

APS-PV-Series 1500 V_{DC}

Outdoor PV hybrid inverters, with output power ranging from 1000 kVA up to 5000 kVA.

The APS-Series 1500 V_{DC} outdoor PV central inverter is the most cost-effective solution for large scale PV installations.

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



- ✓ **Ready for 1500 V_{DC} systems** – Breakthrough technology for the newest PV installations.
- ✓ **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 dehumidifier** to avoid condensation.
- ✓ **AC circuit breaker** built-in.
- ✓ **Fuse-protected DC combiner**.
- ✓ **DC-coupling** in case of an inverter module fault.
- ✓ **Modbus TCP or Real-time Ethernet** communication interfaces.
- ✓ **Configurable hybrid system** for solar, storage applications (connect PV and batteries to different inverter modules) and STATCOM function.



APS-PV-Series 1500 V_{DC}

1000 ... 5000 kVA

DATASHEET - INTRODUCTION

Models	APS1000-PV-1-550-5 APS1045-PV-1-575-5 APS1090-PV-1-600-5 APS1140-PV-1-630-5 APS1200-PV-1-660-5 APS1250-PV-1-690-5	APS2000-PV-2-550-5 APS2090-PV-2-575-5 APS2180-PV-2-600-5 APS2280-PV-2-630-5 APS2400-PV-2-660-5 APS2500-PV-2-690-5	APS3000-PV-3-550-5 APS3135-PV-3-575-5 APS3270-PV-3-600-5 APS3420-PV-3-630-5 APS3600-PV-3-660-5 APS3750-PV-3-690-5	APS4000-PV-4-550-5 APS4180-PV-4-575-5 APS4360-PV-4-600-5 APS4560-PV-4-630-5 APS4800-PV-4-660-5 APS5000-PV-4-690-5
Cabinets options				
Number of Apparent Power Units (APU)	1	2	3	4
Nominal grid voltage ($U_{AC, nom}$) options	550 V / 575 v / 600 V / 630 V / 660 V / 690 V			
Max. AC apparent power (S_{max}) options	From 1000 kVA up to 2500 kVA		From 3000 kVA up to 5000 kVA	
Max. DC voltage ($U_{DC, max}$)	1500 V			

APS-PV-Series 1500 V_{DC} – 550 V_{AC}

1000 ... 4000 kVA

(I) TECHNICAL DATA

	APS1000-PV-1-550-5	APS2000-PV-2-550-5	APS3000-PV-3-550-5	APS4000-PV-4-550-5	COMMENTS
GRID SIDE					
Max. AC apparent power (S_{max})	1000 kVA	2000 kVA	3000 kVA	4000 kVA	At nominal grid voltage
Nominal AC power ($P_{AC, nom}$)	1000 kW	2000 kW	3000 kW	4000 kW	At ($\cos \phi$) = 1.0
Number of Apparent Power Units (APU)	1	2	3	4	
Number of independent grids	1		2		
Nominal grid voltage ($U_{AC, nom}$)	550 V				3~, phase to phase
Grid voltage range	+/- 10% of $U_{AC, nom}$				
Nominal grid frequency (f_{nom})	50 Hz				60 Hz option available
Network configuration	IT system				
Max. AC current per APU ($I_{AC, max (APU)}$)	1050 A				
Max. AC current – APS ($I_{AC, max (APS)}$)	1050 A	2 x 1050 A	3 x 1050 A	4 x 1050 A	
Max. short circuit level ($I_{AC, SC (APS)}$)	50 kA				
Short circuit contribution (I'_{κ})	1060 A	2 x 1060 A	3 x 1060 A	4 x 1060 A	Max. RMS value
Short circuit contribution (I''_{κ})	1060 A	2 x 1060 A	3 x 1060 A	4 x 1060 A	Max. RMS value
Short circuit contribution (I_p)	1560 A	2 x 1560 A	3 x 1560 A	4 x 1560 A	Max. Peak value
Power factor ($\cos \phi$)	> 0.98				At > 20% of nominal AC power
AC current distortion (THD)	< 3%				

