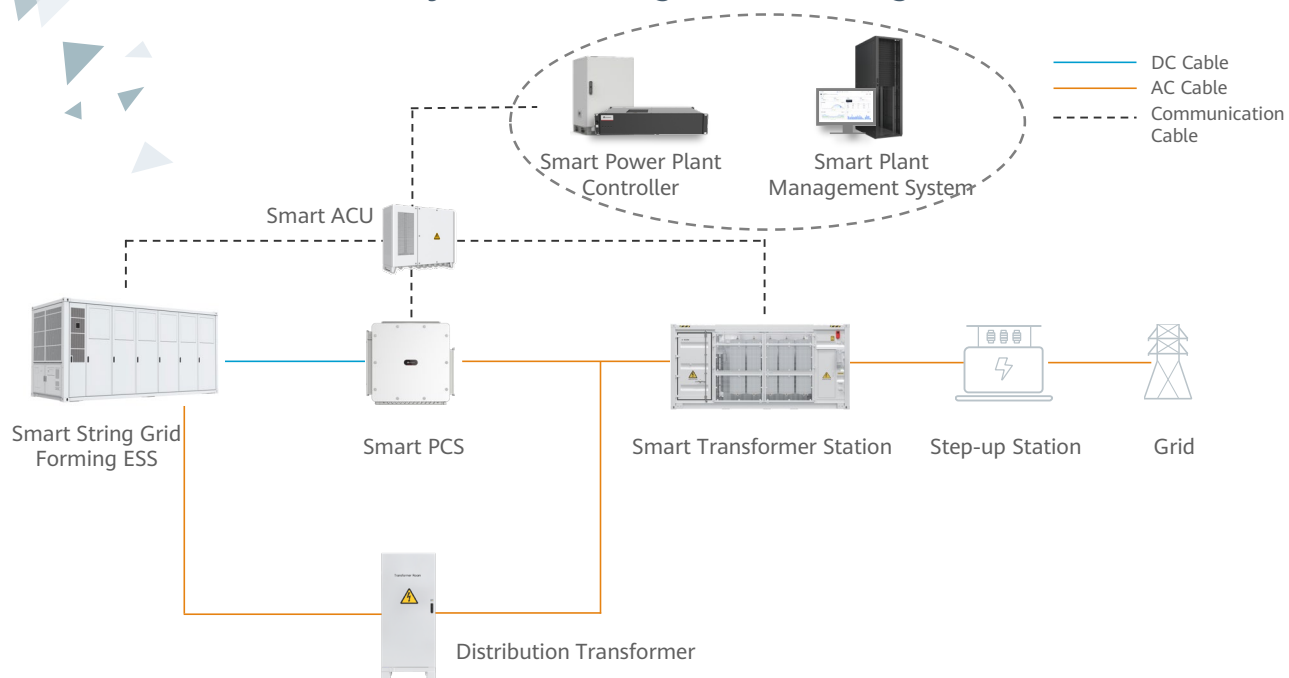


FusionSolar Utility Smart String Grid Forming ESS Solution



**All-architecture
safety**

**All-scenario Grid
Forming**

**All-lifecycle cost-
effectiveness**

**All-rounder Smart
O&M**



Model: LUNA2000-5015-2S

Smart String Grid Forming ESS



**All-architecture
Safety**



**All-scenario
Grid forming**



**All-lifecycle
Cost-effectiveness**



**All-rounder
Digitalization**

Battery Container	
Model	LUNA2000-5015-2S
DC Rated Voltage	1,331.2 V
DC Max. Voltage	1,500 V
Nominal Energy Capacity	5,015 kWh
Charge & Discharge Rate	≤ 0.5 CP
Rated Power	2,507.5 kW
Dimension (W x H x D)	6,058 x 2,896 x 2,438 mm
Weight	< 43 t
Operation Temperature Range	-30° C ~ 55° C
Storage Temperature Range	-40° C ~ 60° C
Relative Humidity	0 ~ 100% (Non-condensing)
Max. Operating Altitude	4,700 m
Cooling Method	Liquid Cooling
Fire Suppression System	Water Sprinkler, NOVEC 1230
Communication Interface	Ethernet / SFP
Communication Protocol	Modbus TCP
Protection Degree	IP55
Anti-corrosion Degree	C5-Medium

Standards Compliance

RoHS, IEC62477-1, IEC62040-1, IEC61000-6-2, IEC62933-5-2, UL9540A, IEC62619, UN38.3, etc.

