

C.A 755

C.A 757



Digital testers

Thank you for purchasing a **C.A 755** or **C.A 757 digital tester**.

For best results from your instrument:

- **read** these operating instructions carefully,
- **comply** with the precautions for use.

	WARNING, risk of DANGER! The operator must refer to these instructions whenever this danger symbol appears.
	Application or withdrawal authorized on conductors carrying dangerous voltages. Type B current sensor as per IEC/EN 61010-2-032.
	Equipment protected by double insulation.
	Battery.
	Important information.
	Earth.
	Chauvin Arnoux has designed this instrument in the context of a global eco-design approach. A life cycle analysis was carried out to master and optimize the impact of this product on the environment. More precisely, the product exceeds the requirements of regulations as regards recycling and valuation.
	The CE marking indicates compliance with the European Low Voltage Directive 2014/35/EU, the Electromagnetic Compatibility Directive 2014/30/EU, and the Directive on the Restriction of Hazardous Substances RoHS, 2011/65/EU and 2015/863/EU.
	The rubbish bin with a line through it means that, in the European Union, the product must undergo selective disposal in compliance with Directive WEEE 2012/19/EU.

Definition of measurement categories

- Measurement category IV corresponds to measurements taken at the source of low-voltage installations.
Example: power feeders, counters and protection devices.
- Measurement category III corresponds to measurements on building installations.
Example: distribution panel, circuit-breakers, machines or fixed industrial devices
- Measurement category II corresponds to measurements taken on circuits directly connected to low-voltage installations.
Example: power supply to electro-domestic devices and portable tools.

PRECAUTIONS FOR USE

This instrument is compliant with safety standard IEC/EN 61010-2-033, the leads are compliant with IEC/EN 61010-031 and the current sensor is compliant with IEC/EN 61010-032, for voltages up to 600V in measurement category III.

Failure to observe the safety instructions may result in electric shock, fire, explosion, and destruction of the instrument and of the installations.

- The operator and/or the responsible authority must carefully read and clearly understand the various precautions to be taken in use. Sound knowledge and a keen awareness of electrical hazards are essential when using this instrument.
- Do not use your instrument on networks of which the voltage or category exceeds those stated.
- Do not use the instrument if it seems to be damaged, incomplete, or poorly closed.
- Do not use the instrument in an explosive atmosphere or in the presence of flammable gases or vapours.
- Before each use, check the condition of the insulation on the leads, housing, and accessories. Any item of which the insulation is deteriorated (even partially) must be set aside for repair or scrapping.
- Use only the leads and accessories supplied. The use of leads (or accessories) of a lower voltage rating or category limits the use of the combined instrument + leads (or accessories) to the lowest category and service voltage.
- Use personal protection equipment systematically.
- When handling the instrument and test probes, keep your fingers behind the physical guard.
- All troubleshooting and metrological checks must be done by competent, accredited personnel.

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1. PRESENTATION

1.1. DELIVERY CONDITION

C.A 755 voltage tester

Delivered in blister pack with:

- one red test probe 2 mm in diameter,
- one black lead terminated by a removable black probe tip 2mm in diameter,
- two alkaline batteries (AAA or LR3),
- one multilingual quick start guide,
- one test certificate.

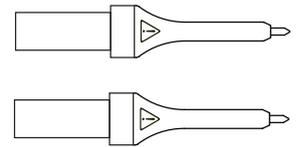
C.A 757 voltage tester

Delivered in blister pack with:

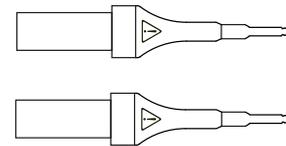
- one red test probe 2 mm in diameter,
- one black lead terminated by a removable black probe tip 2mm in diameter,
- one MiniFlex flexible current sensor,
- two alkaline batteries (AAA or LR3),
- one multilingual quick start guide,
- one test certificate.

1.2. ACCESSORIES AND SPARE PARTS

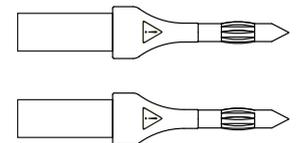
- Carrying bag
- LR3 o AAA batteries
- Test probes 2mm in diameter and 4mm long (one red and one black) 600V CAT III



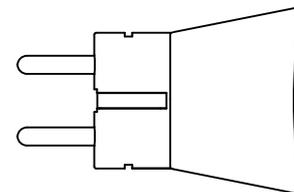
- Test probes 2mm in diameter and 15mm long (one red and one black) 300V CAT II



- Test probes 4mm in diameter and 19mm long (one red and one black) 300V CAT II



- C.A 753 2P+T adapter.

