

Analog Interfaces



INDENTER POLYMER AGING MONITOR

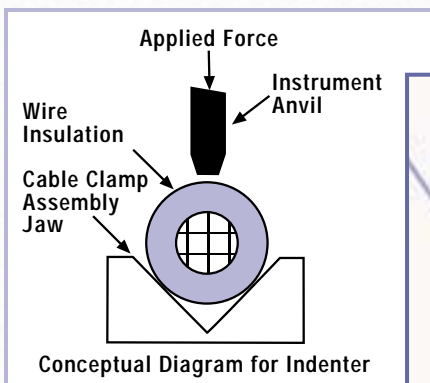
Portable ■ Non-Destructive ■ Wires Tested in Aircraft

The Indenter Polymer Aging Monitor is a portable, non-destructive test device that is capable of performing aging tests on cables and wires. This instrument is particularly well suited for aircraft wire testing, but can be used to test a wide variety of polymers such as gaskets, diaphragms, etc.

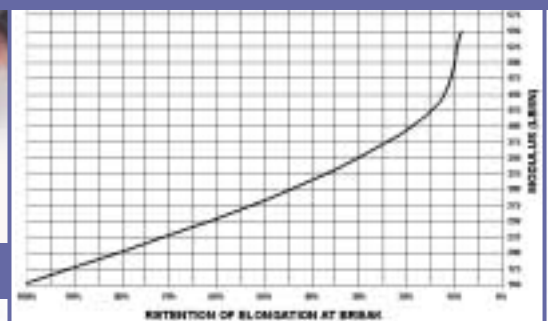
OVERVIEW OF SYSTEM

Indenter data enables the user to determine the aging level (or remaining life) on a given wire sample by looking at a graph which shows how Indenter readings change over the life of that wire type.

Using a Pocket PC, the Analog Interfaces Indenter is capable of easily taking non-destructive measurements on location and storing the test information for plotting, analysis and reporting.



GRAPH OF MODULUS VALUES VS. AGING



SYSTEM FEATURES

WIRE IN CABLE CLAMP ASSEMBLY JAW

Uses a Pocket PC with rugged case, running a custom program written in Microsoft® Pocket PC.

Data stored in Pocket PC memory or optional SD card. A full day's worth of test data can be stored in system memory.

Includes an AC/DC power supply for powering the system when used in a lab or where running from battery power is not required.

Calibration check can be done quickly in the field. Fixturing and software are included for performing a full calibration using NIST weights.

PRINCIPLES OF INDENTER MEASUREMENT

Knowing the condition of wire insulation is a key aircraft safety concern as insulation properties deteriorate with aging.

The purpose of the Indenter is to obtain a value of the hardness or compressive modulus of a wire insulation at a given location. This is done by measuring the force and displacement as a small anvil is moved against the insulation at a constant velocity. The change in force divided by the change in position is called the “modulus”. A “relaxation

value” is also calculated that gives a measure of the insulation’s viscoelastic properties.

For cable materials that harden with age, Indenter modulus values increase. Indenter modulus curves show the relationship between modulus values and an independent measure of aging such as EAB (elongation-at-break).

Test taking is easy and quick. The operator positions the wire in a handheld clamp assembly and initiates a

test. Typically ten tests are taken at a given location with the clamp position moved slightly after each test to get representative values of the insulation hardness. Each test takes about one minute. This data is then saved on the Pocket PC for later transfer to a host computer for further analysis.

