CHAUVIN ARNOUX

CA 6541 & CA 6543

Insulation Testers



Expertise in 1 kV insulation testing

- Large, backlit LCD screen with digital display + bar graph
- Range from 2 kΩ to 4 TΩ
- Automatic calculation of insulation quality ratios (DAR, PI)
- R(t) curve plotting
- Memory / RS232 / rechargeable battery (CA 6543)

IP 54 | 600 V CAT III | RS 232

CE | DataView | 💾

Measure up

DEVICES DESIGNED FOR THE FIELD!

Housed in their compact, field-ready cases, the CA 6541 and CA 6543 megohmmeters offer you the best in insulation testing. These devices feature highly advanced functions for insulation testing (from 50 V to 1,000 V up to 4 TΩ) and for AC/DC voltage measurements, continuity testing (up to 200 mA), resistance, capacitance, and more... The CA 6543 model also features a rechargeable battery, memory, and an RS232 interface for controlling the device from a PC or for transferring stored data and processing it using specially developed software.



REMOTE CONTROL PROBE

The remote-control probe is an optional accessory specifically designed to simplify and speed up field testing.With a single press of the probe's button, the user can start and stop measurements.

Equipped with a light, this probe also effectively illuminates the area around the measurement point (approximately 500 lux). Combined with the backlight on the megohmmeter's display, measurements can be taken at any time of day and in any season.



This handy accessory pouch attaches to the case lid with four snap fasteners.



THE EXPERTS IN INSULATION TESTING FROM 50 V TO 1 KV!

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

On rotating machinery, insulation testing can be skewed at startup by transient parasitic currents that interfere with the measurement before canceling each other out. To eliminate their influence, a long-duration measurement must be performed. The absolute insulation value recorded at the end of the measurement and the calculation of the PI and DAR coefficients make it possible to assess the quality of the insulation and its aging.

PI = R10min / R1min	DAR = R1min / R30s	Insulation Quality
< 1 or < 2	< 1.25	Insufficient, even dangerous
From 2 to 4	From 1.25 to 1.6	Good insulation
> 4	> 1.6	Excellent insulation

PROGRAMMABLE TEST DURATION

Insulation measurements sometimes take a long time to stabilize due to transient stray currents. The ability to perform long-duration measurements and analyze the insulation response curve as a function of the test voltage application time allows for a better assessment of the quality of the insulation.

PLOTTING R(t) CURVES

When a programmable-duration test is initiated, the CA 6541 and CA 6543 automatically store samples of the measured insulation at the interval selected by the user. The R(t) curve can then be plotted using these values or directly on a PC screen via the CA 6543 software.

LOCKING OF INSULATION TEST VOLTAGES

To allow less experienced users to operate the device, or to prevent operating errors on sensitive installations or equipment, each insulation test voltage (50 V, 100 V, 250 V, 500 V, or 1000 V) can be disabled.

SMOOTH FUNCTION

When measurements are unstable, the Smooth function smooths the display of insulation values for easier reading and faster interpretation.

PROGRAMMABLE ALARMS

For each function, an upper or lower alarm threshold can be set. Exceeding this threshold will trigger a visual warning on the display and an audible buzzer alarm.

ADDITIONAL FEATURES OF THE CA 6543

DATA STORAGE

The CA 6543 has an internal memory capable of storing several thousand measurements. Data is stored using two indices OBJ (= object) and TEST (= test) which allow results to be organized systematically. This makes it possible to record the various tests (TEST) corresponding to each machine or system tested (OBJ).

SOFTWARE

The Megohmmeter Transfer software allows you to retrieve data from memory, plot the insulation resistance curve as a function of test voltage application time (R(t)), generate customized test reports, create text files for use in spreadsheets, and fully configure and control the device via RS232!

