



**Ksolare- Solar Inverters
With Indian Technology**



5G Pro - Nex-Gen



Installed over
256 MW Successfully
43000 units



R & D
Own Technology with
25 Years Design Life



In House
Production
(In Pune)



24/7 Service
Support



Grid-Tie Solar Inverter

5th Generation Technology

India's most compact 5th Generation Grid-Tie Inverter ranging from 1 to 100KW with 25 years design life.

- Nex-Gen Quad Core Technology with superfast dynamic MPPT (199.99%) by using SIC SC with 1.7% Isc using Thin film capacitors.
- 98.9% Max conversion efficiency by using 3-Level bridge DSV-PWM technology with <1.7% THD.
- Ultra low voltage start up: 70V-500V (1Ø) / 200V-1000V (3Ø) (MPPT range) provides low light adaptation.
- Electronic auto-resettable protections eliminating fuse for greater reliability.
- Unique design by using Type-III surge protections (SPD) with thermal cut-off to avoid ARC or fire for greater safety for user, for All models, Type-II auto-resettable programmable SPD. (for Selected models)
- Fanless (zero-maintenance) design with high quality alloy material with lower thermo-emission.
- User friendly RMU with free cloud-based server for Wi-Fi / GPRS / Ethernet RS-485 to monitor all parameters on PC and Mobile Apps with in-detailed analysis for Solar power plant.
- Fastest Anti-Islanding response time (<0.9ms) by using Dual Texas DSP (Tms 320F28335) as compared to other which 1~5 Sec.
- Highest safety standards by using Robust AC/DC EMI, π type and RFI filters with protections like GDT, ELCB, RCCB, OV/UV/OL/Short Circuit protection, Instantaneous and superfast DC protection against Isc HVDC.
- Unique feature by adapting 5G technology for user defined Grid parameters for LVRT/HVRT.
- UV rated LCD display for greater reliability throughout the life.
- Thermo dynamically controlled radiator system with natural convection which helps our inverter to work above 60 °C temperature.
- Optional ARC free protection to eliminate sparks and Anti-PID for enhancing the solar power plant from degradation.





Comparison with other Inverters

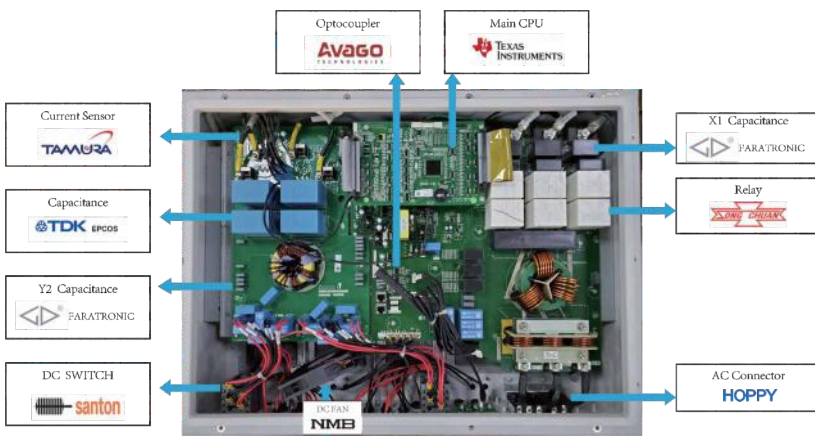
	Dynamic Efficiency of MPPT	Anti-Islanding IEC-62116 (GRID Failure Response Time)	Waveform Distortion	Output Voltage Bandwidth	Temperature Derating
K Solare Energy Pvt. Ltd.	99.99%	0.9 ms	Clean THD<1.7%	Wide 145-290	60 °C
Others	98.75%	1-5 SEC	Distorted THD<3%	Narrow 170-270	50 °C

Technology

<p>Specific Algorithm</p>	<p>SIC - diode More effective & fast</p>	<p>3-Level IGBT Bridge DSV-PWM Technology</p>	<p>Latest Texas DSP</p>	<p>Device from Vincotech Germany</p>
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Technical Datasheet

