



ILIA

PRO VERSION



RILEVATORI LINEARI ANTINCENDIO
SMOKE AND FIRE BEAM DETECTORS

www.setronicverona.com

EN 54-12

Built in compliance with European standard

EN 54-17

Built in compliance with European standard



0786-CPR-20925

CE Certification



n° G209195

VdS certification



01111

Russian certificate

2002/96/CE

Manufactured in accordance with the regulations and respect for the environment as in

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ILIA

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ILIA



High sensitivity beam SMOKE / FIRE detector
Transmitter / Receiver
version

MODEL ERHS0712-PRO

TRANSMITTER – RECEIVER VERSION

Basic Characteristics

- **Detector:** Italian technology, design and manufacture
- For use in any industrial or civil environment
- Extreme ease of installation and programming
- Very low assembly, cabling and maintenance costs
- The detector may be installed horizontally or vertically and can work at any angle
- Micrometric alignment device
- Variable-adjustment integrated diaphragm (on the Rx unit)
- **Control unit** for the programming, calibration and the performance of remote beam detector testing, enabled for:
 - Basic settings for two beam detectors, even of different types
 - Expansion board for the connection from 3 to 8 detectors and loop closure and available pre-alarm output with restriction to 5 detectors
 - On site installation at eye level
 - Fault outputs programmable
 - Password access to programming keyboard
 - Reset through Control unit and/or signal and control unit or by means of the MRS module
- **Fastening base**
 - Plug-in connection between detector and base
 - Line protection board to ensure running in the event of short circuit
- **Special Allen key** suitable for mechanical alignment, diaphragm regulation, opening and closing of base and control unit.

Product characteristics

- Standard of construction EN 54-12 / EN 54-17
- Protection rating IP65 (Tx Unit, Rx Unit and Control unit)
- RoHS compatibility
- Operating distance from 10 to 200 m for a maximum area of cover of 1600 sqm per detector, please refer to National Standards
- Max width of cover of 15 m, please refer to National Standards
- Connections to 4 conductor cables in series RS485
- Auto-adjustment of threshold
- Angular misalignment maximum ± 1 degree
- Complete directional stability over time
- Sensitivity threshold modifiable and selectable with extended range.
- Automatic detector reset on breaking of infrared beam
- Auto-testing of correct RS485 communication
- Power supply 24 V DC
- Extended sensitivity threshold to about 4 dB attenuation;
- SMLS expansion board required always in control unit, to permit of Pre-Alarm outputs;
- Ability up to 5 detectors per control unit (with Pre-Alarm) or 8 detectors per control unit (without Pre-Alarm);
- Special screen in the menu for Pre-Alarm sensitivity adjustment;
- Timing of fault output up to 254 seconds;
- Lower maintenance request level (activated when the signal falls below 35%);
- Longer maintenance timing level, up to over 8 minutes;
- Log of fault events with causes (Saturation, Maintenance request and infrared beam break);
- Model PRO-L which, as compared with the PRO, has a removable dust shield tube to protect the optics from environmental dust.

SYSTEM DESCRIPTION

The beam detector **ILIA ERHS0712-PRO** consists of a Transmitter unit, a Receiver unit and a Control unit for beam detectors, specific for programming, calibration and testing.

The **Control Unit** is used remotely, at ground level, to run the detectors through a single serial connection. It can therefore be installed directly on site with all operations carried out there simply and effectively without having to do so at height, except of course for the actual securing and the first alignment of the detector. It is made up of a plastic container with a 5 function key keyboard and backlit display of 16 characters and 2 lines. By means of the menu, entering a 4 digit **PassWord**, the system can be programmed from the ground, setting for each individual sensor the signal level and intervention threshold, check environmental interferences and the alarm threshold, as well as test the individual detectors and carry out a reset.

The configuration **menu** for the system becomes available on pressing OK on the front panel, entering the default **PW** of **FFFF** for first programming. Customisation of the **PW** can now be carried out, following the instructions in the programming menu (if you forget the **PW** it can be reset from the control unit, for this contact the technical service).

