

Configuration handbook

CNL45
CNL45L



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RS232 link configuration

The device can be configured or updated in terminal mode via an RS232 link.

Step 1: Driver installation for USB / RS232 adapter



- download driver at www.loreme.fr:
http://www.loreme.fr/aff_produits.asp?rubid=53&langue=fr
- Click on executable file to install the driver,
- Plug the cable on a USB port, Windows install a new serial communication port **COMx** (x >= 4).

Note :

The use of the cable on another USB port don't generates a new communication port. Use of another adapter generates another communication port number (COMx) and requires the reconfiguration of the hyperterminal.

Step 2: Setting of terminal emulation software (PC with windows).

1 The terminal emulation software for PC « HyperTerminal » is resident in windows up to XP version. For later versions, it is downloadable on : www.loreme.fr in **download part** (<http://www.loreme.fr/HyperTerm/htpe63.exe>)
=> Run the downloaded software to install it.

2 Start a "hyper Terminal" connection :
- Click on "**START**" button
Up to XP version
- Go to "**Programs \ Accessories \ Communication \ Hyper Terminal**"
- Click on "**Hypertrm.exe**"
Or if the software was downloaded
- Go to "**All programs \ HyperTerminal Private Edition**"
- Click on "**HyperTerminal Private Edition**"

3 Enter name for the new connection

4 Choose the communication port related to the adapter.

5

Choose:
- 9600 bauds
- 8 DATA bits
- no parity
- 1 stop bit
- **XON/XOFF**

6 The PC is now in terminal mode, connect it to the device by plugging the RS232 cable. The measure is now displayed on the terminal. To access configuration, press 'C' key.

7 When leaving Hyper terminal, the following window will appear. By saving, the terminal session will start with the same configuration.

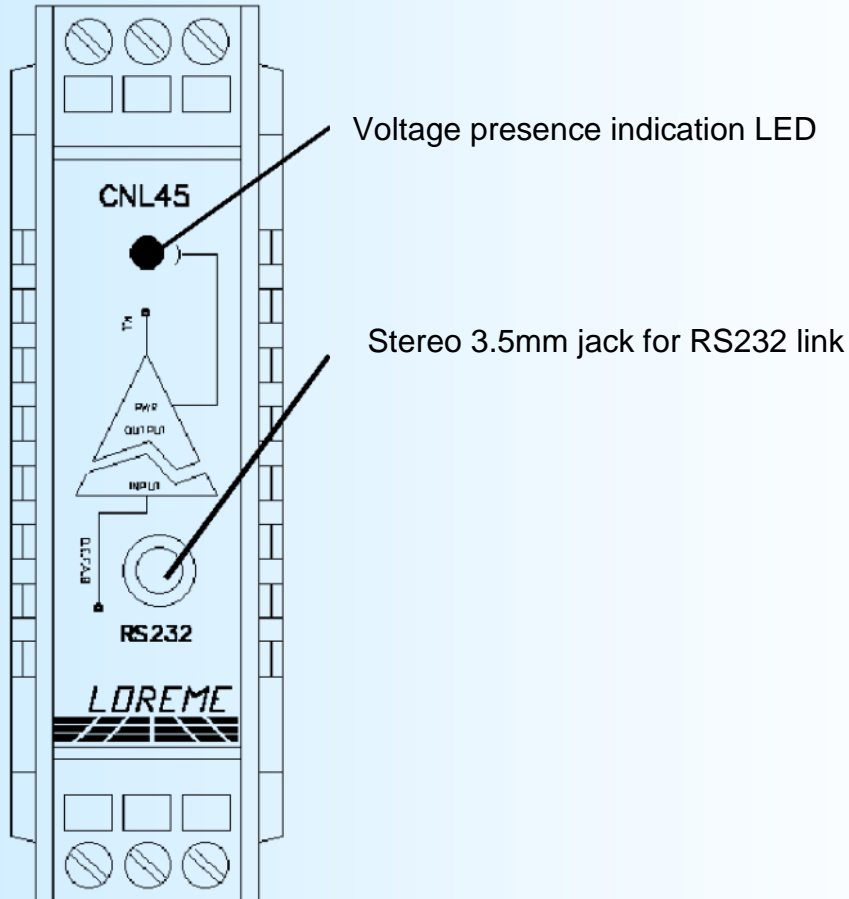
Thus, the shortcut **LOREME.ht** will permit to communicate with all LOREME devices.

Note: to modify the parameters of terminal mode whereas this one is already started, it is necessary, after having carried out the modifications, to close the terminal and to open it again so that the modifications are effective.

Device overview

It's a converter in 2 wires technical, supplied by the current loop. Only 2 wires has needed for power supply and analog output. Its input capacity are as follows :mV, V, mA, resistance (2 or 3 wires), Pt100 (2 or 3 wires), Tc (B, E, J, K, R; S, T) and potentiometer.

The datasheet can be downloaded at : http://www.loreme.fr/fichtech/CNL45_eng.pdf



Terminal mode

VISUALIZATION:

When power on, the device is automatically put in measure mode.
 2 information are available on screen:

10.00 mV	input measure value
11.92 mA	output result value.

