

# SOLAR INVERTER FOR AC PUMPS

 **Zirantec**



[www.zirantec.com](http://www.zirantec.com)

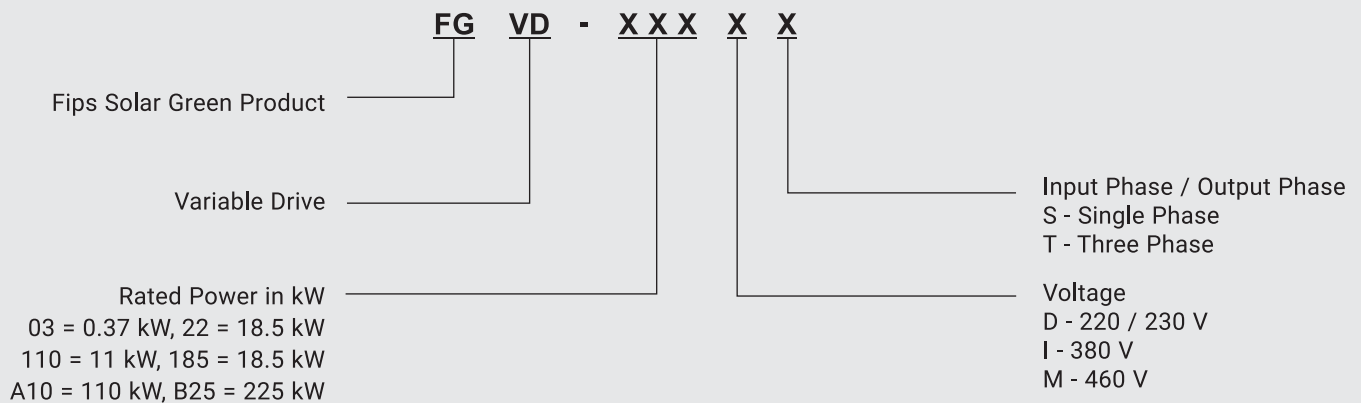


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## SOLAR INVERTER FOR AC PUMPS

Zirantec Solar inverters are made of hi-tech components and designed to perfection with various features for ultimate performance of solar A.C. pumps using D.C. (Direct Current) produced by solar photovoltaic modules. These inverters also have hi-precision MPPT feature and works on hybrid mode with both D.C. & A.C. input currents by using PV combiner box and other accessories.

### PRODUCT IDENTIFICATION CODE



### SPECIFICATION

#### Output 3PH 380V AC

Rated Input AC Voltage	380V AC
Maximum Input DC Voltage	900V DC
Recommended Input DC Voltage Range	420V~720V DC
Recommended Input Working Voltage	540V DC
The Number of Input port	1
Rated Output Voltage	3PH 380V AC

#### Input & Output Voltage

Input : DC 420V ~ 720V / AC 3Ph 380V  $\pm$  15% 50/60Hz  
(or Both AC & DC).  
Output : 3Ph 380V AC

#### Output 3Ph 220V AC

Rated Input AC Voltage	220V AC
Maximum Input DC Voltage	450V DC
Recommended Input DC Voltage Range	220V~370V DC
Recommended Input Working Voltage	305V DC
The Number of Input port	1
Rated Output Voltage	3PH 220V AC

