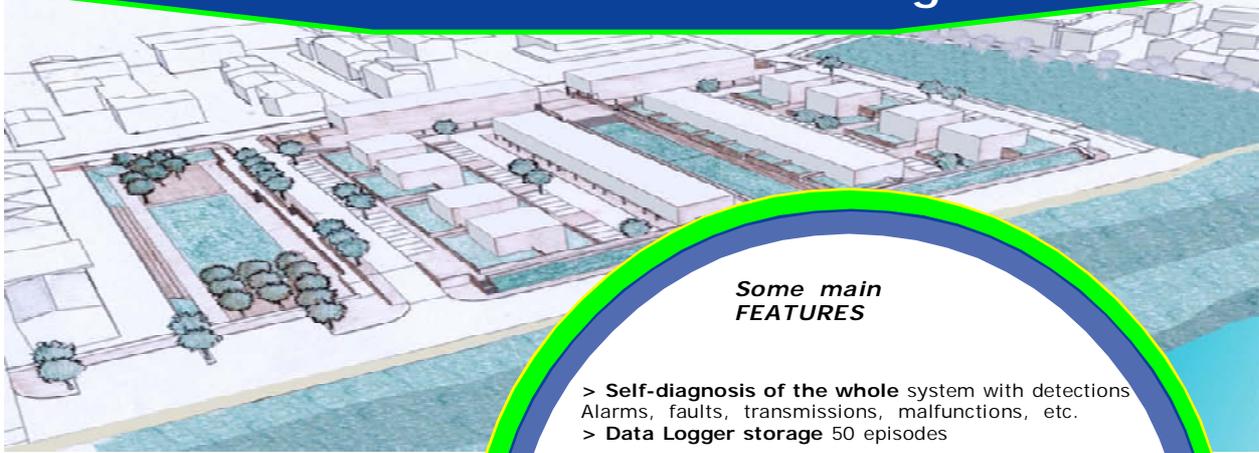


Gas control unit 32 addressables digital sensors BXI 32

Rev. 1-14

The first with self-diagnosis and Maintenance Program



Some main FEATURES

- > Self-diagnosis of the whole system with detections Alarms, faults, transmissions, malfunctions, etc.
- > Data Logger storage 50 episodes
- > Ordinary maintenance program
- > Alarms Source
- > Automatic reading of the gas type of each sensor
- > Adjustable alarm level for each sensor.
- > Automatic operating range from 20 to 100% LEL
- > Efficiency of the connected sensors
- > Positive Security Function
- > Possibility of inserting Relay expansion card
- > Factory reset
- > Connection, Printer to print the Reports
- > Manual alarm button connection
- > Brand
- > Serial number
 - > Date and Time
 - > Monitored sensor
 - > Graph of the quantity of gas detected

The experience and the knowledge acquired over the years within industrial sector and market together with the prestige that has always made **BEINAT S.r.l.** have allowed the design of a new **Gas Control Unit the... "BXI 32"** which has the prerogative to control, through the connected addressed sensors to it from 1 to 32, the presence of gas: **Toxic, Explosive, and Oxygen**

The control unit **BXI 32** has been designed and built to meet the current requirements of the Market and in compliance with European Standard for checking gas presence in a versatile and innovative with **addressed sensors** through an **addressed network RS-485 MODBUS**

When one of the connected sensors exceeds the pre-alarm setpoint, the control unit emits a proportional sound signal, based on the amount of gas detected, and shows on the display the number of the sensor, the amount of gas detected and its origin; the alarm triggered is saved in a memory (**Datalogger**).

The control unit is equipped with 1 general alarm relay with/without Positive Safety to enable further independent control of two solenoid valves..

Up to 2 relay expansion cards **CARD-TX4R** can be inserted if necessary.



Important: Assembly / maintenance of the appliance must be carried out by qualified personnel and in accordance with applicable laws and regulations. The manufacturer assumes no responsibility for the use of products that have to comply with particular environmental and / or installation standards.



Important note
Before connecting the equipment, it is recommended that you read the instruction manual carefully and keep it for future reference. It is also recommended to perform the electrical connections correctly as per enclosed drawings, observing the instructions and the Standards.
N.B. Refer to the documentation in all cases where the symbol is on the side

Installation and user guide

TO INSTALL IN SAFE ZONE NO ATEX

CONFORMITY

EN 50194
EN 45544-1-3
EN 61010-1

Compliant EN 60079-29-1
Installation EN 60079-29-2
EN 50270

Reports issued by TUV Italia



Electric connections also available on

Channel: Beinat gas solutions



Main features

Control unit power supply : 15 VDC \pm 10%

Probe power supply Separately from the control unit: 15 VDC \pm 10%

Set: Date and time

Select: The number of sensors, and their disablement

Select: The Operating range of the sensors, from 0 to 20%, or 0-100 of L.E.L.

Select: The type of gas that the sensor must detect "Toxic or Explosive"

Choice of ALARM Thresholds

Prealarm: The Pre-Alarm level, for every sensor from 3% to 16%

1st Alarm: The Alarm level, from 10 to 20%. of the LEL, Step 1% (Default 20% of the LEL)

2nd Alarm: The Alarm level, from 10 to 50%. of the LEL, Step 5% (Default 20% of the LEL)

With password entry

Select: The operation of the relay " pulsed or continuous"

Select: The function of Positive Safety

Select: The function of saving the alarm triggered

Select: The exclusion or insertion of "external siren"

Select: The exclusion or insertion of "internal buzzer" if an alarm is triggered

Data logger: Alarm and events resulting from self-diagnosis: faults, transmissions, malfunctions, etc.

Connection: a) Of a portable printer, b) relay expansion card

LCD display

Display: the Brand, the serial number, Date and Time

Display: automatic Explosive Gas and Operating range L.E.L. or Toxic Gas ppm

Display: the chart of the amount of gas detected

Display: Warm up on Display appears the "count-down" time

Front Panel

Push-buttons for navigation and confirmation of data set

Test push-buttons for total control of the BXI32 checking the efficiency of the unit and the connected sensors.

Reset button used to reset alarm and faults memories

LED that displays the silenced external siren. This operation can be performed by entering the Password

All operation and alarm LEDs: read page 3 to find out their functions

LED that displays the charge status of Buffer battery

Technical features

Main Power Supply15 VDC \pm 10%

Power demandfrom 1.2W min. to a max. of 3W Max 15 DC

Secondary power supply via battery Max 2,2 Ah (not supplied) 12,7 V \pm 10%

Battery Charger Max 2,2 Ah controlled

Relay Contact Range 10A 250V resistive

ALARMS

Pre-Alarm adjustablefor each sensor from 2% (450ppm) to 15% (240ppm) of the LEL with Step

1st Final alarm adjustable for each sensor from 10% to 20% - with Step of 1% from factory to 20% of the LEL

With password entry

2nd final alarm adjustable for each sensor from 10% to 50% - with Step of 5% from factory to 20% of the LEL

ALARMS Oxygen <Oxygen deficiency and > Oxygen excess See thresholds page 3

INDICATIONS

Signaling the % of the monitored gas visible on display

Indication of mains power supplied, alarms, battery state, sensor and battery over load, faults

Manual alarm indication built-in

Siren ON indication built-in

Duration of pre-heating phase via count-down 90 seconds

Manual test built-in

External siren and internal Buzzer silencing via software operation

ALARM ZONE AND ADDRESSABLE SENSORS

Number of connectable sensors 32

Sensor connection/disconnection via software operation

Connectable sensors Semi-conductor, Catalytic, Electrochemical cell, Pellistore, Infrared Red

Faults detected by fault circuit Interruption , short circuit or fault

Addressed data line RS485 prot. ModBus RTU

Operating Range 0-20% or 0-100% of L.E.L.

Equipment precision 1% FS

Response time < 2"

Maximum distance between sensors and control unit1000 m

Cable diameter for connecting sensors0,25 mm² Twisted

CONNECTIONS

Printer through dedicated USB port

CARD-TX4R Relay expansion card each card has 4 relays

Operating temperature -10°C + 60°C

DIN rail omega dimensions DIN EN 50092 9 modules 158x90x58 mm

Degree of Protection in air IP20

GENERAL INFORMATION

Attention !! The sensors must be powered by a source of energy external to the panel keeping in mind that each sensor has an absorption of 200 mA

Optional cabinet for BXI32, composition:

- Rail DIN Omega for insertion BXI32,
- Switching Power Supply 110/230 VAC 35W 12 VDC
- Control unit cable and power supply,
- Battery holder bracket
Dimensions: 340x280x160
Degree of protection: IP65



Precautions

CHECK the integrity of the control unit after removing it from the box.
 Check that the data written on the box correspond to the type of gas used.
 When doing the electrical connections, follow the drawing closely.
 Any use of the detector for purposes other than the intended one is considered improper, and as a result of which **BEINAT S.r.l.** therefore disclaims any responsibility for possible damages caused to people, animals or objects.

