

Commercial Solutions



Revisions

Version	Date	Revision	Author	Approved by
V1.0	2019.01	First Release	Li Y	
V1.1	2019.01	Chinese to English	Li ZH	
V1.2	2019.02	modify	Li Y	
V1.3	2019.02	modify	Li Y	

Note: Please delete this page before release

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Main Application Scenarios

- Commercial and Industrial Roof



- Plants Features

PV plant capacity

Industrial and commercial: $\leq 5\text{MW}$

On-grid mode

Energy cost reduced
Self consumption
Full on-grid

Client Premises

High safety

Challenges and Solutions

Challenge 1

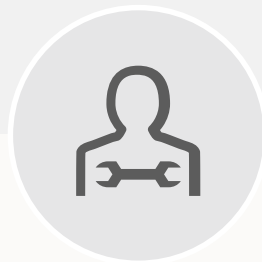
Low Investment Income



- High efficiency
- High yield
- High safety

Challenge 2

Difficult Installation and O&M



- Easy installation
- Easy registration
- Easy management

Challenge 3

Safety First



- High power quality
- Ultra low radiation

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Solution Package



SG15/20KTL-M



SG12KTL-M



SG110CX



SG33/40/50CX



E-Net



WiFi



EyeM4



COM100



iSolarCloud



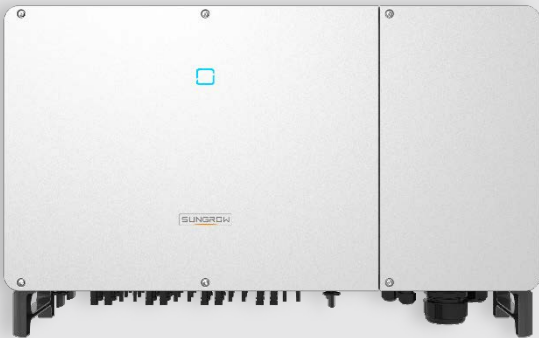
iSolarCloud APP

Features

SG33/40/50CX



SG110CX



- High efficiency, multi-MPPT
- Support bifacial PV module, Max. PV current 13A
- Support 2 string -1 input, saving DC cable costs
- PID recovery at night to increase yields
- Q at Night function
- IP66 protection, C5 anti-corrosion
- String detection and I-V scanning
- Proactive fault diagnosis

Main Technical Parameters

Critical Parameters	SG33CX	SG40CX	SG50CX	SG110CX
Input (DC)				
Max. PV input voltage	1100V			
Nominal input voltage	585V			
No. of MPPT * Number per MPPT	3*2	4*2	5*2	9*2
MPPT voltage range	200~1000V			
MPPT voltage range for nominal power	550~850V			
Output (AC)				
Nominal AC voltage	3 / N / PE, 230 / 400V			
AC output power	36.3 kVA @ 40 °C / 33 kVA @ 45 °C	44 kVA @ 40 °C / 40 kVA @ 45 °C	55 kVA @ 40 °C / 50 kVA @ 45 °C	110 kVA @ 45 °C / 100 kVA @ 50 °C
Max. AC output current	55.2A	66.9A	83.6A	158.8A
General Data				
Max, efficiency / Euro. Efficiency	98.6% / 98.2%	98.6% / 98.3%	98.7% / 98.4%	98.7% / 98.5%
Display / Communication	LED + Bluetooth + APP&RS485 / RS485 / Optional: WiFi, Ethernet			
Degree of protection & corrosion	IP66 & C5			
Dimensions (W*H*D)	702 * 595* 310 mm	782 * 645 * 310 mm	782 * 645 * 310 mm	1051 * 660 * 362.5 mm
Weight	50kg	58kg	62kg	85kg

