

CONFIGURATION HANDBOOK

94000CA



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Device Presentation

The 94000CA is a digital meter for voltage, current or frequency measurement designed for low-cost or small size applications. The optional relay allows to use it as a protection relay.

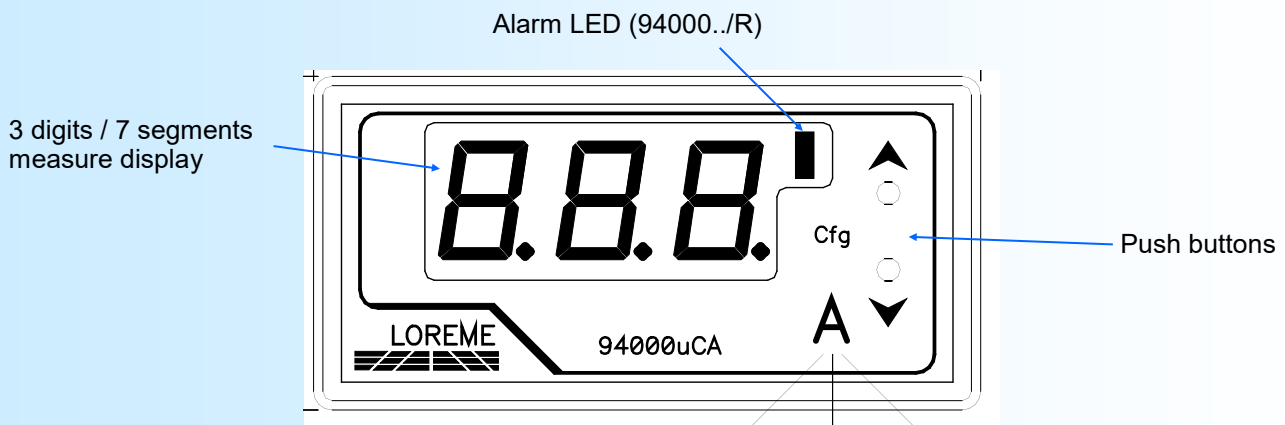
The implementation is fast by simple programming by the front panel.

94000CA is available in the following versions:

- 94000UCA:** High and low voltage inputs.
- 94000ICA:** Current input.
- 94000Hz:** Frequency input on 2 voltage calibers.
- 94000... /R:** With an alarm relay.

The technical data sheet can be downloaded here: http://www.loreme.fr/fichtech/94000CA_eng.pdf

USER INTERFACE



Push buttons functions

- ▲ Configuration access or <YES> button or value increasing button.
- ▼ <NO> button or value decreasing button.

Configuration

Visualization

On power on, the 94000 displays momentarily his Hard & Soft version in the form "h-s".

In input voltage it has 2 calibers (100 V and 800 V by default) and in current input one 10 A caliber. For these two types of input it is able to display a measurement going from -99 kV / kA to 999 kV / kA depending on the PT or CT ratio configured. The message "Hi" is displayed in case of overflow or the message "Lo" in case of underflow.

Configuration

The device is fully configurable by the push buttons on the front panel. It is thus possible to modify the PT ration and the input caliber (UCA model) or the CT ration (ICA model) and the alarm relay parameters (/R option). Access to the configuration is done by pressing the top button (▲).

1) PT ratio (94000UCA) or CT ratio (94000ICA) configuration

The device displays the message 'tP' or 'ti', pressing the ▲ button permit to access the adjustment. Pressing button ▼ permit to skip the adjustment and continue with the next rubric. In adjustment mode, the actual PT or CT ratio is displayed and the ▲, ▼ permits to increment or decrement it. The display is flashing during the adjustment. The value is automatically validated after 4 seconds if no key is pressed. The value can be adjusted from 0.01 to 999 000.

2) Voltage input configuration (94000UCA)

The device displays the message 'inP', pressing the ▲ button permit to access the input choice. Pressing button ▼ permit to skip the input choice and continue with the next rubric.

