



0871MD series ice detectors

Affordable ice detection for proven peace of mind

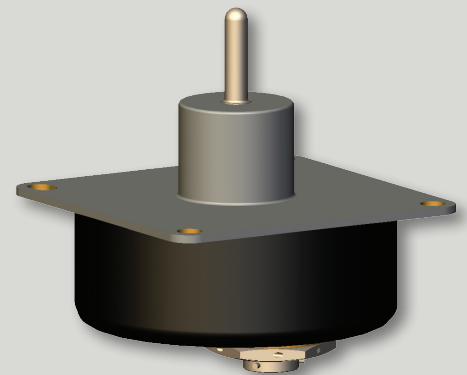
It can be difficult for remote uncrewed aerial vehicle (UAV) operators to notice when the vehicle is flying under icing conditions. Collins Aerospace ice detectors automate detection, constantly checking for ice regardless of workload or lighting conditions.

We have leveraged our proven experience on ice detection platforms to develop the smaller, lower power 0871MD series, designing them to be the most economical ice detection choice for UAVs.

With over 50 years of ice detection experience and innovation, Collins continues to be at the forefront of icing technology. Our flexible, robust designs detect ice in a wide range of icing environments and have demonstrated their success around the world on thousands of aircraft, ranging from commercial and business jets to military fighters and helicopters.

Key features & benefits

- Lower power consumption resulting from use of unheated struts
- Lighter weight
- Smaller package size offering greater flexibility for mounting and installation
- Proven core technology
- Same robust design/ construction of other 0871 series ice detectors
- Built-in test capability to verify internal electronics are functioning properly
- Compatible with aluminum or composite skin



0871MD series ice detectors

General specifications

Power consumption

Sensing mode	5 W max. at 28 VDC
De-icing mode	42 W max. at 28 VDC

Discrete outputs: customer-selectable output configuration

Ice	Open/ground
Fail	Open/ground
Test	Open/ground
Weight	0.7 lbs. max./0.32 kg
Serial ports	RS-485 (RS-232 available with line level converter)

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 resonant frequency occurs. When the resonant frequency reaches the set point, an ice signal is activated and the probe de-ices.

The heaters remain on for a predetermined time once ice has debonded from the probe to ensure the ice is removed. De-icing takes approximately six seconds. Once the heaters deactivate, the probe quickly cools down to begin sensing again.

Based on operational experience, once the ice signal is activated, it is latched in the "on" configuration for approximately 60 seconds in order to avoid nuisance on/off indications in intermittent icing conditions.

Operational considerations

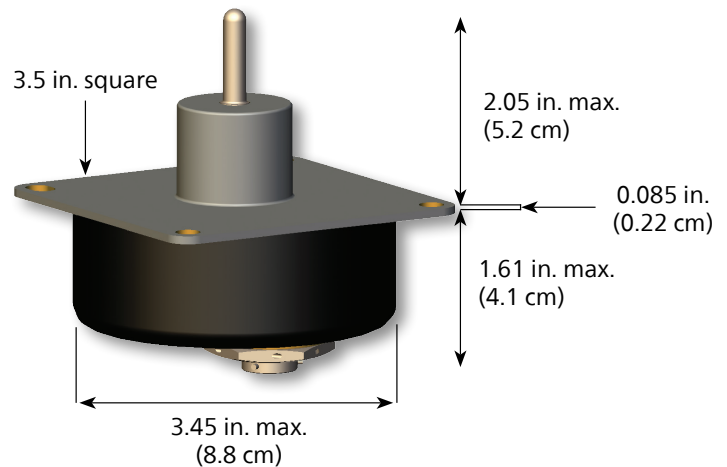
We designed our ice detectors to meet the demanding aerospace requirements of Radio Technical Commission for Aeronautics (RTCA) DO-160 for environmental conditions. Software development and verification follows the RTCA DO-178 process for Design Assurance Level A devices. In addition, system design process assurance follows SAE ARP4754.

Ice detection sensitivity

- Sensitive to less than 0.001 inches (0.00254 cm) of ice
- Indicates detection at 0.020 inches (0.0508 cm)

Installation

The 0871MD series is designed for inside-out mounting on the vehicle.



Learn more at collinsaerospace.com

Collins Aerospace
Four Coliseum Centre
2730 West Tyvola Road
Charlotte, NC 28217
USA

Connect with us



RTX.com