Solution Configuration

1 Solution 1

- Single communication

2 Solution 2

- Multiple communication
- 10 inverters cascade

3 Solution 3

- Multiple communication
- 30 inverters cascade
- Power Zero export Control



SG33/40/50CX



SG110CX

1

2

3



WiFi or E-Net



EyeM4



COM100



iSolarCloud APP



iSolarCloud

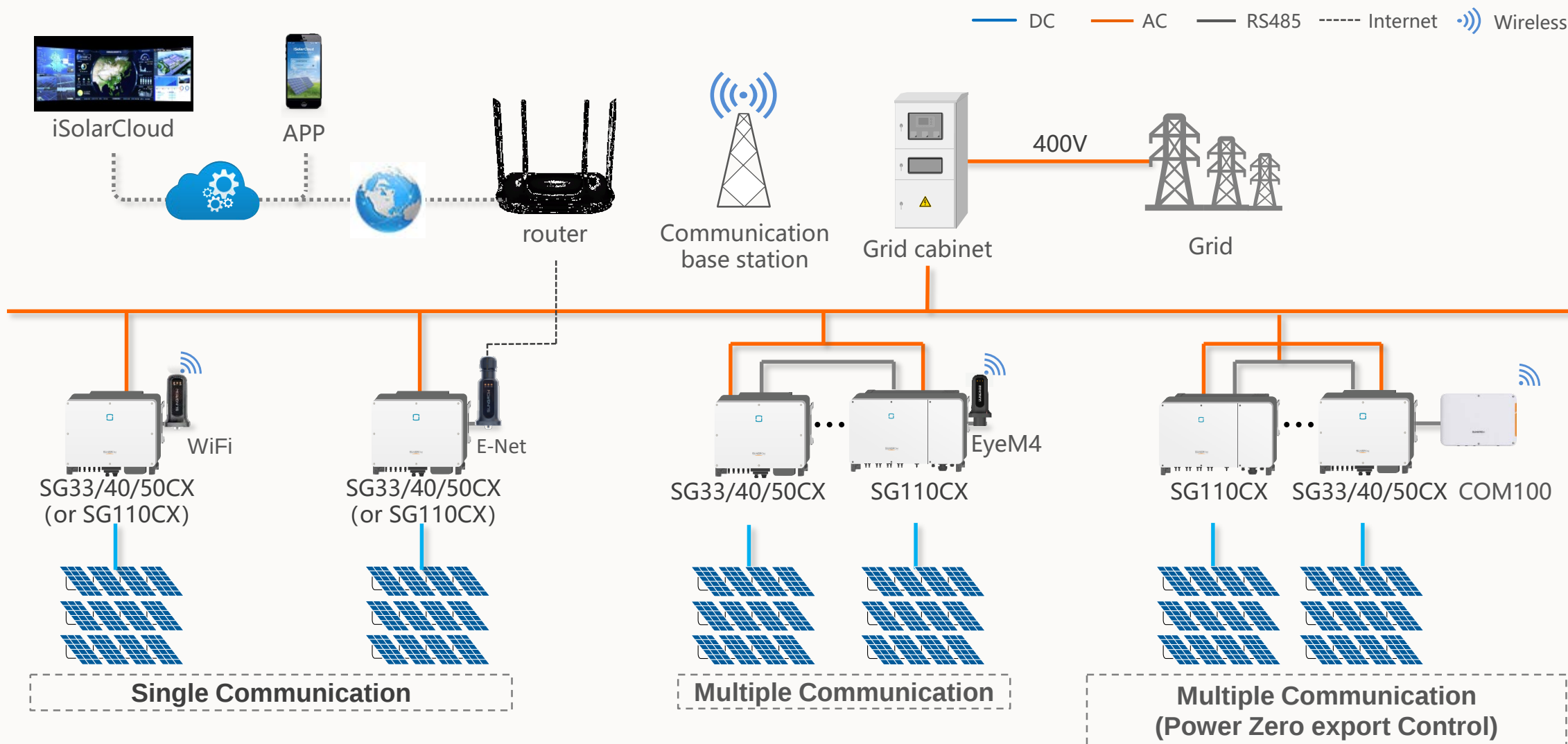
Inverter Selection

- Select inverters according to the project
- Priority recommendation for inverters with high power ratings

Communication Scheme Selection

- ≤5 inverters, WiFi single communication recommended
- 6~10 inverters, EyeM4 multiple communication recommended
- If the power grid has Power Zero export Control requirements, adopt COM100 communication

Flexible Design of Single and Multiple Communication Solutions

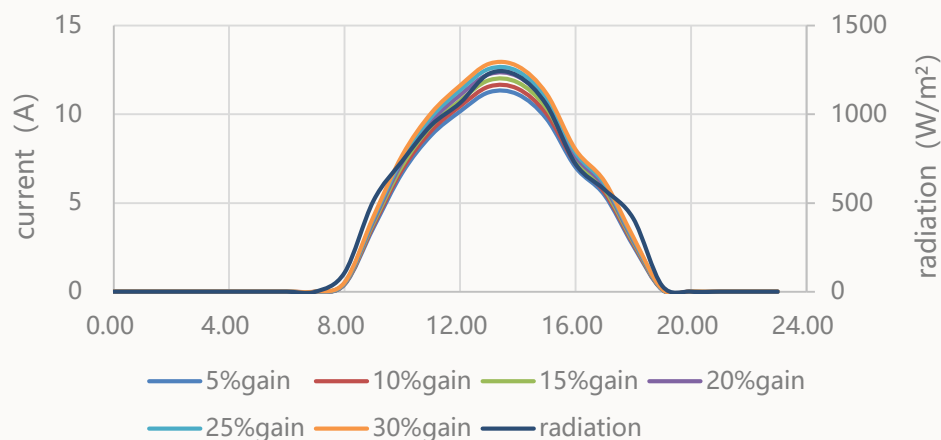


Support Bifacial PV Modules

Simulation data

- Max. operating current is less than 13A

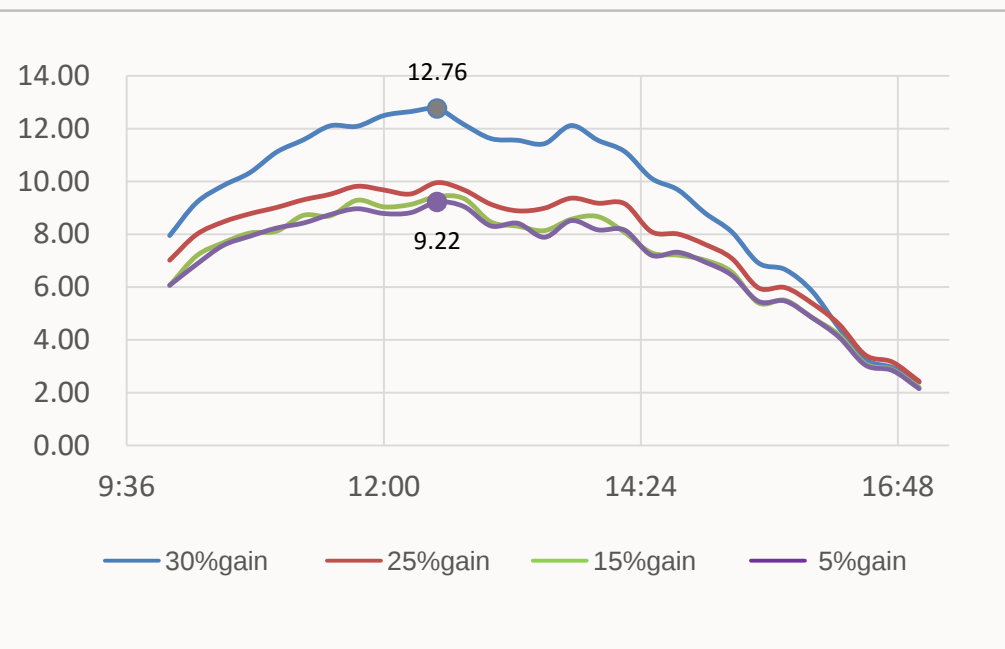
Module	5%gain	10%gain	15%gain	25%gain	30%gain
Current	11.24A	11.57A	11.91A	12.57A	12.84A



Typical bifacial module Imp with different gains (370Wp)

