

EDDY CURRENT FLAW DETECTORS

AEROCHECK SINGLE FREQUENCY

AEROCHECK+ DUAL FREQUENCY



AEROCHECK - SINGLE FREQUENCY



AEROCHECK+ - DUAL FREQUENCY PLUS

- Large, Crisp Daylight Readable Display
- User Friendly Interface and Ergonomic Lightweight Design
- Rotary Capabilities As Standard
- Industry Standard Probe Connectors
- Long running time typically 8 Hours Battery With A Pencil Probe and 6 Hours Battery running time With A Rotary Drive
- Rapid 2.5 hour charging time
- Advanced Features 'Loop', 'Guides' and 'Auto-mix' (AEROCHECK+ only)

AEROCHECK

AEROCHECK+

“ The AEROCHECK Flaw Detector offers the very best in Eddy Current performance with rotary inspection capabilities as standard. ”

INDUSTRY STANDARD PROBE CONNECTORS

The AEROCHECK is able to use a wide range of eddy current probes meeting all the needs of the Aerospace Eddy Current Inspector. Absolute, bridge and reflection connected probes use the industry standard 12 Way LEMO Connector and a LEMO 00 Connector is also provided for simpler connection of absolute probes.

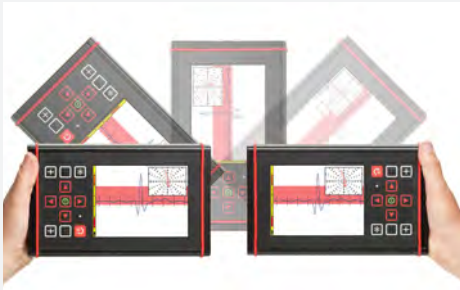


WIDE FREQUENCY RANGE

The single frequency AEROCHECK has a frequency range of 20Hz to 20MHz, whereas the dual frequency AEROCHECK+ offers 10Hz -12.8MHz, ensuring a diverse range of real world applications can be met.

Area of Inspection: Fasteners
Probe: Low Frequency, Slider

WORKS THE WAY YOU DO!



handed technicians but especially useful if the operator is inspecting in a restricted area like the Engine Mounts.

Area of Inspection: Engine Mounts
Probe: Surface

The AEROCHECK has the ability to work in left and right-handed mode; thanks to the “Auto Flip” function. This is not only helpful for left

Engine Blades & Discs
Probe: High Frequency

Window Frames
Probe: High & Low Frequency, Rotary



Area of Inspection: Wing Surface & Hinges
Probe: High & Low Frequency

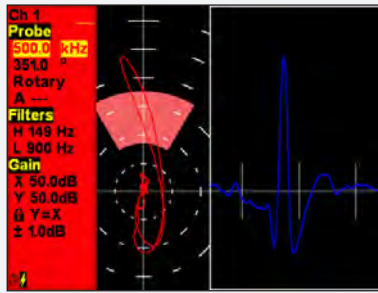
LIGHTWEIGHT, RUGGED, “SURE GRIP” & ENHANCED PROTECTION

Weighing just 1.2kg (2.6lbs), housed in a tough aluminium alloy Mg Si 0.5 powder-coated outer case and fitted with rubber feet to aid grip, the AEROCHECK is as stable on a wing of an aircraft as it is on a laboratory bench.

Both instruments come with built in, moulded “Sure Grip” handles on each side of the instrument stand.

The tough casing is also given enhanced protection as standard with the AEROCHECK+ (optional with the AEROCHECK) with a fully fitted, specially designed outer “boot” and integral hand strap for extra comfort, grip and functionality.





ROTARY CAPABILITIES AS STANDARD

The AEROCHECK includes rotary capabilities as standard and can be used with the ETHER Mercury (mini) ARD002, Hocking 33A100 or the Rohmann MR3/SR1 and SR2 Drives (with special adapter cable).