Single Phase														Three Phase																																																																		
Model (KSY)	1 KW	1.2 KW	1.5 KW	2 KW	2.2 KW	3 KW	3.2 KW	3.3 KW	4 KW	4.2 KW	5 KW	5.2 KW	5.3 KW	6 KW	6.2 KW	5 KW	6 KW	7 KW	8 KW	9 KW	10 KW	12 KW	15 KW	18 KW	20 KW	25 KW	30 KW	33 KW	35 KW	40 KW	50 KW	60 KW	70 KW	80 KW																																														
Input (DC)																																																																																
Nominal Input Power (KW)	1	1.2	1.5	2	2.2	3	3.2	3.3	4	4.2	5	5.2	5.3	6	6.2	5	6	7	8	9	10	12	15	18	20	25	30	33	35	40	50	60	70	80																																														
Max Peak DC Input Power (KW)	1.2	1.4	1.8	2.4	2.6	3.6	3.8	4	4.8	5	6	6.2	6.4	6.5	6.6	6	7	8	9	10	12	13.5	17.5	20	22	27.5	33	36	38.5	44	55	66	77	88																																														
Max. DC I/P (V dc)	500V DC														1000V DC																																																																	
Max. MPPT I/P Current(A)	10A					10A					20A					28.5																																																																
MPPT Short Circuit Current(A)	15A					15A					26 Amps					37 Amps																																																																
MPPT Tracking Voltage(Vdc)	70-500V					100-500V					200-850V																																																																					
Min. Start Voltage(V)	80V					120V					250VDC/ 150VDC(low) & 1000 VDC(High)																																																																					
Number of MPPT Tracker strings per MPPT Trackers	1					2					2					3			4																																																													
Output (AC)																																																																																
Nominal output power (KW)	1	1.2	1.5	2	2.2	3	3.2	3.3	4	4.2	5	5.2	5.3	6	6.2	5	6	7	8	9	10	12	15	18	20	25	30	33	35	40	50	60	70	80																																														
Max Peak Output Power (KW)	1.1	1.3	1.6	2.2	2.4	3.3	3.5	3.7	4.4	4.6	5.5	5.7	5.9	6.4	6.5	5.5	6.6	7.7	8.8	9.9	11	12.7	16.5	19	21	26.5	32	35.5	38	43	54	65	76	87																																														
Nominal Grid Voltage (V)	180-270V Standard 140-300V User Defined														300-510 V User Defined																																																																	
Rated Grid Voltage(V)	230V														415 Vac																																																																	
Nominal Grid freq.(Hz)	47.5-51.5 HZ OR 57-62Hz														47-55 Hz / 57-65 Hz Auto Selection																																																																	
Max. output current AC(A)	4.7	5.6	7	9.5	10.4	14.3	15.2	15.8	19.1	20	23.9	24.7	25.3	27.8	28.2	8	9.57	11.11	12.75	14.3	15.94	18.4	23.9	27.5	30.4	36	43	47.8	51	58	72.4	91	100	114																																														
AC Connection (With PE)	P + N + E														3P + N + E																																																																	
THD (%)	<2.3%														<1.7%																																																																	
Output Power factor(%)	>99.99%(User Defined from 0.85 to 0.99)														>99.99%(User Defined from 0.85 to 0.99)																																																																	
Efficiency																																																																																
Max. conversion eff. (%)	97.3					97.5					98.5					98.6					98.7					98.8					98.7					98.7					98.6					98.7					98.6					98.9					98.9																			
Max. Euro Efficiency(%)	97.3					97.3					98					98.1					98.2					98.3					98.3					98.4					98.5					98.5					98.2					98.2					98.2					98.2					98.2					98.2				
Max. MPPT Efficiency (%)	>99%														>99%																																																																	
Physical Parameters																																																																																
Dimensions(WXHXD) mm	330*347.5*127					330*347.5*179					385*479*184					455*573*265					700*575*307					700*684*307																																																						
Weight (Kg)	7.8					12.5					16					32					61					77																																																						
General Data																																																																																
Operating Temperature	- 25 ° to +60°														- 25 ° to + 60°																																																																	
Operating Surrounding Humidity	0-100%														0-100%																																																																	
Design Life	Over 25 Years														Over 25 years																																																																	
Night Con. (W)/Noise Level	<0.2/<25dB														<1W/<30dB																																																																	
Heat Dissipation	Natural Convection														Natural Convection					Forced Cooling + Natural Convection																																																												
RH/Max. Altitude	0% to 98%. No Condensation/<2000 without power derating														0% to 98%. No Condensation/<2000 without power derating																																																																	
Display	LED with LCD Display														Graphical -LED with LCD Display																																																																	
DC /AC Connectors	MC-4/IP-65 Plug														MC-4/IP65 Plug					MC4/H4/TB																																																												
Communication interface	RS 485/RS 232/WiFi/GPRS/ETHERNET LAN														RS 485/RS 232/WiFi/GPRS/ETHERNET LAN																																																																	
Standard Warranty	Upto 7 Years														Upto 7 Years/10 Years (For Selected Model)																																																																	
Standards, Safety & Protections																																																																																
DC Switch	Optional														Including																																																																	
SPD	Type - 3 SPD With GDT														Type-3 SPD With GDT					Type-2 & Type-3 SPD With GDT																																																												
MPPT Efficiency	EN 50530																																																																															
Inverter Efficiency	IEC 61683																																																																															
Protection Class	1(According to IEC 62103)																																																																															
Over Voltage Category	PVII / Mains II (According to IEC 62109-1)																																																																															
Safety Standard	IEC 62109-1&2																																																																															
EMC Standard	IEC61000-6-1/2/3/4																																																																															
Environment Protection	IEC 60068-2-1/2/14/15																																																																															
Product Safety for relay	IEC 60255-27:2013																																																																															
Anti-Islanding	IEC-62116																																																																															
Ingress Protection	IP 65 (Accordance to IEC 60529)																																																																															
Grid	VDE-ARN-4105, VDE 0126, AS4777, NRS2017, G98, G99, EN50438																																																																															
BIS	Applied																																																																															
Protection & Safety	  <p>PV Lighting,String input Reverse Polarity,DC input short circuit,DC O/V & U/V,Insulation Resistance detection,RCCB/ELCB, Output Over /Under voltage, Output Over current, Output Over/Under frequency, LVRT/HVRT, Over temperature,GDI for input & Output, SPC as per capacity-Type-1 & Type-2, AC output PF control, AC output power control by using external limiter for zero export protection, Defined remote Grid monitoring setting & Anti-Islanding.</p>																																																																															



