

The Wire Knows. Do You?

The Importance of Wire Gauge

ARE YOU RUNNING THE RIGHT WIRE?

Wire sizing sounds simple until it isn't. Every conductor has a rated ampacity the maximum current it can carry safely but that number alone doesn't tell the whole story. NEC code requires circuits with continuous loads (anything running for three or more hours at a stretch) to be sized at 125% of the actual load current. That means a 20-amp continuous load needs a circuit rated for 25 amps minimum. Motors, heating elements, pumps, and most process equipment all qualify. Undersizing a continuous load circuit isn't just a code violation it's a slow burn toward insulation failure, nuisance trips, and unplanned downtime. Getting it right starts with knowing what you're actually running.



The right wire isn't just about ampacity distance, load type, and installation conditions all change the answer.

email: sales@craftautomation.com
Phone: 269-389-0048

THE RUN THAT NEEDED ONE MORE WIRE

A manufacturing facility ran new conduit for a control expansion four conductors, cleanly pulled, properly terminated. Six months later they needed a fifth circuit through the same run. The conduit was full. A straightforward addition became a full re-pull through a congested pathway, two days of unplanned downtime and real cost. The fix wasn't complicated. It was a planning conversation that never happened. A good panel partner asks that question before the conduit goes in the wall.

HOUSTON, WE HAVE A WIRE GAUGE PROBLEM

NASA engineers don't just size wire for load they size it for survival. In the vacuum of space there's no air to carry heat away from a conductor, so wire that runs cool in a panel room can overheat on a spacecraft. NASA derates wire to 50-60% of rated ampacity just to compensate. Your facility probably isn't orbiting Earth but a hot equipment room or a packed conduit moves the needle in the same direction. The advanced options in our Wire Gauge Selector exist for exactly that reason. Most users will never touch them. Now you know why they're there.

KNOW BEFORE YOU PULL

Wire sizing mistakes are cheap to prevent and expensive to fix. Our free Wire Gauge Selector covers every variable load current, run distance, voltage drop, continuous load derating and returns an NEC-based AWG recommendation in seconds. No login. Just the answer. See below for link.

<https://craftautomation.com/tools/wire-gauge-selector/>

Have a project that needs a second set of eyes on the electrical design? We've been doing this a long time. Let's talk.

www.craftautomation.com