APS-PV-Series 1500 V_{DC} – 550 V_{AC}

1000 ... 4000 kVA

(II) TECHNICAL DATA

	APS1000-PV-1-550-5	APS2000-PV-2-550-5	APS3000-PV-3-550-5	APS4000-PV-4-550-5	COMMENTS
DC SIDE					
Independent DC sources	1		2		Depending on configuration
Nominal DC voltage ($U_{DC, nom}$)	1000 V				
Max. DC voltage ($U_{DC, max}$)	1500 V				Depending on application
Min. DC voltage ($U_{DC, min}$)	722 V / 802 V / 882 V				At 90% / 100% / 110% nominal grid voltage
Max. DC current ($I_{DC, max}$)	1220 A	2 x 1220 A	3 x 1220 A	4 x 1220 A	
Max. short circuit level ($I_{DC, SC (APS)}$)	6.4 kA / 30 kA / 140 kA (max. 0.5 ms)				Without / With DC fuses / External protection required
Nominal DC power ($P_{DC, nom}$)	1016 kW	2033 kW	3049 kW	4065 kW	
Max. capacity against earthing	2000 μ F				For each IT system
Number of MPPTs	1		2		
MPP-range ($U_{DC, mpp}$)	From 722 V up to 1500 V				At nominal DC power
Max. DC power	No limit				
GENERAL					
Control strategy	MPPT				
Efficiency	(98.3 98.7 98.7 98.6 98.4) %	(98.3 98.7 98.7 98.6 98.4) %	(98.3 98.7 98.7 98.6 98.4) %	(98.3 98.7 98.7 98.6 98.4) %	At (10 30 50 75 100) % power, @ $U_{DC, nom}$
EU efficiency	98.6%				Including all inverter losses
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	
Max. auxiliary power	< 3500 W		< 7000 W		Excluding optional heating

APS-PV-Series 1500 V_{DC} – 575 V_{AC}

1045 ... 4180 kVA

(I) TECHNICAL DATA

	APS1045-PV-1-575-5	APS2090-PV-2-575-5	APS3135-PV-3-575-5	APS4180-PV-4-575-5	COMMENTS
GRID SIDE					
Max. AC apparent power (S_{max})	1045 kVA	2090 kVA	3135 kVA	4180 kVA	At nominal grid voltage
Nominal AC power ($P_{AC, nom}$)	1045 kW	2090 kW	3135 kW	4180 kW	At ($\cos \phi$) = 1.0
Number of Apparent Power Units (APU)	1	2	3	4	
Number of independent grids	1		2		
Nominal grid voltage ($U_{AC, nom}$)	575 V				3~, phase to phase
Grid voltage range	+/- 10% of $U_{AC, nom}$				
Nominal grid frequency (f_{nom})	50 Hz				60 Hz option available
Network configuration	IT system				
Max. AC current per APU ($I_{AC, max (APU)}$)	1050 A				
Max. AC current – APS ($I_{AC, max (APS)}$)	1050 A	2 x 1050 A	3 x 1050 A	4 x 1050 A	
Max. short circuit level ($I_{AC, SC (APS)}$)	50 kA				
Short circuit contribution (I'_{κ})	1060 A	2 x 1060 A	3 x 1060 A	4 x 1060 A	Max. RMS value
Short circuit contribution (I''_{κ})	1060 A	2 x 1060 A	3 x 1060 A	4 x 1060 A	Max. RMS value
Short circuit contribution (I_p)	1560 A	2 x 1560 A	3 x 1560 A	4 x 1560 A	Max. Peak value
Power factor ($\cos \phi$)	> 0.98				At > 20% of nominal AC power
AC current distortion (THD)	< 3%				

APS-PV-Series 1500 V_{DC} – 575 V_{AC}

1045 ... 4180 kVA

(II) TECHNICAL DATA

	APS1045-PV-1-575-5	APS2090-PV-2-575-5	APS3135-PV-3-575-5	APS4180-PV-4-575-5	COMMENTS
DC SIDE					
Independent DC sources	1			2	Depending on configuration
Nominal DC voltage ($U_{DC, nom}$)	1000 V				
Max. DC voltage ($U_{DC, max}$)	1500 V				Depending on application
Min. DC voltage ($U_{DC, min}$)	754 V / 838 V / 922 V				At 90% / 100% / 110% nominal grid voltage
Max. DC current ($I_{DC, max}$)	1220 A	2 x 1220 A	3 x 1220 A	4 x 1220 A	
Max. short circuit level ($I_{DC, SC (APS)}$)	6.4 kA / 30 kA / 140 kA (max. 0.5 ms)				Without / With DC fuses / External protection required
Nominal DC power ($P_{DC, nom}$)	1062 kW	2124 kW	3186 kW	4248 kW	
Max. capacity against earthing	2000 μ F				For each IT system
Number of MPPTs	1			2	
MPP-range ($U_{DC, mpp}$)	From 754 V up to 1500 V				At nominal DC power
Max. DC power	No limit				
GENERAL					
Control strategy	MPPT				
Efficiency	(98.3 98.8 98.8 98.6 98.5) %	(98.3 98.8 98.8 98.6 98.5) %	(98.3 98.8 98.8 98.6 98.5) %	(98.3 98.8 98.8 98.6 98.5) %	At (10 30 50 75 100) % power, @ $U_{DC, nom}$
EU efficiency	98.7%				Including all inverter losses
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	
Max. auxiliary power	< 3500 W		< 7000 W		Excluding optional heating

