# TRANSMITTING CLAMP N-1

CE

## USER MANUAL

Version 2.02 18.10.2023

## 1 Description

N-1 clamp is used to generate the test current in the tested object. It is used in to locate cables and measure earthing systems with the two-clamp method. Together with the current clamp, it eliminates the need to use auxiliary probes driven into the ground, and in case of locating cables, it enables identification of cables without galvanic connection.

The maximum diameter of the tested conductor is 52 mm. The clamp is powered by a removable two-wire lead, terminated with 4 mm banana plugs. The output signal is transmitted via two banana plugs.

## 2 Safety

**NOTE!**

- Do not expose the clamp to water.
- It is not allowed to use clamps on conductors that conduct currents higher than 1200 A. Limit the working time for currents over 1000 A according to the following data.

**Overloads**

| Current range | I ≤ 1000 A | 1000 A < I ≤ 1200 A |
|---|---|---|
| Operating mode | continuous [1] | 15 minutes of measurement, followed by 30-minute break |

[1] For frequencies f ≤ 1kHz. Limiting the maximum current in continuous operation for frequencies above 1 kHz according to the following:

$$I_{cont.} = \frac{1000\ \text{A}}{\text{f [kHz]}}$$

## 3 Operation

To induce a current in a conductor, open the clamp slightly by turning the clasp, clamp it on the conductor with flowing current and roughly center the conductor relative to the clamp loop. Then close the clamps and make sure that both jaws fit tightly together.

The gap (formed by the faces of the core) should be kept perfectly clean.

## 4 Cleaning and maintenance

**NOTE!**
Apply only maintenance methods specified by the manufacturer in this manual.

Before cleaning, disconnect the clamp from the tested circuit and the meter. Do not spray the clamps with water.

Remove the dust from the gap with a soft and dry cloth. Periodically wipe the accessible iron part of the jaws with an oil-soaked cloth to prevent possible corrosion.

The clamp may be cleaned with a soft, damp cloth using all-purpose detergents. Do not use any solvents.

## 5 Dismantling and utilisation

Worn-out electric and electronic equipment should be gathered selectively, i.e. it must not be placed with waste of another kind.

Worn-out electric equipment should be sent to a collection point in accordance with the law of waste electrical and electronic equipment.

Before the equipment is sent to a collection point, do not dismantle any elements.

Observe the local regulations concerning disposal of packages.

## 6 Reference conditions

a) temperature .....+20°C …+26°C
b) relative humidity..... 20…75%
c) conductor..... centred in the jaws
d) current constant component..... none
e) permanent magnetic field ....<40 A/m (Earth's magnetic field)
f) variable, external magnetic field..... none
g) conductors in the immediate vicinity ..... no current flow

## 7 Technical data

**Basic technical data**

a) nominal current.....1000 A AC
b) output for maximum current .....1 A AC
c) frequency range.....30 Hz...5 kHz

- When using the clamp with a SONEL meter, total measurement accuracy of the measuring system of the meter and clamp is specified in the manual of a given meter.
- The accuracy of the clamp given in this manual is not the sum of the accuracy of the meter and accuracy of the clamp..

**Other technical data**

a) insulation type acc. to IEC 61010-1 .....double
b) measurement category acc. to IEC 61010-1 ..... III 600 V
c) ingress protection acc. to IEC 60529
  ▪ closed jaws ..... IP40
  ▪ open jaws..... IP30
d) flammability classification acc. to UL 94 ..... V0
e) dimensions ..... 216 × 111 × 45 mm
f) weight .....ca. 550 g
g) jaws opening distance.....53 mm
h) height of open jaws .....139 mm
i) maximum diameter of tested cable.....∅52 mm
j) operating temperature.....-10°C…+55°C
k) relative humidity ..... <90%
l) altitude a.s.l. ..... ≤2000 m
m) the product meets the EMC requirements according to ... .....IEC 61000-6-3, IEC 61000-6-2, IEC 61326-1

## 8 Manufacturer

The manufacturer, which also provides guarantee and post-guarantee services:


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Manufactured in France for SONEL S.A.