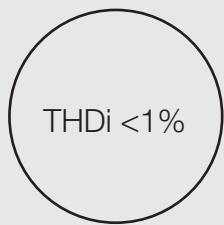
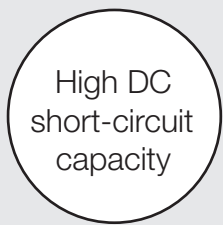




Gamesa Electric Proteus PCS-E Stations

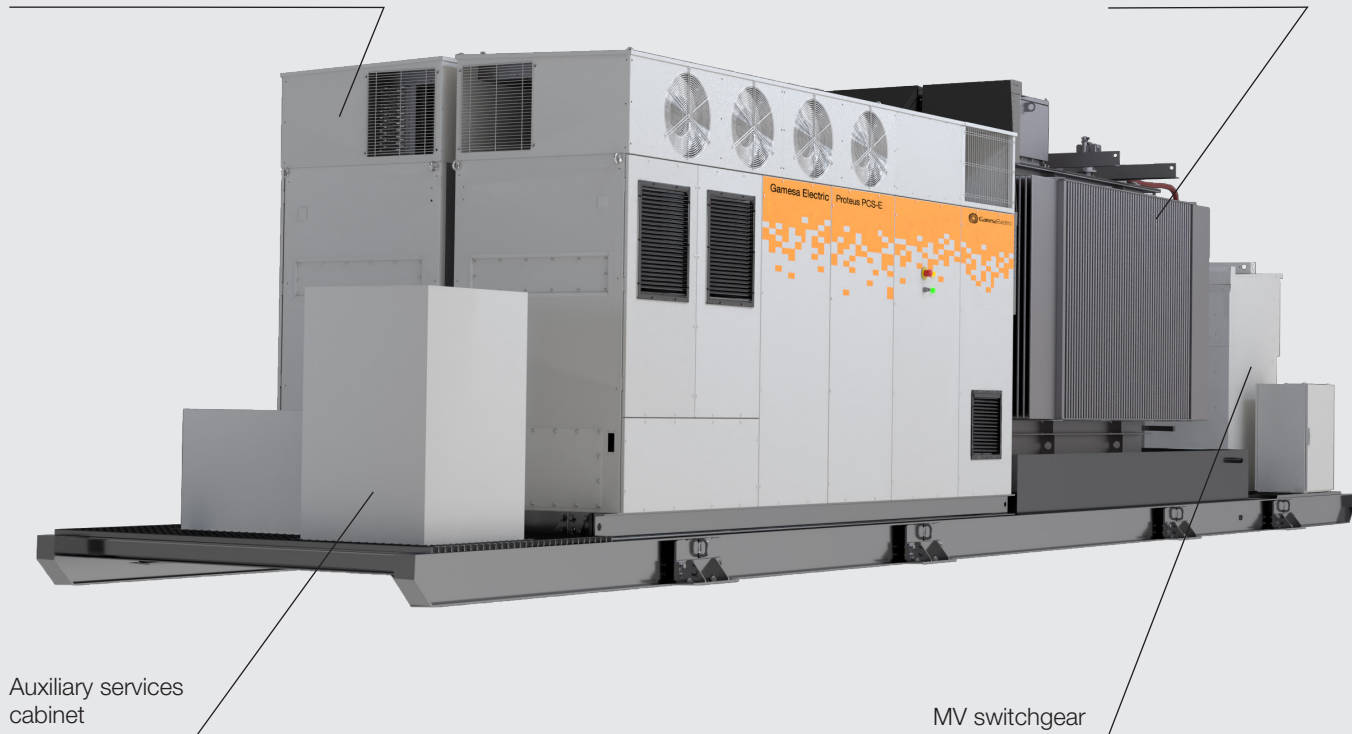
Maximum efficiency and compactness
for utility-scale energy storage projects





2 x Gamesa Electric Proteus PCS-E

Transformer



Auxiliary services cabinet

MV switchgear

Gamesa Electric Proteus PCS-E Station



High Round Trip Efficiency (RTE)

High efficiency that allows to improve 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

