

Connection Structure

PV Input

Connect solar panels to the independent DC input terminals.

AC Input

Connect 380V three-phase grid power or a diesel generator when AC support is needed.

Pump Output

Wire directly to a Three Phase 380V-440V AC water pump motor.

Water Sensor

Optional water level sensor signal supports automatic stop and restart.

Solarseeker



SP4 SERIES

Solar Pumping Inverter

380V Three Phase

SMART · SIMPLE · EFFICIENT

Application Scenarios & Key Features

Designed for 380V input and three-phase pump systems

Ideal Applications

 **Agricultural irrigation**

 **Domestic water supply**

 **Livestock watering**

 **Desertification control**

System Positioning

The SP4 series is specifically designed for 380V AC three-phase input and output water pump system.

Core Value

One inverter supports solar, AC, and hybrid power modes, helping pumps work longer while reducing fuel and grid power costs.

Key Features

-  **Simplest Installation**
Only 1 minute for installation or commissioning, with convenient one-key restart.
-  **Smart Operation**
Automatic start and pump protection help extend total system working life by 20%.
-  **High Efficiency MPPT**
Advanced tracking algorithms capture maximum panel power, reaching up to 99% efficiency.
-  **Hybrid Function**
Solar power and generator power can work together in the evening, reducing diesel cost by up to 30%.
-  **Dry-Running Protection**
Automatically stops operation to protect the pump from dry running without extra sensors.
-  **Water Sensor Compatible**
Starts and stops automatically with water level sensor signal.
-  **Lower Voltage Start**
Starts at lower panel voltage to significantly extend daily working time.

Technical Specifications

SP4 solar pumping inverter platform data

Category	Parameter	Specification Detail
Input DC	Max DC Voltage	800 V
	Min DC Voltage	270 V
	MPPT Range	270 - 800 V
Input AC	Rated AC Voltage	380 - 440 V
	Frequency	47 - 63 Hz
	Connect Method	Three Phase
Output AC	Rated Power	1.5-200KW
	Rated Current	5-426A
	Frequency	0 - 60 Hz
	Connect Method	Three Phase
Others	Motor Type	Asynchronous and Synchronous
	Ingress Protection	IP20/IP54/IP55
	Certification	CE
	Operating Temperature	0°C–50°C

System Notes

Input Independent PV input and AC input make DC-only, AC-only, and hybrid wiring possible.

Output Directly drives a three-phase 380V-440V AC water pump motor.

Protection Built-in smart start, dry-running protection, and water sensor signal compatibility.

Efficiency MPPT up to 99% helps maximize panel utilization under changing sunlight.

Recommended Panel Voltage

For 380V pump systems, keep solar array Vmp over 530V.
This improves MPPT efficiency and supports stable operation.

SP4 Series Specifications & Matching Table

Rated AC input and output: Three Phase 380V-440V

Inverter Model	Inverter Power	Output Current	Pump Power	Panel Power	DC Input Range	Recommended DC Input	600W Panel Matching
SP4002	2.2 kW	5 A	1.5 kW	7.8 kW	270-800 V	530-800 V	13 pcs / 1P × 13S
SP4004	4.0 kW	9 A	2.2 kW	7.8 kW	270-800 V	530-800 V	13 pcs / 1P × 13S
SP4005	5.5 kW	13 A	4 kW	7.8 kW	270-800 V	530-800 V	13 pcs / 1P × 13S
SP4007	7.5 kW	17 A	5.5 kW	7.8 kW	270-800 V	530-800 V	13 pcs / 1P × 13S
SP4011	11 kW	25 A	7.5 kW	16.8 kW	270-800 V	530-800 V	28 pcs / 2P × 14S
SP4015	15 kW	32 A	11 kW	18 kW	270-800 V	530-800 V	30 pcs / 2P × 15S
SP4018	18.5 kW	37 A	15 kW	31.2 kW	270-800 V	530-800 V	52 pcs / 4P × 13S
SP4022	22 kW	45 A	18.5 kW	36 kW	270-800 V	530-800 V	60 pcs / 4P × 15S
SP4030	30 kW	60 A	22 kW	42 kW	270-800 V	530-800 V	70 pcs / 5P × 14S
SP4037	37 kW	75 A	30 kW	63 kW	270-800 V	530-800 V	105 pcs / 7P × 15S
SP4045	45 kW	91 A	37 kW	72 kW	270-800 V	530-800 V	120 pcs / 8P × 15S
SP4055	55 kW	112 A	45 kW	90 kW	270-800 V	530-800 V	150 pcs / 10P × 15S
SP4075	75 kW	150 A	55 kW	110 kW	270-800 V	530-800 V	180 pcs / 12P × 15S
SP4090	90 kW	176 A	75 kW	150 kW	270-800 V	530-800 V	240 pcs / 16P × 15S
SP4110	110 kW	210 A	90 kW	180 kW	270-800 V	530-800 V	300 pcs / 20P × 15S
SP4132	132 kW	253 A	110 kW	220 kW	270-800 V	530-800 V	360 pcs / 24P × 15S
SP4160	160 kW	304 A	132 kW	261 kW	270-800 V	530-800 V	435 pcs / 29P × 15S
SP4185	185 kW	350 A	160 kW	315 kW	270-800 V	530-800 V	525 pcs / 35P × 15S
SP4200	200 kW	377 A	185 kW	351 kW	270-800 V	530-800 V	585 pcs / 39P × 15S
SP4220	220 kW	426 A	200 kW	387 kW	270-800 V	530-800 V	645 pcs / 43P × 15S

