

AC/DC INTELLIGENT Micro-Grid

ENERGY STORAGE SYSTEM



Strong Capacity

Utility-size distributed ESS solution, supporting 56MW of output power and 104MWh of capacity in a standard array.

Superb Performance

Safe LFP, 8000 cycles, high density, and embedded liquid-cooling thermal management system to remain working esp in extreme weather.

Optimized for Modese

Work with PV side and store power for later use. Help in peak-shaving application. Pos virtual scheduling application.sesses VPP

Pioneering Tech

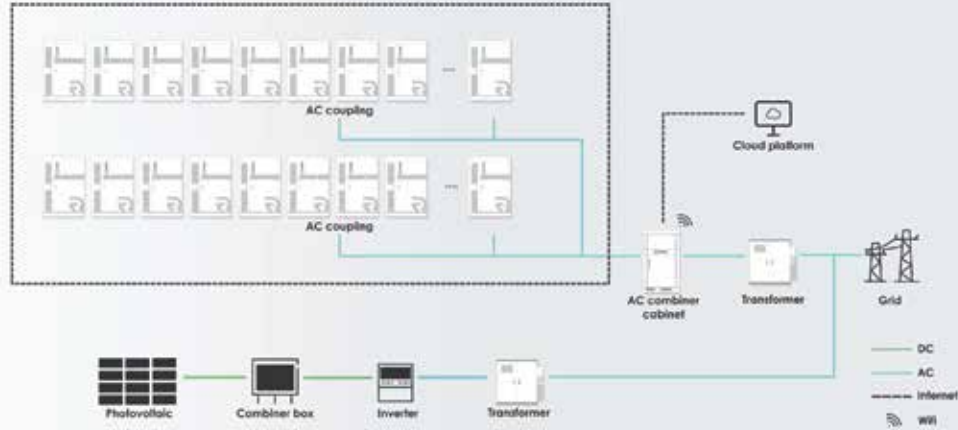
With a DCDC controller, realize the bus parallel connection of the battery cluster, which can carry out system-level active equalization control.

RENEWABLE. RELIABLE. REMARKABLE.



Matrix Series AC

Renon Smart Matrix Series is a distributed liquid cooling system for massive energy storage with AC couple and DC couple solutions to meet different usage requirements. Smart Matrix enables low-cost, high-density utility projects at a gigawatt-hour scale. It ships ready to install with fully integrated battery modules, Controller System, and other key components. One Matrix-Controller can carry a maximum of 14 systems of the mono pack, matrix arrangement for infinitely scalable. The batteries and software control store and dispatch energy, creating a more stable and economic power grid.



AC-MPack Specification

Battery Combination	1P416S
Cell Capacity (Ah)	280
Nominal Energy (kWh)	372.736
Nominal DC Voltage (Vdc)	1331.2
Battery Voltage Range(V)	1248~1476.8
C-rate and D-rate	≤1C
Nominal AC Voltage (Vac)	690, 3W+PE
Range AC Voltage (Vac)	586.5~759
Nominal AC Power (kW)	200
Max. AC Power (kW)	220
Max. AC Current (A)	184.1
Nominal Frequency (Hz)	50/60
Factor Range	-1~+1
Max System Efficiency	99%
Switching Time (ms)	<100
Cycle Life	>8000 times
Communication Interface	Ethernet
Enclosure	IP65
Noise Level	<80db(A)
DOD	90%
THDi	<1.5%
Altitude	≤2000m
Thermal Management (PCS)	Air Cooling
Thermal Management (Battery)	Liquid Cooling

General Parameters

Operating Temperature	-20°C~50°C
Operating Humidity (RH)	0~100% (non-condensing)
Certifications	UL9540, UL9540A, UL1973, UL1741+SA, IEEEE1547, UN 38.3
Warranty ^[1]	10 Years

[1] Please refer to the warranty manual for details

Matrix-Controller Specification

Nominal AC Voltage (Vac)	690
Rated Power (kW)	2976
Rated Current (A)	2490
Short-circuit Protection	YES
Ac Access/Output Channel	16 / 1
Isolation Method	Transformer
Transformer Rated Power (kVA)	2750
LV/MV Voltage (kV)	0.69/35
Transformer Vector	Dy11
Transformer Cooling Type	ONAN (Oil Natural Air Natural)
Oil Type	Mineral oil (PCB free) or degradable oil on request
Communication Interface	Ethernet, Wifi, 4G
Certifications	IEC104, IEC61850, CAN2.0B, Modbus (TCP,RTU)
Enclosure	IP65
Noise Level	<50db(A)
Altitude (m)	≤2000

