

EXPERT OF SOLAR MODULE-LEVEL CONTROL



AdvanSol

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 MODULE-LEVEL RAPID SHUTDOWN

 MODULE-LEVEL MONITORING

 MODULE-LEVEL MPPT OPTIMIZATION

AdvanSol

AdvanSol Power Technology Co., Ltd

THE FUTURE OF SMART SOLAR SYSTEM

AdvanSol Module-level Control Technology

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EVOLUTION OF SOLAR SYSTEM TECHNOLOGY

EXPERT OF SOLAR MOUDLE-LEVEL CONTROL

01.

3

GENERATION

Module-Level Control

Module-Level Control significantly improves PV system performance by enabling individual module optimization, offering design flexibility, precise monitoring, and enhanced safety compliance.

AdvanSol is focusing on pioneering cost-effective 3rd-gen module-level control technology.

2

GENERATIC

String-Level Control

Requires matched modules; shading reduces entire string output. High-voltage strings risk DC arcing, and cannot fully de-energize during fires (must comply with NEC rapid shutdown).

1

GENERATIC

Matrix-Level Control

Matrix-Level Control is a basic, centralized PV management method that is cost-effective but inefficient due to its inability to handle module/string mismatches or partial shading.

ADVANTAGES OF MODULE-LEVEL CONTROL



Module-Level Rapid shutdown Quickly cutting off DC high voltage

AdvanSol PV solutions effectively prevent high DC voltage accidents, with rapid shutdown technology reducing voltage below 1V within 30 seconds to fully comply with NEC.

30s



Module-Level optimization Increasing energy in its lifetime

AdvanSol's module-level MPPT optimization addresses power mismatch from shading or improper installation, improving overall system efficiency by over 10% on average.

10⁺%



Module-level monitoring Quickly locating faulty modules

AdvanSol Acloud's module-level monitoring provides real-time data to address human errors in PV O&M, enabling rapid fault detection and potentially reducing O&M costs by up to 50%.

50⁺%



Roof areas can be fully utilized

AdvanSol's O-series controller overcomes limitations of traditional string inverters. Increasing rooftop PV capacity by 30%+ for maximum space utilization.

30⁺%

ABOUT ADVANSOL

EXPERT OF SOLAR MODULE-LEVEL CONTROL



FOUNDER Dr. JIAN CHEN

Renowned Scientist in Solar Energy

Senior Industrial Leader

Senior technical team

We have a strong R&D team with experienced and talented engineers and advanced equipment. To develop innovative MLPE products meeting a wide range of solar system needs.

Reliable manufacturing capabilities

We have advanced production lines to produce each series of products. ISO9001 quality control ensures the quality of each product.

TO BE THE BEST IN MODULE-LEVEL CONTROL

The key ambition of AdvanSol is to be the best manufacturer for Module-level Control Solution since our establishment.

As the Expert of Solar Module-level Control AdvanSol is quickly expanding our market globally



MULTIPLE CERTIFICATIONS AND AWARDS



50+ PATENT

80+ CERTIFICATION



MATURE PRODUCTION LINE

ESG sustainable development concept
 5s standardized management
 ISO9001 iphone-standard manufacturing quality



ADVANCED TECHNOLOGY THROUGH 235 TEST PROCESS

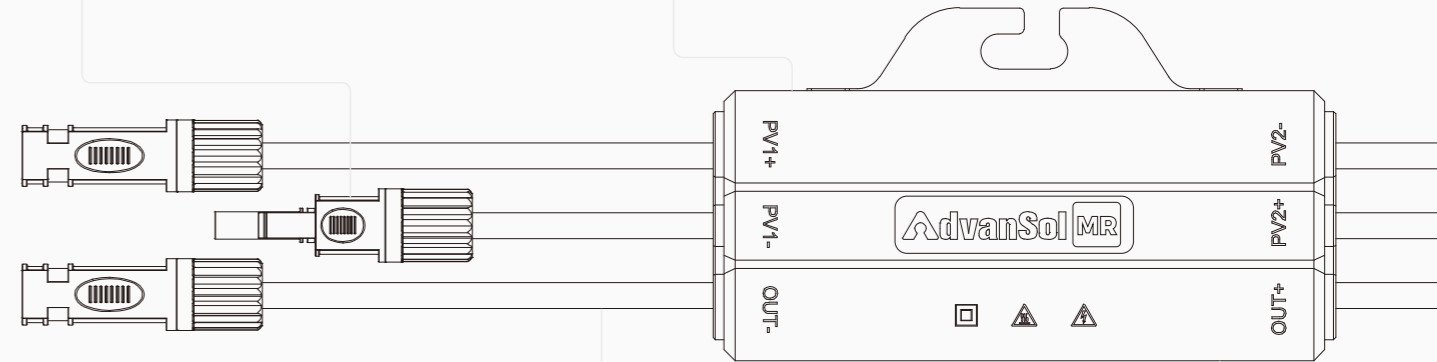
⚡ Electrical Safety Tests

- Dielectric Strength Test / Hi-Pot Test
- Ground Continuity Test
- Leakage Current Test
- Short-Circuit Protection Test
-



🔥 Environmental Durability Tests

- High Temperature Operating Life Test
- Low Temperature Operating Life Test
- Waterproof Test, type 6p
- Condensation Resistance Test
-



↓ Mechanical Reliability Tests

- Compression Test
- Impact Resistance Test
- Random Vibration Test
- Free Fall Drop Test
- Plug & Unplug Durability Test
-

🕒 Long-Term Reliability & Endurance Tests

- Long-Term High Temperature Aging Test
- Light Exposure Aging Test
- Fire Resistance Test
- Long-Term Operating Stability Test
- Electrical Connection Durability Test
-

PRODUCTS & SOLUTIONS

EXPERT OF SOLAR MODULE-LEVEL CONTROL

03.



