

# MET400

- Professional manufacturer, best quality with competitive price
- Recommended by the world UT NDT inspection association for training and examination
- Core technology with independent intellectual property rights, certificate of CE, GOST and etc..

## Portable Eddy Current Flaw Detector



### Overview

Mitech MET Series Portable Eddy Current Flaw Detector, also known as digital electromagnetic detector, based on the principle of electromagnetic induction, it can detect various defects on the surface or near surface of metal workpieces at high speed. Adopted with advanced DSP digital processing and designed with FPGA technology innovation, selected with 5.7-inch TFT LCD screen, it can display the detection data clearly. The product has high sensitivity, stable performance, multi-channel simultaneous detection and intelligent data analysis. It can be equipped with intelligent probe as well as customized probe according to customer needs. It has many practical functions such as extended magnetic memory, coating thickness measurement, conductivity measurement and so on. It is widely used in all kinds of metal pipe rods, auto parts, bearings, oil casing, oil control rods, ring metal parts in non-destructive testing and the scientific research of higher education institutions and other fields. It is the necessary professional precision testing equipment to improve production efficiency, and saving production cost.

## Technical Parameters

Technical Parameters	MET Sreies	MET401	MET402	MET404
Testing range		0-5mm		
Testing channel		1	2	4
Independent detection frequency		Single frequency		
Frequency range		10HZ-10MHZ , Step by 1KHz		
Crack detection accuracy		L×W×H 3mm×0.1mm×0.072mm (Using flat probe to detect steel test block)		
Pipe inspection accuracy		0.3mm through hole to 8db (20mm within the probe)		
Gain range		0.0-99.0dB , Step by : 0.1/0.5/1 dB		
Phase rotation		0-359°Continuously adjustable , step by 1/5/10 Deg		
Signal to noise ratio(SNR)		≥10dB		
ratio of gains		( Y/X ) : 0.1-10.0		
Probe drive		1-8		
Calibration curve		Equivalent amplitude		
Digital filtering		Lowpass:0Hz-2000Hz ; Qualcomm:0Hz-2000Hz		
Filter points		0-1024		
Broadband		100Hz-10MHz		
A/D rate		12bit 80M		
Automatic balance		Digital electronic balance		
Display method		Impedance, time base, round hole, Cartesian coordinates, polar coordinates		
Scan speed		1-1000 Level		
Real-time hardware sampling		10-bit AD converter with sampling speed of 160MHz		
Alarm mode		Real-time alarm		
Alarm window		Fan, square		
Window adjustment		1~12 Level		
Storage type		SD Card		
Test data		Over 5000 groups		
Detection parameters		Over 1000 groups		
Display		5.7 inch color TFT-LCD liquid crystal display with a resolution of 640 * 480		
Standby time		10h		
Interface		LEMO-6 DB-15		
Magnetic memory sensitivity		5Gs		
Digital conductivity display range		0.9%-110%IACS or 0.5-64MS/m		
Digital Conductivity Accuracy		0.9%-65%IACS : ±0.5%IACS ; over 62%IACS : ±1.0%		
Nonconductive coating thickness		0 mm-0.648 mm		
Coating Thickness Accuracy		0.025 mm ( ±0.001 in )		
Dimensions		240*175*75mm		
Total weight		1.5kg		

