NDT Supply.com, Inc.
7952 Nieman Road
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ED-520Me

Portable Eddy Current Flaw Detector

Special Features

- Proven, reliable microprocessor-based circuit design
- Highly sensitive resonance-type eddy current instrument
- Automatic, pushbutton selection of operating frequency and balance
- Wide selection of probes and coils - interchangeable with existing equipment
- Variable frequency range from 55 KHz to 220 KHz
- Built-in threshold circuit includes an indicating lamp and an audible alarm
- Extremely versatile, yet simplified operation
- Dust-proof, weather resistant rugged aluminum enclosure for operation under most environmental conditions
- Includes test block and pencil probe

Applications

The Model ED-520 eddy current instrument is an electronic device that will locate surface and near-surface discontinuities in non-magnetic materials. It also finds surface defects in magnetic materials, where permeability is relatively constant throughout the test area. In addition, the ED-520 will sort classes of materials according to such properties as hardness, alloy type, carbon content, heat treat condition, tensile strength, and grain structure (where these relate to changes in the magnetic and electrical characteristics of the test part).

With proper standards, electrical conductivity may be evaluated. This often relates to the tensile strength of many aluminum and magnesium alloys. The instrument can also be used to measure the thickness of thin, non-magnetic sheets, as well as conductive and nonconductive coatings (when used with suitable standards).

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The ED-520 is widely used in military and commercial aircraft testing as well as process control, receiving inspection, research, and maintenance. Its compactness, ease of operation, and consistent precision make the ED-520 valuable for testing in foundries, heat treat shops, and manufacturing plants - wherever accurate data must be obtained quickly to establish fatigue or product reliability. The ED-520 features battery operation for extended field use. It is easily recharged for the AC line, using the supplied AC charger.

Operation

The push-button controlled ED-520 instrument utilizes the eddy current principle, whereby induced currents are affected by changes in test part characteristics and homogeneity. Variations in material conductivity, permeability, or physical characteristics cause impedance changes in the test probe or coil attached to the bridge circuit. Such an impedance change causes the bridge to become unbalanced, as indicated by a change on the front panel meter.

Initially, the probe (or coil) is tuned to the specific geometry, conductivity, and permeability of the test system, through adjustment of the lift-off/frequency control. This adjustment for lift-off is especially important in reducing irrelevant meter reading due to surface coatings, roughness, oxides and rocking or wobbling of the probe during testing.

With a full charge, the ED-520 can operate on batteries continuously for at least 8 hours. Recharging takes 10-14 hours.

Description

The ED-520 is a portable, self contained electronic instrument offering high sensitivity, versatility and ease of operation. Either manual of automatic adjustment of frequency or balance controls allows the instrument to be set for highest sensitivity on various parts with various probes or coils. The manual controls can also be operated in conjunction with pushbuttons to permit "fine tuning" after automatic setup.

Sensitivity: Single-turn control for continuous adjustment of the gain between push-button selectable settings.

Charge: LED indicates charger is plugged in and battery is being charged.

Frequency: Continually varies adjustment of operating frequency over the range of 55 KHz to 220 KHz. In the automatic set-up mode, used to fine adjust lift-off/frequency.

Balance: Controls the position of the meter needle.

Gate: A rotary switch to select upscale or downscale triggering for the threshold gate The single-turn potentiometer positions where the threshold gate triggers. The LED indicator lights when the gate has been triggered.

Accessory: Analog outputs available for chart recorder; TTL output for relay.

Probe: BNC-type connector for a wide range of probes and coils. All previous ED-520 and ED-530 probes and coils are compatible.

Phone: Earphone connector.

Volume: Determines earphone volume.

Test Block: 2024 Aluminum alloy with reference slots of .008", .020" and .040" deep. Used to periodically check the instrument's performance.

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Push-Button Controls

BATTery: Depress to read battery status.

ON: Power switch. Embedded LED lights when power is applied.

BALance: Activates the auto-balance function. Will set the meter needle to the desired location on the meter face.

SCAN: Activates the automatic lift-off compensation function.

FREQency: Depress to display operating frequency.

Range: Selects between the three sensitivity levels for the unit.

Specifications

Case Dimensions: (cover closed): 6" deep x 9" wide x 5" high (15.2cm x 22.9cm x 12.7cm)

Weight: 5.5 lbs. (2.48 kg)

Power: Rechargeable Ni-Cad battery. Line operation must be specified to operate 115 or 230V.

Enclosure: Case is made of durable aluminum, cover contains accessory packet

Frequency Range: Variable from 55 KHz to 220 KHz

Readout: Rectangular meter, 3.5" wide. Scale numbered from 0 - 500 in 50 divisions

Environment: 0° to 120° at 85% RH

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