

SOLAR INVERTERS

Off Grid - Inverters



SAKO is ideal solution for off grid hybrid inverters. SAKO range has different type of solar inverters use for off grid solar systems install in domestic & commercial installations.

We can supply any model of SAKO solar inverters on request.

SAKO - China **SAKO**[®]

Ordering Information

Order No	Model No	Product	Watt	Phase	Voltage
297100	SUNON - PRO - 3.5kW/24V	Off Grid Inverter - Hybrid	3.5kW	1Phase	24V
297101	SUNON - PRO - 5.5kW/48V	Off Grid Inverter - Hybrid	5.5kW	1Phase	48V

Technical Specifications



IT CAN WORK WITH OR WITHOUT BATTERY

Model	SUNON PRO 3.5K	SUNON PRO 5.5K
The rated power	3500VA/3500W	5500VA/5500W
INPUT		
Voltage	230 VAC	
Selectable Voltage Range	170-280VAC(UPS), 90-280VAC(Appliances)	
Frequency Range	50Hz/60Hz (Auto sensing)	
OUTPUT		
AC Voltage Regulation (Batt. Model)	230VAC ± 5%	
Surge Power	7000VA	11000VA
Efficiency(Peak)	> 90%	
Transfer Time	10MS(UPS),20MS(Appliances)	
Wave form	Pure sine wave	
No load current	1.0A	1.1A
BATTERY		
Battery voltage	24VDC	48VDC
Low battery alarming voltage	22.0VDC	44.0VDC
Low battery cut off protection voltage	21VDC	42VDC
Low battery recovery voltage	23.0VDC	46.0VDC
Floating Charge Voltage	27VDC	54VDC
Overcharge Protection	32VDC	64VDC
MPPT SOLAR CHARGER & AC CHARGER		
Maximum PV Array Power	5000W	6000W
MPPT Range at Operation Vol.	120-450VDC	
Maximum PV Array Open Circuit Vol.	500VDC	
Number of MPPT trackers / Max output current	100A	
Maximum AC Charge Current	60A	
Maximum Charge Current	100A	
Maximum Efficiency	98%	
BEST PANEL CONFIGURATION		
Best Panel configuration	300Wp*9pcs*36V(2700Wp)*2Parallel	330Wp*9pcs*36V(2970Wp)*2Parallel
PHYSICAL		
Products Dimension, D*W*H(mm)	481mm*313mm*117mm	481mm*313mm*117mm
Packing size, D*W*H(mm)	543mm*394mm*204mm	543mm*394mm*204mm
Net Weight (kgs)	9.8KG	10.5KG
G.W. kg	11KG	11.7KG
OPERATING ENVIRONMENT		
Humidity	5% to 95% Relative Humidity (Non-condensing)	
Operation Temperature	0°C-50°C	

On Grid - Inverters



Growatt is a global leading solar inverter brand. Growatt range has different types of solar inverters use for off-grid, hybrid and on-grid solar systems in residential, commercial & factory installations.

We can supply any model of growatt solar PV inverters on request.

GROWATT - China 

Ordering Information

Order No	Model No	Product	Watt	Phase	Voltage	MPPT
-	SPH 3600	Residential Inverter	3.6kW	1Phase	42-59V	2
297300	SPH 5000	Residential Inverter	5 kW	1Phase	42-59V	2
297301	MID-15KTL3-X	Rooftop Inverter	15kW	3Phase		2
-	MID-25KTL3-X	Rooftop Inverter	25kW	3Phase		2

