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## 2017 interVOLT Product Guide

# **COMPANY PROFILE**

Amelec Australia Pty Ltd is a wholly owned and operated Australian private company and the proud owner of the interVOLT brand, a trademark registered in over 20 countries worldwide.

We have been producing specialised power control and conversion products for the transportation market for over 15 years. All our products are designed, developed and assembled in-house at our premises in Perth, Western Australia.

Our design ethos is based on quality, performance and value and we are committed to the ongoing development of products in our field. interVOLT products are designed to cope with the demands of the harshest applications, particularly in high temperature/high humidity environments. They are constructed of quality materials, marine grade where applicable, and designed to provide many years of continuous service.

Our products are backed by an extensive research, engineering and testing program in order to deliver only the best products to our customers. In choosing an interVOLT product you are supporting Australian innovation, technology and intellectual property.



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## **DCC Series**











### **Overview**

The DCC Pro was developed for the purpose of charging and maintaining an auxiliary battery in an installation where the starting battery is used as the supply source. It has been designed for use in 4WDs, RVs, buses, coaches, caravans, campers or any vehicle with a 12VDC electrical system.

The DCC Pro is built for our tough Australian conditions. Unlike many imported products, particularly those produced for the European market, it is designed to safely maintain output in the harshest of environments under the highest ambient temperatures.

The DCC Pro is a standalone power conversion device. It will manage a variety of different battery types according to their specific charging requirements. As no modification to the vehicle's original wiring is required this ensures the manufacturer's electrical system is not compromised in any way.

The DCC Pro is a highly innovative product with many unique features. It has the flexibility to adapt to almost any vehicle, old or new, simple or complex with or without an ECU controlled electrical system and even allows the operator to monitor the charging status from the comfort of the cabin!

- Designed for Australia's harshest conditions.
- The best in-class performance for a charger of this size.
- Remote monitoring from the comfort of the driving seat.
- Solar ready no need for a separate regulator or relay.
- Under bonnet charging device is dust and water proof.
- Capable of monitoring two chargers on a single display.
- Overload and short circuit protection with automatic shutdown.
- Over temperature protected with automatic thermal shutdown.
- Screw terminated connectors no flying leads.
- No modification to the vehicle's original wiring is required.
- Compact design can be mounted in any position that suits.
- 24 months warranty (subject to policy terms and conditions).

# **In-Vehicle Battery Chargers**

"Designed for Australian conditions and engineered for demanding off road applications, the DCC Pro is no ordinary battery to battery charging system."



### **Part Numbers**

- DCC1225ACK-RP
- DCC1225ACD\* DCC0001ARD\*
- The DCC Pro automotive charging kit includes \* items Automotive Charging Device 12 Volts DC 25 Amps
  - Automotive Remote Display complete with bracket
  - Data cable 3 metres charging device to remote display
- DCC3000CTR\* DCC6000CTR Data cable 6 metres charging device to remote display
- DCC9000CTR Data cable 9 metres charging device to remote display

	Length	Width	Height	Weight
Charging Device	112mm	112mm	75mm	690 grams
Remote Display	60mm	36mm	59mm	55 grams













# **SVS** Series



### **Overview**

The use of mobile devices such as data terminals, code scanners, data storage, monitoring equipment and wireless routers in vehicle applications are increasing in popularity. The more ancillary equipment added to the electrical system, the more likely voltage related issues will occur. Issues such as voltage dips, spikes and transients can wreak havoc with sensitive electronic equipment.

When there are fluctuations in voltage some electronic devices may simply shut down, go offline or reboot, usually at an inconvenient time and often resulting in issues such as data loss or corruption. In a worst case scenario, these devices may actually be damaged, not always catastrophically but even long term exposure to these voltage issues can render damage and/or seriously reduce the expected life of the device.

interVOLT produces several solutions for protection onboard devices, including our renown SPCi Power Conditioner range. We have now released a new product, the SVS Voltage Stabiliser range, effectively a DC-DC power conditioner without galvanic isolation. The SVS utilises a common negative design, actively controlling the high side only, thereby eliminating the need for galvanic topology. The SVS is a cost-effective solution for many applications where complete DC-DC isolation is simply not required.



