

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 |
| Under voltage shutdown (V) | - | 14 | 14 | 14 | 14 | 14 | 8 | 8 | 8 |
| Under voltage 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 10-15 V F set 13,2 V | 12 | Adjustable 10-15 V F set 13,2 V | 24 | Adjustable 20-30 V F set 26,4 V | Adjustable 20-30 V F set 26,4 V |
| 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 (hxxwxd 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, EN 61000-6-1, EN 55014-2 EN 50498 | | | | | | | | |

| Isolated Converters | Orion xx/yy-100W | Orion xx/yy-200W | Orion xx/yy-360W |
|---|-------------------------------------|--------------------------------------|---------------------------------------|
| Power rating (W) | 100 (12,5 V / 8 A or 24 V / 4 A) | 200 (12,5 V / 16 A or 24 V / 8 A) | 360 (12,5 V / 30 A or 24 V / 15 A) |
| 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 hwxwd in mm (hwxwd in inches) | 50 x 88 x 151 (1.9 x 3.5 x 6.0) | 50 x 88 x 176 (1.9 x 3.5 x 7.2) | 82 x 132 x 190 (3.2 x 5.2 x 7.5) |
| Input voltage (xx): 12 V (9 – 18 V) or 24 V (20 – 35 V) or 48 V (30 – 60 V) or 110V (60 – 140V) | | | |
| Output voltage (yy): 12,5 V, 24 V or 48V | | | |

Isolated 24 V 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 aluminium |
| 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, EN 61000-6-1, EN 55014-2 EN 50498 |



Orion isolated 100W



Orion isolated 360W