

# Advance

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VEHICLE POWER

Vehicle generators and power management systems



The choice of professionals

# Vehicle Power Systems



Advance Vehicle Power specialise in mobile power solutions for a broad range of vehicle applications. As UK distributor for lightweight Panther diesel generators, advanced Studer inverter technology and powerful Cristec battery chargers – we offer a complete package to meet all your requirements.

## Quality products from the world's leading suppliers



Panther vehicle generators provide a professional solution for power on the go. Manufactured by VTE in Italy; specialists in the production of water-cooled, high power, low weight diesel generators for over 80 years.



World leaders in the design and manufacture of pure sine wave inverters and smart inverter/chargers; Studer and Victron Energy products are used all over the world in industrial, mobile and land based applications. These smart inverter/chargers are at the heart of a hybrid power system.



Cristec are specialists in high frequency switch mode battery charging. Their chargers, mains power charger units and charge splitters ensure high performance and efficient operation resulting in reduced maintenance for vehicle power systems.



Rolls produce superior 12 volt AGM deep cycle VRLA batteries. These feature high reserve capacity, long cycle life and low internal resistance. These sealed maintenance free batteries are the smart choice for demanding recreational and professional vehicle engine start and systems service applications.

You can buy from us - from individual component supply to complete system design & installation, we are able to help you complete your vehicle upgrade. To buy, you can simply call us or, for smaller items you can also buy on-line.



## Component supply, system design & installation

With unrivalled experience in the specification and configuration of mobile generators and power management technology, we can design packages using the latest power generation and management equipment to suit your needs.

### Recreational

- Caravans
- Campervans
- Horseboxes



### Luxury Travel

- Live aboard RV's
- Exploration vehicles
- Luxury motor coaches



### Professional

- SNG vans
- Outside broadcast trucks
- Service vans



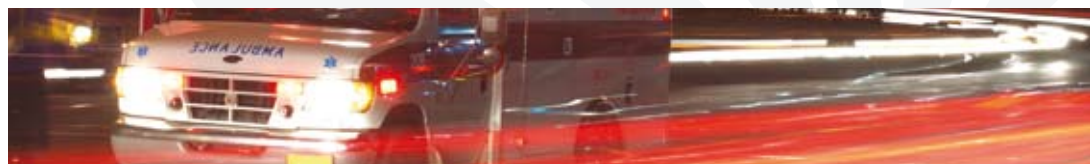
### Promotion Vehicles

- Motorsport support
- Exhibition vehicles
- Mobile stages



### Emergency Services

- Police incident support
- Mobile military command
- Ambulances



# Panther Vehicle Generators



## The ultimate source of mobile power... ...Compact, ...Light, ...Quiet, ...Water-cooled

- Water-cooled primary exhaust muffler mounted inside sound capsule for low sound and cooler exhaust temperature
- Dual anti-vibration system based on four soft shock absorber mounts inside the capsule and four firm mounts outside, to reduce noise and vibration transmission
- Silenced air-intake through capsule base via foam covered inlets to reduce induction noise
- Oil removal hand pump fitted as standard for easy, clean and quick oil changes
- Remote control panel complete with 15m harness
- High temperature resistant engine harness wiring with silicon sleeving



## Synchronous, Permanent Magnet, Variable Speed

The electrical output comes from the use of high quality electrical alternators with two choices available; skew cut brushless synchronous and permanent magnet (PMG). The generators are available from 6kVA to 18kVA in four formats; high speed synchronous, slow speed synchronous, high speed PMG and Variable speed PMG.

The water-cooled brushless synchronous alternators produce an excellent sine wave. This is a popular format successfully employed in outside broadcast vehicles using the latest SNG High Definition TV transmission uplink technology.

Our range of PMG diesel generators has the important feature that they are shorter and lighter than the synchronous version. This is helpful when a powerful generator needs to fit in a small location. The output from our PMG generators is also extremely clean. The larger 9-12kW models are also available with variable speed option. This allows the engine to run slower when low amounts of power are required and speed up at peak power times.



