

**GEN<sup>3</sup>**  
**SYSTEMS**

**AutoCAF<sup>2+</sup>**  
Conductive Anodic Filament Monitoring System

Introducing the next generation AutoCAF<sup>2+</sup> system from Gen3 Systems

Measuring resistance changes derived through Electrochemical Migration (ECM)

Features:

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Measurement Time: <10 seconds to scan, measure, and display all 256 channels

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Applied Voltage: +1V to 1250V

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Measurement Range:  $10^6 \Omega$  to  $10^{14} \Omega$

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Measurement Method: Continuous on all selected channels

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Measurement Test Intervals: Fully selectable from a minimum of 30 seconds

# Conductive Anodic Filament Monitoring System



Following over 2 years of intense research and development we are proud to introduce the next generation instrument used to measure Surface Insulation Resistance (SIR) and Conductive Anodic Filaments (CAF).

## NEW Gen3 Systems AutoCAF 2+

Our new instrument has: High voltage capability, new software user interface, new low noise measurement capability, ability to run multiple voltage tests simultaneously.

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# GEN 3 – Continuing to set the standard

Aside from “conventional” SIR and CAF testing, industry trends impacting on reliability and testing announced in 2018 now demand:

**Automotive:** ISO PASS 19295:2016(E) Electric Vehicle developments

- High Voltage – Low Current = 470V to 1,250V @ 10 to 50 Amp
- Low Voltage – High Current = 48V @ 300 to 1200 Amp

## Micro-electronic circuits

- Ultra Low Voltage / Current = < 2V with ultra- fine pitch ~50µm or less

To meet these demands requires far greater test flexibility with measurement capability to pA levels.

## NEW bespoke software

Simultaneously run 3 different voltages directly from the unit

The user can select 3 from the following: 0V; 3.3V; 5V; 10V; 12.5V; 15V; ±50V, ±100V

As an example, and based upon our standard 16 channel measurement boards, this would permit an AutoSIR 2+ 256 or AutoCAF 2+ 256, to employ 144 channels split as 48 channels at 15V; 48 channels at 50V and 48 channels at 100V running simultaneously. The remaining 112 channels could, via an external power supply, run other voltages >100V simultaneously. With this configuration, coupled with the CLR1250 BRIDGE, up to 1250V simultaneous testing can be achieved.

## The AutoCAF 2+ continues to feature:

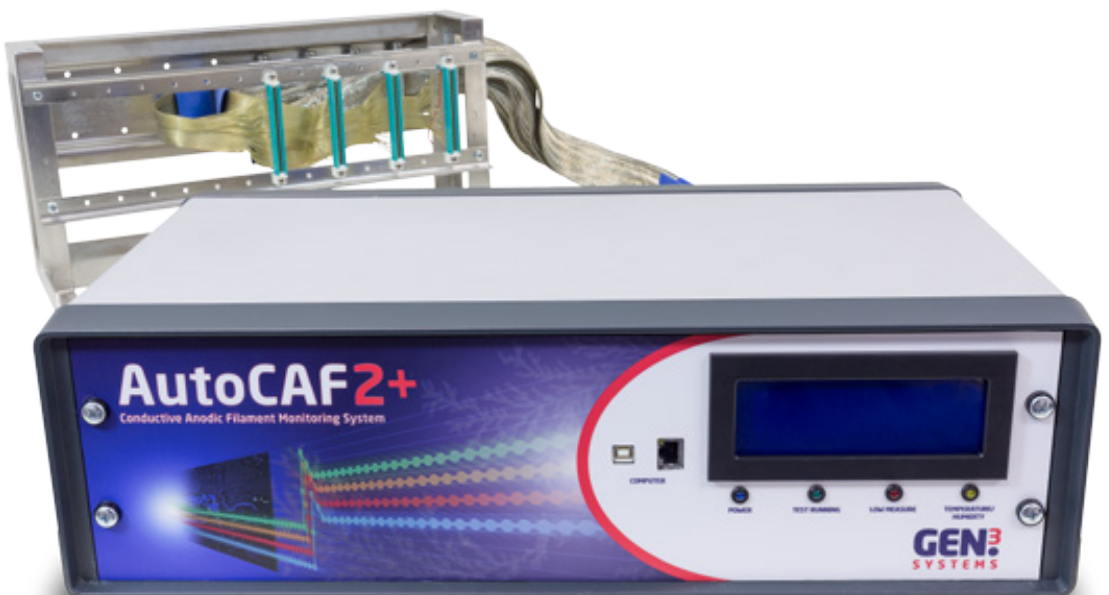
- No switching: When the measurement and test bias are the same, no switching takes place as the voltages are continuously applied
- Fast data acquisition: Measurement per channel is less than 15 milliseconds
- Flexibility: Capable of testing to all existing test specifications IPC - IEC - JNC and other user specifications
- Future-proofed design
- Adaptable and flexible software operating with Windows 10
- A measurement range of  $10^6$  to  $10^{14} \Omega$  @100V remains at the heart of the systems.

