



DIFFUL



- Domestic water supply
- Agricultural irrigation
- Livestock drinking water
- Deep-well and borehole

Pump Features:

- Permanent magnet DC brushless motor
- CU Japanese bearing structure
- Double mechanical seals
- Sacrificial anode
- 3" & 4" Screw pump

DC Controller:

- Protection class: IP65
- Ambient temperature: -15°C ~ 60°C
- LED displays working conditions & fault codes
- Auto start & stop
- Soft start



Positive
displacement Rotor
& Stator



CU / NSK Bearings
double bearing
arrangement



Stainless steel oil
cylinder

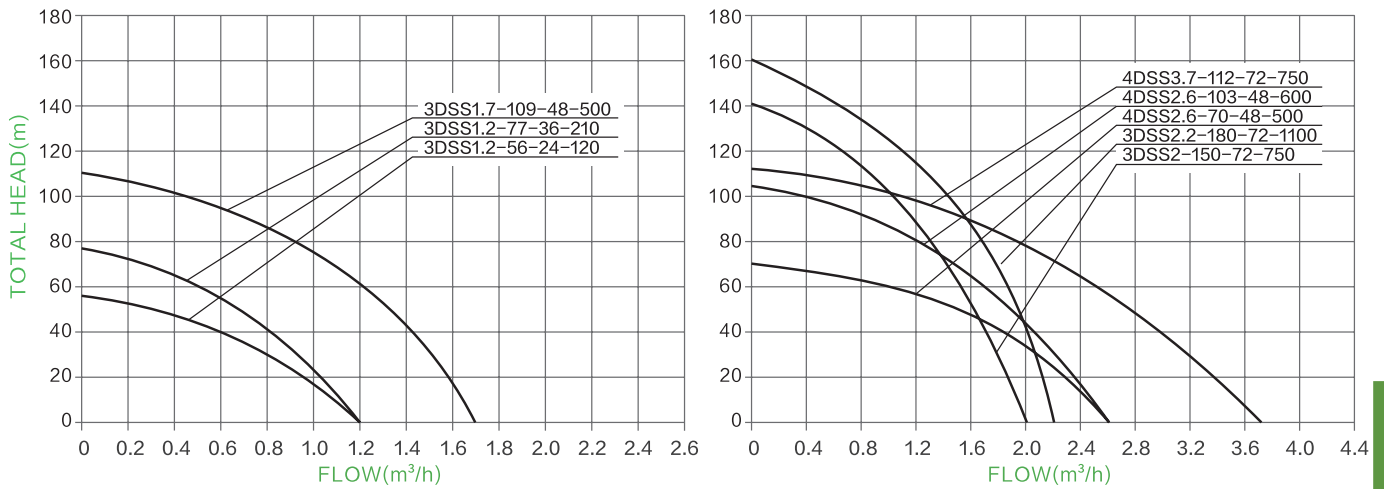
- **Technical Data:**

Item	Voltage	Optimum input voltage (DC)	Power	Max. Flow	Max. Head	Outlet	Cable	Solar panel	
								Open circuit voltage (VOC)	Power
3DSS1.2-56-24-120	24V	30V-48V	120W	1.2m³/h	56m	3/4"	2m	<60V	>1.3 x Pump Power
3DSS1.2-77-36-210	36V	30V-48V	210W	1.2m³/h	77m	3/4"	2m	<60V	>1.3 x Pump Power
3DSS1.7-109-48-500	48V	60V-90V	500W	1.7m³/h	109m	3/4"	2m	<110V	>1.3 x Pump Power
3DSS2.0-150-72-750	72V	90V-120V	750W	2.0m³/h	150m	3/4"	2m	<170V	>1.3 x Pump Power
3DSS2.2-180-72-1100	72V	90V-120V	1100W	2.2m³/h	180m	3/4"	2m	<170V	>1.3 x Pump Power
4DSS2.6-70-48-500	48V	60V-90V	500W	2.6m³/h	70m	1"	2m	<110V	>1.3 x Pump Power
4DSS2.6-103-48-600	48V	60V-90V	600W	2.6m³/h	103m	1"	2m	<110V	>1.3 x Pump Power
4DSS3.7-112-72-750	72V	90V-120V	750W	3.7m³/h	112m	1"	2m	<170V	>1.3 x Pump Power

