

ELOTEST PL500

The innovative eddy current platform to solve various inspection tasks in production, in lab or in production environment



Accurate material sorting and high-resolution crack detection may be combined for the comprehensive quality assurance of your products

Extremely fast

Flexible configuration

Low noise and highly stabilized



Eddy Current Test Instruments and Systems

MULTIPLEX

This state of the art technology offers independent parameter multiplex, allowing various sequential settings to optimize results using a single probe. On the other hand the probe multiplexing allows the use of probe arrays to inspect large area test objects fast and efficiently.

The high multiplex rate does not present any significant limitations to the inspection rate and therefore provides inspections with optimized resolution rate and test speed in a cost effective way.



LONG PRODUCTS - Bar, Tube and Wire Industry

The inspection of long products demands high flexibility and versatility of a system in combination with multiple test requirements. The versatility of ELOTEST PL500 offers in addition to the traditional crack detection, sorting and distance compensation channels, digital I/O's, trigger modules for paint markers, PROFIBUS and Ethernet connection for remote and host controlled production lines. These modules may be combined at random and permit high inspection rates of up to 100 m/sec with an excellent resolution of less than 1 mm. Modern digital interfaces provide the entire network with all inspection data for further processing or visualization, allowing intuitive and customized graphical user interfaces (GUI) to be integrated into the production control.

**Trend-setting in performance
consistent use of the most modern
implementation of innovative technology
using eddy**





SORTING -

Automotive, Aerospace & Industrial Components

A sorting module is available for multi-batch and multi-frequency sorting. The self-learning "bubble gates" of this module automatically adapt to the distribution of the "good" parts. The sorting criteria can be optimized by retroactively adding/removing (RetroTeach) "good" and "bad" parts. Optionally a special multi channel mode is available for fast high dynamic sorting applications. This mode automatically determines the reversal point providing a reliable high speed sorting.

The sorting may be combined with other available modules and components for the ELOTEST PL500.



ce and flexibility due to the modern technologies and the solutions for materials testing by currents.

CONFIGURATION

The modular design with 16 slots makes customizing the ELOTEST PL500 to the exact requirements easy. The ELOTEST PL500 platform guarantees a highly cost effective solution of your inspection needs with state of the art technology. Subsequent upgrades and adaptations are possible at any time since almost all functionalities are realized in digital algorithms to keep interchangeability. Today's investment comes with a guaranteed future and is cost-effective.



General

The focus of the new instrument family is the fully digitized signal processing chain on the NF-side (after demodulation) with an extremely great bandwidth of 100 kHz and ultrafast multiplexing capability featuring a multiplexing rate of 32 kHz (probe to probe).

The full dynamics of 96 dB (digital) across the frequency range from 10 Hz to 12 MHz speak for themselves.

The display is something special, too:

The display of an analog tube is simulated in a digital manner with adjustable persistence and so far unmatched definition and brilliance— simply the best analog display, if it wasn't digital and thus a effective combination of traditionally proven and modern technology.

Technical data for the basic unit

- 4 slots for functional modules (may be upgraded to 16)
- Available module types:
 - Test channel module (may also be used as distance compensation)
 - 2 slots Q500 sorting module
 - Probe multiplex module
 - Fieldbus I/O-module (Profibus, Device Net etc.)
 - Parallel I/O-module
 - Triple counter module

Screen display

- Color TFT display, 800 x 480 pixel (WVGA), 229 mm (9") diagonally, 16:9 format
- Simultaneous display of up to 8 signals with a display rate of 250,000 signal dots per second for each channel (in real time)

Test Channel Module

Frequency range

- 10 Hz - 12 MHz
- Driver output: +/-10Vs; max. 300mA
- Internal mux
- The external mux requires 1 slot.

Bandwidth useful signal

- 100 kHz
- Fully digitized signal processing; featuring a digitizing rate of 250 kHz with a resolution of 2 x 16 bit

Pre-amplification

- -16.5 – 60 dB adjustable in 0.5 dB-increments

Gain

- -16 – 80 dB adjustable in 0.5 db-increments
- Additional 0 – 20 dB axis spread for the X- or the Y-axis

Signal filter

- HP/LP independently adjustable from 1 Hz to 100 kHz in 20 logarithmic steps per decade => a total of 100 filter steps

Phasing

- 0 - 359° in 0.5°-increments

Real time gates for evaluation

- 2 gates per channel; selectable mode X, Y, Box, circle, flattened circle

Connection standard probes to the test channel module

- 26-pin HD-Sub-connector to connect all probe types
(Note: no rotor power supply for hand-held rotors)

Input/output connector on the test channel module

- 15-pin HD-Sub-connector; opto-decoupled
 - 4 x programmable gate outputs
 - 1 x test enable
 - 1 x synchronization input (counter, trigger)
 - 1 x multifunction output
 - 1 x error message

Analog output

- Max. ±10V amplitude

Multiplex operation

Two (2) types of multiplex operation are possible:

1. Parameter multiplex ("frequency multiplex")

In the test channel various parameters such as frequency, gain, phase, filter etc. may be set successively for one and the same probe during probe multiplex operation. Depending on the selected test frequency, the change-over frequency may be up to 32 kHz. The parameter-multiplex operation is a standard feature of the test instrument.

2. Probe multiplex

During probe-multiplex operation one and the same channel may be switched to several probes in rapid succession. Depending on the selected test frequency, the change-over frequency may also be up to 32 kHz.

For the probe-multiplex operation at least one (1) probe-multiplex module (optional) will be required

Probe-multiplex module:

Available as internal plug-in module or external multiplexer box:

- Basic configuration: 8 each symmetrical (or earth-related) transmitter outputs and receiver inputs; may be upgraded for up to 32 transmitter outputs and receiver inputs
- Internal module requires one slot plus one slot each for:
 - Connector panel for 8 probes featuring 50-pin DSub-connector or
 - 8 slots each: connector panel for 8 probes with separate 26-pin HD-SUB connectors (customized connectors/connector panel upon request)
- External module in IP65 featuring 8 separate 26-pin HD-SUB IP65 sockets; max. distance to the test channel 30 m (customized external multiplexer modules upon request)

General information on the instrument:

Housing data::

Housing
IP30 protective system

Dimensions

Width: 448.8 mm (19")
Depth: 375 mm (14.1")
+ 35 mm (1.38")
Height: 177 mm (4HU)

Weight

(basic unit with one test channel):
10,5 kg (23.15lbs)