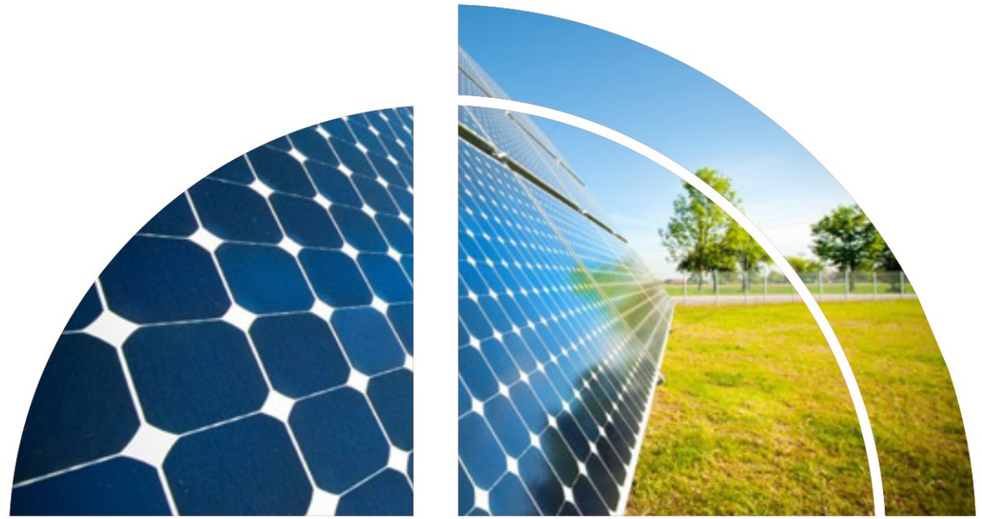
USFULL®

ZHEJIANG FULLWILL ELECTRIC CO., LTD.



Solar Pump Inverter

www.usfull.com

Website

USFULL®

ZHEJIANG FULLWILL ELECTRIC CO.,LTD

Address: Sulv Industrial Zone, Liushi Town, Yueqing City, Zhejiang Province,China

Mobile: 008613706770280

Tel: 0086-577-61728833

Fax: 0086-577-61728822

Website: www.usfull.com

E-mail: scarlett@usfull.com

USFULL®

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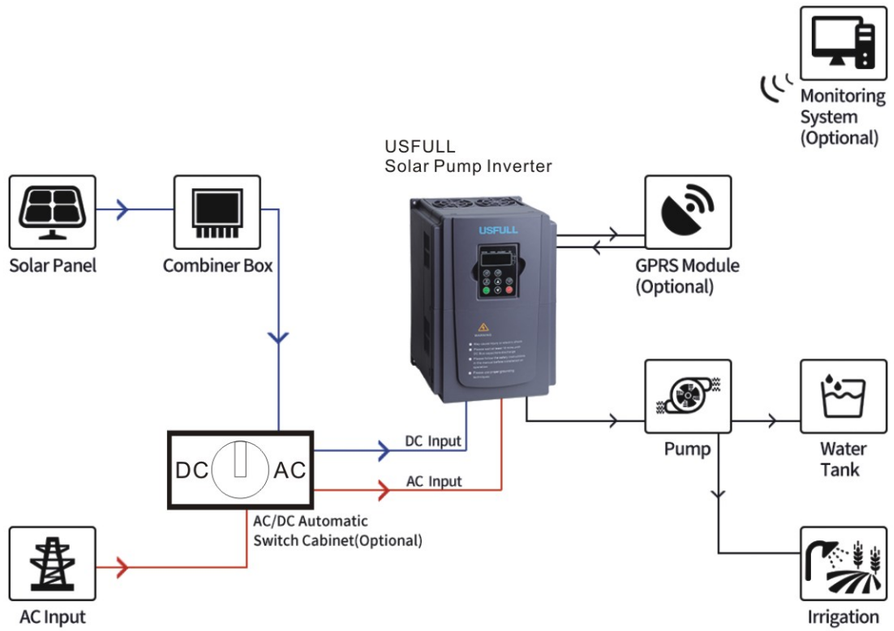
USFULL®

FU9000S Solar Pumping System



- **Built-in MPPT**

  Maximum power point tracking functionality guarantees the system get the most power output from solar panel and maximizes the efficiency of pumping system.

- **Monitoring System**

  With the optional GPRS modules, users can monitor and control drive and adjust parameters from anywhere via computer.