COMPLETE AND RELIABLE PRODUCT MATRIX

A wide range of products, including 3 mature MLPE solutions, meet the needs of different solar system application.

- Module-Level MPPT Optimization
- Module-Level Monitoring
- Module-Level Rapid Shutdown

R SERIES



MRO SERIES



MR SERIES



ACLOUD

Smart cloud Platform



STRING CONTROLLER

SC-100K



V2.5 CONTROL BOX

DCON-S / 4G / WIFI



SOLUTION

R PROVIDE THE HIGHEST SAFETY



Module-level
Rapid shutdown



30^s
↓ 1V

RAPID SHUTDOWN RESPONSE

High standard on fire protection extreme solar accidents such as electric ARC-caused fire can be prevented

Automatic /manual button/App shutdown

MULTI CHANNEL SAFETY GUARANTEE

The only one RSD in the market with APP control. Automatically shutdown abnormal panel without affecting others.



RAPID SHUTDOWN

It provides an effective solution for fire safety, and meets the safety requirements for solar system specified in the American Standard NEC 690.12-2014, 2017 and 2020. R series micro controller has many advantages such as simple and convenient installation, safe and reliable operation, and can perfectly match with other third-party string inverter.

30s

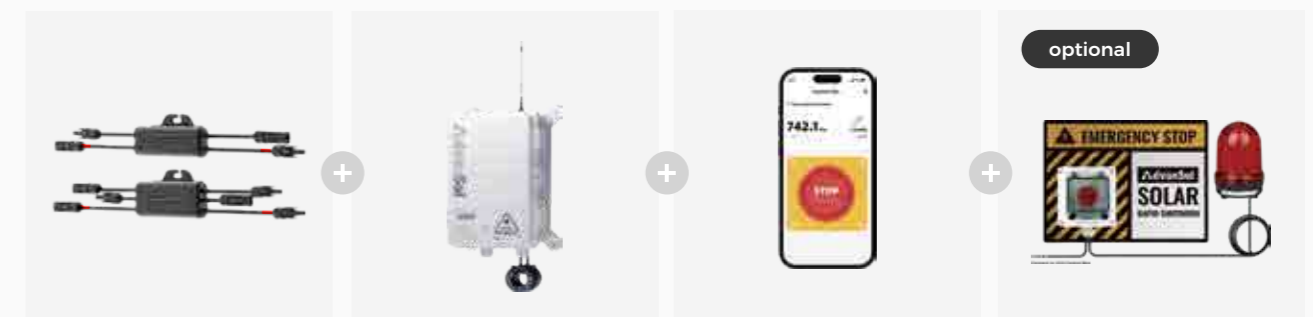
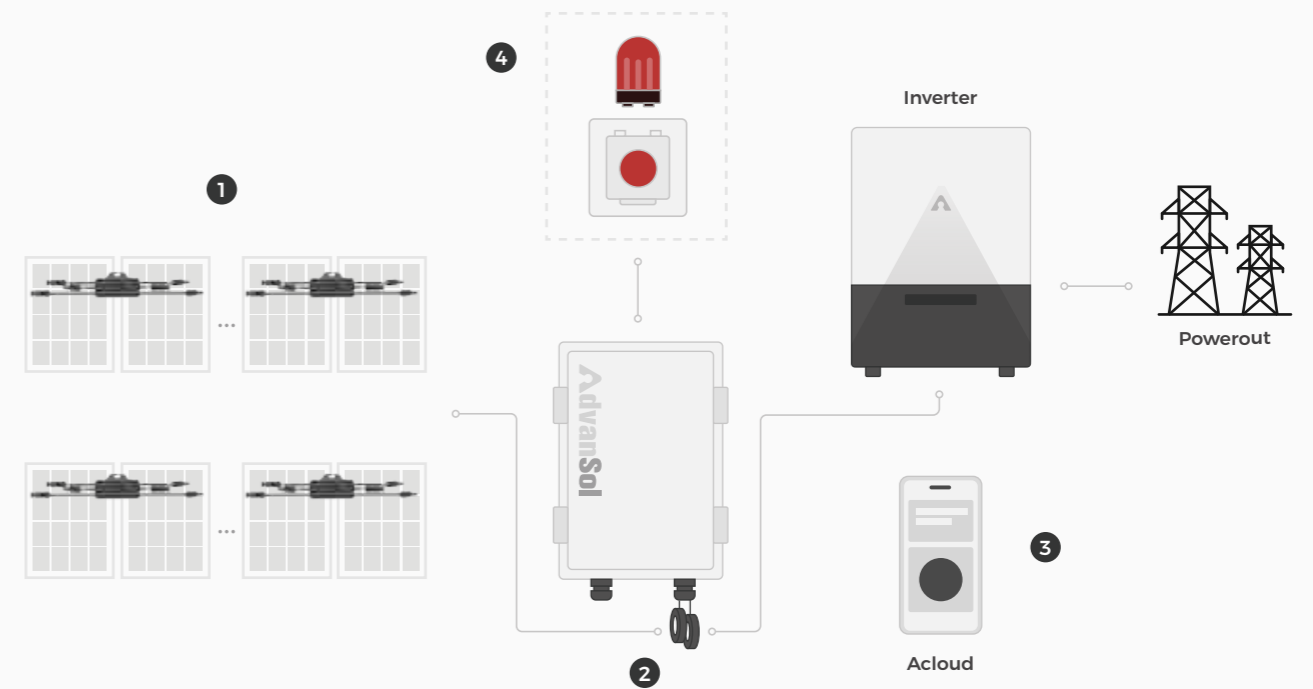
Each Panel's Voltage dropping to 0-1V