Low power derating

High power capacity at 1500Vdc

Wide operating temperature range



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 capability

Fast frequency response

Synthetic inertia

Grid forming in parallel operation with the grid



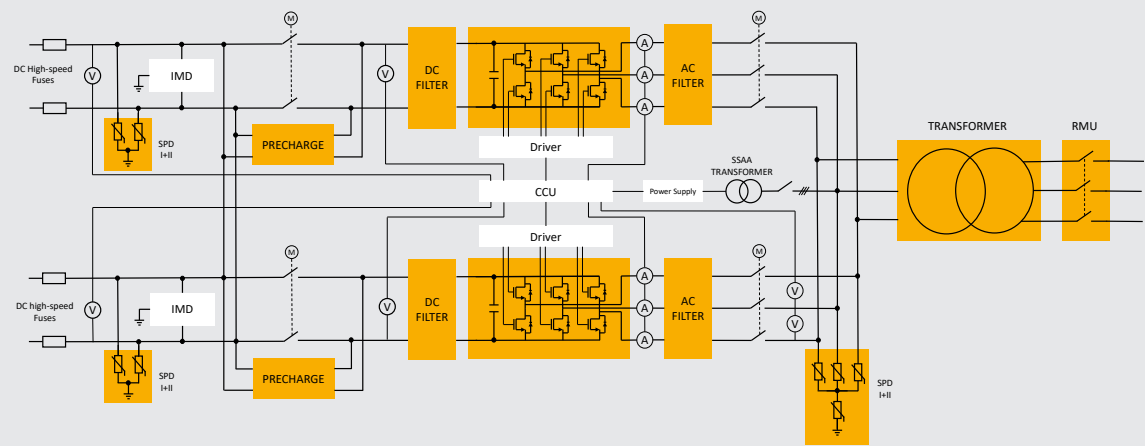
Battery oriented

Safety centered design with high speed control and monitoring.

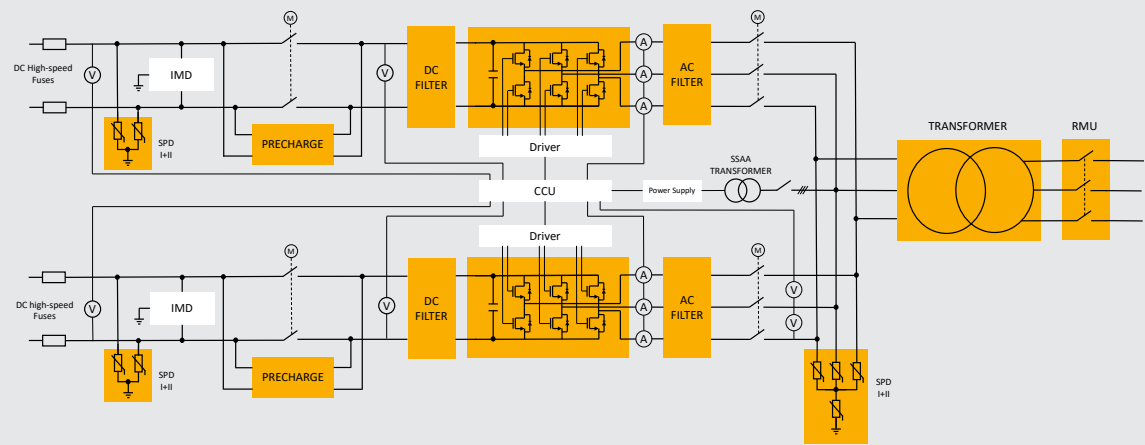
Double power module topology for two independent battery connections allowing for much higher DC short-circuit currents and increased system availability

Battery agnostic design to accommodate different battery technologies up to 1500Vdc, including: li-ion, lead-acid, flow and others

Single station (1 x PCS-E), Single DC bus configuration (Capacity to manage 1 battery)

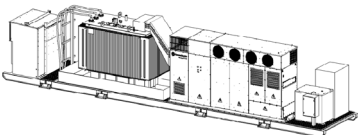


Single station (1 x PCS-E), Double DC bus configuration (Capacity to manage up to 2 independent batteries)

