



LB-480A

Automatic Electric Submersible Pump

Sample Specifications

1. SCOPE OF SUPPLY –

Furnish and install TSURUMI Model LB-480A-62 Submersible Pump(s). Each unit shall be capable of delivering _____ GPM (_____ m³/min) at _____ Feet (_____ m) TDH. The pump(s) shall be designed to pump water, without damage during operation. The pump(s) shall be designed so that the shaft power required (BHP)/(kW) shall not exceed the motor rated output throughout the entire operating range of the pump performance curve. Pump(s) shall be of the top flow through design to provide maximum motor cooling efficiency and allowing continuous operation at low water levels and extended dry-run capabilities. Shape of the pump shall be cylindrical and slim for installation in a well casing for deep well dewatering.

2. MATERIALS OF CONSTRUCTION –

Construction of major parts of the pumping unit(s) shall be as follows: Pump casing shall be synthetic rubber. Motor frame shall be aluminum alloy die-casting. A fused polymer coating shall protect internal and external surfaces being exposed to the pumpage. All exposed fasteners shall be stainless steel. All units shall be furnished with a 2" NPT discharge connector. Impellers shall be of the multi-vane, urethane rubber, semi-vortex solids handling design and shall be slip fit to the shaft. The motor shaft shall be machined to provide a positive drive of the impeller.

3. MECHANICAL SEAL –

All units shall be furnished with a dual inside mechanical shaft seal located completely out of the pumpage, running in a separate oil filled chamber and further protected by an exclusionary oil seal located between the bottom seal faces and the fluid being pumped. The oil chamber shall be fitted with a device that shall provide positive lubrication of the top mechanical seal, (down to one third of the standard oil level). The device shall not consume any additional electrical power. Mechanical seals shall be rated to preclude the incursion of water up to 13.9 PSI. (32 Ft.) submergence. Units shall have silicon carbide mechanical seal faces. Mechanical seal hardware shall be stainless steel.

4. MOTOR

The pump motor(s) shall be 2/3 HP, 0.48 kW, 115 or 230 V., 60 Hz. 1 Phase and shall be NEMA MG-1, Design Type B equivalent. Motor(s) shall be rated at 6.1 or 3.0 full load amps. Motor(s) shall have a 1.15 service factor and shall be rated for 10 starts per hour. Motor(s) shall be air filled, copper wound, class E insulated with built in thermal protection. Motor shaft shall be 403 stainless steel, fitted with a replaceable, stainless steel shaft sleeve and shall be supported by two permanently lubricated, high temperature ball bearings, with a B-10 life rating at best efficiency point of 60,000 hours. Bearings on all units shall be single row, double shielded, C3, deep groove type ball bearing.

5. POWER CABLE AND CABLE ENTRANCE –

The pump power cable shall be suitable for submersible pump applications. The cable entrance shall incorporate built in strain relief, a one piece, three way mechanical compression seal with a fatigue reducing cable boot. The cable entrance assembly shall contain an anti-wicking block to eliminate water incursion into the motor due to capillary wicking should the power cable be accidentally damaged.

6. WATER SENSING PROBE FOR AUTOMATIC ON/OFF OPERATION–

To avoid dry run operation, the pump shall include a water level sensor (probe) with all electronics completely molded in resin and covered by a rubber case to protect against rough handling, and shall have no moving parts. Once the probe detects water, the pump shall start cycling and continue to cycle until water level recedes down past the level of the probe. At which time the pump shall continue to operate for an additional 60 seconds before shutting off, to avoid short cycling due to turbulence in the water. Probe and all electronics shall be rated for in excess of 30,000 on/off cycles without failure or damage.