

## ZHEJIANG HADIYA MACHINERY CO.,LTD

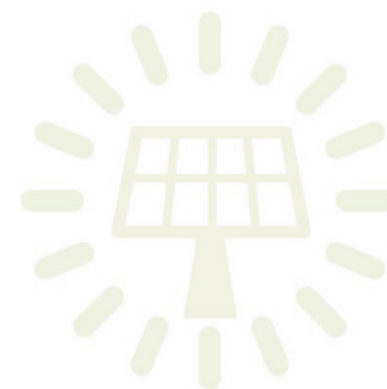
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Green New energy  
Environment protection



# SOLAR PUMP

PRODUCT CATALOG







**HADIYA**

# DEEP WELL PUMP

Environmental protection and energy saving

## PROFESSIONAL SOLAR PUMP MANUFACTURER

By using solar energy, the submersible pump is put into the well to draw water from the deep well, which can be used for domestic water supply, drinking water, agricultural irrigation and drinking water for cattle and sheep.





# DEEP WELL PUMP

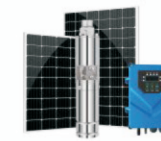
Environmental protection and energy saving

## PROFESSIONAL SOLAR PUMP MANUFACTURER

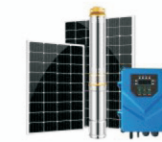
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## SOLAR PUMP CONTENTS

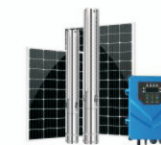
### DC SOLAR PUMP



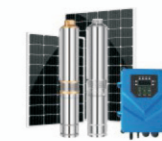
**3DSS**  
3" DC BRUSHLESS SCREW  
DEEP WELL SOLAR PUMP  
P03-P04



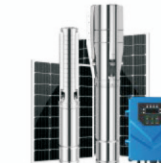
**3DSD**  
3" DC BRUSHLESS PLASTIC IMPELLER  
DEEP WELL SOLAR PUMP  
P05-P06



**3DSP**  
3" DC BRUSHLESS SS IMPELLER  
DEEP WELL SOLAR PUMP  
P07-P08

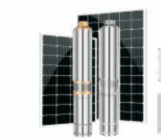


**4DSD**  
4" DC BRUSHLESS PLASTIC IMPELLER  
DEEP WELL SOLAR PUMP  
P09-P10

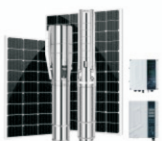


**4DSP**  
4" DC BRUSHLESS SS IMPELLER  
DEEP WELL SOLAR PUMP  
P11-P12

### AC/DC SOLAR PUMP

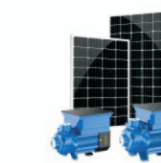


**4SD-A/D**  
4" AC/DC BRUSHLESS  
PLASTIC IMPELLER  
DEEP WELL SOLAR PUMP  
P15-16



**4SP-A/D**  
4" AC/DC BRUSHLESS SS  
IMPELLER DEEP WELL SOLAR PUMP  
P17-18

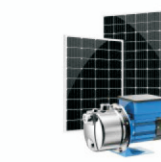
### SOLAR GROUND PUMP



**QBDC**  
DC BRUSHLESS PERIPHERAL  
SOLAR PUMP  
P21



**HFDC**  
DC BRUSHLESS CENTRIFUGAL  
SOLAR PUMP  
P22



**TPDC**  
DC BRUSHLESS JET  
SOLAR PUMP  
P23



**LPDC**  
DC BRUSHLESS SWIMMING POOL  
SOLAR PUMP  
P24

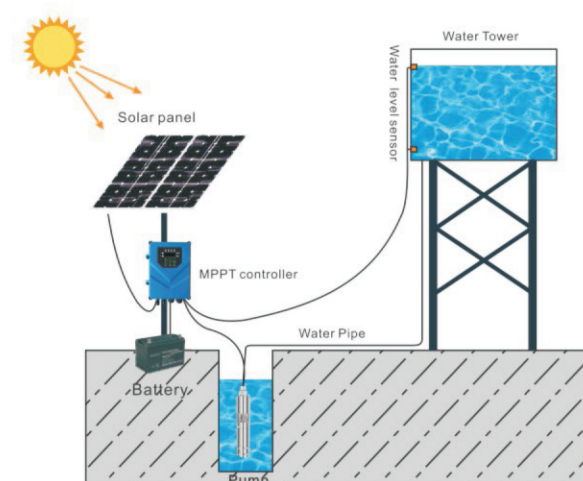


# DC SOLAR PUMP

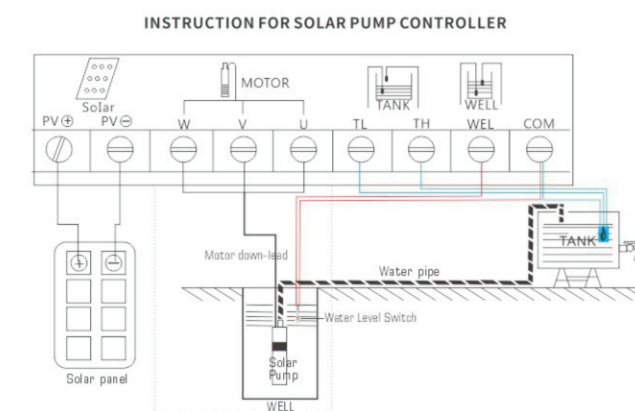
## ADVANTAGES OF DC SOLAR PUMP

1. Permanent magnet DC brushless synchronous motor : The efficiency is improved by 25% , Save energy ; Reduce the consumption of solar panels
2. 304 S / S pump shaft
3. MPPT function , the solar power utilization rate is higher
4. Brass or stainless steel outlet / connector / oil cylinder
5. Japanese NSK bearing : prolong the working life
6. Double bearing motor base : can work under more axial pressure
7. Alloy mechanical seal : Longer working life and high reliability
8. Motor coil is made by automatic winding machine with centralized winding technology , motor efficiency is much improved
9. Intelligent water shortage protection : The pump stops working automatically when there is no water in the well , and auto start protection function for 10 minutes

Green New energy  
Environment protection



DC EXTERNAL CONTROLLER TYPE



DC:12v-110V

## DC CONTROLLER WORKING ENVIRONMENT AND ELECTRICAL PROPERTY

| Controller and Pump Matching Method |                 |                        |                               |                        |                          |
|-------------------------------------|-----------------|------------------------|-------------------------------|------------------------|--------------------------|
| Controller Model                    | Adaptable Pump  | Max. Input Current (A) | Max. Open Circuit Voltage (V) | MPPT Voltage Range (V) | Working Temperature (°C) |
| ZM-24                               | Rated 24V Pump  | 15                     | <50                           | 24-36                  | -15-60                   |
| ZM-36                               | Rated 36V Pump  | 15                     | <50                           | 24-36                  | -15-60                   |
| ZM-48                               | Rated 48V Pump  | 15                     | <100                          | 48-72                  | -15-60                   |
| ZM-72                               | Rated 72V Pump  | 15                     | <150                          | 72-108                 | -15-60                   |
| ZM-110                              | Rated 110V Pump | 15                     | <200                          | 96-144                 | -15-60                   |

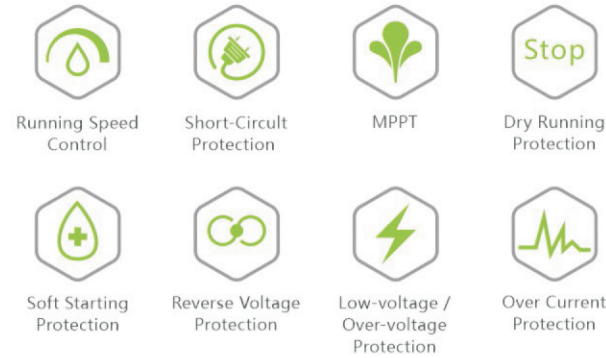


## 3DSS

3" DC BRUSHLESS SCREW DEEP WELL  
SOLAR PUMP

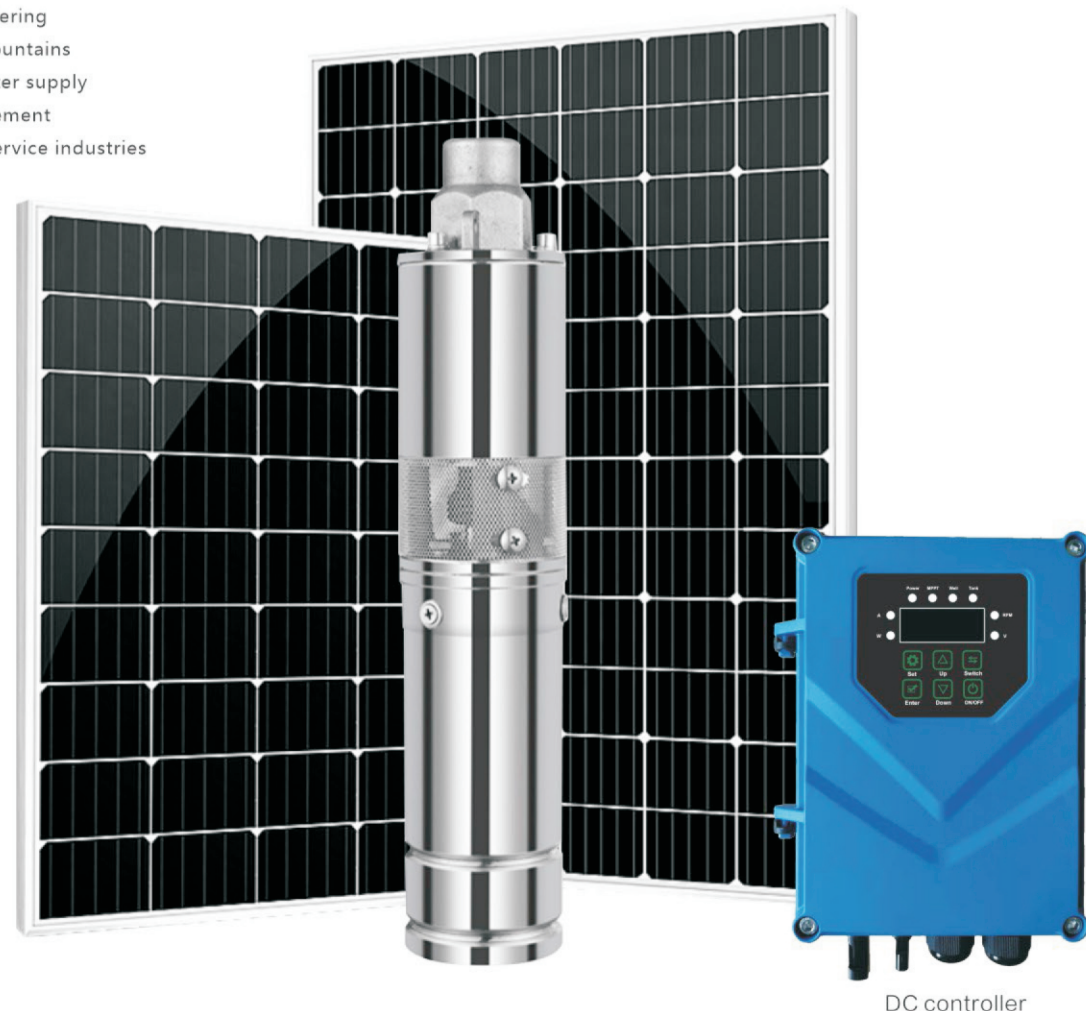
### ADVANTAGE

- Maintenance-Free Brushless DC Motor
- Integrated DSP & MPPT(Maximum Power Point remote control etc.)
- Suitable for Wide DC voltage Operation
- Control inputs for well probe,dry running protection
- Battery Operation,low voltage disconnect for battery Tracking)
- Overload and high Adjustable speed control of motor
- Temperature Protection and against reverse polarity



### APPLICATION

- Irrigation in horticulture & agriculture
- Livestock watering
- Gardens or fountains
- Domestic water supply
- Pond management
- Small scale service industries

