

Professional manufacturer in electric drive  
and industry control since 2012



Energy-saving Intelligent Efficient

## VC50 Series Solar Pumping AC Drive

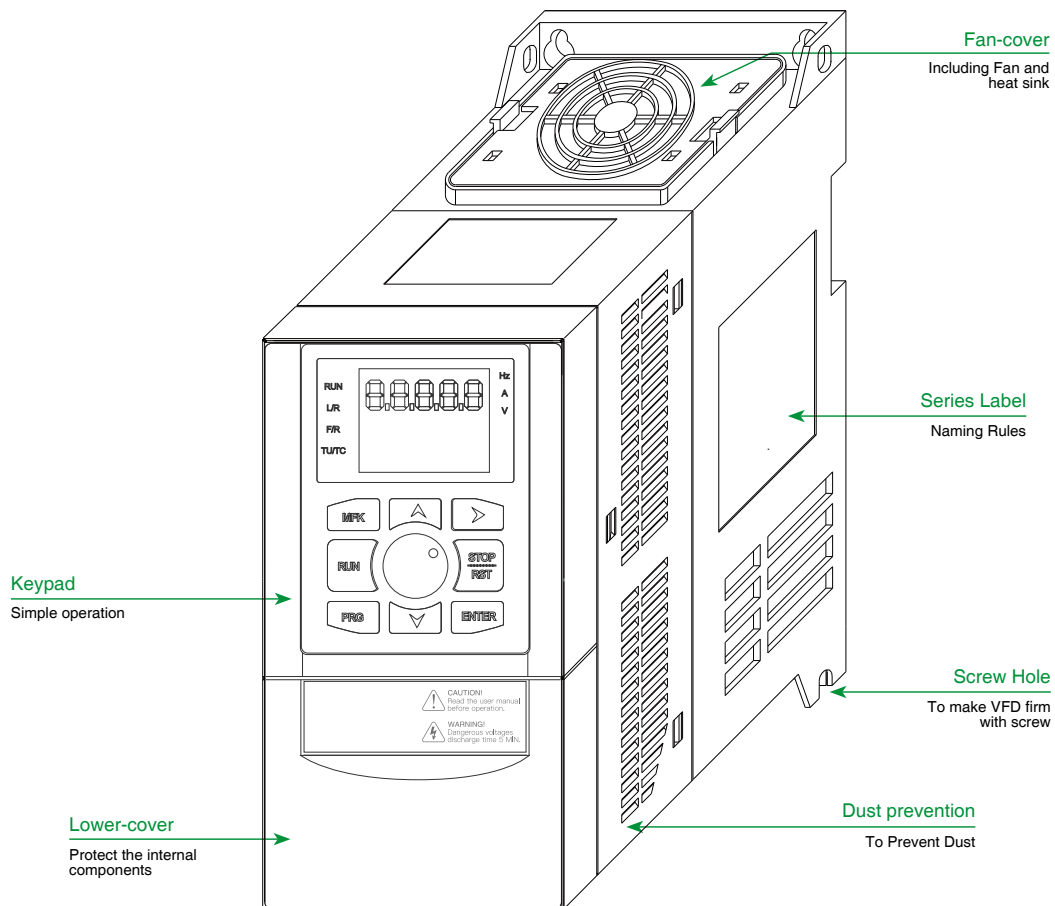
Adaptable motor power: 0.4 to 37kW;  
No battery required, fully powered by solar energy;  
Smart protection, Automatic start/stop;  
Using high power point tracking technology(MPPT);  
Durable and Stable;  
MODBUS RS485.



