

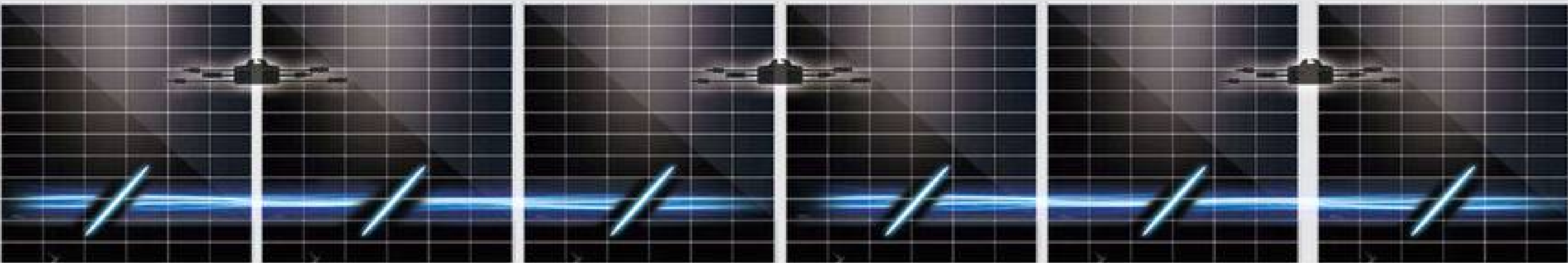


R Series Module-Level Micro Controller Rapid Shutdown Function Series



Module-Level Rapid Shutdown

Reduce module voltage below 1V within 30s. Meet the most strict photovoltaic safety regulations in the United States



The R series module-level micro controller has a module-level rapid shutdown function, meeting the US NEC 690.12-2014, 2017 and 2020 photovoltaic safety requirements. In an event of emergency, the micro controller will automatically disconnect the output of each module to ensure system safety.

Users can also switch to safe mode through emergency button or APP or switching off the AC power.



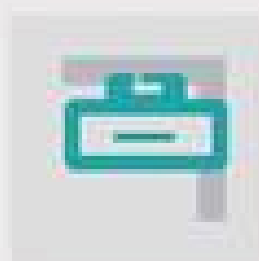
Reduce module voltage below 1V within 30s

Compatible with any third party PV inverters
Achieving module-level safe and rapid shutdown within 30s (safety mode)



Online and offline shutdown at any time

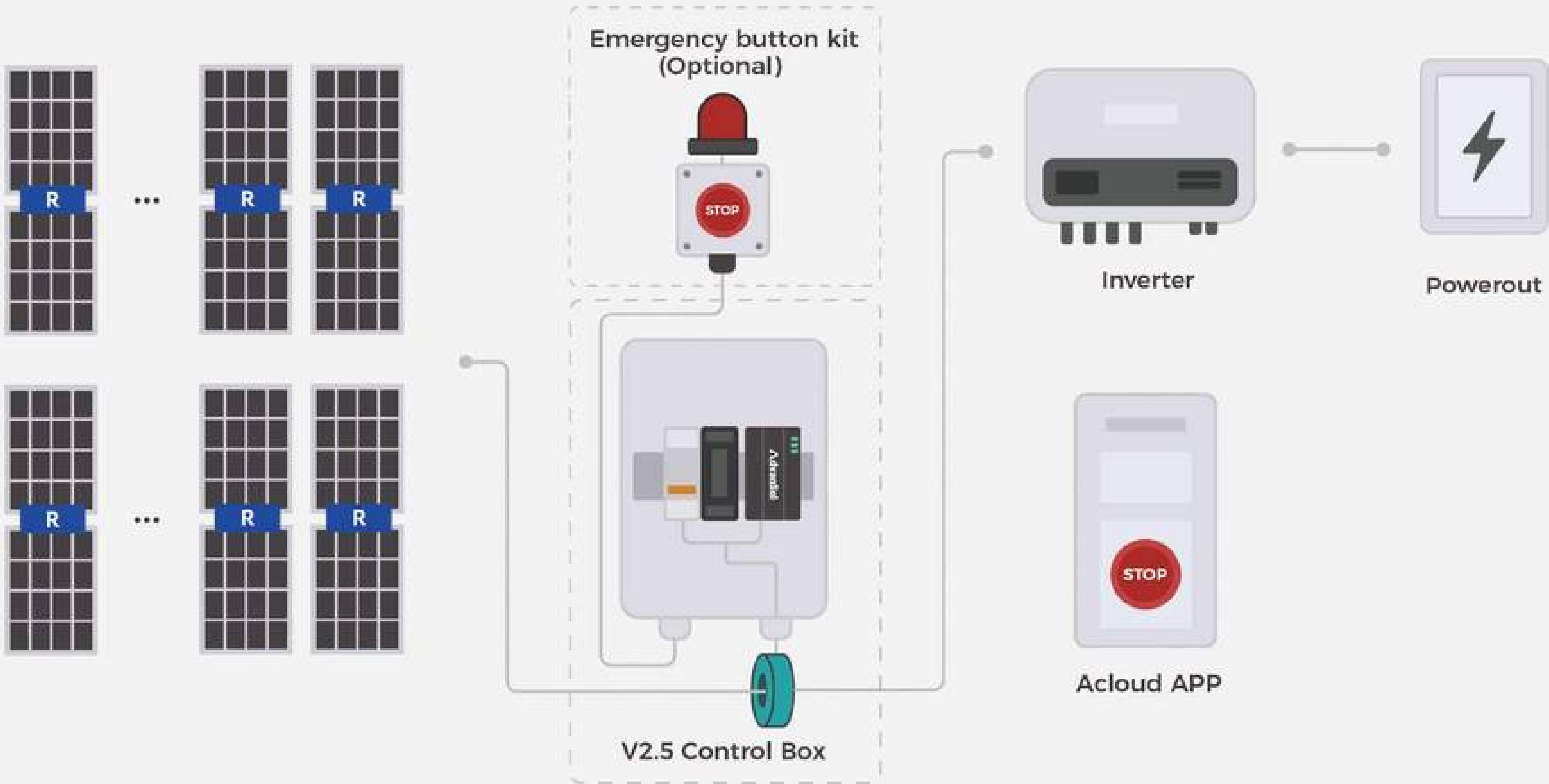
Multiple mechanisms to activate safety mode
(automatic/manual/APP)
Providing the highest safety protection
anytime and anywhere