Area of Inspection: Door Access Points & Window Frames

Probe: Rotary

DAYLIGHT READABLE, SHARP, CLEAR, LARGE, CONFIGURABLE COLOUR SCREEN

The AEROCHECK has a large 14.5cm (5.5 Inches) LCD Colour Screen of 640 x 480 pixels providing the Operator with excellent signal resolution and presentation and with the choice of configuring their own colour schemes and display types. It is easy to optimise the screen presentation regardless of the light conditions and it is possible to view a choice of upto two spot, time-base, waterfall or meter display types.

Not all NDT inspection on aircraft takes place in the comfort of an aircraft hangar so the daylight readable display can be used both in and out of doors.

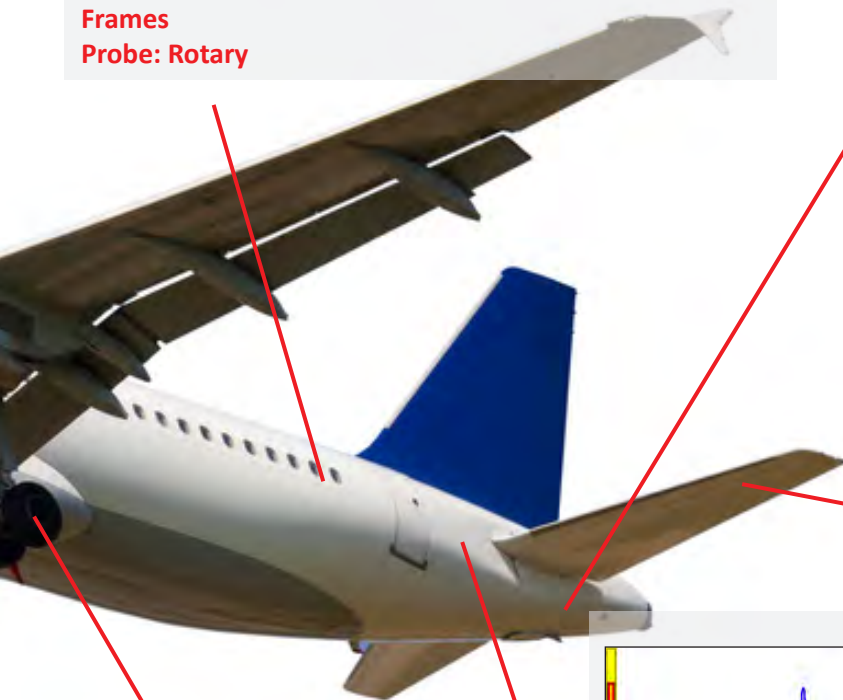
Area of Inspection: Bulkhead

Probe: Low Frequency



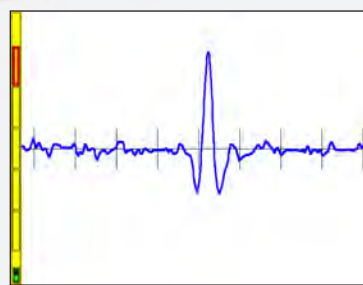
Area of Inspection: Horizontal Stabilisers

Probe: High & Low Frequency



Wheels, Wheel Brakes, Landing Gear

Probe: High Frequency, Rotary

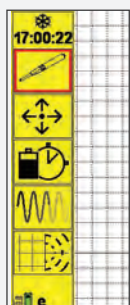


RECORD AND REPLAY

Up to 164 seconds of live data may be recorded in realtime and then played back either on the instrument or on a PC using the desktop application ETHERANALYSER for subsequent analysis and review. The recorded data may be further optimised by adjusting many settings including phase, gain, filters, display and spot position.

Area of Inspection: Fuselage

Probe: Surface & Sub-Surface



EASY TO USE MENUS & ICON SYSTEM

The AEROCHECK menu system is simple and fast to navigate with its ability to add individually selectable soft key menu items to the sidebar as recognisable icons for rapid function access and a quick setting menu for easy set-up, review and adjustment.

