



September 2010

POL-ESSER USER GUIDE

Note: Before installing any device, please thoroughly read their manuals which include detailed information about installation and operating instructions and important warnings to be followed. Honeywell Life Safety Iberia cannot be held responsible for any direct or indirect damage arising from an incorrect installation.

ESSER
by Honeywell

POL-ESSER User Guide

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POL-ESSER Hand Tool for Loop Checking

1. Introduction

1.1 Overview

POL-ESSER is a hand tool designed for checking and detecting faults in ESSER by Honeywell analogue loop installations.

POL-ESSER is compatible with **esserbus**® o **esserbus Plus**® loop devices which can be read from any point of the installation, both in loops which have been already configured and in loops with new devices.

This tool allows device acknowledgement (regardless of the type of wiring), fault detection and site certification.

Backlight 320x240 pixel display shows all the information clearly. The display shows the configuration of sensors and modules, information about the type of device, total and subtotals of polled devices.

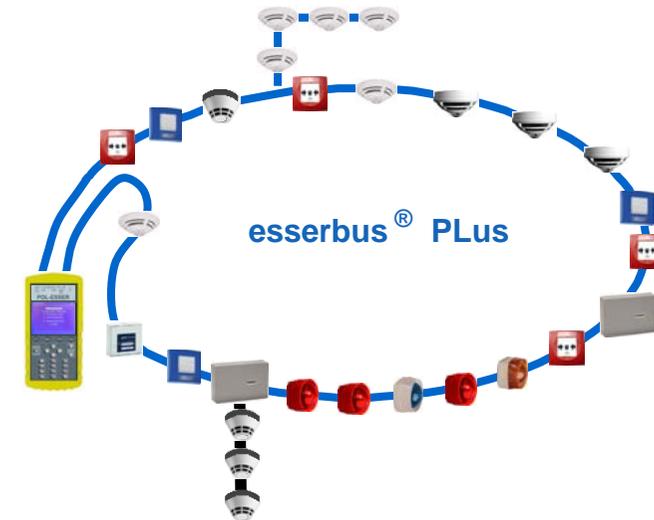
POL-ESSER can also read the device EPROM in order to see manufacturing date, version, number of alarms and types of fault such as dirty chamber, short-circuits, etc.



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1.2 Main Features

- Stand-alone tool for device maintenance and checking
- Compatible with esserbus® y esserbus® Plus loop devices
- Loop, ground fault, short-circuits checking, multimeter options and distance measuring in metres.
- Isolator independent control for sector isolation and checking loop by sections.
- Installed devices reading as they are or addressed in new loop configuration. RESTORE function to restore a saved addressing and graphic map of installation.
- Loop display: address, type of device, part number and current status.
- Device display: manufacturing date, type of fault, number of alarms, sensor real value, etc.
- IQ8 Flash and Sounder activation option.
- USB connector for PC connection for update and download logged register files
- Powered by 12Vcc charger or internal battery



1.3 Compatibility

Compatible Protocols:

- esserbus®
- esserbus® PLus

Compatible Devices:

- 9200 Series
- 9200 Plus Series
- IQ8 Series
- IQ8 Plus Series

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2. Keypad and Wiring

2.1 Keypad



- 10 Numeric keys to introduce values and addresses and 2 character keys: "*" y "#"



- 4 Navigation keys "▲▼◀▶" to move through menus, loop devices and map.



- 4 Function keys (F1- F4) to carry out different functions depending on the current menu or display.



- Escape "Esc" and Enter "↵" keys to accept or cancel a function or menu.



- On/Off key

On/Off



- Pug-in terminals for:
- Power Supply
 - Synchronization signal for oscilloscope
 - Earth
 - Start Loop
 - Return Loop
 - USB interface

