

## Description

The Omnicharge Solar 100-20, 100-30, 100-50, 150-60 and 250-70 are very high efficient solar charge controllers with Maximum Power Point Tracking (MPPT).

The Omnicharge Solar (OCS) MPPT solar charge controllers, are advanced and modern battery chargers for off-grid photovoltaic (PV) energy systems.

The OCS family offers solutions for PV array maximum power levels from 260Wp up to 3.6kWp and battery system voltages of 12V up to 48V.

Smart and rapid Maximum Power Point Tracking ensures the most efficient utilization of solar power to charge your batteries. An OCS controller can recognize multiple power points during partial shading or other mixed PV panel conditions. Under these circumstances the OCS controller will continuously make sure that maximum PV power is transferred to your batteries.

Very low self consumption and high resolution power control circuits ensure excellent performance at sunrise and low light levels.

The OCS controllers are highly efficient, reaching peak efficiency levels of respectively 98% and 99% for the conversion- and MPPT sections. This way PV power will be transferred to your batteries with minimum losses. But this also means that no cooling fans are needed and that the OCS controllers are running at respectable internal temperatures, resulting in a long lifetime.

Many protections are built-in, like for reverse battery- and PV connection, output short circuit, input power overload and high temperatures.

There are selectable charge programs available for Lithium, AGM, GEL and Flooded batteries. Additionally, a user defined charge program can also be selected and edited to fit your desired battery type.

Each OCS controller can be configured and readout using our Dashboard Mobile app for iOS and Android devices. This includes the display of 300 days of extensive history data.

All OCS controllers are very easy to install and come with clear instructions. A battery temperature sensor is included as standard for the OCS150-60 and 250-70 models.



## Features

- Ultra fast Maximum Power Point Tracking (MPPT) ensures most efficient utilization of solar power to charge your batteries
- Smart selectable charge programs for AGM, Gel, Flooded, Lithium and User defined battery types
- Monitoring and configuration via Dashboard Mobile app (iOS and Android)
- Highly efficient fanless design
- Automatic battery voltage detection
- Battery temperature sensor input
- Historical data storage up to 300 days
- Fully protected against: battery reverse polarity, PV reverse polarity, short circuits, battery open circuit and charge controller overtemperature
- Detachable information display (OCS150-60 and 250-70 only)

## Applications

- Stationary off-grid solar systems
- Recreational vehicles
- Marine applications
- Industrial systems



## Technical specifications

Parameter	OCS 100-20 art # 5024200	OCS 100-30 art # 5024300	OCS 100-50 art # 5024500	OCS 150-60 art # 5024630	OCS 250-70 art # 5024770	
System voltage	12V / 24V			12V / 24V / 36V / 48V		
Maximum charge current <sup>1)</sup>	20A	30A	50A	60A	70A	
Self consumption	0.12W			0.54W		
Battery voltage range	9.0 – 32.0Vdc			9.0 – 64.0Vdc		
Max. PV open circuit voltage	100Vdc			150Vdc	250Vdc	
Max. PV short circuit current	20A	30A	50A	50A	40A	
MPPT voltage range	V <sub>batt</sub> + 2 up to 75Vdc			V <sub>batt</sub> + 2 up to 120Vdc	V <sub>batt</sub> + 2 up to 180Vdc	
Max. PV input power	12V 24V 36V 48V	260W 520W n/a n/a	400W 800W n/a n/a	660W 1320W n/a n/a	800W 1600W 2400W 3200W	920W 1840W 2760W 3680W
Charge characteristic	IUoUo, intelligent 3-stage, temp. compensated					
Supported battery types <sup>2)</sup>	Flooded / GEL / AGM / LiFePO4 / Custom (user defined)					
Temperature compensation	-3mV / °C / Cell (lead based batteries only)					
Maximum conversion efficiency	98%					
Maximum MPPT efficiency	99%					
LED indicators	Charge mode, Battery state and Battery type					
Display	No			Yes (detachable for remote use)		
Battery temperature sensor	Optional <sup>3)</sup>			Included		
Alarm relay	No			Yes (10A @ 230Vac or 30Vdc)		
Configuration	By Dashboard Mobile app for iOS and Android					
Cooling	Natural convection (no fan)					
Protections	Battery and PV reverse polarity, output short circuit and overtemperature					
Operating temperature	-35°C ... +60°C (humidity max. 90% non condensing)					
Storage temperature	-40°C ... +80°C (humidity max. 90% non condensing)					
Connections (PV + Battery)	Screw terminals (10mm <sup>2</sup> / 8 AWG)			Screw terminals (35mm <sup>2</sup> / 2 AWG)		
Dimensions (L x H x D)	150x106x62mm	150x106x68mm	183x127x70mm	266x194x119mm		
Weight	0.70kg	0.88kg	1.39kg	3.6kg		
Protection class	IP32 (mounted in upright position)					
Standards	CE marked meeting EMC directive 2014/30/EU, Safety EN62109-1, Functionality EN62509-1 and RoHS 2011/65/EU					

Note: the given specifications are subject to change without notice.