With four operator-selectable soft keys and a fifth position for the last menu function used, Operators can quickly set up the system with their preferences. Each saved instrument setting can be associated with a unique, single press set of quick access soft keys. There are also two front panel hard keys that can also be readily programmed for rapid single press access to frequently used functions.

Specifications

AeroCheck & AeroCheck+ Specification

AeroCheck		AeroCheck+	
Probe	Connectors	12 Way Lemo 2b (Absolute, Bridge and Reflection) and Connection Lemo 00 (for single element absolute probes).	Simultaneous probe operation possible using Lemo 12 way and Lemo 00.
	Rotary	600-3000 rpm - ETher Mercury Drive (ADR002), Hocking 33A100, Rohmann MR3, SR1 and SR2 Drive (special adapter needed)	
Frequency		Single Freq. = 20Hz – 20.00 MHz with range variable resolution.	Dual Freq. = 10Hz - 12.8MHz
Gain	Overall Input Drive	-18 to + 100 dB, 0.1, 1 and 6dB steps (100dB maximum) 0dB or 12dB 0dB or 6dB (0dB reference 1mW into 50 ohm).	
	Max X/Y Ratio	+/-100.0 dB 0dB, 6dB and 10dB (0dB reference 1mW into 50 ohm).	
Phase	Range	0.0-359.9°, 0.1° steps	
	Auto Phase	Allows phase angle to be automatically set to a pre set angle	
Filters	Normal High Pass	DC to 2kHz or Low Pass Filter, which ever 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, which ever is lower in 1 Hz 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.	
Alarms	Box Sector Output	Fully configurable, Freeze, Tone or visual. Fully configurable, Freeze, Tone or visual. Open collector transistor (50v dc at 10mA max) available on 12 way lemo.	
Display	Type	5.7” (145mm), 18 bit Colour, daylight readable.	
	Viewable Area	115.2mm (Horizontal) x 86.4mm (Vertical)	
	Resolution	640 x 480 pixels	
	Flip	Manual or automatic screen orrientation change to enable left or right handed use.	
	Colour Schemes Configurable Screen	User configurable Dark, Bright and Black & White 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%	
	Digital Spot	Display in X,Y or R,θ	
	Position Readout		
	Summary	Display of all settings in Legacy Format	
Removable Data Storage	Setup Storage	microSD up to 2GB, holding over 500 saves.	micro SD up to 32GB, holding over 10,000 settings)
	Stored Screen Shots	microSD up to 2GB, holding over 500 saves.	micro SD up to 32GB, holding over 10,000 screen shots)
	Record Replay	Comprehensive Record Replay and Storage Real-time recording of trace data and Replay on instruments and desktop PC up to 164 seconds	
Outputs	PC Connectivity Digital volt free alarm VGA	USB (Full PC remote control plus Real Time data) On Lemo 12 way Open collector transistor (36v dc at 10mA max). Full 15 way VGA output	
Languages		English, French, Spanish, Russian, Japanese, Chinese, Turkish.	
Verification Level		The system includes on delivery a 2 year validity Verification Level 2 detailed functional check and calibration as per ISO 15548-1:2013	
Power on Self Test		The system performs a self test on start up of external ram, sd ram, accelerometer, Micro SD card, LCD screen buffer.	
Power	External Battery	100-240 v 50-60Hz 30 Watts	
	Running Time	Internal 7.2V nominal @ 3100mAh = 22.32 watt.hr Up to 8 hours with a 2MHz Pencil Probe 30% Back Light and up to 6 hours with a Rotary Drive at 3000rpm 50% duty cycle.	
	Charging Time	2.5 hrs. charge time, Simultaneous charge and operation.	
Physical	Weight	1.2 kg, 2.7 lbs.	
	Size (w x h x d)	223 x 141 x 50 mm / 8.8 x 5.6 x 2.0 inches	237.5mm x 144mm x 52mm / 9.4” x 5.7” x 2.1”
	Material	Aluminium alloy Mg Si 0.5 powder-coated	
	Operating Temp Storage Temp IP Rating	-20 to +60 °C Storage for up to 12 months -20 to +35 °C Nominal +20 °C 54	