IMPORTANT: The operating test should not be performed with the gas tap because this don't provide enough gas concentration to trigger the general alarm.

TERMS and EXPECTATIONS: The installation of the art. **BXI32**, its ordinary maintenance once a year including the sensors operation and its disposal at the end of the functional life guaranteed by the manufacturer, must be carried out by authorized and/or specialized personnel

To use your control unit for a long time and with satisfaction, use it with the following precautions:

Keep dry.

The control unit is not waterproof if it is immersed in water or exposed to high humidity levels can result in serious damage.

Do not drop it.

Heavy knocks or falls during transportation or installation can damage the appliance.

Avoid abrupt temperature fluctuations.

Sudden temperature variations can cause condensation and the sensor could work poorly.

Beyond the temperature + 60 ° C about, the display becomes black, in this case you must cool it to make it visible

Cleaning

Never clean the device with chemical products. If necessary, wash with a moist cloth.

MAINTENANCE



The user periodically (every 6 months) must perform a check of the operation of the control unit by spraying a suitable test gas at the base of the sensors connected until the alarm condition is reached.

- At least once a year make a more accurate check by a specialist technician.
- Disabling the detector must be carried out by qualified personnel.



Suitable sensors by zone and type of gas

Probe	SENSOR	DEGREE Protect.	<u>Suitable for</u> ZONE	GAS Detected	RANGE operating	OUTPUT	PRECIS. Automatic	CALIBRATION
SGM595	Catalytic	IP55	<i>Tertiary</i>	seepricelist	0÷100%	LIE	Digital	±5 % SI
SGM595/A	Catalytic	IP65	<i>Zone 2</i>	seepricelist	0÷100%	LIE	Digital	±5 % SI
SG895	Catalytic	ATEX	Zone 1	seepricelist	0÷100%	LIE	Digital	±5 % SI
SG580	Catalytic	IP65	<i>Zone 2</i>	seepricelist	0÷100%	LIE	Digital	±5 % SI
SGF101	Catalytic	IP64	<i>Zone 2</i>	Methane	0÷100%	LIE	Digital	±5 % SI
SGF103	Catalytic	IP64	<i>Zone 2</i>	LPG	0÷100%	LIE	Digital	±5 % SI
SGF111	Electrochemical	IP64	<i>Zone 2</i>	CO	0÷300%	ppm	Digital	±5 % SI
SGF113	Catalytic	IP64	<i>Tertiary</i>	Hydrogen	0÷100%	LIE	Digital	±5 % SI
CARD-TX4R, max. 2 Expansion Card 4 Digital Relay								
Legend								
Domestic Locations: Households. Boiler rooms max 38000 kW-h								
Tertiary locations: Big boiler rooms, workshops, warehouses of materials, industrial kitchens, big building complexes, factories.								
Zone 2- Mixed IP65 ATEX: Locations with great probability of gas escape, locations high risk, locations for which compliance regulations are in force								
Zone 1- Hazard ATEX: Locations high risk, locations for which compliance regulations are in force, gas bottles warehouses, solenoid valve control or mixed ramps								

Oxygen alarm levels

1° Pre-Alarm	<	19.9 %
	>	21.9 %
Main alarm	<	18.5 %
	>	23.5 %
Legend:		
< Oxygen deficienty		
> Excess Oxygen		

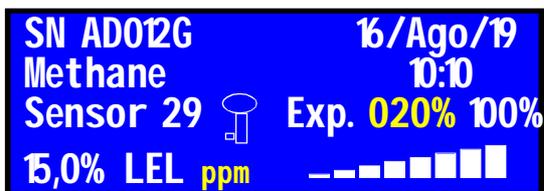


- 1) **Power.** **Green** led, **electric network**. This LED lights up when the power supply is applied.
 - 2) **Battery.** **Green** Led, this LED lights up with the power led when the device is powered by battery. When the green LED flashes, the battery is low.
 - 3) **OVER LOAD SENSORS.** **Yellow** led. This LED indicates a short circuit or a high current absorption to the sensors. Check the sensors and the connecting cables.
 - 4) **OVER LOAD BATTERY.** **Yellow** led. This LED lights when the battery is connected incorrectly or has an abnormal power consumption. Proceed to the battery and connecting cables.
 - 5) **Fault.** When this yellow LED lights up and flashes it means that one of the connected sensors is fault or: the connection cables are interrupted, or there has been a connection error.
When this Led is switched on, the equipment is no longer able to detect and enables all alarm relays.
To reactivate the operation, repair or clear the sensor, using the setup program and press the RESET button.
 - 6) **Pre-Alarm.** When the red light comes on, one of the connected sensors detects the gas dispersed in the environment and reached a concentration varying from 8 to 16% of the LEL and closes the contact of the relay 1st THRESHOLD.
 - 7) **Main Alarm.** When turns on the red alarm LED, one of the sensors has detected a gas concentration of 20% of the LEL. and closes the contact of the GENERAL ALARM relay.
 - 8) **Exit Alarm.** When the **red** light of the manual alarm light turns on, a manual alarm button is pressed
 - 9) **Siren Status.** When the **red** LED is lit, **the external siren has been switched off.**
 - 10) **TRANSMISSION RX Data reception.** **yellow** Led flashing of Data reception "**BUS RX**"
 - 11) **TRANSMISSION TX Data transmission.** **Yellow** Led flashing of data transmission "**BUS TX**"
 - 12) **TEST button.** Pressing this button you get the simulation of a gas leak.
 - 13) **RESET button.** Press the button to reset all memories of the events detected.
 - 14) USB port for **printer.** Prints current status of the unit and sensors or the data from Datalogger.
- TOTAL RESET button.** Use this button only in case of extreme necessity. Return the **BXI32** to the factory data



Screen displayed when turning on the **BXI 32**
This screen remains on for 90 seconds

Home screen



In the normal operating state of the control unit, the display shows the following information:

- Serial number
 - Current date and time
 - Type of gas of the sensor is reading
 - Current sensor reading "address" from n° 1 to n° 32.
If in the reserved addresses (31-32) is connected to a CARD-TX4R it will be read Card-TX4R 31-32).
The operating range of each sensor, 20% or the 100% of LEL, this happens directly from the sensors DIP2
- N.B.** The change of each sensor is carried out every 8 seconds.
- To accelerate the display of the sensors, press the buttons **right** and **left**.
 - To lock or unlock the sequence of sensors, and analyse the functioning of a specific sensor, press "ENTER".
the display shows a key symbol.
 - Display of the percentage of L.E.L. or ppm detected by the sensor, and the graphic of the gas quantity that the sensor is detecting.

Setting the control unit



To access the **BXI32** setting program you should press the "ENTER" button for 4 seconds.

The program provides to **enter** a password
La "Password" di fabbrica è **1-2-3-4**.
The Password can be changed by accessing to "Advanced Functions" program under "General Functions".

Move with the **left** button above the required number, and press "ENTER", every asterisk will turn on every number, until all four asterisks are switched on.

If the PassWord is correct it reads "Accepted Password"
If you enter the wrong code you read "Wrong Password", repeat the entry.

N-B. after three wrongs attempts the control panel comes out of the insertion

Selecting Functions



Select the desired function with the "UP" and "DOWN" buttons
When selected, press "ENTER"

Press "End" to come out menu

Date and time setting



To set the date and time proceed as follows:

- Navigate with the **right** and **left** buttons above the day, month, and year, hour, and minute.
 - Select with the **ENTER** button to find the day, month or year, hour, minute, desired
- N.B.** In case of lack electric, the control unit does not lose the stored data.

In case the internal battery is exhausted, it will appear at startup or reset of **BXI32** the written: "Err. bat. orologio"

END: to exit the program, select:

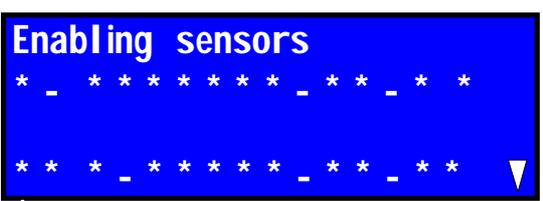
"the return arrow".

Detection sensors

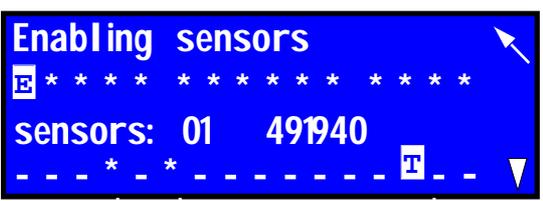
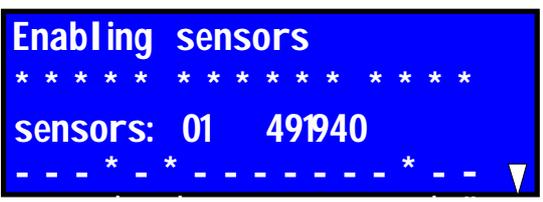
Input settings



Sensors Acquisition



Legend
 * Sensor detected
 - Sensor not detected (free address)
 "E" Sensor for explosive gas
 "T" Sensor for toxic gas
 "O" sensor enabled for oxygen gas



Selection

To the controller you can associate the following connections:

- 1) connections up to **32 sensors**
 - 2) connections up to **31 sensors and a CARD-TX4R**
 - 3) connections up to **30 sensors and two CARD-TX4R**
- To do this you need to acquire the both the sensors that the CARD.