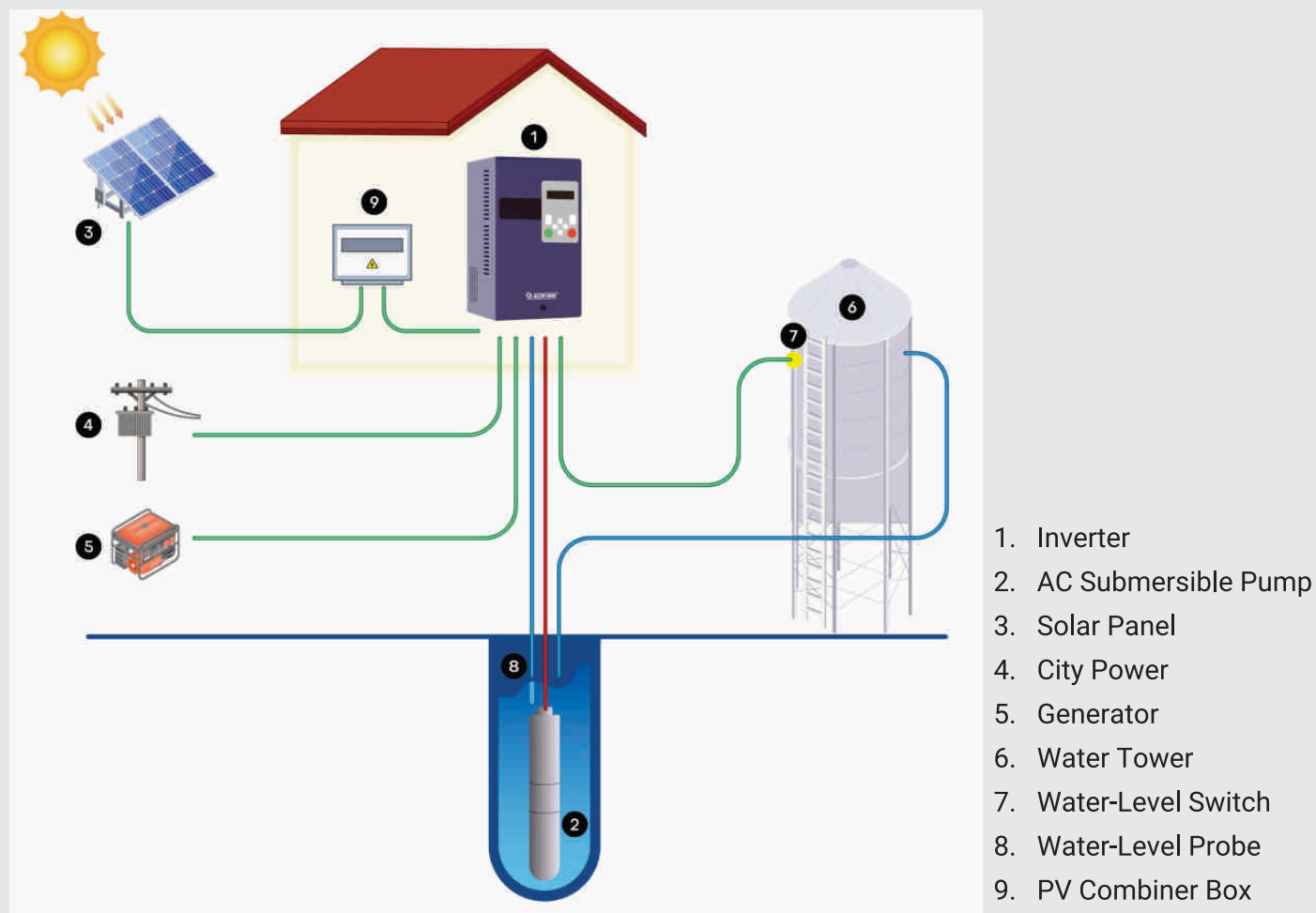
#### Input & Output Voltage

Input : DC 220V ~ 370V / AC 3Ph 220V  $\pm$  15% 50/60Hz  
(or Both AC & DC).  
Output : 3Ph 220V AC

