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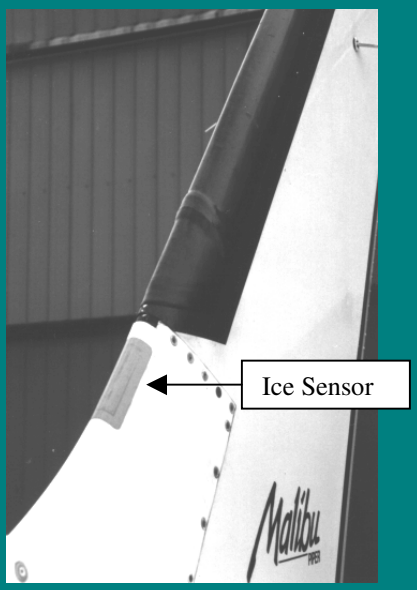
Features

- ✓ Detects initial onset of icing and indicates when critical ice levels are reached
- ✓ Distributed ice measurement over the sensor area provides wide area sensing
- ✓ Flush mount installation
- ✓ Deice output available for autonomous deicing application



Sensor mounted on vertical tail

ICING ONSET SENSOR

An Advanced Aircraft Icing Sensor

IOS is a novel airfoil ice sensor that provides the pilot:

- ➢ Warning of icing conditions
- ➢ Indication of critical ice thickness accumulation

Surface Mount Sensor

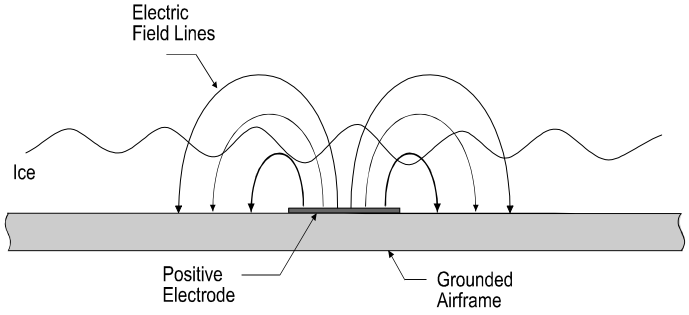
The sensor consists of a copper electrode pattern embedded in a polyimide laminate which is screwed or bonded to the host airfoil. A small electric field is set up on the surface of the sensor. The presence of ice on the sensor alters the field characteristics which are monitored by the sensor electrodes using a dielectric measurement. The sensor measures 1.5" chord-wise x 4.5" span-wise. In custom applications, these dimensions are tailored in accordance with the leading edge curvature, angles of attack, and icing prone region.

Electronics Unit

The electronics package contains the circuitry that monitors and interprets the electric field signals. The 4x7x2" electronics package can be located remotely from the sensor and connected via small coaxial cables.

Pilot Instrument Indicator

Instrument panel indicators are provided as a small cluster of indicator lights. A *Trace* light comes on when .05" ice detected and remains on as long as ice is present on the sensor. An *Ice* light comes on when the ice pack becomes thicker (.25") or enough to visually verify.



Autonomous Deicing Application

A deice output is available that can be directly used to activate a deicer. The thickness threshold is set commensurate with the thickness range for effective deicing for the specified deicer and within the performance constraints of the airfoil. This operational mode optimizes the effectiveness of the deicer while conserving power.

System Specifications

Ice Sensor

- Sensitivity: Ice thickness of 0.05"
- Output: Two discrete ice thickness threshold levels, and Fault
- Sensor area(in): 1.5x4.5

Electronics Unit

- Dimension(in): 4x7x2
- Power: 28VDC @ 0.18A
- Weight: 1.5 lbs

Cockpit Display

- Dimension(in): 1.1x3.5
- Indicator lights: Ice, Trace, Error
- Push-button light test

Applications

- General Aviation
- Engine Inlets
- Unmanned Air Vehicles
- Road/BridgeSurfaces
- Commercial Refrigeration
- Antenna Towers