Display

F1 to F4 Function keys

Navigation keys

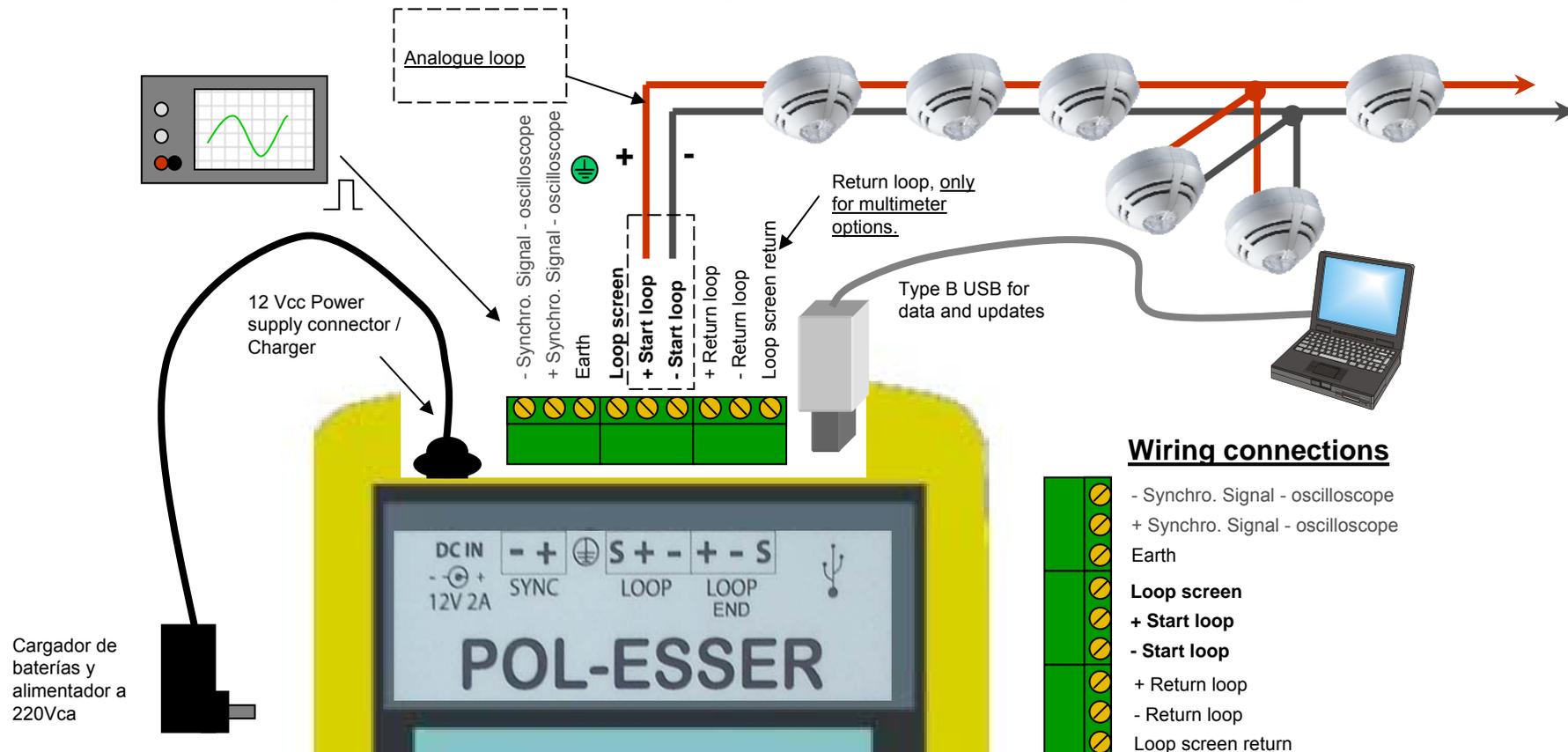
Numeric keypad

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2.2. Wiring

POL-ESSER provides plug-in terminals for different wiring options

⚠ ¡Serious damage! Before connecting external wiring ensure that any control panel is powered off, loop wiring is not connected to the control panel and has not any power. Please check the whole wiring and make sure that there is no voltage between wiring cables before connect.



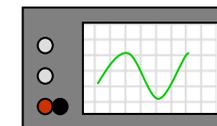
Cargador de baterías y alimentador a 220Vca

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External connections

- Synchronization signal for oscilloscope : (-/+ SYNC) option for laboratory and engineers

The synchronization output can be connected to an oscilloscope Synchro input to activate the oscilloscope reading connected to the loop. This signal is a squared wave which is only active while POL-ESSER is communicating.



- Earth wiring (Earth). Optional for isolation and earth driven measurement.

Building earth should be connected in order to check for isolation or earth faults.



Building Earth

- Loop communications wiring (S/+/- LOOP)

S (loop screen): Connection for loop screen. It measures continuity and length (if S return is connected) and screen driven to earth (if Building earth is connected).