Data of PV module manufacturer

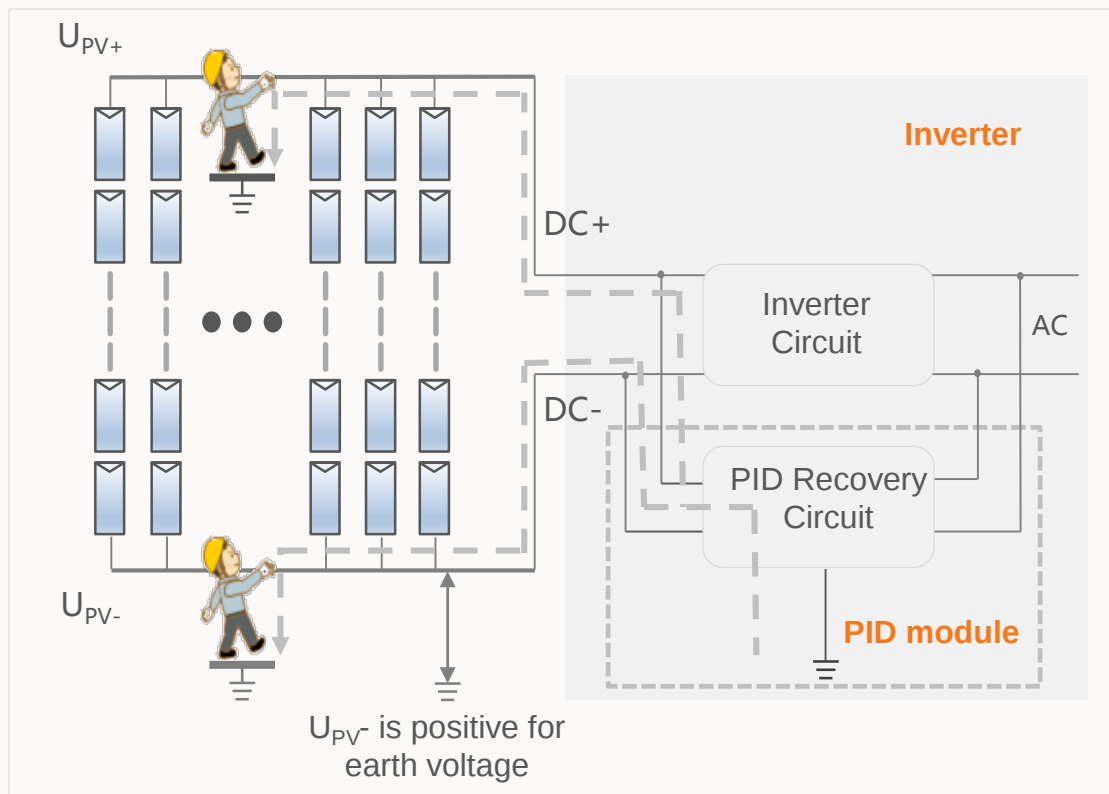
- Max. DC current is between 9.22A and 12.76A



Bifacial PV module current measured value (360Wp)

Integrated PID Recovery Function

- **Repair:** Integrated PID recovery module, controlling the PV-Ground voltage to be higher than 0V at night
- **Safety:** When it is detected the leakage current is greater than the set value, turn off the PID power supply
- **Example:** In a 5.5MW project in Shenzhen, the modules showed different degrees of attenuation. After 42 hours of PID repair, 100% of the parameters returned to normal.



Randomly select 2 modules, test parameters before and after PID repair

Parameter item	Isc	Voc	I _{max}	V _{max}	P _{max}
Nominal value	8.65	37.5	8.14	29.5	240
#1 module after weaken	8.35	36.9	7.89	28.9	228
#1 module after repair	9.05	37.23	8.27	29.98	248
#2 module after weaken	8.47	36.84	8.02	28.8	231
#2 module after repair	8.92	37.22	8.22	30.08	247

The open circuit voltage (Voc) test values before and after PID repair

No.	1	2	3	4	5	6	7	8	9	10
Before Repair	712V	716V	708V	709V	707V	709V	708V	708V	708V	709V
After Repair	723V	727V	723V	724V	724V	725V	726V	726V	728V	729V

C5 Anti-Corrosion

- The plate is made of 5052 aluminum alloy, and the surface sprayed with outdoor powder of thickness more than 80μm. The whole machine has been designed and tested in strict accordance with anti-corrosion requirements to ensure safe and reliable operation .

Applicable Environment

- Suitable for areas within 350 meters away from the sea with high temperature, high humidity, high pollutant and high salinity

Application



Place: Japan
On-grid time: 2017

Capacity: 200kW
Features: within 100m away from sea

Test Verification



TEST REPORT	
Report Reference No.	: 6041018.50
Tested by (name + signature)	: Hua Yu
Approved by (name + signature)	: Jason Guo
Date of issue	: 2018-10-19
Dates tests performed	: 2018-09-26 to 2018-10-16
Contents / enclosures	: N/A
Name of Testing Laboratory preparing the Report	: DEKRA Testing and Certification (Shanghai) Ltd.
Address	: 3F, #250 Jiangchangsang Road, Building 16, Headquarter Economy Park Shibel Hi-Tech Park, Zhabei District, Shanghai 200436, China
Applicant	: Sungrow Power Supply Co., Ltd.
Address	: No.1699 Xiyao Rd., New & High Technology Industrial Development Zone, 230088, Hefei, P. R. China
Test specification:	
Standards	: Corrosivity category C5 of ISO 12944-6:2018, ISO 6270-1:2017, ISO 9227:2017
Test procedure	: ☐ Basic safety test ☐ Screen test ☐ Quick scan ☐ Basic EMC test ☐ Flash test ☐ IP65 ☒ Environmental test ☐ Fitness for use
Test object description	: Grid-connected PV inverter
Trade Mark	: 阳光电源 SUNGROW
Manufacturer	: Sungrow Power Supply Co., Ltd.
Address	: No.1699 Xiyao Rd., New & High Technology Industrial Development Zone, 230088, Hefei, P. R. China

Test results: Surface spray treatment, enduring the argon-free salt spray test for 480h without rust and no blistering

