

# Minimac<sup>®</sup> 55

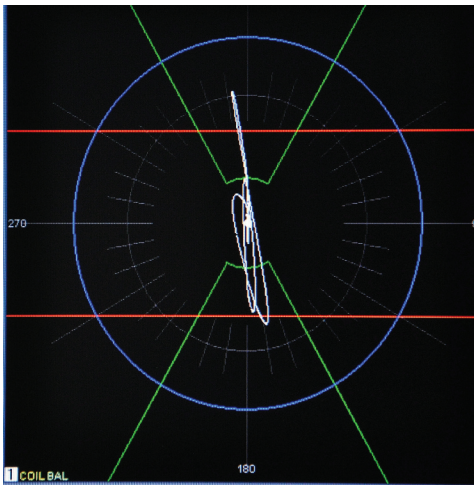
Economic, Single Channel, Full Feature  
Eddy Current Tester



# Minimac® Features

## Performance

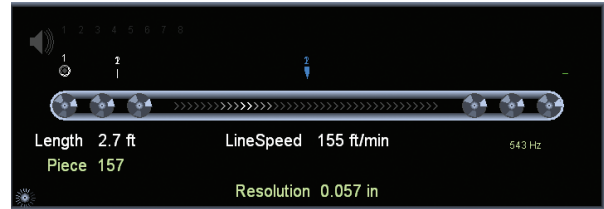
- ☐ MAC's proprietary Multimac® software.
- ☐ High performance, low cost.
- ☐ Broad frequency range - 1 KHz to 5 MHz.
- ☐ Configure for Flaw or Absolute mode for use with encircling or sector coils.
- ☐ Sensitivity, phase & filter easily set on screen while viewing full color polar & linear display of real time, true wave form signals.
- ☐ Solid state relay output from active threshold signal.
- ☐ Use with MAC test coils & platforms, including DC saturation CP's for testing magnetic material.
- ☐ CE Compliant



Minimac EC screen polar view of thresholds with a test signal for a drilled hole in a copper tube.

## Simple Operation

- ☐ Setup and monitor on site, or through computer network.
- ☐ Store, annotate, and recall from internal library or network an unlimited number of settings.
- ☐ Linear strip charts and complete test data are stored.
- ☐ Complete networking capabilities using standard remote desktop operating software.
- ☐ Lockout mode to prevent unauthorized changes in settings.
- ☐ Defect signal report, including location, time, amplitude, phase, user and product data.



Track Screen - Displays a visual representation of the product, length, line speed, end suppression, flaw tracking, piece count, and output (alarm) routing. Advantages include increased quality control and decreased down time.

## Applications

- ☐ Detect short surface & some subsurface defects, including laps, slivers and cracks in tube, bar, wire and parts.
- ☐ Test magnetic and non magnetic grades.
- ☐ Find weld line faults, including short ID or OD defects.
- ☐ Operate at speeds up to 4000 f.p.m.
- ☐ Check continuity & locate welds in single & multi-conductor insulated wire and cable.
- ☐ Test cut lengths or continuous product, on-line or off-line.
- ☐ Detect Magnetic Inclusions with MID version of Minimac.