APS-PV-Series 1500 V_{DC} – 600 V_{AC}

1090 ... 4360 kVA

(I) TECHNICAL DATA

	APS1090-PV-1-600-5	APS2180-PV-2-600-5	APS3270-PV-3-600-5	APS4360-PV-4-600-5	COMMENTS
GRID SIDE					
Max. AC apparent power (S_{max})	1090 kVA	2180 kVA	3270 kVA	4360 kVA	At nominal grid voltage
Nominal AC power ($P_{AC, nom}$)	1090 kW	2180 kW	3270 kW	4360 kW	At ($\cos \phi$) = 1.0
Number of Apparent Power Units (APU)	1	2	3	4	
Number of independent grids	1		2		
Nominal grid voltage ($U_{AC, nom}$)	600 V				3~, phase to phase
Grid voltage range	+/- 10% of $U_{AC, nom}$				
Nominal grid frequency (f_{nom})	50 Hz				60 Hz option available
Network configuration	IT system				
Max. AC current per APU ($I_{AC, max (APU)}$)	1050 A				
Max. AC current – APS ($I_{AC, max (APS)}$)	1050 A	2 x 1050 A	3 x 1050 A	4 x 1050 A	
Max. short circuit level ($I_{AC, SC (APS)}$)	50 kA				
Short circuit contribution (I'_{κ})	1060 A	2 x 1060 A	3 x 1060 A	4 x 1060 A	Max. RMS value
Short circuit contribution (I''_{κ})	1060 A	2 x 1060 A	3 x 1060 A	4 x 1060 A	Max. RMS value
Short circuit contribution (I_p)	1560 A	2 x 1560 A	3 x 1560 A	4 x 1560 A	Max. Peak value
Power factor ($\cos \phi$)	> 0.98				At > 20% of nominal AC power
AC current distortion (THD)	< 3%				

APS-PV-Series 1500 V_{DC} – 600 V_{AC}

1090 ... 4360 kVA

(II) TECHNICAL DATA

	APS1090-PV-1-600-5	APS2180-PV-2-600-5	APS3270-PV-3-600-5	APS4360-PV-4-600-5	COMMENTS
DC SIDE					
Independent DC sources	1		2		Depending on configuration
Nominal DC voltage ($U_{DC, nom}$)	1000 V				
Max. DC voltage ($U_{DC, max}$)	1500 V				Depending on application
Min. DC voltage ($U_{DC, min}$)	787 V / 875 V / 962 V				At 90% / 100% / 110% nominal grid voltage
Max. DC current ($I_{DC, max}$)	1220 A	2 x 1220 A	3 x 1220 A	4 x 1220 A	
Max. short circuit level ($I_{DC, SC (APS)}$)	6.4 kA / 30 kA / 140 kA (max. 0.5 ms)				Without / With DC fuses / External protection required
Nominal DC power ($P_{DC, nom}$)	1108 kW	2215 kW	3323 kW	4431 kW	
Max. capacity against earthing	2000 μ F				For each IT system
Number of MPPTs	1		2		
MPP-range ($U_{DC, mpp}$)	From 787 V up to 1500 V				At nominal DC power
Max. DC power	No limit				
GENERAL					
Control strategy	MPPT				
Efficiency	(98.4 98.9 98.8 98.7 98.5) %	(98.4 98.9 98.8 98.7 98.5) %	(98.4 98.9 98.8 98.7 98.5) %	(98.4 98.9 98.8 98.7 98.5) %	At (10 30 50 75 100) % power, @ $U_{DC, nom}$
EU efficiency	98.7%				Including all inverter losses
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	
Max. auxiliary power	< 3500 W		< 7000 W		Excluding optional heating

