CHAUVIN® ARNOUX
CHAUVIN ARNOUX GROUP

C.A 6505
C.A 6545
C.A 6547
C.A 6549

The insulation experts at 5 kV

Megohmmeters

- ***Large measurement range from 10 kΩ to 10 TΩ***
- ***Large backlit LCD screen, with digital display and bargraph***
- ***Fixed test voltages and programmable test voltages from 40 V to 5,100 V***
- ***Quantitative and qualitative insulation analysis***
- ***Automatic calculation of the DAR / PI / DD quality ratios***
- ***Step voltage mode***
- ***Calculation of the result R at a reference temperature***

INDUSTRY

Testing and maintenance of industrial equipment

Performance in the field...

In their site-proof casing suitable for the severest measurement conditions, the C.A 6505, C.A 6545, C.A 6547 and C.A 6549 megohmmeters offer you the best in insulation testing in terms of accuracy and expertise.
As soon as they are connected, they measure voltages, frequencies, capacitances and residual currents on the installation or equipment to be tested.
With their multiple functions, they not only qualify the insulation measured, but also ensure genuine preventive maintenance.

Accessories for all situations

The C.A 6545, C.A 6547 and C.A 6505 megohmmeters are delivered as standard with a bag containing 3 m leads terminated with large, fully-insulated, built-in crocodile clips: 2 measurement leads and an earth cable for high insulation measurements.

Simplified leads terminated by a 4 mm banana plug are also available as an option for connecting small crocodile clips or test probes.

The C.A 6505 megohmmeter is also delivered in a bag, with 2 measurement leads 2 m long, crocodile clips and 2 guarded safety leads.

In-depth expertise ...

Main applications

- Insulation measurement on cables, motors, generators, transformers…

  2 levels of diagnostics:
  – "Go/No go" measurement
  – Qualitative measurement for preventive maintenance:
    - Testing with programmed duration
    - Quality ratios: polarization index (PI) & dielectric absorption ratio (DAR)
    - Insulation testing on heterogeneous or multi-layer cables (dielectric discharge index)
    - Step voltage
- Locking of test voltages: ideal when entrusting the instrument to less experienced users
- Measurement voltage selectable from 40 to 5,100 V to deal with all types of measurement situations
- Possibility of storing the results in the memory and exporting the data by means of software to keep a log of the measurements (C.A 6547 / C.A 6549)

"THEORETICAL" REMINDER

Reduced insulation may be due to slow, gradual deterioration over a long period of time, but also due to sudden damage. The effects of humidity, dirt, corrosion, penetration by chemicals and even vibrations can all cause this sort of deterioration. Its effects are easy to document using the quality ratios (PI-DAR-DD) available on the whole range of 5 Kv insulation testers. Comparison of the insulation values over time provides crucial information for preventive maintenance of machines.

This preventive maintenance is essential at 2 levels:
1. Safety: minimizing the risk of short-circuits
2. Cost: avoiding the failure of important equipment leading to high costs in terms of production down-time, production losses and repairs.

POLARIZATION INDEX (PI) & DIELECTRIC ABSORPTION RATIO (DAR)

Insulation is sensitive to temperature and humidity variations. In addition, measurement is affected by the appearance of disturbance currents. To overcome these effects, long-term measurements must be performed and the PI and DAR coefficients must be calculated. They will then allow qualification of the insulants and their ageing.

DIELECTRIC DISCHARGE INDEX (DD)

This test measures the dielectric absorption of a heterogeneous or multi-layer insulant and will reveal the presence of impurities or a faulty layer.

$$DD = \frac{\text{Current measured after 1 min (mA)}}{\text{Test voltage (V) x Capacitance measured (F)}}$$

Var 50-5,000 V SETTING

To deal with the whole range of measurement situations (electrical equipment, telecom installations, etc.) and measure as accurately as possible, all 3 instruments offer the possibility of selecting the test voltage by means of the Var 50-5,000 V setting on the rotary switch. The voltage can be adjusted between 40 V and 1,000 V in 10 V increments and between 1,000 V and 5,100 V in 100 V increments.

PROGRAMMABLE ALARMS

A high or low alarm threshold can be memorized. If there is an overrun, a visual warning is triggered and a buzzer sounds.

STORAGE (C.A 6547 and C.A 6549)

The C.A 6547 and C.A 6549 have an internal memory for storing several thousand measurements. Storage is performed with two indices, OBJ (object) and TEST (test), which store the results in an ordered way.

STEP VOLTAGE (C.A 6549)

The resistance of a faulty insulant gradually decreases as the test voltage rises. This test, which involves increasing the test voltage in steps, can be used to assess the quality of the insulant by observing the curve R(Utest) and the result in ppm/V which provides a quantitative evaluation of the curve's slope.