Battery Pack	
Cell Material	LFP
Number of Cell	104
Nominal Capacity	314 Ah / 104.49 kWh
Protection Degree	IP65
Weight	< 710 kg
Dimensions (W x H x D)	785 x 249 x 2135 mm

Model: LUNA2000-213KTL-H0
Smart PCS



Max. Efficiency 99%



Modular Design



IP66 Protection



Built-in Intelligent
Active Breaking Device

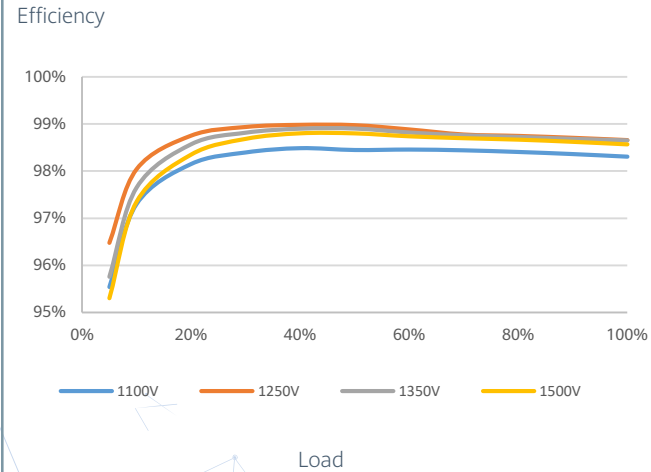


Dual-stage
Architecture

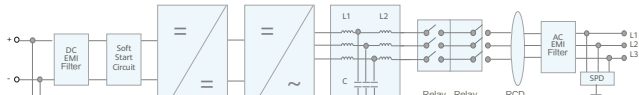


Smart Grid Forming
Algorithm

Efficiency Curve



Circuit Diagram



LUNA2000-213KTL-H0

1 - Applies to LUNA2000-4472 series models.

Model: LUNA2000-213KTL-H0

Technical Specifications

Efficiency	
Max. Efficiency	99.01%
DC Side	
Rated DC Voltage	1,331 V
Max. DC Voltage	1,500 V
Operating DC Voltage Range	800 V ~ 1,500 V
Rated Power Operating Voltage Range	1100V-1500V
Max. DC Current	218.5 A
Max. Number of Inputs	1
AC Side	
Rated AC Active Power	213,000 W @40°C; 192,000 W @50°C
Max. Apparent Power	236,400 VA
Rated AC Voltage	800 V
Rated AC Grid Frequency	50 Hz / 60 Hz
Max. AC Current	170.6 A
Adjustable Power Factor Range	-1 ... +1
Max. Total Harmonic Distortion	THD _i ≤ 1.5% (Rated)
Protection	
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
Insulation Resistance Detection	Yes
Residual Current Protection	Yes
DC Surge Protection	Type II
AC Surge Protection	Type II
Communication	
Display	LED Indicators, USB data cable + APP
USB	Yes
Communication Protocol	Ethernet, CAN
General	
Dimension (W x H x D)	875 x 865 x 365 mm
Weight	≤ 110 kg
Operating Temperature Range	-25°C ~ 60°C
Cooling Method	Smart Air Cooling
Max. Operating Altitude without Derating	4,700 m
Relative Humidity	0 ~ 100% (Non-condensing)
DC Connector	OT / DT Terminal
AC Connector	OT / DT Terminal
Protection Degree	IP66
Anti-corrosion Degree	C5-Medium
Topology	Transformerless
Standards Compliance	
GB/T 34120, GB/T 34133, IEC/EN62477-1, etc.	