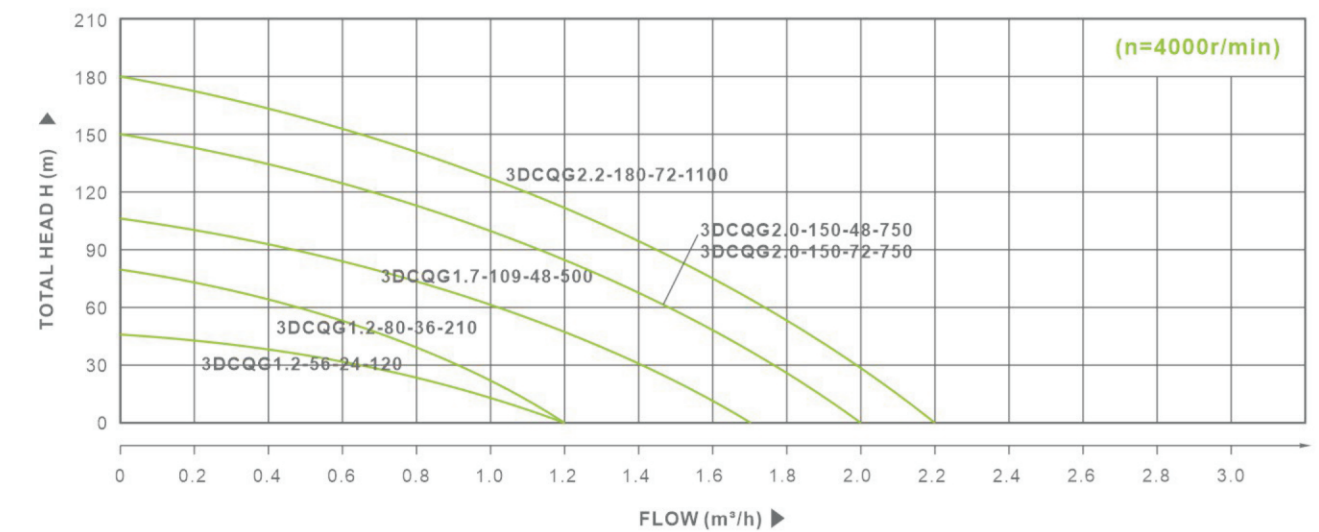


DC controller

### FREE SPARE PARTS



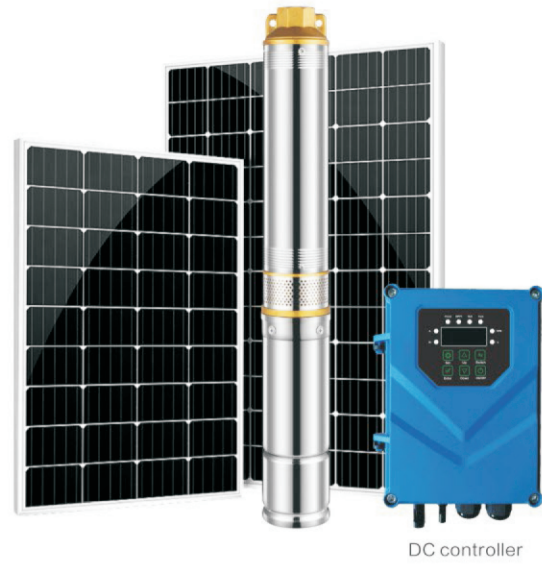
### PERFORMANCE CURVES



### TECHNICAL DATA

| ITEM                 | Voltage (v) | Best input Voltage (DC) | Power (w) | Max. Flow (m³/h) | Max. Head (m) | Outlet (in) | Open circuit voltage (VOC) | Solar Panels Suggestion |           |                |                                                                                       |
|----------------------|-------------|-------------------------|-----------|------------------|---------------|-------------|----------------------------|-------------------------|-----------|----------------|---------------------------------------------------------------------------------------|
|                      |             |                         |           |                  |               |             |                            | Voltage (V)             | Power (w) | Quantity (pcs) | Connection                                                                            |
| 3DCQG1.2-56-24-120   | 24          | 30-48V                  | 120       | 1.2              | 56            | 0.75"       | <50V                       | 36                      | 250       | 1              |  |
| 3DCQG1.2-80-36-210   | 36          | 30-48V                  | 210       | 1.2              | 80            | 0.75"       | <50V                       | 36                      | 300       | 1              |  |
| 3DCQG1.7-109-48-500  | 48          | 60-90V                  | 500       | 1.7              | 109           | 0.75"       | <100V                      | 36                      | 330       | 2              |  |
| 3DCQG2.0-150-48-750  | 48          | 60-90V                  | 750       | 2.0              | 150           | 0.75"       | <100V                      | 36                      | 250       | 4              |  |
| 3DCQG2.0-150-72-750  | 72          | 90-120V                 | 750       | 2.0              | 150           | 0.75"       | <150V                      | 36                      | 330       | 3              |  |
| 3DCQG2.2-180-72-1100 | 72          | 90-120V                 | 1100      | 2.2              | 180           | 0.75"       | <150V                      | 36                      | 300       | 6              |  |





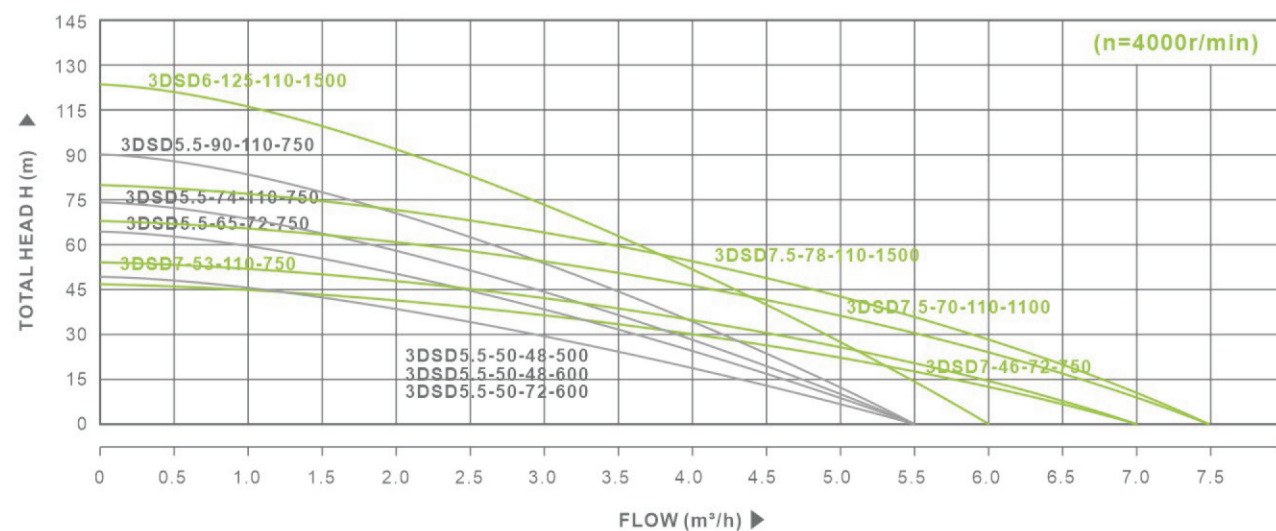
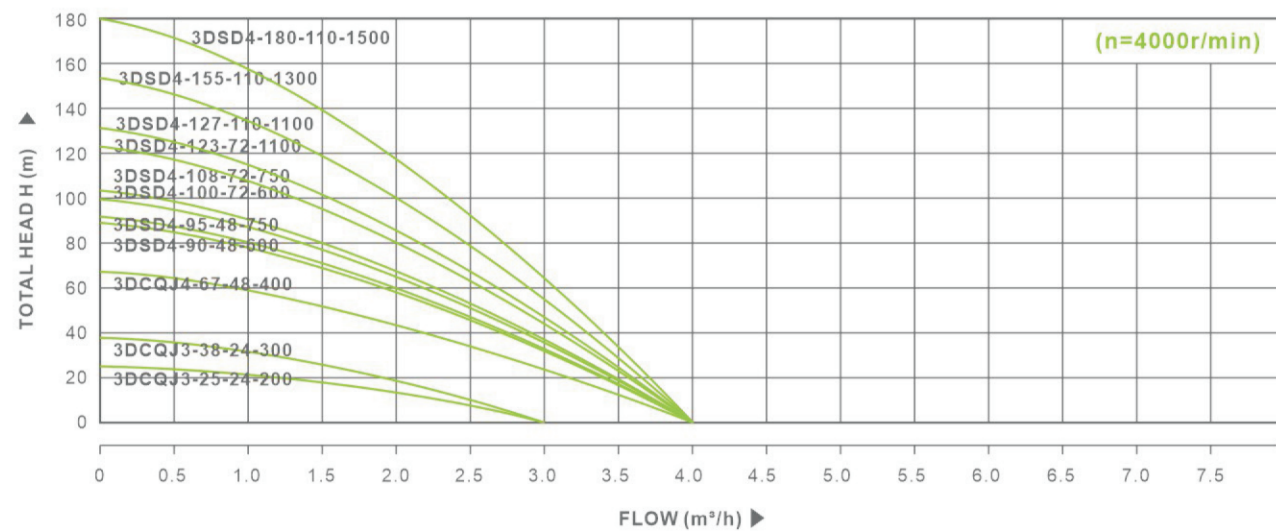
#### ADVANTAGE

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- Integrated DSP & MPPT(Maximum Power Point remote control etc.)
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- Control inputs for well probe,dry running protection
- Battery Operation,low voltage disconnect for battery Tracking)
- Overload and high Adjustable speed control of motor
- Temperature Protection and against reverse polarity

#### FREE SPARE PARTS



#### PERFORMANCE CURVES



#### TECHNICAL DATA

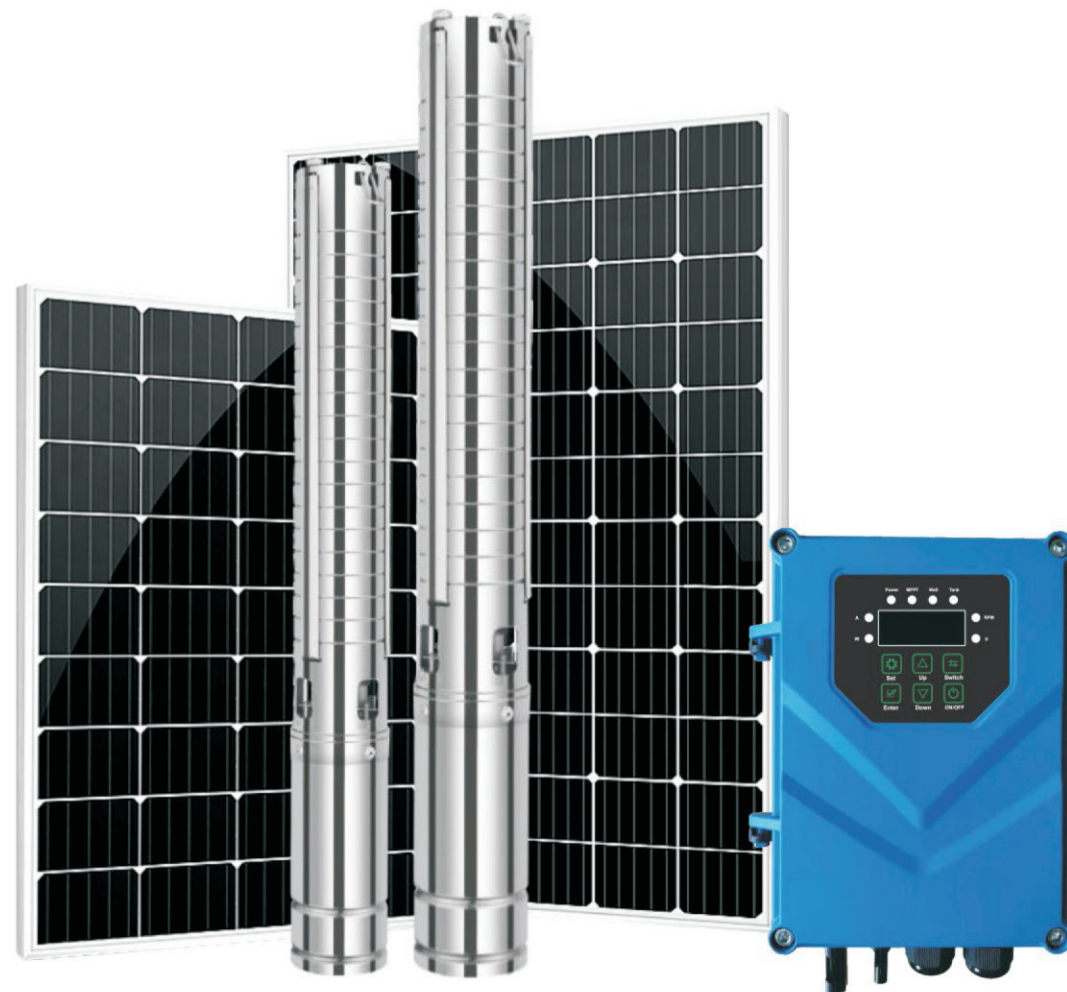
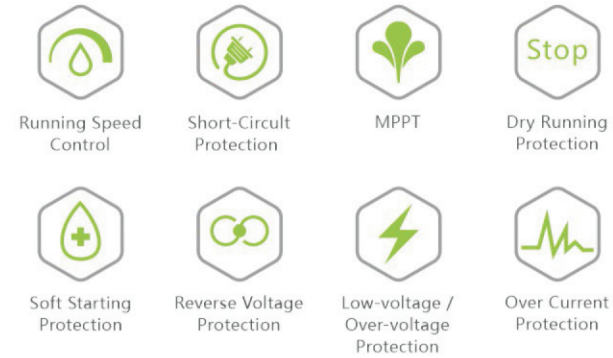
| ITEM                | Voltage (v) | Best input Voltage (DC) | Power (w) | Max. Flow (m³/h) | Max. Head (m) | Outlet (in) | Open circuit voltage (VOC) | Solar Panels Suggestion |           |                |                                                                                       |
|---------------------|-------------|-------------------------|-----------|------------------|---------------|-------------|----------------------------|-------------------------|-----------|----------------|---------------------------------------------------------------------------------------|
|                     |             |                         |           |                  |               |             |                            | Voltage (V)             | Power (w) | Quantity (pcs) | Connection                                                                            |
| 3DSD3-25-24-200     | 24          | 30-48V                  | 200       | 3                | 25            | 1.25"       | < 50V                      | 36                      | 300       | 1              |    |
| 3DSD3-38-24-300     | 24          | 30-48V                  | 300       | 3                | 38            | 1.25"       | < 50V                      | 36                      | 250       | 2              |    |
| 3DSD4-67-48-400     | 48          | 60-90V                  | 400       | 4                | 67            | 1.25"       | < 100V                     | 36                      | 300       | 2              |    |
| 3DSD4-90-48-600     | 48          | 60-90V                  | 600       | 4                | 90            | 1.25"       | < 100V                     | 36                      | 250       | 4              |    |
| 3DSD4-95-48-750     | 48          | 60-90V                  | 750       | 4                | 95            | 1.25"       | < 100V                     | 36                      | 250       | 4              |    |
| 3DSD5.5-50-48-500   | 48          | 60-90V                  | 500       | 5.5              | 50            | 1.5"        | < 100V                     | 36                      | 250       | 4              |    |
| 3DSD5.5-50-48-600   | 48          | 60-90V                  | 600       | 5.5              | 50            | 1.5"        | < 100V                     | 36                      | 250       | 4              |    |
| 3DSD4-100-72-600    | 72          | 90-120V                 | 600       | 4                | 100           | 1.25"       | < 150V                     | 36                      | 300       | 3              |    |
| 3DSD4-108-72-750    | 72          | 90-120V                 | 750       | 4                | 108           | 1.25"       | < 150V                     | 36                      | 330       | 3              |   |
| 3DSD4-123-72-1100   | 72          | 90-120V                 | 1100      | 4                | 123           | 1.25"       | < 150V                     | 36                      | 300       | 6              |  |
| 3DSD5.5-50-72-600   | 72          | 90-120V                 | 600       | 5.5              | 50            | 1.5"        | < 150V                     | 36                      | 300       | 3              |  |
| 3DSD5.5-65-72-750   | 72          | 90-120V                 | 750       | 5.5              | 65            | 1.5"        | < 150V                     | 36                      | 330       | 3              |  |
| 3DSD7-46-72-750     | 72          | 90-120V                 | 750       | 7                | 46            | 1.5"        | < 150V                     | 36                      | 330       | 3              |  |
| 3DSD4-127-110-1100  | 110         | 110-150V                | 1100      | 4                | 127           | 1.25"       | < 200V                     | 36                      | 300       | 6              |  |
| 3DSD4-155-110-1300  | 110         | 110-150V                | 1300      | 4                | 155           | 1.25"       | < 200V                     | 36                      | 300       | 6              |  |
| 3DSD4-180-110-1500  | 110         | 110-150V                | 1500      | 4                | 180           | 1.25"       | < 200V                     | 36                      | 300       | 8              |  |
| 3DSD5.5-74-110-750  | 110         | 110-150V                | 750       | 5.5              | 74            | 1.5"        | < 200V                     | 36                      | 300       | 4              |  |
| 3DSD5.5-90-110-750  | 110         | 110-150V                | 750       | 5.5              | 90            | 1.5"        | < 200V                     | 36                      | 300       | 4              |  |
| 3DSD6-125-110-1500  | 110         | 110-150V                | 1500      | 6                | 125           | 1.5"        | < 200V                     | 36                      | 300       | 8              |  |
| 3DSD7-53-110-750    | 110         | 110-150V                | 750       | 7                | 53            | 1.5"        | < 200V                     | 36                      | 300       | 4              |  |
| 3DSD7.5-70-110-1100 | 110         | 110-150V                | 1100      | 7.5              | 70            | 1.5"        | < 200V                     | 36                      | 300       | 6              |  |
| 3DSD7.5-78-110-1500 | 110         | 110-150V                | 1500      | 7.5              | 78            | 1.5"        | < 200V                     | 36                      | 300       | 8              |  |





