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Director's Message



As infrared technology has advanced, radiometers have become a common tool for many maintenance technicians and mechanics. Although radiometers are relatively easy to use, there are several important factors that influence the accuracy of a radiometer's readings.

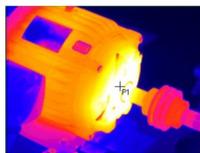
Infrared radiometers offer several advantages when it comes to temperature measurements. Measurements are non-contact, non-destructive and can be obtained quickly. Unfortunately, radiometers are not self-diagnostic and cannot warn the operator of erroneous readings. The following are some simple tips that can help to ensure accurate infrared temperature measurements.

- Target should be stationary and at a stable temperature with a dry surface
- Radiometer lens should be clean and free from obstructions
- Radiometer batteries should be fully charged
- IR temperature measurements should be made perpendicular to target
- IR radiometer should be operated at a distance to ensure that spot measurement size is smaller than the target
- Accurate emissivity and reflected temperature values should be entered into the radiometer's computer

Whenever possible, infrared readings should be correlated with known temperature values. If a discrepancy is observed, it could be due to a procedural error in measurement or the radiometer may require calibration.

Measuring Motor Temperatures

Measuring motor temperature is often a challenge since electric motors differ widely in their design and construction. While many have suggested measuring the motor casing along the stator, this method does not work well for motors that are fan cooled or exposed to external air currents. For uncooled motors, this approach can produce varying temperature values depending upon the location of the subject temperature readings.



In 1997, a research project led by Infraspection Institute utilized instrumented motors in a controlled environment to determine the effect of excess force on installed motors. One of the primary goals

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of this research was to identify a location for collecting reliable temperature data.

From our research it was found that measuring the exterior of the motor bellhousing within 1" of the output driveshaft consistently produced temperatures that were within 1 to 2 C of the motor windings and the output side bearing assembly. Temperatures taken at the bellhousing were especially useful for fan-cooled motors since this area was unaffected by convective cooling from the fan.

When measuring motor temperatures, keep the following in mind:

- Make certain that all thermometers are within calibration and used properly
- Motor temperature will vary with load and ambient temperature. Be certain to record both along with motor temperature
- Elevated temperatures can be caused by electrical or mechanical defects within the motor and/or defective installations
- Motors with elevated temperature should be further investigated for cause and repaired or replaced accordingly

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Infraspection Institute are pleased to announce that our annual Advanced Training Conference, Technical Symposium and Technology Expo, IR/INFO 2023, will be held January 15 - 18, 2023 in Orlando, FL.

Now in its 33rd year, IR/INFO features four days of networking, learning, and fun in a relaxed, yet professional, family atmosphere. We are presently accepting papers and presenters for IR/INFO 2023. Invited topics include, but are not limited to: safety, emerging applications, building sciences, related NDT, case histories, as well as tips and tricks.

Presentations are typically 20-25 minutes with 5 minutes for questions and answers with the audience. All papers and presentations will be published in the IR/INFO Conference Proceedings. The deadline for abstract submissions is July 31.

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October 17 - 21, 2022
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January 15 - 18, 2023
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