

## Experts in insulation analysis at 5kV

C.A 6545

C.A 6547

C.A 6549

Megohmmeters



Photo: "Factory in Choisy-le-Roy: property of Syndicat des Eaux d'Ile-de-France"

- ☒ Giant backlit LCD or graphic screen
- ☒ 10 k  $\Omega$  to 10 T  $\Omega$  range
- ☒ Test voltages: 40 to 5100 V
- ☒ Step voltage mode
- ☒ Automatic calculation of DAR, PI and DD quality ratios
- ☒ R result recalculated to a reference temperature

# Built for use on site!

In a hard casing that is site-adapted for the most severe measuring conditions, the C.A 6545, C.A 6547 and C.A 6549 megohmmeters offer the very best in insulation testing technology and accuracy.

They measure voltages, frequencies, capacitance and residual current on installations or equipment.

Their multiple functions not only qualify the measured insulation, but also provide real preventative maintenance.

Site-proof casing with sealed (IP 53) shock resistant cover

Socket for AC mains connection and internal NiMH battery charger

Folding handle for storing

RS 232 for PC or printer connection (C.A 6547 and C.A 6549)

Backlit graphic display with messages, symbols and bargraph

C.A 6545 and C.A 6547 with giant LCD screen

## Accessories for all measurement conditions



The C.A 6545, C.A 6547 and C.A 6549 megohmmeters are supplied with a tool bag containing perfectly insulated and large-sized crocodile clamp leads (3 m); 2 measurement leads and a guarded lead for strong insulation measurements.

Simplified banana plug leads (4 mm) are used for adapting small-sized crocodile clips or test probes, available as accessories.

# A sure expert!

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

Insulation is sensitive to variations in temperature and hygrometry. The measurement is initially inaccurate due to unwanted currents. To eliminate their influence, it is necessary to measure for a long period of time and calculate with PI and DAR coefficients. These calculations are used to qualify the quality and the aging of the insulation.

\* To adapt to possible normative changes or a specific application, the 10 mn and 1 mn times for calculating PI can be changed in the instrument's SET-UP.

| PI = R10 mn / R1 mn* | DAR = R1 mn / R30 s | Insulation quality |
|----------------------|---------------------|--------------------|
| < 1                  | < 1.25              | Dangerous          |
| 1 to 2               |                     | Inadequate         |
| 2 to 4               | 1.25 to 1.6         | Good               |
| > 4                  | > 1.6               | Excellent          |

## DIELECTRIC DISCHARGE INDEX (DD)

This test measures the dielectric absorption in heterogeneous and multi-layer insulation and reveals any impurities or defective layers. Principle: after the insulation has been energized for a certain time (500 V for 30 mn is recommended), its capacitance is measured; then 1 mn later, the residual current is measured.

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

| DD value | Insulation quality |
|----------|--------------------|
| > 7      | Very poor          |
| 4 to 7   | Poor               |
| 2 to 4   | Inadequate         |
| < 2      | Good               |

## Var 50-5000 V POSITION

To satisfy all measurement needs (electric switchgear, telecom installations) and measure as accurately as possible, the test voltage can be selected on all three instruments with the Var 50-5000 V position on the rotary switch. Voltage can be adjusted between 40 V and 1000 V in 10 V steps and between 1000 V and 5100 V in 100 V steps.

## TIME-CONTROLLED TESTING

Insulated measurements sometimes take a long time to stabilize due to transient unwanted currents. Being able to carry out measurements over a long period of time and analyze the insulation's curve as a function of the test voltage application time gives a better understanding of the quality of the insulation.

## R(t) GRAPH

When a time-controlled test is begun, the instruments automatically memorize measured insulation samples at a rate specified by the operator. The R(t) curve can then be plotted out by hand or on a PC screen using DATAVIEWER software. For the C.A 6549, the curve can also be viewed directly on the graphic screen.

## LOCKING INSULATION TEST VOLTAGES

It is possible to limit the test voltage to a unique value regardless of the chosen test voltage. This locking function is used for when the instrument is entrusted to someone who is less experienced and for avoiding procedural errors on sensitive installations or equipment.

## SMOOTH FUNCTION

When measurement values are unstable, this function smoothes out the values displayed, making them easier to read and quicker to interpret.

## PROGRAMMABLE ALARMS

A high or low alarm threshold can be stored. If exceeded, a visual warning signal and an audible buzzer will go off.

## MEMORIZATION (C.A 6547 and C.A 6549)

The C.A 6547 and C.A 6549 have an internal memory for storing several thousand measurements. Measurements are stored by classification according to the object (OBJ) and test (TEST) address for systematic memory storage of tests.