APS-PV-Series 1500 V_{DC} – 630 V_{AC}

1140 ... 4560 kVA

(I) TECHNICAL DATA

	APS1140-PV-1-630-5	APS2280-PV-2-630-5	APS3420-PV-3-630-5	APS4560-PV-4-630-5	COMMENTS
GRID SIDE					
Max. AC apparent power (S_{max})	1140 kVA	2280 kVA	3420 kVA	4560 kVA	At nominal grid voltage
Nominal AC power ($P_{AC, nom}$)	1140 kW	2280 kW	3420 kW	4560 kW	At ($\cos \phi$) = 1.0
Number of Apparent Power Units (APU)	1	2	3	4	
Number of independent grids	1		2		
Nominal grid voltage ($U_{AC, nom}$)	630 V				3~, phase to phase
Grid voltage range	+/- 10% $U_{AC, nom}$				
Nominal grid frequency (f_{nom})	50 Hz				60 Hz option available
Network configuration	IT system				
Max. AC current per APU ($I_{AC, max (APU)}$)	1050 A				
Max. AC current – APS ($I_{AC, max (APS)}$)	1050 A	2 x 1050 A	3 x 1050 A	4 x 1050 A	
Max. short circuit level ($I_{AC, SC (APS)}$)	50 kA				
Short circuit contribution (I'_{κ})	1060 A	2 x 1060 A	3 x 1060 A	4 x 1060 A	Max. RMS value
Short circuit contribution (I''_{κ})	1060 A	2 x 1060 A	3 x 1060 A	4 x 1060 A	Max. RMS value
Short circuit contribution (I_p)	1560 A	2 x 1560 A	3 x 1560 A	4 x 1560 A	Max. Peak value
Power factor ($\cos \phi$)	> 0.98				At > 20% of nominal AC power
AC current distortion (THD)	< 3%				

APS-PV-Series 1500 V_{DC} – 630 V_{AC}

1140 ... 4560 kVA

(II) TECHNICAL DATA

	APS1140-PV-1-630-5	APS2280-PV-2-630-5	APS3420-PV-3-630-5	APS4560-PV-4-630-5	COMMENTS
DC SIDE					
Independent DC sources	1		2		Depending on configuration
Nominal DC voltage ($U_{DC, nom}$)	1000 V				
Max. DC voltage ($U_{DC, max}$)	1500 V				Depending on application
Min. DC voltage ($U_{DC, min}$)	827 V / 919 V / 1010 V				At 90% / 100% / 110% nominal grid voltage
Max. DC current ($I_{DC, max}$)	1220 A	2 x 1220 A	3 x 1220 A	4 x 1220 A	
Max. short circuit level ($I_{DC, SC (APS)}$)	6.4 kA / 30 kA / 140 kA (max. 0.5 ms)				Without / With DC fuses / External protection required
Nominal DC power ($P_{DC, nom}$)	1159 kW	2317 kW	3476 kW	4634 kW	
Max. capacity against earthing	2000 μ F				For each IT system
Number of MPPTs	1		2		
MPP-range ($U_{DC, mpp}$)	From 827 V up to 1500 V				At nominal DC power
Max. DC power	No limit				
GENERAL					
Control strategy	MPPT				
Efficiency	(98.4 98.9 98.9 98.8 98.6) %	(98.4 98.9 98.9 98.8 98.6) %	(98.4 98.9 98.9 98.8 98.6) %	(98.4 98.9 98.9 98.8 98.6) %	At (10 30 50 75 100) % power, @ $U_{DC, nom}$
EU efficiency	98.8%				Including all inverter losses
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	
Max. auxiliary power	< 3500 W		< 7000 W		Excluding optional heating

APS-PV-Series 1500 V_{DC} – 660 V_{AC}

1200 ... 4800 kVA

(I) TECHNICAL DATA

	APS1200-PV-1-660-5	APS2400-PV-2-660-5	APS3600-PV-3-660-5	APS4800-PV-4-660-5	COMMENTS
GRID SIDE					
Max. AC apparent power (S_{max})	1200 kVA	2400 kVA	3600 kVA	4800 kVA	At nominal grid voltage
Nominal AC power ($P_{AC, nom}$)	1200 kW	2400 kW	3600 kW	4800 kW	At ($\cos \phi$) = 1.0
Number of Apparent Power Units (APU)	1	2	3	4	
Number of independent grids	1		2		
Nominal grid voltage ($U_{AC, nom}$)	660 V				3~, phase to phase
Grid voltage range	+/- 10% of $U_{AC, nom}$				
Nominal grid frequency (f_{nom})	50 Hz				60 Hz option available
Network configuration	IT system				
Max. AC current per APU ($I_{AC, max (APU)}$)	1050 A				
Max. AC current – APS ($I_{AC, max (APS)}$)	1050 A	2 x 1050 A	3 x 1050 A	4 x 1050 A	
Max. short circuit level ($I_{AC, SC (APS)}$)	50 kA				
Short circuit contribution (I'_{κ})	1060 A	2 x 1060 A	3 x 1060 A	4 x 1060 A	Max. RMS value
Short circuit contribution (I''_{κ})	1060 A	2 x 1060 A	3 x 1060 A	4 x 1060 A	Max. RMS value
Short circuit contribution (I_p)	1560 A	2 x 1560 A	3 x 1560 A	4 x 1560 A	Max. Peak value
Power factor ($\cos \phi$)	> 0.98				At > 20% of nominal AC power
AC current distortion (THD)	< 3%				

