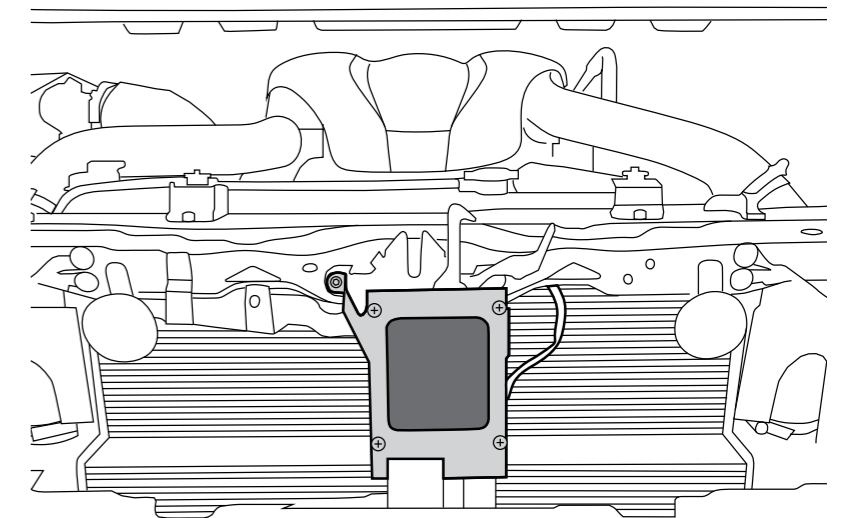


BCDCMB-010
Nissan Patrol Y61 GU Series 4-9 Diesel (01/2005-04/2016)

Designed to increase performance, these brackets are intended to mount at the front of the vehicle's engine bay, where they will receive cooler airflow.



BCDCMB-005 recommended installation.



BCDCMB-006 recommended installation.

BCDC ACCESSORIES.

FUSE KITS.

Designed to provide a simple, neat fuse installation, these kits are equipped with high-quality fuses and fuse holders to fit the cable required for the specified current and make a solid connection.

Fusing and fuse holders are one of the most common issues leading to a dual battery installation failure. Poor quality fuse holders often allow dirt and dust to get in between the contact points, causes excess heat to be generated, melting the fuse and the holder. Even if the fuse holder doesn't melt, you could be losing valuable charge to heat dissipation.

REDARC Fuse Kits are designed to fit the cable required for the specified current and make a solid connection, giving you peace of mind that your installation is working efficiently and safely.



23A FUSE KIT.
FK23

Perfect for BCDC1212T installations.



30A FUSE KIT.
FK30

Perfect for BCDC1212T installations.



40A FUSE KIT.
FK40

Perfect for BCDC1220, BCDC1225D and BCDCN1225 installations.



50A FUSE KIT.
FK50

Perfect for TVMS1240 installations.



60A FUSE KIT.
FK60

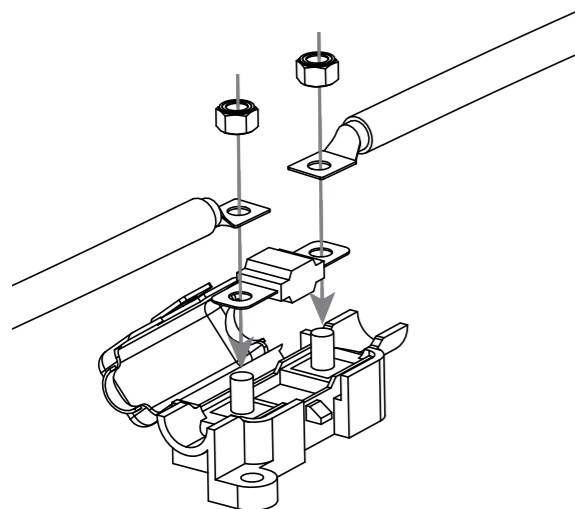
Perfect for BCDC1240D, BCDCN1240 and BCDC1250D installations.



100A FUSE KIT.
FK100

Perfect for SBI12 installations.

TYPICAL FK60 INSTALLATION.



12V RELAY KIT. RK1260



Allows for connection between solar and a single input BCDC.

BATTERY TO FUSE CABLE. KIT19



A cable capable of distributing 50A to a battery positive terminal from a battery charger, providing protection of the wiring and minimising voltage drop.

WORKS WELL WITH...



LOAD DISCONNECT ISOLATOR. SBI12-LLD

This microprocessor-controlled Load Disconnect Isolator is designed specifically for use in LiFePO₄ battery applications to protect the lithium battery from being excessively discharged by auxiliary loads.

For more information, see page 71.

BCDC TECH TIP - WIRING.

The heavy gauge wires on the BCDC1225D, BCDC1240D and BCDC1250D carry peak currents of up to 55A, and it is important to make a good, low resistance electrical connection that will not degrade over time.

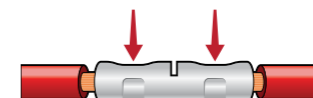
Failure to make a good reliable contact may result in breakdown of the wire insulation and cause a short circuit or, in the worst case, a fire.

We recommend that this activity is undertaken by an appropriately trained person.

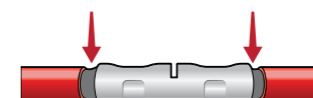
REDARC recommends using a soldered butt-splice crimp connection that is covered with heat-shrink.

REDARC does not recommend using standard red/blue/yellow blade connections, as they are not rated for either the current required or gauge of wire supplied on the unit.

Crimping provides good mechanical connection, soldering provides a long lasting electrical connection and forming of the heat-shrink will prevent any shorting/contact with your vehicle's chassis.



Crimp both wires to the butt splice using single-indent type crimpers. Fold the cable over before inserting into the butt-splice as required. Single-indent crimpers should also be used on any lugs used.



Solder the wires to the butt splice. Ensure that a good connection is made. Keep heat-shrink away until after soldering is complete and has cooled.

SMART START DUAL BATTERY ISOLATORS.



SIMPLE OFF-GRID POWER.

REDARC's microprocessor-controlled Smart Start Battery Isolators (SBI) are designed to protect the start battery from excessive discharge, while allowing the auxiliary battery to power non-essential loads. Featuring sophisticated fault detection and LED indication, users are warned of faults including over-voltage, voltage drop and excessive current-draw conditions.

SIMPLE TO INSTALL.

Smart Start Battery Isolators are easy to install and compact in size, so they can be fitted in an out-of-the-way location in your engine bay. Once it's installed you'll forget it's even there.

A MODEL TO SUIT EVERY REQUIREMENT.

Dual sensing models allow the start battery to charge from the auxiliary battery's charging source. Load disconnect models stop non-essential loads from discharging the battery in BMS/lithium setups.

A RANGE OF VOLTAGE AND CURRENT RATINGS.

Smart Start Battery Isolators are available in four models: 12 or 24V, incorporating 100 or 200A continuous ratings. No matter what vehicle you have, there's a model to suit.

Get the most out of your batteries with REDARC's state-of-the-art dual battery isolators. These dual battery isolators are designed to significantly extend battery life and safely charge auxiliary batteries.

DUAL SENSING MODELS (SBIXXD).

Dual sensing models isolate the start and auxiliary batteries where the auxiliary battery may be charged by an external source such as solar.

The start battery is charged by the external source once the auxiliary battery reaches 13.2V.

Dual sensing models operate as standard SBIs when the start battery terminal of the SBI receives a voltage higher than 13.2V (in a 12V system) or 26.4V (in a 24V system).



SBI ACCESSORIES.

SMART START BATTERY ISOLATOR & WIRING KIT 12V.

SBI12KIT



Includes everything required to install a Smart Start Dual Battery Isolator, the SBI12KIT features high quality, MTA 60A fuses and fuse holders with the corresponding ring terminals already attached to the wires.

CUSTOMISABLE SMART START BATTERY ISOLATOR.

SBI-X



REDARC can create a custom isolator, tailored to suit any application. An SBI-X can be customised in 12 or 24V, 100 and 200A options.

FEATURES:

- On/off voltages between 9 and 15V on 12V models or 18 and 30V on 24V models
- Programmable on/off delays
- Programmable on/off override trigger

FEATURES:

- Overmould design
- Compact in size
- Easy to install
- Silver contacts for longer life and suitability for marine applications
- Power-saving technology
- Fault indication
- Fully surge-protected

APPLICATIONS:

- Prevents your auxiliary battery draining your start battery
- Suitable for harsh environments
- Charge your auxiliary battery whilst driving
- Jump starter for start battery failure
- Link batteries to power a winch



SBI12/SBI12D



SBI24/SBI24D



SBI212/SBI212D

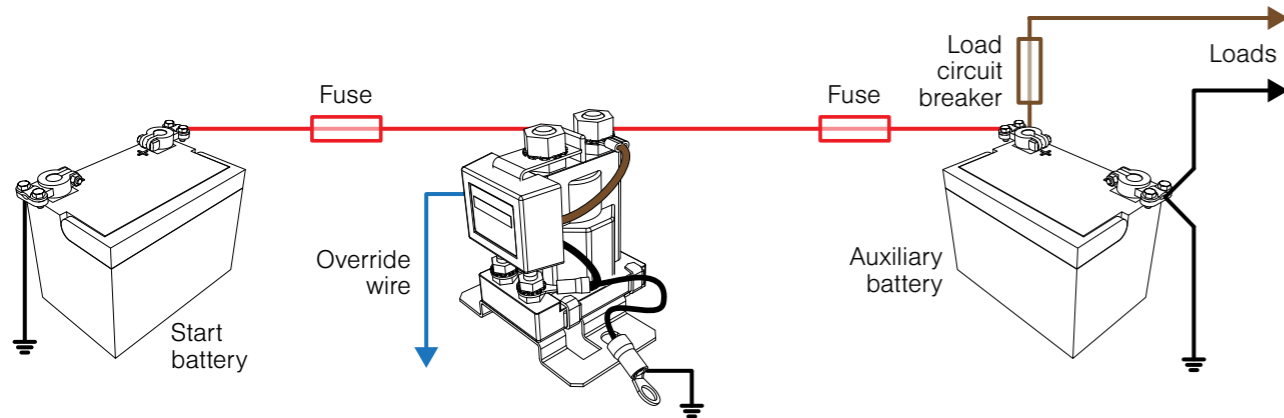


SBI224/SBI224D

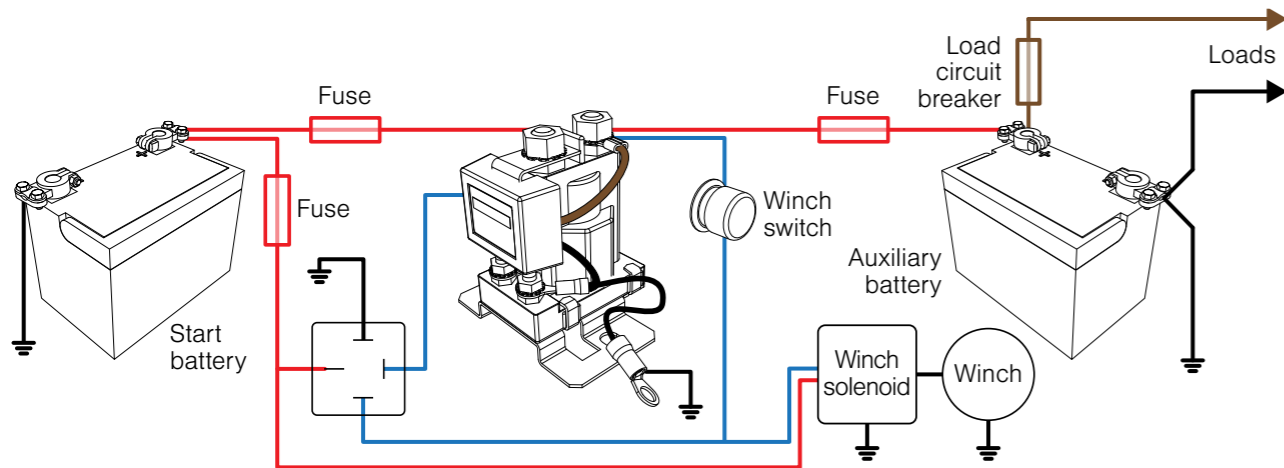
	SBI12/SBI12D	SBI24/SBI24D	SBI212/SBI212D	SBI224/SBI224D
System voltage	12V	24V	12V	24V
ON voltage	13.2V	26.4V	13.2V	26.4V
OFF voltage	12.7V	25.4V	12.7V	25.4V
Turn ON delay	5 seconds	5 seconds	5 seconds	5 seconds
Turn OFF delay	10 seconds	10 seconds	10 seconds	10 seconds
Maximum continuous current	100A	100A	200A	200A
Maximum inrush current	400A	400A	600A	600A
Standby current	<5mA	<5mA	<5mA	<5mA
Standards	CE, C-Tick, AS/NZS CISPR11:2004			
Dimensions	75 x 70 x 80mm	75 x 70 x 80mm	90 x 95 x 100mm	90 x 95 x 100mm
Weight	200g	200g	600g	600g
Warranty	Two years	Two years	Two years	Two years



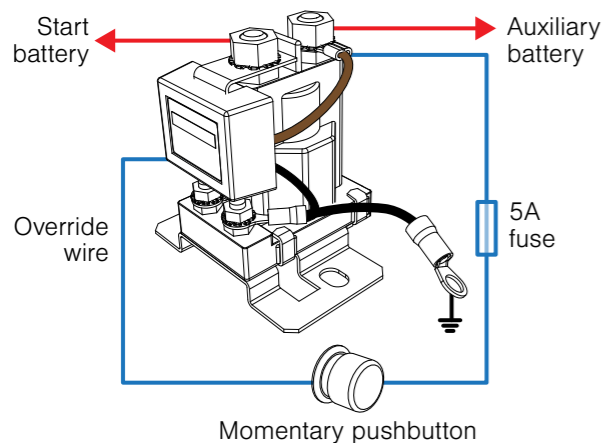
TYPICAL SBI INSTALLATION - 12 OR 24V.



TYPICAL SBI INSTALLATION - WINCHING FROM BOTH BATTERIES.



PUSH BUTTON FOR START ASSIST.



FUSE SIZE RECOMMENDATIONS.

SBI12/SBI24	
Pushbutton override	100A
No override	60A
SBI212/SBI224	
Pushbutton override	200A
No override	120A

LOAD DISCONNECT CONTROLLERS.

REDARC have two Load Disconnect Controllers for use in LiFePO₄ auxiliary battery installations.

SMART START LOAD DISCONNECT CONTROLLER.

SBI12-LLD



Designed specifically for use in LiFePO₄ battery applications to protect the lithium battery from being excessively discharged by auxiliary loads. When the auxiliary battery has been overly discharged, the Load Disconnect Controller will turn off any connected loads. Similarly, if the battery climbs back above a suitable level, it will restore power to the connected loads.

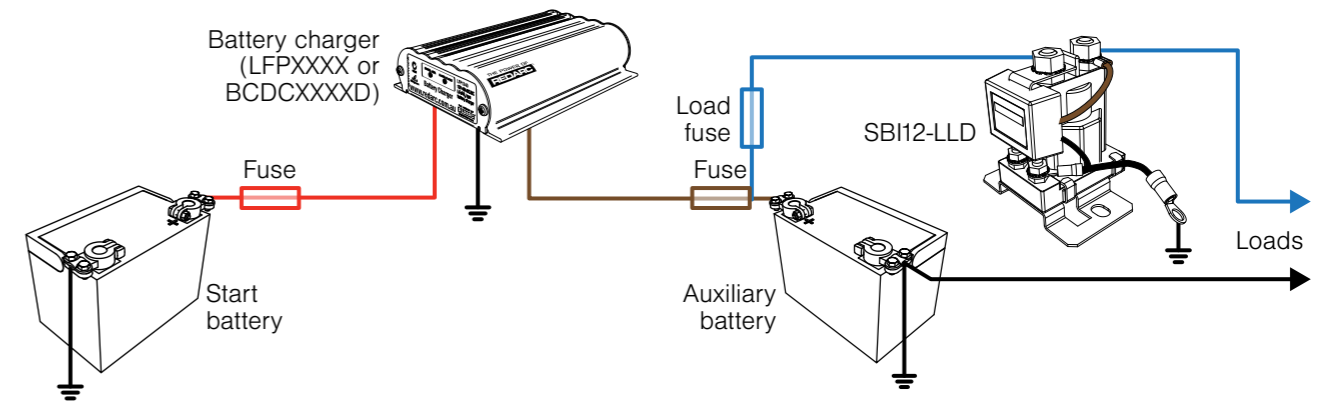
BMS LOAD DISCONNECT CONTROLLER.

SBI12-BLD



Designed to be used with a REDARC Manager30 BMS to protect the auxiliary battery from excessive discharge.

TYPICAL LOAD DISCONNECT CONTROLLER INSTALLATION.



	SBI12-LLD	SBI12-BLD
System voltage	12V	12V
ON voltage	11.0V	10.2V
OFF voltage	10.5V	10.0V
Turn ON delay	10 seconds	5 seconds
Turn OFF delay	2 seconds	10 seconds
Instant OFF voltage	N/A	9.0V
Maximum continuous current	100A	100A
Maximum inrush current	400A	400A
Standby current	<5mA	<5mA
Main stud torque	5 to 6.2Nm	
Standards	CE, C-Tick, AS/NZS CISPR11:2004	
Dimensions	75 x 70 x 80mm	75 x 70 x 80mm
Weight	200g	200g
Warranty	Two years	Two years

FEATURES:

- Overmould design
- Compact in size
- Easy to install
- Silver contacts for longer life and suitability for marine applications
- Power-saving technology
- Fault indication
- Fully surge-protected

APPLICATIONS:

- Prolong the life of lithium batteries by protecting them from excessive discharge
- Models designed for systems that include a BCDC or Manager30

MANAGER30 BATTERY MANAGEMENT SYSTEM.



THE MANAGER



INFINITE POWER FOR ENDLESS ADVENTURE.

REDARC's state-of-the-art Battery Management System is designed to charge and maintain auxiliary batteries in recreational vehicles, caravans and camper trailers.

This 6-in-1 solution that can simultaneously charge from 240V AC mains power, your vehicle's alternator and solar, as well as featuring a dual battery isolator, load disconnect controller and remote battery monitor. It can charge all common automotive batteries, including lithium.

CHARGE FROM MULTIPLE SOURCES.

With the ability to accept charge from three different sources, mains AC, vehicle DC and solar, you'll be able to charge for more hours in the day, no matter what you are doing.

GET THE MOST FROM THE SUN.

Thanks to its built in MPPT solar regular and Green Power Priority, the Manager30 will prioritise solar power before topping up the output charging current from another source, such as mains power.

SEE WHERE YOU'RE AT, QUICKLY AND EASILY.

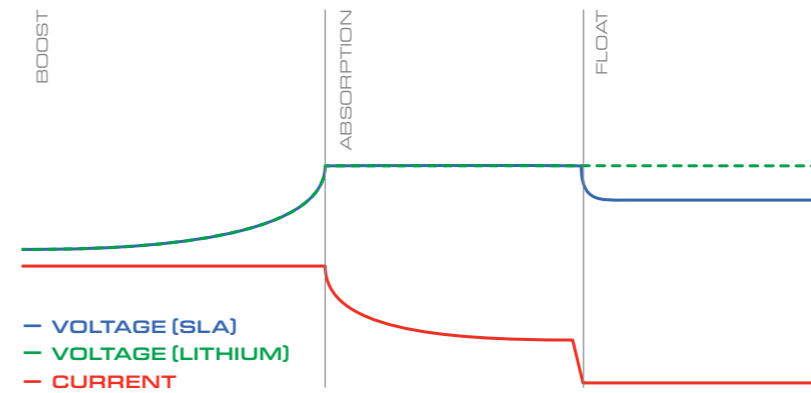
The Manager30 comes with a choice of displays designed to give your battery information and charge status along with critical system information while charging.

MULTI-STAGE CHARGING PROCESS.

Two different multi-stage DC to DC charging profiles fully charge auxiliary batteries. Sophisticated fault detection sensors monitor the battery conditions during all stages of charging, keeping you and your caravan/camper safe.

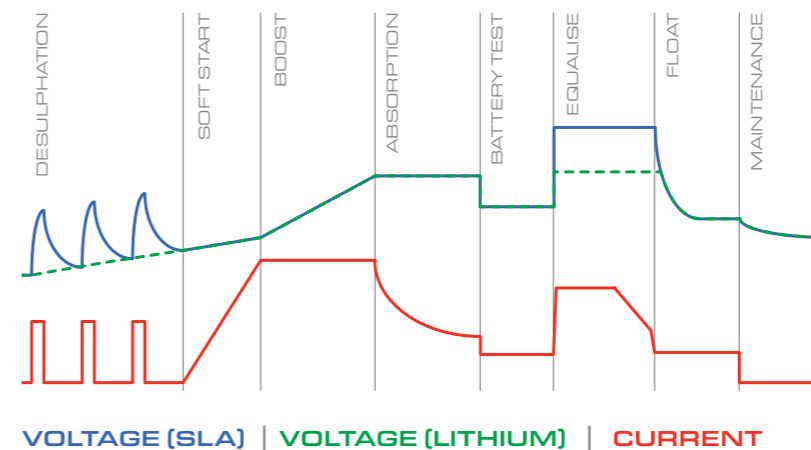
TOURING MODE.

Designed for use on the road, touring mode offers a three stage charging profile comprising boost, absorption and float. Touring mode will charge your auxiliary battery to its optimal level whilst allowing you to run multiple loads from the battery.



STORAGE MODE.

Designed to keep your auxiliary battery charged whilst your caravan/camper is in storage by using an eight stage charging profile.



FEATURES:

- Multi Stage AC to DC Battery Charger
- Multi Stage DC to DC Charger
- Battery type-specific charging
- Suitable for 12 and 24V vehicle charging systems
- Maximum Power Point Tracking Solar Regulator
- Dual Battery Isolator
- Load Disconnect Controller
- Tested to mains power safety standards in Australia

APPLICATIONS:

- Designed to charge and maintain auxiliary batteries in recreational vehicles, caravans and camper trailers
- Fully automatic, set and forget solution
- Provide user with battery information at their fingertips
- Never be without charge thanks to AC, DC and solar charging capabilities

REMOTE BATTERY MONITOR OPTIONS.

The Manager30 comes with a choice of displays designed to give you house battery information and charge status, along with critical system information, while charging is in progress.

MANAGER30 WITH STANDARD DISPLAY. BMS1230S3



The BMS1230S3 is supplied with the standard monochrome remote monitor which provides information such as state of charge, current, voltage and temperature as well as a simplified battery percentage and charge rate.

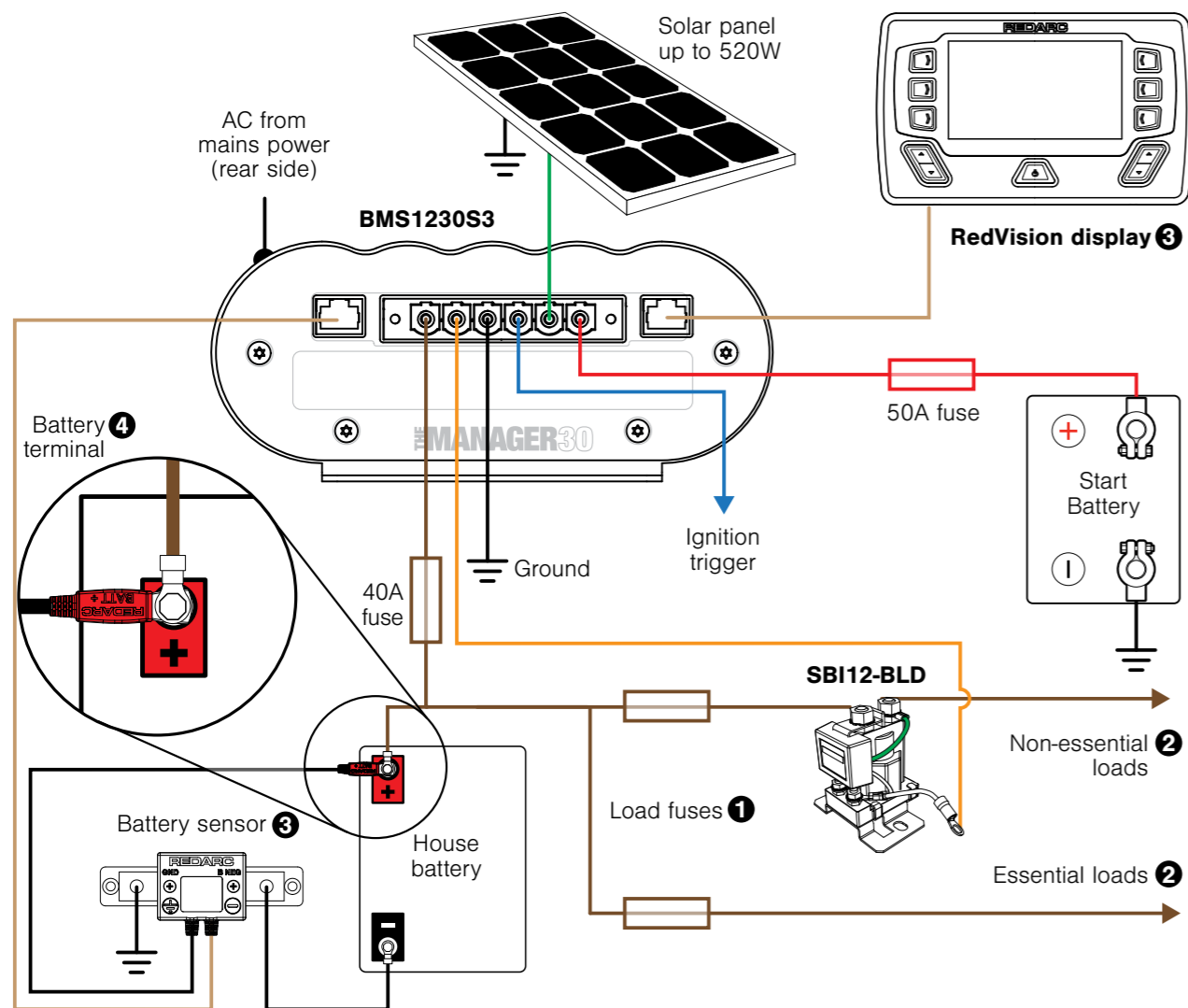
MANAGER30 WITH REDVISION DISPLAY. BMS1230S3R



The BMS1230S3R is supplied with the RedVision display and provides connectivity of the Manager30 to the RedVision interface, allowing monitoring of the battery state of charge from your mobile device.



TYPICAL MANAGER30 INSTALLATION.



- 1 The size of this fuse relates to the total current draw of all the loads connected to the house battery, and should be rated slightly higher than this. REDARC recommend the use of MIDI style fuses.
- 2 Essential loads are loads which must be left on at all times, until the battery is flat. Non-essential loads are those switched off when the battery reaches a particular low-charge level, which can be set in the 'Advanced Settings' menu.
- 3 Both CANBus connections can be used for either the display or battery sensor.
- 4 Ensure the **red** terminal on the battery sensor is connected to the battery positive terminal.

WORKS WELL WITH...



LOAD DISCONNECT CONTROLLER.

SBI12-LLD

For LiFePO₄ auxiliary battery installations, use of a Load Disconnect Controller is recommended. For more information, see page 71.



TVMS PRIME.

TVMS1280

When paired with a Manager30, it allows for the monitoring of all battery usage and charging information. For more information, see page 29.

LITHIUM READY CHARGING.

With chemistry-specific charging profiles, including lithium, the Manager30 is a complete DC to DC charging and maintenance solution that ensures your batteries are ready for your next adventure.

MPPT SOLAR REGULATOR.

The built-in Maximum Power Point Tracking (MPPT) solar regulator allows The Manager30 to deliver the maximum amount of power from your solar panels, even during low light conditions.

LOAD DISCONNECT FEATURE.

The featured load disconnect wire acts as a ground switch to activate a relay for disconnection of any loads running from the house battery, so there is always power to start the car.

MANAGER30 ACCESSORIES.

MANAGER30 BATTERY SENSOR ASSEMBLY. BMS1230S3-SK



A replacement battery sensor assembly for the Manager30 S3 and Manager30 S2.

FUSE KITS. FK40/FK60



40A and 60A fuse kits to complete your Manager30 installation to a professional level.

REDVISION DISPLAY. DISP4300-RC



A replacement or secondary display unit for the RedVision TVMS or Manager30 S3.



BMS1230S3



BMS1230S3R

Output current	30A		30A	
Charging mode	Storage	Touring	Storage	Touring
Lithium (max)†	14.5V	14.5V	14.5V	14.5V
GEL (max)†	14.4V	14.4V	14.4V	14.4V
AGM (max)†	14.4V	14.4V	14.4V	14.4V
Calcium†	16.0V	15.2V	16.0V	15.2V
Lead acid†	15.5V	14.8V	15.5V	14.8V
Operating temperature	-40° to 80°C		-40° to 80°C	
Main unit dimensions H x W x L	445 x 185 x 79mm		445 x 185 x 79mm	
Display unit dimensions H x W x D	186 x 74 x 29mm		178 x 107.5 x 25.5mm	
Weight	5.5kg		5.2kg	
EMC compliance	RCM, AS/NZS, CISPR11		RCM, AS/NZS, CISPR11	
Safety compliance	AS/NZS 60335.2.29, AS/NZS 60335.1		AS/NZS 60335.2.29, AS/NZS 60335.1	
Environmental compliance	RoHs		RoHs	
Warranty	Two years		Two years	

† Voltages stated are nominal and may vary slightly from that specified. Contact REDARC for more information.

‡ The Manager30 will only charge the battery when the battery temperature is between -25° and 60°C for standard lead acid, AGM and calcium batteries that are above 10.5V and between 0° and 60°C in all other circumstances.

LITHIUM BATTERIES.



MORE POWER TO YOU.

REDARC's range of Lithium deep cycle batteries is the last word in deep-cycle battery technology, delivering unrivalled performance and battery life. Lightweight, with huge capacity, these 12V lithium battery options deliver longer-lasting power, and they are built to survive and thrive in Australia's toughest conditions.

BUILT POWERFUL FOR HEAVY LOADS.

They're fast charging and they last up to eight times longer than traditional acid-based batteries. Best of all, they have zero maintenance requirements so you can just sit back and relax.

A WIDE RANGE OF CAPACITIES.

REDARC have a wide range of lithium batteries, with models available in capacities ranging from 60Ah to a massive 200Ah so there's a size to suit your needs and your budget.

BUILT IN BATTERY MANAGEMENT.

REDARC's lithium batteries feature an internal Battery Management System enabling them to be connected together in parallel, increasing your power storage for even longer off-grid stays.

FEATURES:

- Fast charging, feature a long lifespan, are lightweight and low maintenance
- Built-in Battery Management System
- Protection from over-charge, over-discharge and short-circuit

APPLICATIONS:

- Power additional accessories like portable fridges and camping lights
- Compatible with RedVision, Manager30 and BCDC for ultimate charging, monitoring and control of your off-grid setup
- Configure in a parallel connection for increased energy storage



60AH SLIMLINE BATTERY.
LBAT12060

A space-saver that packs a punch! A great solution for people that use their SUVs, dual cab utes and courier vans for work and adventure, but do not have the space for bulky batteries.

You can parallel up to four of these batteries to satisfy higher power demands and add an inverter. You can make these additions whenever you like. Start small and expand as needed.