+Start loop: + communication wire to communicate with devices and measurement of continuity, loop length and cable driven

- Start loop: - communication wire to communicate with devices and measurement of continuity, loop length and cable driven

- Return loop wiring (**S/+/- LOOP END**) (*Optional only for multimeter options*)

S (loop screen): Connection for loop screen return. It is used only for continuity and length cable measuring.

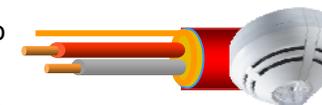
+ Start loop: Positive return. It is used only for continuity and length cable measuring.

- Start loop: Negative return. It is used only for continuity and length cable measuring.

-**USB Connector** (only Data): Optional for PC connection.

USB Type B connector for update and download loop reading registers using dedicated Pol-ESSER Software.

POL-ESSER driver installation is needed for PC connection (supplied with POL-ESSER software). Only compatible with POL-ESSER software. Battery cannot be charged using USB connector.



Communication with devices



Only return

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3. Main Menu

When POL-ESSER is switched on, the main menu is displayed. Use the navigation keys in order to select the different options “▲▼” and confirm by pressing “↵”. Press “Esc” from any submenu, as many times as necessary, to return to the main menu.

The Main Menu has the following options:

[1.MULTIMETER]

Multimeter, loop continuity, earth fault, cable isolations, cable resistive values, etc.

Short-circuit Isolators: The multimeter options depends on the device short-circuit isolators (negative loop isolator) need to start the communications before making the measurements to open or close the isolators.

[2.DEVICE SAMPLING]

Function which allows the user to start communications with devices, assign addresses to loop devices and read all the addresses of the loop.

From this menu, POL-ESSER can read the device information (type, status) and activate leds, flash and sounders.

This function is also used to check communications and devices connected to the loop, to open and close device isolators to isolate loop by sections and make the measurements from the previous menu.

[3. LOOP REGISTRY] (A specific software is needed to download the log files)

This function is used to select the devices to be logged in the internal file.

[4. CONFIGURATION]

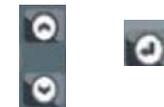
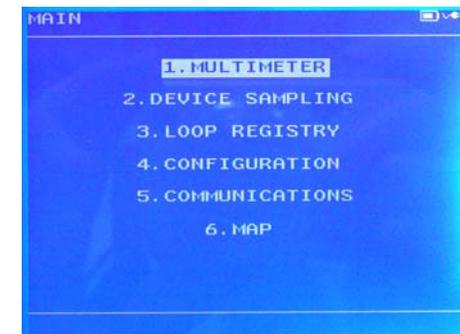
User can set different Pol-ESSER options like cable resistance per Km, register options, language, etc...

[5.COMMUNICATIONS]

This function is used to select the the speed of Internal USB connector/Serial converter

[6. MAP]

This function is used to detect the loop type and make a graphic illustration of the site and devices.



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3.1 MULTIMETER Menu

To enter this menu, select [1.MULTÍMETRO] with “▲▼” keys and press “↵” to confirm. The MULTIMETER menu has the following options.

- [1.RESISTANCE] Resistance, length and isolation among loop cables.
- [2.EARTH] Isolation of loop cable connected to the building earth connection.
- [3.VOLTAGE/CURRENT] Functio to conect typical voltages and check current.

3.1. RESISTANCE Menu

Cable continuity measurements can be indicated in **Ohms** (resistance in ohms) and **mts*** (length in metres).

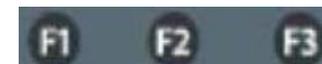
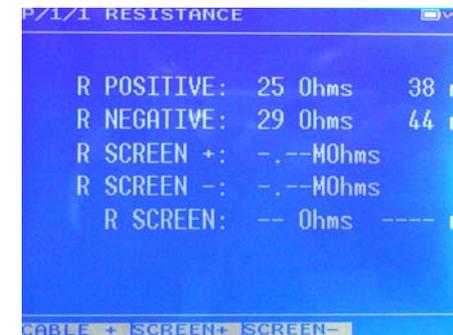
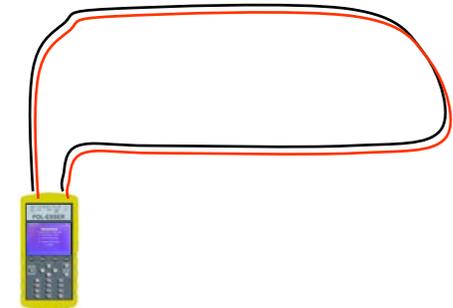
*Note: Precision in **mts**: The length measurement is calculated by conversion, with the cable resistance value per Km (according to the value inserted in the Configuration menu), and it is just an approximate value. Regarding the negative cable, the calculation is based on the drop in voltage and it changes slightly depending on the number of isolators. Isolation measurements are always in MOhms.

