

APS-Q-Series

Outdoor STATCOM systems, with output power ranging from 1250 up to 5000 kvar.

The APS-Series outdoor STATCOM system is the most cost-effective solution for supplying and/or absorbing reactive power.

The APS is a turnkey solution made for the most demanding environments.

- ✓ **IP65 outdoor cabinet** – Hermetically sealed against heavy dust, sand and rain.
- ✓ **Two redundant cooling systems** ensuring energy production up to 60 °C ambient.
- ✓ **Low maintenance heat exchangers** – Automatic cleaning function of the water-to-air heat exchanger. Easy to clean air-to-air heat exchanger with no filter mats.
- ✓ Internal maintenance free **patented air dryer** to avoid condensation.
- ✓ **AC circuit breaker** built-in.
- ✓ **Modbus TCP or Real-Time Ethernet** communication interfaces.
- ✓ **Configurable hybrid system** for solar, storage applications (connect PV or batteries to different inverter modules) and STATCOM function.



APS-Q-Series

1250 ... 5000 kvar

DATASHEET - INTRODUCTION

	1 Cabinet	2 Cabinets
Cabinets options		
Number of Apparent Power Units (APU)	1 / 2	3 / 4
Rated grid voltage ($U_{N(AC)}$) options	690 V	
Maximum AC-power (S_{max}) options	1250 & 2500 kvar	3750 & 5000 kvar

APS-Q-Series models

	690 V _{AC}
1 Cabinet & 1 APU	APS 1250-Q
1 Cabinet & 2 APUs	APS 2500-Q
2 Cabinets & 3 APUs	APS 3750-Q
2 Cabinets & 4 APUs	APS 5000-Q

APS-Q-Series – 690 V_{AC}

1250 ... 5000 kvar

(I) TECHNICAL DATA

	APS 1250-Q	APS 2500-Q	APS 3750-Q	APS 5000-Q	COMMENTS
GRID SIDE					
Rated & Maximum AC-power (Q_{max})	1250 kvar	2500 kvar	3750 kvar	5000 kvar	At rated grid voltage
Number of Apparent Power Units (APU)	1	2	3	4	
Number of independent grids	1				
Rated grid voltage ($U_{N(AC)}$)	690 V				3~, phase-to-phase
Grid Voltage range	+/- 10% of $U_{N(AC)}$				
Rated grid frequency (f)	50 Hz				60 Hz option available
Network configuration	IT-grid				
Maximum AC-current per APU ($I_{max(AC), APU}$)	1050 A				
Maximum AC-current – APS ($I_{max(AC), APS}$)	1050 A	2 x 1050 A	3 x 1050 A	4 x 1050 A	
Maximum short circuit level ($I_{SC(AC), APS}$)	60 kA				
AC-current distortion (THD)	< 3 %				
GENERAL					
Control strategy	STATCOM				
Feed-in starting at ($P_{DC, th}$)	200 W	200 W	400 W	400 W	
Standby losses	80 W	90 W	140 W	150 W	
Maximum losses	20 kW	40 kW	60 kW	80 kW	Without transformer
Rated relative losses	16 kW/Mvar				Without transformer
Maximum auxiliary power	< 3500 W		< 7000 W		Excluding optional heating

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(I) GENERAL DATA

	1 Cabinet & 1 APU (model list below)	1 Cabinet & 2 APUs (model list below)	2 Cabinets & 3 APUs (model list below)	2 Cabinets & 4 APUs (model list below)	COMMENTS
Ambient working temperature	From -10°C up to 60°C (From 14°F up to 140°F)				Others on request
Ambient storage temperature	From -40°C up to 60°C (From -40°F up to 140°F)				
Storage relative humidity	< 90%				
Maximum altitude	1500 m above sea level				Without power derating
Cooling type	Forced air and water cooling				
Protection class	IP65				
Dimensions (L × W × H)	1860 × 1142 × 3645		3503 × 1142 × 3645		Dimensions in millimeters
Weight	< 1525 kg	< 2150 kg	< 3275 kg	< 3900 kg	
Shelter surface	Painted				
Corrosivity category	C4-high				Others on request
Colour	RAL7035				Others on request