Use the "UP" and "DOWN" buttons to select the desired function, press "ENTER"

Detection Sensors Acquisition

Waiting! The duration is about max. 40 seconds

Enabling detection sensors

At the first test we will find on the screen as many asterisks as many sensors are connected, and many hyphens for unconnected sensors.

Quick enable or disable of all sensors.

Enabling hold the "Up" button for a few seconds. Disabling hold the "Down" button for a few seconds.

Manual enabling of each sensor

1) Press the "right - left" button to move the cursor to the first asterisk on, at the same time shows the words "SENSORS: 01" and the serial number **491940** of the sensor in question press "ENTER" Continue like this for all the sensors.

Manual disabling of each sensor

To disable the sensor, use the "DX - SX" key when the cursor is positioned on the probe in question press "ENTER" Continue like this for all the sensors. **N.B.** when you find the "hashtag" symbol means that are inserted the **CARD-TX4R**; in this case you cannot insert the sensor.

Saving the enablement

To save the sensors enabling you must select with the buttons the arrow at the top left and press "ENTER"

Leaving everything stationary for three minutes, the saving is automatic.

a) Pre-alarm programming of each sensor

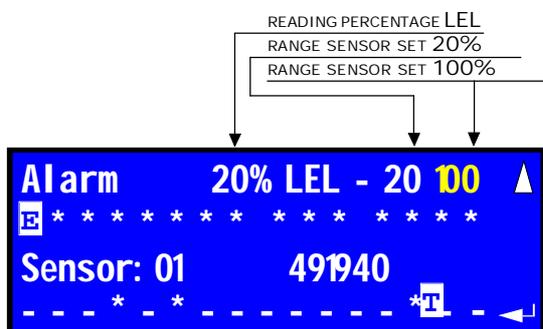
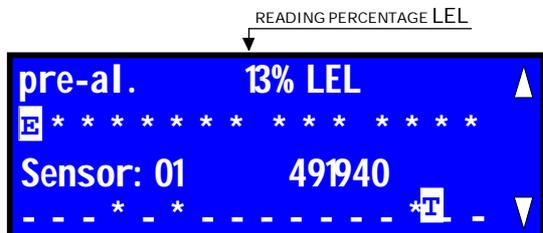
If necessary, the Pre-Alarm Threshold can be changed Select with the "DOWN?" the arrow at the bottom right and press "ENTER" ▼

follows

b) Programming of the alarm threshold of each sensor

Detection sensors, follow

SETTING THRESHOLDS OF
PRE-ALARM FOR EACH SENSOR



PASSWORD ENTRY FOR
MODIFY ALARM THRESHOLD



Pre-alarm threshold setting

The control unit program provides that each sensor connected may have a different pre-alarm threshold on each other.

press "**DOWN**" button on the panel with "**right**" and "**left**" button to the desired sensor.

The percentage set will appear, to change it press the "**ENTER**" button as many times as needed to set the desired data. Exiting the page, the data remains stored.

Legend of the available percentages

The percentages available for Explosive GAS are including: between 2% and 15% of the LEL for Toxic GAS are between 45 and 240ppm.

▲ By selecting "**UP**" and "**DOWN**" buttons and pressing "**ENTER**" you return to the previous page

▼ Use the "**DOWN**" button to select the lower right arrow and press "**ENTER**" to exit the menu

Impostazione Soglia di Allarme Generale

Il programma della centralina prevede che ogni sonda collegata possa avere una soglia di Allarme diversa una dall'altra.

THE THRESHOLDS ARE DIVIDED ON TWO SCALES AND ARE:

1ST SCALE FROM 10 TO 20% OF THE LEL IN 1% STEPS
2ND SCALE FROM 10 TO 50% OF THE LEL IN 5% STEPS

The two scales are subordinated to the working range selected in the sensors.

range selected on 20% sensors = 10-20% scale
range selected on ensors at 100% = scale 10-50%

The first 10-20% scale can be set as desired keeping in mind that the intervention threshold cannot be lower than the pre-alarm.

To be set, the second scale needs:

- set the probe concerned to detect 100%.
- a **password** is required to proceed

VARIATION OF THE SCALE

WITH THE "DX" AND "SX" BUTTONS GO TO THE DESIRED PROBE.

TO CHANGE THE VALUE, PRESS THE "ENTER" BUTTON AS MANY TIMES AS NECESSARY TO SET THE DESIRED DATA.

LEAVING THE PAGE, THE DATA REMAINS STORED.

The program provides to **enter** a password

La "**Password**" di fabbrica è **1-2-3-4**.

The Password can be changed by accessing to "Advanced Functions" program under "General Functions".

Move with the **left** button above the required number, and press "**ENTER**", every asterisk will turn on every number, until all four asterisks are switched on.

If the PassWord is correct it reads "**Accepted Password**"
If you enter the wrong code you read "**Wrong Password**", repeat the entry.

N-B. after three wrongs attempts the control panel comes out of the insertion

▲ Indicator to return to the previous page, use "**UP**" and "**DOWN**" keys and press "**ENTER**"

▼ Indicator to advance to the ALARM THRESHOLD SELECTION page, use "**UP**" and "**DOWN**" keys and press "**ENTER**"

◀ Indicator to exit the program, use "**UP**" and "**DOWN**" keys and press "**ENTER**"

Expansion card

EXPANSION CARD ACQUISITION

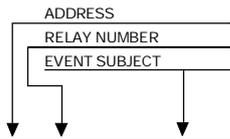


Sensor
Expansion Card

CARD acquisition !

Expansion Card Acquisition CARD-TX4R

Waiting! The duration is about max. 40 seconds



card-TX4R : 31
Relay : 01 02-03-04
Func. : not used preallarme
Sensors : 132 allarme- avaria

In anticipation of connection of more auxiliaries. We have taken the opportunity to add up to two cards relay CARD-TX4R with 4 relay board, for a total of 8.

THE CARDS CAN ONLY CONNECT TO THE ADDRESSES "31 AND 32"

Each relay can be subjected to the following events:

FAULT, THRESHOLD, GENERAL ALARM.

And they can be subjected to all probes.

SELECTION

Move with the "DOWN" button over the word Relay With "ENTER" button select the first example relay. 1

Move with the "DOWN" button over the word Func. With the "ENTER" button select the function you want to be subjected to relay 1 (FOR EXAMPLE FAULT, THRESHOLD, ALARM)

Move with the "DOWN" button above the word sensors With the "ENTER" button select the sensor to be subjected to relay 1. Continue as above for both the relays and the remaining functions.

- ▲ Indicator to return to the previous page, use "UP" and "DOWN" keys and press "ENTER"
- ▼ Indicator to advance to the ALARM THRESHOLD SELECTION page, use "UP" and "DOWN" keys and press "ENTER"
- ◀ Indicator to exit the program, use "UP" and "DOWN" keys and press "ENTER"

General Functions

Selecting General Alarm Relay Operation Mode



Relay: Contin. impulse
Positive safety: off ON
Latching: ON

Depending on the type of system you can choose the alarm relay working mode; **Continuous and Impulse**.

In the "**Continuous**" position, the relay remains closed until the **RESET** button is pressed.

In "**Pulse**" position, the relay remains closed for only 20 seconds

Each time you press "**ENTER**" changes the written continuous-impulse. Once selected, move with the buttons **UP** and **DOWN** on the next selection.

ONCE CHOSEN, MOVE WITH THE UP AND DOWN BUTTONS TO THE NEXT SELECTION.

SELEZIONE DELLA SICUREZZA POSITIVA

Relay: Continuous impulse
Posit. safety: off ON
Latching: off ON

Depending on the type of the system it is possible to choose the need to select the **Positive Safety**.

Selection

Use the UP and DOWN buttons to select **Positive Safety**.

Each time you press "**ENTER**" button changes the written **ON - OFF**.

"**ON**" enables the **Positive Security** function

"**OFF**" disables the **Positive Safety** function

Once chosen, move with the **UP** and **DOWN** buttons on the next selection.

N.B. This function is activated only after leaving the program.

ONCE CHOSEN, MOVE WITH THE UP AND DOWN BUTTONS TO THE NEXT SELECTION.

Selecting the General Alarm Latching

Relay: Continuous impulse
Positive safety: off ON
Latching: off ON

With in detection system:

"**Carbon monoxide gas or Oxygen gas**"
you can choose: a) enable - b) disable
of the General alarm **memorization**.