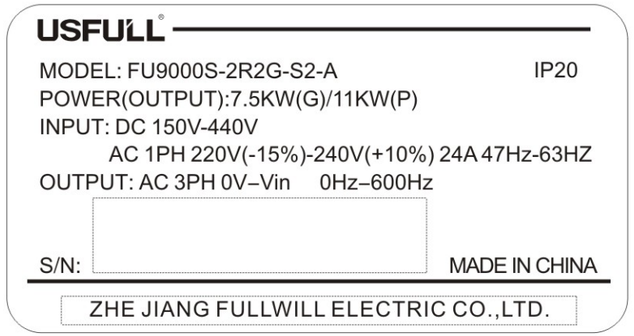
- **Best Off-grid Solution**

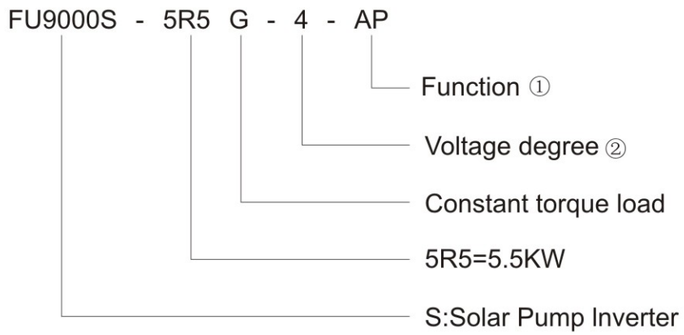
  For off-grid area, solar pump inverter without battery is the best solution for agricultural irrigation.

- **Professional Pump Protection**

  Automatic start and stop in the morning, for full tank and water shortage in the well.

FU9000S Type Designation Key





① Function

A : Automatic+IP20 AP : Automatic+IP65

② Voltage degree

Model	-SS2	-S2	-2	-4
Ac Input Voltage (V)	1Phase 220(-15%)~240(+10%)		3Phase 220(-15%)~240(+10%)	3Phase 380(-15%)~440(+10%)
Max. Dc Voltage (V)	400			800
Start-up Voltage (V)	200			300
Lowest Working Voltage (V)	150			250
Recommended Dc Input Voltage Range (V)	200~400			300~750
Recommended Mpp Voltage (V)	330			550
Input Frequeney	47~63Hz			
Qutput Frequeney	0~300Hz			
Output Voltage(V)	1Phase 0-220V	3Phase 0-220V		3Phase 0-380V

Rated Specifications

Series	Model	Rated Output Power (KW)	Rated Input Current (A)	Rated Output Current (A)
-SS2(0.75KW-2.2KW)	FU9000S-0R7G-SS2-A	0.75	9.3	7.2
	FU9000S-1R5G-SS2-A	1.5	15.7	10.2
	FU9000S-2R2G-SS2-A	2.2	24	14
-S2(0.75KW-2.2KW)	FU9000S-0R7G-S2-A	0.75	9.3	4.2
	FU9000S-1R5G-S2-A	1.5	15.7	7.5
	FU9000S-2R2G-S2-A	2.2	24	10
-2(4KW-7.5KW)	FU9000S-004G-2-A	4	17	16
	FU9000S-5R5G-2-A	5.5	25	20
	FU9000S-7R5G-2-A	7.5	33	30
-4(0.75KW-110KW)	FU9000S-0R7G-4-A	0.75	3.4	2.5
	FU9000S-1R5G-4-A	1.5	5	4.2
	FU9000S-2R2G-4-A	2.2	5.8	5.5
	FU9000S-004G-4-A	4	13.5	9.5
	FU9000S-5R5G-4-A	5.5	19.5	14
	FU9000S-7R5G-4-A	7.5	25	18.5
	FU9000S-011G-4-A	11	32	25
	FU9000S-015G-4-A	15	40	32
	FU9000S-018G-4-A	18.5	47	38
	FU9000S-022G-4-A	22	51	45
	FU9000S-030G-4-A	30	70	60
	FU9000S-037G-4-A	37	80	75
	FU9000S-045G-4-A	45	94	92
	FU9000S-055G-4-A	55	128	115
	FU9000S-075G-4-A	75	160	150
	FU9000S-090G-4-A	90	190	180
	FU9000S-110G-4-A	110	225	215

Model Selection Reference For Low-voltage Apparatus

Model	AC Breaker (A)	DC Breaker (A)	AC Contactor (A)	Surge Protection	Fuse	Diode
FU9000S-0R7G-2-A	16A	16A / 500V	10A	Type Ⅱ 1000VDC	30A	Not required since they are equipped with the boost module
	25A		25A			
FU9000S-1R5G-2-A	25A		25A			
	40A		32A			
FU9000S-2R2G-2-A	40A		32A			
	40A		32A			
FU9000S-0R7G-4-A	10A	16A / 1000V	10A			
FU9000S-1R5G-4-A	10A		10A			
FU9000S-2R2G-4-A	16A		10A			
FU9000S-004G-4-A	25A		16A			55A/1600V
FU9000S-5R5G-4-A	25A		16A			
FU9000S-7R5G-4-A	40A		25A			
FU9000S-011G-4-A	63A		32A			
FU9000S-015G-4-A	63A	63A / 1000V	50A			110A/1600V
FU9000S-018G-4-A	100A		63A			
FU9000S-022G-4-A	100A		80A			
FU9000S-030G-4-A	125A		95A			
FU9000S-037G-4-A	160A		120A			

