

SmartPV APIS International

APIS1200-INT / APIS1500-INT / APIS1750-INT

Extended Range to meet all the requirements

APIS INT-i20



Mechanical characteristics	
Inverter Power Module dimensions (H / W / D)	2100 x 2000 x 780 mm / 82,67 x 78,74 x 30,70 in
Container dimensions (H / W / D)	2900 x 6000 X 2440 mm / 8' x 20' x 9'6"
Weight	8396 kg / 18510 lbs
Maximum fresh air consumption	8000 (2 x 4000) m ³ /h
Environment rating	NEMA 3R, IP54
Medium Voltage Stage	
Transformer	Pad Mounted / Oil -Outdoor
Protections	2 x GP Tech GPDM -I



A complete set of integration options

APIS INT-i40



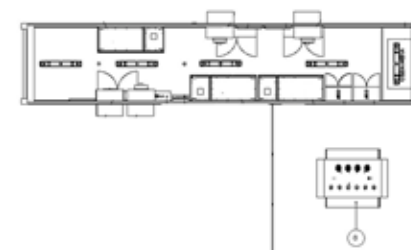
Mechanical characteristics	
Inverter Power Module dimensions (H / W / D)	2100 x 2000 x 780 mm / 82,67 x 78,74 x 30,70 in
Container dimensions (H / W / D)	2900 x 12000 X 2440 mm / 8' x 40' x 9'6"
Weight	17530 kg / 38647 lbs
Maximum fresh air consumption	8000 (2 x 4000) m ³ /h
Environment rating	NEMA 3R, IP54
Medium Voltage Stage	
Transformer	Pad Mounted / Oil -Outdoor
Protections	up to 4 x GP Tech GPDM -I



APIS INT-skd



Mechanical characteristics	
Inverter Power Module dimensions (H / W / D)	2300 x 2000 x 845 mm / 90,55 x 78,74 x 30,70 in
Inverter Disconnection Module dimensions (H / W / D)	2162 x 1100 x 750 mm / 85,12 x 43,3 x 29,52 in
Skid dimensions (H / W / D)	2522 X 9000 x 2100 mm / 99,3 x 354,4 x 82,7 in
Weight	12000 kg / 26455 lbs
Maximum fresh air consumption	12000 (2 x 6000) m ³ /h
Environment rating	NEMA 3R, IP54
Medium Voltage Stage	
Transformer	Pad Mounted / Oil -Outdoor
Protections	2 x GP Tech GPDM -O



	APIS 1200-INT	APIS 1500-INT	APIS 1700-INT
DC Input			
Voltage range (MPPT)	375 - 825 Vdc	455 - 825	525 - 825 Vdc
Maximum DC voltage	1000 Vdc		
Maximum input current	3800 A		
Fused DC inputs (optional external box)	2 0-40 (2x10 - 2x20)		
Number of MPPT inputs	2		
AC Output			
Rated AC power @ 50°C ²	1120 kVA	1400 kVA	1660 kVA
Rated AC power @ 35°C ²	1200 kVA	1500 kVA	1780 kVA
Nominal AC voltage	Customizable. Standard voltages: 11kV; 13. kV; 15 kV; 20 kV; 22.9 kV;33 kV;34.5 kV		
Transformers taps	Customizable. Standards ±2.5%,±5%		
Transformer Vector Group	Customizable. Standards. Ynd11d11; Dy11y11		
Frequency rated	50/60 Hz		
Frequency operation range	47 - 63 Hz		
Power Factor at rated power	Full range adjustable		
Cooling type	ONAN/KNAN		
Output MV Maneuver	T-Blade. Bayonet fuses.		
Efficiency			
Maximum European efficiency ³	97.01%	97.16%	97.23%
Maximum CEC efficiency ³	97.14%	97.30%	97.38%
Internal consumption at night (Inv. / MV transformer) (W) ⁴	<=400 (2 x 200) W / <2400 W	<=400 (2 x 200) W / <3000 W	<=400 (2 x 200) W / <3400 W
Internal consumption in operation (Inv. / APIS Aux. services) (W) ⁵	<= 6000 (2 x 3000) W / <2100 W		
Ambient Conditions			
Operation temperature	-40F/140oF (-20oC/55oC)		
Operation ambient temperature (without derating)	-40F/113oF (-20oC/45oC)		
Storage and transport temperature	-22oF/149oF (-30oC/65oC)		
Maximum relative humidity	95% without condensation		
Maximum altitude above the sea level	3000 m		
AC Protections			
Inverter output AC overvoltage protection	Yes		
Anti-islanding	Yes		
Grid voltage variations	Yes		
Frequency failures	Yes		
Asymmetric currents	Yes		
Low Voltage Ride Through (LVRT) Capability	Yes		
DC Protections			
DC overvoltage protection	Yes		
Inverter shutting down on overload error	Yes		
PV-field isolation detector	Yes		
Panel Disconnection Capability	Yes. DC Contactor		
Other Protections			
Breaker protections of auxiliary systems	Yes		
Auxiliary systems overvoltage protection	Yes		
Power Control Features			
Reactive control by external signal	Yes		
Reactive control by internal configuration	Yes. Timetable PF configuration or voltage dependent function		
Reactive injection in LVRT	Yes. Three different operation modes		
Over frequency active power response	Yes		
Ramp rate control	Yes. Under irradiance value restriction		
External power limitation	Yes. Control allows continuous limit values		
APIS Controller	Optional. See specifications		
Interfaces			
Touch-HMI	Yes		
MODBUS RTU communication protocol	Yes		
Field bus connection with RS485	Yes		
Remote monitoring system, with GSM/GPRS modem	Optional		
Legal standards			
NEC 2011	Yes		
United States - UL 1741 Listing Mark ⁶	Yes, Certification in process		
Canada - cUL Listing Mark ⁶	Yes, Certification in process		
IEEE 1547 ⁶	Yes, Certification in process		
CSI/CEC Performance Testing (California) ⁶	Yes, Certification in process		
IEC 62109-1, IEC 62109-2	Yes		