#### ADVANTAGE

Maintenance-Free Brushless DC Motor  
Integrated DSP & MPPT(Maximum Power Point remote control etc.)  
Suitable for Wide DC voltage Operation  
Control inputs for well probe,dry running protection  
Battery Operation,low voltage disconnect for battery Tracking)  
Overload and high Adjustable speed control of motor  
Temperature Protection and against reverse polarity

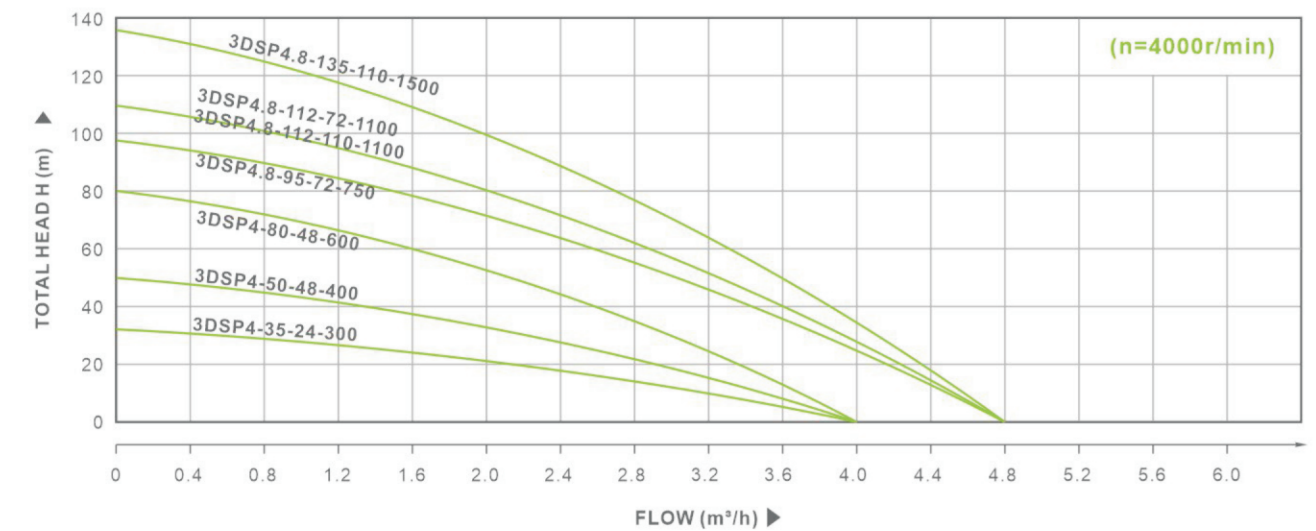


DC controller

#### FREE SPARE PARTS



#### PERFORMANCE CURVES



#### TECHNICAL DATA

| ITEM                 | Voltage (v) | Best input Voltage (DC) | Power (w) | Max. Flow (m³/h) | Max. Head (m) | Outlet (in) | Open circuit voltage (VOC) | Solar Panels Suggestion |           |                |            |
|----------------------|-------------|-------------------------|-----------|------------------|---------------|-------------|----------------------------|-------------------------|-----------|----------------|------------|
|                      |             |                         |           |                  |               |             |                            | Voltage (V)             | Power (w) | Quantity (pcs) | Connection |
| 3DSP4-35-24-300      | 24          | 30-48V                  | 300       | 4                | 35            | 1.25"       | <50V                       | 36                      | 250       | 2              |            |
| 3DSP4-50-48-400      | 48          | 60-90V                  | 400       | 4                | 50            | 1.25"       | <100V                      | 36                      | 300       | 2              |            |
| 3DSP4-80-48-600      | 48          | 60-90V                  | 600       | 4                | 80            | 1.25"       | <100V                      | 36                      | 250       | 4              |            |
| 3DSP4.8-95-72-750    | 72          | 90-120V                 | 750       | 4.8              | 95            | 1.25"       | <150V                      | 36                      | 330       | 3              |            |
| 3DSP4.8-112-72-1100  | 72          | 90-120V                 | 1100      | 4.8              | 112           | 1.25"       | <150V                      | 36                      | 300       | 6              |            |
| 3DSP4.8-112-110-1100 | 110         | 110-150V                | 1100      | 4.8              | 112           | 1.25"       | <200V                      | 36                      | 300       | 6              |            |
| 3DSP4.8-135-110-1500 | 110         | 110-150V                | 1500      | 4.8              | 135           | 1.25"       | <200V                      | 36                      | 300       | 8              |            |





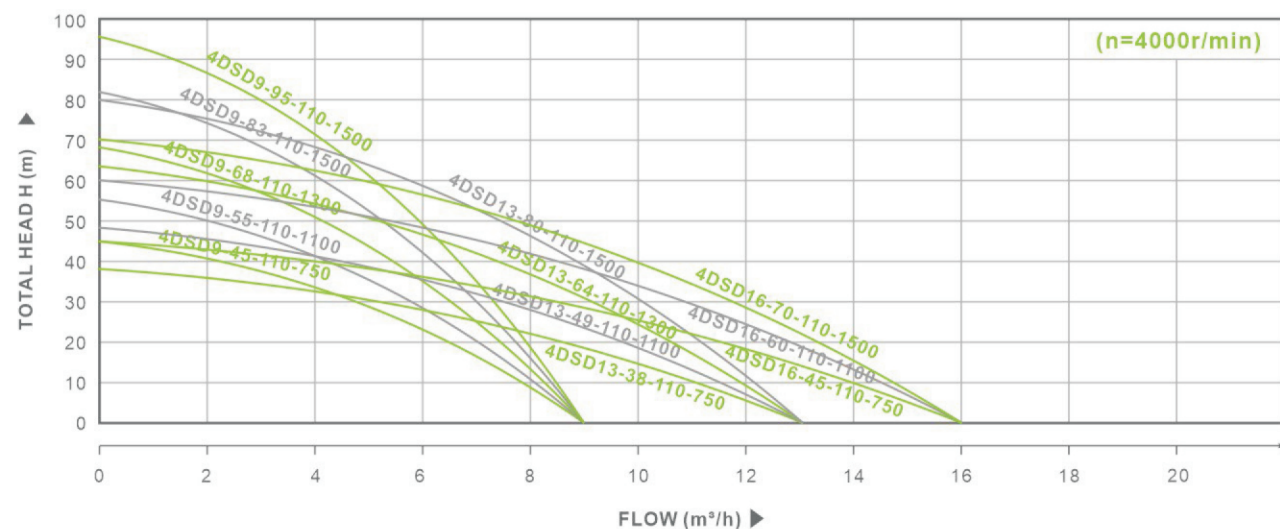
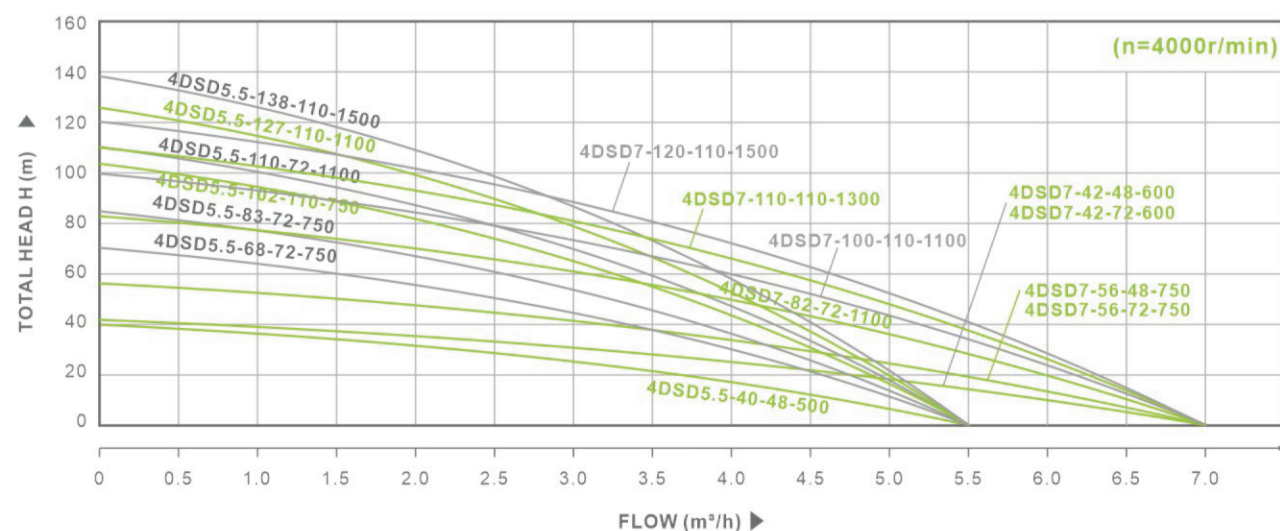
#### ADVANTAGE