FU9000S Dimension

Dimensions of 0.75-110kw IP20 Models

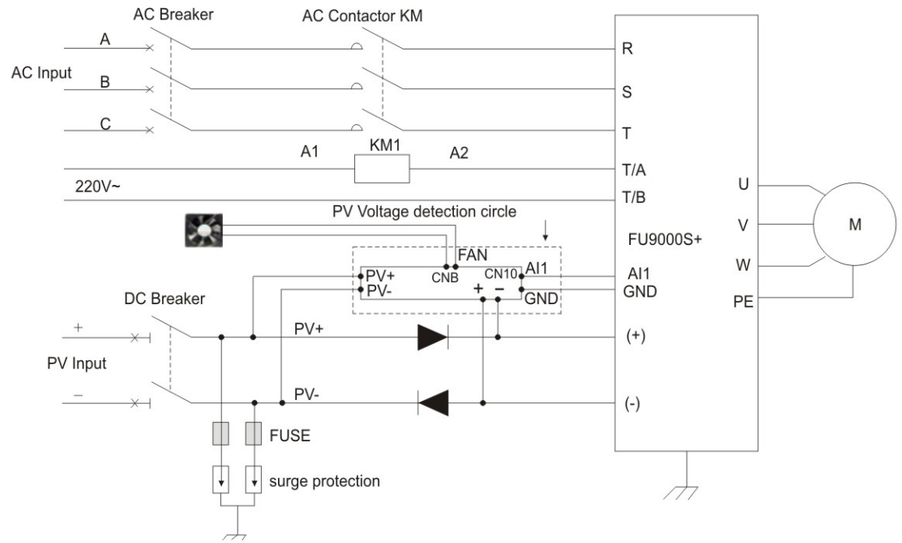
Dimensions of 0.75-7.5kw IP65 Models

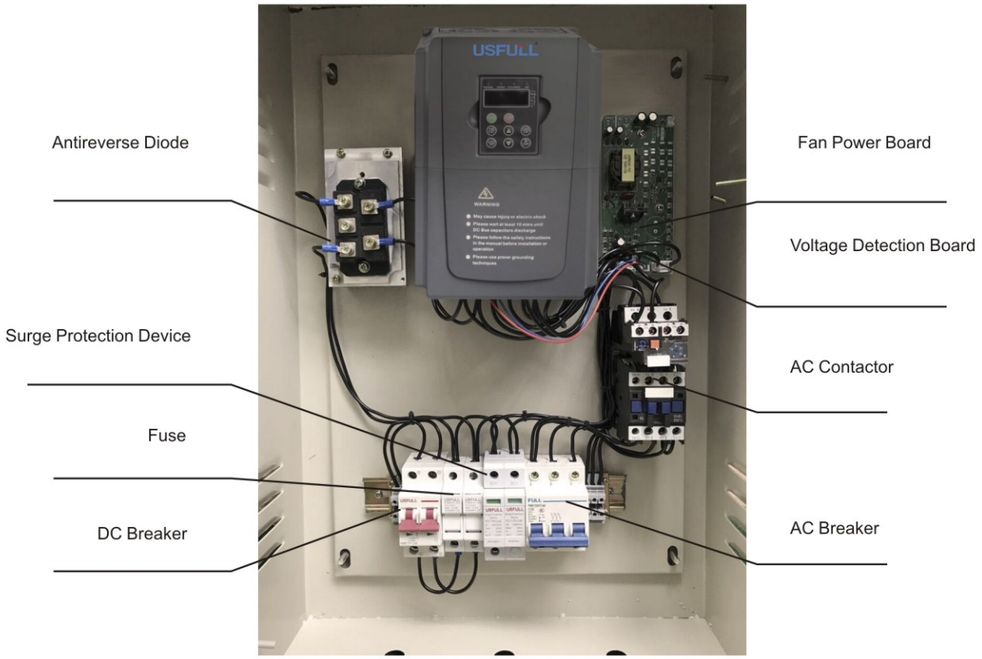
In Wall Mounting (unit: mm)

