

Eddy Current Technology Incorporated



THE ect MAD 8D EDDY CURRENT SYSTEM

This system is capable of inspecting any heat exchanger tube in the world (ferrous or nonferrous), and can do it faster than any other eddy current system. Everything that is needed to inspect any heat exchanger from the largest power plant condenser to the smallest feed water heater, all in one portable unit.

IMPORTANT SPECIFICATIONS:

- High Speed 2-Meter Per Second Inspection Speed
- Up to 8 kHz Sample Rate
- High Speed 5-Meter Per Second Automatic Data Analysis
- Peak-to-Peak or Maximum Rate of Change Data Analysis
- Built-in 4.2 GByte Optical Disk Drive for Data Storage
- All in One 27 Pound Unit
- 12.0 H x 15.5 W x 8.5 D Inches
- AT Style Keyboard, 102 Keys
- 110/220 Vac Auto Sensing Power Supply
- Extensive On Line Help

SPECIAL FEATURES:

- Eddy Current Data Acquisition Hardware
- Data Storage on Built-in Optical Disk Drive
- Automatic or Manual Data Analysis
- Tube Sheet Mapping
- Report Generation



THE ect MAD 8D EDDY CURRENT SYSTEM

This system is capable of inspecting any heat exchanger tube in the world (ferrous or nonferrous), and can do it faster than any other eddy current system. Everything that is needed to inspect any heat exchanger from the largest power plant condenser to the smallest feed water heater, all in one portable unit.

IMPORTANT SPECIFICATIONS:

- High Speed 2-Meter Per Second Inspection Speed
- Up to 8 kHz Sample Rate
- Peak-to-Peak or Maximum Rate of Change Data Analysis
- All in One 27 Pound Unit
- 12.0 H x 15.5 W x 8.5 D Inches
- AT Style Keyboard, 102 Keys
- 110/220 Vac Auto Sensing Power Supply
- Extensive On Line Help

PROBE TYPES

Differential, Absolute, and Send/Receive with industry standard 4 Pin MS Connector

BRIDGE IMPEDANCE 50 ohm

FREQUENCY CHARACTERISTICS

RANGE: 55 Hz to 4 MHz
DRIFT: Less than 0.002% for 24 hours
REPEATABILITY: Better than 0.002%

ANALOG OUTPUT CHARACTERISTICS

VOLTAGE: ± 8 Volts minimum into 10k ohm
BANDWIDTH: 450 Hz
IMPEDANCE: 100 ohm nominal
CONNECTOR: 15 Pin D Connector

TRANSFER CHARACTERISTICS

SENSITIVITY: 150 Volts/Ohm min. at 30 kHz at max. gain setting
GAIN: 84 db at maximum gain setting
DRIFT: Less than 0.1 Volts per hour at 60db gain with probe
NOISE: Less than 90 mV P-P at max. gain & max. bandwidth
BALANCE: High speed successive approx. electronic balance
DISPLAY: 10.4 inch active TFT color VGA on local bus

STORAGE DISPLAY MODES

4XY Impedance Planes; 1XY Impedance Plane
4 or 8 Strip Charts;
2XY Impedance Planes and 2 or 4 Strip Charts

PERSISTENCE DISPLAY MODE

1XY Impedance Plane

EDDY CURRENT CHANNEL CONTROLS

GAIN: 256 Linear Steps
PHASE: 360 Degrees
FREQUENCY: 2 Digit and X10 Multiplier
VOLTS/DIVISION: Separate Horiz. & Vert. .06, .13, .25, .5, 1, 2, V/DIV
ANGLE AMPLIFIER: On/Off
HP FILTER: On/Off
LP FILTER: 8 to 450 Hz
BALANCE: Each channel independent or all simultaneously
FLAW GATE: ± 8 Volts Vertical
POSITION: \pm Full Screen, Horizontal and Vertical

MIXER CONTROLS

INPUT PHASE: 360 Degrees
OUTPUT PHASE: 360 Degrees
HORIZ. WEIGHT: 0 - 100
VERT. WEIGHT: 0 - 100
VOLTS/DIVISION: Separate Horiz. & Vert. .06, .13, .25, .5, 1, 2 V/DIV
ANGLE AMPLIFIER: On/Off
HP FILTER: On/Off
POSITION: \pm Full Screen, Horizontal and Vertical
CANCEL: Automatic

SYSTEM CONTROLS

SAMPLE RATE: 125Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz, 8kHz
AUTO ERASE: 1 to 32 Seconds or Off

CODE COMPLIANCE

Meets or exceeds ASME Section V & XI requirements

COMPUTERS

In the **ect** MAD 8D Eddy Current System, the eddy current hardware is housed in a computer, usually a lunchbox style computer. The minimum computer configuration is as follows:

STYLE:	Lunch Box
COLOR LCD SCREEN:	800 x 600 Pixels
DIAGONAL SCREEN SIZE:	12.1 inches
DIAGONAL IMAGE SIZE:	9.7 inches
PROCESSOR:	Pentium 586-233 MHz
OPERATING SYSTEM:	DOS 7.03 or Windows
RAM:	32 MByte
HARD DRIVE:	20.0 GByte Minimum with local bus controller
FLOPPY DRIVE:	3-1/2 inch 1.44 MByte
KEYBOARD:	102 Key
SIZE:	11.5 H x 15.75 W x 8.25 D inches
WEIGHT:	20 pounds (with optional Optical Disk Drive)

POWER REQUIREMENTS

VOLTAGE:	90-130 and 185-270 Vac auto selected
FREQUENCY:	50 - 60 Hz
POWER:	200 Watt Max

ect MAD 8D MAIN FEATURES

The **ect** MAD 8D Eddy Current System, designed for inspecting ferro and non-ferromagnetic heat exchanger tubes, has up to four frequency channels and two mixers.

- Up to 2 meters per second probe speed.
- Up to 8,000 Hz sample rate, each channel.
- Over 100 samples/inch.
- Automatic data analysis.
- Save and recall unlimited test setups.
- Defect signals are highlighted in red in real time during recording or playback.
- Up to four independently selected frequencies.
- Up to 7 MByte (7,168k Byte) data buffer.
- Digital filters.
- Four simultaneous X-Y signals on four screens.
- Eight built-in strip chart displays.
- Independent horizontal and vertical display scaling.
- Signal phase and amplitude measurement functions.
- Defect depth measurement functions.
- Audio, visual, and logic output alarms.
- Eight analog outputs.
- Standard printer interface.
- Angle amplifier.
- The macro string capability allows additional user programmable automation.
- Optional **ect** [Data Analysis Software](#)
- Optional **ect** [AutoMAD Software](#)
- Optional **ect** [Data Storage Software](#) stores and recalls eddy current signals on disk.

ect

Eddy Current Technology Incorporated 201 A Horace Avenue
Virginia Beach, Virginia 23462 USA
Phone 1 757 490 1814
Facsimile 1 757 490 2778