IP66 Protection Degree



IP66 Protection

- IP66 protection, better performance against water impact
- Key components encapsulated in electronic cavity separated from heat sink



IP68 Fan

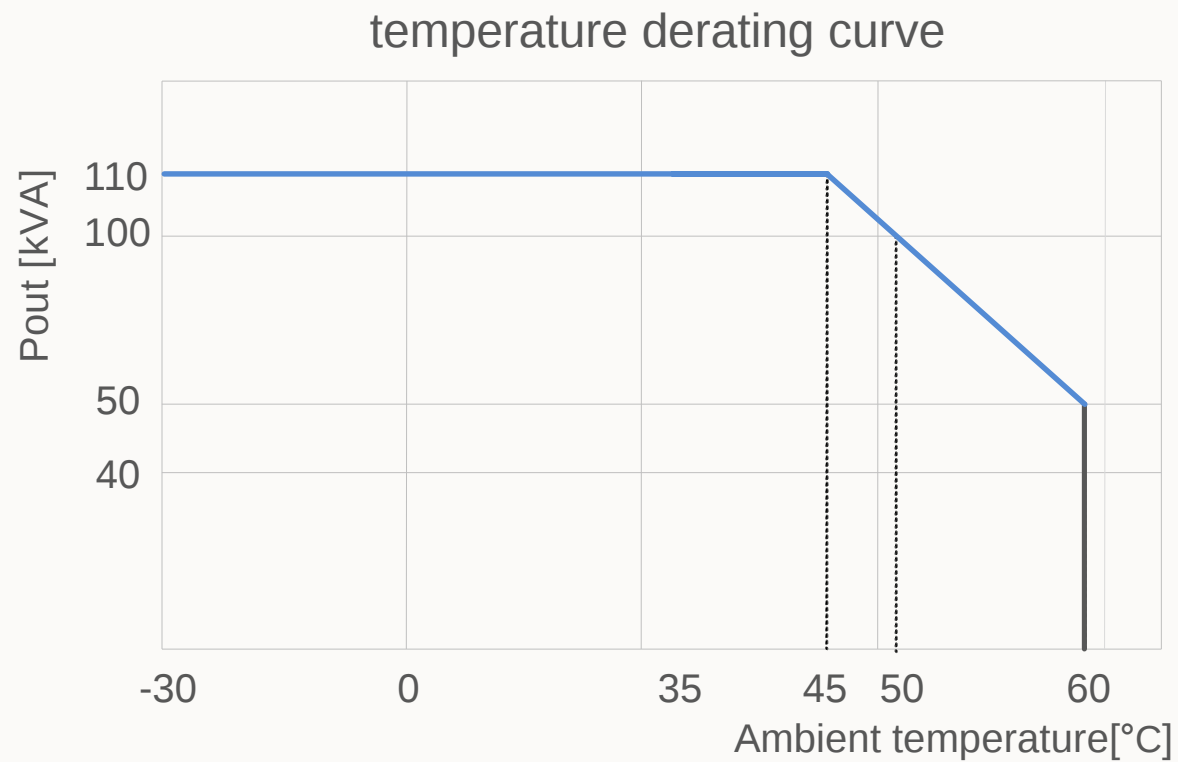
- IP68 fan, intelligent air cooling

Intelligent Air Cooling



Intelligent air cooling

Lower operating temperature, Longer service life, No derating at high temperature



