

# Manual de utilizare

## Clește ampermetric

### MiniFLEX



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## 2. Cuvant inainte

Draga client,

Va multumim pentru decizia luata in favoarea cumpararii clestelui ampermetric MiniFLEX. Va rugam sa cititi cu mare atentie acest manual de instalare si operare, inainte de montarea si punerea in functiune a clestelui ampermetric MiniFLEX, urmand in totalitate sfaturile noastre. Functionarea corecta si fara riscuri este garantata numai daca au fost respectate in totalitate instructiunile si precizarile din acest manual.



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### 3. Instrucțiuni de siguranță



Please check to see if these instructions correspond to the device type.

Observe all the instructions stated in this manual. It contains fundamental information, which must be observed during installation, operation and maintenance. Therefore, this manual must absolutely be read carefully by the installer and the responsible operator/personnel before the installation, commissioning and maintenance.

The operating instructions must always be accessible at the operation location of the product.

In addition to these instructions, local and national regulations must be observed if necessary.

In case of doubt or questions about this manual or the device, you should contact CS Instruments GmbH.

#### Further safety instructions:

1. Trouble-free operation and reliability of the device can only be guaranteed if the device is not subjected to any other climatic conditions than those stated under 'Specification'.
2. General instructions and safety regulations for electric, light and heavy current plants, including domestic safety regulations (e.g. VDE), have to be observed.
3. If device is to be connected to other devices (e.g. via PC) the circuitry has to be designed most carefully. Internal connection in third party devices (e.g. connection GND and earth) may result in not-permissible voltages impairing or destroying the device or another device connected.
4. If there is a risk whatsoever involved in running it, the device has to be switched off immediately and to be marked accordingly to avoid re-starting.  
Operator safety may be a risk if:
  - there is visible damage to the device.
  - the device is not working as specified.
  - the device has been stored under unsuitable conditions for a longer time.

In case of doubt, please return device to manufacturer for repair or maintenance.

5. Do not use this product as safety or emergency stop devices, or in any other application where failure of the product could result in personal injury or material damage.

## 4. Descriere

MiniFLEX.ACDC-400-040 is an AC RMS current sensor composed of a flexible active part (Rogowski coil model MiniFLEX MA101) connected to a compact digital converter, capable of measuring the current carried on a power conductor up to a value of 400 Aac. The digital converter supplies an output of 4-20 mAdc in linear proportion to the measured current.

## 5. Caracteristici tehnice

- Domeniu de masurare: 5 ... 400 Aac
- Frecventa de baza: 45 ... 65 Hz
- Semnal iesire: 4 ... 20 mAdc
  - 4 m = 0 Aac
  - 20 m = 400 Aac
- Semnal maxim iesire: 21,6 mA
- Impedanta sarcina:  $\leq 300 \Omega$
- Precizie:  $\leq 1 \%$  cap scala pe tot domeniul de masurare 5 ... 400 Aac <sup>(1)</sup>
- Tensiune alimentare: 10 ... 30 Vdc
- Putere consumata:  $\leq 50 \text{ mA}$
- Cablu conectare cu 3 fire (maro – albastru – negru)

(1) Conditii de referinta  $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , R.H. 20...75%, camp magnetic extern continuu  $< 40\text{A/m}$ , absenta campurilor magnetice si electrice, frecventa semnal masurat  $50 \text{ Hz} \pm 1 \text{ Hz}$  unda sinusoidala, senzor montat conform Fig. 3, diametru cablu 14...24 mm.

