

# UTILITY-SCALE ESS SOLUTION

DEYE WINTER WS SERIES



## Ultimate Safety

- 3+3 Fire Protection System
- 3+3 Electrical Safety Safeguards
- AC Leakage & DC Insulation detection
- High-Voltage Interlock



## Versatile Applications

- Peak Shaving & Energy Arbitrage
- Virtual Power Plant (VPP) Ready
- Off-Grid & Microgrid Capable
- PV and BESS DC Coupling
- Hybrid Solar-BESS-Diesel Systems



## High Energy Density

- 4300kWh in 20' BESS container
- 1125kW PCS, 1400kW PV



## Seamless Scalability

- Modular Architecture
- Flexible 2/4h Energy Storage Solutions
- Compact Design, High Energy Density



## Smart Cloud Management

- AI-Powered Load Optimization
- 24/7 Remote Monitoring & O&M
- Real-Time Battery Health & Safety Alerts
- Cloud-Connected Ecosystem



## Cluster Management

- One cluster management, high availability, more friendly to the cell

**IP55**

Protection Rating

**1440kW**

PV DC Coupling

**10 Years**

Warranty

**5 Levels**

Fire Protection

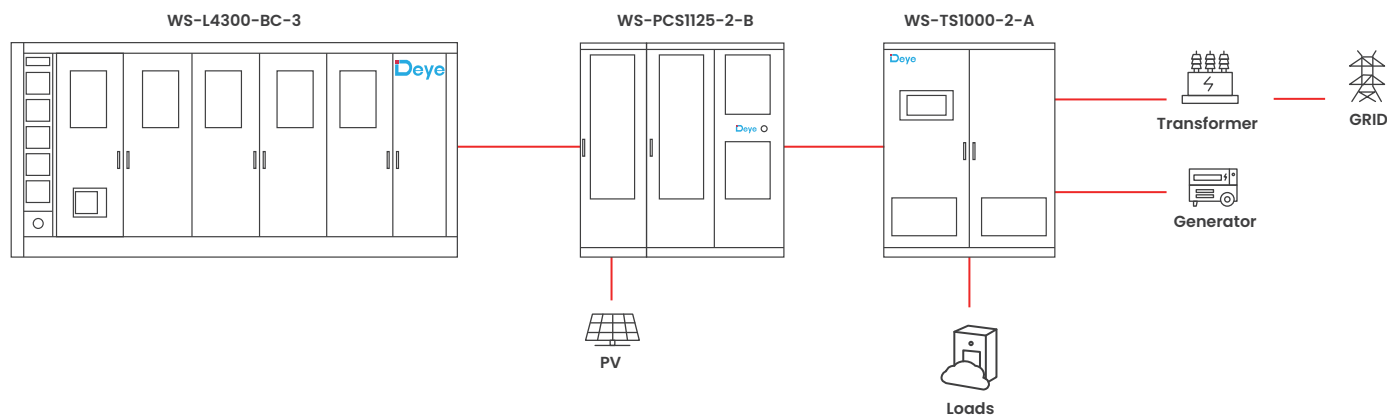


| Model                               |  | WS-L4300-BC-3               |
|-------------------------------------|--|-----------------------------|
| <b>DC Battery</b>                   |  |                             |
| Battery Type                        |  | LiFePO <sub>4</sub>         |
| Nominal Capacity ( Cell )           |  | 314Ah                       |
| Nominal Energy                      |  | 4340kWh                     |
| PACK Configuration                  |  | 1P48S                       |
| RACK Configuration                  |  | 18 × 1P240S                 |
| Nominal DC Voltage                  |  | 768Vdc                      |
| DC Voltage Range                    |  | 648Vdc ~ 876Vdc             |
| Charge and discharge rate           |  | ≤0.5P                       |
| Max. Charging / Discharging Current |  | 3150A ( 18 × 175A )         |
| No. of DC Output                    |  | 18                          |
| <b>System</b>                       |  |                             |
| Operating Temperature               |  | -30°C ~ +55°C               |
| Storage Temperature                 |  | -30°C ~ +60°C               |
| Humidity                            |  | 0 ~ 95% ( No condensation ) |
| Type of cooling                     |  | Liquid cooling              |
| Fire Suppression                    |  | Aerosol、Water               |
| Ingress Protection                  |  | IP55                        |
| Anticorrosion grade                 |  | ≥C4                         |
| Altitude                            |  | ≤2000m                      |
| Communication                       |  | CAN、RS485、TCP、DIDO          |
| Weight                              |  | 40000kg                     |
| Dimensions ( W × D × H )            |  | 6058 × 2438 × 2896mm        |

