# CONFIGURATION HANDBOOK

## HRG40
## HRG40/T
## HRG40L
## HRG40/A

HRG40, /T, L



HRG40/A

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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 )

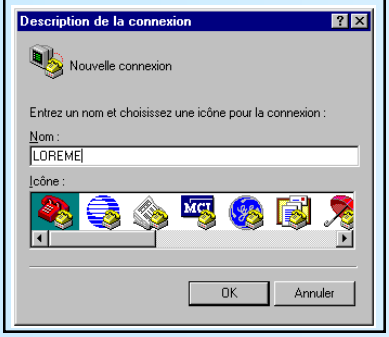
=> Run the downloaded software to install it.

**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"**

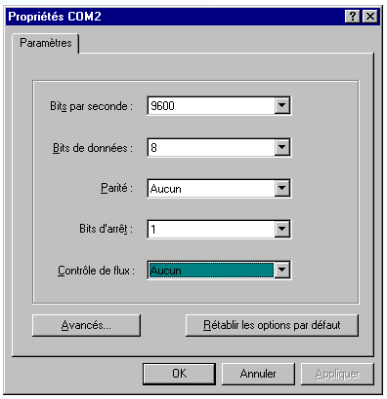
**3** Enter name for the new connection




**4** Choose the communication port related to the adapter.

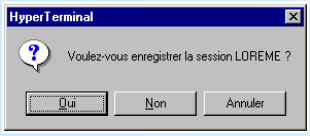
**5**

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 will permit to communicate with all LOREME devices.

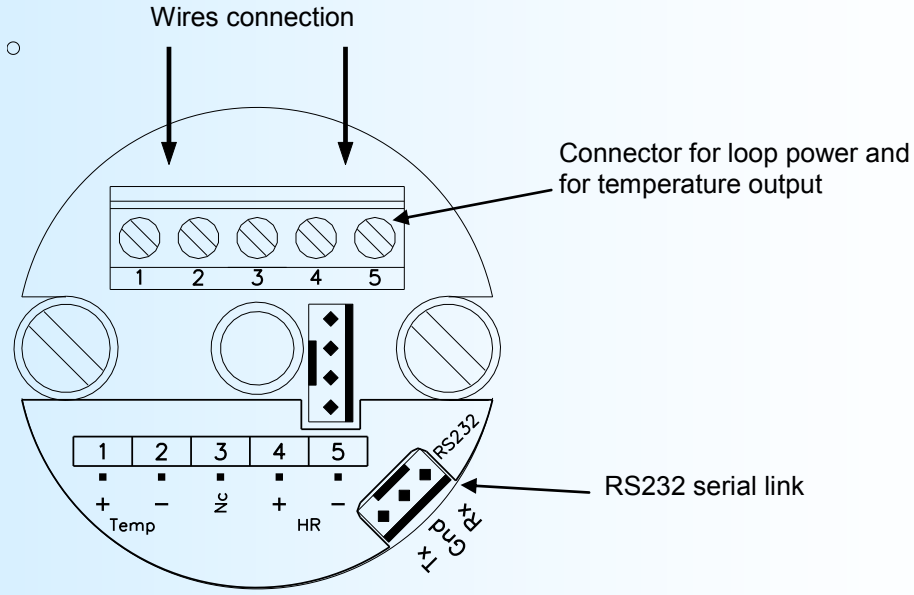
**Note**: To modify the parameters of terminal session whereas this one is connected, it is necessary to disconnect it, modify the parameters and then to reconnect it.

# Device overview

The HRG40 is a duct mounting thermo-hygrometer. The device is a 2 wire transmitter , powered by the hygrometry input. The hygrometry information is given by the current consumed by the HRG40. In case of sensor breaking, the output is set to security value of 22mA.

The device have several options:
- HRG40T : with a second output, isolated from power loop, for a temperature measurement.
- HRG40A : with a 4 digits LCD display
- HRG40L : HRG40 model with less accurate humidity sensor.