Model	W1	W2	H1	H2	D1	Installation Hole (d)	Gross Weight (kg)
FU9000S-0R7G-S2-A	120	110	180	170	154	4	2.28
FU9000S-1R5G-S2-A	120	110	180	170	154	4	2.28
FU9000S-2R2G-S2-A	120	110	180	170	154	4	2.28
FU9000S-0R7G-SS2-A	120	110	180	170	154	4	2.28
FU9000S-1R5G-SS2-A	120	110	180	170	154	4	2.28
FU9000S-2R2G-SS2-A	120	110	180	170	154	4	2.28
FU9000S-004G-2-A	221	205	320	305	190	6	2.28
FU9000S-5R5G-2-A	221	205	320	305	190	6	2.28
FU9000S-7R5G-2-A	221	205	320	305	190	6	2.28
FU9000S-0R7G-4-A	120	110	180	170	154	4	2.28
FU9000S-1R5G-4-A	120	110	180	170	154	4	2.28
FU9000S-2R2G-4-A	120	110	180	170	154	4	2.28
FU9000S-004G-4-A	161	148	250	240	184	5	4.6
FU9000S-5R5G-4-A	161	148	250	240	184	5	4.6
FU9000S-7R5G-4-A	221	205	320	305	190	6	7
FU9000S-011G-4-A	221	205	320	305	190	6	7
FU9000S-015G-4-A	221	205	320	305	190	6	7
FU9000S-018G-4-A	295	220	475	455	245	6	19.5
FU9000S-022G-4-A	295	220	475	455	245	6	20
FU9000S-030G-4-A	295	220	475	455	245	6	20.5
FU9000S-037G-4-A	295	220	475	455	245	6	35
FU9000S-045G-4-A	375	230	580	560	265	6	36
FU9000S-055G-4-A	375	230	580	560	265	6	37
FU9000S-075G-4-A	460	320	755	730	330	6	63
FU9000S-090G-4-A	460	320	755	730	330	6	65
FU9000S-110G-4-A	460	320	755	730	330	6	68
FU9000S-0R7G-SS2-AP	155	145	240	228	145	4	3.0
FU9000S-1R5G-SS2-AP	155	145	240	228	145	4	3.0
FU9000S-2R2G-SS2-AP	180	165	290	270	150	4	4.0
FU9000S-0R7G-S2-AP	155	145	240	228	145	4	3.0
FU9000S-1R5G-S2-AP	155	145	240	228	145	4	3.0
FU9000S-2R2G-S2-AP	180	165	290	270	150	4	4.0
FU9000S-0R7G-2-AP	155	145	240	228	145	4	3.0
FU9000S-1R5G-2-AP	155	145	240	228	145	4	3.0
FU9000S-2R2G-2-AP	180	165	290	270	150	4	4.0
FU9000S-0R7G-4-AP	155	145	240	228	145	4	3.0
FU9000S-1R5G-4-AP	155	145	240	228	145	4	3.0
FU9000S-2R2G-4-AP	155	145	240	228	145	4	3.0
FU9000S-004G-4-AP	180	165	290	270	150	4	4.0
FU9000S-5R5G-4-AP	180	165	290	270	150	4	4.0
FU9000S-7R5G-4-AP	180	165	290	270	150	4	4.0

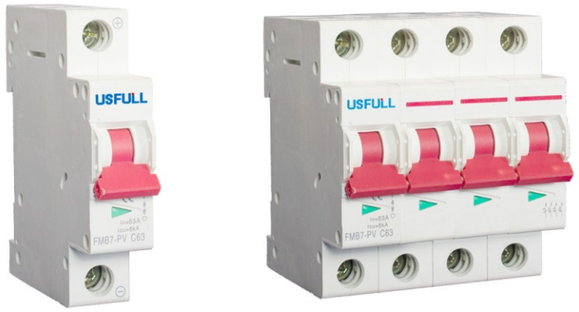
Solution for DC/ AC Automatic Switch Cabinet

Generally, inverters do not allow simultaneous connection to mains and PV. If such simultaneous connection is required, switching control circuit must be configured externally. The figure below shows the solution for reference





DC MCB



FMB7-PV63 DC Breaker (DC MCB)

Specifications

FMB7-PV 63 Series Circuit Breaker		FMB7-PV 63
Frame Degree Rated Current (A)		63
Pole		1P,2P,3P,4P
Rated Operating Voltage (V DC)		DC12V-DC1200V
Rated Current In (A)		1-63A
Rated Insulation Voltage Ui (V DC)		1200VDC
Rated Impact Voltage Uimp (kV)		4
Ultimate Breaking Capacity Icu (kA)		6
Run Breaking Capacity Ics (%Icu)		75%
Curve Type		C
Trip Type		Thermal-magnetic
Mechanical	Actual average value	20000
	Standard value	8500
Electric	Actual average value	2500
	Standard value	1500

Specifications

Wiring capacity (mm^2)		In≤32A, 1~25 mm^2, I≥40A, 10~35mm^2			
Ambient temperature()		-20~+70			
Altitude		≤2000			
Relative humidity		≤9 5%			
Pollution Level		3			
Installation Environment		No obvious shock and vibration			
Installation category		Class III			
Installation		DIN Standard rail			
Dimensions (W)*(H)*(Deep)	W	18	36	54	72
	H	80	80	80	80
	Deep	71	71	71	71
Weight (kg)		0.12	0.24	0.36	0.48