Multiple efficient and convenient installation methods

Installed on the bracket or the edge of the solar
panel using M6 bolts or directly buckle it

Technical Parameters	APT-MC-R-T1	APT-MC-R-T2
Function	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 (Imp)	20A / 25A (Optional)	20A / 25A (Optional)
Max. Short-circuit Current (Isc)	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 V2.5 Control Box	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	1.2m / Customized	1.2m / Customized
Operating Temperature Range	-40℃ to +85℃	-40℃ to +85℃
Humidity Range	0%-100%	0%-100%
Protection Rating	IP68	IP68
Max.System Voltage	1500V	1500V





MR Series Module-Level Micro Controller
Monitoring & Rapid Shutdown Function Series



Module-Level Rapid Shutdown

Reduce module voltage below 1V within 30s



Module-Level Monitoring

1:1 digital virtual power station
Real-time monitoring and diagnosis of panel status



The MR series not only has a module-level rapid shutdown function, meeting the safety requirements of the US NEC 690.12-2014, 2017 and 2020 for photovoltaics, but also can monitor the power, voltage, current and other parameters of any panel in real time, and collect and upload them to the Acloud platform through the data controller (V2.5 Control Box).

1:1 digital virtual power station can realize convenient operation and maintenance of solar system, in-depth health scan and operation data analysis of each single panel, realizing intelligent analysis of solar system.



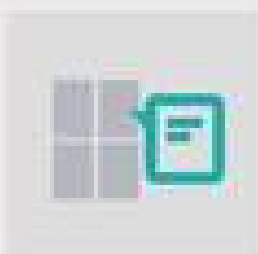
Reduce module voltage below 1V within 30s

Compatible with any third party PV inverters
Achieving module-level safe and rapid shutdown within 30s (safety mode)



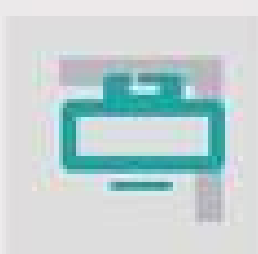
Intelligent operation costs reduced by 50%

Equipped with Acloud smart platform
Monitoring and controlling power station operation anytime and anywhere



Digital Power Station One-Stop Control

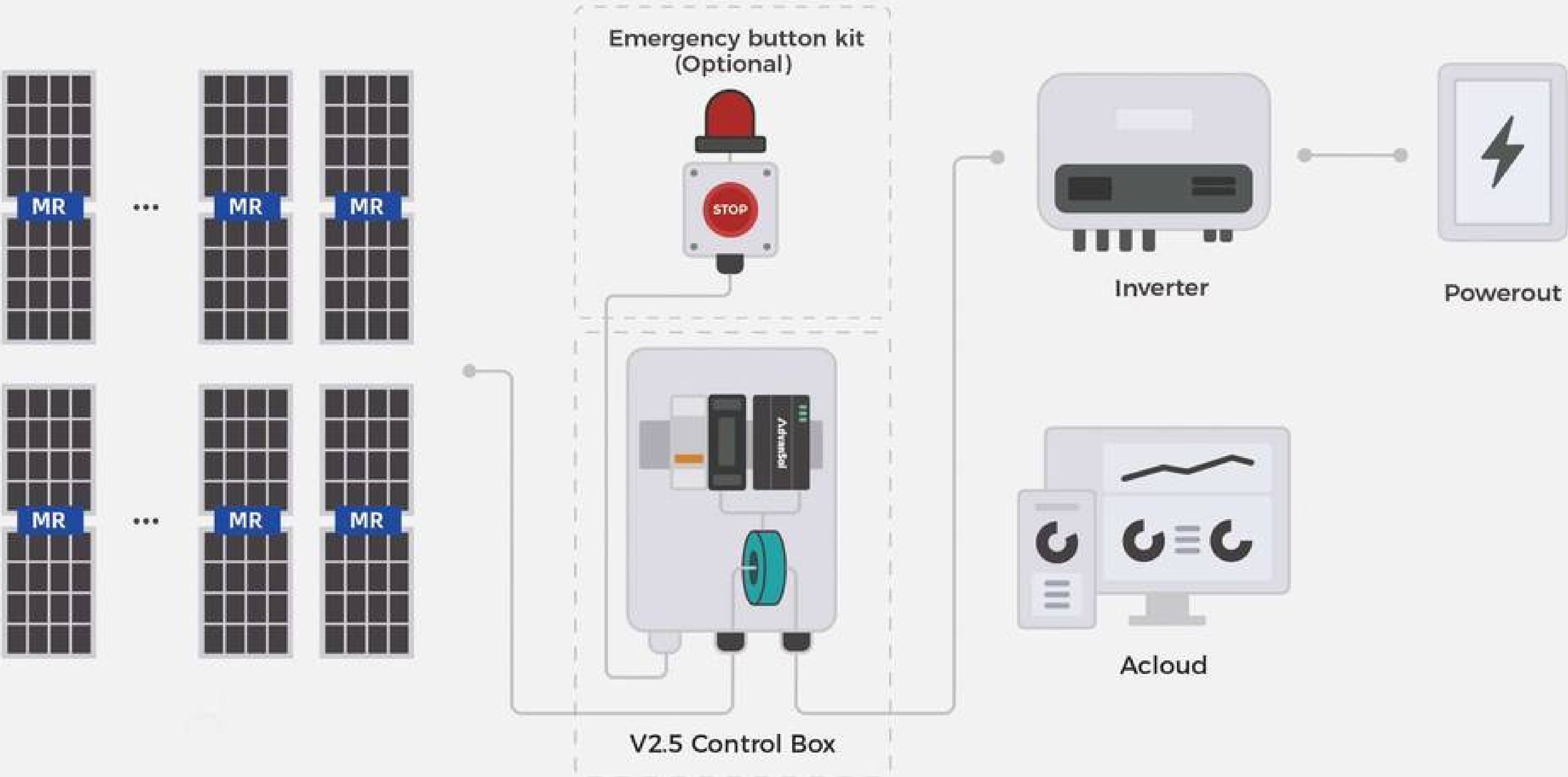
1:1 digital virtual power plant,
Achieving intelligent power plant operation and maintenance and in-depth module-level health scan

