

# Battery Energy Storage System



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## GESS-SW-600C-PI

### 30kW/60kWh(0.5CP)/ 400Vac



**Swedish Grid approved PCS  
with EN50549 certification**

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# Technical Specifications

| Technical Feature         |  | GESS- SW-600C-PI                                        |
|---------------------------|--|---------------------------------------------------------|
| Normal capacity           |  | 60kWh                                                   |
| Power (charge/discharge)  |  | 30kW                                                    |
| "C" rating                |  | 0.5                                                     |
| Battery chemistry         |  | Li-ion LFP                                              |
| Cell                      |  | 3.2V/280Ah                                              |
| Nominal battery voltage   |  | 614.4 VDC/ 768 VDC                                      |
| Battery voltage range     |  | 556.8-672 VDC/ 672-852 VDC                              |
| Grid connection voltage   |  | 3x400V+N AC                                             |
| Battery system efficiency |  | 94% (25°C)                                              |
| Operating temperature     |  | -20°C to 40°C, cooling by Air conditioner               |
| Parallel coupling         |  | Ability to couple multiple racks in parallel            |
| PV coupling               |  | AC side or DC side                                      |
| Dimensions                |  | W1240mm × H2023mm × D970 (D1113mm with Air conditioner) |
| Weight                    |  | < 1350 kg                                               |
| Power Quality Feature     |  |                                                         |
| Load balance              |  | Yes                                                     |
| Harmonic filtering        |  | Yes                                                     |
| Reactive power control    |  | Yes                                                     |
| Power factor correction   |  | Yes                                                     |
| Grid Support Functions    |  |                                                         |
| Off grid support          |  | On and off grid switch support                          |
| Frequency support         |  | Yes                                                     |
| Voltage support           |  | Yes                                                     |
| Peak shaving              |  | Yes                                                     |
| Load following            |  | Yes                                                     |
| Standards and Compliance  |  |                                                         |
| Battery system:           |  | CE, Safety, health and environment                      |
|                           |  | UN38.3 classification for safe transportation           |
|                           |  | IEC62619                                                |
| Power Conversion System:  |  | EN 50549-1                                              |
|                           |  | IEC 62477-1                                             |
| Protection rating         |  | IP55                                                    |
| Performance warranty      |  | 4000 cycles or 5 years (Whichever comes first)          |

## Applications

Frequency Regulation  
Peak Shaving  
Capacity Firming  
Transmission support  
Distribution support  
Black Start  
PV & wind Integration  
Power Factor & Voltage Support  
Reactive power trading