- **Kit Includes:**

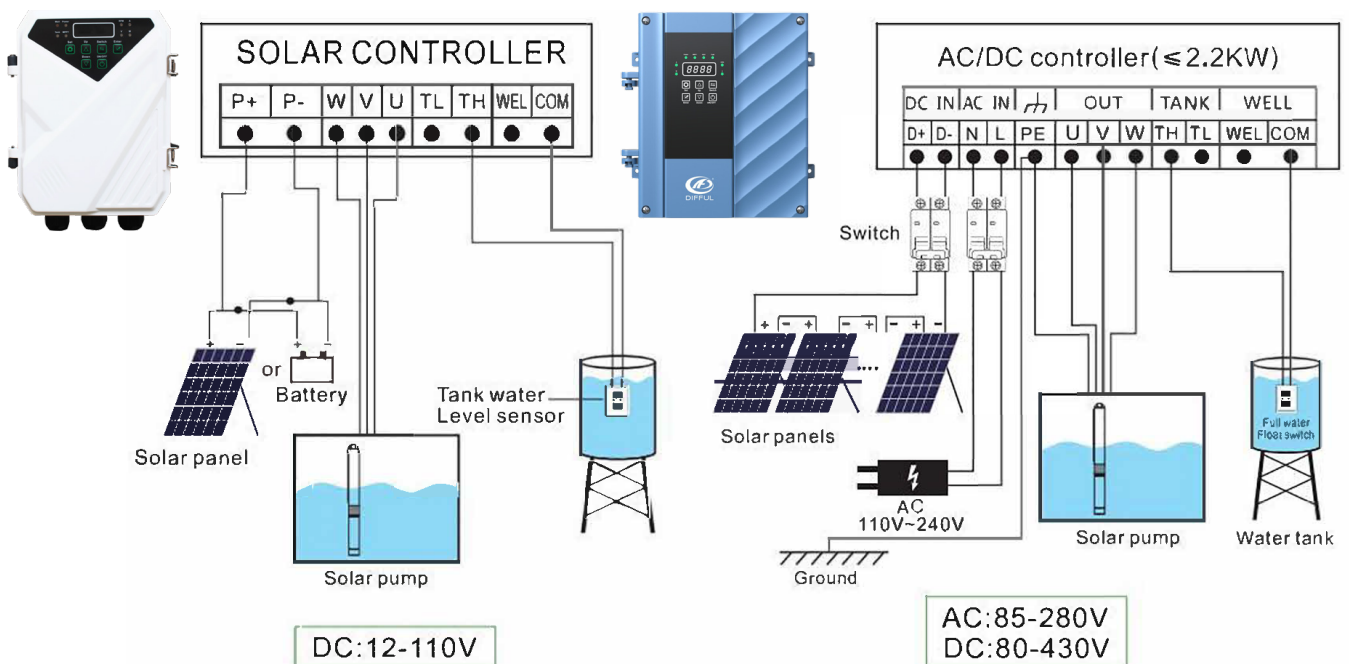


● Performance Curve:



● Performance Table:

Model	Power	l/min m³/h	0	3	7	10	13	17	20	23	27	30	33	37	40
	kW		0.0	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4
3DSS1.2-56-24-120	0.12	H(m)	56	46	42	40	26	18	2	-	-	-	-	-	-
3DSS1.2-77-36-210	0.21		77	76	70	56	40	24	2	-	-	-	-	-	-
3DSS1.7-109-48-500	0.50		109	102	100	90	82	78	60	40	20	-	-	-	-
3DSS2.0-150-72-750	0.75		140	130	122	118	104	95	80	62	44	22	-	-	-
3DSS2.2-180-72-1100	1.10		160	154	144	140	130	118	102	82	64	44	22	-	-
4DSS2.6-70-48-500	0.50		70	64	62	60	55	50	48	42	40	30	28	20	12
4DSS2.6-103-48-600	0.60		103	101	100	95	90	85	80	71	62	51	40	30	20
4DSS3.7-112-72-750	0.75		112	109	106	104	102	101	100	94	88	84	80	70	60



MODEL DESCRIPTION

SUBMERSIBLE BOREHOLE RANGE

3DSS	3" Brushless Screw Solar Pump
3DPC	3" Brushless Plastic Impeller Solar Pump
4DPC	4" Brushless Plastic Impeller Solar Pump
4DLR	4" Brushless Plastic Impeller Solar Pump
4DCS	4" Brushless Stainless Steel Impeller Solar Pump

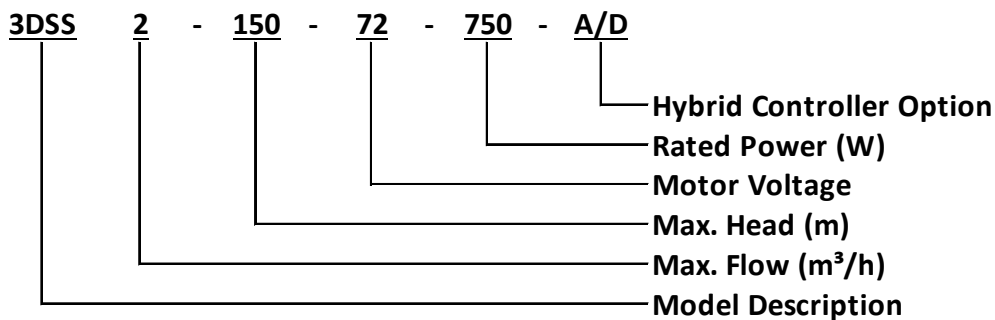
SURFACE & DRAINAGE PUMP RANGE

DJET	Brushless Self-Priming Jet Solar Pump
DQB	Brushless Peripheral Solar Pump
DLP	Brushless Swimming Pool Solar Pump
DCPM	Brushless Centrifugal Solar Pump
DQD	Brushless Drainage Solar Pump

