



Gamesa Electric Stor 3X series PCS Stations

Maximum efficiency and compactness
for utility scale energy storage projects





Gamesa Electric Stor 3X series PCS Station



High Round Trip Efficiency (RTE)

Market leading efficiency of up to 99.45%, improving the overall system RTE and LCoS

Smart liquid/air cooling system that allows critical components to work at temperature level far below their limits, guaranteeing longer product lifespan and lower thermal losses

Enhanced temperature derating: keeping full power up to 40°C [104°F]



Grid connection

Four quadrant operation for full active and reactive power support to comply with the most demanding grid codes

Weak grid and micro-grid configuration with a seamless transition and black start capabilities

Fast frequency control mode



Battery oriented

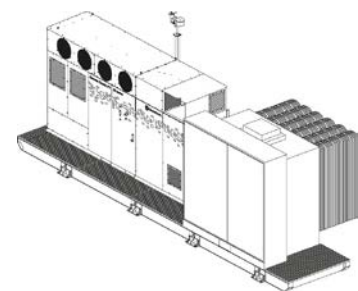
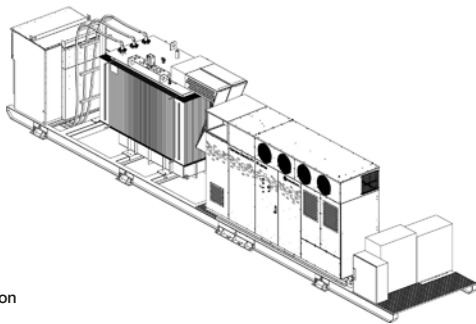
Safety centered design with instantaneous controls and monitoring both hard-wired and through communication protocols

Double power module topology for two independent battery connections allowing for much higher DC short-circuit currents and increased system availability

Battery agnostic design to accommodate different battery technologies, including: li-ion, lead-acid, flow and others

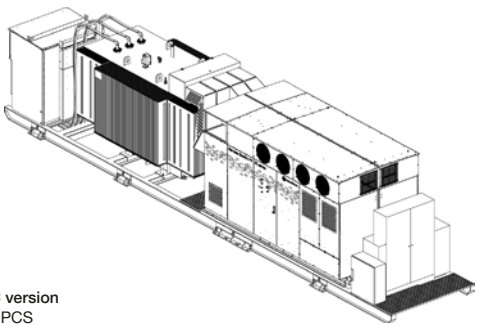
1 x Stor PCS Configurations

Gamesa Electric Stor PCS Station 3X series				
Number of PCSs	1 x Stor PCS 4100	1 x Stor PCS 4300	1 x Stor PCS 4500	1 x Stor PCS 4700
DC Connection				
DC Minimum Voltage*	835 V	875 V	915 V	955 V
DC Maximum Voltage (w/o derating)	< 1300 V			
DC Maximum Voltage (with derating)	< 1500 V			
Number of Independent Modules per PCS	2			
Max. DC Current @40°C [104°F]	2 x 2500 A			
Max. DC Current @50°C [122°F]	2 x 2313 A			
Max. DC Current @55°C [131°F]	2 x 2220 A			
Max. DC Current @60°C [140°F]	2 x 1110 A			
Number of Fused DC Inputs per PCS	Up to 6+ & 6-			
AC Connection				
Nominal AC Power Total @40°C [104°F]	4095 kVA	4299 kVA	4504 kVA	4709 kVA
Nominal AC Power Total @50°C [122°F]	3790 kVA	3979 kVA	4169 kVA	4358 kVA
Nominal AC Power Total @55°C [131°F]	3637 kVA	3819 kVA	4001 kVA	4183 kVA
Nominal AC Power Total @60°C [140°F]	1819 kVA	1910 kVA	2001 kVA	2091 kVA
Maximum AC Current per PCS @40°C [104°F]	3940 Arms			
Nominal AC Voltage*	< 34.5 kV			
Nominal Voltage Allowance Range*	+/-10%			
Frequency Range*	47.5 - 53 / 57 - 63 Hz			
THD of AC Current	< 1% @Sn			
Power Factor Range	0 (reactive) - 1 - 0 (capacitive)			
Protection Devices				
DC Connection	Motorized disconnectors, Overvoltage protection (Type 1 + 2 SPD), reverse polarity detection, DC ground fault and insulation detection			
AC Connection	Motorized AC circuit breakers, Overvoltage protection (Type 1 + 2 SPD), Anti-islanding, Voltage failure, Frequency failure			
Components Stor PCS Station				
PCS	1 x Stor PCS 4100	1 x Stor PCS 4300	1 x Stor PCS 4500	1 x Stor PCS 4700
Transformer* ⁽¹⁾	Dyn KNAN / ONAN			
Switchgear* ⁽¹⁾	0L1V / 1L1V / 2L1V up to 36 kV			
Custom Auxiliary Transformer	Optional			
Others	Auxilliary cabinet			
Communications				
Control*	Modbus TCP / IP (Profinet, CAN upon request)			
Monitoring*	Modbus TCP / IP			
Websserver	Included			