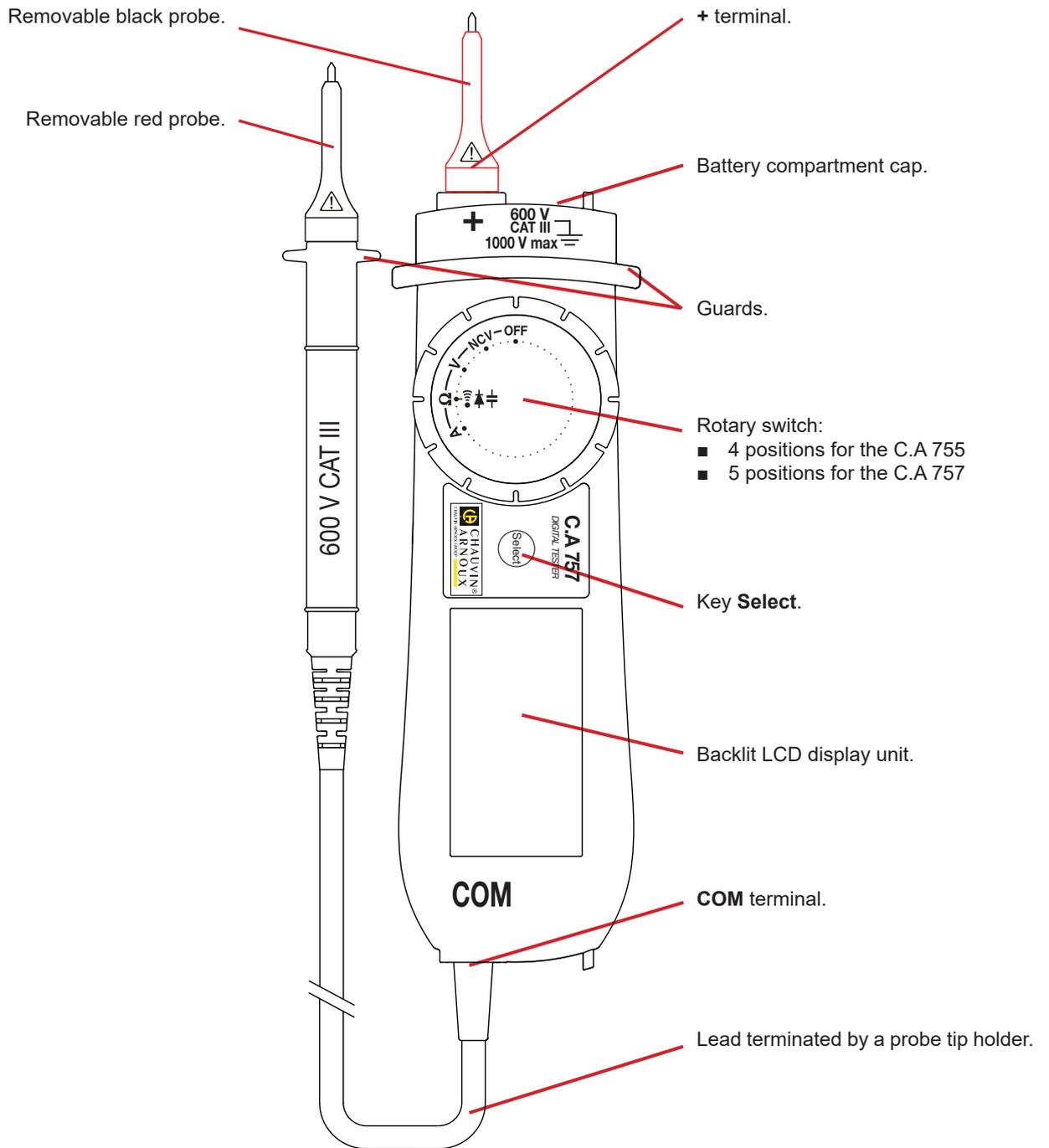


- MiniFlex MA101-250 flexible current sensor.
- Set of 5 Velcro straps.

