

New Technique, New Equipment

EEC / SMART-2004

EDDYSUN

SMART MMT/ET TESTER

Smart-2004, a smart portable electromagnetic (magnetic memory/eddy current /magnetic leakage (low frequency electromagnetic field tester) detecting instrument, is a new generation non-destructive testing (NDT) instrument with advanced microelectronic, computer, magnetic memory and digital eddy current detecting techniques. The experiment proves that under the action of the alternative loading, the normalization phenomenon of the magnetic domain occurs at the places containing defects and inclusions in in-service ferromagnetic components, and on it leakage magnetic field arises. At the places of defects or internal stress relative concentration the metal magnetic conductivity is in possession of minimum value, and the tangent component of its magnetic field is in possession of maximum value, and therefore the sign of the normal component is changed and its value is zero. When the normal component of magnetic field on the surface of the component is detected by means of transducer scanning, the stress concentration areas can be determined and accordingly the possibility of existing defects in ferromagnetic components can be indirectly estimated from its. At the same time the instrument has the digital eddy current and magnetic leakage detecting function. It can be applied to the detecting of cracks and measuring the depth of cracks in the weld with anticorrosion layer and its base material.

With Smart-2004 smart portable electromagnetic detecting instrument a new and quick detecting for stress concentration caused by material discontinuity (defects) of the equipment in service, it can come into an early diagnostic for component fatigue damage. The instrument is equipped with various different shapes of transducers and meters for length measurement to meet inspection requirements of different shapes of components and so can meet various kind of NDT requirements, such as the detecting of boiler pressure vessels, pipes, blades, bearings, rails, gears, welds as well other ferromagnetic metal components.

Features

Metal magnetic memory detecting

- Measurement channel: 8 channels
- Minimum measurable distance: 1mm
- Maximum measurable distance: 150mm
- Maximum scanning velocity: 0.5m/second

Eddy current detecting

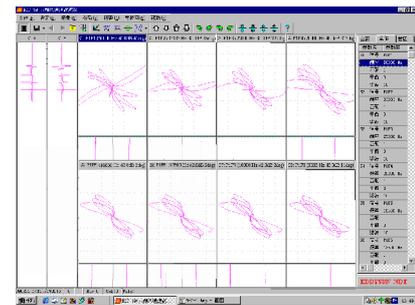
- ◆ 2 independent, selectable frequency range: 64Hz—5 MHz (extendable to 8 frequencies)
- ◆ Gain: 0—90dB, step length: 0.5 dB
- ◆ Automatic/manual amplitude and phase measure
- ◆ Non-equal phase/amplitude alarming
- ◆ Independent storage of detecting programs
- ◆ Impedance plane and stripe curve displays
- ◆ Online operation prompt with hotkey help
- ◆ Parameter, graphic data can be transferred among instruments and microcomputers
- ◆ Selectable background for polar and right coordinate systems

Magnetic flux Leakage detecting (Low frequency electromagnetic field)

- Channels: 8
- Gain: 0—90dB, step length: 0.5 dB
- High-pass wave: 0~1999.9Hz
- Low-pass wave: 0.1 Hz~2 KHz

Other feature

- Microprocessor: 16 bit
- Memory capacity: 16M
- Memorizer: 128M (extendable to 2G)
- High bright electroluminescence screen: EL 256x320
- Operating temperature: -25°C ~ +60°C
- Internal power supply: 14.4V 4AH (rechargeable lithium battery)
- External power supply: AC 220V
- Graphics and parameter can be stored, replayed and analyzed



EDDYSUN (XIAMEN) ELECTRONIC CO., LTD.

No.57, South Hubin Rd, Xiamen, China (PC: 361004) P.O.Box: 0108
Tel: 86-592-2211133/2230833/2217133 Fax: 86-592-2237091
E-mail: eddysuns@public.xm.fj.cn <http://www.eddysun-ndt.com>
Beijing Office of EDDYSUN Tel: 86-10-82731103 Fax: 82734773