Selecting the **Latching** function, the unit will keep the relay closed, until the **Reset** button is pressed.

Selecting the **No-Latching** function, the control unit will not keep the relay closed when the alarm stops

Each time you press "**ENTER**" button you change ON/ OFF.

ONCE CHOSEN, MOVE WITH THE UP AND DOWN BUTTONS TO THE NEXT SELECTION.

Continue on the second page

Relay: Continuous impulse
Positive safety: off ON
Latching: off ON

By positioning on the indicated arrow and pressing "**ENTER**" to continue to the next page

General Functions

External Siren Silencing



The control unit program provides the possibility to **silence the external siren**, which may be annoying during the test phase or during the prolonged alarms.



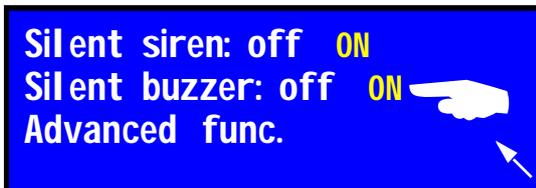
The extern siren silencing is signaled by a red LED

- a) Illuminated **red LED**, siren silenced
- b) **LED off**, operating siren.

Press "**ENTER**" button to change **ON - OFF**.

To move between the lines press the **UP** and **DOWN**

Silencing the Internal Buzzer



The control unit program provides the possibility to **silence the external buzzer**, which may be annoying during the test phase or during the prolonged alarms.

Press "**ENTER**" button to change **ON - OFF**.

To move between the lines press the **UP** and **DOWN**

Continue to advanced features



To continue to the Advanced Functions menu.

By positioning on the written "**ADVANCED FUNC.**" and press the "**ENTER**" button

To move between the lines press the **UP** and **DOWN**

change Password



To change the factory password (1234) with your own password.

Move with the buttons **right** and **left** above the desired number, press "**ENTER**", for every number entered illuminates the number selected, up to all four numbers are switched on.

When inserted, the written "**CONFIRMED**" lights up.

Save your own password and do not forget it, this time to access the programming of the unit you have to enter the new **password**.

N.B. If you forget your password, use the "**PUK**" number in the warranty sheet.

DATALOGGER



Posizionarsi sulla scritta "**DATALOGGER**" e premere il pulsante "**ENTER**"

Dal datalogger si fa l'Autodiagnosi di tutto il sistema con rilevazioni di:

Allarmi, Avarie, Diagnosi delle sonde, Trasmissioni, Malfunzionamenti, ecc.

> **Memorizzazione Datalogger** 50 episodi

▲ Indicator to return to the previous page, use "**UP**" and "**DOWN**" keys and press "**ENTER**"

▼ Indicator to advance to the **ALARM THRESHOLD SELECTION** page, use "**UP**" and "**DOWN**" keys and press "**ENTER**"

◀ Indicator to exit the program, use "**UP**" and "**DOWN**" keys and press "**ENTER**"

Advanced Functions

Reading Datalogger (events)

- ▲ Retrocession pag. x10
- ▲ Retrocession pag. x1
- READING EXAMPLES
- ▼ Advancement pag. x1
- ▼

Scroll through the pages with the UP and DOWN buttons by selecting them for 1 or 10 using the arrows you like, press "ENTER"

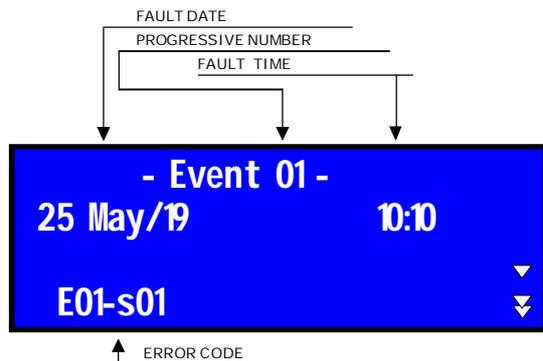


This chapter requires special attention because all anomalies that occurred during the operation of the entire system are recorded.

In fact, all the events of safety and general failures are stored in the Datalogger, including network blackouts, digital transmission or reception errors, battery operation or discharge, etc.

See the table below.

All data are saved with codes, each code corresponds to an event.



Event type	Codice
1 Pre-alarm	E00-S01
2 Alarm	E01-S01
3 Generic sensor fault	E02-S01
4 Black Out	E03-C00
5 Network Restore	E04-C00
6 Low Battery	E05-C00
7 Reset	E06-C00
8 Sensor communication error	E07-C00
9 Enabled sensor	E08-S01
10 Disabled sensor	E09-S01
11 Hardware Reset	E10-C00
12 Battery Clock	E11-C00
13 Sensor not present	E12-C00
14 Fault sensor	E13-S01
15 Sensor expired	E14-S01
16 Sensor replacement	E15-S01
17 Central Communication Error	E16-S01



STAMPA STATO ATTUALE ED EVENTI DEL DATALOGGER



Use the UP and DOWN buttons to select the written:

a) Print status, press "ENTER".

The current status of the control unit and sensors.

b) Print Datalogger, press "ENTER"

All datalogger events

▲ Indicator to return to the previous page, use "UP" and "DOWN" keys and press "ENTER"

▼ Indicator to advance to the ALARM THRESHOLD SELECTION page, use "UP" and "DOWN" keys and press "ENTER"

◀ Indicator to exit the program, use "UP" and "DOWN" keys and press "ENTER"

SCONTRINO STAU	SCONTRINO DATALOGGER
<pre> BEINAT == BXI32 == Ver: 1.14 S/N Example Serial: 0102 Date Hour 31/MAY/17 10:00 Sensors Status ----- Sensor 01 Zone 1 Gas Type: Explosive Gas Level: 02.9 LEL Status: Normal ----- Sensor 02 Zone 1 Disabled ----- Sensor 03 Zone 1 Disabled ----- Until the completion </pre>	<pre> BEINAT == BXI32 == Ver: 1.14 S/N Example Serial: 0102 Date Hour 31/MAY/17 10:00 Datalogger ----- - Event 01 - 06/jun/2019 08:27 Reset ----- - Event 02 - 07/jun/2019 10:11 Hard Reset ----- - Event 03 - 07/jun/2019 10:27 Vbat=11.8V ----- Until the completion </pre>

Advanced Functions



Beinat always attentive to the needs of its customers, has introduced into this unit the new function::

"MAINTENANCE"

This mode is used to ensure that the technician during normal maintenance does not interrupt gas delivery and the interruption of the external siren.

The interruption period is managed directly by the technician acting on "**MAINTENANCE:00**".

Each time you press the "**ENTER**" button changes the time range from **15 - 30 - 45- max to 60 minutes**

N.B. at the end of the Countdown the equipment returns to the normal operating state

END: To exit the program, select "**Return arrow**".



"SELF-DIAGNOSIS".

The self-diagnosis consists in carrying out a check up of operation of the entire system in case of anomalies, and if necessary resort to repair.

Examples of reading:

E01-CE00 (central side communication error)

E01-SE15 (sensor 15 communication error)

E01-EE31 (expansion communication error 31)

END: To exit the program, select "**Return arrow**".

During the Maintenance period, the writing **In Maintenance 20m** appears on the first page (screen) (20m = countdown time)

Maintenance interruption

If the work ends before the time set by pressing the **RESET** button, the maintenance cycle is exited.



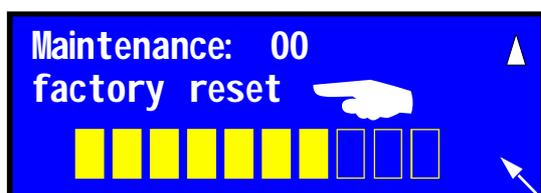
- ▲ Indicator to return to the previous page, use "**UP**" and "**DOWN**" keys and press "**ENTER**"
- ▼ Indicator to advance to the **ALARM THRESHOLD SELECTION** page, use "**UP**" and "**DOWN**" keys and press "**ENTER**"
- ◀ Indicator to exit the program, use "**UP**" and "**DOWN**" keys and press "**ENTER**"

Advanced Functions..follow



Factory Reset

Before using this feature you must be sure of your actions, because by doing this you will lose all the data saved on the unit.



After selecting "**Factory Reset**"

By holding the "ENTER" button for 4 seconds, appears a frame with 10 empty rectangles that will gradually fill with yellow color. At the end, the BX32 will be totally reset and starts a new countdown of 90 seconds.

The control unit is now reset

N.B. be sure of what is done because doing this all the previous settings will be lost.

- ▲ Indicator to return to the previous page, use "UP" and "DOWN" keys and press "ENTER"
- ▼ Indicator to advance to the ALARM THRESHOLD SELECTION page, use "UP" and "DOWN" keys and press "ENTER"
- ◀ Indicator to exit the program, use "UP" and "DOWN" keys and press "ENTER"

Installation and Positioning of the Control Unit

The BXI32 control unit belongs to group II and must be installed in a safe zone; **Outside the NO ATEX zone, and in any case not in boiler rooms or engine room.** The control unit must be accessible and visible to the user.

