

Flawmark-EC

Non-destructive Eddy Current Test System for Tubes, Bars and Wires

Flawmark-EC can detect cracks, pin-holes, open welds, voids, inclusions, concentrated porosity, weld defects, slivers, opened up skin laminations, deep pittings as well as mechanical damage in metal tubes, bars and wires. Ferromagnetic, non-ferromagnetic as well as austenitic materials can be inspected by the system in Online, Offline, Inline and Spool-to-spool configurations. The inspection can be carried out as per API, ASTM, DIN, BS, ETTC, JIS, IS or other relevant standards.

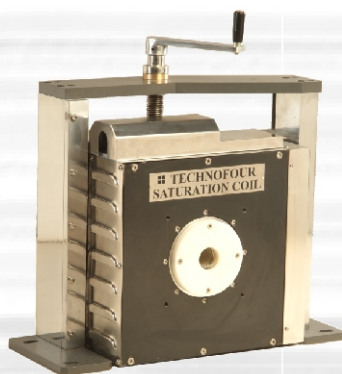
Flawmark-EC can be used with an encircling test coil for full body inspection or with a segment test head for inspection of the weld zone. An absolute channel can be configured for Online systems for detection of open welds etc. Multifrequency and multichannel options are available for advanced use.

A two-level password security access control prevents unauthorized access to the system. Test data for each tube is logged to a Hard Disk with serial numbers, time-stamps and test parameters. Any number of test parameter sets can be stored to the HDD and recalled for later use.

The system can automatically adjust all major test parameters when a standard tube is passed through the test head just once. This is especially useful for online configurations where each hole drilled is a waste of a tube. Similarly end-suppression and paint marker delays are set automatically in case of offline / inline configurations.

Mechanical handling systems are also available for test automation.

- Differential as well as Absolute channels
- Encircling as well as Segment Test Heads
- Multifrequency and multichannel options
- Three Evaluation Modes
- Three thresholds for differential channels
- Automatic Setup
- Automatic tracking filters for online use
- Static and Dynamic end-suppression
- Online, Offline, Inline and Spool-to-spool
- Online manual and context sensitive help
- Data logging and reporting



Saturation coil with platform



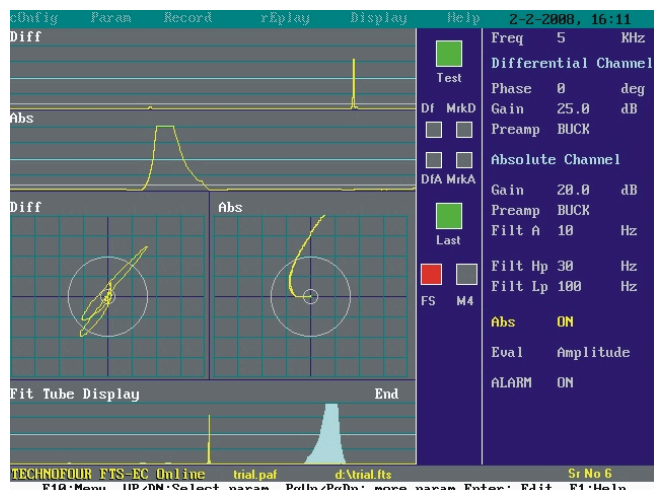
Segment and encircling test heads



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FLAWMARK-EC TECHNICAL DATA



Several displays are possible on the screen for easy and intuitive operation of the Flawmark-EC system. All parameters, signals and alarm annunciations are simultaneously displayed.



Magnetic Saturation Yoke for Segment Test Heads. The mechanism can be swivelled if the weld line wanders around.



THE NDT TECHNOCRATS

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Frequency Range

1 KHz to 1000 KHz

Test Channels

1 Differential + 1 Absolute
Optional simultaneous multi-frequency operation
(up to 2 frequencies / 4 channels)

Differential Gain

14 dB to 91.9 dB in steps of 0.1 dB

Absolute Gain

0 dB to 59.9 dB in steps of 0.1 dB

Phase

0 deg to 359 deg in steps of 1 deg

Filters

Independently adjustable High Pass and Low Pass
Can Auto-track in online configurations

Thresholds

Upper, Lower, Third, Sector

Evaluation Modes

Phase Sensitive (differential channels)
Amplitude (all channels)
Sector (Phase + Amplitude) (differential only)

Balance

Differential channel: Non-balancing
Absolute channel: Smart auto-balance

Data Storage

Hard Disk

Printers Supported

External PCL-3 compatible parallel-port printers

Setup

Manual, Visual and Automatic

Tube Diameters

1mm to 219mm for encircling test heads
25mm to 520mm for segment test heads

Test capability

API 5L/5LX, ASTM A450, BS 3889, ETTC, JIS and several other international standards

Paint Markers

Two for differential, one for absolute channel

Screen

TFT LCD

Digital Outputs

Threshold Crossings, Result, Paint Markers

Test Automation

External PLC

Variants

Flawmark-EC : Single frequency at a time
Flawmark-EC-2 : Two frequencies simultaneous

Magnetic Saturation and Demagnetization

Magnetic saturation is required for testing ferromagnetic tubes in all cases. Technofour offer several sizes of saturation coils and yokes for using with encircling as well as segment test heads. Demagnetization is then required for all offline systems and may be necessary for some online applications. Smaller Saturation and Demagnetization coils are air-cooled, while larger coils are water-cooled.