



致力于电子测试、维护领域!

# D37N et D37N-EA



Measure up



Vous venez d'acquérir une **pince ampèremétrique D37N ou D37N-EA** et nous vous remercions de votre confiance.

Pour obtenir le meilleur service de votre appareil :

- **lisez** attentivement cette notice de fonctionnement,
- **respectez** les précautions d'emploi.



ATTENTION, risque de DANGER ! L'opérateur doit consulter la présente notice à chaque fois que ce symbole de danger est rencontré.



Appareil protégé par une isolation double.



Application ou retrait autorisé sur les conducteurs sous tension dangereuse. Capteur de courant de type A selon IEC 61010-2-032.



Information ou astuce utile.



Sens du courant.



Courant alternatif



Le marquage CE indique la conformité aux directives européennes , notamment DBT et CEM.



La poubelle barrée signifie que, dans l'Union Européenne, le produit fait l'objet d'une collecte sélective conformément à la directive DEEE 2002/96/EC : ce matériel ne doit pas être traité comme un déchet ménager.

### Définition des catégories de mesure

- La catégorie de mesure IV correspond aux mesurages réalisés à la source de l'installation basse tension.  
Exemple : arrivée d'énergie, compteurs et dispositifs de protection.
- La catégorie de mesure III correspond aux mesurages réalisés dans l'installation du bâtiment.  
Exemple : tableau de distribution, disjoncteurs, machines ou appareils industriels fixes.
- La catégorie de mesure II correspond aux mesurages réalisés sur les circuits directement branchés à l'installation basse tension.  
Exemple : alimentation d'appareils électrodomestiques et d'outillage portable.

# ENGLISH

Thank you for purchasing a **D37N or D37N-EA current clamp**.

For best results from your instrument:

- **read** this manual carefully,
- **comply with** the precautions for use.



WARNING, DANGER! The operator should refer to this user's manual whenever this danger symbol appears.



Equipment protected by double insulation.



Application or withdrawal authorized on bare conductors carrying dangerous voltages. Type A current sensor as per IEC 61010-2-032.



Useful information or tip.



Direction of current.



Alternating current



The CE marking indicates conformity with European directives, in particular LVD and EMC.



The rubbish bin with a line through it indicates that, in the European Union, the product must undergo selective disposal in compliance with Directive WEEE 2002/96/EC. This equipment must not be treated as household waste.

## Definitions of the measurement categories

- Measurement category IV corresponds to measurements taken at the source of low-voltage installations. Example: power feeders, meters 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 domestic electrical appliances and portable tools.

# PRECAUTIONS FOR USE

This device is compliant with safety standard IEC 61010-2-032, for voltages up to 600 V in category III or 300 V in category IV.

Failure to observe the safety instructions may result in electric shock, fire, explosion, or 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.
- If you use this instrument other than as specified, the protection it provides may be compromised, thereby endangering you.
- Do not use the instrument on networks of which the voltage or category exceeds those mentioned.
- Do not use the instrument above the frequency indicated.
- Do not use the instrument if it seems to be damaged, incomplete, or poorly closed.
- 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.
- When applying or withdrawing the sensor on uninsulated conductors carrying a dangerous current, suitable safety equipment must be used.
- If it is not possible to power down the installation, adopt safe operating procedures and use suitable protective equipment.
- Keep your fingers behind the physical guard.
- The clamp must always be connected to a measuring instrument before clamping a conductor.
- Withdraw the clamp from the conductor before changing the range.
- Do not leave the clamp in places which are humid or exposed to running water.
- All troubleshooting and metrological checks must be performed by competent and accredited personnel.

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# 1. PRESENTATION

## 1.1 DELIVERY CONDITION

Each D clamp is delivered in a cardboard box with a user's manual and a verification certificate.

For the accessories and spares, consult our web site:

[www.chauvin-arnoux.com](http://www.chauvin-arnoux.com)

## 1.2. GENERAL INFORMATION

The D current clamps are designed to measure alternating currents without opening the circuits or powering down the installation.

The shape of the D clamps makes it easy to enclose busbars carrying the current to be measured.