- Maintenance-Free Brushless DC Motor
- Integrated DSP & MPPT(Maximum Power Point remote control etc.)
- Suitable for Wide DC voltage Operation
- Control inputs for well probe,dry running protection
- Battery Operation,low voltage disconnect for battery Tracking)
- Overload and high Adjustable speed control of motor
- Temperature Protection and against reverse polarity

#### FREE SPARE PARTS



#### PERFORMANCE CURVES



#### TECHNICAL DATA

| ITEM                 | Voltage (v) | Best input Voltage (DC) | Power (w) | Max. Flow (m³/h) | Max. Head (m) | Outlet (in) | Open circuit voltage (VOC) | Solar Panels Suggestion |           |                |                                                                                       |
|----------------------|-------------|-------------------------|-----------|------------------|---------------|-------------|----------------------------|-------------------------|-----------|----------------|---------------------------------------------------------------------------------------|
|                      |             |                         |           |                  |               |             |                            | Voltage (V)             | Power (w) | Quantity (pcs) | Connection                                                                            |
| 4DSD5.5-40-48-500    | 48          | 60-90V                  | 500       | 5.5              | 40            | 1.25"       | <100V                      | 36                      | 250       | 4              |    |
| 4DSD7-42-48-600      | 48          | 60-90V                  | 600       | 7                | 42            | 1.25"       | <100V                      | 36                      | 250       | 4              |    |
| 4DSD7-56-48-750      | 48          | 60-90V                  | 750       | 7                | 56            | 1.25"       | <100V                      | 36                      | 250       | 4              |    |
| 4DSD5.5-68-72-750    | 72          | 90-120V                 | 750       | 5.5              | 68            | 1.25"       | <150V                      | 36                      | 330       | 3              |    |
| 4DSD5.5-83-72-750    | 72          | 90-120V                 | 750       | 5.5              | 83            | 1.25"       | <150V                      | 36                      | 330       | 3              |    |
| 4DSD5.5-110-72-1100  | 72          | 90-120V                 | 1100      | 5.5              | 110           | 1.25"       | <150V                      | 36                      | 300       | 6              |    |
| 4DSD7-42-72-600      | 72          | 90-120V                 | 600       | 7                | 42            | 1.25"       | <150V                      | 36                      | 300       | 3              |    |
| 4DSD7-56-72-750      | 72          | 90-120V                 | 750       | 7                | 56            | 1.25"       | <150V                      | 36                      | 330       | 3              |    |
| 4DSD7-82-72-1100     | 72          | 90-120V                 | 1100      | 7                | 82            | 1.25"       | <150V                      | 36                      | 300       | 6              |   |
| 4DSD5.5-102-110-750  | 110         | 110-150V                | 750       | 5.5              | 102           | 1.25"       | <200V                      | 36                      | 300       | 4              |  |
| 4DSD5.5-127-110-1100 | 110         | 110-150V                | 1100      | 5.5              | 127           | 1.25"       | <200V                      | 36                      | 300       | 6              |  |
| 4DSD5.5-138-110-1500 | 110         | 110-150V                | 1500      | 5.5              | 138           | 1.25"       | <200V                      | 36                      | 300       | 8              |  |
| 4DSD7-100-110-1100   | 110         | 110-150V                | 1100      | 7                | 100           | 1.25"       | <200V                      | 36                      | 300       | 6              |  |
| 4DSD7-110-110-1300   | 110         | 110-150V                | 1300      | 7                | 110           | 1.25"       | <200V                      | 36                      | 300       | 6              |  |
| 4DSD7-120-110-1500   | 110         | 110-150V                | 1500      | 7                | 120           | 1.25"       | <200V                      | 36                      | 300       | 8              |  |
| 4DSD9-45-110-750     | 110         | 110-150V                | 750       | 9                | 45            | 2"          | <200V                      | 36                      | 300       | 4              |  |
| 4DSD9-55-110-1100    | 110         | 110-150V                | 1100      | 9                | 55            | 2"          | <200V                      | 36                      | 300       | 6              |  |
| 4DSD9-68-110-1300    | 110         | 110-150V                | 1300      | 9                | 68            | 2"          | <200V                      | 36                      | 300       | 6              |  |
| 4DSD9-83-110-1500    | 110         | 110-150V                | 1500      | 9                | 83            | 2"          | <200V                      | 36                      | 300       | 8              |  |
| 4DSD9-95-110-1500    | 110         | 110-150V                | 1500      | 9                | 95            | 2"          | <200V                      | 36                      | 300       | 8              |  |
| 4DSD13-38-110-750    | 110         | 110-150V                | 750       | 13               | 38            | 2"          | <200V                      | 36                      | 300       | 4              |  |
| 4DSD13-49-110-1100   | 110         | 110-150V                | 1100      | 13               | 49            | 2"          | <200V                      | 36                      | 300       | 6              |  |
| 4DSD13-64-110-1300   | 110         | 110-150V                | 1300      | 13               | 64            | 2"          | <200V                      | 36                      | 300       | 6              |  |
| 4DSD13-80-110-1500   | 110         | 110-150V                | 1500      | 13               | 80            | 2"          | <200V                      | 36                      | 300       | 8              |  |
| 4DSD16-45-110-750    | 110         | 110-150V                | 750       | 16               | 45            | 2"          | <200V                      | 36                      | 300       | 4              |  |
| 4DSD16-60-110-1100   | 110         | 110-150V                | 1100      | 16               | 60            | 2"          | <200V                      | 36                      | 300       | 6              |  |
| 4DSD16-70-110-1500   | 110         | 110-150V                | 1500      | 16               | 70            | 2"          | <200V                      | 36                      | 300       | 8              |  |





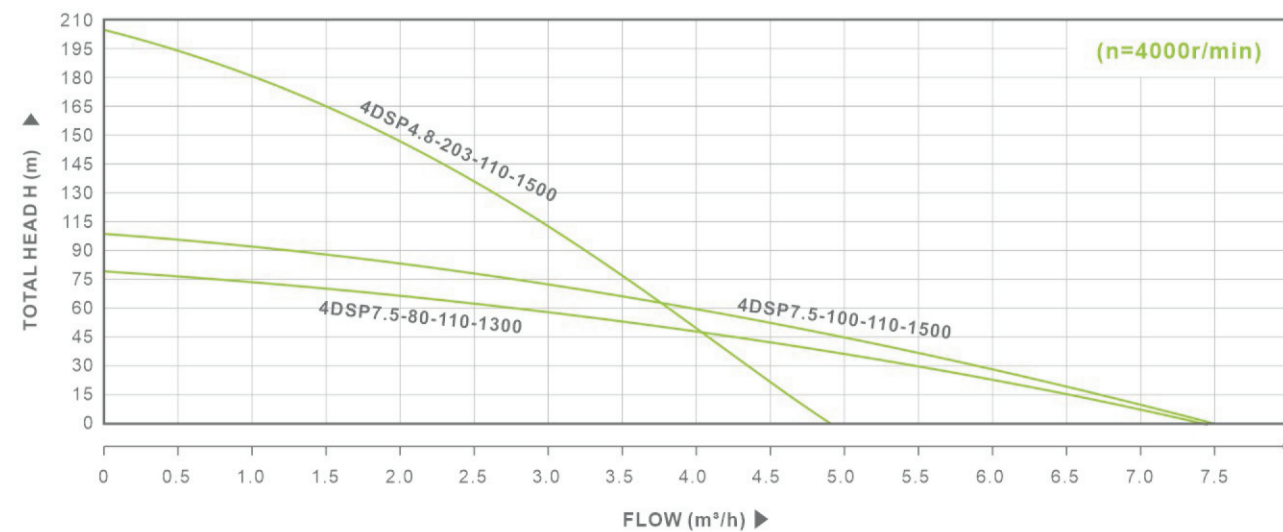
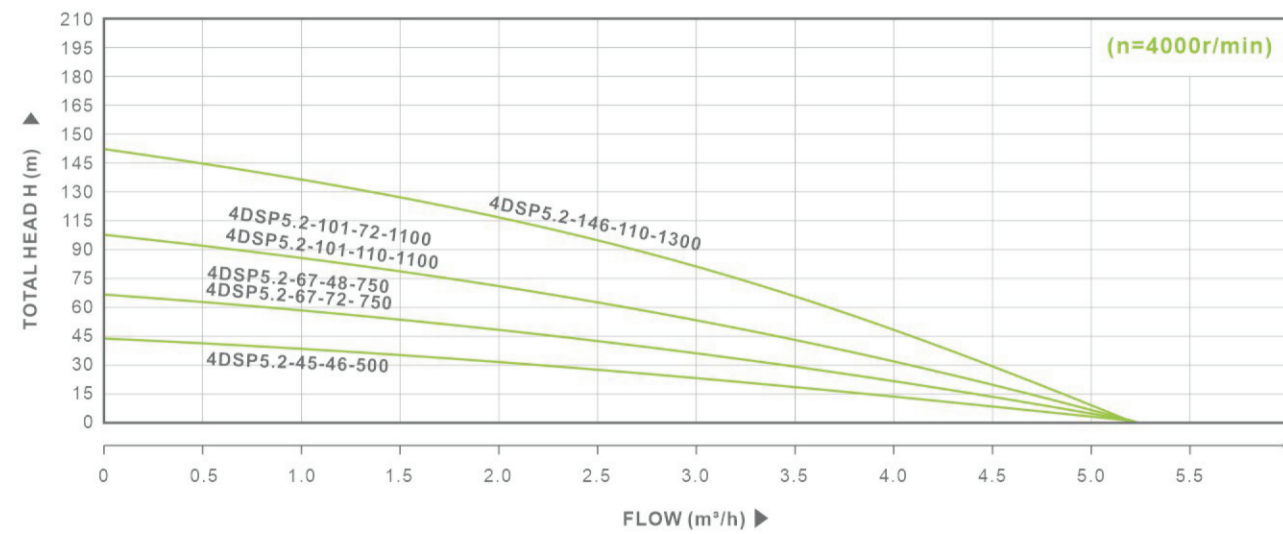
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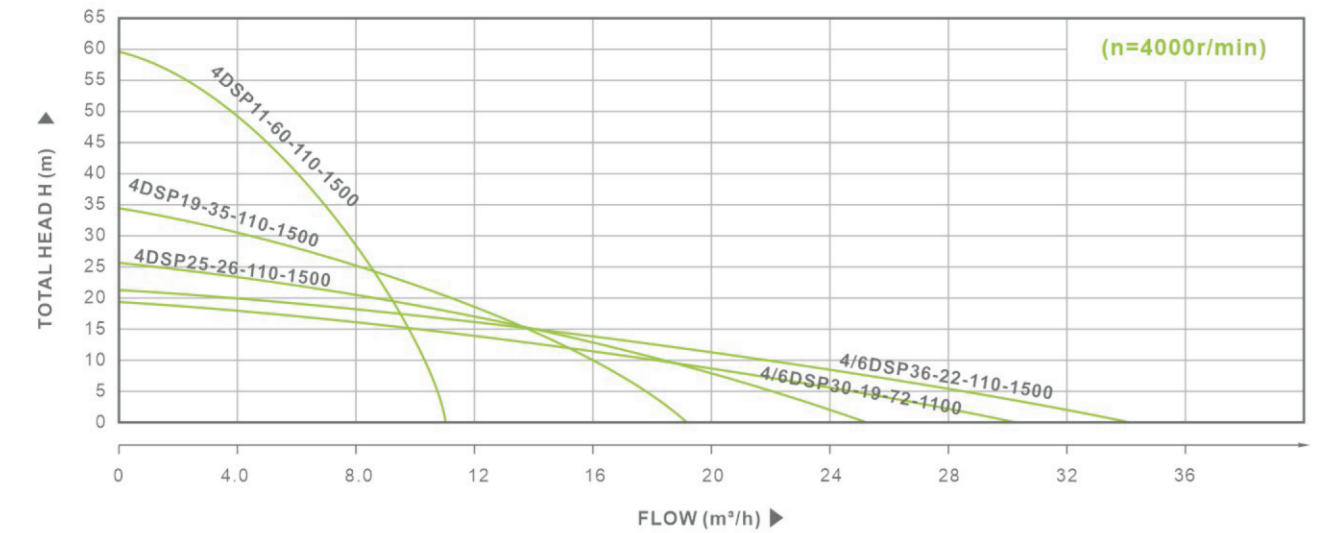
#### FREE SPARE PARTS