- Economical protection for sensitive electronic equipment.
- Available in both 12V and 24V DC for transport applications.
- Excellent line and load regulation output characteristics.
- Highly stable under a range of adverse input voltage conditions.
- Suitable for high temperature ambient environments.
- Compact in size with unique mounting plate to reduce footprint.
- High visibility LED status display and diagnostic indicators.
- Corrosion resistant materials suited to tropical environments.
- Conformally coated printed circuit board for greater protection.
- 24 months warranty (subject to policy terms and conditions).

# **Switchmode Voltage Stabilisers**

*"The SVS is a cost-effective solution for many applications where complete DC-DC isolation is simply not required"* 

## Models

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE	RATING
SVS1212050	11 – 17V (will dip to 8V)	12.5VDC ±1%	5.0 Amps max.
SVS2424025	22 – 33V (will dip to 16V)	25.0VDC ±1%	2.5 Amps max.





Length	101mm
Width	62mm
Height	34mm





## **EBI Series**









### **Overview**

In many vehicles, particularly 4WD or RV applications, there is a requirement to automatically charge a second (or auxiliary) battery from the starting (or main) battery. This is a well proven concept and is usually only limited by the constraints of the device used in the installation. These constraints have now been overcome by the introduction of the EBI Pro.

The EBI Pro is a revolution in dual battery control devices. 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.

Designed on the back of the ground-breaking PSR, the EBI Pro is also adjustable in terms of voltage and time delay. This provides the installer or operator with the means to customise the EBI Pro for the application rather than suffer the 'one size fits all' philosophy from manufacturers of traditional devices. This is a feature previously unavailable in conventional dual battery isolators/combiners and sets interVOLT apart from the competition.

- Clear LED status display and indicators for ease of operation.
- 100 Amps continuously rated with a generous 500 Amps peak.
- Dual sensing allows main battery to be charged from auxiliary.
- Output indicator function for convenient in-vehicle monitoring.
- Input for in-vehicle remote emergency combine switch (starting).
- Overload and short circuit protection with automatic shutdown.
- Over temperature protected with automatic thermal shutdown.
- Electronics are encapsulated in dust and water proof housing.
- Compact design can be mounted in any position that suits.
- Heavy duty construction designed for under-bonnet installations.
- 24 months warranty (subject to policy terms and conditions).

# **Electronic Battery Isolators**

"The EBI Pro is a revolution in dual battery control devices. Unlike conventional electro-mechanical isolators the EBI Pro is solid state"



## Models

MODEL	NOM. VOLTAGE	INPUT VOLTAGE	CONTINUOUS RATING	PEAK RATING
EBI12100A	12VDC	8 -17VDC	100 Amps @ 60°C	500 Amps - 5 Secs



Length	92mm
Width	67mm
Height	94mm







# **PSR Series**







### **Overview**

Voltage sensing relays have existed in one form or another for many years. They are commonly used to automatically replace the traditional manual process of controlling the charge function between batteries or battery banks, thus eliminating the risk of over/under charging.

interVOLT takes this process to a whole new level. The innovative design of the interVOLT PSR replaces traditional electro-mechanical relay devices used in 12/24 Volt DC applications by removing all mechanical parts to produce a completely solid state product with a myriad of added features.

In short, the PSR is a user adjustable voltage sensing relay in terms of voltage and time delay parameters. It allows the user to choose the voltage they want for switching loads on and off rather than be restricted to settings dictated by manufacturers. The time delay allows the relay to activate only after a user specified time to prevent cyclic (threshold) switching. In addition the PSR is electrically isolated (contact to load), non-polarised and bi-directional, features previously unheard of in any other solid state relay devices. Additionally the PSR has the major benefit of being able to change from normally open or normally closed, all literally, at the touch of a button.