The message 'UHi' is displayed for the high voltage (800 V) input choice and the 'ULo' message for the low voltage input (100 V) choice.

Pressing the ▲ button permit to validate the displayed choice.

Pressing the ▼ button permit to change the displayed choice.

3) Relay configuration (/R option)

The device displays the message 'rEL'. Pressing the ▲ button permit to access the relay parameters configuration.

The ▼ button permits to go to the next rubric.

The relays parameters are:

- Threshold,
- Hysteresis,
- Threshold detection type, high or low.

3.1) Threshold

The device displays the message 'thr', pressing the ▲ button permit to access the adjustment. Pressing button ▼ permit to skip the adjustment and continue with the next rubric. In adjustment mode, the actual threshold is displayed and the ▲, ▼ permits to increment or decrement it. The display is flashing during the adjustment. The value is automatically validated after 4 seconds if no key is pressed.

3.2) Hysteresis (dead band)

The device displays the message 'db', pressing the ▲ button permit to access the adjustment. Pressing button ▼ permit to skip the adjustment and continue with the next rubric. In adjustment mode, the actual hysteresis is displayed and the ▲, ▼ permits to increment or decrement it. The display is flashing during the adjustment. The value is automatically validated after 4 seconds if no key is pressed.

3.3) Threshold detection type

It is possible to choose the detection type with this parameter.

The **threshold detection** works in this manner:

- high threshold detection:

- .The relay is activated when measure goes above threshold,
- .The relay is deactivated when measure goes below threshold minus hysteresis.

- low threshold detection:

- .The relay is activated when measure goes below threshold,
- .The relay is deactivated when measure goes above threshold plus hysteresis.

Configuration

The detection configuration possibilities are:

- High threshold detection, with displayed message 'AHi'.
- Low threshold detection, with displayed message 'ALo'.

Pressing the ▲ button permit to validate the displayed choice.

Pressing the ▼ button permit to change the displayed choice.

4) End of the configuration

The configured parameters are memorized in internal non-volatile memory and the device returns to measure mode.

Notes:

- *If there is no action on the buttons for a delay longer than 60 seconds, the device leaves automatically the configuration mode and returns in measure mode without memorizing the new configured parameters.*

- *If the user does not complete the configuration process until the end, the reconfigured parameters will not be saved.*

- *The default factories parameters are:*

for the 94000UCA:

High voltage (800 V) input, PT ration = 1, alarm threshold = 0 V, hysteresis = 0 V, low threshold detection.

For the 94000ICA:

CT ration = 1, alarm threshold = 0 V, hysteresis = 0 V, low threshold detection.

EMC Consideration

1) Introduction

To meet its policy concerning EMC, based on the Community directives **2014/30/EU** & **2014/35/EU**, the LOREME company takes into account the standards relative to this directives from the very start of the conception of each product.

The set of tests performed on the devices, designed to work in an industrial environment, are made in accordance with **IEC 61000-6-4** and **IEC 61000-6-2** standards in order to establish the EU declaration of conformity. The devices being in certain typical configurations during the tests, it is impossible to guarantee the results in every possible configurations. To ensure optimum operation of each device, it would be judicious to comply with several recommendations of use.

2) Recommendations of use

2.1) General remarks

- Comply with the recommendations of assembly indicated in the technical data sheet (direction of assembly, spacing between the devices, ...).
- Comply with the recommendations of use indicated in the technical data sheet (temperature range, protection index).
- Avoid dust and excessive humidity, corrosive gas, considerable sources of heat.
- Avoid disturbed environments and disruptive phenomena or elements.
- If possible, group together the instrumentation devices in a zone separated from the power and relay circuits.
- Avoid the direct proximity with considerable power distance switches, contactors, relays, thyristor power groups, ...
- Do not get closer within fifty centimeters of a device with a transmitter (walkie-talkie) of a power of 5 W, because the latter can create a field with an intensity higher than 10 V/M for a distance fewer than 50 cm.

