Typical Specifications
Submersible Solar Pumps and Motors

1.0 SCOPE
1.1 The Submersible pump and motor shall be designed for continuous submerged operation.
1.2 The pump shall be driven by a motor attached below the pump section.
1.3 The pump unit shall be equal to Grundfos SQFlex pump model _____.

2.0 SYSTEM CAPACITY AND ELECTRICAL REQUIREMENTS
2.1 The pump shall have a capacity of _____ US GPM when operating against a total dynamic head of _____ feet of water.
2.2 The motor shall have a power rating of up to 1400 Watts, rated for 90-240 AC volts single phase, 50-60 hertz or 30-300 DC volts.
2.3 The cable between the motor and service entry shall be at least _____ feet _____ AWG with three conductors, 600-volt insulation.

3.0 PUMP DESIGN
3.1 There shall be a check valve integrally designed into the pump discharge housing.
3.2 The pump shall have integrated protection against upthrust and downthrust
3.3 Pump type will be 3" positive displacement helical design or 4" centrifugal design
3.4 A filter screen and sand slinger feature shall be included as part of the suction inlet assembly.

4.0 PUMP MATERIALS OF CONSTRUCTION
4.1 The centrifugal pump bowls, impellers, guide vanes, strainer, and check valve shall be 300 Series stainless steel. The shaft and coupling shall be 300 Series stainless steel.
4.2 The helical pump rotor, shaft, casing shall be 300 Series stainless steel. The check valve mechanism shall be constructed of Polyamide material

5.0 MOTOR DESIGN
5.1 The motor shall be a 3" variable speed brushless, electronically commutated DC motor equipped with a permanent magnet rotor designed for continuous underwater operation in conformance to NEMA standards.
5.2 The motor shall have a stationary thrust bearing capable of carrying the maximum pump thrust loads.
5.3 The motor shall be water filled for cooling and lubrication. No oils or grease lubrication shall be used.
5.4 The motor shall have built in Maximum Power Point Tracking (MPPT) for increased efficiency

6.0 MOTOR MATERIALS OF CONSTRUCTION
6.1 The shaft seal shall be a Nitrile Rubber.
6.2 The motor casing and shaft shall be 300 Series stainless steel.

7.0 MOTOR PROTECTION
7.1 Motor shall have the following built in protections:
- dry run
- overvoltage and undervoltage
- overload
- over temperature

7.2 For complete operational control, protection and diagnostic benefits, a Grundfos CU200 is recommended.

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Subject to revisions.