With a maximum jaw opening of 90 mm, the clamp can be used on cables up to 64 mm in diameter or on various types of busbars: 5 busbars of 125 mm x 5 mm or 3 busbars of 100 mm x 10 mm, with the spacing between the busbars equal to their thickness.

These D clamps are used in combination with multimeters, recorders, wattmeters, energy analysers or any other instrument with an AC current measurement input and the appropriate range.

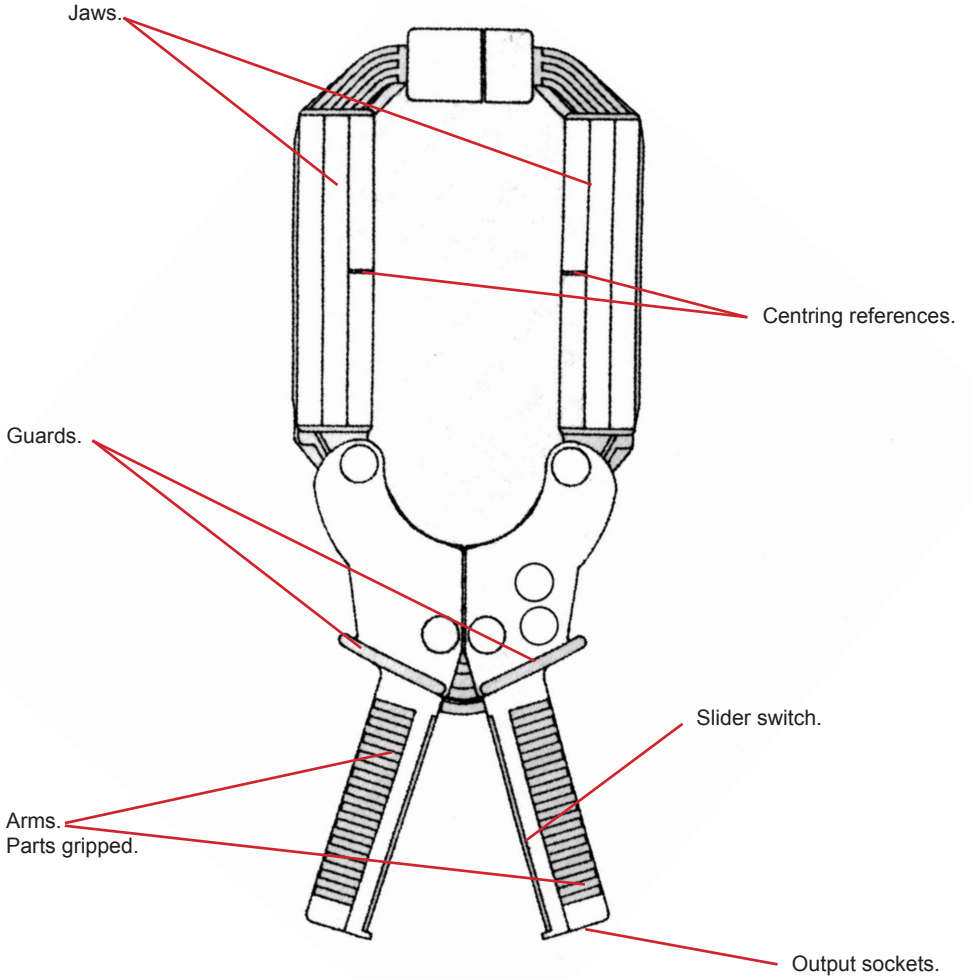
| Clamp            | Output            | Range (A <sub>AC</sub> ) |
|------------------|-------------------|--------------------------|
| D37N and D37N-EA | 3 V <sub>AC</sub> | 30 - 300 - 3 000         |

These clamps can withstand a 20% overload on all the ranges.

They are equipped with output via  $\varnothing$  4mm female safety sockets identified as S1 and S2 (S1 is the red socket).

The D37N-EA clamp is calibrated and specified only at a frequency of 4 Hz with the 30 A<sub>AC</sub> range for specific fault-current applications.

### 1.3. FRONT VIEW



## 2. OPERATION

- Set the switch to the highest range.
- Connect the clamp to the measuring instrument.



If it is not possible to power down the installation, the clamp must be set up and withdrawn in strict compliance with the applicable safety instructions.



