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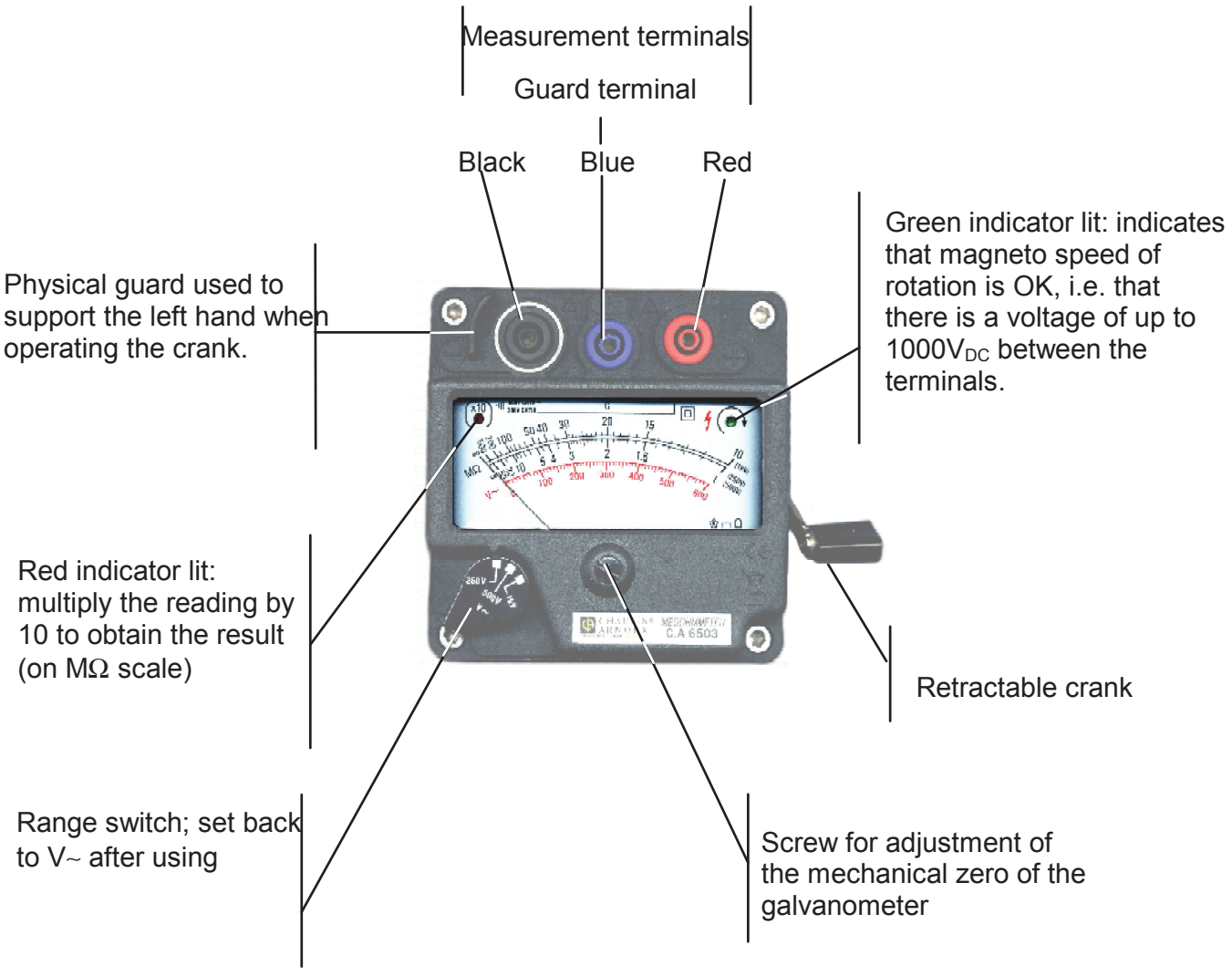
1. PRESENTATION

The CA 6503 is an electrical measuring instrument intended for insulation measurements (1 to 500MΩ at 250 or 500VDC and 10 to 5000MΩ at 1000VDC). A voltage-present indicator serves to make sure that there is no AC voltage in the circuit to be tested.
This instrument is ready for use at all times because it requires no operating maintenance. A magneto generator provides the various measurement and operating voltages.

2. DESCRIPTION OF THE VARIOUS PARTS, CONTROLS, AND FUNCTIONS



3. USE AND CHARACTERISTICS:

3.1. RECOMMENDATIONS

- The needle must indicate 0 on the 600-scale when at rest; if not, adjust it using the black screw in the centre (see picture above).
- Do not connect the instrument to the terminals of a circuit of which the voltage exceeds 600V_{AC} or $_{DC}$.
- Before any resistance measurement, check that the circuit is not live (switch set to 500V before connection).
- After each insulation resistance measurement, let the circuit discharge (needle on 0V; this takes a few seconds) before disconnecting the instrument.