Surge Protector Device and Fuse

FLY1-PV-C40

Specifications

Type	FLY1-PV-C40		
Pole	2P	3P	3P
Rated Voltage	500V DC	800V DC	1000V DC
Maximum operating voltage	530V DC	840V DC	1060V DC
Nominal discharge current	5KA	20KA	30KA
The maximum discharge current	10KA	40KA	60KA
Protection level	≤1.5KV	≤3.0KV	≤3.2KV
Operating temperature	-40℃--+85℃		
Relative humidity	≤95%(25℃)		
Installation method	35mm Din Rail		
Window indicates	Normal:Green Feailure:Red		
Degree of protection	IP20		
Leakage	≤20		

FRPV-30

Specifications

Type	FRPV-30
Fuse size1	10 x 38
Poles	1P
Rated voltage	DC 1000V
rated current	1,2,3,4,5,6,8,10,12,15,20
short-circuit breaking capacity	33KA
max power attenuation	3.5W
protection grade	IP20
connection	2.5-10mm2
operation ambient temperature	-30~+70°C
Resistance and damp hot	Class 2
elevation	≤ 2000
installation way	TH35-7.5/DIN35 Rail installation
RH(relative air humidity)	when +20 °C,not exceed 95%;when +40 °C,not exceed 50%
pollution class	3
installation environment	the place of no abvious vibrate & impact
installation class	III
WxHxL	W18 x H89 x L90mm
Weight(kg)	0.07

Combiner Box

Function

1. IP65
2. PV convergence, current anti-reverse protection, overcurrent protection, overvoltage protection, lightning protection.
3. Can work for PV grid-tie inverter and off-grid inverter.

Product Description

1. The smart lightning-protection PV combiner box has built-in combiner monitoring unit that monitors every parts in the combiner box.
2. We also supply non-smart lightning-protection PV combiner box.

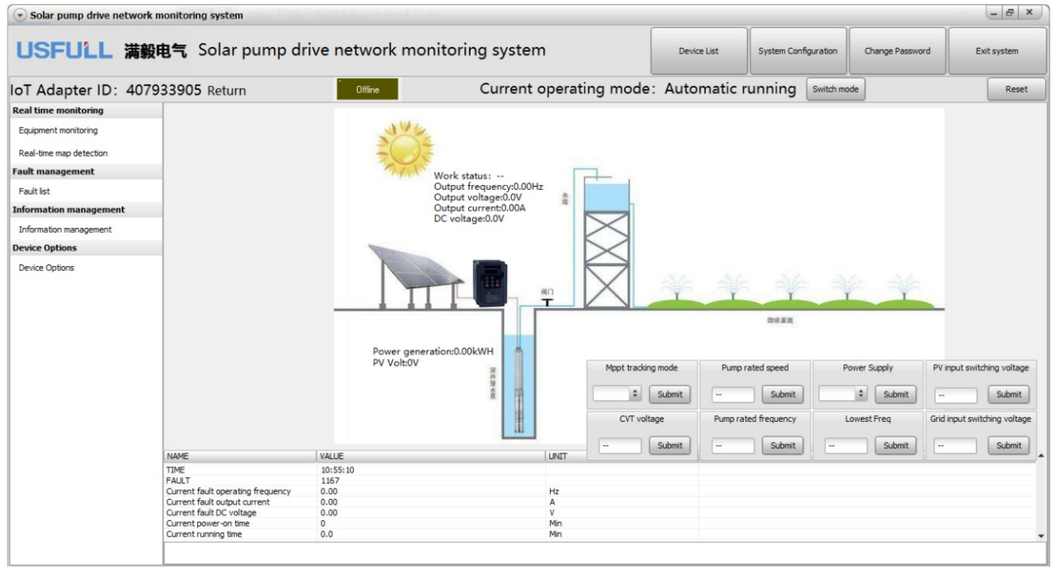
Detail Shows

1. MC4 compatible input/output connectors for easy installation
2. DC fuse for each PV string with fuse links meet PV standard
3. DC Isolator or DC MCB for isolating and over-voltage protection with inside operation
4. Anti-lighting and surge protector professional for PV
5. Each channels has 6 sets of input/output connectors
6. The enclosure is made by polycarbonate and ABS, anti-UV or Stainless steel material