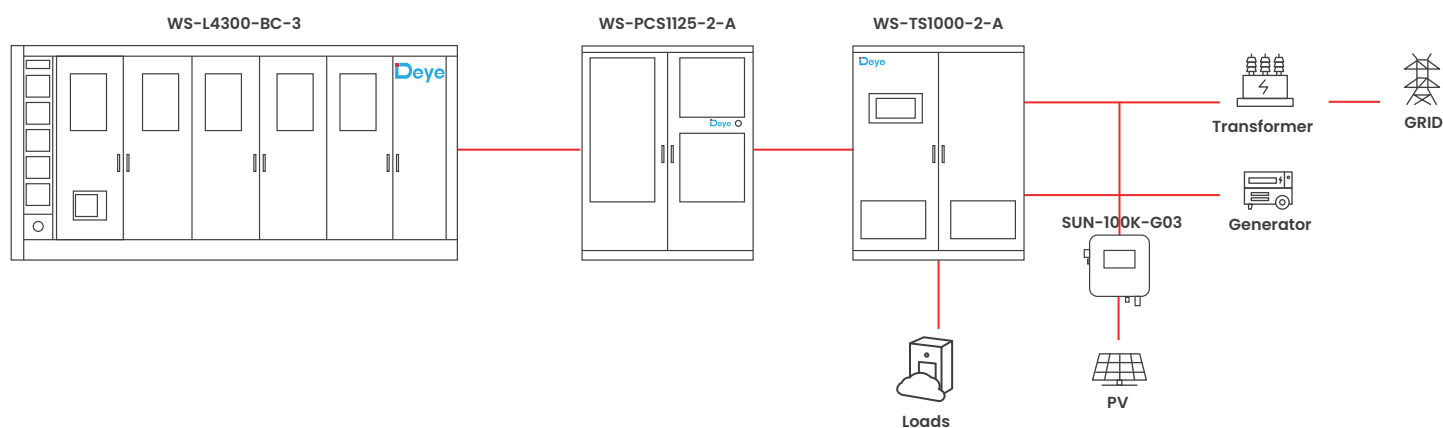
| Model                                   | WS-PCS1125-2-A                |                                   | WS-PCS1125-2-B |
|-----------------------------------------|-------------------------------|-----------------------------------|----------------|
| PCS Data                                |                               |                                   |                |
| AC Rated Power                          | 1125kW ( 9 × 125kW )          |                                   |                |
| AC Rated Voltage / Frequency            | 400Vac / 50Hz ( 3L+N+PE )     |                                   |                |
| AC Rated Current                        | 1624A ( 9 × 180.4A )          |                                   |                |
| Max Power                               | 1237.5kW ( 9 × 137.5kW )      |                                   |                |
| Power Factor                            | -1 ~ +1                       |                                   |                |
| Battery Input Voltage Range             | 630Vdc ~ 1000Vdc              |                                   |                |
| Max. Charging / Discharging Current     | 1710A ( 9 × 190A )            |                                   |                |
| MPPT Data                               |                               |                                   |                |
| Max. PV Input Power                     | /                             | 1800kW ( 9 × 200kW )              |                |
| Max. PV Input Voltage                   | /                             | 800Vdc                            |                |
| Start-up Voltage                        | /                             | 200Vdc                            |                |
| Max Operating PV Input Current          | /                             | 9 × ( 40+40+40+40+40+40+40+40 ) A |                |
| No. of MPP Trackers                     | /                             | 72 ( 9 × 8 )                      |                |
| System Data                             |                               |                                   |                |
| General Data                            |                               |                                   |                |
| Operating Temperature                   | -25°C ~ +55°C                 |                                   |                |
| Humidity                                | 0 ~ 95% ( No condensation )   |                                   |                |
| Ingress Protection                      | IP54                          |                                   |                |
| Anticorrosion grade                     | ≥C4                           |                                   |                |
| Altitude                                | ≤2000m                        |                                   |                |
| Weight                                  | 待定                            | ≤3600kg                           |                |
| Dimensions ( W × D × H )                | 2000 × 1350 × 2450mm          | 2300 × 1000 × 2450mm              |                |
| Model                                   | WS-TS1000-2-A                 |                                   |                |
| Grid Side Data                          |                               |                                   |                |
| Rated AC Input/Output Active Power (kw) | 1000                          |                                   |                |
| Rated AC Input/Output Current(A)        | 1450                          |                                   |                |
| Rated input/Output Voltage(V)           | 220/380,230/400 (three phase) |                                   |                |
| Grid Connection Form                    | 3L/N/PE                       |                                   |                |
| Rated input/Output Grid Frequency       | 50Hz/60Hz                     |                                   |                |
| Load Side Data                          |                               |                                   |                |
| Rated AC Input/Output Active Power(kw)  | 1000                          |                                   |                |
| Rated AC Input/Output Current           | 1450                          |                                   |                |
| Rated Input/Output Voltage(V)           | 220/380,230/400(three phase)  |                                   |                |
| Grid Connection Form                    | 3L/N/PE                       |                                   |                |
| Rated input/Output Grid Frequency       | 50Hz/60Hz                     |                                   |                |
| GEN Side Data                           |                               |                                   |                |
| Rated AC Input/Output Active Power (kW) | 1000                          |                                   |                |
| Rated AC input/Output Current(A)        | 1450                          |                                   |                |
| Rated Input/Output Voltage(V)           | 220/380,230/400 (three phase) |                                   |                |
| Grid Connection Form                    | 3L/N/PE                       |                                   |                |
| Rated input/Output Grid Frequency       | 50Hz/60Hz                     |                                   |                |
| System Data                             |                               |                                   |                |
| Dimension ( W x D x H, mm )             | 2000 × 1200 × 2450mm          |                                   |                |
| Weight Appr. ( kg )                     | 1500                          |                                   |                |
| System Operating temperature range      | -30°C~+50°C                   |                                   |                |
| Max. working altitude ( m )             | ≤3000                         |                                   |                |
| IP Rating of Enclosure                  | IP54                          |                                   |                |
| Switching Time (ms)                     | ≤20                           |                                   |                |