Irrigation

## Product Description

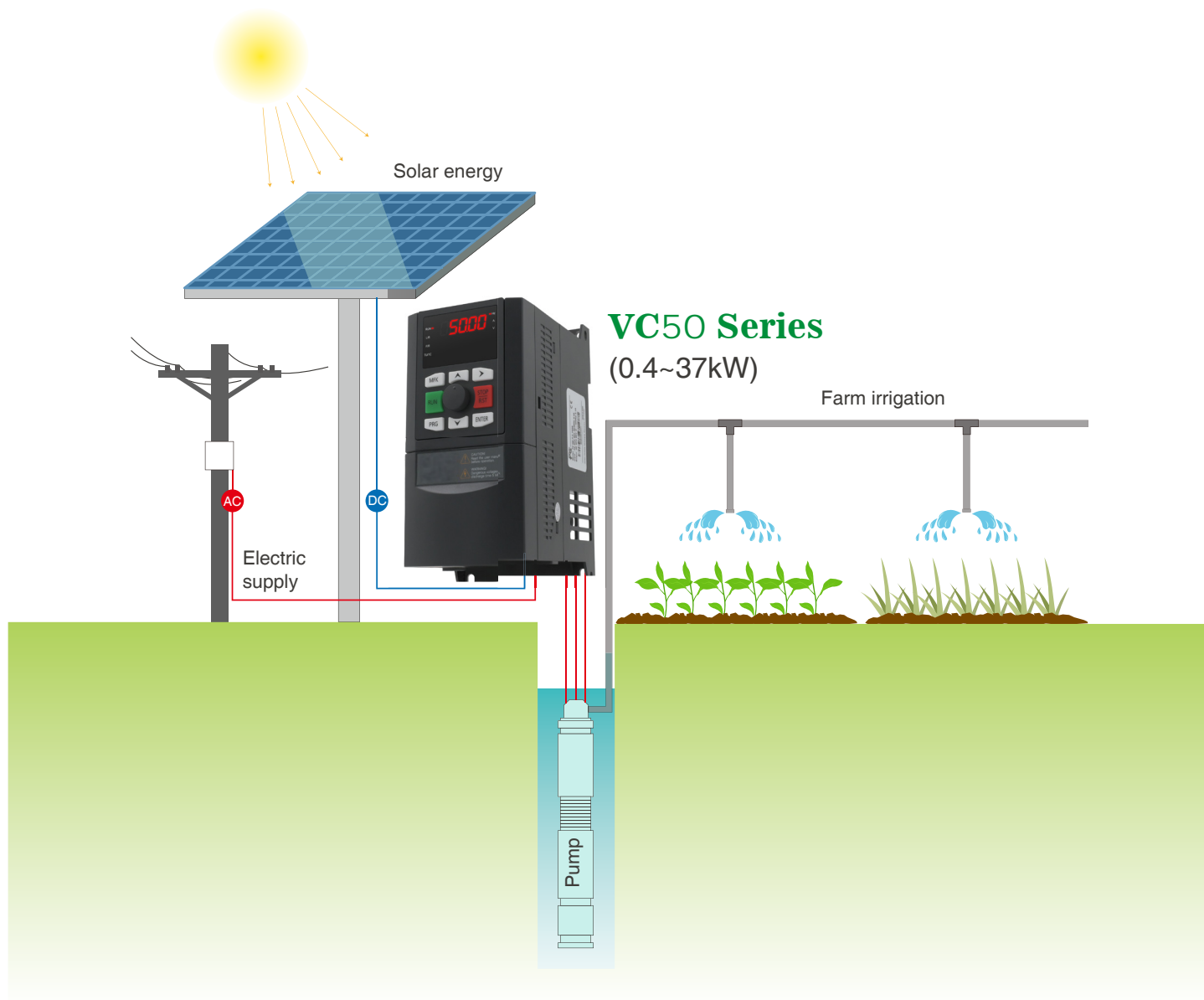
VC50 series inverter is a new inverter introduced by Vinac for photovoltaic water pumps. According to the market changes and customer requirements, the product usability and product performance are optimized, and the applicable voltage level and power range of the product are expanded, which can be applied to single-phase/three-phase 220V and three-phase 380V pumps.



## Product Feature

- ▼ Support single-phase 220V, three-phase 220V and three-phase 380V pumps with power from 0.4kW to 37KW;
- ▼ Simply connect the photovoltaic panel to the frequency converter without setting any parameters, and the photovoltaic water pump can be automatically started after being electrified;
- ▼ Standard RS485 communication interface, support Modbus RTU communication
- ▼ Advanced MPPT algorithm, Ensure that the solar power tracking efficiency can reach 99%;
- ▼ With PV overvoltage protection, PV polarity reverse alarm, over-temperature automatic derating and other protection functions, it can effectively extend the product life;