Product Specification

Model	FU-CB24	FU-CB16	FU-CB12	FU-CB8	FU-CB4
Input channel number	17~24	13~16	9~12	5~8	1- 4
Max. input voltage	1000Vdc				
Input current of each channel	0~20A				
Max. output current	250A	160A/200A	100A/125A/160A	96A	48A
Monitoring module(optional)	Detect current of each channel, bus voltage, status of circuit breaker and lightning protector, box temperature				
Communication mode/ protocol(optional)	Rs485 bus/standard MODBUS-RTU protocol				
Prevent-reverse function	Can be equipped with modularized and encapsulated prevent-reverse diode (optional)				
Temperature and humidity	Operating temperature: -40~+85°C, humidity 95%, places free of dew or corrosive gas.				
Power consumption of monitoring module	Working hours≤8W				
Auxiliary power supply	Auxiliary power supply: AC85V~265V/DC24V(±10%)/DC200V~1000V				
Box material	Hot galvanized steel/stainless steel/cold rolled sheet/engineering plastics				
Protection level	IP65				

Monitoring System



Interface of monitoring system software

GPRS Module

■ Introduction of monitoring system and GPRS module(optional)

With monitoring system and GPRS module(optional), users can control the solar pumping system from distance.

Users can control the working status of solar pump inverter, check real time monitoring(including MPPT, frequency, etc.) , fault management and other informations.

Recommended Solar Modules

Optimum Operating Voltage (Vmp)	29±1V		36±1V	
Open-circuit Voltage (Voc)	37±1V		45±1V	
Solar Pump Drive Model	Module Power±5Wp	Modules Per String * Strings	Module Power±5Wp	Modules Per String * Strings
FU9000S-0R4G-SS2-A	250	11*1	300	9*1
FU9000S-0R7G-SS2-A	250	11*1	300	9*1
FU9000S-1R5G-SS2-A	250	11*1	300	9*1
FU9000S-2R2G-SS2-A	250	11*1	300	9*1
FU9000S-0R4G-S2-A	250	11*1	300	9*1
FU9000S-0R7G-S2-A	250	11*1	300	9*1
FU9000S-1R5G-S2-A	250	11*1	300	9*1
FU9000S-2R2G-S2-A	250	11*1	300	9*1
FU9000S-004G-2-A	250	11*2	300	9*2
FU9000S-5R5G-2-A	250	11*3	300	9*3
FU9000S-7R5G-2-A	250	11*4	300	9*4
FU9000S-0R7G-4-A	250	18*1	300	15*1
FU9000S-1R5G-4-A	250	18*1	300	15*1
FU9000S-2R2G-4-A	250	18*1	300	15*1
FU9000S-004G-4-A	250	20*1	300	16*1
FU9000S-5R5G-4-A	250	18*2	300	15*2
FU9000S-7R5G-4-A	250	18*2	300	15*2
FU9000S-011G-4-A	250	18*3	300	15*3
FU9000S-015G-4-A	250	18*4	300	15*4
FU9000S-018G-4-A	250	18*5	300	15*5
FU9000S-022G-4-A	250	18*6	300	15*6
FU9000S-030G-4-A	250	18*8	300	15*8
FU9000S-037G-4-A	250	18*9	300	15*9

USFULL®

Recommended Pumps

All solar pumps are manufactured by our partner,the international leading pump supplier who has sold its pumps to over 120 countries and regions all over the word.Including Europe, North America,Middle and South America,Southeast Asia,Middle East Africa etc.

◆BASIC DATA

[Submersible Pumps]

Pump

Flow range:1~30(m^3/h)
Maximum fluid temperature:40℃
Maximum sand content:0.25%

Motor.

Power:Three phase:3~30KW 380~415V
Insulation class:F
Protection grade:IP68
Frequency:50Hz

90 QJ 2 28 / 7

- 7 — Impeller number
- 28 — Head
- 2 — Flow
- QJ — Pump name
- 90 — Pump out diameter (35* 88mm)

Components	Material
Motor external casing	AISI304
Bottom support	Cast-iron HT200
Bottom bearing chock	Cast-iron HT200
Top bearing chock	Cast-iron HT200
Rotator	AISI304
Connector	AISI304
Outlet	AISI304
Pump external casing	AISI304
Splinted hub	AISI304
Strainer mesh	AISI304
Diffuser	AISI304
Impeller	AISI304
Cover plate	AISI304
Shaft coupling	AISI304
Control box	Start control box/ Automatic control box
Outlet diameter	2.5".3"

3.5QJ 2 Technical Data

Item Number	Power		Outlet Diameter	Flow m^3/h	0	0.4	0.8	1.2	1.6	2	2.4	2.8	3.2
	HP	kW											
90QJ2-28/7	0.5	0.37	1" 1.25"	Head(m)	42	40	38	33	30	28	26	22	18
90QJ2-36/9	0.75	0.55			55	52	50	42	39	36	32	28	21
90QJ2-48/12	1	0.75			69	65	63	54	51	48	42	39	31
90QJ2-56/14	1.5	1.1			76	72	69	65	60	56	49	43	36
90QJ2-68/17	2	1.5			97	92	88	83	73	68	60	52	44
90QJ2-76/19	3	2.2			104	99	94	90	81	76	67	58	49
90QJ2-100/25	3.5	2.5			136	130	123	116	107	100	87	77	64