It is possible to compensate the reading inaccuracy by entering a corrected conversion value. The conversion value by default is 14.00 ohms./Km, which belongs to the de 1.5mm² Shielded Twisted Pair cable supplied by HLSI. If other types of cable are used, please consult the manufacturer.

3.1.1 INDICATIONS

The Multimeter display shows the following information:

- R POSITIVE:** + loop cable measurement between **LOOP +** and **LOOP END +** terminals
- R NEGATIVE:** - loop cable measurement between **LOOP -** and **LOOP END -** terminals (closed isolators)
- R SCREEN +:** + loop cable and screen isolation measurement between **LOOP +** and **LOOP S**
- R SCREEN -:** - loop cable and screen isolation measurement between **LOOP -** and **LOOP S**
- R SCREEN:** + loop cable measurement between **LOOP S** and **LOOP END S**



- F1 CABLE +:** Measure cable +
- F2 SCREEN +:** Measure + or screen
- F3 SCREEN -:** Measure - or screen

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3.2. EARTH Menu

Loop screen isolation measurement with regard to the device earth terminal.

It is necessary to connect the building earth ground to the POL-ESSER earth terminal. 

By entering this menu, the POL-ESSER starts the isolation measurements of the wire connected to the S LOOP.

POL-ESSER applies a potential difference between the loop cable and the earth terminal and shows the isolation resistive value in MOhms. **If the isolation value is correct > 2 MOhms, the following is displayed** “ -- . -- -- ” MOhms.

The cable to be tested can be selected using the function keys.

The no conductance between loop cables ensures the complete wiring isolation.

R SCR. EARTH: value in Mohms of wiring isolation from screen to earth

R POS. EARTH : value in Mohms of wiring isolation from positive to earth

R NEG. EARTH : value in Mohms of wiring isolation from negative to earth

3.3 VOLTAGE Menu (for laboratory and engineers)

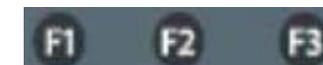
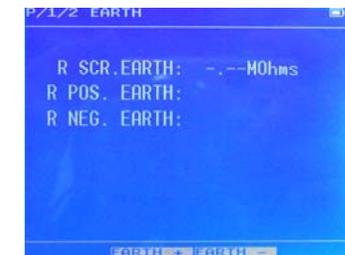
POL-ESSER allows the user to apply typical esserbus loop voltage to loop terminals (LOOP) in order to test the power consumption. The applied voltage is Vcc

Indications:

VOLTAGE: Current value of the voltage applied to the loop

V. LOOP END: Measurement of the loop end voltage.

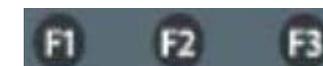
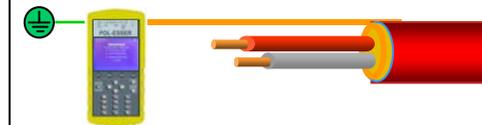
CURRENT: 19mA. Current of the loop for the applied voltage .



F1 EARTH S: Screen isolation

F2 EARTH + : Positive isolation

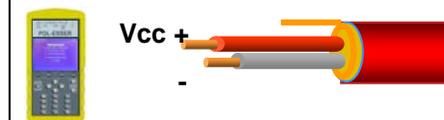
F3 EARTH - : negative isolation



F1 19v: Apply 19Vcc between + and – of loop (LOOP).

F2 7v : Apply 7Vcc between + and – of loop (LOOP).

F3 0v : Remove voltage between + y – of loop (LOOP).



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3.2 DEVICE SAMPLING

This menu is used to test the devices connected to the esserbus loop.

