

Rohmann GmbH 社

## ELOTEST M2 V3 :片手保持型万能渦流探傷器

### 多くの特徴を備えた万能検査技術

ELOTEST M2 は、表面、ポアホールおよび多重構造検査に係わる、片手保持タイプの万能渦流探傷器です。加えて ELOTEST M2 はすべての材料の伝導率と層の厚さを測定します。ELOTEST M2 の特徴は、10Hz から 12MHz までの周波数全域において混合使用できる 2 周波検査で、静的および動的な検査信号を最適化するためにすべてのフィルタ機能(LP、HP、BP)を提供します。更に Preamplification の採用により、最大ゲイン 120dB の高性能を実現しました。またノイズや立ち上がり（リフトオフ）との混同を避け検出信号を表示できる Axis Spread 機能は、他社に類を見ない機能です。LED バックライトを伴う鮮明な LCD は、直射日光下においても試験信号の最適な表示を確実にし、搭載された多種機能により簡単に迅速な現場作業を実現します。

当社では、当該製品を含めた万能探傷器を始め、高性能渦流探傷器まで幅広く製品を取り揃えております



### 主な仕様と特徴

- 本体サイズ (mm) : 320 (L) x 125 (W) x 73 (D) 最大寸法
- 重量 : 約 530 g (バッテリーパックを除く)  
約 390 g (Li-Ion バッテリーパック)
- ディスプレイサイズ : 80 mm x 60 mm ( 320x240 画素)

### 簡単操作を約束する系統化キーパッド

ELOTEST M2 は、明確な機能割り当てが確実に系統化されたキーパッドにより操作されます。この機能により、たとえ未経験なおオペレータであっても、器具を直ちにそして確実に使用することができます。ディスプレイに表示されるテキストメッセージにて、ユーザーフレンドリー性が維持されます。



日本販売代理店

株式会社 祥インターナショナル

連絡先 : sho\_koho@shoint.co.jp

## SPEIFICATIONS

### User-Interface ELOTEST M2

- Pictograph-based, one-hand operation via key pad with key-click
- 6 languages: English, German, French, Italian, Swedish and Spanish
- Direct-function keys for offset- and liftoff-compensation
- Programmable function key
- Intuitive operation using only one submenu-level

### Probe Connection

- 11-pin Fischer socket, compatible with the 8-pin Rohmann connector
- BNC connector for parametric probes (resonant probes)
- OEM probes to be connected via an adapter or directly to the BNC connector
- Speed control for rotor (torque compensated) in 10 steps (corresponds to approx. 900 rpm to 2700 rpm using Rohmann standard rotors)

### Active Probe Compensation

- Compensation of the probe response signal for optimum signal dynamics
- Automatic test frequency selection using the probe characteristics
- Automatic balancing of single-coil probes using finely graduated, internal compensating loads (no external elements required)

### Frequency Range

- 10 Hz to 12 MHz, continuously adjustable, display in Hz, kHz, MHz
- Adjustable driver current, from 0 % to 100 % in 2 % steps
- Frequency variation from nominal less than 1 %; frequency stability 50 ppm
- Dual-frequency operation in multiplex-mode

### Gain

- Preamplification 0 to 60 dB in 0.5 dB steps (0 to 40 dB in 100 kHz range)
- Gain 0 to 60 dB in 0.5 dB steps
- Axis spread 0 to 20 dB in 1 dB steps
- Automatic selection of preamplification and gain

### Phase

- 0-359.5° in 0.5° steps; step size adjustable

### Filter

- Low-pass filter 1.3 Hz to 10 kHz in 40 steps
- High-pass filter 0 Hz to 10 kHz in 40 steps
- Band-pass filter 0 Hz to 10 kHz; combination of HP and LP
- Selectable automatic filter for rotor operation

### LCD-Display

- LCD featuring long-life LED backlight, 80 x 60 mm (3.15" x 2.36")
- Temperature-compensated contrast setting
- Resolution 320 x 240 Pixel; refresh rate 75 Hz,
- 220,000 data samples/second, no signal delay
- Signal display covering 100 % of the screen; over 89 % with menu displayed
- 80° viewing angle