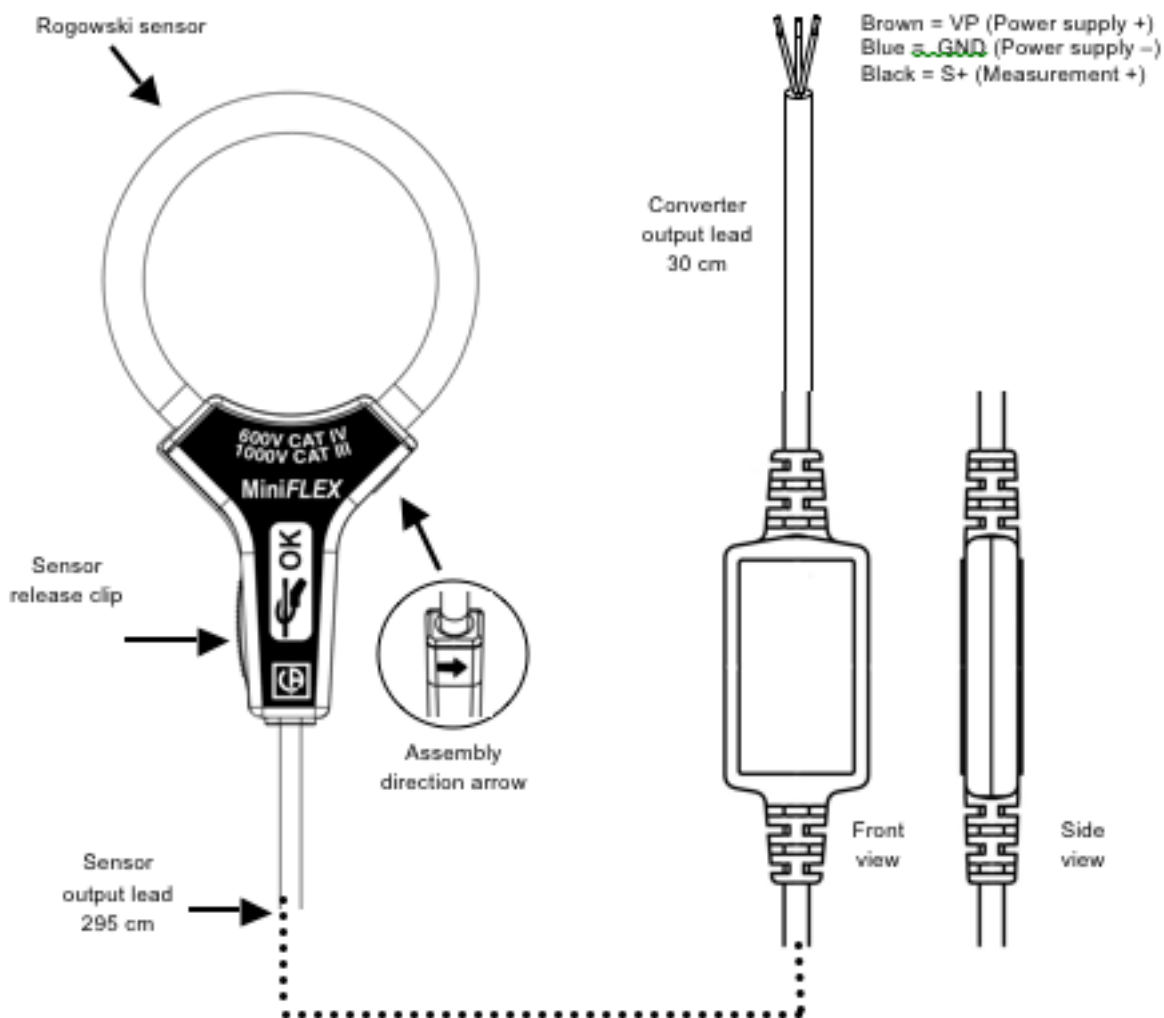
## 6. Caracteristici senzor MiniFLEX MA101

- Lungime senzor:  $140 \text{ mm} \pm 5\text{mm}$
- Capacitate maxima de prindere:  $40 \text{ mm} \pm 2\text{mm}$
- Lungime cablu pentru conectare la convertor digital:  $290 \text{ cm} \pm 5 \text{ cm}$
- Diametru senzor: cca. 5,5 mm
- Diametru cablu iesire: cca. 3 mm
- Temperatura maxima a cablului:  $\leq 80^{\circ}\text{C}$
- Clasa de protectie: IP50
- Protectie la foc: UL94-V0
- Tensiune de service:  $\leq 600 \text{ Vrms (CAT IV) / } 1000 \text{ Vrms (CAT III)}$
- Material clasa II, izolatie dubla, conform EN61010-1 si EN61010-2-032

## 7. Convertor digital

- Dimensiuni: 55 x 30 x 12,5 mm (fara mufa cablu conectare)
- Lungime cablu conectare: 30 cm  $\pm$  2 cm
- Cablu iesire: cablu cu 3 fire, fire cu terminale libere
- Diametru cablu iesire: cca. 4 mm
- Clasa de protectie: IP54
- Protectie la foc: UL94-V0

## 8. Descriere produs



Vedere fara dimensiuni la scara

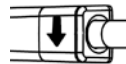
Fig. 1: Vedere senzor MiniFLEX MA101

Fig. 2: Vedere convertor

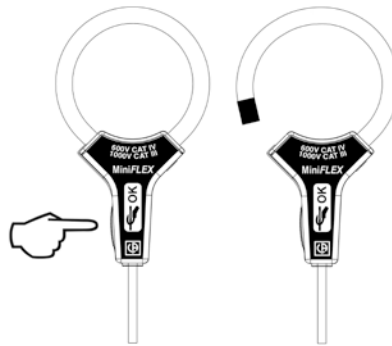
## 9. Instalare senzor MiniFLEX MA101

To ensure compliance with the stated measurement tolerance, the sensor must be positioned as shown in **fig. 3**.