APS-PV-Series 1500 V_{DC} – 660 V_{AC}

1200 ... 4800 kVA

(II) TECHNICAL DATA

	APS1200-PV-1-660-5	APS2400-PV-2-660-5	APS3600-PV-3-660-5	APS4800-PV-4-660-5	COMMENTS
DC SIDE					
Independent DC sources	1		2		Depending on configuration
Nominal DC voltage ($U_{DC, nom}$)	1100 V				
Max. DC voltage ($U_{DC, max}$)	1500 V				Depending on application
Min. DC voltage ($U_{DC, min}$)	866 V / 962 V / 1058 V				At 90% / 100% / 110% nominal grid voltage
Max. DC current ($I_{DC, max}$)	1220 A	2 x 1220 A	3 x 1220 A	4 x 1220 A	
Max. short circuit level ($I_{DC, SC (APS)}$)	6.4 kA / 30 kA / 140 kA (max. 0.5 ms)				Without / With DC fuses / External protection required
Nominal DC power ($P_{DC, nom}$)	1220 kW	2439 kW	3659 kW	4878 kW	
Max. capacity against earthing	2000 μ F				For each IT system
Number of MPPTs	1		2		
MPP-range ($U_{DC, mpp}$)	From 866 V up to 1500 V				At nominal DC power
Max. DC power	No limit				
GENERAL					
Control strategy	MPPT				
Efficiency	(98.5 98.9 98.9 98.8 98.6) %	(98.5 98.9 98.9 98.8 98.6) %	(98.5 98.9 98.9 98.8 98.6) %	(98.5 98.9 98.9 98.8 98.6) %	At (10 30 50 75 100) % power, @ $U_{DC, nom}$
EU efficiency	98.8%				Including all inverter losses
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	
Max. auxiliary power	< 3500 W		< 7000 W		Excluding optional heating

APS-PV-Series 1500 V_{DC} – 690 V_{AC}

1250 ... 5000 kVA

(I) TECHNICAL DATA

	APS1250-PV-1-690-5	APS2500-PV-2-690-5	APS3750-PV-3-690-5	APS5000-PV-4-690-5	COMMENTS
GRID SIDE					
Max. AC apparent power (S_{max})	1250 kVA	2500 kVA	3750 kVA	5000 kVA	At nominal grid voltage
Nominal AC power ($P_{AC, nom}$)	1250 kW	2500 kW	3750 kW	5000 kW	At ($\cos \phi$) = 1.0
Number of Apparent Power Units (APU)	1	2	3	4	
Number of independent grids	1		2		
Nominal grid voltage ($U_{AC, nom}$)	690 V				3~, phase to phase
Grid voltage range	+/- 10% of $U_{AC, nom}$				
Nominal grid frequency (f_{nom})	50 Hz				60 Hz option available
Network configuration	IT system				
Max. AC current per APU ($I_{AC, max (APU)}$)	1050 A				
Max. AC current – APS ($I_{AC, max (APS)}$)	1050 A	2 x 1050 A	3 x 1050 A	4 x 1050 A	
Max. short circuit level ($I_{AC, SC (APS)}$)	50 kA				
Short circuit contribution (I'_{κ})	1060 A	2 x 1060 A	3 x 1060 A	4 x 1060 A	Max. RMS value
Short circuit contribution (I''_{κ})	1060 A	2 x 1060 A	3 x 1060 A	4 x 1060 A	Max. RMS value
Short circuit contribution (I_p)	1560 A	2 x 1560 A	3 x 1560 A	4 x 1560 A	Max. Peak value
Power factor ($\cos \phi$)	> 0.98				At > 20% of nominal AC power
AC current distortion (THD)	< 3%				