CONFIGURATION:

This manual resume in detail the different configuration possibilities:
 Language, input, display range, output, special function.
 To access the configuration mode, type the « C » key

1) Method:

In configuration, different types of questions are asked. For each of them, several answers are possible.
 Here is their description:

1.1) Menu selection:

Example: INPUT The choice is done by typing "Y" or "N" keys.
 Y - N This choice allows access to different configuration menus.

1.2) Parameter selection:

Example: VOLTAGE or VOLTAGE
 (Y-N) YES (Y-N) NO

Previous choice = YES: - type "Y", "Enter" => validation, choice = YES,
 - type "N" => change and validation, choice = NO.

Previous choice = NO: - type "N", "Enter" => validation, choice = NO,
 - type "Y" => change and validation, choice = YES.

Choices and validation are made by typing "Y" or "N" keys, validation are made by typing "Enter".

1.3) Value acquisition:

Example: LOW SCALE
 4 mA

Two possibilities:

- The validation without modification by typing "Enter",
- The modification with simultaneous display followed by validation with "Enter" key.

Remarks on value acquisition:

- It is possible, when a mistake is made during a value acquisition, before validating it, to go back by pressing on " ← " key. This re-displays the message without taking notice of the mistake.
- In configuration mode, if there is no action during 2 minutes, device goes back in operating mode without taking notice of the modifications made before.
- In configuration mode, if you want go back to measure mode without taking notice of modifications made before, just press "ESC" (PC).

2) Language:

The language possibilities are:

- French
- English

3) Inputs

Input types are :

- Voltage (mV, V),
- Current (mA),
- Resistance (Ohms),
- Pt 100 (°C),
- Thermocouple (°C).

with for each type, the choice of:

- Low range,
- High range.

Particularities:

- Thermocouple:

Define the thermocouple type (B, E, J, K, R, S, T),

Define the cold junction compensation (internal or external).

Choose the internal compensation if thermocouple is wiring with compensation cable.

Choose the **external compensation** when a compensation box where the temperature will be know and fixed is used. Enter this temperature as the external compensation value.

- Potentiometer:

Configure voltage input (mV):

- low scale: 0 mV
- high scale: 140 mV

Move potentiometer at the start and at the end of range, notice each value.

Change voltage input (mV):

- low scale = start range value,
- high scale = end range value.

See wiring diagram for potentiometer wiring.

4) Analog output

With a 2 wire technique transmitter, the output parameters are fixed in type: mA and range: 4-20mA

The user setting parameters:

- Security value,
- response time,
- limitation.

The security value allows to set the output to a known state when there is a sensor breaking or a measure range overflow. This value will be transferred to output.

The limitation allows to bound the output signal swing to the configured output scales for all input signal values. Only security value goes beyond this function.

- **The response time** is adjustable from 0 to 60 s.

5) Special functions

This functions are not available for PT100 and Tc input.

Square root:

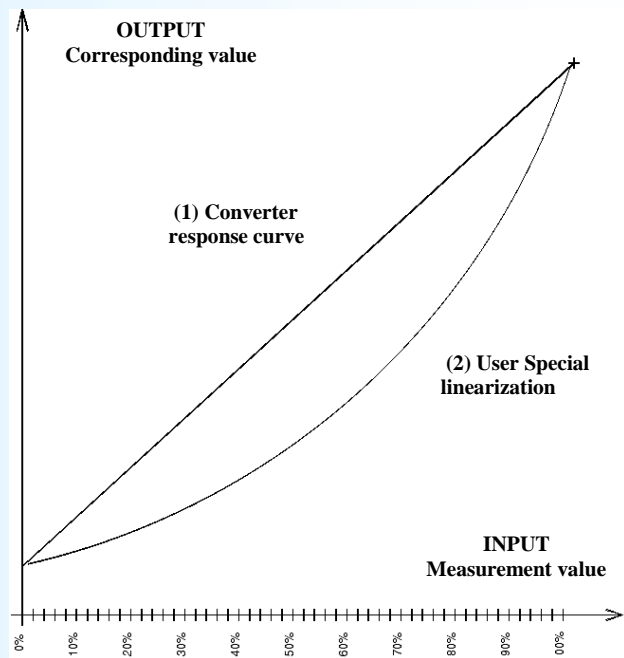
The **square root** function executes a square root on the input range percentage. The result is reported on analog output and on the displayed value.

Special linearization:

When the user activate this function, the calculation is validate with the linearization parameters unchanged. To modify this parameters, answer Yes at the proposal of configuration.

When the linearization is activated, the transmitter use the special curve (2).

To have a special linearization curve (2), it's necessary to put for each curve point the physical input value and the corresponding physical output value (max.: 20 signed points including 0 % and 100 % of the input). So, for each measure in the input range (**device can't use the linearization function out of range**), the device will make the corresponding of linearized output value.



OFFSET

Sometimes, it may be interesting to modify the measure by a simple terminal keyboard intervention. It can be used in many situations as sensor aging, an input refinement as a result of magnifying effect...