## SOLAR INVERTER FOR AC PUMPS

### SOLAR PUMPING SYSTEM

Schematic Diagram

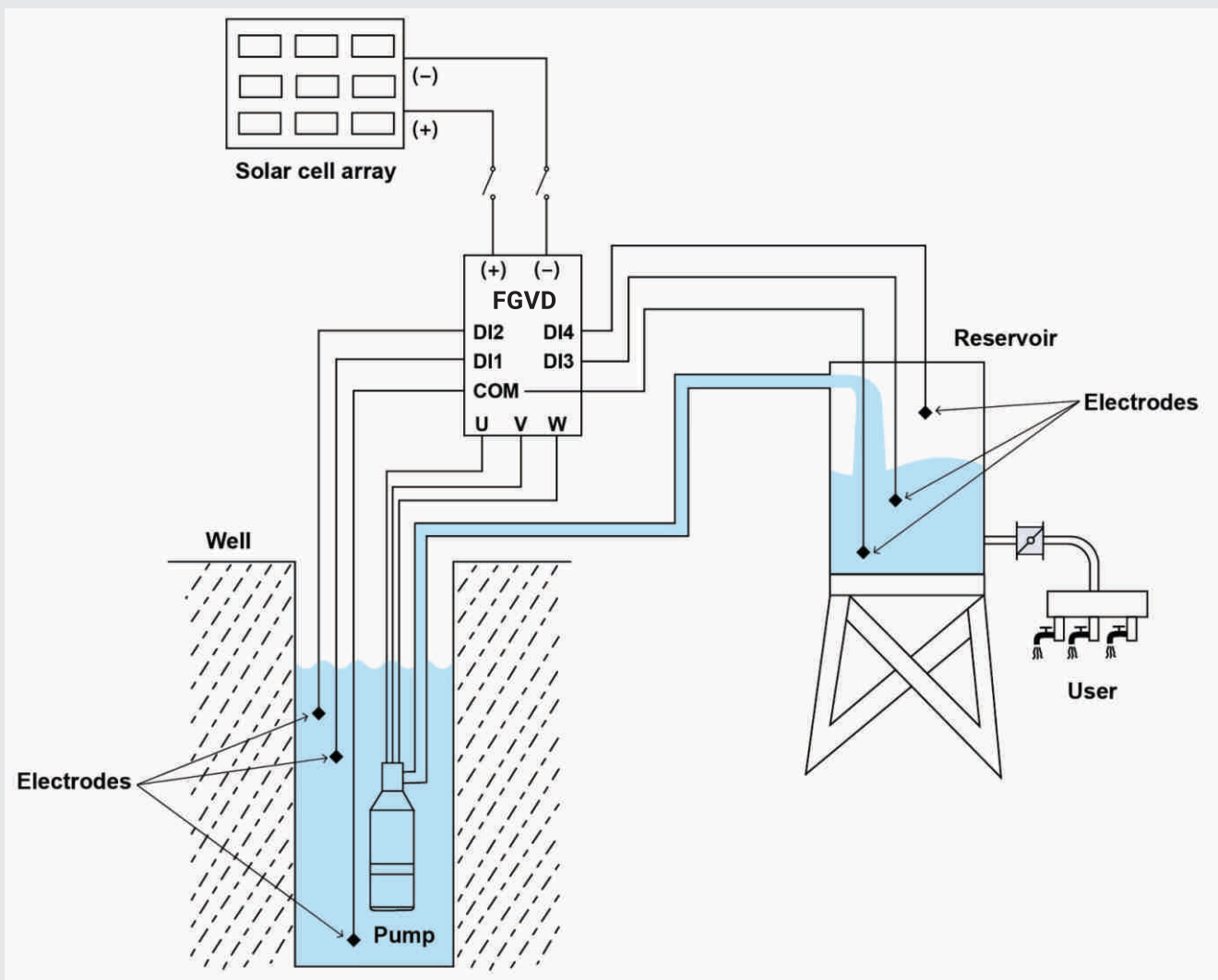


## SOLAR INVERTER FOR AC PUMPS

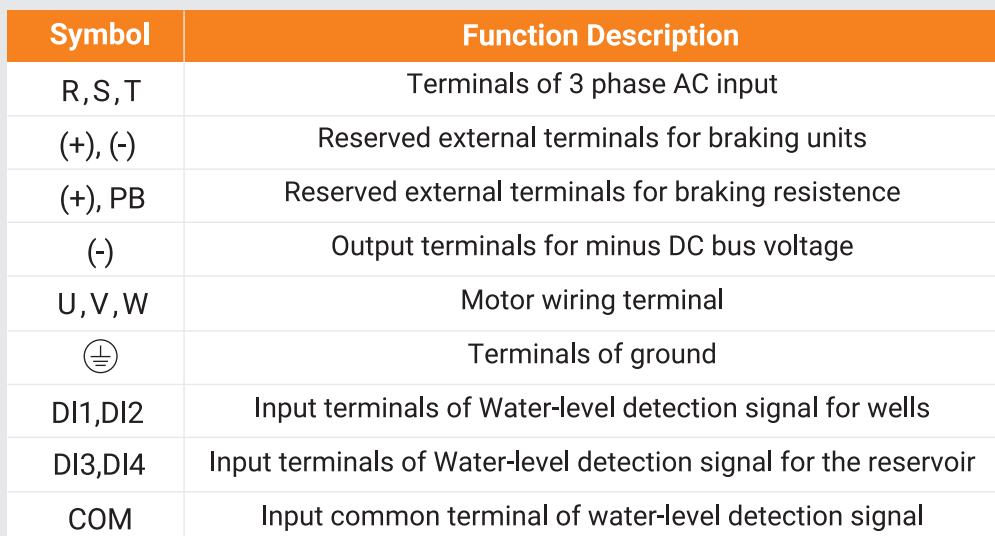
### FEATURES

- Intelligent Auto-Sleep Protection of under-voltage and over-voltage.
- High-Precision MPPT accuracy up to 99% Higher utilization of solar energy.
- Accepted AC&DC input at the same time.
- Sleek design, simple installation & run automatically.
- Supply water to remote areas where electricity is lacking or unreliable.
- Powered by solar energy, saving electricity costs.