## Product application system



Agricultural irrigation



Desert greening



Animal husbandry



## Product Selection Table

| Item No.  | Adaptable Motor (kW) | Input Current (A) | Output Current (A) | Rate Capacity (kVA) | W (mm) | H (mm) | D (mm) | W1 (mm) | H1 (mm) | ØD (mm) | GW (kg) |
|---|----------------------|-------------------|--------------------|---------------------|--------|--------|--------|---------|---------|---------|---------|
| 1 Phase Input and 1 Phase Output 220V (-15%~+15% Tolerance) |                      |                   |                    |                     |        |        |        |         |         |         |         |
| VC50-2SS-0.4P   | 0.4                  | 6.5               | 4.2                | 0.7                 | 89.6   | 197.2  | 139    | 74      | 187     | Ø5      | 1.5     |
| VC502SS-0.75P   | 0.75                 | 9.3               | 7.2                | 1.5                 |        |        |        |         |         |         |         |
| VC50-2SS-1.5P   | 1.5                  | 15.7              | 10.2               | 3                   |        |        |        |         |         |         |         |
| VC50-2SS-2.2P   | 2.2                  | 24                | 14                 | 4                   | 102    | 202    | 162    | 90      | 189.1   | Ø5.6    | 3       |
| 1 Phase Input and 3 Phase Output 220V (-15%~+15% Tolerance) |                      |                   |                    |                     |        |        |        |         |         |         |         |
| VC50-2S-0.4P  | 0.4                  | 6.5               | 2.5                | 0.7                 | 89.6   | 197.2  | 139    | 74      | 187     | Ø5      | 1.5     |
| VC50-2S-0.75P   | 0.75                 | 9.3               | 4.2                | 1.5                 |        |        |        |         |         |         |         |
| VC50-2S-1.5P  | 1.5                  | 15.7              | 7.5                | 3                   |        |        |        |         |         |         |         |
| VC50-2S-2.2P  | 2.2                  | 24                | 14                 | 4                   |        |        |        |         |         |         |         |
| 3 Phase Input and 3 Phase Output 220V (-15%~+15% Tolerance) |                      |                   |                    |                     |        |        |        |         |         |         |         |
| VC50-2T-4P  | 4                    | 17                | 16                 | 5.9                 | 102    | 202    | 162    | 90      | 189.1   | Ø5.6    | 3       |
| VC50-2T-5.5P  | 5.5                  | 25                | 20                 | 8.5                 |        |        |        |         |         |         |         |
| VC50-2T-7.5P  | 7.5                  | 33                | 30                 | 11                  | 125    | 242.5  | 169.5  | 108.5   | 226     | Ø6.3    | 3.5     |
| 3 Phase Input and 3 Phase Output 380V (-15%~+15% Tolerance) |                      |                   |                    |                     |        |        |        |         |         |         |         |
| VC50-4T-0.75P   | 0.75                 | 3.4               | 2.5                | 1.5                 | 89.6   | 197.2  | 139    | 74      | 187     | Ø5      | 1.5     |
| VC50-4T-1.5P  | 1.5                  | 5                 | 4.2                | 3                   |        |        |        |         |         |         |         |
| VC50-4T-2.2P  | 2.2                  | 5.8               | 5.5                | 4                   |        |        |        |         |         |         |         |
| VC50-4T-4P  | 4                    | 13.5              | 9.5                | 5.9                 |        |        |        |         |         |         |         |
| VC50-4T-5.5P  | 5.5                  | 19.5              | 14                 | 8.9                 | 102    | 202    | 162    | 90      | 189.1   | Ø5.6    | 3       |
| VC50-4T-7.5P  | 7.5                  | 25                | 18.5               | 11                  |        |        |        |         |         |         |         |
| VC50-4T-11P   | 11                   | 32                | 25                 | 4                   |        |        |        |         |         |         |         |
| VC50-4T-15P   | 15                   | 40                | 32                 | 21                  |        |        |        |         |         |         |         |
| VC50-4T-18.5P   | 18.5                 | 47                | 38                 | 24                  | 125    | 242.5  | 169.5  | 108.5   | 226     | Ø6.3    | 3.5     |
| VC50-4T-22P   | 22                   | 51                | 45                 | 30                  |        |        |        |         |         |         |         |
| VC50-4T-30P   | 30                   | 70                | 60                 | 39                  |        |        |        |         |         |         |         |
| VC50-4T-37P   | 37                   | 80                | 75                 | 49                  | 225    | 360    | 231.7  | 206     | 342     | Ø7      | 10      |