Future Products

- EV chargers / E-mobility
- String Level Monitoring
- Anti-PID kit
- Micro inverters
- Mobile Application for all Ksolare Users
- Intelligent Hybrid solution for water Pump, Import/Export etc.

Production Process

1. **R & D**- hardware/ software & PCB layout designing
2. **Procurement**- world class component selection

3. **PCB assembly** – auto wave soldering by machine with special epoxy layer
4. **Final assembly**- integrating PCB, inductors, heat sink and other components in cabinet
5. **DC/AC and other Testings**
6. **Physical QC & Packaging**

FUTURE PRODUCTS

PRODUCTION

Promoters of this company having wide experience in power electronics with various applications in field of renewable -Solar & wind energy

2001 - 2011

2012 - 2015

Company Incorporation with promotion of Ksolare branding in Asia- Pacific region. with manufacturing facility in Pune



Assembly



HV Test



Heat Run Test



Major Installations

- GEDA (Gujrat) : 34 MW
- GEDA (Goa) : 0.6 MW
- SECI : 8MW
- SDMC (South Delhi Municipal Corporation) : 1.9MW
- SKY : 26 MW
- IIT Indore : 0.5MW
- MPT (Mumbai Port Trust): 0.3MW
- CESSCOM Mysore : 1.7 MW
- UREDA : 0.1MW