The datasheet can be downloaded at : http://www.loreme.fr/fichtech/HRG40_eng.pdf





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# Terminal mode

## VISUALIZATION

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

| | | |
|---|---|---|
| | 33.3 % HR/25.3 DC | Humidity measure / temperature measure. |
| | 9.3 mA | Humidity output (4/20 mA for 0/100 %). |
| *or* | 9.3 mA/10.3 mA | Output value humidity / temperature (HRG40/T only). |

## CONFIGURATION

This manual resume in detail the different configuration possibilities:
Language, temperature range, outputs. 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: FRENCH or FRENCH
(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
-20 °C

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) Temperature range**
- Configuration of temperature range : Celsius or Fahrenheit degree.
- Configuration of temperature low scale and high scale for 4 and 20 mA output.

**4) Analogue output**
In standard, the device has one current output. With the /T option, a second current output is available. This outputs are isolated and independently configurable.

The output configuration has 2 rubrics :

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

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

## 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 **"-", on the terminal the following is displayed**

| | |
|---|---|
| 42.8 % RH/22.6 °C | Humidity measure value with offset. |
| OFFSET HR: 0.6 % RH | Actual humidity offset value. |

- use keys **"+"** and **"-"** to adjust offset, humidity measure is directly modified.
- type on **"ENTER"** to save the new offset for humidity and pass to temperature measure offset.

| | |
|---|---|
| 42.8 % RH/22.6 °C | Temperature measure with offset. |
| OFFSET TEMP.: -0.3 °C | Actual temperature offset value. |

- use keys **"+"** and **"-"** to adjust offset, temperature measure is directly modified.
- type on **"ENTER"** to save the new offset for temperature.

**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 the offset value to zero with the **"+"** and **"-"** keys, then validate by **"ENTER"**.*


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# FIRMWARE update

To access to the firmware update function, you must first open an HyperTerminal session on a PC, connect the device to the PC with the RS232 link cable and then power on the device.

The following character is send to the terminal:

> <——————— The device sends this character then it waits the « F » key during 0.5 s.

If the user has pressed the « F » key in the allowed time, the following message is displayed in the HyperTerminal windows:

**FIRMWARE LOADER Rev2.1**
**READY TO TRANSFER...**

The device is now in the firmware load mode and is waiting for the firmware file. This file is provide by LOREME and contain the firmware code in Intel HEX format.

Select the « Transfer », « Send a text file ... » in the HyperTerminal menu.
Select the directory and open the file. The HyperTerminal program begins to send the file to the device.

**FIRMWARE LOADER Rev2.1**
**READY TO TRANSFER**
********** <——————— The star characters appears to show the progress of the uploading.

At the end, the message « **PROGRAMMING OK !** » is display if no errors occurs. Otherwise, these following message could be displayed:

- SERIAL COM ERROR ! Error during receipt.
- SERIAL TIMEOUT ! Waiting time of receipt elapsed (60 s).
- PROGRAMMING FAILED ! Programming error in the internal flash memory.

**Attention**
If an error occurs during the programming process, it is necessary to start again the whole procedure.
A bad programming leads to an inoperative device.

