CONFIGURATION HANDBOOK

GAL96BP

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Download manual at : www.loreme.fr

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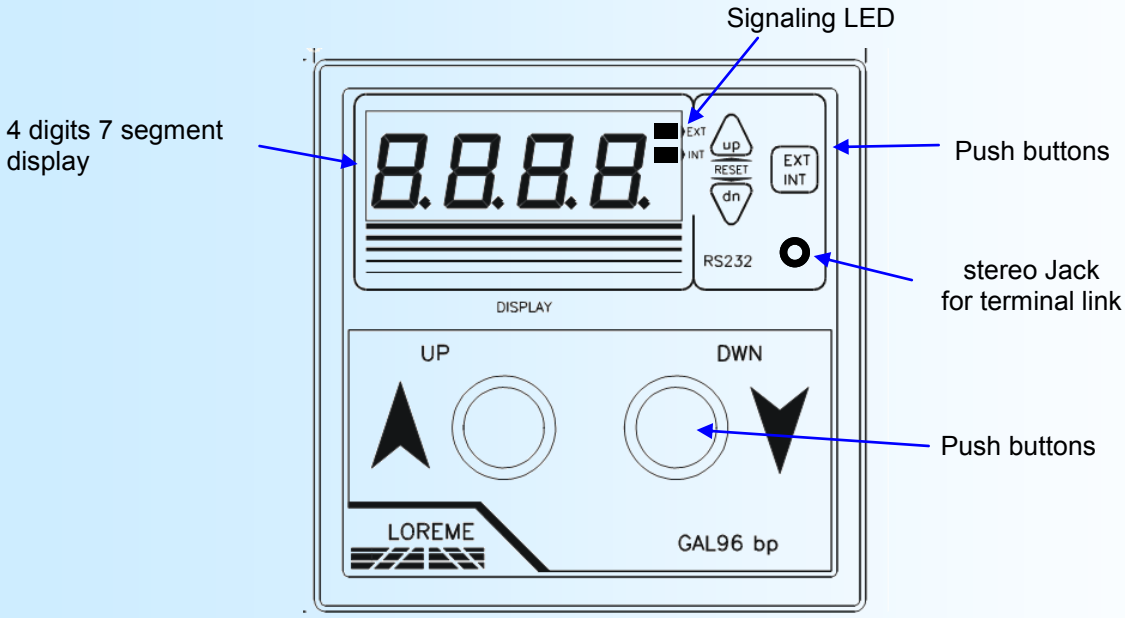
Device Presentation

The GAL96BP is a setpoint generator which can be drive by local or remote push buttons or by an external setpoint analog signal.
The input selection (internal/external) can be made with the front face push button or via the external contact input on the rear face. A display range can be apply and the output signal parameters are configurable.

The technical data sheet is downloadable here: http://www.loreme.fr/fichtech/GAL96BP.pdf

USER INTERFACE



The front face of the device is composed of:

- 4 digits display for the setpoint value.
- 2 LED:
  - **ext** external setpoint mode (automatic).
  - **int** internal setpoint mode (manual).
- 3.5 mm stereo jack plug for the RS232 terminal link.
- 3 Push buttons:

EXT INT — switch between internal setpoint or external setpoint input.

up — increase internal setpoint value

dn — decrease internal setpoint value

up + dn — Reset the setpoint value to the starting value

- 2 big push buttons <UP> and <DWN> for setpoint value setting.

Note: *In external setpoint mode, the* <UP> and <DN> *push buttons are deactivated.*

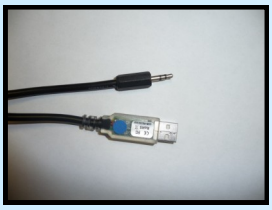
Available models:

GAL96BP : Front face buttons for setpoint selection and setpoint value adjustment
GAL96BP-i : Setpoint value adjustment by front face or remote contact inputs. Setpoint selection by external contact input.
GAL96BP-o : Setpoint value adjustment by front face. Setpoint selection by front face with output contact indication.
GAL96BP-io : Setpoint value adjustment by front face or remote contact inputs. Setpoint selection by front face with output contact indication.
GAL96BP-io1: Setpoint value adjustment by front face. Setpoint selection by front face or external contact input. Output contact for setpoint mode indication.

RS232 link setting

The device can be configured 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)

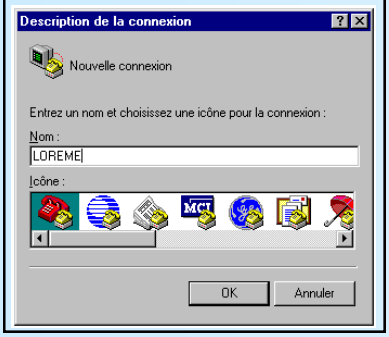
=> Run the downloaded software to install it.

