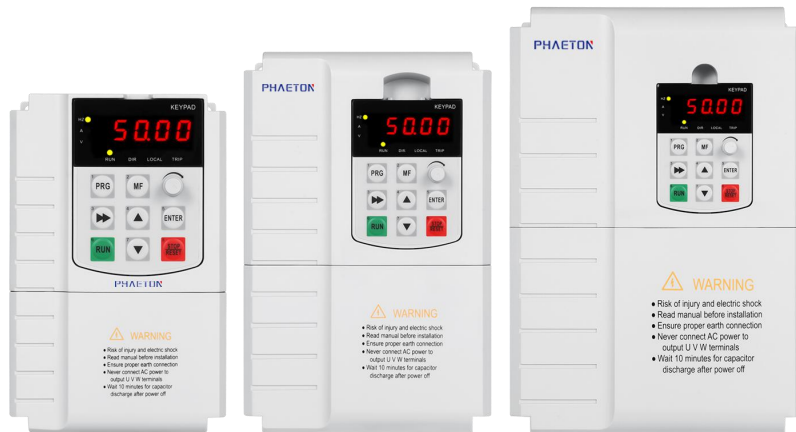


## PH380 series MPPT Solar Pump Inverter



## **PHAETON** brief introduction:



PHAETON master the core technology of control algorithm and have a good cooperation with China National Motor Control Research Institute to keep our technology always at a high level. Most of our engineer are much experienced in inverter area for more than 12 years, and some of them (software and hardware engineer) are well-reputed for their technology and experience.

Our customer/partner/user are widely distributed around the world, such as USA, Brazil, Mexico, India, Pakistan, Bangladesh, Yemen, Saudi Arabic, Somalia, Egypt, Morocco, Kenya, South Africa etc....Our customer have wining a good market and reputation by their great efforts and our products.

PHAETON will continue to make great efforts to improve the Technology, Quality and Service!



PH380 series Solar Pump Inverter is based on PH100 series frequency inverter and widely used for solar pump system.

Nowadays, PH380 are hot selling in the countries who are lack of water and want to use solar energy to get more water for home-use, irrigation, farming etc...

PH380 are suitable with the solar pump system well due to our experienced R&D team and customers. It always helps our agent/dealer to get a good reputation from their market, like USA, Middle East, Africa etc...

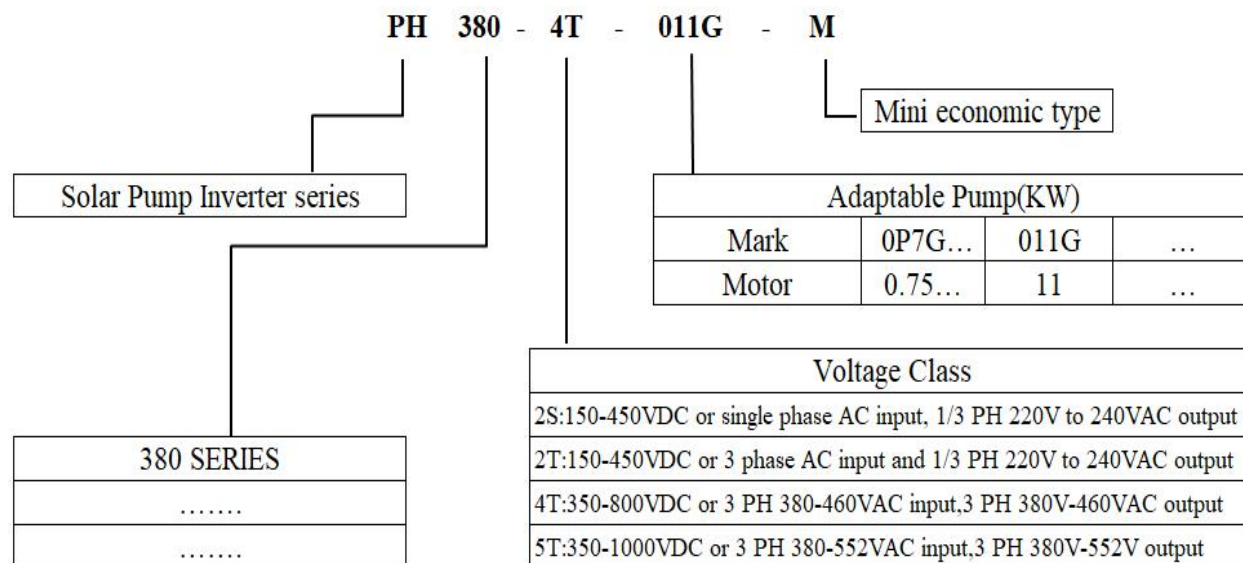
### Several advantages of PH380 solar pump inverter:

- ✧ Maximum power point tracking (MPPT) with fast response speed and stable operation
- ✧ Enable to drive for PMSM high speed and high efficiency pumps without motor ID auto tuning
- ✧ Dry run (under load ) protection, lowest speed auto tuning , Pumps maximum current protection, Minimum power input protection...
- ✧ The PQ (power/flow) performance curve enables to calculate the flow output from the pump
- ✧ Dual mode AC and DC power supply input is available
- ✧ Digital signal of water level sensor and analog signal of water level sensor for water tank fulling detect
- ✧ Dedicated hardware design with dual CPU, independent air duct design
- ✧ Import IGBT module such as Infineon/Fuji to ensure good quality
- ✧ Enhanced lightning protection module
- ✧ GPRS remote control module for distance monitoring, control, parameters modification etc
- ✧ Efficiency is higher than 99.5%, power factory not less than 0.96 for below 15kw inverter

# Technical specification

Recommended MPPT voltage range	Vmp260 to 355VDC for 2S ( 150V to 450VDC input, 3PH 220 to 240VAC output) Vmp 486 to 650 VDC for 4T ( 250V to 800VDC input, 3PH 380 to 460VAC output)
Recommended input VOC and Vmp ( voltage at Max Power point voltage )	VOC 372(VDC), Vmpp 310(VDC) for 2S model or 220V AC pumps VOC 648(VDC), Vmpp 540(VDC) for 4T model or 380V AC pumps
Motor type	Control for permanent magnet synchronous motor and asynchronous motor pumps.
Rated output voltage	3-Phase,110V/160V/220V. 3-phase, 220V/380V/460V
Output frequency range	0~maximum frequency 320Hz. Resolution 0.01 Hz
MPPT efficiency	99.7%, more efficiency if use to drive PMSM pumps
Ambient temperature range	G-type for submersible pumps, 150% rated current for 60s, 180% rated current for 2s . P type for general pumps, 120% rated current for 60s, 150% rated current for 2s
Solar pump control special performance	MPPT ( maximum power point tracking), CVT (constant voltage tracking), auto/manual operation, dry run protection, low stop frequency protection, minimum power input, motor maximum current protection, flow calculating, energy generated calculating and water tank level detected
Protection function	Phase loss protection, phase short circuit protection, ground to phase circuit protection , input and output short circuit protection. Stall protection, lightning protection
Protection degree	IP20, Air force cooling
Running mode	MPPT or CVT
Altitude	Below 1000m; above 1000m, derated 1% for every additional 100m.
Standard AC input backup circuit	CE, Design based on vector control drive PH100 series, more specification please refer to PH100 vector control drive operation manual
Auto stop and auto restart	Control by external switch, float switch, Rs485 communication. It will auto start at morning when get enough power from sunlight, and stop at sunset when power is less from solar panel under terminals control mode

## The designation rules of PH380 solar pump inverter



## PH380 solar pump inverter voltage range

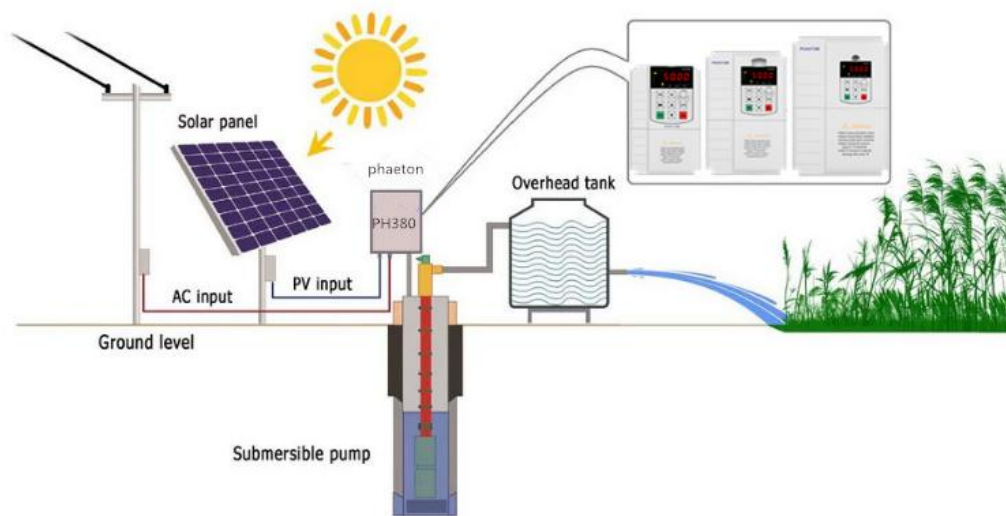
Model	Applicable for pumps	Input DC voltage	Over voltage point	Under voltage point	Suggest Vmp	Suggest Voc
PH380-2S	For 220V AC	150V – 450V	450V	100V	310VDC	380VDC
PH380-4T	For 400V AC	250V– 800V	800V	200V	520VDC	650VDC