| Model                            | MS-EMS                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>System</b>                    |                                                                                                                                                                                                                                                                                                                                                                              |
| Configuration                    | EMS controller, lightning protection module, switch power supply, UPS module, switch                                                                                                                                                                                                                                                                                         |
| Function                         | <p>Basic functions : peak valley arbitrage, anti backflow, main transformer overload protection, load tracking, demand control, backup power function, phase separation control, SOC balancing, Deye Cloud monitoring</p> <p>Advanced features : load forecasting, production planning, electricity price planning, optimal economic curv</p>                                |
| <b>Communicate</b>               |                                                                                                                                                                                                                                                                                                                                                                              |
| Ethernet ( 5 channels )          | 10 / 100 / 1000 Mbps                                                                                                                                                                                                                                                                                                                                                         |
| Fiber optic port ( 2 channels )  | 1Gbps                                                                                                                                                                                                                                                                                                                                                                        |
| USB ( 2 channels )               | Host                                                                                                                                                                                                                                                                                                                                                                         |
| CAN ( 3 channels )               | Isolation, with 2 channels supporting CAN-FD                                                                                                                                                                                                                                                                                                                                 |
| RS485 ( 8 channels )             | Isolation                                                                                                                                                                                                                                                                                                                                                                    |
| RS232 ( 3 channels )             | 2 isolated channels, 1 non isolated debugging channel ( DB9 socket )                                                                                                                                                                                                                                                                                                         |
| TF Card ( 1 channel )            | Standard TF card holder                                                                                                                                                                                                                                                                                                                                                      |
| LVDS ( 1 channel )               | The physical interface is DVI ( including 1 USB for touch )                                                                                                                                                                                                                                                                                                                  |
| M. 2 Interfaces ( 1 channel )    | PCIe2.0 X1, Scalable SSD ( standard 1TB )                                                                                                                                                                                                                                                                                                                                    |
| MiniPCle Interface ( 1 channel ) | 4G card with expandable USB communication protocol ( standard )                                                                                                                                                                                                                                                                                                              |
| Nano SIM Interface ( 1 channel ) | Used in conjunction with the miniPCle expansion 4G module                                                                                                                                                                                                                                                                                                                    |
| DI ( 17 channels )               | Optocoupler isolation                                                                                                                                                                                                                                                                                                                                                        |
| DO ( 8 channels )                | Relay isolation                                                                                                                                                                                                                                                                                                                                                              |
| WLAN                             | 802.11 b / AC g n , HT 20 / 40 , 2.4 GHz 5 Ghz                                                                                                                                                                                                                                                                                                                               |
| 4G Antenna                       | Support multi country frequency bands                                                                                                                                                                                                                                                                                                                                        |
| <b>Power Supply</b>              |                                                                                                                                                                                                                                                                                                                                                                              |
| Communication Input              | 220Vac                                                                                                                                                                                                                                                                                                                                                                       |
| DC IN                            | 24Vdc                                                                                                                                                                                                                                                                                                                                                                        |
| UPS Backup Power                 | 24Vdc                                                                                                                                                                                                                                                                                                                                                                        |
| Consumption                      | Max 25W                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Environmental parameters</b>  |                                                                                                                                                                                                                                                                                                                                                                              |
| Operation Temperature            | -15°C ~ +50°C                                                                                                                                                                                                                                                                                                                                                                |
| Storage Temperature              | -15°C ~ +50°C                                                                                                                                                                                                                                                                                                                                                                |
| Working Humidity                 | 5% ~ 95%                                                                                                                                                                                                                                                                                                                                                                     |
| Max. Working Altitude ( m )      | ≤3000m                                                                                                                                                                                                                                                                                                                                                                       |
| IP Rating of Enclosure           | IP54                                                                                                                                                                                                                                                                                                                                                                         |
| Anti-Corrosion Grade             | ≥C4                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Mechanical parameters</b>     |                                                                                                                                                                                                                                                                                                                                                                              |
| Dimension ( W × D × H, mm )      | 488 × 188 × 588                                                                                                                                                                                                                                                                                                                                                              |
| Weight Appr. ( kg )              | ≤24.5kg                                                                                                                                                                                                                                                                                                                                                                      |
| Installation Location            | Indoor or outdoor, wall-mounted                                                                                                                                                                                                                                                                                                                                              |
| Box Material                     | Metal                                                                                                                                                                                                                                                                                                                                                                        |
| Incoming Specifications          | <p>AC power cord : Recommended wire diameter 1.5mm<sup>2</sup></p> <p>DC power cord : Recommended wire diameter of 1.5mm<sup>2</sup></p> <p>Eight core Ethernet cable: Recommended CAT5e Ethernet cable</p> <p>RS485 : Recommended 0.75mm<sup>2</sup>~1.5mm<sup>2</sup> outdoor UV protection with shielding layer twisted pair cable length&lt;1000m ( baud rate 9600 )</p> |