99%+

Increase solar system safety rate

3 TYPES

Automatic, manual, APP
3 shutdown methods



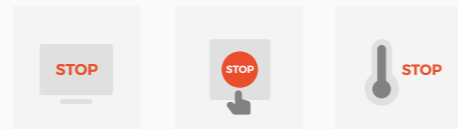
1 Micro Controller R Series 2 V2.5 Control Box DCON-S 3 Smart Platform Acloud 4 optional Emergency Button Kit

FLEXIBLE SHUTDOWN SAFETY PROTECTION ANYTIME



Multiple shutdown methods

Automatical, manual button and APP rapid shutdown (The only one RSD in the market with APP control)



Smart Protector mode

Real-time temperature detection, and automatically shutdown abnormal panel without affecting other panels



Highest product quality

IP68 rating, 5VA anti-fire rating for plastic shell material and V-0 anti-fire rating for internal glue filling



Highest product rating

max solar panel input power
Pmax=800Wp, max continuous input current Imp=20A/25A (Optional)



Extremely convenient installation

Using M6 bolts or directly mounted on the panel frame with the buckle



CASE

ROOFTOP SOLAR STATION OF RLE FACTORY IN SUZHOU, CHINA

400kwp

This project is a large industrial park in Suzhou. There are important warehouses of many companies in the park, storing many high-value products. So safety issue is a top priority.

We have configured 900+ R series micro controllers. Once an accident occurs, they will quickly shut down within 30 seconds and the module voltage will drop to less than 1V. Help maintenance personnel conduct timely and safe debugging to reduce the expansion of losses.



900+

sets of R series module-level micro controllers

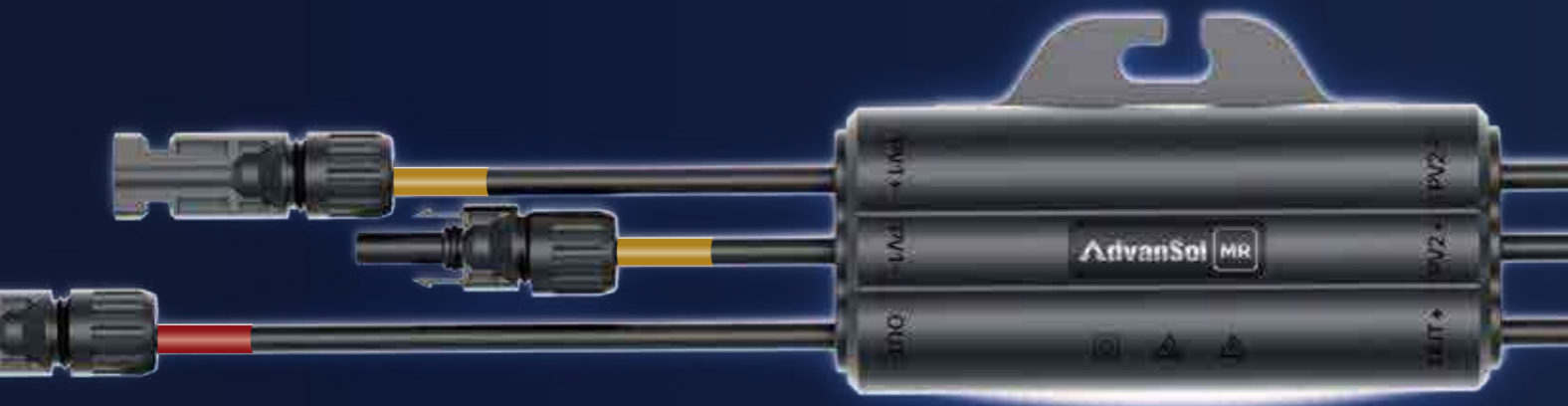
30s

Each Panel's Voltage dropping to 0-1V

99%

The safety factor has been improved to 99%





MONITORING RAPID SHUTDOWN

Upgrade your traditional string inverter system to module-level control system, compatible with any third-party inverter and applicable to both new and old solar stations.