Select this menu by means of the “▲▼” keys and confirm by pressing “↵” in order to have access to all the reading options and check loop devices,

It can be accessed to de loop display by 4 different options as following:

[1. READ] Continuous polls for all possible loop devices to check for communications and state only. Requires a loop Search (3.) or Configure (4.) to ask for each serial numbers and store devices in the Pol-ESSER. Loop display is continuously refreshed. New devices (not saved) will be displayed with “000000” serial number.

[2. LAST POLLING] Display last poll with no refresh and no communications to check last devices on loop or a saved loop device list. It is used to check in a map all recognised devices.

[3. SEARCH] Already addressed Loop devices acknowledgement: This option make cyclical queries up to 127 loop addresses.

This function **does not change the loop device configuration or address.**

The display lines show information about the devices which have been acknowledged and addressed . The address which is being checked at the moment ant the total number of acknowledged devices is visualized at the bottom of the display.

[4.CONFIGURE] Only for not configured installations. This function addresses all loop devices by assigning correlative numbers.

Pol-ESSER assigns a new address number to each loop device following the device answer from the loop start (LOOP)

The devices with isolator must be addressed so that the isolator closes automatically and gives continuity to the loop.

The SAVE option allows the user to save the current configuration (the assigned addresses) The RESTORE option is used to recover a previously saved loop addressing.

ADD	SER.N:	I	O	FAM	TYP	REG	NPA	I
4	975545			2	02T		0	
5	027112	0		NNNN	4-2		0	0
6	662793	0	0	NNNN	0T		0	0
7	841817			NNNN	4-2		0	0
8	009562	0	0	3333	TAL		0	0
9	011038	0	0	NNNN	0Tb		0	0
10	138660	0	0	NNNN	MCP		0	0
11	526346	0	0	NNNN	PUL		0	0
12	841103	0	0	3333	SVF		0	0
13	973419	0	0	NNNN	OS		0	0
14	883931	0	0	NNNN	0T		0	0
15	009301	0	0	NNNN	0Tb		0	0
16	011388	0	0	NNNN	OVF		0	0

SAMPLING: 50 TOTAL: 16

ISOLATOR REGISTRY SAVE RESTORE

F1 F2 F3 F4



F1 ISOLATOR: Open selected ISO

F2 REGISTRY: Add device to log registry

F3 SAVE: Save current loop addressing

F4 RESTORE.: Restore saved addressing



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3.2.1 DEVICE SAMPLING DISPLAY

The display shows all the devices which are communicating with POL-ESSER.

Note: Devices without isolator answer simultaneously between an isolator and the following device, so the assignment order is not real (see Map Menu for further information).

3.2.1.1 INDICATIONS

The display show the following information:

ADD	SER N.	I	O	FAM	TYP	REG	NPA	!
114	841817	0	0	2	4+2	0	0	0
115	0011388	0		2	OTb		0	
116	009301	X		3	OVF		0	
117								
SAMPLING: 121				TOTAL: 116				

Example:

Address 116:

- Isolator manually opened
- Without integrated output
- Family 3 of protocol, device type: IQ8Quad O²T with Speech and Flash
- Normal status without alarms or faults

ADD. Addresses assigned to the loop device
SER N°. 6 last digits of part number (SER N°)
I Isolator: **0** isolator closed
X isolator manually opened
O Device with integrated output
FAM esserbus protocol family (2/3)
! Not compatible with esserbus PLus
TYP Device type
REG Device selected for data registry
N Device in Normal status
P Device in Prealarm status
A Device in Alarm status
! Device in Fault status
SAMPLING: Addressed being checked
TOTAL: Number of devices which have been already sampled



- F1 ISOLATOR:** Open selected ISO
- F2 REGISTRY:** Add device to log registry
- F3 SAVE:** Save current loop addressing
- F4 RESTORE.:** Restore saved addressing



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3.2.1.2 OPTIONS

The following functions can be carried out from the DEVICE SAMPLING Display:

ADD	SER.N.	I	O	FAM	TYP	REG	NPA	!
114	841817	0	0	2	4+2	0	0	
	0							
115	0011388	0		2	OTb		0	
116	009301	X		3	OVF		0	
117								
SAMPLING: 121		TOTAL: 116						
ISOLATOR		REGISTRY		SAVE		RESTORE		

