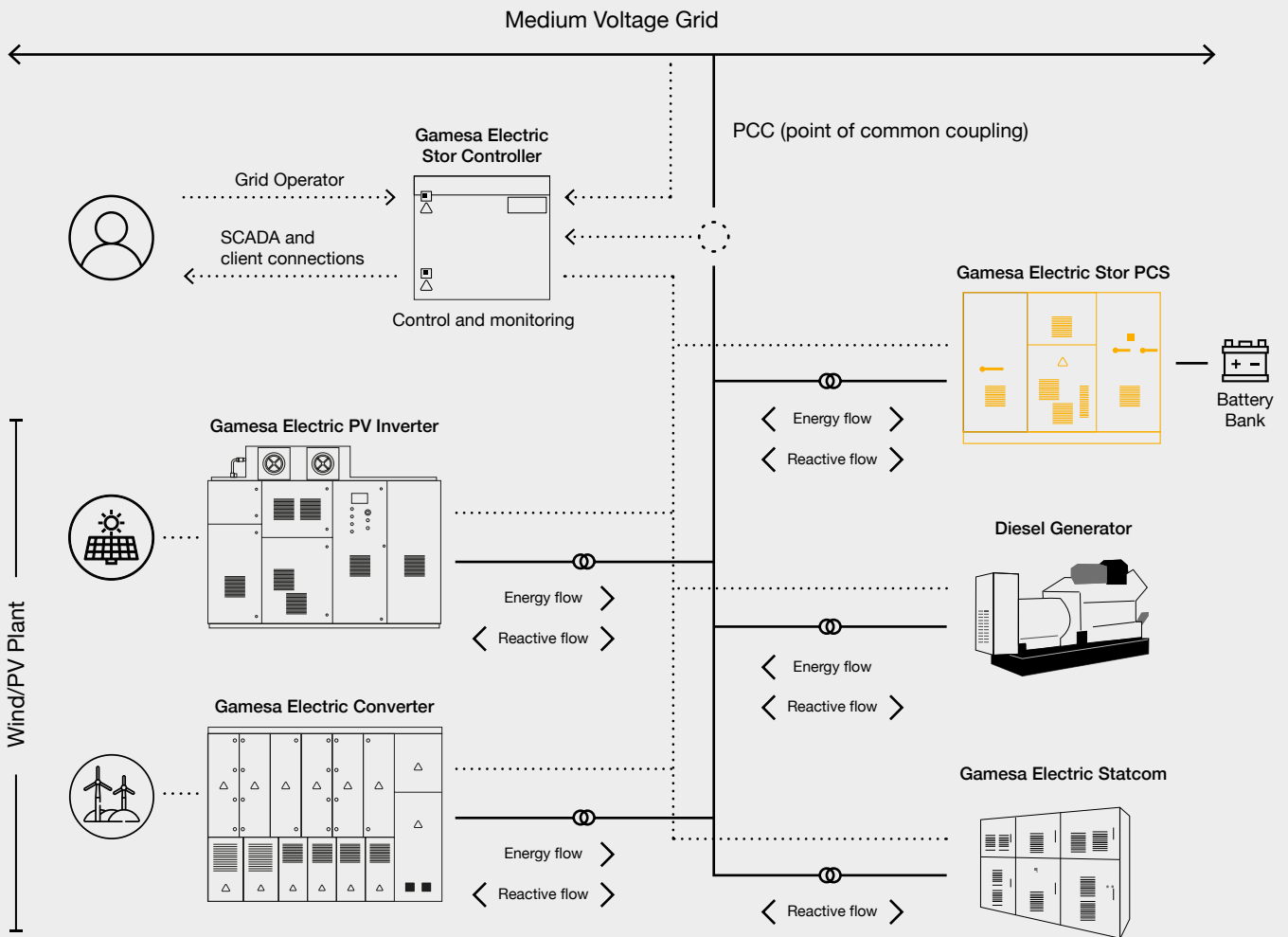





Gamesa Electric Stor PCS

Bi-directional inverter for large-scale
energy storage systems





Gamesa Electric Stor PCS Battery Inverter

| | | | |
|--|---|--|---|
|  <p>Lower LCoE</p> | <p>Market leading efficiency of 99.1% @660Vrms (IEC 62683)</p> | <p>Up to 50°C (122°F) and 2000 m (6561 ft) with no power derating</p> | <p>Outstanding compactness that reduces logistic & field installation costs</p> |
|  <p>Maximum performance</p> | <p>Four quadrant operation for full active and reactive power support</p> | <p>Direct frequency/voltage control for fast response time</p> | <p>Large number of grid control modes including weak grid and island mode operation</p> |
|  <p>Flexibility</p> | <p>Double DC Input topology for separate ESS connection resulting in lower fault DC currents and greater ESS availability</p> | <p>ESS technology agnostic with wide DC input range (up to 1300 Vdc @full power)</p> | <p>DC input harmonics fine tuning for minimum ESS disturbance</p> |

