



F CHOICE SOLAR TECH INDIA PRIVATE LIMITED

Regd. Office & Factory
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Triruppur Dt. Tamil Nadu, India

SOLAR WATER PUMPING INVERTERS - VFD with MPPT and MEPT

TECHNICAL SPECIFICATION 110 V AC 3 PHASE OUT PUT

MODEL NO	Hydro X2110	
Power rating	3 Hp	5 Hp
Input voltage Voc	300-450 V	300-450 V
Input current I max.	15 A	20 A
Wattage Pv required	2250-3600	3500-6000
Output voltage V ac 3 phase	110	110
Output Frequency	0-60Hz	0-60Hz
Best water flow @ Frequency	40-50 Hz	40-50 Hz
MPPT Tracking @ every	10 ms	10 ms
MPPT Tracking efficiency	> 98 %	> 98 %
Cumulative discharge with MEPT	1.3 times	1.3 times
Head range in Mts.	210	250
Ambient temperature	45 °C	45 °C
Relative humidity non condensate	95%	95%
Noise level @ 1 meter	< 50 dB	< 50 dB
Enclosure type	IP 54	IP 54
Cooling system Natural	convection	convection
Effective Pumping hours	07.Sep	07.Sep
Flow @ cloudy weather	>50%	>50%
Pump selection	Any 3 phase pump	
Compatibility with Ac power supply	External automatic change over available for AC/DC operation	
Display - 4 line LCD	Pv array volt, current, wattage, frequency,Output voltage	
Protection	Reverse polarity, short circuit, over current, over voltage, Lightning, Dry run(sensor less), over temperature	
Data collection	RS484 port for instant data collection and can be accessed via net work- Optional	
SYSTEM MANAGEMENT	Via Mobile phone-Optional	

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ADVANTAGES OF F CHOICE SOLAR PUMPING VFD OVER OTHER BRANDS

	<u>FIRST CHOICE</u>	<u>OTHER BRANDS</u>
Head	Pumping with full efficiency up to 350 mts (1150 ft) of vertical head and above 6000 mts of horizontal distance	Full efficiency below 50 mts (160 ft) head only above which very low performance and that too only up to 50-100 mts(160-330 ft)
Pump suitability	Any type of old/new pumps of any brand with any RPM range of 1440 or 2800 works with full efficiency	Only specified brand will work with the this VFD and other pumps may or may not work and with very less efficiency
Pump Voltage	Programmable to any type of 440 v/230v/170 v 3 phase ac pumps	Not possible to program and needs separate system for each application
Universal range	Universal range of pump capacity. That is a 15 hp controller can be used from 0.5 hp to 15 hp.	Separate VFD is required for Individual capacity.
Upgrading	Unit can be upgraded simply by increasing panel wattage	No at all possible and need to change the entire unit.
Input voltage range	Very wide range of input working voltage, works well from 150 v-1000 v	Very narrow range will work well within the specified range of 100 to 200 volts
Panel combination	works well with any combination of PV module as it has got very wide range of voltage range suitability	Needs special combination, very difficult to suit for the field condition and it has no voltage suitability range
panel requirement	1000 watt is the maximum requirement to pump from 350 mts head	more than 1300 watt is required even at 150 mts. head and will never work with a higher heads
special futures (No where in the world)	The pump can be run with even 200 watt PV per hp at a lower head of 10 mts	Can't be run with less than 800 watt per hp
low watt surface pumping	Possible with lower watt PV array(example: a 5 hp swimming pool pump can be operated with its full efficiency just with 2500 watt panels)	Not at all possible
Inbuilt boost voltage(no where in the world)	System boosts its input voltage to 2X, 4X, 8X level to keep the voltage range to a maximum and extracts full efficiency	Not at all possible
Pumping parallel combination(First time in the world)	2 pumps of same capacity with almost same physical condition can be run with single VFD	Not at all possible
pumping on clouds	Pumps well during cloudy weather and also pump never stops when cloud crosses the sun	No pumping during cloudy weather and pump stops even a small cloud crosses the sun
Smart Current limiting	The system has got current limiting factors where by neglects the excess current and allow the system to run consistently even at any high lux level of sun light	The system stops at very high sun light due to excess current
User friendly	Very easy operation modes, even a former can handle the system	Very difficult to understand and operate even by an educated
Service facility	Since we are the manufacturer we can handle the service by component level where by with a minimum or no cost the system can be made worthy	Technology not known to the dealer or seller so the system can't be serviced or may get service facility by sending the unit to exporters. This is time taking and not worthy
Technology updating	Updating of technology possible	Not at all possible, and unit will stand outdated after one or two years
Date logging	Built-in remote monitoring and data logging facilities	Not available or adds very high extra costs to avail the facility
Design and advisory support	Direct acces with manufacturer and technologist for technical assistance	No support and advisory helps
Data Center and remote operation	All parameters can be collected via internet. The system can be controlled via mobile phone	Commonly not available. An additional divice is required to avail this facility
MEPT (First time in the world)	M aximum E fficiency T racking T echnology, which means overall discharge(co-efficient of discharge) through out the day is 30 % more	Not applicable