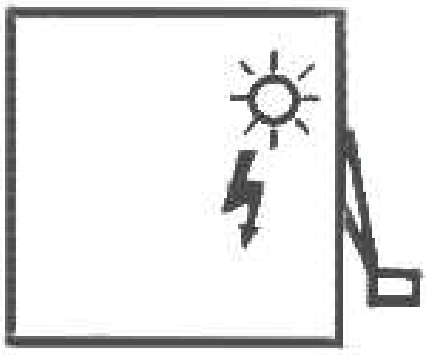


Fig. 1

Measurement input terminals: These accept safety plugs 4mm in diameter.

Other indicators:

A green indicator (Fig. 1) on the right side of the instrument indicates that the speed of the magneto is correct. When it is lit, the voltage between the terminals of the instrument is 250V, 500V, or 1000VDC (no-load), depending on the setting of the switch.

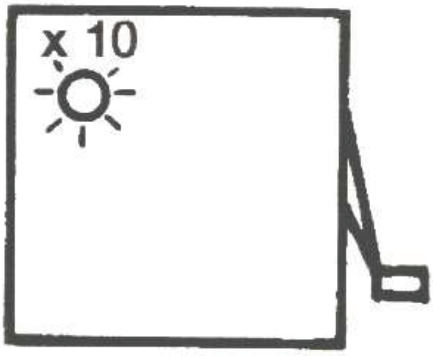
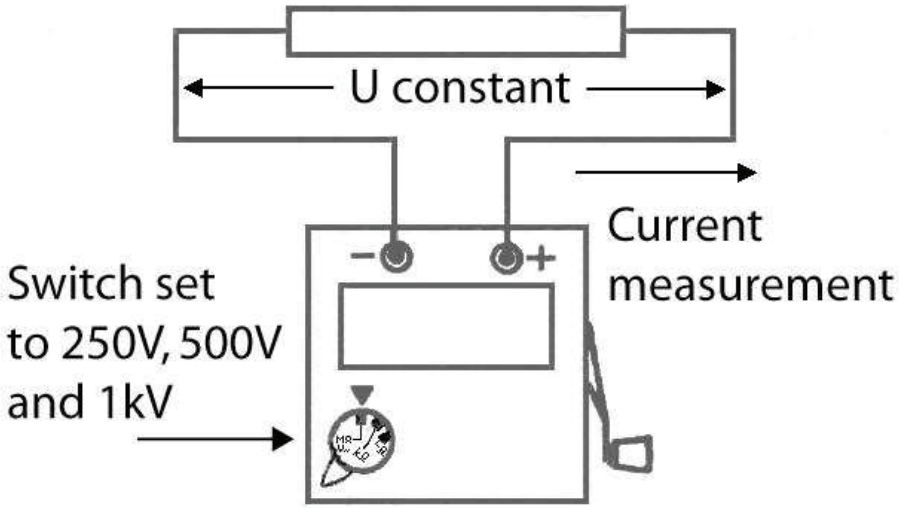


Fig. 2

A red indicator (Fig. 2) on the left side of the instrument indicates the automatic change of range. When it is lit, multiply the reading by 10 to obtain the result.

3.2. OPERATION:

3.2.3. MΩ measurement:



MΩ measurement at $250V_{DC}$:

The measurement is made at a voltage of $250V_{DC}$ above 1MΩ measured. Short-circuit current ≤ $5mA_{DC}$.

There is a change of reading coefficient for rising values: 50MΩ (changes to X10 reading), and a change of reading coefficient for falling values: 11MΩ (changes to X1 reading).

MΩ measurement at $500V_{DC}$:

The measurement is made at a voltage of $500V_{DC}$ above 1MΩ measured. Short-circuit current ≤ $5mA_{DC}$.

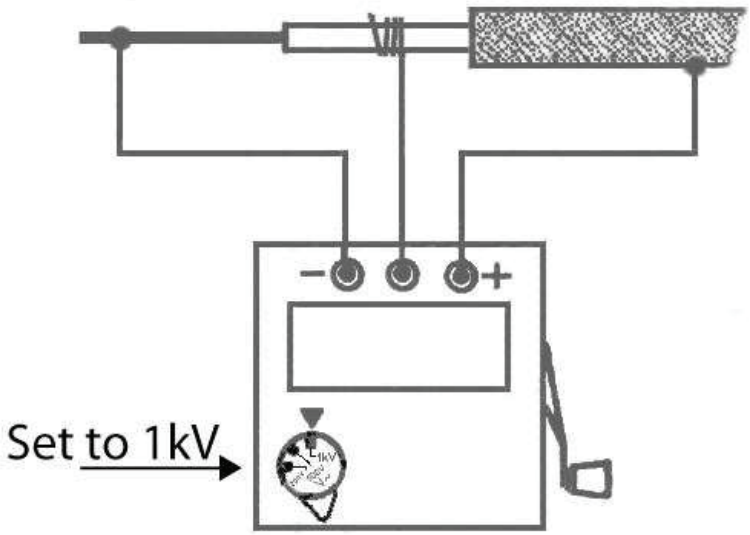
There is a change of reading coefficient for rising values: 50MΩ (changes to X10 reading), and a change of reading coefficient for falling values: 11MΩ (changes to X1 reading).