1:1

1:1 digital virtual power station

30s

Each Panel's Voltage dropping to 0-1V

50%+

O&M costs reduced

Module-level
Rapid shutdown

Module-level
Monitoring & alarm



Monitoring / Diagnosis / Positioning / Rapid shutdown
One-stop intelligent operation and maintenance



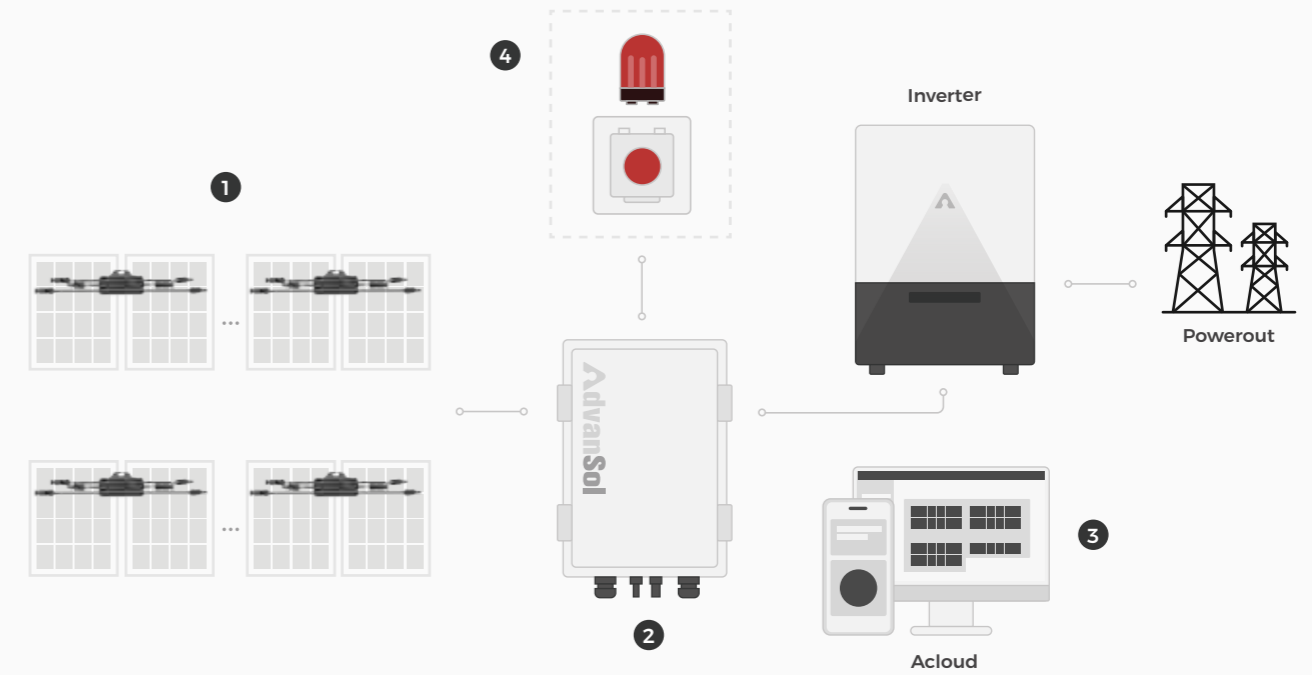
1:1 digital virtual power station



Real-time module data



Multiple ways of rapid shutdown



1 Micro Controller MR Series

2 V2.5 Control Box DCON-4G/WIFI (S/M/L)

3 Smart Platform Acloud

4 optional Emergency Button Kit

SOLAR SYSTEM MAINTENANCE COSTS REDUCED BY 50%+



1:1 digital virtual power station

Clearer power generation display and easier fault location

Panel health diagnose

Real-time module-level data monitoring

Smart Protector mode

Real-time temperature/voltage/current detection, and automatically shutdown abnormal string



Highest product quality

IP68 rating, 5VA anti-fire rating for plastic shell material and V-0 anti-fire rating for internal glue filling



Multiple shutdown methods

Automatic, manual button and APP rapid shutdown



Highest product rating

max solar panel input power Pmax=800Wp, max continuous input current Imp=20A/25A (Optional)



Extremely convenient installation

Using M6 bolts or directly mounted on the panel frame with the buckle



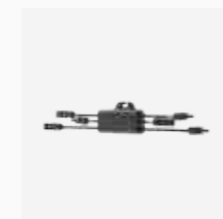
CASE

ROOFTOP SOLAR STATION OF A LARGE FACTORY IN JINTAN, CHANGZHOU

500kwp

This is a large factory roof project. Due to its large area and large installed capacity, the amount of maintenance is also large. Hiring more maintenance staff means higher costs. So customers want a smarter way to regulate.

We have configured more than 500 MR series micro controllers to help users monitor component data in real time, accurately locate faulty modules and save 50% of maintenance expenses.