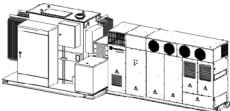


1 x Gamesa Electric Proteus PCS-E Configurations

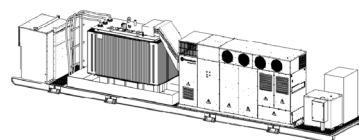
Gamesa Electric Proteus PCS-E Stations						
Number of PCS-Es	1 x Proteus PCS 4000E	1 x Proteus PCS 4180E	1 x Proteus PCS 4360E	1 x Proteus PCS 4600E	1 x Proteus PCS 4910E ⁽⁷⁾	1 x Proteus PCS 5150E ⁽⁷⁾
DC Connection						
DC Minimum Voltage ⁽¹⁾	934 V	976 V	1018 V	1075 V	1146 V	1202V
DC Maximum Voltage	1473 V	1500 V	1500 V	1500 V	1500 V	1500 V
Number of Independent Power Modules	2, not galvanically isolated					
Max. DC Current @40°C [104°F]	2 x 2227 A					
Number of Fused DC Inputs ⁽²⁾	Up to 6+ & 6-					
Max. DC short-circuit withstanding capability	2 x 250kA, 3ms Double DC bus configuration 1 x 250kA, 3ms Single DC bus configuration					
AC Connection						
Number of Phases	Three-phase					
Nominal AC Power Total @25°C [77°F], Max. Vdc	4250 kVA	4446 kVA	4639 kVA	4897 kVA	5219 kVA	5477 kVA
Nominal AC Power Total @40°C [104°F], Max. Vdc	4000 kVA	4183 kVA	4365 kVA	4607 kVA	4910 kVA	5153 kVA
Nominal AC Power Total @40°C [104°F], 1300VDC	4298 kVA	4494 kVA	4689 kVA	4950 kVA	5275 kVA	5535 kVA
Nominal AC Voltage, LV side ⁽²⁾	660 Vrms	690 Vrms	720 Vrms	760 Vrms	810 Vrms	850 Vrms
Nominal AC Voltage, MV side ⁽²⁾	Up to 34.5kV					
Nominal Voltage Allowance Range ⁽²⁾	+/-10%					
Frequency Range ⁽²⁾	47.5 - 52.5/57 - 63.5 Hz					
THD of AC Current	< 1% @Sn					
Power Factor Range ⁽³⁾	0 (lagging) - 1 - 0 (leading)					
Protection devices						
DC Connection	Motorized DC switches (on-load), Overvoltage protection (Type 1 + 2 SPD), Reverse polarity detection, DC ground fault and insulation detection, fast fuses (optional)					
AC MV Connection	Protection switchgear / Fuses Pad mounted version					
Over-temperature Protection	Included					
Emergency Push Button	Included					
Components Proteus PCS-E Stations						
PCS-E	1 x Proteus PCS 4000E	1 x Proteus PCS 4180E	1 x Proteus PCS 4360E	1 x Proteus PCS 4600E	1 x Proteus PCS 4910E	1 x Proteus PCS 5150E
Transformer ⁽²⁾⁽⁶⁾	Dy11y11 KNAN					
Switchgear ⁽²⁾⁽⁶⁾	0L1V / 1L1V / 2L1V up to 38 kV					
Custom Auxiliary Transformer ⁽²⁾	Optional					
Others ⁽²⁾	Auxilliary cabinet					
Communications						
Control ⁽²⁾	Modbus TCP / IP					
Monitoring ⁽²⁾	Modbus TCP / IP					
Webserver	Included					
Other Features						
Temperature Range - Operation	-20°C / +60°C[-4°F/+140°F]					
Relative Humidity	4% - 100% (without condensation)					
Maximum Altitude (without derating)	2,000 m [6,561 ft]					
Dimensions W x H x D (IEC / UL version) ⁽⁴⁾	11,800 x 2,600 x 2,100 mm / 30 x 8.5 x 8.6 ft					
Protection ⁽⁵⁾	IP54					
Cooling System	Liquid & forced air					
Optional ⁽²⁾						
Low Temperature Kit to up to -30°C [-22°F]	⁽¹⁾ At nominal AC voltage. Consult Gamesa Electric for other options					
Factory-fitted DC fuses	⁽²⁾ Consult Gamesa Electric for a specific configuration					
Factory-fitted joint DC inputs	⁽³⁾ Consult P-Q chart					
Enhanced corrosion protection	⁽⁴⁾ UL variant only available for 1-PCS-E based configuration					
Motorized MV Switchgear	⁽⁵⁾ Consult Gamesa Electric for more details					
UPS	⁽⁶⁾ UL version: Padmounted Dyn (without external switchgear)					
Custom Auxiliary Transformer	⁽⁷⁾ Consult Gamesa Electric on the application for this model					
Seismic Reinforcement						
Standards/Directives ⁽⁵⁾						
IEC 62109-1	EN 55011 / CISPR11:2019	NFPA 70:2020				
IEC 62109-2	IEC 62116	IEC 62477-1:2022				
IEC 61000-6-2	UL 1741-SB	IEEE C57				
IEEE 1547	CSA C22.2 No 107.1	IEC 60076				