MΩ measurement at $1000V_{DC}$:

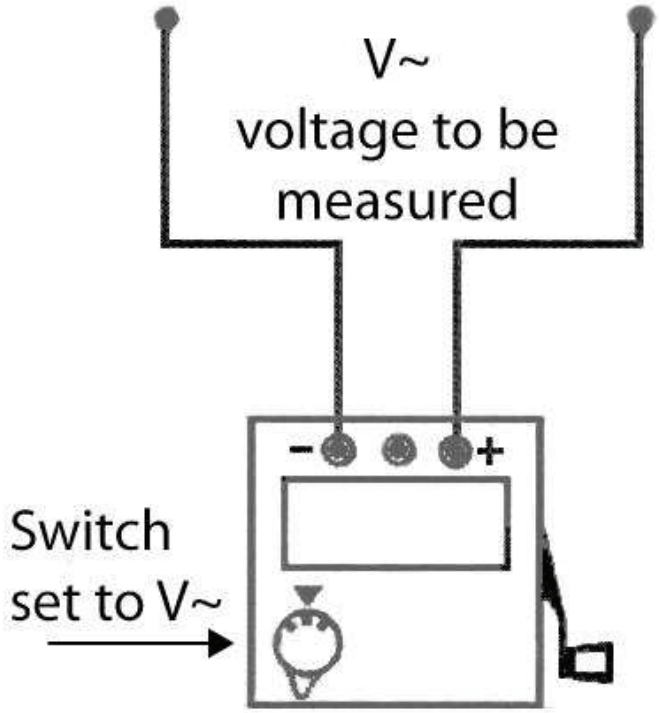
The measurement is made at a voltage of $1000V_{DC}$ above 10MΩ measured. Short-circuit current ≤ $5mA_{DC}$.

There is a change of reading coefficient for rising values: 500MΩ (changes to X10 reading), and a change of reading coefficient for falling values: 110MΩ (changes to X1 reading).

To avoid interference by surface leakage currents when making an insulation measurement at 1000V, it is best to establish a guard circuit (fig. 3) using the guard terminal ("G").



3.2.4. AC voltage measurement



The AC voltage measurement is from 0 to 600V_{AC} in a single range (input impedance: 100kΩ), switch set to V.

Fig. 3

4. GENERAL CHARACTERISTICS:

Dimensions: 120mm x 120mm, height 130mm.

Mass: 1.05kg.

Degree of protection by housing: IP54 with cover and IP52 without cover as per IEC 60529 (Ed. 92)

Power supply: This instrument is supplied by a magneto generator that provides the various measurement and operating voltages (speed of rotation: approximately 140rpm).

The voltmeter is supplied by the measurement input and so there is no need to operate the crank.

Characteristics in the reference domain (23℃ ± 3℃):

Ranges	Characteristics in the reference range
MΩ	± 2,5% of full scale
Volt ~	± 3% of full scale
MΩ	Measurement voltage: 250V, 500V and 1000V
MΩ	Short-circuit current ≤ 5mA

Variations in the domain of use: quantities.

Ranges	Errors in the range of use (-10 to+ 45℃)
MΩ	+1% / 10℃
Volt ~	+1.5% / 10℃
MΩ	± 5%

Overloads - protection:

MΩ ranges: 600VAC/DC max.

Compliance with international standards:

Electrical safety in accordance with IEC 61010-1 (Ed. 2 of 2001).
Electrical safety in accordance with IEC 61010-2-031 (Ed. 2 of 2002).
Measurement in accordance with IEC 61557 (Ed. 2 of 2007), parts 1 and 4
Rated maximum voltage: 600V
Rated characteristics: measurement category III, 300V, or measurement category II, 600V with respect to earth,
degree of pollution 2.

Electromagnetic compatibility:

The instrument complies with EMC requirements as per NF EN 61326-1 : 2006.

5. WARRANTY

Our warranty applies, except as otherwise expressly stipulated, for twelve months counting from the date of availability of the equipment (extract from our General Terms of Sale, communicated on request).

6. MAINTENANCE

6.1. STORAGE:

Snap the crank into the recess provided for this purpose; fit the protective cover.

There is nothing that need be removed for prolonged storage.

6.2. CLEANING:

The CA6503 must be disconnected from any electrical installation.

To clean the housing, use a cloth moistened with soapy water. Wipe off with a damp cloth. Then dry rapidly with a dry cloth or forced air.

6.3. METROLOGICAL CHECK

Like all measuring and testing devices, the multimeter must be checked periodically.

This instrument should be checked at least once a year. For checks and calibrations, contact one of our accredited metrology laboratories (information and contact details available on request), at our Chauvin Arnoux subsidiary or the branch in your country.

6.4. REPAIR:

For all repairs before or after expiry of warranty, please return the device to your distributor.

7. TO ORDER

C.A 6503 Megohmmeter P01132504

Delivered with:

- 1 1.5m black angled / straight cord.
- 1 1.5m red angled / straight cord.
- 1 1.5m blue angled / straight cord.
- 1 Black alligator clip.
- 1 Red alligator clip.
- 1 Blue alligator clip.
- 1 Black probe tip.
- 1 user guide in 5 languages
- 1 carrying bag

SPARES:

Carrying bag P01298006