# 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.


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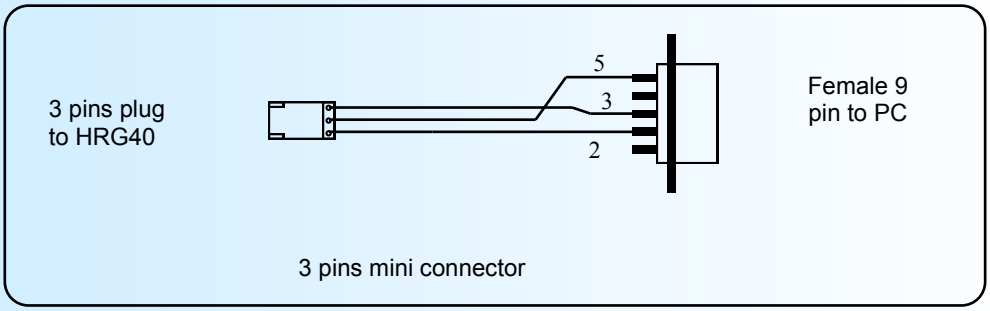
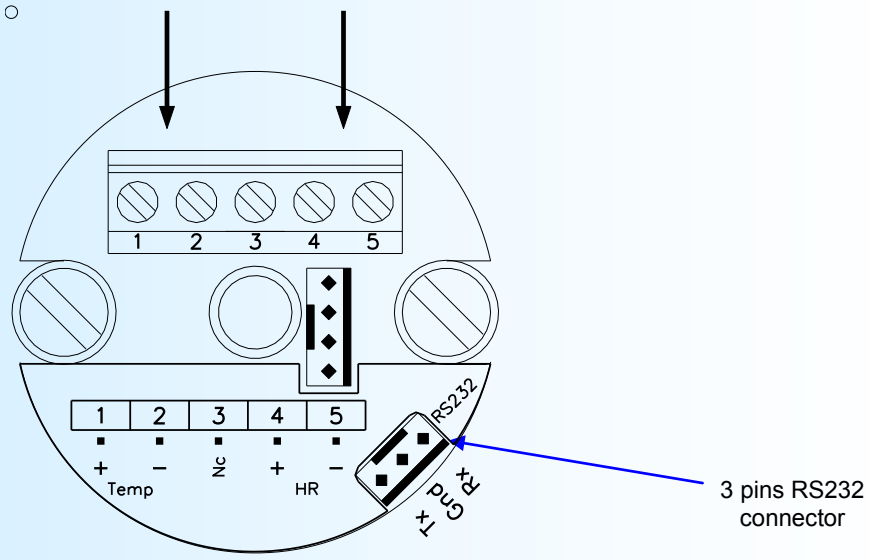
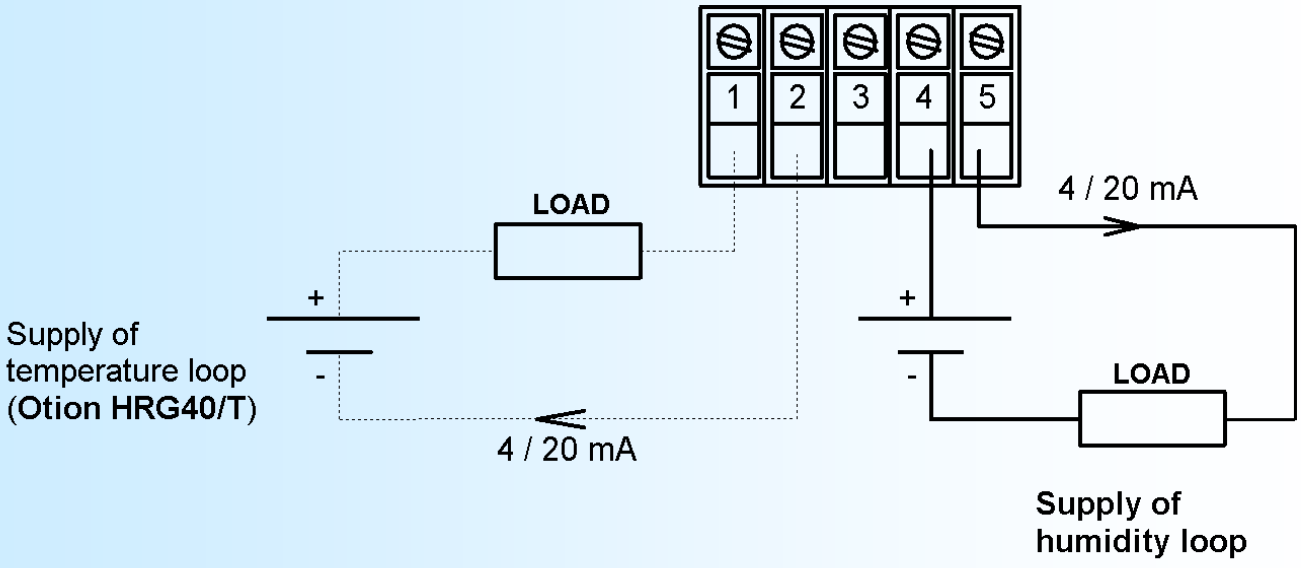
# WIRING