The control unit (CSRLS-2-PRO) for beam detectors makes direct contact possible between two detectors. Using the **expansion board** (SMLS) it is possible to use up to 5 detectors (with pre-alarm output) or 8 detectors (without pre-alarm) and it possible to have a two branch connection with open lines or with closed loop. With this last type of connection the system assures correct working of all the devices even if there is a break in the line or a short-circuit, isolated through the board inserted into the connection base of each individual detector. On the board there are the output relays that enable each single detector to send a dedicated signal for alarm, fault or maintenance request. Such messages are clearly indicated on the display and are repeated on the corresponding front panel LEDs. The fault relays can be set as NC or NO with timing set using the Control unit menu. Any loss of communication between the Control unit and the Detectors connected to it is immediately signalled by the simultaneously flashing of the yellow and green LEDs on both the Transmitter and the Receiver units. An error message will appear automatically on the display, such as for a break in the beam, in which case there is an indication of the position at which the fault occurred.

The **Control Unit** (CSRLS-2-PRO) is suited to truly critical environments and uses special VdS certified software. This model allows measuring of the detection threshold up to the maximum limits permitted by standard EN54-12, without losing the principal characteristic of the range: early detection in any environment. ILIA with the PRO control unit has already had successful laboratory tests and environmental tests with real scale fire tests. These field tests have shown how detection by this model can assure an early alarm in any space, getting round any unfavourable conditions that could create false alarm or false fault conditions. ILIA with the PRO control unit is therefore more reliable for all systems that present environmental problems associated with the presence of dust, fumes or particular works, where other technologies cannot guarantee safe conditions with careful and precise detection.

Power tension for the equipment is direct current 24 Volt.

WORKING PRINCIPLE

The Transmitter unit emits two 1 KHz modulated infrared beams as two cones which cross the environment concerned to reach the Receiver unit. The crossing of the environment by the two infrared beams means all that happens can be checked as the information is steadily received that could indicate the start of a fire. The event is monitored through the optical modulation of the infrared carrier between the Transmitter and the Receiver, in frequency and in amplitude. The Receiver is thus able to demodulate the infrared beam and receive the information necessary for checking on any initial indications of a fire, turning such data into electrical signals that correspond to the detection of combustion smoke. These signals are made electronically using a special algorithm, from the Receiver unit they are sent to the Control unit for the suitable signals and activation. All the pieces of equipment have microprocessor that follows the scanning of operations, separately managing not only the alarm but also fault conditions and breaks in the beam, and requests for maintenance for each individual unit. The messages are clearly visible on the display of the Control unit and are repeated with the LEDs on the Control unit itself and on the Detector, the origin of the signal, to permit the event to be localised immediately. The message on the display will show the nature of the event in question, as well as the address of the Detector concerned. If the event involved more than one Detector, all the addresses concerned appear on the display and the associated outputs are activated. For connection you have to use the size cable indicated in current regulations, that is to say a minimum of 0.5 2. For the type of cable to use refer to current regulations. The detection of the start of a fire is always transferred from the field unit (Detector) to the Control unit, and from this through the Control unit's dedicated relays to the Control and Signalling Centre. The system reset can be carried out through the Control unit keyboard, going into the main menu with the **PW**, or through the control and signalling centre, taking away the power to the control unit for about 1 second, by means of the modules or with relays, and closing, by means of a contact that is normally open, the two terminals at the MRS module. The Control unit for the beam detectors can also be used for the delay times in the event of fault for any blinding of the detectors, with outputs individually timeable from 0 to 254 seconds. The Receiver unit (Rx) has an internal diaphragm that makes it possible, following the instructions, to select the filter positions mechanically to solve any problems in the local environment, especially of an architectural nature, where there are false reflections or if the Detector has to work in optically limited spaces. The connection of the detector is carried out at the base which is affixed to the wall, to which the detector plugs in. This means any necessary cabling can be carried out at the time of wiring without having to leave the detector installed on site and working, thus avoiding the risk of damage, loss of alignment or its getting dirty too quickly.

ASSEMBLY PROCEDURE

NOTE 1 Use the SETRONIC Allen key to open and close the detector and for the mechanical alignment of the equipment.