- Completely solid state, no moving parts to wear or fail.
- Available in 12 or 24 VDC at 150 Amps continuous rating.
- Fully programmable interface for voltage and time delay.
- User configurable for normally open or closed switching.
- Load contacts are bi-directional and not polarity conscious.
- Switched circuit cannot backfeed due to isolated design.
- Complete DC-DC isolation between control and load circuits.
- Alarm output for remote monitoring of voltage condition.
- Electronics are enclosed in dust and water proof housing.
- Over temperature protection with automatic shutdown.
- Separate connection for emergency override or control.
- 24 months warranty (subject to policy terms and conditions).

# **Voltage Sensing Relays**

"The PSR is a user adjustable voltage sensing relay. Electrically isolated, non-polarised and bi-directional, features previously unheard of in any other solid state relay devices"

## Models

MODEL	NOM. VOLTAGE	INPUT VOLTAGE	CONTINUOUS RATING	PEAK RATING
PSR12150	12VDC	9-18VDC	150 Amps @ 50°C	500 Amps – 10 Secs
PSR24150	24VDC	16-38VDC	150 Amps @ 40°C	500 Amps – 10 Secs

Dimensions





Length	97mm
Width	86mm
Height	81.5mm

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# **SLD & SLD DuoDim Mini Series**







### **Overview**

The interVOLT range of SLD electronic DC lighting dimmers provide an excellent solution for the dimming of conventional (filament) lamps as well as compatible LED devices. The dimming of onboard lighting in boats, RVs, caravans and coaches at an affordable price has always been an issue. The SLD Series overcomes this with a feature packed design, not only presenting great value, but ensuring reliability, longevity and safety.

The SLD range of dimmers include single and two channel versions all housed in interVOLT's unique Mini Series enclosures which are not only stylish but compact, efficient and installer friendly. The single channel range can be paralleled to increase load capability and controlled from a single momentary switch. A selector switch allows the first dimmer to act as the master device with any subsequent dimmer connected as a slave.

The innovative DuoDim model is a true two channel dimmer with separate control and monitoring for each circuit which can also be combined (grouped) to form a single circuit dimmer if required. The DuoDim enables two lighting circuits to be separately controlled from one device, for example ceiling lights and reading lights can be separately switched and dimmed from one convenient source.

- Heavy duty design for switching high power DC lighting loads.
- Available in both single and dual channel models up to 500W.
- All models are universal voltage input suitable for 12 or 24VDC.
- Soft start control reduces in-rush current and extends bulb life.
- Built in memory retains previous setting for comfort and ambience.
- Special LED diagnostic indicator to assist with troubleshooting.
- Full electronic protection to ensure both longevity and safety.
- Protection Dimmers protect the electronics from various problems.
- Automatically dims load to 50% if the device should overheat.
- Single channel models can be paralleled to increase load rating.
- Dual channel model can be 'GROUPED' for single channel use.
- 24 months warranty (subject to policy terms and conditions).

# **Lighting Dimmers**

*"interVOLT's unique Mini Series - single and two channel versions are not only stylish but compact, efficient and installer friendly"* 

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## Models

MODEL	INPUT VOLTAGE	12V NOM. POWER RATING	24V NOM. POWER RATING
SLD2040DC	9 – 33VDC	200 Watts @ 13.0VDC	400 Watts @ 26.0VDC
SLD2550DC	9 – 33VDC	250 Watts @ 13.0VDC	500 Watts @ 26.0VDC
SLD2040DD	9 – 33VDC	200 Watts @ 13.0VDC	400 Watts @ 26.0VDC







	SLD2040DC	SLD2550DC	SLD2040DD
Length	120mm	170mm	145mm
Width	80mm	80mm	80mm
Height	40mm	40mm	40mm
Weight	250 grams	350 grams	300 grams

# **SPCi GEN II Maxi Series**









### **Overview**

Introduced in 2003, the interVOLT SPCi Maxi Series power conditioners were ground-breaking. Developed to address the many issues associated with on-board 12VDC and 24VDC power issues, the SPCi Maxi Series are, in fact, a converter, stabiliser, isolator and regulator with the added advantage of galvanic isolation.