The BXI32 has an DIN rail Omega enclosure and is a device suitable for mounting on cabinet and has IP20 protection. powered at 15 VDC

During installation the normal precautions required for electronic devices should be required and therefore:

- Install the equipment away from excessive heat sources.
- Do not allow liquids in contact with the control unit, remembering that its external structure **not mounted** has IP20 degree of protection, if installed on Boxed version (cabinet) it takes the box protection degree

Sensors installation and positioning

The sensors must be selected with a degree of IP protection depending on the area to be monitored (Kitchens, Boiler rooms, Laboratory, etc.).

choosing one of the Beinat's sensors ranging from IP30 to ATEX. vedi pagina 3

The GAS sensors connected to this equipment are of many types and must be positioned at different heights depending on the type of gas to be detected.

These heights are:

- 30 cm. from the lowest point of the floor to detect *heavy gases (L.P.G. etc.)*
- 30 cm. from the highest point of the ceiling to detect *light gases (Methane etc)*
- 160 cm. from the lowest point of the floor to detect *volatile gases (CO etc.)*

It is important to remember that remote sensors should be installed, bearing in mind that:

- 1) The sensors should not be placed near the appliances to be controlled (boilers, burners, industrial kitchens, etc.) but on the opposite side.
- 2) The sensors should not be affected by smoke, vapour, and moving air, as they could distort their detection.
- 3) The sensors should not be placed near sources of heat, ventilators or fans.

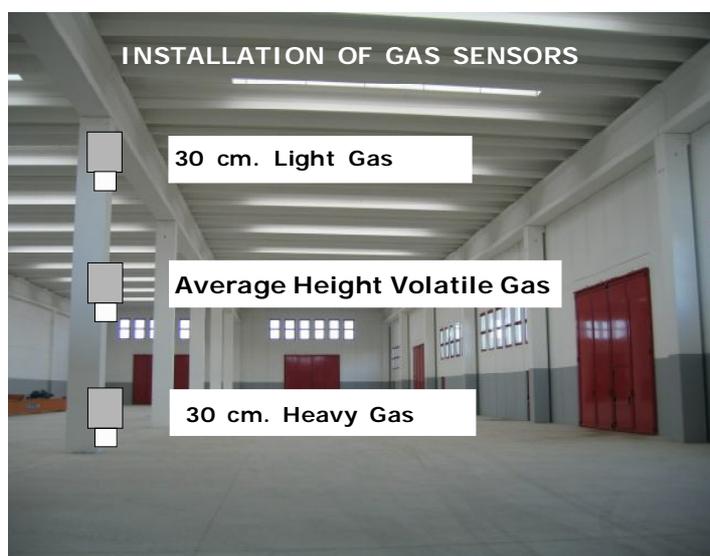
Note:It should be noted that the internal GAS sensors of the probe are perishable components with a variable average life span from 5 to 6 years (you can request the relative table). Therefore, after this period of time has elapsed it is advisable to replace them.

Maintenance

The user periodically (every 6 months), must perform a functional test of the detection system by spraying appropriate test gas towards sensor connected to the BXI32 until to obtain the control unit alarm state.

a) The control of operation and maintenance must be carried at least once a year by specialized technician.

b) The disposal of the sensors after 5 years from installation must be performed by specialized technician.



Turning and testing

1) When switched on, the display of the **BXI32** lights up as **BEINAT Srl**. After 10 seconds the product information will be displayed such as:

Beinat

Serial number with 6 digits

Date and time

Product code example BXI32 and software version

CountDown; the countdown has a duration of 90 seconds, at the end of it, the unit will be ready for use. Meanwhile, all LEDs will light up cyclically, by doing so a Functioning test.

2) At the end of the countdown the display stands so regular operation represented by the display designed.



MANUAL TEST

3) Press the **TEST** button to get the simulation of a gas leak, and the control panel performs the following operations for all connected sensors:

a) Lights up the **Preallarme LED**, by switching the **1st threshold** relay. The buzzer emits a sound to slow frequency.

b) Then turns on the general **alarm LED**. In addition to switching the **pre-alarm relay**, also switches the general alarm relay, the **MAIN ALARM LED** starts blinking; the buzzer emits a sound at a higher frequency. Releasing the **TEST** button you see the opposite effect: only the **MAIN ALARM relay LED** will be blinking. *The general alarm will persist until the RESET button is pressed resetting the alarm memory.*

TEST WITH GAS

To perform **GAS** testing, a pre-calibrated gas bottle must be used with the type of gas for which the system has been built. Carefully read the sensor user guide and run the sensor test.

FAULT

There are two Fault types:

a) **Fault Serial Connection**: appears on the display ERR. COM. (communication error). To test just disconnect a connection wire.

2) **Sensor fault**: To simulate this test, disconnect the sensor, **FAULT** appears on the display.

Before calling a technician check...



- **If the unit does not start**

If the control unit is supplied with Box, check that the voltage **110/230 VAC** is present at the ends of the connection terminals.

- **If the control unit is supplied without Box**, check that the voltage **15 VDC**, is present at the ends of the connection terminals.

- **If the Fault yellow LED lights up.**

a) First check the fault source: **from the serial network or from the sensor.**

Communication Error

If the fault comes from the serial communication check: that the cables have been correctly connected and that the cables are of the type recommended by the manufacturer; Make sure you have inserted the jumper end line

FAULT

Check that the sensor wires are connected as in the drawing, not to have pinched the insulating sheath.

Check that the voltage at terminals 1-2 is greater than **11 VDC**

- **If the Yellow Overload Probes LED lights up**

Check:

That the power polarity is not reversed, that there is no short circuit, that the sensors have not been damaged during installation, that it does not absorb an excessive current.

- **If the Yellow Over Load Battery LED lights up**

That the power polarity is not reversed, that there is no short circuit, that the polarity has not been reversed or the battery is not damaged.

If the control unit is repeatedly in alarm.

Check that there is no gas leak.

Check that the **FAULT** Led does not light up with the alarm signal, in this case control the sensors.

If the control unit is repeatedly in alarm and does not close the equipment connected to it.

Check that the connections are correct and that the jumper that carries voltage to the common relay has been made.

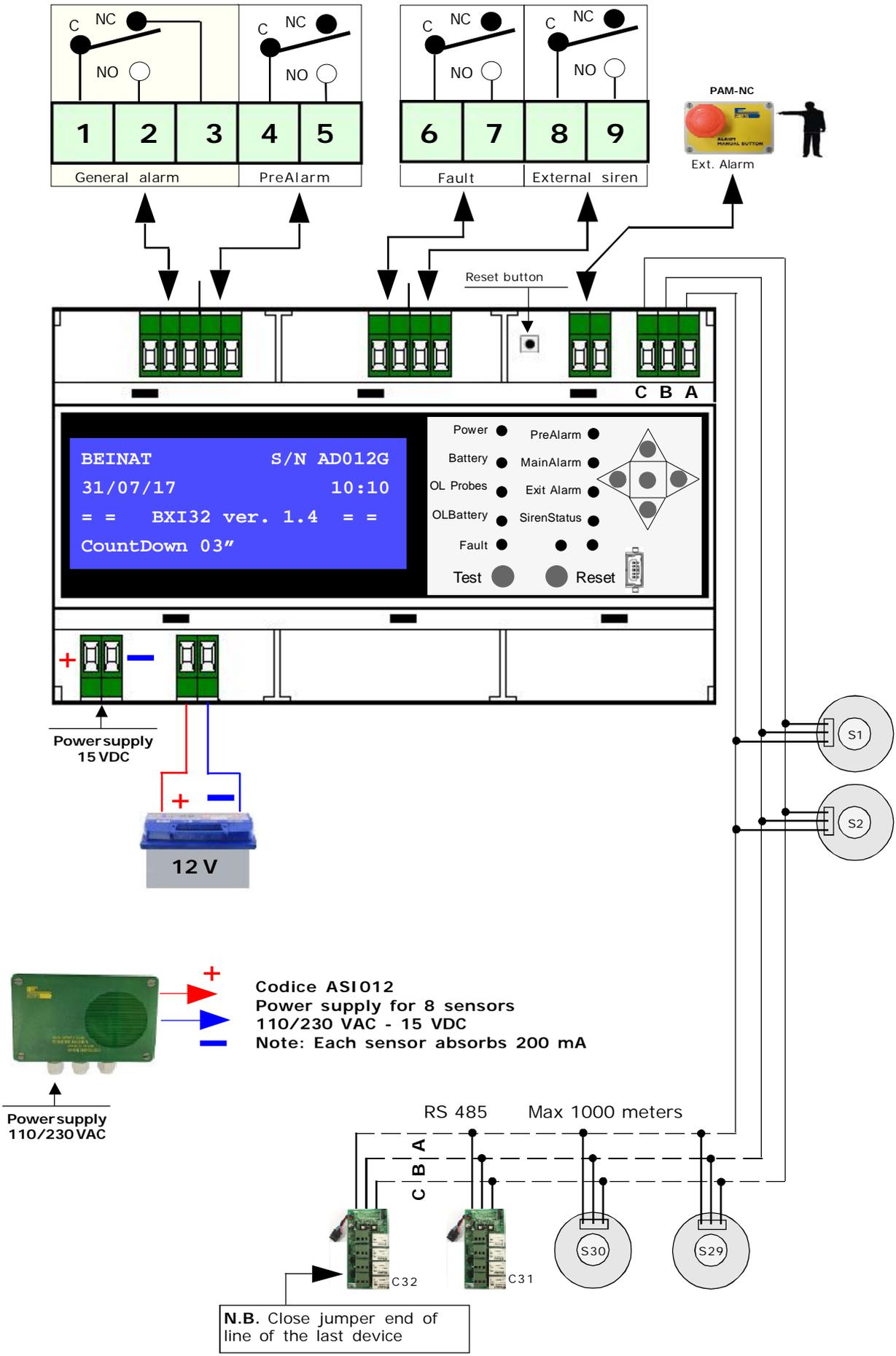
N.B. All relays are voltage free. Check the connection drawing.