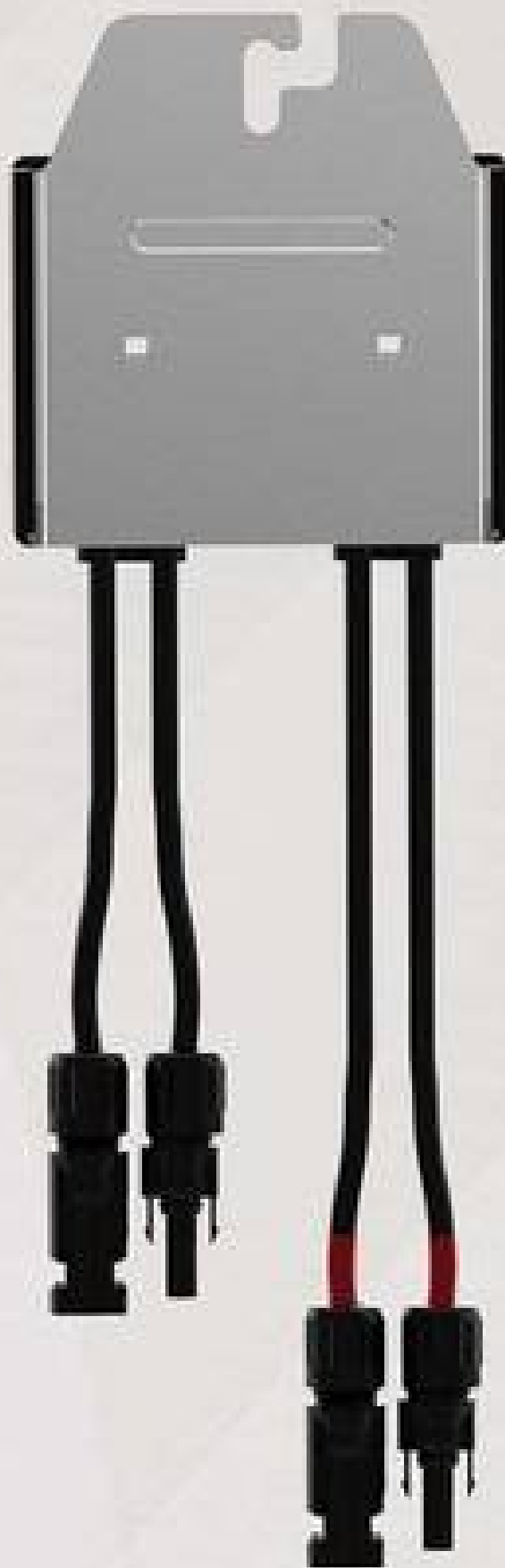


Multiple efficient and convenient installation methods

Installed on the bracket or the edge of the solar panel using M6 bolts Or directly buckle it

Technical Parameters	APT-MC-MR-T2
Functions	Module-level Rapid Shutdown ; Module-level Monitoring
Number of Modules Connected	2
Input	
Rated Input Power	800W*2
Input Voltage Range	12V-80V*2
Max. Operating Current (Imp)	20A
Max. Short-circuit Current (Isc)	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 V2.5 Control Box	DCON-4G (S/M/L), DCON-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	1.2m / Customized
Operating Temperature Range	-40℃ to +85℃
Humidity Range	0%-100%
Protection Rating	IP68
Max.System Voltage	1500V