For the accessories and spares, consult our web site:

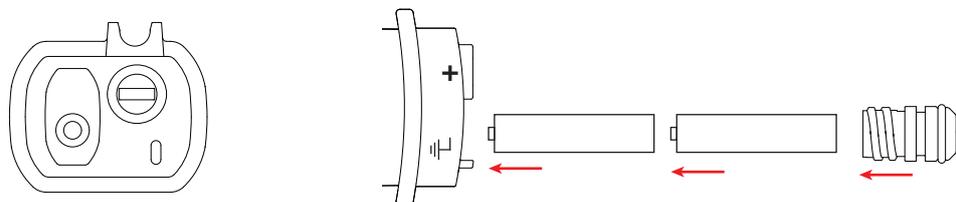
www.chauvin-arnoux.com

1.3. C.A 755 AND C.A 757



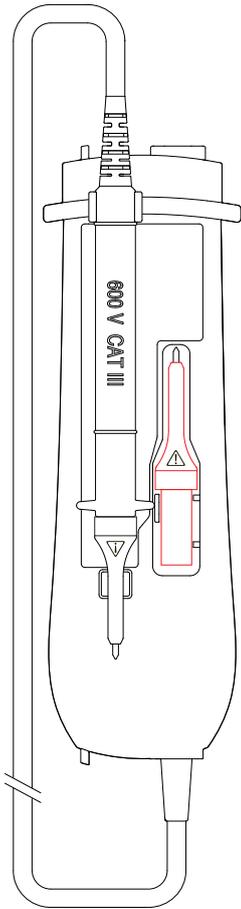
1.4. INSERTING THE BATTERIES

- Use a screwdriver to unscrew the battery compartment cap.
- Insert the two batteries provided (AAA or LR3 1.5V alkaline batteries).
- Screw the battery compartment cap all the way back in and make sure that it is completely and correctly closed.

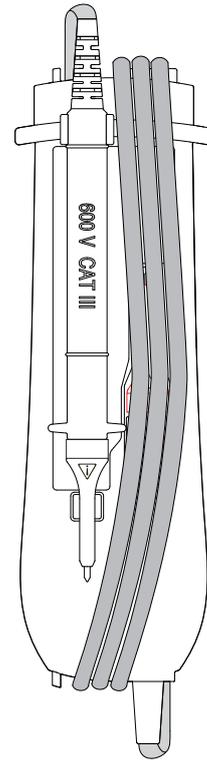


1.5. STORAGE

When the instrument is not being used, the probe tips can be stored on the back of the instrument.



You can also wrap the lead around the instrument.



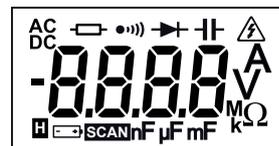
2. USE

This instrument is a digital tester. It measures AC and DC voltages, alternating currents, resistances, and capacitances. It also has a continuity function and a diode function and can be used for non contact voltage detection.

2.1. INSTRUMENT TEST

Before making any measurements, test all of the functions of the instrument.

- To switch the instrument on, turn the switch to any position. All segments of the display unit light and the instrument emits a continuous beep.
If the battery voltage is too low for correct operation of the instrument, the  symbol is displayed.
If the battery voltage is much too low, the display unit will not light.
In both cases, it is time to replace the batteries (see § 4.2).



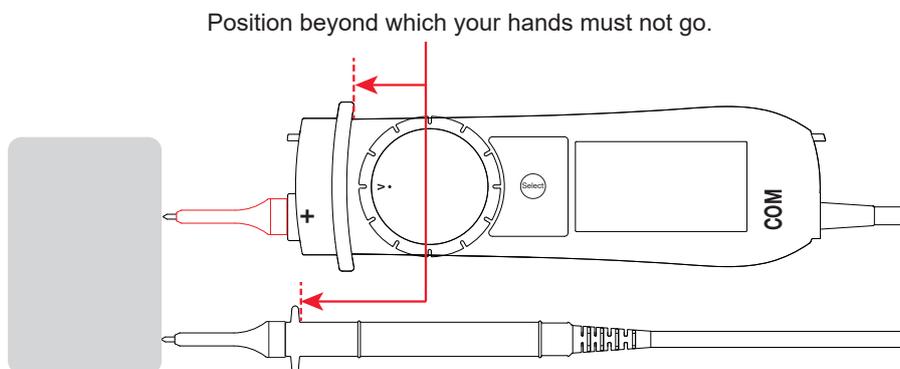
- With the inputs disconnected, set the switch to Ω . The display unit indicates - - - -.
- Connect the red probe tip to the + terminal and the black probe tip to the **COM** terminal. Bring the two probe tips together, so that they touch. The instrument indicates a resistance near zero and emits a continuous beep.
- Measure a known voltage greater than 12V.