Additional AeroCheck+ Features Specifications

Probe	Conductivity	Option becomes active with use of AeroCheck+ conductivity probe and cable
Removable Data Storage	Guides	micro SD up to 32GB, holding 10,000 Slides
Advanced Features	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
	Trace	Allows a calibration reference signal to be stored on the screen and then compared with the live signal

Conductivity Specification

Accuracy:	0.5%-10% IACS better than +/-0.05% IACS
	10%-25% IACS better than +/-0.25% IACS
Resolution:	25%-60% IACS better than +/-0.5% IACS
	60%-110% IACS better than +/-1% IACS
	Lift Off corrected to 1.0mm
	No temperature compensation
	All Errors at 90% Confidence Level
	3 decimal points max
	Auto Resolution Mode AutoS = Legacy Instrument,
	Auto = SigmaCheck

Equipment Kits

STANDARD Aero Check Series KIT

IAER001 Instrument, AeroCheck, Single Frequency (20Hz-20MHz), Hand Held Portable Flaw Detector, Software + Manual on USB Stick
AWEL002 AeroCheck, Power Adapter + Input Plugs (UK, EU, US & Australia)
AWEL003 Adjustable Shoulder Strap, Padded with Quick-Release
AC006 Instrument Soft Carry Case
A090 USB Cable, A to MIN B
40449 Quick Reference Card – AeroCheck
ALLCX-M02-015A Lead, Lemo 00 to Microdot, 1.5m (Absolute)
ALL12-L04-015R Lead, Lemo 12-Way - Lemo 4-Way (Reflection)

OPTIONAL ACCESSORIES

AWEL004 Hard Transit Case
AWEL005 Protective Splash Proof Cover / Rope Access (AeroCheck only)
AWEL006 External, 8 x AA Battery Holder with On/Off Switch
AWEL007 Wrist Strap
AWEL008 In car Power Adapter
ALL12-L04-015R Lead, Lemo 12-Way - Lemo 4-Way, 1.5m (Reflection)
ALL12-L04-015B Lead, Lemo 12-Way - Lemo 4-Way, 1.5m (Bridge)
ALLCX-M02-015A Lead, Lemo 00 to Microdot, 1.5m (Absolute)
ALLCX-B02-015A Lead, Lemo 00 to BNC, 1.5m (Absolute)
ARD002 Mercury (mini) Rotary Drive
ALL12-L12-020M Lead to connect Mercury (mini - ARD002) Rotary Drive, Lemo 12-Way, 2m
ALL12-F08-020ETH Adapter, lead to connect Rohmann Rotary Drive MR3, SR1 and SR2, Lemo 12-Way, 2m.
40470 Tripod Bracket To fit 1/4” Camera Tripod Mount with Male Screw

A244 - Hand Strap (AeroCheck+ only)

PROBE KITS

KASUR001 KIT Surface Inspection (4 probes, lead and Al and Fe Test Block)
KASUBS001 KIT Sub Surface Inspection, Low Frequency (2 probes, lead and test piece)
KAROT001 KIT Mercury Rotary Drive and Cable Only
KACON001 - Conductivity Kit (Probe, Calibration and Cable) - (AeroCheck+ only)

AEROCHECK AEROCHECK+

The AEROCHECK SERIES is designed to offer the very best in Eddy Current Performance with the right mix for features for any Eddy Current application need.

ALL POSSIBLE APPLICATIONS COVERED!

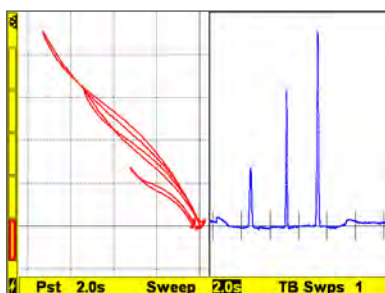
The AEROCHECK and AEROCHECK+ offers maximum flexibility when deciding what features are needed for your application. As well as the hand-held WELDCHECK, AEROCHECK and AEROCHECK+ instruments, the range also offers the **COMPONENTCHECK** for in-line applications.