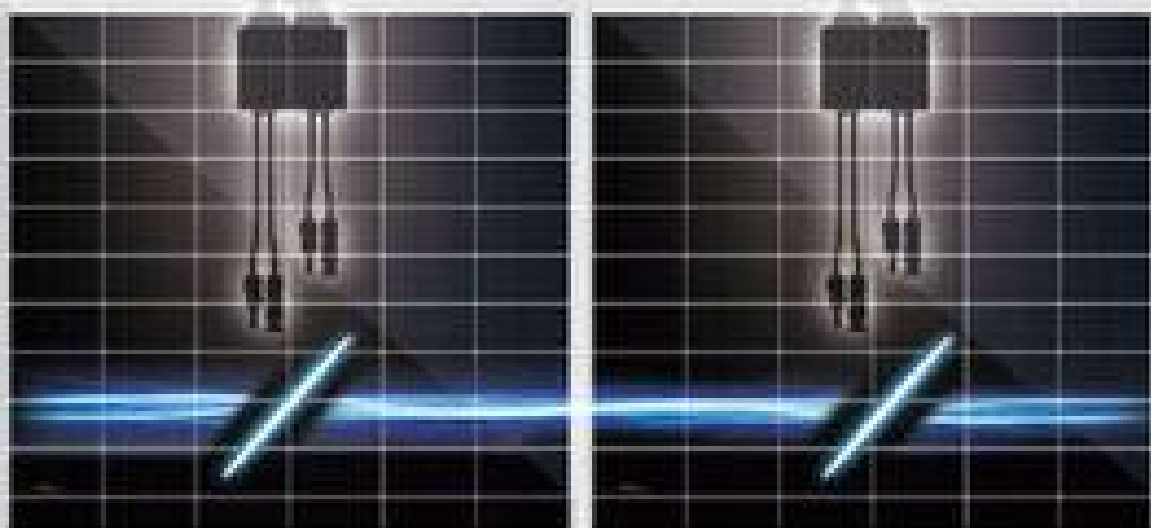




MRO Series Module-Level Micro Controller Optimization Function Series

Module-Level Rapid Shutdown

Reduce module voltage below 1V within 30s



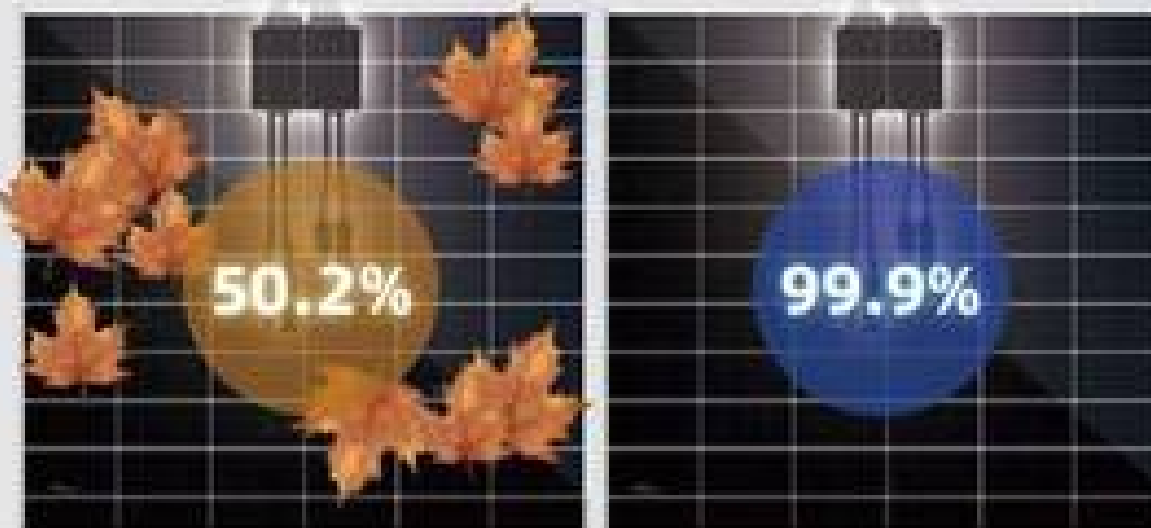
Module-Level Monitoring

1:1 digital virtual power station. Real-time monitoring and diagnosis of panel status



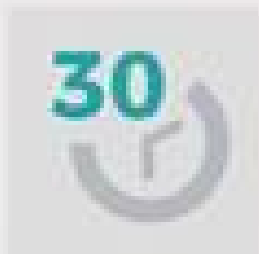
Module-Level Optimization

panels in the same string are not troubled by power generation mismatch



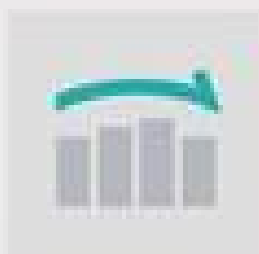
The MRO series module-level micro controller has module-level rapid shutdown, module-level monitoring and module-level MPPT power generation optimization functions. The optimization function ensures the optimal power output of each module in the solar system.

The new PLC has efficient dual-channel communication, no additional communication wiring is required, and the instability of wireless communication is avoided, so that the system always runs in an efficient and stable state.



Reduce module voltage below 1V within 30s

Compatible with any third party PV inverters
Achieving module-level safe and rapid shutdown within 30s (safety mode)



Intelligent operation costs reduced by 50%

1:1 digital virtual power plant
Achieving intelligent power plant operation and maintenance and in-depth module-level health scan