If the results of these four tests are correct, your instrument is ready for use.

2.2. VOLTAGE

- Connect the red probe tip to the + terminal and the black probe tip to the **COM** terminal.
- Set the switch to **V**.
- Keep your hands behind the guards of the device and of the test probe.



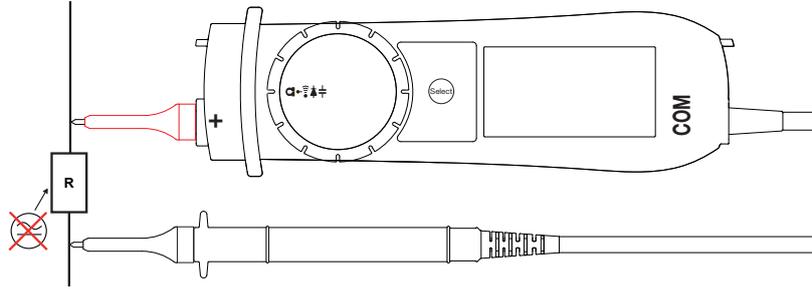
- Place the test probes on the element to be tested and maintain a firm contact.
- The voltage is displayed.
 - If the voltage is > 30V, the instrument displays , indicating that the voltage is dangerous.
 - As default, the instrument is in automatic mode (**SCAN**). If the voltage is AC, the instrument displays AC. If the voltage is DC, it indicates DC and displays its polarity.
 - The **Select** key is used to exit from the automatic mode (the **SCAN** symbol disappears) and display the AC voltage only, or the DC voltage only, or to return to the automatic mode.
 - To determine the type of voltage (AC or DC) for a measurement < 1V, exit from the automatic mode.



Do not use the C.A 755 or the C.A 757 to check for the absence of a voltage. For that, use a VAT.

2.3. RESISTANCE, CONTINUITY, DIODE AND CAPACITANCE

- Connect the red probe tip to the **+** terminal and the black probe tip to the **COM** terminal.
- Set the switch to Ω .
- Keep your hands behind the guards of the device and of the test probe.
- Place the test probes on the element to be tested. If a voltage is present, the instrument so indicates.



Do not make a resistance, diode, continuity, or capacitance measurement on a live circuit.

As default, the instrument is in automatic mode (**SCAN**) and chooses automatically among the resistance \square , continuity $\bullet\bullet\bullet$), diode $\rightarrow|$, and capacitance || functions. To force one of these functions, press the **Select** key (the **SCAN** symbol disappears).

2.3.1. RESISTANCE AND CONTINUITY

If the resistance is less than 300 Ω , the instrument is in continuity. Below 30 Ω , it emits a continuous beep. Between 300 Ω and 3 M Ω , the instrument is in resistance mode. Above 3 M Ω , the display unit indicates **OL**. The 30 M Ω range is not available in automatic mode; resistance mode \square must be used.

2.3.2. DIODE

- In diode test, place the red probe tip on the anode of the diode to be tested and the black probe tip on the cathode.
- The instrument indicates the voltage of the diode. If it is above 2V or if the polarity is reversed, the instrument displays - - - -.

2.3.3. CAPACITANCE

The 3mF and 30mF ranges are not available in automatic mode; capacitance mode || must be used.

If the device displays **dis.C** after a measurement, wait for the end of automatic discharging of the capacitance before making another measurement.

2.4. CURRENT (C.A 757)

- Connect the current sensor to the **+** terminal.
- Set the switch to **A**.
- Press on the yellow opening device to open the flexible coil.