100AH STANDARD BATTERY.
LBAT12100

Constant and true power for low draw appliances. A great choice for people who want to run low powered devices on weekend getaways and day trips.

You can parallel up to six of these batteries to satisfy higher power demands and add an inverter. You can make these additions whenever you like. Start small and expand as needed.



100AH HEAVY DUTY BATTERY.
LBAT12100-HD

A powerful choice for power-hungry appliances. Excellent for higher power needs off-grid. If you rely on 240V appliances that need a higher current, this battery can handle a larger inverter so you can keep your essentials running.

You can parallel up to six 100Ah-HD batteries to satisfy higher power demands and add an inverter. You can make these additions whenever you like. Start small and expand as needed.



200AH BATTERY.
LBAT12200

Whether you're heading out in your caravan, RV or fully-kitted 4WD, these 200Ah batteries provide energy storage to the max. If you rely on 240V appliances that need a higher current, this battery can handle a larger inverter so you can keep your essentials running.

You can parallel up to six of these batteries to satisfy higher power demands and add an inverter. You can make these additions whenever you like. Start small and expand as needed.



BATTERIES TO RUN 12V DC APPLIANCES.

This table shows appliances like those you'd plug into a USB port or cig socket. You don't need an inverter to run these DC appliances. If you want to run more power-hungry appliances, such as a small coffee pod machine, consider the AC appliance chart below. The 100Ah-HD and 200Ah can also run DC devices but, depending on your power needs, they may not be necessary.

Which appliances do you want to use?	Smart devices (e.g. a phone or a tablet)	A set of basic LED lights	Water pump	LED lights installed in a caravan	Portable, 50 litre fridge	Air compressor
60Ah Slimline Battery	1 battery	1 battery	1 battery	1 battery	1 or 2 batteries	
100Ah Standard Battery	1 battery	1 battery	1 battery	1 battery	1 or 2 batteries	
100Ah Heavy Duty Battery						1 battery
200Ah Battery						1 battery

BATTERIES TO RUN 240V AC APPLIANCES.

Like the ones you'd plug into a wall socket at home. These batteries can handle all the 12V DC appliances shown in the table above, plus 240V AC appliances like laptops and electric kettles, as long as you use the correct inverter.

Which appliances do you want to use?	Charging a laptop or drone battery	Two slice toaster	Coffee machine	Hair dryer or hair straightener	Microwave	Electric kettle
60Ah Slimline Battery		2 batteries	2 batteries			
100Ah Standard Battery	1 or 2 batteries					
100Ah Heavy Duty Battery		2 batteries	2 batteries	2 batteries	2 batteries	3 batteries
200Ah Battery		2 batteries	2 batteries	2 batteries	2 batteries	3 batteries
Inverter	350W	1000W	1500W	1500W	2000W	3000W

The above chart is an example only. Remember that DC power systems are not like AC power. You can run many devices and appliances, but perhaps not all at once and batteries will need to be recharged. Ask us about our range of battery chargers and battery management systems that'll keep you charged off-grid for days and days.



COMPLETE YOUR OFF-GRID SETUP.

A DC to DC charger (BCDC) or a Manager30 Battery Management System will not only keep you off-grid for longer, they are also practical for managing battery power and for maintaining the health of your lithium batteries.

Best of all, these systems can draw power from solar panels and blankets making use of free energy from the sun.

For the ultimate in automation and control, you can choose RedVision which allows you to turn appliances or systems on and off, like lights and water pumps. It is Bluetooth capable so you can monitor and control systems from your smart device via the RedVision app.

Bring your home luxuries with you by adding a REDARC Pure Sine Wave inverter to your setup, allowing for use of your electrical devices anywhere, anytime with the same type of 240V power you'd get at home.



LBAT12060



LBAT12100



LBAT12100-HD



LBAT12200

	LBAT12060	LBAT12100	LBAT12100-HD	LBAT12200
Nominal capacity	60Ah	100Ah	100Ah	200Ah
Recommended continuous discharge	85A	50A	100A	100A
Maximum discharge	100A	80A	170A	170A
Peak discharge	120A	120A	400A	400A
Recommended charge current	≤30A	≤30A	≤50A	≤50A
Maximum charge current	30A	50A	50A	100A
Recommended charge voltage	14.6V ± 0.2V	14.6V ± 0.2V	14.6V ± 0.2V	14.6V ± 0.2V
Charge temperature range	0° to 60°C	0° to 60°C	0° to 60°C	0° to 60°C
Discharge temperature range	-20° to 70°C	-20° to 70°C	-20° to 70°C	-20° to 70°C
Storage temperature range	-20° to 40°C	-20° to 40°C	-20° to 40°C	-20° to 40°C
Weight	8.0kg	11.5kg	12.5kg	25.5kg
Dimensions	291 x 106 x 231mm	305 x 165 x 221mm	305 x 165 x 221mm	485 x 170 x 242mm
Warranty	Three years	Three years	Three years	Three years



PURE SINE WAVE INVERTERS.



FIND POWER ANYWHERE.

Use your electrical devices anywhere, anytime with the same type of 240V power you'd get at home.

Producing a pure sine wave, REDARC's Pure Sine Wave Inverters ensure smoother, more efficient running of appliances like laptops and phone chargers, power tools, heaters, kettles and more.

SIMPLE TO INSTALL.

Slimmer and lighter than other inverters, REDARC Pure Sine Wave Inverters fit and work comfortably anywhere. You can pack them away after use or permanently mount them in your rig for convenience.

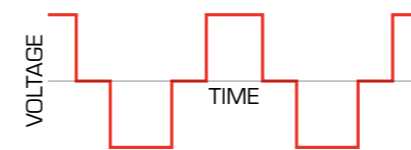
RELIABLE AC POWER FROM ANY DC INPUT.

REDARC Pure Sine Wave Inverters have a wider input voltage range and multiple levels of protection, including overload, short-circuit and a load-controlled cooling fan.

A RANGE OF SIZES AND POWER RATINGS.

No matter the power draw of your appliance... whether it's charging your laptop or making your morning coffee with an espresso machine, REDARC has a 12 or 24V inverter to suit.

MODIFIED SINE WAVE INVERTERS VERSUS REDARC PURE SINE WAVE INVERTERS.

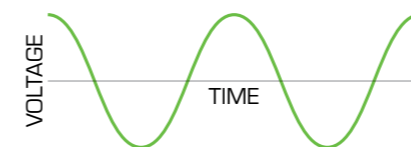


MODIFIED SINE WAVE.

Cheaper inverters try to imitate a sine wave by 'chopping off' the corners of a square wave, creating a modified square wave.

Modified sine wave inverters can often lead to appliances overheating. This is due to the square wave having faster switching times on each polarity change, which stresses appliances designed for pure sine wave.

Light bulbs and shunt motors may be able to run on a modified sine wave but for many other appliances this will not be sufficient.



PURE SINE WAVE.

REDARC Pure Sine Wave Inverters are the safest choice for using common household appliances on the road as they give you an output almost identical to household mains power.

The change in a pure sine wave is smooth and gradual, ensuring the correct functioning and efficient operation of high end electronic equipment.

FEATURES:

- Pure sine wave output
- Input and output fully isolated
- Multiple levels of protection; overload, short circuit and over temperature and load-controlled cooling fan
- Appliances will run smoothly and efficiently, producing less heat and noise

APPLICATIONS:

- Take all the comforts of home wherever you travel
- Designed to run any 240V equipment efficiently and effectively
- Power your tools of the trade, whether that's a drill, a camera or a laptop
- Power sensitive equipment like laptops and tablets

PURE SINE WAVE INVERTER ACCESSORY.

INVERTER REMOTE REMOTE-RS



This handy on/off switch allows control of your inverter from any convenient location.

REDVISION INTEGRATION.

REDARC's RedVision features a dedicated inverter channel allowing for control of a REDARC RS series Pure Sine Wave Inverter through RedVision, either via a smartphone or RedVision Display.

Customise the channel details, settings and logic configuration via the RedVision Configurator app.



WHICH INVERTER MODEL DO I NEED?

MODEL	SUITABLE APPLICATIONS
R-XX-350RS	Phone and camera chargers, CD players, GPS, computers, CPAP machines and laptops
R-XX-700RS	Any of the above plus televisions and refrigerant recovery machines
R-XX-1000RS	Any of the above plus power tools
R-XX-1500RS	Any of the above plus coffee makers, hairdryers and irons
R-XX-2000RS	Any of the above plus microwaves
R-XX-3000RS	Any of the above plus heaters, kettles and power tools

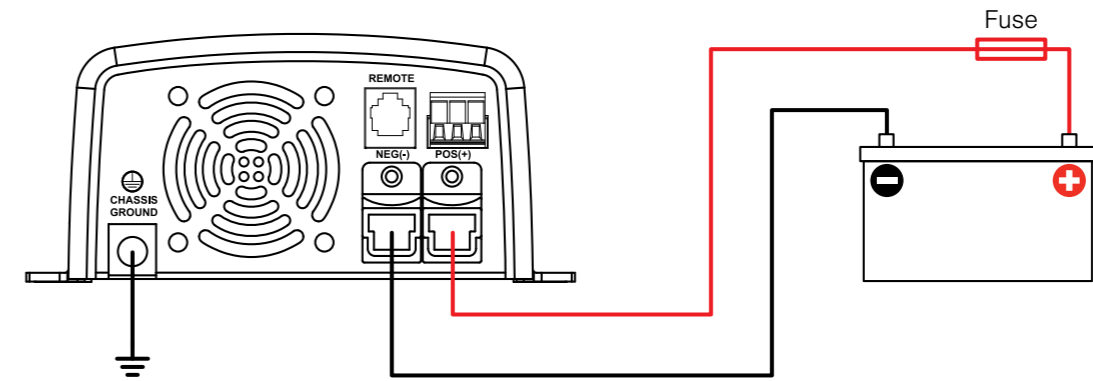
XX refers to the voltage - 12 or 24V. This is a guide only - refer to the appliance power consumption placard to ensure the correct model inverter is selected.

INVERTER LED STATUS INDICATORS.

INVERTER STATUS	LED COLOUR	LED DISPLAY
Normal	Green	
Over current/overload protection (AC output short and overload)	Red	
Under voltage protection Input DC voltage under spec Recovery points: 12.5V - 12V models/25V -24V models	Red	
Over voltage protection Input DC voltage over spec Recovery points: 14.5V - 12V models/29V -24V models	Red	
Abnormal device start-up	Orange	
Under temperature Heatsink temperature under -20°C Recovery point: >0°C	Orange	
Over temperature Heatsink temperature over 80°C Recovery point: <60°C	Orange	



TYPICAL PURE SINE WAVE INVERTER INSTALLATION.



CAUTION.

The 3000W (R-12-3000RS and R-24-3000RS) models are only suitable for installations performed by a licenced electrician.

Power rating	350W	700W	1000W	1500W	2000W	3000W
Surge capacity	700W	1230W	1750W	2650W	3500W	6000W
DC input voltage						
R-12-XXXRS*	12V	12V	12V	12V	12V	12V
R-24-XXXRS*	24V	24V	24V	24V	24V	24V
DC input voltage range						
R-12-XXXRS*	11.5 - 15.5V	10.5 - 16.5V	10.5 - 16.5V	10.5 - 16.5V	10.5 - 16.5V	10.5 - 16.5V
R-24-XXXRS*	20.0 - 31.0V	21.0 - 33.0V	21.0 - 33.0V	21.0 - 33.0V	21.0 - 33.0V	21.0 - 33.0V
Output waveform	Pure sine wave	Pure sine wave	Pure sine wave	Pure sine wave	Pure sine wave	Pure sine wave
Output AC frequency	50Hz ±0.1%	50Hz ±0.5%	50Hz ±0.5%	50Hz ±0.5%	50Hz ±0.5%	50Hz ±0.5%
Socket type	AU/NZ socket	AU/NZ socket	AU/NZ socket	AU/NZ socket	AU/NZ socket	Hard wire plate
Dimensions	188 x 150 x 68mm	330 x 200 x 83mm	372 x 200 x 83mm	421 x 248 x 83mm	443 x 248 x 83mm	442 x 255 x 158mm
Weight	1.60kg	2.60kg	3.26kg	4.14kg	5.24kg	8.20kg

* XXX refers to the model wattage.



GO EXPLORE.

The GoBlock by REDARC is both a portable power source and a flexible in-vehicle dual battery system, capable of powering your electronics and accessories when you're on the road.

This system is built tough for the most rugged and distant off-grid adventure, yet suitable for practically any vehicle, from cars and vans to 4WDs.

DESIGNED TO LAST LONGER.

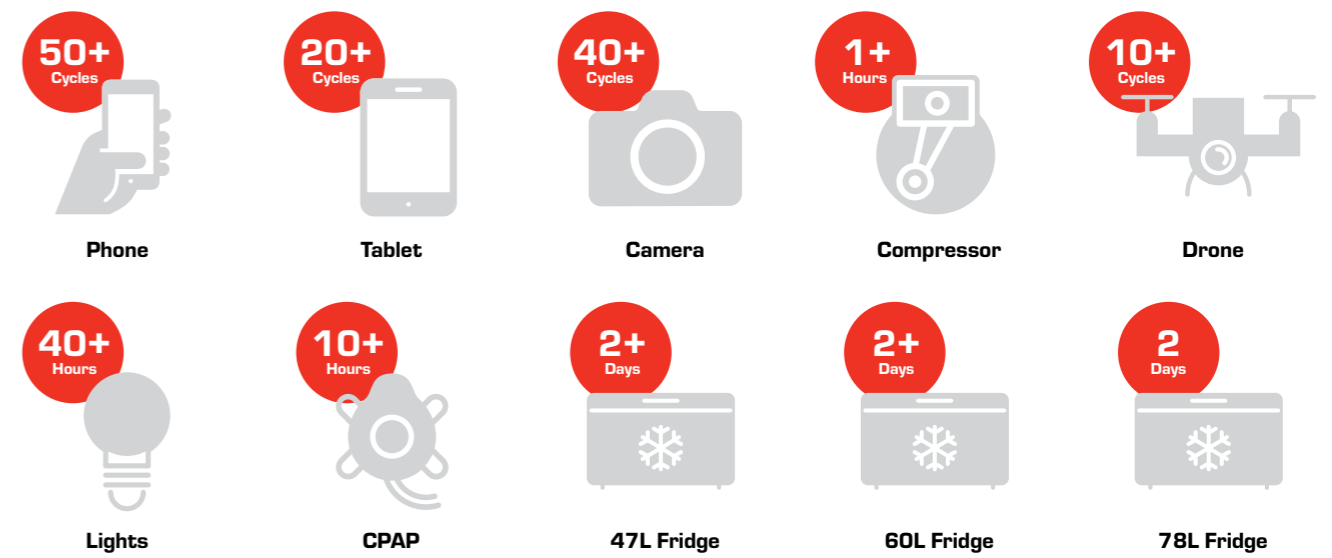
Featuring lithium iron phosphate (LiFePO₄) cells, the GoBlock has been designed to deliver over 2,000 cycles, up to four times more charge cycles than other portable power stations on the market.

POWER A WIDE VARIETY OF DEVICES.

With USB, accessory, Merit, fridge and Anderson outputs, the GoBlock is ideal for charging phones, games, cameras and drones, and running lights, compressors, a portable fridge and more.

WIRELESS MONITORING.

GoBlock is RedVision-enabled, giving you remote access to battery state of charge, system diagnostics, input source information and the Start Battery Recovery feature, from the palm of your hand.



FEATURES:

- AC charger and 50A DC to DC charger
- 50A MPPT solar regulator
- Quality LiFePO₄ battery cells
- REDARC battery management system
- RedVision compatibility
- Start battery recovery capability
- Aluminium battery housing
- Charging outlets for 12V accessories, Anderson™ and USB

APPLICATIONS:

- Built tough for off-grid adventurers
- Ideal for vehicles that do not have room for a traditional dual battery system
- Perfect for commercial and recreational applications

GO TOUGH.

Designed and built for outdoor use, GoBlock can operate within a wider temperature range so it'll perform in extreme conditions without compromising performance. There are no fans or exposed parts, allowing you to take it everywhere without worrying about wind, moisture, dust or grime (IP52 rating).

GO SAFE.

The GoBlock includes a start battery recovery feature which enables you to safely charge a vehicle's start battery. Get out of trouble and back on the road quickly with this unique vehicle battery recovery capability.

GO OFF-GRID.

The GoBlock features no fans or exposed components and offers flexible charge options. Pre-charge your devices with 7.5A AC mains, or on the go using the DC accessory socket charger.

It will also accept up to 50A input from a power source via an Anderson plug, including solar.

GO WIRELESS.

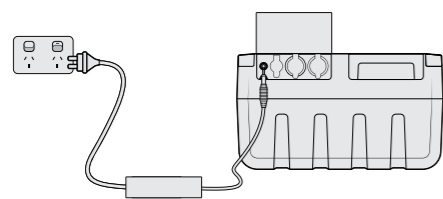
GoBlock features connectivity to REDARC's RedVision interface. Connect to REDARC's RedVision smartphone app (IOS 12 and Android 8 compatible) via Bluetooth to gain remote access to the battery state of charge, system diagnostics and input source information.

TRADITIONAL DUAL BATTERY SETUP VERSUS GOBLOCK+POWERDOCK.

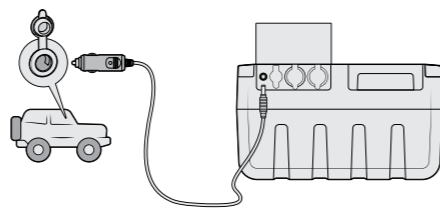
	DUAL BATTERY	GOBLOCK
Easy standard installation	✗	✓
Portable - move between your car, boat, camp and trailer	✗	✓
Neat and compact – battery, cabling, DC to DC charger and connectors inside the unit	✗	✓
Plug and play connectors ready to go	✗	✓
Safely recover your (or a mate's) start battery	✗	✓
Charge back to the start battery when the auxiliary is charged and mains or solar is available	✗	✓
Warranty	?	Two years

GOBLOCK CHARGING OPTIONS.

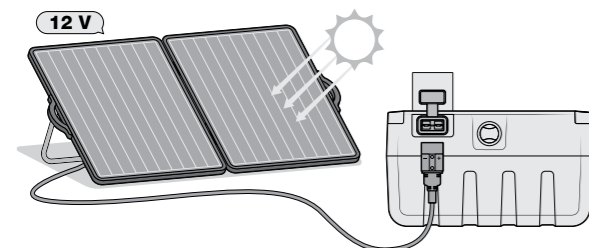
AC WALL CHARGER.



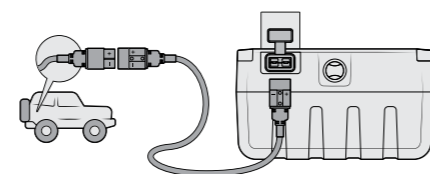
ACCESSORY SOCKET CHARGER.



SOLAR PANEL CHARGING CABLES.



AUXILIARY TO ALTERNATOR LEAD.



POWERDOCK.

See page 87.

GOBLOCK ACCESSORIES.

GOBLOCK SMART BATTERY RECOVERY CABLE. SBR0001



For safely recovering a vehicle's flat start battery using the GoBlock's smart battery recovery feature.

GOBLOCK INVERTER CONNECTOR CABLE. PPSKIT-001



Designed to connect a 350W REDARC inverter to a GoBlock.

0.3M ANDERSON™ PARALLEL CABLE. SRC0012



A cable that allows for multiple solar panel connectivity.



PPS12050



PPS12100

Battery capacity	50Ah (640Wh)	100Ah (1280Wh)
Nominal voltage	12.8 - 15.8V	12.8 - 15.8V
Cycle life	2000 cycles (≥80% capacity retention)	2000 cycles (≥80% capacity retention)
Maximum current input	50A (AUX Anderson or solar)	50A (AUX Anderson or solar)
Maximum total output	50A	50A
Operating temperature range charging	0° to 45°C	0° to 45°C
Operating temperature range discharging	-20° to 60°C	-20° to 60°C
IP rating	IP52	IP52
Dimensions closed (L x W x H)	425 x 196 x 230mm	425 x 196 x 230mm
Weight	15kg	19kg
Warranty	Two years	Two years

POWERDOCK.

PPSDOCK

Get the most out of your GoBlock portable power system with PowerDock.

With the installation of a PowerDock, charge and restrain GoBlock. PowerDock allows for a rapid charge directly to the unit, making it the most versatile portable dual battery system and a true all-in-one solution. It is even lockable with a neat anti-theft feature.

When you reach your destination, pop the quick release handle and the GoBlock is recharged, ready to go.



FEATURES:

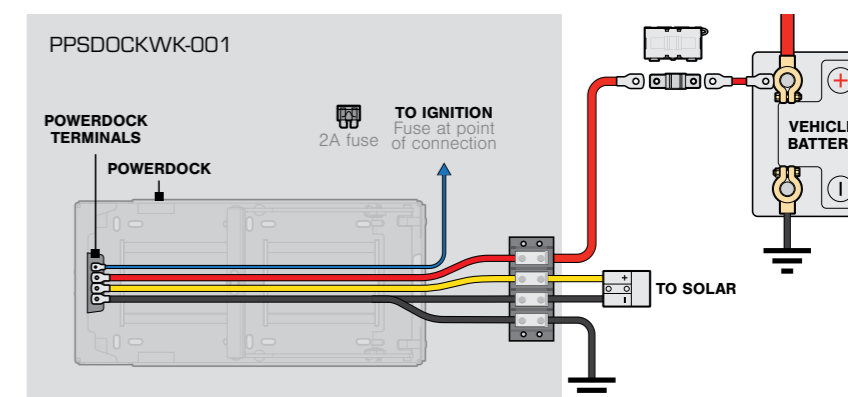
- Simple to install, quick-release system
- Simultaneous DC and fixed solar charging with Green Power Priority
- Automatic safe chargeback to the start battery
- GoBlock restraint for safe travel
- Lockable
- Ignition signal input for better performance when used with smart alternators

POWERDOCK WIRING KIT - TERMINAL BLOCK. PPSDOCKWK-001



Provides the parts necessary for easy installation of the dock to a terminal block behind the PowerDock installation.

TYPICAL PPSDOCKWK-001 INSTALLATION.

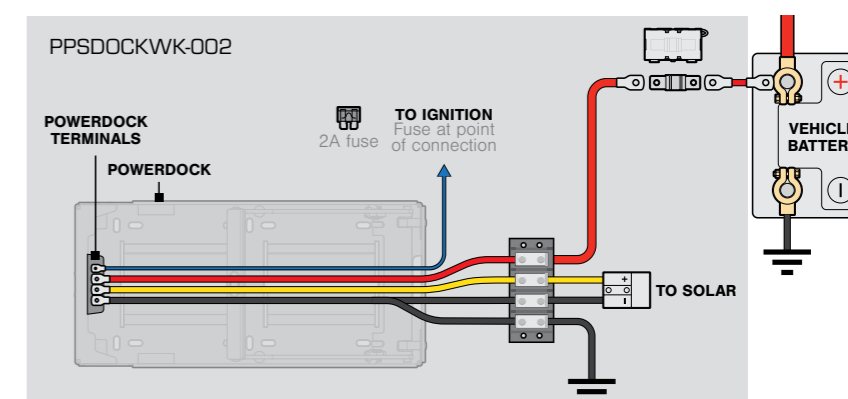


POWERDOCK COMPLETE WIRING KIT. PPSDOCKWK-002

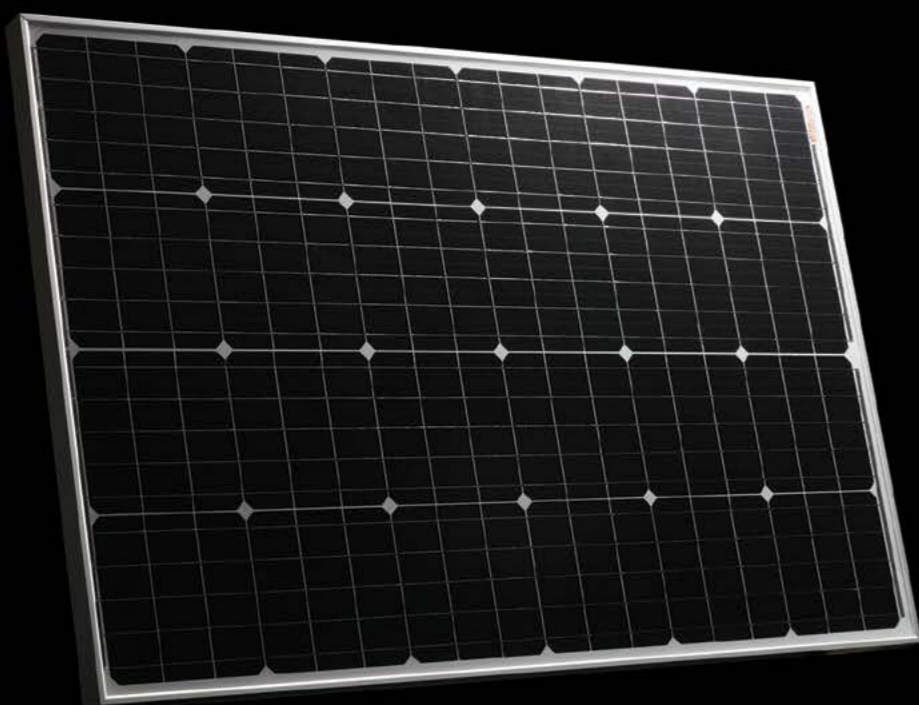


The Complete PowerDock Installation Kit is designed to provide everything you need to install the PowerDock in your vehicle. The kit allows connection from the rear of the vehicle the start battery in the engine bay along with provision for an Anderson™ connector to either permanently mounted or portable solar panels.

TYPICAL PPSDOCKWK-002 INSTALLATION.



SOLAR RANGE.



MORE STAYING POWER.

Harness the power of the sun with flexible solar blankets, portable folding panels and permanent fixed panels available in 50 to 300W capacities and supported by a complete range of accessories.

REDARC's solar panels are built using the highest quality materials for the toughest conditions and come in a range of styles and sizes.

FLEXIBLE SOLAR SOLUTIONS.

Designed to complement your current battery charging system, these fixed solar panels can either be temporarily or permanently mounted to the top of your caravan, RV or camper-trailer.

HIGH QUALITY CONNECTORS.

REDARC solar range features industry-standard, genuine Anderson™ SB™ 50 connectors for a simple and fast connection, with no screw terminals and removing the risk of poor connections.

GET THE COMPLETE SOLAR SYSTEM.

The range of solar solutions offer regulators and monitors, to convert the sun's power, along with an extensive range of solar cables and connectors for easy connection to the solar range.

MONOCRYSTALLINE FIXED PANELS.

Fixed panels are the most cost-effective, set and forget solution for caravans and camper trailers.

Being fixed to your car, camper trailer or caravan, these panels are the ultimate no fuss solution.

They're available in sizes from 50 to 200W, offering plenty of flexibility when designing a setup to fit your roof.

MONOCRYSTALLINE FOLDING PANELS.

These next-generation folding solar panels are a small, ultra-lightweight solution and quick and easy to set up.

Ideal for those who travel a few times a year, and value ease of use, value and flexibility.

Available in 120 and 200W options, they feature adjustable legs, so the panels can be angled towards the sun and conveniently moved as required.

SOLAR BLANKETS.

Perfect for when space is at a premium, these flexible and convenient solar blankets are available with monocrystalline or amorphous solar cells.

Whichever you choose, they can be folded up into a neat package, offering flexibility that's not available with fixed or folding panels.

You can drape it over the bonnet, lay it on the ground or hang it from the awning.

Then, when it's time to hit the road, they can be folded up to fit under the car seat.

THE SOLAR RANGE.

FIXED MONOCRYSTALLINE SOLAR PANELS.

Page 90



50W
SMSP1050

80W
SMSP1080

120W
SMSP1120

180W
SMSP1180

200W
SMSP1200

FOLDING MONOCRYSTALLINE SOLAR PANELS.

Page 92

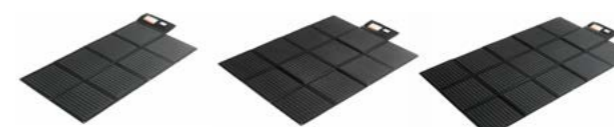


120W
SPFP1120

200W
SPFP1200

MONOCRYSTALLINE SOLAR BLANKETS.

Page 94



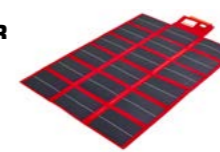
160W
SMFB1160

240W
SMFB1240

300W
SMFB1300

AMORPHOUS SOLAR BLANKET.

Page 94



112W
SAF1112



FIXED MONOCRYSTALLINE SOLAR PANELS.



SET AND FORGET SOLAR.

The most cost-effective solar panels in REDARC's solar range, these fixed panels are perfect for those who travel for longer periods of time. With a double channel aluminium frame and a tempered glass coating, these monocrystalline panels are designed with rugged terrain in mind, and can withstand harsh conditions and extreme weather.

A simple, permanent and no fuss solution, they're available in a variety of sizes, with models from 50 to 200W, offering plenty of flexibility when designing a setup to fit your roof.



FIXED SOLAR PANELS ACCESSORIES.

ABS MOUNTING BRACKETS.

	SMI9001 Corner mounting bracket x4 Required for connection to the MC4 plus
	SMI9002 Side mounting bracket x2 Required for connection to the MC4 plus
	SMI9003 525mm spoiler mounting bracket Required for connection to the MC4 plus
	SMI9007 670mm spoiler mounting bracket
	SMC0001 Single cable gland

ROOF RACK MOUNTING BRACKETS.