Power generation increased by 10% to 30%

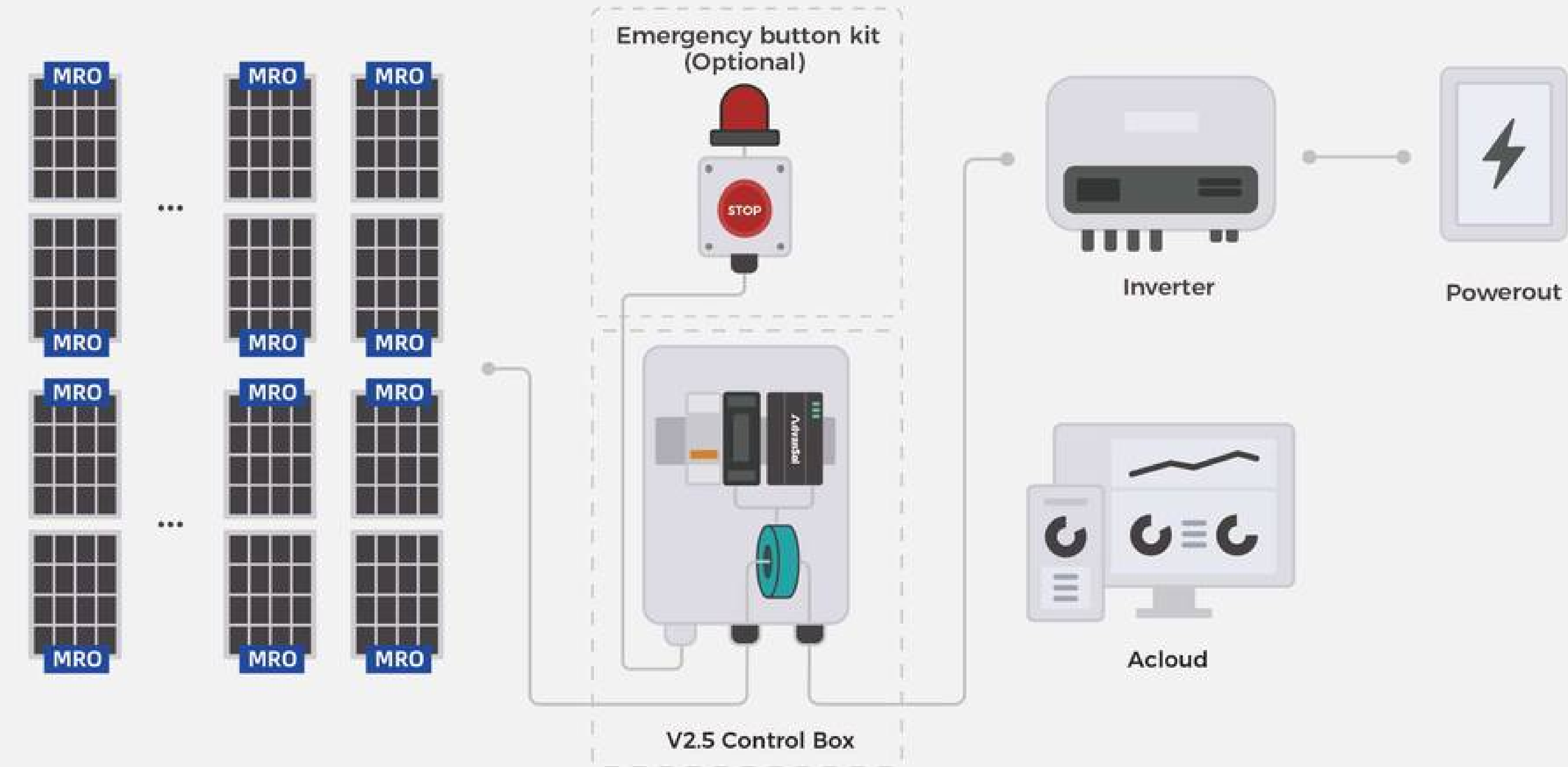
With module-level MPPT optimization function,
to achieve optimal power generation for each panel
The power generation can be increased by up to 30%+



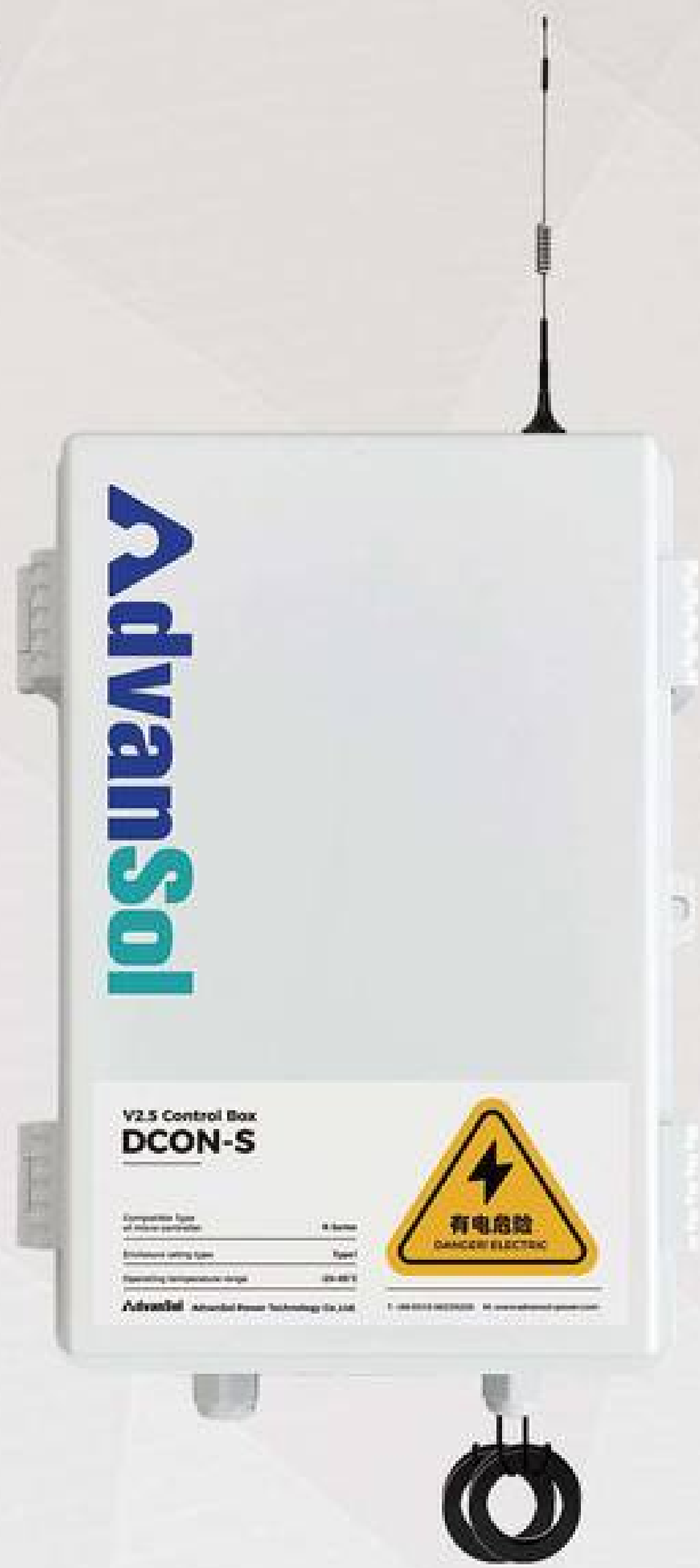
Installation capacity increased by 30%+

No afraid of partial shading or different orientation
of the roof. The installation capacity is increased
by fully using roof area