Other Features		
LVRT	Yes	
HVRT	Yes	
Working Ambient Temperature**	-20°C / +60°C [-4°F / +140°F], Option -40°C [-40°F]	
Relative Humidity	100% (without condensation)	
Maximum Altitude (without derating)***	2,000 m [6,561 ft]	
Dimensions W x H x D (IEC / UL version) ⁽²⁾	11800 x 2600 x 2100 mm / 30 x 8,5 x 8,6 ft	
Protection	IP54	
Cooling System	Liquid & forced air	
Main Standards		
IEC62109	-40°C Low Temperature Kit	Custom Auxiliary Transformer
UL1741-SA	UPS	Seismic Reinforcement
UL62109	Motorized MV Switchgear	High Corrosion Protection Kit
NEC	DC Fuses	

2 x Stor PCS Configurations

Gamesa Electric Stor PCS Station 3X series				
Number of PCSs	2 x Stor PCS 4100	2 x Stor PCS 4300	2 x Stor PCS 4500	2 x Stor PCS 4700
DC Connection				
DC Minimum Voltage*	835 V	875 V	915 V	955 V
DC Maximum Voltage (w/o derating)	< 1300 V			
DC Maximum Voltage (with derating)	< 1500 V			
Number of Independent Modules per PCS / Total	2 / 4			
Max. DC Current @40°C [104°F]	4 x 2500 A			
Max. DC Current @50°C [122°F]	4 x 2313 A			
Max. DC Current @55°C [131°F]	4 x 2220 A			
Max. DC Current @60°C [140°F]	4 x 1110 A			
Number of Fused DC Inputs per PCS / Total	Up to 6+ & 6- / 12+ & 12-			
AC Connection				
Nominal AC Power Total @40°C [104°F]	8190 kVA	8598 kVA	9008 kVA	9418 kVA
Nominal AC Power Total @50°C [122°F]	7580 kVA	7958 kVA	8338 kVA	8178 kVA
Nominal AC Power Total @55°C [131°F]	7274 kVA	7638 kVA	8002 kVA	8366 kVA
Nominal AC Power Total @60°C [140°F]	3638 kVA	3820 kVA	4002 kVA	4182 kVA
Maximum AC Current per PCS / Total @40°C [104°F]	3940 Arms / 2 x 3940 Arms			
Nominal AC Voltage*	< 34.5 kV			
Nominal Voltage Allowance Range*	+/-10%			
Frequency Range	47.5 - 53 / 57 - 63 Hz			
THD of AC Current	< 1% @Sn			
Power Factor Range	0 (reactive) - 1 - 0 (capacitive)			
Protection Devices				
DC Connection	Motorized disconnectors, Overvoltage protection (Type 1 + 2 SPD), reverse polarity detection, DC ground fault and insulation detection			
AC Connection	Motorized AC circuit breakers, Overvoltage protection (Type 1 + 2 SPD), Anti-islanding, Voltage failure, Frequency failure			
Components Stor PCS Station				
PCS	2 x Stor PCS 4100	2 x Stor PCS 4300	2 x Stor PCS 4500	2 x Stor PCS 4700
Transformer* ⁽¹⁾	Dynyn KNAN / ONAN			
Switchgear* ⁽¹⁾	0L1V / 1L1V / 2L1V up to 36 kV			
Custom Auxiliary Transformer	Optional			
Others	Auxilliary cabinet			
Communications				
Control*	Modbus TCP / IP (Profinet, CAN upon request)			
Monitoring*	Modbus TCP / IP			
Webserver	Included			
				
