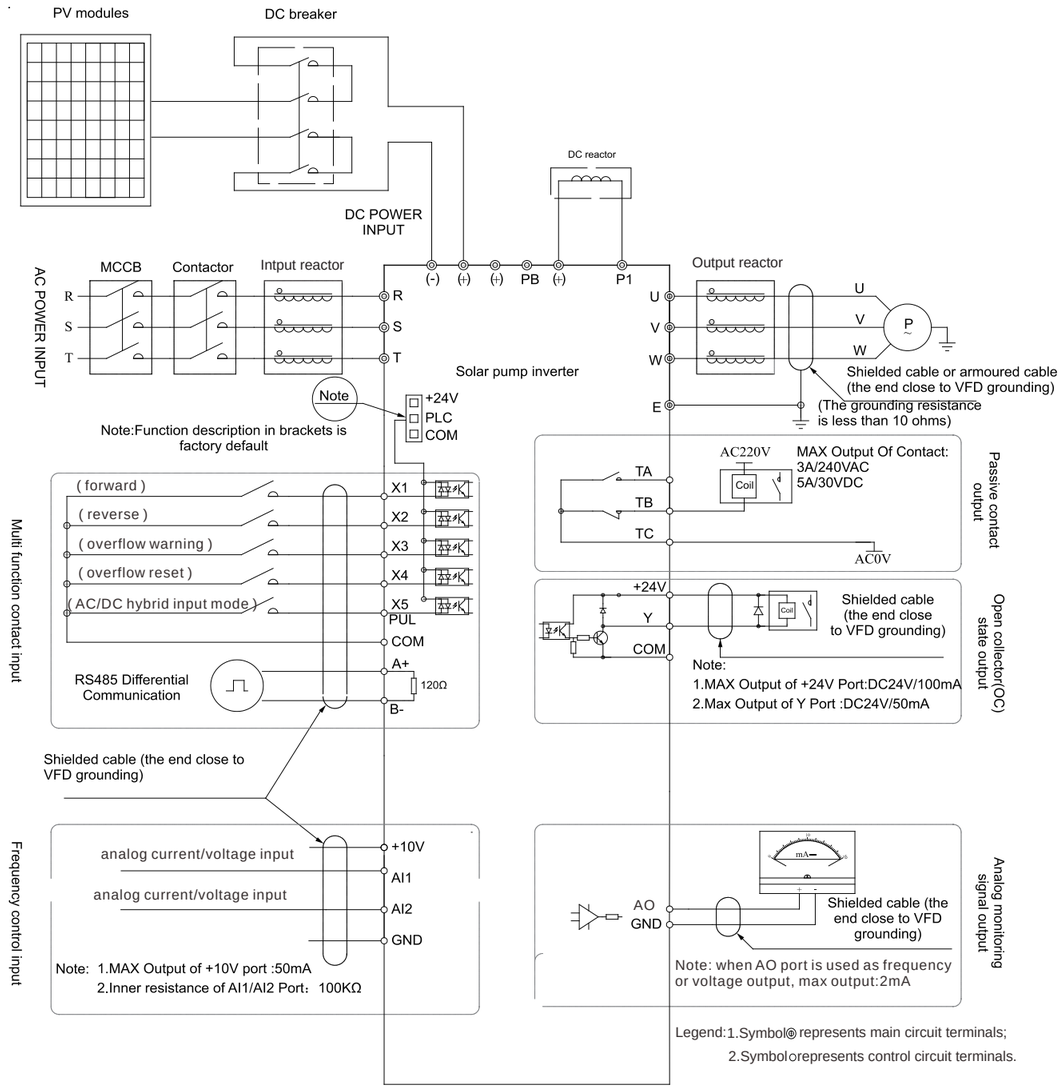
Standard Wiring Diagram



Note: When connect solar panel, both ACinput (R, T) and DCinput (+, -) is okay, ACinput is prefer.

