

Electrical Requirements for DEWATS

Pumps, blowers, and controllers are common DEWATS components. Utilize best practices for electrification to ensure long-term function and safety.



Typical NEMA 4 junction box for pump tank. A better installation would be to run the wires through the riser and mount the box externally.



Multi-meter. A most useful tool for checking if circuits are hot when troubleshooting electrical equipment.

Project Planning

Prior to considering components for mechanized DEWATS, knowledge of the available power specifications is required. Three considerations are key:

1. Distance from the power tap to the mechanized equipment;
2. Single or three phase conductor system availability;
3. Voltage availability – 110 V, 220 V or 440 V.

All three will have an impact on the capital cost, operations cost, and type of equipment that may be applicable to your DEWATS project. To obtain this information, as well as the approval to connect, contact the power generator early in the DEWATS project planning.

General Requirements for Wastewater Electrification

1. Licensed electricians should perform all electrical work.
2. Protect workers and electrical equipment by using proper enclosures. Enclosures constructed for either indoor or outdoor use shall provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, and hose-directed water; and that will be undamaged by the external formation of ice on the enclosure. Look for enclosures that bear a NEMA-4 rating for use in wastewater systems.
3. Use conduits to encase wires. Conduits are electrical piping systems composed of steel or grey PVC. Use conduit seals to prevent sewer gasses from passing from tanks to electrical components to reduce explosion hazard. *TIP:* If conduit seals are not available, seal the conduit ends with non-shrinking silicone-based caulk.
4. Use exterior junction boxes for tanks and basins. The wastewater environment is corrosive to wires and connectors. When possible, place junction boxes outside of tanks where they are easily accessible and removed from corrosive atmospheres.
5. Provide a wiring diagram and troubleshooting guide in the operation and maintenance manual for quick reference.

Multi-meter. A Must-have Tool for the DEWATS Service Provider. A Multi-meter, otherwise known as a **VOM** (Volt-Ohm meter), is an electronic instrument that measures voltage, current, and resistance. It is a vital tool to determine if circuits are electrified. Multi-meters are inexpensive, costing as little as \$10, but proper operation and use is required. View a video tutorial on the use of multi-meters at www.youtube.com/watch?v=KzjMICER4EU.