## Modern Technology

The Panther range uses a selection of ultra-modern Lombardini engines. These engines feature Fully Overhead Controlling System (FOCS) fuel injection technology. This results in smooth, quiet running with low emissions (Tier 4 / EU Stage 111A).

## Remote Control

- Hour meter
- Load indicator
- Auto shut off for low oil pressure and water over temperature
- Indicators for mains power and start battery charge current
- 15m harness



## Fan Cooled Radiators

Roof or side mounted radiators are used to cool the generator. These lightweight, fan cooled systems feature a deep lightweight aluminium core keeping vehicle weight to a minimum.

The radiator is fitted with two large diameter fans, reducing the need for higher fan speeds and keeping noise to a minimum. Each fan is commanded to operate at different temperature levels ensuring noise is kept to a minimum.

The radiators come complete with a gloss white UV resistant ABS cowling.

## Our Vehicle Generator Package

Each vehicle generator comes complete with:

- Mains power RCD and MCBs (including fan power) in enclosure
- Water-cooled muffler in sound capsule, mounted on anti-vibration feet
- Remote control panel with 15m harness featuring start, stop, run hours, load meter and over temp/low oil shutdown indicator
- Lightweight fan-cooled radiator for rooftop or side mounting on anti-vibration mounts, with power supply and white UV resistant ABS cowling and roof hose connectors

We can also supply kits to complete the installation:

- Fuel supply kit with connectors, hoses, filter and stop valve
- Mains power kit with source selector switch and 10 metres of flexible mains cable. Mains safety breaker and RCD are included with the generator
- External exhaust silencer with flexible metal hose and connectors



# Power Management



## Studer & Victron – Inverter/Chargers

Studer Xtender and Victron MultiPlus/Quattro inverter/chargers provide a seamless supply of AC power, acting as battery chargers when there is a source of mains and inverters when there isn't. The boost function also enables inverter power to be added to either mains power or generator, giving you extra AC power at times of peak load.



## Studer & Victron – Inverters

Studer AJ's are the most efficient pure sine wave inverters available. Converting DC voltage into AC and featuring outstanding overload capabilities, digital regulation and microprocessor control, they are suitable for use with all electrical appliances. We also supply Victron Phoenix inverters.



## Cristec Battery Chargers

Cristec battery chargers feature fully-automatic 3-stage charging and can be left permanently connected to the batteries to maintain their charge. Dip switch programming allows you to select the correct charge curves to suit the battery type used and all chargers up to 80A have 3 independent outputs (to charge 3 separate battery banks).



## Cristec Mains Power Charger Units

These units combine a battery charger with an AC consumer unit in a single box. Compact and lightweight, they simplify installation by providing a complete pre-wired system. The AC circuit protection is assured by a residual current device (RCD) and 2, 3 or 4 miniature circuit breakers (MCB) depending on model. The battery charger function is supplied by a high frequency switch mode standard CPS3 PCB that delivers an IUoU curve.





**Rolls**  
BATTERY ENGINEERING

**STUDER**  
SWISS MADE

**CRISTEC**  
on-board energy

## Rolls Batteries

Vehicle electrical systems revolve around the batteries ability to absorb, maintain and deliver high levels of power. Rolls AGM deep cycle batteries are designed and built differently than ordinary automotive starting batteries. They use more lead, stronger plates and other proprietary materials enabling them to deliver more power and capacity over many life cycles. They are able to survive very deep discharge with excellent recovery, are maintenance free and do not vent gas in normal operation. They are the best choice for both starting and service batteries used in vehicles.



## Studer & Cristec – Battery Monitors

Battery monitors provide the most accurate and reliable method for correctly assessing the state of charge of your batteries. Battery monitors keep you accurately informed of your battery's voltage, current, consumed Amphours, state of charge, time to go and temperature. This allows for recharging in a timely manner which prevents expensive damage occurring as a result of accidental deep discharge.



## Studer – Voltage Sensitive Relays (VSR)

Studer MBR battery separators are microprocessor controlled VSRs, allowing one battery bank to be charged first from a battery charger or engine alternator and then automatically connecting the second battery in parallel to allow it to be charged. See also Cristec Battery Charge Splitters.