KEY DIFFERENCES

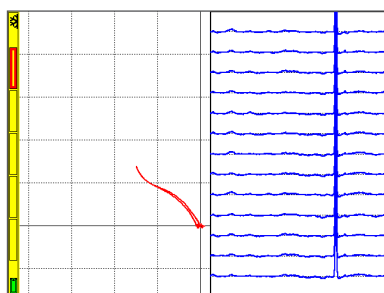
EQUIPMENT	FEATURES								
	ROTARY	DATA RECORDING	DUAL FREQUENCY	CONDUCTIVITY	GUIDES	LOOP	TRACE	ENHANCED PROTECTION	FREQUENCY
AEROCHECK	●	●						✱	10Hz-20MHz
AEROCHECK+	●	●	●	●	●	●	●	●	10-12MHz

● = As Standard ✱ = Optional Extra

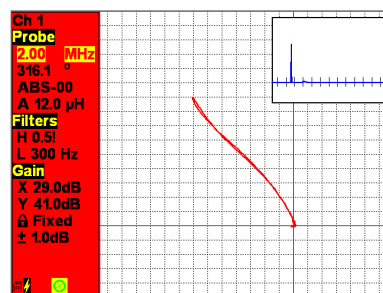
EXCEPTIONAL SCREEN CLARITY FOR ANY APPLICATION



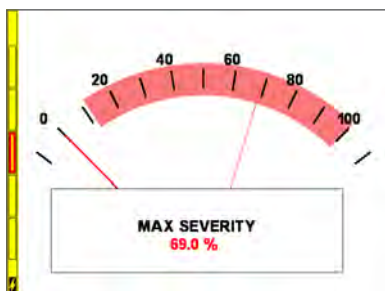
50/50 XY & Timebase (AEROCHECK & AEROCHECK+)



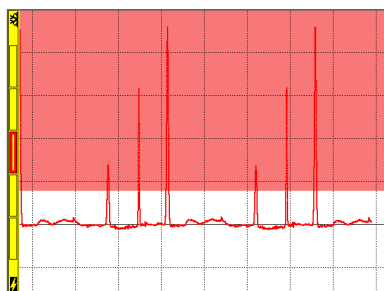
50-50 XY Waterfall with 12 2s time sweeps (AEROCHECK & AEROCHECK+)



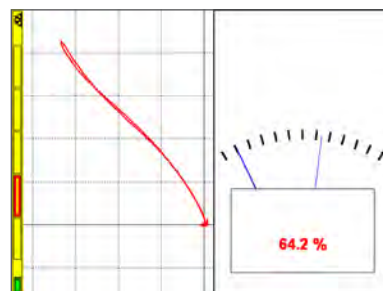
XY with small timebase and Quick Menu (AEROCHECK & AEROCHECK+)



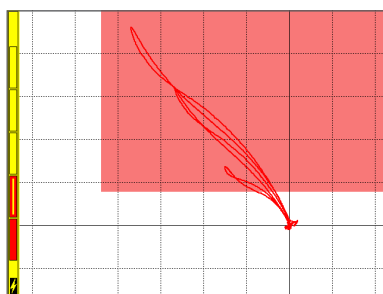
Meter Full Screen (AEROCHECK & AEROCHECK+)



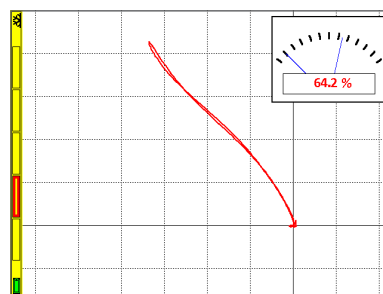
Timebase Full Screen with level arm (AEROCHECK & AEROCHECK+)



XY and Meter 50-50 (AEROCHECK & AEROCHECK+)