NOTE 2 To ensure that the base does not lose its Protection rating of IP65, make sure it is fastened to a flat surface. If this is not possible, a fastening bracket should be used.

1. Fasten the connection base of the Detector and carry out the cabling (power supply + serial line) (e.g. cable of 4 x 0.5 mm²).
2. Set the Detector address between 1 and 8, consequentially using the Dip-Switch according to the table on page 29, remembering that the same address must be set on the transmitter and on the receiver.
You are advised to do this before fastening the base at height.

NOTE The address Dipswitch on the Detector must always be set to ON only on the last Detector connected to the open line. It must also only be set on just one Detector. For a closed loop configuration Dip n° 4 must be at the OFF position. If using an open line no bridge is to be put between the two serial lines.

3. Insert the plug on the bottom of the Detector into the connector of the base, until it clicks and then lock the unit to the base by turning it with the wrench and direct it towards the associated device at the opposite side.
4. Repeat all the above actions for all the Detectors installed. Check that the Transmitter and the Receiver have the same address.

CHECK THE CONNECTIONS BEFORE START-UP

(to be carried only with a loop configuration)

1. Disconnect the two "power output" and "serial line A" terminals of the main module and the two terminals "power output" and "serial line B" of the expansion module.
2. Use a voltammeter to measure the resistance on the flying leads, between the positive of the first power output and the positive of the second power line. You should also measure the flying leads resistance between the negative of the first power output and the negative of the second power line.
3. Both the resistance figure read must be below 100 Ω.
4. Reconnect the terminals to the boards, ensuring they are well inserted.

CALIBRATION

1. Power the system through the Control unit and set the number of Detectors connected and the configuration of the serial connections (e.g. closed or open loop). The Control unit also permits use of two independent serial ports as if there were to separate lines open. In this case, the addresses to set are the same as from 1 to 8, but you have to set the line closing (Dip-switch 4 ON) on the last unit of both lines.
2. At this point the green LEDs of the two Detector units and the Control unit must come on; short flashing will confirm beam scanning continues. If the unit has flashing green and yellow LEDs at the same time, flashing at intervals of about 2 seconds, it means there is no serial communication. In such case check: the cabling for possible errors or inversions, incorrect configuration of the address switches (doubling) or the wrong number of detectors connected (system setup menu)
3. Point the Transmitter, using the Allen adjustment screw to cause the yellow LED to flash.
4. Starting in one direction, for example to the left, move the unit slowly until the yellow LED stops flashing. At this point turn the unit to the right (the yellow LED will start flashing again). Count how many key turns are made before the LED goes off in the opposite direction. Reposition at the centre point, dividing the number of turns counted by two. The yellow LED will continue flashing and you will be at the centre of the optical axis.
5. Carry out the same procedure for the vertical axis.
6. Point the Receiver following the same procedure as for points 3, 4, 5.
7. Carry out the calibration using the ground level Control unit following the <AUTO Adjust> menu.
8. When calibration has been completed, wait for a minute of normal working and then cover one of the two units and check the yellow fault LED goes on.

MAIN CALIBRATION PROCEDURE

1. Enter menu

- from the main screen and press OK;
- enter the password, use the cursors Press OK;

2. Set up the number of detectors

- press ► or ◀ until you view <System Setup >; Press OK;
- press ▲ or ▼ to change the number of detectors (from 1 to 5 if "Prealarm Output" is ON and from 1 to 8 if "Prealarm Output" is OFF); Press OK;
- press or to set fault contact delay (from 0 to 254 sec.); Press OK;
- press ▲ or ▼ to set fault (normal open or normal closed); Press OK;
- press ▲ or ▼ to configure the serial lines <Com Lines> (if a sole open serial line set <Com Line> OFF, otherwise if there are two serial lines open two branches - or closed line - loop - set <Com Line> ON); Press OK;
- if < Com Line> is set at ON or the screen <Com Line Loop>; if two open serial lines are open -two branches - set <Com Line Loop> otherwise with the closed line - loop - set <Com Line Loop> CLOSE); Press OK;
- keep <Com Error Check> at OFF; Press OK;
- press ▲ or ▼ to change the Pre-Alarm output qualification; Press OK;
- keep <Select Language> at ENG; Press OK to save setting

3. First calibration of the detector (after physical alignment)

- press ► or ◀ until you view <AUTO Adjust>; Press OK;
- press ▲ or ▼ to select the detector to be calibrated; Press OK;
- wait for the Rx value to settle at around 100% (see notes on page 20)
- for any required adjustment press ▲ or ▼
- press OK to save and memorise the setting.