### WIRING DIAGRAM - ONLY WITH DC INPUT

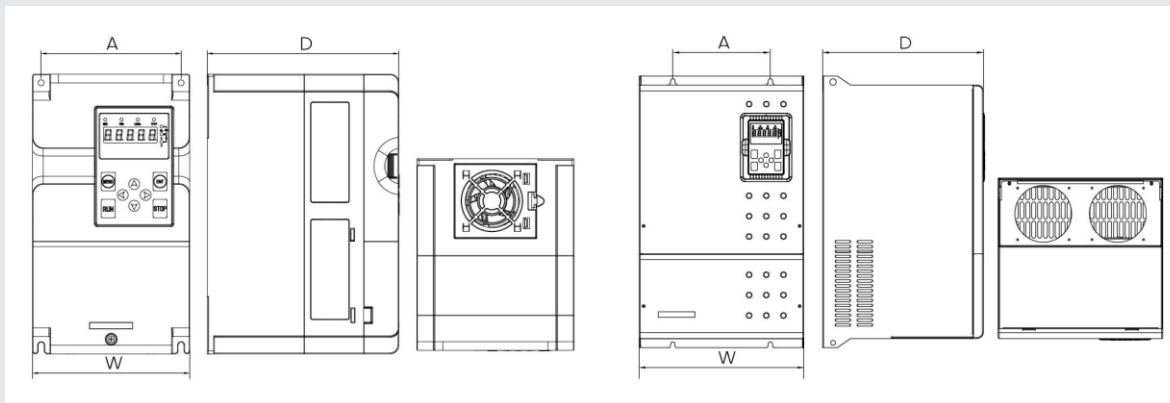


## MAIN CIRCUIT TERMINALS WIRING



## SOLAR INVERTER FOR AC PUMPS

### EXTERNAL DIMENSION



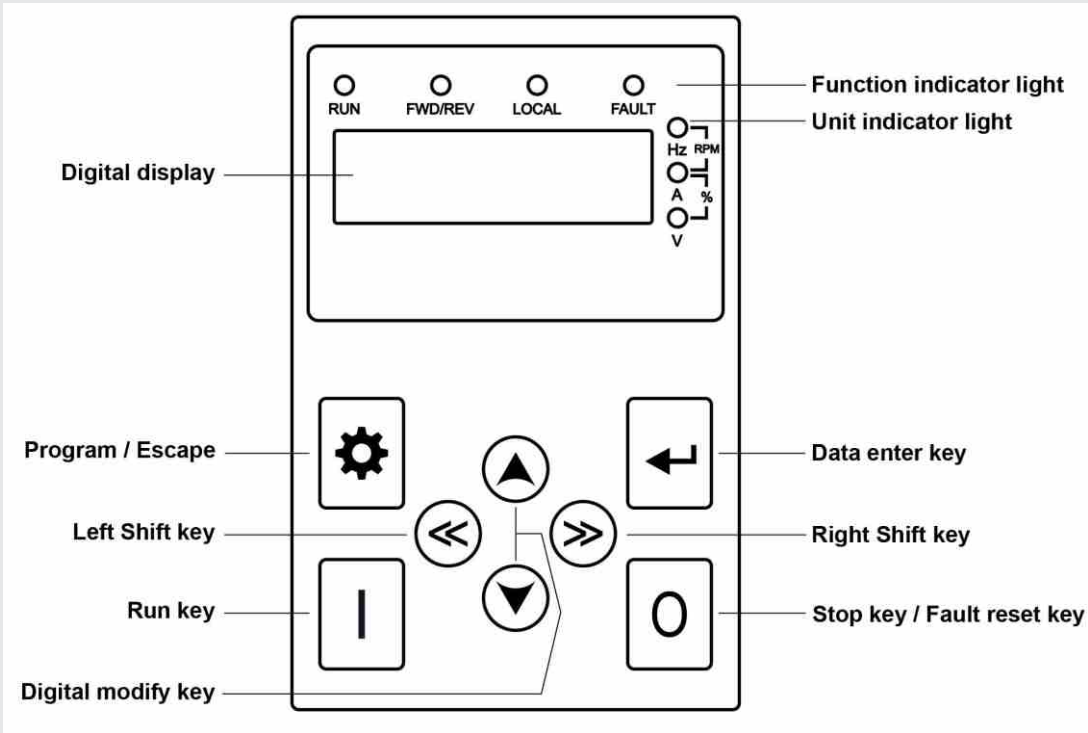
220V: 0.75kW~22kW Dimension  
380V: 0.75kW~37kW Dimension

220V: 30kW~55kW Dimension  
380V: 45kW~200kW Dimension

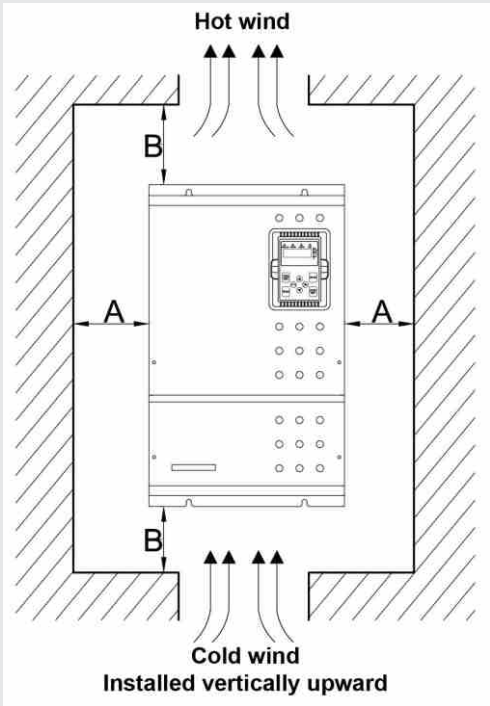
Power(kW)	Installation Dimension		External Dimension			Installation Hole(mm)
	A(mm)	B(mm)	H(mm)	W(mm)	D(mm)	
220V : 0.75~2.2	114	174	186	126	163.8	5
380V : 0.75~2.2						
110V : 1.5	114	174	186	126	185	5
220V : 3.7						
380V : 4.0~5.5						
110V : 2.2	129	242	258	145	176.5	5.5
220V : 5.5						
380V : 7.5						
220V : 7.5	146	301	313	161	210	6
380V : 11.0~15.0						
220V : 11.0~15.0	185	330	342	200	200.5	6
380V : 18.5~220						
220V : 18.5~220	233	381	400	251	213	6
380V : 30.0~37.0						
220V : 30.0~55.0	199	534	554	336	327.5	9
380V : 45.0~110.0						
380V : 132~200	360	848	870	503	362	11