SI21 Series
Solar Pump Inverter

Mini | Economic

Product Features

Flexible & Various Installation

- MINI & Various installation methods

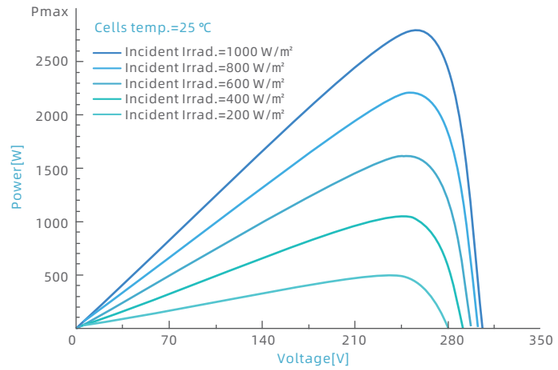
Side by side installation, no need to reserve clearance

Rail mounting, plug into it then use it

Side mounting, sideways installation if vertical space is not compatible

MPPT Technology

- Whole voltage range .
- Efficiency up to 99.8% .



Advanced Technology

- Suitable for asynchronous motors, permanent magnet synchronous motors, synchronous reluctance motors.
- Smooth operation, energy saving and high efficiency

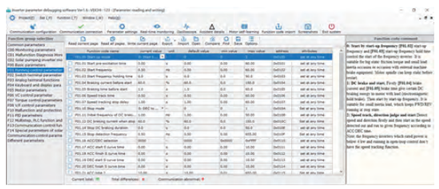
Synchronous reluctance motors

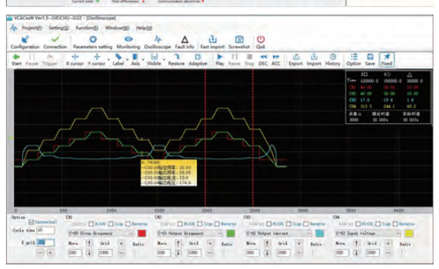
Permanent magnet synchronous motors

Asynchronous motors

Functional PC Monitor Software

- Parameters monitoring & Settings .
- Virtual oscilloscope .





Naming Rules of SI21 Series Model

SI21 - D1 - 1R5G - A

Product category
SI:stands for the solar pump inverter

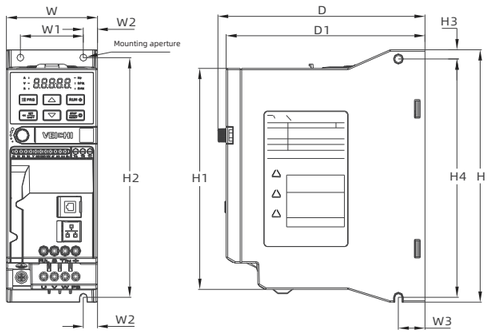
Product series
Different series are represented by different two-digit numbers

Voltage class
D1: 155V DC, Suitable for the 110V AC pumps 3PH
D3: 311V DC, Suitable for the 220V AC pumps 3PH
D5: 540V DC, Suitable for the 380V AC pumps 3PH

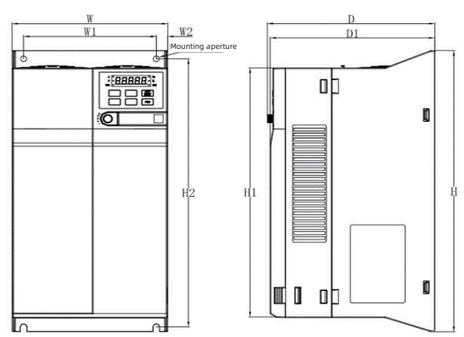
Suffix
"A" for VEICHI
Non-A for neutral brand