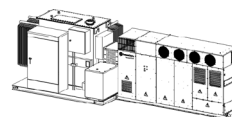
IEC version
1 x PCS-E



UL version
1 x PCS-E



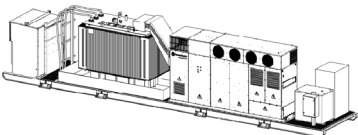
IEC version
1 x PCS-E



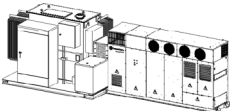
UL version
1 x PCS-E

1 x Gamesa Electric Proteus PCS-E Configurations

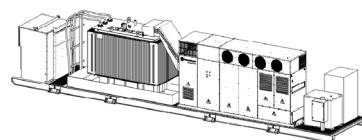
Gamesa Electric Proteus PCS-E Stations					
Number of PCS-Es	1 x Proteus PCS 2420E	1 x Proteus PCS 2910E	1 x Proteus PCS 3150E	1 x Proteus PCS 3630E	1 x Proteus PCS 3810E
DC Connection					
DC Minimum Voltage ⁽¹⁾	566 V	679 V	736 V	849 V	891 V
DC Maximum Voltage	1238 V	1310 V	1347 V	1418 V	1445 V
Number of Independent Power Modules	2, not galvanically isolated				
Max. DC Current @40°C [104°F]	2 x 2227 A				
Number of Fused DC Inputs ⁽²⁾	Up to 6+ & 6-				
Max. DC short-circuit withstanding capability	2 x 250kA, 3ms Double DC bus configuration 1 x 250kA, 3ms Single DC bus configuration				
AC Connection					
Number of Phases	Three-phase				
Nominal AC Power Total @25°C [77°F], Max. Vdc	2577 kVA	3093 kVA	3351 kVA	3866 kVA	4059 kVA
Nominal AC Power Total @40°C [104°F], Max. Vdc	2425 kVA	2910 kVA	3152 kVA	3637 kVA	3819 kVA
Nominal AC Power Total @40°C [104°F], 1300VDC	N/A	3127 kVA	3387 kVA	3908 kVA	4103 kVA
Nominal AC Voltage, LV side ⁽²⁾	400 Vrms	480 Vrms	520 Vrms	600 Vrms	630 Vrms
Nominal AC Voltage, MV side ⁽²⁾	Up to 34.5kV				
Nominal Voltage Allowance Range ⁽²⁾	+/-10%				
Frequency Range ⁽²⁾	47.5 - 52.5/57 - 63.5 Hz				
THD of AC Current	< 1% @Sn				
Power Factor Range ⁽³⁾	0 (lagging) - 1 - 0 (leading)				
Protection devices					
DC Connection	Motorized DC switches (on-load), Overvoltage protection (Type 1 + 2 SPD), Reverse polarity detection, DC ground fault and insulation detection, fast fuses (optional)				
AC MV Connection	Protection switchgear / Fuses Pad mounted version				
Over-temperature Protection	Included				
Emergency Push Button	Included				
Components Proteus PCS-E Stations					
PCS-E	1 x Proteus PCS 2420E	1 x Proteus PCS 2910E	1 x Proteus PCS 3150E	1 x Proteus PCS 3630E	1 x Proteus PCS 3810E
Transformer ⁽²⁾⁽⁶⁾	Dy11y11 KNAN				
Switchgear ⁽²⁾⁽⁶⁾	0L1V / 1L1V / 2L1V up to 38 kV				
Custom Auxiliary Transformer ⁽²⁾	Optional				
Others ⁽²⁾	Auxilliary cabinet				
Communications					
Control ⁽²⁾	Modbus TCP / IP				
Monitoring ⁽²⁾	Modbus TCP / IP				
Webserver	Included				
Other Features					
Temperature Range - Operation	-20°C / +60°C[-4°F/+140°F]				
Relative Humidity	4% - 100% (without condensation)				
Maximum Altitude (without derating)	2,000 m [6,561 ft]				
Dimensions W x H x D (IEC / UL version) ⁽⁴⁾	11,800 x 2,600 x 2,100 mm / 30 x 8.5 x 8.6 ft				
Protection ⁽⁵⁾	IP54				
Cooling System	Liquid & forced air				
Optional ⁽²⁾					
Low Temperature Kit to up to -30°C [-22°F]					
Factory-fitted DC fuses					
Factory-fitted joint DC inputs					
Enhanced corrosion protection					
Motorized MV Switchgear					
UPS					
Custom Auxiliary Transformer					
Seismic Reinforcement					
Standards/Directives ⁽⁵⁾					
IEC 62109-1	EN 55011 / CISPR11:2019	NFPA 70:2020			
IEC 62109-2	IEC 62116	IEC 62477-1:2022			
IEC 61000-6-2	UL 1741-SB	IEEE C57			
IEEE 1547	CSA C22.2 No 107.1	IEC 60076			