500+

sets of MR series module-level micro controllers

30s

Each Panel's Voltage dropping to 0-1V

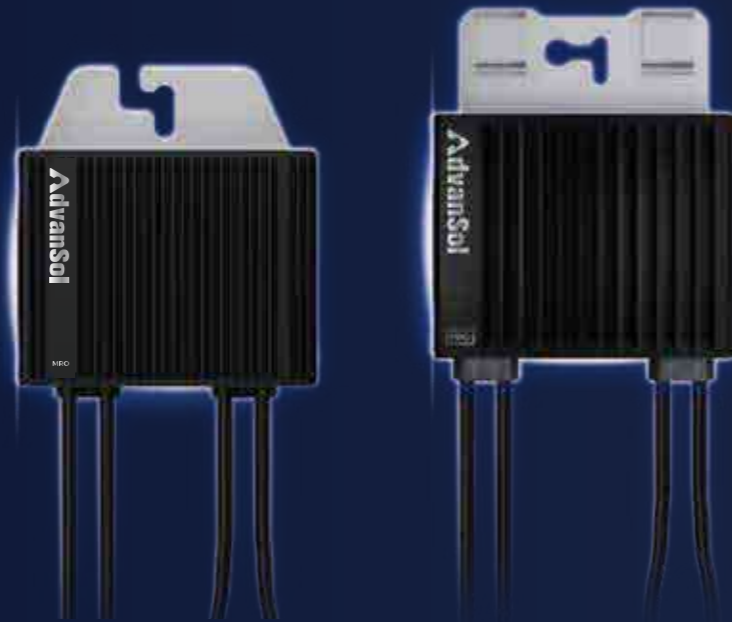
50%+

O&M costs reduced



SOLUTION
MRO

MEET ALL YOUR
REQUIREMENTS



FULL-FUNCTION OPTIMIZER

AdvanSol MRO Series is featured with module-level rapid shutdown, module-level monitoring and module-level optimization functions. It can protect the safety of solar system and assets and increase the return on investment.