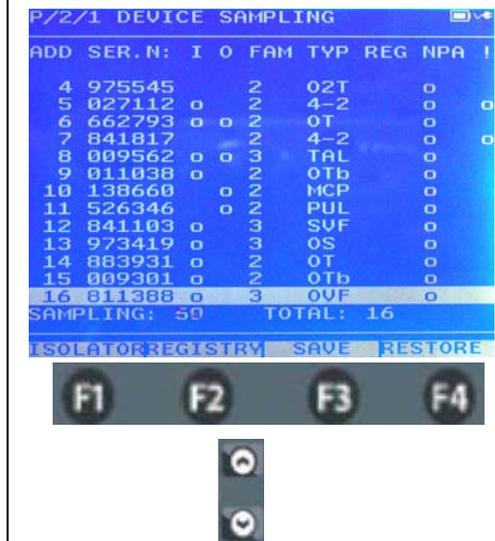
F1 ISOLATOR: This function is used to open or close device isolator of the selected device. Devices with isolators show an "o" (closed) or a "x" (open) in the column "I"

Isolators keep their status even if the user changes to any other menu (except loop Search or Configure), so their normal status should be restored manually or by new powering of loop like Search or Configure.

F2 REGISTRY: Save the data in an internal log. The registry data can be recovered with POL-ESSER software (future option).

F3 SAVE: The current loop addresses are saved in the internal memory (part number and address of each device)

F4 RESTORE.: Recover the last configuration (addresses and part number) saved by means of F3.



F1 ISOLATOR: Open isolator

F2 REGISTRY: Add to registry

F3 SAVE: save loop addresses

F4 RESTORE.: Recover the last saved loop configuration

 Select device highlighted

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3.2.2 DEVICE DISPLAY

Press “Enter” with a highlighted device from the DEVICE SAMPLING display to have access to the Device display.

The selected device LED will blink while the device display is active in order to locate the device easily.

Esserbus Plus loop sounders or flashes can be turned on. If there is a device which is not compatible with Plus loop, this function is inhibited.

The device address can also be changed from the device display by selecting the address field, pressing enter and writing the new address. By pressing enter again, the new value is applied.

POL-ESSE samples devices continuously from this menu and shows the information as follows :

[LOOP VER]: Version of device communication internal driver

[SERIAL N]: Device complete serial number

[ADDRESS]: Current device address

“DEVICE TYPE DESCRIPTION”

[S1 / S2 / S3]: Raw sensor reading values

[INPUT] : Status of device integrated input (Options : **OK / Input short / Input open**)

[OUTPUT]: Status of device integrated output (Options : **OK / short / Inact. / Latch**)

[CHAMBER]: Device sensor status (Options: **OK / Dirty sensor / Low level / High level**)

[EPROM]: internal memory and software status (Options: **OK / Int. Fail**)

[PREALARMS / ALARMS]: Total number of logged Prealarms y Alarms.

[DATE]: Manufacturing date, format **dd/mm/yyyy**

[SOUNDER / FLASH]: Sounder or Flash status: **ON / Changing... / OFF**

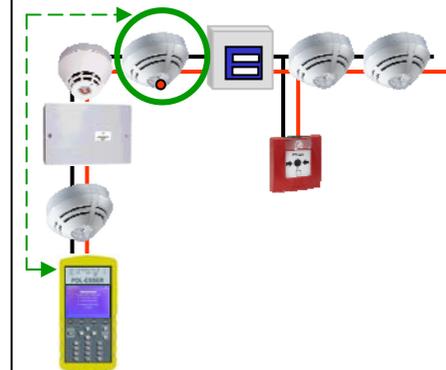


F1 PREVIOUS: Previous Device

F2 NEXT: Next Device

F3 SOUNDER: ON/OFF Sounder (Sound1)

F4 FLASH.: ON/OFF Flash



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3.3 LOOP REGISTRY

POL-ESSER provides an internal file to registry data related to devices connected to the loop. This option requires the use of POL-ESSER software for PC.

POL-ESSER registry is cyclic and it provides an information line for each device. POL-ESSER software is able to recover this registry in order to be saved in .csv format.

LOOP REGISTRY menu has the following options:

3.3.1 REGISTRY OPTIONS

[1.SELECTED DEVICES] : All the selected devices are added to the registry. Only the devices selected in the DEVICE SAMPLING display (column [REG = o]) are logged.

[2.COMPLETE LOOP] : All loop devices are logged (up to 127). The addresses with no answer will be registered as a blank line.