4. Recalibration of the detectors previously installed

- press ► or ◀ until you see <AUTO Adjust>; Press OK;
- press ▲ or ▼ to select the detector to be calibrated; Press OK;
- wait for the Tx signal to settle and press OK;
- the value of the Rx must be as close as possible to 100% (see notes on page 20)
- press OK to confirm the setting.

5. Sensitivity setting

- press ► or ◀ until you see < sensitivity >; Press OK;
- press ▲ or ▼ to select the detector to be calibrated; Press OK;
- read the Detec disturbance value (every 30 secs press ▲ or ▼)
- press ▲ or ▼ to select the SMOKE threshold (the peak value most highly viewed by Detec must be less than the threshold to be set); wait 2 secs and Press OK;
- if "Prealarm Output" status was set at ON:
- read the Detec disturbance value;
- press ▲ or ▼ to select the SMOKE threshold (the peak value most highly viewed by Detec must be less than the threshold to be set); wait 2 secs and Press OK;
- press ▲ or ▼ to select the FIRE threshold (the peak value most highly viewed by Detec must be less than the threshold to be set);
- wait 2 secs and Press OK to confirm the setting.

PROCEDURE FOR FURTHER ADJUSTMENT

1. Enter menu

- from the main screen and press OK;
- entered the password, use the cursors ▲►▼◀ press OK;

2. Checks alignment and manual settings of the TX level

- press ► or ◀ until you see < adjustment >; Press OK;
- press ▲ or ▼ to select the detector to be adjusted or checked; Press OK;
- press ▲ or ▼ to increase or lower the Tx value;
- the value of the Rx must be as close as possible to 100% (see notes on page 20)
- wait 2 secs and Press OK to confirm the setting.

3. Detector alarm simulation

- press ► or ◀ until you see < Alarm Test >; Press OK;
- press ▲ or ▼ to select the detector to be tested; Press OK;
- Press OK to start alarm test;
- wait for the detector to activate the alarm signal;
- Press OK to reset the detector (for menu details see page 22)

4. Alarms reset

- press ► or ◀ until you set < ResetAlarm >; Press OK;
- Press OK to reset the alarm.
- it is also possible to reset the alarms suing the MRS module, see page 34)

5. Change menu password

- press ► or ◀ until you see < Change password; Press OK;
- entered the new password using the cursors ▲►▼◀;
- press OK to confirm the new password.

TECHNICAL FEATURES

Detector Transmitter – Receiver mod. ERHS0712-PRO

Working temperature	-20°C/+65° C
Storage temperature	-20°/+70° C
Electromagnetic interference	EMC test up to 30 Volt/m (VdS protocol)
Power tension	24V DC \pm 20%
Cable type	minimum section 0.5 sqmm with 4 wires (details on page 28)
Maximum cable length	1200 m from Control unit for beam detectors
Maximum permitted cover	1600 sqm
Cover by length	15 m
Operating distance	from 10 to 200 m
Angular misalignment	\pm 1 degree max
Detector Protection rating	IP65
Colour RAL	9005 deep black, 1013 pearl white
Material	PPE+PS «Noryl» Flame Class V0 self-extinguishing
Dimensions	162x145x193 mm
Weight	Tx unit 735g, Rx unit 775g

