

# Orion DC-DC Converters

www.victronenergy.com



**Orion 24/12-5**

**Remote on-off connector on the high power models (see table below)**

The remote on-off eliminates the need for a high current switch in the input wiring. The remote on-off can be operated with a low power switch or by the engine run/stop switch (see manual).

**All models with adjustable output can also be used as a battery charger**

For example to charge a 12 Volt starter or accessory battery in an otherwise 24 V system.

**All models with adjustable output can be paralleled to increase output current**

Up to five units can be connected in parallel.

**The Orion 12/27,6-12: a 24 V battery charger (see page 2)**

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 (see page 2)**

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.

**Easy to install**

Delivery includes four Insulated Fastons Female Crimp 6.3 mm (eight Fastons in case of the Orion 24/12-40).



**Orion 24/12-17**



**Orion 24/12-25**



**Orion 24/12-40**



**Orion 24/12-70**

Non isolated converters	Orion 24/12-5	Orion 24/12-12	Orion 24/12-17	Orion 24/12-25	Orion 24/12-40	Orion 24/12-70	Orion 12/24-8	Orion 12/24-10	Orion 12/24-20
Input voltage range (V)	18-35	18-35	18-35	18-35	18-35	18-35	9-18	9-18	9-18
Undervoltage shutdown (V)	-	14	14	14	14	14	8	8	8
Undervoltage restart (V)	-	18	18	18	18	18	10	10	10
Output voltage adjustable with potentiometer	no	no	no	yes	no	yes	no	yes	yes
Output voltage (V)	12	12	12	Adjustable 10-15V F set 13,2V	12	Adjustable 10-15V F set 13,2V	24	Adjustable 20-30V F set 26,4V	Adjustable 20-30V F set 26,4V
Efficiency (%)	92	95	94	96	95	92	95	95	93
Suitable to buffer-charge a battery	no	no	no	yes	no	yes	no	yes	yes
Can be connected in parallel	no	no	no	yes	no	yes	no	yes	yes
Continuous output current (A)	5	12	17	25	40	70	8	10	20
Max. Output current (A)	5	20	25	35	55	85	20	20	30
Fan assisted cooling (temp. controlled)	no	no	no	no	yes	yes	no	no	yes
Galvanic isolation	no	no	no	no	no	no	no	no	no
Off load current	< 5mA	< 7mA	< 7mA	< 15mA	< 20mA	< 20mA	< 10mA	< 15mA	< 30mA
Remote on-off	no	no	no	yes	yes	yes	no	no	yes
Operating temperature range (derate 3% per °C above 40°C)	-20 to +55°C	-20 to +55°C	-20 to +55°C	-20 to +55°C	-20 to +55°C	-20 to +55°C	-20 to +55°C	-20 to +55°C	-20 to +55°C
DC connection	Faston tabs 6.3 mm	Faston tabs 6.3 mm	Faston tabs 6.3 mm	Faston tabs 6.3 mm	Double Faston tabs 6.3 mm	M6 bolts	Faston tabs 6.3 mm	Faston tabs 6.3 mm	M6 bolts
Weight kg (lbs)	0,2 (0.40)	0,3 (0.65)	0,3 (0.65)	0,7 (1.55)	0,85 (1.9)	0,9 (2.0)	0,4 (0.8)	0,4 (0.9)	0,9 (2.0)
Dimensions hxxwxd in mm (hxxwd in inches)	45x90x65 (1.8x3.5x2.6)	45x90x100 (1.8x3.5x3.9)	45x90x110 (1.8x3.5x3.9)	65x88x160 (2.6x3.5x6.3)	65x88x185 (2.6x3.5x7.3)	65x88x195 (2.6x3.5x7.7)	45x90x115 (1.8x3.5x4.5)	45x90x125 (1.8x3.5x4.5)	65x88x195 (2.6x3.5x7.7)
Standards: Safety Emission Immunity Automotive Directive	EN 60950 EN 61000-6-3, EN 55014-1 EN 61000-6-2, EN61000-6-1, EN 55014-2 EN 50498								

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 hxxxd in mm (hxxxd 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) or 110V (60 – 140V)			
Output voltage (yy): 12,5 V, 24 V or 48V			

**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 + 40°C (0 to 100°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 connection Overvoltage	Short circuit proof Reduction of output voltage Fuse and reverse connected diode across input Varistor (also protects against load dump)
Standards: Safety Emission Immunity Automotive Directive	EN 60950 EN 61000-6-3, EN 55014-1 EN 61000-6-2, EN61000-6-1, EN 55014-2 EN 50498



**Orion isolated 100W**



**Orion isolated 360W**