Galvanic isolation ensures complete DC - DC electrical isolation, that is, no common connection between the input and output whatsoever. The benefits of using an isolated conditioner include elimination of line interference, increased electrical safety, improved circuit protection and a reduction in voltage transients. This means peace-of-mind when connecting sensitive and often expensive, high-end electronic equipment to the output.

The original Maxi Series Power Conditioners have recently been superceded by the innovative second generation versions. The GEN II range as they are known, are designed on the solid foundation of the former product with a host of new features and benefits. With digital over analogue topology the GEN II range allows the installer/operator to control and monitor various functions and provides valuable feedback on the status of the connected load.

The GEN II is more compact due to multi-speed fan cooling and as a result no longer relies on convection for cooling.

- Unique operator interface for control and monitoring.
- Galvanically isolated input to output no common connectivity.
- Special mode setting for charging an auxiliary battery (2 stage).
- High resolution voltage output of less than 0.5% under any load.
- Peak efficiency of 92% (better than 90% under most conditions).
- Remote operator control to turn unit on/off with signal power only.
- Multifunction alarm output for fault and pre-emptive warnings.
- Integrated speed and temperature controlled cooling fan.
- Compact design which can be mounted vertically or horizontally.
- Heavy duty termination with separate, removable terminal cover.
- Tropicalisation via conformally coated printed circuit board.
- 24 months warranty (subject to specific terms and conditions).

# **Power Conditioners**

"The SPCi GEN II Maxi Series are, in fact, a converter, stabiliser, isolator and regulator with the added advantage of galvanic isolation"

### Models

MODEL	ISOLATED	INPUT VOLTAGE	OUTPUT VOLTAGE	CONTINUOUS RATING
SPCi121210G2	Yes	10.5 – 16VDC*	12.0 – 14.0V	10 Amps @ 40°C
SPCi121220G2	Yes	10.5 – 16VDC*	12.0 – 14.0V	20 Amps @ 40°C
SPCi242410G2	Yes	20 – 33VDC**	24.0 - 28.0V	10 Amps @ 40°C
SPCi242420G2	Yes	20 – 33VDC**	24.0 - 28.0V	20 Amps @ 40°C

\* will dip to 9V - in power supply mode only

\*\* will dip to 17V - in power supply mode only



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	SPCi121210G2	SPCi121220G2
Length	170mm	230mm
Width	110mm	110mm
Height	55mm	55mm
Weight	830 grams	1150 grams

	SPCi242410G2	SPCi242420G2
Length	170mm	230mm
Width	110mm	110mm
Height	eight 55mm 55mm	
Weight	Weight 830 grams 1150	



# **SPCi Mini Series**







### **Overview**

Founded on the success of the original SPCi Maxi Series Power Conditioners, the Mini Series range was developed by demand for a smaller device to power and protect low current electrical and electronic equipment in transport applications. Utilising the unique Mini Series housing design, these devices are not only stylish but compact, efficient and installer friendly.

Like the larger Maxi Series the SPCi Mini Series feature DC - DC electrical isolation, that is, no common connection between the input and output whatsoever. The benefits of using an isolated conditioner include elimination of line interference, increased electrical safety, improved circuit protection and a reduction in voltage transients. This means peace-of-mind when connecting sensitive and often expensive, high-end electronic equipment to the output.

The Mini Series Power Conditioners feature a unique, microprocessor controlled diagnostic fault finding indicator. This assists in trouble shooting an array of common installation or connection issues. They are also fully protected by a range of safety features. These protect the device from certain conditions including input reverse connection, under voltage and transients and output overload, short circuit and over voltage. For safety reasons, shutdown functions are designed to automatically reset once the fault condition has been rectified.