| | Gamesa Electric Stor PCS 1510 | Gamesa Electric Stor PCS 1760 | Gamesa Electric Stor PCS 2080 | Gamesa Electric Stor PCS 2270 | Standards/Directives |
|--|---|---|--|--|---|
| Input (DC) | | | | | IEC 61000-6-2 |
| Battery Power* | 2 x 825 kW | 2 x 960 kW | 2 x 1135 kW | 2 x 1240 kW | IEC 62109-1 |
| DC Minimum Voltage* | 620 V | 715 V | 845 V | 925 V | IEC 62109-2 |
| DC Maximum Voltage (w/o Derating) | 1300 V | | | | EN 55011 |
| DC Maximum Voltage (with Derating) | 1500 V | | | | IEC 61683 |
| Number of Power Modules (DC Inputs) | 1/2 (Single or Double DC Input Configuration) | | | | IEEE 519 |
| Max. DC Current per DC Input @25°C (77°F) | 1460 A | | | | IEC 62116 |
| Max. DC Current per DC Input @40°C (104°F) | 1430 A | | | | IEEE 1547 |
| Max. DC Current per DC Input @50°C (122°F) | 1400 A | | | | UL 1741: 2011 |
| Max. DC Current Total @50°C (122°F) | 2800 A | | | | C22.2 No.107.1-01:2001 |
| Number of DC Ports per DC Input/Total* | Up to 12/24 | | | | Other Standard Compliance**** |
| | | | | | IEC 61727 |
| | | | | | IEC 62163 |
| Output (AC) | | | | | Optional |
| Number of Phases | Three-phase w/o Neutral Point | | | | DC Ground Connection Kit |
| Nominal AC Power per Single Power Module @25°C (77°F) | 785 kVA | 915 kVA | 1080 kVA | 1180 kVA | Low Temperature Kit (<-20°C (<-4°F)) |
| Nominal AC Power per Single Power Module @40°C (104°F) | 770 kVA | 895 kVA | 1055 kVA | 1155 kVA | Touch Display (HMI – Human Machine Interface) |
| Nominal AC Power per Single Power Module @50°C (122°F) | 755 kVA | 880 kVA | 1040 kVA | 1135 kVA | Current Monitoring of DC Inputs |
| Nominal AC Power Total @50°C (122°F) | 1510 kVA | 1760 kVA | 2080 kVA | 2270 kVA | |
| Maximum AC Current per Single Power Module @50°C (122°F) | 1094 Arms | | | | |
| Maximum AC Current Total @50°C (122°F) | 2187 Arms | | | | |
| Nominal AC Voltage* | 400 Vrms | 465 Vrms | 550 Vrms | 600 Vrms | |
| Voltage Allowance Range (2)* | +/-10% | | | | |
| Frequency Range* | 47.5 - 53/57 - 63 Hz | | | | |
| THD of AC Current | <3% @Sn | | | | |
| Power Factor Range | 0 (Reactive) - 1 - 0 (Capacitive) | | | | |
| Performance | | | | | |
| Max. Efficiency | 98.1% | 98.3% | 98.6% | 98.7% | |
| Euro-Efficiency | 97.8% | 98% | 98.3% | 98.4% | |
| Stand-by Power Consumption | <200 W | | | | |
| General Data | | | | | |
| Temperature Range - Operation** | -20°C/+50°C (60°C) (-4°F/+122°F (140°F)) | | | | |
| Temperature Range - Storage | -20°C/+70°C (-4°F/+158°F) | | | | |
| Maximum Altitude*** | <2000 m (<6561 ft) without derating | | | | |
| Cooling System | Liquid + Forced Air Cooling | | | | |
| Relative Humidity | 95% without condensation | | | | |
| Protection Class | IP 20 | | | | |
| Dimensions (W/H/D) | 2800 x 2230 x 975 mm (110.2 x 87.8 x 38.4 in) | | | | |
| Power Density @25°C (77°F) | 258 kVA/m ³ (7.30 kVA/ft ³) | 300 kVA/m ³ (8.49 kVA/ft ³) | 355 kVA/m ³ (10.04 kVA/ft ³) | 388 kVA/m ³ (10.98 kVA/ft ³) | |
| Power Density @50°C (122°F) | 249 kVA/m ³ (7.04 kVA/ft ³) | 289 kVA/m ³ (8.17 kVA/ft ³) | 342 kVA/m ³ (9.67 kVA/ft ³) | 373 kVA/m ³ (10.55 kVA/ft ³) | |
| Weight | 2400 kg (5291 lbs) | | | | |
| Features | | | | | |
| Communications* | Modbus TCP-IP, Ethernet RJ-45, F.O., CAN Bus, F.O. Interbus | | | | |
| Reverse Polarity Detection | Included | | | | |
| DC Overvoltage Protection Class II | Included | | | | |
| DC Overvoltage Protection Class I + II | Optional | | | | |
| AC Overvoltage Protection Class II | Included | | | | |
| AC Overvoltage Protection Class I + II | Optional | | | | |
| AC and DC Short-Circuit Protections | Included | | | | |
| Over-temperature Protections | Included | | | | |
| Ground-fault & Insulation Monitoring | Included | | | | |
| DC Side Disconnection | Motorized DC Section Breaker (On-load) - (2 in Total) | | | | |
| AC Side Disconnection | Motorized AC Circuit Breaker - (2 in Total) | | | | |

