

Next-Gen

MULTIFUNCTION SOLAR PUMP CONTROLLER



One Controller. 7 Modes.
No more limiting your solar pump
to 150 days.

Water First. Power for Home & Farm

Next-Gen MFC is a multifunction solar pump controller built on a single power-electronic platform. Water pumping always comes first. When the pump is idle, the same solar power runs home loads, cold storage, flour mills and chaff cutters, charges batteries and EVs, or feeds the grid through net metering, so farmers put 100% of their solar investment to work and earn extra income.



Priority Water Pumping



Home & Cold Storage Power



Runs Flour Mill & Chaff Cutter



EV & 48V DC Bus Ready (Optional)



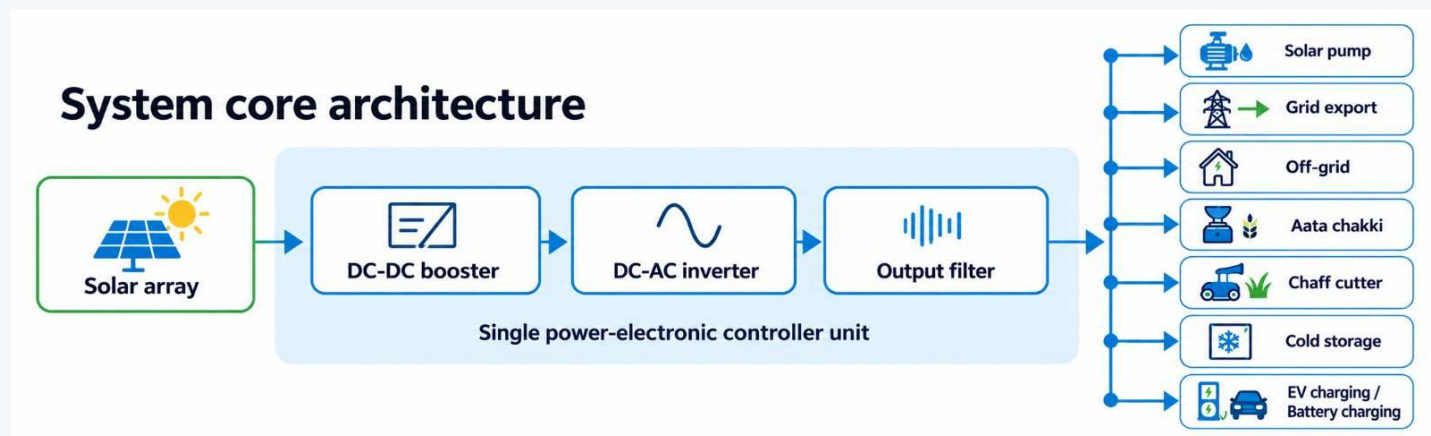
Grid Export via Net Metering



Upgradable to True-Hybrid

One Controller. Seven Smart Modes.

Next-Gen MFC is a multifunction solar pump controller built on a single power-electronic platform, designed to meet a broad spectrum of farmers' needs. Water pumping always comes first. The same solar plant also powers homes, farm machinery and cold storage, charges batteries and EVs, and exports surplus energy to the grid. The modes below show how, though its uses are not limited to these.



Off-grid operating modes (low light and peak sun)

1

Low-light domestic power

When: early morning, late afternoon and cloudy days

PV power is present but not enough for pumping. The partial solar power runs home loads such as fans and lights, and can also charge a local inverter battery.

2

Peak-sun water pumping

When: peak sunlight

Full PV power goes to high-priority water pumping for irrigation, while the household runs on stored battery energy.

3

Cold storage and sine-wave utility

When: peak hours, when pumping is not required

Full PV power supplies a clean sine-wave output for normal utility loads: households, refrigerators and cold storage chambers.

4

Heavy machinery operation

When: peak hours, on demand

Full PV power runs motor loads such as flour mills (atta chakki) and chaff cutters as needed, while stored energy keeps household loads running.

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Beyond Pumping. Grid and Hybrid Ready.

Off-grid operating modes (continued)

5

Auxiliary DC bus and battery loads

When: full day, whenever other loads are not needed (optional accessory)

With the optional 48V DAB / DC bus accessory, DC power can feed an HV battery or a 48V battery. The sine-wave output can also charge 2-wheeler, 3-wheeler and other batteries, creating extra revenue.