30s

Each Panel's Voltage dropping to 0-1V

10%+

Power generation within the full life cycle increased

30%+

Installed capacity increased

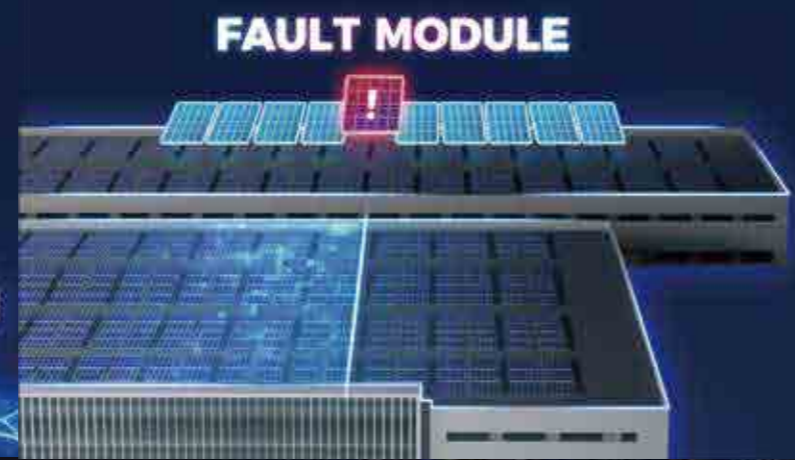
50%+

O&M costs reduced

Module-level
Rapid shutdown

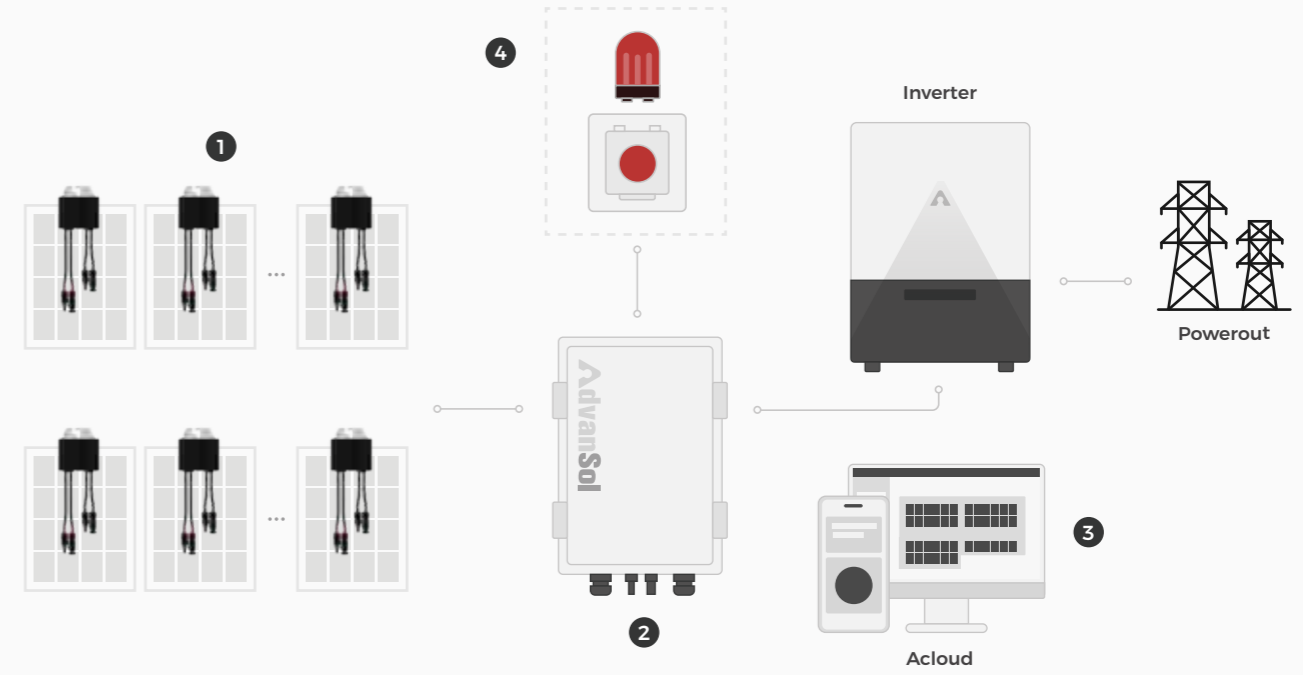
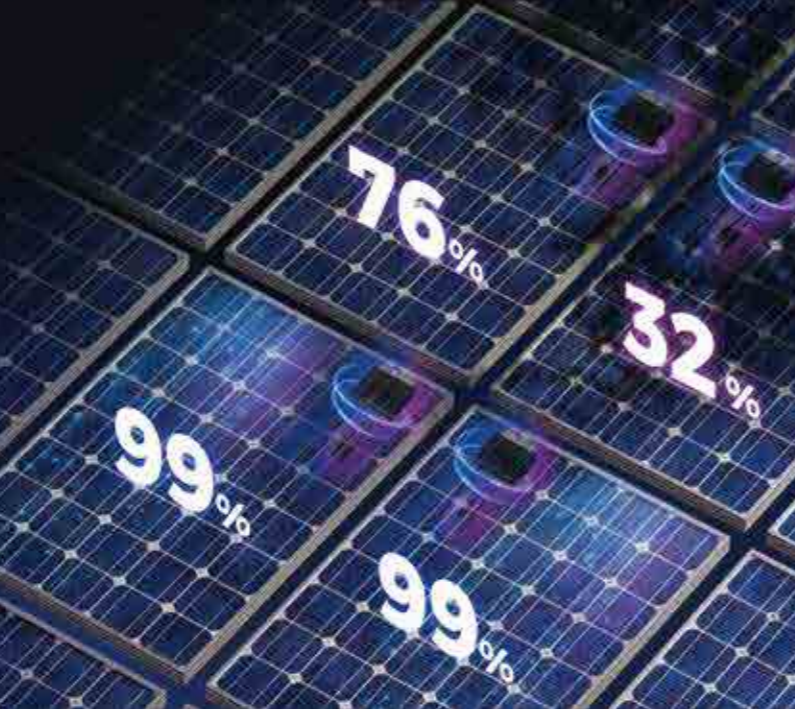


Module-level
Monitoring & alarm



Module-level
Power Optimization

10% - 30%
INCREASE ENERGY GENERATION



1 Micro Controller MRO Series 2 V2.5 Control Box DCON-4G/WIFI (S/M/L) 3 Smart Platform Acloud 4 optional Emergency Button Kit

POWER GENERATION INCREASED BY 10-30%



Power generation increased by 10-30%

The unique module-level MPPT optimization function is designed to maximize each module's output, no afraid of shading or orientation issue.

therefore maximizing the entire solar system's output by more than 10% in average throughout the lifecycle.



Highest product quality

IP68 rating, AL5052/6063 Aluminum alloy casing and V-0 anti-fire rating for internal glue filling



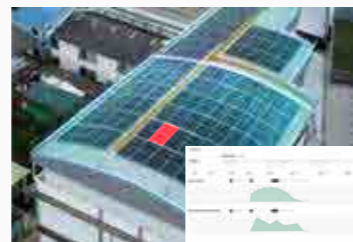
Extremely convenient O&M

1:1 digital virtual power station with visualized fault location



Panel health diagnose

Real-time module-level data monitoring and active IV scanning



Multiple shutdown methods

Automatical, manual button and APP rapid shutdown



Highest product rating

max solar panel input power max=800Wp max continuous input current Imp=20A/25A (optional)



CASE

NL SMART SOLAR STATION OF LARGE PHARMACEUTICAL FACTORY IN THAILAND

851.8kwp

The client is a large pharmaceutical industrial park with complex roof conditions. The pharmaceutical equipment in the park consumes extremely high power, and users hope that the photovoltaic system can output more power.

We have deployed a total of 3,000+ MROs to help solve the problems of partial shading and installation angle restrictions on some roofs, increasing power generation by about 10% throughout the cycle. Help customers save more electricity expenses.