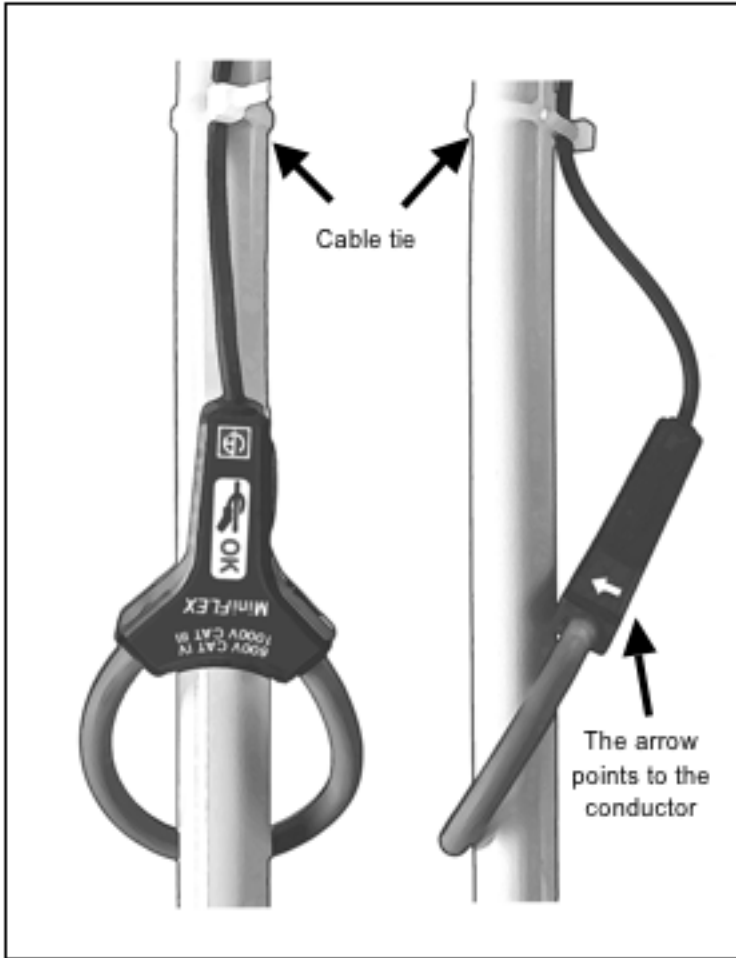
- 1) The sensor must be installed in an inclined position and inverted, with the "OK" label visible to the operator.



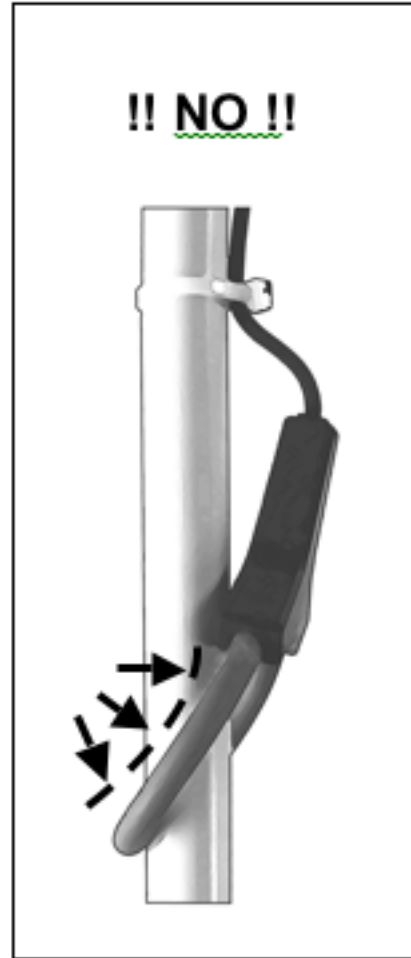
- 2) There is a black arrow on the right-hand side of the sensor. The arrow must be pointing towards the clamped conductor.
- 3) Press the yellow clip to release the sensor



- 4) Circle the cable with the sensor and lock the clamp, ensuring the yellow clip clicks into place. Make sure the red sensor is correctly locked in its location.
- 5) Incline the sensor until the black fastening clip is in contact with the clamped conductor (**Fig. 3**). Do not bend the sensor (**Fig. 4**).
- 6) To prevent the sensor from sliding along the conductor, fix the output lead to the clamped conductor, e.g. using a cable tie.
- 7) Allow the sensor to lie in a natural position, without causing any distortion during the fastening stage (**Fig. 4**).
- 8) The sensor should be positioned at a distance greater than 5 cm from other external conductors



