

## CONFIGURATION HANDBOOK

### GAL48BP GAL48BP1



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Download manual at : [www.loreme.fr](http://www.loreme.fr)

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## Device overview

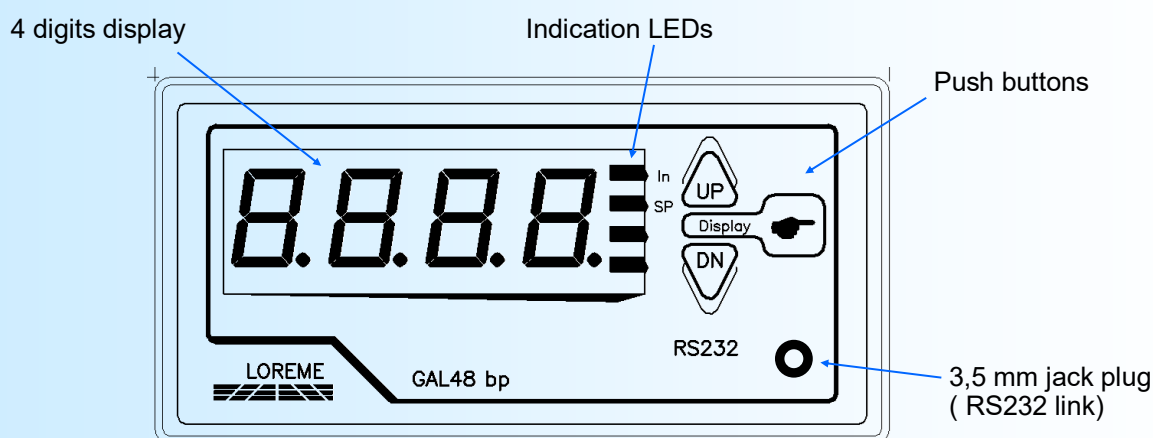
The **GAL48BP** can measure an input signal and generate an output setpoint signal independently of input measure. It is possible to select the signal to be displayed (setpoint or measure) via push button.

The **GAL48BP1** is a setpoint generator who can be drive by front face buttons or by an external analog signal. An output relay contact indicate the type of setpoint in use.

- opened contact : external setpoint.
- closed contact : internal setpoint.

The datasheet can be downloaded at : [http://www.loreme.fr/fichtech/GAL48-GAL96-GAL144\\_eng.pdf](http://www.loreme.fr/fichtech/GAL48-GAL96-GAL144_eng.pdf)

### USER INTERFACE



The front face is compose of :

- 4 digits LED display for setpoint and measure.
- 2 LED :
  - **in** measure display (GAL48BP) or external setpoint (GAL48BP1).
  - **SP** setpoint display (GAL48BP) or internal setpoint (GAL48BP1).
- 3,5 mm jack stereo plug for RS232 link.
- 3 push buttons:

- Switch of setpoint / measure display or internal/external setpoint
- Increase setpoint value (internal).
- Decrease setpoint value (internal).
- Reset setpoint (internal) to the start value.

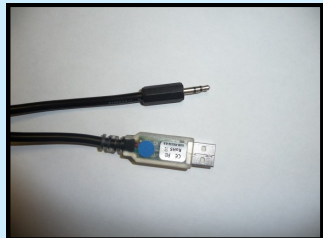
#### **Note:**

- On a GAL48BP in measure display mode, the display switch to setpoint if button <UP> or <DN> are press.
- On a GAL48BP1, when the external setpoint is selected, the buttons <UP> and <DN> are deactivated.

## RS232 link setting

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/download/](http://www.loreme.fr/download/) rubric accessories

- 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.

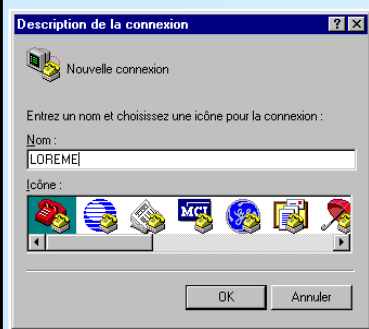
### Step 2: Setting of terminal emulation software (PC with windows).