Rated output power
R75G=0.75KW
1R5G=1.5KW
004G=4KW

Dimension of SI21 Solar Pump Inverter



Model	Dimensions (mm)					Installation size (mm)						Mounting aperture
	W	H	H1	D	D1	W1	W2	H2	W3	H3	H4	
SI21-D1-R75G-A	65	177	155	148	142	45	10	168	19	6.5	167	3-M4
SI21-D3-R75G-A												
SI21-D3-1R5G-A												
SI21-D5-R75G-A												
SI21-D5-1R5G-A												
SI21-D5-2R2G-A												
SI21-D1-1R5G-A	75	202	180	163	157	55	10	193	19	6.5	192	3-M4
SI21-D3-2R2G-A												
SI21-D5-004G-A												
SI21-D5-5R5G-A												



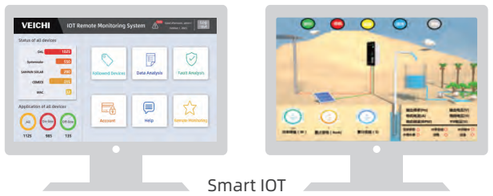
Model	Dimensions (mm)					Installation size (mm)						Mounting aperture
	W	H	H1	D	D1	W1	W2	H2	W3	H3	H4	
SI21-D5-7R5G-A	130	320	286	161	158	105	12.5	302	-	-	-	M5
SI21-D5-011G-A												
SI21-D5-015G-A	170	342.5	303.5	183	180	145	12.5	326.5	-	-	-	M5
SI21-D5-018G-A												
SI21-D5-022G-A												

Various Specific Functions

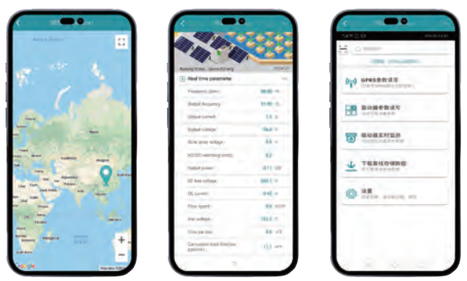
- One-key operation .
- Dormancy、dry run、low speed、minimum power、pump over current .
- Water fulfilled、output power limit、PQ curve、pump clean 、constant pressure control .

01. Dry Run	06. Dormancy
02. Low Speed	07. PQ Curve
03. Pump Over Current	08. Pump Clean
04. Minimum Power	09. Water Fulfilled
05. Constant Pressure Control	10. One-key Operation