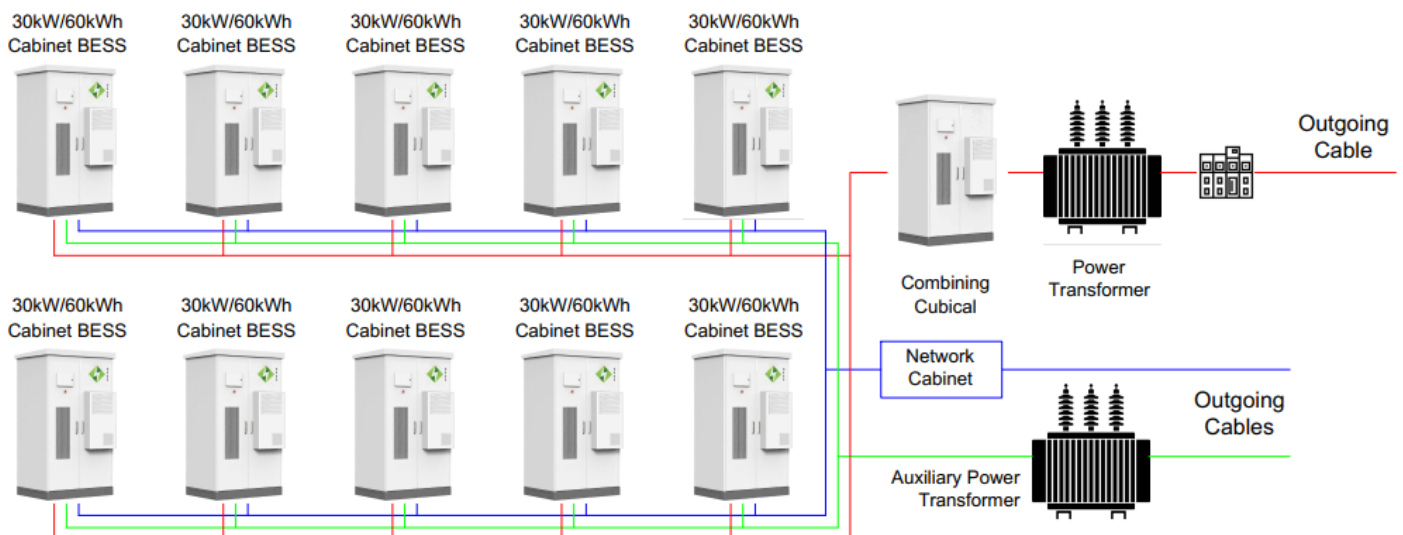
## Features

- 400V AC voltage
- Forced air cooling system
- Operating temperature range +40°C to -20°C
- IP54 enclosure
- C3 grade Corrosion resistant
- Warranty: 4000 cycles or 5 years (whichever comes first) (unless otherwise the commercial offer mention different warranty conditions)

## Easy Operation

- Fully integrated and plug-and-play
- 3L+N PCS without transformer and directly connect to grid
- DC coupling system ensuring higher DC/AC ratio, higher round trip efficiency
- Accessible to different sources of powers: PV, Grid or DG, supports both on-grid and off-grid modes

## 600MWh BESS Arrangement



# MPPT Module : 2 for 40kW (Optional)



MPPT for cabinet BESS

## Features

- Input and output voltage Extra wide
- High efficiency operation and ultra-low standby power consumption
- Full digital control: dual DSP design, ensuring high reliability of control
- Hot-swap: plug-and-play
- Anti-reverse flooding of batteries

| Specification of the MPPT           |                                                                      |
|-------------------------------------|----------------------------------------------------------------------|
| Operation Environment Conditions    |                                                                      |
| Working temperature                 | -40°C~+75°C, derate above +55°C                                      |
| Storage temperature                 | -40°C ~+80°C                                                         |
| Relative humidity                   | ≤95%RH, non-dens                                                     |
| Cooling method                      | Fan cooling                                                          |
| Altitude                            | 2000m                                                                |
| DC Input                            |                                                                      |
| Rated input voltage                 | 710Vdc                                                               |
| Rated input voltage range           | 260Vdc-900Vdc                                                        |
| Maximum input current               | 34A                                                                  |
| Efficiency (full load)              | >95.5%                                                               |
| DC Output                           |                                                                      |
| Output power                        | 20kW                                                                 |
| Voltage range                       | 50Vdc-750Vdc, the voltage regulation step is 0.1Vdc                  |
| Constant power output voltage range | 400Vdc-750Vdc                                                        |
| Output current                      | 0-50A                                                                |
| Output current limiting             | 0.2-50A Continuously adjustable                                      |
| Current balance                     | imbalance <±5%                                                       |
| Stable voltage accuracy             | <±0.5%                                                               |
| Steady current accuracy             | ≤±1% (Output load 20% to 100% of rated range )                       |
| Monitoring                          |                                                                      |
| Communication mode                  | CAN                                                                  |
| Indicator light                     | Green: normal operation Yellow: protection alarm<br>Red: fault alarm |
| Size and Weight                     |                                                                      |
| Size                                | 85mm(H)×226mm(W)×395mm(D)                                            |
| Weigh                               | ≤8.5kg                                                               |

