

SMART-501 Multi-frequency Eddy Current Tester



SMART-501 is designed with advanced microelectronic digital processing technology, real-time double-frequency eddy current testing technology, and microprocessing technology. It is well used for defect inspection on metal, material and heat treatment condition sorting, as well as the thickness change detection. Inspection settings for different applications can be stored in files and simply called up when needed.

KEY FEATURES

- Two independent testing channels
- Two independent frequencies available
- Non-direction function enables real-time display of crack depth and crack direction angle with orthogonal nondirectional probe
- Automatic measurement and manual measurement are available for phase and amplitude
- Non-equal phase/amplitude alarm function
- Impedance XY signal display and real-time chart display



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- 1 mixing unit to suppress noise signal at a constant frequency
- Operation tips and help function can be called to display relevant information
- Various filtering methods
- Parameters can be stored in advance and easily called out for inspection when needed
- Video image and eddy current testing signal can be get at once
- Connectors available for USB and Internet
- Built-in lithium battery for working 8 hours per charge
- Languages available in English and Chinese

TECHNICAL SPECIFICATION

ECT SPECIFICATION

Channel	2 channels
Frequency	2 frequencies per channel
Frequency Range	10Hz-10MHz
Screen Display	Real-time strip chart, 2 impedance plane
Mixing Unit	1 mixing unit to suppress noise signal at a constant frequency
Filter	High pass: 0-500 Hz; Low pass: 10Hz-10KHz; Digital: 1-100
Pre-Gain	10-35dB
Drive Voltage Level	8 levels
Amp & Pha Measurement	Automatic/Manual measurement
Gain	0-90 dB in 0.5 dB steps
Phase	0-359° in 0.1° steps
Alarm Mode	Half Amp-Pha/ Amp-Pha/ Box
Balance	Digital electronic balance
Probe Calibration	Probe self-diagnosis with probe calibration curve
Gain Ratio (Y/X)	0.1-10, X and Y can be set separately
Non-direction	Non-direction function enables real-time display of crack depth and crack



	direction angle with orthogonal nondirectional probe
Calibration Curve	Defect depth (thickness)-Amp/Y Amp/Pha/P Curve calibration
Probe Connector	LEMO
Port	USB, Internet, WIFI, Mouse connection
Data Analysis	Automatic generation of report including testing information, defect signal, defect location, date, person etc.
Data Record and Manage	<ol style="list-style-type: none">1. Enable to save the impedance signal of defect, to save defect wave file and to save the testing parameters;2. Enable to store the testing data and recall to display for analysis;3. A storage card is supplied with the instrument for convenient data storage, and the card can be taken back to laboratory for data analysis.
Human Computer Interaction (HCI)	Human Computer Interaction enables to: <ol style="list-style-type: none">1. Manually separate and sort the signals to get amplitude and phase of different type of signal;2. Manually revise the phase offset of different signals;3. Calibration on the amplitude of the standard sample signal;4. Set the time duration of the data sampling.
OTHER SPECIFICATION	
MPU	32bit dual-core processor
Storage	16G/64G/128G
Memory	1G
Display Screen	8 inch TFT, high brightness, LCD color touch screen, 1280*720 pixels
Operating Temperature	-20°C to 55°C
Instrument Dimensions	Not more than 2kg; 240mm x 140mm x 60mm
External Power Supply	DC19V adapter, 14.8V 5.7AH rechargeable lithium battery



NONDIRECTIONAL TESTING SIGNAL (Defects at 45 degree can be inspected)

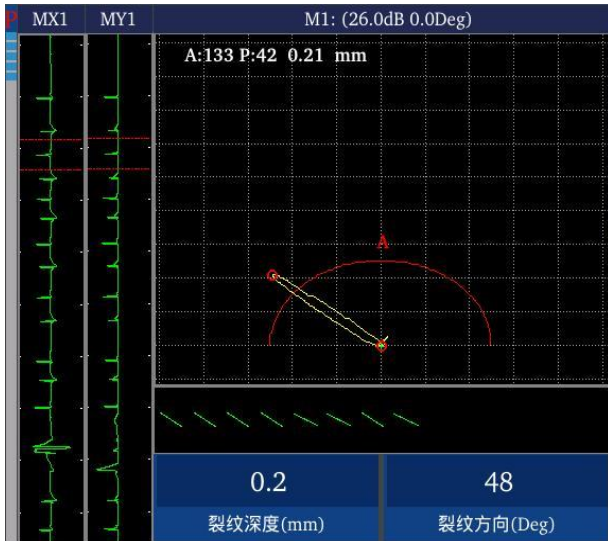


Figure 1 Defect at 48 degree



Figure 2 Defect at 144 degree

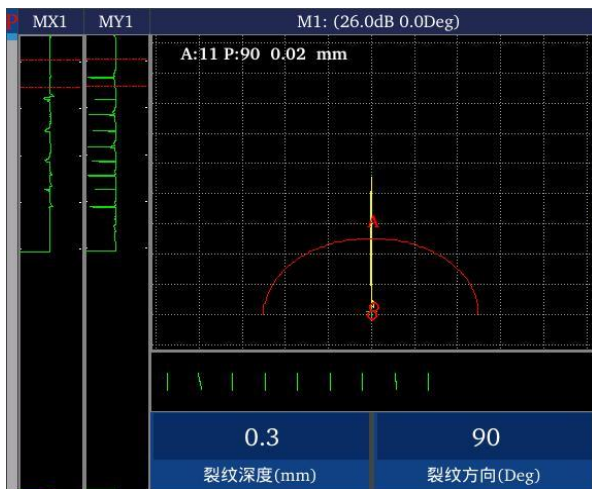


Figure 3 Defect at 90 degree

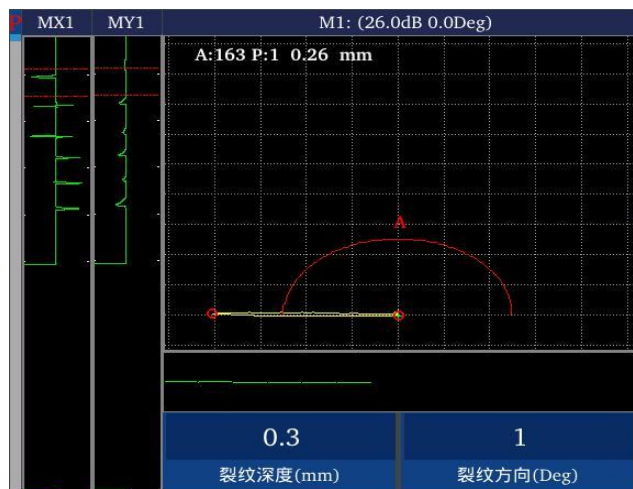


Figure 4 Defect at 0 degree