## Cristec – Battery Charge Splitters

Cristec MOSFET battery splitters generate an insignificant voltage drop. They supply the alternator/charger's current to several batteries. All batteries are thus charged at the same time, but remain electrically independent and so cannot discharge each other.



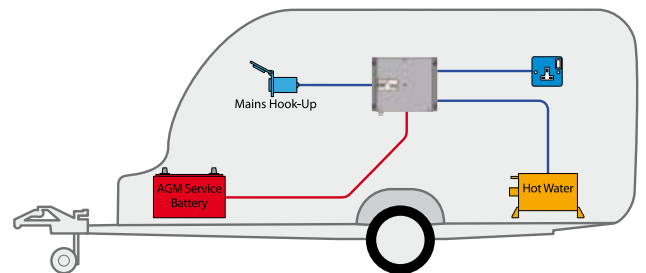
# Typical Applications



## Small caravan

*Caravans that connect to the mains and require circuit protection and battery charging facilities*

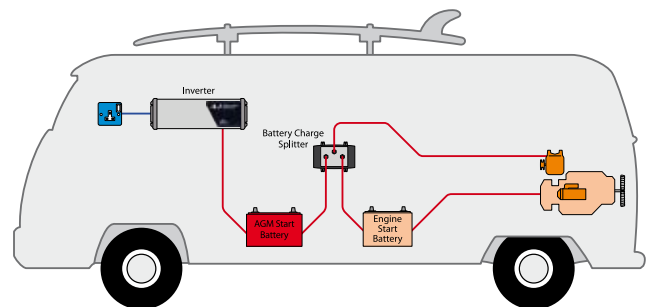
The Cristec mains power charger unit provides battery charging when hooked up to mains power, and ensures full AC circuit protection with a built-in RCD and 2, 3 or 4 circuit breakers.



## Camper van

*Vehicles that require low AC power for domestic appliances on the go*

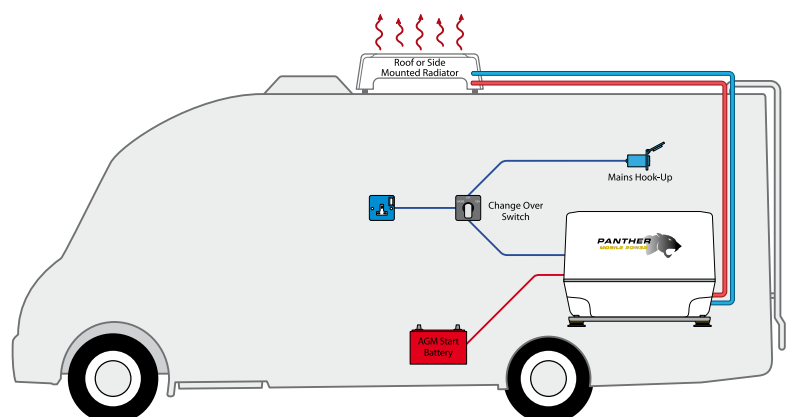
When the engine is running, the vehicle alternator charges the start battery and another 'service' battery via a splitter or voltage sensitive relay. A Studer inverter connected to the service battery can be used to provide up to 2kW of AC power for laptops, phone charging, kettle, even a microwave. As equipment is used, it consumes the energy stored in the second battery but it does not deplete the start battery.



## Live aboard recreational and exploration vehicles

*Vehicles that require a 'domestic' quantity of power for comfort on the road*

Simply press START on the remote panel and the Panther generator provides mains power. If you are parked near to a mains hook-up facility you have the choice of switching over and using mains power.