Selection Reminder

The matching table is a quick selection guide. For final system sizing, check pump nameplate data, provide us with the pump power(KW or hp), voltage(220V/380V/440V or others), phase number(single-phase or three-phase).

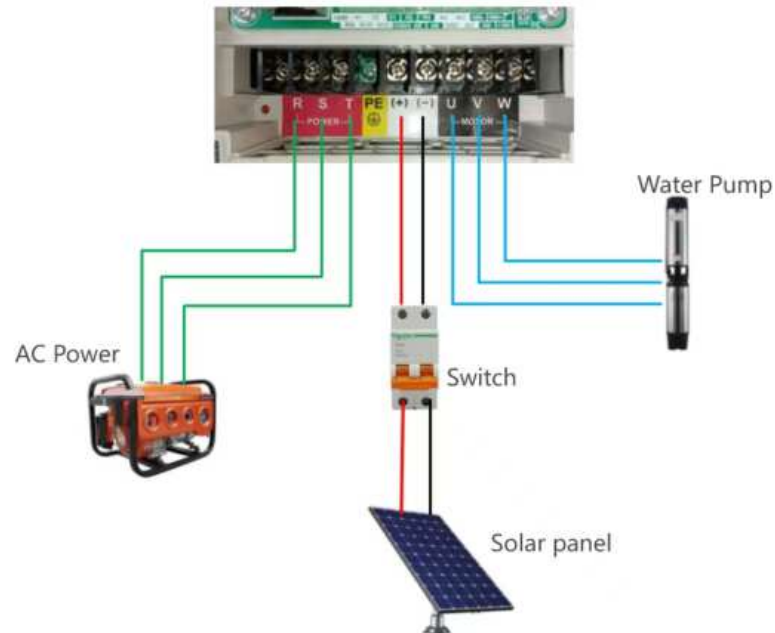
Basic Wiring Architecture

Three-phase motor driver with independent PV and AC input terminals.

Special Circumstances

Suitable for high-power irrigation solar or hybrid applications.
Specifically designed for 380V 3-phase motors,
connecting to solar DC power or 380V AC power, requiring no parameter modifications.

Three-Phase Pump Inverter Wiring

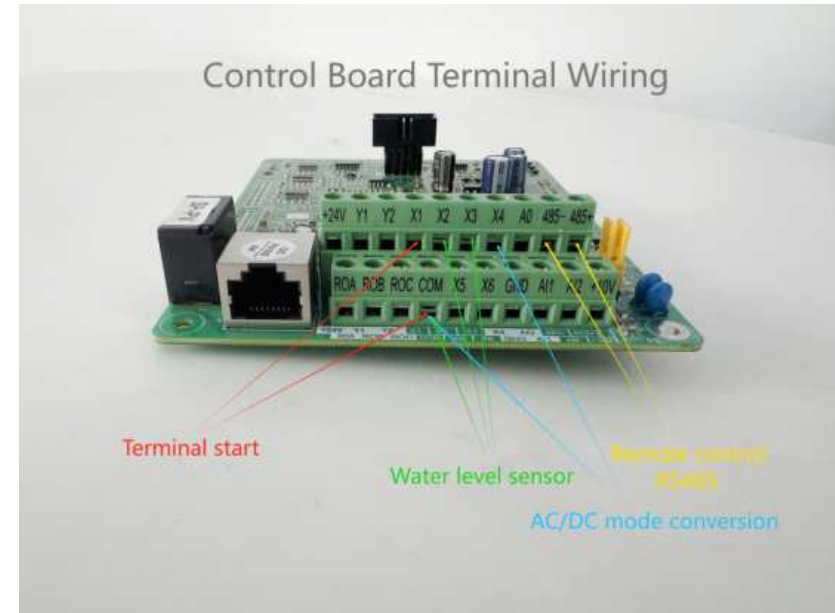


AC power + Solar DC power + Water pump wiring

Input Mode Reminder

Only solar DC input: Please don't connect X4 & COM.
Only grid AC input: Please connect X4 & COM.
Hybrid input (input solar and AC power at the same time): Please connect X4 & COM.

Control Board Terminal Functions



Terminal start | Water level sensor | RS485 | AC/DC mode