**Fig. 3:** correct mounting position

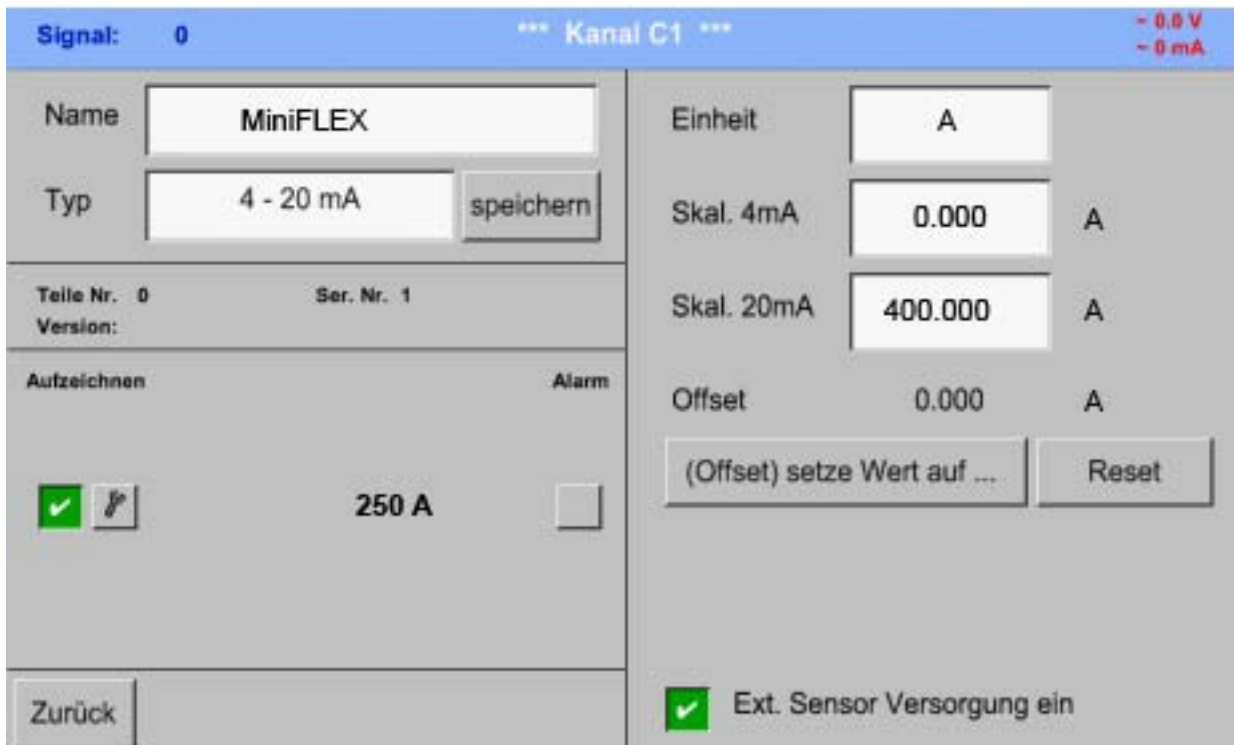


**Fig. 4:** take care to avoid mechanical distortion



## 10. Conectare la DS 500 (mobile)

Use the following settings to connect your MiniFLEX clamp-on-ammeter to the mobile datalogger DS 500:



Signal: 0 \*\*\* Kanal C1 \*\*\* - 0.0 V  
- 0 mA

Name: MiniFLEX

Typ: 4 - 20 mA

Teil Nr. 0 Ser. Nr. 1

Version:

Aufzeichnen  Alarm

250 A

Einheit: A

Skal. 4mA: 0.000 A

Skal. 20mA: 400.000 A

Offset: 0.000 A

Ext. Sensor Versorgung ein

1) Open the settings menu and choose the preferred channel:

Main menu > Settings > Sensor settings > choose channel (e.g. C1)

2) Utilizati setarile urmatoare:

Type:	4 - 20 mA
Unit:	A
Scale 4 mA:	0
Scale 20 mA:	400
Sensor Supply Voltage On:	activated

## 11. Conectare la alte instrumente

Sonda MiniFLEX.ACDC-0400-040 poate fi conectata la sistemele cu intrare 4-20 mA.

Respectati urmatoarele polaritati:

- Cablu de iesire cu 3 fire:
  - Maro = VP (Alimentare +)
  - Albastru = GND (Alimentare -)
  - Negru = S+ (Semnal iesire +)

## 12. Instructiuni de reciclare

Dispozitivul nu trebuie aruncat la deseurile menajere obisnuite. In cazul in care senzorul ar trebui sa fie distrus, returnati dispozitivul la furnizorul dvs. insotit de o adresa inregistrata si stampilata. Vom organiza distrugerea acestuia conform legilor privind protectia mediului.