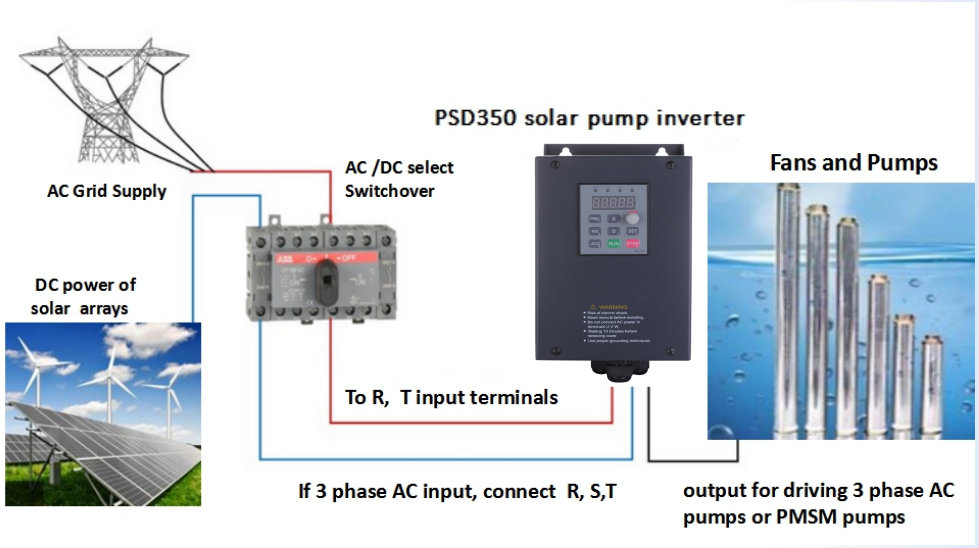
Solar Pumps Inverter with MPPT for PMSM and IM pumps

PSD350/PSD800 IP65 Solar Pump Inverter



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PSD350/PSD800 IP65 solar pump inverter

IP65——no dead angle of waterproof and dustproof

- High-end protection: waterproof panel, waterproof joint, waterproof enclosure.
- Enhanced end cover design, suitable for applications in harsh environments
- Can be installed without power distribution cabinet, saving power distribution costs

Main feature of solar pump inverter

1. IP65 solution
2. In-built MPPT function
3. GPRS module remote monitoring
4. Support AC pump 110V/220V/440V

Solar pump inverter-product introduction

1.Ingenious design,latest generation Infineon/Fuji IGBT using

2.Apply to all series IM and PMSM pumps

3.RCS system--GPRS module, control by phone and website

4.IP65 protection--no dead angle of waterproof and dustproof

5. Compatible with DC / AC power input

PSD800 Products Model

PSD 800 - 4T 7.5G B

- B: equipped with brake function
  Null: brake function operation
- Suitable Water Pump Power
  1R5：1.5kW
  2R2：2.2kW
  004：4.0kW
  .....
- 4T：DC540V，Suitable for driving pumps within 380VAC
  2S：DC310V，Suitable for driving pumps within 220VAC
  1S：DC150V，Suitable for driving pumps within 110VAC
- 350: compact structure for 110VAC/220AC pump
  800: high performance structure for 380VAC/460VAC pump
- PSD: IP65 Renewable Energy Product