General Specifications	CA 6541	CA 6543
Bar graph (logarithmic)	Yes	
Display backlight	Yes	
Programmable alarms	Yes	
Display smoothing (SMOOTH)	Yes	
Display of the exact test voltage generated	Yes	
Test duration programming	Yes	
Automatic calculation of ratios	DAR and PI	
Automatic storage of insulation trend data based on test voltage application time (R(t) function)	20 samples	128 KB of internal memory
Measurement storage	-	128 KB of memory
RS232	-	Bidirectional
PC software	-	Yes
Device power supply	8 piles LR14	Secteur 85 V-256 V 50/60 Hz ou batterie rechargeable (chargeur interne)
Battery life	21,000 5-second insulation tests 16,000 5-second continuity tests	5,000 5-second insulation tests 4,000 5-second continuity tests
Remote control probe with measurement point illumination	Option	
Electrical safety	IEC 61010-1 + A2 - CAT III - 600 V and IEC 61557	
Protection rating	IP54	
Environmental conditions	-10 to +55°C and 20 to 80% RH during use - 40 to +70°C and 10 to 90% RH during storage	
Dimensions	240 x 185 x 110 mm	
Weight	3.4 kg (with batteries)	

Metrology	CA 6541 and CA 6543
▪ **INSULATION** [1][2]	
Test voltages	50 V 100 V 250 V 500 V 1000 V
Range	2 kΩ...200 GΩ 4 kΩ...400 GΩ 10 kΩ...1 TΩ 20 kΩ...2 TΩ 40 kΩ...4 TΩ
Resolution	from 1 kΩ to 1 GΩ depending on range
Accuracy	± (5%L + 3 pt) from 2 kΩ...40 GΩ, then ± (15%L + 10 pt)
Test voltage lock	for each voltage
▪ **RESISTANCE** [1]	
Range	0.01 Ω...400 kΩ
Resolution	from 0.01 Ω to 100 Ω, depending on the range
Accuracy	± (3% of full scale + 3 points)
▪ **CONTINUITY** [1]	
Audible beep	Yes
Range	0.01 Ω...40 Ω
Resolution	0.01 Ω
Accuracy	± (3%L + 4 pt)
Measurement current	> 200 mA (0.01... 19.99 Ω)
Lead compensation	Yes
▪ **AUTOMATIC VOLTAGE**	
Range	1...1,000 V AC (16...420 Hz) or DC
Resolution	1 V
Accuracy	± (1% of full scale + 3 points)
▪ **AUTOMATIC CAPACITANCE**	
Range	0.005... 4.999 µF
Resolution	1 nF
Accuracy	± (10%L + 1 pt)

[1] Each measurement is preceded by an automatic voltage measurement that prevents operation if voltage is present on the device under test.

[2] Each insulation test is automatically followed by a voltage measurement (to monitor the discharge of the circuit under test) and a capacitance measurement.

TO ORDER

CA 6541_____**P01138901**

Delivered in a cardboard box with a carrying case containing:
- 2 safety cords, one red and one blue, each 1.5 m long
- 1 black safety cord, 1.5 m long,
- 3 alligator clips—one red, one blue, and one black,
- 1 black test probe,
- 8 LR14 or C batteries,
- 1 multilingual quick start guide,
- 1 multilingual safety data sheet,
- 1 verification certificate.

CA 6543_____**P01138902**

Delivered in a cardboard box with a carrying case containing:
- 1 DB9F-DB9F cable,
- 1 DB9M-DB9M adapter,
- 2 safety cords, one red and one blue, each 1.5 m long,
- 1 black safety cord, 1.5 m long,
- 3 alligator clips—one red, one blue, and one black,
- 1 black test probe,
- 1 2-meter AC power cord,
- 1 multilingual quick start guide,
- 1 multilingual safety sheet,
- 1 calibration certificate.

OPTIONAL ACCESSORIES

- Remote control probe P01101935
- Set of 2 test probes (red/black) P01295454Z
- Set of 3 safety leads, 3 m each (red/blue/black with protective sheath) P01295170

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