The clamp must always be connected to a measuring instrument before enclosing a conductor.

- Open the clamp's jaws by bringing the arms closer together. Enclose the conductor(s) carrying the current to be measured. Close the jaws by lightly clicking them together.



For optimum measurement quality, centre the conductor as precisely as possible in the middle of the jaws. Make sure the conductor is perpendicular to the jaws.



As far as possible, keep away from other conductors which could generate spurious fields.

- Read the measurement on the instrument and apply the reading coefficient to the measurement in  $V_{AC}$ .

| Clamp   | Coefficient     |            |       |
|---------|-----------------|------------|-------|
| D37N    | 30 AAC range    | 100 mV / A | x 100 |
| D37N-EA | 300 AAC range   | 10 mV / A  | x 10  |
|         | 3,000 AAC range | 1 mV / A   | x 1   |

If necessary, withdraw the clamp from the conductor, change the range and then reposition on the conductor.

- When you have finished measuring, remove the clamp from the conductor and then disconnect the measuring instrument.

## 3. SPECIFICATIONS

### 3.1. CONDITIONS OF REFERENCE

| Influencing quantity                                    | Reference value                 |
|---|---------------------------------|
| Temperature   | 23 ± 3 °C                       |
| Relative humidity                                       | 0 to 85 % RH                    |
| Frequency of signal measured                            | 48 to 65 Hz                     |
| Type of signal  | sinusoidal without DC component |
| Adjacent current-carrying conductor                     | none                            |
| Conductor position in jaws                              | centred                         |
| External electric field                                 | none                            |
| External DC magnetic field (terrestrial magnetic field) | < 40 A/m                        |
| External AC magnetic field                              | none                            |
| Input impedance of measuring instrument                 | 1 MΩ                            |

The intrinsic uncertainty is the error defined in the conditions of reference.

Uncertainties are expressed as a percentage of the reading (%R) on the measuring instrument.



The uncertainties indicated are those of the clamps. To find out the total uncertainty, you must add on the uncertainty of the measuring instrument.