- Galvanically isolated input to output no common connectivity.
- User selectable high or low voltage output setting (slide switch).
- Can be used as a float charger for standard lead acid batteries.
- Unique LED diagnostic indicator to assist with troubleshooting.
- Will operate in high ambient temperatures under continuous load.
- Peak efficiency up to 93% (better than 90% under most conditions).
- Precise voltage regulation and superior noise filtering circuitry.
- Full electronic protection to ensure both longevity and safety.
- Tropicalisation via conformally coated printed circuit board.
- 24 months warranty (subject to specific terms and conditions).

# **Power Conditioners**

"The SPCi Mini Series are not only stylish but compact, efficient and installer friendly"

## Models

MODEL	ISOLATED	INPUT VOLTAGE	OUTPUT VOLTAGE	CONTINUOUS RATING
SPCi121207	Yes	10 – 16VDC	12.5/13.6VDC	7 Amps @ 30°C
SPCi242405	Yes	17 – 33VDC	25.0/27.2VDC	5 Amps @ 30°C

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# **SVC and SVCi GEN II Maxi Series**





### **Overview**

The GEN II range of SVC and SVCi Maxi Series Voltage Converters as they are known, are designed on the solid foundation of the original product with a host of new features and benefits. With digital over analogue topology the GEN II range allows the installer/operator to control and monitor various functions and provides valuable feedback on the status of the connected load. The GEN II is more compact due to multi-speed fan cooling and as a result no longer relies on convection for cooling.

Available in both common negative and galvanically isolated versions, the GEN II Maxi Series models are designed for high performance installations where a 12VDC source is required in a 24VDC application. The common negative SVC version provides maximum efficiency at a cost effective price and provides all the same protection of the SVCi version with the exception of galvanic isolation. The isolated version ensures complete DC - DC electrical isolation, that is, no common connection between the input and output whatsoever. Isolated converters will eliminate line interference, increase electrical safety with improved circuit protection and reduce voltage transients. This means peace-of-mind when connecting sensitive and often expensive, high-end electronic equipment to the output.



- Unique operator interface for control and monitoring.
- Available in common negative or galvanically isolated models.
- Special mode setting for charging an auxiliary battery (2 stage).
- High resolution voltage output of less than 0.5% under any load.
- Peak efficiency up to 94% (no less than 90% under any load).
- Remote operator control to turn unit on/off with signal power only.
- Multifunction alarm output for fault and pre-emptive warnings.
- Integrated speed and temperature controlled cooling fan.
- Compact design which can be mounted vertically or horizontally.
- Heavy duty termination with separate, removable terminal cover.
- Tropicalisation via conformally coated printed circuit board.
- 24 months warranty (subject to specific terms and conditions).

# **Voltage Converters**

*"With digital over analogue topology the GEN II range allows the installer/operator to control and monitor various functions"* 

## Models

MODEL	ISOLATED	INPUT VOLTAGE	OUTPUT VOLTAGE	CONTINUOUS RATING
SVC241225G2	No	20 – 33VDC*	12.0 – 14.0V	25 Amps @ 40°C
SVC241235G2	No	20 – 33VDC*	12.0 – 14.0V	35 Amps @ 40°C
SVCi241215G2	Yes	20 – 33VDC*	12.0 – 14.0V	15 Amps @ 40°C
SVCi241225G2	Yes	20 – 33VDC*	12.0 – 14.0V	25 Amps @ 40°C

\* will dip to 17V - in power supply mode only





	SVC241225G2 SVCi241215G2	SVC241235G2	SVCi241225G2
Length	170mm	200mm	230mm
Width	110mm	110mm	110mm
Height	55mm	55mm	55mm
Weight	750 grams	900 grams	1150 grams



# **SVC and SVCi Mini Series**







### **Overview**

The SVC and SVCi Mini Series range was developed to fulfil the need for a small device to power low current electrical and electronic equipment in transport applications. Utilising the unique Mini Series housing design, these devices are not only stylish but compact, efficient and installer friendly.

