



**WattsNext**  
ENERGY SOLUTIONS

# 1.0MW/2.09MWh Liquid Cooling C&I ESS ES2090/1000K-A/EU



## Advantages and Features



Three-level topology, conversion efficiency up to 99.0%.



CATL long-life LFP battery cells, cycle life > 8000 times.



Thermal runaway detection & Aerosol & Water spray, three-level fire linkage.



Liquid-cooling temperature control design, battery pack temperature difference <3°C, auxiliary power consumption reduced by 30%, extending system lifespan by 2 years+.



Smart string balancing architecture, compatible with mixed use of new and old battery packs, supporting phased investment in battery replenishment.

## Specifications

| Product Model                   | ES2090/1000K-A/EU                                                                       |
|---------------------------------|-----------------------------------------------------------------------------------------|
| <b>DC Side</b>                  |                                                                                         |
| Cell Type                       | LFP/314Ah                                                                               |
| Rated Energy                    | 2090.0kWh                                                                               |
| Rated Battery Voltage           | 832Vdc                                                                                  |
| Operating Voltage Range         | 728Vdc~936Vdc                                                                           |
| Max. DC Current                 | 157A*8                                                                                  |
| Battery Configuration/Cluster   | 1P52S*5                                                                                 |
| Number of Battery Clusters      | 8                                                                                       |
| Charge/Discharge C-Rate         | ≤0.5P                                                                                   |
| <b>On-grid Side</b>             |                                                                                         |
| Rated Output Power              | 1000kW                                                                                  |
| Rated Output Voltage            | 400Vac                                                                                  |
| Rated Output Voltage Range      | -15%~10% (adjustable)                                                                   |
| Rated Grid Frequency            | 50Hz/60Hz (±5Hz)                                                                        |
| Output Power Factor             | -1~+1                                                                                   |
| Operating Phase                 | 3L+N/3L+N+PE                                                                            |
| Adaptation to Grid Types        | TT/TN                                                                                   |
| Topology                        | Transformerless                                                                         |
| <b>Efficiency</b>               |                                                                                         |
| Max. Efficiency                 | 90%                                                                                     |
| <b>General Data</b>             |                                                                                         |
| Surge Protection                | DC Type II / AC Type II                                                                 |
| Pollution Level                 | Class II                                                                                |
| Fire Control                    | Aerosol                                                                                 |
| Ingress Protection              | IP54                                                                                    |
| Installation Method             | Outdoor installation                                                                    |
| Battery Cooling Concept         | Liquid cooling                                                                          |
| Running Temperature             | -30°C~+60°C (derating above 55°C)                                                       |
| Operating Surroundings Humidity | 0~95% (no condensation)                                                                 |
| Permissible Altitude            | ≤2000m                                                                                  |
| Cabinet Size (WxHxD)            | 6058*2896*2438mm                                                                        |
| Weight                          | <25T                                                                                    |
| Display                         | LED+Web+APP                                                                             |
| Interface                       | RS485, Ethernet 4G                                                                      |
| Safety EMC / Standard           | EN 62477-1, EN 61000-6-2 EN 61000-6-4                                                   |
| Grid Connection Standard        | EN 50549-1:2019+A1 2023, TOR Erzeuger: 2019-12-12, OVE-Richtlinie R 25:2020-03-01, PPDS |

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