# PCS Specification and Standards

EN IEC 61000-6-2:2019

EN IEC 61000-6-4:2019

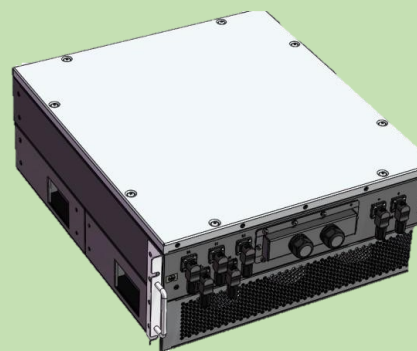
EN IEC 61000-6-2:2016

IEC 61000-6-4:2018

EN 62477-1:2012+A1:2017

EN 62477-1:2012: A12:2021 NRS 097-2-1:2017 edition 2.1

EN 50549-1:2019-AC:2019-04 with deviations for Netherlands,  
Belgium, Greece



30kW PCS

| Specification of the PCS          |                                                                            |                                                               |                                              |
|-----------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------|
| Protection                        |                                                                            | Parameters                                                    |                                              |
| Reverse protection                | Yes                                                                        | Max. DC voltage                                               | 850 V                                        |
| DC switch                         | Yes                                                                        | Min. DC voltage                                               | 400 V                                        |
| AC switch                         | Yes                                                                        | DC voltage range for nominal power                            | 500 –850 V                                   |
| Over voltage protection           | DC Type II / AC Type III                                                   | Max. DC current                                               | 62 A                                         |
| Ground fault monitoring           | Yes / Yes                                                                  | Max. DC power                                                 | 34 kW                                        |
| Insulation monitoring             | Yes                                                                        | AC Side (Grid)                                                |                                              |
| Overheat protection               | Yes                                                                        | Output power                                                  | 33 kVA @ 45°C<br>30 kVA @ 50°C               |
| General Data                      |                                                                            | Max. AC current                                               | 50A                                          |
| Dimensions (W*H*D)                | 520*750*220mm /<br>20.6in*29.6in*8.7in                                     | Nominal AC voltage                                            | 400 V / 230V                                 |
| Weight                            | 37 kg / 82 lbs                                                             | AC voltage range                                              | -20%~15%                                     |
| Degree of protection              | IP65                                                                       | Nominal grid frequency /<br>Grid frequency range              | 50Hz / 47Hz~52Hz<br>60Hz / 57Hz~62Hz         |
| Operating temperature             | 25 to 60 ° (> 45 °<br>derating)                                            | AC current THD                                                | < 3 % (at nominal power)                     |
| Allowable relative humidity range | 0 –100 %                                                                   | DC Current Injection                                          |                                              |
| Cooling method                    | Temperature controlled<br>forced air cooling                               | Power factor at nominal<br>power / Adjustable<br>power factor | > 1 leading –1 lagging                       |
| Max. operating altitude           | 4000 m (> 3000 m<br>derating)                                              | Adjustable reactive<br>power                                  | -100%~100%                                   |
| Display                           | LED, Bluetooth                                                             | AC Side (Off-Grid)                                            |                                              |
| Self-consumption at stop          | < 10 W                                                                     | Nominal AC voltage                                            | 400 V / 230V                                 |
| Communication                     | RS485 / Ethernet / CAN                                                     | AC voltage THD                                                | < 1.5 % (Resistance load)                    |
| Communication protocol            | Modbus-RTU / Modbus<br>TCP, CAN2.0B                                        | Unbalance load<br>capacity                                    | 100%                                         |
| Compliance                        | EC 62103, IEC 62477<br>IEC 62116, IEC 61727<br>IEC 61000,<br>G 99 CIG 023  | Nominal voltage<br>frequency/ Voltage<br>frequency range      | 50Hz / 45.00Hz~59.8Hz<br>60Hz / 50.20Hz~66Hz |
|                                   |                                                                            | AC output power                                               | 45kW,30s                                     |
|                                   |                                                                            | Efficiency                                                    |                                              |
| Grid support                      | LVRT, active & reactive<br>power control and<br>power<br>ramp rate control | Max. charge efficiency                                        | 98.0%                                        |