Technical Parameters	APT-MC-MRO	APT-MC-MRO-120
Functions	Module-level Rapid Shutdown ; Module-level Monitoring ; Moudle-level MPPT Optimization	
Number of Modules Connected	1	2
Input		
Rated Input Power	700W	1300W
Max.Input Voltage	70V	120V
MPPT Operating Range	10V-70V	15V-105V
Max. Operating Current (I _{mp})	18A	18A
Max. Short-circuit Current (I _{sc})	22.5A	22.5A
Max. Efficiency	99.5%	99.5%
Output		
Max. Output Voltage	70V	80V
Max. Output Current	18.8A	18.8A
Bypass Output	☑	☑
Output Shutdown Voltage	< 1V	< 2V
Shutdown Response Time	30s	30s
Communication		
Communication Mode	PLC	PLC
Communication Rate	200k-1M/s Self-Adaptive	200k-1M/s Self-Adaptive
Compatible V2.5 Control Box	DCON-4G (S/M/L), DCON-WIFI (S/M/L)	DCON-4G (S/M/L), DCON-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	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	1.2m / Customized	2.4m / Customized
Operating Temperature Range	-40℃ to +85℃	-40℃ to +85℃
Humidity Range	0%-100%	0%-100%
Protection Rating	IP68	IP68
Max.System Voltage	1000V / 1500V	1000V / 1500V



DCON-S



DCON-4G (S/M/L)



DCON-WIFI (S/M/L)



V2.5 Control Box

Product Introduction

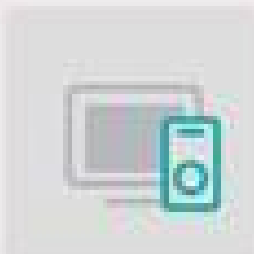
The Advansol V2.5 control box pairs with the module-level micro controller to realize module-level monitoring and shutdown functions. There are three series of control boxes designed to adapt to different micro controllers.

The V2.5 control box DCON-4G and DCON-WIFI can realize two-way communication with the Acloud, and support MR and MRO series micro controllers to achieve visual and module-level management of solar system. The V2.5 control box DCON-S supports the R series micro controller to achieve module-level rapid shutdown function.



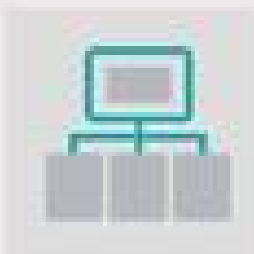
**ALL IN ONE
PLUG AND PLAY**

The product is assembled all in one.
Just simply fix the control box, connect the cables,
connect to Acloud, and done.



**ONE-KEY CONTROL
REMOTE SHUTDOWN**

Multiple online and offline shutdown methods
Online shutdown function can all be realized for R/MR/MRO
series micro controllers