Notes

1. Estimated. Customized MV transformer configuration
2. At VAC, nom and $\cos\phi=1$
3. Inverter self-consumption is not considered in the efficiency measurement. Medium voltage transformer is not considered in the efficiency measurement (Typical transformer efficiency > 99%)
4. Self-consumption at rated operation
5. Self-consumption in inverters is not considered in the efficiency measurement. reference transformer values: 33kV/240-300-355-430V
6. For UL certification, please, consult special sales conditions

	APIS 1900-INT	APIS 2200-INT	APIS 3300-INT	APIS 4400-INT
DC Input				
Voltage range (MPPT)	525 - 825 Vdc	580 - 825 Vdc	580 - 825 Vdc	580 - 825 Vdc
Maximum DC voltage	1000 Vdc			
Maximum input current	3800 A		5700 A	7600 A
Fused DC inputs (optional external box)	2 0-40 (2x10 - 2x20)		30-60 (3x10 - 3x20)	40-80 (4x10 - 4x20)
Number of MPPT inputs	2		3	4
AC Output				
Rated AC power @ 50°C ²	1780 kVA	2010 kVA	3015 kVA	4020 kVA
Rated AC power @ 35°C ²	1900 kVA	2150 kVA	3225 kVA	4300 kVA
Nominal AC voltage	Customizable. Standard voltages: 11kV; 13. kV; 15 kV; 20 kV; 22.9 kV;33 kV;34.5 kV			
Transformers taps	Customizable. Standards ±2.5%,±5%			
Transformer Vector Group	Customizable. Standards. Ynd11d11; Dy11y11			
Frequency rated	50/60 Hz			
Frequency operation range	47 - 63 Hz			
Power Factor at rated power	Full range adjustable			
Cooling type	ONAN/KNAN			
Output MV Maneuver	T-Blade. Bayonet fuses.			
Efficiency				
Maximum European efficiency ³	97.23%	97.30%	98.45%	98.45%
Maximum CEC efficiency ³	97.38%	97.50%	98.49	98.49
Internal consumption at night (Inv. / MV transformer) (W) ⁴	<=400 (2 x 200) W / <3800 W	<=400 (2 x 200) W / <4400W	<=600 (3 x 200) W / <5000W	<=800 (4 x 200) W / <5600W
Internal consumption in operation (Inv. / APIS Aux. services) (W) ⁵	<= 6000 (2 x 3000) W / <2100 W		<= 9000 (3 x 3000) W / <2100W	<= 12000 (4 x 3000)W / <2100W
Ambient Conditions				
Operation temperature	-40F/140oF (-20oC/55oC)			
Operation ambient temperature (without derating)	-40F/113oF (-20oC/45oC)			
Storage and transport temperature	-22oF/149oF (-30oC/65oC)			
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