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** ( [www.loreme.fr/download/](http://www.loreme.fr/download/) )

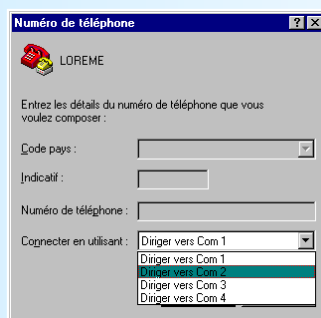
=> Run the downloaded software to install it.

2 Start a "hyper Terminal" connection :  
 - Click on **"START"** button  
 - Go to **"All programs \ HyperTerminal Private Edition"**  
 - Click on **"HyperTerminal Private Edition"**

3 Enter name for the new connection

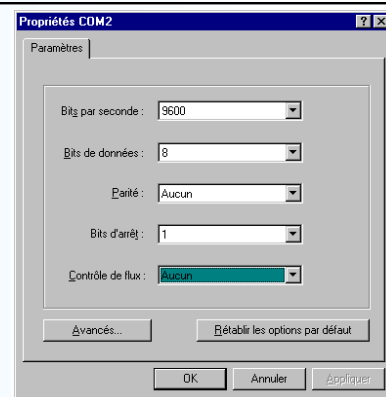


4 Choose the communication port related to the adapter.



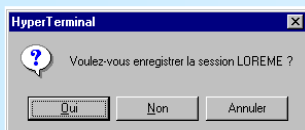
5

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.

## Visualization

2 information are display on terminal:

2 information are display on terminal:

|          |                        |
|----------|------------------------|
| 50 %     | Actual setpoint value. |
| 12.00 mA | Output value.          |

To enter configuration mode, just press "C" key.

At the configuration time, different types of questions are displayed. For each one, several answers are possible. You will find below the detailed description of each case.

example: INPUT (Y-N)      The user makes a choice by pressing the keys "Y" or "N".

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

Previous choice = YES: - pressing **"Y"** or **"Enter"** => choice validation = YES.  
- pressing **"N"** => choice changing = NO.  
Previous choice = NO: - pressing **"N"** or **"Enter"** => choice validation = NO.  
- pressing **"Y"** => choice changing = YES.

Example: LOW SCALE  
4 mA

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

- It is possible, when a mistake is made during a value acquisition, before validating it, to go back by pressing on backspace key. This re-displays the message without taking notice of the mistake.
- In configuration mode, if there is no action on a key during 2 minutes, device goes back in measure 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 the escape key.

- current (+/- 20 mA)
- voltage (+/- 10 V),
- voltage (+/- 100 V),
- frequency (up to 35 kHz and only on **GAL48BP** )

For each input type, the user should setting the low and high scale.

Particularities:

- Potentiometer:

Configure the voltage (10V) input :     - low scale: 0 V,  
                                                      - high scale: 5 V.

Put the potentiometer at the starting position and at the ending position. note the voltage values read.  
Modify the scale of voltage (10V) with this new values.

See the diagram for the potentiometer wiring.

**3) Display range**

The display range converts the input signal in a other physical unit, thus making the reading of the measured information easier.

Ex: Input 4-20 mA / Display range 0-100 BAR

=> Input = 12 mA, displayed value = 50 BAR

To setting the display range, the user should setting :

- unity,
- low display range,
- high display range,
- the number of decimal,
- the filter (have effect only on the display value)

The display range **Unity** is optional. is just display on terminal, it is limited to 4 characters.

The **number of decimal** is the number of digits displayed after the decimal point. This number depend of the input type and the display range.

The **display filter** is for smoothing the displayed value. The factory value is 2.

**4) Special function**

The **GAL48BP1** have only the square root function. calculation on internal and external setpoint value.

The **GAL48BP** have more special function:

The square root function executes a square root calculation on the input range percentage. The result is reported on the measure value.

The special linearization function allows to customize a response curve by the configuration of corresponding points between the measured input value and the wanted value. When this function is chosen, it is directly activated, but linearization points are not modified. To change linearization points, it is necessary to validate by "YES" the configuration proposal.