	SPMB0001 Suits Rhino-Rack Vortex, Euro and HD roof bars
	SPMB0002 Suits ARB Base Rack
	SPMB0003 Suits Rhino-Rack Pioneer
	SPMB0004 Suits 35mm Unistrut

FEATURES:

- Monocrystalline construction
- Anodised aluminium frame
- Robust tempered glass coating

APPLICATIONS:

- Take advantage of roof space on your 4WD, caravan or RV
- Perfect set-and-forget solution - never worry about adjusting the angle, positioning or setting up

	SMSP1050	SMSP1080	SMSP1120	SMSP1180	SMSP1200
Peak power	50W	80W	120W	180W	200W
Max power current	2.5A	4A	6A	9A	10A
Short circuit current	2.70A	4.32A	6.48A	9.72A	10.8A
Maximum power voltage	20.0V	20.0V	20.0V	20.0V	20.0V
Open circuit voltage	22.3V	22.3V	22.3V	22.3V	22.3V
Conversion efficiency	20.6%	20.6%	20.6%	20.6%	20.6%
Power tolerance	±3%	±3%	±3%	±3%	±3%
Power to temperature coefficient	-0.41%/°C	-0.41%/°C	-0.41%/°C	-0.41%/°C	-0.41%/°C
Operating temperature	-40° to 85°C	-40° to 85°C	-40° to 85°C	-40° to 85°C	-40° to 85°C
Standard test conditions	AM1.5 1000W/m ² 25°C	AM1.5 1000W/m ² 25°C	AM1.5 1000W/m ² 25°C	AM1.5 1000W/m ² 25°C	AM1.5 1000W/m ² 25°C
Cell construction	Monocrystalline	Monocrystalline	Monocrystalline	Monocrystalline	Monocrystalline
Cable length	900mm	900mm	900mm	900mm	900mm
Dimensions	590 x 505 x 35mm	700 x 670 x 35mm	1005 x 670 x 35mm	1475 x 670 x 35mm	1110 x 992 x 35mm
Weight	3.6kg	5.5kg	7.5kg	10.7kg	11.8kg



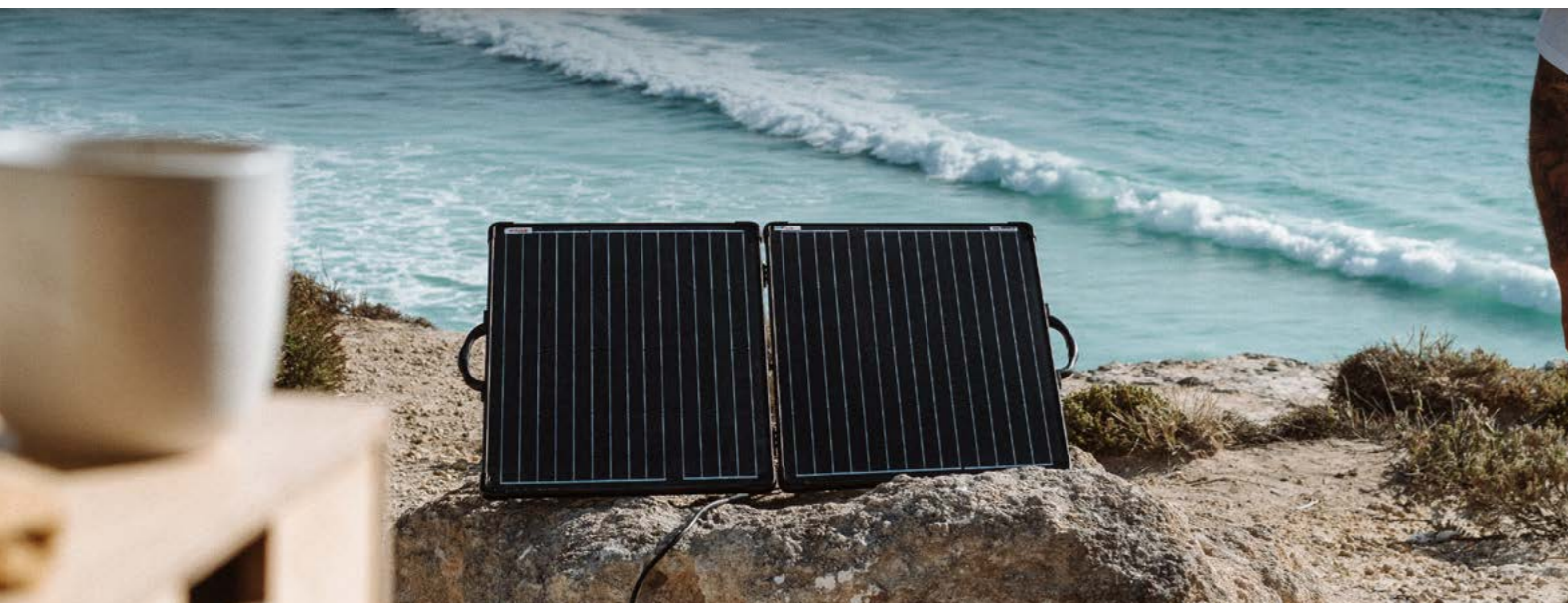
FOLDING MONOCRYSTALLINE SOLAR PANELS.



POWER WITH PORTABILITY.

These next-generation folding solar panels offer a small, ultra-lightweight solution, prioritising ease of use, value and flexibility. These ultra-lightweight, unglazed panels are less fragile than most other folding solar panels and feature an ETFE (ethylene tetrafluoroethylene) coating designed to protect the cells from damage.

With adjustable legs, they can be angled towards the sun and conveniently moved to make the most of patchy sunlight. These flexible solar panels fold to become flat, compact and lightweight to can be placed wherever you have room in your car, camper van or trailer. Available in 120 and 200W models, they're up to 50% lighter than other popular panels.



FOLDING SOLAR PANEL KITS.

These complete portable folding solar panel kits feature a solar panel, regulator, cables and accessories for the perfect camping solar charging setup.

120W FOLDING SOLAR PANEL KIT SPFP1120-K



200W FOLDING SOLAR PANEL KIT SPFP1200-K



FEATURES:

- Adjustable legs
- Portable and compact
- ETFE coating
- Withstands high temperatures
- Monocrystalline cells
- Ultra lightweight

APPLICATIONS:

- Stay in the shade while your batteries charge in the sun
- Quick and easy setup
- Make the most of patchy sunlight at camp

ANDERSON™ CONNECTORS FOR PLUG-AND-PLAY CONVENIENCE.

The folding panels feature genuine, industry-standard Anderson™ SB™ 50 connectors for plug-and-play convenience and come with a protective carry bag.



SPFP1120



SPFP1200

	SPFP1120	SPFP1200
Peak power	120W (2x 60W)	200W (2x 100W)
Max power current	6.0A	10.0A
Short circuit current	6.48A	10.8A
Maximum power voltage	20.0V	20.0V
Open circuit voltage	22.3V	22.3V
Conversion efficiency	20.6%	20.6%
Power tolerance	±3%	±3%
Power to temperature coefficient	-0.41%/°C	-0.41%/°C
Operating temperature	-40° to 85°C	-40° to 85°C
Standard test conditions	AM1.5 1000W/m² 25°C	AM1.5 1000W/m² 25°C
Cell construction	Monocrystalline	Monocrystalline
Minimum solar regulator size	SRPA0120	SRPA0240
Cable length	900mm	900mm
Dimensions - open	1030 x 715 x 25mm	1370 x 800 x 25mm
Dimensions - closed	515 x 715 x 50mm	685 x 800 x 25mm
Weight	6.3kg	9.5kg



SOLAR BLANKETS.



SPACE-SAVING SOLAR.

Discover an unlimited power supply wherever your adventure takes you with REDARC's range of solar blankets. Perfect for when space is limited, these flexible blankets can be draped over the bonnet, laid on the ground or hung from an awning.

Featuring a unique design, these blankets have a solid copper backing and thick connectors that reduce cell failure from corrosion or breakage. Utilising anti-reflective scratch resistant ETFE coating, these blankets are also UV resistant, have non-stick resistant properties and a high melting temperature. Lightweight and designed for portability and strength, these blankets are available in 160, 240 and 300W models and offer exceptional value for money.



SOLAR BLANKET KITS.

These complete portable solar blanket kits feature a solar blanket, regulator, cables and accessories for the perfect camping solar charging setup.

160W MONOCRYSTALLINE SOLAR BLANKET KIT.
SMFB1160-K



240W MONOCRYSTALLINE SOLAR BLANKET KIT.
SMFB1240-K



300W MONOCRYSTALLINE SOLAR BLANKET KIT.
SMFB1300-K



FEATURES:

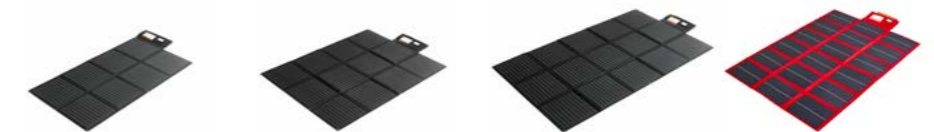
- Efficient monocrystalline cells
- Lightweight and highly portable
- Anti-reflective and scratch-resistant ETFE coating
- Genuine industry standard Anderson™ SBT™50 plug connections
- High power output

APPLICATIONS:

- Ideal solution when space is at a premium
- Fast and convenient setup
- Drape it over the bonnet or windscreen, lay it on the ground or hang it from the side of your awning

AMORPHOUS CELLS.

With their triple layer system, high melting temperature and UV resistance, REDARC's Amorphous Blankets are reliable, reduce the risk of cell breakage and cracks and perform better in the shade, capturing the full spectrum of light.



	SMFB1160	SMFB1240	SMFB1300	SAF1112
Peak power	160W	240W	300W	112W
Cell construction	Monocrystalline	Monocrystalline	Monocrystalline	Amorphous
Max power current	8.9A	13.4A	18.0A	6.3A
Short circuit current	9.5A	14.2A	19.0A	7.6A
Maximum power voltage	18.0V	18.0V	18.0V	18.0V
Open circuit voltage	21.5V	21.5V	21.5V	21.5V
Conversion efficiency	21.0%	21.0%	21.0%	21.0%
Power tolerance	±5%	±5%	±5%	±5%
Operating temperature	0° to 85°C	0° to 85°C	0° to 85°C	0° to 85°C
Standard test conditions	AM1.5 1000W/m ² 25°C	AM1.5 1000W/m ² 25°C	AM1.5 1000W/m ² 25°C	AM1.5 1000W/m ² 25°C
Cable length	120mm	120mm	120mm	120mm
Eyelets	6x 8mm	6x 8mm	6x 8mm	6x 8mm
Dimensions - open	1635 x 740 x 2.5mm	1635 x 1110 x 2.5mm	1995 x 1110 x 2.5mm	1860 x 1185 x 2.0mm
Dimensions - closed	365 x 365 x 70mm	365 x 365 x 75mm	365 x 365 x 80mm	400 x 280 x 100mm
Weight	4.8kg	7.0kg	8.5kg	4.8kg

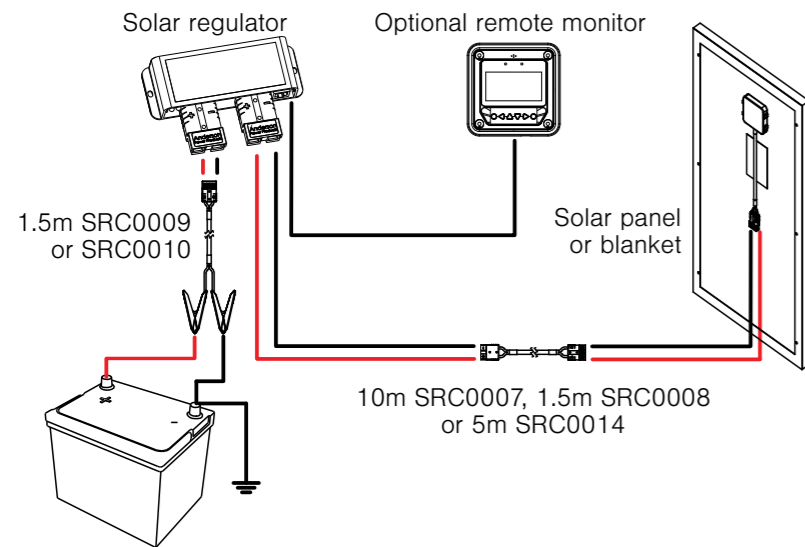


ANDERSON™ SOLAR REGULATORS.

Designed to pair perfectly with REDARC's solar panels, these solar regulators ensure the correct charge is supplied safely and efficiently, to charge your auxiliary batteries.

Featuring multi-stage charging, REDARC's solar regulators work with multiple chemistry batteries, with multiple levels of protection. Available in 10, 20 and 30A ratings, these SRPA regulators work in 12 and 24V systems and are best suited for solar blankets and folding panels.

TYPICAL ANDERSON™ SOLAR REGULATOR 12V INSTALLATION.



ACCESSORIES.

20A SOLAR REGULATOR AND CABLE VALUE PACK. SRPA20-VP



Includes everything required to connect and use a REDARC Solar Blanket, including a 20A Solar Regulator, 5m Anderson™ to Anderson™ cable and 1.5m Anderson™ to Battery clip cable.

ANDERSON™ SOLAR REMOTE MONITOR. SRPA-RM



With a 3" back-lit LED display, this monitor provides panel charging information, real-time system monitoring and allows battery and configuration changes to the solar regulator to be made remotely.

This product is only compatible with the SRPA range of solar regulators.



SRPA0120



SRPA0240



SRPA0360

	SRPA0120	SRPA0240	SRPA0360
Output current	10A	20A	30A
Battery voltage	12/24V	12/24V	12/24V
Maximum power rating	120/240W	240/480W	360/720W
Charge type	PWM 50Hz	PWM 50Hz	PWM 50Hz
Waterproof IP rating	IP55	IP55	IP55
Operating temperature	-35° to +55°C	-35° to +55°C	-35° to +55°C
Dimensions	28 x 153 x 98mm	28 x 153 x 103mm	28 x 153 x 108mm
Weight	480g	520g	550g
Warranty	Two years	Two years	Two years

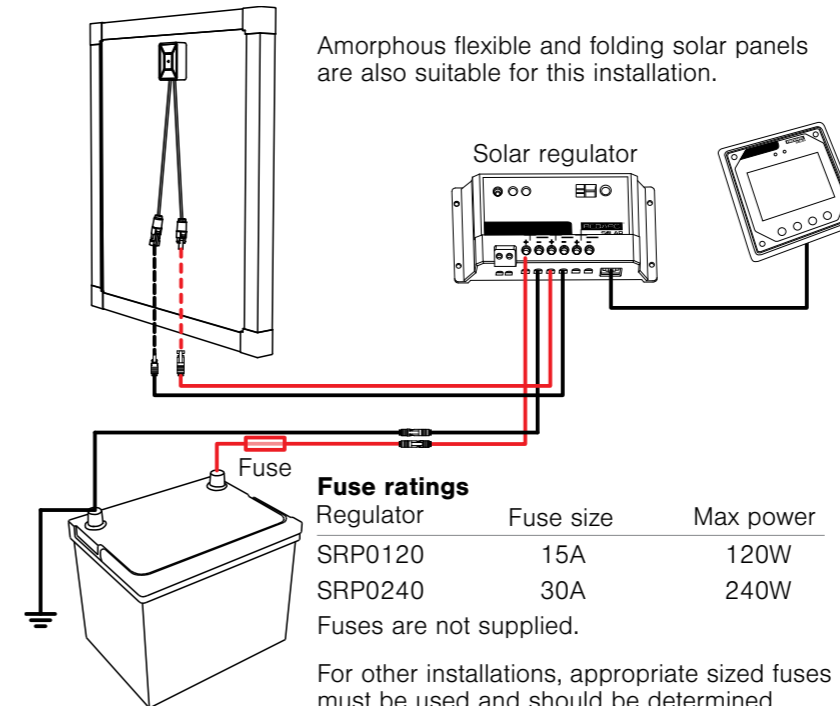
BARE WIRE SOLAR REGULATORS.

REDARC's SRP Solar Regulators ensure that the power supplied by the solar panels is at the right voltage to charge house or auxiliary batteries.

Featuring multi-stage charging, these regulators are primarily used with fixed solar panels and are suitable for charging up to two separate battery banks.

Bare wire connectors are available in 10 and 20A ratings.

TYPICAL BARE WIRE REGULATOR INSTALLATION.



Amorphous flexible and folding solar panels are also suitable for this installation.

Fuse ratings

Regulator	Fuse size	Max power
SRP0120	15A	120W
SRP0240	30A	240W

Fuses are not supplied.

For other installations, appropriate sized fuses must be used and should be determined according to specific installation requirements.

ACCESSORIES.

REGULATOR TEMPERATURE PROBE. SRP0240-TP



Allows for temperature compensation of the charge rate of a regulator via actual battery temperature.

BARE WIRE SOLAR REMOTE MONITOR. SRP0240-RM



The SRP0240-RM remote monitor provides an informative, user-friendly display, showing the power that the solar panels are producing and the charge stage of the battery.

This product is only compatible with the SRP range of solar regulators.



SRP0120



SRP0240

	SRP0120	SRP0240
Output current	10A	20A
Battery voltage	12/24V	12/24V
Maximum power rating	120/240W	240/480W
Charge type	PWM25Hz (factory setting) or PWM50HZ	PWM25Hz (factory setting) or PWM50HZ
Waterproof IP rating	N/A	N/A
Operating temperature	-35° to +50°C	-35° to +50°C
Dimensions	37 x 153 x 76mm	37 x 153 x 76mm
Weight	240g	260g
Warranty	Two years	Two years

SOLAR CABLES AND CONNECTORS.

REDARC's extensive range of cables and connectors enable quick and easy connection of the whole range of solar products, with the ability to set up camp in a shady area, but still get the most out of the sun.

PANEL TO REGULATOR CABLES.



SRC0008
1.5m Anderson™
to Anderson™
Cable



SRC0018
5m Anderson™
to Anderson™
Cable



SRC0019
10m Anderson™
to Anderson™
Cable



SRC0001
5m Regulator to
Panel Cable



SRC0002
10m Regulator to
Panel Cable

REGULATOR TO BATTERY CABLES.



SRC0009
1.5m Anderson™
to Battery Clip
Cable



SRC0010
1.5m Anderson™
to Battery Eyelet
Cable



SRC0003
1.5m Regulator to
Battery Cable



SRC0003-B2
Battery Option
Cable (Alligator
Clips)

MULTI-PANEL CABLE ACCESSORIES.



SRC0011
0.3m Anderson™
Series Cable



SRC0012
0.3m Anderson™
Parallel Cable



SRC0006
Positive and
Negative MC4
Y Adapters

CONNECTOR CABLES.



SRC0016
1.5m Anderson™
to Bare Wire Cable



SRC0017
1.5m MC4 to
Anderson™
Connector Cable

SOLAR CABLE ACCESSORIES.

SOLAR CONNECTOR KIT.

SRC0001-CK



Provides all the components needed to make one MC4 connection, used in the installation of REDARC fixed solar panels.

REDARC SOLAR CALCULATOR.

The REDARC solar calculator provides a guide to which solar products are best suited to your needs.

To access the solar calculator scan the QR code or visit redarc.com.au/solarcalculator



WHAT IS MPPT AND HOW DOES IT WORK?

MPPT stands for Maximum Power Point Tracking and it relates to the solar cell itself.

Each solar cell has a point at which the current (I) and voltage (V) output from the cell result in the maximum power output of the cell.

With the cells regulated at the point needed for voltage and current levels to achieve a power output, the power generated by the solar cell will be used most efficiently.

HOW IS THIS DONE?

The MPPT solar regulator simulates the load required by the solar panel to achieve the maximum power from the cell, and derives from this the voltage and current outputs required for maximum power to be achieved. It will then calculate the load that it must simulate based on these voltage and current levels ($R=V/I$).

The regulator, now receiving the maximum amount of power in, will then regulate the output according to what it is designed for. In the case of REDARC's MPPT equipped range, the output features a battery specific charging profile.

In the diagram shown, the curve is an example of the standard output expected from a solar cell, the maximum power point is at the position marked on the diagram.

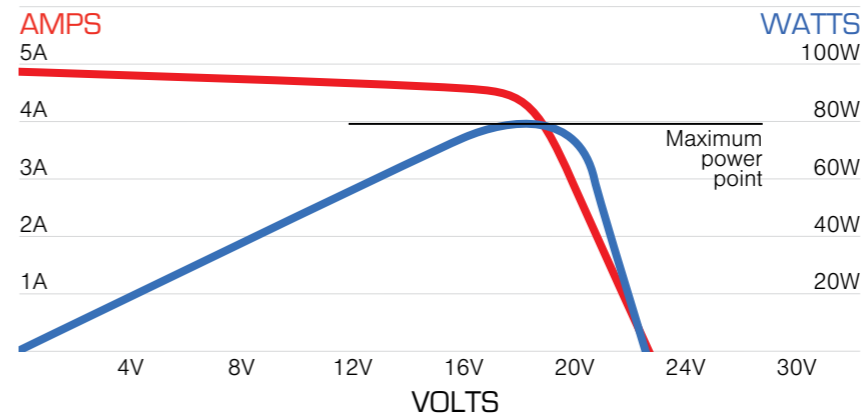
HOW DOES MPPT BENEFIT ME?

MPPT ensures that you get the most power possible from your solar panels at any point in time. It is particularly effective during low light level conditions.

These calculations result in an output that delivers maximum current at the required voltage at any point in time.

During low light level situations it will compensate for the low light level and find the new point at which the solar cell delivers its maximum power output.

MPPT IV AND PV CURVES.



WHICH REDARC PRODUCTS FEATURE MAXIMUM POWER POINT TRACKING?

A number of our products feature Maximum Power Point Tracking, including:

BATTERY MANAGEMENT SYSTEMS:

- The Manager30 (BMS1230S2)
- The Manager15 (BMS1215S3)

IN-VEHICLE DC TO DC BATTERY CHARGERS:

- BCDC1225
- BCDC1225-LV
- BCDC1240
- BCDC1240-LV
- LFP1225
- LFP1225-LV
- LFP1240
- LFP1240-LV
- BCDC1225D
- BCDC2420
- BCDCN1225
- BCDCN1240



SMARTCHARGE AC BATTERY CHARGER RANGE.



LEADING THE CHARGE.

Compact and easy to use, the REDARC range of Smartcharge AC Battery Chargers ensure your vehicle's batteries are fully maintained, charged and always ready to go.

Designed to automatically charge and maintain most common 12V automotive batteries, REDARC's AC chargers are compatible with common automotive battery types including lithium. They automatically adjust to suit the battery voltage and type in any caravan, car or boat.

THEY'RE CALLED SMART FOR A REASON.

REDARC's AC Battery Chargers give you peace of mind because you know your battery is getting the right amount of charge, without the risk of overcharging, leading to longer, more reliable battery life.

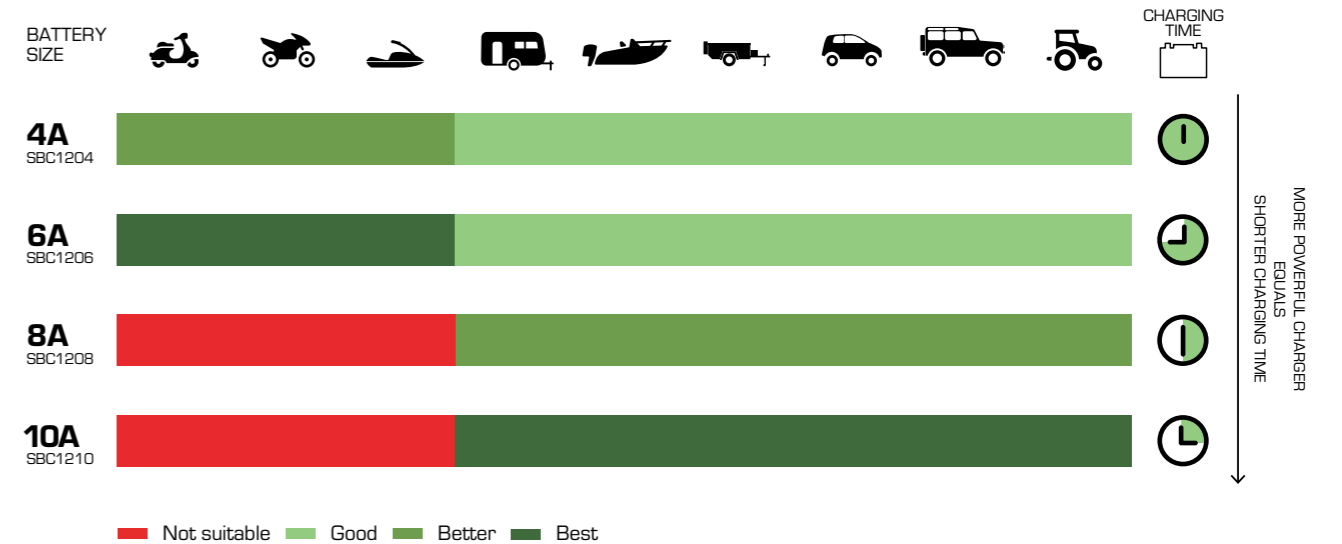
STAY FULLY CHARGED AT ALL TIMES.

All you need to do is plug it in, clip it on and turn it on to keep your 12V vehicle or secondary battery healthy, fully charged and always ready to go. You'll never be caught out with a flat battery again.

BUILT FOR A RANGE OF APPLICATIONS.

REDARC SmartChargers are rated to IP65 and are available in 4, 6, 8 and 10A models. Wherever you want to use it, whatever you want to charge with it, there's one to suit your needs.

CHOOSE THE RIGHT SMARTCHARGE FOR YOUR NEEDS.



SMARTCHARGE ACCESSORIES.



12V CHARGING KIT.
SBC12ACC1-4

An easily mountable charging cable with 12V input, that can be permanently mounted to a battery using ring terminals.



12V CHARGING CABLE WITH RING TERMINALS.
SBC12ACC1-5

Cable with ring terminals designed for easy battery charging and monitoring with the range of SmartCharge Battery Chargers.



12V CHARGING CABLE WITH CLAMPS.
SBC12ACC1-6

Cable with clamps designed for easy battery charging and monitoring with the range of SmartCharge Battery Chargers.



	SBC1204	SBC1206	SBC1208	SBC1210
Maximum output current	4A	6A	8A	10A
Power consumption	60W	115W	132W	175W
Battery size	12V/2-110Ah	12V/2-150Ah	12V/20-200Ah	12V/30-250Ah
Input	230V AC 50-60Hz	230V AC 50-60Hz	230V AC 50-60Hz	230V AC 50-60Hz
Inverse current	<1mA	<1mA	<1mA	<1mA
Output voltage	14.4/14.7V	14.4/14.7V	14.4/14.7V	14.4/14.7V
IP class	IP65	IP65	IP65	IP65
Dimensions	210 x 90 x 54mm	210 x 90 x 54mm	235 x 90 x 54mm	235 x 90 x 54mm
Weight	735g	735g	750g	750g
Warranty	Five years	Five years	Five years	Five years

FEATURES:

- Simple, one-button activation
- Battery status monitoring in the display
- Secured against short circuits and reverse polarity
- Integrated cable storage solution
- Temperature-compensated charging cycle

APPLICATIONS:

- Ideal for maintenance charging
- Perfect for caravans, cars and boats as it automatically adjusts to suit the battery voltage and type



BATTERY MASTER ISOLATION SWITCH.



BMIS



SAFE AND RELIABLE BATTERY ISOLATION.

Designed to safely isolate the vehicle batteries in 12 and 24V vehicles, the BMIS allows for manual isolation of a truck's electrical system from its battery and will work with existing roll over sensors. REDARC's BMIS is available in two variants, ensuring reliable performance when the vehicle is operating.

The REDARC Battery Master Isolation Switch (BMIS) is designed to safely isolate the vehicle batteries in 12 and 24V vehicles ensuring reliable performance when the vehicle is operating. Easy to install as new or a retrofit, BMIS allows for manual isolation of a truck's electrical system from its battery. It will work with existing roll over sensors on the market. Maintain important OH&S standards and improve safety for your drivers and fleet with REDARC's Battery Master Isolation Switch.

THE REDARC BMIS IS AVAILABLE IN TWO MODELS:



BATTERY MASTER ISOLATION SWITCH (POSITIVE-POSITIVE)
SMIS4PPV2KIT

With positive-positive isolation for heavy vehicles with dual start cables to isolate both battery circuits.



BATTERY MASTER ISOLATION SWITCH (POSITIVE-NEGATIVE)
SMIS4PNV2KIT

With positive-negative isolation to isolate both battery circuits.

FEATURES:

- Rated IP66, IP67 and IP69K
- Dual redundancy feature to avoid false triggering
- Continuous self-checking function
- In-built lockout capability
- In-built diagnoses from external looms and remote actuating devices
- Compatible with Roll Over Sensor (ROS)
- Increased reliability with dual redundancy feature to avoid false triggering

APPLICATIONS:

- Perfect for dangerous goods vehicles as, when ROS and BMIS are installed in accordance with the standard, ensures AS2809;1:2020 compliance
- Increase heavy vehicle safety with manual isolation of a vehicle's electrical system after a roll over event, reducing the risk of fire by electrical spark
- Reduces flat batteries in trucking and mining vehicles

WORKS WELL WITH...



ROLL OVER SENSOR
ROS1224

The BMIS can be used in unison with REDARC's Roll Over Sensor to enable heavy-duty vehicles to meet AS2809 roll-over sensing requirements, automatically shut down the vehicle's engine and all electrics when a dangerous angle of more than 45 degrees is reached, and reduce frustrating false triggers from wiring faults through the system's dual fault protection.

For more information, see page 130.

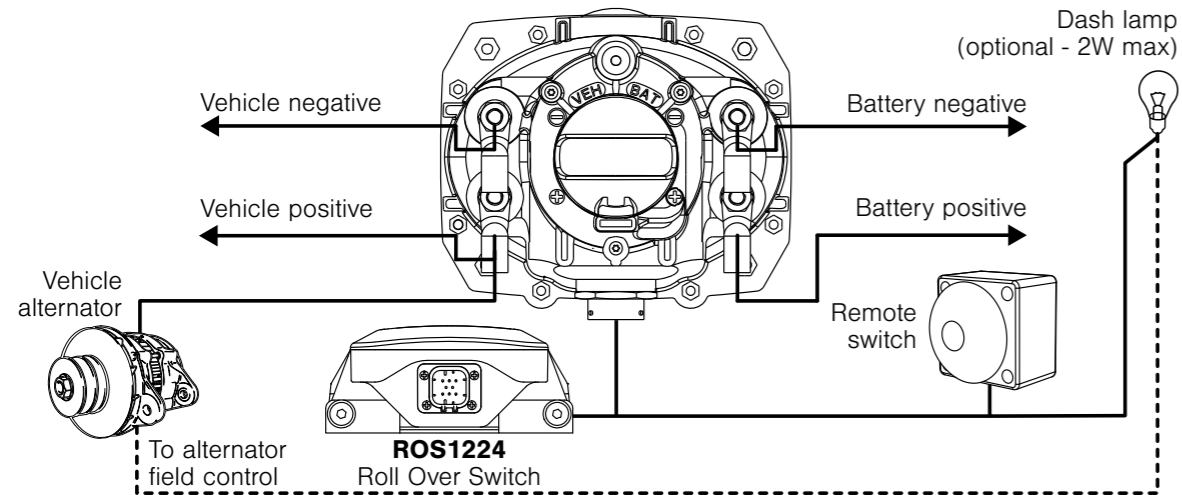


ISOLATION VERIFICATION CONTROL.
HML1005

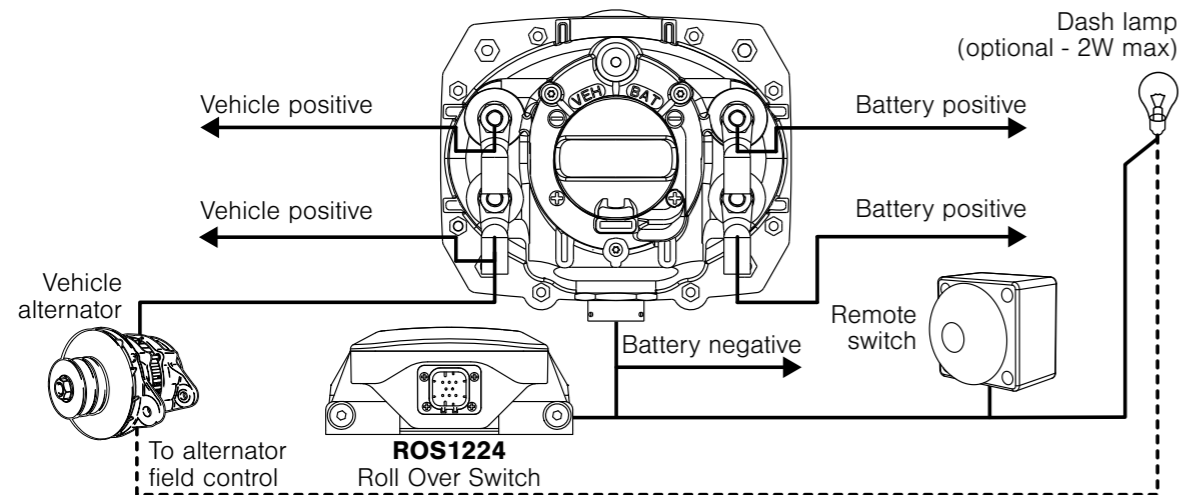
Provides a visual readout of your vehicle's true isolation state before you commence any electrical work. For more information, see page 146.