- UPNEDA : 0.5MW
- HAREDA : 0.7MW
- PEDDA : 0.5MW
- REIL : 50kw
- NISE : 30kw
- Govt. Projects : 18MW
- Commercial EPC : 74 MW
- Residential : 42 MW
- Hospitals : 12 MW

- Institutes : 7.5 MW
- Hotels : 6 MW
- Banks : 5 MW
- Pharma industry : 1.5 MW
- OEM/ODM : 55 MW
- Other industry : 28 MW
- International : 6.5 MW

OUR MAJOR INSTALLATIONS: TOTAL 256 MW

Indigenous product development in field of Grid-Tie Inverters, Hybrid Inverters with state-of-the-art R & D

2018 - 2019

Future 2020

To cover min 550MW installation & To export the same to International Market & to develop EV chargers



ATE Test



IP 65 Test



QC & Packing

Hybrid & Bi-Directional Inverters

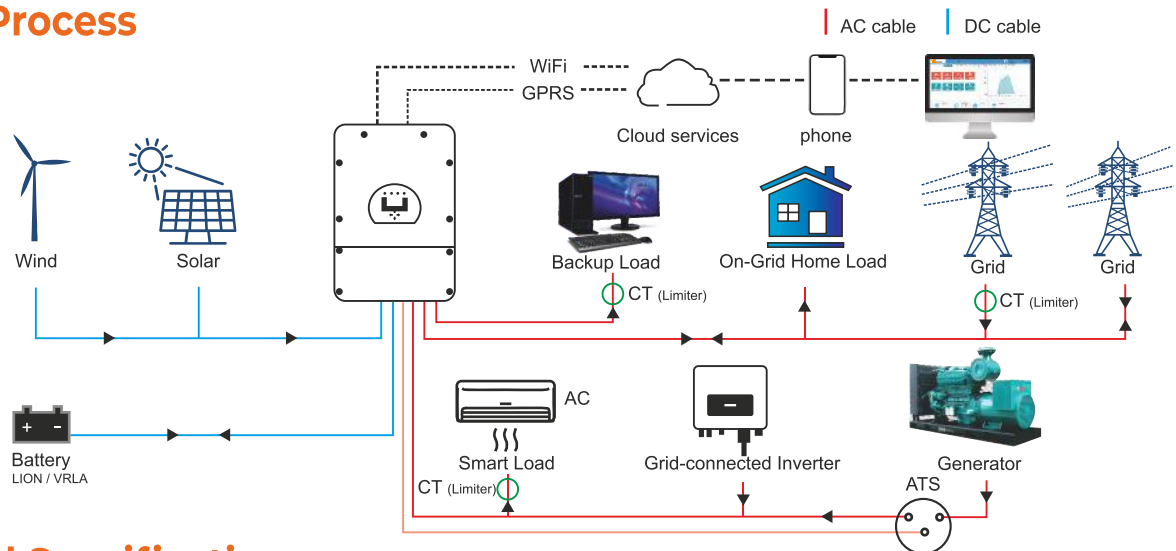
5th Generation Technology

India's most compact Highly intelligent 5G Smart Hybrid Inverter ranging from 3 to 8 KVA.
Ideal solution for BLACK-OUT & BROWN-OUTS with GRID Exports.

- Programmable supply priority for PV, Battery & Grid.
- Battery Management System (BMS) to protect & enhance the battery life. (LION/VRLA)
- Facility for Back up + Export to the grid
- Can enable to zero export/ Reverse power Limit to grid.
- Grid Peak shaving mode- max limit reducing grid MD .
- Work like UPS with ultra-low change over time.
- Also compatible with DG with ATS operation & special Loads like AC/water heater etc.
- Excess power intelligence mode-SMART LOAD
- Advanced integration can be used with with Micro-inverter/Grid-Tie Inverter
- Reduces the entire energy bill.
- User friendly Remote Monitoring via WIFI/GPRS/LAN