Model: LUNA2000-200KTL-H1

Technical Specifications

Efficiency	
Max. Efficiency	99.01%
DC Side	
Rated DC Voltage	1,180 V
Max. DC Voltage	1,500 V
Operating DC Voltage Range	1,180 V ~ 1,500 V
Max. DC Current	207.6 A
Max. Number of Inputs	1
AC Side	
Rated AC Active Power	200,000 W @40°C
Rated AC Voltage	800 Vac, 3W + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Max. AC Current	173.2 A
Adjustable Power Factor Range	-1 ... +1
Max. Total Harmonic Distortion	THD _i < 1% (Rated)
Grid Forming	Yes
Protection	
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
Insulation Resistance Detection	Yes
Residual Current Protection	Yes
DC Surge Protection ¹	Type II
AC Surge Protection ¹	Type II
Communication	
Display	LED Indicators, USB data cable + APP
USB	Yes
Ethernet	Yes
General	
Dimensions (W x H x D)	875 x 820 x 365 mm
Weight	< 99 kg
Operating Temperature Range	-25°C ~ 60°C
Cooling Method	Smart Air Cooling
Max. Operating Altitude without Derating	4,000 m
Relative Humidity	0 ~ 100% (Non-condensing)
DC Connector	OT / DT Terminal
AC Connector	OT / DT Terminal
Protection Degree	IP66
Anti-corrosion Protection	C5-Medium
Topology	Transformerless
Standards Compliance	
RoHS, IEC 62477-1, IEC 61000-6-2, IEC 61683, VDE 4120, EN 50549, etc.	

1: Compatible Type II protection class according to IEC / EN 61643-11



JUPITER-9000K/6000K/3000K-H1 (built-in SACU) Smart Transformer Station



Simple

Prefabricated and Pre-tested, No Internal Cabling Needed Onsite
Compact 20' HC Container Design for Easy Transportation



Efficient

High Efficiency Transformer for Higher Yields, meeting class A
Lower Self-consumption for Higher Yields



Safe

Meets IEC 61641, Up to Class C arcing protection on LV side
Update the function for MV protection, Change to Upward arc discharge, Meets IEC 62271-202 IAC-A



Smart

Real-time Detection of Transformer, LV Panel and RMU
High Precision Sensor of LV Electricity Parameters
Remote Control of ACB and MV Circuit Breaker



Reliable

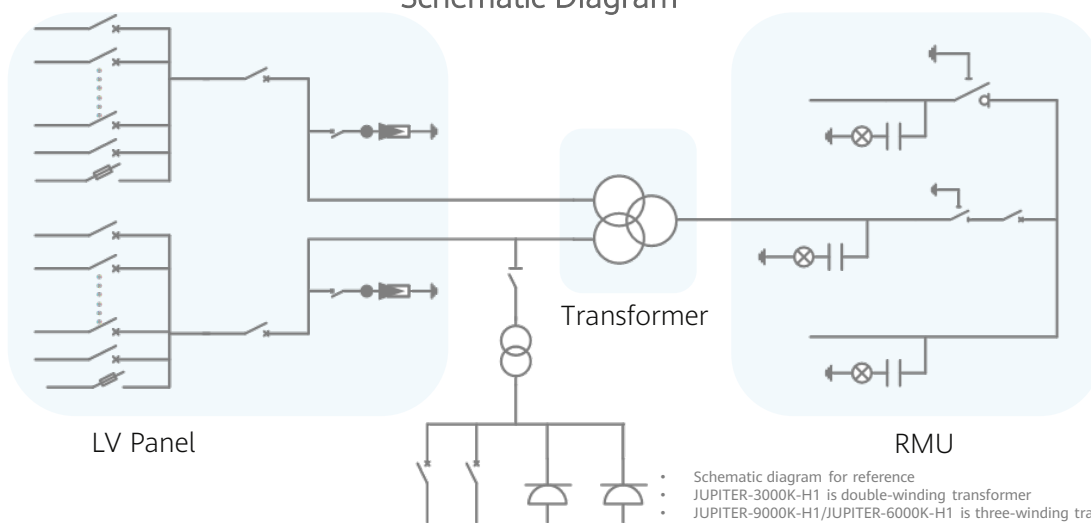
Robust Design against Harsh Environments
Optimal Cooling Design for High Availability and Easy O&M
Comprehensive Tests from Components, Device to Solution



Environmental protection

STS Can support natural ester vegetable oils
Environmentally friendly, easy to degrade, 98% degradable in 28 days
High flash point, > 350°C, not easily combustible
Oil-free sump design, Simplify O&M

Schematic Diagram



- Schematic diagram for reference
- JUPITER-3000K-H1 is double-winding transformer
- JUPITER-9000K-H1/JUPITER-6000K-H1 is three-winding transformer
- Only the DVC solution is shown in the figure, the CVC solution is optional

