



Key Features



**ADVANCED
MPPT TECHNOLOGY**



**HIGH
CONVERSION EFFICIENCY**



**SOFT START
PROTECTION**



**INTELLIGENT
V / F CONTROL**



**IP65
RATED**



**AGRICULTURAL
IRRIGATION**



**BOREWELL
WATER PUMPING**



**COMMERCIAL
FARMING**



**COMMUNITY
WATER SUPPLY**



**LIVESTOCK
FARMS**



GREENHOUSES



**WATER STORAGE
SYSTEMS**



**REMOTE &
OFF-GRID AREAS**

Intelligent MPPT Solar Pump Drive
Efficient Water Pumping Powered by Solar Energy
The Smarten Solar Pump Controller is an advanced MPPT-based solar drive designed to deliver reliable and energy-efficient water pumping for agricultural, commercial, and off-grid applications.

By intelligently converting solar DC power into stable three-phase AC output, it maximizes solar energy utilization, ensures smooth motor operation, and provides reliable performance even under changing sunlight conditions.

Built with an IP65-rated enclosure and intelligent protection functions, the controller offers long service life, low maintenance, and dependable operation in demanding outdoor environments.



**DRY RUN
PROTECTION**



**OVER TEMPERATURE
PROTECTION**



**OVER CURRENT
PROTECTION**



**SHORT CIRCUIT
PROTECTION**



**PHASE LOSS
PROTECTION**



**EARTH FAULT
PROTECTION**

MPPT Controller

With the inbuilt MPPT (Maximum Power Point Tracking) technology, the controller regulates output frequency based on real-time solar irradiation to achieve maximum efficiency. The advanced dynamic VI MPPT algorithm ensures fast response, stable tracking, and superior performance compared to traditional methods.

Salient Features of Smarten Solar Pump Controller:

- Automatic switching between solar power and AC supply when sunlight is low
- High-resolution LCD display: Speed (%), DC input voltage, AC / PWM output voltage, system status
- MPPT technology to maximize water discharge at different solar levels
- Fast, stable MPPT tracking for improved efficiency
- GSM option for remote monitoring & control
- RS485 telemetry support (optional)
- High-flow performance for faster tank filling
- Easy installation and low maintenance
- Efficient DC-to-AC conversion for submersible pump operation
- Fully operable through the Smarten Mobile App

RATING	3 HP	5 HP	7.5 HP	10 HP
Pump Controller Rating	2.2 kW	3.7 kW	5.5 kW	7.5 kW
MPPT Range	250-450 VDC	350-790 VDC	350-790 VDC	350-790 VDC
Controller I / P Voc	310-450 VDC	540-790 VDC	540-790 VDC	540-790 VDC
Controller I / P Vmp	310-450 VDC	450-790 VDC	300-790 VDC	450-790 VDC
Controller I / P Current DC	10 Amp	10 Amp	18.5 Amp	18.5 Amp
Controller O / P Current	9 Amp	9 Amp	17 Amp	17 Amp
Controller I / P Power (kW)	2.2 kW	3.7 kW	5.5 kW	7.5 kW
Enclosure IP Protection	IP 65	IP 65	IP 65	IP 65
MPPT Tracking	Yes	Yes	Yes	Yes
Operating Temp	C(-10) to C(+55)	C(-10) to C(+55)	C(-10) to C(+55)	C(-10) to C(+55)
Inside the control box	up to 60	up to 60	up to 60	up to 60
Relative Humidity	Less than 95%	Less than 95%	Less than 95%	Less than 95%
Controller overload capacity	120% rated current for 60s	120% rated current for 60s	120% rated current for 60s	120% rated current for 60s