Grid-connected and hybrid operating modes

6

Grid export via net metering

When: PV and grid both available

Excess solar power is exported to the grid through a net meter. External current sensors stop the system drawing more than the sanctioned grid current, preventing unauthorised grid use and disruption.

7

True-hybrid upgrade

When: PV and grid both available (optional add-on)

With an optional add-on device (priced separately), Next-Gen MFC becomes a true-hybrid inverter, with multi-directional energy flow between solar, battery, grid and loads.

One controller, endless possibilities

- A true multifunction pump controller that always gives water pumping priority
- Flexible across a wide variety of farm, home and rural business applications
- Grid-ready for future needs, with a true-hybrid upgrade path
- Programmable for different pump ranges
- 100% utilisation of the solar investment, and extra income for farmers

100%

Solar investment utilisation

Designed to unlock extra income for rural users by putting unused solar capacity to work in revenue-generating agricultural and domestic operations, instead of letting it go to waste once the pumping is done.

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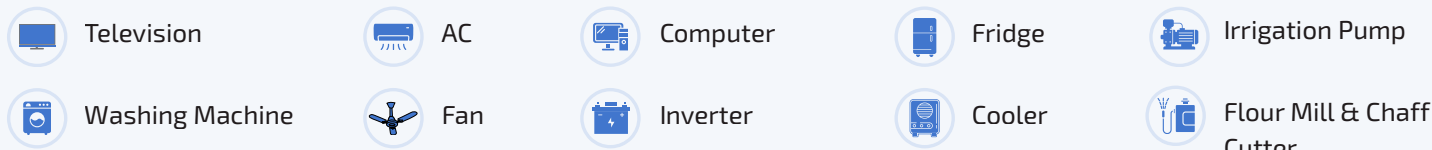
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Engineered for Multiple Applications



NEXT-GEN MFC TECHNICAL SPECIFICATIONS

PARAMETERS	3 HP	5 HP	7.5 HP	10 HP
PV Input				
PV Voltage Range	180-310 VDC	280-420 VDC	480-590 VDC	550-780 VDC
Max. PV Current (Imp)	20 A	20 A + 20 A	20 A + 20 A	20 A + 20 A
Nominal PV Voltage	245 VDC	350 VDC	535 VDC	665 VDC
Number of PV Inputs	1	1	1	1
Max. Power	3000 W	5500 W	7500 W	10000 W
PV Start Voltage	150 VDC	200 VDC	200 VDC	200 VDC
Grid Export Mode	Available			
MOTOR-PUMP OUTPUT				
Voltage Range	0-460 VAC	0-460 VAC	0-460 VAC	0-560 VAC
Operating Frequency Range	0-200 Hz	0-200 Hz	0-200 Hz	0-200 Hz
Power Factor Range	0.75-1	0.75-1	0.75-1	0.75-1
Peak Efficiency	>93%	>93%	>93%	>93%
Protection	Short circuit, Dry run, Over temperature, Overload etc			
OFF-GRID APPLICATION OUTPUT (3 Nos)				
Voltage Range	415 VAC ±5%	415 VAC ±5%	415 VAC ±5%	415 VAC ±5%
Max. Current	5 A	8.5 A	10 A	16 A
Nominal Frequency	48-60 Hz	48-60 Hz	48-60 Hz	48-60 Hz
Operating Frequency Range	0-52 Hz (controlled constant V/f)			
Peak Efficiency	>93%	>93%	>93%	>95%
THDv	<3%	<3%	<3%	<3%
Protection	Output voltage low/high, Over current, Peak torque overload			
DISPLAY & COMMUNICATION				
Display Type	Graphical LCD			
Status Indicator	LEDs			
Serial Communication	RS232 & RS485			
Aux Ports	1 Output port, 2 Digital Port, 2 Analog Port			
Remote Monitoring	Yes (optional)			
Wi-Fi	Yes (optional)			
Operating Temperature	-25°C to 45°C			
Relative Humidity	0-95% RH (No condensing)			
Altitude	1000 m			
IP Degree of Protection	IP65	IP65	IP65	IP65
Cooling	Air Forced Cooling			
Remote Control Operation	Available			

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