

GESS-SW-1000TH-PO

1MW/995kWh (1C)



**Swedish Grid approved PCS with
EN50549, IFS 2018:2 certification**



**SPECIALLY DESIGNED
BESS FOR
ARCTIC ENVIRONMENT**

Global Energy Storage Solutions Battery AB

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Features

- 1MW/995kWh capacity Forced Air-cooled (1CP; 1MW throughout 10 years guaranteed)
- Swedish Grid approved PCS with EN50549 & IFS 2018:2 certification
- Cold start operations from -55°C *
- Can operate in extreme environments up to -40°C* or -55°C * (Standard version designed for -20°C)
- Special Auxiliary heating systems to keep the battery & PCS warm for black start *
- Fully containerized IP55 system
- Internal humidity controller to ensure to prevent static discharge in extreme weather conditions*
- Separate remote condition monitoring system to monitor Internal & external CCTV cameras, Fire system, door sensors, humidity & temperature *
- Specially designed for FFR market with less than 600ms response time
- Can be used for other BESS applications (Reactive power trading, Peak shaving, UPS etc.)
- LiFePO4 Battery technology
- Backup power unit for emergency internal usage
- Clip-on Generator mounting facility and supply socket to facilitate to maintain the BESS temperature during transport*
- Directly communicating with IEC60870-5-104

CELL Standard:

- IEC 62619
- UL 1973
- UL9540A
- UN 38.3

Pack Standard:

- IEC 62619
- UL9540A

System Standards :

- IEC 62619

PCS Standards :

- IEC62477
- EN61000
- EN50549
- IFS 2018:2

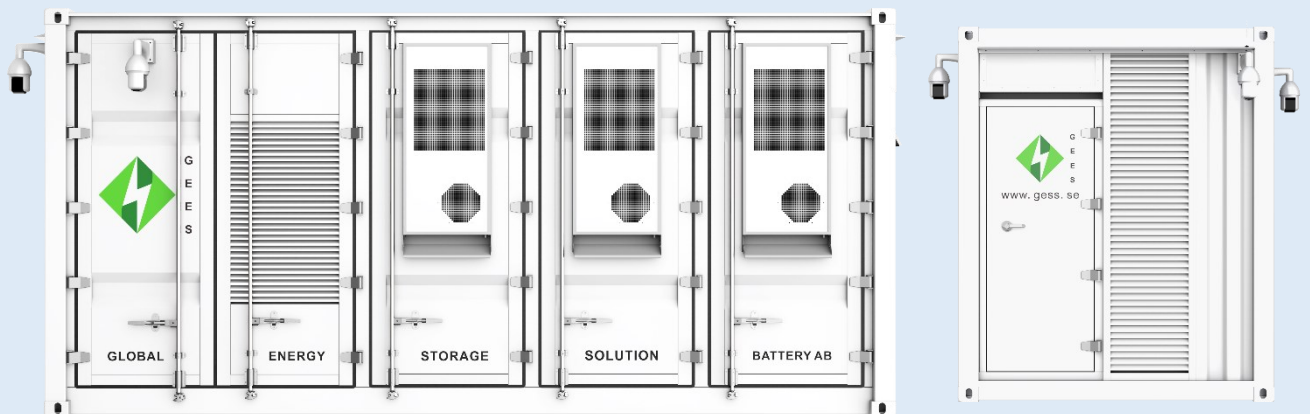
Technical specification	GESS-SW-1000TH-PO
Rated discharge power (kW)	1000
Rated charging power (kW)	1000
Rated capacity (kWh)	995 (995.328-1036.8)
Max. power (kW)	1100
Max. 2Sec power (kW)	1200
No of Cells	2592
Battery clusters (units)	12
Number of battery stacks	4
Dimensions (L x W x H) mm	6058 *2438 *2896
Weight (T)	22Ton
Cell parameters	
Cell type	LFP
Rated capacity (Ah)	120 (123~125)
Rated voltage (V)	3.2
Rated energy (kWh)	0.384 (+0.3936~+0.4)
Voltage range (V)	2.0-3.65
Charging cut-off voltage (V)	3.6
Discharge cut-off voltage (V)	2.8
Operating humidity	< 85% ROH, no condensation
Power Efficiency	97%
Calendar life	not less than 10 years
Battery pack parameters	
Combination	1P24S
Rated capacity (Ah)	120
Rated voltage (V)	76.8
Capacity (kWh)	9.216 (9.446-9.6)
Battery cluster parameters	
Rated capacity (Ah)	120
Rated voltage (V)	691.2
Rated energy (kWh)	82.944 (85.017-86.4)
Series-parallel	1P9S
Battery stack parameters	
Clusters	3
Rated voltage (V)	691.2
Minimum discharge voltage (V)	604.8
Maximum charging voltage (V)	777.6
Rated power (kW)	250
Rated current (A)	360
Rated capacity (kWh)	248.832 (248.832-259.2)
BESS parameters	
Stacks	4
Rated voltage (V)	691.2
Minimum discharge voltage (V)	604.8
Maximum charging voltage (V)	777.6
Rated power (kW)	1000
Rated current (A)	1440

Fire Fighting system	
Perfluorohexanone fire protection system	1 set
Cooling system	
Forced air cooling system with six air conditioner units	
PCS parameters	
PCS systems	2
Nominal power	500kVA
AC max power	550kVA
AC frequency	50/60(-2.5~2.5) Hz
AC voltage	400(-15%~15%) Vac
Battery voltage range	600~900Vdc
Quantity of battery strings	8
DC max current in each branch	110A
THDi	≤ 3%
	Listed: 0.8~1 leading or lagging (Controllable)
AC PF	Actual: 0. 1~1 leading or lagging (Controllable)
Cooling	Forced air cooling
Noise	< 75d B
Enclosure	NEMA1 IP20 and optional IP54 with outdoor cabinet
Max elevation	3000m/ 10000feet (> 3000m/ 10000feet derating)
Operating ambient temperature	(-20°C to -55°C*) to 50°C (Derating over 45°C)
Humidity	0~95% (No condensing)
Size (W × H × D)	1100×2160×800 mm
Weight	Cabinet 280kg + Module 40kg*n (n=1, 2, ..., 8)
Installation	Floor standing
	OTP, AC OVP/ UVP, OFP/ UFP, EPO, AC Phase Reverse, Fan/ Relay Failure, OLP, GFDI, Anti-islanding
Protection	Upper/ Lower AC Voltage/ Frequency limit, Battery EOD voltage
Configurable protection limits	
AC connection	3-Phase 3-Wire
Display	Touch Screen
Communication	RS485, CAN, Ethernet
Isolation	Non-isolation
	CE LVD IEC 62477, CE EMC IEC 61000,
Certification	EN 50549-1:2019 G99, AS4777

* Optional features * Specification can be changed without notice



GESS-SW-1000TH-PO



GESS-SW-1000TH-PO side views



GESS-SW-1000TH-PO with Clip-On Genset attached