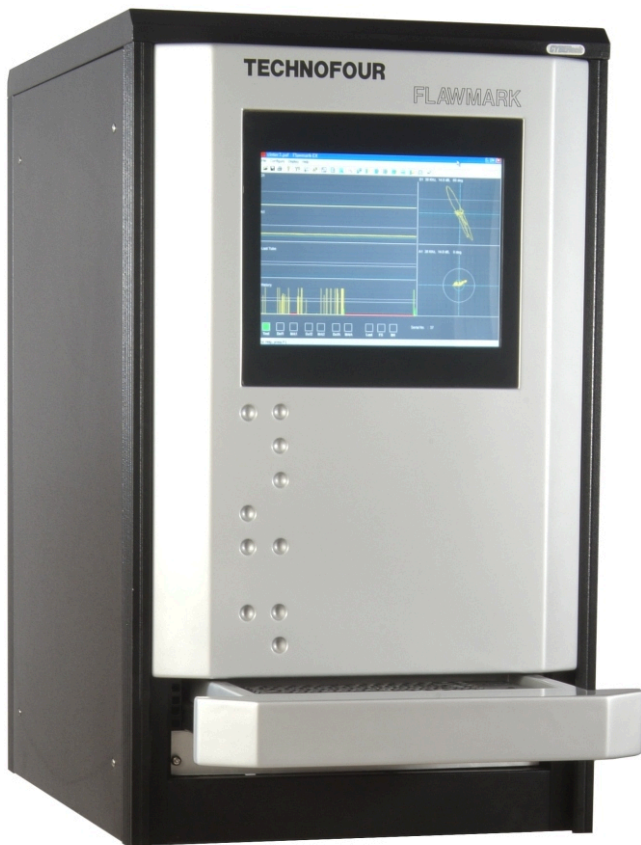


# Flawmark-EX

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



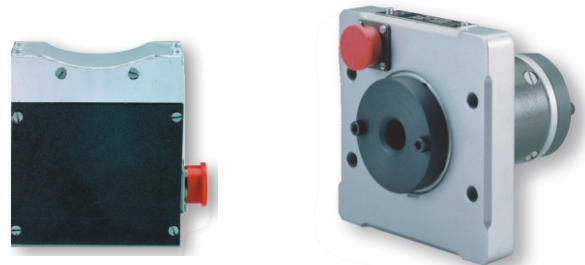
Flawmark-EX is a highly advanced thoroughbred from Technofour stables. This seventh generation Flawmark keeps you connected no matter where you might be in the world. You can connect to it from intranet or internet and view test signals and results in real time. It can even send you E-mails at your scheduled times with all test data, statistics and error conditions. An SPC display is available for online systems that shows the history of your mill up to the past 24 hours, with eddy current signals. The system also supports remote diagnostics over TCP/IP.

Flawmark-EX 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 standards. All data is logged to a Hard Disk. Test reports can be generated in Microsoft Excel format.

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 with extensive activity-logging and reporting keeps the system free of intentional or unintentional abuse.

- Differential as well as Absolute channels
- Encircling as well as Segment Test Heads
- Multifrequency and multichannel options
- Four Evaluation Modes
- Three thresholds for differential channels
- Automatic Setup
- Online, Offline, Inline and Spool-to-spool schemes
- Windows XP Professional operating system
- Online manual and context sensitive help
- Extensive Data logging and reporting
- TCP/IP servers over Ethernet
- Optional grade-sorter channel for offline systems



Segment and Encircling Test Heads



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## FLAWMARK-EX TECHNICAL DATA

### Frequency Range

1 KHz to 1000 KHz

### Test Channels

1 Differential + 1 Absolute  
Optional simultaneous multi-frequency operation  
(up to 4 frequencies / 8 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, Multiple sector

### Evaluation Modes

Phase Sensitive (differential channels)  
Amplitude (all channels)  
Sector ( Phase + Amplitude) (differential only)  
Advanced Sector (Multiple adjustable sectors)

### Balance

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

### Data Storage

Hard Disk, USB flash drive, DVD writer

### 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, ETT, JIS and  
several other international standards

### Operating System

Windows XP Professional

### User Interface

Keyboard and Mouse

### Screen

TFT LCD

### Digital Outputs

Threshold Crossings, Result, Paint Markers

### Test Automation

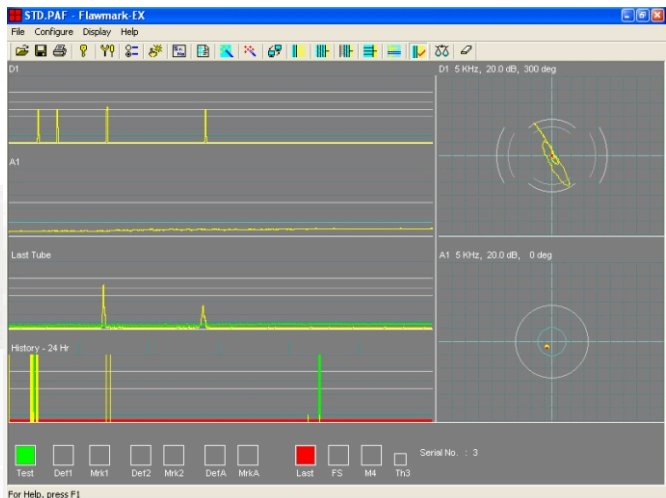
External PLC

### Connectivity

Intranet / Internet over Ethernet

### Variants

Flawmark-EX : Single frequency at a time  
Flawmark-EX-2 : Two frequencies simultaneous  
Flawmark-EX-4 : Four frequencies simultaneous



Flawmark-EX displays are quite configurable. Test signals in vector and strip-chart form with thresholds for any channels can be viewed as well as SPC, test results and statistics

### 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.

### Optional Grade Sorter Channel

One channel can be added to offline systems for grade sorting. This channel can offer a frequency range of 10 Hz to 100 KHz with a circular Go/No-Go threshold.

Technofour also manufacture automation and mechanical handling systems for offline or inline Flawmark-EX system configurations.



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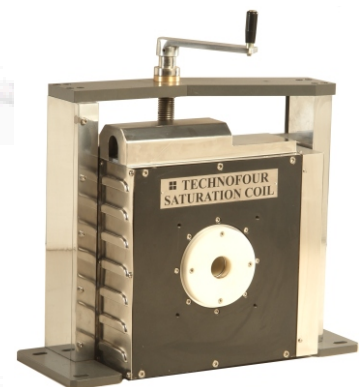
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Magnetic Saturation Coil