Intelligent IOT



Smart IOT



Various Mobile Applications

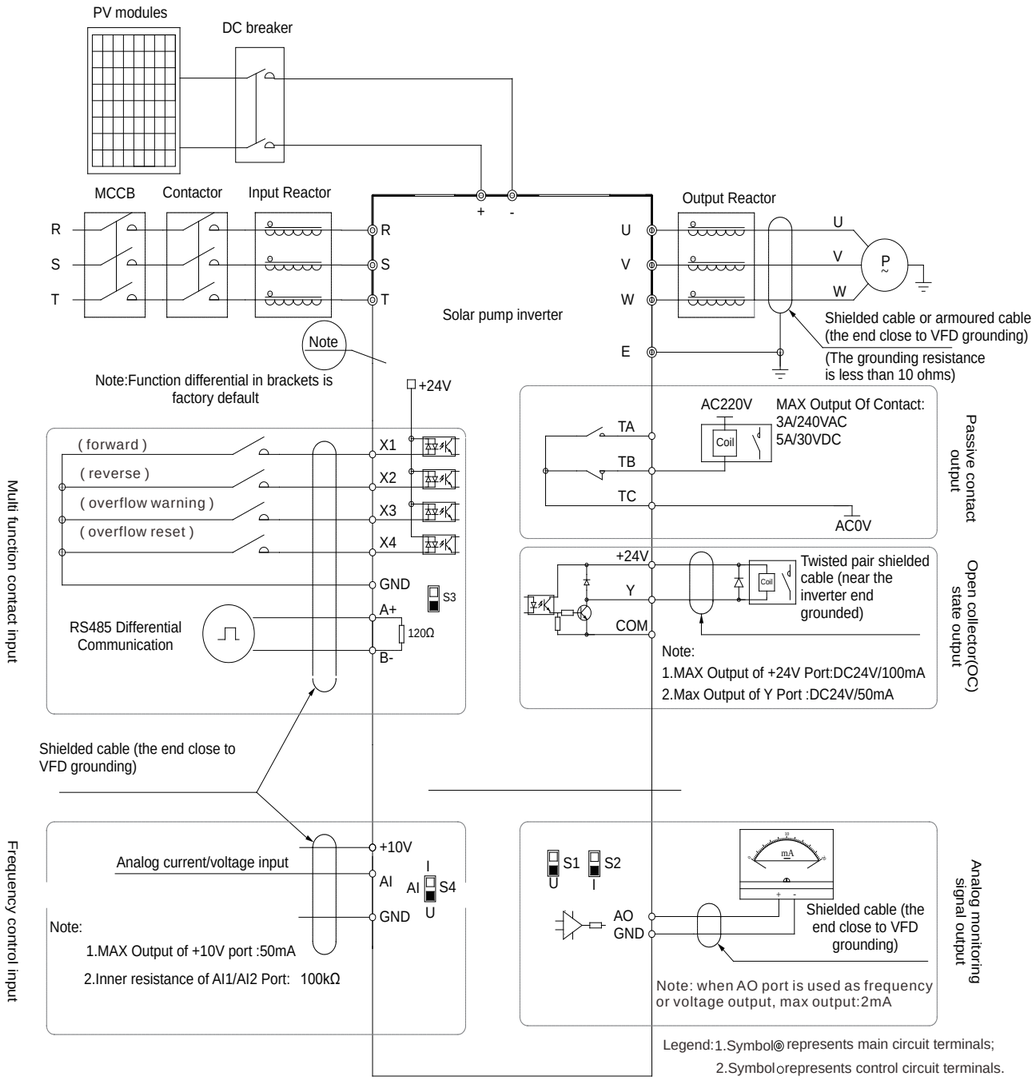
Technical Specification

MODEL	D1	D3	D5
		PV Input	
Input voltage range	60~400V	150~450V	250~780V
Recommended Voc voltage	175~380V	360~430V	620~750V
Maximum MPPT efficiency	up to 99.8%	up to 99.8%	up to 99.8%
		AC Input	
Input voltage range	1PH/3PH 110V	1PH/3PH 220~240V	3PH 380~480V
Input voltage frequency	50/60Hz	50/60Hz	50/60Hz
		Output	
Output voltage range	110~230V	150~230V	230~460V
Output frequency range	0~600Hz	0~600Hz	0~600Hz
Output power range	0.75~1.5kW	0.75~2.2kW	0.75~22kW
Power		**Rated output current**	
0.75kW	7A	4A	3A
1.5kW	10A	7A	4A
2.2kW	-	10A	5A
4kW	-	-	9.5A
5.5kW	-	-	13A
7.5kW	-	-	17A
11kW	-	-	25A
15kW	-	-	32A
18.5kW	-	-	38A
22kW	-	-	45A

	Control Performance	
Motor type	Asynchronous motor, permanent magnet synchronous motor, synchronous reluctance motor	
Control mode	V/F control, open-loop vector control, closed-loop vector control, voltage-frequency separated control	
Overload capacity	150% of rated load for 60s, 180% of overload capacity for 10s, 200% of overload capacity for 0.5s	
	System	
Installation	Hitch mounting	
Protection class	IP20	
Working temperature	-10~60℃	
Cooling method	Forced air cooling	
Humidity	20%~95%RH（condensation free）	
Installation environment	Altitude lower than 1000m. Derate 1% for each 100m rise when above 1000m.No condensation, icing, rain, snow, hail, etc., solar radiation below 700W/m2, air pressure 70kPa～106kPa	

		Protection		
Common potection	Undervoltage / overvoltage	√	√	√
	Input/output phase loss	√	√	√
	Overload	√	√	√
	Overcurrent	√	√	√
	Drive overheat	√	√	√
	Short circuit between phases and to ground	√	√	√
Specialized protection	Low frequency	√	√	√
	Pump overcurrent	√	√	√
	Dry run	√	√	√
	Min. power	√	√	√
	Overflow	√	√	√
	Sleep protection	√	√	√