SOLAR CONTROLLERS

DC & Hybrid Solar Controllers

MODEL SPECIFICATION





Model	Protection Voltage (V)
DF-12	20
DF-24	20
DF-36	20
DF-48	40
DF-72	60
DF-110	80

DC CONTROLLER

Connect normal DC Power

DC Controller Fault Types			
Fault Code	Fault Description	Causes and Solutions of Fault	Recovery Procedure
P0	Hardware Overcurrent	Motor model is mismatched, please choose matching pumps	Automatically remove after 30s
		UVW three-phase short-circuit connection, please rewire to ensure the normal installation of UVW	
P43	Phase -lack Protection	UVW three-phase open circuit please rewiring to ensure it reliable contact.	Automatically remove after 30s
P46	Stall Protection	Motor model is mismatched , please choose matching pumps	Automatically remove after 30s
		Pump extension cord is too long, please reduce the extension cord	
		Power is too low, increase the power supply	
		Pump bearing is stuck, please clean pump bearings	
P49	Software Overcurrent	Water pump bearing stuck, clean pump bearings	Automatically remove after 30s
		UVW three phase short-circuit connection, please rewire to ensure the normal installation of UVW	
P50	Low Voltage Protection	The input voltage is too low, please distribute power refer to the electrical characteristics.	Voltage return to normal, remove the fault immediately
P51	High Voltage Protection	The input voltage is too high, please distribute power refer to the electrical characteristics.	Voltage return to normal, remove the fault immediately
P48	Dry-run Protection	Not all of air in the pump is exhausted, cut off the power, re-power and start the pump drainage after 30 seconds	Automatically clear after 30 minutes or re-power to clear
		There is no water in the water tank waiting for water, it will restart	
P60	High Temperature Protection	The temperature of controller MCU is more than 90° C	Automatically clear after the temperature is normal
E8	Current Sampling Failure	Cut of the power and restart after 30 seconds	Restart the power
PL	Power Shortage	No sunlight, waiting for the sunlight to restart	At the first 5 times, it will remove after
		Solar panel matching error, refer to the recommendation to match correctly	30 seconds, and then 30 minutes to remove



DC CONTROLLER
Connect normal DC power



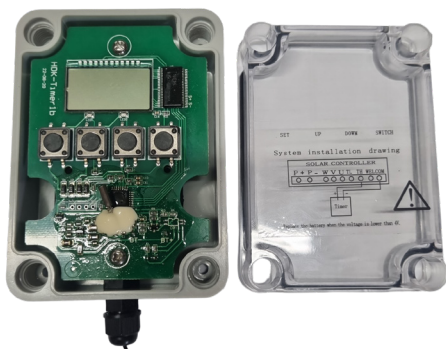
WIDE VOLTAGE HV CONTROLLER
Connect DC power with wide voltage.



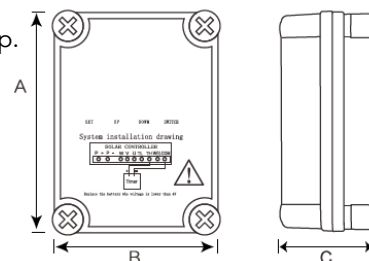
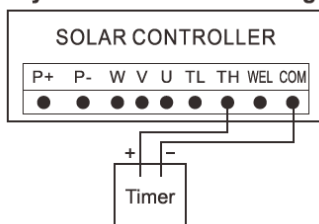
AC/DC HYBRID CONTROLLER
Automatically switch between AC and DC power.

TIMER FOR SOLAR PUMP

Set the startup and shutdown time to intelligently control the operation of the solar pump.