Technical Specifications

Technical Specifications	JUPITER-9000K-H1 (built-in SACU)	JUPITER-6000K-H1 (built-in SACU)	JUPITER-3000K-H1 (built-in SACU)
Input			
Available Inverters / PCS	SUN2000-330KTL-H1 / SUN2000-330KTL-H2 / LUNA2000-213KTL-H0		
Max. MCCB inputs	30	22	12 ¹ /11
Max. LV AC Inputs	60 ²	44 ²	24 ² /12
AC Power	9,000 kVA @40°C ³	6,600 kVA @40°C ³	3,300 kVA @40°C ³
Rated Input Voltage	800 V		
LV Panel Segregation	Form 2b		
LV Main Switches	ACB (4,000 A, 2 x 1 pcs)	ACB (2,900 A, 2 x 1 pcs)	ACB (2,900 A, 1 x 1 pcs)
LV Main Switches ⁴	MCCB (400 A, 2 x 15 pcs)	MCCB (400 A, 2 x 11 pcs)	MCCB (400 A, 11 pcs)
Output			
Rated Output Voltage	10~35 kV ⁴		
Frequency	50 Hz or 60 Hz		
Transformer Type	Oil-immersed, Conservator Type		
Transformer Cooling Type	Mineral Oil: ONAN / Natural Ester: KNAN		
Transformer Tappings	± 2 x 2.5%		
Transformer Oil Type	Mineral Oil (PCB Free)/Natural ester oil (Optional)		
Transformer Vector Group	Dy11-y11		Dy11
Transformer Min. Peak Efficiency Index	Tier 1 or Tier 2 In Accordance with EN 50588-1		
RMU Type	SF ₆ Gas Insulated		
RMU Transformer Protection Unit	MV Vacuum Circuit Breaker Unit		
RMU Cable Incoming / Outgoing Unit	Direct Cable Unit or Cable Load Break Switch Unit		
Auxiliary Transformer	Dry Type Transformer, 5 kVA, Single-phase, li0/50kVA, Three-phase, Dyn11 (Optional)		
Output Voltage of Auxiliary Transformer	400/230/220/210V		
Protection			
Transformer Detection & Protection	Oil Level, Oil Temperature, Oil Pressure and Buchholz		
Protection Degree of MV & LV Room	IP 54		
Internal Arcing Fault of STS	Standard IAC A 20 kA 1s/ IAC A 25 kA 1s (Optional)		
MV Arc Releasing	MV Upward Arc Releasing for Higher Safety, Meets IEC 62271-202 IAC-A		
LV Arc Releasing	Meets IEC 61641 up to Class C arcing protection on LV side		
MV Relay Protection	DVC/CVC Standard 50/51, 50N/51N DVC High Standard 50/51, 50N/51N, 87, 50BF, 51G, Inrush Blocking, Watchdog, 49T (External trip), FR (Optional) CVC High Standard 50/51, 50N/51N, 49, 86, 27, 59, 79, 74, 59N, 50BF, Inrush Blocking, Watchdog, 49T(External Trip), FR (Optional)		
LV Overvoltage Protection	Type I+II		
Anti-corrosion Protection	C5-M		
Feature			
2 kVA UPS	Optional ⁵		
MV Surge Arrester for Transformer	Optional ⁵		
IMD License	Optional ⁵		
General			
Dimensions (W x H x D)	6,058 x 2,896 x 2,438 mm (20' HC ISO Container)		
Weight	< 28 t	< 23 t	< 17 t
Operating Temperature Range	-25°C ~ 60°C ⁶		
Relative Humidity	0% ~ 95% (Non-condensing)		
Max. Operating Altitude	1,000 m ⁷		
MV-LV AC Connections	Prewired and Pretested, No Internal Cabling Onsite		
	Smart Cooling without Air-across for Higher Availability		
Communication	Modbus TCP, Preconfigured with SmartACU		
Standards Compliance			
IEC 62271-202, EN 50588-1, IEC 60076, IEC 62271-200, IEC 61439-1			

1. only for GFM version

2. one MCCB can aggregate one inverter and one PCS at the same time, Max. LV AC Inputs means Theoretical number of full-access PCS