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(II) GENERAL DATA

	1 Cabinet & 1 APU (model list below)	1 Cabinet & 2 APUs (model list below)	2 Cabinets & 3 APUs (model list below)	2 Cabinets & 4 APUs (model list below)	COMMENTS
EMC and security standards	IEC 61000-6-2, IEC 61000-6-4 + AMD1, IEC 62109-1, IEC 62109-2.				
CE-conformity	Complies				
Grid connection standards	IEC 62116, BDEW (Germany), PEA & MEA (Thailand), EN 50549-2 (Turkey), NEPRA (Pakistan), PO 12.3 (Spain), C10/11 (Belgium), Order 30/2013 (Romania), South African Grid Code, Chilean Grid Code, G59-3 (UK), Egyptian Grid Code, DEWA (Dubai), NEPCO (Jordan), Malaysian Grid Code, Arrêté 23-2008 (France), Italian Grid Code, CRE-3025 (Mexico), ABNT NBR 16149/16150 + NDU-015 (Brazil), Saudi Arabian Grid Code.				
Efficiency standard	IEC 61683				
UL / CSA standards	UL 1741 2nd edition (including IEEE 1547, IEEE 1547.1, SA), California Rule 21, CSA C22.2 No.107.1				To be ordered as an option
Seismic standards	IEEE 693-2005, EN60068-3-3:1993, EN 60068-2-6: 2008, EN 60068-2-47 : 2005				To be ordered as an option

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(I) FEATURES & OPTIONS – APS - STATCOM APPLICATION

	1 Cabinet & 1 APU / 1 Cabinet & 2 APUs / 2 Cabinets & 3 APUs / 2 Cabinets & 4 APUs / (model list below)	COMMENTS
IP65 outdoor cabinet made for desert installations	F	
Insulation monitor	F	
Monitored surge arresters on AC-side	F	
Status display on the shelter	F	
Air dehumidifier inside the shelter	F	
External heat exchanger for dusty/moist ambient and extreme climatic conditions	F	
Low voltage ride trough (LVRT) handling	F	
Modbus TCP communication interface	F	
Powerlink Communication Interface (Real time Ethernet)	O	
Internal datalogger	F	
Service access via VNC	F	
FTP-Server for log log data	F	

(O) – Optional (F) – Feature

APS-Q-Series models

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(II) FEATURES & OPTIONS – APS - STATCOM APPLICATION

	1 Cabinet & 1 APU / 1 Cabinet & 2 APUs / 2 Cabinets & 3 APUs / 2 Cabinets & 4 APUs / (model list below)	COMMENTS
Network Interface: fiber optic multi-mode	F	
Network Interface: fiber optic single-mode	O	
Heating	O	
Positive earthing of PV fields	O	
Negative earthing of PV fields	O	
Irradiation sensor	O	
Alternative grid voltage range (+/- xx %)	O	Only with external control voltage supply
Grid frequency 60 Hz	O	
Power limitation [kVA]	O	
Area for customer's installations (H x W X D) 400 x 500 x 200 mm	F	Including: 1-phase, 230V, TN, 1000 VA, network connection
UL certified	O	
Seismic IEEE 693 / EN 60068	O	