## PC - DEVICE LINK

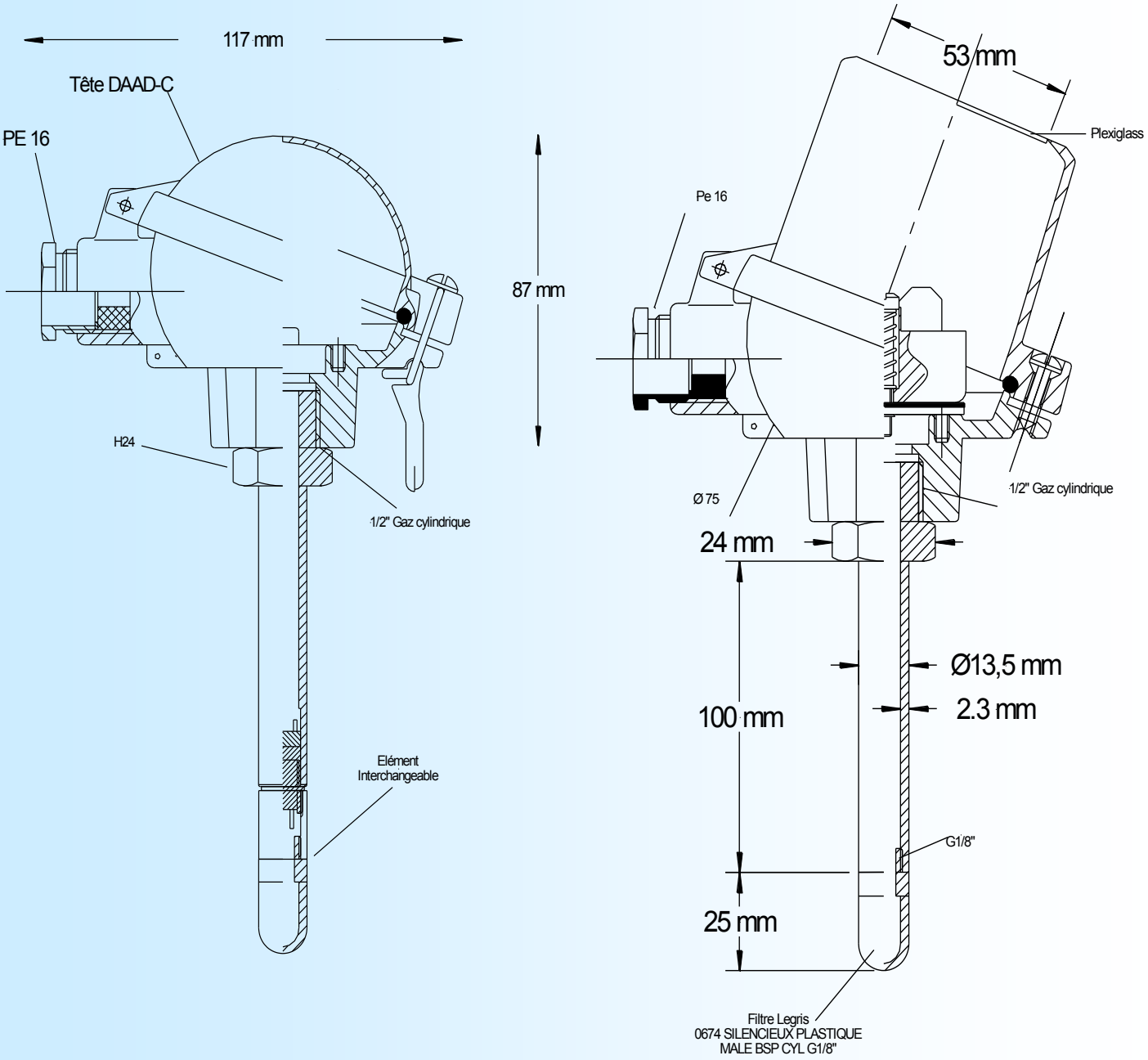



## WIRING



# Outline dimensions





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