Dhyan **Ohli Node**
Smart Lighting Made Easy

Dhyan's Smart MPPT Solar Charge Controller with built-in NB-IoT Connectivity combines advanced Maximum Power Point Tracking (MPPT) technology with Internet of Things (IoT) capabilities. This charge controller not only maximizes the energy extraction from solar panels but also enables remote monitoring and control of solar power systems through NB-IoT connectivity.

Solar LED Controller

Features:

MPPT Technology: The charge controller utilizes MPPT technology to constantly track and optimize the poweroutput from solar panels. This ensures maximum energy extraction, resulting in higher charging efficiency compared to traditional PWM controllers.

Built-in NB-IoT (5G) Connectivity: The charge controller comes with integrated Internet of Things (NB-IoT) connectivity, allowing for seamless and secure communication with Dhyan Ohli Management System. This enables real-time monitoring and control of the solar power system, enhancing system performance and maintenance.

Wide Input Voltage Range: The charge controller supports a wide range of input voltage from the solar panels, accommodating various configurations and ensuring compatibility with different solar panel setups.

High Charging Efficiency: With its advanced MPPT algorithm, the charge controller achieves high charging efficiency (>99.9%), optimizing the conversion of solar energy into usable power for charging batteries. This results in faster charging times and improved system performance.
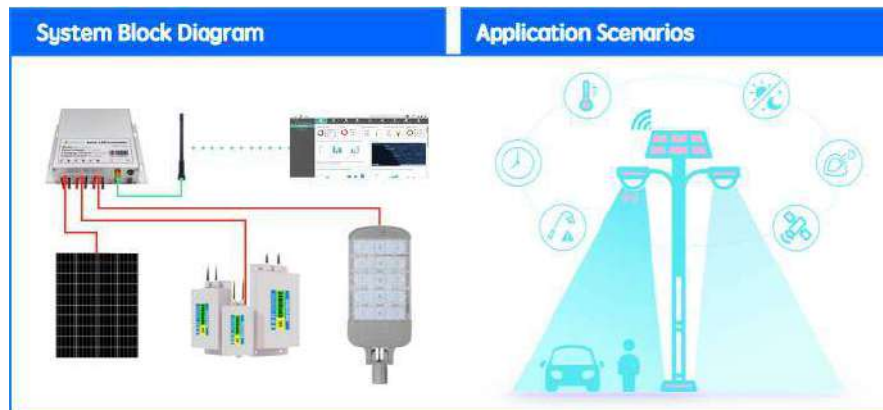
Intelligent Battery Management: The charge controller incorporates intelligent battery management features to protect the batteries from overcharging, deep discharging, and reverse current flow. This extends the battery lifespan and improves overall system reliability.

Remote Monitoring and Control: Through the built-in NB-IoT connectivity and synced with Dhyan Ohli Management System, users can remotely monitor key parameters such as solar panel output, battery voltage, charging current, and system status. Users can access this information through a web portal or dedicated mobile application, allowing for convenient system management and troubleshooting.

Real-time Alerts and Notifications: The charge controller can send real-time alerts and notifications to users via SMS or email in the event of system faults, battery abnormalities, or other critical conditions. This proactive monitoring helps prevent potential issues and ensures timely maintenance.

Comprehensive Protection Mechanisms: To safeguard the system components, the charge controller incorporates a comprehensive set of protection mechanisms, including overcharge, over-discharge, short circuit, reverse polarity, over-temperature, and lighting surge protection.

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Ohli solar charge controller