3.5QJ 4 Technical Data

Item Number	Power		Outlet Diameter	Flow m^3/h	0	0.8	1.6	2.4	3.2	4	4.8	5.6	6.4
	HP	kW											
90QJ4-21/7	0.75	0.55	1" 1.25"	Head(m)	35	33	31	28	25	21	16	11	6
90QJ4-27/9	1	0.75			46	43	41	37	33	27	20	14	8
90QJ4-33/11	1.5	1.1			55	51	49	44	39	33	25	17	10
90QJ4-39/13	2	1.5			68	63	60	54	48	39	29	20	12
90QJ4-48/16	3	2.2			76	70	67	60	54	48	36	25	15
90QJ4-60/20	3.5	2.5			94	87	83	74	67	60	45	31	18

4QJ 2 Technical Data

Item Number	Power		Outlet Diameter	Flow m^3/h	0	0.5	1	1.5	2	2.5	3	3.5	4
	HP	kW											
100QJ2-25/5	0.4	0.3	1.25" 1.5"	Head(m)	29	28	27	26	25	23	21	17	15
100QJ2-35/7	0.5	0.37			41	40	38	37	35	32	26	24	19
100QJ2-45/9	0.75	0.55			53	51	49	47	45	42	36	31	26
100QJ2-55/11	1	0.75			65	63	60	58	55	52	46	39	34
100QJ2-70/14	1.2	0.9			84	82	80	76	70	65	55	47	40
100QJ2-80/17	1.5	1.1			99	95	90	86	80	75	63	55	46
100QJ2-100/20	2	1.5			122	118	112	107	100	94	85	75	64
100QJ2-154/30	3	2.2			183	177	171	163	154	143	131	117	101
100QJ2-183/38	4	3			224	215	206	198	183	175	148	141	126
100QJ2-220/46	5.5	4			266	258	251	237	220	211	171	166	133
100QJ2-278/58	7.5	5.5			335	320	304	292	278	266	223	190	168
100QJ2-385/76	10	7.5			435	424	412	394	385	357	334	285	259

4QJ 4 Technical Data

Item Number	Power		Ourlet Diameter	Flow m^3/h	0	0.8	1.6	2.4	3.2	4	4.8	5.6	6.4
	HP	kW											
100QJ4-18/4	0.5	0.37	1.25" 1.5"	Head(m)	25	24	23	21	20	18	16	14	11
100QJ4-27/6	0.75	0.55			35	34	33	31	29	27	24	21	17
100QJ4-41/9	1	0.75			55	54	52	50	47	41	36	30	25
100QJ4-50/11	1.2	0.9			65	64	61	57	54	50	43	35	26
100QJ4-54/12	1.5	1.1			69	68	66	63	60	54	48	44	32
100QJ4-72/16	2	1.5			95	94	89	84	80	72	64	59	43
100QJ4-94/21	3	2.2			124	123	115	110	105	94	84	77	54
100QJ4-135/30	4	3			179	177	166	158	151	135	120	110	81

4QJ 8 Technical Data

Item Number	Power		Outlet Diameter	Flow m^3/h	0	2	4	6	8	10	12	14	16
	HP	kW											
100QJ8-16/4	1	0.75	1.5" 2"	Head(m)	24	23	21	18	16	12	9	6	2
100QJ8-20/5	1.2	0.9			28	27	25	21	20	17	13	8	3
100QJ8-24/6	1.5	1.1			33	32	29	25	24	19	15	10	4
100QJ8-32/8	2	1.5			45	43	39	36	32	25	20	13	5
100QJ8-48/12	3	2.2			66	63	58	52	48	38	29	15	6
100QJ8-60/16	4	3			87	83	76	68	60	44	33	17	7
100QJ8-83/20	5.5	4			119	114	104	94	83	67	52	32	14
100QJ8-96/24	7.5	5.5			132	126	115	104	96	76	57	35	45
100QJ8-104/26	10	7.5			143	137	125	113	104	82	64	39	17

5QJ 12 Technical Data

Item Number	Power		Outlet Diameter	Flow m^3/h	0	2	4	6	8	10	12	14
	HP											
130QJ12-16/4	1.5	1.1	1.5" 2"	Head(m)	40	38	36	33	29	23	16	13
130QJ12-24/6	2	1.5			60	57	54	46	38	30	24	18
130QJ12-36/9	3	2.2			85	81	77	66	60	50	36	26
130QJ12-49/11	4	3			106	101	96	88	79	65	49	38
130QJ12-63/14	5.5	4			129	123	118	108	97	82	63	53
130QJ12-90/20	7.5	5.5			183	174	167	153	138	117	90	76
130QJ12-113/25	10	7.5			233	222	213	195	175	148	113	96
130QJ12-153/34	12.5	9.2			330	314	301	276	237	205	153	126
130QJ12-180/40	15	11			385	367	352	322	282	243	180	149