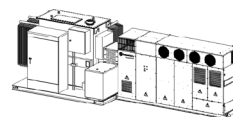
IEC version
1 x PCS-E



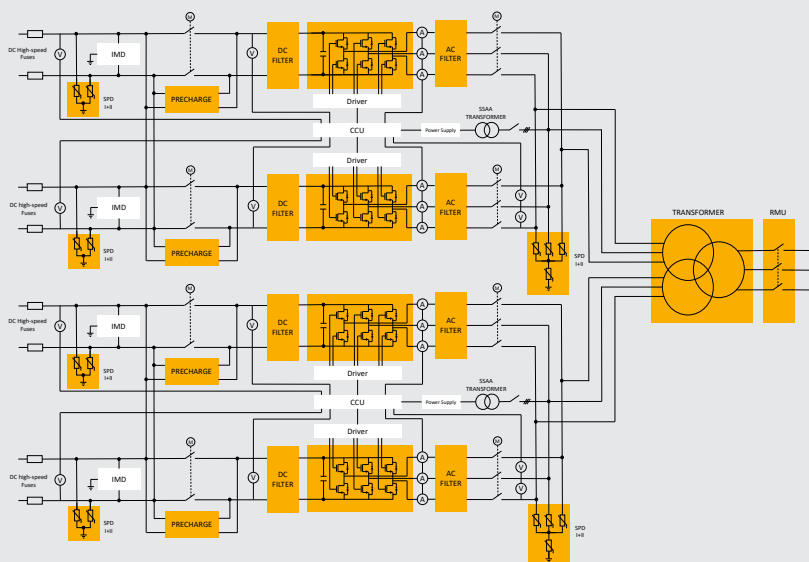
UL version
1 x PCS-E



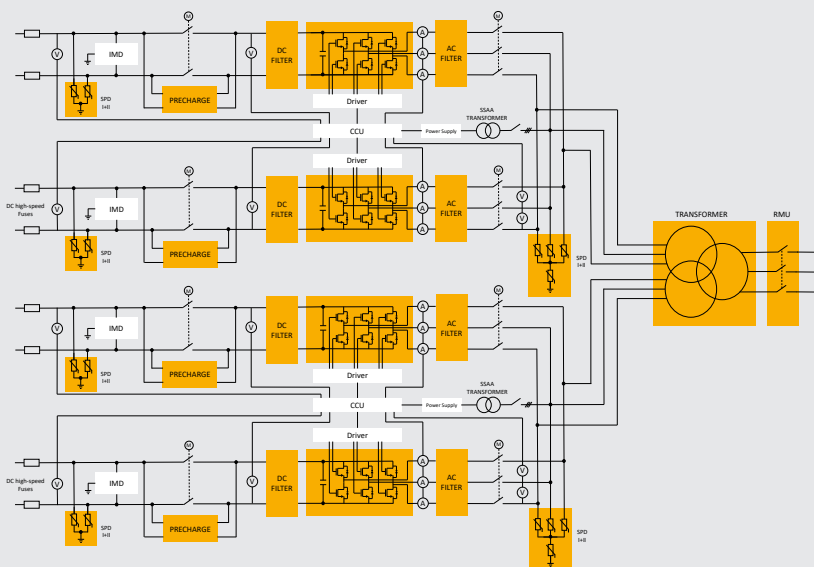
IEC version
1 x PCS-E



UL version
1 x PCS-E



**Double station (2 x PCS-E)
Single DC bus configuration
(Capacity to manage up to
2 independent batteries)**



**Double station (2 x PCS-E),
Double DC bus configuration
(Capacity to manage up to
4 independent batteries)**



2 x Gamesa Electric Proteus PCS-E Configurations

	Gamesa Electric Proteus PCS-E Stations					
	Proteus PCSS 8000E	Proteus PCSS 8360E	Proteus PCSS 8720E	Proteus PCSS 9200E	Proteus PCSS 9820E	Proteus PCSS 10,300E
Number of PCS-Es	2x Proteus PCS 4000E	2x Proteus PCS 4180E	2x Proteus PCS 4360E	2x Proteus PCS 4600E	2x Proteus PCS 4910E [®]	2x Proteus PCS 5150E [®]
DC Connection						
DC Minimum Voltage ⁽¹⁾	934 V	976 V	1018 V	1075 V	1146 V	1202V
DC Maximum Voltage	1473 V	1500 V	1500 V	1500 V	1500 V	1500 V
Number of Independent Power Modules per PCS-E / Total	2 / 4					
Max. DC Current @40°C [104°F]	4 x 2500 A					
Number of Fused DC Inputs per PCS-E / Total ⁽²⁾	Up to 12+ & 12-					
Max. DC short-circuit withstanding capability	4 x 250kA, 3ms Double bus configuration 2 x 250kA, 3ms Single bus configuration					