APS-PV-Series 1500 V_{DC} – 690 V_{AC}

1250 ... 5000 kVA

(II) TECHNICAL DATA

	APS1250-PV-1-690-5	APS2500-PV-2-690-5	APS3750-PV-3-690-5	APS5000-PV-4-690-5	COMMENTS
DC SIDE					
Independent DC sources	1		2		Depending on configuration
Nominal DC voltage ($U_{DC, nom}$)	1100 V				
Max. DC voltage ($U_{DC, max}$)	1500 V				Depending on application
Min. DC voltage ($U_{DC, min}$)	905 V / 1006 V / 1107 V				At 90% / 100% / 110% nominal grid voltage
Max. DC current ($I_{DC, max}$)	1220 A	2 x 1220 A	3 x 1220 A	4 x 1220 A	
Max. short circuit level ($I_{DC, SC (APS)}$)	6.4 kA / 30 kA / 140 kA (max. 0.5 ms)				Without / With DC fuses / External protection required
Nominal DC power ($P_{DC, nom}$)	1220 kW	2439 kW	3659 kW	4878 kW	
Max. capacity against earthing	2000 μ F				For each IT system
Number of MPPTs	1		2		
MPP-range ($U_{DC, mpp}$)	From 905 V up to 1500 V				At nominal DC power
Max. DC power	No limit				
GENERAL					
Control strategy	MPPT				
Efficiency	(98.5 99.0 98.9 98.8 98.7) %	(98.5 99.0 98.9 98.8 98.7) %	(98.5 99.0 98.9 98.8 98.7) %	(98.5 99.0 98.9 98.8 98.7) %	At (10 30 50 75 100) % power, @ $U_{DC, nom}$
EU efficiency	98.8%				Including all inverter losses
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	
Max. auxiliary power	< 3500 W		< 7000 W		Excluding optional heating

APS-PV-Series 1500 V_{DC} – 550 ... 690 V_{AC}

1000 ... 5000 kVA

(III) TECHNICAL DATA

	APS1000-PV-1-550-5	APS2000-PV-2-550-5	APS3000-PV-3-550-5	APS4000-PV-4-550-5	COMMENTS
	APS1045-PV-1-575-5	APS2090-PV-2-575-5	APS3135-PV-3-575-5	APS4180-PV-4-575-5	
	APS1090-PV-1-600-5	APS2180-PV-2-600-5	APS3270-PV-3-600-5	APS4360-PV-4-600-5	
	APS1140-PV-1-630-5	APS2280-PV-2-630-5	APS3420-PV-3-630-5	APS4560-PV-4-630-5	
	APS1200-PV-1-660-5	APS2400-PV-2-660-5	APS3600-PV-3-660-5	APS4800-PV-4-660-5	
	APS1250-PV-1-690-5	APS2500-PV-2-690-5	APS3750-PV-3-690-5	APS5000-PV-4-690-5	
AUXILIARY SUPPLY (EXTERNAL)					
Nominal grid voltage ($U_{AC, nom (aux)}$)	400 V				3~, phase to phase
Grid voltage range	+/- 10% of $U_{AC, nom (aux)}$				
Nominal grid frequency ($f_{nom (aux)}$)	50 Hz				
Network configuration	TN-S system				
Max. AC current ($I_{AC, (aux)}$)	3 x K16A				
Max. short circuit level ($I_{AC, SC (APS)}$)	6 kA				
Internal buffer time	4.0 s				Only for control supply available

APS-PV-Series 1500 V_{DC} – 550 ... 690 V_{AC}

1000 ... 5000 kVA

(I) GENERAL DATA

	APS1000-PV-1-550-5	APS2000-PV-2-550-5	APS3000-PV-3-550-5	APS4000-PV-4-550-5	COMMENTS
	APS1045-PV-1-575-5	APS2090-PV-2-575-5	APS3135-PV-3-575-5	APS4180-PV-4-575-5	
	APS1090-PV-1-600-5	APS2180-PV-2-600-5	APS3270-PV-3-600-5	APS4360-PV-4-600-5	
	APS1140-PV-1-630-5	APS2280-PV-2-630-5	APS3420-PV-3-630-5	APS4560-PV-4-630-5	
	APS1200-PV-1-660-5	APS2400-PV-2-660-5	APS3600-PV-3-660-5	APS4800-PV-4-660-5	
	APS1250-PV-1-690-5	APS2500-PV-2-690-5	APS3750-PV-3-690-5	APS5000-PV-4-690-5	
PARAMETER					
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)	1950 × 1170 × 3740		3510 × 1170 × 3740		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

APS-PV-Series 1500 V_{DC} – 550 ... 690 V_{AC}

1000 ... 5000 kVA

(II) GENERAL DATA

	APS1000-PV-1-550-5	APS2000-PV-2-550-5	APS3000-PV-3-550-5	APS4000-PV-4-550-5	COMMENTS
	APS1045-PV-1-575-5	APS2090-PV-2-575-5	APS3135-PV-3-575-5	APS4180-PV-4-575-5	
	APS1090-PV-1-600-5	APS2180-PV-2-600-5	APS3270-PV-3-600-5	APS4360-PV-4-600-5	
	APS1140-PV-1-630-5	APS2280-PV-2-630-5	APS3420-PV-3-630-5	APS4560-PV-4-630-5	
	APS1200-PV-1-660-5	APS2400-PV-2-660-5	APS3600-PV-3-660-5	APS4800-PV-4-660-5	
	APS1250-PV-1-690-5	APS2500-PV-2-690-5	APS3750-PV-3-690-5	APS5000-PV-4-690-5	
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