- Wide temperature range for increased power generation

IP68 Fan

IP68
Protection degree



Dustproof and waterproof

25 years
Longer service life



100,000 hours of lifetime

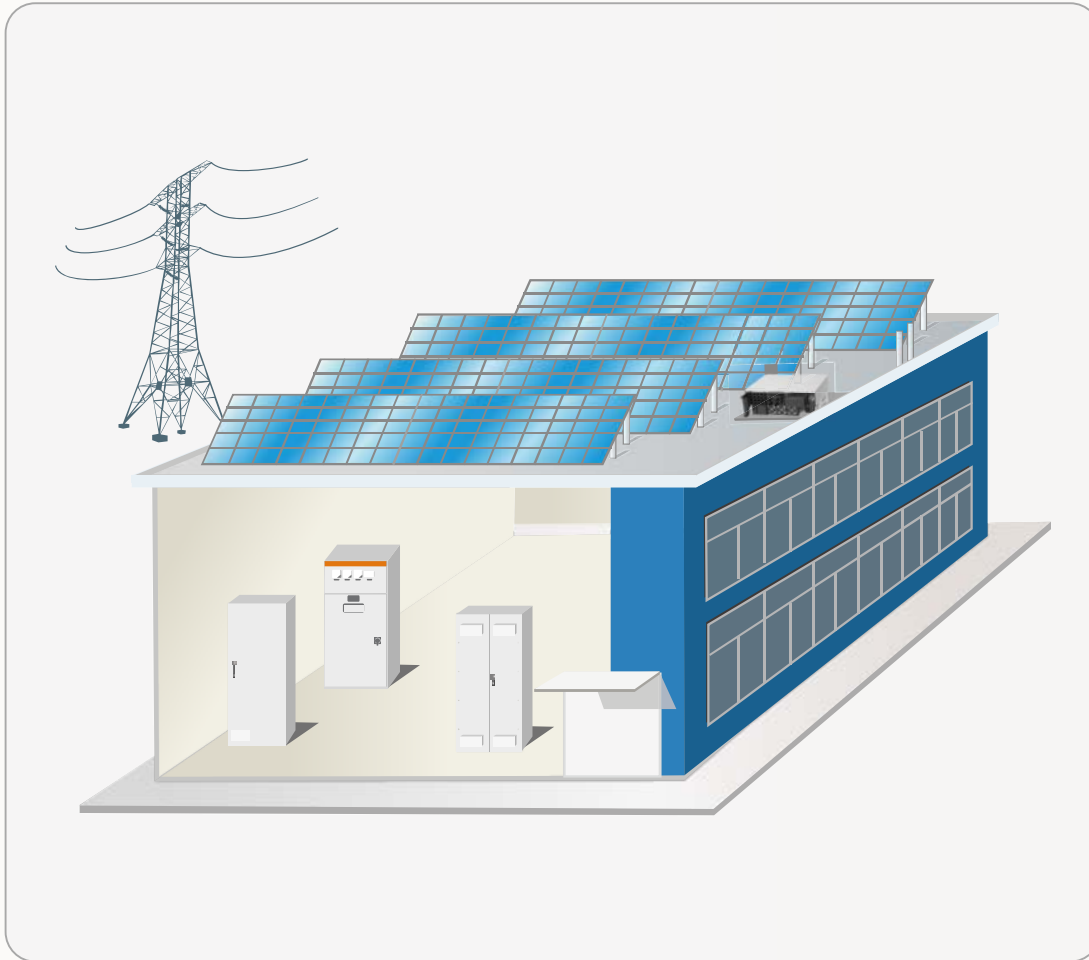
1 minute
Quick replacement



Slide & Swap design

Note: The fan is from well-known manufacture with high quality, starting temperature 50 °C, stepless speed regulation, rated power 30W, multiple fan redundancy design

Ultra Low Radiation



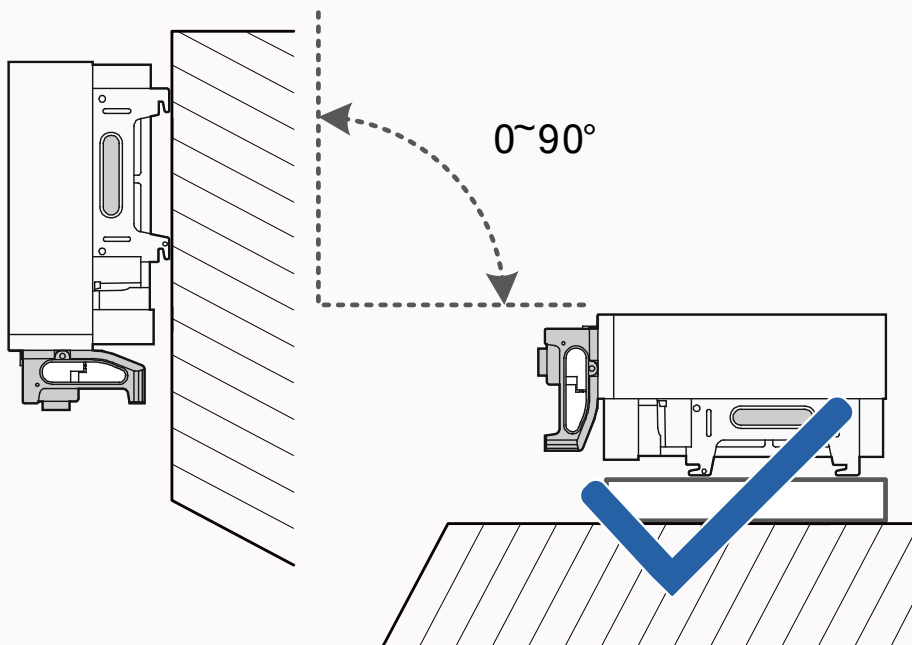
Radiated values are much lower than the Class B