3. More detailed AC power of STS, please refer to the de-rating curve.

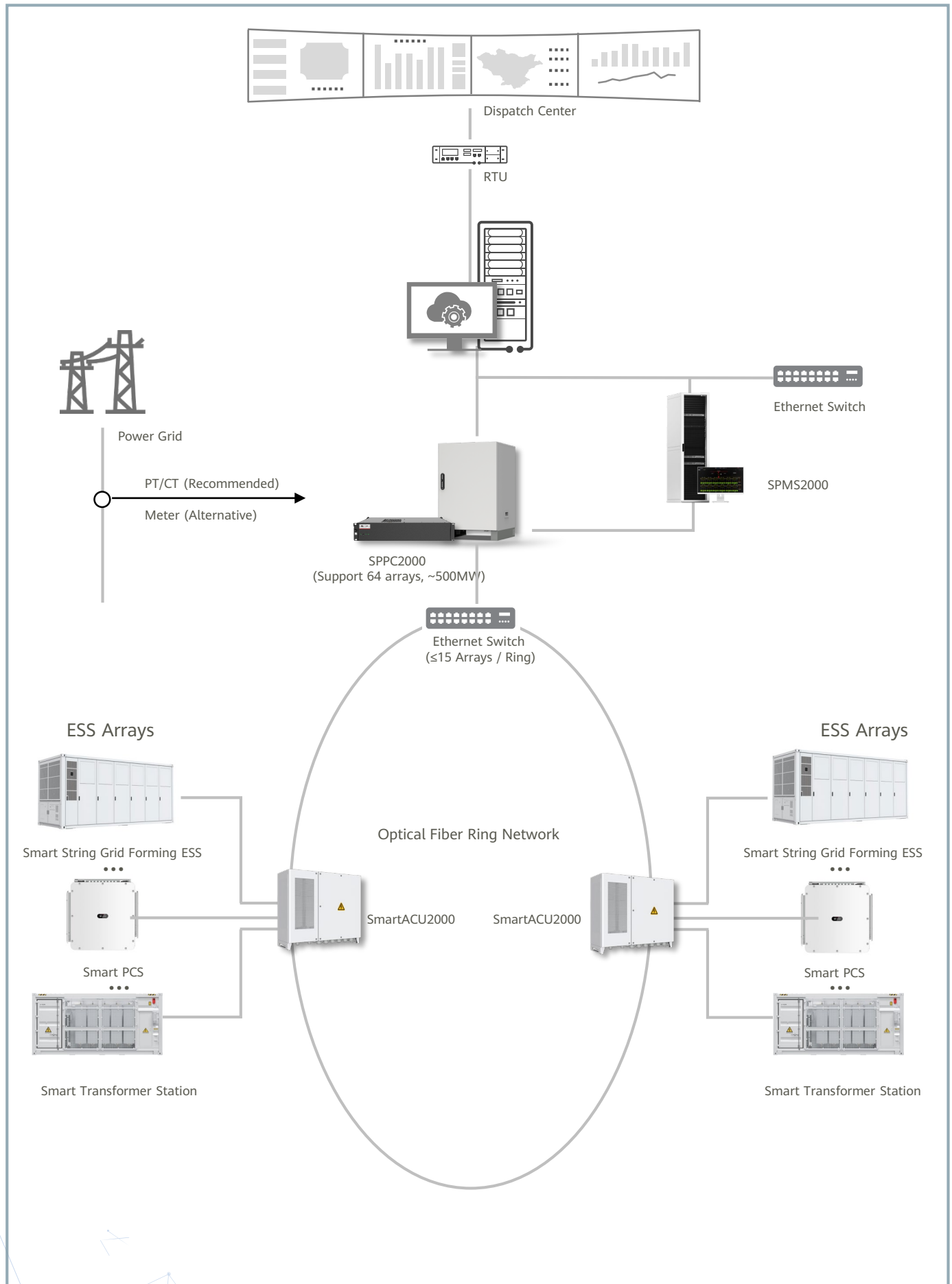
4. Rated output voltage from 10 kV to 35 kV, more available upon request

5. Extra expense needed for optional features which standard product doesn't contain, more options upon request.

6. When ambient temperature ≥55°C, awning shall be equipped for STS on site by customer.

7. For higher operating altitude, please consult with Huawei.

Network Applications



*For details about the project configuration and sales area, contact Huawei engineers.
SPPC does not support the PV & ESS low-voltage AC coupling solution.