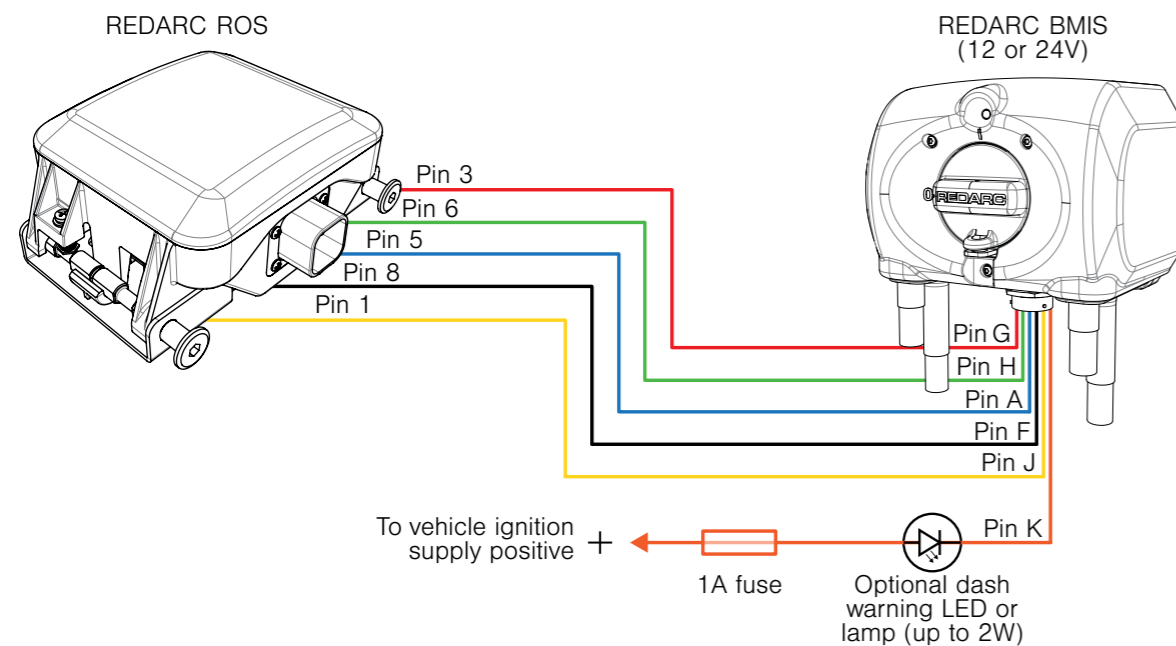
TYPICAL BMIS-4PNV2 BATTERY MASTER ISOLATION SWITCH (POSITIVE-NEGATIVE) INSTALLATION.



TYPICAL BMIS-4PPV2 BATTERY MASTER ISOLATION SWITCH (POSITIVE-POSITIVE) INSTALLATION.



TYPICAL ROLL OVER SENSOR INSTALLATION.



BMIS ACCESSORIES.

REDARC recommends the purchase of a BMIS-CK connector kit if the BMIS is not installed OE.



BMIS CONNECTOR KIT. BMIS-CK

Designed for installation on heavy vehicles where a factory harness is not available.

The BMIS-CK comes standard with both BMISPPKIT and BMISPNKIT.

Kit contains:

- Connector
- HDP20 backshell straight
- Terminal 16-20AWG
- Terminal 14AWG
- Sealing plugs
- HDP20 contact removal tool



BMIS ADAPTOR PLATE. BMIS-AP

Designed to retrofit the REDARC Battery Master Isolation Switch to an existing installation of other brand switches.

Kit contains:

- REDARC BMIS adaptor plate
- M8 nyloc nuts
- M8 washers



BMIS-4PNV2/BMIS-4PPV2

Input voltage	9 - 32V (suitable for 12 or 24V systems)
Standby current draw	<30mA
Ambient operating temperature	-20° to 70°C
Ambient operating humidity	0% to 100%
Current rating (continuous 20°C)	400A per pole
Current rating (90s, 20°C)	1500A (12% duty cycle)
Current rating (20s, 20°C)	3500A per pole
Field isolation current rating	10A resistive, 5A (field) inductive
Environmental protection	IP66, IP67 and IP69K
Lamp drive	2W maximum
Control inputs (remote, ROS)	14mA current-limited
Housing material	GF PBT
Dimensions	218 x 188 x 159mm
Weight	3.5kg
Warranty	Two years



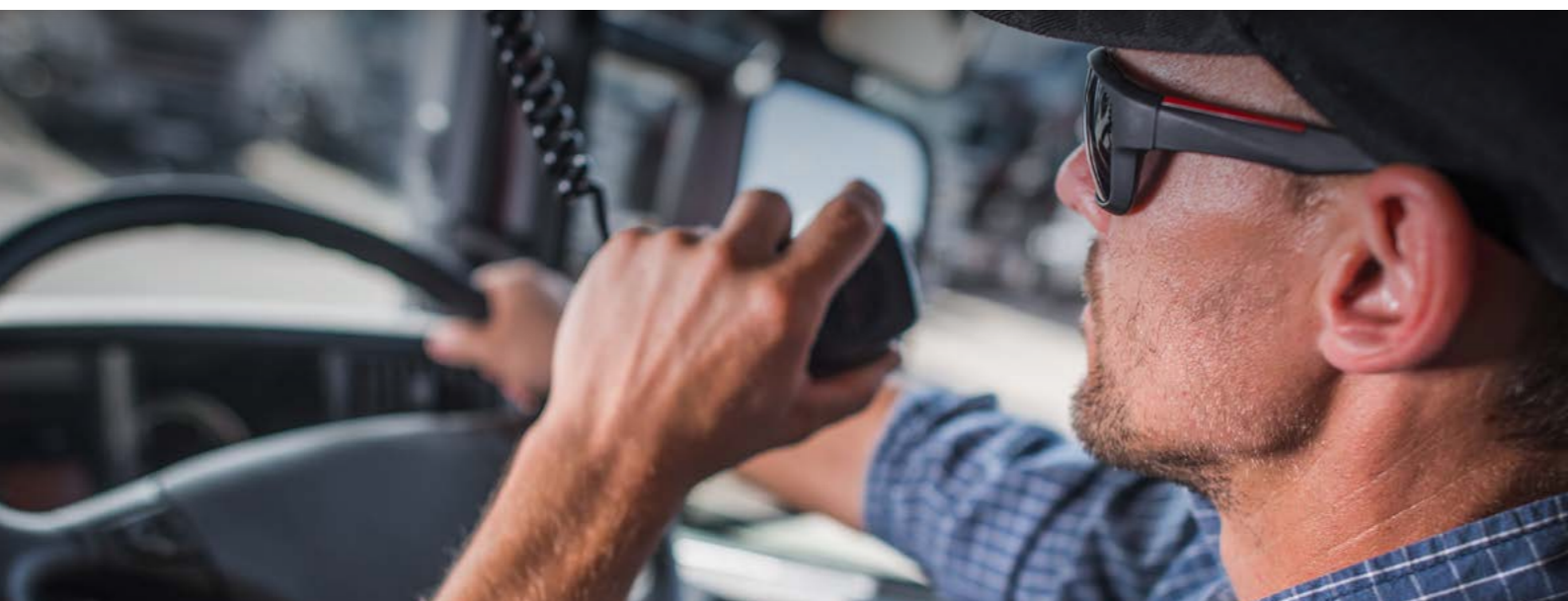
SWITCHMODE REDUCERS.



RUN 12V DEVICES FROM A 24V POWER SOURCE.

REDARC's range of Switch Mode Reducers provide a 12V nominal output from a 24V source, designed to run 12V lamps, small motors and electronic loads from a 24V vehicle input.

REDARC Switch Mode Reducers are perfectly suited to applications that require a low noise output and are designed to operate sensitive radio and communication equipment.



PROTECTION.

ALL SMF CONVERTERS.

All converters are protected against voltage spikes, continuous overloads and short circuits. All protection is fully electronic and is not reliant on relays or fuses.

SMF5 AND SMF60.

These converters are also protected against reverse/swapped connections.

FEATURES:

- Compact size
- Highly efficient switch mode design
- Less than 25mA standby current draw
- Protected against spikes, surges, and incorrect connections

APPLICATIONS:

- Run 12V equipment in a 24V vehicle
- Keep the memory in a stereo or CB radio (Compact Switch Mode Reducers)
- Operate sensitive radio and communication equipment (Switch Mode Reducers)

SMF10 TO SMF60.

Will reduce output voltage or switch off in the event of an overload or short circuit, resetting automatically when the overload or short is removed. The load is protected by an independent over-voltage protection circuit.

COMPACT SWITCH MODE REDUCERS.

Also available, REDARC's Compact Switch Mode Reducers are for applications that only require a low output rating, are small in size and designed to fit into tight locations.

They provide an ignition-switched output as well as a constant output to allow for preserving radio memory.



	SMF5	SMF8
Nominal output current	5A	8A
Maximum output current	22A	33A
Output voltage	13.6V	13.6V
Input fuse rating	5A	10A
Conversion efficiency	>90%	>90%
Operating temperature	-10° to 50°C	-10° to 50°C
Dimensions	100 x 45 x 30mm	124 x 45 x 30mm
Weight	210g	270g
Warranty	Two years	Two years



	SMF10	SMF20	SMF30	SMF40	SMF60
Nominal output current	10A	20A	30A	40A	60A
Maximum output current	11A	22A	33A	44A	66A
Nominal input voltage	17 - 33V	17 - 33V	17 - 33V	17 - 33V	17 - 33V
Output voltage	13.7V	13.7V	13.7V	13.7V	13.7V
Input fuse rating	7.5A	15A	20A	25A	40A
Conversion efficiency	>90%	>90%	>90%	>90%	>90%
Line regulation	<0.1V	<0.1V	<0.1V	<0.1V	<0.1V
Load regulation	<0.5V	<0.5V	<0.5V	<0.5V	<0.5V
Operating temperature	-10° to 50°C	-10° to 50°C	-10° to 50°C	-10° to 50°C	-10° to 50°C
Dimensions	100 x 135 x 50mm	160 x 135 x 50mm	160 x 135 x 60mm	160 x 135 x 60mm	220 x 135 x 67mm
Weight	0.6g	0.9g	1.1kg	1.1kg	1.3kg
Warranty	Two years	Two years	Two years	Two years	Two years



VOLTAGE STABILISERS.



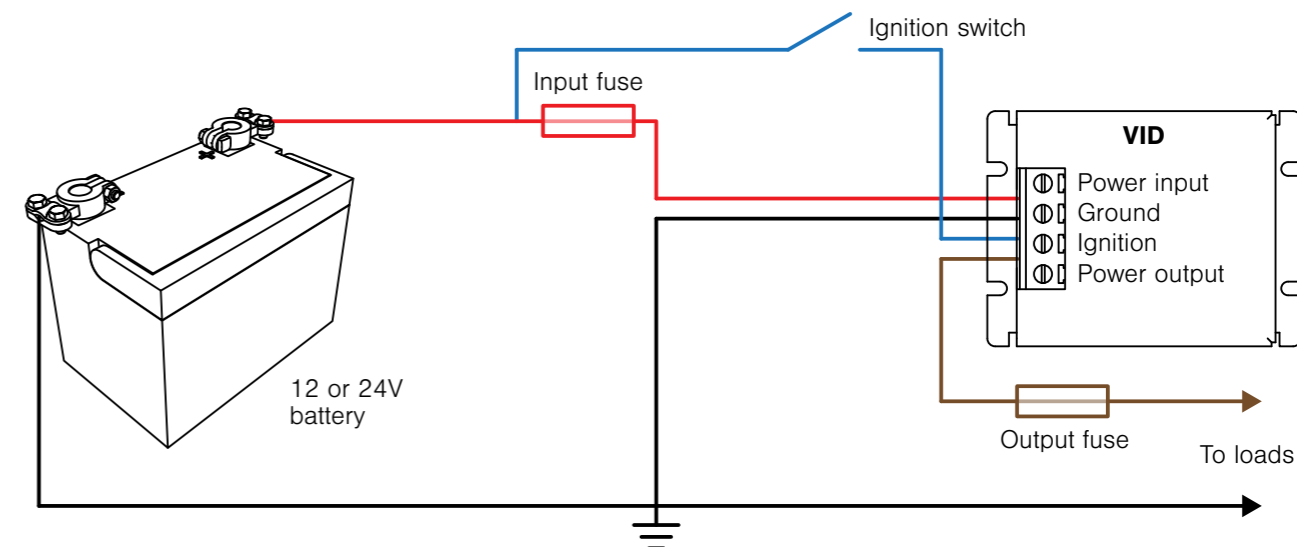
LOW CURRENT STABILISATION.

REDARC Voltage Stabilisers are DC to DC power supplies that take an input of between 9 and 32V (9 and 20V for VI72D-12) and supply a fixed 12V nominal output.

Designed for low current applications where the loads may be sensitive to voltage fluctuations, these units are perfect for running camera systems and communication equipment in mobile installations, but can also be used in a range of other applications, such as computers, test equipment and automotive environments where the supply voltage can fluctuate significantly.



TYPICAL VOLTAGE STABILISER INSTALLATION.



FEATURES:

- Fully encapsulated
- Compact size
- Over current and short circuit protection
- High operating temperature range up to 70°C
- Over-temperature protection
- Under and over-voltage shut down
- LED indication of output voltage

APPLICATIONS:

- Designed for low current applications where the loads may be sensitive to voltage fluctuations.
- Protected against reverse polarity power connection to input and output by external fuses (fuses required 3A on input and output)



VI24D-12



VI48D-12



VI72D-12

	VI24D-12	VI48D-12	VI72D-12
Output current (nominal)	2A continuous	4A continuous	6A continuous
Current limit (input voltage dependent)*	2.7 - 5.0A	3.6 - 6.7A	5.5 - 8.5A
Input voltage range	9 - 32V	9 - 32V	9 - 20V
Output voltage	12V	12V	12V
Voltage accuracy	±250mV	±250mV	±250mV
Efficiency at rated load (typical)	>90%	>90%	>90%
No load current (ignition on)	<100mA	<100mA	<100mA
Standby current (ignition off)	150µA	150µA	150µA
Recommended input fuse	3A	7.5A	7.5A
Recommended output fuse	3A	5A	7.5A
Line regulation (rated load)	<50mV	<50mV	<50mV
Load regulation (no load to full load)	<50mV	<50mV	<50mV
Operating temperature	-20° to 50°C	-20° to 50°C	-20° to 50°C
Standards	UNECE Regulation 10: revision 5		
Dimensions	80 x 60 x 20mm	80 x 60 x 20mm	80 x 60 x 20mm
Weight	200g	200g	200g
Warranty	Two years	Two years	Two years

*Output current does vary with changes in input voltage. Contact REDARC if more information is required



DC POWER SUPPLIES.



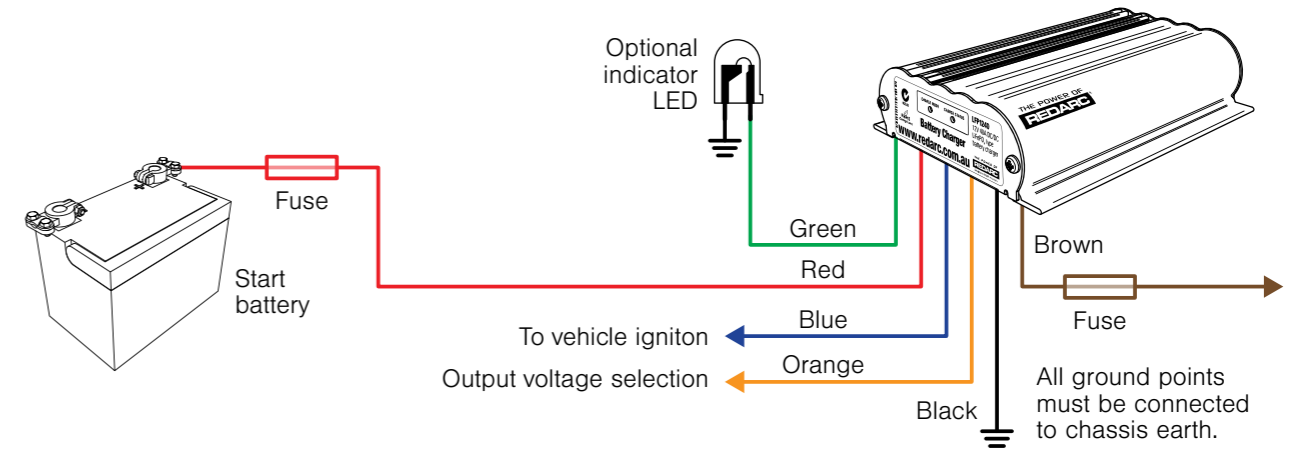
CONSTANT, REGULATED DC POWER.

Keep your appliances, equipment and devices powered up no matter where you are. With an output of 12 or 24V, these voltage converters can provide a constant, regulated power from an input of 9 to 32V. With a highly-efficient design, REDARC's 12 and 24V DC power supplies can be used to power a variety of loads including lamps, radios, small motors, communications equipment, TVs and fridges.

As this power source generates minimal electrical noise, you can power hi-tech radio systems without any interference. Fully encapsulated in REDARC's silicone elastomer, this DC power supply range can be mounted externally on any vehicle and they have in-built protection against spikes/surges and reverse polarity.



TYPICAL DC POWER SUPPLY INSTALLATION.

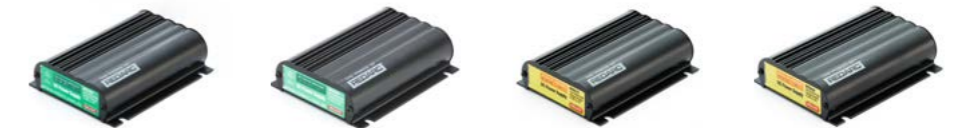


FEATURES:

- Fully encapsulated
- Ignition controlled
- No fan for reduced noise
- Highly efficient design
- Wide input voltage range
- User selectable output voltage

APPLICATIONS:

- Protect against surges/spikes and incorrect connections
- Power a variety of loads including lamps, radios, small motors, communications equipment, TVs and fridges
- Perfect for hi-tech radio systems



	DPS1225	DPS1240	DPS2410	DPS2420
Output current	25A	40A	10A	20A
Surge current rating	50A	80A	20A	40A
Recommended input fuse	40A (FK40 recommended)	60A (FK60 recommended)	40A (FK40 recommended)	60A (FK60 recommended)
Recommended output fuse	40A (FK40 recommended)	60A (FK60 recommended)	40A (FK40 recommended)	40A (FK40 recommended)
Input voltage range	9 - 32V	9 - 32V	9 - 32V	9 - 32V
No load current	<100mA	<100mA	<200mA	<200mA
Standby current	<5mA	<5mA	<5mA	<5mA
Output voltage (selected with orange wire)				
No connection	12.0V	12.0V	24.0V	24.0V
Earth	13.7V	13.7V	27.4V	27.4V
Positive supply	14.5V	14.5V	29.0V	29.0V
Line and load regulation	±1%	±1%	±1%	±1%
Conversion efficiency	>94%	>94%	>94%	>94%
Operating temperature	-50° to 50°C	-50° to 50°C	-50° to 50°C	-50° to 50°C
Standards	CE, C-Tick, AS/NZS CISPR1 1:2004	CE, C-Tick, AS/NZS CISPR1 1:2004	CE, C-Tick, AS/NZS CISPR1 1:2004	CE, C-Tick, AS/NZS CISPR1 1:2004
Dimensions	150 x 120 x 37mm	150 x 120 x 37mm	150 x 120 x 37mm	150 x 120 x 37mm
Weight	680g	680g	680g	680g
Warranty	Two years	Two years	Two years	Two years

CHARGE EQUALISERS.



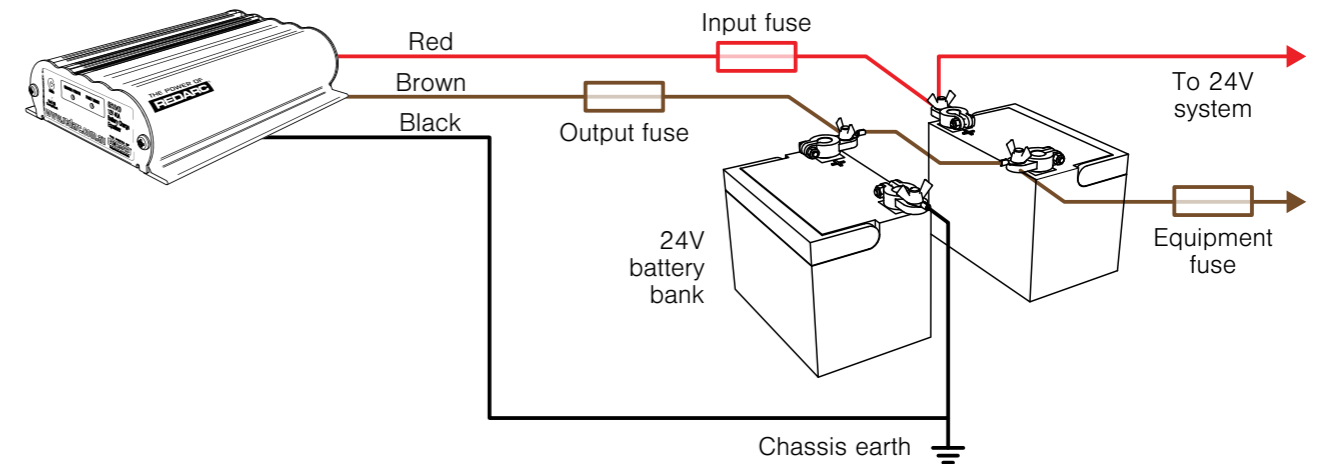
HIGH CURRENT 12V FROM A 24V SYSTEM.

REDARC's Charge Equalisers allow 12V to be 'tapped' from the centre of a series-connected, two battery, 24V DC electrical system, while still ensuring an equal charge across the two batteries. Thanks to their high peak current capability and fast transient response, REDARC Charge Equalisers are ideally suited to loads requiring a safe, clean and stable 12V supply.

Designed to manage a high current 12V supply in a 24V vehicle, charge equalisers draw power from a battery allowing for a much larger peak current draw. REDARC's Charge Equalisers are available in 10, 25 and 40A models.



TYPICAL CHARGE EQUALISER INSTALLATION.



FEATURES:

- Based on the award-winning BCDC platform (CE25 and CE40S2 only)
- High peak current capability
- Fast transient response
- Sealed and suited for commercial applications (CE25 and CE40S2 only)
- Fully encapsulated (3 and 10A only)

APPLICATIONS:

- Perfect for when space or cost prohibits the installation of a separate 12V battery in a heavy vehicle
- Keeps 24V batteries equally charged
- Reduces down time and running costs by extending battery life



	CE10	CE25	CE40S2
Output current	10A	25A	40A
Input voltage range	19 - 33V	20 - 32V	20 - 32V
Output voltage range	9.5 - 16.5V	6 - 16V	6 - 16V
No load current	N/A	<100mA	<100mA
Standby current	35mA	<10mA	<10mA
Input fuse rating (24V)	15A	40A	50A
Output fuse rating	15A	40A	50A
Operating temperature	-10° to 50°C	-20° to +80°C	-20° to +80°C
Standards		CE, C-Tick, AS/NZS CISPR11:2004	CE, C-Tick, AS/NZS CISPR11:2004
Dimensions	156 x 135 x 75mm	150 x 120 x 37mm	150 x 120 x 37mm
Weight	800g	680g	680g
Warranty	Two years	Two years	Two years



GALVANIC ISOLATED DC TO DC CONVERTER.



PROTECT YOUR ELECTRONIC SYSTEMS.

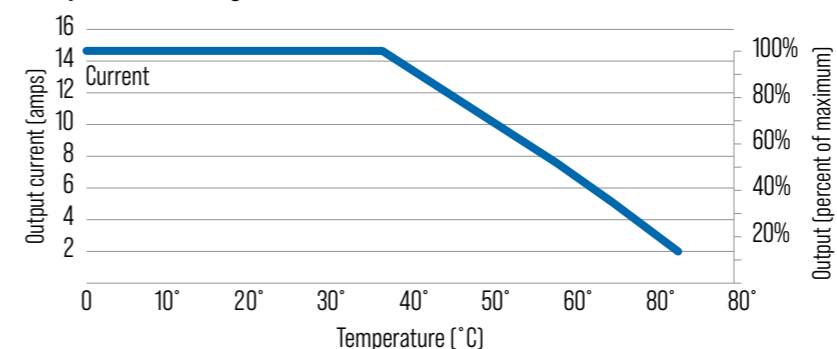
The Galvanic Isolated DC to DC Converter ensures operators avoid damaged or destroyed onboard electronic systems by interfacing its circuit's high-voltage components with low voltage.

The efficient onboard systems manage the power supply to a number of loads that are powered inside the dozer. Even if the voltage drops, typically during cranking, the Galvanic Isolated DC to DC Converter will continue to ensure there is power supply to sensitive electronic equipment.

Designed for a quick and easy installation, this Galvanic Isolated DC to DC Converter helps operators avoid damaged or destroyed onboard electronic systems by interfacing its circuit's high-voltage components with low-voltage. Ideal for mining, industrial and automotive applications, the Galvanic Isolated Power Supply has an earth for the input and a separate earth for the output to comply with any above ground circuits used on the battery side of the isolation switch.

The benefits of galvanic isolation come into play in underground and coal mining environments, where a machine or vehicle cannot go to ground. If a collision were to occur, a spark could cause a fire and catastrophe.

Temperature derating



FEATURES:

- Ultra-wide, 9 to 32V input
- Acts as a voltage reducer or voltage stabiliser
- Regulated 13.8V output
- 200W power capacity, providing additional power if devices have higher current demand or have sufficient cooling
- Step-up and step-down to maintain stable output efficiently
- Output is fully isolated from input

APPLICATIONS:

- Ideal for mining, industrial and automotive applications
- Avoid damaged or destroyed on-board electronic systems
- Ensure there is power supply to sensitive electronic equipment, even if the voltage drops

WHY GALVANIC?

Galvanic isolation isolates functional sections of electrical systems to prevent current flow. Whilst no direct conduction path is permitted, energy or information can still be exchanged between the sections.

Galvanic isolation is used where two or more electric circuits must communicate, but their grounds may be at different potentials.

It is a method of breaking ground loops by preventing current flowing between units sharing a ground conductor.

Most importantly, galvanic isolation is used for safety.

The benefits of galvanic isolation come into play in underground and coal mining environments, where a machine or vehicle cannot go to ground. If a collision were to occur, a spark could cause a fire catastrophe.



HML1018

Supply voltage	9 - 32V
Output current	33.5A max current in 200mA quiescent current
Output voltage	13.8V
Environmental	-40° to 85°C
Dimensions	110 x 170 x 55mm
Weight	1.2kg



MONITOR.



MONITOR.

Track your vehicle equipment's vitals at any given moment with the REDARC and Hummingbird's wide and varied range of monitoring devices.

This extensive range of monitoring products will ensure that you, or your operator, know when danger is coming, helping avoid the avoidable.

Whether you're on the road, or on the job, you need to know that your vehicle is operating safely. Ensure you know exactly how your vehicle is doing at any given moment, and avoid a run-down engine, a runaway truck, or tipping your digger.

Monitor what matters with REDARC and Hummingbird's range of monitoring products, including battery monitors, gauges, cabin pressure monitors, inclinometers, RF wireless monitors and much more.

52MM GAUGES.



MONITOR WHAT MATTERS.

REDARC gauges monitor vehicle health like battery voltage, current draw, exhaust gas temperature (EGT), manifold boost and vacuum pressure, oil pressure and a range of temperatures - outside, cabin, oil, water, coolant and fridge temperatures. This extensive range of LCD/LED gauges combine dual or triple functions in the one 52mm gauge.



VOLTAGE GAUGES.

Monitors the charging performance of main and/or auxiliary battery. Ideal for battery systems installed in 4WDs, campers, caravans, motorhomes.

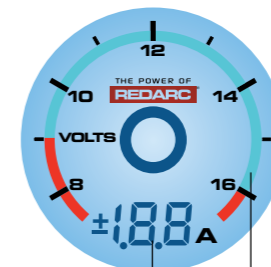
G52-VA.

Measures one voltage level. The voltage is indicated on a 270° sweep gauge indicating between 7.5 and 16.5V.

G52-VVA.

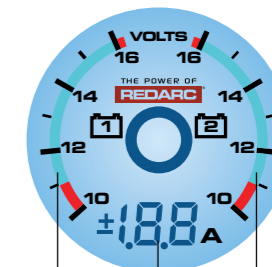
Measures the voltage levels of two 12V batteries. Each battery voltage is indicated on a 120° sweep gauge indicating between 10 and 16V.

SINGLE VOLTAGE. G52-VA



Optional digital current meter ±100A
Voltage gauge 270° sweep 7.5 to 16.5V

DUAL VOLTAGE. G52-VVA



Battery 1 120° sweep 10 to 16V
Optional digital current meter ±100A
Battery 2 120° sweep 10 to 16V

TEMPERATURE GAUGES.

Monitors your engine's oil and/or water (coolant) temperature. Used for monitoring engine oil and/or water (coolant) temperature.

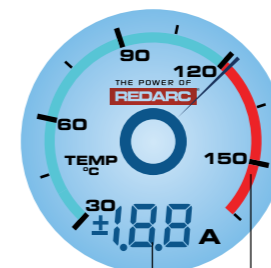
G52-TA.

Measures from 30° to 160°C and is equipped with an optional ±100A rated current display that monitors the amount of current to or from a battery.

G52-TTT.

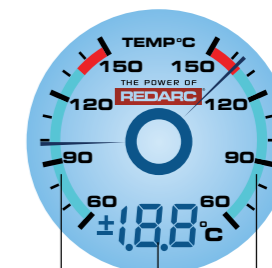
Measures from 60° to 150°C. The G52-TTT gauge also supports one of four optional temperature sensors.

SINGLE TEMPERATURE. G52-TA



Optional digital current meter ±100A
Temp gauge 120° sweep 60 to 150°C

DUAL TEMPERATURE. G52-TTT



Temp gauge 120° sweep 60 to 150°C
Optional digital temp reading -20 to +170°C
Temp gauge 120° sweep 60 to 150°C

FEATURES:

- Programmable alert levels (except voltage gauges)
- LCD/LED screen
- Satin chrome bezel
- 13 selectable colours
- Relay output and peak hold functions (except voltage gauges)
- Display illuminates when park lights are turned on

APPLICATIONS:

- Monitor key vehicle functions
- Avoid breakdowns and equipment failures
- Save space on busy dashboard
- Know potential issues before catastrophe strikes



EGT AND BOOST PRESSURE GAUGES.

A must-have for turbocharged diesel vehicles, these gauges are used to monitor the exhaust gas temperature (EGT) of turbo-equipped vehicles through a supplied a pyrometer probe.

G52-EB.

Measures exhaust gas temperature which is shown on a 270° sweep gauge indicating between 0° and 1000°C.

G52-BET.

Measures boost pressure between 0 and 35PSI and exhaust gas temperature between 300° and 750°C.