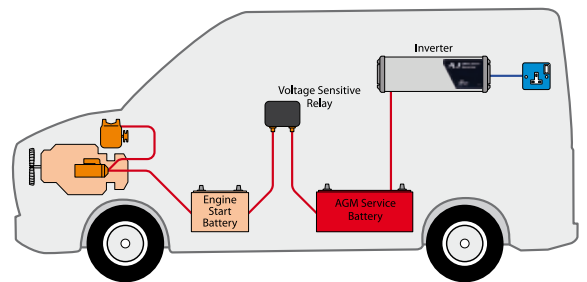




## Small service van

*Vehicles that require up to 2kW of AC power for up to hours at a time*

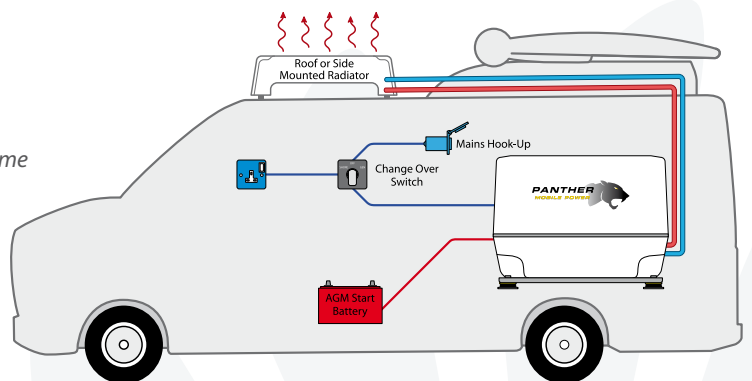
The vehicle alternator is used to charge the start battery and another 'service' battery via a splitter or voltage sensitive relay. A Studer Inverter connected to the service battery can be used to provide pure sine wave 230V AC power for laptops and power tools such as drills, bench grinders or hot air guns etc. As equipment is used, it consumes the energy stored in the second battery but it does not deplete the start battery.



## Outside broadcast vehicle

*Vehicles that require large amounts of AC power for long periods of time*

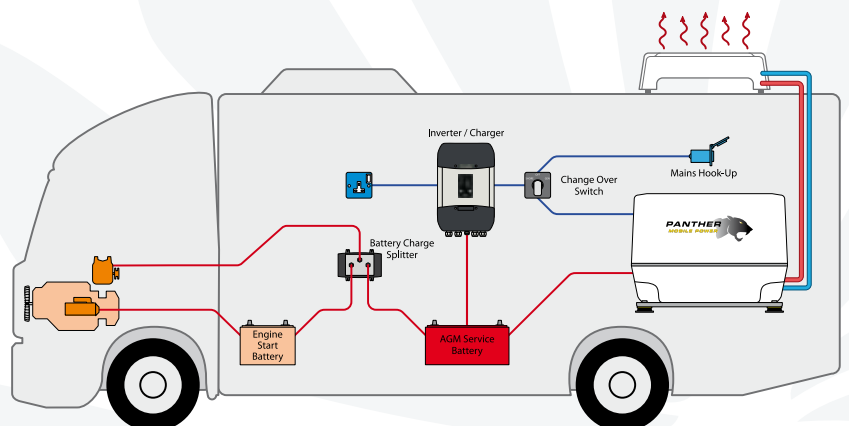
The most effective way to do this is with a diesel generator specially designed for vehicles. Vehicles with a ground hook-up facility are fitted with a changeover switch to give the choice of switching between power supplies, when mains is available.



## Police incident support trucks - mobile military command centres

*Vehicles that need to meet mission critical levels of operational continuity and require a powerful supply of 230V with some level of seamless 'back-up'*

In such cases we have developed solutions that use the Studer inverter/chargers with high speed automatic transfer switches and circuit load shedding relays. Combined with AGM batteries and assisted by the engine driven DC alternator, we can offer a system that provides permanent 230V supply.



# Specifications



Panther Generators			
Model	kW*	RPM	Engine Spec
6000	6	3000	2 Cyl 505cc
9000	9	3000	2 Cyl 686cc
14000	14	3000	3 Cyl 1028cc
18000	18	3000	4 Cyl 1372cc
6500	6	1500	3 Cyl 1028cc
8500	8	1500	4 Cyl 1372cc
9000 PMG	9	3000	2 Cyl 686cc
12000 PMG	12	3000	3 Cyl 1028cc
9000 V	9	Variable	2 Cyl 686cc
12000 V	12	Variable	3 Cyl 1028cc