System Process



Technical Specification

Model (KSY)		3 KW	5KW	6KW	8KW
Batter	Battery (V)	40v-60V			
	Charging Strategy	3 stage Self - Adaption to BMS			
	Max. CH/DISCH (A)	90A	125A	125A	175A
PV String	Max. DC I/P Vol.(V)	3960W	6000W	6000W	8400W
	MPPT Range (V)/(I)	150-500V/ 11A+11A			125V-425V/18A+18A
	No. of MPPT /Strings	2x1			2x2
	Start up /Max. DC (V)	150V/500V			
AC Output Data (Single Phase)	AC / UPS Power (W)	3600W	5000W	5000W	76000W
	Max AC Current (A)	20.8A	25A	25A	33A
	Peak Power(off grid)	2 Times of rated power, 2 S			1.5 Times - 10 S
Efficiency	Voltage/Freq./THD	230V/50Hz./<3%			
	Efficiency-INV/MPPT	97.6%/99.90%			
Complying Standards	Safety /Grid/EMC Regulation	IEC62109 - 1&2/VDE-ARN-4105, VDE 0126, AS4777, NRS2017, G98, G99, EN50438/EN61000-6-1, EN61000-6-3			
General Data	Op.Temp./Cooling/Noise	-25~60°C, 45°C Derating/FAN/<30dB			
	Comm with BMS/RMU	RS485; CAN/ WIF/GPRS/LAN			
	Protection Degree	IP21 /IP65			
	Warranty	2/5 Years			
	Size (L*W*H mm)/Weight	580*330*217mm/20.5Kg			680*420*233mm/32Kg
Protections	PV I/P Lightning	PV Lightning,String input Reverse Polarity,DC input short circuit,DC O/V & U/V,Insulation Resistance detection,RCCB/ELCB,Anti-Islanding,Output Over /under voltage,Outpur Over current, Outpur Over/Under frequency, Over temperature,GDI for input & Output, SPC as per capacity-Type-1 & Type-2,AC output PF control,AC output power control by using external limiter for Zero protection, Smart Load funtion, Battery Over /Under charging ,Battery temperature protection with CA bus, Battery current limits (user define, Battery type selection-VRLA/AGMLION , Battery ripple control.			

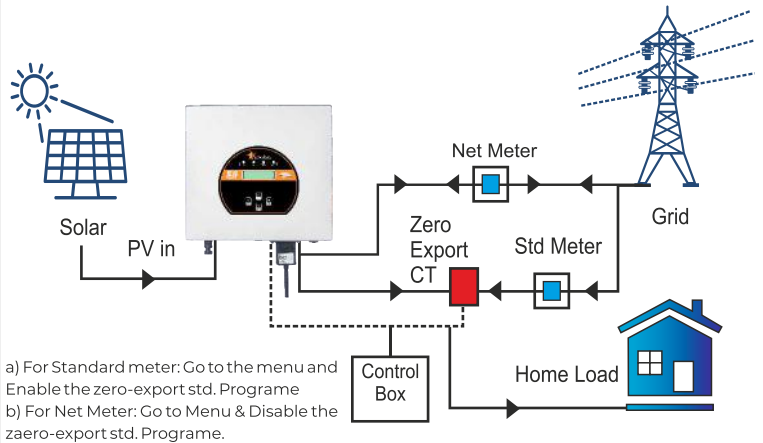
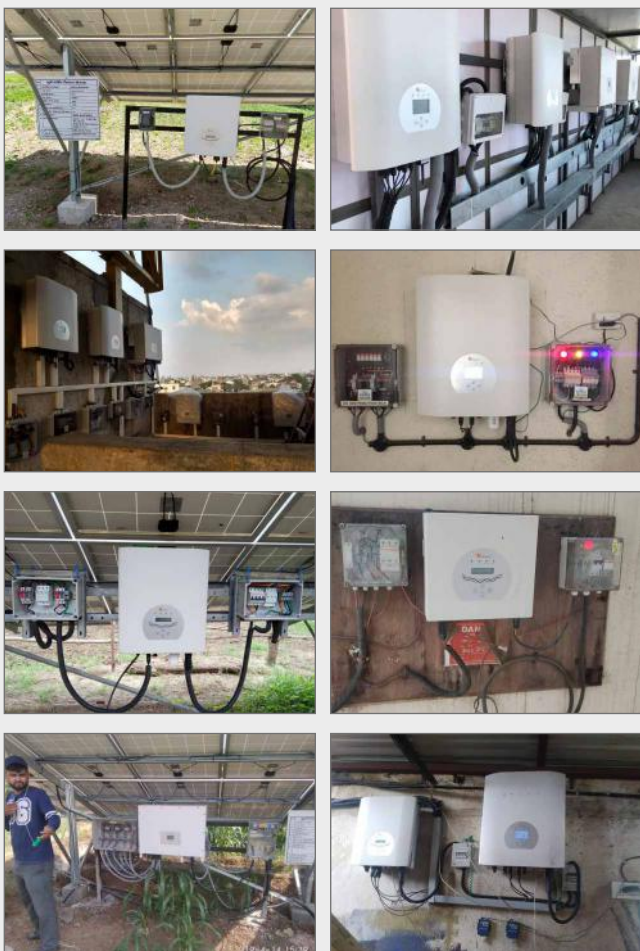
Central-Web Monitoring System (CMS Box)