## Minimac® Model 55 Instrument Technical Data

### TEST PARAMETERS

<b>CHANNELS</b>	One test channel. Software configurable as Flaw (Differential), or Absolute for use with Encircling or Sector Coils.
<b>TEST FREQUENCY</b>	1KHz to 5 MHz. 20 pre-selected frequencies, or user selection of any specific frequency.
<b>FLAW BANDWIDTH</b>	Variable up to 5 KHz.
<b>FILTERS</b>	High Pass, Low Pass, Band Pass, BP- Auto and Out. Fixed filter positions adjustable from 0.1 Hz to 5000 Hz flaw frequency. The bandwidth of the BP filter can be selected through a "Q" factor dictating the ratio of high to low pass filters.
<b>AUTO SPEED SHIFT FILTER</b>	Auto speed shift control, used with the optional encoder, adjusts filters to the optimum frequency for the line speed.
<b>PHASE</b>	0 - 359°, calibrated in 1° steps.
<b>SENSITIVITY</b>	0 - 99 dB, calibrated in 1dB steps.
<b>THRESHOLD SELECTION</b>	selections include All Phase, Sector, Chord, and Half Chord, all assignable with up to three levels. The sector threshold can be rotated to any phase angle. There are counters for active thresholds and each active gate. Only active thresholds display on the screen. The threshold selection feature allows complex gating for challenging test conditions.
<b>ENHANCEMENT CIRCUITS</b>	These circuits may be selected to improve the apparent linear signal-to-noise ratio of signals in any phase. Circuits include A+, V+H- and V++H-. The H- has an adjustable H- factor.
<b>AUTO TRACKING BALANCE</b>	All differential channels, are continually tracked to ensure proper balance of the test sensors. Minimac 55 automatically rebalances if the test system is out of balance, to assure reliable test function, even under adverse conditions. The System Ready Indicator will indicate if the power, coil condition and balance are not adequate.
<b>CALIBRATION</b>	Internally generated signal provides a system check for repeatability of all parameters.
<b>LOCKOUT MODE</b>	Prevents unauthorized changes to instrument settings.
<b>END SUPPRESSION</b>	Optional external switch end sensor and optional encoder to suppress end signals.
<b>SOFTWARE CONTROL</b>	Control of all functions is set through keyboard entry and/or mouse.

### OUTPUTS

<b>FOUR OUTPUTS</b>	Four 24 VDC @ 250mA output modules are provided.
<b>OUTPUT THRESHOLDS</b>	Outputs can be routed to accept any threshold. Combined current draw for all outputs cannot exceed 2 amps.  A choice of 3 thresholds, based on All Phase, Sector, Chord or Half Chord, can be mapped to any of 4 outputs. Independently configurable for time or distance delay and normal, reject or latched mode.

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## **SCREEN DISPLAY**

<b>EC SCREEN</b>	All parameters for testing are set up through this screen. In the polar display the amplitude and phase are represented by the length and angle of the signal. The linear display is a strip chart, with real-time scrolling portrayal of the vertical channel.
<b>TRACK SCREEN</b>	Provides setup for production line parameters for speed, flaw tracking and end suppression. Output routing and configuration are also entered in this screen.
<b>CHART SCREEN</b>	View live chart and replay recorded strip charts for selected gate or threshold.
<b>BATCH SCREEN</b>	Manage strip chart recording storage. Create new batch for recording and select particular recording folder to view recorded charts in CHART screen.
<b>SYSTEM SCREEN</b>	Manage hardware device and license. Set channel and system ready monitoring items.
<b>SYSTEM STATUS</b>	System Status section of display includes indicators for Coil, Threshold, System Ready and Balance conditions.

## **DATA STORAGE, REPORTING & NETWORKING**

<b>SETTINGS STORE &amp; RECALL</b>	Unlimited settings can be named, annotated, stored and recalled from a library on the internal storage device, or network. When networked, multiple instruments can share the same library for assurance of correct settings in multiple test lines.
<b>DATA STORAGE</b>	Linear strip charts and complete test data are stored.
<b>REPORTING CAPABILITIES &amp; NETWORKING</b>	Through Windows® OS, reports containing customer, product information, defect location, time, amplitude and phase, can be stored locally or on a network server for quick follow up and quality assurance. Test data report is managed in the BATCH screen.

## **TEST COILS & SENSORS**

<b>COILS &amp; COIL DRIVE</b>	All Standard MAC coil types & sensors. Adjustable/Primary Bridge Drive up to 20 V pp.
<b>COIL CONNECTORS</b>	9 Pin industrial D-SUB connection cable extender to accept all standard MAC solid coils.

## **STANDARD CABINET SPECIFICATIONS**

<b>CABINET DIMENSIONS</b>	7.68" W x 10.55" D x 3/93" H (195mm x 268mm x 100mm)
<b>WEIGHT</b>	4.2 kg (9.26 lb)
<b>OPERATING TEMPERATURE</b>	Ambient temperature of 0° - 50° celsius (32° - 122° fahrenheit)
<b>POWER REQUIREMENT</b>	110/240 VAC, 50/60 Hz, single phase, 1 amp.