4QJ 6 Technical Data

Item Number	Power		Outlet Diameter	Flow m^3/h	0	1	2	3	4	5	6	7	8	9
	HP	kW												
100QJ6-30/6	1	0.75	1.25" 1.5"	Head(m)	39	37	36	35	34	32	30	27	24	20
100QJ6-30/6	1.5	1.1			44	42	41	40	39	37	35	32	28	23
100QJ6-30/6	2.2	1.5			50	48	47	45	44	42	40	37	34	28
100QJ6-30/6	3	2.2			55	54	52	50	49	47	45	43	39	34

6QJ 18 Technical Data

Item Number	Power		Outlet Diameter	Flow m^3/h	0	3	6	9	12	15	18	21	24	27
	HP	kW												
150QJ18-6	7.5	5.5	2.5" 3"	Head(m)	87	84	81	77	72	64	55	45	33	19
150QJ18-7	7.5	5.5			99	95	92	87	81	72	62	50	35	19
150QJ18-9	10	7.5			130	125	121	115	107	96	83	66	48	28
150QJ18-11	12.5	9.2			156	150	145	138	128	114	98	78	56	31
150QJ18-13	15	11			188	177	175	166	154	138	119	96	70	40
150QJ18-15	17.5	13			213	205	198	189	175	156	134	107	77	43
150QJ18-18	20	15			260	249	241	230	213	191	164	132	96	55
150QJ18-22	25	18.5			314	302	292	279	258	230	198	158	114	64
150QJ18-26	30	22			374	360	348	332	308	275	237	190	138	79
150QJ18-30	35	26			429	412	400	380	352	315	270	216	156	88
150QJ18-34	40	30			489	470	455	434	402	360	310	248	180	103
150QJ18-36	40	30			515	495	479	456	423	378	325	260	188	106

6QJ 30 Technical Data

Item Number	Power		Outlet Diameter	Flow m^3/h	0	5	10	15	20	25	30	35	40
	HP	kW											
150QJ30-5	7.5	5.5	2.5" 3"	Head(m)	72	68	64	59	53	45	35	23	10
150QJ30-7	10	7.5			98	92	86	79	71	59	45	30	11
150QJ30-8	10	7.5			115	109	102	94	84	71	55	37	14
150QJ30-9	12.5	9.2			127	119	112	103	91	77	60	38	15
150QJ30-11	15	11			158	149	140	129	115	97	75	50	21
150QJ30-13	17.5	13			184	173	162	149	133	111	86	56	22
150QJ30-15	20	15			215	203	190	176	157	132	103	68	28
150QJ30-18	25	18.5			255	241	225	208	185	155	120	80	31
150QJ30-21	30	22			301	284	266	245	219	184	143	95	39
150QJ30-24	35	26			341	322	301	277	247	207	161	106	42
150QJ30-27	40	30			387	365	342	315	281	237	184	122	50
150QJ30-30	40	30			427	403	376	347	310	260	201	133	52

6QJ 60 Technical Data

Item Number	Power		Outlet Diameter	Flow m^3/h	0	6	12	18	24	30	36	42	48	54	60	66	72
	HP	kW															
150QJ60-4	10	7.5	2.5" 3"	Head(m)	62	59	56	53	50	47	43	39	35	30	24	17	9
150QJ60-5	15	11			74	70	66	62	60	55	51	46	40	34	26	18	8
150QJ60-6	17.5	13			93	87	83	78	74	70	64	58	52	44	35	25	13
150QJ60-7	20	15			105	100	93	88	83	78	72	65	57	48	38	26	12
150QJ60-8	25	18.5			123	116	110	104	99	93	86	78	69	59	46	33	18
150QJ60-9	25	18.5			135	127	121	114	108	101	93	84	74	63	50	34	17
150QJ60-10	30	22			154	145	137	130	123	115	107	97	85	73	58	41	22
150QJ60-11	35	26			166	156	148	140	132	124	114	103	91	77	61	42	21
150QJ60-12	35	26			184	174	165	156	147	138	128	116	102	87	69	49	26
150QJ60-13	40	30			196	185	175	165	156	147	135	122	108	91	72	50	25
150QJ60-14	40	30			215	202	192	181	172	161	149	135	119	102	81	57	30
150QJ60-15	50	37			227	214	202	191	181	170	156	141	125	106	83	58	30
150QJ60-16	50	37			245	231	219	207	196	184	170	154	136	116	92	65	34