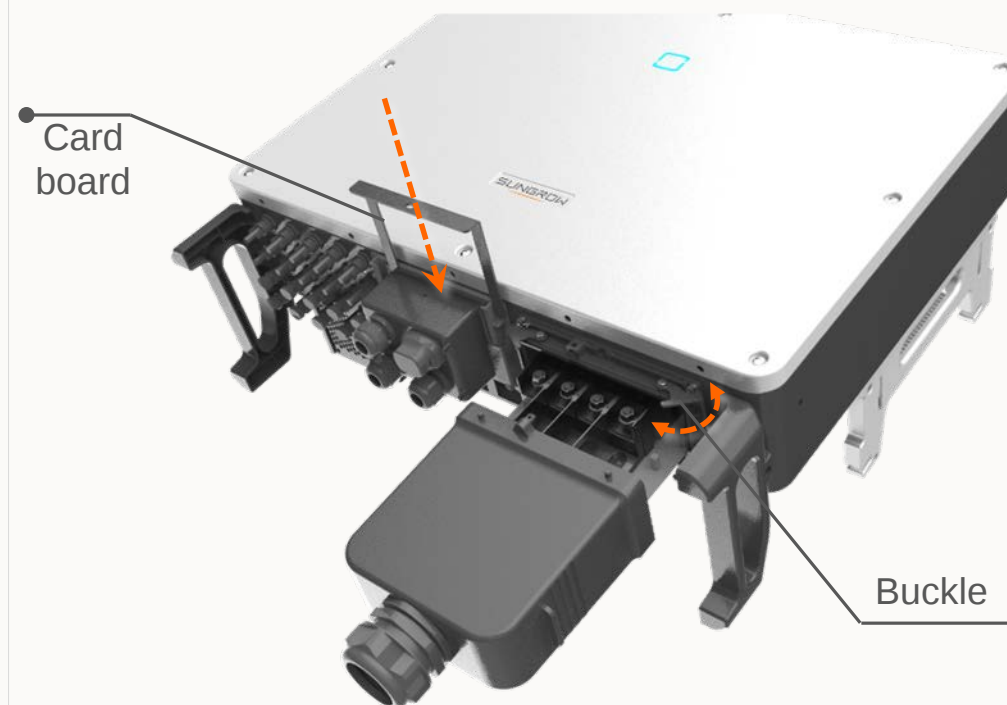
High-standard EMC test platform



Support Horizontal Installation, Quick Installation of AC Terminal

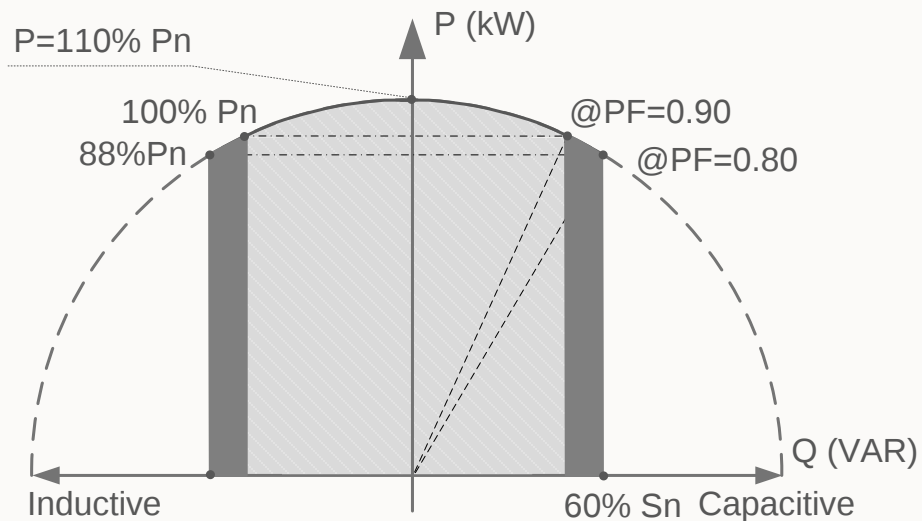


- 0~90°, support horizontal installation, mounting bracket optional
- Reduction of the sheltering to PV modules caused by vertical installation
- Compared with vertical installation, power generation loss reduced by more than 0.2%

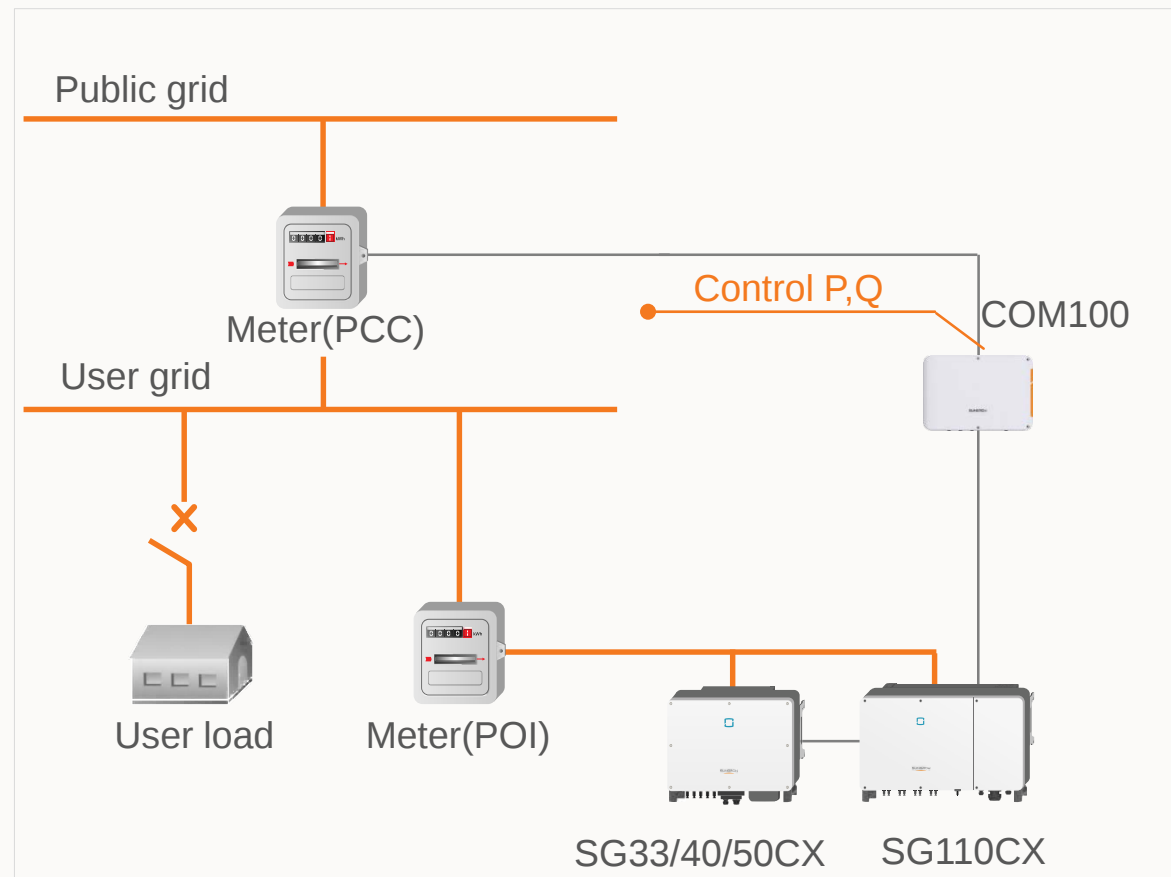


- Without the need of removing device cover to connect communication and AC cables
- Buckle design, quick installation of AC terminal block
- Card board design, easy installation of communication terminal block

