

# CA 6505, CA 6545, CA 6547 & CA 6549

## 5kV insulation testers



## Checking and maintenance of electrical machines and equipment

- Large measurement range from 10 k $\Omega$  to 10 T $\Omega$
- 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

1000 V  
CAT III

IP53

IEC  
61557



Measure up



# Performance in the field...

*In a hard casing which is site-adapted for the most severe measuring conditions, the CA 6545, CA 6547 and CA 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 preventive 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



USB for connection to a PC  
or printing via a terminal  
(CA 6547 & CA 6549)

Backlit graphic  
display with messages,  
symbols and bargraph



CA 6545 and CA 6547  
with giant LCD screen

## Accessories for all measurement conditions



The CA 6505, CA 6545, CA 6547 and CA 6549 megohmmeters are delivered as standard with a bag and leads 3 m long terminated by built-in isolated HV crocodile clips.

The shape of these HV crocodile clips is optimized for perfect contact when connected to objects with different geometrical forms.

Available as an option: simplified cables terminated by a 4 mm banana plug for plugging in small crocodile clips or test probes.

# In-depth expertise...

## Main applications

- Insulation measurement on cables, motors, generators, transformers, etc.
  - 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 (DD))
    - Ramp by voltage steps
- 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 (CA 6547 / CA 6549).

### "THEORETICAL" REMINDER

Reduced insulation may be due to slow, gradual deterioration over a long period of time, but may also result from 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.



### 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 (CA 6547 and CA 6549)

The CA 6547 and CA 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.



### VOLTAGE-STEP RAMP (CA 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 DATAVIEWER software. With the CA 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 (CA 6547 and CA 6549)

A USB serial drive or a PC can be hooked up for transmission to a printer. It is also possible to use a USB printer printing ASCII.



### REFERENCE TEMPERATURE (CA 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 a USB link!

# SPECIFICATIONS

	CA 6505	CA 6545	CA 6547	CA 6549
<b>Metrology</b>				
<b>Insulation</b>	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			
<b>Voltage</b>	1 to 5,100 V (15 Hz to 500 Hz or DC) during the test, 1 to 2,500 VDC - 15...500 Hz / 2,500 - 4,000 VDC before the test			
<b>Capacitance</b>	0.001 to 49.99 F			
<b>Leakage current</b>	0.000 nA to 3,000 A			
<b>Functions</b>				
<b>Display</b>	Large graphical LCD			Graphic
<b>Backlighting</b>	Yes			
<b>Programmable alarms</b>	No	Yes		
<b>Smoothing of display</b>	No	Yes		
<b>Prog. test duration</b>	Yes			
<b>Calculation of ratios</b>	DAR - PI	DAR - PI and DD		
<b>Prog. test duration</b>	No			5 steps
<b>Calculation of R referenced T°</b>	No			Yes
<b>Locking of test voltage</b>	Yes			
<b>R(t)</b>	No	Recording of samples		Directly on the display
<b>Storage</b>	No	128 kB		
<b>Communication</b>	No	Two-way		
<b>Printing of measurements</b>	No	Serial or parallel printer PC software		
<b>PC software</b>	No	Megohmmeter Transfer (Standard) - DataView® (option)		
<b>Power supply</b>	Rechargeable NiMH battery			
<b>Battery life</b>	30 days with 10 DARs and 5 PIs / day			
<b>Electrical safety</b>	CEI 61010-2-030 Cat. III 1,000 V or Cat. I 2,500 V) and 61557			
<b>Dimensions</b>	270 x 250 x 180 mm			
<b>Weight</b>	4.3 kg			

## To order

CA 6547 megohmmeter.....P01139712

CA 6549 megohmmeter.....P01139713

Delivered with a carrying bag containing:

- 2 HV safety leads, one red and one blue, length 3 m, equipped with an HV plug at one end and an HV crocodile clip at the other end.
- 1 black guarded HV safety lead, length 3 m, equipped with an HV plug with rear connection at one end and an HV crocodile clip at the other end.
- 1 blue guarded HV safety lead, length 0.35 m, equipped with an HV plug at one end and an HV plug with rear connection at the other end.
- 1 mains power cable 1.80 m long
- 8 simplified user's manuals (CA 6547)
- 1 USB drive containing the user's manuals (1 file per language) and the MEG application software
- 1 USB-A / USB-B cable

### Replacement parts

- Red guarded high-voltage cable 3 m long with crocodile clip.....P01295510
- Blue guarded high-voltage cable 3 m long with crocodile clip.....P01295506
- Black guarded high-voltage cable 3 m long with crocodile clip.....P01295513
- 1 blue high-voltage cable 0.35 m long with rear connection.....P01295516
- Bag no. 8 for accessories.....P01298066
- Fuse FF 0.1 A - 380 V - 5x20 mm - 10 kA (set of 10).....P03297514
- 9.6 V - 3.5 AH - NiMH rechargeable battery.....P01296021
- 2P mains power cable.....P01295174
- USB type A-B cable.....P01295293
- CA 1821 1-channel TC thermometer - K-I-T-E-N.....P01654821
- CA 1246 thermo-hygrometer.....P01654246

CA 6505 megohmmeter.....P01139714

CA 6545 megohmmeter.....P01139711

Delivered with a carrying bag containing:

- 2 HV safety leads, one red and one blue, length 3 m, equipped with an HV plug at one end and an HV crocodile clip at the other end.
- 1 black guarded HV safety lead, length 3 m, equipped with an HV plug with rear connection at one end and an HV crocodile clip at the other end.
- 1 blue guarded HV safety lead, length 0.35 m, equipped with an HV plug at one end and an HV plug with rear connection at the other end.
- mains power cable 1.80 m long
- 8 simplified user's manuals (CA 6547)
- 1 USB drive containing the user's manuals (1 file per language)

### Accessories

- Blue high-voltage cable 8 m long with crocodile clip.....P01295507
- Red high-voltage cable 8 m long with crocodile clip.....P01295511
- Guarded high-voltage cable 8 m long with black crocodile clip with rear connection.....P01295514
- Guarded high-voltage cable 15 m long with blue crocodile clip.....P01295508
- Guarded high-voltage cable 15 m long with red crocodile clip.....P01295512
- Guarded high-voltage cable 15 m long with black crocodile clip with rear connection.....P01295515



**FRANCE**  
**Chauvin Arnoux**  
 12 - 16 rue Sarah Bernhardt  
 92600 Asnières-sur-Seine  
 Tél : +33 1 44 85 44 85  
 Fax : +33 1 46 27 73 89  
 info@chauvin-arnoux.fr  
 www.chauvin-arnoux.fr/com

**UNITED KINGDOM**  
**Chauvin Arnoux Ltd**  
 Waldeck House - Waldeck Road  
 MAIDENHEAD SL6 8BR  
 Tel: +44 1628 788 888  
 Fax: +44 1628 628 099  
 info@chauvin-arnoux.co.uk  
 www.chauvin-arnoux.com

**MIDDLE EAST**  
**Chauvin Arnoux Middle East**  
 P.O. BOX 60-154  
 1241 2020 JAL EL DIB (Beirut) - LEBANON  
 Tel: +961 1 890 425  
 Fax: +961 1 890 424  
 camie@chauvin-arnoux.com  
 www.chauvin-arnoux.com

