0871NA series ice detectors

Mature fielded performance

Offering a robust and customizable solution

With over 50 years of ice detection experience and innovation, Collins Aerospace continues to be at the forefront of icing technology. Our flexible designs detect ice in a wide range of icing environments and have demonstrated their success around the world on both aircraft and ground-based applications.

Collins ice detectors do more than just detect the presence of ice – they can be used to calculate ice accretion rate and liquid water content (LWC).

hey are designed to meet the demanding aerospace requirements of RTCA DO-160 for environmental conditions. These factors, as well as droplet impingement and unit orientation, should be considered with each installation.

Customization is available, including connector type, strut/flange and outputs. With heated struts and probes, our ice detectors offer robust capabilities and can perform multiple calculations.

Key features & benefits

- Customizable connector strut/flange and output
- Compatible with aluminum or composite skin
- Flexible mounting and installation
- Heated struts and probes
- Built-in test capability

Collins Aerospace
An RTX Business

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General specifications

Connector	MS3474L14-15P

Power consumption

Sensing mode	5 W max. at 115 VAC (360-800 Hz)
De-icing mode	Approximately 330 W at 115 VAC (360-800 Hz), depending on configuration

Discrete outputs: customer-selectable output configuration

Ice	Open/ground
Status	Open/ground
Weight	Approximately 1.0 lb.
Serial ports	RS-485 (RS-232 available with line level converter)

Ice detection sensitivity

- Sensitive to less than 0.001 inches of ice
- Customer-selectable ice signal threshold (typically 0.020 inches)

Software meets DO-178B, Level A requirements. Hardware development follows DO-254, Level A standards. The unit complies with SAE AS5498.

Theory of operation

Collins ice detectors use a magnetostrictive technology to drive the sensing probe to resonate at its natural frequency. As ice accretes on the probe, a shift in resonance frequency occurs. When the resonance frequency reaches the set point, an ice signal is activated and the strut and probe de-ice. The heaters remain on for a predetermined time once ice has debonded from the probe to ensure the ice is removed.

Testing capabilities

Collins has one of the most capable icing wind tunnels in the world. Aerodynamic and icing testing is essential to analyze the effectiveness of our products. The new icing wind tunnel enables us to meet the new, stringent icing requirements set forth by the world's aviation regulatory agencies. It offers significantly increased capabilities, such as colder temperatures and higher altitudes, and is capable of producing both solid ice particles and supercooled liquid water droplets in high concentrations. Extensive wind tunnel testing enables us to optimize the design for performance throughout the flight envelope and environmental conditions experienced in flight.

Learn more at collinsaerospace.com

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