#### PERFORMANCE CURVES



#### PERFORMANCE CURVES



#### TECHNICAL DATA

| ITEM                 | Voltage (V) | Best input Voltage (DC) | Power (w) | Max Flow (m³/h) | Max. Head (m) | Outlet (in) | Open circuit voltage (VOC) | Solar Panels Suggestion |           |                |                                                                                       |
|----------------------|-------------|-------------------------|-----------|-----------------|---------------|-------------|----------------------------|-------------------------|-----------|----------------|---------------------------------------------------------------------------------------|
|                      |             |                         |           |                 |               |             |                            | Voltage (V)             | Power (w) | Quantity (pcs) | Connection                                                                            |
| 4DSP5.2-45-48-500    | 48          | 60-90V                  | 500       | 5.2             | 45            | 1.25"       | <100V                      | 36                      | 330       | 2              |   |
| 4DSP5.2-67-48-750    | 48          | 60-90V                  | 750       | 5.2             | 67            | 1.25"       | <100V                      | 36                      | 250       | 4              |  |
| 4DSP5.2-67-72-750    | 72          | 90-120V                 | 750       | 5.2             | 67            | 1.25"       | <150V                      | 36                      | 330       | 3              |  |
| 4DSP5.2-101-72-1100  | 72          | 90-120V                 | 1100      | 5.2             | 101           | 1.25"       | <150V                      | 36                      | 300       | 6              |  |
| 4/6DSP30-19-72-1100  | 72          | 90-120V                 | 1100      | 30              | 19            | 3"          | <200V                      | 36                      | 300       | 6              |  |
| 4DSP5.2-101-110-1100 | 110         | 110-150V                | 1100      | 5.2             | 101           | 1.25"       | <200V                      | 36                      | 300       | 6              |  |
| 4DSP5.2-146-110-1300 | 110         | 110-150V                | 1300      | 5.2             | 146           | 1.25"       | <200V                      | 36                      | 300       | 6              |  |
| 4DSP7.5-80-110-1300  | 110         | 110-150V                | 1300      | 7.5             | 80            | 1.25"       | <200V                      | 36                      | 300       | 6              |  |
| 4DSP4.8-203-110-1500 | 110         | 110-150V                | 1500      | 4.8             | 203           | 1.25"       | <200V                      | 36                      | 300       | 8              |  |
| 4DSP7.5-100-110-1500 | 110         | 110-150V                | 1500      | 7.5             | 100           | 1.25"       | <200V                      | 36                      | 300       | 8              |  |
| 4DSP11-60-110-1500   | 110         | 110-150V                | 1500      | 11              | 60            | 2"          | <200V                      | 36                      | 300       | 8              |  |
| 4DSP19-35-110-1500   | 110         | 110-150V                | 1500      | 19              | 35            | 2"          | <200V                      | 36                      | 300       | 8              |  |
| 4DSP25-26-110-1500   | 110         | 110-150V                | 1500      | 25              | 26            | 2"          | <200V                      | 36                      | 300       | 8              |  |
| 4/6DSP36-22-110-1500 | 110         | 110-150V                | 1500      | 36              | 22            | 3"          | <200V                      | 36                      | 300       | 8              |  |



# AC/DC HYBRID SOLAR PUMP

PROFESSIONAL SOLAR PUMP MANUFACTURER



## 1)Single solar mode:

The controller can be used in single solar mode, the maximum current is limited to 12A, and the maximum power is tracked by MPPT algorithm. The running speed of the water pump is determined by the solar panel power, the maximum speed of the water pump, the maximum power of the controller and the temperature of the controller. When any condition is satisfied, the speed of the water pump will maintain the current speed or run at a reduced speed. Among them,



## 2)Single exchange mode:

The controller can be used in single AC mode, and the maximum AC current input is limited to 13A (different models may vary) (same as above). The running speed of the pump is determined by the AC input current, the maximum speed of the pump, the maximum power of the controller and the temperature of the controller. When any condition is satisfied, the speed of the pump will maintain the current speed or run at a reduced speed.



## 3) Full power AC / DC automatic hybrid compensation mode:

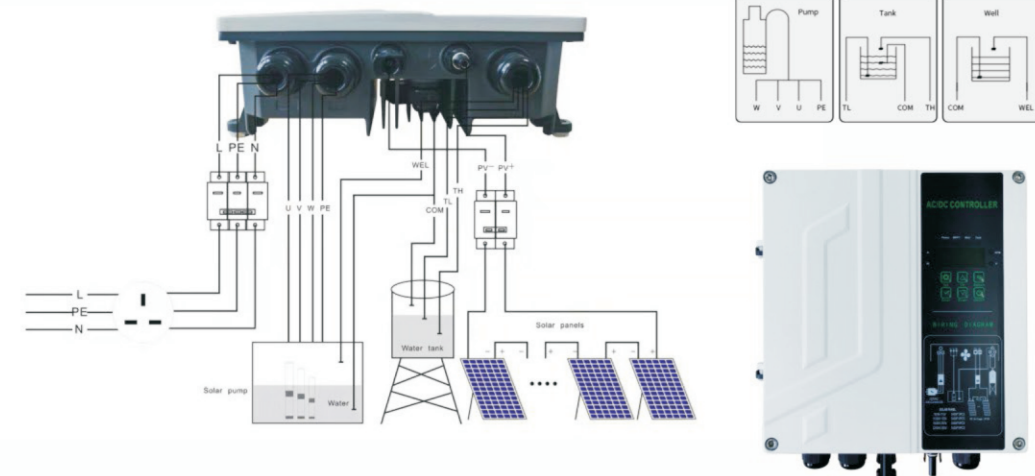
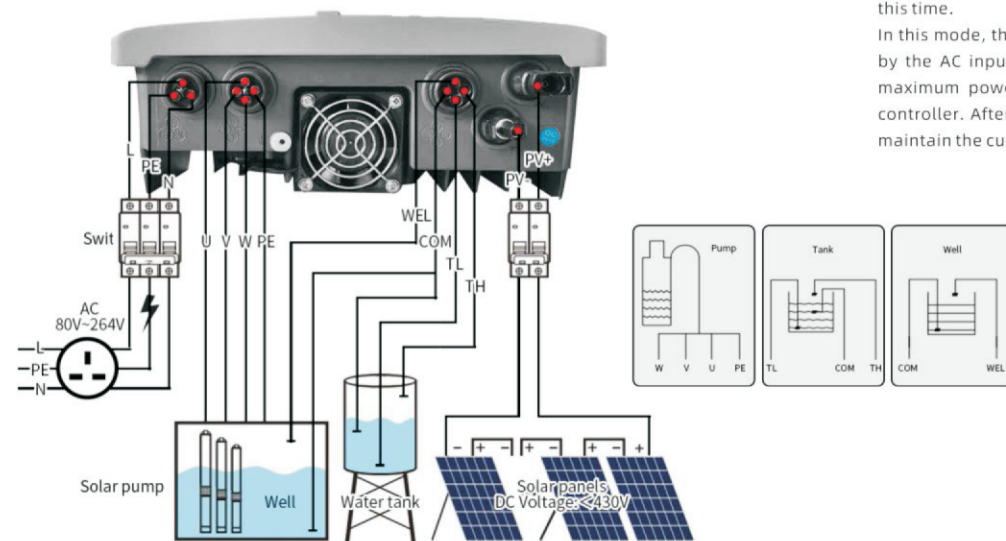
Under the full power AC / DC automatic hybrid compensation mode, the maximum current of DC side is limited to 12A. DC priority and adjustable. Put into use all day, solar panel minimum power can use 1W. In order to meet the pump full power operation, when the sun. When the power is not enough, the AC side will automatically supplement the power to ensure the normal operation of the power pump. In this mode, the operation of the water pump. The speed is still determined by the AC input current, the maximum speed of the pump, the maximum power of the controller and the temperature of the controller. After any condition is satisfied, the speed of the pump will keep the current speed or run at a reduced speed.

## 4) Custom AC power operation mode:

User defined AC power operation mode is a programmable hybrid compensation mode. Users can enter the setting mode to set the maximum input of AC power to achieve the purpose of saving AC power. The user can turn on this mode by pressing and holding the key, and the indicator light (AC\_LIM) on.

For example: the maximum input of P1.5 AC power is 1000W, when the solar power is not enough, the AC side will automatically supplement the AC power to ensure the normal operation of the power pump, but the AC power is only allowed to input 1000W at this time.

In this mode, the operation speed of the pump is still determined by the AC input current, the maximum speed of the pump, the maximum power of the controller and the temperature of the controller. After any condition is met, the speed of the pump will maintain the current speed or run at a reduced speed



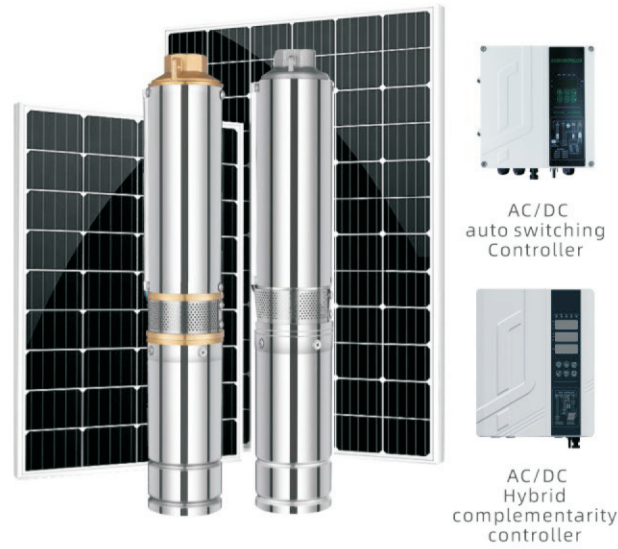
## AC/DC AUTOMATIC SWITCHING CONTROLLER WORKING ENVIRONMENT AND ELECTRICAL PROPERTY

| Controller and Pump Matching Method |                          |                           |                           |                      |                      |                          |
|-------------------------------------|--------------------------|---------------------------|---------------------------|----------------------|----------------------|--------------------------|
| Controller Model                    | Adaptable Pump           | DC Max. Input Current (A) | AC Max. Input Current (A) | DC Input Voltage (V) | AC Input Voltage (V) | Working Temperature (°C) |
| ZM-AC220V/DC110V                    | Rated AC220V/DC110V Pump | 12                        | 20                        | 108-410              | 100-264              | -15-60                   |
| ZM-AC220V/DC150V                    | Rated AC220V/DC150V Pump | 12                        | 20                        | 108-410              | 100-264              | -15-60                   |
| ZM-AC220V/DC200V                    | Rated AC220V/DC200V Pump | 12                        | 20                        | 108-410              | 100-264              | -15-60                   |
| ZM-AC220V/DC300V                    | Rated AC220V/DC300V Pump | 12                        | 20                        | 108-410              | 100-264              | -15-60                   |

## AC/DC HYBRID COMPLEMENTARITY CONTROLLER WORKING ENVIRONMENT AND ELECTRICAL PROPERTY

| Controller and Pump Matching Method |                          |                           |                           |                      |                      |                          |
|-------------------------------------|--------------------------|---------------------------|---------------------------|----------------------|----------------------|--------------------------|
| Controller Model                    | Adaptable Pump           | DC Max. Input Current (A) | AC Max. Input Current (A) | DC Input Voltage (V) | AC Input Voltage (V) | Working Temperature (°C) |
| ZM-AC220V/DC110V                    | Rated AC220V/DC110V Pump | 12                        | 15                        | 80-410               | 150-264              | -15-60                   |
| ZM-AC220V/DC150V                    | Rated AC220V/DC150V Pump | 12                        | 15                        | 80-410               | 150-264              | -15-60                   |
| ZM-AC220V/DC200V                    | Rated AC220V/DC200V Pump | 12                        | 15                        | 80-410               | 150-264              | -15-60                   |
| ZM-AC220V/DC300V                    | Rated AC220V/DC300V Pump | 12                        | 15                        | 80-410               | 150-264              | -15-60                   |





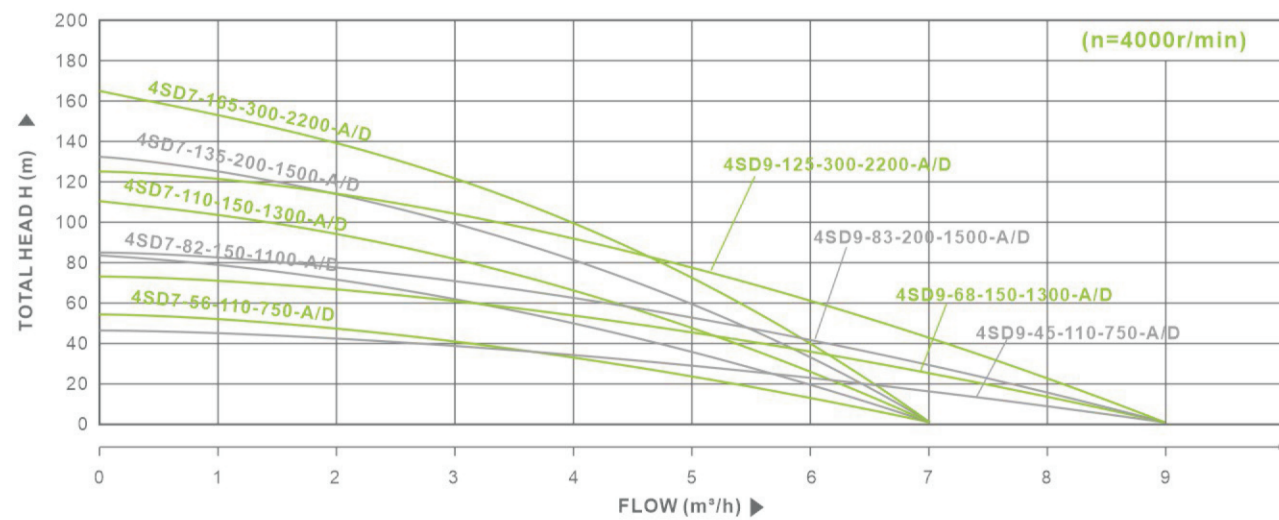
#### ADVANTAGE

- Maintenance-Free Brushless DC Motor
- Integrated DSP & MPPT(Maximum Power Point remote control etc.)
- Suitable for Wide DC voltage Operation
- Control inputs for well probe,dry running protection
- Battery Operation,low voltage disconnect for battery Tracking)
- Overload and high Adjustable speed control of motor
- Temperature Protection and against reverse polarity