APS-PV-Series 1500 V_{DC} – 550 ... 690 V_{AC}

1000 ... 5000 kVA

(I) FEATURES & OPTIONS – APS - PV APPLICATION

	APS1000-PV-1-550-5	APS2000-PV-2-550-5	APS3000-PV-3-550-5	APS4000-PV-4-550-5	COMMENTS
	APS1045-PV-1-575-5	APS2090-PV-2-575-5	APS3135-PV-3-575-5	APS4180-PV-4-575-5	
	APS1090-PV-1-600-5	APS2180-PV-2-600-5	APS3270-PV-3-600-5	APS4360-PV-4-600-5	
	APS1140-PV-1-630-5	APS2280-PV-2-630-5	APS3420-PV-3-630-5	APS4560-PV-4-630-5	
	APS1200-PV-1-660-5	APS2400-PV-2-660-5	APS3600-PV-3-660-5	APS4800-PV-4-660-5	
	APS1250-PV-1-690-5	APS2500-PV-2-690-5	APS3750-PV-3-690-5	APS5000-PV-4-690-5	
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 data logger			F		
Service access via VNC			F		
FTP server for log log data			F		

(O) – Optional (F) – Feature

APS-PV-Series 1500 V_{DC} – 550 ... 690 V_{AC}

1000 ... 5000 kVA

(II) FEATURES & OPTIONS – APS - PV APPLICATION

	APS1000-PV-1-550-5	APS2000-PV-2-550-5	APS3000-PV-3-550-5	APS4000-PV-4-550-5	COMMENTS
	APS1045-PV-1-575-5	APS2090-PV-2-575-5	APS3135-PV-3-575-5	APS4180-PV-4-575-5	
	APS1090-PV-1-600-5	APS2180-PV-2-600-5	APS3270-PV-3-600-5	APS4360-PV-4-600-5	
	APS1140-PV-1-630-5	APS2280-PV-2-630-5	APS3420-PV-3-630-5	APS4560-PV-4-630-5	
	APS1200-PV-1-660-5	APS2400-PV-2-660-5	APS3600-PV-3-660-5	APS4800-PV-4-660-5	
	APS1250-PV-1-690-5	APS2500-PV-2-690-5	APS3750-PV-3-690-5	APS5000-PV-4-690-5	
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		
Additional auxiliary output			O *		No transformer: fuse-protected output at APU 3/4 with 25 A (3~, PE)
			O *		With transformer: with internal 8 kVA transformer (3~, N, PE)