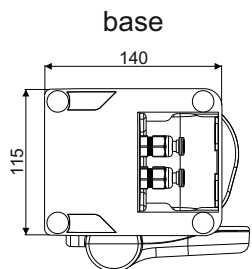
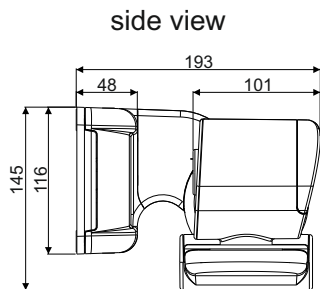
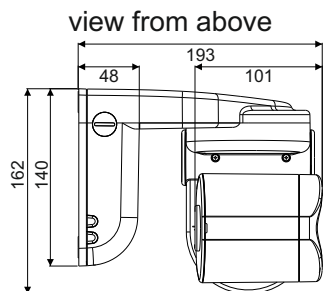
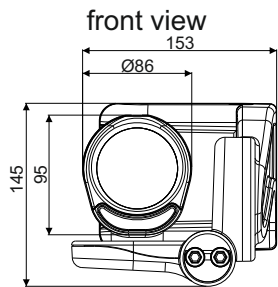
Control unit for beam detectors model CSRLS-2-PRO

Working temperature	-20°C/+65° C
Storage temperature	-20°/+70° C
Power tension	24V DC \pm 20%
Type of output cable	max section 0.5 sqmm
Maximum cable length	1000 m with cable of 0.5 sqmm
power supply	(to the control and signalling centre)
Contact capacity Alarm/Fault optorelay	max 150 mA
Connectable detectors	from 1 to 8
Control unit protection rating	IP65
RAL colour	9005 deep black
Material	PPE+PS «Noryl» Flame Class V0 self-extinguishing
Dimensions	177x145x69 mm
Weight	375g

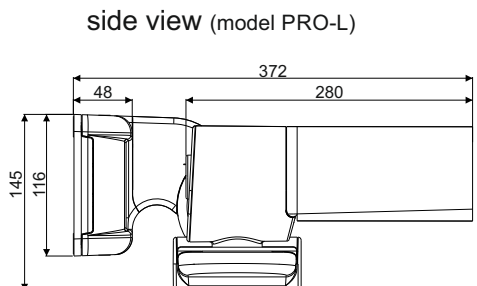
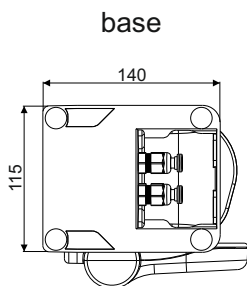
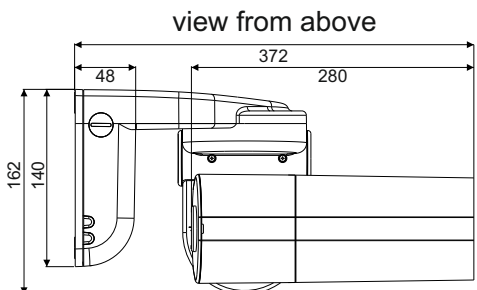
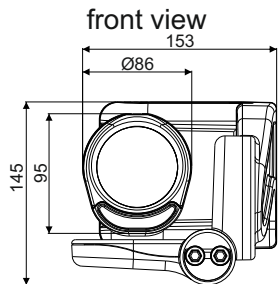
Current drawn

	POWER TENSION	24V \pm 20%
1 DETECTOR CONNECTED	In stand By	max 48 mA
	Typical (active alarm or fault relay)	max 50 mA
8 DETECTORS CONNECTED	In stand By	max 261 mA
	Typical (active alarm or fault relays)	max 270 mA

DIMENSIONS OF ILIA ERHS0712-PRO (mm)



DIMENSIONS OF ILIA ERHS0712-PRO-L (mm)



SETTING OF DIAPHRAGM FOR MODEL ERHS0712-PRO

ILIA has inside its device a 6-position diaphragm (from 0 - fully open to 5 - maximum closure) which can be used where problems arise in the environment to be protected, for example in the present of direct sunlight or false reflections. The diaphragm allows short distance adjustments and/or permits the beam to pass through narrow spaces or in any case limit the dimensions of the beam.



