DEFECTOMETER® 2.837

- √ High detection sensitivity to surface flaws (even underneath paint)
- √ Simple, microprocessor-controlled operation
- √ Automatic lift-off and zero compensation
- √ Several alternatives for signal display
- √ Integrated crack standards (optional)
- √ Comprehensive range of test probes
- √ Two alarm thresholds
- √ External control through PC or PLC systems
- √ Modern capabilities for test documentation to printer and PC via RS232 serial interface
- √ Fully compatible with all predecessor instruments and existing probes

Eddy current test instrument DEFECTOMETER 2.837

®Registered trademark

Features:

* The DEFECTOMETER 2.837 is a modern eddy current instrument for non-destructive testing of conductive materials for surface flaws. The material surface may be painted, lacquered or untreated.

* Material with electrical conductivity between 0.5 and 60 MS/m (1 to 103% IACS) can be tested, including ferromagnetic (Fe) materials.

* Flaw depth resolution down to approximately 20 μm (less than 0.001 inch under best conditions).

* The instrument can also be used for simple hardness testing and material sorting.

* Modern microprocessor technology and a RS232 serial interface allow flaw signal documentation on a printer and signal storage on a computer.

* Versatility and simplicity make the DEFECTOMETER 2.837 an ideal instrument for maintenance inspection and metal-producing and metal-processing industries.

Example applications:

Aircraft Maintenance

- Testing for surface cracks on wings around rivets, on turbine blades, wheels, etc.

Automotive and component manufacturers

- Testing for cracks and hardness changes

Metal processing industries

- Simple sorting tasks

Power industries

- Testing of turbine components and heat condenser tubing for cracks

Mode of operation

Like its predecessor instruments, the DEFECTOMETER 2.837 is based on a highly sensitive resonance principle. Even shallow cracks, down to a depth of approximately 20 μm (less than 0.001 inch under best conditions) can be detected on the surface of electrically conductive materials. Metals with conductivities between 0.5 and 60 MS/m (1 to 103% IACS) can be tested. To ensure highly sensitive flaw detection, operating modes are customized to the material under test.

"Aust" for austenitic steels and titanium alloys
"NFe" for other non-ferrous metals
"Fe" for all ferromagnetic materials

Microprocessor control simplifies operation of the instrument. An operator is guided through the power-up and compensation procedure to reduce the chance of improper operation. First, the probe corresponding to the type of material to be tested is plugged into the instrument. After turning the instrument on, the operation mode (Aust, NFe or Fe) is selected according to material type and the probe is compensated in air (lift-off). Then the probe is placed on the corresponding crack standard and the zero compensation is performed.

After this, the gain is adjusted while the probe is moved across a notch, and the alarm thresholds are set. After these simple steps the instrument is ready for use.

The operator can choose between three alternatives for signal display on the LCD, depending on personal preference. The first display mode simulates a horizontally moving needle. The second mode shows the signal as a horizontally moving bargraph. The third mode displays the signal amplitude as a function of time, similar to an oscilloscope. This type of display allows the operator to test a section of his material without having to observe the LCD. He or she can concentrate on guiding the probe and can evaluate the signal afterwards.

The signals displayed on the LCD can be sent to an EPSON compatible printer for documentation. This feature and others, such as warnings when the sensor element in the probe is broken or when the battery power is insufficient, increase the confidence in the test results.

Construction

The DEFECTOMETER 2.837, in its compact housing for laboratory and field use, can be operated in all positions, standing or flat. The housing, made of impact-proof ABS plastics, is fuel and oil resistant and qualifies for European IP 54 dust- and splash-proofing. Hard-foam protective collars provide additional protection from damage.

The LCD is integrated in a dust and waterproof membrane keypad and is used for the display of instrument settings and measurement signals. Sockets for probe, external power supply, printer/PC, headphones and analog I/O are positioned on the side of the instrument.

The instrument can be powered by alkaline batteries, rechargeable Ni-CD batteries or by an external power supply. The battery compartment is at the back of the instrument.

Technical Data

Flaw resolution		To approximately 20 μm (less than 0.001 inch under best conditions)
Sensitivity adjustment		0 - 20 dB in steps of 0.5 dB
Zero offset		0 to 100 scale divisions (sd) in steps of 1 sd
Alarm thresholds		Two, variable in steps of 1 sd, with on/off option
Flaw indicator		Visual as segment on the LCD, acoustic on speaker or headphones, analog signal on pin in analog I/O socket
LCD		128 x 128 pixel, with switchable back lighting, high contrast in sunlight
Power		3x battery (alkaline "D", IEC LR20, 1.5V), or 3x Ni-CD battery (e.g. IEC KR 35/62), or external power supply (input 220 VAC, output 12 VDC; 110VAC/12VDC in USA)
Operating duration with batteries		>8h
Battery indicator		Warning "BAT" if operating time is less than 10 minutes
Housing		ABS plastics, kerosene and oil resistant
Membrane keypad		10 membrane keys, dust and water proof
Dust and water proofing		IP 54
Permissible ambient temperature		-10 °C to +55 °C (14 °F to 131 °F)
Permissible storage temperature		-55 °C to +85 °C (-67 °F to 185 °F)
Permissible humidity		5% to 95%
Mass (with batteries)		0.95 kg (2.1 lb)
Connections:	Probe	Socket 5-pin DIN 41524
	RS232	Connector DB-9P
	Analog I/O	Socket 6-pin DIN 45322
Accessories:	Printer cable	DB-9S to DB-25P for EPSON compatible printer
	PC cable	DB-9S to DB-9S, null modem wiring for data communication PC-to-PC
Maximum test speed		Approx. 0.1 - 0.15 m/s (4 - 6 inch/s) depending on probe characteristics