

CONFIGURATION HANDBOOK

DSL35L



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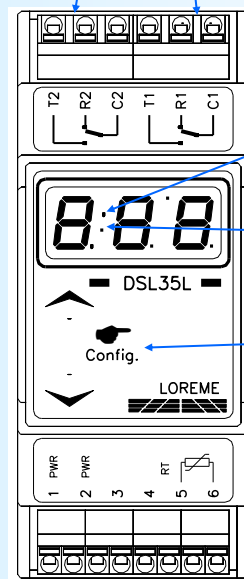
Device Presentation

The DSL35L is a compact relay used for protection or regulation. It is entirely configurable via the front face. The measured value is displayed on a 3 digit LED display. Its wide range of temperature and process input makes it a very versatile device.

The technical data sheet can be downloaded here: http://www.loreme.fr/fichtech/DSL35L_eng.pdf

USER INTERFACE

Output relays 2 and 1 terminals.



Relay 1 state

On: Relay ON
Off: Relay OFF

Relay 2 state

Push buttons
(open cover to access)

Power supply terminals

Measure input terminals

Configuration access or

• ▲ / ▸
 <YES> button or value increasing button.

• ▼
 <NO> button or value decreasing button.

Visualization

The device permits to view the analog input on the 3 digits display. The value displayed depends on the setting of the display range (see next page).

It displays the message "Hi" if the input signal exceeds the high scale plus 1% or the message "Lo" if the input signal exceeds the low scale minus 1%.

Configuration

The two push-buttons under the cover are used for setting the display range (low and high scale) and the relays parameters. By pressing the top button (▸) the device enters the configuration mode.

Configuration

1) Display range configuration

The range interpret the input signal in an other physical unit, thus making the reading of the measured information easier.

Ex: Input 4-20 mA / Range 0-100 (kg)
 → Input = 12 mA, visualization = 50 (kg)

To configure the range, it is necessary to configure:
 - the low scale, from -99 to 999 with 0.01 minimum resolution.
 - the high scale, from -99 to 999 with 0.01 minimum resolution.

1.1) Low scale

The device displays the message 'dLo', 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 low scale 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 button is pressed.

1.2) High scale

The device displays the message 'dHi', 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 high scale 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 button is pressed.

2) Relay 1 or 2 configuration (/R2 option)

The device displays the message 'AL1' or 'AL2'. Pressing the ▲ button permit to access the relay parameters configuration. The button ▼ permits to go to the next rubric or, if there is only 1 relay, to leave the configuration mode. In this case, the device leave the configuration and the message 'End' is displayed.

The relay parameters are:
 - Threshold type detection, high or low?
 - Threshold,
 - Hysteresis,
 - Activation & deactivation delays.

2.1) Threshold detection type

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

The detection possibilities are:
 - High threshold detection, with displayed message 'AHi'.
 - Low threshold detection, with displayed message 'ALo'.

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

- **High threshold** detection (cooling):
 .relay is activated when measure goes above threshold,
 .relay is deactivated when measure goes below threshold minus hysteresis.
- **Low threshold** detection (heating):
 .relay is activated when measure goes below threshold,
 .relay is deactivated when measure goes above threshold plus hysteresis.

Pressing the ▲ button permit to validate the displayed choice.

Pressing the ▼ button permit to change the displayed choice.

Configuration

2.2) 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.

2.3) Hysteresis

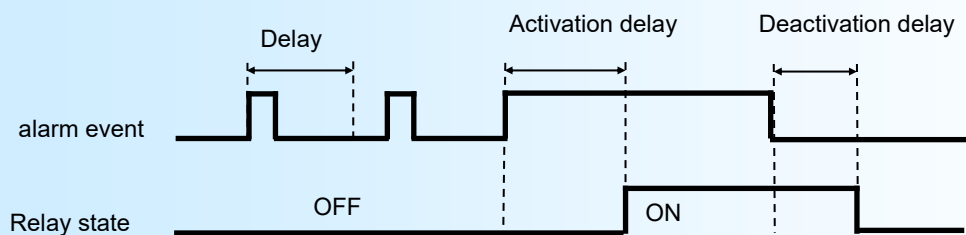
The device displays the message 'db', pressing the ▲ button permit to access the adjustment. Pressing button ▼ permit to skip the adjustment and continue with the next rubric. In adjustment mode, the actual hysteresis is displayed and the ▲, ▼ permits to increment or decrement it. The display is flashing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

Note: The hysteresis value is relative to the display range scale and can be configured between 0 % and 99 %.