# SOLAR INVERTER FOR AC PUMPS

## KEYPAD DESCRIPTION



## INSTALLATION SPACE



Model (kW)	Dimension	
380V: 0.75kW~15kW	A=50mm	B=100mm
220V: 0.75kW~7.5kW		
380V: 18.5kW~22kW	A=50mm	B=200mm
220V: 11kW~15kW		
380V: 22kW~37kW	A=50mm	B=200mm
220V: 15kW~22kW		
380V: 37kW~200kW	A=50mm	B=300mm
220V: 22kW~55kW		



## SOLAR INVERTER FOR AC PUMPS

### MODEL SPECIFICATION (IP20)

Model	Rated Input Voltage (V)	Rated Output Power (kW)	Rated Input Current (A)	Rated Output Current (A)	Motor Power (kw)
FGVD-07IT	DC 420V~720V / AC 3PH 380V±15%	0.75	3.4	2.1	0.75
FGVD-15IT		1.5	5	3.8	1.5
FGVD-22IT		2.2	5.8	5.1	2.2
FGVD-40IT		4	13.5	9.5	4
FGVD-55IT		5.5	19.5	14	5.5
FGVD-75IT		7.5	25	18.5	7.5
FGVD-110IT		11	32	25	11
FGVD-150IT		15	40	32	15
FGVD-185IT		18.5	47	38	18.5
FGVD-220IT		22	51	45	22
FGVD-300IT		30	70	60	30
FGVD-370IT		37	80	75	37
FGVD-450IT		45	98	92	45
FGVD-550IT		55	128	115	55
FGVD-750IT		75	139	152	75
FGVD-900IT		90	168	180	90
FGVD-A10IT		110	201	215	110
FGVD-A32IT		132	265	260	132
FGVD-A60IT		160	310	305	160
FGVD-A85IT		185	345	340	185
FGVD-B00IT		200	385	380	200
FGVD-07DT	DC 220V~370V / AC 3PH 220V±15%	0.75	7.1	4.5	0.75
FGVD-15DT		1.5	11.1	7	1.5
FGVD-22DT		2.2	15.8	10	2.2
FGVD-40DT		3.7	23	17	3.7
FGVD-55DT		5.5	32	25	5.5
FGVD-75DT		7.5	40	32	7.5
FGVD-110DT		11	56	45	11
FGVD-150DT		15	70	60	15
FGVD-185DT		18.5	80	75	18.5
FGVD-220DT		22	97	90	22
FGVD-300DT		30	125	112	30
FGVD-370DT		37	155	150	37
FGVD-450DT		45	178	176	45
FGVD-550DT		55	210	210	55



## SOLAR INVERTER FOR AC PUMPS

### SOLAR PHOTOVOLTAIC PUMP CONTROLLER (1PH OUTPUT)

FGVD Single Phase series designed to drive single phase pumps by using DC (Direct Current) produced by solar photovoltaic modules.

These Pump Controller converts DC power generated by solar panels into AC power (Single Phase) to drive various types of single phase pumps.