- Display the accumulated generation data and location info of all solar PV plants under one user
- Displays each inverters power generation info and parameters under every user
- Display all alerts info
- CCTV integration available- Displays the video taken by camera
- Intercom screen-allows cellphone to communicate at big screen

Installations

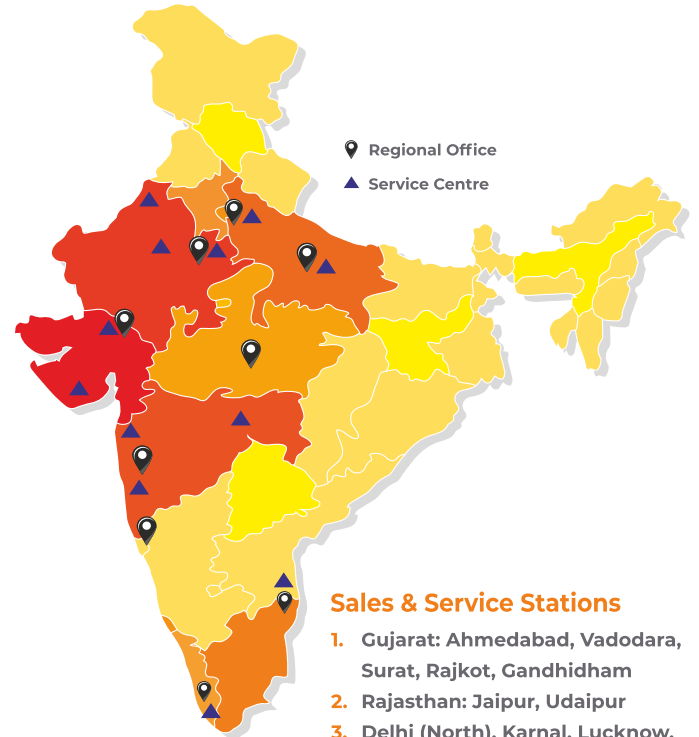
Zero Export Kit - Reverse Power Limiter



Service & Contacts



Our Presence



Sales & Service Stations

1. Gujarat: Ahmedabad, Vadodara, Surat, Rajkot, Gandhidham
2. Rajasthan: Jaipur, Udaipur
3. Delhi (North), Karnal, Lucknow, Chandigarh
4. Tamilnadu: Chennai, Coimbatore
5. Kerala: Kochi

Inverter Family



 **KSolare**
Energy Pvt. Ltd.

Reach us at :

KSolare Energy Private Ltd.

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KSolare Technology Park, Sr.No. 62, Hissa No. 03,
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