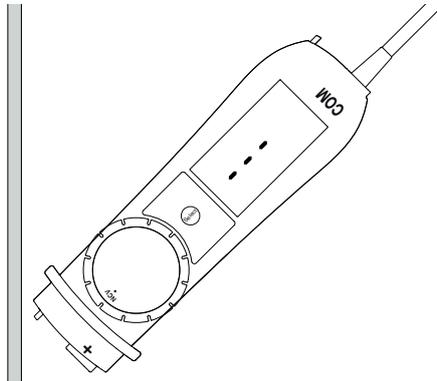


- Open it and place it around the conductor carrying the current to be measured (only one conductor in the sensor).
- Close the coil. To optimize measurement quality, centre the conductor in the coil and make the coil as round as possible.
- The current is displayed.

2.5. NON-CONTACT VOLTAGE DETECTION (NCV)

The instrument can detect an AC voltage of approximately 230V.

- Withdraw the probe tips.
- Set the switch to **NCV**.
- Move the top of the instrument (+ terminal side) close to the conductor without touching it. The position of the instrument may affect the result. The sensitivity is better on the battery compartment cap side.



If no alternating voltage is detected, the device displays **EF**.

If a voltage is detected, the device displays one of 4 detection levels:

- - , the buzzer beeps once a second and the backlighting flashes at the same rate.
- -- , the buzzer beeps twice a second and the backlighting flashes at the same rate.
- --- , the buzzer beeps three times a second and the backlighting flashes at the same rate.
- ----, the buzzer emits a continuous beep and the backlighting is on continuously.



The absence of a voltage indication in the NCV function does not mean that there is no voltage. To confirm the absence of a voltage, use a VAT.

2.6. AUTOMATIC STANDBY

To save the batteries, the instrument automatically switches to standby after 10 minutes without user activity (switch turned or **Select** key pressed).

The instrument can be reactivated by turning the switch or pressing the **Select** key.

3. CHARACTERISTICS

3.1. REFERENCE CONDITIONS

Quantity of influence	Reference values
Temperature	23 ± 5 °C
Relative humidity	30 to 75% RH
Supply voltage	3 ± 0.1V
Frequency of the measured signal	DC or 45 to 65Hz
Type of signal	sinusoidal
External electric field	< 1V/m
DC external magnetic field	< 40A/m

3.2. ELECTRICAL CHARACTERISTICS

3.2.1. VOLTAGE

Particular reference conditions:

- AC signal ≤ 1% in DC measurements.
- DC signal ≤ 1% in AC measurements.

Range	3 V	30 V	300 V	1000 V
Measurement range	3 mV _{DC} to 2,999 V _{DC}	3.00 V to 29.99 V	30.0 V to 299.9 V	300 V to 1000 V
	100 mV _{AC} to 2,999 V _{AC}			
Resolution	1 mV	10 mV	100 mV	1 V
Intrinsic uncertainty in V _{DC}	2% ± 3 pt			
Intrinsic uncertainty in V _{AC}	3% ± 4 pt			
Input resistance	10 MΩ			

Automatic AC/DC detection is possible only above 450 ± 150mV.

3.2.2. RESISTANCE AND CONTINUITY

Particular reference conditions:

- Zero voltage.
- Pure resistance (no diode or capacitance in parallel).

Range	300 Ω	3 kΩ	30 kΩ	300 kΩ	3 MΩ	30 MΩ
Measurement range	0.3 to 299.9 Ω	300 to 2999 Ω	3.00 to 29.99 kΩ	30.0 to 299.9 kΩ	300 to 2999 kΩ	3.000 to 30.00 MΩ
Resolution	0,1 Ω	1 Ω	10 Ω	100 Ω	1 kΩ	10 kΩ
Intrinsic uncertainty	3% ± 5 pt	3% ± 3 pt				5% ± 3 pt

The 30 MΩ range is not available in automatic mode.

In continuity, in the 300 Ω, range, the instrument emits an audible signal below 30 Ω.

3.2.3. DIODE

Particular reference conditions:

- Zero voltage.
- Diode without resistance or capacitance in parallel.

Diode voltage measured between 0.29 and 2V.

3.2.4. CAPACITANCE

Particular reference conditions:

- Zero voltage.
- Capacitance without resistance in parallel.

Range	3 nF *	30 nF *	300 nF	3 µF
Measurement range	400 pF to 2.999 nF	3.00 to 29.99 nF	30.0 to 299.9 nF	0.300 to 2.999 µF
Resolution	0,001 nF	0,01 nF	0,1 nF	0,001 µF
Intrinsic uncertainty	5% ± 10 pt	5% ± 5 pt		

*: In these ranges, subtract the no-load value (typically 50pF) from all readings.