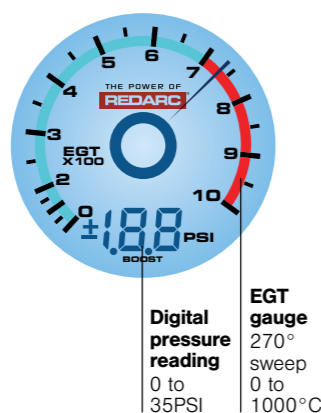
G52-BEA.

Measures boost pressure between 0 and 35PSI and exhaust gas temperature between 300° and 750°C.

G52-BEP.

Measures boost pressure between 0 and 35PSI and exhaust gas temperature between 300° and 750°C.

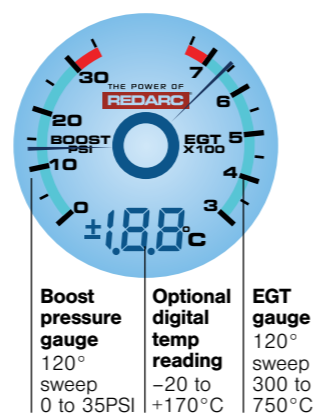
BOOST PRESSURE.
G52-EB



Digital pressure reading
0 to 35PSI

EGT gauge
270° sweep
0 to 1000°C

EGT & BOOST PRESSURE WITH OPTIONAL TEMPERATURE.
G52-BET

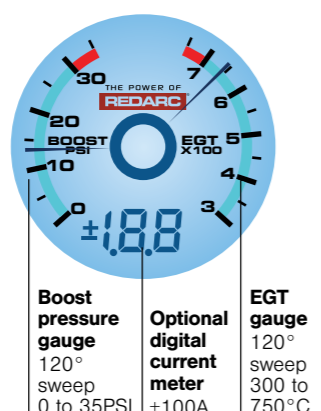


Boost pressure gauge
120° sweep
0 to 35PSI

Optional digital temp reading
-20 to +170°C

EGT gauge
120° sweep
300 to 750°C

EGT & BOOST PRESSURE WITH OPTIONAL CURRENT.
G52-BEA

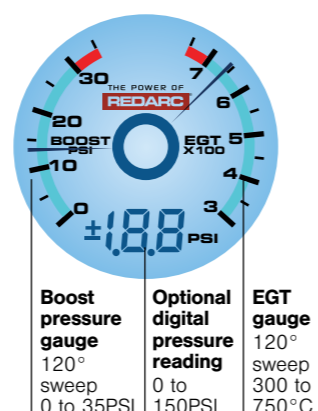


Boost pressure gauge
120° sweep
0 to 35PSI

Optional digital current meter
±100A

EGT gauge
120° sweep
300 to 750°C

EGT & BOOST PRESSURE WITH OPTIONAL OIL PRESSURE.
G52-BEP



Boost pressure gauge
120° sweep
0 to 35PSI

Optional digital pressure reading
0 to 150PSI

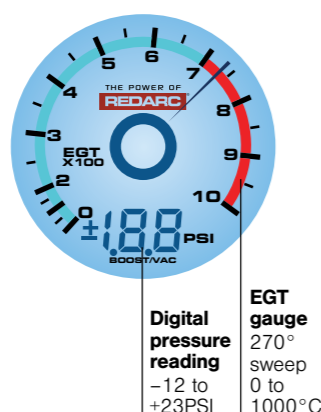
EGT gauge
120° sweep
300 to 750°C

EGT AND BOOST/VACUUM GAUGE.

G52-EU.

Shows the amount of boost or vacuum present in the intake manifold.

EGT & BOOST/VACUUM.
G52-EU



Digital pressure reading
-12 to +23PSI

EGT gauge
270° sweep
0 to 1000°C

OIL PRESSURE GAUGES.

Used for monitoring engine oil pressure, all gauges are supplied with one REDARC 1/8" NPT thread oil pressure sensor able to read up to 150PSI, depending on the model.

G52-PT.

G52-PT is an oil pressure gauge that displays from 0 to 130PSI.

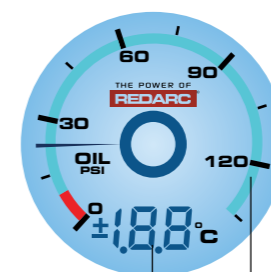
G52-PWT.

Measures oil pressure and water temperature. The oil pressure and temperature are indicated on a 120° sweep gauges indicating between 0 and 80PSI and 30° and 120°C.

G52-POT.

Oil pressure gauge that displays pressure from 0 to 80PSI and oil temperature. It is supplied with a 1/4" NPT thread oil temperature sensor that displays temperatures from 60° to 150°C.

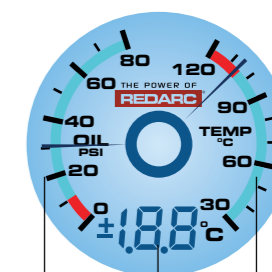
SINGLE OIL PRESSURE.
G52-PT



Optional digital temp reading
-20 to +170°C

Oil pressure gauge
270° sweep
0 to 130PSI

OIL PRESSURE AND WATER TEMPERATURE.
G52-PWT

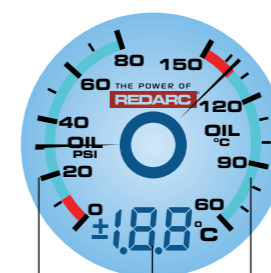


Oil pressure gauge
120° sweep
0 to 80PSI

Optional digital temp reading
-20 to +170°C

Water temp gauge
120° sweep
30 to 120°C

OIL PRESSURE AND OIL TEMPERATURE.
G52-POT

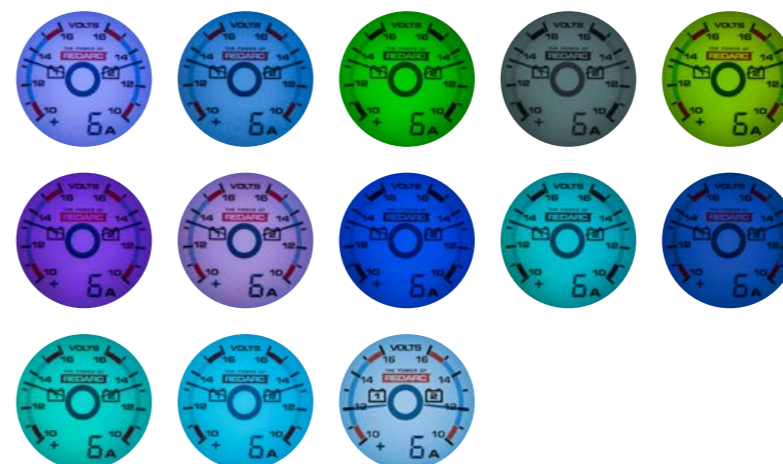


Oil pressure gauge
120° sweep
0 to 80PSI

Optional digital temp reading
-20 to +170°C

Oil temp gauge
120° sweep
60 to 150°C

THIRTEEN SELECTABLE BACKLIGHT COLOURS.



TWO PROGRAMMABLE ALERT BACKLIGHT COLOURS WITH AUDIBLE BEEP.



GAUGE SENSORS.

WATER & OIL TEMPERATURE SENSOR – 1/8" NPT SENSOR. GS-DWT1-8



An oil and water/coolant temperature sensor with a 1/8" NPT thread, designed to measure from -20° to 170°C.

Compatible with G52-BET, G52-POT, G52-PWT, G52-PT and G52-TTT.

WATER & OIL TEMPERATURE SENSOR – 1/4" NPT SENSOR. GS-DWT1-4



An oil and water/coolant temperature sensor with a 1/4" NPT thread, designed to measure from -20° to 170°C.

Compatible with G52-BET, G52-POT, G52-PWT, G52-PT and G52-TTT.

NTC ABS PLASTIC TEMPERATURE SENSOR – 20° TO 80°C. GS-UT-80



A NTC temperature sensor encased in a plastic housing for measuring cabin, fridge or ambient temperature within the following range -20° to 80°C.

Compatible with G52-BET, G52-POT, G52-PWT, G52-PT and G52-TTT.

NTC COPPER TEMPERATURE SENSOR – 20° TO 120°C. GS-UT-120



A NTC temperature sensor in a metal copper housing with 6mm diameter mounting hole, temperature range is -20° to 120°C.

Compatible with G52-BET, G52-POT, G52-PWT, G52-PT and G52-TTT.

OIL PRESSURE SENSOR 150PSI – 1/8" NPT THREAD. GS-P-150



A 150PSI oil pressure sensor with a 1/8" NPT thread.

Compatible with G52-BEP.

HALL EFFECT CURRENT SENSOR. GS-AMPS



Cable-mounted current sensor rated up to 100A.

Compatible with G52-VVA, G52-VA, G52-BEA and G52-TA.

EGT SENSOR KIT. SENSOR05



A replacement 1/8" NPT EGT Sensor Kit for use with REDARC's range of boost gauges.

Compatible with G52-EB, G52-BET, G52-BEP, G52-BEA and G52-EU.

1/4 INCH NPT THREAD EGT PROBE COMPRESSION FITTING WITH WELD IN BUNG. GA-COMP1-4

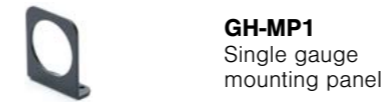


The GA-COMP1-4 replaces the 1/8" NPT compression fitting on the EGT probe supplied with REDARC's G52-EB, G52-EU, G52-BET, G52-BEP and G52-BEA gauges.

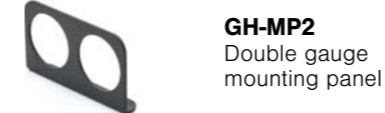
GAUGE ACCESSORIES.

GAUGE MOUNTS.

REDARC Gauge Mounts are designed to hold REDARC gauges in a variety of different positions and angles.



GH-MP1
Single gauge mounting panel



GH-MP2
Double gauge mounting panel



GH-MP3
Triple gauge mounting panel



GH-RI05
Gauge holder, suitable for Toyota Hilux radio inserts, left and right side



GH-CUP
Mounting cup

MUFFLER CLAMPS.

The REDARC range of muffler clamps are designed to mount REDARC EGT probes without welding, and come in four sizes.



GMC-2.5
2.5" muffler clamp



GMC-3.25
3.25" muffler clamp



GMC-4.2
4.2" muffler clamp



GMC-5.5
5.5" muffler clamp

ENHANCED LIGHTING CONTROLLER. GA-ELC



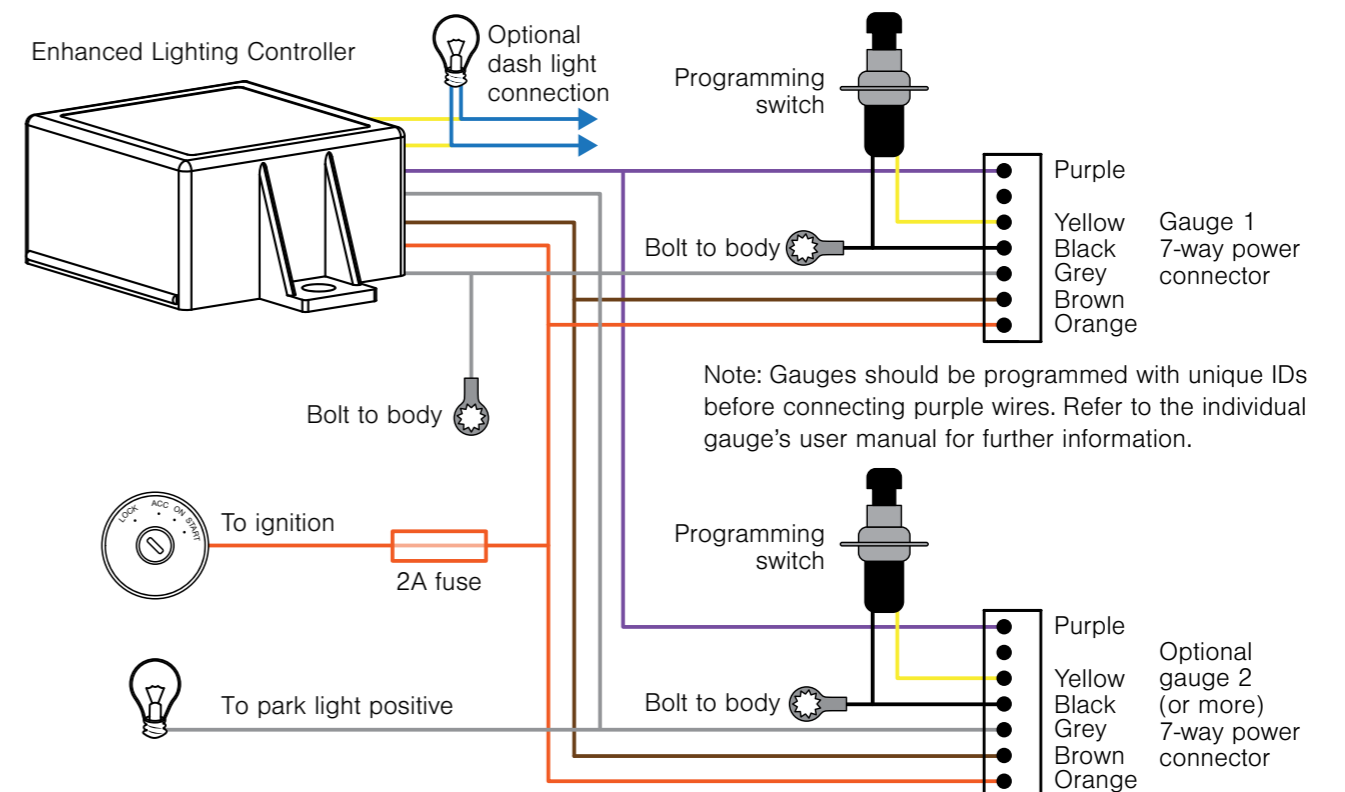
Allows you to program night-time brightness, dimming and colour of REDARC gauges.

24V TO 12V SINGLE GAUGE ADAPTOR. GA-2412V



Designed to connect a gauge to a vehicle with a 24V ignition and lighting supply.

TYPICAL ELC INSTALLATION.



RF BATTERY MONITOR KIT.



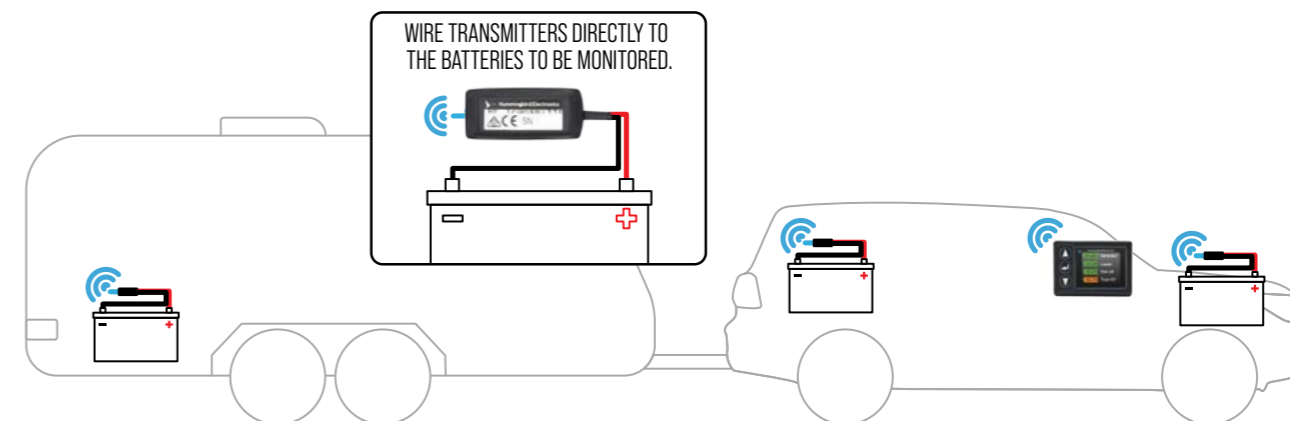
MONITOR WHAT MATTERS.

Smart, powerful, and user-friendly. Avoid downtime, monitor ancillary equipment and extend the life of your batteries with the Hummingbird RF Battery Monitor. This plug-and-play DC Battery Monitor allows you to wirelessly monitor up to 16 batteries in your car, caravan, 4WD, truck, boat heavy machinery and more.

The ultra-low power transmitters can be left permanently connected to batteries, and the display clearly illustrates the voltage levels of each connected battery. When outside the set range will change colour to provide a simple visual and audio alert. The battery monitor is perfect for monitoring large fleets, but just as suitable for single applications.



TYPICAL RF BATTERY MONITOR INSTALLATION.



RF BATTERY MONITOR ACCESSORIES.

RF BATTERY MONITOR RECEIVER DISPLAY. HMRF0200B



An optional extra or replacement colour display for the RF Battery Monitor.

RF BATTERY MONITOR TRANSMITTER. HMRF0020



An optional extra or replacement transmitter for the RF Battery Monitor.

WINDSCREEN MOUNT. HMRM0010



Suitable for RF, SA and DS compact screens.

BRACKET DASH MOUNT. HMRM0020



Suitable for RF, SA and DS compact screens.



HMRF2000B

DC input voltage range	11 - 36V
Current draw - screen	10mA @ 12V - 7mA @ 24V
Current draw - transmitter	Typically 0.5mA
Resolution	100mV
RF frequency	433MHz
Acquisition time - power up	30 seconds
Range	100m (line of sight)
Operating temperature	-20° to 55°C - 95% relative humidity
Mounting method	Windscreen suction or camera mount
Dimensions - screen	70 x 50 x 18mm
Weight	160g
Warranty	Two years

FEATURES:

- Monitor up to 16 batteries
- Uses RF technology to transmit voltages
- Buzzer and colour change for user-adjustable under or over voltage limits
- Multi-voltage – simply plug into your cigarette lighter socket
- Precision 100mV measurement
- Ultra-low power transmitter can remain connected to batteries
- Customisable battery names
- Comes with one transmitter

APPLICATIONS:

- Perfect for 'drive-by' battery monitoring for fleets
- Monitor multiple onboard batteries on a 4WD, caravan, camper, boat or RV
- Avoid breakdowns and flat batteries
- With no wiring needed, it's the perfect plug and play solution for battery monitoring

LOW COOLANT ALARM.



KEEP YOUR COOL.

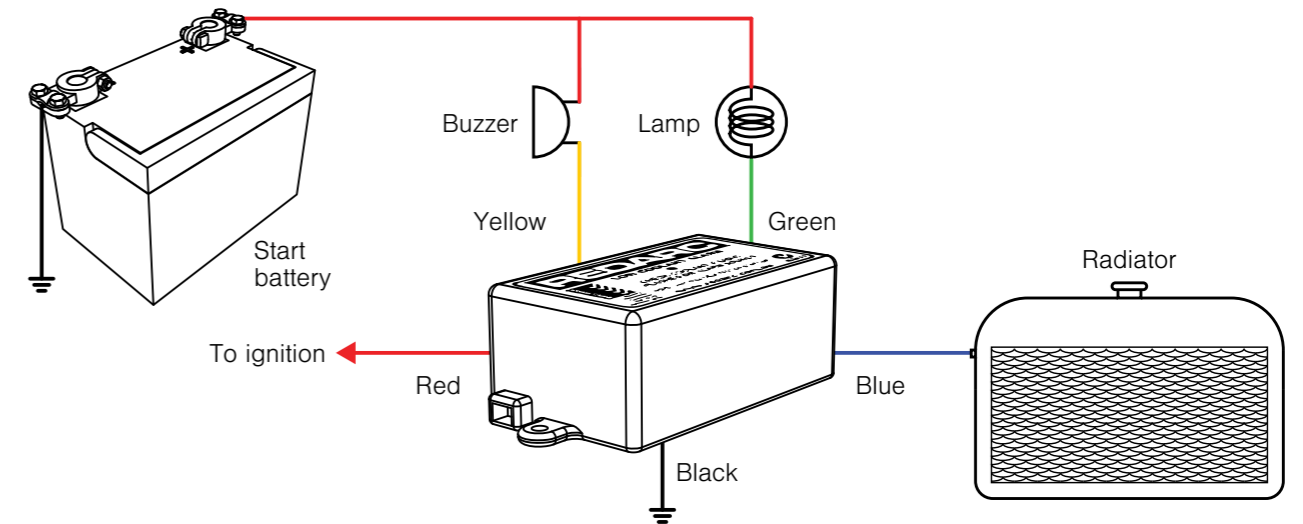
The LCA1224 low coolant alarm is used to monitor radiator coolant level in a 12 or 24V automotive system or remote water pumping system. It will provide a visual and audible alarm if the coolant falls below the chosen level.

It will give warning of a sudden loss of coolant (from a burst radiator hose, for example) alerting you to switch off the engine, preventing any damage due to overheating.

The LCA1224 features an anti-slosh delay, which means that the alarm won't sound every time you turn a corner. The LCA1224 has external lamp and buzzer outputs, if more powerful or more convenient indication is required.



TYPICAL LCA1224 INSTALLATION.



LCA SPARE PARTS.

REPLACEMENT PROBE KIT. LCAPROB



Replacement probe kit for REDARC's Low Coolant Alarm.

LCA ACCESSORIES.

COMBINATION WARNING LED AND BUZZER 12V/24V. HMAC001-12/HMAC001-24



A LED and buzzer pulse for maximum impact, available in 12 or 24V models.

FEATURES:

- AC sensing to avoid corrosion
- Warning buzzer alert if the sense wire is broken
- Built-in anti-slosh delay
- Output for external alarm and/or indicator
- Comes with LCAPROB
- Suitable for 12 and 24V vehicles

APPLICATIONS:

- Perfect for 4WDs, RVs, heavy vehicles, and mining and industrial vehicles
- Cost-effective protection against damage due to coolant loss
- Know about faults before damage occurs
- A more reliable system than a vehicle's temperature gauge when sudden coolant loss occurs



LCA1224

DC input voltage range	11 - 32V
Current draw (alarm off)	<2mA
Current draw (alarm on)	Approx 15mA
Internal audible warning	Piezo buzzer
Internal visual warning	Red LED
Output to external relay	Ground, 0.5A max
Dimensions	65 x 40 x 25mm
Weight	65g
Warranty	Two years

HAND BRAKE ALARM.



PREVENT VEHICLE RUNAWAYS.

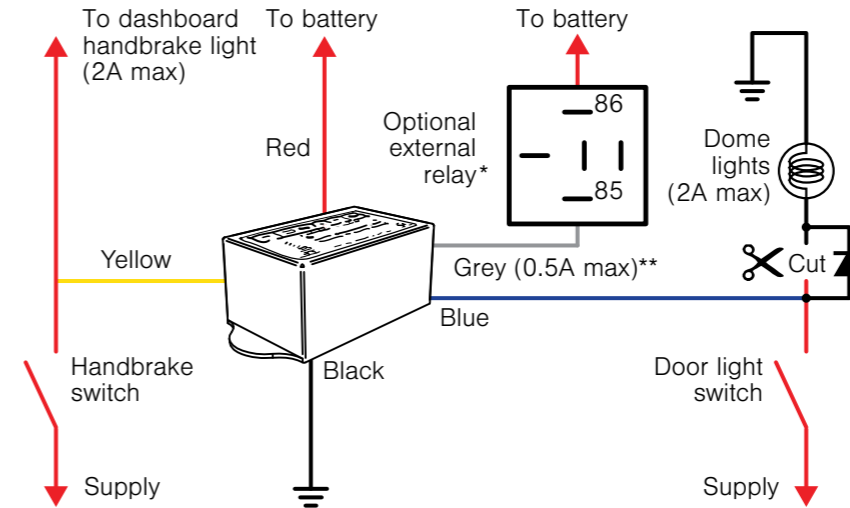
The REDARC Hand Brake Alarm monitors the hand brake and door switch to provide audible and visual warning if the door is opened while the hand brake is not applied.

Designed to limit the possibilities of runaway vehicles, the HBA has a built in LED warning light and piezo buzzer. It can also be used to trigger an external LED, lamp or alarm.

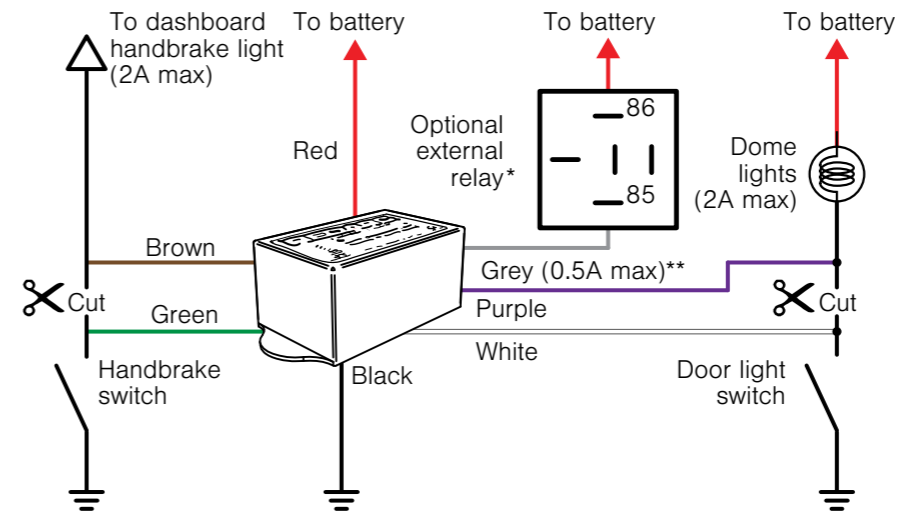
Available in two models, the HBA1224 features a fly lead, while the HBA1224-003 features a male connector lead for a faster, simpler installation.



TYPICAL HBA INSTALLATION - POSITIVE DOOR AND HAND BRAKE SWITCHES.



TYPICAL HBA INSTALLATION - NEGATIVE DOOR AND HAND BRAKE SWITCHES.



HBA1224



HBA1224-003

	HBA1224	HBA1224-003
DC input voltage range	11 - 32V	11 - 32V
Current draw (alarm off)	<1mA (red wire)	<1mA (red wire)
Current draw (alarm on)	Approx 30mA (red wire)	Approx 30mA (red wire)
Internal audible warning	Piezo buzzer	Piezo buzzer
Internal visual warning	Red LED	Red LED
Output to external relay	Ground, 0.5A max (grey wire)	Ground, 0.5A max (grey wire)
Termination	Bare wires	Male connector
Dimensions	50 x 30 x 25mm	50 x 30 x 25mm
Weight	<40g	<40g
Warranty	Two years	Two years

HBA ACCESSORIES.

MATING CONNECTOR TO SUIT HAND BRAKE ALARM.

HBAKIT-001



Corresponding mating connector kit to suit REDARC's Hand Brake Alarm (HBA1224-003).

* If relays are connected to HBA inputs or outputs they must have diode suppressed coils.

** The grey wire is capable of 0.5A maximum. For loads larger than 0.5A, this wire should be used to power a suitably rated diode suppressed external relay.

FEATURES:

- Built-in LED warning light and internal piezo buzzer plus external output
- Designed for universal fitment
- Output latches on once triggered
- Can be used in various other installations (e.g. headlight alarm)
- Available in three variants - fly leads, connectorised and connectorised with connector kit
- Suitable for 12 and 24V vehicles

APPLICATIONS:

- Perfect system to warn against forgetting to apply the hand brake, especially for heavy vehicles
- Features LED warning light, perfect for noising mining sites
- Helps comply with mandatory health and safety regulations on many mining site vehicles
- Prevention against the risk of avoidable damage to other vehicles and people



ROLL OVER SENSOR.



ROS
by REDARC



THE BENCHMARK IN HEAVY VEHICLE SAFETY.

The Roll Over Sensor triggers the Battery Master Isolation Switch (see page 102) in the event of a vehicle rollover, enabling trucks to meet the legal requirement of roll over sensing (AS2809:2008). The ROS signals the isolation switch to disconnect power to the trucks system, representing a significant improvement over existing roll over switches in the market. It is suitable for 12 or 24V systems.

DISCONNECTS THE ELECTRICS.

The ROS automatically shuts down the engine and all electrics when an angle of more than 45° is reached and reduces frustrating false triggers from wiring faults through the system's dual fault protection

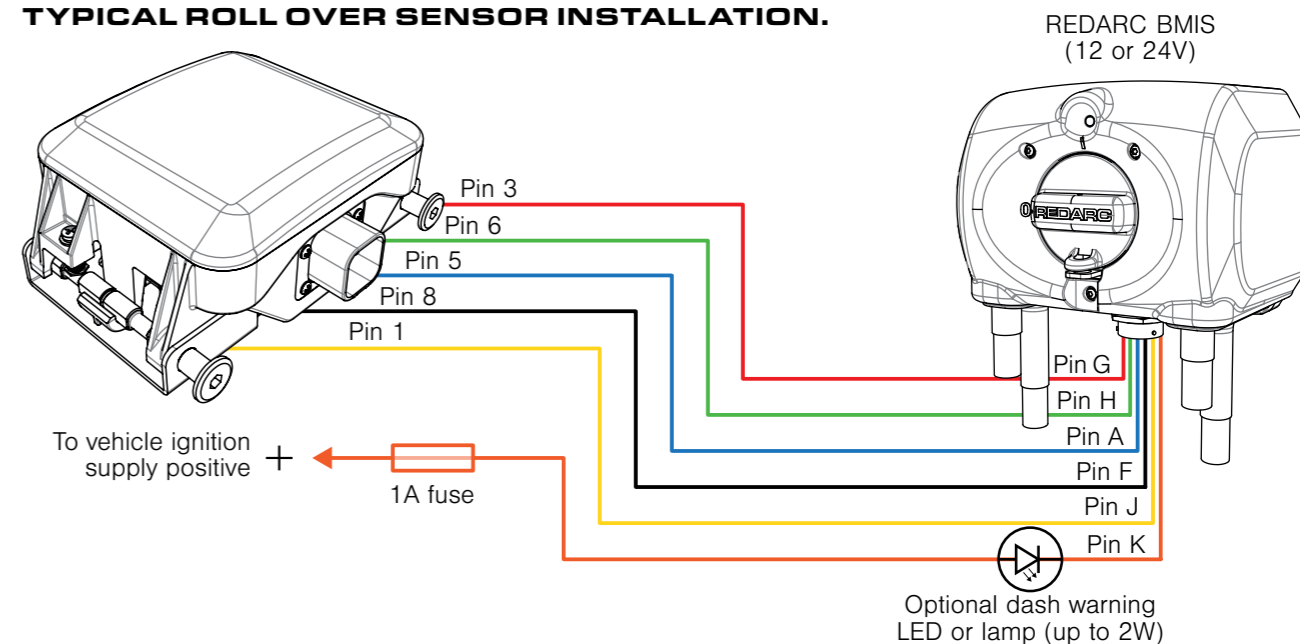
MULTI-AXIS DUAL ACCELEROMETERS.

The unit features multi-axis dual accelerometers that provide multiple detections and will isolate in line with the three second window required by Australian standards.

BUILT TOUGH FOR TOUGH ENVIRONMENTS.

The REDARC Roll Over Sensor is designed, manufactured and tested in Australia to withstand the harsh environments that are experienced day after day by the transport industry.

TYPICAL ROLL OVER SENSOR INSTALLATION.



WORKS WELL WITH...



BATTERY MASTER ISOLATION SWITCHES.

SMIS4PPV2KIT & SMIS4PNV2KIT

The ROS can be used in unison with the Battery Master Isolation Switches to enable heavy-duty vehicles to meet AS2809 roll-over sensing requirements, automatically shut down the vehicle's engine and all electrics if a dangerous angle of more than 45 degrees is reached.

