

# Orion-Tr Smart DC-DC charger non-isolated

360/400 Watt

With 3-stage battery charge algorithm

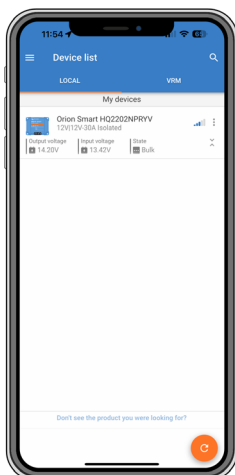
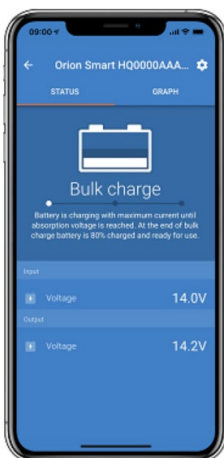
[www.victronenergy.com](http://www.victronenergy.com)



Orion-Tr Smart non-isolated 12/12-30



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## Bluetooth Smart enabled

- Any Bluetooth enabled smart phone, tablet or other device can be used to monitor, to change settings and to update the charger when new software features become available.
- Instant Readout: The [VictronConnect App](#) can display key data, including warnings and alarms, on the Device list page without the need to connect to the product.

## Fully programmable

- Battery charge algorithm (configurable) or fixed output.
- Smart alternator compatibility: engine running detection mechanism.

## Adaptive 3-stage charge algorithm: bulk – absorption – float

- For lead acid batteries it is important that during shallow discharges the absorption time is kept short in order to prevent overcharging of the battery. After a deep discharge the absorption time is automatically increased to make sure that the battery is completely recharged.
- For lithium batteries absorption time is fixed, default 2 hours.
- Alternatively, a fixed output voltage can be chosen.

## Remote on/off

A remote on/off switch or relay contact can be connected to a two-pole connector. Alternatively, the H terminal (right) of the two-pole connector can be switched to battery plus, or the L terminal (left) of the two pole connector can be switched to battery minus (or the chassis of a vehicle, for example).

## All models are short circuit proof and can be paralleled to increase output current

An unlimited number of units can be connected in parallel.

## High temperature protected

The output current will reduce at high ambient temperature.

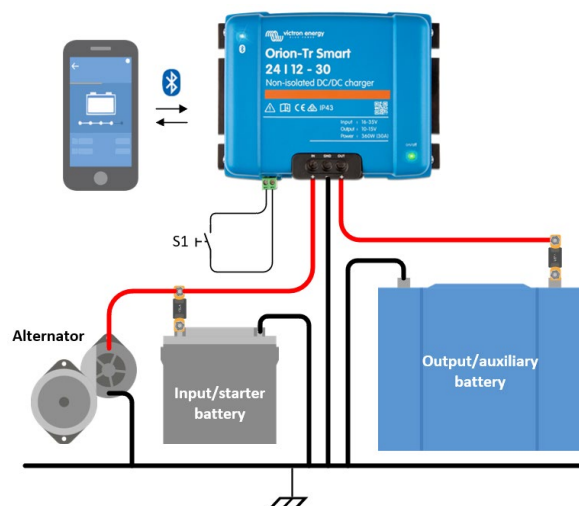
## IP43 protection

When installed with the screw terminals oriented downwards.

## Screw terminals

No special tools needed for installation.

## Input fuse (not replaceable)



Orion-Tr Smart Chargers non-isolated 360 - 400 Watt	12/12-30 (360 W)	12/24-15 (360 W)	24/12-30 (360 W)	24/24-17 (400 W)
Input voltage range <sup>(1)</sup>	10-17 V	10-17 V	20-35 V	20-35 V
Under voltage shut down	7 V	7 V	14 V	14 V
Under voltage restart	7,5 V	7,5 V	15 V	15 V
Nominal output voltage	12,2 V	24,2 V	12,2 V	24,2 V
Output voltage adjust range	10-15 V	20-30 V	10-15 V	20-30 V
Output voltage tolerance	+/- 0,2 V			
Output noise	2 mV rms			
Cont. output current at nominal output voltage and 40 °C	30 A	15 A	30 A	17 A
Maximum output current (10 s) at nominal output voltage minus 20 %	40 A	25 A	45 A	25 A
Short circuit output current	60 A	40 A	60 A	40 A
Cont. output power at 25 °C	430 W	430 W	430 W	480 W
Cont. output power at 40 °C	360 W	360 W	360 W	400 W
Efficiency	87 %	88 %	88 %	89 %
No load input current	< 80 mA	< 100 mA	< 100 mA	< 80 mA
Standby current	Less than 1 mA			
Operating temperature range	-20 to +55 °C (derate 3 % per °C above 40 °C)			
Humidity	Max. 95 % non-condensing			
DC connection	Screw terminals			
Maximum cable cross-section	16 mm <sup>2</sup> (AWG6)			
Weight	12 V input and/or 12 V output models: 1,8 kg (3 lb)		Other models: 1,6 kg (3.5 lb)	
Dimensions hwxwd	130 x 186 x 80 mm (5.1 x 7.3 x 3.2 inch)			
Protection category	IP43 (electronic components), IP22 (connection area)			
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 ECE R10-5			

1) If set to nominal or lower than nominal, the output voltage will remain stable within the specified input voltage range (buck-boost function). If the output voltage is set higher than nominal by a certain percentage, the minimum input voltage at which the output voltage remains stable (does not decrease) increases by the same percentage.

Note 1: The VictronConnect App will not display current in or current out.

Note 2: The Orion-Tr Smart is not equipped with a VE.Direct port.