3000+

sets of MRO series module-level micro controllers

10%

Increased power generation

30%

Increase in installed capacity





APT-MC-R-T1 / T2

Module-Level Rapid Shutdown Micro Controller

Technical Parameters	APT-MC-R-T1	APT-MC-R-T2
Functions	Module-Level Rapid Shutdown	Module-Level Rapid Shutdown
Number of Modules Connected	1	2
Input		
Rated Input Power	800W	800W*2
Input Voltage Range	10V-80V	10V-80V*2
Max. Operating Current (I _{mp})	20A/25A (Optional)	20A/25A (Optional)
Max. Short-circuit Current (I _{sc})	25A/31.2A (Optional)	25A/31.2A (Optional)
Max. Efficiency	> 99.5%	> 99.5%
Output		
Max. Output Voltage	80V	160V
Max. Output Current	20A/25A (Optional)	20A/25A (Optional)
Bypass Output	✓	✓
Output Shutdown Voltage	1V	<1.5V
Shutdown Response Time	30s	30s
Communication		
Communication Mode	PLC	PLC
Compatible Data Controller	DCON-S	DCON-S
Safety Certification		
Safety	UL1741 / CSA C22.2 No.107.1 / CSA C22.2 No.330 comply with NEC Code Article 690.12 module-level shutdown characteristics	
EMC	FCC part 15b	
RoHS Certification	✓	✓
General Parameters		
Dimensions (L x W x D)	144 x 50 x 16.9 mm	143 x 62 x 19.5 mm
Weight (Including Cables)	0.45KG	0.76KG
Input and Output Terminals	MC4 / Compatible with MC4 / Customized	MC4 / Compatible with MC4 / Customized
Length of Output Cable (mm)	OUT:+770 -770 IN:+770 -260	OUT:+1300 -1500 PV1:+950 -200 PV2:+200 -950
Operating Temperature Range	-40°C to +85°C	-40°C to +85°C
Humidity Range	0%-100%	0%-100%
Protection Rating	IP68	IP68
Max.System Voltage	1500V	1500V



APT-MC-MR-T2

Module-Level Monitoring Micro Controller

Technical Parameters	APT-MC-MR-T2
Functions	Module-Level Monitoring / Rapid Shutdown
Number of Modules Connected	2
Input	
Rated Input Power	800W*2
Input Voltage Range	12V-80V*2
Max. Operating Current (I _{mp})	20A
Max. Short-circuit Current (I _{sc})	25A
Output	
Max. Output Voltage	160V
Max. Output Current	20A
Bypass Output	✓
Output Shutdown Voltage	<1.5V
Shutdown Response Time	30s
Communication	
Communication Mode	PLC
Communication Rate	200k-1M/s Self-Adaptive
Compatible Data Controller	V2.5 Control Box DCON-4G/WIFI (S/M/L)
Safety Certification	
Safety	UL1741 / CSA C22.2 No.107.1 / CSA C22.2 No.330 comply with NEC Code Article 690.12 module-level shutdown characteristics
EMC	FCC part 15b
RoHS Certification	✓
General Parameters	
Dimensions (L x W x D)	143 x 62 x 19.5 mm
Weight (Including Cables)	0.76KG
Input and Output Terminals	MC4 / Compatible with MC4 / Customized
Length of Output Cable (mm)	OUT:+1300 -1500 PV1:+950 -200 PV2:+200 -950
Operating Temperature Range	-40°C to +85°C
Humidity Range	0%-100%
Protection Rating	IP68
Max.System Voltage	1500V



APT-MC-MRO / MRO-120

Module-Level MPPT Optimization Micro Controller

Technical Parameters	APT-MC-MRO	APT-MC-MRO-120
Functions	Module-Level MPPT Optimization / Monitoring / Rapid Shutdown	
Number of Modules Connected	1	2
Input		
Rated Input Power	800W	1600W
Max.Input Voltage	80V	120V
MPPT Operating Range	12V-80V	15-105V
Max. Operating Current (I _{mp})	20A	20A
Max. Short-circuit Current (I _{sc})	25A	25A
Max. Efficiency	99.5%	99.5%
Output		
Max. Output Voltage	80V	80V
Max. Output Current	22A	
Bypass Output	✓	✓
Output Shutdown Voltage	< 1V	< 2V
	30s	30s
Communication		
Communication Mode	PLC	
Communication Rate	200k-1M/s Self-Adaptive	
Compatible Data Controller	V2.5 Control Box DCON-4G/WIFI (S/M/L)	
Safety Certification		
Safety	UL1741 / CSA C22.2 No.107.1 / CSA C22.2 No.330 comply with NEC Code Article 690.12 module-level shutdown characteristics	
EMC	FCC part 15b	
RoHS Certification	✓	✓
General Parameters		
Dimensions (L x W x D)	123.8 x 112 x 27 mm	133.8 x 115 x 37 mm
Weight (Including Cables)	0.66KG	0.86KG
Input and Output Terminals	MC4 / Compatible with MC4 / Customized	MC4 / Compatible with MC4 / Customized
Length of Output Cable (mm)	OUT:+770 -770 IN:+770 -260	OUT:+1400 -1400 IN:+1200 -1200
Operating Temperature Range	-40°C to +85°C	
Humidity Range	0%-100%	
Protection Rating	IP68	
Max.System Voltage	1000V / 1500V	