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"**

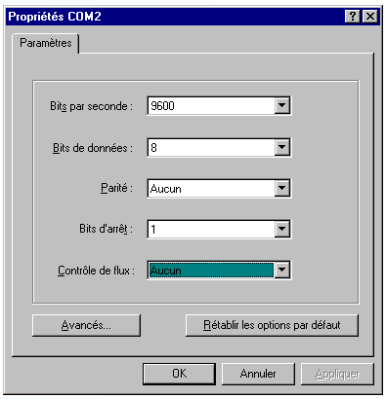
3 Enter name for the new connection



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.

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Terminal mode

Start-up

GAL96BP-i :

At power on, the device use the setpoint mode selected by the dry contact wired on the rear of the device (terminals 8+10) :

Contact open = external setpoint.
Contact closed = internal setpoint.

GAL96BP-o , GAL96BP-io, GAL96BP-io1:

At power on, the device use the last setpoint mode selected by the **ext/int** front face button.

Visualization

Two information are regularly send to the terminal :

50 %	Setpoint value.
12.00 mA	Output value.

Configuration

The handbook explains in detail the different configurations possibilities: input, display range, special functions, setpoint functions, analog output.
To enter configuration mode, just press **"C"** key.

1) Method

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.

1.1) Menu selection

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

1.2) Parameter selection

example: VOLTAGE (Y-N)YES or VOLTAGE (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.

1.3) Value acquisition

Example: LOW SCALE
4 mA

There are two possibilities:
- The validation without modification by typing "**Enter**",
- The modification with simultaneous display followed by validation with "**Enter**".

Notes:

- *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.*

At the beginning of configuration, a temporary message is display on terminal
CONFIGURATION
VER:0.0 indication for hard and soft revision numbers

2) Input
The input configuration are: current (+/- 20mA), voltage (+/- 10V), or voltage (+/- 100V).
For each input type, the user should setting the low and high scale values.

Special for potentiometer input:
Use the 10V voltage input.
Setting the scale to 0V and 5 V.
Set the potentiometer to the start position, read off the value and do the same with the end position.
Modify the input scale with this new values.

2-1) Messages in configuration
ENTREE Press 'O' key to select the input type. Press the 'N' key to go to the next rubric.
O - N

COURANT +/-20mA	Proposal for current input
(O-N) OUI	Press 'O' key ('yes') to select this input type. 'N' for the next choice.
TENSION +/-10V	Proposal for low voltage input.
(O-N) NON	
TENSION +/-100V	Proposal for high voltage input.
(O-N) NON	

Once the type of input is made, the user must define the measure scale.

ECHELLE BASSE	
4.00 mA	Type the low scale value.
ECHELLE HAUTE	
20.00 mA	Type the high scale value.

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 0-1000 kg
=> Input = 12 mA, displayed value = 500 kg

To configure the display range, it is necessary to configure the unit, the low scale, the high scale, the number of decimal, and the filter (used only for the external setpoint).

The **unit** parameter 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.

3-1) Messages in configuration
GAMME AFFICHAGE
O - N Press 'O' key to access to the display range parameters. 'N' for the next rubric.

UNITE	
%	Type characters (4 maxi) for the unit (display only on terminal).
ECHELLE BASSE	
0 %	Type the value display for the low scale measure.
ECHELLE HAUTE	
100 %	Type the value display for the high scale measure.

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NBRE DECIMALE
1 Define the number of decimal displaying.

FILTRE
2 Define the level of display filter.

4) Special functions
The **square root** function perform a square root calculation on the setpoint value.

4.1) Messages in configuration
FONCT.SPECIALE
O - N Press the 'O' to access to the parameter function.

RACINE CARRE Proposal for square root calculation.
(O-N) NON 'O' (yes) for actiavted the calculation. 'N' (no) for deacitvated calculation.

5) Setpoint functions
The Setpoint parameters are the starting value, the rise time and the Digital input configuration,

The **starting value** can be setting within -5% to 105%. It is the setpoint value at the power on or after a setpoint reset (press the UP and DN buttons simultaneously for 2s).
The **rise time** can be setting within 0 to 60s. It is the time needed for the setpoint setting to evolves from the low to the high value.
The **Digital input configuration** is to define the function of (pin 8, pin 10) at the rear face (see the wiring).

If defined as an input, it is the dry contact input for the internal / external setpoint mode selection (GAL96BP-i model).
- Opened contact = external setpoint.
- Closed contact = internal setpoint.
In this mode there is no push button <**int/ext**> on the front face for the setpoint mode selection.