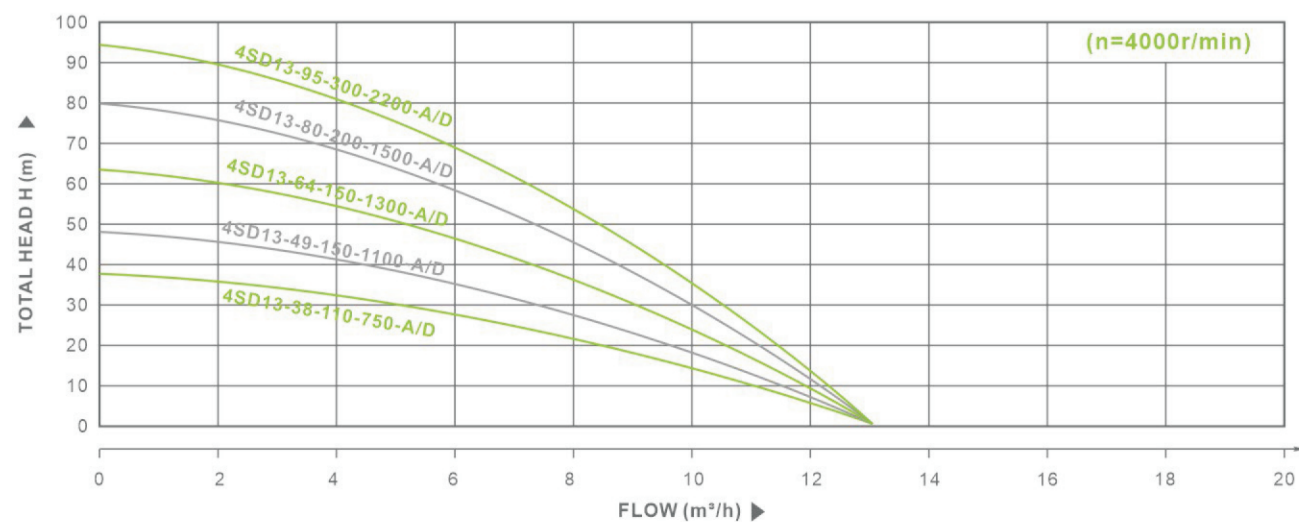
#### FREE SPARE PARTS



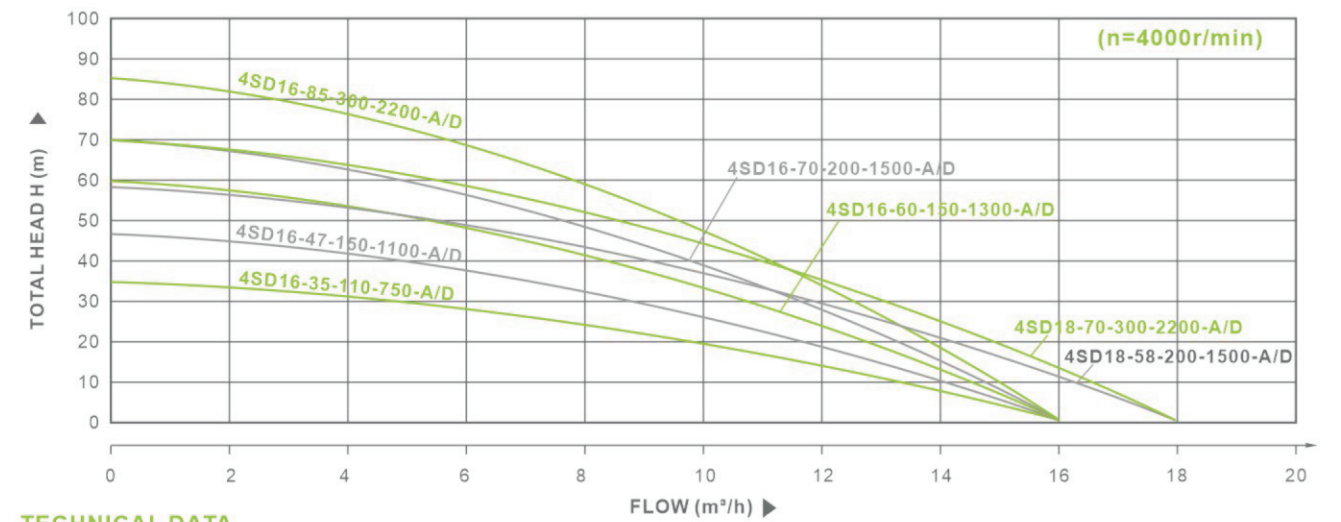
#### PERFORMANCE CURVES



#### PERFORMANCE CURVES



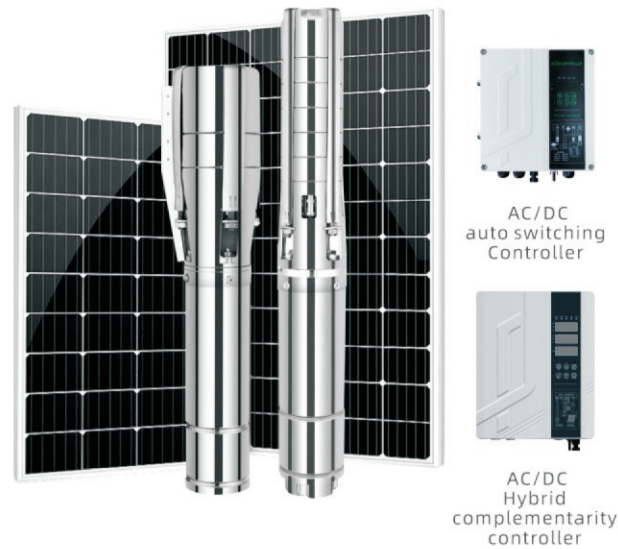
#### PERFORMANCE CURVES



#### TECHNICAL DATA

| ITEM                  | Voltage (AC) | Voltage (DC) | Power (w) | Max. Flow (m³/h) | Max. Head (m) | Outlet (in) | Solar Panels Suggestion |           |                |                                                                                       |
|-----------------------|--------------|--------------|-----------|------------------|---------------|-------------|-------------------------|-----------|----------------|---------------------------------------------------------------------------------------|
|                       |              |              |           |                  |               |             | Voltage (V)             | Power (w) | Quantity (pcs) | Connection                                                                            |
| 4SD7-56-110-750-A/D   | 85V-280V     | 80V-420V     | 750       | 7                | 56            | 1.25"       | 36                      | 340       | 3              |    |
| 4SD9-45-110-750-A/D   | 85V-280V     | 80V-420V     | 750       | 9                | 45            | 2"          | 36                      | 340       | 3              |    |
| 4SD13-38-110-750-A/D  | 85V-280V     | 80V-420V     | 750       | 13               | 38            | 2"          | 36                      | 340       | 3              |  |
| 4SD16-35-110-750-A/D  | 85V-280V     | 80V-420V     | 750       | 16               | 35            | 2"          | 36                      | 340       | 3              |  |
| 4SD7-82-150-1100-A/D  | 85V-280V     | 80V-420V     | 1100      | 7                | 82            | 1.25"       | 36                      | 340       | 4              |  |
| 4SD9-55-150-1100-A/D  | 85V-280V     | 80V-420V     | 1100      | 9                | 55            | 2"          | 36                      | 340       | 4              |  |
| 4SD13-49-150-1100-A/D | 85V-280V     | 80V-420V     | 1100      | 13               | 49            | 2"          | 36                      | 340       | 4              |  |
| 4SD16-47-150-1100-A/D | 85V-280V     | 80V-420V     | 1100      | 16               | 47            | 2"          | 36                      | 340       | 4              |  |
| 4SD7-110-150-1300-A/D | 85V-280V     | 80V-420V     | 1300      | 7                | 110           | 1.25"       | 36                      | 340       | 5              |  |
| 4SD9-68-150-1300-A/D  | 85V-280V     | 80V-420V     | 1300      | 9                | 68            | 2"          | 36                      | 340       | 5              |  |
| 4SD13-64-150-1300-A/D | 85V-280V     | 80V-420V     | 1300      | 13               | 64            | 2"          | 36                      | 340       | 5              |  |
| 4SD16-60-150-1300-A/D | 85V-280V     | 80V-420V     | 1300      | 16               | 60            | 2"          | 36                      | 340       | 5              |  |
| 4SD7-135-200-1500-A/D | 85V-280V     | 80V-420V     | 1500      | 7                | 135           | 1.25"       | 36                      | 340       | 6              |  |
| 4SD9-83-200-1500-A/D  | 85V-280V     | 80V-420V     | 1500      | 9                | 83            | 2"          | 36                      | 340       | 6              |  |
| 4SD13-80-200-1500-A/D | 85V-280V     | 80V-420V     | 1500      | 13               | 80            | 2"          | 36                      | 340       | 6              |  |
| 4SD16-70-200-1500-A/D | 85V-280V     | 80V-420V     | 1500      | 16               | 70            | 2"          | 36                      | 340       | 6              |  |
| 4SD18-58-200-1500-A/D | 85V-280V     | 80V-420V     | 1500      | 18               | 58            | 2"          | 36                      | 340       | 6              |  |
| 4SD7-165-300-2200-A/D | 85V-280V     | 80V-420V     | 2200      | 7                | 165           | 1.25"       | 36                      | 340       | 8              |  |
| 4SD9-125-300-2200-A/D | 85V-280V     | 80V-420V     | 2200      | 9                | 125           | 2"          | 36                      | 340       | 8              |  |
| 4SD13-95-300-2200-A/D | 85V-280V     | 80V-420V     | 2200      | 13               | 95            | 2"          | 36                      | 340       | 8              |  |
| 4SD16-85-300-2200-A/D | 85V-280V     | 80V-420V     | 2200      | 16               | 85            | 2"          | 36                      | 340       | 8              |  |
| 4SD18-70-300-2200-A/D | 85V-280V     | 80V-420V     | 2200      | 18               | 70            | 2"          | 36                      | 340       | 8              |  |

