

SOLUTION MR

EXPERT OF SOLAR MODULE-LEVEL CONTROL

AdvanSol Power Technology Co., Ltd



V2.5 Module-Master™ Solution MR

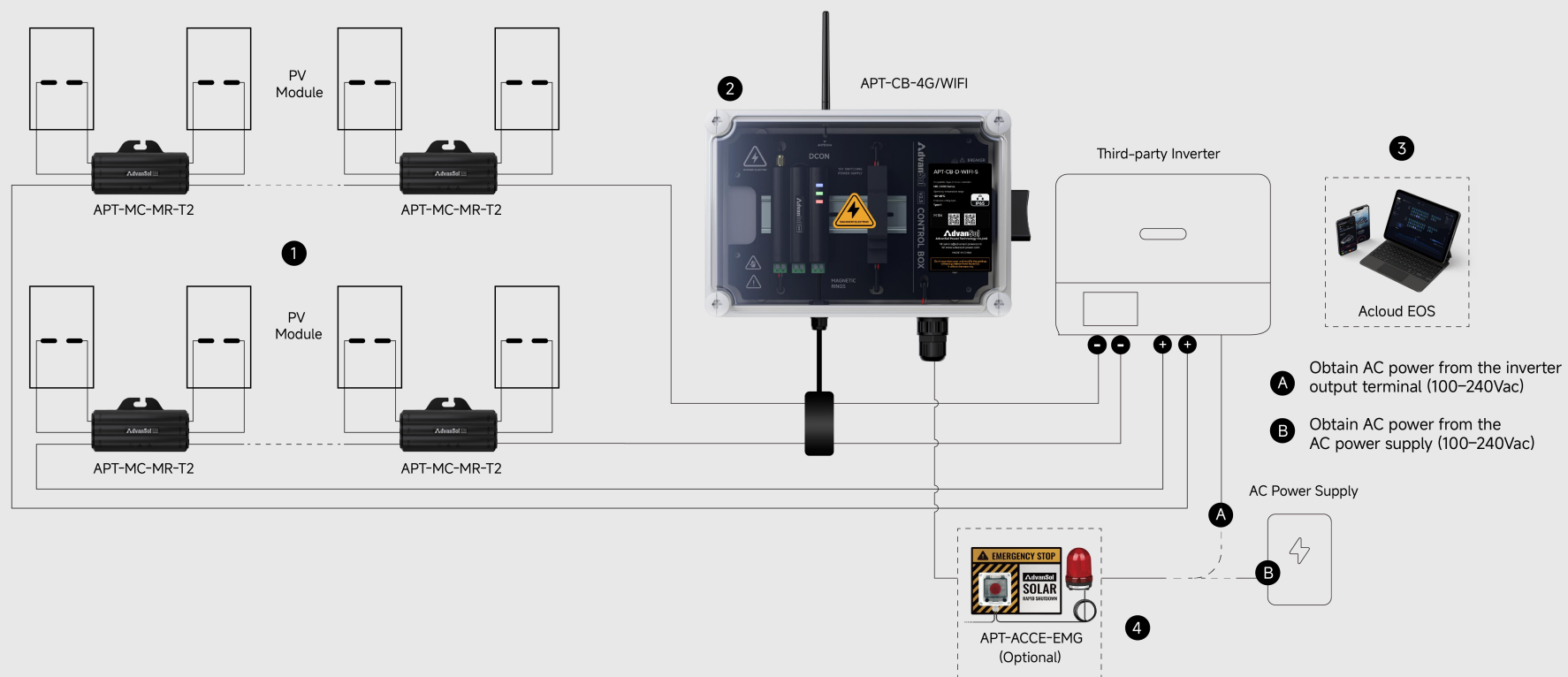
Module-Level Monitoring & Rapid Shutdown Solution

Building on module-level safety, this solution integrates module-level monitoring, achieving dual upgrades in system safety and visibility through module-level safety control + an intelligent monitoring platform.

With Solution MR deployed, the system provides module-level rapid shutdown along with real-time monitoring of power, voltage, current, temperature, and operating status. Faults can be precisely located down to a single module, with online remote module-level control. Fully certified to UL 1741 / UL 3741 / CE standards.



Topology Diagram & Products of Solution MR



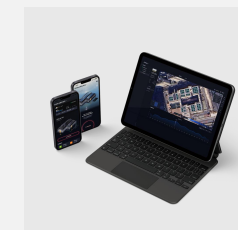
APT-MC-MR-T2



APT-CB-4G/WIFI



APT-ACCE-EMG



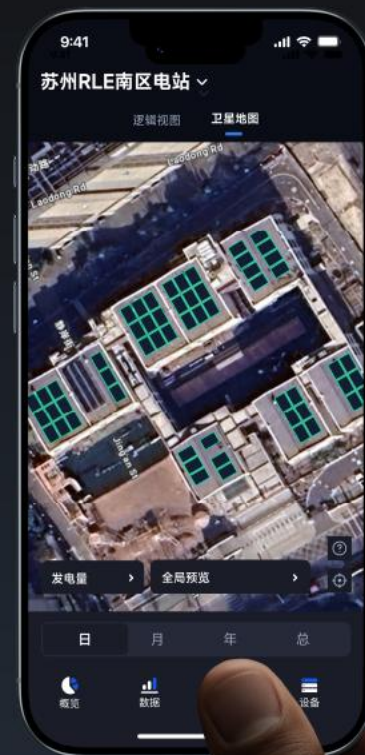
Acloud EOS APP

Super-HPLC Unlimited Communication Distance



1:1 Virtual PV Plant

Multi-view access to virtual power plants via both APP and Web terminals, module-level data monitoring, and precise fault location