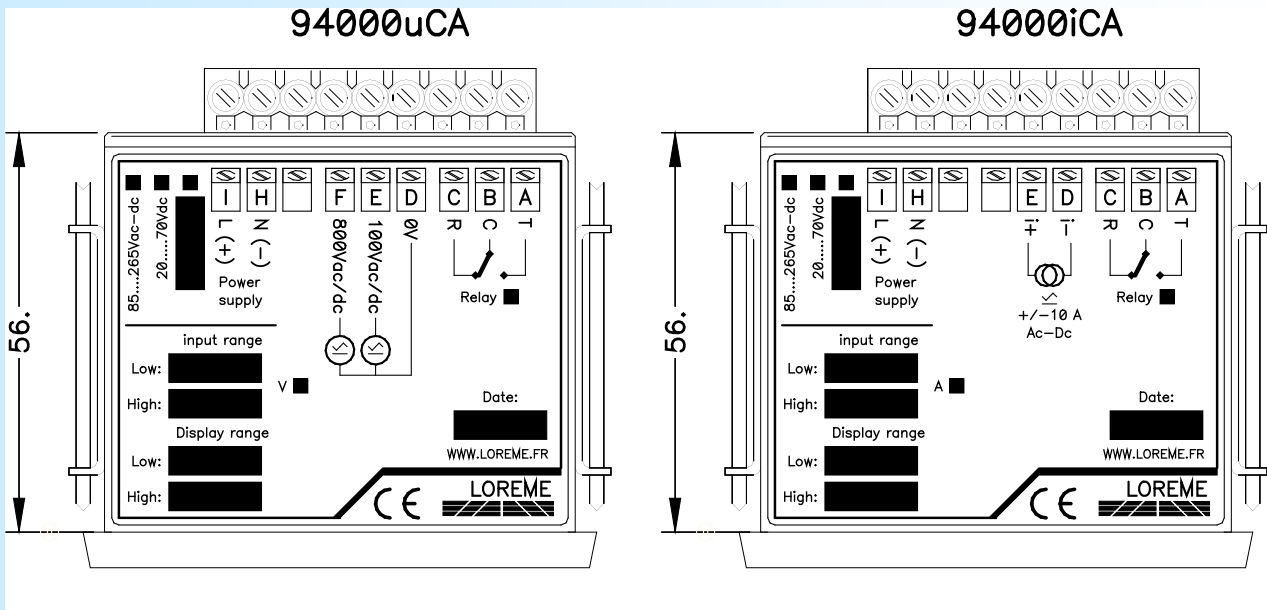
2.2) Power supply

- Comply with the features indicated in the technical sheet (power supply voltage, frequency, allowance of the values, stability, variations ...).
- It is better that the power supply should come from a system with section switches equipped with fuses for the instrumentation element and that the power supply line be the most direct possible from the section switch.
- Avoid using this power supply for the control of relays, of contactors, of electrogates, ...
- If the switching of thyristor statical groups, of engines, of speed variator, ... causes strong interferences on the power supply circuit, it would be necessary to put an insulation transformer especially intended for instrumentation linking the screen to earth.
- It is also important that the installation should have a good earth system and it is better that the voltage in relation to the neutral should not exceed 1V, and the resistance be inferior to 6 ohms.
- If the installation is near high frequency generators or installations of arc welding, it is better to put suitable section filters.

2.3) Inputs / Outputs

- In harsh conditions, it is advisable to use sheathed and twisted cables whose ground braid will be linked to the earth at a single point.
- It is advisable to separate the input / output lines from the power supply lines in order to avoid the coupling phenomena.
- It is also advisable to limit the lengths of data cables as much as possible.

Wiring



94000UCA or 94000Hz

94000ICA

High voltage or frequency input: **F terminal, D terminal (0 V).**
 Low voltage or frequency input: **E terminal, D terminal (0 V).**

Current input: **E terminal (+), D terminal (-).**

Relay: **T terminal (work),
 R terminal (rest),
 C terminal (common).**

Power supply: **I & H terminals.**