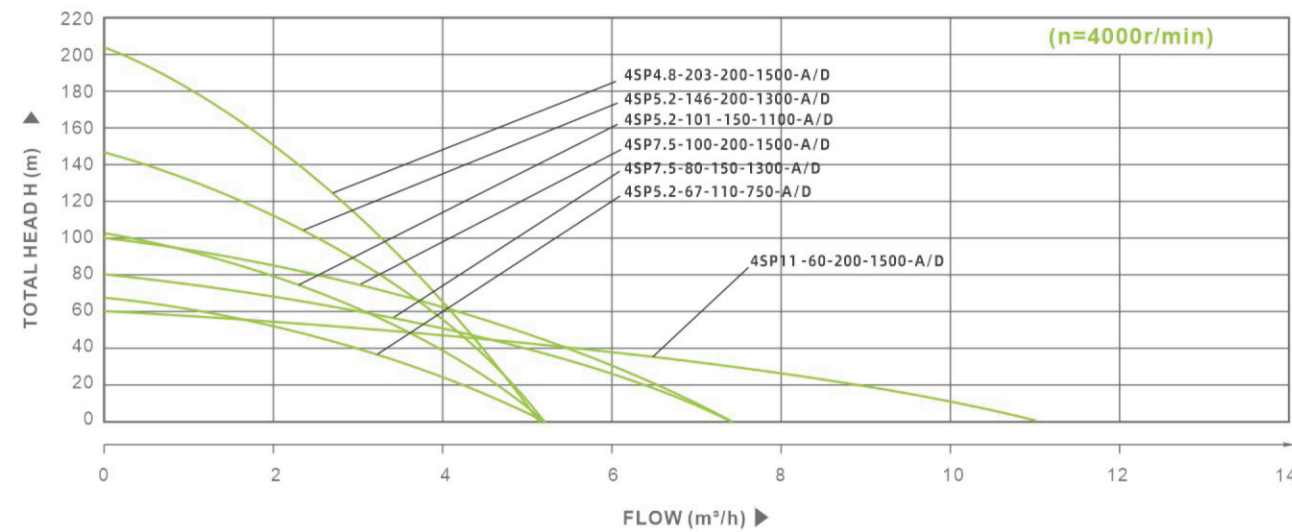




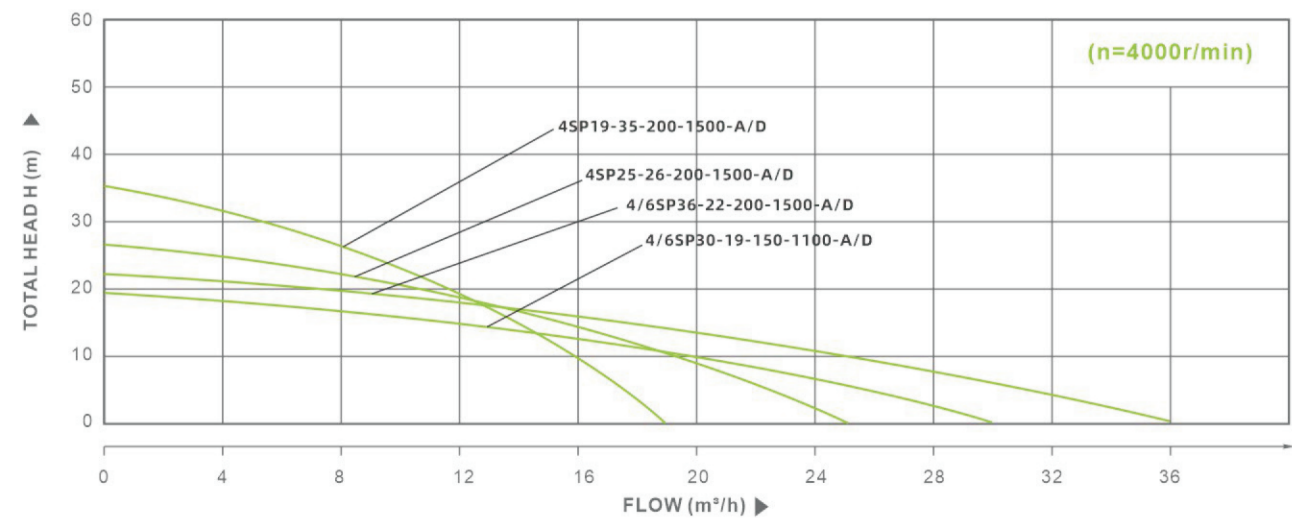
#### ADVANTAGE

- Maintenance-Free Brushless DC Motor
- Integrated DSP & MPPT(Maximum Power Point remote control etc.)
- Suitable for Wide DC voltage Operation
- Control inputs for well probe,dry running protection
- Battery Operation,low voltage disconnect for battery Tracking)
- Overload and high Adjustable speed control of motor
- Temperature Protection and against reverse polarity

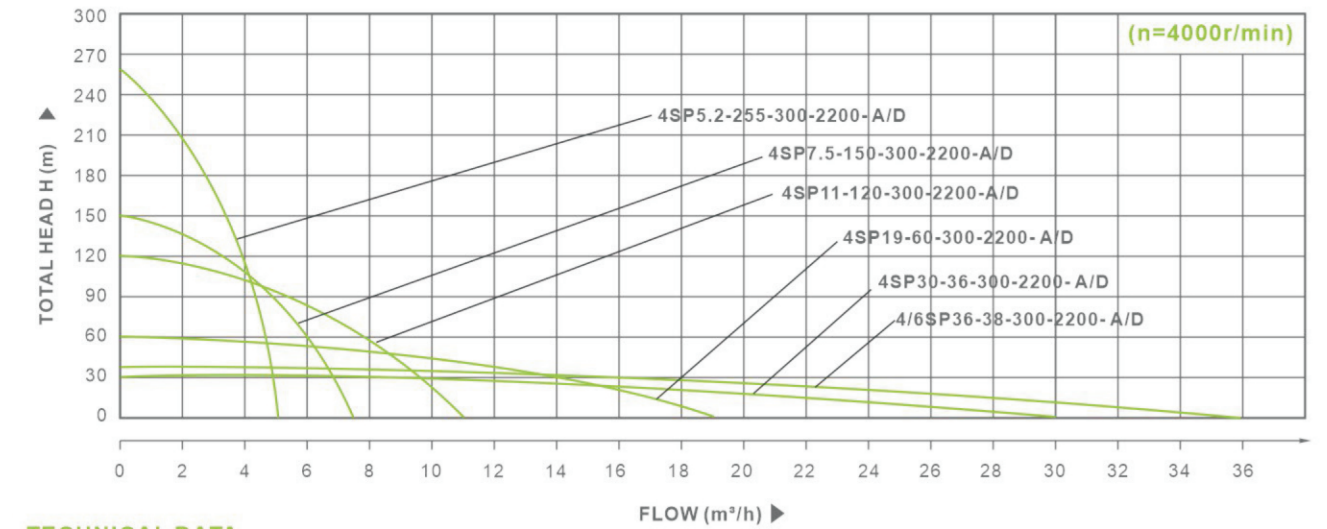
#### FREE SPARE PARTS



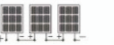
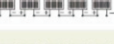
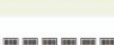
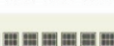
#### PERFORMANCE CURVES



#### PERFORMANCE CURVES



#### TECHNICAL DATA

| ITEM                    | Voltage (AC) | Voltage (DC) | Power (w) | Max. Flow (m³/h) | Max. Head (m) | Outlet (in) | Solar Panels Suggestion |           |                |                                                                                       |
|-------------------------|--------------|--------------|-----------|------------------|---------------|-------------|-------------------------|-----------|----------------|---------------------------------------------------------------------------------------|
|                         |              |              |           |                  |               |             | Voltage (V)             | Power (w) | Quantity (pcs) | Connection                                                                            |
| 4SP5.2-67-110-750-A/D   | 85V-280V     | 80V-420V     | 750       | 5.2              | 67            | 1.25"       | 36                      | 340       | 3              |    |
| 4SP5.2-101-150-1100-A/D | 85V-280V     | 80V-420V     | 1100      | 5.2              | 101           | 1.25"       | 36                      | 340       | 5              |   |
| 4/6SP30-19-150-1100-A/D | 85V-280V     | 80V-420V     | 1100      | 30               | 19            | 3"          | 36                      | 340       | 5              |  |
| 4SP5.2-146-200-1300-A/D | 85V-280V     | 80V-420V     | 1300      | 5.2              | 146           | 1.25"       | 36                      | 340       | 5              |  |
| 4SP7.5-80-150-1300-A/D  | 85V-280V     | 80V-420V     | 1300      | 7.5              | 80            | 1.25"       | 36                      | 340       | 5              |  |
| 4SP4.8-203-200-1500-A/D | 85V-280V     | 80V-420V     | 1500      | 4.8              | 203           | 1.25"       | 36                      | 340       | 6              |  |
| 4SP7.5-100-200-1500-A/D | 85V-280V     | 80V-420V     | 1500      | 7.5              | 100           | 1.25"       | 36                      | 340       | 6              |  |
| 4SP11-60-200-1500-A/D   | 85V-280V     | 80V-420V     | 1500      | 11               | 60            | 2"          | 36                      | 340       | 6              |  |
| 4SP19-35-200-1500-A/D   | 85V-280V     | 80V-420V     | 1500      | 19               | 35            | 2"          | 36                      | 340       | 6              |  |
| 4SP25-26-200-1500-A/D   | 85V-280V     | 80V-420V     | 1500      | 25               | 26            | 2"          | 36                      | 340       | 6              |  |
| 4/6SP36-22-200-1500-A/D | 85V-280V     | 80V-420V     | 1500      | 36               | 22            | 3"          | 36                      | 340       | 6              |  |
| 4SP5.2-255-300-2200-A/D | 85V-280V     | 80V-420V     | 2200      | 5.2              | 255           | 1.25"       | 36                      | 340       | 8              |  |
| 4SP7.5-150-300-2200-A/D | 85V-280V     | 80V-420V     | 2200      | 7.5              | 150           | 1.25"       | 36                      | 340       | 8              |  |
| 4SP11-120-300-2200-A/D  | 85V-280V     | 80V-420V     | 2200      | 11               | 120           | 2"          | 36                      | 340       | 8              |  |
| 4SP19-60-300-2200-A/D   | 85V-280V     | 80V-420V     | 2200      | 19               | 60            | 2"          | 36                      | 340       | 8              |  |
| 4SP30-36-300-2200-A/D   | 85V-280V     | 80V-420V     | 2200      | 30               | 36            | 2"          | 36                      | 340       | 8              |  |
| 4/6SP36-38-300-2200-A/D | 85V-280V     | 80V-420V     | 2200      | 36               | 38            | 2"          | 36                      | 340       | 8              |  |





**HADIYA**

# GROUND PUMP

Environmental protection and energy saving



## PROFESSIONAL SOLAR PUMP MANUFACTURER

By using solar energy, the submersible pump is put into the well to draw water from the deep well, which can be used for domestic water supply, drinking water, agricultural irrigation and drinking water for cattle and sheep.



Running Speed  
Control



Short-Circuit  
Protection



MPPT



Dry Running  
Protection



Soft Starting  
Protection



Reverse Voltage  
Protection



Low-voltage /  
Over-voltage  
Protection



Over Current  
Protection





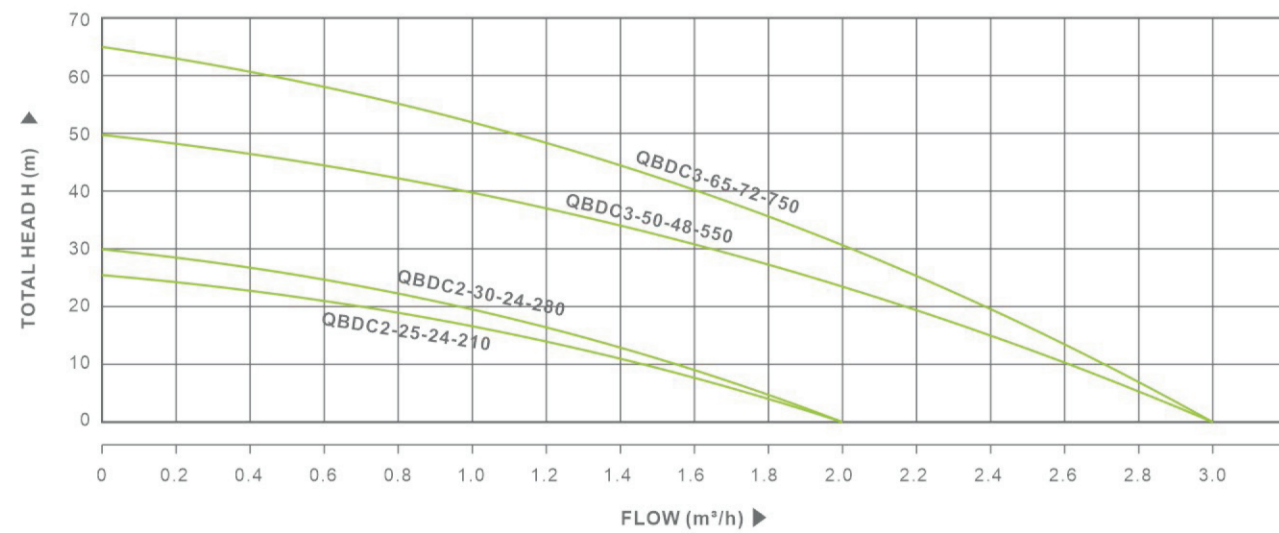
#### ADVANTAGE

- Maintenance-Free Brushless DC Motor
- Integrated DSP & MPPT(Maximum Power Point remote control etc.)
- Suitable for Wide DC voltage Operation
- Control inputs for well probe,dry running protection
- Battery Operation,low voltage disconnect for battery Tracking)
- Overload and high Adjustable speed control of motor
- Temperature Protection and against reverse polarity

#### FREE SPARE PARTS



#### PERFORMANCE CURVES



#### TECHNICAL DATA

| ITEM            | Voltage (v) | Best input Voltage (DC) | Power (w) | Max Flow (m³/h) | Max. Head (m) | Outlet (in) | Open circuit voltage (VOC) | Solar Panels Suggestion |           |                |                                                                                       |
|-----------------|-------------|-------------------------|-----------|-----------------|---------------|-------------|----------------------------|-------------------------|-----------|----------------|---------------------------------------------------------------------------------------|
|                 |             |                         |           |                 |               |             |                            | Voltage (V)             | Power (w) | Quantity (pcs) | Connection                                                                            |
| QBDC2-25-24-210 | 24          | 30-48V                  | 210       | 2               | 25            | 1"×1"       | <50V                       | 36                      | 300       | 1              |  |
| QBDC2-30-24-280 | 24          | 30-48V                  | 280       | 2               | 30            | 1"×1"       | <50V                       | 36                      | 250       | 2              |  |
| QBDC3-50-48-550 | 48          | 60-90V                  | 550       | 3               | 50            | 1"×1"       | <100V                      | 36                      | 250       | 4              |  |
| QBDC3-65-72-750 | 72          | 90-120V                 | 750       | 3               | 65            | 1"×1"       | <150V                      | 36                      | 330       | 3              |  |