### Display Modes

- Impedance plane / spot display (X/Y), available for all probes
- Time-base/sweep display (Y/t), 5 ms to 60 s in 17 steps; synchronized
- Simultaneous X/Y- and Y/t-display (dual-screen mode)
- Reference signal may be displayed in the background
- 2 screen grid sizes with adjustable intensity
- Selectable display range:  
X/Y center – X/Y center bottom – X/Y bottom right
- Freely positionable zero/null point
- Automatic trigger during rotor operation
- Simultaneous multi-signal display during multi-frequency operation
- Persistence: 0.1 s to 70 s adjustable in 12 steps
- On-screen signal storage; cleared manually or via auto-erase (2 - 80 s)

### Gates/Alarm

- Alarm: optical and acoustic
- Active in all display modes; may be inverted
- Adjustable gates: +Y-gate, Box-gate, Circle-gate with adjustable flat in the Y-direction

### Parameter Settings/Image Memory

- 99 user settings may be programmed, stored and recalled

- 50 application-related factory default settings (cannot be overwritten)
- 32 signal memories incl. parameter settings for documentation
- Parameter setups and images may be named using alphanumeric characters
- Image and parameter data may be printed and transmitted to personal computer
- Long-term recording (strip chart) of X- and Y-signals, from 20 s to 24 hours; 90,000 min/max-values (envelope, without data-loss)
- Data storage maintained (backup-battery)

### Conductivity Measurement

- Measurement in % IACS or MS/m from 1 % IACS to 110 % IACS.
- Measuring frequency: 60 kHz
- Calibration using 2 individually adjustable calibration points

### Coating Thickness Measurement

- Measurement of non-conductive layers on conductive non-ferromagnetic materials
- Measurement range up to 1000 µm or 40 mils

### Multi-Frequency Operation

- 2-frequency multiplex
- Multiplex rate up to 1 kHz
- Both frequencies fully adjustable, independent of each other
- Signal mix-function to suppress unwanted effects

### Interfaces

- RS232-interface for PC or printer (HP Laserjet and Epson LX80)

### Operation with Lithium-Ion Batteries

- Without background light and rotor: approx. 8 hours
- With light and rotor: approx. 6 hours
- Indication of remaining charge capacity
- Acoustic and optical alarm for low battery
- Charge time Li-Ion battery from 0 % to 70 % - approx. 1 hour
- Charge time Li-Ion battery from 0 % to 100 % - approx. 6 hours
- Battery may be replaced in less than 10 seconds

### Ambient Conditions

- Operation between -20 °C (-4 °F) and 50 °C (122 °F) at max. 85 % rel. humidity (non-condensating)
- Storage between -30 °C (-22 °F) and 80 °C (176 °F) at max. 85 % rel. humidity (non-condensating)
- Battery charge between 0 °C (32 °F) and 40 °C (104 °F) at max. 85% rel. humidity (non-condensating)

### Dimensions

- Ergonomic design
- Max. dimensions: 320 mm (12.6") / 125 mm (4.92") / 73 mm (2.87") (length/width/depth)
- At display:  
120 mm (4.72") / 107 mm (4.21") / 53 mm (2.08") (length/width/depth)
- At handle:  
185 mm (7.2") / 63 mm (2.48") / 44 mm (1.73") (length/width/depth)

### Weight

- Ergonomically optimized center of gravity (inside the operator's hand)
- Instrument without battery approx. 530 g (1.1 lbs)
- Lithium-ion battery approx. 390 g (0.85 lbs)
- Wide-range charger approx. 560 g (1.23 lbs)
- Table-top charger (docking station) approx. 1,070 g (2.35 lbs)

### Power Supply (Options)

- Li-ion battery (14.8 V/2300 mAh)
- Mains operation with desk-top docking station (88 – 265 VAC/47 – 440 Hz) featuring intelligent battery management separately for instrument and second battery pack

### Calibration Standards (optional)

- Calibration standards: titanium, aluminum, stainless and ferromagnetic steel with reference notches: 0.2/0.5/1.0 mm (0.039/0.02/0.008 inch) deep; may be inserted into the instrument handle

### Setting Manager

- PC-software to archive settings, generate test reports and screen shots