System installation drawing



TECHNICAL DATA

Model	Dimensions (cm)			Weight(kg)
	A	B	C	
TIMER	11	8	4.5	0.25

WORKING ENVIRONMENT AND ELECTRICAL PROPERTY

Controller and Pump Matching Method					
Controller Model	Adaptable Pump	Max. Input Current (A)	Max. Open Circuit Voltage (V)	Optimum MPP Voltage (V)	Working Temperature (°C)
DF-12	Rated 12V Pump	17	<60	30-48	-15 ~ 60
DF-24	Rated 24V Pump	17	<60	30-48	-15 ~ 60
DF-36	Rated 36V Pump	17	<60	30-48	-15 ~ 60
DF-48	Rated 48V Pump	17	<110	60-90	-15 ~ 60
DF-72	Rated 72V Pump	17	<170	90-120	-15 ~ 60
DF-110	Rated 110V Pump	17	<220	110-150	-15 ~ 60
DF-72-A/D	Rated 72V-A/D Pump	17	<430	100-190	-15 ~ 60
DF-110-A/D	Rated 110V-A/D Pump	17	<430	110-190	-15 ~ 60
DF-150-A/D	Rated 150V-A/D Pump	17	<430	150-220	-15 ~ 60
DF-200-A/D	Rated 200V-A/D Pump	17	<430	200-290	-15 ~ 60
DF-300-A/D	Rated 300V-A/D Pump	17	<430	300-390	-15 ~ 60

CABLE SELECTION CHART

Voltage & Power	Cable lenght (m)														
	m	10	20	30	40	50	60	70	80	90	100	110	120	130	140
24V-120W	Metric Cable Size (m ²)	2.5	2.5	4	4	6	6	6							
36V-210W		2.5	2.5	2.5	4	4	6	6	6						
48V-400W		2.5	2.5	2.5	4	4	6	6	6	10					
48V-500W		2.5	2.5	4	4	6	6	10	10	10	10				
48V-600W		2.5	2.5	4	6	6	10	10	10	10	16	16			
72V-750W		2.5	2.5	2.5	2.5	4	4	6	6	6	6	10	10		
72V-1100W		2.5	2.5	4	4	6	6	10	10	10	10	10	16	16	16
110V-750W		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	4	4	4	4	4
110V-1100W		2.5	2.5	2.5	2.5	2.5	2.5	4	4	4	4	6	6	6	6
110V-1300W		2.5	2.5	2.5	2.5	2.5	4	4	4	4	6	6	6	6	10
110V-1500W		2.5	2.5	2.5	2.5	4	4	4	6	6	6	6	10	10	10

SOLAR PANEL RECOMMENDATION FOR 12V-110V DC SOLAR PUMP

PUMP POWER 80W-12V Voc: 18V-55V	 (1)  (2)  (3)	Solar panel:150W*1PCS Solar panel:270W*1PCS Solar panel:330W*1PCS
PUMP POWER 120W-24V 180W-24V 200W-24V 210W-24V 210W-36V Voc: 18V-55V	 (1)  (2)  (3)	Solar panel:150W*2PCS Solar panel:270W*1PCS Solar panel:330W*1PCS
PUMP POWER 280W-24V 300W-24V Voc: 18V-55V	 (1)  (2)	Solar panel:270W*2PCS Solar panel:330W*1PCS
PUMP POWER 400W-36V Voc: 18V-55V	 (1)  (2)	Solar panel:270W*2PCS Solar panel:330W*2PCS
PUMP POWER 370W-48V 400W-48V Voc: 30V-105V	 (1)  (2)	Solar panel:270W*2PCS Solar panel:330W*2PCS
PUMP POWER 500W-48V 550W-48V Voc: 30V-105V	 (1)  (2)	Solar panel:270W*4PCS Solar panel:330W*2PCS
PUMP POWER 600W-48V Voc: 30V-105V	 (1)  (2)	Solar panel:270W*4PCS Solar panel:330W*4PCS
PUMP POWER 600W-72V Voc: 55V-160V	 (1)  (2)	Solar panel:270W*3PCS Solar panel:330W*3PCS
PUMP POWER 750W-48V Voc: 30V-105V	 (1)  (2)	Solar panel:270W*4PCS Solar panel:330W*4PCS
PUMP POWER 750W-72V Voc: 55V-160V	 (1)  (2)	Solar panel:270W*4PCS Solar panel:330W*3PCS
PUMP POWER 900W-72V Voc: 55V-160V	 (1)  (2)	Solar panel:270W*4PCS Solar panel:330W*3PCS
PUMP POWER 1100W-72V Voc: 55V-160V	 (1)  (2)	Solar panel:270W*6PCS Solar panel:330W*6PCS
PUMP POWER 1100W-110V Voc: 60V-210V	 (1)  (2)	Solar panel:270W*6PCS Solar panel:330W*6PCS
PUMP POWER 1300W-110V Voc: 60V-210V	 (1)  (2)	Solar panel:270W*8PCS Solar panel:330W*6PCS
PUMP POWER 1500W-110V Voc: 60V-210V	 (1)  (2)	Solar panel:270W*8PCS Solar panel:330W*8PCS