For more information, see page 102.



ROS1224

Input voltage	9 - 32V (12 or 24V systems)
Current draw (into VIN+)	16mA (typical)
Ambient temperature	-40° to 85°C
Ambient humidity	0% - 100%
Switching point	45 - 64°, 55° (typical)
Timing	>2 seconds (3 seconds maximum)
Output trigger	3x 40 millisecond ground pulses at 0.5 second intervals
Reverse polarity protection	Yes
Dash warning LED lamp	12V LED suitable
Environmental protection	IP66/IP67/IP69K
Dimensions	150 x 122 x 65mm
Weight	700g
Warranty	Two years

FEATURES:

- Uses dual accelerometers for automotive safety applications, giving high accuracy, reliability and ability to detect fault conditions
- Immune to vibration, bump, shock, turning or electrical transients
- Built for high reliability using automotive grade parts, and redundant sensors and controllers
- Fault detection and indication LED on the unit and via an optional dash-mounted lamp
- Suitable for 12 and 24V vehicles

APPLICATIONS:

- Reduce testing time with easy periodic test by pin-removal and tilt mechanism
- Built tough for truck electrical environments
- Enables trucks to meet the legal requirement of roll over sensing
- A significant improvement over existing roll over switches on the market

SILENT HORNS.



SAFETY WITHOUT THE NOISE.

The Hummingbird Silent Horn is a replacement for noisy machine horns on site. Operators can alert other vehicles with a simple press of a button. Other drivers receive a visual and audio alert to identify which loader is contacting them; all without any external noise. Specific kits are available for diggers and trucks.



TYPICAL SILENT HORN INSTALLATION.



FEATURES:

- Reduces noise pollution while improving communications
- Utilises GPS and GLONASS satellite systems for improved positional accuracy
- Allocated RF transmission timeslot avoids radio interference
- Password protected
- Rugged and weatherproof
- Easy mounting with U-bolt supplied
- IO module available for expandable functionality
- Spare parts - HMSM0001D, HMSM0010, HMSM1010C and WIR577

SILENT HORN ELITE SYSTEM FOR TRUCKS.

HMSM2000KIT
When the loader/truck presses the horn switch, an RF message is sent to trucks and diggers in the area. If they are within a specified distance from the loader/truck and are part of that loader's circuit, a buzz in the display will sound and a red horn symbol will be displayed, along with the loader number.

Consists of two core components:

- Display
- Antenna

SILENT HORN ELITE SYSTEM FOR DIGGERS.

HMSM2000KIT
The IO module supplied with this product enables expandable functionality and the addition of external buzzers or beacons. It reads in any normally open switch contacts for the horn button. The display, antenna and IO module all communicate using proven RS485 comms, enabling simple wiring runs between modules.

Consists of three core components:

- Display
- Antenna
- IO module



HMSM2000KIT



HMSM2000KIT

	HMSM2000KIT	HMSM2000KIT
Description	The silent horn elite system for trucks	The silent horn elite system for diggers
Input voltage	9 - 36V	9 - 36V
IP rating	Antenna - equivalent to IP66	Antenna - equivalent to IP66
Horn range	Settable up to 150m	Settable up to 150m
RF frequency	433.92Mhz with digital modulation	433.92Mhz with digital modulation
Kit includes	Wiring loom for display with Deutsch plug for antenna	Wiring loom for display with Deutsch plug for antenna and IO module
Display dimensions	130 x 94 x 25mm	130 x 94 x 25mm
Display weight	495g	495g
Module weight	N/A	175g



AUDIO ALERT SYSTEM.



GET THE MESSAGE.

The 16 Channel Audio Alert System provides vehicle operators clear, precise and customised verbal alerts when an input trigger has been detected. Customised verbal alerts could include 'low oil pressure', 'high engine temperature', 'over speed detected' or 'please apply seatbelt'.

A CHOICE OF AUDIO OUTPUTS.

An in-built amplifier allows messages to be relayed (spoken) through an 8 ohm speaker. There is also an audio line-out that can be connected to an external amplifier or PA system.

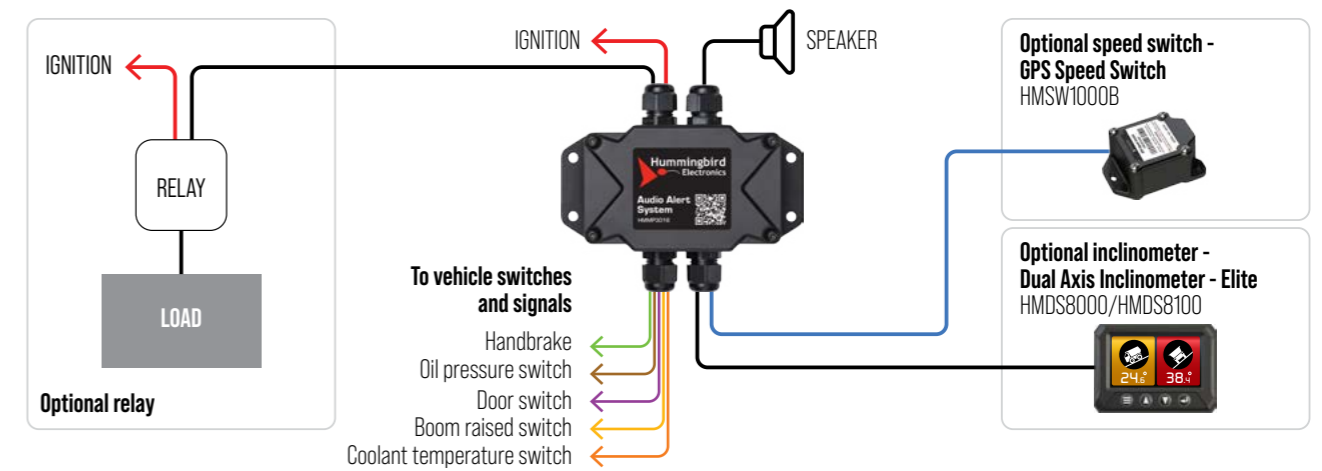
SUITABLE FOR 12 OR 24V VEHICLES.

The 16 Channel Audio System features a wide input voltage of 10 to 30V, enabling it to be used in 12 and 24V vehicles, making it perfect for cars, trucks, buses and other heavy vehicles and machinery.

CUSTOMISABLE CONFIGURATION.

The audio file-name provides customised configuration, including: CAN signals, positive or negative input triggers, how many times the message is repeated, message volume and a timed delay before triggering if required.

TYPICAL HMMP3016 INSTALLATION SAMPLE INPUTS.



FEATURES:

- SD card slot for simple loading of audio files (MP3, WAV, OGG, WMA)
- Built-in amplifier can directly drive an 8 ohm speaker plus line out for connection to an external amplifier or PA system
- Easy to configure programming
- Configurable volume and delay for each input channel
- Selectable long or short power-up delay
- Rugged sealed aluminium housing offering moisture and dust protection
- Four cable glands for entry of power, trigger inputs and speaker outputs



HMMP3016

Input voltage	10 - 30V
Supply current	Standby: 35mA @ 12V DV Playback: up to 2A depending on speaker and audio file A 5A fuse must be installed on positive supply
Inputs	12 individually-configurable, positive or negative digital J1939 CAN inputs 4 configurable negative digital inputs
Voltage on inputs	Minimum: 1V - maximum: 30V - must not exceed supply voltage
Cable glands	4 M16 x 1.5 glands included, to fit diameter 4-8mm speaker outputs 2 terminals for direct connection to a single 8 ohm speaker Delivers up to 10W output power
Line out	Three terminals for left, right and common line out
IP rating	IP65 equivalent when assembled correctly
Operating temperature	-10° to 70°C - 5% to 95% relative humidity
Dimensions	74 x 147 x 42mm excluding glands
Weight	311g
Warranty	Two years



INCLINOMETERS.



PREVENT ROLL OVERS AND KEEP YOUR OPERATORS SAFE.

Industrial, mining, civil, defence, transport and machinery hire industries continually strive to improve safety, not only for equipment operators, but also their machinery. The costs associated with near misses and reported events is huge in terms of time and money, as well as people's lives. Hummingbird's wide range of inclinometers provide highly visible pitch, roll and speed measurement display.

A WIDE RANGE OF SAFETY DEVICES.

Hummingbird Electronics offer a range of stability monitoring devices, including inclinometers and tilt switches, focused on improving the safety of mobile machines and their operators.

CONFIGURABLE TO MEET EVERY NEED.

Our digital and dual axis inclinometers and tilt sensors offers an unmatched WHS/OHS vehicle solution. They provide highly visible and configurable pitch and roll measurements and display them to operators.

BUILT TOUGH FOR TOUGH ENVIRONMENTS.

Like all Hummingbird products, our inclinometers, tilt switches and precision sensors are designed and manufactured in Australia to withstand the harsh environments experienced by the mining industry.

THE INCLINOMETER RANGE.

The extensive range of Hummingbird Inclinometers, tilt switches and sensors are designed and manufactured in Australia for to withstand the harsh environments of the mining industry. Regardless of which inclinometer you choose, you'll be assured you experienced an unmatched WHS or OHS vehicle solution.

DUAL AXIS INCLINOMETER RANGE.

Page 138



ACTIVE
HMDS2000



ELITE
HMDS8000/HMDS8100



COMPACT
HMDS0500

INTEGRATED SENSOR RANGE.

Page 142



COMPACT
HMDS0400



COMPACT BALL BANK
HMBS0400

TILT SENSORS.

Page 144



1 DEGREE
HMMS2M0000B



0.1 DEGREE
HMMS2M3000C



0.1 DEGREE - TCM OUTPUT
HMMS2CFG232-TMC

TILT SWITCHES.

Page 145



USB CONFIGURABLE
HMMS2CFG0



DUAL AXIS
HMMS2CFG10B

APPLICATIONS:

- Reduce machine downtime
- Improve machine and operator safety
- Reduce injury risk and meet safety compliance
- Perfect for construction, industrial, mining and farming machinery, as well as caravans, campers and 4WDs

WORKS WELL WITH...



AUDIO ALERT SYSTEM.

HMMP3016

Provides vehicle operators with clear and precise verbal alerts when an input trigger has been detected, for example "Warning, dangerous vehicle angle".

It can provide a verbal announcement for a range of customised alerts relating to pitch and roll warnings.



COMBINATION WARNING LED AND BUZZER.

HMAC001-12 (12V) - HMAC001-24 (24V)

Used as an alarm or indicator in automotive applications. When a DC voltage is applied, the LED and buzzer pulse for maximum impact.



DUAL AXIS INCLINOMETER RANGE.



REDUCE THE RISK OF ROLL OVERS.

Hummingbird's range of dual axis inclinometers offer a range of stability monitoring devices to operators of heavy machinery that are vulnerable to rollovers pre-emptive warnings against rollover events. Designed with a focus on improving the safety of mobile machines, such as construction, water trucks and transport vehicles, these units provide highly visible and configurable pitch and roll measurements.



DUAL AXIS INCLINOMETER - ACTIVE. HMDS2000

Active Inclinometers provide visible pitch and configurable pitch and roll measurements that are displayed on the full colour display. There is an option for signals in the event of an alarm or warning condition.

FEATURES:

- High visibility colour display
- Warning and alarm outputs
- Dual axis remote MODBUS incline sensor
- Password protection
- Voltage range of 9 to 36V
- Includes target mode



DUAL AXIS INCLINOMETERS - ELITE. HMDS8000/HMDS8100

The Elite range provide a visible pitch and roll readout via their colour displays. In the event of an alert or warning the internal memory data logger will capture time, GPS location and speed of the event. They have multiple graphical display modes including degree, percentage and target modes. They are ideally suited to use in mining and civil engineering equipment.

FEATURES:

- Ability to monitor two independent sensors
- Two outputs to drive external alarms and for remote monitoring
- Remote MODBUS incline sensor included
- Sensor damping configurable
- 0.1° sensors available
- Password protected



DUAL AXIS INCLINOMETERS - COMPACT. HMDS0500/HMDS0400

Hummingbird's Compact Inclinometers are pocket-size units with full colour displays, suited to smaller construction and farming machinery. They feature pitch and roll readouts with configurable warning and alarm levels.

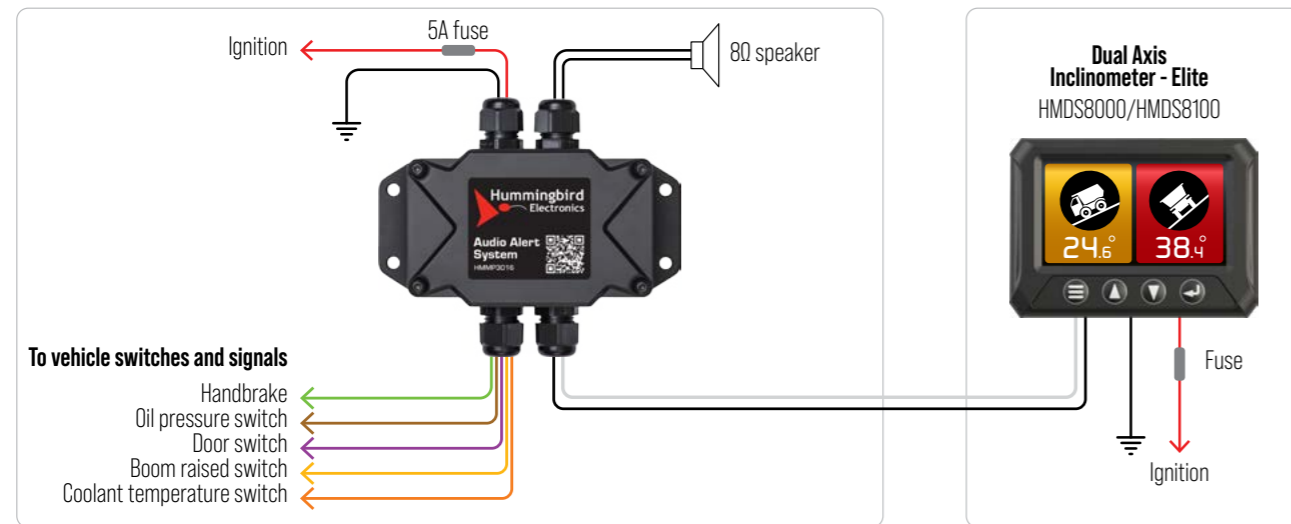
FEATURES:

- Remote MODBUS incline sensor included
- Sensor damping configurable
- Internal buzzer
- Password protection

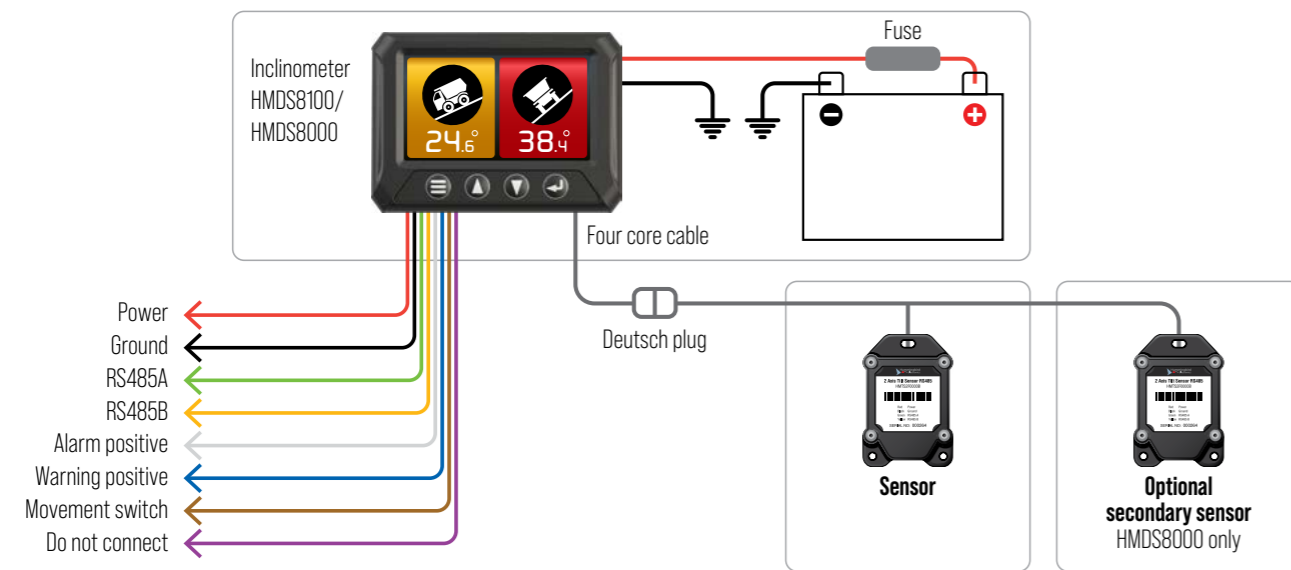


DUAL AXIS INCLINOMETERS.

TYPICAL AUDIO ALERT SYSTEM AND INCLINOMETER COMBINATION INSTALLATION.



TYPICAL INCLINOMETER INSTALLATION.



ADDITIONAL DISPLAY MODES.

In addition to basic degree and percent gradient display modes, Elite Inclinometers can display pitch and roll via vehicle pictograms for an intuitive view of the vehicle's angle.

They also feature a target display mode – commonly used in crane or drill rig applications.



1° SENSOR VERSUS A 0.1° SENSOR.

A 1° sensor is best suited when the machine is moving at speed.

In a static situation users should utilise a high precision 0.1° sensor.

	HMDS2000	HMDS8000/HMDS8100	HMDS0500
Input voltage	9 - 32V	9 - 32V	9 - 32V
Power consumption	<2W	<2W	<2W
Sensor resolution	1°	1°(HMDS8000) 0.1°(HMDS8100)	1°
Sensor accuracy	Accurate to 1° from 0-30° Accurate to 2° from 30-60°	Accurate to 0.10° from 0-30° Accurate to 0.25° from 30-60°	Accurate to 1° from 0-30° Accurate to 2° from 30-60°
Operating temperature	-20° to 70°C 5-95% relative humidity	-20° to 70°C 5-95% relative humidity	-20° to 70°C 5-95% relative humidity
Storage temperature	-30° to 80°C	-30° to 85°C	-30° to 80°C
Mounting system	1" RAM mount with diamond base	1" RAM mount with diamond base	0.5" RAM mount with diamond base
Dimensions - display unit	130 x 94 x 25mm	130 x 94 x 25mm	70 x 50 x 18mm
Dimensions - sensor	82 x 58 x 36mm	82 x 58 x 36mm	82 x 58 x 36mm
Sensor cable length	7 metres	7 metres	7 metres
Weight	175g	175g	100g
Compliance	CE EN303413 EN301489 FCC part 15B C-Tick ASNZS CISPR 32	CE EN303413 EN301489 FCC part 15B C-Tick ASNZS CISPR 32	
Warranty	Two years	Two years	Two years

INTEGRATED SENSOR RANGE.



INTEGRATED COMPACT INCLINOMETER.

HMDS0400

Flexible, and cost-effective, this unit can be plugged in via an accessory socket or hard wired. It features an integrated accelerometer in its compact colour display, so there is no need for an external tilt switch.

FEATURES:

- Configurable warning and alarm levels
- Full colour display
- Internal buzzer
- Password-protected menu
- Rugged mounting system
- Suitable for 12 and 24V vehicles



INTEGRATED BALL BANK.

HMBB0400

The HMBB0400 is a versatile ball banking system, used for determining safe curve speed.

It measures roll angles of up to 20° via an integrated accelerometer and clearly displays them on an integrated full colour screen.

FEATURES:

- Roll measurement
- Configurable warning and alarm levels
- Full colour display
- Sensor damping configurable
- Internal buzzer
- Rugged RAM mounting system

SAFETY MADE SIMPLE.

Hummingbird tilt switches measure pitch and roll angles with high accuracy using a three-axis accelerometer, switching one or two internal standard automotive relays with user-configurable angles for switching. These relays can be used in many ways, including to control warning devices or to trigger telematics systems.



HMDS0400



HMBB0400

Input voltage	9 - 32V	9 - 32V
Power consumption	<1W	<1W
Sensor resolution	1°	1°
Sensor accuracy	3°	3°
Update rate	10Hz	100Hz
Mounting system	Windshield mount	Windshield mount
Operating temperature	-40° to 85°C 5% to 95% relative humidity	-40° to 85°C 5% to 95% relative humidity
Storage temperature	-30° to 80°C	-30° to 80°C
Dimensions	70 x 50 x 18mm	70 x 50 x 18mm
Weight	100g	100g
Warranty	Two years	Two years



TILT SENSORS.



DUAL AXIS TILT SENSOR RS485 - 1 DEGREE PRECISION.

HMTS2M0000B

A 1° accurate sensor utilising MODBUS over RS485. Designed to be used with the HMDS0500, HMDS2000 and HMDS8000 inclinometers, it can also be used in any RS485 system.



DUAL AXIS TILT SENSOR MODBUS - 0.1 DEGREE PRECISION.

HMTS2M3000C

A 0.1° accurate sensor utilising MODBUS over RS485. Designed to be used with the HMDS2000 and HMDS8000 inclinometers, it can also be used in any RS485 system.



DUAL AXIS TILT SENSOR - TCM OUTPUT.

HMTS2CFG232-TCM

0.1° accurate sensor that transmits pitch and roll angles compatible with Trimble's TCM protocol.

FEATURES:

- Reverse-polarity protected
- Dual axis remote incline sensor
- Rugged aluminium enclosure
- Suitable for 12 and 24V vehicles

FEATURES:

- Reverse-polarity protected
- Dual axis remote incline sensor
- Rugged aluminium enclosure
- Suitable for 12 and 24V vehicles

FEATURES:

- Reverse-polarity protected
- Dual axis remote incline sensor
- Rugged aluminium enclosure
- Suitable for 12 and 24V vehicles



HMTS2M0000B



HMTS2M3000C



HMTS2CFG232-TCM

	HMTS2M0000B	HMTS2M3000C	HMTS2CFG232-TCM
Axes	Dual axis	Dual axis	Dual axis
Current (12V)	30mA	30mA	50mA
Response	10Hz	10Hz	0.01Hz - 10Hz
Accuracy -30° to 30° (25°C)	0.5°	0.1°	0.1°
Accuracy -30° to 30°	1°	0.1°	0.1°
Accuracy -60° to 60°	2°	0.25°	0.25°
Interface	MODBUS over RS485	MODBUS over RS485	RS232 (9600 baud, 8N1)
Inclinometer compatibility			
HMDS0500	Included	Limited	N/A
HMDS2000	Included	Compatible	N/A
HMDS2100	Compatible	Included	N/A
HMDS8000	Included	Compatible	N/A
HMDS8100	Compatible	Included	N/A
Dimensions	82 x 58 x 32.5mm	82 x 58 x 32.5mm	82 x 58 x 32.5mm
Warranty	Two years	Two years	Two years

TILT SWITCHES.



USB CONFIGURABLE TILT SWITCH.

HMTS2CFG0

The HMTS2CFG0 is an accurate tilt-switch with voltage outputs, typically used in automation systems where voltage output is required. It features an in-built USB interface and software that enables users to set various parameters associated with the tilt switch.

FEATURES:

- Accurate to 0.1 degrees for up to 30 degrees of tilt in any axis
- Manual calibration can be performed
- Two voltage outputs
- USB configurable angle and voltage outputs
- Reverse polarity protected
- Separate outputs for pitch and roll
- Rugged aluminium enclosure
- Suitable for 12 and 24V vehicles



DUAL AXIS TILT SWITCH.

HMTS2CFG10B

The HMTS2CFG10B is a simple to configure, flexible tilt switch that can be operated horizontally, vertically or upside down and can be configured for single or dual axis operation. The switch set point is also user configurable.

FEATURES:

- Relay output
- In system calibration
- Reverse polarity protected
- Rollover mode
- Configurable damping
- Suitable for 12 and 24V vehicles



HMTS2CFG0



HMTS2CFG10B

	HMTS2CFG0	HMTS2CFG10B
Axes	Dual axis	Configurable - dual or single axis; vertical or horizontal operation
Switch angle	-70° to 70°	0 to 64°
Current (12V)	30mA (100mA with relays on)	15mA (35mA with relay on)
Response	0.04Hz - 1Hz	0.03Hz - 0.3Hz
Accuracy -30° to 30° (25°C)	0.5°	0.5°
Accuracy -30° to 30°	1°	1°
Accuracy -60° to 60°	2°	2°
Interface	USB	N/A
Dimensions	82 x 58 x 32.5mm	82 x 58 x 36mm
Weight	253g	189g
Warranty	Two years	Two years

ISOLATION VERIFICATION CONTROL.



ISOLATE YOUR VEHICLE.

Create a safer work environment for your employees by verifying the true isolation state of a vehicle before any electrical work commences on it.

The Hummingbird Isolation Verification Control gives a visual readout of your vehicle's true isolation state before any electrical work commences, giving you peace of mind and keeping your employees safe.



TYPICAL HML1005 INSTALLATION.

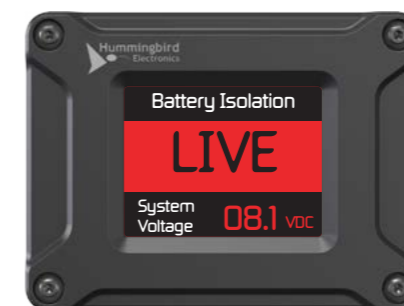


POWERFUL PERFORMANCE.

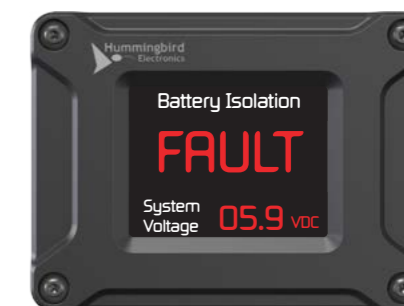
To capture isolator internal connection failures, this unit measures the difference between the isolator battery and machine side, and determines if there is a voltage drop. In the event the machine's isolator is turned off while the machine is running, the isolation control will measure the voltage drop between the battery and the machine to determine this occurrence, and will activate a warning led/alarm with a 20 second delay interlock relay. This will cut out either ignition or start solenoid depending on the customers' requirements.



SYSTEM IS SAFE.



BATTERY IS LIVE.



SYSTEM FAULT OCCURRED.

FEATURES:

- Dual pole isolation verification
- Output for remote isolation indicator
- Voltage status indication
- Over/under voltage warning and voltage control interlock
- Isolation voltage drop and open circuit protection
- Configure for starter motor or battery isolation
- Remote live testing with bonnet down
- Suitable for 12 and 24V vehicles

APPLICATIONS:

- Provides peace of mind with accurate monitoring
- Delivers a safer working environment for your employees
- Provides a visual readout, perfect for noisy work-sites
- Easy-to-read interface ensures there's no confusion in high risk situations



HML1005

Input voltage	9 - 32V
Dimensions	76 x 135 x 100mm
Weight	208g



CABIN PRESSURE MONITORS.



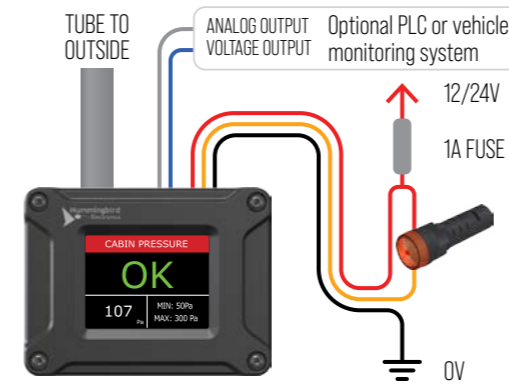
LOOK AFTER YOUR OPERATORS.

Hummingbird Cabin Pressure Monitors provide a visual display to operators, letting them know when positive pressure in the cabin is too low or too high. Low cabin pressure can result in dust and other harmful materials entering the cabin, and high cabin pressure can result in fatigue and headaches. The Cabin Pressure Monitor has been engineered for simple installation and operation.

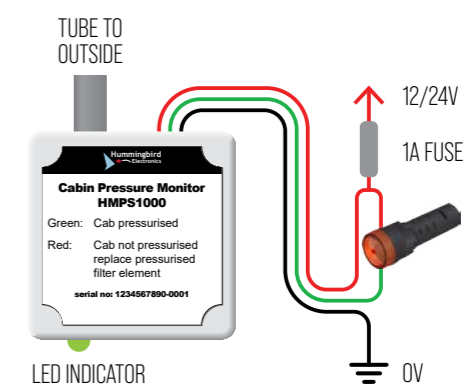
They measure pressure in the cabin and compare it with atmospheric pressure. When pressure in the cabin is outside the safe range – either high or low cabin air pressure – the operator is alerted via a change of colour on the unit or display. By ensuring positive pressure, operators and equipment will be protected from dust ingress.



TYPICAL HMP3000KIT INSTALLATION.



TYPICAL HMP1000BKIT INSTALLATION.



FEATURES:

- Visible touch-screen display
- Under and over-pressure warning
- Installer settable threshold
- Real-time pressure readout to a resolution of 0.1mm H₂O
- External output
- Suitable for 12 and 24V vehicles

APPLICATIONS:

- Keeps operators safe from dangerous dust and airborne contaminants by alerting them to unsafe cabin pressures
- Depending on the use case, the output triggers for external devices can be customised, e.g. for buzzers and lamps or the Audio Alert System
- Reduce machine downtime with less machinery damage from dust



HMP3000KIT



HMP1000BKIT

Description	HMP3000KIT	HMP1000BKIT
Description	Panel mount cabin air pressure monitor kit	Configurable cabin pressure monitor
Operating pressure range	0 - 500Pa (0 - 50mm H ₂ O)	0 - 500Pa (0 - 50mm H ₂ O)
Sensor resolution	1Pa (0.1mm H ₂ O)	1Pa (0.1mm H ₂ O)
Sensor burst pressure	5000Pa	5000Pa
Temperature range	-10° to 55°C	-40° to 85°C
Input voltage	9 - 36V	9 - 36V
Current consumption	Less than 2W (100mA at 12V, 50mA at 24V)	Less than 100mA
External output	Normally open collector, switches to ground if under or over pressure, 200mA limit	Normally high, low on alarm
Analog output	Range 0 - 10V, maximum 10mA output current	N/A
Voltage output	Low value 0V, High value 9V, maximum output current 10mA	N/A
Tube specification	N/A	3mm outside diameter, 1m length
Base plate	N/A	66mm
Dimensions	90 x 76 x 33mm	22 x 50 x 50mm
Panel cutout	77 x 57mm	77 x 57mm
Weight	220g	81g
Warranty	Two years	Two years



GPS TRIP METERS.



KNOW THE DISTANCE.

GPS Trip Meters improve safety and efficiency in road management tasks by accurately displaying distance travelled and speed. They are commonly used to locate areas that require minor or major road repair. They are ideal for council fleets, civil contractors or road authorities that need to measure road distances to accurately position road signs or marker cones.

PLUG AND PLAY FLEXIBILITY.

Hummingbird's GPS Trip Meters feature plug and play flexibility that allows them to be installed independently of the vehicle for a simple, calibration-free installation.

BUILT FOR THE TOUGHEST CONDITIONS.

Hummingbird GPS Trip Meters are designed and constructed in Australia to withstand the diverse and extreme environmental conditions of Australia's mining, civil and construction sites.

UNSURPASSED ACCURACY.

