victron energy
BLUE POWER

Orion DC/DC Converters: any voltage you need

Orion DC/DC Converters

Possibly the widest range on the market!

An ever-increasing amount of electric equipment is being used on vehicles and boats. Because most low-voltage equipment, such as navigation and radio equipment, mobile telephones or car hi-fi systems, is designed for 12 Volts, Victron Energy supplies DC/DC converters which deliver a stable 12 Volt supply from a 24 Volt system. These products are also distinguished by high efficiency, together with absolute safety. An inferior supply can cause irreparable damage to your 12 Volt system, but the use of an Orion voltage converter prevents such problems.
Next to converters from 24 V to 12 V, a wide range of other models is available.

The Orion 24/12-20, 24/12-30 and 24/12-60 can also be used as a 12 V battery charger

The Orion 24/12-20 and 24/12-30 can also be used as a 13.8 Volt battery charger for a 12 Volt starter or accessory battery in an otherwise 24 V system.

The Orion 12/27,6-12: a 24 V battery charger

To charge a 24 V battery from a 12 V system.
The output voltage of this model can be adjusted with a potentiometer

A super wide input range buck-boost regulator: the Orion 7-35/12-3

The Orion 7-35/12-3 is an isolated converter with a very wide input range, suitable for both 12 V and 24 V systems, and a fixed 12,6 V output.

Non isolated converters	Orion 24/12-5	Orion 24/12-8	Orion 24/12-12	Orion 24/12-20	Orion 24/12-30	Orion 24/12-60	Orion 12/24-7	Orion 12/24-10
Input voltage range (V)	18-35	18-35	20-35	20-35	20-35	20-35	9-18	9-18
Output voltage (V)	13,2	13,2	13,2	13,8	13,8	13,8	24	24
Max.output current (A)	5,5	8	12	20	30	60	7	10
Fan assisted cooling (temp. controlled)	no	no	no	no	yes	yes	no	no
Galvanic isolation	no	no	no	no	no	no	no	no
Off load current	< 5mA	< 5mA	< 5mA	appr.25mA	appr.25mA	appr.50mA	< 15mA	< 15mA
Temperature increase after 30 minutes at full load °C (°F)	30 (85)	20 (70)	30 (85)	25 (75)	33 (90)	33 (90)	30 (85)	30 (85)
Weight kg (lbs)	0,17 (0.37)	0,25 (0.55)	0,26 (0.57)	0,48 (1.1)	0,6 (1.3)	1,2 (2.6)	0,3 (0.7)	0,4 (0.9)
Dimensions hxwxd in mm (hxwxd in inches)	49x88x68 (1.9x3.5x2.7)	49x88x98 (1.9x3.5x3.9)	49x88x98 (1.9x3.5x3.9)	49x88x126 (1.9x3.5x5.0)	49x88x151 (1.9x3.5x6.0)	88x100x180 (3.5x4.0x7.0)	49x88x98 (1.9x3.5x3.9)	49x88x126 (1.9x3.5x5.0)

Note: two units Orion 24/12-60 can be connected in parallel to obtain a 120 A converter

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Orion DC/DC Converters

Isolated converters	Orion xx/yy-100W	Orion xx/yy-200W	Orion xx/yy-360W
Power rating (W)	100 (12,5V/8A or 24V/4A)	200 (12,5V/16A or 24V/8A)	360 (12,5V/30A or 24V/15A)
Galvanic isolation	yes	yes	yes
Temperature increase after 30 minutes at full load (°C)	25	30	30
Fan assisted cooling (temp. controlled)	no	yes	yes
Weight kg (lbs)	0,5 (1.1)	0,6 (1.3)	1,4 (3.1)
Dimensions hxwxd in mm (hxwxd in inches)	49 x 88 x 152 (1.9 x 3.5 x 6.0)	49 x 88 x 182 (1.9 x 3.5 x 7.2)	64 x 163 x 160 (2.5 x 6.4 x 6.3)
Input voltage (xx): 12 V (9 – 18 V) or 24 V (20 – 35 V) or 48 V (30 – 60 V) or 96 V (60 – 120 V)			
Output voltage (yy): 12,5 V or 24 V			

Isolated 24V battery charger: Orion 12/27,6-12

Input 9 – 18 V, output 27,6 V, current limit 12 A, fan assisted cooling
Output voltage adjustable with potentiometer)
Weight 1,4 kg (3.1 lbs), dimensions 64 x 163 x 160 mm (2.5 x 6.4 x 6.3 inch)

Isolated buck-boost regulator: Orion 7-35/12-3

Input 7 – 35 V, output 12,6 V current limit 3 A, derate current linearly from 3 A at 18 V to 1,5 A at 7 V
Weight 1,4 kg (3.1 lbs), dimensions 64 x 163 x 160 mm (2.5 x 6.4 x 6.3 inch)

Common Characteristics	
Output voltage stability	2 % (Orion 12/24-7 and Orion 12/24-10: + 0% / - 5%)
Output voltage tolerance	3 %
Output noise	< 50 mV rms
Off load current	< 25 mA (isolated converters)
Efficiency	Non isolated: appr. 92% Isolated: appr. 85%
Isolation	> 400 Vrms between input, output and case (isolated products only)
Operating temperature	- 20 to + 30°C (0 to 90°F). Derate linearly to 0 A at 70°C (160°F)
Humidity	Max 95% non condensing
Casework	Anodised aluminum
Connections	6.3 mm (2.5 inch) push-on flat blade connectors
Protection: Overcurrent Overheating Reverse polarity conn. Overvoltage	Short circuit proof Reduction of output voltage Fuse and reverse connected diode across input Varistor (also protects against load dump)
Standards: Emission Immunity Automotive Directive	EN 50081-1 EN 50082-1 95/45/EC

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