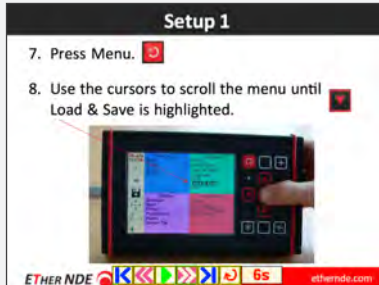
XY Full screen with Box Alarm (AEROCHECK & AEROCHECK+)



XY with Small Meter (AEROCHECK & AEROCHECK+)

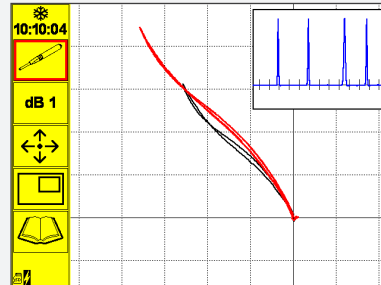
“ The AEROCHECK+ offers all the great features of the AEROCHECK plus Dual Frequency and Conductivity Measurement with useful features such as Auto-Mix, Guides, Loop and Trace. ”

ADDITIONAL FEATURES AVAILABLE ON THE AEROCHECK+



GUIDES FEATURE: “Guides”, allows the user to display a slide show that can be created easily with commonly used desktop software. The benefit of this

feature is that instructions, tutorials and procedures for the inspection can be added to the AEROCHECK+ very quickly and the NDT inspector can easily switch between the inspection itself and the “Guides” while performing a live test.

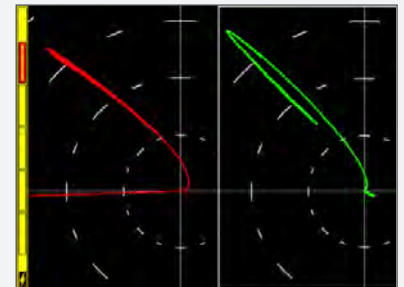


TRACE FEATURE: The trace function allows a reference waveform to be stored on the screen and appears along with the live spot. This allows the operator to readily compare the live data with the reference calibration.

“LOOP” FEATURE: “Loop” is a convenient way of capturing a short live repetitive signal and then optimizing the instrument settings through real time adjustments of the Phase, Gain, Balance, Filters and Display Configuration in order to simplify the task of optimising the parameters.

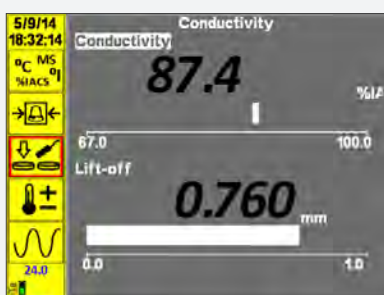
The “Loop” function is excellent for calibration set up especially for setting the filters for Rotary and Dual Frequency mix.

DUAL FREQUENCY FEATURE: At different frequencies, different signal indications (e.g. lift off and defect) have a different relative phase and amplitude response. By means of phase rotation and Gain change of the X Y signal components one of these indications can be manipulated to be nearly the same in phase and amplitude as the other and then by subtraction (mixing), the unwanted component is minimised, giving an improved detection of the unwanted signal. This is achieved through using the Dual Frequency feature.



AUTO-MIX FEATURE: A dual frequency mix exploits the phase and sensitivity change between two different types of indication to suppress one and enhance the other.

Auto-mix simplifies the sometimes complex procedure of mixing two different frequency signals and can be achieved on the AEROCHECK+ through a series of easy steps. Ultimately once set up, the Auto-mix itself is as simple as pressing one key.



CONDUCTIVITY MEASUREMENT: Many of the Aerospace procedures require that Conductivity Measurement is available on the designated Eddy Current Flaw Detector.

When plugging in the Conductivity Probe, the AEROCHECK initiates its Auto-Detect function to instantly recognise the probe making it a quick and simple process to switch between flaw detection and conductivity measurement modes.