TEC News Quarterly

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Con Edison Lives Up to Its Creed

Alongside Manhattan's East River, resides Con Edison's new administration facility. The new building contains Con Edison's service center. Located at 750 East 16th Street, on the outskirts of Alphabet City, this new 3-story facility sits next to an existing power plant. For more than 175 years, Con Edison has served New York City, where saving energy is a must. Yet, energy efficiency is not isolated to Con Edison's customers alone. Con Edison has committed itself to saving energy as well, and it shows.

T.E.C. Systems Inc. engineered a Honeywell Excel system that seamlessly controls heat exchangers, air handling units, air compressor plant, hot, chilled and condenser water systems, as well as the variable air volume terminal units. Honeywell's Excel 5000 System controllers are a perfect fit because of their stand-alone operating capability and their ability to network together to allow central building control.

The Excel 5000 System provides various modules to monitor and control mechanical equipment. It is recognized for its ability to optimize operations for energy savings. The system monitors energy usage and coordinates maintenance schedules, all from one interface, making it convenient for management.

Part of the Excel 5000 System is the XL-10. Honeywell's zone manager, the XL-10, is capable of energy efficient control as well. The XL-10 has time-of-day control, a

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We specialize in:

- HVAC SYSTEM CONTROLS
- OPEN / INTEROPERABLE TECHNOLOGY
- SYSTEMS INTEGRATION
- FIRE / SMOKE CONTROLS

TEC Corner: Low Voltage Power Sources

Most modern building control systems utilize low voltage power distribution systems to feed DDC controllers, sensors, control relays and actuators. These low voltage systems, nominally 24 volts AC and/or DC need to be handled similarly to their high voltage counterparts when it comes to grounding and short-circuit protection. Although these systems do not pose the same hazards as their high voltage counterparts, improper grounding and short-circuit protection can result in equipment failure or damage.

To help protect your investment and keep your systems operating properly make sure these rules are followed during the implementation of your Building Management System:

1. A color scheme should be established for low voltage power distribution conductors. The IEEE standards are 24VAC (Hot) – Black, 24VAC (Neutral) – White, 24VDC (Positive) – Red, 24VDC (Negative) – Black, Chassis ground – Green. Some confusion may arise with black being designated for both 24VAC (Hot) and 24VDC (Negative). The 24VAC (Hot) can be blue or some other non-utilized color.
2. AC transformer secondary neutral lines and DC power supply negative terminals should be bonded to chassis ground. This bond will allow the short circuit protection (fuses or circuit breakers) to properly detect ground faults within the system. Non-bonded power sources can be utilized when field devices require a non-bonded power source. However, additional short circuit protection may be required to assure adequate system protection.
3. Provide separate power sources, or protected branch circuits for DDC microprocessors, and field components.

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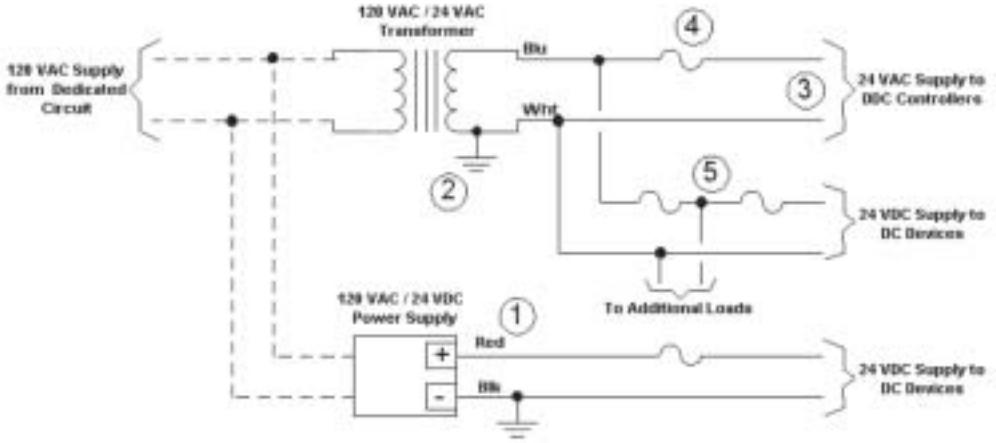

Typical Low Voltage Power Distribution System

What's New?

Verizon- 50 Varick Street- Verizon's offices at 50 Varick Street are currently undergoing an HVAC controls expansion. Contracted to T.E.C. Systems Inc., this project consists of extending new HVAC equipment with DDC controls to the facility's recently implemented LonWorks Building Management System. This project is concurrent with the installation of a high-speed Ethernet system. The project was designed by Arthur R. Brewer, Consulting Engineer for ASM Mechanical Contracting Corp. It is expected to be ready by the end of 2002.