Technical Specifications

	SPH 3000	SPH 3600	SPH 4000	SPH 4600	SPH 5000	SPH 6000
DC input data						
Max. recommended PV power	6600W	6600W	6600W	8000W	8000W	8000W
Start voltage				150V		
Max. PV voltage				550V		
PV voltage range				120V-550V		
MPPT voltage range/				150V-550V /360V		
Max. input current of tracker A/B				13.5A/13.5A		
Number of MPP trackers / strings per MPP tracker				2/1		
AC Output						
Rated AC output power	3000W	3680W	4000W	4600W	4999W	6000W
Max. AC apparent power	3000VA	3680VA	4000VA	4600VA	5000VA	6000VA
Max. output current	16A	16A	22A	22A	22A	27A
Nominal AC output voltage				230V		
Nominal grid frequency				50/60Hz, ±5Hz		
Power factor at rated power				1		
Displacement power factor				0.8leading...0.8lagging		
THDI				<3%		
AC output power (Backup)						
Max. output power				3000W		
Rated AC output voltage				230Vac		
Rated AC output frequency				50/60Hz		
Automatic switchover time				<0.5S		
Battery data						
Battery voltage range				42~59V		
Max. charging voltage				58V		
Max charging and discharging current				66A		
Max charging and discharging power				3000W		
Battery type				Lithium /Lead-acid		
Capacity of battery				50-2000AH		
Efficiency						
Max. efficiency	97.5%	97.5%	97.5%	97.6%	97.6%	97.7%
Euro European efficiency	97.0%	97.0%	97.0%	97.1%	97.1%	97.1%
MPPT efficiency				99.9%		
Protection devices						
DC switch				Yes		
DC reverse polarity protection				Yes		
Battery reverse protection				Yes		
Output over current protection				Yes		
Output over voltage protection				Yes		
Ground fault monitoring				Yes		
Grid monitoring				Yes		
Integrated all-pole sensitive leakage				Yes		
Dimensions						
Dimensions (W / H / D)				458/565/180mm		
Dimensions (W / H / D)				27kg		
Operating temperature range				-25°C ... +60°C		
Altitude				2000m		
Self-Consumption				< 3 W		
Topology(solar)				Transformerless		
Topology(battery)				HF transformer		
Cooling concept				Natural		
Environmental protection Rating				IP65		
Relative humidity				100%		
DC connection				MC4/H4(Optional)		
AC connection				Connector		
Interfaces: RS232/RS485/CAN/USB				Yes		
Monitor : RF/WIFI/GPRS				Optional		
Display				LCD+LED		
Warranty: 5 years / 10 years				Yes /Optional		
CE, IEC62109, G98/G99, VDE0126-1-1S#77, AS/NZS 3100, CEI 0-21, VDE-AR-N4105, UTE C 15-712, EN50438, EN50549, IEC 61727, IEC 62116, C10/11						

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Technical Specifications

Datasheet	MID 15KTL3-X	MID 17KTL3-X	MID 20KTL3-X	MID 22KTL3-X	MID 25KTL3-X
Input data (DC)					
Max. recommended PV power (for module STC)	22500W	25500W	30000W	33000W	37500W
Max. DC voltage	1100V				
Start Voltage	250V				
Nominal voltage	580V				
MPPT voltage range	160V-1000V				
No. of MPP trackers	2				
No. of PV strings per MPP tracker	2	2	2	2	2/3
Max. input current per MPPT tracker*	25A	25A	25A	25A	25A/37,5A
Max. short circuit current per MPPT	32A	32A	32A	32A	32A/48A
Output data (AC)					
Rated AC output power	15000W	17000W	20000W	22000W	25000W
Max. AC apparent power	16600VA	18800VA	22000VA	24400VA	27700VA
Nominal AC voltage(range*)	220V/380V, 230V/400V (340-440V)				
AC grid frequency;(range*)	50/60 Hz (45-55Hz/55-65 Hz)				
Max. output current	24,2A	27,4A	31,9A	35,5A	40,2A
Adjustable power factor	0,8leading...0,8lagging				
THDi	<3%				
AC grid connection type	3W+N+PE				
Efficiency					
Max. efficiency	98,75%				
European efficiency	98,6%				
MPPT efficiency	99,9%				
Protection devices					
DC reverse polarity protection	Yes				
DC Switch	Yes				
AC/DC surge protection	TypeII/Type II				
Insulation resistance monitoring	Yes				
AC short-circuit protection	Yes				
Ground fault monitoring	Yes				
Grid monitoring	Yes				
Anti-islanding protection	Yes				
Residual-current monitoring unit	Yes				
String monitoring	Optional				
AFCI protection	Optional				
General data					
Dimensions (W / H / D)	525/395/222mm				
Weight	23kg				
Operating temperature range	-25 °C ... +60 °C				
Self-Consumption (night)	<1W				
Topology	Transformerless				
Cooling	Smart air cooling				
Protection degree	IP65				
Relative Humidity	0~100%				
Altitude	4000m				
DC connection	H4/MC4(Optional)				
AC connection	Cable gland + OT terminal				
Display	OLED+LED/WIFI+APP				
Interfaces: RS485 / USB / WIFI/ GPRS / RF/ LAN	Yes/Yes /Optional/Optional/Optional/Optional				
Warranty: 5 years / 10 years	Yes /Optional				
CE, VDE0126, Greece, EN50549, C10/C11, UTE C 15-712, IEC62116, IEC61727, IEC 60068, IEC 61683, CE10-21, N4105, TOR Erzeuger, G98/G99, G100, UNE217001, UNE206007, PO12,2, KSC8565					

* The AC voltage range and frequency range may vary depending on specific country grid standard. All specifications are subject to change without notice.
 * Only the latest version with max. input current 13,5A per string, for details please contact Growatt.

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