AC Connection						
Number of Phases	Three-phase					
Nominal AC Power Total @25°C [77°F], Max. Vdc	8500 kVA	8892 kVA	9278 kVA	9794 kVA	10438 kVA	10954 kVA
Nominal AC Power Total @40°C [104°F], Max. Vdc	8000 kVA	8366 kVA	8730 kVA	9214 kVA	9820 kVA	10306 kVA
Nominal AC Power Total @40°C [104°F], 1300VDC	8596 kVA	8988 kVA	9378 kVA	9900 kVA	10550 kVA	11070 kVA
Nominal AC Voltage, LV side ⁽²⁾	2 x 660 Vrms	2 x 690 Vrms	2 x 720 Vrms	2 x 760 Vrms	2 x 810 Vrms	2 x 850 Vrms
Nominal AC Voltage, MV side ⁽²⁾	Up to 34.5kV					
Nominal Voltage Allowance Range ⁽²⁾	+/-10%					
Frequency Range ⁽²⁾	47.5 - 52.5/57 - 63.5 Hz					
THD of AC Current	< 1% @Sn					
Power Factor Range ⁽³⁾	0 (lagging) - 1 - 0 (leading)					

Protection devices						
DC Connection	Motorized DC switches (on-load), Overvoltage protection (Type 1 + 2 SPD), Reverse polarity detection, DC ground fault and insulation detection, fast fuses (optional)					
AC MV Connection	Protection switchgear / Fuses Pad mounted version					
Over-temperature Protection	Included					
Emergency Push Button	Included					

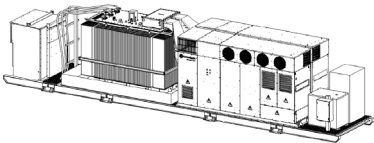
Components Proteus PCS-E Stations						
PCS-E	2 x Proteus PCS 4000E	2 x Proteus PCS 4180E	2 x Proteus PCS 4360E	2 x Proteus PCS 4600E	2 x Proteus PCS 4910E	2 x Proteus PCS 5150E
Transformer ⁽²⁾	Dy11y11 KNAN					
Switchgear ⁽²⁾	0L1V / 1L1V / 2L1V up to 38 kV					
Custom Auxiliary Transformer ⁽²⁾	Optional					
Others ⁽²⁾	Auxilliary cabinet					

Communications						
Control ⁽²⁾	Modbus TCP / IP					
Monitoring ⁽²⁾	Modbus TCP / IP					
Webserver	Included					

Other Features						
Temperature Range - Operation	-20°C / +60°C [-4°F/+140°F]					
Relative Humidity	4% - 100% (without condensation)					
Maximum Altitude (without derating)	2,000 m [6,561 ft]					
Dimensions W x H x D (IEC / UL version) ⁽⁴⁾	11,800 x 2,600 x 2,100 mm / 30 x 8.5 x 8.6 ft					
Protection ⁽⁵⁾	IP54					
Cooling System	Liquid & forced air					

Optional ⁽²⁾						
Low Temperature Kit to up to -30°C [-22°F]						
Factory-fitted DC fuses						
Factory-fitted joint DC inputs						
Enhanced corrosion protection						
Motorized MV Switchgear						
UPS						
Custom Auxiliary Transformer						
Seismic Reinforcement						

- ⁽¹⁾ At nominal AC voltage. Consult Gamesa Electric for other options
- ⁽²⁾ Consult Gamesa Electric for a specific configuration
- ⁽³⁾ Consult P-Q chart
- ⁽⁴⁾ UL variant only available for 1-PCS-E based configuration
- ⁽⁵⁾ Consult Gamesa Electric for more details
- ⁽⁶⁾ Consult Gamesa Electric on the application for this model

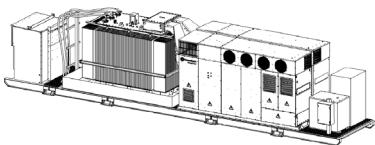


IEC version
2 x PCS-E

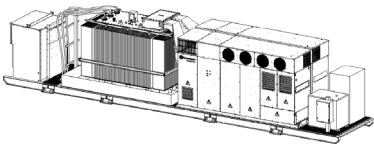
Standards/Directives ⁽⁶⁾		
IEC 62109-1	EN 55011 / CISPR11:2019	NFPA 70:2020
IEC 62109-2	IEC 62116	IEC 62477-1:2022
IEC 61000-6-2	UL 1741-SB	IEEE C57
IEEE 1547	CSA C22.2 No 107.1	IEC 60076