Each measurement channel is current limited (1 M $\Omega$ ), ensuring that Electrochemical Reactions (Dendrites) are preserved for subsequent failure analysis. The frequent monitoring capability provides a full picture of the electrochemical reactions taking place in the circuit board, and provides early trend analysis enabling tests to be curtailed, thus saving considerable test time and money.

This latest instrument design minimises channel-to-channel leakage. This is important because, the extremely low levels of current involved in SIR & CAF measurement means that any stray currents (including electromagnetic noise or leakage between wire insulations) can significantly affect measurement accuracy.

Independent temperature-humidity monitoring records the environmental conditions next to the coupon under test, as the data is gathered, for more accurate data analysis.

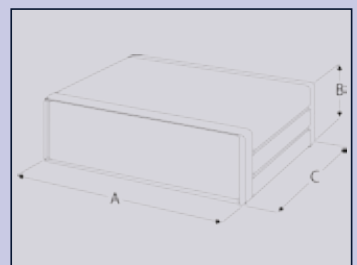
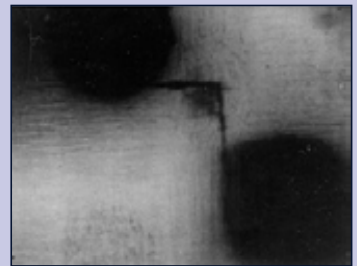
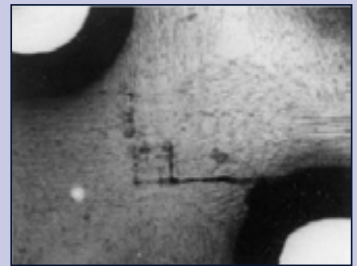
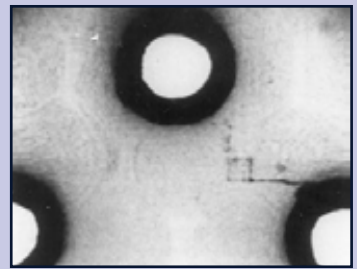
AutoCAF 2+ is available with 64 or 128 or 256 channel configurations.



*AutoCAF 2+ with optional test rack*

# Specifications

Applied Voltage	+1V to 1250V External Presets: 0V; 3.3V; 5V; 10V; 12.5V; 15V; ±50V, ±100V
Number of Channels	64 or 128 or 256
Measurable range of insulation resistance	$10^6$ to $10^{14}\Omega$
Internal Bias Voltage	AutoCAF 2+ has Built-in Bias Power Supply equipped with: 0V; 3.3V; 5V; 10V; 12.5V; 15V; ±50V, ±100V
External Bias Voltage	1V to 100V Free selection External 1V to 1250V
Maximum Test Duration	Unlimited
Measurement Method	Continuous on all selected channels
Measurement Test Intervals	Fully selectable from minimum of 30 seconds
Measurement Time	<15ms/channel
Current measuring cable	Fully shielded
Alarms	Low resistance Test Running Bias Voltage Out of Range / Failure Temperature Humidity out of range
Data collection	Sampling Time, Elapsed Time, Resistance, Current, Applied Voltage, Temperature, Humidity
Applicable OS	Windows® 7 onwards
Power source	110V / 230V Switchable mains single phase
Dimensions	[A] 515mm (20½") [B] 170mm (6½") [C] 390mm (15")
Weight	10.5 kgs (37 lbs)



\* Testing at higher voltages than the machine can provide requires the use of an external power supply that is NOT part of our scope of supply.

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