Solar Pump Inverter Standard Wiring Diagram



BLDC pumping system

Photovoltaic pump specific | Plug and play | IP55

Product Features

Household PV Water Pump Inverter

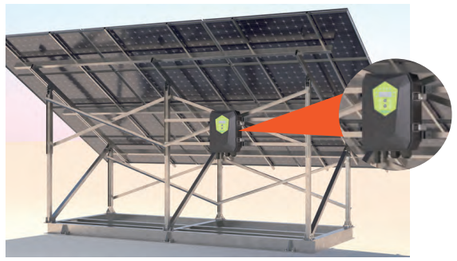
Designed for household use， and applied to screw pumps, plastic impeller pumps, stainless steel impeller pumps, ground pumps and more.

Plug and play, friendly interface

- Real-time working status, output power, output voltage, current, pump speed ect are displayed on the LED screen for full control;
- Simple installation with easy plug-and-play function saves complicated and cumbersome wiring.

Protection class：IP55

The SIV series has a high protection class and can be mounted on PV panel supports.



Cost Saving

The cost of the SIV series inverters and the pumps is approximately the same as the price of a conventional inverter.

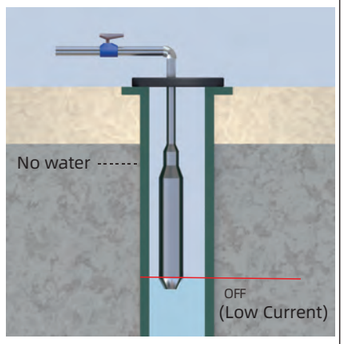
Technical Specification

Photovoltaic pump	Screw pump	Plastic impeller pump	Stainless steel impeller pump	Surface pump
Size(inch)	3	3/4	3/4/6	1/2(outlet)
Max.flow(m^2/h)	2.2	20	40	45
Max.range(m)	180	195	203	65
Voltage(V)	24/48/72	24/48/72/110	24/48/72/110	24/48/72/110
Power(W)	80~1100	200~1500	300~1500	210~1500

Exclusive Solutions For Water Pump Applications

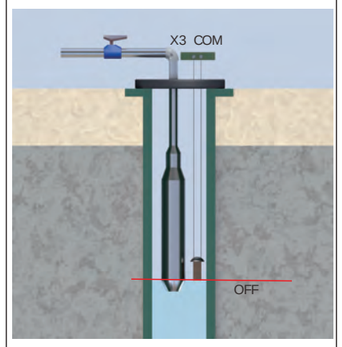
Dry running protection(No sensor)

When the well is empty, the output current will decrease, when the output current is lower than threshold value, dry running protection will be triggered



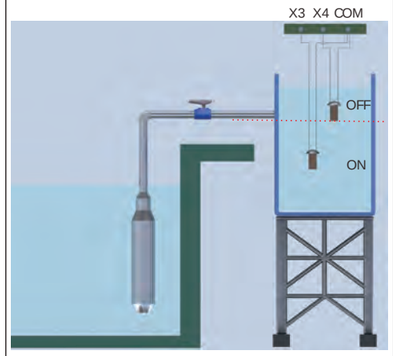
Dry running protection(One sensor)

When the downhole liquid level sensor detects water shortage, the frequency converter will enter into dry protection



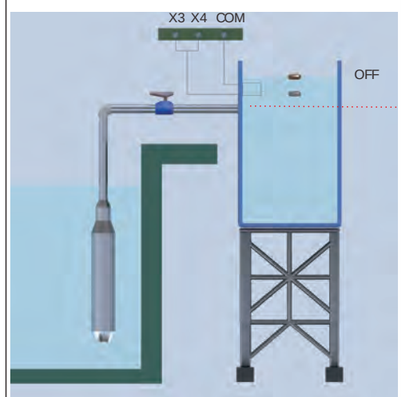
Water fulfil protection(Dual level sensor)