2 x Gamesa Electric Proteus PCS-E Configurations

Gamesa Electric Proteus PCS-E Stations						
	Proteus PCSS 4840E	Proteus PCSS 5820E	Proteus PCSS 6300E	Proteus PCSS 7260E	Proteus PCSS 7620E	
Number of PCS-Es	2x Proteus PCS 2420E	2x Proteus PCS 2910E	2x Proteus PCS 3150E	2x Proteus PCS 3630E	2x Proteus PCS 3810E	
DC Connection						
DC Minimum Voltage ⁽¹⁾	566 V	679 V	736 V	849 V	891V	
DC Maximum Voltage	1238 V	1310V	1347 V	1418 V	1445 V	
Number of Independent Power Modules per PCS-E / Total	2 / 4					
Max. DC Current @40°C [104°F]	4 x 2500 A					
Number of Fused DC Inputs per PCS-E / Total ⁽²⁾	Up to 12+ & 12-					
Max. DC short-circuit withstanding capability	4 x 250kA, 3ms Double bus configuration 2 x 250kA, 3ms Single bus configuration					
AC Connection						
Number of Phases	Three-phase					
Nominal AC Power Total @25°C [77°F], Max. Vdc	5154 kVA	6186 kVA	6702 kVA	7732 kVA	8118 kVA	
Nominal AC Power Total @40°C [104°F], Max. Vdc	4850 kVA	5820 kVA	6304 kVA	7274 kVA	7638 kVA	
Nominal AC Power Total @40°C [104°F], 1300VDC	N/A	6252 kVA	6774 kVA	7816 kVA	8206 kVA	
Nominal AC Voltage, LV side ⁽²⁾	2 x 400 Vrms	2 x 480 Vrms	2 x 520 Vrms	2 x 600 Vrms	2 x 630 Vrms	
Nominal AC Voltage, MV side ⁽²⁾	Up to 34.5kV					
Nominal Voltage Allowance Range ⁽²⁾	+/-10%					
Frequency Range ⁽²⁾	47.5 - 52.5/57 - 63.5 Hz					
THD of AC Current	< 1% @Sn					
Power Factor Range ⁽³⁾	0 (lagging) - 1 - 0 (leading)					
Protection devices						
DC Connection	Motorized DC switches (on-load), Overvoltage protection (Type 1 + 2 SPD), Reverse polarity detection, DC ground fault and insulation detection, fast fuses (optional)					
AC MV Connection	Protection switchgear / Fuses Pad mounted version					
Over-temperature Protection	Included					
Emergency Push Button	Included					
Components Proteus PCS-E Stations						
PCS-E	2 x Proteus PCS 2420E	2 x Proteus PCS 2910E	2 x Proteus PCS 3150E	2 x Proteus PCS 3630E	2 x Proteus PCS 3810E	
Transformer ⁽²⁾	Dy11y11 KNAN					
Switchgear ⁽²⁾	0L1V / 1L1V / 2L1V up to 38 kV					
Custom Auxiliary Transformer ⁽²⁾	Optional					
Others ⁽²⁾	Auxilliary cabinet					
Communications						
Control ⁽²⁾	Modbus TCP / IP					
Monitoring ⁽²⁾	Modbus TCP / IP					
Webserver	Included					
Other Features						
Temperature Range - Operation	-20°C / +60°C[-4°F/+140°F]					
Relative Humidity	4% - 100% (without condensation)					
Maximum Altitude (without derating)	2,000 m [6,561 ft]					
Dimensions W x H x D (IEC / UL version) ⁽⁴⁾	11,800 x 2,600 x 2,100 mm / 30 x 8.5 x 8.6 ft					
Protection ⁽⁵⁾	IP54					
Cooling System	Liquid & forced air					
Optional ⁽²⁾						
Low Temperature Kit to up to -30°C [-22°F]	⁽¹⁾ At nominal AC voltage. Consult Gamesa Electric for other options					
Factory-fitted DC fuses	⁽²⁾ Consult Gamesa Electric for a specific configuration					
Factory-fitted joint DC inputs	⁽³⁾ Consult P-Q chart					
Enhanced corrosion protection	⁽⁴⁾ UL variant only available for 1-PCS-E based configuration					
Motorized MV Switchgear	⁽⁵⁾ Consult Gamesa Electric for more details					
UPS						
Custom Auxiliary Transformer						
Seismic Reinforcement						
Standards/Directives ⁽⁵⁾						
IEC 62109-1	EN 55011 / CISPR11:2019		NFPA 70:2020			
IEC 62109-2	IEC 62116		IEC 62477-1:2022			
IEC 61000-6-2	UL 1741-SB		IEEE C57			
IEEE 1547	CSA C22.2 No 107.1		IEC 60076			



IEC version
2 x PCS-E



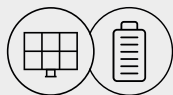
IEC version
2 x PCS-E

⁽¹⁾ At nominal AC voltage. Consult Gamesa Electric for other options
⁽²⁾ Consult Gamesa Electric for a specific configuration
⁽³⁾ Consult P-Q chart
⁽⁴⁾ UL variant only available for 1-PCS-E based configuration
⁽⁵⁾ Consult Gamesa Electric for more details