To shift the measure, it is necessary:

- to be in measure mode,
- type on "+" or "-" to access the function,
- on terminal the display become:
 - 100.5 DC** measure value with offset,
 - OFFSET 10** offset function, offset value.
- use keys "+" and "-" to adjust offset, measure is directly modified.
- type on "ENTER" to memorize offset.

Note:

When the device is not supplied or is in configuration mode, offset stay active.

To reset offset, it is necessary to start "OFFSET" function, put this value to zero with the "+" and "-" keys, then validate by "ENTER".

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

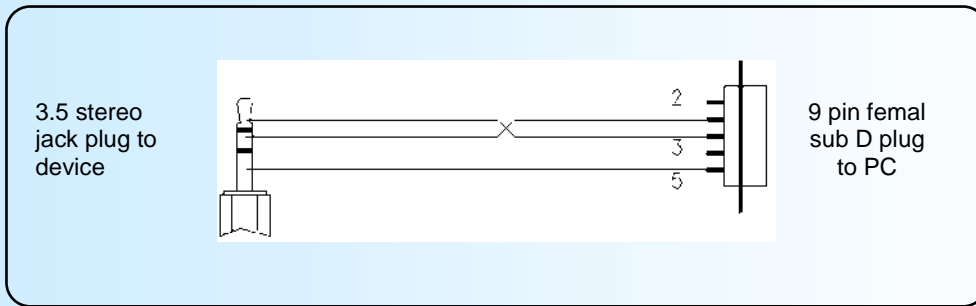
- Comply with the features indicated in the technical sheet (power supply voltage, frequency, allowance of the values, stability, variations ...).
- It is better that the power supply should come from a system with section switches equipped with fuses for the instrumentation element and that the power 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

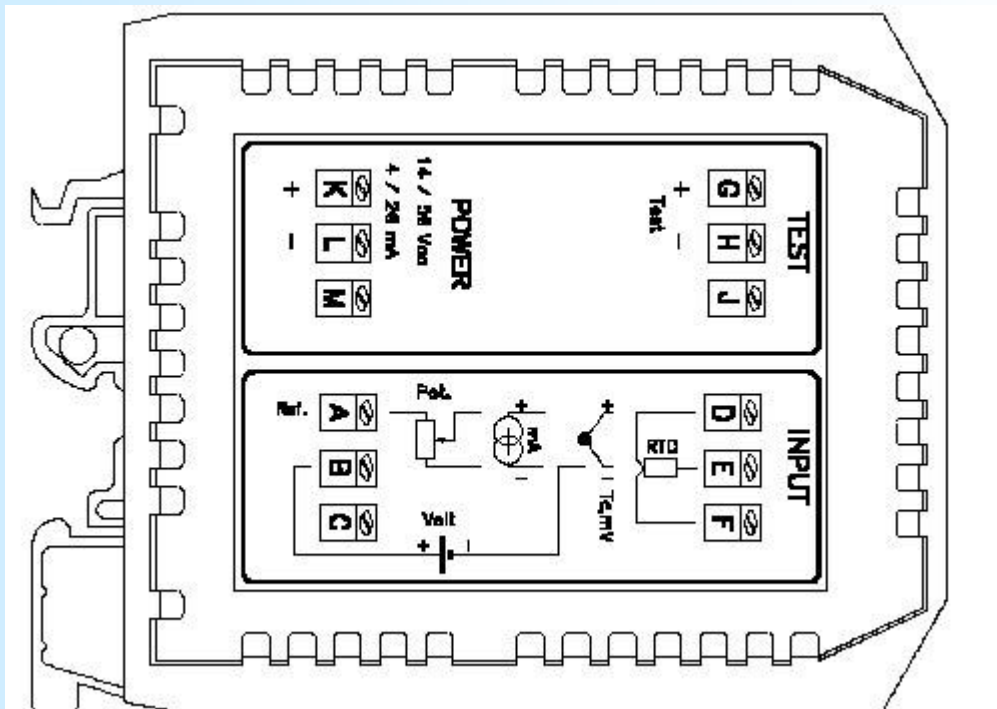
- In harsh conditions, it is advisable to use sheathed and twisted cables whose ground braid will be linked to the earth at a single point.
- It is advisable to separate the input / output lines from the power supply lines in order to avoid the coupling phenomena.
- It is also advisable to limit the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

Câblages

TERMINAL - DEVICE LINK



WIRING



- | | |
|-------------------------------|-------------------------------------|
| mV input: | D (+), E (-) |
| V input: | B (+), E (-) |
| mA input: | D (+), E (-), internal 2 ohms shunt |
| Resistance 2 wires input: | D and F(+), E (-) |
| Resistance 3 wires input: | D (+), F (line), E (-) |
| PT100 2 wires input: | D and F(+), E (-) |
| PT100 3 wires input: | D (+), F (line), E (-) |
| Tc input: | D (+), E (-) |
| Potentiometer input: | A (+Réf), D (+), E (-) |
| Power supply / analog output: | K (+), L (-) |
| Test pins: | G (+), H (-) |