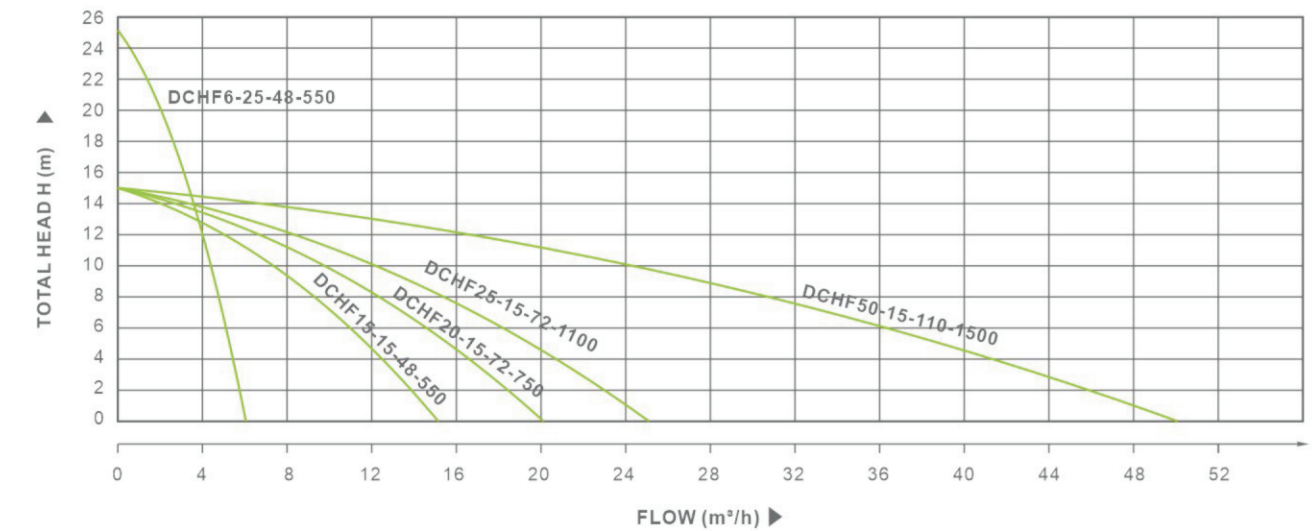
#### ADVANTAGE

- Maintenance-Free Brushless DC Motor
- Integrated DSP & MPPT(Maximum Power Point remote control etc.)
- Suitable for Wide DC voltage Operation
- Control inputs for well probe,dry running protection
- Battery Operation,low voltage disconnect for battery Tracking)
- Overload and high Adjustable speed control of motor
- Temperature Protection and against reverse polarity

#### FREE SPARE PARTS



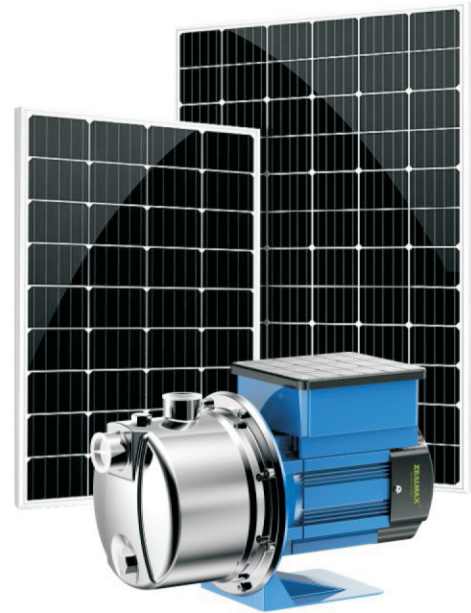
#### PERFORMANCE CURVES



#### TECHNICAL DATA

| ITEM               | Voltage (v) | Best input Voltage (DC) | Power (w) | Max Flow (m³/h) | Max. Head (m) | Outlet (in) | Open circuit voltage (VOC) | Solar Panels Suggestion |           |                |                                                                                       |
|--------------------|-------------|-------------------------|-----------|-----------------|---------------|-------------|----------------------------|-------------------------|-----------|----------------|---------------------------------------------------------------------------------------|
|                    |             |                         |           |                 |               |             |                            | Voltage (V)             | Power (w) | Quantity (pcs) | Connection                                                                            |
| DCHF6-25-48-550    | 48          | 60-90V                  | 550       | 6               | 25            | 1"×1"       | <100V                      | 36                      | 250       | 4              |  |
| DCHF15-15-48-550   | 48          | 60-90V                  | 550       | 15              | 15            | 1.5"×1.5"   | <100V                      | 36                      | 250       | 4              |  |
| DCHF20-15-72-750   | 72          | 90-120V                 | 750       | 20              | 15            | 2"×2"       | <150V                      | 36                      | 330       | 3              |  |
| DCHF25-15-72-1100  | 72          | 90-120V                 | 1100      | 25              | 15            | 2"×2"       | <150V                      | 36                      | 300       | 6              |  |
| DCHF50-15-110-1500 | 110         | 110-150V                | 1500      | 50              | 15            | 3"×3"       | <200V                      | 36                      | 300       | 8              |  |





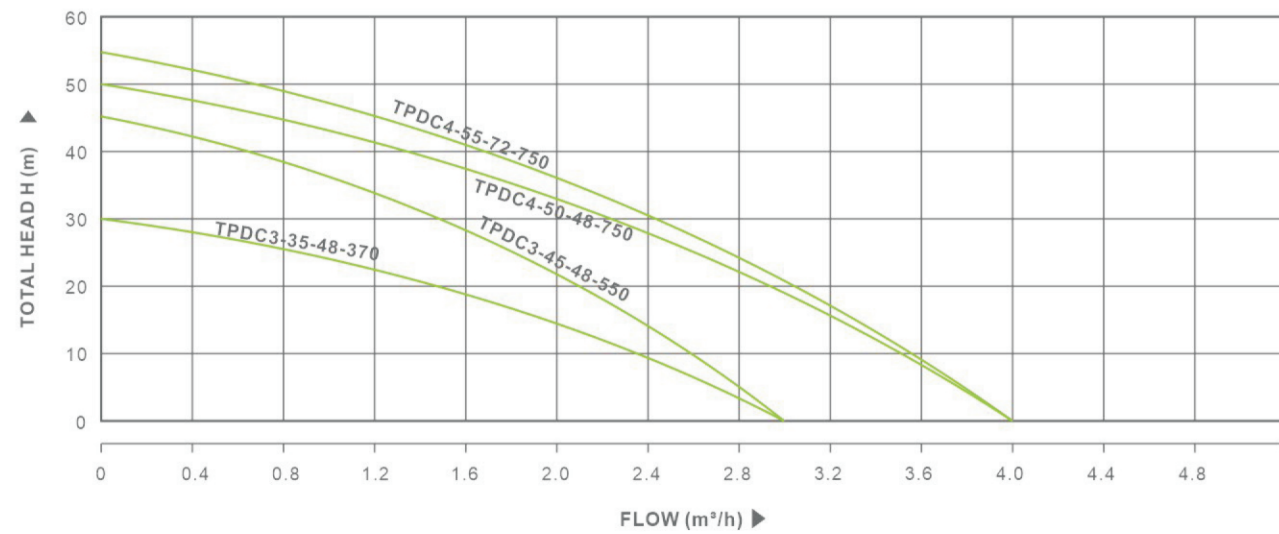
#### ADVANTAGE

- Maintenance-Free Brushless DC Motor
- Integrated DSP & MPPT(Maximum Power Point remote control etc.)
- Suitable for Wide DC voltage Operation
- Control inputs for well probe,dry running protection
- Battery Operation,low voltage disconnect for battery Tracking)
- Overload and high Adjustable speed control of motor
- Temperature Protection and against reverse polarity

#### FREE SPARE PARTS



#### PERFORMANCE CURVES



#### TECHNICAL DATA

| ITEM            | Voltage (v) | Best input Voltage (DC) | Power (w) | Max. Flow (m³/h) | Max. Head (m) | Outlet (in) | Open circuit voltage (VOC) | Solar Panels Suggestion |           |                |                                                                                       |
|-----------------|-------------|-------------------------|-----------|------------------|---------------|-------------|----------------------------|-------------------------|-----------|----------------|---------------------------------------------------------------------------------------|
|                 |             |                         |           |                  |               |             |                            | Voltage (V)             | Power (w) | Quantity (pcs) | Connection                                                                            |
| TPDC3-35-48-370 | 48          | 60-90V                  | 370       | 3                | 35            | 1"×1"       | <50V                       | 36                      | 250       | 2              |  |
| TPDC3-45-48-550 | 48          | 60-90V                  | 550       | 3                | 45            | 1"×1"       | <50V                       | 36                      | 330       | 2              |  |
| TPDC4-50-48-750 | 48          | 60-90V                  | 750       | 4                | 50            | 1"×1"       | <100V                      | 36                      | 250       | 4              |  |
| TPDC4-55-72-750 | 72          | 90-120V                 | 750       | 4                | 55            | 1"×1"       | <150V                      | 36                      | 330       | 3              |  |



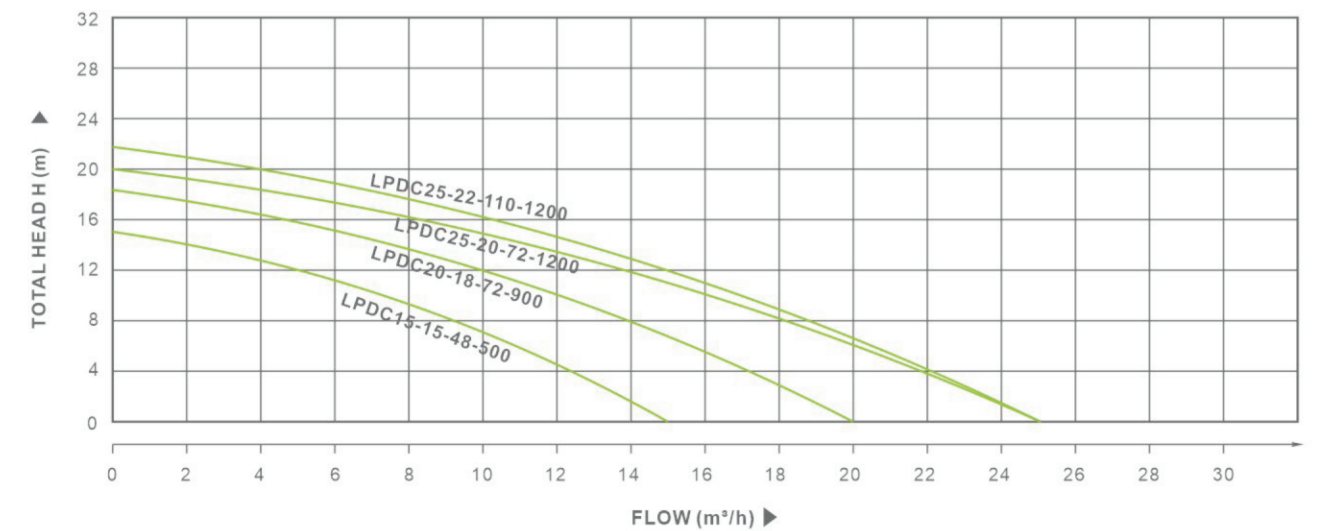
#### ADVANTAGE

- Maintenance-Free Brushless DC Motor
- Integrated DSP & MPPT(Maximum Power Point remote control etc.)
- Suitable for Wide DC voltage Operation
- Control inputs for well probe,dry running protection
- Battery Operation,low voltage disconnect for battery Tracking)
- Overload and high Adjustable speed control of motor
- Temperature Protection and against reverse polarity

#### FREE SPARE PARTS



#### PERFORMANCE CURVES



#### TECHNICAL DATA

| ITEM               | Voltage (v) | Best input Voltage (DC) | Power (w) | Max. Flow (m³/h) | Max. Head (m) | Outlet (in) | Open circuit voltage (VOC) | Solar Panels Suggestion |           |                |                                                                                       |
|--------------------|-------------|-------------------------|-----------|------------------|---------------|-------------|----------------------------|-------------------------|-----------|----------------|---------------------------------------------------------------------------------------|
|                    |             |                         |           |                  |               |             |                            | Voltage (V)             | Power (w) | Quantity (pcs) | Connection                                                                            |
| LPDC15-15-48-500   | 48          | 60-90V                  | 500       | 15               | 15            | 2"×2"       | <100V                      | 36                      | 330       | 2              |  |
| LPDC20-18-72-900   | 72          | 90-120V                 | 900       | 20               | 18            | 2"×2"       | <150V                      | 36                      | 300       | 4              |  |
| LPDC25-20-72-1200  | 72          | 90-120V                 | 1200      | 25               | 20            | 3"×3"       | <150V                      | 36                      | 300       | 6              |  |
| LPDC25-22-110-1200 | 110         | 110-150V                | 1200      | 25               | 22            | 3"×3"       | <200V                      | 36                      | 300       | 6              |  |