D-AESS Standard Array

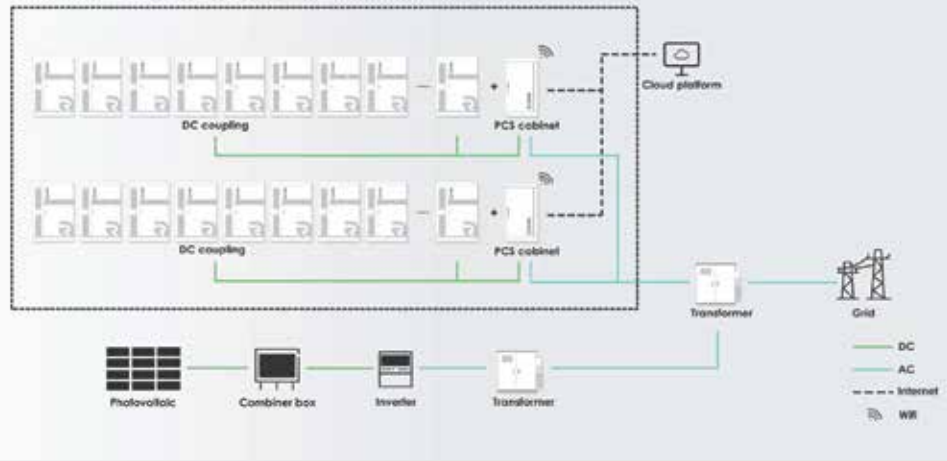
AC-MPack Quantity	14
Matrix-Controller Quantity	1
Nominal Energy (kWh)	5.2
Nominal AC Power (MW)	2.8
Nominal AC Voltage (Vac)	35KV, 3W+PE

D-AESS Distributed Matrix

D-AESS Standard Array	20
Matrix-Controller Quantity	1
Nominal Energy (MWh)	104
Nominal AC Power (MW)	56
Nominal AC Voltage (Vac)	35KV, 3W+PE

Matrix Series DC

Renon Smart Matrix Series is a distributed liquid cooling system for massive energy storage with AC couple and DC couple solutions to meet different usage requirements. Smart Matrix enables low-cost, high-density utility projects at a gigawatt-hour scale. It ships ready to install with fully integrated battery modules, Controller System, and other key components. One Matrix-Controller can carry a maximum of 14 systems of the mono pack, matrix arrangement for infinitely scalable. The batteries and software control store and dispatch energy, creating a more stable and economic power grid.



DC-MPack Specification

Battery Combination	1P416S
Cell Capacity (Ah)	280
Nominal Energy (kWh)	372.736
Nominal DC Voltage (Vdc)	1331.2
Battery Voltage Range (V)	1248~1476.8
C-rate and D-rate	≤1C
Max. DC Voltage (Vdc)	1500
Nominal DC Power (kW)	200
Max. DC Current (A)	200
Max. System Efficiency	99%
Switching Time (ms)	<100
DOD	90%
Cycle Life	8000 times
Communication Interface	Ethernet
Enclosure	IP65
Noise Level	< 80db(A)
Altitude	≤2000m
Thermal Management (DC-DC)	Air Cooling
Thermal Management (Battery)	Liquid Cooling

General Parameters

Operating Temperature	-20°C~50°C
Operating Humidity (RH)	0~100% (non-condensing)
Compliance	UL9540, UL9540A, UL1973, UL1741+SA, IEEE1547, UN 38.3
Warranty ^[1]	10 Years

[1] Please refer to the warranty manual for details

Matrix-Controller Specification

Max. DC Voltage (Vdc)	1500
Rated Power (kW)	2800
Rated Current (A)	2800
Short-circuit Protection	YES
AC Access/Output Channel	16 / 1
Communication Interface	Ethernet, Wifi, 4G
Certifications	IEC104, IEC61850, CAN2.0B, Modbus (TCP, RTU)
Enclosure	IP65
Noise Level	< 50db(A)
Altitude	≤2000m

D-DESS Standard Array

DC-MPack Quantity	14
Matrix-Controller Quantity	1
Nominal Energy (MWh)	5.2
Nominal AC Power (MW)	2.8
Max. AC Voltage (Vdc)	1331.2

D-DESS Distributed Matrix

D-DESS Standard Array	20
Nominal Energy (MWh)	104
Nominal AC Power (MW)	56
Max. AC Voltage (Vdc)	1331.2