Dual high standards

The product is IP68 certified and uses raw materials with high flame-retardant standards.



Backup Protection Design

Backup shutdown activates on communication/shutdown failure for device protection.



Module-Level Rapid Shutdown

Modules voltage and current drop to the safe range within 15 seconds.



Global authoritative certifications





MR series Micro Controller Model MR-T2

APT-MC-MR-T2

Product Model	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 (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	HPLC
PLC Maximum Communication Distance (Along the Cable)*	Distance from the data control box to the nearest micro-controller ≤ 400 m Distance between micro-controllers ≤ 50 m
Communication Rate	200k-1M/s Self-Adaptive
Compatible V2.5 Control Box	APT-CB-D-4G/WIFI-S/L
Safety Certification	
Safety	UL1741 / UL3741 / 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 Cable(mm)	OUT:+1300 -1500 PV1:+950 -200 PV2:+200 -950
Operating Temperature Range	-40℃ to +85℃
Humidity Range	0%-100%
Protection Rating	IP68
Max.System Voltage	1500V



V2.5 Control Box DCON-4G/WIFI

APT-CB-D-4G/WIFI-S/L

Product model	APT-CB-D-4G-S/L	APT-CB-D-WIFI-S/L
Data controller	DCON-4G	DCON-WIFI
Compatible micro controller	MR/MRO series	MR/MRO series
Communication mode with Acloud	4G	WIFI
Communication mode with micro controller	HPLC	HPLC
PLC Maximum Communication Distance (Along the Cable)**	Nearest microcontroller ≤ 400m Distance between microcontrollers ≤ 50m	
Number of Communication Magnetic Rings	S:1/L:3	S:1/L:3
Max. number of strings supported	6 strings/mag ring (Rec.) Total max Isc/mag ring ≤ 160A	
Max.number of Modules each ring	Each magnetic ring ≤ 160	
Power Supply	100-240VAC	100-240VAC
Communication Interval	5min	5min
Local Data Storage time	7Days	7Days
Working ambient temperature	-20℃~65℃	-20℃~65℃
Dimensions(LxWxD)	280 x 190 x 130 mm 340 x 280 x 130 mm	280 x 190 x 130 mm 340 x 280 x 130 mm
Protection Rating	IP65	IP65

MR series Micro Controller Model T2

Monitoring & Rapid Shutdown Device

- Module-Level Real-Time Monitoring & Rapid Shutdown
- Three-Level Protection System (Patented Hardware Protection Module)
- Super-HPLC | Unlimited Communication Distance
- Internationally Recognized Certifications
- Compatible Mixed Installation with MRO Series
- Dual High Standards: Protection & Flame Retardancy

APT-MC-MR-T2



V2.5 Control Box DCON-S/4G/WIFI

Data Controller

- V2.5 Module-Master™ Solution Accessories
- Super-HPLC | Unlimited Communication Distance (4G WIFI)
- Multi-String Management
- Premium Design × Plug-and-Play
- All-in-One Integrated Design
- Compatible with Third-Party String Inverters



V2.5 Control Box DCON-4G/WIFI ASP

AFCI Data Controller

- V2.5 Module-Master™ Solution Accessories
- Optional AFCI Configuration
- Anti-Vibration & Impact Resistance
- IP65 Protection Rating
- Plug-and-Play Installation
- Integrated Design



APT-CB-D-4G/WIFI-ASP-S



APT-CB-D-4G/WIFI-ASP-L

APT-CB-D-4G/WIFI-ASP



EMERGENCY BUTTON KIT

【Accessory】

- One-Click Emergency Shutdown
- On-Site Warning Indication
- Compliance with International Safety Standards
- V2.5 Module-Master™ Solution Accessories

APT-ACCE-EMG



Acloud EOS AI Cloud Platform

Energy Operating System

- Comprehensive Module-Level Power Plant Monitoring
- 50% Reduction in O&M Costs
- AR-Based Satellite Power Plant View
- AI-Assisted Operations & Maintenance
- Cross-Platform Access × Multi-User Collaboration
- Visualized Data × Decision-Grade Analytics



ACLOUD EOS



Philippines LCM Project

- Challenge: A high-traffic SEA commercial landmark with complex rooftop & extreme climate demands (safety + adaptability).
- Solution: "All-in-one" solar-storage (high-efficiency generation + Module-level protection + digital O&M).
- Results: 30% more power, 80% safer, 2× O&M efficiency.