Receiver Unit



Fastening the key



Turn clockwise



Diaphragm position 0
distance from 30 m to 200 m



Diaphragm position 1
distance from 50 m to 180 m



Diaphragm position 2
distance from 40 m to 170 m



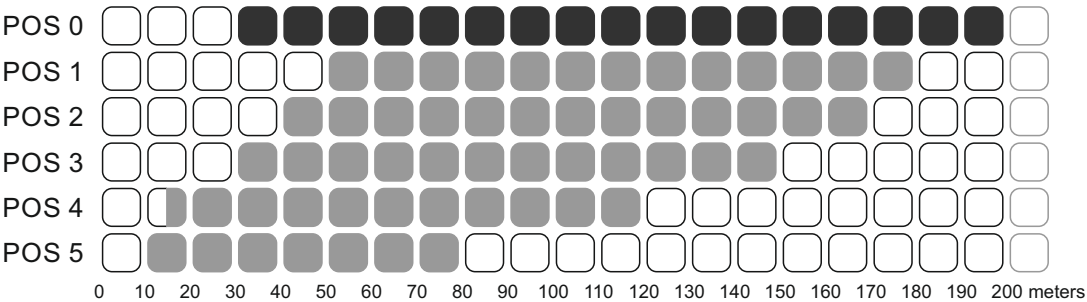
Diaphragm position 3
distance from 30 m to 150 m



Diaphragm position 4
distance from 15 m to 120 m



Diaphragm position 5
distance from 10 m to 80 m





CONTROL UNIT FOR BEAM DETECTORS

MODEL CSRLS-2-PRO

DISPLAY MESSAGE AND PROGRAMMING STEP

1. Menu access protect by password

SETRONIC Verona
Normal Operation

Main screen in Normal Working mode

PRESS OK

Insert Password
FFFF

Pressing the arrows ►◄ and moving the flashing cursor with the ▲▼ arrows, you can change the password characters (from 0 to 9 and from A to F).

PRESS OK

Password error

If you enter the wrong code, *Password error* will appear after the OK. Check and repeat the procedure.

2. Sensibility Setting

<sensibility>

Enter the correct password to go to the configuration menu

PRESS OK

<choose line>
N.:1

Pressing the ▲▼ arrows, select the Detector for which the sensitivity has to be adjusted for the background noise to be read (DETECTOR)

PRESS OK

Loading data
from device:1

Wait for the data to load.

If the next screen does not open within a few seconds hold down OK until it exits the function

Read the Detector figures for a couple of minutes and set a value that is higher than the highest peak read. The base setting is 673 divisions for Smoke, 200 for PreAll and 200 divisions for Fire, following the steps read on the Control unit. Carry out the Smoke, PreAll and Fire measurements.

Pressing the ▲▼ arrows to set the SMOKE sensitivity
NOTE 1 if the sensitivity threshold is at the limit of the range required by the regulations, there will be a <Warn> signal

NOTE 2 in the PRO control unit the <Warn> signal appears for the smoke threshold > 1492 indicating the point at which the PRO thresholds start (e.g. Smoke: 3200 Warn)

Detec: 0
Smoke: 200 Warn

wait 2 secs and
PRESS OK

Pressing the ▲▼ arrows you set the PreAl sensitivity

Detec: 0
PreAl: 200

wait 2 secs and
PRESS OK

Pressing the ▲▼ arrows you set the FIRE sensitivity

Detec: 0
Fire : 200

wait 2 secs and
PRESS OK

Once the setting has been completed

If the sensitivity has been changed the message here at the side is seen.

Savin9 data...

Otherwise, if no changes have been made, but there has only been, for example, a check on the values, the message at the side here is shown.

Data not changed
OK to exit

To go back to the menu

PRESS OK

3. Modify of Transmitter level and check of the signal level received

Se necessario, eseguire l'accesso al menù con password seguendo i passi del punto 1

Enter the password

PRESS OK

Insert Password
FFFF

Enter the correct password to go to the menu

<sensibility>

<adjustment>

Press ► until you see <adjustment>

PRESS OK

<choose line>
N.:1

Pressing the ▲ ▼ arrows you select the Detector for you wish to adjust the transmission power

PRESS OK

Loading data
from device:1

Wait for the data to load.
If the next screen does not open within a few seconds hold down OK until it exits the function.