Greater Reactive Power Support

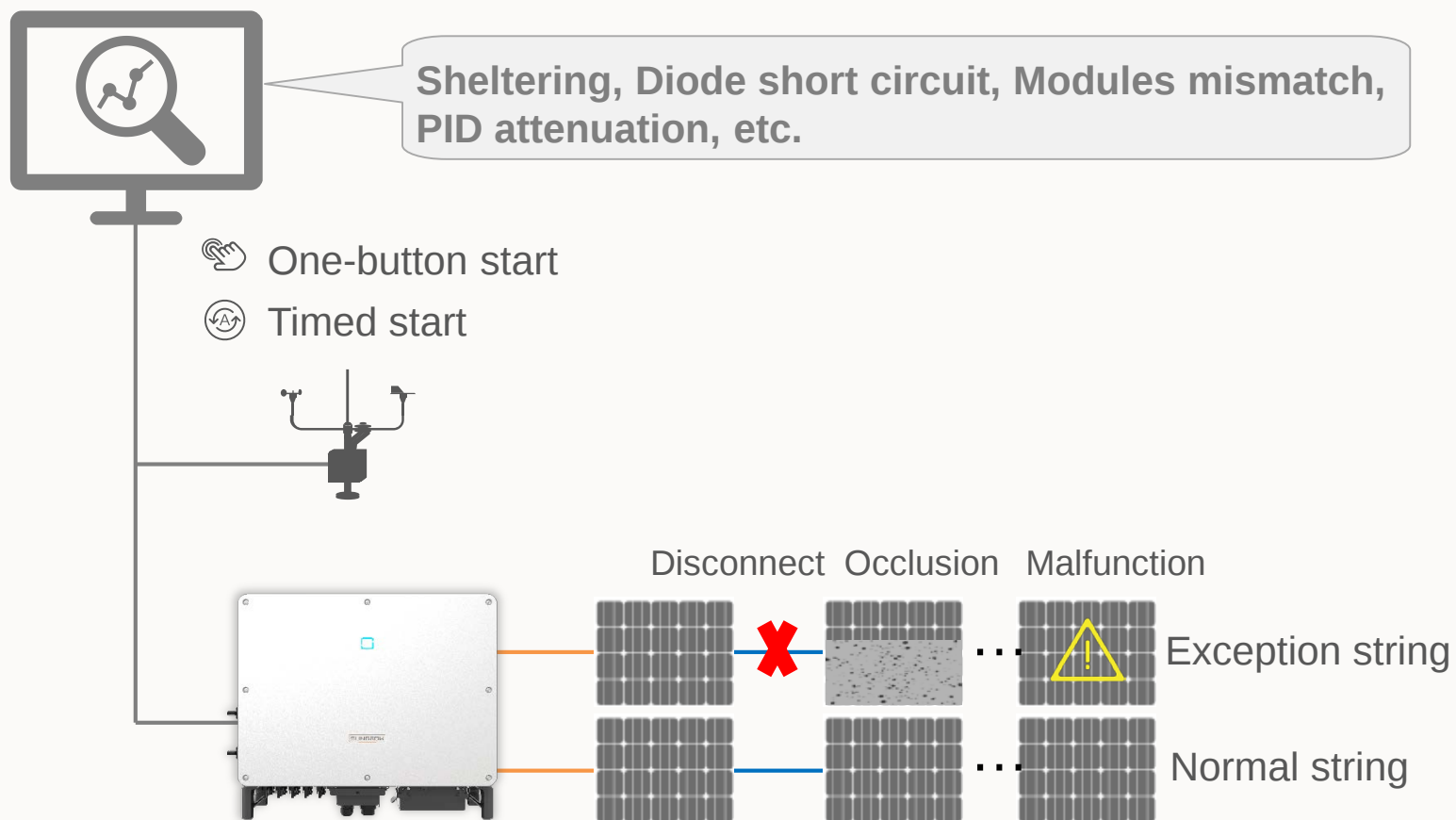


-  Great reactive capacity
-  Reactive fast response
-  Four control modes
-  Save investment



— Power line — Communication line

0.5% Accurate String Detection and Online IV Scanning



Online scanning

Scan string I-V curves online



String diagnosis

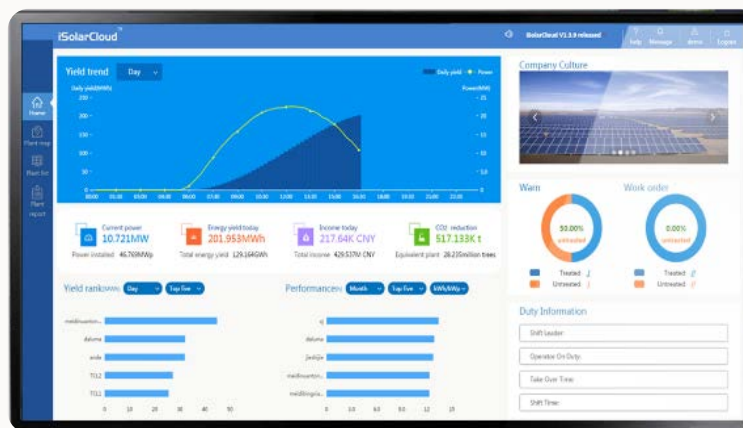
Precise positioning of abnormal components



Handling suggestions

Automatic output graphical diagnostic report

iSolarCloud, Cumulative Access to 13GW+ Power Stations



iSolarCloud Operation Platform

- Data display
- Area management
- Integrated management
- Quantitative assess
- Hierarchical management
- Auxiliary O&M

iSolarCloud O&M Platform

- Data display
- Operational status
- Plant report
- Intelligent analysis

iSolarCloud APP

- Data display
- Fault location
- Quick plant creation
- Smart order management

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Inverter Shipments Totaled Over 79GW