6MWP

Power Station Scale

4600+

Installation Quantity



APT-MC-MRO

Product

Cagayan de Oro

Location



Shanghai WSE Project

- Challenge: Complex infrastructure & high-risk wastewater environment hinder PV maintenance, raising electrical faults & instability.
- Goal: To implement a safer, low-maintenance PV solution with reliable shutdown to ensure stable operation in a high-risk environment.
- Results: Safety +80%, module-level protection & remote shutdown O&M efficiency +40%, AI reduces inspections, Stable operation, failure rate 0.2%

1.2MWP

Power Station Scale

970+

Installation Quantity

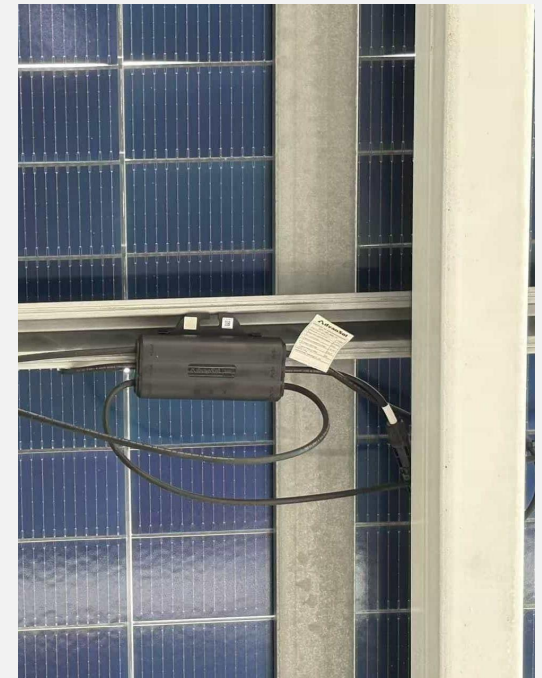
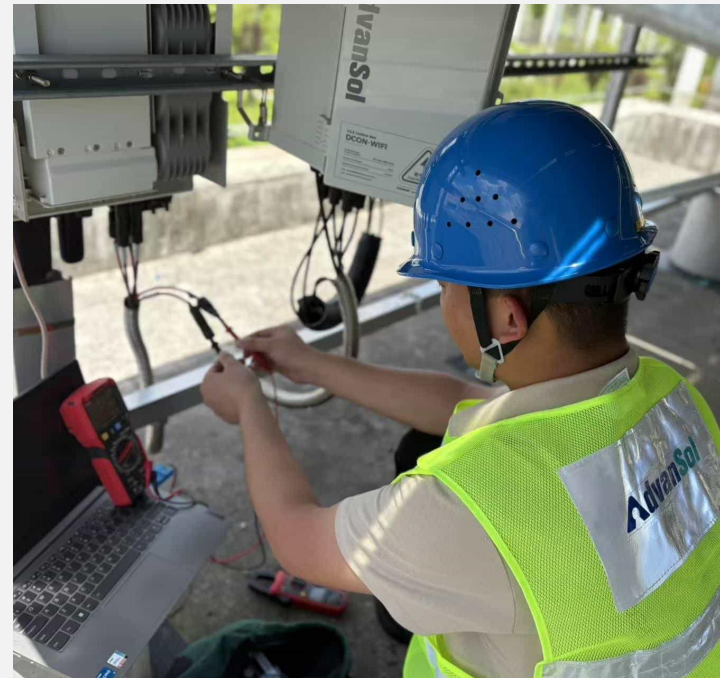


APT-MC-MR

Product

Shanghai

Location



Global Case Study



BI Project

1.5MWp



APT-MC-MR-T2



Zhuhai China



WSE Project

1.2MWp



APT-MC-MR-T2



Shanghai China



FLK Project

649 kWp



APT-MC-MR-T2



GuangDong China



ZR Project

1.5MWp



APT-MC-MRO-120 、 APT-MC-MR



Changzhou China



RLE Project

400 kWp



APT-MC-MRO



SuZhou China



YZ Project

400 kWp



APT-MC-MRO



Yangzhou China

Global Case Study



NMP Project

649 kWp



APT-MC-MR-T2



Malaysia



JMC Project

649 kWp



APT-MC-MR-T2



Philippines



KB Project

200 kWp



APT-MC-R-T2



Thailand



GTZ Project

255 kWp



APT-MC-MRO



Panan China



CDH Project

128 kWp



APT-MC-MRO



Philippines



XN Project

150 kWp



APT-MC-MRO



Xuzhou China

Global Case Study



LM Project

122 kWp



APT-MC-MRO



Wuxi, China



LS Project

121 kWp



APT-MC-MRO



Zhuhai, China



CPD Project

161 kWp



APT-MC-MRO



Philippines



GMH Project

100 kWp



APT-MC-MRO



Shanghai China



Solar Ark 5.0 Project

22 kWp



APT-MC-MRO



Panan China

Contact AdvanSol for the best solution

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