When the water level is higher than the high level sensor, it enters the water full protection. When the water level drops to the low level sensor, the inverter starts running



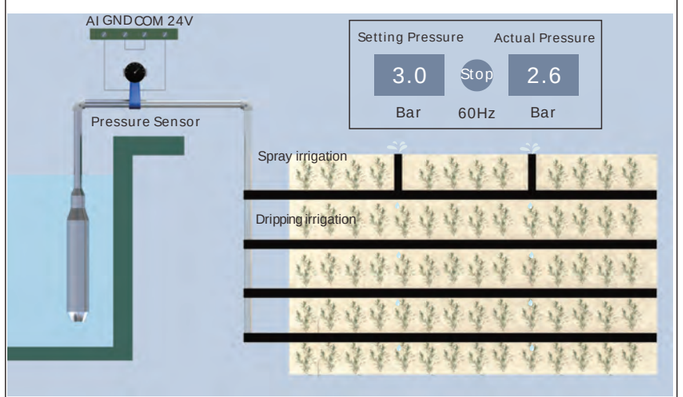
Water fulfil protection(Float switch)

The float switch controls the start and stop according to the liquid level

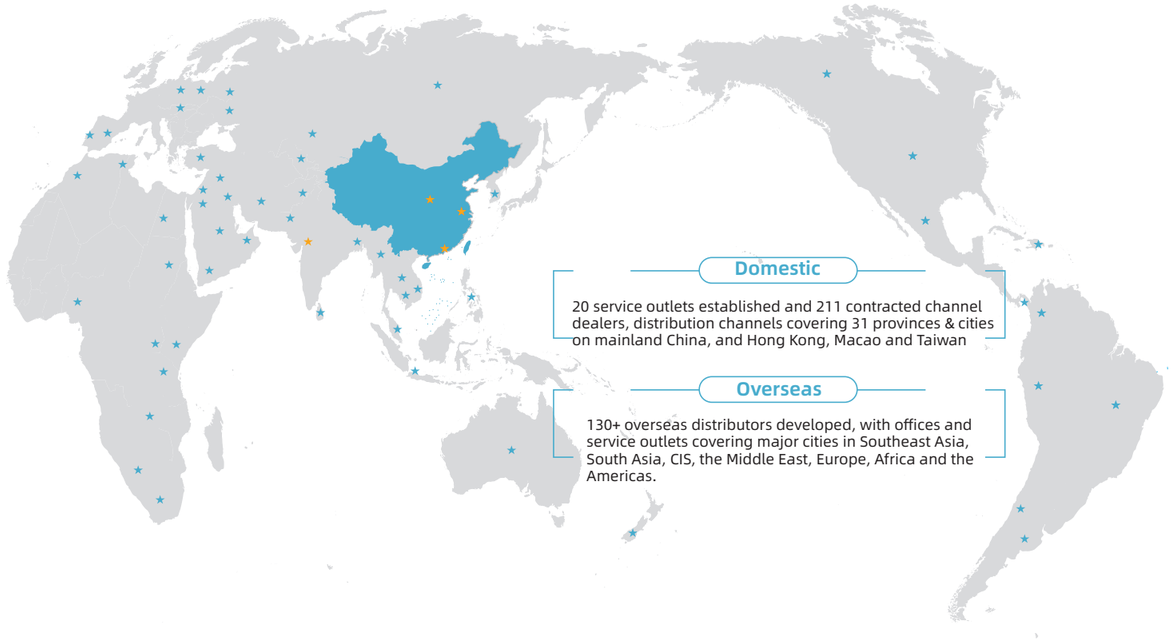


Constant pressure irrigation solution

Built-in PID algorithm, according to the pressure gauge feedback data to adjust the running frequency, to achieve constant pressure water supply



Service and Support



01 Pre-sales

Technology promotion, site survey, proposal design, energy saving assessment

02 During-sales

Customization, design consultation, installation and commissioning, on-site training

03 After-sales

Regular return visits, regular maintenance, timelyrepairs, application instruction