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

A compact serial printer can be connected for printing directly on-site.

It is also possible to use a parallel office printer via the serial-to-parallel adapter accessory.



## DATAVIEWER PRO SOFTWARE (C.A 6547 and C.A 6549)

This software provides data recovery and processing, test protocol printing and customizing, as well as configuring and driving the C.A 6547 and C.A 6549 via the connection. This software is also compatible with all other Chauvin Arnoux instruments equipped with a communication output.



## STEP VOLTAGE (C.A 6549)

The resistance of a faulty insulation decreases as the test voltage increases. In this test, the test voltage is increased in steps. Thus it is possible to judge the quality of the insulation by its R curve ( $R_{\text{test}}$ ) and the ppm/V result which quantitatively translates the slope of the curve.

## REFERENCE TEMPERATURE (C.A 6549)

The value of the insulation resistance varies according to measurement temperature. For accurate and reliable follow-up, it is advisable to always recalculate the measurement result to the same reference temperature. Simply press on the key  $T_{\text{ref}}$ , and the C.A 6549 makes this calculation.

|                          | C.A 6545  | C.A 6547                      | C.A 6549           |
|--------------------------|---|-------------------------------|--------------------|
| <b>Metrologie</b>        |   |                               |                    |
| INSULATION               | Pre-set test voltage: 500 / 1000 / 2500 / 5000 V<br>Adjustable test voltage: 40 V to 5100 V by increments of 10 or 100 V<br>Range: 10 $\text{k}\Omega$ to 10 $\text{T}\Omega$ |                               |                    |
| VOLTAGE                  | from 1 to 5100 V (15 Hz to 500 Hz or DC)  |                               |                    |
| CAPACITANCE              | 0.005 to 49.99 $\mu\text{F}$  |                               |                    |
| LEAKAGE CURRENT          | 0.000 nA to 3000 $\mu\text{A}$  |                               |                    |
| Display                  | Giant LCD   |                               | Graphic            |
| Backlighting             | yes   |                               |                    |
| Programmable alarms      | yes   |                               |                    |
| Smooth                   | yes   |                               |                    |
| Prog. test duration      | yes   |                               |                    |
| Ratio calculations       | DAR - PI and DD   |                               |                    |
| Step voltage mode        | no  |                               | 5 steps            |
| R calcul to T° reference | no  |                               | yes                |
| U test locking           | yes   |                               |                    |
| R(t)                     | Samples recording   |                               | Displayed directly |
| Memory                   | no  | 128 Kbytes                    |                    |
| RS 232                   | no  | Bi-directional                |                    |
| Result print out         | no  | On serial or parallel printer |                    |
| PC software              | no  | DataViewer                    |                    |
| Power supply             | Rechargeable NiMH battery   |                               |                    |
| Charge life              | 30 days with 10 DAR and 5 PI / day  |                               |                    |
| Electrical safety        | IEC 61010-1 (Cat. III 1000 V or Cat. I 2500 V) and 61557  |                               |                    |
| Dimensions               | 270 x 250 x 180 mm  |                               |                    |
| Mass                     | 4.3 kg  |                               |                    |

#### TO ORDER

|          |             |
|----------|-------------|
| C.A 6545 | P01.1397.01 |
| C.A 6547 | P01.1397.02 |
| C.A 6549 | P01.1397.03 |

Delivered complete with tool bag containing accessories:

- ❑ 2 x 3 m HV measurement leads with crocodile clip (blue + black)
- ❑ 1 x 3 m HV guard lead with black crocodile clip
- ❑ 1 x 3 m rear pick up lead, 0,35 m (blue)
- ❑ 1 x 2 m power supply lead
- ❑ 1 user's manual in 5 languages

#### ACCESSORIES

|  |                   |
|--|-------------------|
| ❑ Data ViewerPro PC software                 | P01.1020.06       |
| ❑ Serial printer                             | P01.1029.03       |
| ❑ Serial-to-parallel adapter                 | P01.1019.41       |
| ❑ Set of 2 simplified HV leads (red + black) | P01.2952.31       |
| ❑ Set of 2 crocodiles clips (red + black)    | P01.1018.48A      |
| ❑ Set of 2 test probes (red + black)         | P01.1018.55A      |
| ❑ HV leads: 8 m or 15 m                      | Please contact us |
| ❑ C.A 861 K-type Thermocouple Thermometer    | P01.6501.01Z      |
| ❑ C.A 846 Thermo-hygrometer                  | P01.1563.01Z      |