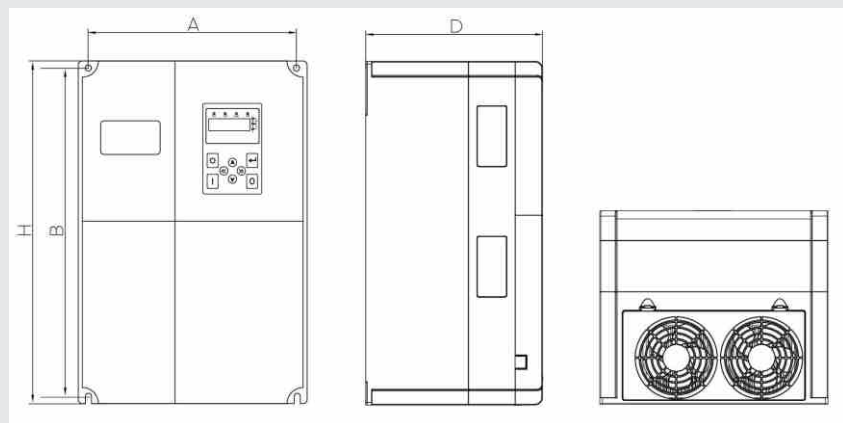
#### Input & Output Voltage

Input : 220~370V DC / AC 1PH 220V 50/60Hz (or Both AC & DC)

Output : AC 1PH 0~220V

Model No.	DC Input Voltage Range	Output Current (A)	Motor Power (kW) (1PH)
FGVD-03DS	DC:220~370V AC:1PH 220V±15%	4.5	0.37
FGVD-07DS		7.0	0.75
FGVD-15DS		10	1.5
FGVD-22DS		16.0	2.2

#### EXTERNAL DIMENSION



Power (kW)	Size	Installation Dimension		External Dimension			Installation Hole (mm)	Packing Size (mm)	Weight (kg)
		A(mm)	B(mm)	H(mm)	W(mm)	D(mm)			
0.37~1.5	B	110.0	169.6	179.6	120.1	150.3	4	235*175*210	2.03
2.2	C	147.4	236	250	160	194.5	5	345*255*285	4.0

#### FEATURES

- High- accuracy MPPT technology.
- Automatic regulation of pump flow.
- Automatic water level control.

#### PROTECTION FUNCTION

- Output short circuit protection.
- High-voltage and low-voltage protection.
- Overload, over-current, phase failure protection.

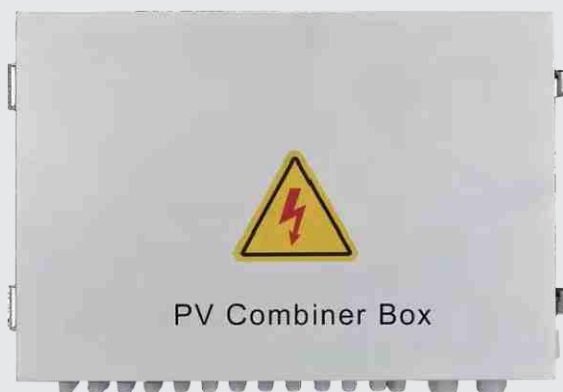
## PV COMBINER BOX

### PHOTOVOLTAIC PUMPING SYSTEM'S ACCESSORIES

#### PV COMBINER BOX

##### FPVCB-4S~FPVCB-24S

- IP65, Outdoor application design
- Each string with independent protection
- Special lightning protection for Photovoltaic
- High voltage 1000VDC circuit breaker to ensure system reliability
- Applying anti-backflow device to avoid backflow current caused by PV unbalance voltage,
- Improving life time of PV module



**PV Combiner** is used between PV modules and inverter to reduce connecting cables, easy maintenance and improve reliability.

### TECHNICAL SPECIFICATIONS

Model	FPVCB-4S	FPVCB-6S	FPVCB-8S	FPVCB-10S	FPVCB-12S	FPVCB-14S	FPVCB-16S	FPVCB-18S	FPVCB-20S	FPVCB-22S	FPVCB-24S
Max Input Vol.						1000VDC					
PV Array Input String No.	4	6	8	10	12	14	16	18	20	22	24
Input Current of Each String						0~20A					
Max.Output Current	100A	100A	100A	100A	200A	250A	250A	250A	250A	250A	250A
Protection Level						IP65					
Max.Altitude						<200m					
Ambient Temperature						-25°C~+55°C					
Lightning Protection Level						40KA					
Relative Humidity						<95%					

## SOLAR INVERTER FOR AC PUMPS

### SINE WAVE FILTER

Sine Wave Filter is installed on the output side of three-phase 380/400V frequency converter to suppress and absorb high-order harmonics generated by switching frequency. The corrected waveform is approximately sine wave filtering which greatly extends the cable length and reduces the motor eddy current loss and noise. It protects motor insulation and prolong service life.