If the BXI32 is connected to a 12VDC Solenoid Valve and does not work well.

The BXI32 can be connected directly to 12 VDC Solenoid valves, Sirens with a maximum absorption of **400 mA**.

In the event of further problems, you should contact a authorised technician directly or the **BEINAT S.r.l.** dealer.

Block diagram electrical connections



Electrical connections

Connection and addressing of detection sensors

Each connected sensor or card must have an address unique to avoid conflicts in the data transmission. To enter the addresses of each sensor or card you have to act through the rotary switches that each device possesses, until a maximum of 32 addresses..



Tens

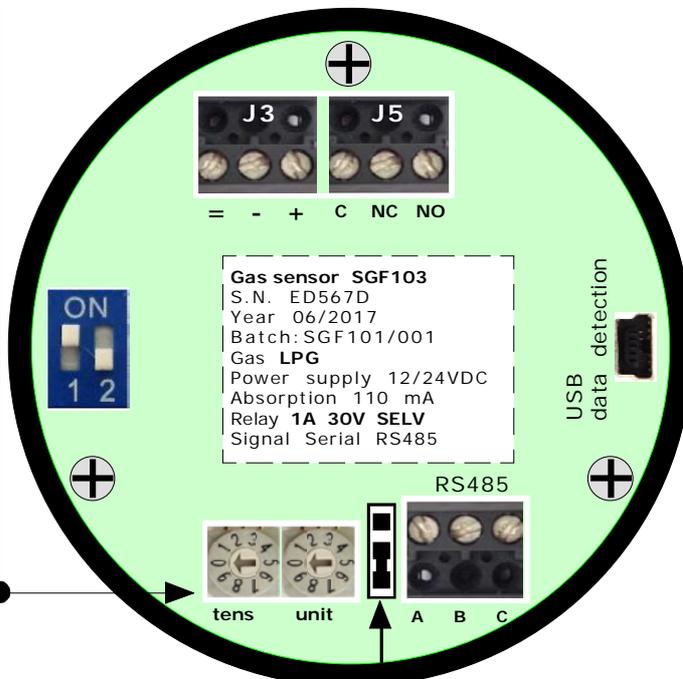


Units

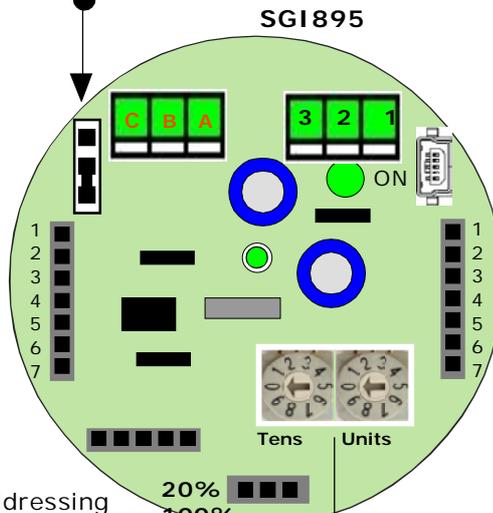
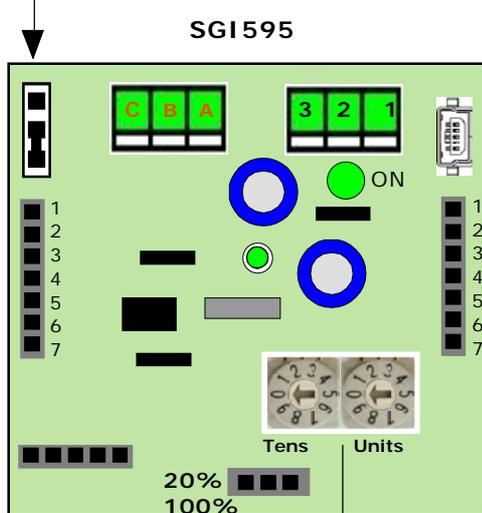
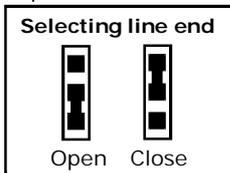
Example to select an address

Turn the Switch of tenths until you find the desired tenth. For example: 1
Turn the Switch of units until you find the desired unit. For example: 6
In this way you set the address " 16 "

REMEMBER TO INSERT THE END LINE CLOSURE AT THE LAST SENSOR OR CARD



Unlock Pivot



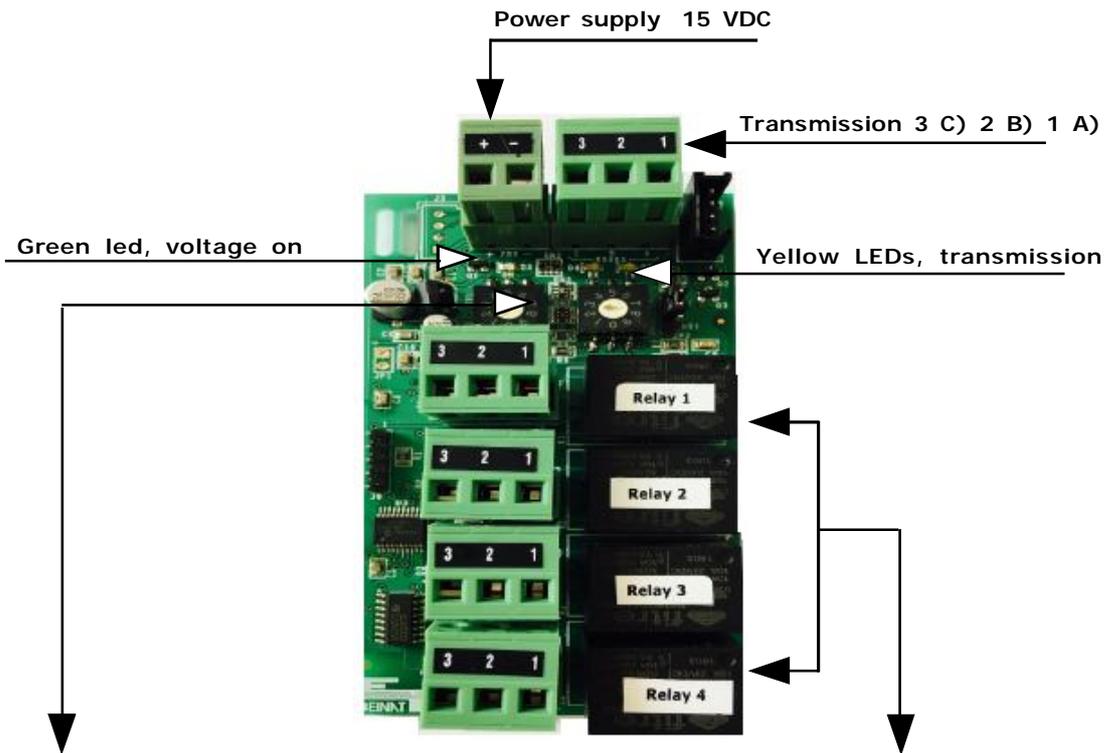
Addressing switches

follows .. Electrical Connections



WARNING. Before connecting to the mains power, ensure the voltage is correct. Carefully follow the instructions and the connections according to Regulations in force, keeping in mind that the signal cables should be laid separate from the power cables. An automatic cut-off switch (appropriately identified as device sectioning of the detector) should be incorporated in the electrical system, adequately located and easily accessible.

Connection and Addressing of an additional Relay Card "CARD-TX4R"



Each connected board must have an address unique to avoid conflicts in the data transmission.