If defined as an output, it is an indication of the actual setpoint mode (GAL96BP-o, GAL96BP-io, GAL96BP-io1 models).
- Contact open = external setpoint in use.
- Contact closed = internal setpoint in use.
In this mode, the front face button <**int/ext**> is used to select the setpoint mode.

5.1) Messages in configuration
FONCT.CONSIGNE
O - N Press the 'O' key to access to the setpoint parameters.

VALEUR DE DEPART
50 % Type the starting value for setpoint. (setpoint value at power on or after reset).

TEMPS DE MONTE Rise time
5 s Define the value in second for the rise time

CONTACT SORTIE Proposal for an output contact in pin 8-10
(O-N) OUI Press the 'O' (yes) key to validate the output contact for setpoint selection indication

CONTACT ENTREE Proposal for an input contact in pin 8-10
(O-N) OUI Press the 'O' (yes) key to validate the input contact to select the setpoint type

6) Analog output
The analog output parameters are : type of the output (Current or Voltage), the response time and the output limitation For each type of output, the user should setting the low and high scale values.

The **response time** can be setting within 200 ms to 60 s. It is used to smoothed the output signal when the setpoint signal is disturbed.

The **output limits** are used to limit the excursion of output signal to the configured scale whatever the setpoint (internal or external) value.

6.1) Messages in configuration

SORTIE	Output parameters.
O - N	Press the 'O' to access to the output parameters.
COURANT	Proposal for a current (mA) output.
(O-N) OUI	Press the 'O' key to validate the choice. 'N' for the next proposal.
TENSION	Proposal for a voltage (V) output.
(O-N) OUI	
ECHELLE BASSE	Low scale for output.
4.00 mA	Define the value for the output low scale.
ECHELLE HAUTE	High scale for output.
20.00 mA	Define the value for the output high scale.
TEMPS DE REPONSE	
200 ms	Define the response time for the output.
LIMITATION	Output limitation.
(O-N) NON	Press the 'O' key for activate the output limitation. 'N' for deactivate the function.

End of configuration:

OK!	Message display at the end of configuration. Indicate that the new parameters are saved in memory.

External setpoint offset

This function can be used to offset the external setpoint. It is useful for example to correct the aging of a potentiometer used as a setpoint signal generator.

To offset the setpoint, you must:

- be in exploitation mode on terminal,
- press on **"+"** or **"-"** to start the correction,
- The information display to the terminal become:

80 %	Setpoint value (with the offset value),
OFFSET 10	Offset function, offset value.

- Use the keys **"+"** and **"-"** to setting the offset,
- Press the **"ENTER"** key to save the offset.

Notes:

- When the device is in configuration or in power off, the offset still activate.
*- To deactivated the offset, enter in **"OFFSET"** mode, put the value to 0 with the **"+"** or **"-"** keys, and valid with **"ENTER"**.*
- If in offset mode, no key action are made within a delay of 20s, the device don't take account of the actual setting and return to exploitation mode.
- In internal setpoint mode, the offset is ignored.

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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

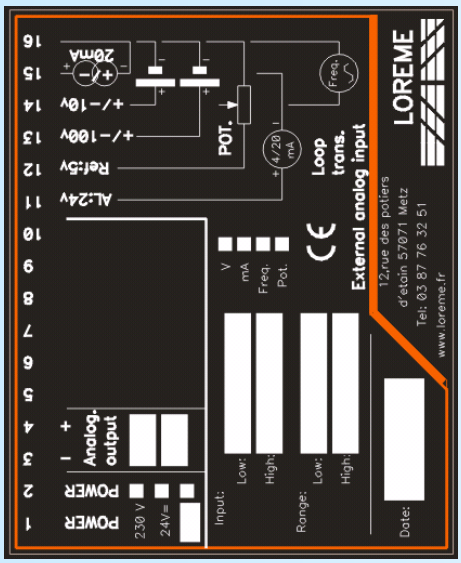
- In harsh conditions, it is advisable to use sheathed and twisted cables whose ground braid will be linked to the earth at a single point.
- It is advisable to separate the input / output lines from the power supply lines in order to avoid the coupling phenomena.
- It is also advisable to limit the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

Wirings

For all models:

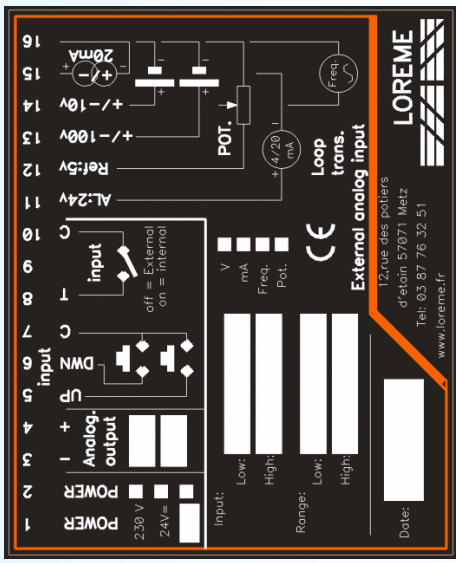
Power	pin 1 and 2
Analog output	pin 4 (+), 3 (-)
+/- 20mA Input	pin 15 (+), 16 (-)
+/- 10V input, frequency input	pin 14 (+), 16 (-)
+/-100 V input	pin 13 (+), 16 (-)
Potentiometer input	pin 12 (5V Ref.), pin 14 (+), 16 (-)
2 wires loop transmitter input	pin 11 (+), 15(-)

GAL96BP



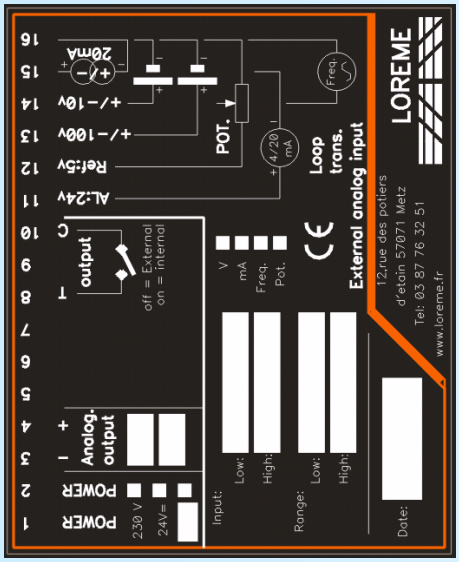
Front face buttons for setpoint selection, increase and decrease setpoint value.

GAL96BP-i



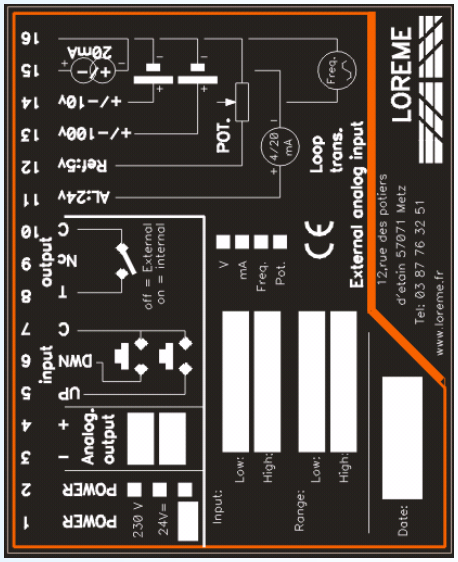
Contact input for setpoint selection (internal / external):
pin 8 and 10
Input for remote UP and DOWN push button :
pin 5 (up), pin 6 (down), pin 7 (common)

GAL96BP-o



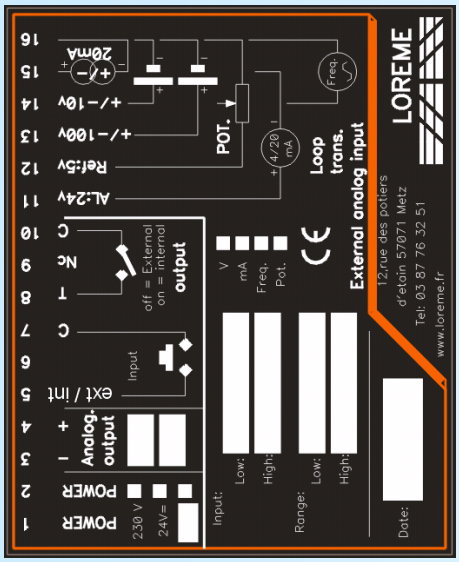
Contact output for selected setpoint (internal / external):
pin 8 and 10
Front face button for setpoint selection

GAL96BP-io



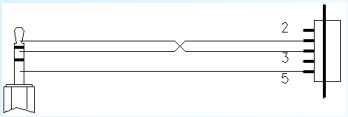
Contact output for selected setpoint (internal / external):
pin 8 and 10
Input for remote UP and DOWN push button :
pin 5 (up), pin 6 (down), pin 7 (common)
Front face button for setpoint selection

GAL96BP-io1



Contact output for selected setpoint (internal / external):
pin 8 and 10
Contact input for remote setpoint selection (pulse input) :
pin 5 and 7

3.5 stereo jack plug to device



9 pins Sub-D to Terminal

STANDARD LINK
IN FRONT FACE