(O) – Optional (F) – Feature

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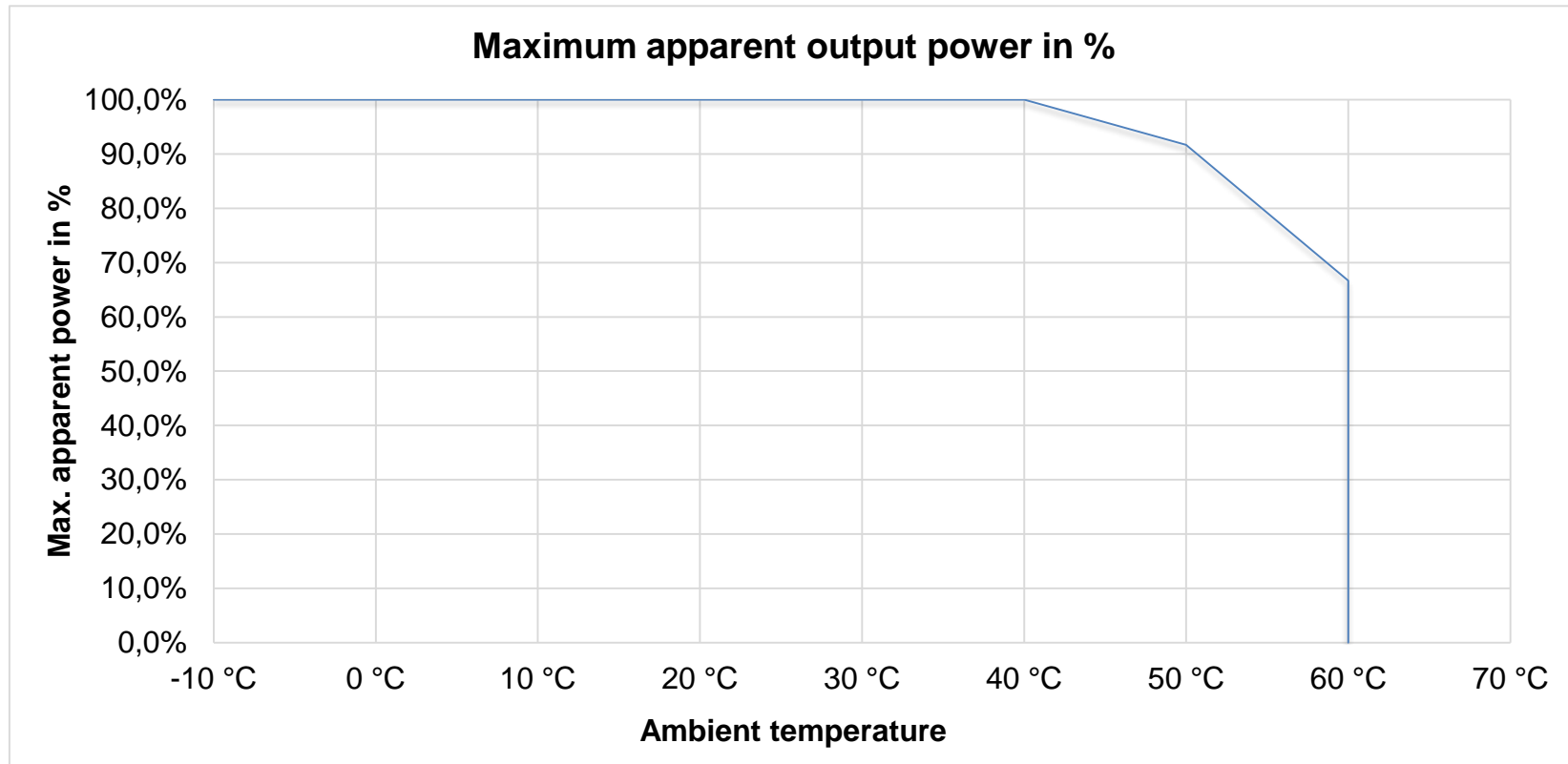
1250 ... 5000 kvar

FEATURES & OPTIONS – APU - STATCOM APPLICATION

	Apparent Power Unit (APU)	COMMENTS
AC-charge circuit	F	
Operating mode STATCOM	F	
AC circuit-breaker	F	

(O) – Optional (F) – Feature

POWER DERATING



APS-Q-Series – 690 V_{AC}

1250 ... 5000 kvar

MECHANICAL DRAWINGS

APS-Q-Series 1500 V_{DC}



APS 1250-Q / APS 2500-Q



APS 3750-Q / APS 5000-Q



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