



“Uptime, All the Time!” POWER SYSTEMS

UPS Keeps Water Facilities Operating Reliably



*NEMA RATED INDUSTRIAL UPS WITH WIDE
TEMPERATURE BATTERIES, BY FALCON*

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Today's water treatment plants are fully automated, relying on an advanced Supervisory Control and Data Acquisition (SCADA) network to control the entire water treatment process. This network is integrated throughout the plant and has two primary functions: process monitoring and process control. Should one element of this network fail, it has the potential to shut down the entire facility's production.

Microprocessor-based SCADA hardware is often power sensitive and relies on a high quality power source that is protected from outages. Due to the presence of large motors and pumps connected to the facility's power system, the utility power supplied to the plant can become polluted with voltage sags, high voltage transients and over-voltage conditions. It can also create problems through experiencing short- and long-term outages.

As true online uninterruptible power supply (UPS) models regenerate new, clean AC power, they are often used to condition power to the SCADA systems, in addition to providing a backup power source. Due to their continuous duty inverters, they can support minutes to hours of backup. As most online UPS products on the market have been designed for use in protected 0°C to 40°C computer room environments, it is essential to select properly rated industrial-grade online UPS, designed for use in a plant's harsh environment.

Due to the improper use of office-grade UPS models in these unforgiving environments, unscheduled downtime is common in the industry. In addition, the electronics in these types of UPS are not designed to operate reliably in the high temperature and corrosive gas environment present in water treatment plants.

Differences Between Industrial-Grade and Office-Grade UPS

Wide-temperature range, industrial-grade, online UPS models that are on the market have been safety agency listed, and their operational temperature can range from -30°C to 60°C. These units have been specifically designed to be more efficient and are manufactured with high-temperature-rated components. Most importantly, they are built to operate with a high level of reliability over their operational temperature range.

As a power protected environment is key to the reliability of most electronic equipment, some online UPS manufacturers offer their products in turnkey systems, pre-packaged inside NEMA 3 and environmentally-controlled NEMA 4 rated enclosures. For NEMA 3 rated systems, the UPS must be paired with robust batteries which have a wide operational temperature range. However, this may not be a requirement when packaged inside an environmentally-controlled NEMA 4 system. In some cases, 10-year long-life batteries can be incorporated.

Turnkey systems are a fast, cost-effective solution to deploying wide-temperature range, high level power conditioning and backup into the difficult environment of water treatment plants.

Not all online UPS systems are created equal. Only double-conversion online industrial-grade UPS models offer the high level of reliability, power conditioning and battery backup protection that the SCADA hardware distributed throughout a water treatment plant demands. Plants must use care and select industrial-grade, online UPS solutions that will not only eliminate and protect against power pollution, but also offer long-term reliability in their demanding environments.

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