# Models and specification

SN	Model No.	Rate current	Output voltage ( 3PH AC)	Applicable for pumps	External of drive size(mm)	MPPT voltage (VDC)	Weight (kg)
<b>Economic type 2S series: Input 150-450V DC or 200 to 240V AC, VOC 350V DC</b>							
1	PH380-2S-0P7G-M	4A	0-220VAC	0.75KW	132*85*123.5	260 to 375	1.2
2	PH380-2S-1P5G-M	7A	0-220VAC	1.5KW	132*85*123.5	260 to 375	1.2
3	PH380-2S-2P2G-M	10A	0-220VAC	2.2KW	151*100*127	260 to 375	1.4
<b>Economic type 4T series: Input 350 to 800V DC or 380 to 460V AC, VOC 620V DC</b>							
1	PH380-4T-0P7G-M	2.5A	380V-440V	0.75KW	132*85*123.5	486 to 750	1.2
2	PH380-4T-1P5G-M	3.7A	380V-440V	1.5KW	132*85*123.5	486 to 750	1.2
3	PH380-4T-2P2G-M	5A	380V-440V	2.2KW	132*85*123.5	486 to 750	1.2
4	PH380-4T-004G-M	10A	380V-440V	4KW	151*100*127	486 to 750	1.4
<b>General type 2S series : Input 150 to 450V DC or 200 to 240V AC, VOC 350 VDC</b>							
1	PH380-2S-0P7G	4A	220V/240V	0.75KW	252*195*230	260 to 375	2
2	PH380-2S-1P5G	7A	220V/240V	1.5KW	252*195*230	260 to 375	2
3	PH380-2S-2P2G	10A	220V/240V	2.2KW	252*195*230	260 to 375	2.5
4	PH380-2S-004G	16A	220V/240V	4.0KW	315*235*253	260 to 375	4.3
<b>General type 4T series : Input 350 to 800V DC or 380 to 460V AC, VOC 620V DC</b>							
1	PH380-4T-0P7G	2.5A	380V-440V	0.75KW	252*195*230	486 to 750	2
2	PH380-4T-1P5G	3.7A	380V-440V	1.5KW	252*195*230	486 to 750	3
3	PH380-4T-2P2G	5A	380V-440V	2.2KW	252*195*230	486 to 750	3
4	PH380-4T-004G	10A	380V-440V	4KW	252*195*230	486 to 750	3
5	PH380-4T-5P5G	13A	380V-440V	5.5KW	315*235*253	486 to 750	4.2
6	PH380-4T-7P5G	17A	380V-440V	7.5KW	315*235*253	486 to 750	4.3
7	PH380-4T-011G	22A	380V-440V	11KW	315*235*253	486 to 750	4.5
8	PH380-4T-015G	30A	380V-440V	15KW	395*295*275	486 to 750	7.3
9	PH380-4T-018G	37A	380V-440V	18KW	395*295*275	486 to 750	7.5
10	PH380-4T-022G	45A	380V-440V	22KW	395*295*275	486 to 750	12
11	PH380-4T-030G	60A	380V-440V	30KW	640*410*390	486 to 750	17
12	PH380-4T-037G	75A	380V-440V	37KW	640*410*390	486 to 750	17.5
13	PH380-4T-045G	91A	380V-440V	45KW	700*410*460	486 to 750	35
14	PH380-4T-055G	110A	380V-440V	55KW	700*410*460	486 to 750	36
15	PH380-4T-075G	150A	380V-440V	75KW	680*485*415	486 to 750	45
16	PH380-4T-093G	180A	380V-440V	93KW	680*485*415	486 to 750	51
17	PH380-4T-110G	220A	380V-440V	110KW	680*485*415	486 to 750	54
18	PH380-4T-132G	250A	380V-440V	132KW	885*535*370	486 to 750	86
19	PH380-4T-160G	310A	380V-440V	160KW	885*535*370	486 to 750	90
22	PH380-4T-***G	***	380V-440V	185-400KW	*****	486 to 750	***

# Applications

Our PH380 series Solar Pump Inverter are widely used in Solar Pump Systems which are popular in irrigation, agriculture, fountain and as a key part of whole system controller.



*Drinking water supply*



*Green irrigation systems*



*Agricultural irrigation systems*



*Livestock watering*



*Swimming pool*



*Water tank*