Range	30 µF	300 µF	3 mF	30 mF
Measurement range	3.00 to 29.99 µF	30.00 to 299.9 µF	0.300 to 2.999 mF	3.00 to 29.99 mF
Resolution	0,01 µF	0,1 µF	0,001 mF	0,01 mF
Intrinsic uncertainty	5% ± 5 pt			

The 3mF and 30mF ranges are not available in automatic mode.

3.2.5. CURRENT (C.A 757)

Particular reference conditions:

- DC signal ≤ 1% in AC measurements.

Range	30 AAC	300 AAC
Measurement range	0.5 A to 29.99 A	30.00 A to 299.9 A
Resolution	10 mA	100 mA
Intrinsic uncertainty	3% ± 5 pt	

3.2.6. NON-CONTACT VOLTAGE DETECTION (NCV)

The instrument detects the line voltage at 230VAC with respect to ground, at 50 Hz and at a distance of less than 5cm.

3.3. ENVIRONMENTAL CONDITIONS

Operating range:

-10°C at 55°C and ≤ 80%RH without condensation up to 40° C.

Storage range (without battery):

-20°C at +55°C and ≤ 90%RH without condensation up to 45°C.

For use indoors and outdoors without rain.

Pollution degree: 2.

Altitude: <2000m.

3.4. POWER SUPPLY

The instrument is powered by two 1.5V alkaline batteries (type AAA or LR3).
Battery mass: approximately 2 x 12 g.
Battery life is 150 h.



For an extended period of non-use or storage, withdraw the batteries from the electronic unit.

3.5. CHARACTERISTICS OF CONSTRUCTION

3.5.1. C.A 755

Dimensions (L x W x D) 180 x 52 x 45 mm
Mass 200 g approximately
Cable length 142 cm
Protection rating IP 54 according to IEC 60529
IK 04 according to IEC 62262
Drop test 2 meters.

3.5.2. C.A 757

Dimensions (L x W x D) 180 x 52 x 45 mm
Mass 200 g approximately
Cable length 142 cm
Protection rating IP 54 according to IEC 60529
IK 04 according to IEC 62262
Drop test 2 meters.

3.5.3. MINIFLEX SENSOR

Clamping diameter 70 mm
Length of the sensor 250 mm
Length of the connecting cable 1m, terminated by a specific three-point plug
Mass 60 g approximately
Protection rating IP 50 according to IEC 60529
IK 04 according to IEC 62262

3.6. ELECTRICAL SAFETY

This instrument is compliant with safety standard IEC/EN 61010-2-033, and the leads are compliant with IEC/EN 61010-031, for voltages up to 600V in measurement category III.

Double or reinforced insulation .

3.7. ELECTROMAGNETIC COMPATIBILITY

Emission and immunity in industrial environment according to IEC/EN 61326-1.

4. MAINTENANCE



Except for the batteries, the instrument contains no parts that can be replaced by personnel who have not been specially trained and accredited. Any unauthorized repair or replacement of a part by an "equivalent" may gravely impair safety.

4.1. CLEANING

Disconnect the instrument completely.

Use a soft cloth, dampened with soapy water. Rinse with a damp cloth and dry rapidly with a dry cloth or forced air. Do not use alcohol, solvents, or hydrocarbons.

4.2. REPLACEMENT OF BATTERIES

If the  symbol flashes during the battery test, or is displayed during a measurement, you must replace the batteries.

- Disconnect the instrument completely.
- Refer to §1.4 for the replacement of the batteries.



Spent batteries must not be treated as ordinary household waste.
Take them to the appropriate recycling collection point.

5. WARRANTY

Except as otherwise stated, our warranty is valid for **24 months** starting from the date on which the equipment was sold. The extract from our General Conditions of Sale are available on our website.

www.group.chauvin-arnoux.com/en/general-terms-of-sale

The warranty does not apply in the following cases:

- inappropriate use of equipment or use with incompatible equipment;
- modifications made to the equipment without the explicit permission of the manufacturer's technical staff;
- work done on the instrument by a person not approved by the manufacturer;
- adaptation to a particular application not anticipated in the definition of the equipment or by the user manual;
- damage caused by shocks, falls, or floods.



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