Solar Pumps Inverter with MPPT for PMSM and IM pumps

Technical specification

Models	Rate current	Maximum Input DC Voltage(V)	Recommend working VDC	Output voltage (3PH VAC)	Applicable for pumps	Output Frequency Range(Hz)
2S series: Input 90V-450VDC, 3 Phase150-240VAC Output, MPPT Voltage Range 150-450VDC,Suitable for AC220V Pumps						
PSD350-2S0.75GB	4A	450V	250V-400V	0-220V/240V	0.75KW	0-600HZ
PSD350-2S1.5GB	7A	450V	250V-400V	0-220V/240V	1.5KW	0-600HZ
PSD350-2S2.2GB	10A	450V	250V-400V	0-220V/240V	2.2kw	0-600HZ
PSD800-2S3.7G	16A	450V	250V-400V	0-220V/240V	3.7kw	0-600HZ
4T series: Input 250V-850VDC, 3 Phase 0-460VAC Output, MPPT Voltage Range 300-800VDC,Suitable for AC380V Pumps						
PSD350-4T0.75GB	2.5A	850V	500V-750V	0-380V/480V	0.75KW	0-600HZ
PSD350-4T1.5GB	3.7A	850V	500V-750V	0-380V/480V	1.5KW	0-600HZ
PSD350-4T2.2GB	5A	850V	500V-750V	0-380V/480V	2.2KW	0-600HZ
PSD350-4T3.7GB	8.5A	850V	500V-750V	0-380V/480V	3.7KW	0-600HZ
PSD800-4T1.5GB	3.7A	850V	500V-750V	0-380V/480V	1.5KW	0-600HZ
PSD800-4T2.2GB	5A	850V	500V-750V	0-380V/480V	2.2KW	0-600HZ
PSD800-4T3.7GB	8.5A	850V	500V-750V	0-380V/480V	4.0KW	0-600HZ
PSD800-4T5.5GB	13A	850V	500V-750V	0-380V/480V	5.5KW	0-600HZ
PSD800-4T7.5GB	16A	850V	500V-750V	0-380V/480V	7.5KW	0-600HZ
PSD800-4T11GB	25A	850V	500V-750V	0-380V/480V	11KW	0-600HZ
PSD800-4T15GB	32A	850V	500V-750V	0-380V/480V	15KW	0-600HZ
PSD800-4T18.5GB	38A	850V	500V-750V	0-380V/480V	18.5KW	0-600HZ

Solar panel recommended configuration

Input voltage, power solar arrays selection				
Pumps model	Inverte models	Vmp	Voc	Total Power of solar arrays
110VAC pumps	1S	110*1.41=155VDC	190VDC	≧(1.2 to 1.5) rated power of pumps It is also depend on the quality of solar panels. The more power input, the better performance.
220VAC pumps	2S	220*1.41=310VDC	372VDC	
380VAC pumps	4T (Max 800VDC)	380*1.41=540VDC	648VDC	
480VAC pumps	4T (Max 900VDC)	480*1.41=677VDC	812VDC	
Take a solar panels Voc38VDC, Vmp 31VDC, 265W for exampling.				
Inverter models	Power of pump	in Series (PCS) (Vmp)	in Strings Power	Total (PCS)
1S (110VAC)	0.75kw to 1.0kw	4 or 5 PCS	1* strings	5*1=5
2S (220VAC)	0.75kw to 1.5kw	10PCS	1* strings	10*1=10
	2.2kw	11PCS	1* strings	11*1=11
4T(380VAC)	0.75kw to 2.2kw	18PCS	1* strings	18*1=18
	5.5kw	18PCS	2* strings	18*2=36
4T(380VAC) Max900VDC	3.7kw	20PCS	1* strings	20*1=20
	7.5kw	20pcs	2* strings	20*2=40

Technical specification

Item		Specification
Power input	voltage, frequency	1S:90V DC to 400V DC or 110V±15% AC, 50/60Hz 2S:150V DC to 450V DC or 220V±15% AC, 50/60Hz 4T:250V DC to 750V DC or 380V±15% AC, 50/60Hz
	Allowable fluctuations	voltage unbalance rate:<3%; Frequency:±5%; Aberration rate: as IEC61800-2 required
	VFD Efficiency	≥96%
	Total Voc range (V) of recommended panels	1S:180VDC to 450VDC 2S:380VDC to 450VDC 4T:650V DC to 800VDC
Output	MPPT efficiency	Above 99.6%
	Output frequency range	0~maximum frequency 600Hz
	Overload capacity	150% rated current for 60s, 180% rated current for 10s .
Motor type		Control for permanent magnet synchronous motor and asynchronous motor pumps.
Solar pump control special performance		MPPT (maximum power point tracking), CVT (constant voltage tracking), auto/manual operation, dry run protection, low stop frequency protection, minimum power input, motor maximum current protection, flow calculating, energy generated calculating and water tank level detected
Protection function		Overvoltage, under-voltage, current limit, over-current, overload, electric thermal relay, overheat, overvoltage stall, data protection, rapid speed protection, input/output phase failure protection.
Environment	Install place	Below 1000m; above 1000m, derated 1% for every additional 100m.
	Temperature, humidity	-10 ～+ 50℃, derating above 40℃, maximum temperature 60℃(no-load operation)5% to 95% RH (non-condensing)
	Vibration	When 9～200Hz, 5.9m/s2(0.6g)
	Storage temperature	-30 ～+60℃
	Protection grade	IP65
	Cooling method	Forced air cooling
International Certificate		CE, ISO

