

# VICTOR 2.2D

## EDDY CURRENT AUTOMATED INSPECTION INSTRUMENT



ETHER NDE introduces the VICTOR 2.2D, the user-friendly automated eddy current inspection system, designed with the Automation Engineer in mind.

Based on the ETHER NDE AEROCHECK+ Hardware, NDT Inspectors will become quickly familiar with its user interface and with a variety of case configurations available, the VICTOR 2.2D offers maximum flexibility for each individual application.

### APPLICATIONS

- Surface breaking defects.
- Sub-surface defects in non-ferrous materials.
- Heat Treatment / material property verification.
- Sensing applications for verifying geometry such as the presence of threads, butt-weld detection.

### ADVANTAGES

- Capable of using two probes simultaneously for more efficient inspection.
- Separate dual alarms.
- Large bright LCD screen and external VGA for monitor output.
- Includes rotary drive and conductivity.
- Configurable I/O capability using voltage free contacts.
- USB or RS-232 remote control.
- Dual analogue outputs giving simple recording.
- Powered by 24V DC for easy integration in an industrial control system.
- RS-232 and USB remote control for easy Control System Integration.
- Ability to stream real time data over USB.
- A DLL is available to permit software integration by the end user.

Eddy Current is ideally suited to inspection automation particularly of so called rotationally symmetric components for the following reasons:

Non-contacting, High Speed (potentially up to 200ms<sup>-1</sup>), no couplant required or effluent produced, good for surface defect detection, instant coupling, wide variety and geometry of probes available, cost effective and ideal for rotationally symmetrical components e.g. bearings, gudgeon pins, cylinder liners etc.

## SPECIFICATION

Probe	Connectors Rotary	2 off 12 Way Lemo 2b (Absolute, Bridge and Reflection) and Lemo 00 (for single element absolute probes) Probe 1 only. 600-3000 rpm - Ether Mercury Drive (ARD002), Hocking 33A100 / 40A100, Rohmann MR3, SR1 and SR2 Drive (special adapter needed)
	Conductivity	Probe 1 only. Option becomes active with use of AeroCheck+ conductivity probe and cable
Frequency	Dual Frequency	10 Hz to 12.8 MHz
Gain	Overall	-18 to + 104 dB
	Main Gain	-18 to + 82dB, 0.1, 1 and 6dB steps
	Input	0dB or 12dB
	Drive	0dB, 6dB and 10dB (0dB reference 1mW into 50 ohm)
Phase	Max X/Y Ratio	-18dB to +82dB independent
	Range	0.0-359.9°, 0.1° steps
Filters	Normal High Pass	DC to 2kHz or Low Pass Filter, whichever is the lower in 1 Hz steps. Plus variable adaptive balance drift compensation 0.01 - 0.5 Hz (6 steps)
	Normal Low Pass	1Hz to 2kHz or a quarter of the lowest test frequency whichever is lower in 1Hz steps
Balance	Manual	14 internal balance loads; 2.2µH, 5.0µH, 6.0µH, 6.5µH, 7.0µH, 7.5µH, 8.2µH, 12µH, 15µH, 18µH, 22µH, 30µH, 47µH, 82µH
	Automatic	Optimised balance load selection
Mix Channel	Frequency	Full frequency range available on both channels
	Probe Mode	Simultaneous reflection / bridge and absolute including simultaneous two probe Differential and Absolute
	Mix Gain	X/Y -18 to +18dB
	Mix Phase	0.0-359.9°, 0.1° steps
Alarm Gates	Number	2 Independent Alarm Gates may be configured on Pane 1, Pane 2 or Both Panes (logical or)
	Box	Fully configurable, Freeze, Tone or Visual
	Sector	Fully configurable, Freeze, Tone or Visual
Display	Type	5.7" (145mm), 18 bit Colour, daylight readable
	Viewable Area	115.2mm (Horizontal) x 86.4mm (Vertical)
	Resolution	640 x 480 pixels
	Colour Schemes	User configurable Dark, Bright and Black & White
	Config. Screen	Full Screen, Single, Dual Spot or Dual Pane with variable size and location and function e.g. XY, Timebase, Waterfall and Meter.
	Display Modes	Spot, Time base (0.1-20 seconds x 1-200 sweeps and up to 55 seconds), Waterfall and Meter with peak hold and % readout.
	Graticules	None, Grid (4 sizes 5, 10,15 and 20% FSH), Polar (4 sizes 5, 10,15 and 20% FSH)
	Offset	Spot Position: Y =-50 to +50, X =-65 to +65%
	Spot Readout	Display in X,Y or R,θ
	Summary	Display of all settings in Legacy Format
Removable Data Storage	Setup Storage	micro SD up to 32GB, holding over 10,000 settings
	Stored Screen Shots	micro SD up to 32GB, holding over 10,000 screen shots
	Recorded Data	micro SD up to 32GB, holding over 500 2.5 minute long data recordings
	Guides	micro SD up to 32GB, holding 10,000 Slides
Advanced Features	Data logging	Real-time recording of signal data and replay on instruments and desktop PC up to 164 seconds
	Guides	Create and display a slide show containing instructions, tutorials and procedures using Microsoft PowerPoint.
	Attachments	Screenshots and Data Recordings are saved in a folder with the name of the Settings.
	Loop	Capture a live repetitive signal and then optimise the instrument settings (Phase, Gain, Filters) to simplify optimising the parameters
Inputs/Outputs	Trace	Allows a calibration reference signal to be stored on the screen and then compared with the live signal
	Auto Phase	Allows phase angle to be automatically set to a pre set angle
	PC Connectivity	USB (Full PC remote control plus Real Time data) and RS-232 May be set Off, 9600, 19200, 38400, 57600, 115200, 230400, 460800, 921600 baud
	Analogue	2 outputs 2 Volts swing
Languages	Digital volt free Alarm	On Lemo 12 way Open collector transistor (36v dc at 10mA max)
	VGA	Full 15 way VGA output (EC screens only)
	I/O	Two configurable
	Alarm Out	2 off Opto Isolated 2mA 50v max
	External Alarm Inhibit	2 TTL Inputs
Verification		English, French, Spanish, Italian, Portuguese, Russian, Japanese, Chinese, Turkish, Czech
Power on Self Test		The system includes on delivery a 2 year validity Verification Level 2 detailed functional check and calibration as per ISO 15548-1:2013
Power Physical	External	The system performs a self test on start up of external RAM, SD RAM, accelerometer, Micro SD card, LCD screen buffer
Power Physical	Weight	100-240 v 50-60Hz 30 Watts
	Size (w x h x d)	3.3 kg, 7.25 lbs.
	Operating Temp	246 x 152 x 250 mm / 9.7 x 6.0 x 9.9 inches
	Storage Temp	-20 to +60 °C
	IP Rating	Storage for up to 12 months -20 to +35 °C Nominal +20 °C 54 (front panel only)