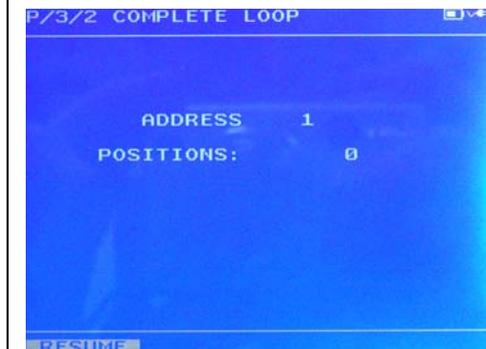
[3.ERASE REGISTRY] :This option erases all saved data

3.3.2 DISPLAY INDICATIONS

[ADDRESS:] It shows the address of the device which is being sampled (1-127).

[POSITIONS:] It shows the number of lines currently registered.

Note: Frequency of registering and registered values can be selected in the **[4. CONFIGURATION]** menu in REGISTRY FIELDS settings.



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3.4 CONFIGURATION Menu

This menu displays basic configuration details.

 **Operating changes:** Ensure that you make the correct change because otherwise the POL-ESSER normal operation could be affected.

3.4.1 CONFIGURATION SETTINGS

The configuration display shows the following information:

[DATA]: Current device date which is used to register data, format dd/mm/yyyy

[TIME]: Current device time which is used to register data, format: hh:mm:ss

[LANGUAGE]: Language of POL-ESSER menus

[SPEED]: Communications port speed

[REG. PERIOD] : Time interval between samples. Use for device readings.

[RESIST. CABLE]: Resistance value of loop wire for 1,000 mts. This value is used to indicate wiring distances in the **[1.MULTIMETER]** menu.

Parameter changes: In order to change any configuration setting, select the required field with the navigation keys and press Enter to confirm. Change the value with the navigations keys or using the numeric keypad and confirm with Enter.

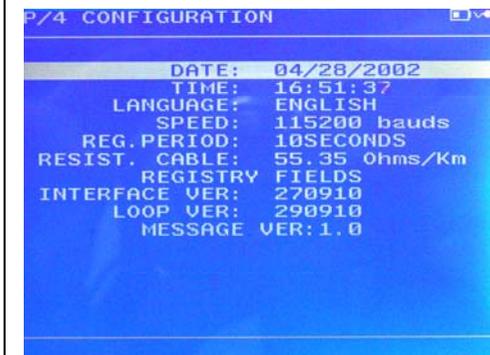
[REGISTRY FIELDS]: Registry options to be logged in the registry file (i.e. device answering current or device serial number)

DEVICE VERSION:

[INTERFACE VER.]: POL-ESSER version

[LOOP VER.]: esserbus loop driver version

[MESSAGE VER.]: Language menu interface version



Select a menu option or change between settings.



Select highlighted option to edit

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3.5 COMMUNICATIONS Menu

Option to link the Pol-ESSER to a PC to uploads, downloads, updates and PC control.

Before opening this menu make sure you have selected the correct communication speed in the **[4.ONFIGURACIÓN]** menu, (**[SPEED]** option). Once a compatible speed has been set, select **[5.COMUNICACIONES]** menu and press "Enter" to activate the port. To leave the menu, press "ESC".

This option is required to:

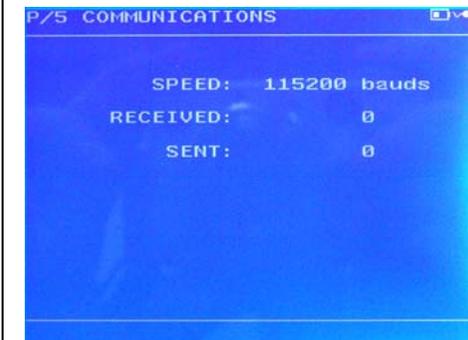
- Download device log files
- Device monitoring using the POL-ESSER software for PC
- Change of device parameters (Internal use)
- Firmware and language interface update (Internal use)

3.4.1 DISPLAY INDICATIONS

[SPEED]: Current serial baud rate

[RECIIVED] : Number of data packets received from PC

[SENT]: Number of data packets sent to PC



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3.6 MAP Menu

POL-ESSER provides an installation map with the physical location of each device connected to the loop. The configuration of this map may take some minutes depending on the number of devices.