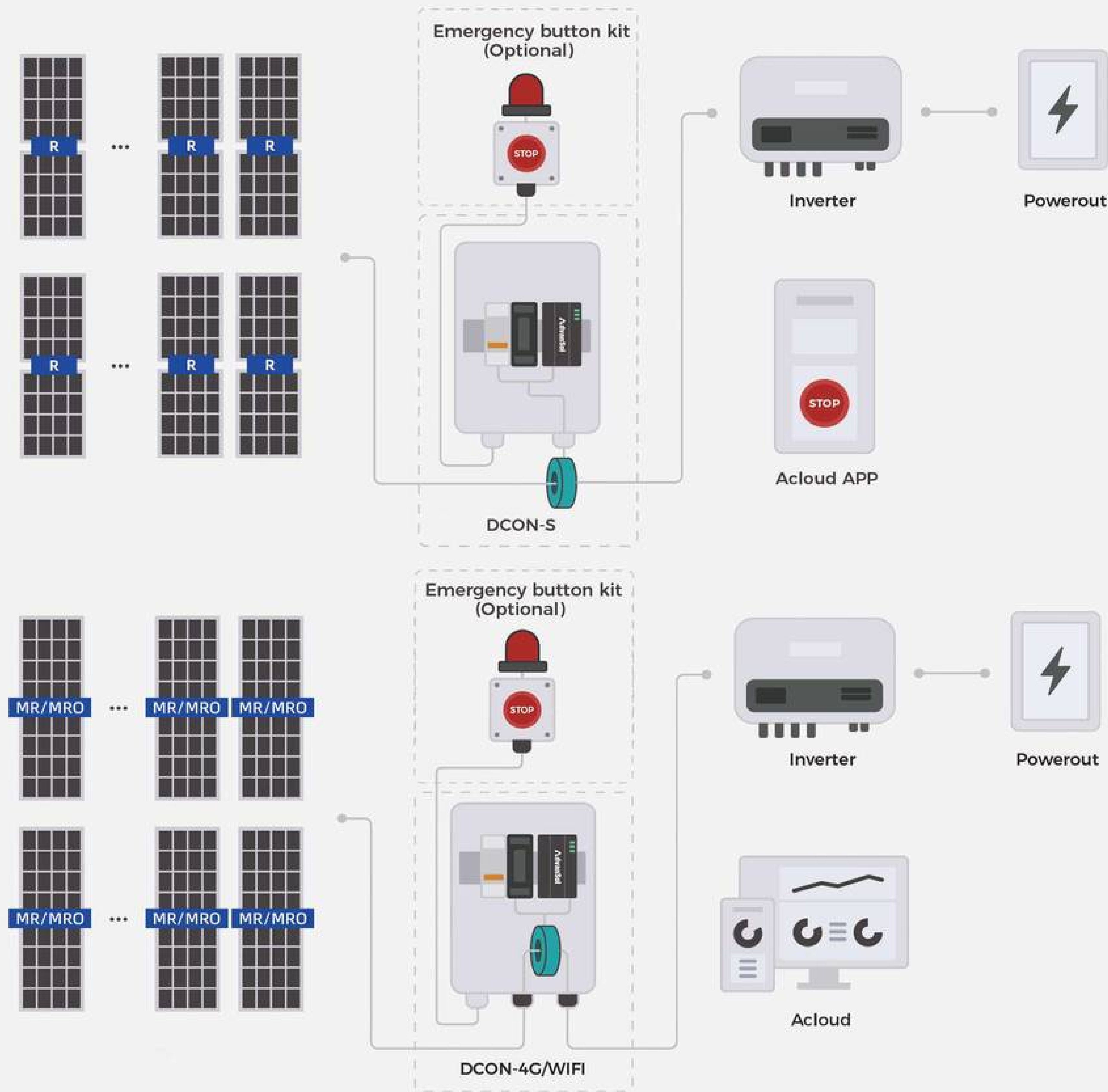


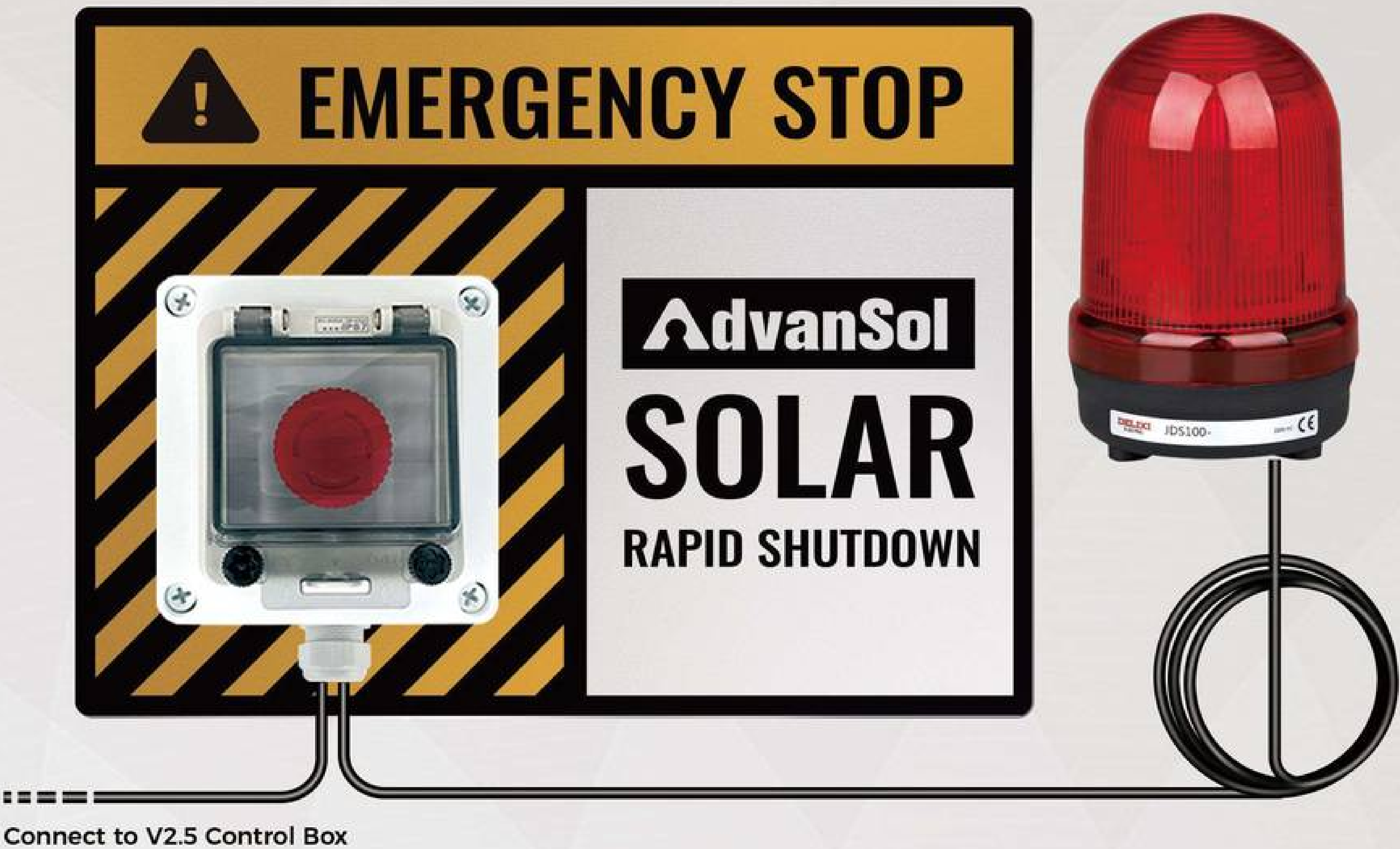
**HIGHLY INTEGRATED AND
SIMPLE SYSTEM**

A variety of models are available for different-size
power stations. A single control box can control multiple
strings, saving overall costs

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 mode with Acloud	WIFI*	4G	WIFI
Communication mode with micro-controller	PLC	PLC	PLC
Max. number of strings supported	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~65°C	-20°C~65°C	-20°C~65°C
Cooling	Natural cooling	Natural cooling	Natural cooling
Dimensions(LxWxD)	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

Note*: If you need 4G communication mode for APT-CB-DS, please contact AdvanSol sales.