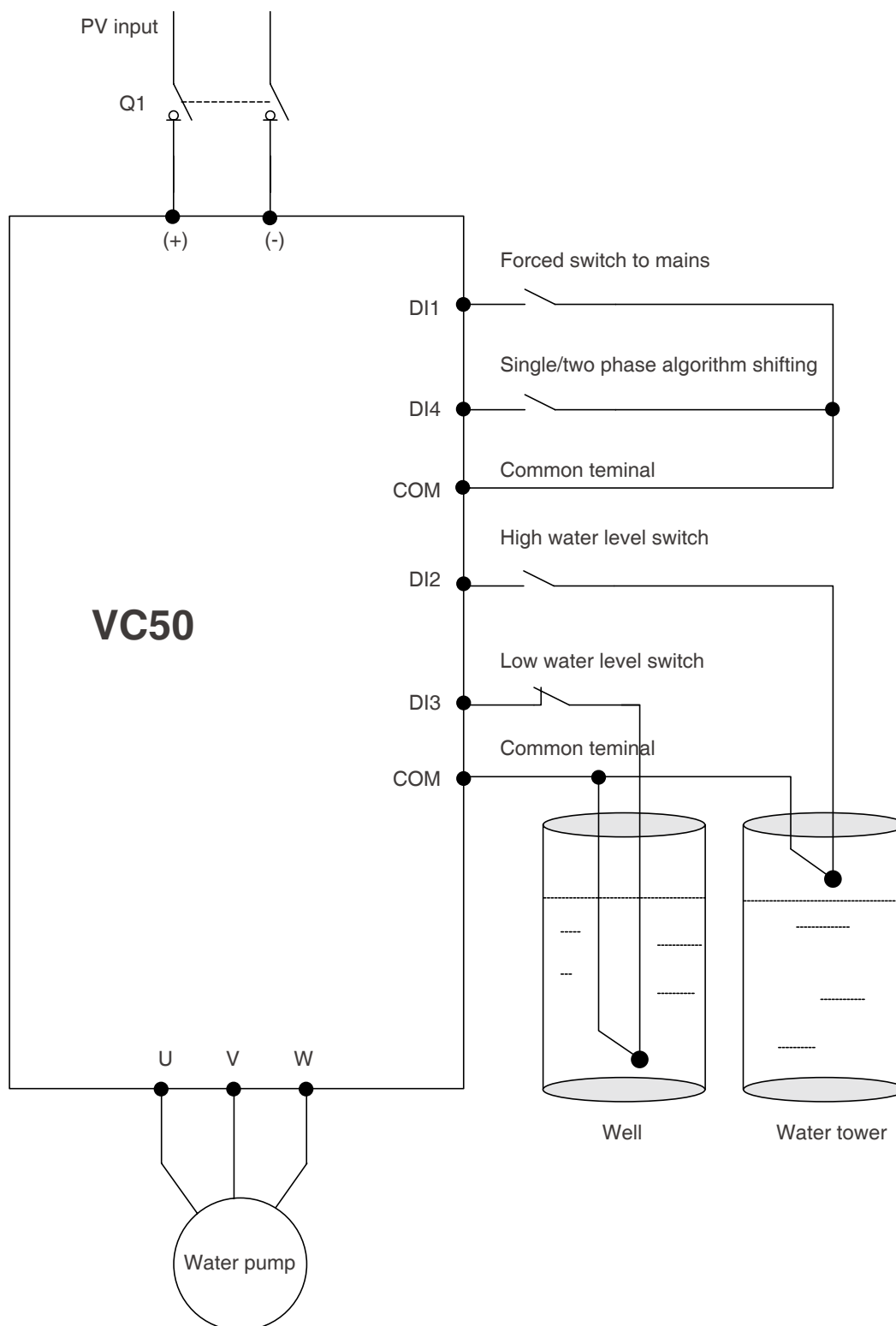
## Product functional parameters

| Model                                  | 2SS   | 2S          | 2T                       | 4T                       |
|--|---|-------------|--------------------------|--------------------------|
| Ac input voltage (V)                   | 220(-15%)-240(+10%)(1PH)  |             | 220(-15%)-240(+10%)(3PH) | 380(-15%)-440(+10%)(3PH) |
| Max. input DC voltage (V)              | 440   | 440         | 440                      | 800                      |
| Starting voltage (V)                   | 200   | 200         | 200                      | 300                      |
| Min. operating voltage (V)             | 150   | 150         | 150                      | 250                      |
| Recommended DC input voltage range (V) | 200-400   | 200-400     | 200-400                  | 300~750                  |
| Recommended MPP voltage (V)            | 330   | 330         | 330                      | 550                      |
| Rated output voltage (V)               | 1 phase 220   | 3 phase 220 | 3 phase 220              | 3 phase 380              |
| Output frequency range (HZ)            | 0-400   |             |                          |                          |
| MPPT                                   | 99%   |             |                          |                          |
| Installation mode                      | Support wall-mounted  |             |                          |                          |
| Ambient temperature                    | -10℃ -+50℃<br>When the temperature exceeds 40℃ , it will be reduced by 2% at 1℃ .             |             |                          |                          |
| Altitude                               | Below 1000m, after more than 1000m, it will be reduced by 1% according to the 100m reduction. |             |                          |                          |
| Cooling mode                           | Air blast cooling   |             |                          |                          |
| Protection grades                      | IP20  |             |                          |                          |

## Recommended solar module configuration under standard conditions

| Solar pumping inverter model | Open-circuit voltage degree of solar modul |                              |                  |                              |
|------------------------------|--|------------------------------|------------------|------------------------------|
|                              | 37±1V                                      |                              | 45±1V            |                              |
|                              | Module power±5Wp                           | Modules per string * strings | Module power±5Wp | Modules per string * strings |
| VC50-2SS-0.4P                | 250  | 11*1                         | 300              | 9*1                          |
| VC50-2SS-0.75P               |  | 11*1                         |                  |                              |
| VC50-2SS-1.5P                |  | 11*1                         |                  |                              |
| VC50-2SS-2.2P                |  | 11*1                         |                  |                              |