<p>IEC version 2 x PCS</p> <p>⁽¹⁾ UL version: Padmounted Dyn (without external switchgear) ⁽²⁾ UL variant only available for 1-PCS based configuration * Consult Gamesa Electric for a specific configuration ** With derating from 40°C [104°F] *** Up to 4,000 m (13,123 ft) with derating as optional</p>				
Other Features				
LVRT	Yes			
HVRT	Yes			
Working Ambient Temperature**	-20°C / +60°C [-4°F / +140°F], Option -40°C [-40°F]			
Relative Humidity	100% (without condensation)			
Maximum Altitude (without derating)***	2,000 m [6,561 ft]			
Dimensions W x H x D (IEC / UL version) ⁽²⁾	11800 x 2600 x 2100 mm / 30 x 8,5 x 8,6 ft			
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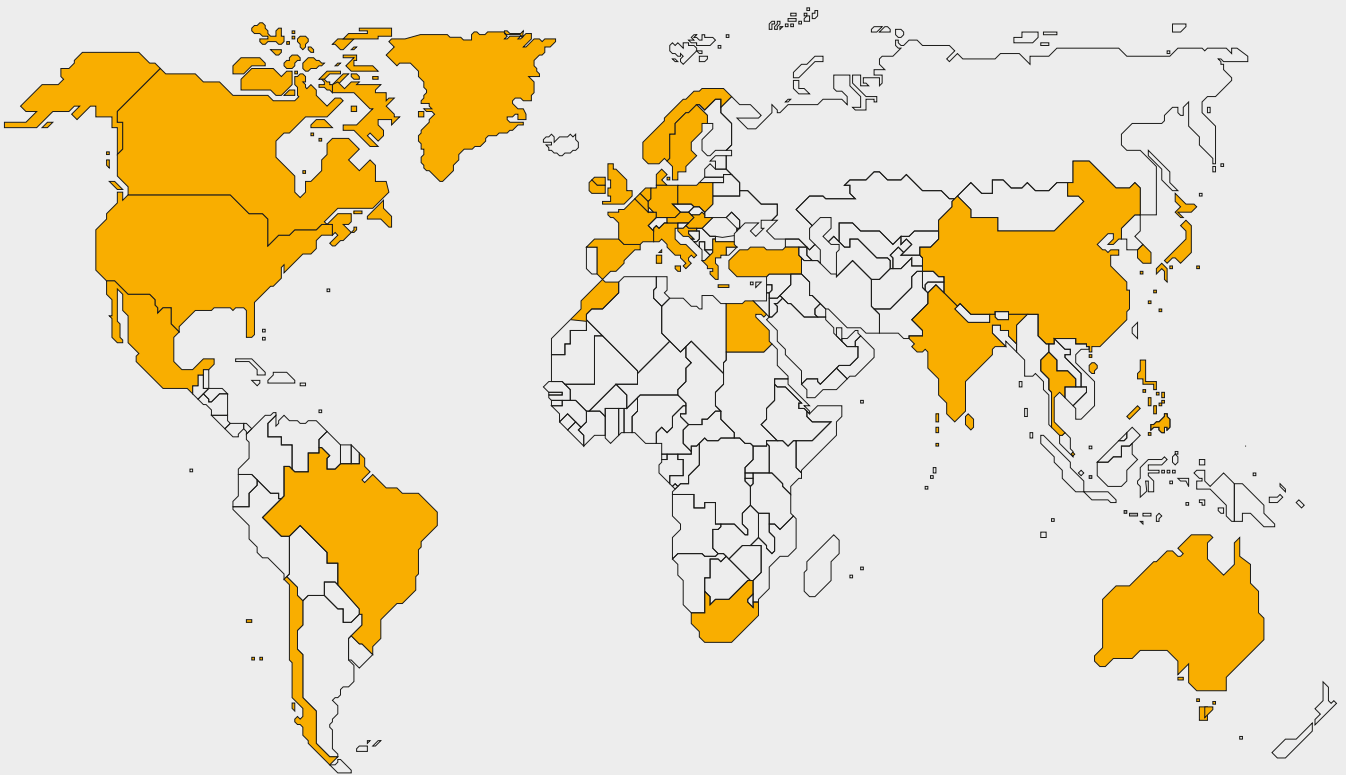
+3.7 GW
SOLAR ENERGY



+115 GW
WIND POWER



+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