Coney Island Hospital Modernization Project- Teaming up with Nelson Air Mechanical Contractors and BR&A Mechanical Engineers, T.E.C. Systems Inc. was awarded a contract that consists of implementing the hospital's first computerized HVAC system, which includes Honeywell's SymmetrE graphical user interface. This project will be completed by June 2003.

CIBC Tenant Work at 300 Madison Ave- T.E.C. will be providing a Honeywell SymmetrE Building Management System designed by Flack + Kurtz Consulting Engineers for the CIBC tenant spaces. The General Contractor is StructureTone, Inc. The project is scheduled for completion in the Fall of 2003.

Low Voltage Power Sources (continued)

This segregation provides protection to the costly DDC controllers in the event field problems arise.

4. Select proper short circuit protection sizes. Micro controllers and sensitive equipment should be protected by 1.5 Amp, fast-blow fuses or breakers. Field relays and actuators should utilize 2.0 Amp, slow-blow devices.

5. Where short-circuit protection devices are utilized in series, implement selective coordinated protection when sizing the devices. This will assure that the circuit experiencing the problem will become isolated and not affect the performance of other components. Keep in mind: to consider field and equipment ground references when utilizing a single power source to feed multiple devices; ground loops can circumvent circuit protection and result in improper system operation; and always keep a few extra control fuses on hand so that if any problems arise, system operations can be quickly restored.

Following these basic rules and treating low voltage power distribution systems with the same care and respect as their high-voltage counterparts will assure that your Building Control System continues to give you constant, reliable service■

Con Edison

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its energy efficient controls.. It also serves as a gateway between Excel 5000 System C-Bus devices and the various E-Bus Subsystems.

T.E.C. Systems Inc., a Honeywell ACI member since 1995, provided this facility with a system that facilitates future expansion and/or renovations. The system's ability to grow and expand, as well as manage other systems, such as lighting, fire, security, and access control, was a wise investment, and typical of T.E.C.'s expertise■

Tweed Courthouse Restored

On the outskirts of New York's famous Chinatown, and only a block away from City Hall, stands one of New York City's oldest buildings- the Tweed Courthouse. This newly renovated 1881 landmark, named after the notorious government official, Boss Tweed, cost a total of $90 million and almost three years of labor that ended in December of 2001.

According to F.W. Dodge's *New York Construction News*, "modernization elements of the [Tweed restoration] program included the introduction of fire stairs, elevators, central air conditioning and heating and emergency and normal power, all of which had to be woven and concealed within a historic structure"[1]. This paradoxical balance had to be maintained to achieve the optimum delicacy desired of architectural firm, John G. Waite Associates.

While the building maintains its original look with its marble and stone facades, the interior was to consist of nothing but state-of-the-art components. This included the facility's Building Management System (BMS), designed and installed by T.E.C. Systems Inc.

Tweed Courthouse

Honeywell's Excel 5000 system, known for scalability and high performance, was the system of choice. This, along with the incorporation of LonWorks based Excel 10 controllers gave the system the cutting edge needed to bring this facility up to date.

This system controls the entire facility's HVAC system, which includes: 13 factory packaged air-handling units, a dual water temperature system, a reheat hot water system and many variable air volume terminal units.

During the Giuliani administration, the Tweed Courthouse was the designated location for the new headquarters of the Museum of the City of New York. Plans have changed with the new Bloomberg administration.

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Tweed Courthouse cont.

The newly appointed Mayor has decided to move the Education Department's headquarters from Brooklyn to the recently restored Tweed Courthouse, following his proposal to take over said department.

Whether the Tweed Courthouse will house the new Museum of the City of New York headquarters or the New York City Education Department offices, the historic nature and care taken in restoring the Courthouse is worthy of recognition.

[1] F.W. Dodge *New York Construction News*. December 2001.

In the Spotlight

Honeywell Automation and Control Solutions Inc. has recently purchased Sensor Systems from Invensys, making them the new addition to their controls manufacturing family. As a leading global supplier of sensors, which ranges from the medical industry to HVAC controls, Sensor Systems will give Honeywell a greater advantage as a controls manufacturer.

Sensors in the HVAC industry are used to measure actual changes in temperature, humidity, and pressure. Sensor Systems's reputation as a state-of-the-art technology company and taking pride in their product quality will be of a benefit to Honeywell. Honeywell will now have more options when serving their customers.

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