### FUNCTIONAL FEATURES

- System voltage: 220/380/400V
- Rated working frequency: 50/60Hz
- Rated working current: 5A-1200A (can be customized)
- Inductance: according to the actual situation
- Switching frequency: 2~8KHZ
- Withstand voltage test: winding to core 3500V/5mA/60S
- Insulation resistance: DC 1000V insulation resistance >100MΩ
- Insulation grade: F or H grade optional
- Noise : < 75dB (can be customized)
- Overload capacity: 1.5 times 1 min, 2 times 10S
- Saturation characteristics: 1.5 times the inductance is not less than 95% of the original inductance
- Single harmonic distortion voltage: ≤5% (can be customized according to the actual situation)
- Storage conditions: temperature -40°C~60°
- Relative humidity ≤ 90%, no condensation
- Working temperature: - 30°C~45°C
- Application altitude: ≤200m

## SINE WAVE FILTER FOR SOLAR INVERTERS

### PRODUCT DETAILS

Adapted power (kW)	Model (3 Ph - 380V)	Current (A)	Switching Frequency (kHz)	Dimension (L x W x H) (mm)	Weight (kg)	Sharp
5.5	FSFT-15A/5.5kW/380V	15	2~8	200 × 220 × 220	12	A
7.5	FSFT-20A/7.5kW/380V	20	2~8	220 × 220 × 270	18	A
11	FSFT-30A/11kW/380V	30	2~8	220 × 220 × 270	18	A
15	FSFT-40A/15kW/380V	40	2~8	245 × 230 × 280	23	A
18.5	FSFT-50A/18.5kW/380V	50	2~8	245 × 240 × 290	24	A
22	FSFT-60A/22kW/380V	60	2~8	245 × 290 × 290	31	A
30	FSFT-80A/30kW/380V	80	2~8	245 × 310 × 290	40	A
37	FSFT-90A/37kW/380V	90	2~8	245 × 310 × 290	45	B
45	FSFT-120A/45kW/380V	120	2~8	300 × 240 × 420	55	B
55	FSFT-150A/55kW/380V	150	2~8	300 × 290 × 420	60	B
75	FSFT-200A/75kW/380V	200	2~8	370 × 280 × 500	98	C
90	FSFT-250A/90kW/380V	250	2~8	395 × 320 × 550	115	C
132	FSFT-300A/132kW/380V	300	2~8	395 × 320 × 550	125	C
160	FSFT-330A/160kW/380V	330	2~8	440 × 320 × 600	155	C
200	FSFT-400A/200kW/380V	400	2~8	440 × 320 × 600	172	C
250	FSFT-500A/250kW/380V	500	2~8	480 × 360 × 750	220	C
280	FSFT-600A/280kW/380V	600	2~8	520 × 400 × 750	240	C
315	FSFT-700A/315kW/380V	700	2~8	520 × 400 × 750	250	C
355	FSFT-750A/355kW/380V	750	2~8	520 × 400 × 750	310	C
400	FSFT-900A/400kW/380V	900	2~8	600 × 450 × 860	345	C

## ACCESSORIES

Cable  
(RV : Single-Core,  
Multiple-Core)



For connecting solar panels to inverters

MC4 Connector  
(Special for  
Solar panel)



Easier connection of solar panelst

Waterproof  
Electrical  
Adhesive Tape



Protects connections from short circuits

Float Switch



Detects water level in the tank

Water Level  
Probe



Detection of water level in wells

Grounding Rods



For connecting solar panels to inverters

Sine Wave Filter  
or  
Output AC Reactor



Supports extended motor-inverter cable distance



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