## PV-BESS DC-Coupled Solution



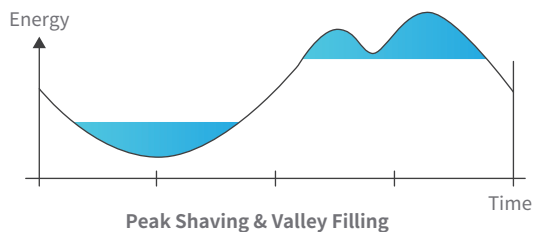
## PV-BESS AC-Coupled Solution



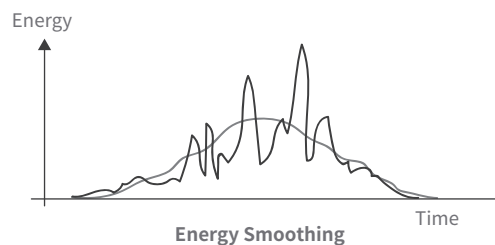
## Application Scenarios

### Ideal for medium to large C&I microgrid applications

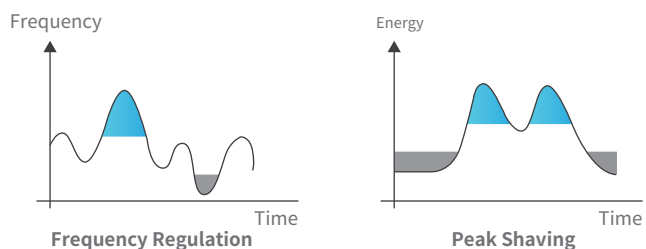
#### 1. Applied in medium to large-scale C&I applications (Peak Shaving & Valley Filling)



#### 2. Integrated with renewable energy storage systems to smooth power output



#### 3. Used for Peak Shaving and Frequency Regulation on the power generation side



#### 4. Participates in virtual power plants to provide ancillary power services (electricity trading)





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