GamesaElectric

Shaping New Energy



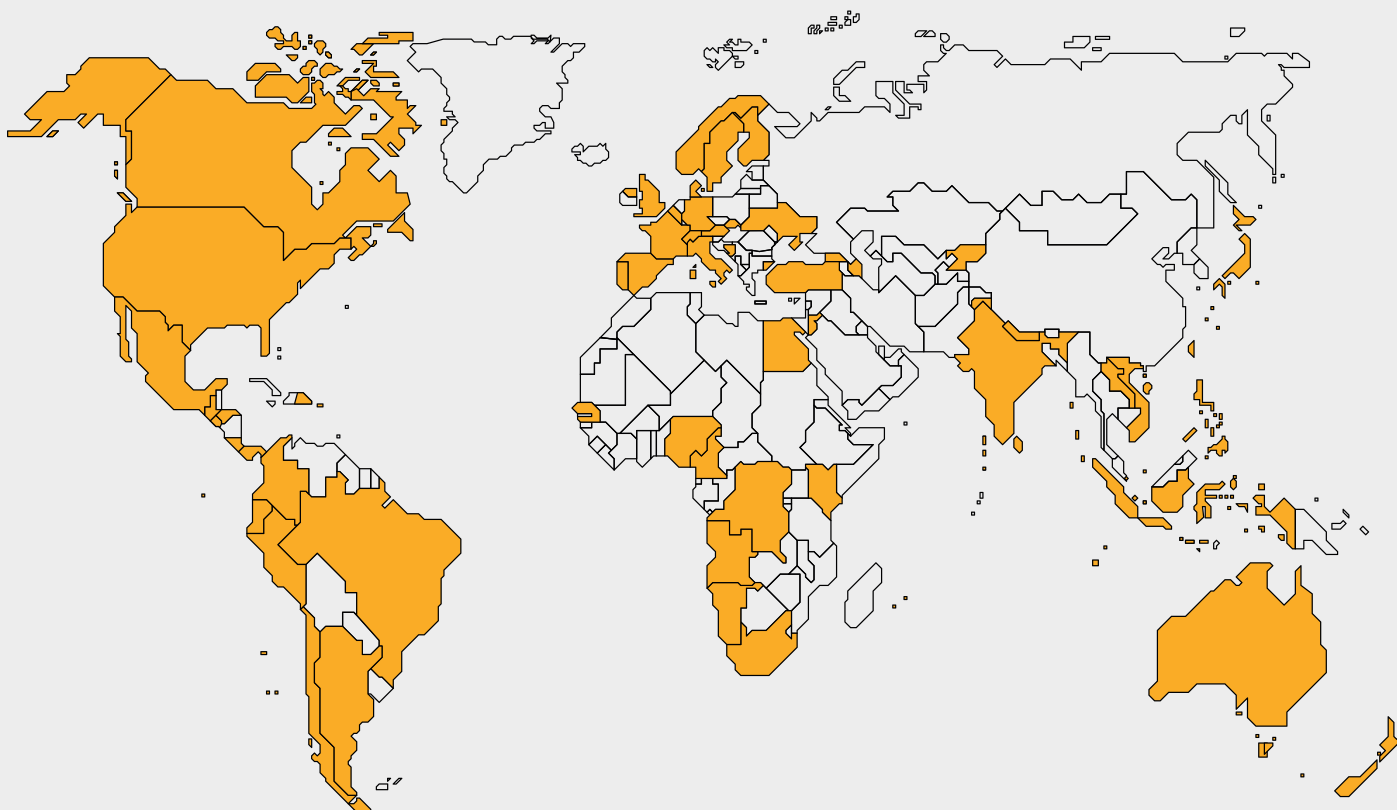
~10 GW SOLAR &
STORAGE ENERGY



+62 GW
WIND POWER



+60
COUNTRIES



Worldwide presence

Albania
Angola
Argentina
Australia
Austria
Azerbaijan
Belgium
Bosnia and
Herzegovina

Brazil
Bulgaria
Cameroun
Canada
Chile
Colombia
Costa Rica
D.R. Congo
Denmark

Denmark (Faroe
Islands)
Dominican Rep.
Ecuador
Egypt
El Salvador
Finland
France
Georgia

Germany
Guatemala
Honduras
India
Indonesia
Italy
Japan
Jordan
Kenya

Kyrgyzstan
Laos
Mexico
Namibia
Nepal
New Zealand
Nigeria
Norway
Panama

Peru
Philippines
Portugal
Rwanda
Senegal
Slovakia
South Africa
Spain
Sri Lanka

Sweden
Switzerland
Taiwan
Turkey
Ukraine
UK
USA
Vietnam



www.gamesaelectric.com

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July 2025