



**EPG CONNECTION NEWSLETTER**

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**In This Issue: Controls in Wet Environments | Conference Schedule**

**EPG Solutions - Keeping Controls Dry in Wet Environments**

Below grade and underground locations such as lift stations and valve vaults are particularly vulnerable to water infiltration, condensation, and flooding.

These wet environments place electrical conduit and wiring, electrical connections, controls, and other devices at risk.

System disruptions and equipment failure often point to inadequate sealing, incorrect conduit materials or installation methods, and poor connection practices.

You may find some of these recommendations to be useful in improving your electrical system's durability in wet environments found in some of your applications.



*Typical Valve Vault*

**1. Electrical Conduit Selection & Installation**

- Use only conduit systems rated for wet locations.
- Provide solvent-welded connections (for PVC) to minimize water ingress.
- Use long sweeping bends instead of tight angles to prevent stress and reduce condensation traps.
- Liquid-tight flexible metallic conduit (LFMC).
- Use water-tight expansion fittings where conduits enter or exit the vault.

**2. Wiring & Cable Selection**

- Use only wet-location-rated cable.
- Submersible pump cable or tray-rated cable (TC-ER) with UV and moisture resistance.
- Consider armored cable with moisture barrier sheathing for added protection.

**3. Junction Boxes & Enclosures**

- Use NEMA 6P-rated or IP68/IP69-rated junction boxes for underground or flood-prone areas.
- Choose enclosures made of corrosion-resistant material (e.g., stainless steel, polycarbonate).
- Install boxes above the high-water mark, if possible.
- Use waterproof cord restraints.

**4. Wiring Connections & Sealing**

- Avoid standard wire nuts — use only waterproof, gel-filled connectors.
- Heat-shrink tubing with adhesive lining over all splices or crimp connectors.
- For high-risk areas, consider potting all connections in epoxy or silicone compound inside boxes.
- Dielectric grease on all low-voltage terminal blocks and connections helps prevent corrosion.

**5. Location Design Improvements**

- Ensure proper drainage in vault/lift station (sump pump with check valve, gravel bottom, etc.)
- Add desiccant packs or mini dehumidifiers inside enclosures in humid areas.
- Incorporate venting to reduce condensation buildup when conditions change (warm water + cold air).
- Leak detection sensors and alarms.
- For new projects: Better designed specifications written specifically for the wet environment application, including final inspection prior to signing off on project.

**6. Remote Wiring to Control Panels**

- Use dedicated conduits for signal and power cables to reduce noise and crosstalk.
- Seal conduits at both ends to prevent water migration through capillary action.
- Add conduit drains or drip legs at low points in long conduit runs to collect condensation.

**7. Grounding & Surge Protection**

- Ensure proper vault grounding to avoid ground potential rise and protect sensitive electronics.
- Install surge protection devices (SPD) at control panels and device power feeds.

*If you have any questions about the information above, please call and ask to speak to one of our Application Specialists 1-800-443-7426.*

**Industry Events**

*This list of events is updated each month.  
 We will do our best to keep the list accurate when published.*

**July 13-15 Missouri Waste Control Coalition**  
 Lake of the Ozarks, MO (The Reich Co. Exhibiting)

**Aug 18-20 Wyoming SWANA & Recycling Conf.**  
 Cheyenne, WY (The Reich Co. Exhibiting)

**Aug 20-22 Georgia Environmental Conf.**  
 Jekyll Island, GA (The Reich Co. Exhibiting)

**Sep 9-12 Tennessee SWANA Conference**  
 Chattanooga, TN (The Reich Co Exhibiting)

**Sep 15-17 Colorado SWANA Conference**  
 Fort Collins, CO (The Reich Co Exhibiting)

**Sep 22-25 Kansas SWANA Conference**  
 Wichita, KS (The Reich Co. Exhibiting)

**Oct 22-24 Arizona SWANA Vendor Showcase**  
 Location TBD (The Reich Co Exhibiting)

**Nov 5-7 Nebraska SWANA Joint Conference**  
 Kearney, NE (The Reich Co Exhibiting)

**(TBD) Kentucky SWANA Bluegrass Chapter Meeting**  
 (TBD, KY (The Reich Co Exhibiting)

**(TBD) New Mexico Conference**  
 (Albuquerque, NM (The Reich Co Exhibiting)

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