<sup>1)</sup> Maximum charge current tolerance is +/-5%. Automatic output current derating at T<sub>ambient</sub> > 45°C.

<sup>2)</sup> Selectable by program switch or through Dashboard Mobile app. Custom battery type charge voltages can also be modified by the Dashboard Mobile app.

<sup>3)</sup> An external battery temperature sensor is required when charge voltage compensation against varying temperature is desired.

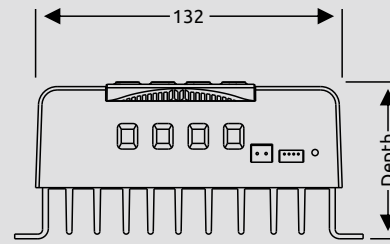
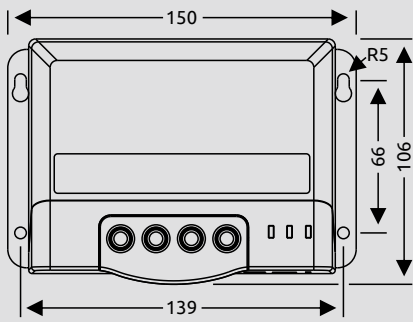
## Accessories

OCS Temperature Sensor Kit 3m



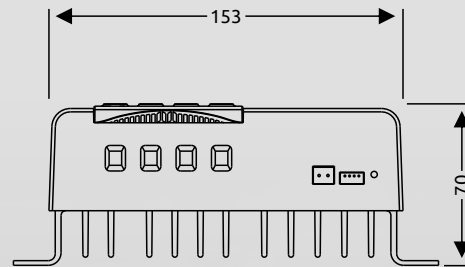
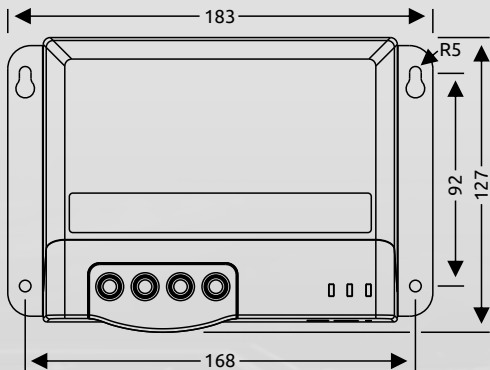
OCS Temperature Sensor Kit 3m, art # 5055319  
Battery temperature sensor kit for the OCS controllers, with 3m cable length (provided as standard with the OCS 150 and 250 models).

## Dimensions OCS 100-20 and 100-30

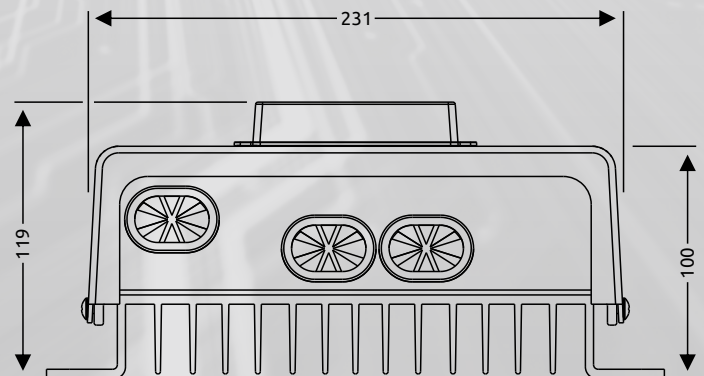
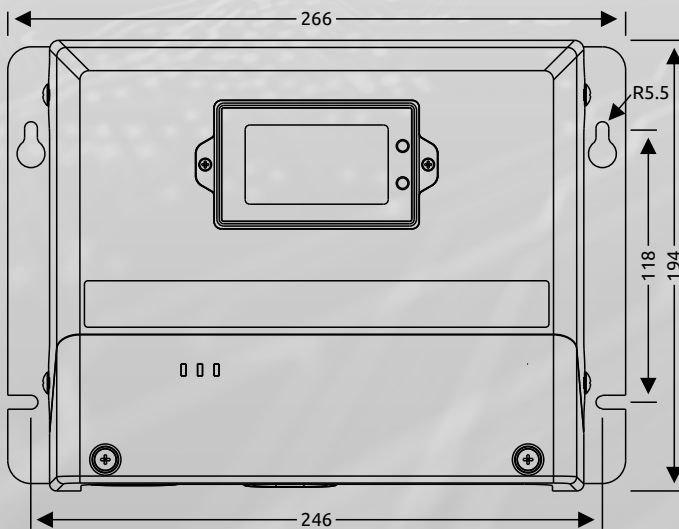


OCS 100-20 depth is 62mm  
OCS 100-30 depth is 68mm

## Dimensions OCS 100-50



## Dimensions OCS 150-60 and 250-70



Measurement units: millimeters

## Basic application diagram