\* continuous rating at 230V supplying consumers with a power factor of 1.0

Studer Xtender Inverter/Chargers				
Model	Inverter Power VA (30 min)	Inverter Peak Power VA (5 sec)	Charger Output (A)	Transfer Relay Rating (A)
XTM 900-12	900	2300	35	16
XTM 1500-12	1500	3400	70	50
XTM 2000-12	2000	4800	100	50
XTH 3000-12	3000	7500	160	50
XTM 1200-24	1200	2500	25	16
XTM 2400-24	2400	6000	55	50
XTM 3500-24	3500	9000	90	50
XTH 5000-24	5000	12000	140	50



Studer AJ Inverters		
Model	Inverter Power VA (30 min)	Inverter Peak Power VA (5 sec)
275-12	275	450
500-12	500	1000
1000-12	1000	2200
2100-12	2100	5000
350-24	350	650
600-24	600	1200
1300-24	1300	2800
2400-24	2400	5200

Studer Voltage Sensitive Relays		
Model	Current Rating (A)	Remote Contact Control
MBR 12/24-100	100	No
MBR 12/24-160	160	Yes
MBR 12/24-500	500	Yes

Studer Battery Chargers		
Model	Charge Output (A)	No. of Outputs
MBC 12-06/1	6	1
MBC 12-15/1	15	1
MBC 24-03/1	3	1
MBC 24-08/1	8	1
MBC 24-15/1	15	1
MBC 24-32/1	32	1



Cristec Battery Chargers		
Model	Charge Output (A)	No. of Outputs
CPS70-1A	6	1
CPS140-1A	10	1
YPO12-16ST	16	3
YPO12-25ST	25	3
YPO12-40ST	40	3
YPO12-60ST	60	3
CPS3/12-80	80	3
CPS3/12-100	100	1
CPS70-2A	3	1
CPS120-2A	5	1
YPO24-12ST	12	3
YPO24-20ST	20	3
YPO24-30ST	30	3
CPS3/24-60	60	3
CPS3/24-75	75	3
CPS3/24-120	120	1
CPS3/24-150-TRI	150	1

Cristec MOSFET Charge Splitters		
Model	No. of Inputs/Outputs	Current Rating (A)
RCE/100-1E-2IG	1 / 2	100
RCE/100-1E-3IG	1 / 3	100
RCE/100-2E-3	2 / 3	100
RCE/150-1E-2IG	1 / 2	150
RCE/150-1E-3IG	1 / 3	150
RCE/180-1E-2IG	1 / 2	180
RCE/180-1E-3IG	1 / 3	180
RCE/200-1E-3IG	1 / 3	200

Cristec Mains Power Charger Units (12 Volt Charger Only)			
Model	Charge Output (A)	No. of Outputs	No. of MCBs
UECPS/12-12/2D	12	2	2
UECPS/12-16/2D	16	3	2
UECPS/12-16/3D	16	3	3
UECPS/12-16/4D	16	3	4
UECPS/12-25/2D	25	3	2
UECPS/12-25/3D	25	3	3
UECPS/12-25/4D	25	3	4
UECPS/12-40/3D	40	3	3
UECPS/12-40/4D	40	3	4

Rolls AGM Batteries - Red Series			
Model	Battery Capacity (Ah @ C20)	Size (L x W x H mm)	Weight (kg)
S12-95AGM	85	260 x 169 x 237	25
S12-116AGM	105	307 x 169 x 215	30
S12-128AGM	115	328 x 172 x 236	33
S12-160AGM	145	341 x 173 x 309	44
S12-230AGM	210	530 x 209 x 218	61
S12-240AGM	215	381 x 178 x 371	60
S12-290AGM	260	521 x 269 x 224	78

Rolls AGM Batteries - Series 2			
Model	Battery Capacity (Ah @ C20)	Size (L x W x H mm)	Weight (kg)
R12-80AGM	80	260 x 169 x 237	23
R12-100AGM	100	307 x 169 x 237	27
R12-110AGM	110	328 x 172 x 240	30
R12-200AGM	200	522 x 240 x 240	56
R12-260AGM	260	522 x 268 x 240	73





Your local dealer is:



*I'm as free as the breeze, what's to stop me and why; I can live as I please, open road, open sky!*

John Charles Thomas



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VEHICLE POWER

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