- * Consult GaE for different configuration
- ** With derating from 50°C - 60°C (122°F - 140°F)
- *** Up to 4000 m (13123 ft) with derating
- **** Consult GaE for other Standards/Directives



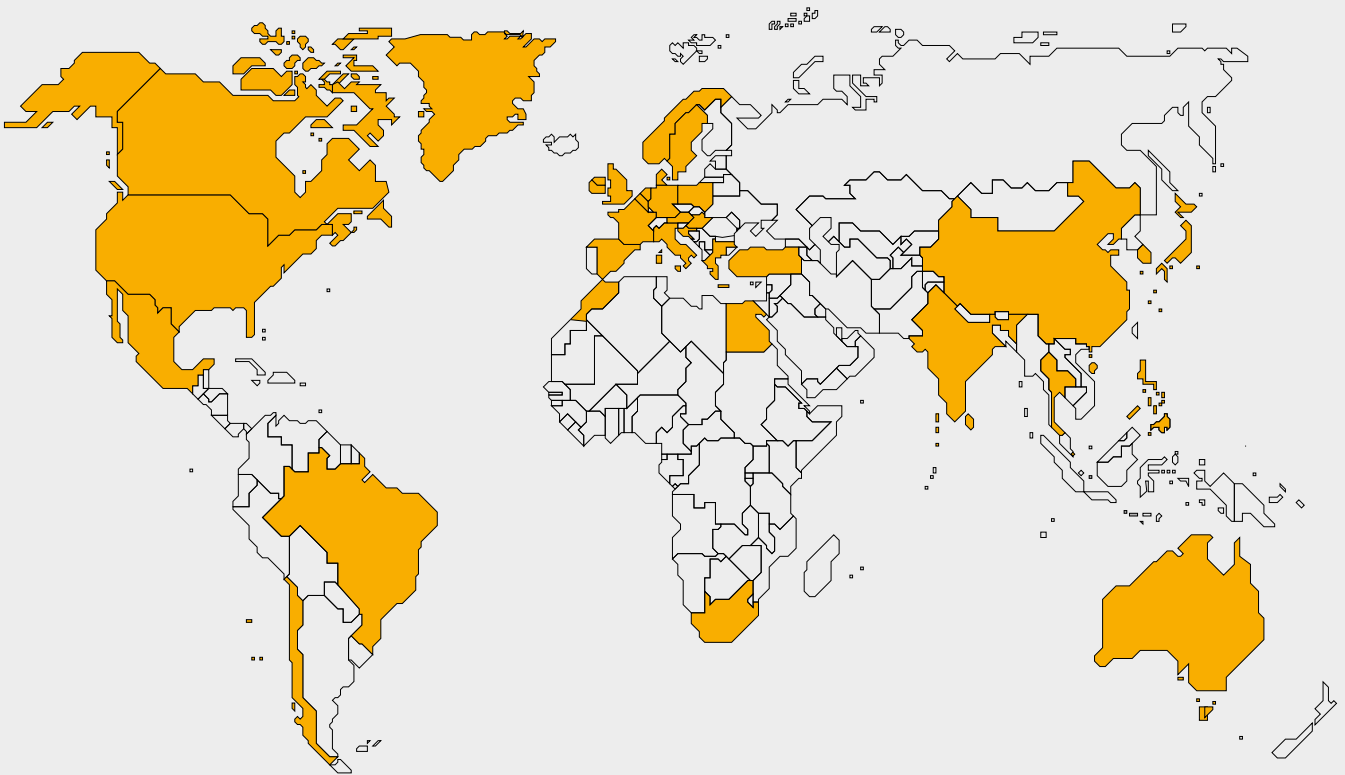
+2400
PV INVERTERS



+90 GW
Wind & Solar
INSTALLED



+90
COUNTRIES



Worldwide presence

Australia
Austria
Belgium
Brazil
Canada

Chile
China
Croatia
Denmark
Egypt

France
Germany
Greece
Hong Kong
Hungary

India
Ireland
Italy
Japan
Korea

Mexico
Morocco
Netherlands
Norway
Philippines

Poland
Singapore
South Africa
Sri Lanka
Sweden

Thailand
Turkey
UK
USA

