

Solar pump drive model analysis

Model analysis of three phase AC PMSM pump drive					
Product model	Voltage level	Input power		Power range	
		DC	AC		
SI30-D1-xxG	110V	90-400VDC	Single-phase 110VAC	0.75-1.5kW	
SI30-D3-xxG	220V	150-450VDC	Single-phase 220VAC	0.75-2.2kW	
SI30-D5-xxG	380V	300-800VDC	Three-phase 380VAC	0.75-15kW	

Technical Specification

Solar Pump Inverter Power (KW)	Pump		Maximum Input Power of Solar panel (KW)	Maximum Input DC Voltage(V)	Total Voc range of Recommended Panels(V)	Rated Output Current(A)	Output Frequency Range(Hz)
SI30-D1 Series: Input 90-400VDC, 3 Phase 110-230VAC Output, Suitable for AC110V Pumps							
0.75	0.75	110	1.0	400	175-380	7A	0-320
1.5	1.5	110	1.95	400	175-380	10A	0-320
SI30-D3 Series: Input 150-450VDC, 3 Phase 150-230VAC Output, Suitable for AC220V Pumps							
0.75	0.75	220	1.0	450	360-430	4A	0-320
1.5	1.5	220	1.95	450	360-430	7A	0-320
2.2	2.2	220	2.86	450	360-430	10A	0-320
SI30-D5 Series: Input 300-800VDC, 3 Phase 230-460VAC Output, Suitable for AC380V Pumps							
0.75	0.75	380	1.0	800	620-750	2.3A	0-320
1.5	1.5	380	2.2	800	620-750	3.7A	0-320
2.2	2.2	380	3.3	800	620-750	5.0A	0-320
4.0	4.0	380	5	800	620-750	10A	0-320
5.5	5.5	380	8	800	620-750	13A	0-320
7.5	7.5	380	10	800	620-750	17A	0-320
11	11	380	14.3	800	620-750	25A	0-320
15	15	380	19.5	800	620-750	32A	0-320

Technical Specification

Items	Specification
Power Supply Input	voltage, frequency D1 Type:90-450VDC/1*110VAC 50/60Hz D3 Type:150-450VDC/1*220VAC 50/60Hz D5:Type:300-800VDC/3*380VAC 50/60Hz
	Allowable Fluctuations Voltage Imbalance Rate:<3% Frequency Fluctuation :±5% Distortion Rate: confirm to IEC 61800-2
	VFD Efficiency ≥97%
	Total Voc range (V) of recommended panels D1 Type:175-380VDC D3 Type:360-430VDC D5 Type:620-750VDC
Output	MPPT efficiency up to 99.9%
	Output frequency range 0 ~ 320Hz (320Hz or more can be customized)
	Overload capacity 150% of rated current for 1 minute; 180% of rated current for 10 seconds; 200% of rated current for 0.5 seconds
Protection function	Solar pump protection function Dry run, low frequency, low power, dormancy, water full, pump over current protection
	AC/DC switching function Self identification light intensity, automatic switching AC and DC power supply
	IOT function Support VEICHI cloud service, scan code to connect APP keyboard
	Boost function Only for D1, D3 models, support built-in Boost function
	Water pump type Three-phase AC AM pump, three-phase AC PMSM pump, BLDC, single-phase water pump
	Multi function input Supports 4 way X input
	Analog input Support 2 analog AI input, Can choose 0-10V/0-20mA
	Basic protection function Bus overvoltage, under voltage, inverter over current, module fault, inverter overload, motor overload, current detection zero drift fault,hall fault, E2RCM fault, motor grounding short circuit fault, input phase loss, output phase loss, inverter overheat, communication fault, motor parameter self-tuning fault
	Motor grounding short-circuit detection Automatically detect whether the motor is short-circuit to ground. Auto detection while electrify
	Communication network Support 485 / Modbus protocolSupport Modbus free protocol; can realize the network, linkage control among VEICHI inverters
Environment	Remote and monitoring functions Support remote program upgrade, remote monitoring, and remote lock function, can be connected to VEICHI GPRS module;support VEICHI virtual oscilloscope monitoring and debugging
	Installation site Indoor, altitude less than 1000m, free corrosive gases and direct sunlight
	Temperature, humidity -10 ~ +60°C , 20% to 95% RH (No condensation)
	Vibration Less than 0.5g when frequency less than 20Hz
	Storage Temperature -20~60°C
	Installation mode Hanging machine
Ingress Protection	IP65
Cooling Method	Natural cooling / forced air cooling
International Certificate	CE(in progress)