

DANKOFF ETAPUMP®



SOLAR SUBMERSIBLE PUMPS

THE WORLD'S MOST EFFICIENT SOLAR PUMPS

Pump from as deep as 525 feet (160m)

for deep wells, surface water, long pipelines and portable applications

- Powered by photovoltaic panels that last for decades
- High reliability and life expectancy
- Only one moving part, brushless motor
- High resistance to sand and corrosion
- Fits 4" and larger well casings

HIGH EFFICIENCY = LOWER COST

ETA is a Greek letter that engineers use in their equations to represent ENERGY EFFICIENCY.

In YOUR equation, HIGH ETA = LOW SYSTEM COST. *ETAPUMP* uses a solar array of 20-50% less power than other solar pumps, to do the same work. It is the most economical solar submersible pump available today.

RELIABLE AND MAINTENANCE-FREE

ETAPUMP has only one moving part —no failure-prone diaphragms or brushes to replace.

ALL electronic control parts are above ground for easy access and greatest reliability. Be cautious of solar pumps with circuit boards sealed inside the motor—if one tiny part fails, the pump must be pulled and the whole motor replaced.

ETAPUMP INTEGRATED SYSTEM™ is complete and ready to install

An *ETAPUMP INTEGRATED SYSTEM* is a complete system kit, engineered for the lift and daily volume that you require. It includes premium crystalline UL-listed solar modules (panels) with a life expectancy well beyond 20 years. The solar array rack (or optional tracker) is engineered for 90 MPH (192 kph) wind. The controller is weather-sealed for all climates.

SYSTEM INSTALLATION

The pump can be installed with the same methods and materials used for conventional submersible pumps. The solar array requires simple nuts-and-bolts assembly and easy wiring. The *ETAPUMP* instruction manual is clearly illustrated. No special product training is required.



ETAPUMP INTEGRATED SYSTEM™

Appearance of components and quantity of solar modules varies according to the system number

ETAPUMP INTEGRATED SYSTEM™ INCLUDES

- Pump and controller
- Solar modules (panels)
- Solar array mounting rack (top-of-pole) & fasteners
- Solar array disconnect switch
- Submersible cable splice kit
- Low-water probe
- Instruction manual

The following items are NOT included. They are available from local suppliers.

- Steel pole and concrete to support the solar array (schedule 40 pipe, size and length specified in the rack instructions)
- Drop pipe (refer to a pipe sizing chart)
- Submersible pump cable, 3-wire + ground
- Water well safety rope (1/4")
- Wire, electrical conduit and fittings

DEEP WELL APPLICATIONS

ETAPUMP can be submersed as deep as necessary to ensure reliable water supply.

SURFACE WATER APPLICATIONS

ETAPUMP can be submersed in any position, in a stream, pond, tank or shallow well. This eliminates any need for a pump house or for periodic priming.

DRY RUN PROTECTION

A low water sensor (included) turns pump off to prevent dry-run damage. Reset is automatic.

CONTROLLER DISPLAY

Indicates System-ON, Pump-ON, Full Tank-OFF and Low Water Source-OFF

STORAGE REQUIREMENT

A storage tank (not included) should be sized to supply a minimum of 5-10 days' water supply, depending on climate and application. Water storage is generally more economical than energy storage in batteries.

BATTERY SYSTEMS

ETAPUMPS for battery systems use a different controller. Request data for 24V and 48V models.

DIMENSIONS & WEIGHTS

PUMP & MOTOR

- Diameter: 3.78" (96mm) Height: 20"-32" (500-800mm) depending on model
- Weight: 25lbs (11.5kg) or less, depending on model

CONTROLLER

- 17" x 7" x 6" (425 x 175 x 150mm)
- PV input: 3/4" conduit hole
- Output: 1 1/4" conduit hole
- Float switch cable: 1/2" conduit hole
- Weight: 11lbs (4.8kg)

SOLAR ARRAY

- Approximate area in sq. feet = watts/10 (sq.m = watts/100). Watts is the last 3 digits of the system number.
- Approximate weight (including mounting rack) in lbs = watts x .3 (kg = watts x .14) Tracker option adds approximately 20% to the weight.

ACCESSORIES

- FLOAT SWITCH for full-tank shutoff, Item #10320
- FLOAT SWITCH CABLE (18 AWG, shielded, burial, UV for max. 2,000ft from pump controller to switch) Item #10326
- LOW WATER SENSOR CABLE (1-conductor, submersible) Item #11421

WARRANTY

4 YEARS for pump and controller when purchased as part of an *ETAPUMP Integrated System*. Solar modules 20 or 25 YEARS, mounting racks and trackers 10 years, according to individual manufacturers' warranties.

HOW TO SELECT AN *ETAPUMP INTEGRATED SYSTEM*[™]

REFER TO THE SIZING TABLE

See instructions in upper right

VERTICAL LIFT = total dynamic head = the vertical distance from the draw-down level in the water source, to the pipe outlet or top of storage tank + pipe friction losses.

CLIMATE ZONE Three solar radiation zones are shown on the table, defined by *peak sun hours/day*. 7.5 is average for summer in central and western USA, and for most locations during dry summer weather.

PERFORMANCE RELATED TO WEATHER These systems are selected for optimum daily output during clear weather (best choice for agriculture). For improved performance during cloudy weather, select a system that produces about 50% more water than you require at 4.5 peak sun hours, or ask your supplier for advice.

SOLAR TRACKER OPTION A solar tracker automatically aims the solar array at the sun throughout the day. In clear weather, tracking increases the daily water volume by about 40% in summer (15% in winter). The tracker's drive is non-mechanical and highly reliable, using only the flow of fluid against gravity. Tracking requires a different array rack to be ordered with the original purchase. For improved performance during cloudy weather or with frequent highly turbulent wind, a passive tracker is not advisable.

DOUBLE SYSTEM Two pump systems can be installed in the same water source if the well casing is not less than 6" inside diameter. This will double the daily water volume.

Document Version 1.3 · March 20, 2002.

EXCLUSIVE IMPORTER PARTS & SERVICE

Dankoff Solar Products, Inc.
www.dankoffsolar.com

Available from