Deployment Types

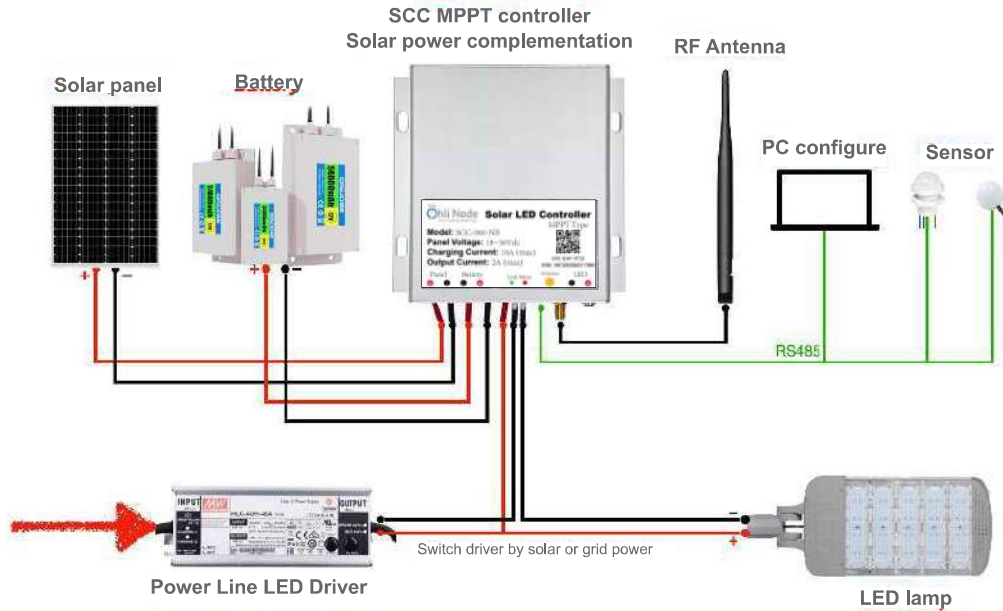

Off-Grid deployment

Wiring steps: Please connect the load first, then the battery, and finally the solar panel.
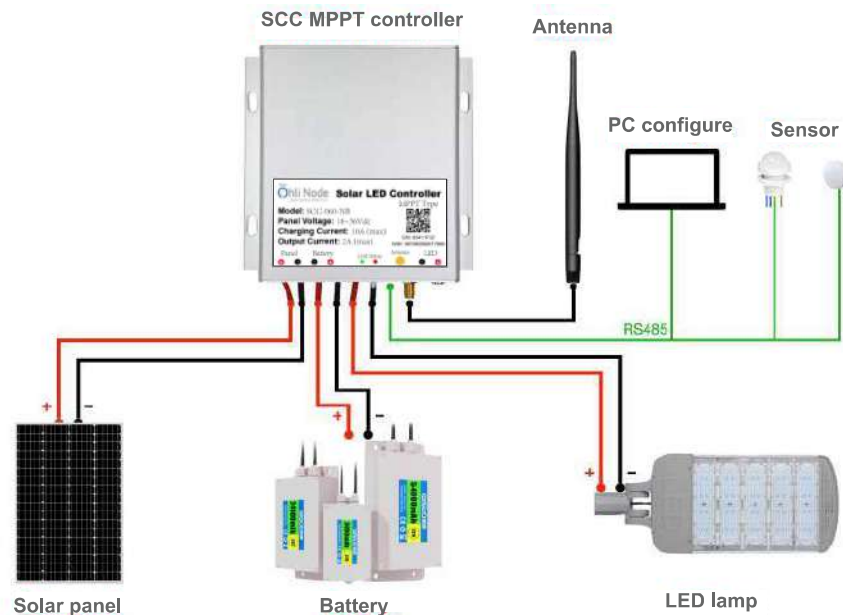
On-Grid deployment

Wiring steps: Please connect the load first, then the battery, and the solar panel, then connect LED driver finally.

The solar controller has a built-in switcher, which is connected to the external LED drive power supply by default. When the battery capacity meets the LED lamp working, it will switch to the solar power supply mode.
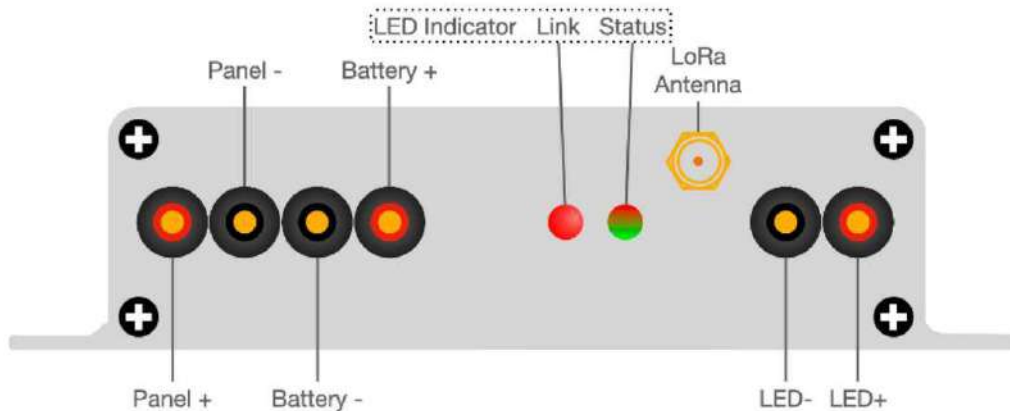
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LED Indicators

SCC reserve 1 Red LED and 1 Red/Green LED for user:

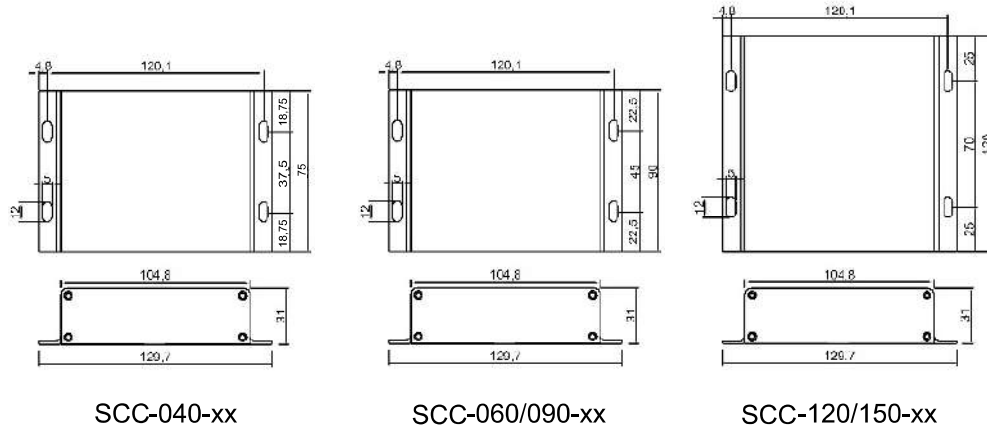| Indicator	State	Description
Red/Green LED Charging indications	RED light ON	Charging
	Green light ON	Discharging
	0.1 Sec ON, 0.1 Sec OFF	Error
	OFF	Idle
Red LED Network indications	1 Sec ON, 1 Sec OFF	Network conneted
	0.1 Sec ON, 0.1 Sec OFF	Network link successful

Interface

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Technical Specfications

Items	SCC-040-xx	SCC-060-xx	SCC-090-xx	SCC-120-xx
Solar Panel				
System voltage	12.8V/25.6V (automatic identification)			
Open circuit voltage	20Vdc ± 2Vdc for 12.8V system / 40Vdc ± 2Vdc for 25.6V system			
Input power (Max.)	240W/36V(Max)	240W/36V(Max)	240W/36V(Max)	360W/36V(Max)
Charge current (Max.)	10A	10A	10A	15A
MPPT Tracking range	(Battery voltage + 1V) to (Panel voltage)			
MPPT Tracking efficient	＞99%			
Charging efficient	85%-98% (typical 97%)			
Battery parameters				
Charging voltage	10～24.4V (25℃) for 12.8V system / 20～28.8V (25℃) for 25.6V system			
Over charge voltage	＞14.4+0.2V for 12.8V system / ＞28.8+0.2V for 25.6V system			
Over Charge return voltage	Over charge voltage – 0.2V			
Over discharge voltage	＜10.0V for 12.8V system / ＜20.0V for 25.6V system			
Over discharge return voltage	Over discharge voltage + 0.2V			
Over discharge recover voltage	Over discharge voltage + 2V			
temperature compensation	None			
Load parameters				
Load current	0～833mA	0～1250mA	0～1875mA	0～2500mA
Load voltage	24～48Vdc			
Load max power	40W(Max)	60W(Max)	90W(Max)	120W(Max)
Load efficient	85～95% (Typical 93%)			
Load regulation	≤30mA			
Dimming Range	10%～100%			
Timer dimming	8-time segments			
Timer segment range	0 ～ 255 min			
Photocell feature	RS485 input or Digital input			
Photocell delay control	Yes			
Operate temperature	+30℃～+60℃			
Waterproof	IP67			
Protections	Battery reverse connection protection, panel reverse connection protection, panel overvoltage protection, lithium battery overcharge and over discharge protection, lithium battery BMS overcharge detection protection, overtemperature protection, load open circuit short circuit protection, load overcurrent protection, etc.			
Self-consumption	≤50mA for 12.8V system / ≤50mA for 25.6V system			
dimension (mm)	75*129.7*31mm	90*129.7*31mm	90*129.7*31mm	120*129.7*31 mm
Install dimension (mm)	45*120.1 mm	45*120.1 mm	45*120.1 mm	70*120.1 mm
Weight(g) (Exclude antenna)	450g	550g	550g	700g

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Product Dimension

SCC-040-xx   SCC-060/090-xx   SCC-120/150-xx

Product SKUs

Model	Description
SCC-120-NB	120W Solar charge control, NB-IoT
SCC-120-NBG	120W Solar charge control, NB-IoT, GPS

Note: This product data sheet is for informational purposes only. The specifications and features mentioned above are subject to change without prior notice as part of our continuous product improvement process.

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