When the linearization function is enabled, the device use linearization curve corresponding to configured points.

To customize the response curve, it's necessary to set for each curve point the input value and the corresponding wanted value. 26 points maximum are allowed including the 0% and the 100% for input. So, for each measured point, the device will make correspondence to the linearized display range value.

The polynomial function executes a three degree polynomial calculation on measured value. The calculation is execute on measure percentage  
The equation is in form  $Dx^3 + Cx^2 + Bx + A$ , where x is the measure and A,B,C,D are coefficients freely configurable.

**Note:**

*The special functions on GAL48BP are applicable on the measure only and not on the setpoint.*

## 5) Setpoint functions

### 5.1 GAL48BP

The setpoint configuration is made with 2 rubrics:

- Type of setpoint signal:
  - current (mA),
  - voltage (V).

For each type, set the low and high range parameters.

- Setpoint parameters:
  - start value,
  - rising time.

**The start value**, is the value for the setpoint after power on or when the user press simultaneously the button <UP> and <DN>.

**The rising time** is setting in the range 0s to 600s. It fixing the time need for the setpoint to change from the minimal value to the maximal value during the setting.

### 5.2 GAL48BP1

The setpoint configuration is composed of "start value" and "rising time". The contact type should not be modified with this version!

**The start value** is setting from -5% to 105%. This value is the value of setpoint after power on and after the reset function (simultaneously press of <UP> and <DN>).

**The rising time** is setting in the range 0s to 60s. It fixing the time need for the setpoint to change from the minimal value to the maximal value during the setting.

FONCT.CONSIGNE

O - N                                      Press 'O' to access to setpoint parameters.

VALEUR DE DEPART

50%                                      Input the start value.

TEMPS DE MONTE

5s                                      Input the rising time

CONTACT SORTIE

(O-N) OUI                              Configuration of contact type (do not modify).

contact indication for INT/EXT setpoint.

## 6) Analog output (GAL48BP1 only)

The configuration of output is composed of type (current, voltage), response time and limitation.

For each type of output, setting the low and high range.

The **response time** can be set from 0.2s to 60s. It allows to smooth the output signal when the setpoint is disturbed.

The **limitation** is for clamping the output evolve to output range.

## 7) Password (GAL48BP only)

It's possible to lock the configuration with a password (to define at the order). At the configuration access, if this option is enable, The device request a password. At the end of configuration, its possible to customize the password. By default the password is 177B.

### End of configuration

OK! Message display when the new parameters are saved in memory.

### MEASURE OFFSET (GAL48BP) or EXTERNAL SETPOINT (GAL48BP1)

In some case, it may be interesting to modify the measure when for example : aging of sensor, input correction...

To drift the measure:

- be in measure mode with measure displaying,
- type on "+" or "-" to access the function,
- The terminal display become:

|                  |                                         |
|------------------|-----------------------------------------|
| <b>125 kg</b>    | measured value or setpoint with offset. |
| <b>OFFSET 10</b> | Value of offset.                        |

- use the keys "+" and "-" to change the value,
- Confirm with ENTER to save the value

### Notes:

- *The offset still active after a power off.*
- *To deactivate the offset, enter in offset mode, set the value to 0 and confirm with ENTER.*
- *If no action are made during 20s, the device return to measure mode with no change.*
- *On a GAL48BP1, in external setpoint, the offset is not taking account.*

## 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**

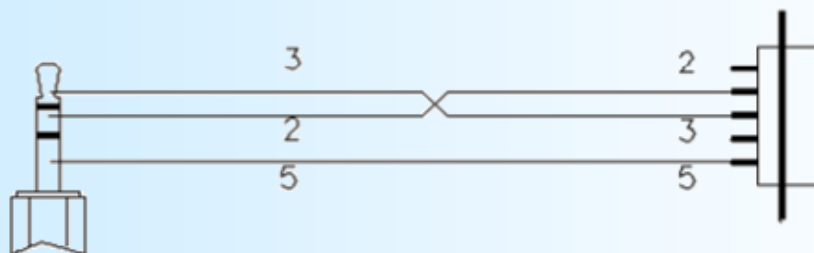
- Comply with the features indicated in the technical sheet (power supply voltage, frequency, allowance of the values, stability, variations ...).
- It is better that the power supply should come from a system with section switches equipped with fuses for the instrumentation element and that the power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