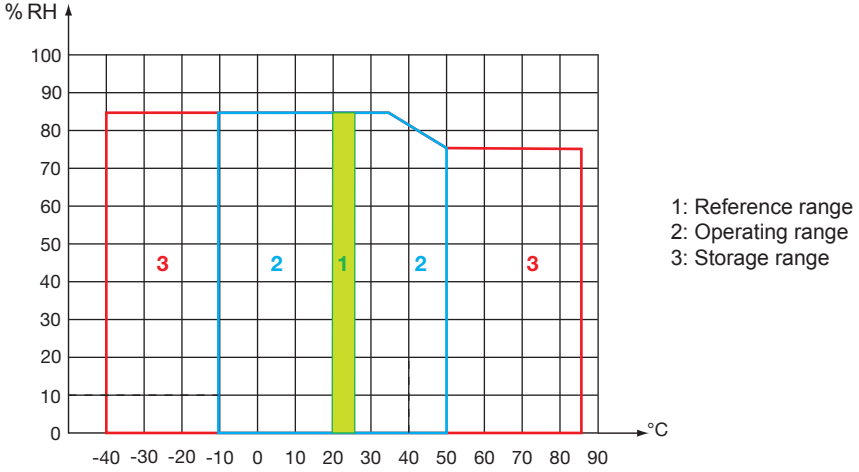


### 3.2. D37N AND D37N-EA CLAMP

| Clamp   | D37N-EA                 | D37N  | D37N and D37N-EA  |
|---|-------------------------|---|---|
| Range   | 30 AAC                  | 30 AAC  | 300 AAC<br>3,000 AAC  |
| Measurement range                                   |                         | 100 mA to 36 ARMS   | 1 to 360 ARMS   |
| Intrinsic uncertainty                               | 5 %R + 10 mV<br>at 4 Hz | 2 %R + 10 mV  | 2 %R + 0.5 mV   |
| Phase shift   |                         | 15° for 1.5 A<br>7° for 6 A<br>5° for 30 A<br>5° for 36 A | 3° for 15 A<br>1.5° for 60 A<br>1° for 300 A<br>1° for 360 A  |
| Max peak current                                    |                         | 90 A  | 900 A   |
| Influence of temperature                            |                         |   | < 0.1% / 10 °C  |
| Influence of an adjacent current-carrying conductor |                         |   | 0.005 A / AAC   |
| Influence of conductor position                     |                         |   | 1.5 %   |
| Influence of frequency from 30 to 5,000 Hz          |                         | 6 %   | 6 %<br>5 %  |
| Duration of use                                     |                         | permanent   | permanent<br>from 1 to 2,000 A permanent<br>from 2,000 to 2,400 A permanent with ambient temp. < 40 °C<br>from 2,400 to 2,800 A<br>10 min - 30 min off<br>from 2,800 to 3,200 A<br>5 min - 30 min off |

### 3.3. ENVIRONMENTAL CONDITIONS

The instrument must be used in the following conditions:



Indoor use.

Degree of pollution: 2.

Altitude: < 2,000 m.

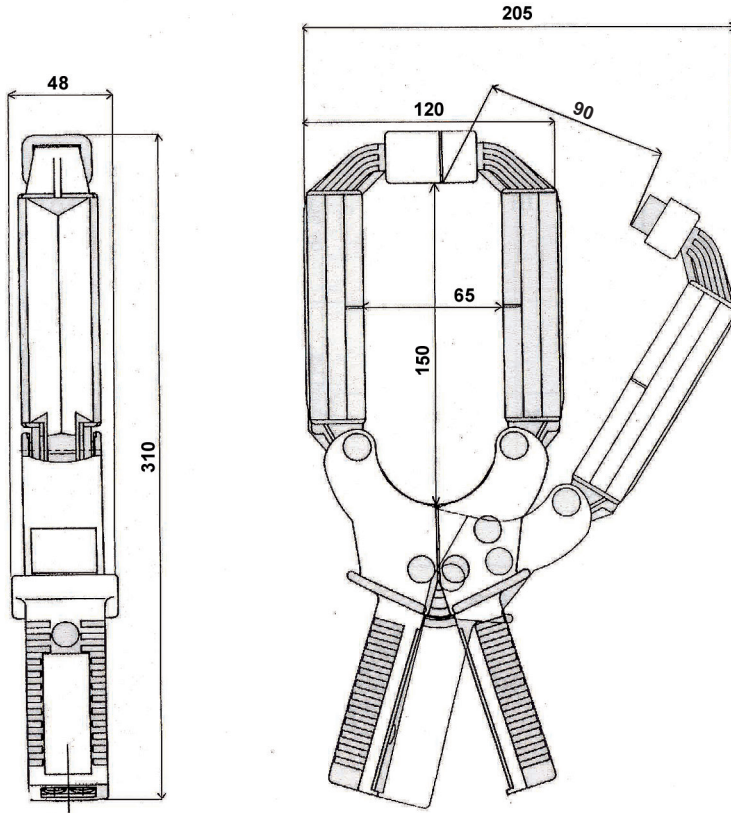
### 3.8. CONSTRUCTION SPECIFICATIONS

Dimensions: 310 x 120 x 48 mm

Opening: approx. 90 mm

Weight: approx. 1,200 g.

Protection rating: IP 20 as per IEC 60529



### 3.9. COMPLIANCE WITH INTERNATIONAL STANDARDS

The instrument complies with the IEC 61010-2-032 standard for type-A sensors.  
Double insulation.

### 3.10. ELECTROMAGNETIC COMPATIBILITY (EMC)

Emission and immunity in industrial environments as per IEC 61326-1.

## 4. MAINTENANCE

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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 seriously impair safety.

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### 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.

Make sure that the jaw faces are kept clean. If necessary, clean them with a soft, slightly-oiled cloth to avoid oxidization.

## 5. WARRANTY

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Except as otherwise stated, our warranty is valid for **twelve months** starting from the date on which the equipment was sold. Extract from our General Conditions of Sale provided on request.

The warranty does not apply in the following cases:

- Inappropriate use of the 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 device by a person not approved by the manufacturer;
- Adaptation for a particular application not anticipated in the definition of the equipment or not indicated in the user's manual;
- Damage caused by shocks, falls, or floods.