

INSTRUMENTATION ENGINEERS AND CONTRACTORS

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MAKE TIME FOR PRE-FUNCTIONAL TESTING

Commissioning of any building system – electrical distribution, BAS, fire alarm, lighting controls, local controls, etc. is a process that can go smoothly and efficiently, or it can be an extended series of problems, false starts and disruptions. The difference between these two scenarios often boils down to one thing: whether or not pre-functional testing was performed first.

Pre-functional testing (PFT), also known as pre-testing, pre-functional check (PFC) or pre-verification testing (PVT), is an activity that should be scheduled to occur just prior to commissioning to catch and correct system issues that can derail the commissioning process. Unfortunately, too many project schedules skip this extremely important step, and these are the projects that are unnecessarily fraught with problems and delays that should have been caught and corrected prior to show time.

Commissioning is certainly not the time to suddenly discover problems like design flaws, malfunctioning equipment, installation errors, and missing components that will require some time and effort to correct. Setting aside a window for pre-functional testing just might be the most valuable slice of time in the MEP portion of your project.



OMNI TECH TALK: Shielded Cable

Industrial environments are subject to electrical noise, which can cause electromagnetic interference (EMI) that can negatively affect the operation of equipment. Cables can act both as a generator of EMI, conducting or radiating noise to other equipment, or as a receiver of noise from other sources. Shielding, which surrounds the conductor within the cable to either reflect electromagnetic energy or pick up the noise and conduct it to ground, is used to prevent EMI in cables.

There are two main types of cable shield, foil and metal braid, which come in varying degrees of coverage and should be selected depending on the application, environment, required flexibility, etc. Foil shielding consists of a thin layer of aluminum attached to a backing material and requires a drain wire for terminating and grounding EMI. Foil can achieve 100% coverage, is lightweight, easy to terminate, and cheaper than braid, but it has limited flex life and offers little physical protection.

Braid shielding is a woven mesh of bare or tinned copper strands (though stainless steel or silver-plated copper is sometimes used) that surround the conductor to provide a low-resistance path to ground. Braid can provide anywhere from 40—96% coverage, depending on the tightness of the weave, though 75-85% is standard. Braid provides improved termination and lower DC resistance, making it ideal for low frequency interference. It has greater flex life and mechanical strength than foil and is generally more effective, but it is bulkier and costs more. In particularly noisy environments, braid and foil shields can be layered to improve performance.



OMNI WELCOMES Omni is pleased to announce that **Stephen Tallo has joined our team as Electrical Project Manager.** Steve comes to us with over twenty-three years of diverse experience in the Security and Life Safety industry. He began his career as a technician and he soon moved on to serve in various managerial and global management roles at Johnson Controls and, most recently, Convergent Technologies. He holds an AS in Electromechanical Engineering and a BS in Electrical Engineering Technology from NJIT. In his new position at Omni, Steve will manage a broad range of electrical project responsibilities, from planning and procurement through execution and completion. Please join us in welcoming Steve to the Omni Team

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FROM THE PANEL SHOP: Do you own a PCB transformer?

Polychlorinated biphenyls, or PCBs, are a group of manufactured organic chemicals that, beginning in 1929, were used extensively as coolants and lubricants in transformers, capacitors, and fluorescent light ballasts. Production of PCBs was banned in the US in 1979 due to toxicity to humans and wildlife and their tendency to build up in the environment. In the interim, countless PCB transformers were installed in residential, commercial, and industrial buildings, and many are still in use today.

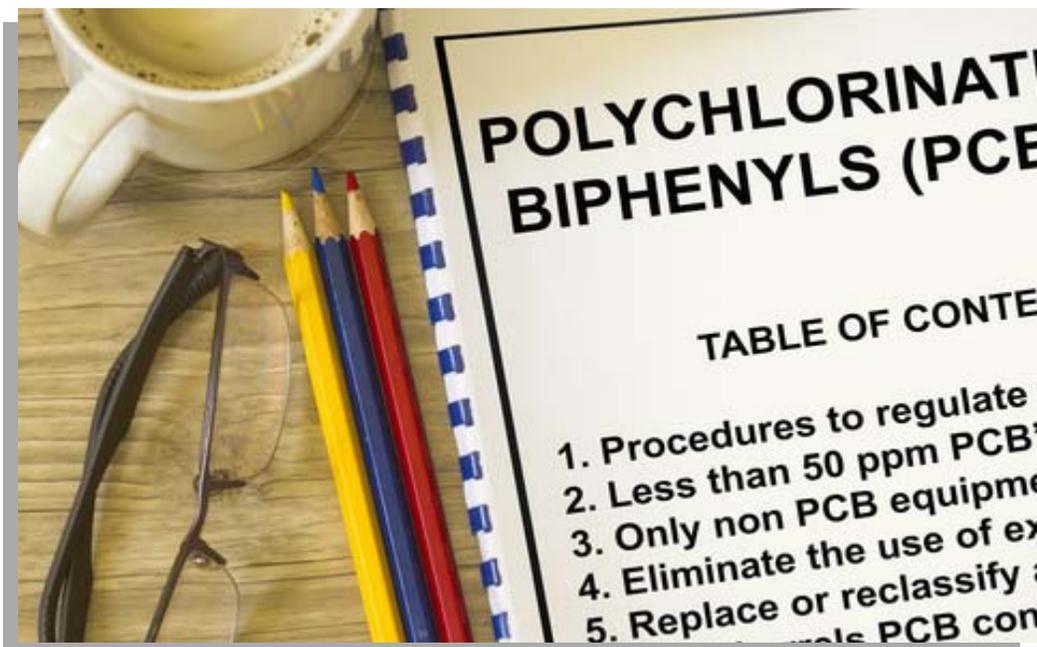
How to identify a PCB Transformer

All PCB Transformers (containing PCBs greater than 500 ppm) and PCB-Contaminated Transformers (50-499 ppm) are regulated by the EPA under the Toxic Substances Control Act (TSCA). Manufacturer nameplates on transformers generally list the trade name of the dielectric fluid, the approximate weight, and the amount of fluid. If the nameplate

says "PCBs" or bears a PCB trade name (such as Araclor, Pyranol Clophen, Apirolino, Interteen, Kaneclor, among many others) it most likely contains PCBs. If the label does not list the fluid, or if the label is missing or illegible, it must be tested to see if it contains PCBs. Otherwise, it should be assumed to be a PCB transformer.

PCB Regulations

Because PCBs are safe as long as they are contained, existing PCB transformers are permitted to remain in use. All PCB transformers must, however, be registered with the EPA. PCB storage and disposal are regulated by the EPA as well, with specific approaches for PCB cleanup, storage location and duration, landfill and incineration disposal, and decontamination and recycling. Removal or refilling of PCB transformers should only be performed by a certified specialist contractor.



30+ Years of Omni Going Strong!



This month Omni is marking our 31st anniversary, providing a timely opportunity to THANK our clients, vendors, associates, and coworkers, both past and present, for our continuing success. Founded in 1986, Omni has steadily grown and transformed from a small instrumentation and controls specialist to a full-service, multi-discipline electrical contractor in response to our customers' evolving needs. Though so many things have changed in our industry over the years, our dedication to excellence and customer satisfaction has never wavered.

Omni serves clients throughout the eastern U.S. in a broad range of industries including pharmaceuticals, laboratory, power generation, industrial and advanced manufacturing from our offices in South Plainfield, New Jersey and Ijamsville, Maryland. We thank you again and look forward to many more years at your service.
~Mike Kornas