APT-CB-DS

APT-CB-D-4G/WIFI

V2.5 CONTROL BOX

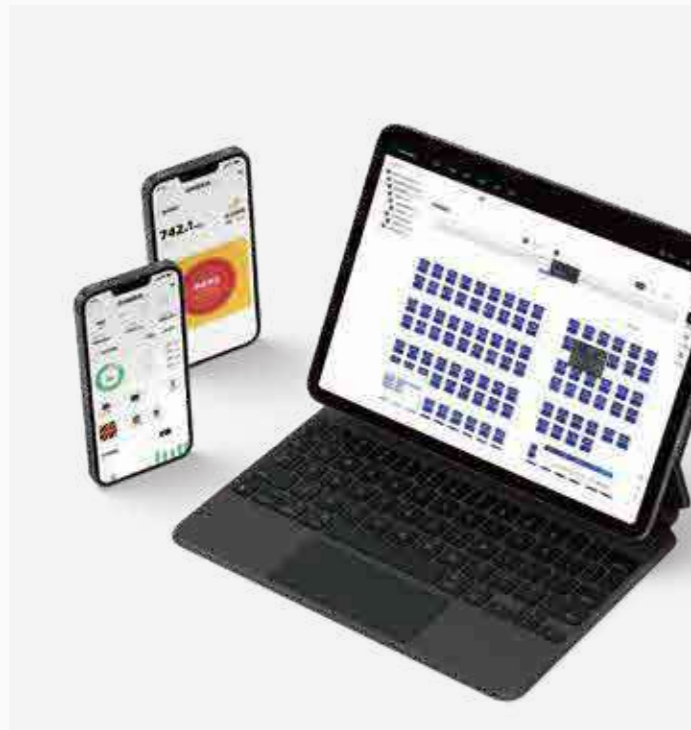
Technical Parameters	APT-CB-DS	APT-CB-D-4G-S/M/L	APT-CB-D-WIFI-S/M/L
Data Controller	DCON-S	DCON-4G	DCON-WIFI
Communication Protocol	WIFI*	4G	WIFI
Communication Mode with Module-Level Micro Controller	PLC	PLC	PLC
Max. Number of Supported Strings	12 strings	4/12/20 Strings	4/12/20 Strings
Power Supply	220AC	220AC	220AC
Communication Interval	/	5min	5min
Local Data Storage Time	/	7Days	7Days
Debugging mode	/	Web Server/Local Serial Port Debugging	
Working Ambient Temperature	-20°C to +65°C	-20°C to +65°C	-20°C to +65°C
Cooling	Natural Cooling	Natural Cooling	Natural Cooling
Dimensions (L x W x D)	300 x 200 x 170 mm	300 x 200 x 170 mm 400 x 300 x 170 mm 500 x 400 x 200 mm	300 x 200 x 170 mm 400 x 300 x 170 mm 500 x 400 x 200 mm
Protection Rating	IP65	IP65	IP65



APT-ACC-EMG

Emergency button kit optional

Technical Parameters	APT-ACC-EMG
Power Supply	220V AC
Power Consumption	<7W
Working Temperature	-20--65°C
Cool Down	Natural Cooling
Dimensions (L x W x D)	Warning light: 95*95*144mm Emergency button kit: 125*125*115mm
Protection Degree	IP 20



ACLOUD

Smart Cloud Platform

The Acloud provide services of module-level data monitoring, big data analysis, early warning mechanism and active system maintenance. Thus, the operation of the equipment can be monitored and controlled anytime and anywhere.



SC100K

Smart String Controller

AdvanSol's new SC100 series string controller, in combination with the O series module-level micro-controllers, can form the V3.0 intelligent micro-string inverter system, providing a thoroughly cost-effective module-level inverter solution.

Function	WEB	APP
Home Page		
Power generation overview	✓	✓
Statistics	✓	✓
Power station list	✓	✓
Power station operation	✓	✓
Power station map	✓	✓
Alarm prompt	✓	✓
Monitoring		
Device tree diagram	✓	✓
Power station overview	✓	✓
Equipment statistics	✓	✓
Emergency stop and reset	✓	✓
Equipment upgrade	✓	✓
Power station layout diagram	✓	✓
Log information	✓	✓
String controller data	✓	✓
Date controller data	✓	✓
Micro controller data	✓	✓
Historical data	✓	
System		
Alarm display	✓	✓
Firmware management	✓	
Permission management	✓	

Note: App is available for all three series micro-controller while PC web only for MR and MRO Series.

Technical Parameters	APT-SC-100K
DC Input	
Max. Input Power	154000W
Max. Input Voltage	1000V
Max. Input Current	30A
Max. Short Circuit Current	50A
AC Output	
Rated Output Power	100000
Max. Output Power	120000VA
Rated Output Voltage	400/380,3W+PE,4W+PE
Output Voltage Frequency	50Hz/60Hz
Max. Output Current	180A (per phase)
Power Factor Range	~1(0.8lead...0.8lag)
THDi	<3%
Efficiency	
Max. Efficiency	98.80%
CEC Efficiency	98.40%

GLOBAL SUCCESS STORIES

EXPERT OF SOLAR MODULE-LEVEL CONTROL

05.



ADVANSOL INFO SUMMARY

EXPERT OF SOLAR MODULE-LEVEL CONTROL

06.

V2.5 Module-Level Control Solution Introduce



Solution R
(EN / TL / PT / CN)



Solution MR
(EN / TL / PT / CN)



Solution MRO
(EN / TL / PT / CN)

Company and product related



Global Cases
(EN / TL / PT / CN)



Products Datasheet
(EN / TL / PT / CN)

Smart cloud platform



Acloud App

Please scan the QR code to download

AdvanSol social media



Facebook



LinkedIn



Instagram



Wechat

Contact information



Website

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