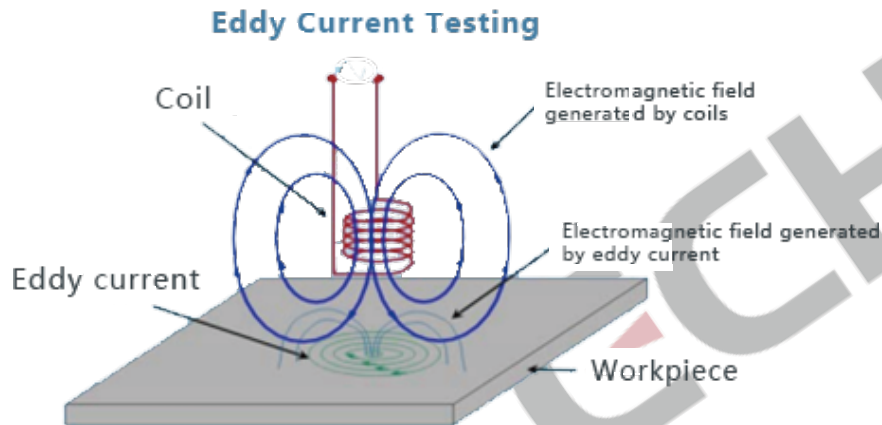
## Working Condition

- Operation Temperature : 0°C-+45°C ;
- Storage temperature : -20°C-+50°C ;
- Relative humidity : ≤85% ;
- In an environment free from vibration, corrosive medium, strong magnetic field and Severe dust.

## Working Principle

The eddy current detection technique is based on the principle of electromagnetic induction, and the excitation signal is loaded into the probe coil. When the probe is close to the metal surface, the alternating magnetic field around the coil will generate the induced current on the metal surface. For flat metal, the flow of induced current is a coil concentric circular, shaped like a vortex, named as the eddy current. The size, phase and flow pattern of the eddy current are affected by the conductivity of the specimen. The eddy current also produces a magnetic field that in turn causes the impedance of the detection coil to change.

So when the conductor surface or near the surface of the defect or the measurement of metal materials change, the intensity and distribution of eddy currents will be affected by changes in the impact, which in turn causes a change in the detection coil voltage and impedance. Eddy current testing is based on this change, the indirect feedback of the existence of defects within the conductor and the performance of metal materials have changed.



## Features

- Widely used in nuclear power, military, petrochemical, metallurgy, university teaching, machinery manufacturing and other fields;
- With modular compact design, small size, light weight, easy to carry, the products can be customized according to customer needs;
- The detector with 10Hz-10MHz test frequency range, can meet a variety of different metal detection requirements;
- Using 5.7-inch color TFT-LCD liquid crystal display, menu design, easy to operate, intuitive display;
- One-button to achieve a variety of modes of switching, the operation more convenient. It can quickly detect a variety of metal surface defects;
- With customizable magnetic memory, coating thickness measurement, conductivity measurement and other functions;
- It has large capacity rechargeable battery, to meet the long-term outdoor work needs, can also be directly connected 220V power supply;
- Compatible with a variety of types of probes, and flexible custom wear, wear, plane, point, weld, fan and other probes;
- It can achieve multi-channel multi-frequency simultaneous detection and can achieve limited mixing, high detection efficiency, high sensitivity;
- Using eddy current impedance plane and time base scan display technology, real-time multi-window display with the same window eddy current signal;
- Chinese and English version of a key to switch, automatic, manual amplitude and phase adjustment, the rapid realization of digital analog electronic balance;
- Real-time alarm output, a variety of alarm window mode, non-equal amplitude, asymmetric phase alarm area settings;
- Using professional "digital filter", effectively suppress the interference signal to ensure the accuracy and stability of the test;
- Can store a large number of various testing procedures and data, with signal acquisition, read, transfer, analysis, storage, playback and other full intelligent processing functions can be connected to the printer to print the file output, storage management;
- Consistent with ASME, GB/T, YB, EN, JIG, API-5L, API-5CL, MH/T and other relevant domestic and foreign standards.

## Applications

- All kinds of metal pipe rod wire high-speed non-destructive testing (according to user needs customized package of non-destructive testing solutions);
- Quality quality links of bearing, ring, auto parts and other metal parts manufacturing quality control links;
- Colleges and universities learning, scientific research and other fields;

## Configurations

	NO.	Name	QTY.	Remarks
	1	Main unit	1	
	2	Flat probe	1	
	3	Standard eddy current test block	1	Aluminum block
	4	Probe cable	1	
Standard config	5	Battery	1	
	6	Power adapter	1	
	7	Attaced files	1	
	1	Various probes		Customized to customer requirements
Optional config	2	Magnetic memory measurement system	1	
	3	Coating thickness measurement system	1	
	4	Conductivity measurement system	1	



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