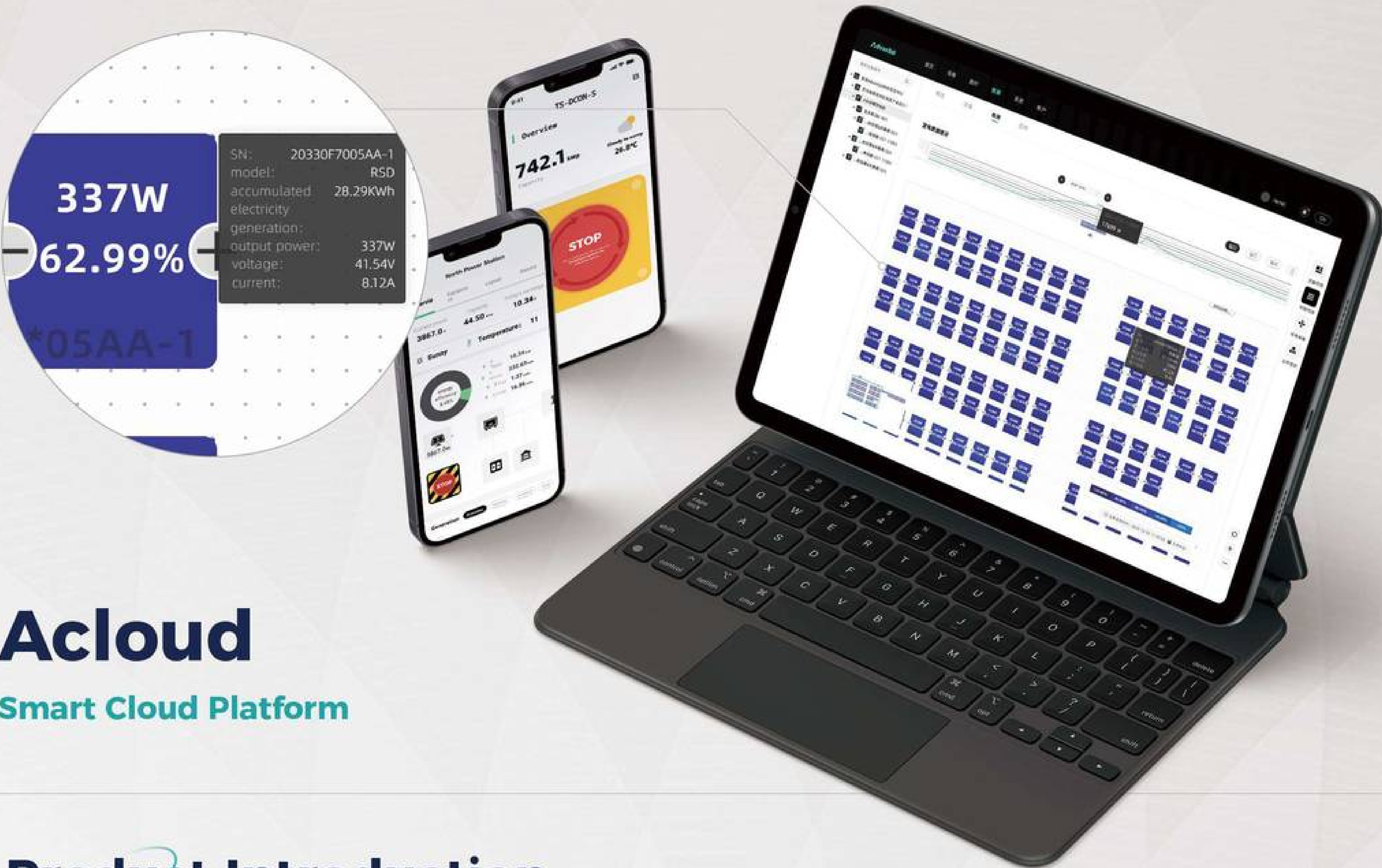
Emergency Button Kit

Production Introduction

The Advansol emergency button kit, as the optional accessory of V2.5 Control Box, serves as one of the method to shutdown the solar system. Press the button, the warning light on, and then the system will be shut down within 30s in case of an emergency or O&M service. After everything is set, reset the button, the warning light off and the system on.

The emergency button kit, as the manual method to shutdown, offers the O&M personnel a more directly way to shutdown the solar system, enhancing the convenience and safety of the solar system and the personnel.

Technical Parameters	APT-ACCE-EMG
Power supply	220V AC
Power consumption	<7W
Working temperature	-20~+65℃
Cooling	Natural cooling
Dimension	Warning light: 95×95×144mm Emergency button: 125×125×115mm
Protection Degree	IP20



Acloud

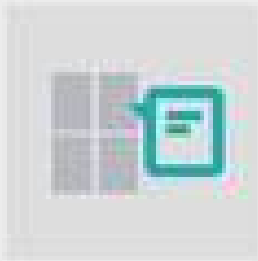
Smart Cloud Platform

Product Introduction

AdvanSol Acloud Platform is an operation center, integrating the solar system and AI technology to provide services such as safe operation management, maintenance support, and equipment management for solar systems throughout their life cycle.

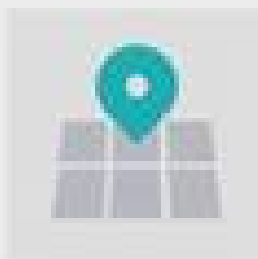
Different from the traditional solar software platform, the Acloud platform has been continuously improved based on the practice and experience of solar system O&M, developing into a "Smart Brain".

The Acloud platform provides services of module-level data monitoring, big data analysis, early warning mechanism and active system maintenance, allowing it to monitor and control the equipment anytime and anywhere, and evaluate the generation status, operation performance as well as the O&M efficiency of the equipment. Remotely rapid shutdown via web and APP can also be allowed.



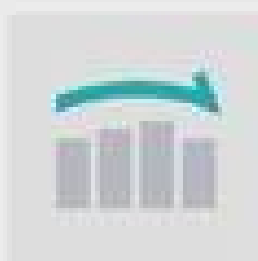
DIGITAL VIRTUAL POWER STATION EXTREMELY CONVENIENT O&M

1:1 digital virtual power station
Intelligent O&M and module-level health scanning



MODULE-LEVEL DIAGNOSIS AND VISUALIZED FAULT LOCATION

Real-time module-level data monitoring
and visualized fault location



INTELLIGENT O&M WITH COSTS REDUCED BY 50%

Equipped with Acloud smart platform
Web and APP can monitor and control the operation
of power stations anytime and anywhere

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	✓	✓
System	historical data	✓	
	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.