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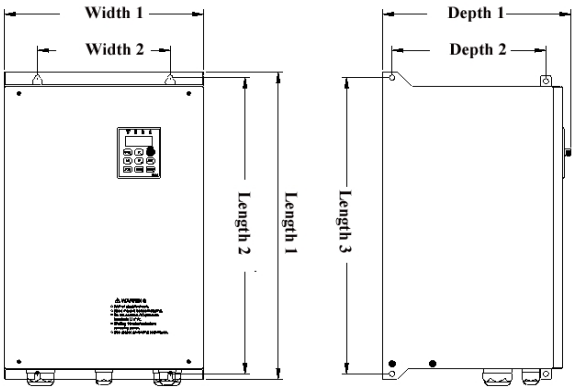
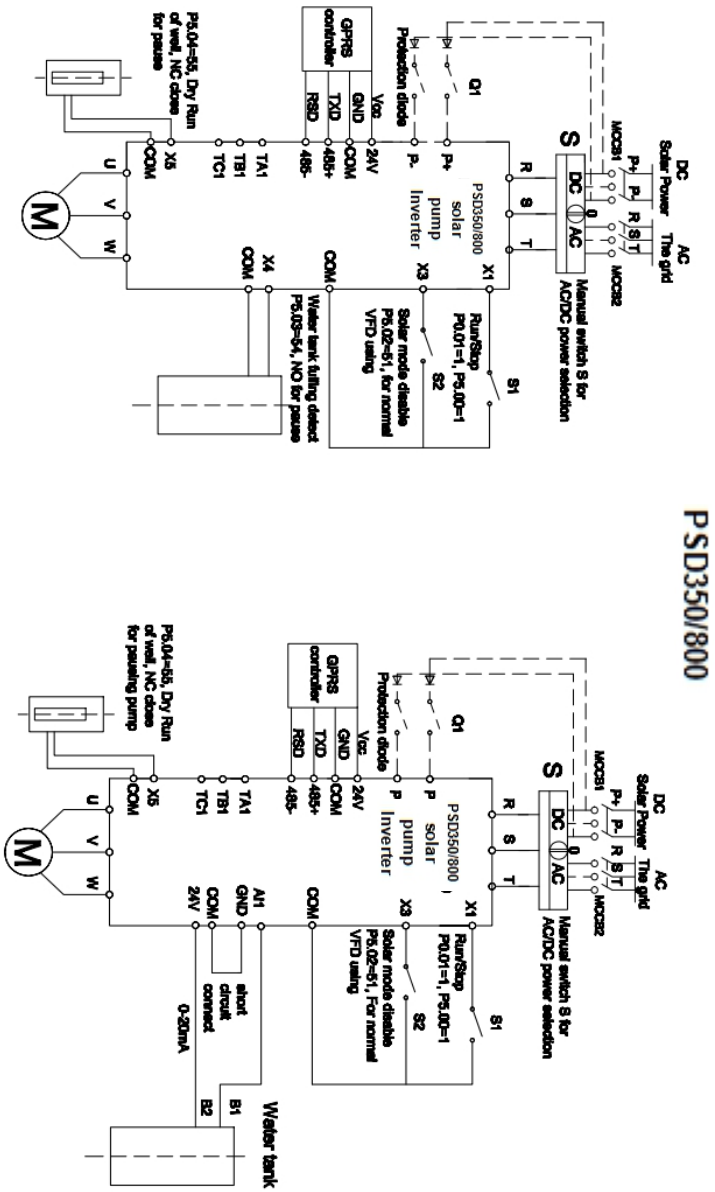
Dimension of solar pump inverter



PSD350/PSD80 (IP65)

Models	Power	L1	W1	D1	L2	W2	L3	D2	Hole
		External size			Install size 1		Install size 2		
PSD350-4T0.7/3.7GB PSD350-2T0.7/2.2GB	0.75-3.7kw,380V 0.75kw-2.2220v	230	130	177	215	90	215	140	M5
PSD800-4T (1.5-3.7GB)	0.75-3.7kw,380V	265	150	200	250	110	250	155	M5
PSD800-4T5.5/7.5GB	5.5-7.5KW,380V	320	180	210	305	120	305	170	M5
PSD800-4T11.0/15GB	11-15kw, 380V	390	230	225	375	160	375	180	M6
SD800-18.5/22/30G	18.5-30kw, 380V	430	230	225	375	160	375	180	M6

Outdoor using, water proof, dust proof and sealed solar pump inverter-IP65

Solar pump inverter standard wiring diagram