TEST WITH PROGRAMMABLE DURATION

Insulation measurements sometimes take a long time to stabilize because of transient disturbance currents. By carrying out long-term measurements and analysing the trend curve of the insulation according to the test voltage application time, you can obtain a better assessment of insulant quality.

GRAPH R(t)

If a programmed-duration test is carried out, the instruments automatically store the samples concerning the insulation tested, at the rate chosen by the user. The curve R(t) can be plotted by hand on the basis of the results, or on screen via the DATA*VIEWER* software.
With the C.A 6549, it is also possible to view the curve directly on the graphic screen.

SMOOTH FUNCTION

When the measurements are unstable, the Smooth function can be used to smooth the display of the insulation values so that they are easier to read and can be interpreted more quickly.

PRINTER (C.A 6547 and C.A 6549)

A compact serial printer can be connected for direct printouts on site. It is also possible to use a desktop parallel printer with a series/parallel adapter available as an accessory.

REFERENCE TEMPERATURE (C.A 6549)

The value of an insulation resistance varies according to the measurement temperature.
For accurate, reliable monitoring, it is always a good idea to express a measurement result in terms of a reference temperature. By simply pressing a button, the calculation can be performed automatically by the instrument.

DATAVIEW SOFTWARE

This software recovers the stored data, plots the trend curve R(t), prints the customized test protocols and creates files for spreadsheet software.
DataView can also configure and control the instrument via an RS232 link!

SPECIFICATIONS

	C.A 6505	C.A 6545	C.A 6547	C.A 6549
Metrology				
INSULATION	Fixed test voltages: 500 / 1,000 / 2,500 / 5,000 V Adjustable test voltage: 40 V to 5,100 V in 10 or 100 V increments Ranges: 500 V: 10 kΩ to 2 TΩ 1,000 V: 10 kΩ to 4 TΩ 2,500 V: 10 kΩ to 10 TΩ 5,000 V: 10 kΩ to 10 TΩ			
VOLTAGE	1 to 5,100 V (15 Hz to 500 Hz or DC)			
CAPACITANCE	0.001 to 49.99 F			
LEAKAGE CURRENT	0.000 nA to 3,000 A			
Functions				
Display	Giant LCD			Graphic
Backlighting	YES			
Programmable alarms	NO	YES		
Smoothing of display	NO	YES		
Prog. test duration	YES			
Calculation of ratios	DAR - PI	DAR - PI and DD		
Step voltage mode	NO			5 steps
Calc. of R at reference T°	NO			YES
Locking of test voltage	YES			
R(t)	NO	Recording of samples		Directly on the display
Storage	NO		128 kB	
RS 232	NO		Two-way	
Printing of measurements	NO		Serial or parallel printer	
PC software	NO		DataView®	
Power supply	Rechargeable NiMH battery			
Battery life	30 days with 10 DARs and 5 PIs / day			
Electrical safety	IEC 61010-1 (Cat. III 1,000 V or Cat. I 2,500 V) and 61557			
Dimensions	270 x 250 x 180 mm			
Weight	4.3 kg			

TO ORDER

• **C.A 6505 Megohmmeter** **P01139704**
Delivered with a carrying bag containing:
• 2 simplified measurement leads 2 m long, equipped with an HV plug at each end (red / blue)
• 1 guarded safety lead 2 m long, equipped with an HV plug at one end and an HV plug with rear connection at the other end (black)
• 1 guarded safety lead 0.35 m long, equipped with an HV plug at one end and an HV plug with rear connection at the other end (blue)
• 3 crocodile clips (red, blue and black)
• 1 mains power cable 1.80 m long
• 1 operating manual in 5 languages

C.A 6545 Megohmmeter **P01139701**
Delivered with a carrying bag containing:
• 2 safety leads 3 m long with HV plug and HV crocodile clip (red/blue)
• 1 guarded safety plug 3 m long with an HV plug with rear connection and an HV crocodile clip (black)
• 1 lead with rear connection (blue) 0.35 m long
• 1 mains power cable 2 m long
• 1 simplified operating manual
• 1 operating manual in 5 languages

C.A 6547 Megohmmeter **P01139702**
C.A 6549 Megohmmeter **P01139703**
Delivered with a carrying bag containing:
• 2 safety leads 3 m long with HV plug and HV crocodile clip (red/blue)
• 1 guarded safety plug 3 m long with an HV plug with rear connection and an HV crocodile clip (black)
• 1 lead with rear connection (blue) 0.35 m long
• 1 mains power cable 2 m long,
• 1 communication lead,
• 1 simplified operating manual
• 1 operating manual in 5 languages

For assistance and ordering

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