2.4) Activation & deactivation delay

The **activation delay** value, which is configurable from 0 s to 60 s, determines the time beyond which the relay is activated after an alarm event occurs.

The **deactivation delay** value, which can be configured from 0 s to 60 s, determines the time after which the relay is released after the disappearance of an alarm event.



2.4.1) Activation delay configuration

The device displays the message 'don', 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 activation delay 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.

2.4.2) Deactivation delay configuration

The device displays the message 'doF', pressing the ▲ button permit to access the adjustment. Pressing button ▼ permit to skip the adjustment and ends the configuration. In adjustment mode, the actual deactivation delay 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) End of configuration

At end of configuration, all the parameters are memorized in an internal non-volatile memory and the message 'End' is displayed.

Notes:

If there is no action on the buttons for a delay longer than 30 seconds, the device leaves automatically the configuration mode and returns in measure mode without memorizing the new configured parameters.

The default factories parameters are:

- Display range = 0 to 100.
- High threshold detection, threshold = 0, hysteresis = 1 %, delays = 0 s.

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:
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.

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 Rev0
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 Rev0
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.

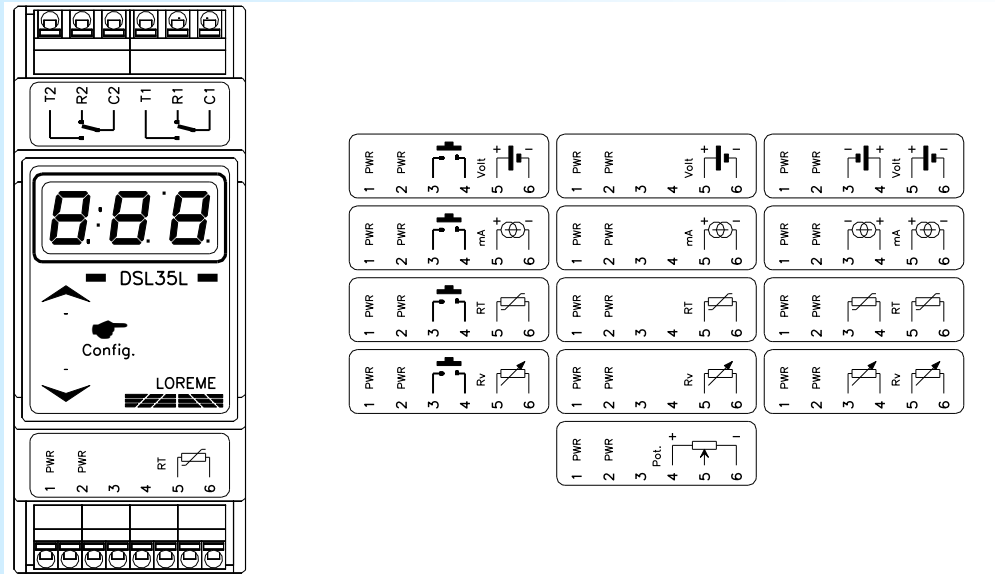
2.2) Power supply

- 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.

Wiring



230Vac/50Hz power: terminals 1, 2.

Signal input: terminals 5 (+), 6 (-).

Relay 1: terminal T1 (work), terminal R1 (rest), terminal C1 (common).

Relay 2 (option /R2): terminal T2 (work), terminal R2 (rest), terminal C2 (common).

RS232 link 3 points connector under the cover