

Model: SMS-SMC000300GB 2.3kW/3.0HP  
Model: SMS-SMC000500GB 3.7kW/5.0HP

Model: SMS-SMC000750GB 5.6kW/7.5HP  
Model: SMS-SMC001000GB 7.5kW/10.0HP



## Smart Controllers for 3-Phase Motors

# Use solar DC power to run high-efficiency AC motors and simultaneously charge batteries – for anytime, anywhere power.

Solar Motor Systems SMC-Series motor controllers bring intelligent and programmable control to 3-phase motors. SMS Solar plus Battery controllers combine the cost-savings of solar power with predictable operation – even when the sun is not shining.

Our proprietary Intelligent Charge Control technology lets you set your preferred power source to use only solar or to use a combination of solar/battery during the daytime and battery for night time operation. The system dynamically manages solar input fluctuations (shadowing) and automatically switches to the alternate battery source to ensure predictable output and performance.



**Conventional Solar Panels**  
More Power with Fewer Panels



**Battery System**  
Intelligent Charge Controller



**Solar Motor Controller**



**3-Phase Motors**  
Cooling Fans/Circulation Fans  
Condensers/Compressors/Pumps

Performance may vary based on solar panel and battery system specifications and installation. Follow solar panel manufacturer instructions. **IMPORTANT:** Installations should be performed by certified and licensed installers. Follow US National Electric Codes (NEC2011) for installation guidelines and restrictions to conform to local electrical codes.

**Intelligent Charge Control Technology** – dynamically manages a 3-phase device and simultaneously charges batteries – for 100% utilization of solar power. Day & night operation from solar power.

### SMS controllers do what others can't

- > *Digital Signal Processing (DSP)* technology practically eliminates electrical and electromagnetic noise and dramatically improves motor performance.
- > *The Internet of Things (IoT)* makes advanced connectivity, remote monitoring and controls, beyond machine-to-machine communications (M2M) possible.
- > Useful features eliminate common conditions of heat and stress that cause motors to fail: soft-start, auto-restart, speed and torque control, temperature management, overload and over-voltage protection.

### Commercial/Industrial-Grade Performance

- > Circuit-level MPPT technology runs even on cloudy days/partial shadowing.
- > The compact unit is lighter, more reliable and runs longer with less maintenance.

### Plug n' play set up – Anywhere

- > Use ANY standard PV solar panels (100w to 310w) and standard connections.
- > Use ANY standard 3-Phase AC motor – 3HP 5HP 7.5HP 10HP.
- > Standard 1" plumbing connections.

### Lower cost of ownership

- > Use fewer, lower cost panels = less cost in a smaller space.
- > 3-Phase motor lifespan 10 years (avg) vs. only 2 years for single phase.
- > No fuel costs! Lower power bills! No brushes/capacitors to replace!

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# Free solar meets the predictability of battery power

**For off-grid jobs that need predictable operation.** The Solar-Battery System provides a compact, durable and long-lasting solution that provides more runtime than solar-only systems.

**100% solar utilization.** If the solar input falls below the minimum required to drive the motor, the system can be set to automatically switch to batteries to keep the motor running. When excess power is available, it is diverted to charge lead-acid batteries. Battery systems can be configured for 2, 4, 6, 8+ hours of backup operation, simply by adding more panels in series/parallel combination to match the size of the battery system.

## Solar Panels (300w) by HP

Recommended minimum panels. Add more for: low light conditions, increased energy harvesting and longer battery runtimes.

3HP motor	10 panels
5HP motor	18 panels
7.5HP motor	26 panels
10HP motor	36 panels

## Pure vs. modified sine wave



## Many off-grid applications

- > Domestic supply, animal water tanks, construction sites.
- > Gardens, fountains, agriculture, horticulture, irrigation.
- > Aerate ponds or fish farm tanks.
- > Circulation/cooling fans, condensers (HVAC) and compressors.

## Specifications

- Use any standard PV solar panels
- Use any standard 3-Phase AC motor
- Built-in Charge Controller – simultaneously run device and charge batteries
- Configurable duration (watt hours) of standby battery power
- Digital Signal Processing produces clean AC power, practically eliminates electrical and electromagnetic noise and dramatically improves motor performance
- Light weight transformer-less design with low parasitic power loss
- Soft start technology
- Closed-loop speed control
- Torque control
- Dry run monitoring
- Reversible motor (not recommended for pumps)
- Temperature management of controller and 3-phase devices
- Overload/over voltage protection
- Highly-efficient MPPT system auto-adjusts to variable solar input
- The Internet of Things (IoT) enabled – monitor and control systems from anywhere
- Programmable management of power source and specified time line
- Real-time synchronization of 24 clock
- Programmable SMS (text) based monitoring and alerts
- Global Parameter Settings – adjust many devices at once to optimize usage

## Other SMC models

- > **Solar-Only System** – Run 3-Phase AC motors off-grid using only DC solar power.
- > **Solar Plus Grid/GenSet System** – Automatic Priority and Differential Source Balancing combines the economies of solar with predictability of Grid/GenSet.

SMS Certified Distributor:



[www.SolarMotorSystems.com](http://www.SolarMotorSystems.com)