Available in both common negative and galvanically isolated versions, the SVC and SVCi Mini Series models are designed for high performance installations anywhere a 12VDC source is required in a 24VDC application. The common negative SVC version provides maximum efficiency at a cost effective price and provides the same protection of the SVCi version with the exception of galvanic isolation. The isolated version ensures complete DC - DC electrical isolation, that is, no common connection between the input and output whatsoever. Isolated converters will eliminate line interference, increase electrical safety with improved circuit protection and reduce voltage transients. This means peace-of-mind when connecting sensitive and often expensive, high-end electronic equipment to the output.

The SVC and SVCi Mini Series incorporate a range of safety features to protect the device from specific fault conditions including under and over voltage, transients, thermal and output overload and short circuit.



- Available in common negative or galvanically isolated models.
- Isolated version has selectable high or low voltage output setting.
- Suitable for float charging of lead acid batteries (isolated model only).
- Unique LED diagnostic indicator to assist with troubleshooting.
- Will operate in high ambient temperatures under continuous load.
- Peak efficiency up to 93% (better than 90% under most conditions).
- Precise voltage regulation and superior noise filtering circuitry.
- Full electronic protection to ensure both longevity and safety.
- Tropicalisation via conformally coated printed circuit board.
- 24 months warranty (subject to specific terms and conditions).

# **Voltage Converters**

"The SVC and SVCi Mini Series models are designed for high performance installations anywhere"

## Models

MODEL	ISOLATED	INPUT VOLTAGE	OUTPUT VOLTAGE	CONTINUOUS RATING
SVC241207	No	19 – 33VDC	13.7VDC	7 Amps @ 30°C
SVC241210	No	19 – 33VDC	13.7VDC	10 Amps @ 30°C
SVCi241208	Yes	17 – 33VDC	12.5/13.6VDC	8 Amps @ 30°C

## Dimensions



_	SVC241207	SVC241210	SVCi241208
Length	120mm	145mm	170mm
Width	80mm	80mm	80mm
Height	40mm	40mm	40mm
Weight	270 grams	325 grams	418 grams

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As many sub-components are highly specialised they are difficult, if not impossible to source externally. As a result, an array of these items, such as custom wire wound inductors and transformers are produced in-house.

High power designs require special engineering considerations, including printed circuit boards. It is not uncommon for our power conversion devices to utilise heavy duty PCBs up to and including five ounce copper traces.

Only high quality components are used in the production of our products. Every significant component is carefully researched, analysed and tested throughout the development stages before being selected for use in production.

The final assembly process is the union of a myriad of components both electronic and mechanical, to form a finished product. Stringent quality control ensures each process is carried out according to industry recognised standards.

Every product is subject to comprehensive testing, both throughout the assembly process and prior to packaging. Due to our high standards and 100% testing regime, the reject and re-work rate is insignificant.











interVOLT products are designed in-house from the ground up. From pencil to production and all stages in between, we use specialised engineering tools to conceive, map, simulate and test our electronic designs. Leading edge software is used to produce printed circuit board layouts and subsequent conversion to CAM files for prototyping and finally, production. We develop and compose unique firmware for on-board logic controllers, from simple to sophisticated, no challenge is too great.

Our hardware is designed using 3D CAD technology, from basic fasteners to complex die-cast aluminium heat sinks and engineered plastic parts. All items are purpose designed and produced using custom made tooling. We even develop components down to PCB level including transformers, inductors, filters, termination and specialised hardware such as transistor retainers.

Our product testing regime is both thorough and exhaustive. After completion of laboratory testing we subject our prototypes to 'real world' scenarios utilising a range of available resources in the field. We use specialised equipment and data logging devices to record and capture relevant information during development. These practices ensure ongoing product reliability, performance, longevity and ultimately, quality.

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