■ **60+** Countries and Regions

■ **79GW+** Inverters Installed



Upcoming

Existing

References



Low temperature | Ukraine Vysokopillya 4MW Project, -30°C



High altitude | Xiaojin Sichuan 50MW Project, 3,900m



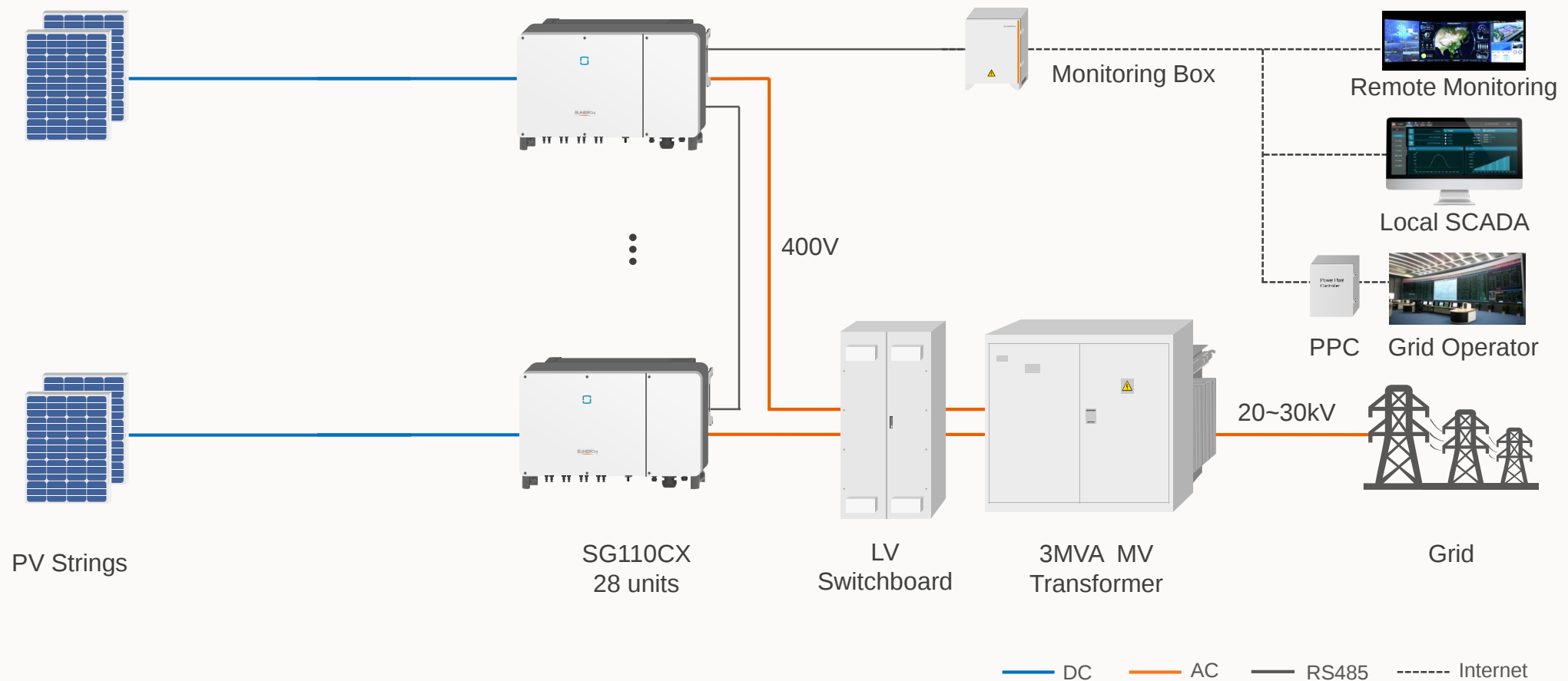
Weak grid | Yuexi county Power Station



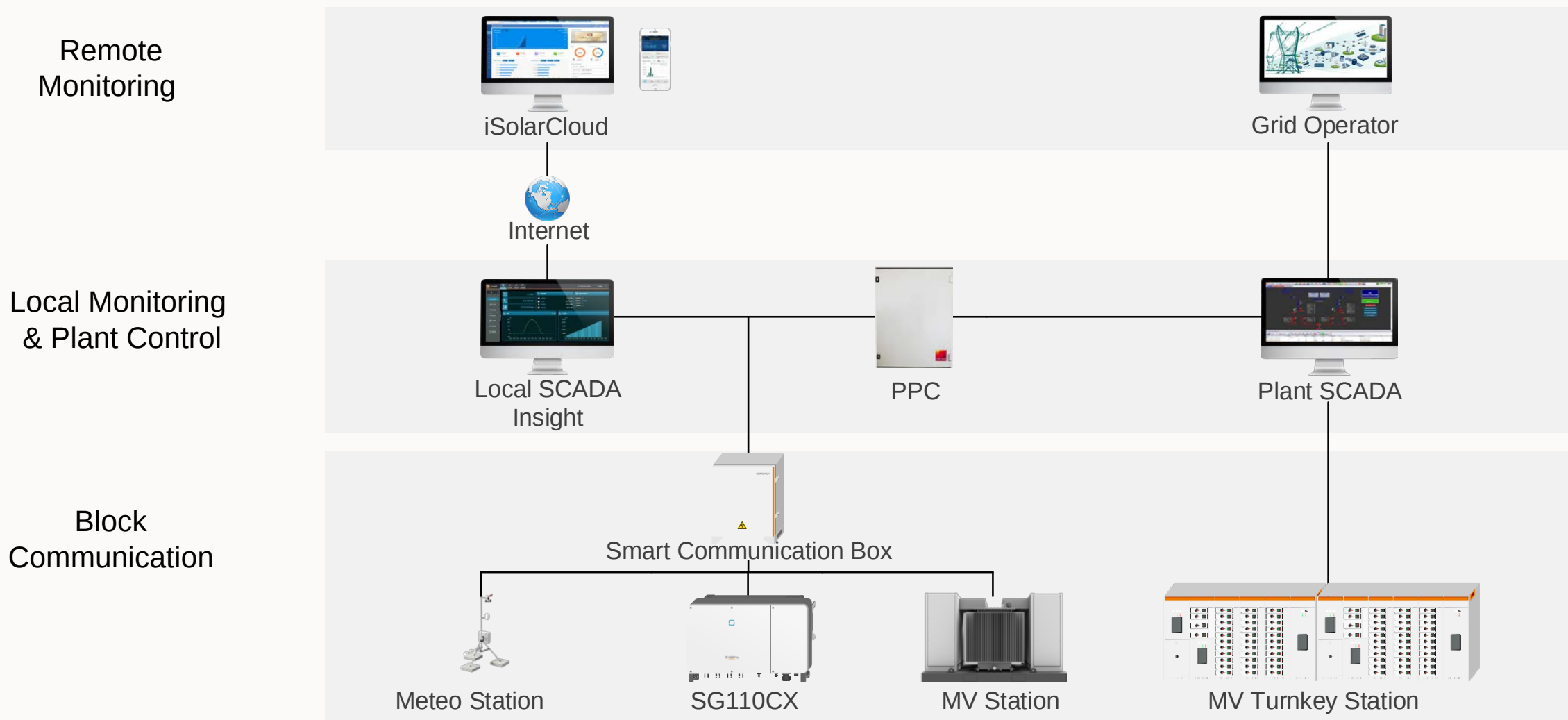
High temperature | Runyang New Energy 250KW Project

Annex: SG110CX Medium Voltage Scenario Block Design

- Typical 3MW Block, support of 1MW to 3MW Block



Annex: SG110CX Medium Voltage Scenario Monitoring Design



THANK YOU!

Clean power for all