(O) – Optional (F) – Feature (*) – Only one option possible

APS-PV-Series 1500 V_{DC} – 550 ... 690 V_{AC}

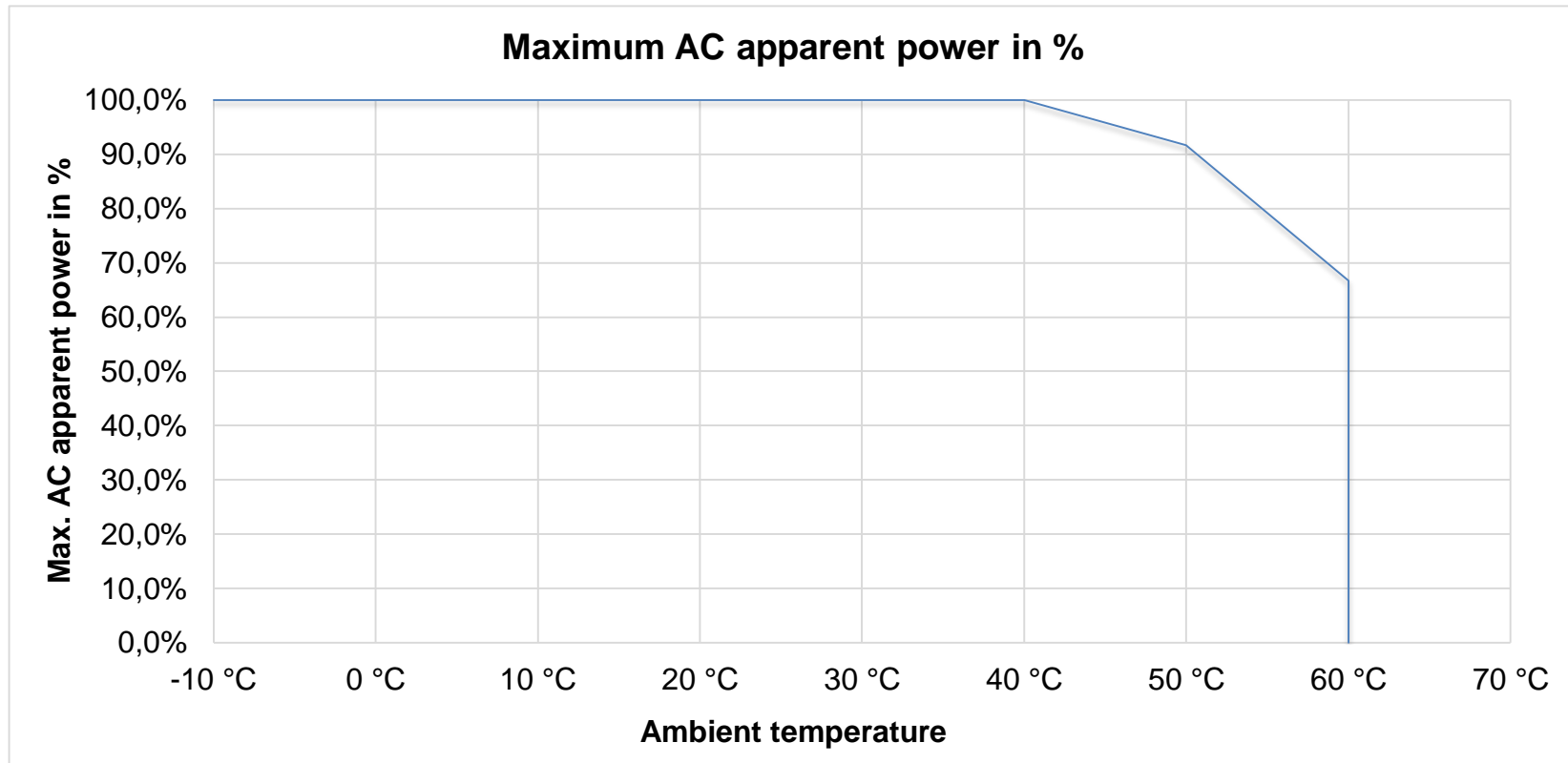
1000 ... 5000 kVA

FEATURES & OPTIONS – APU - PV APPLICATION

	APS1000-PV-1-550-5	APS2000-PV-2-550-5	APS3000-PV-3-550-5	APS4000-PV-4-550-5	COMMENTS
	APS1045-PV-1-575-5	APS2090-PV-2-575-5	APS3135-PV-3-575-5	APS4180-PV-4-575-5	
	APS1090-PV-1-600-5	APS2180-PV-2-600-5	APS3270-PV-3-600-5	APS4360-PV-4-600-5	
	APS1140-PV-1-630-5	APS2280-PV-2-630-5	APS3420-PV-3-630-5	APS4560-PV-4-630-5	
	APS1200-PV-1-660-5	APS2400-PV-2-660-5	APS3600-PV-3-660-5	APS4800-PV-4-660-5	
	APS1250-PV-1-690-5	APS2500-PV-2-690-5	APS3750-PV-3-690-5	APS5000-PV-4-690-5	
DC-charge circuit					- / F
AC-charge circuit					O
Operating mode CC-CV					-
Operating mode STATCOM					O
Operating mode MPPT					F
Fuse protected DC Inputs U2XL-1IGZ/1500/H XXXA					O (1 up to 8)
Fuse protected DC Inputs U3L-1IGZ/1500/H XXXA					O (1 up to 7)
DC-current monitoring					O
DC disconnector					F
Monitored surge arresters on DC-side					F
AC circuit-breaker					F
DC coupling					F
Insulation monitoring – positive grounding					O
Insulation monitoring – negative grounding					O

(O) – Optional (F) – Feature (-) – Not available

POWER DERATING



APS-PV-Series 1500 V_{DC} – 550 ... 690 V_{AC}

1000 ... 5000 kVA

MECHANICAL DRAWINGS

Models

APS1000-PV-1-550-5
APS1045-PV-1-575-5
APS1090-PV-1-600-5
APS1140-PV-1-630-5
APS1200-PV-1-660-5
APS1250-PV-1-690-5

APS2000-PV-2-550-5
APS2090-PV-2-575-5
APS2180-PV-2-600-5
APS2280-PV-2-630-5
APS2400-PV-2-660-5
APS2500-PV-2-690-5

APS3000-PV-3-550-5
APS3135-PV-3-575-5
APS3270-PV-3-600-5
APS3420-PV-3-630-5
APS3600-PV-3-660-5
APS3750-PV-3-690-5

APS4000-PV-4-550-5
APS4180-PV-4-575-5
APS4360-PV-4-600-5
APS4560-PV-4-630-5
APS4800-PV-4-660-5
APS5000-PV-4-690-5



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