How plants are irrigated from a well on the island of Paros with the help of the 4" Solar High Efficiency System

A farm irrigates its crops with water from a 100-meter-deep well. This is pumped with the help of a 4-inch solar well system from Franklin Electric and solar energy from 9 solar panels.

4" HIGH EFFICIENCY SOLAR SYSTEM

SUPERIOR EFFICIENCY

- Up to 15 points (21 %) improved motor efficiency*
- Excellent partial load behaviour (SKU reduction)
- Due to the high motor efficiency, amps are significantly reduced (smaller drop lead cross size / cost saving)
- Power factor corrected input (No power compensation needed)
- One-stop shop and perfectly matching components guarantee first-class performance/efficiency
- Less panels, more water respectively
- Integrated voltage "boost" (up to 2.2 kW) significantly reduces number of solar panels
- Direct DC feeding
- MPPT algorithm maximizes system performance

UP-TO-DATE CONNECTIVITY (up to 4 kW)

- Factory-featured with Bluetooth 4.0 Connectivity
- Remote control and maintenance via Mobile App

INCREASED LIFETIME

- Speed control (Optimum aggregate operation - pump matches system any time)
- Incorporated Soft start and protection features (no additonal investment)

SPECIFICATION

- Motor range:
  1.1 / 2.2 / 3.0 / 4.0 / 7.5 kW (50 Hz - 3000 rpm)
  1.2 / 2.5 / 3.4 / 4.6 / 8.6 kW (60 Hz - 3600 rp)
- System Power Supply:
  ≤ 2,2 kW: 90 - 400 V DC / AC Backup: 90 - 265 V
  ≥ 3,0 kW: 160 - 850 V DC / AC Backup: 190 - 520 V
- Top class protection with Electronics in IP66 / 65 No cabinet - no cooling fan / dust filter - no maintanance
- Backup Power supply / Direct AC feeding to maximize system runtime

*compared to asynchronous technology
** SKU = stock kept units

Solar system for watering plants from a water tank

A farm on the island of Paros in Greece installed Franklin Electric's 4-inch High Efficiency System (HES) to pump water from a well application into a water tank for crop irrigation. The water is pumped from a depth of approximately 100 meters.

Installed is a Solar High Efficiency System with the following components:

- Encapsulated 4" Solar motor
  200 V three-phase 2.2 kW
  with permanent magnet technology
- 4" submersible pump VS2/20
- Frequency converter
  Drive-Tech MINI Solar 2.015 MP
- Level switch for the water tank

Energy savings of up to 20%

Franklin Electric is setting new standards in energy savings and efficiencies with its High Efficiency systems. Compared to standard asynchronous motors, savings of up to 20% have been achieved in the numerous systems already installed worldwide. It is the combination of perfectly matched components and their control: motor, pump, frequency converter and, if necessary, output filter harmonize perfectly from a technical point of view. First and foremost, however, it is due to the highly efficient permanent magnet motor. The technology eliminates rotor losses and thus significantly reduces current and self-heating. In many cases, the current reduction achieved leads to smaller cable cross-sections, which in turn has a positive effect on overall costs.

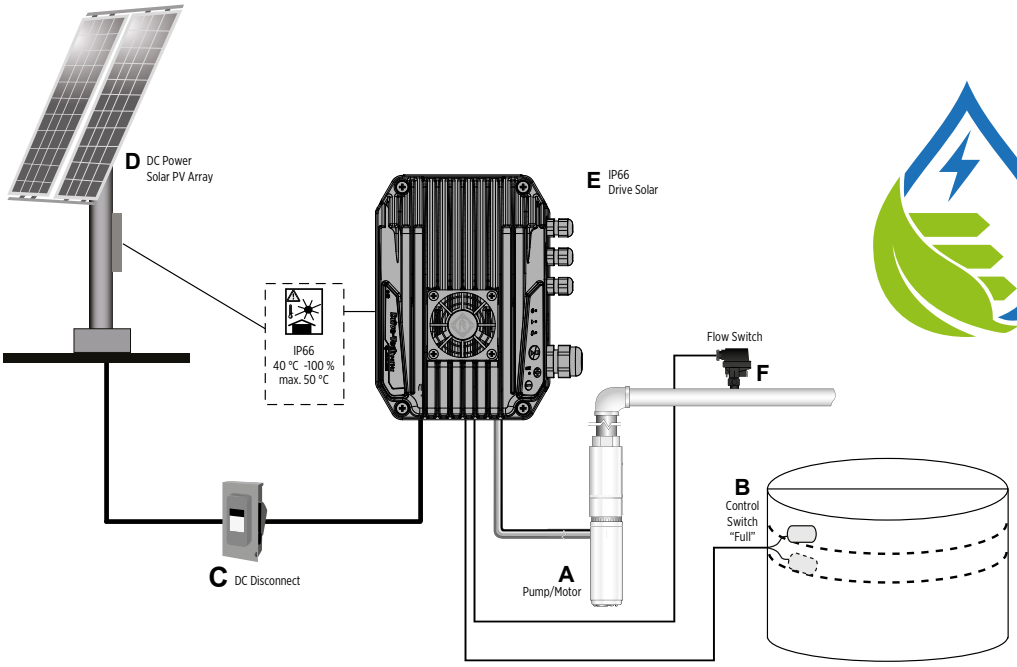
The system is powered by nine solar panels (standard polycrystalline 270 Wmp).

The Drive-Tech MINI Solar 2.015 MP frequency converter used is factory-equipped with Bluetooth 4.0 connectivity and can be controlled remotely via the mobile app.

Setting up the system remotely

Even though the commissioning of the system is very intuitive thanks to the Franklin Electric app solution, it sometimes takes a bit of intuition and experience to find the right settings.
It's a good thing that Franklin Electric customers can rely on the assistance of the Technical Support in such cases! Since the system can even be controlled remotely via the mobile app, the customer was helped quickly.

In this application example, the system was commissioned in bad weather, not the best starting conditions for a solar system. However, Franklin's experts were able to adjust the parameters so that the motor turned and water was pumped despite the bad weather conditions. When the sun came out, the system ran optimally and pumped about 2.0 m^3/hour. water, so that the water tank filled up quickly.



HIGH EFFICIENCY

Installation of the 4" HES: When the filling of the tank has dropped to a defined level, the pump restarts independently to refill the water tank.

For more information on the Franklin High Efficiency Solar System, please visit franklinwater.eu.