Three-dimensional distance measurements ensure accurate trip distance and speed measurements in places with variable topology, such as hilly areas.



GPS TRIP METER - ACTIVE. HMGT3000

The Active GPS Trip Meter features GPS and GLONASS for greater accuracy.

It is easy to operate and can display two independent trips simultaneously. It features a full colour touch screen that can be used to count up or down on different trips simultaneously and is able to be paused, stopped or can reset distances.

Current and average speed are displayed, and an over-speed alert can be configured to activate an internal buzzer. This buzzer can be configured to beep when the trips are in countdown mode.

FEATURES:

- Full colour touch-screen
- Ability to display two independent trips simultaneously.
- Up/down count, pause and reset directly from the touch-screen
- Current speed displayed
- Internal buzzer
- GPS & GLONASS
- USB and 12V accessory socket connections
- Password protected



GPS TRIP METER - ELITE. HMGT8000B

The GPS Trip Meter – Elite has the same functionality as the Active model but includes the ability to display up to eight trips simultaneously.

It can log events and locations of interest with date, time and GPS location.

This logged activity can be saved to its internal memory and extracted to Google Earth for further analysis.

Additional features include a ball bank indicator and internal roughness meter.

FEATURES:

- Includes a ball bank indicator and internal roughness meter
- Option to download all recorded information to a spreadsheet
- Full colour touch-screen with a full numeric keypad
- Up/down count, pause and reset from the touch-pad
- Ability to display up to eight independent trips simultaneously
- Password protected

APPLICATIONS:

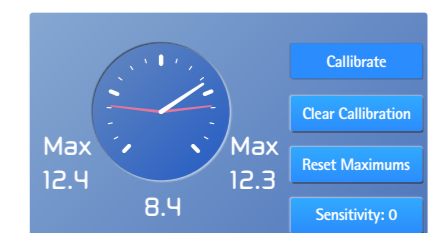
- Perfect to assist with log booking of fleet vehicles
- Ideal for council fleets, civil contractors or road authorities that need to measure road distances accurately
- Three-dimensional distance measurements make GPS Trip Meters ideal for places with variable topology (such as hilly areas)

KEEPING OPERATORS OFF THE ROAD.

Traditionally small-scale road measurements involve operators calculating distance through a surveyor's or 'click' wheel. Using a GPS Trip Meter operators can accurately record the distance for quoting contractors without having to leave the vehicle, ultimately minimising the risks associated with working on busy roads.

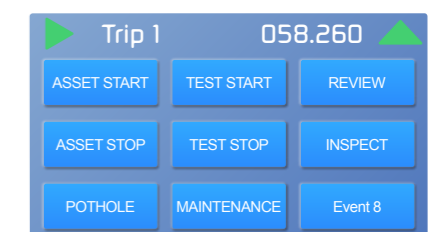
The display of multiple readings benefits users by providing an evaluation of a stretch of road and the distance that may require attention.

GPS Trip Meters can also be used for logbook purposes where the vehicle is not used for work purposes on a regular basis.



BALLBANK FUNCTION.

The digital ballbank provides a horizontal inclinometer reading to $\pm 20^\circ$ from level.



LOGGING DATA.

The unit logs position, speed and trip distance data automatically.



ANTENNAS.

GLONASS ANTENNAS.



BULKHEAD.
HMGA0B1SMAR

Bulkhead mount with 5 metre cable and SMA right angle connector.



STUBBY.
HMGA0S0SMA

An active helical GPS antenna terminated in an SMA male right angle connector.



MAGNETIC RIGHT ANGLE.
HMGA0M1SMAR

Magnetic mount with 5 metre cable and right angle SMA connector.



MAGNETIC.
HMGA0M1SMA

Magnetic mount with 5 metre cable and SMA connector.

GSM ANTENNAS.

GPS SATELLITE SIGNAL REPEATER AMPLIFIER.
HMGA1000A



A GPS signal repeater/amplifier suitable for applications where signal strength is low and it is difficult or impossible to deploy a standard external antenna.

GPS GSM COMBO ANTENNA.
HMGAGSMOSMA



A GPS signal repeater is used to replicate GPS signals in positions where GPS coverage is difficult to achieve.

DATA LOGGING.

The Elite model gives operators the ability to log automatic and user-defined events.

The unit automatically logs position, speed and trip distance.

User-defined and time travelled event logging allows customisation of up to nine events, for example to mark potholes, fallen trees and other points of interest.

These events can then be extracted in CSV format and viewed using mapping software such as Google Earth.



HMGT3000



HMGT8000B

Input voltage	4.4 - 32V, USB compliant	4.4 - 32V, USB compliant
Power consumption	1.4W; 120mA at 12V	1.4w; 120mA at 12V
GPS receiver	GPS/GLONASS/Gallileo/Beidou, 72 channel	GPS/GLONASS/Gallileo/Beidou, 72 channel
Position accuracy	2.5m CEP	2.5m CEP
Distance resolution	1 metre	1 metre
Distance update rate	10Hz	10Hz
Minimum speed	2km/h	2km/h
Satellite acquisition time	30 seconds	30 seconds
Ballbank(horizontal inclinometer) range	N/A	±20°
Mounting system	RAM mount suction system	RAM mount suction system
Operating temperature	-40° to 85°C	-40° to 85°C
Antenna cable length	5 metres	5 metres
Power & reset switch cable length	1.5 metres	1.5 metres
Dimensions (display unit)	130 x 94 x 25mm	130 x 94 x 25mm
Magnetic mount GPS antenna	40 x 15 x 49mm	40 x 15 x 49mm
Weight	175g	175g
Warranty	Two years	Two years



GPS TRAILER ODOMETER.



ENSURE YOUR CARAVAN IS GOING THE DISTANCE.

This Hummingbird GPS Trailer Odometer accurately measures the distance travelled by your caravan or trailer. Featuring customisable service intervals, this trip meter and odometer not only displays the distance travelled by the trailer on its colour screen, but it also allows the user to set a reminder at specified dates and/or distance travelled, to then notify the user when it is time for a trailer service.

EASY INSTALLATION.

Installation is a breeze with this digital odometer and trip meter, use an accessory socket or hard-wire it to the trailer and place the GPS bulkhead antenna with a line of sight to the sky.

STAY UP TO DATE WITH AUDIBLE WARNINGS.

An internal buzzer can be set to provide an audible warning of when a defined distance has been reached. There is also the ability to display a trip A or B, to record individual trips travelled.

NEVER MISS ANOTHER SERVICE.

Customisable intervals allow the user or service agent to set a specified date and/or distance travelled with a service reminder, to ensure routine trailer services are not missed.

EASY-TO-NAVIGATE MENU SYSTEM.



MULTIPLE MODES.

Resettable Trips A and B.



PASSWORD PROTECTED.

Preset maintenance schedule ensures services aren't missed.



SERVICE REMINDERS.

Displays the next service distance interval and date.

POWERFUL PERFORMANCE.

The GPS Trailer Odometer comes supplied with an easy-to-read colour screen which notifies the user when a service interval has been reached. It also comes with a standard GPS Bulk Head Antenna and Mounting Bolt.

Incorporating customisable service intervals allows the user or service agent to set a specified date for a reminder and/or a set distance travelled with adjustments in configurable increments. An internal buzzer can also be optioned providing an audible warning of when a defined distance has been reached. There is also the added ability of displaying a Trip A or B, enabling the user to record individual trips travelled.



HMOD1000

Input voltage	9 - 32V
USB power compliant	No
Power consumption	Maximum 1.2W (100mA @ 12V; 50mA @ 24V)
Distance update rate	10Hz
Minimum speed	3km/h
Satellite acquisition time	Less than 38 seconds 50% of the time Less than 42 seconds 90% of the time
Operating temperature	-40° to 85°C
Mounting system	Bolt and washer
Antenna cable length	5 metres
Dimensions (display unit)	70 x 50 x 18mm
Bulkhead mount GPS antenna	46 x 17mm
Weight	100g
Warranty	Two years

FEATURES:

- Colour LCD Display
- Programmable service intervals
- Resettable Trips A and B
- Password protected
- Accurate GPS and GLONASS distance measurement
- Australian designed and manufactured
- Suitable for 12 and 24V vehicles

APPLICATIONS:

- Know when its time for a trailer service with accurate measurements of the distance travelled by a caravan or trailer.
- Receive reminders of trailer services by setting alerts for specified dates and/or distances travelled
- Track individual trips with Trip A and Trip B



KEY ON/LIGHTS ON RANGE.



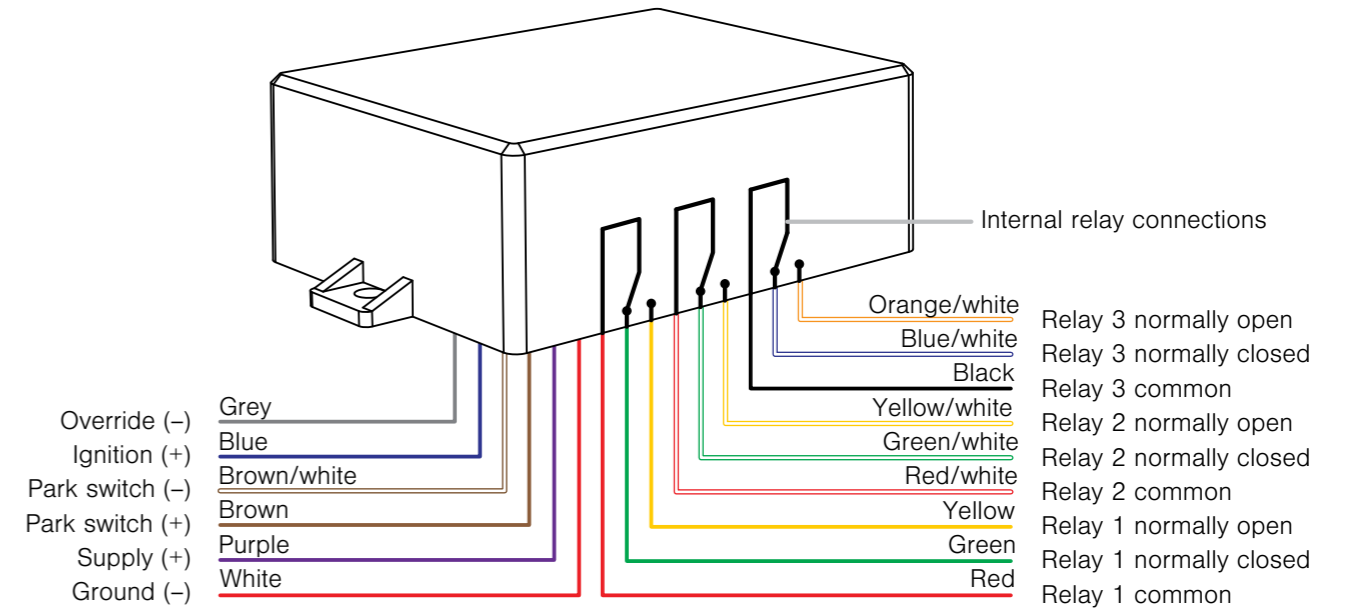
MAKE YOURSELF SEEN.

REDARC daytime running light modules are designed as a safety feature for commercial, industrial and fleet vehicles but are also suitable for the everyday driver. These Key On/Light On modules ensure that the headlights on your vehicle are on at any time the vehicle is operated.

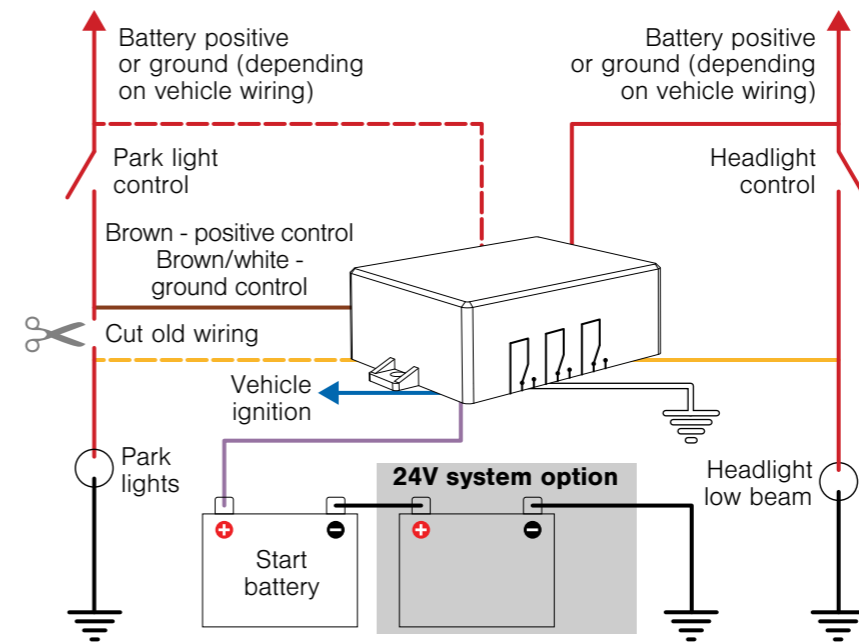
REDARC daytime running light modules are now compulsory as OH&S provisions on many mine sites. They are designed for universal fitment in 12 or 24V vehicles.



KEY ON/LIGHT ON PINOUTS.



TYPICAL KEY ON/LIGHT ON INSTALLATION.



FEATURES:

- Designed for universal fitment
- Ten second turn on delay to reduce cranking load
- Cost-effective protection for fleet vehicles
- Suitable for 12 and 24V vehicles

APPLICATIONS:

- Perfect for commercial, industrial and fleet vehicles, but are also suitable for the everyday driver
- Increases road safety by ensuring vehicles are more visible
- Compulsory on many mine sites as part of OH&S provisions
- With a delayed start-up, it works well with vehicles with an already-large starting load



KOL012DU/24DU



KOL024DU/24DU

Input voltage	10 - 15V	20 - 30V
Override option	KOLO12DU - no KOLO12DUO - yes	KOLO24DU - no KOLO24DUO - yes
Dimensions	90 x 70 x 32mm	90 x 70 x 32mm
Weight	400g	400g
Warranty	Two years	Two years



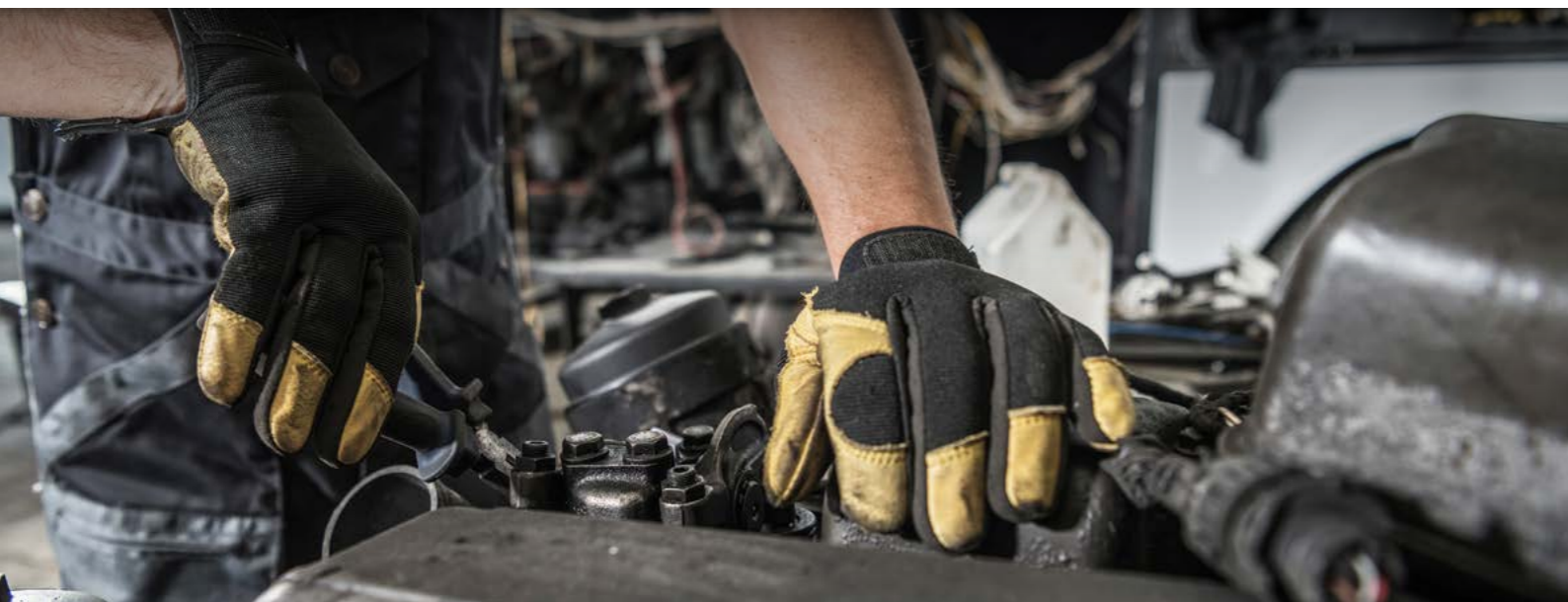
IDLE TIMER.



REDUCE WEAR ON YOUR TURBO.

The Idle Timer is designed to keep an engine running for a settable time after the ignition switch has been turned off, allowing the engine and its turbocharger to cool down safely. The Idle Timer helps avoid premature turbo wear and is both settable and lockable.

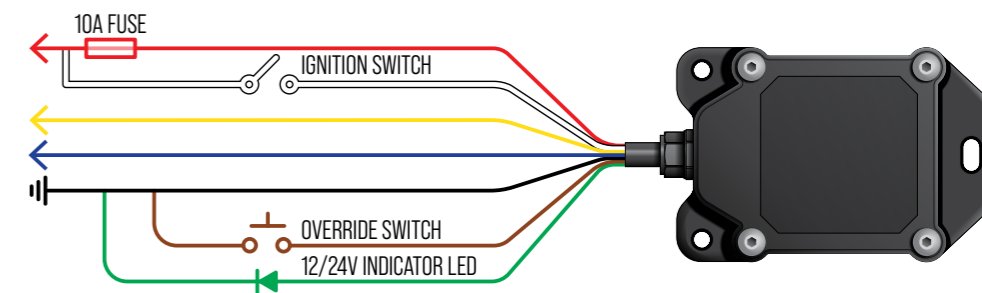
The Idle Timer is designed for quick and easy installation with the ignition input and output wire connected directly in series with the vehicle's ignition supply. Idle time can be set between one and five minutes using four dip switches that can be found under the lid of the device.



TYPICAL IDLE TIMER INSTALLATION.

INPUTS	
RED	BATTERY POSITIVE
WHITE	IGNITION IN
YELLOW	IGNITION OUT
BLUE	KEY OFF
BLACK	GROUND

OUTPUTS	
BROWN	OVERRIDE SWITCH
GREEN	INDICATOR LED



The device is lockable so that an optional override input allows an operator to bypass the cool-down period, and instantly turn the engine off. A key-off output signal is also available for auxiliary power functions and the LED output provides a visual indication to the operator.

Designed for harsh automotive environments, the module features a rugged aluminium enclosure and transient voltage protection on the supply and short circuit protection. The Idle Timer is suitable for use in 12 and 24V vehicles.

FEATURES:

- Connected directly in series to the existing key ignition output wire
- Key off output for auxiliary power
- Internal 10A relay
- Bypass switch
- Lockable idle period
- Suitable for 12 and 24V vehicles

APPLICATIONS:

- Avoids premature turbo wear by allowing the engine and its turbocharger to cool down safely
- Saves money on costly repairs or replacements
- Featuring a rugged aluminium enclosure and transient voltage protection, it is perfect for harsh automotive environments



HML1003

Input voltage	9 - 36V
Power consumption	25mA @ 24V input; 600mW (all outputs off)
Outputs (LED)	Maximum 250mA per output
Relay Output	Maximum 10A in 24V systems. Note the relay is not internally fused.
On-time	Minimum 1 minute Maximum 5 minutes
Activate Switch	Switch to positive to activate timer output
Operating temperature	-40° to 85°C 5% to 95% relative humidity
Dimensions	57 x 82 x 35.2mm
Warranty	Two years



GPS SPEED ALERTS.



PREVENT OVERSPEED EVENTS.

GPS Speed Alerts are accurate and receptive digital speedometers with an over-speed alert. They are compact and connect to your vehicle's 12V accessory socket, meaning no installation or calibration is required. They are available with a variety of mounting options.

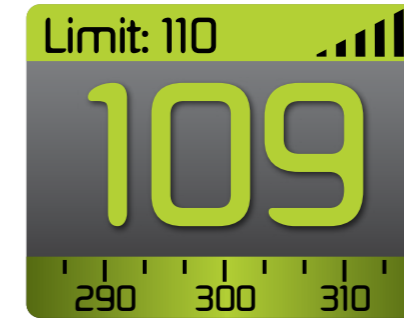
Four models are available featuring different mounting systems, with a model featuring a track day mode also available.



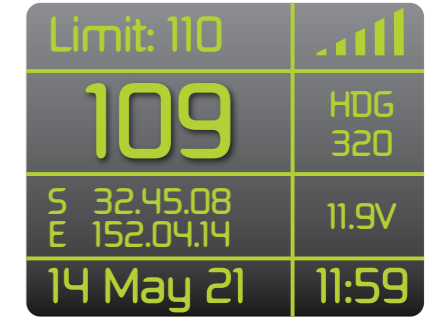
THREE DISPLAYS TO CHOOSE FROM.



BASIC.
Speed only.



COMPASS.
Speed and heading.



DETAILED.
Speed, heading, position, battery voltage, date and time.

FEATURES:

- Speed in km/h, mph or knots
- Measures GPS speed independent of vehicle
- Can permanently disable position display mode for rallies
- Precision of 0.1 km/h
- Internal GPS and GLONASS for highest precision
- 12V accessory socket connection
- Optional buzzer and changes of colour for over-speed warning
- Low current draw
- Battery voltage monitoring
- Multiple mounting options
- User-settable speed threshold
- Suitable for 12 and 24V vehicles

APPLICATIONS:

- Improve machine and operator safety
- Reduce the risk of an over-speed event
- Independent of any vehicle-specific parameters, this flexible speed management solution works with almost any vehicle
- Perfect for racing vehicles - Track Day Mode allows for measurement of a range of speed-related data

TRACK DAY MODE.

The HMSA400B Odometer features a track day mode function, which will measure:

- 0 - 60mph
- 0 - 100km/h
- Maximum speed
- 60ft time
- 1/8 and 1/4 mile time
- GPS lap mode
- GPS finish



HMSA3000



HMSA3300



HMSA3500



HMSA4000B

	HMSA3000	HMSA3300	HMSA3500	HMSA4000B
Mounting system	Windscreen suction	Dash mounting bracket	RAM A diamond base with 2" arm	Windscreen suction
Input voltage	9 - 36V	9 - 36V	9 - 36V	9 - 36V
Power consumption	Maximum 1.2W (100mA @ 12V; 50mA @ 24V)			
Acquisition time, power-up	Less than 38 seconds (50% of the time), less than 42 seconds (90% of the time)			
Resolution	Distance: 1 unit (metre or foot), Speed: 1 unit (km/h or mph)			
Track day mode	No	No	No	Yes
Dimensions	70 x 50 x 18mm	70 x 50 x 18mm	70 x 50 x 18mm	70 x 50 x 18mm
Weight	100g	178g	178g	100g
Warranty	Two years	Two years	Two years	Two years



GPS SPEEDOMETERS.



KEEP AN EYE ON YOUR SPEED.

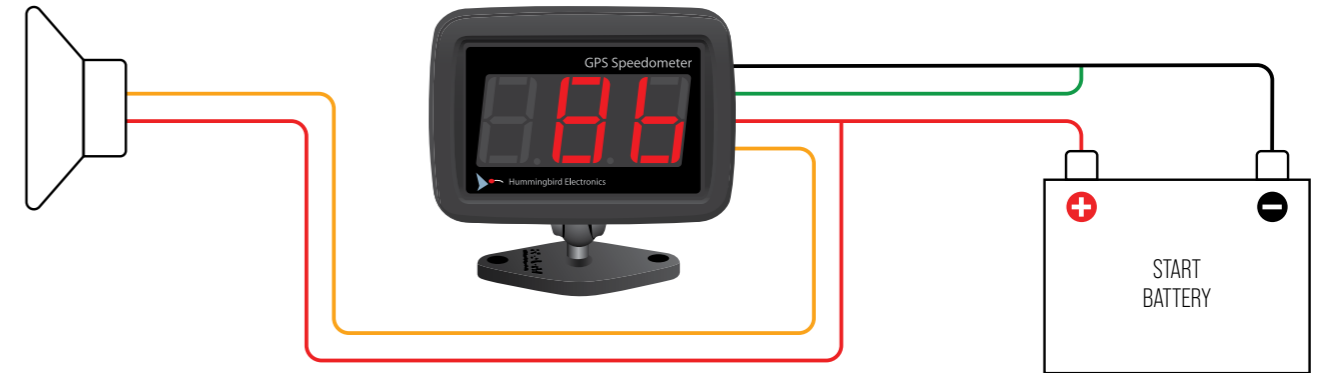
GPS Speedometers are easy to install and ideal for vehicles not fitted with conventional speedometers, such as tractors, rollers and graders. They are available with either a magnetic, internal or bulkhead mount antenna.

Using data from the Global Positioning Satellite network, the GPS Speedometer calculates three-dimensional ground speed accurate to 0.2km/h, with speed readings updated ten times every second.

Designed for harsh automotive environments, the module features a 25mm display with bright red LED digits. Automatic contrast adjustment ensures that the driver can read the display in daylight and is not blinded at night.



TYPICAL GPS SPEEDOMETER INSTALLATION.



FEATURES:

- High visibility display
- Adjustable speed limit – operators cannot adjust limit
- Internal relay to drive external alarm
- Display auto dims at night
- Rugged RAM™ mount
- Reverse polarity protected
- Suitable for 12 and 24V vehicles

APPLICATIONS:

- Ideal for vehicles not fitted with conventional speedometers, such as tractors, rollers and graders
- Prevent over-speed events
- Get accurate readouts thanks to data from the Global Positioning Satellite network
- Operate in the harshest RF environments such as canyons and cities



HMSS1000BB



HMSS1000BM



HMSS1000BI

	HMSS1000BB	HMSS1000BM	HMSS1000BI
Mounting system	Bulkhead mount	Magnetic mount	Internal
Input voltage	9 - 36V	9 - 36V	9 - 36V
Power consumption	Maximum 2.5W (200mA @ 12V) - all segments lit at full brightness		
Relay output	36V maximum 1A maximum	36V maximum 1A maximum	36V maximum 1A maximum
Acquisition time - loss of lock	Less than 2 seconds (90% of the time)		
Acquisition time - temporary loss of power	Less than 10 seconds (50% of the time), less than 13 seconds (90% of the time)		
Acquisition time - power up	Less than 38 seconds (50% of the time), less than 42 seconds (90% of the time)		
Speed range	2 - 299km/h (or 299mph)	2 - 299km/h (or 299mph)	2 - 299km/h (or 299mph)
Preliminary velocity precision	Less than 0.06m/sec or 0.22km/h	Less than 0.06m/sec or 0.22km/h	Less than 0.06m/sec or 0.22km/h
Resolution	1 unit (1km/h or 1mph)	1 unit (1km/h or 1mph)	1 unit (1km/h or 1mph)
Update rate	10Hz	10Hz	10Hz
RF interface	SMA connector	SMA connector	N/A
General	20 channel tracking receiver, 12 day battery backup		
Antenna dimensions	51 x 42 x 12mm	51 x 42 x 12mm	51 x 42 x 12mm
Cable length	3 metres (minimum)	3 metres (minimum)	3 metres (minimum)
Operating temperature	-40° to 85°C 5% to 95% relative humidity	-40° to 85°C 5% to 95% relative humidity	-40° to 85°C 5% to 95% relative humidity
Dimensions	86 x 66 x 25mm	86 x 66 x 25mm	86 x 66 x 25mm
Weight	258g	258g	175g
Warranty	Two years	Two years	Two years



GPS SPEED SWITCHES.



CALIBRATION FREE SPEED CONTROL.

GPS Speed Switches are simple to install and calibration free. Speed thresholds are set using internal switches, in either km/h or mph.

Using data received from the Global Positioning Satellite network, the GPS Speed Switch calculates three-dimensional ground speed, accurate to 0.2km/h, updated ten times every second. A 50 channel satellite receiver, enhanced receiver sensitivity and active antenna result in fast time-to-first velocity calculation, as well as the ability to operate in the harshest RF environments such as canyons and cities. If the speed exceeds the threshold, relay contacts switch, providing the installer with maximum versatility.



RUGGED HARDWARE.

The GPS Speed Switch is supplied in a rugged aluminium enclosure with provision for screw mounting when required.

Antenna connection for the active antenna is provided through a gold-plated threaded SMA connector.

FEATURES:

- No connection to vehicle electrics
- Voltage free relay output
- Adjustable speed limit
- Variable units - km/h or mph
- External GPS and GLONASS antenna
- Installer-settable speed threshold
- Suitable for 12 and 24V vehicles

The active antenna is available in two options:

1. Magnetic mount, suitable for mounting in the interior of the vehicle, for example under the dashboard or rear window sill.
2. Bulkhead mount, suitable for exterior mounting, for example on the roof of the cab.

APPLICATIONS:

- Perfect for managing speeds of heavy vehicles and mining equipment
- Get a warning and take action when a vehicle exceeds a given speed
- Lower the risk of over-speed events
- Enjoy peace of mind, with measurements made using three-dimensional ground speed accurate to 0.2km/h

Power to the unit and switch outputs are provided through four colour-coded wires.

For optimum performance, the antenna should be mounted horizontally and upright; and should have a clear view of the sky.

A red LED inside is provided to give the user status information.



HMSW1000BM

Mounting type	Magnetic
Input voltage	9 - 36V
Power consumption	480mW inc antenna
Relay current	Internal resettable fuse: 1A
Update rate	5Hz
RF interface	SMA connector
Operating temperature	-40° to 85°C 5% to 95% relative humidity
General	50 channel tracking receiver, 12 day battery backup
Antenna dimensions	51 x 12mm
Cable length	5 metres
Dimensions	55 x 82 x 35.2mm
Weight	249g
Warranty	Two years



SPEEDOMETER CALIBRATOR.



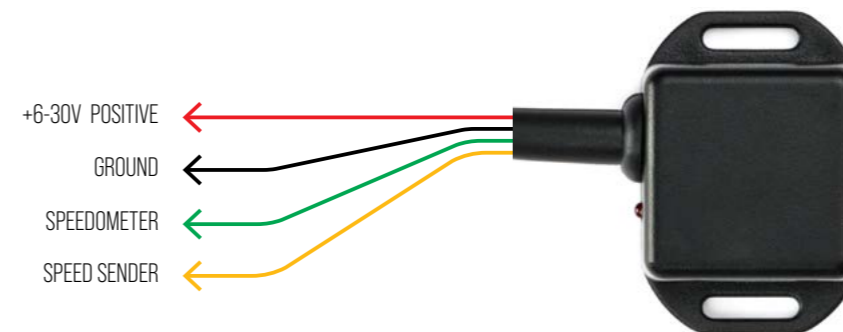
ACCURATE SPEED AT ALL TIMES.

The Speedometer Calibrator is simple to install, providing accurate speed and mileage without having to change the mechanics of the vehicle. It is ideal for use when the wheel or tyre size on your vehicle has changed or the gearbox, engine or differential has been replaced.