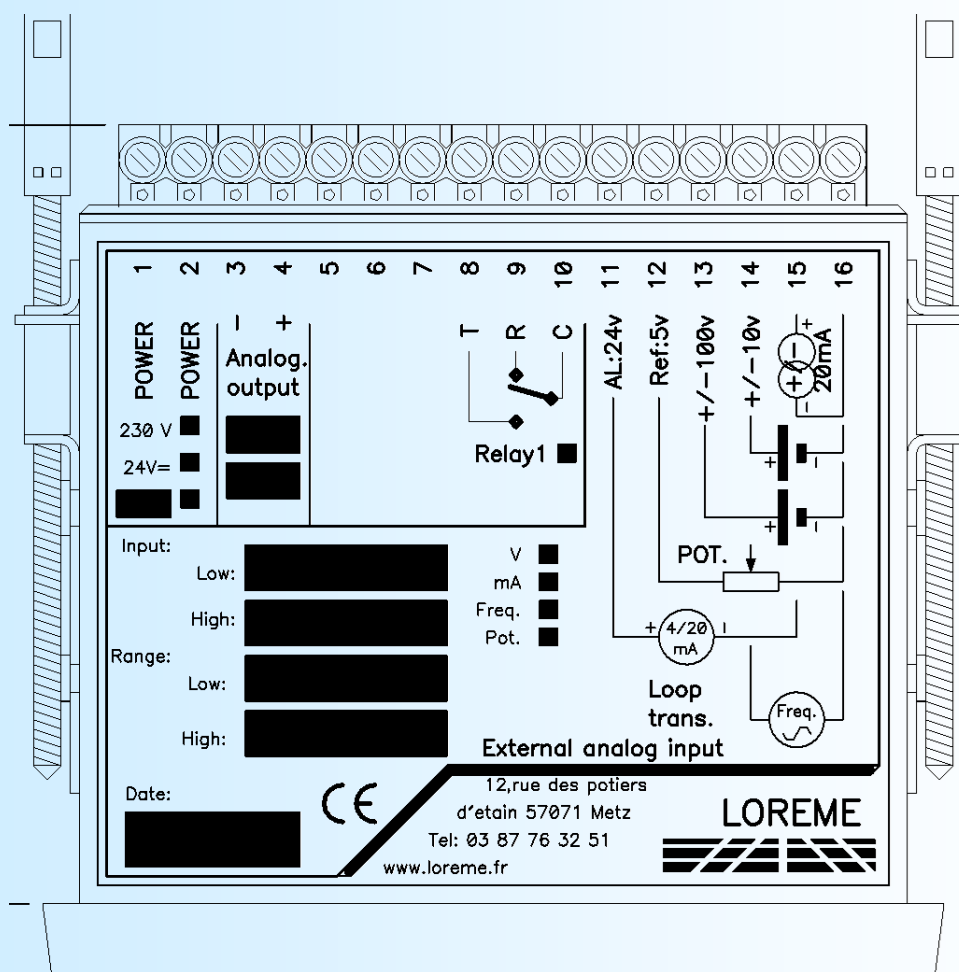
## Wirings

jack stereo  
3,5 mm to  
GAL48BP



Sub-D 9 pins to  
Terminal

### WIRING



Input +/-20 mA  
Input +/-10 V, frequency  
Input +/-100 V

Pin 15 (+), pin 16 (-)  
pin 14 (+), pin 16 (-)  
pin 13 (+), pin 16 (-)

Potentiometer input  
Sensor supply

pin 12 (Ref.), pin 14 (+), pin 16 (-)  
pin 11 (+), pin 15(-)

Output relay (setpoint type  
indication on GAL48BP1)

pin 8 (NO), pin 9 (NC), pin 10 (Common)

Analog setpoint output

pin 4 (+), pin 3 (-)

Power supply

pin 1 (~) , pin 2 (~)