

HydroController Solar

Variable speed inverter designed for use with off grid solar installations

- **Varies Pump Speed to Match Demand or Available Solar Energy**
- **No Battery Storage Needed**
- **Models Available to Control Three Phase Pumps up to 11kW**
- **Input Voltage 250 - 800 VDC connect direct to solar panels**
- **Ideal for Remote Agricultural and Borehole pumps**
- **Programmable Operating Parameters**
- **Built-in Pump Protection (Dry Run, Over/Under Voltage, Low System Pressure, Output Over-Voltage)**
- **Air Cooled Wall Mounted Design**



HydroSolar
controller



How Does It Work?

Mac3 **HydroController Solar** are a range of inverters / variable frequency drives for use with off-grid solar power systems. Developed from Mac3 **HydoController** inverters, **HydroController Solar** is suitable for use with ordinary 230VAC and 400VAC three phase water pumps. Single phase pumps are not supported.

HydroController Solar adjusts the speed of the pump to match demand in the same way as the original HydroController. Additionally the speed will be varied if necessary to match the available power from the solar panels, continuously using all available solar energy until the required system pressure is reached. All of the operating parameters are customisable through the onboard interface with LCD display.

If this unit is to be installed with a cable length of more than 20 metres between the **HydroController** and a pump, it is advisable that a Mac3 **ACL Filter** be added to eliminate harmonics created by high frequency reflectance in long cable lengths. Please ask when ordering to discuss if this would be necessary for a particular project.

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All Mac3 **HydroController Solar** inverters (*variable speed drives*) feature the following protections:

- Dry Run
- Under / Over Voltage
- Short Circuit
- Over Current
- Thermal Overload
- Insufficient Pressure
- Pressure Sensor Malfunction
- Water-hammer

Electrical Specifications

| Model | Voltage Input | Phase Current | Pump Voltage | Max Pump Power |
|---------|---------------|---------------|-------------------|----------------|
| HC-TT10 | 150 - 400VDC | 10A | ~3 230VAC (Delta) | 2.2Kw (3hp) |
| HC-TT06 | 300 - 750VDC | 6A | ~3 400VAC (Wye) | |
| HC-TT11 | | 11A | | 4Kw (5.5hp) |
| HC-TT15 | | 15A | | 5.5Kw (7.5hp) |
| HC-TT18 | | 18A | | 7.5Kw (10hp) |
| HC-TT25 | | 25A | | 11Kw (15hp) |

Technical Specifications

| | |
|-----------------------------|--|
| HCW | 170x190x360 mm |
| HCA 2.2 - 4 Kw | 170x243x350 mm |
| HCA 5.5 - 11 Kw | 185x243x390 mm |
| HCW | 4 Kg |
| HCA 2.2 - 4 Kw | 5.6 Kg |
| HCA 5.5 - 11 Kw | 8 Kg |
| Mounting | Wall Mounted Vertical, In Free Air |
| Cooling | Air |
| Ambient Temperature | 5°C – 40°C |
| Display | 2x16 LCD |
| Ingress Protection | IP65 |
| Output Frequency | 0 - 100 Hz (Resolution 0.01Hz) |
| Acceleration Time | 0.7 – 5 Seconds |
| Deceleration Time | 0.7 – 5 Seconds |
| Programmable Pressure Range | 0.3 – 7.5 Bar (±0.2 Bar) |
| Electrical Safety | EN60730 |
| Standards Compliance | EN61000-6-3 EN61000-6-4 |
| Pump Protection | Dry run, Over/Under-voltage, Short Circuit, Over-current, Over Temperature, Pressure Failure, Sensor Failure, Water Hammer |

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