

Solutions For Dual Battery Systems



Isolators Vs Chargers.

There's a great deal of confusion out there about in-vehicle battery management.

At the end of the day, we simply need to know that our auxiliary battery will be effectively maintained at all times. What was once a simple concept has become quite convoluted. Vehicle manufacturers don't make it easy. In pursuit of greater efficiency and reduced emissions their electrical systems are now so complex that installing a second battery can be a huge challenge!

The key to overcoming this challenge is to ensure a dual battery installation doesn't compromise the vehicle's factory electrical system. An aftermarket install should be completely independent of the host vehicle except for one common connection – the main battery. This is how we, at interVOLT, approach our battery management solutions.

We have two different solutions for battery maintenance and there is a simple distinction between them.

Our EBI Pro is a battery isolator. In basic terms an isolator is a controller. It directs available current from the vehicle's own charging system to the auxiliary battery by controlling the voltage. One of the great benefits of this system is that charging current is not limited by an isolator where it is with a charger. If your vehicle has 100 Amps of charging power available, you can tap into all of it when using an isolator.

Our DCC Pro R2-0 is a charging device. It differs from an isolator in that it works by converting power. In other words, it changes the input power at the device to a self-managed output, independent of the vehicle's own charging system. The charging current is, however, limited by the device. This system is particularly useful where the auxiliary battery is of a different type (chemistry) than the starting battery for example.

Learn more about our dual battery management solutions inside...

DCC Pro R2-0 Specifications

Input Voltage	Main: 9 – 16 VDC Solar: 18 – 28 VDC (open circuit Voltage – no load)		
Solar Power	Unrestricted (system limited to 25 Amps)		
Continuous Rating	25 Amps@50°C (de-rate from 50°C to 85°C)		
Operating Temperature	-20°C to +85°C		
Current Draw	Charging Device: In stand by: Including LED indicator <10mA At full load: Up to 35 Amps Remote Display: With backlight off: 10mA max With backlight on: 45mA max		
Output Voltage	Boost/CC	Absorption/CV	Float/CV
Standard Lead Acid	14.5 VDC	14.4 VDC	13.4 VDC
Absorbed Glass Mat	14.7 VDC	14.6 VDC	13.6 VDC
Gelified Electrolyte	14.3 VDC	14.2 VDC	13.5 VDC
Lead Calcium	14.9 VDC	14.8 VDC	13.8 VDC
LiFePO4 BMS	14.6 VDC	-	14.4 VDC
	Voltage values subject to tolerance ± 0.1V		
Dimensions	Charging Device: 112 x 112 x 75mm (inc. terminal cover) Remote Display: 60 x 36 x 59mm (inc. mounting bracket)		
Weight	Charging Device: 690 grams Remote Display: 55 grams		

EBI Pro Specifications

Design Application	12VDC motor vehicles
Operating Voltage	8 – 17 VDC nominal
Continuous Rating	100 Amps @ 60°C ambient
Peak Current Rating	500 Amps for 5 seconds @ 10% duty cycle
Current Draw	In 'Isolate' mode (open circuit) <30mA In 'Combine' mode (closed circuit) <40mA Add ≈ 10mA when LED Status Display is active Add up to 30mA for external LED indicator
Operating Temperature	-20°C to +60°C
Dimensions	Footprint – 62mm x 92mm including bracket Profile – 94mm including terminal boots
Weight	495 Grams

We've just scratched the surface here – the EBI Pro and DCC Pro are like no other products on the market. Speak to your local interVOLT dealer for more info or visit our website at www.intervolt.com for everything you need to know.

EBI PRO Programmable Solid State Dual Battery Isolator



Before the EBI Pro, battery isolator/combining devices were pretty simple. There's nothing wrong with simplicity but if it comes at the cost of versatility then you already have compromise. The EBI Pro is truly unique and versatility is just one of the many advantages.

Unlike conventional electro-mechanical isolators the EBI Pro is solid state. Solid state means no moving parts. There are no contacts to vibrate, chatter, arc, wear and ultimately – fail. The MOSFET based topology of the EBI Pro is proven. Reliability, durability and longevity are built in.

The solid state aspect is just the beginning. The EBI Pro is also adjustable in terms of voltage and time delay. This provides the installer with the means to customise the EBI Pro for the application rather than suffer the 'one size fits all' philosophy from other isolator manufacturers.

The EBI Pro is built for Australian conditions – seriously. It has been designed for under bonnet use and will run fully loaded at 60°C. That's higher than most manufacturers rate their batteries! It is environmentally sealed and epoxy encapsulated. In short, the EBI Pro is designed to provide years of service – isn't that what you want from a dual battery controller?

DCC PRO R2-0 In-Vehicle Battery To Battery Charging System

There are a number of in-vehicle charging products on the market. The concept is not new but as the saying goes 'oils ain't oils' and there are certain things to look for in a DC-DC charging solution before handing over your hard earned dollars.

Heat is the enemy of electronics and if there is one thing we can't escape in the Australian climate, it's heat. In order to function in hot environments, electronics have to dissipate heat – quickly and efficiently. Electronic equipment manufacturers understand this of course, but rather than deal with the prospect of a hot environment, they cut back performance. Technically it's a good solution but if you have to start cutting back when the ambient is say 25°C, then you're not getting what you paid for!

Amongst other things the DCC Pro is designed for Australian conditions and outputs 100% current at 50°C ambient and will only de-rate after reaching this temperature. It will still output 20% of its rated current up to 85°C, so you should never be without charging power.

Aside from the heat, the Australian climate deals up plenty of dust and moisture, another no-no when it comes to electronics. The DCC Pro is environmentally sealed (to IP67) and can be fitted almost anywhere on the chassis and of course, under the bonnet.

The DCC Pro is also kitted with an interactive, in-cabin display for remote monitoring of the auxiliary charging status from both main and solar power charging sources as well as monitoring the main battery voltage.

And if you have more than one battery, the DCC Pro has the advantage of being able to control and monitor two charging devices from the one in-cabin display. Talk about convenient!

On the matter of solar power, the DCC Pro is ready to go – no need for an external regulator or control relay. Hook in your solar panel and take advantage of the DCC Pro's 3 stage charging capability. The input wattage is unlimited, if you have enough panels to make the most of the power from the sun the DCC Pro can deliver its full charging output of 25 Amps (displayed in Watts).

As for battery compatibility, the DCC Pro is capable of charging a wide range of battery chemistries. Following the release of our latest revision, units carrying the R2-0 marking now incorporates a LiFePO4 (with BMS) charging profile.

Because of its programmability the DCC Pro doesn't lock you into one battery type, you don't have to change your charger if your choice in battery changes down the track. How's that for future proofing your system!