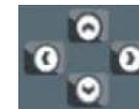
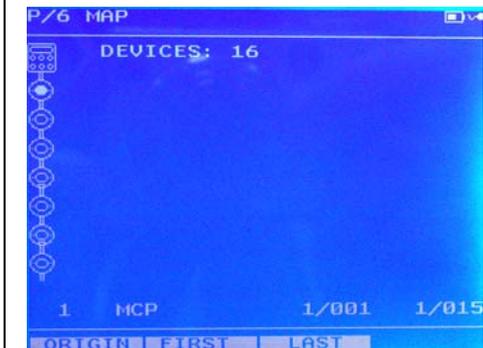
Once the map is finished, the navigation keys allow the user to move through all the devices.

The led of the device selected will turn on and the POL-ESSER display will show the location, address and type of device.

IMPORTANT

ORDER: Devices are assigned to a specific location on the loop following the order of their answers. When a device answers to the sampling, an isolator closes and allows the communication with the following devices.

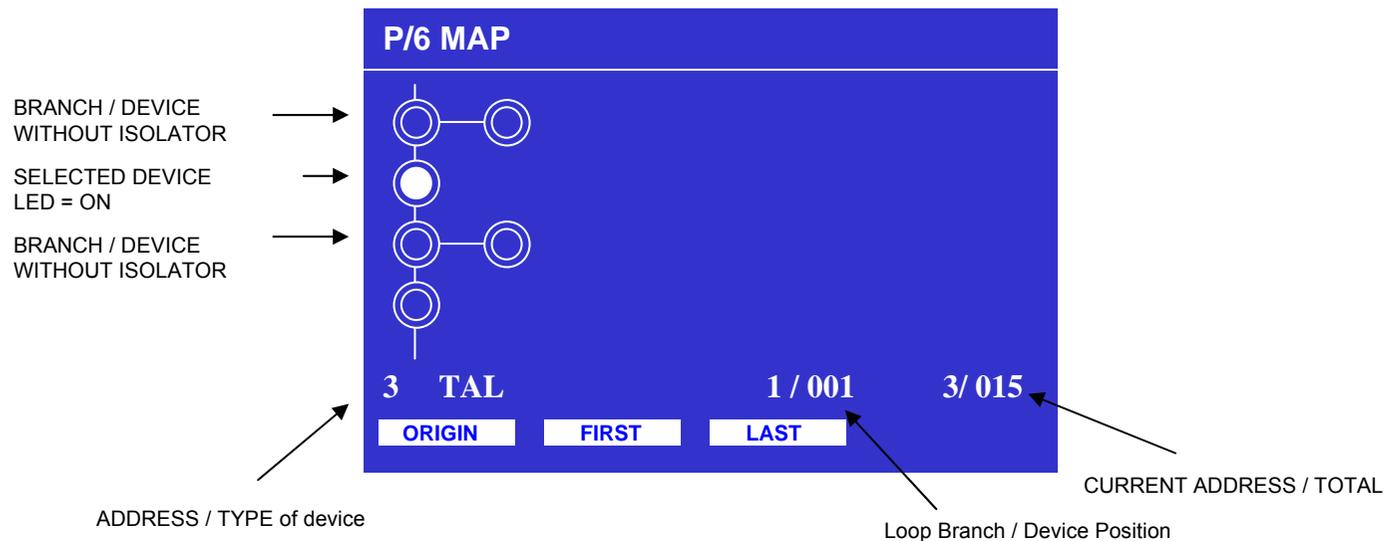
BRANCHES / GROUP: Devices without isolator answer simultaneously when they are powered and they are shown like a group with a branch cable between them.



F1 ORIGIN: Select first device

F2 FIRST: First device / address

F3 LAST: Last device / address



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4 CARACTERÍSTICAS TÉCNICAS

Power	230vac with external power, 12V with charger or autonomous operation with chargeable internal battery.
Autonomy	>24h under eco mode backlight (display unlit)
Battery	Ni-MH 8.2V 14W (1700mA)
External power supply/ Charger	12V 24W (2000mA)
Display	320x240 pixels (81.4x61mm) and blue backlight
Keypad	19 keys + 4 function keys
Dimensions	190mm (h) x 110mm (w) x 32mm (d) (without protective cover)
Colour	Grey keypad (similar to RAL 7045) and yellow protective cover
Weight	740g