To enter the addresses of each **sensor or card** you have to act through the rotary switches that each **CARD** possesses, with them you can select the desired address until to 32



Decine



Unità

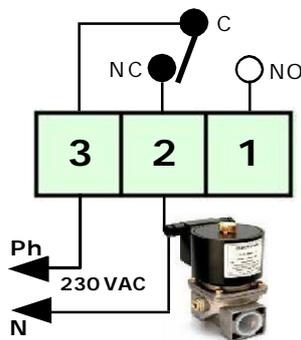
Example to select an address

Turn the Switch of tenths until you find the desired tenth. For example: **0**

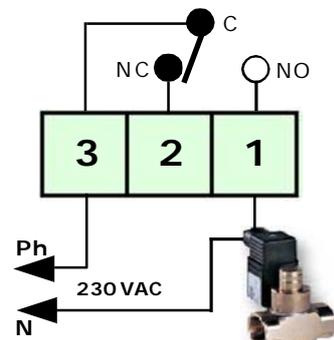
Turn the Switch of units until you find the desired unit. For example: **6**

In this way you will set the address " 6
Remember to insert the end of line closure to the last sensor or card

Each relay can be coupled to the selected probe and now you can match all the functions you want



EV NC 230 VAC



EV NA 230 VAC

Note!

All relays are voltage free.
 Capacity Contacts **10A 230VDC resistive**

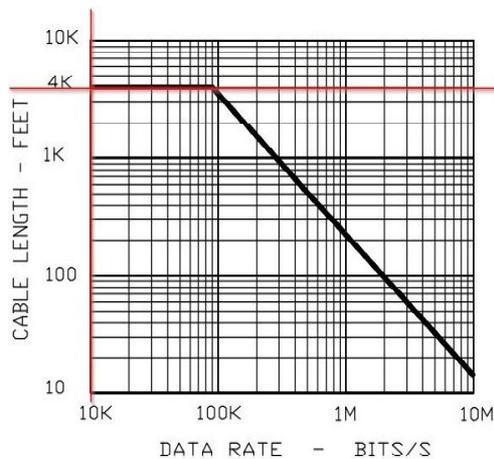
CAUTION !!

RS485 BUS CONNECTION CABLES

The bus connections must be made from a twisted and shielded pair with equivalent characteristics to **BELDEN type 9841** or **BELDEN 9842** cables indicated in the table below:

Type	N° Pair	RESISTENZE IN DC		Nominal Impedence Ohm	NOMINAL CAPACITY		AWG
		Wire Ohm/km	Shield Ohm/km		Between wires pF/m	Between wires Shield pF/m	
BELDEN 9841	1	78,7	11,0	120	42,0	75,5	24 (0,25 mmq)
BELDEN 9842	2	78,7	7,2	120	42,0	75,5	24 (0,25 mmq)

- 1) The **total length** of the **RS485** network must not exceed **1000 meters**.
 - 2) The minimum distance between two devices must not be less than 1 meter.
 - 3) The branch line from the main network must not exceed 2 meters.
 - 4) The shield of the BUS cable must be connected to earth at one end, for example on the peripheral near the control unit.
 - 5) A second ground connection would not guarantee the equipotentiality of the screen.
- Do not use the same conduit for Bus and power supply cables, or power cables in general...



Power cable

Use flame-retardant cable of adequate section according to the devices connected to the control unit, the section must never be less than 2.5 mmq.

Connection: Solenoid valves, Sirens, and other devices.

Calculate the cable section according to the length and the number of connected devices, in order to fall within the power supply range of the devices which guarantees correct operation.

Connection: sensors, sirens, and other devices.

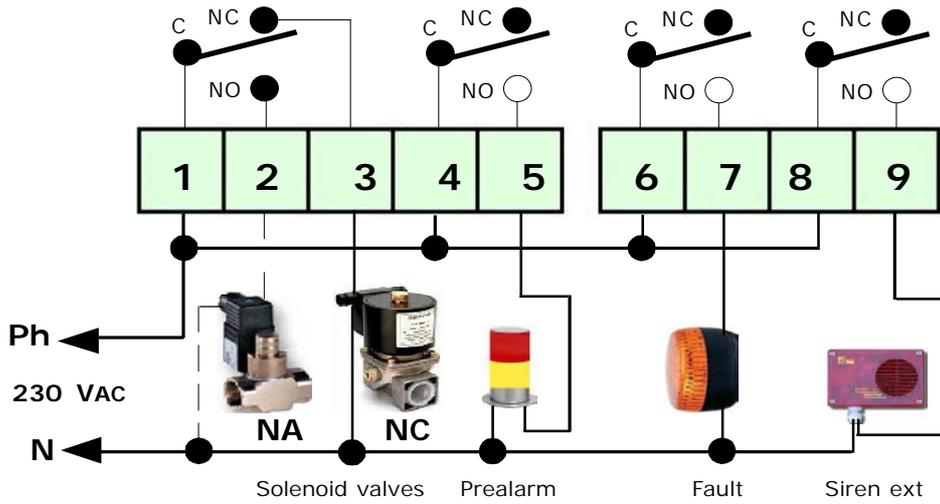
In order to avoid the use of conductors with high section, it is possible to power the devices point by point, by means of individual switching power supplies.

In the **RS485 network**, the masses of the devices must be connected together.

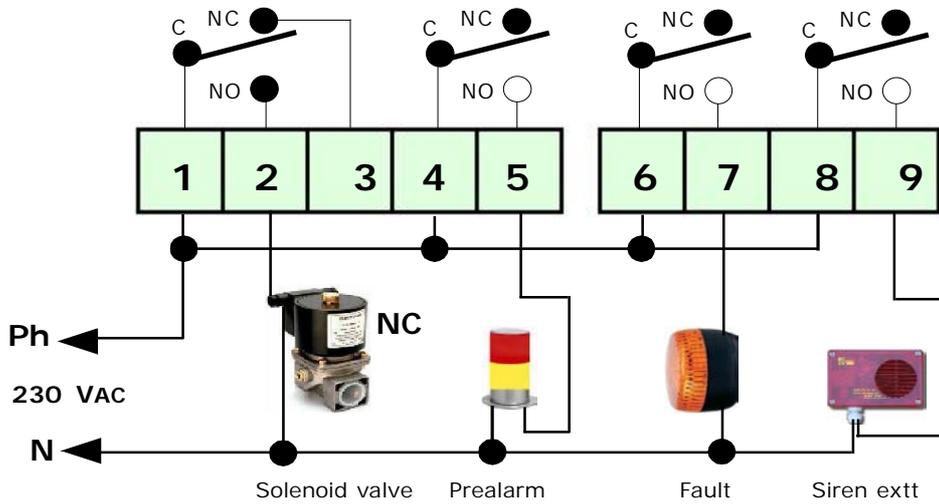
In the case of devices with power supply connected to earth (for example PC), the earth and ground connection together can generate problems.

Electrical connections

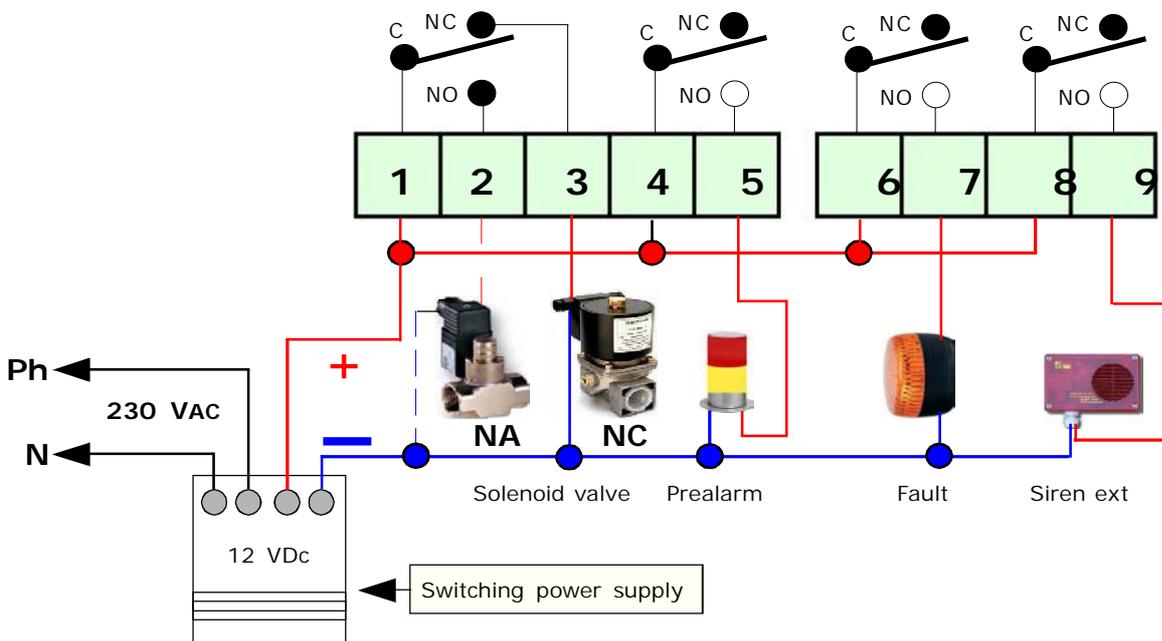
Connections of a solenoid valve Normally Closed without Positive Safety



