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THE MISSING TECHNICIAN

By: Craig Drabyk

In 2011, the oldest of the 76 million baby boomers will be turning 65...

As large numbers of skilled trade workers begin to retire, there is a severe shortage of adequate workers in line to replace them. There are a number of factors at the root of this problem, but one of the main causes is a current American mindset that gives elevated status to white collar jobs over hands-on trades, which is rapidly creating a severe imbalance in the workforce. If we don't change this attitude soon, we are headed toward a labor shortfall at crisis levels.

A 2007 study of the MEP industry uncovered some troubling statistics underscoring the impending labor shortage. It found that 78% of MEP workers fell between the ages of 31 and 59, and workers aged 18 to 30 comprised only 12% of the workforce. These numbers are disheartening – and rather surprising, given that the average MEP salary nationwide is about \$65,000 per year, and higher in our tri-state area.

Omni's success is reliant on our talented instrument technicians, control electricians and control techs. Their challenging, hands-on work requires extensive electrical, mechanical and physics knowledge and training. They, and others like them, make a respectable living. Somehow, over the past few decades, we have lost sight of the fact that jobs like theirs are interesting, honorable, well paying, and vital to our infrastructure. As a nation we need to remove biases and restore honor to our skilled trades, aggressively promote these trades to high school students as positive career choices, encourage educational and training alternatives to 4-year college programs, and enlighten people as to how important these trades are to our nation's future.



OMNI TECH TALK: Selecting A Pressure Transmitter

Selecting the correct pressure transmitter can be a complex task, and choosing the wrong one can make the operation of your equipment inaccurate, and possibly even dangerous. Also, instruments require ample lead time, and a mistake can throw a wrench into a schedule and delay system startup. Here are a number of important things to consider when determining the proper device for your application:

- ❖ Determine your measurement requirements and the type of transmitter you will need. Are you measuring positive pressure or negative pressure? Are you taking stand-alone measurements, or pressure differentials?
- ❖ Assess the operating conditions where the pressure transmitter is to be installed. What is the medium being measured, and are exposed parts compatible, or capable of withstanding, this medium? Steam, refrigerants, chemicals, etc., require special considerations. Also take into account whether your device will be exposed to vibration, shock, moisture, electrical interference, or extreme temperatures.
- ❖ Carefully determine the correct pressure range before selecting a transmitter. Choosing a device with the wrong range can significantly throw off your readings.
- ❖ Choose the proper location for your transmitter, and determine whether it should be blind or indicating. It should be accessible and must have proper vertical and horizontal clearances so it can be calibrated and serviced easily.
- ❖ If your transmitter is to be installed outdoors or in a corrosive environment, make sure it appropriately sealed and protected.
- ❖ Check and double check your make and model number to avoid the major headaches that can result if errors are discovered late in the game. This might seem like a no-brainer, but it is one of the most commonly occurring problems.
- ❖ Choose your communication protocol and hardware wisely. Make sure your pressure transmitter is capable of communicating critical information and operates optimally over your chosen data highway.

These are just a few basic considerations when choosing a pressure transmitter. Contact Mike Kornas to help you with this complicated process at 732-523-0802.

The OMNI Safety Corner

Omni Instrumentation boasts one of the best safety records in our industry, with 9 years of no recordable incidents.

Omni has participated in numerous OSHA VPP projects, and we are ISNworld approved.



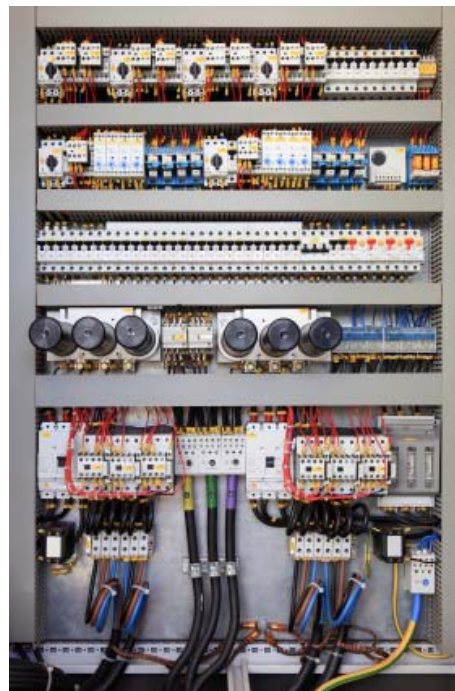
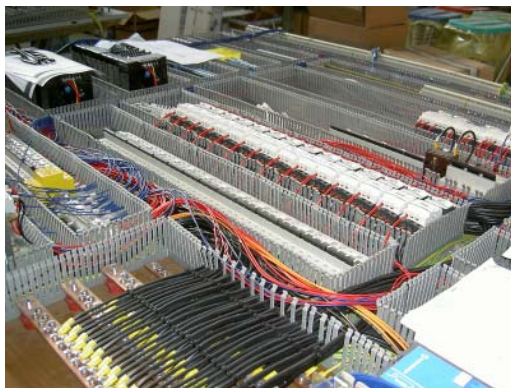
FROM THE PANEL SHOP: Panel Design Essentials

Five key factors of design and layout to be considered if future problems are to be avoided.

❖ **Wire management and wireway layout** – It is important to determine wireway requirements early on in the design process to ensure both factory wire and wiring that will be added in the field will be sufficiently accommodated. This is a particularly important consideration when layout space is at a premium. If the wireway size is underestimated during the design process, it will be overfilled once it is wired onsite, and oftentimes the cover can't be closed.

❖ **Signal separation** - Keeping high and low voltages separated is crucial, especially when dealing with network-type wiring (i.e. Fieldbus, DeviceNet, Ethernet, etc.) AC and DC devices should also be separated on the backplate to allow wires to be kept as far apart from each other as possible. One common solution is to dedicate the outermost vertical runs for AC and DC/network wiring.

❖ **Spare terminal blocks and power distribution** – Panels should always be designed with spare terminals for power (AC and DC) distribution and signal to avoid having to squeeze them in or add them in the field. Even when space is minimal, options such as thinner terminal blocks or multiple-level terminal blocks/fuses can provide the required amount of required and spare signals.



❖ **As-built drawings** – It is very important to not only make sure that the drawings are correct and included with the panel, but that they are marked to show where field wires should be run. Contractors will often just punch out the panel without giving consideration to signal separation, resulting in having mixed signal coming into and throughout the panel. Even when a panel is shipped from the fabricator with complete separation, signals can end up mixed together by the time it is wired in the field. Limiting or eliminating mixed signals greatly reduces the chance of interference when starting up and running the panel.

❖ **Keeping the client in the loop** – Clear lines of communication and mutual understanding of what is to be fabricated to meet or exceed the client's needs is extremely important. A detailed coordination process should be in place to avoid problems such as panels that passed a FAT but do not meet end requirements due to late changes that were not incorporated into the design. Rework can be costly in terms of both time and money, and recertification is usually required if a panel is already UL (or otherwise) listed.