| VC50-2S-0.4P                 |  | 11*1                         |                  |                              |
| VC50-2S-0.75P                |  | 11*1                         |                  |                              |
| VC50-2S-1.5P                 |  | 11*1                         |                  |                              |
| VC50-2S-2.2P                 |  | 11*1                         |                  |                              |
| VC50-2T-4P                   |  | 11*2                         |                  | 9*2                          |
| VC50-2T-5.5P                 |  | 11*3                         |                  | 9*3                          |
| VC50-2T-7.5P                 |  | 11*4                         |                  | 9*4                          |
| VC50-4T-0.75P                |  | 18*1                         |                  | 15*1                         |
| VC50-4T-1.5P                 |  | 18*1                         |                  | 15*1                         |
| VC50-4T-2.2P                 |  | 18*1                         |                  | 15*1                         |
| VC50-4T-4P                   |  | 20*1                         |                  | 16*1                         |
| VC50-4T-5.5P                 |  | 18*2                         |                  | 15*2                         |
| VC50-4T-7.5P                 |  | 18*2                         |                  | 15*2                         |
| VC50-4T-11P                  |  | 18*3                         |                  | 15*3                         |
| VC50-4T-15P                  | 250  | 18*4                         | 300              | 15*4                         |
| VC50-4T-18.5P                |  | 18*5                         |                  | 15*5                         |
| VC50-4T-22P                  |  | 18*6                         |                  | 15*6                         |
| VC50-4T-30P                  |  | 18*8                         |                  | 15*8                         |
| VC50-4T-37P                  |  | 18*9                         |                  | 15*9                         |

## General Wiring Diagram



## Optional Parts And Accessories



### AC Input Reactor

**Voltage:** 220VAC~3300VAC

**Current:** 3A~1600A

- Prevent line power overload;
- Reduce harmonic distortion produced by AC drive;
- Restrain the surge of power supply device caused by AC drive.



### AC Output Reactor

**Voltage:** 220VAC~3300VAC

**Current:** 3A~1600A

- The motor reactor limits the capacitive charging current between the AC drive and the motor cable.
- It dampens the voltage rise rate of the PWM wave outputted by the AC drive



### Input Filter

**Voltage:** 220~1140VAC

**Current:** 3A~1600A

- Reduce the conduction interference of the whole system to the power grid.
- Excellent insertion attenuation performance in the range of 150kHz~30MHz.



### Output Filter

**Voltage:** 220~1140VAC

**Current:** 3A~1600A

- Improve system reliability and efficiency;
- Ensure that EMC;
- No need to shield the motor electricity.



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