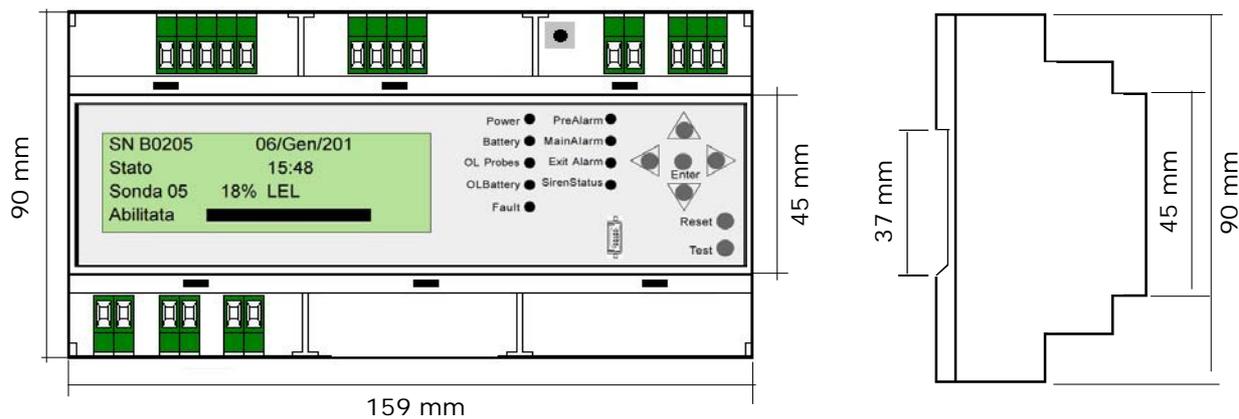
Connections of a solenoid valve Normally Closed with Positive Safety



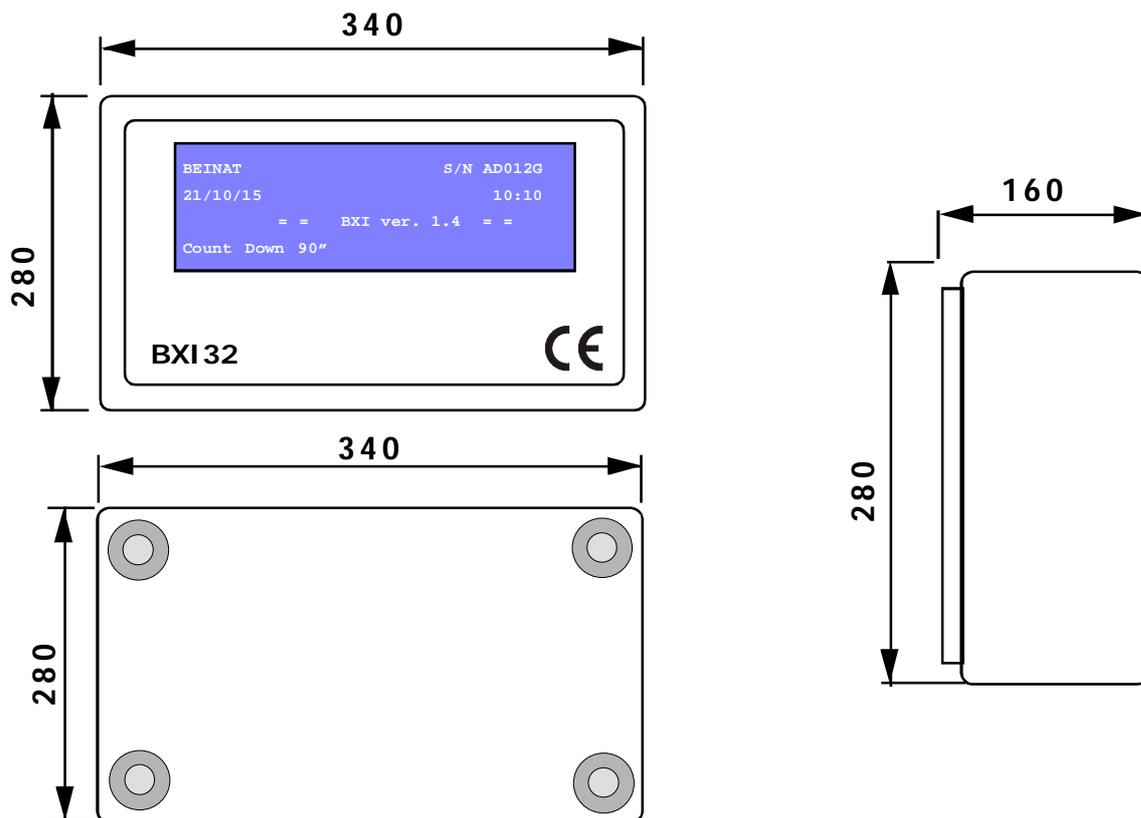
Connecting a Solenoid valve with sirens to 12 VDC, via a power switching. The power supply should be adequate to the consumption of the components



Measures and dimensions of the unit in rail DIN Omega 9 modules



Measurements and dimensions of the control unit in box IP65



The installation of the detector is not exempt from The compliance with all regulations concerning the characteristics, installation and use of gas appliances. The ventilation of the spaces and the elimination of combustion products are described in the **UNI norms according to ART. 3 LAW 1083 / 71** and relevant legal provisions.

ATTENTION! Actions to be taken in case of alarm

- 1) Put out all free flames.
- 2) Close the main gas tap or the LPG cylinder tap.
- 3) Do not turn any lights on or off; do not turn on any electrical device or appliance.
- 4) Open windows and doors in order to increase ventilation.

If the alarm stops, its cause must be found and the relevant consequent measures taken.

If the alarm continues and the cause of gas presence cannot be found or removed, abandon the building and call the emergency services when outside (fire department, distributors, etc.)

IMPORTANT: The operation test should not be carried out with the gas tap as this does not guarantee a sufficient concentration to activate the general alarm.

Warning !!

If you have the following symptoms: vomiting, sleepiness, or else, go to the closest first aid station and inform the operators that you could have been poisoned by **Carbon Monoxide, or by an excess or deficiency of oxygen**



Reminder table of the addressed sensors configuration

Sensors n°	Code	Address	Location	Type of gas
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				

INSURANCE. This device is insured by the SOCIETÀ REALE MUTUA for the PRODUCT'S GENERAL LIABILITY up to a maximum of 1,500,000.00 EURO against damages caused by the device in case of failures in functioning.

WARRANTY. The warranty term is 3 years from manufacturing date, in agreement with the following conditions. The components acknowledged as faulty will be replaced free of charge, excluding the replacement of plastic or aluminium cases, bags, packing, batteries and technical reports.

The device must arrive free of shipment charges to **BEINAT S.r.l.**

Defects caused by unauthorized personnel tampering, incorrect installation and negligence resulting from phenomena outside normal functioning shall be excluded from the warranty.

BEINAT S.r.l. is not liable for possible damage, direct or indirect, to people, animals, or things; from product faults and from its enforced suspension of use.



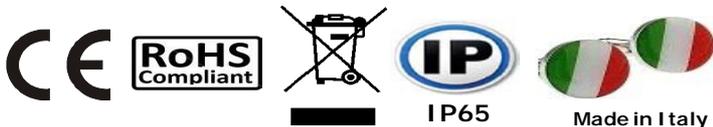
DISPOSAL OF OLD ELECTRICAL & ELECTRONIC EQUIPMENT

This symbol on the product or its packaging to indicates that this product shall not be treated as household waste. Instead, it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment, such as for example:

- sales points, in case you buy a new and similar product
- local collection points (waste collection center, local recycling center, etc...)

By ensuring this product is disposed of correctly, you will help prevent potential negative consequence for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Attention: in some countries of the European Union, the product is not included in the field of application of the National Law that applies the European Directive 2002/96/EC and therefore these countries have no obligation to carry out a separate collection at the "end of life" of the product.



Control Unit BXI32 *Lo styling è della b & b design*

Dealer Stamp

Purchase date:

Serial number:

Beinat S.r.l. following the purpose of improving its products, reserves the right to change the technical, aesthetic and functional characteristics at any time and without giving any notice.

BEINAT S.r.l.
Via Fatebenefratelli 122/C 10077, S. Maurizio C/se (TO) - ITALY
Tel. 011.921.04.84 - Fax 011.921.14.77
[http:// www.beinat.com](http://www.beinat.com)

 **Business** - info@beinat.com
Technical support - laboratorio@beinat.com