

Scan, spot, fix: Team deploys IR camera-thermal multimeter combination

Name: Ryan Manwarren, Maintenance Manager

Company: Continental Carbonic Products, Inc., Winnebago, Minnesota

Tools: Fluke 279 FC Thermal Multimeter, Fluke TiS75 Infrared Camera

Key benefits: Infrared camera and thermal multimeter combination propels proactive maintenance initiative by identifying hotspots, indicating potential issues, fixing problems and verifying repairs.

Continental Carbonic Products, Inc., headquartered in Decatur, IL, specializes in the manufacture and distribution of dry ice (solid carbon dioxide), along with sales and rental of dry ice blasting equipment. They service customers throughout the eastern two-thirds of the United States through their strategic network of 8 dry ice manufacturing plants and 32 distribution facilities. Among those dry ice manufacturing facilities is a facility in Winnebago, MN where Ryan Manwarren is the maintenance manager.

The dry ice produced by Continental Carbonic is used in a variety of industries, including meat processing, food distribution, medical product shipping and blasting dry ice used for industrial cleaning. Each plant operates a range of equipment—block presses, packing machines, an assortment of large compressors and motors as well as band saws to cut the dry ice into smaller pieces.

Many of the plants are located next to an ethanol plant because one of the byproducts of ethanol is carbon dioxide - CO₂. The Continental Carbonic plants take the CO₂ and refines

it into a food grade product. Liquid CO₂ is injected into extruders where it is formed into solid block, standard pellet, rice pellet and high density blasting pellets.

About two years ago Continental Carbonic embarked on a reliability initiative to develop a strong preventive and predictive maintenance program.

“We worked long and hard to write procedures for each set of equipment and are moving into a more predictive maintenance mindset,” said Manwarren, the maintenance manager who had learned preventive techniques in the U.S. Air Force.

The team started its initial round of baseline checks using the TiS75 Infrared Camera, checking compressors and motors at the panel. They found quite a few high temperature signatures indicating issues to explore further.

Manwarren elaborated, “We were just trying to get a baseline scan and we found hot spots indicating a problem. We were able to get them all fixed. The potential for major equipment failure and excessive downtime paid for the thermal camera twice over.”

The technicians who were assigned to make the repairs carried with them the Fluke 279 FC Thermal Multimeter. With the 279, his team can find the hot spots indicated by the earlier scan, fix problems using the multimeter and verify the fix is correct with the included thermal imager. Manwarren’s team has been using the 279 for spot checks on electrical panels and other equipment.

“The thermal camera on the 279 is point and click,” he said. “It requires very little background and training in the finer points of thermography. Technicians can see where a problem is indicated and fix it immediately with the multimeter and verify the repair is complete...The potential for major equipment failure and excessive downtime paid for the thermal camera twice over”



Manwarren sent Fluke a product review letter to note his experience:

First off, I have used Fluke products for the last 18 years. I have not encountered a Fluke product that I have not liked. The Fluke 279 FC True-rms Thermal Multimeter is another great accomplishment coming from the Fluke team. Thank you for your continued commitment to excellence in quality.

I love using the Fluke 279 FC. The screen display is always nice and bright with a large digital readout for voltage, resistance, and amp draw. I don't have to put on reading glasses to use this tool. The hanging clip is a stroke of genius, I can hang the unit from the lip of the control box and use both hands for troubleshooting. This allows me to move from point to point quickly and ensure more accuracy while taking readings.

For my thermal imaging surveys I use a Fluke TiS75 which is great at finding hotspots and areas of increased resistance to formalize a report and repair work order. My Maintenance Techs use the thermal imaging function on the Fluke 279 FC to take a snap shot of the area they worked on to verify all repairs before we close the work order. This saves me time and effort and allows my Techs on all shifts access to a thermal imager during round the clock coverage to do a quick analysis of suspected faults.

I've shown this unit off to a few of my electrician buddies. They have submitted requests to their employers to invest in a 279 FC to have in their tool assortment as it is truly a 3 in 1 space saver for anyone's toolbox.

Ryan F. Manwarren
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