Designed for harsh automotive environments the module features transient voltage protection on the supply and short circuit protected outputs. The unit is designed to work from 6 to 30V and is suitable for use in motorcycles, cars and trucks.



TYPICAL SPEEDOMETER CALIBRATOR INSTALLATION.



COMMON SOURCES OF SPEED ERROR INCLUDE:

- 2% to 10% error direct from the manufacturer
- Change of wheel or tyre size
- Gearing changes: sprockets, differentials etc.
- Replacement of gearbox, engine or differential
- Instrument cluster/speedo faceplate change
- The Speedometer Calibrator is able to compensate for signal errors by dividing the input signal down to as low as 1/8th and up to as high as 8 times, in 0.1% increments



HMSC8000C

Input voltage	6 - 36V
Power consumption	240mW - 20mA @ 12V
Output frequency	10Hz
Adjustable range	12.5% to 800% in 0.1% increments (200Hz can be 25 to 1600Hz)
Input threshold	2.5V in normal mode 125mV in sensitive mode
Output signal (Hall Effect mode)	0/5V in 5V mode; 0/Vin in Vin mode; maximum 25mA drain
Output signal (inductive mode)	±2.5V in 5V mode; ±Vin/2 in Vin mode; maximum 10mA drain
Operating temperature	-40° to 85°C 5% to 95% relative humidity
Dimensions	57 x 82 x 35.2mm
Weight	60g
Warranty	Two years

FEATURES:

- No connection to vehicle electrics
- Voltage free relay output
- Adjustable speed limit
- Variable units - km/h or mph
- External GPS and GLONASS antenna
- Installer-settable speed threshold
- Suitable for 12 and 24V vehicles

APPLICATIONS:

- Obtain accurate fuel consumption figures
- Helps ensure your vehicle is road legal after vehicle customisation
- Compensate for both manufacturer and user-induced errors
- Correct signals from both hall-effect and inductive speed sensors,
- Receive a warning or take action when the vehicle exceeds a given speed



GPS SPEED SENDERS.



ACCURATE DISTANCE-TRAVELLED INFORMATION.

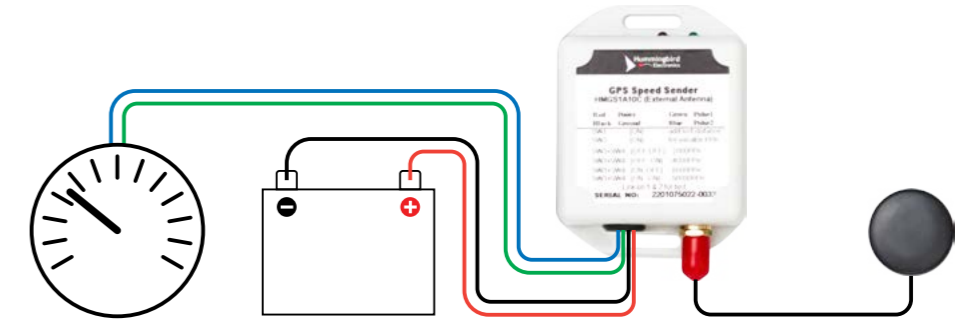
The Global Navigation Satellite System (GNSS) Speed Sender provides more accurate distance-travelled information using GPS and GLONASS satellite networks.

This compact unit is available with either a bulkhead mount, magnetic or internal antenna. It is a calibration-free replacement for mechanical speed senders, enabling quicker installation.



TYPICAL GPS SPEED SENDER INSTALLATION.

- Red Input voltage (0 - 36V)
- Black Ground (0V)
- Green Pulse output (0 - 5V)
- Blue Inverted pulse output



FEATURES:

- GPS and GLONASS for greater accuracy
- Simple electrical installation
- No calibration required
- Internal or external antenna
- Variable pulse rates available between 1,000 and 10,000 pulses per km (ppk)
- Four selectable fixed pulse rates: 2,000, 4,000, 8,000 and 50,000ppk
- Optional tunnel distance correction
- Suitable for 12 and 24V vehicles

APPLICATIONS:

- Reliable calibration-free replacement for mechanical speed senders
- Perfect for heavy vehicle and fleets
- Assists with log booking
- Eradicate the dependency on vehicle-specific parameters and the need for periodic calibration



HMGS1A10CP



HMGS1A10CM



HMGS1A10CB

	HMGS1A10CP	HMGS1A10CM	HMGS1A10CB
Antenna type	Passive	Magnetic	Bulkhead
Input voltage	6 - 36V	6 - 36V	6 - 36V
Power consumption	240mw	480mw inc antenna	480mw inc antenna
Acquisition time - loss of lock	Less than 2 seconds (90% of the time)		
Acquisition time - temp loss of power	Less than 10 seconds (50% of the time)		less than 13 seconds (90% of the time)
Acquisition time - power up	Less than 38 seconds (50% of the time)		less than 42 seconds (90% of the time)
Accuracy - horizontal	Less than 5 metres (50% of the time)		less than 8 metres (90% of the time)
Accuracy - altitude	Less than 10 metres (50% of the time)		less than 16 metres (90% of the time)
Precision velocity	Less than 0.06m/sec or 0.22km/h		
Differential output pulses	Square wave, peak to peak 5V, DC 2.5V; maximum current drain 25mA		
Update rate	10Hz	10Hz	10Hz
RF interface	SMA connector	SMA connector	SMA connector
Operating temperature	-40° to 85°C - 5% to 95% relative humidity		
General	50 channel tracking receiver, 12 day battery backup		
Antenna dimensions	N/A	51 x 42 x 12mm	51 x 42 x 12mm
Cable length	3 metres (minimum)	3 metres (minimum)	3 metres (minimum)
Dimensions	55 x 82 x 35.2mm	55 x 82 x 35.2mm	55 x 82 x 35.2mm
Weight	40g	40g	40g
Warranty	Two years	Two years	Two years



CHOPPER RELAYS.



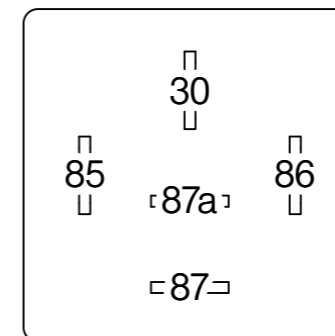
MULTI-APPLICATION SWITCH.

Chopper Relays feature two outputs which alternately latch on or off with the application of an input from the single action of a momentary, push-button switch. Each output remains on or off until the next input signal causes the outputs to swap.

The Chopper Relay is ideal for fog light switches, rear demisters and any dash type switches that need to latch on from a momentary push. They can also be used in conjunction with a bi-metallic switch to provide auto-off directional motor control like electric windows. Each output has a maximum rating of 10A.



CHOPPER RELAY CONNECTIONS.



- Pin 87 Output A
- Pin 87a Output B*
- Pin 30 Battery positive (+12/24V)
- Pin 86 Positive input trigger (+12/24V)
- Pin 85 Negative ground**

* The internal relay is a changeover type - when pin 87 is on pin 87a is off and vice-versa.
 ** Do not switch ground to control relay.



FEATURES:

- Easy to set up and install
- Charge via AC, DC or solar
- Fits into a standard automotive relay base
- Adjustable time setting
- Operates like a standard changeover relay
- Customisable to user specs

APPLICATIONS:

- The latching relay is ideal for fog light switches, rear demisters and any dash type switches that need to latch on from a momentary push
- Use the latching relay in conjunction with a bi-metallic switch to provide auto-off directional motor control, for example electric windows
- The momentary relay is ideal for controlling spotlights, for example, switching between different LED spotlight colours

MOMENTARY OUTPUTS.

CR1224
 While the button is pressed, and for approximately a quarter of a second after release, one output supplies 12 or 24V (depending on the supply voltage).
 Next time the button is pressed, the alternate output operates in the same way.

LATCHING OUTPUTS.

CR1224L
 An output remains on (latched) until the next input signal causes the outputs to swap.
 The outputs are 12 or 24V, depending on the supply voltage.



CR1224



CR1224L

Input voltage	12 or 24V	12 or 24V
Continuous load rating	10A	10A
Dimensions	80 x 31 x 30mm	55 x 31 x 30mm
Weight	90g	70g
Warranty	Two years	Two years



TIMER RELAYS.



WHEN TIMING IS CRITICAL.

Used in a 12 or 24V, negative ground automotive system, these timers are designed to plug into a standard automotive relay base and have the same pin numbers as a standard automotive relays.

REDARC can design timer relays to suit a variety of situations or application. Custom relays can also be used to switch by sensing current, voltage, frequency, RPM or used to count events in an electrical system.



KEY

- Ignition turned ON
- Timer output ON
- Timer output OFF

TIME ADJUST



NOTE

DIP switch 2 is shown in seconds mode (OFF), for minutes mode switch (ON).

Example: A turbo timer is set to run for three minutes after the ignition is shut OFF. In this example the ignition is ON for six minutes, turn OFF delay is set for three minutes so the engine runs for nine minutes in total.



Set switch 1 to delayed turn off mode. Set switch 2 to minutes mode.



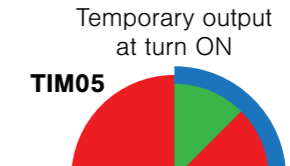
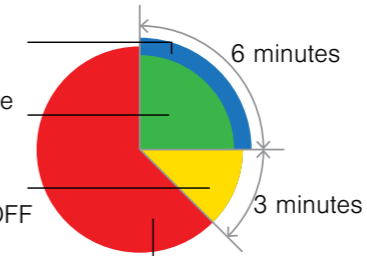
Turn the pot fully anti-clockwise, then turn clockwise slightly to achieve three minutes.

BLUE Ignition is ON for 6 minutes

GREEN Engine runs while ignition is ON

YELLOW Engine runs for 3 minutes after ignition is shut OFF

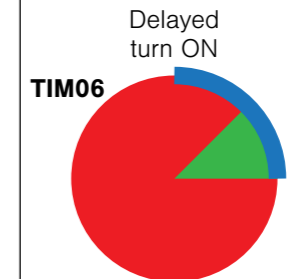
RED Engine OFF



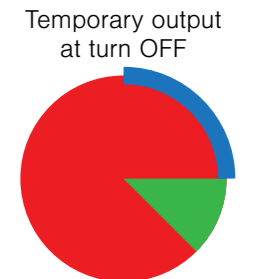
TIM05



Delayed turn OFF



TIM06



Temporary output at turn OFF



FEATURES:

- User/adjustable 1 to 60 seconds or minutes
- Change over type relay
- Fits standard automotive relay bases
- Customisable to user specification

APPLICATIONS:

- Suitable for heavy vehicle, light vehicle and Transport industries



MULTI-FUNCTION TIMER. TIM05

Suitable for instances where a delayed turn-off or temporary output at turn on is required, such as cabin lights, exhaust fans and switching inverters



MULTI-FUNCTION TIMER. TIM06

Suitable for instances where a delayed turn-on or temporary output at turn off is required, such as thermo delays and courtesy lights.



TIM05



TIM06

Input voltage	12 or 24V	12 or 24V
Continuous load rating	10A	10A
Dimensions	80 x 31 x 30mm	55 x 31 x 30mm
Weight	90g	70g
Warranty	Two years	Two years



VOLTAGE SENSORS.



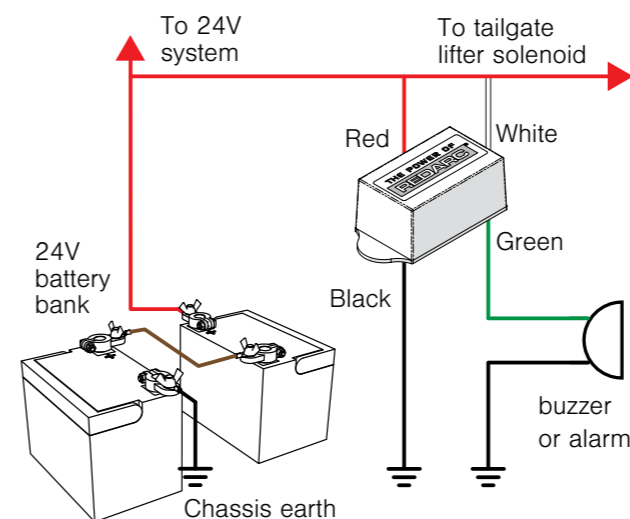
COST-EFFECTIVE CONTROL SYSTEMS.

Voltage sensitive relay modules provide a cost-effective control system for 12 and 24V applications. They are suitable for mobile or stationary installations and feature user-customisable voltage level settings. They are perfect for use as a low voltage disconnect for loads such as car fridges or could also be used as a low voltage alarm trigger or controller.

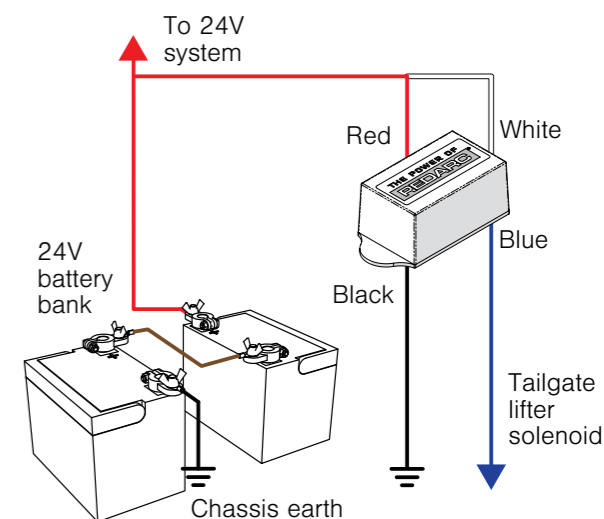
Voltage sensors can be customised to suit any required application at time of manufacture as they feature a programmable microprocessor which can be set to switch at any required voltage, current, frequency or count.



RUNNING A LOW VOLTAGE ALARM.



RUNNING A TAILGATE LIFTER CUT-OFF SOLENOID.



FEATURES:

- Available in 12 and 24V
- Operates like a standard changeover relay
- Customised to suit any required application at time of manufacture
- A programmable microprocessor which can be set to switch at any required voltage, current, frequency or count

APPLICATIONS:

- Prevents over discharge of your battery
- Prevents surges from damaging sensitive equipment
- Easy to set up and install
- Perfect for low or high voltage cut-off applications



VS12



VS24

	VS12	VS24
Supply range	12V	24V
Sensing range	9 - 16V	18 - 35V
Output current rating	10A	10A
Factory settings	12.7V on, 12V off $\pm 0.2V$	25.6V on, 24V off $\pm 0.4V$
Recommended fuse/circuit breaker rating (white wire)	10A	10A
Dimensions	75 x 30 x 24mm	75 x 30 x 24mm
Weight	70g	70g
Warranty	Two years	Two years



DRIVER BEHAVIOUR MONITOR.



PROMOTE RESPONSIBLE DRIVING.

The Driver Behaviour Monitor provides real-time information on a fleet. The sensor can detect accident, roll-over, harsh-braking, harsh-acceleration, harsh rate-of-turn events and battery voltage.

The driver behaviour monitor is compatible with RS232 serial ports. In addition to the serial interface, four digital outputs are available that go high when an event is detected.



DRIVER BEHAVIOUR MONITOR WIRING.

There are three connection points on the Driver Behaviour Monitor:

- The 10 pin plug
- The turquoise wire
- The grey wire

There are two installation options:

OPTION 1 (PREFERRED).

Power to the DBM is supplied from the vehicle's ignition circuit. The turquoise wire is to be connected to the vehicle's switched ignition signal. Grey is not connected. The 10-pin plug is connected to the tracking system.

OPTION 2.

Turquoise is connected to the vehicle's unswitched power supply (battery power).

Grey is connected to the vehicle's switched ignition signal.

The 10 pin plug is connected to the tracking system. In this installation, the DBM's main power is drawn from the vehicle's battery.

The DBM is grounded through the tracking system, via the two black wires in the 10 pin plug.



HMBS001

Input voltage	9 - 36V
Current consumption	Typical - 25 - 50mA @ 12V depending on output loading, Sleep - 8mA (FW version 6-0-13 and above)
Baud rate	9600 baud, 8 data bits, no parity, 1 stop bit (8-N-1)
Interface	RS232
Maximum G-force	16G
Maximum rate of turn	100°/second
Accident detection	3 axis accelerometer sampling at 1000Hz
Brake, acceleration and turning force	9 axis IMU sampling at 100Hz
Output trigger time	Outputs remain high for at least one second if an event is detected
Output specification	No event: <0.5V Event: Vin-2 (e.g. for a 12V vehicle, the output should be at least 10V)
Output current	5mA maximum
Operating temperature	-40° to 85°C 5% to 95% relative humidity
Dimensions	57 x 82 x 35.2mm
Weight	251g
Warranty	Two years

FEATURES:

- Doesn't rely on any vehicle sensors
- Settings are remotely adjustable
- 12 axis sensor fusion
- 6 axis acceleration
- 3 axis gyroscope
- 3 axis magnetometer
- Self-test performed on ignition or power up
- USB output for monitoring real-time data
- Nine colour-coded wires for electrical installation
- Suitable for 12 and 24V vehicles

APPLICATIONS:

- Receive real time information on a fleet
- Detect accidents, roll-overs, harsh braking, harsh acceleration and harsh rate-of-turn
- Monitor fleet battery voltage
- Useful for in-field diagnostics



PROTOCOL CONVERTER.



KEEP TRACK OF WHO IS IN CONTROL OF YOUR VEHICLES.

The Protocol Converter is a simple to install interface between a contact-less card reader and a vehicle tracking system, allowing you to keep track of who is in control of your vehicles. Card readers can be supplied, and the unit has an optional buzzer output.

The device converts the information read from a compatible HID card into Navman's communication protocol, allowing users to extend the Qube's functionality.



TYPICAL PROTOCOL CONVERTER INSTALLATION.



FEATURES:

- Remotely configurable via AVL
- Contactless
- Works with almost any type of ID card
- Flexible configuration
- Built-in buzzer alert if a driver fails to log on
- Optional external buzzer can be connected

APPLICATIONS:

- Improve the safety of employees by monitoring vehicle's use
- Track who is driving particular vehicles at particular times



HMPC0800

Input voltage	6 - 36V
Power consumption	Typical: 50mA @ 12V with no external devices connected - maximum 200mA @ 12V
Compatible card readers	Honeywell Multiclass SE RP10 series
Compatible Qube models	Navman Qube 4, Navman Qube 300
Compatible M-NavM models	M-Nav 800
Communications protocols	RS232, Wiegand
Operating temperature	-20° to 55°C - 5% to 95% relative humidity - non-condensing at 60°C
Storage temperature	-40° to 85°C
Weight	70g
Warranty	Two years



THIRD GEAR SELECTED WARNING SYSTEM.



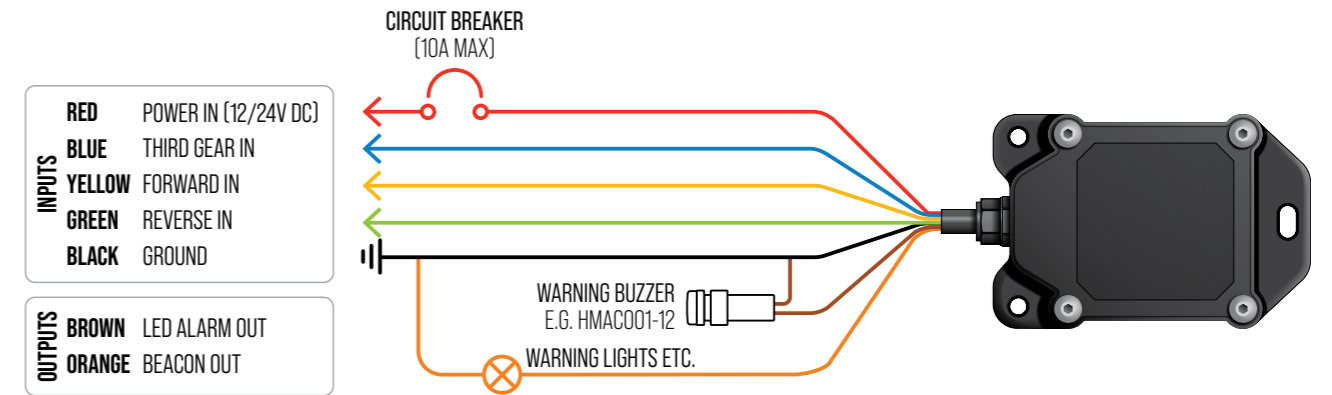
GET YOUR SAFETY INTO GEAR.

The Third Gear Selected Alarm monitors and alerts the operator if they've selected forward or reverse in third gear, preventing damage to the track and drive train. Using the third gear on your dozer can reduce the lifetime of the tracks by 50% and can result in tens of thousands of dollars spent on replacements, depending on the model of the dozer.

When third gear is selected, the systems outputs activate a critical alarm/LED warning, which will appear on the dash along with an external flashing beacon, if connected.



TYPICAL THIRD GEAR SELECTED WARNING SYSTEM INSTALLATION.



FEATURES:

- Alarm delay prevents incorrect gear selection mistakes without activating warning alerts
- Clear audible and LED alerts prompt safe operator reaction
- Easy to install
- Built to last with an enclosed, sealed aluminium housing offering moisture
- Emergency stop input for a quick shut-down
- Internal 10A relay powers an alert when third gear is selected
- DIP switch for delay configuration prevents warning alerts in the event of gear selection
- Suitable for 12 and 24V vehicles

APPLICATIONS:

- Avoid unnecessary machine downtime
- Prevent damage to the track and drive train of heavy vehicle, mining and industrial equipment
- Prompt a safe operator reaction
- Pair with other Hummingbird products, such as the Audio Alert System or LED and buzzer, to further improve longevity of a fleet



HMI1004

Input voltage	9 - 36V
Power consumption	Less than 150mA (in addition to current draw from the optional E-stop power supply)
Aux output max switching current	5A
Optional E-stop power supply (green) max current	1A
Optional E-stop input (brown) pull-down resistance	Approx 6kΩ
Ignition pull-down resistance	Approx 6kΩ
Operating temperature	-40° to 85°C 5% to 95% relative humidity
Dimensions	57 x 82 x 35.2mm
Weight	199g
Warranty	Two years













































































































































































































































































































































GLOSSARY

Absorption	Second of three main stages of charging. A constant voltage is applied until the current drawn by the battery falls below a predetermined threshold.
AC	Alternating current; a voltage measured with current switching directions at a given frequency (back and forth or positive and negative).
Algorithm	A set of mathematical rules designed to provide instructions to solve a problem or complete a required task.
Alternator	A device designed to convert kinetic (moving) energy into electrical energy.
Amp hours	Amp hours is a measure of stored charge; the number of amps available to be drawn for the amount of time in hours that you will draw that current, i.e. amps x hours = Ah.
Amps	See 'current'.
Anti slosh	A time delay to prevent false alarm triggers when the coolant probe is briefly uncovered whilst cornering.
Appliance	Another term for a load, more commonly used when referring to everyday devices.
Auxiliary	A secondary or back-up from the primary. With reference to battery installations an auxiliary is generally used to power peripheral equipment whilst the primary or start battery is used to start the vehicle.
Battery	A battery is a combination of two or more cells made up of acid and metallic plates designed to store electrical energy.
Booster	With reference to electronics, a booster is designed to increase a DC voltage, i.e. 12V increased to 24V. This increase will half the current output according to $V_{in} \times I_{in} = V_{out} \times I_{out}$.
Charge	Charge refers to the amount of electric energy stored in an object. To charge a battery is to increase the amount of electric energy stored in it.
Charge profile	The chemical and physical make up of a battery determines the best voltage, current and timing method used to recharge the battery. This method is referred to as a charge profile and should be followed to ensure you achieve maximum life and performance from your battery.
Chassis ground	The metal frame/chassis of the vehicle to which (in negative ground vehicles) the battery negative lead is connected as well as the negative connections of all or most electrical items in the vehicle.
Chattering	Rapid cycling on and off of the solenoid, usually caused by load connection causing voltage to drop below switch-off voltage.
Circuit	One or more components interconnected and powered by a voltage. A circuit is designed to perform a specific task or function.
Circuit breaker	A device designed to automatically cause a 'break' in a circuit should the current flowing through that circuit reach a certain level. Circuit breakers are generally re-usable.
Closed	Referring to a switch, relay or solenoid contacts, when there is no gap the circuit is complete and the contacts are connected allowing current to flow.
Configuration (or config)	Setting for battery type (standard, AGM, gel or calcium batteries).
Current	Amperes (or amps) is the measure of electric current. One amp is equal to 6.241×10^{18} electrons passing a point in a circuit each second.
Customisable	Able to be programmed to individual customer requirements.
D+	A signal wire used as an on and off switch for devices, its main purpose is to send a 12V+ signal to a device when the vehicle engine is running.
DC	Direct current; a voltage or current measured with fixed polarity or current flowing in a single direction.
Deep cycle	Deep cycle refers to the design and usage pattern of a particular battery. A deep cycle battery is designed to be heavily discharged before being recharged.
Diode	A device which can only pass current in one direction.
Discharge	See 'drain'.
Drain	Drain is the term given to the loss or usage of charge in a system. Loads or appliances will drain the charge from a battery.
Efficiency	Efficiency is a ratio, expressed as a percentage, of the energy produced by something versus the energy supplied to it. With reference to solar panels, efficiency is the energy supplied by the panel (as electricity) versus the energy supplied to the panel by the sun.
Electrolyte	Chemicals in a battery designed to convert chemical energy into electrical energy.
Electron	Electrons are negative particles found orbiting the nucleus of an atom.
EMC	Electromagnetic compatibility - most electrical products, depending on quality and type of construction, generate varying amounts of electromagnetic energy (radio interference). This can lead to disruption of other products (that's why they ask you not to use your mobile phone in aircraft). Whilst a mobile phone is explicitly designed to radiate electromagnetic energy (radio signals) other products should be designed to avoid or at least minimise this. The less electromagnetic energy the unit produces, the better the electromagnetic compatibility.
Encapsulated	A device filled with a waterproof, protective, insulating, supporting material, usually epoxy, silicone or elastomer.
Extruded	Material formed by being pressed through a shaped outlet in a semi-molten state.
Flip-flop	A device which will alternate between two outputs each time a single input is triggered.
Float	Third of the main stages of charging that ensures the battery is maintained at a voltage that will preserve full charge.
Frequency	A measure of how often an event occurs, in electronics refers to the numbers of cycles that an AC wave completes in one second and measured in Hertz (Hz).
Fuse	A device designed to automatically cause a break in a circuit should the current flowing through that circuit reach a certain level. Once a fuse has blown it is rendered useless.



















































































































































































































































































































Ground	A voltage reference point in a circuit. Ground is considered to be zero volts in a circuit.
Inverter	A device designed to convert a DC voltage (usually 12V or 24V) to an AC voltage. Inverters are generally used to run 240V AC appliances such as fridges and televisions in DC electrical systems such as caravans.
Isolator	A component designed to deliberately make or break the connection between the start and auxiliary batteries in a dual battery system.
Lamp	A device designed to emit light when a current flows through its element. Lamps draw considerably more power than LEDs.
LED	Light emitting diode; a device that emits light when current flows across it in a particular direction.
Microprocessor	An integrated circuit capable of being programmed to perform many complex functions.
MPPT	Maximum power point tracking is the process of matching a solar regulator's load to the voltage and current from the solar panel to achieve the greatest output power.
Multi-stage	A battery charger with more than one charging stage (voltage or current level).
Non-rechargeable battery	A battery not suitable for recharging, for example alkaline cells, coin/button cells, mercury batteries and some lithium batteries.
Overload	Current draw in excess of a product's rated current.
Parallel	Items connected so that one point of an item is connected to the corresponding point of the other item. Two power sources connected in parallel will increase the available current whilst the voltage stays the same.
Plates	Sheets of metal, usually some form of lead, used in lead/acid batteries, and variants, to collect and store charge in the battery.
Power	The rate at which electrical energy is transferred by an electric circuit, measured in watts. Power equals current times voltage ($P=IV$).
Potentiometer	Device used to control an electrical parameter, often rotary, commonly turned by a knob or screwdriver.
Profile	Specific set of values for each stage of a multi stage charger, tailored to a specific battery type.
Recharge	To restore the potential electrical energy in an object that has previously been drained.
Reducer	A reducer is designed to decrease a DC voltage, i.e. 24V decreased to 12V. This decrease will double the maximum current output according to $V_{in} \times I_{in} = V_{out} \times I_{out}$.
Relay	A component used to make or break a connection in a circuit due to a change in voltage or current on its trigger input.
Resistance	Measured in Ohms (Ω) and expressed as R, resistance is the characteristic of an electrical component (including wiring) to oppose the flow of current.
Resistor	An electronic component designed specifically to inhibit the flow of current.
Reverse polarity	Connection with the positive and negative terminals swapped.
RMS	Root mean square - a statistical measure of the magnitude of a varying quantity; i.e. a method of stating a complex voltage by defining its equivalent DC voltage with the same heating effect. As an example, a complex wave shape with a voltage of 12V RMS would make a lamp glow with the same brightness as 12V DC.
Series	With reference to electronics, items connected so that current passes through each item in turn. Two power sources connected in series will double the available voltage whilst the current stays the same.
Short circuit	A failure mode occurring when two sections of different potential in a circuit are connected resulting in an excessive flow of current.
Sine wave	A pattern of simple harmonic (smooth progressive natural transition through minimum-maximum-minimum) alternating current polarity in a power supply. This is in contrast to modified sine and square wave AC where the transitions are almost instantaneous.
Solar	Method of electricity generation harnessing energy from the sun.
Solar cell	Solar cells are devices made from a photovoltaic material, usually silicon based, designed to generate an electrical current from solar energy. Each solar cell in a standard crystalline silicon array will output around 0.5V.
Solenoid	A component used to make or break a connection in a circuit due to a change in voltage or current on its trigger input. Solenoids can be large in size and handle large currents of 100A to 500A (and beyond).
Spike	A momentary increase in voltage.
Stabiliser	A stabiliser is a device designed to produce a stable output voltage.
Standby	Current consumed within a device whilst not in use (e.g. a voltage converter not delivering output current to a load).
Surge	A sudden increase in current or voltage, generally caused by a short circuit.
Switch mode	Efficient voltage conversion using electronic switches (transistors) rapidly switching on/off/on/off and dissipating very little power in either on or off state.
Transient	A momentary pulse of either current or voltage.
Trickle-charge	A low-level charge rate designed to retain the charge level in a fully charged battery.
Volt	A unit of electromotive force, the volt measures how much potential there is in an electric circuit. The higher the voltage, the more electrical current will flow in the circuit.
Voltage drop	The term given to the decrease in voltage that occurs along the cable through which current is flowing. Cable length will increase voltage drop, while cable thickness will decrease voltage drop.
Voltage spike	A momentary increase in voltage.
Watts	Named after the eighteenth-century Scottish inventor James Watt, the watt is the basic unit of power and is defined as one joule per second.




















































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For more information scan the QR code or visit the website.



Email support

power@redarc.com.au

Tech support line

+61 1300 REDARC
(+61 1300 733 272)

Head Office number

+61 8 8322 4848

Australian online support

redarc.com.au

New Zealand online support

redarcelectronics.co.nz

US, Europe and Rest of World online support

redarcelectronics.com

REDARC Head Office

23 Brodie Road North
Lonsdale, South Australia 5160

REDARC

GROUP

REDARC.COM.AU

Tech Support available 6:00am to 6:00pm Australian Central Standard Time

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