RX: 100.0%
TX: 25.0%

Pressing the ▲ ▼ arrows to increase or reduce the Tx value (power of Infrared issued). For proper working of the detector the value of the Rx reception must be at around 100% (see notes on page 20).

Once the calibration has been carried out

wait 2 secs and
PRESS OK

Saving data...

If the sensitivity has been changed the message here at the side is seen

Data not changed
OK to exit

Otherwise, if there has been no change, but there has just been, for example, a check on the values, the wording shown here at the side appears.

To go back to the menu

PRESS OK

4. Auto calibration of Transmitter level

PRESS OK

Insert password
FFFF

Enter the password

PRESS OK

Enter the correct password to go to the menu

<sensitivity>

Press ► until you see <AUTO Adjust.>

<AUTO Adjust.>

PRESS OK

Pressing the arrows ▲▼ select the Detector for which you want to adjust the transmission power

<choose line>
N.:1

PRESS OK

Wait for the data to load

Loading data
from device:1

Let the transmitter level update until the value of the Rx is at around 100%, then Press OK to save setting.

RX: 100.0%
TX: 25.0%

NOTE 1

It is possible, once the value has settled close to 100%, to increase or decrease the value using the arrows ▲▼ to bring it to the actual 100% figure Do not set above 102% or below 96%.

NOTE 2

If the Tx value remains very low (<5%) or very high (>95%) check the position of the diaphragm with respect to the operating distance.

NOTE 3

If it does not reach at least 96% with the Tx 100% it means that an obstacle is reducing the infrared beam strength or the mechanical regulation of equipment has not been properly carried out, or the diaphragm is not in position in relation to the range of the use of the detector.

NOTE 4

IMPORTANT

If the installation is in a "dirty" environment, adjust the transmitter level until the Rx value is ≤ at 90 %. This is to avoid the detector going into excess signal when the air becomes clean again.

Once the setting has been completed

PRESS OK

Wait for the data to load

Saving data...

5. Alarm Auto test

If the smoke sensitivity threshold you wish test were 1383, lower it temporarily for the duration of test to 1280.

PRESS OK

Insert Password
FFFF

Enter the password

PRESS OK

<sensitivity>

Enter the correct password to go to the menu

<Alarm Test>

Press ► until you see<Alarm Test>

PRESS OK

<choose line>
N.:1

Pressing the arrows ▲▼ select the Detector that you intend to test

PRESS OK

Loading data
from device:1

Wait for the data to load

Press OK key
to Test Alarm

Press OK to start the test and wait until there is the alarm (*alarm LED goes on*) and activation of the corresponding output.

Press OK to reset the detector. If it does not reset, wait a minute for settling and carry out a manual menu reset

Press OK key
to reset Alarm

6. Alarm reset

- At the menu

Enter the password

PRESS OK

Insert password
FFFF

PRESS OK

Enter the correct password to go to the menu

<sensibility>

Press ► until you see <Reset Alarm>

<Reset Alarm>

PRESS OK

Press OK to reset all the barriers

Press OK key
to Reset Alarm

PRESS OK

- With the remote reset module (MRS)

If the control unit is equipped with a remote MRS reset, close two terminals (+) and (-) through a clean contact for at least 2 seconds

7. System Configuration

Enter the password

PRESS OK

Insert password
FFFF

PRESS OK

<sensibility>

Enter the correct password to go to the menu

<System Setup>

Press ► until you see <System Setup>

PRESS OK

Set number
of detector:1

Pressing the arrows ▲▼ select the number of detectors connected to the control unit.

PRESS OK

Fault Delay
0 seconds

Pressing the arrows ▲▼ select the delay for the fault output, from 0 to 254 sec.

PRESS OK

Fault Output
Normal Close

Pressing the arrows ▲▼ set the fault contact normally open or closed.

PRESS OK

Com Line 2
OFF

pressing the arrows ▲▼ activates (ON) or deactivates (OFF) the second serial line (to use only in the case in which the expansion module is installed)

PRESS OK

Com Line Loop
Close

Pressing the arrows ▲▼ sets the serial line as closed loop (close) or Open Error, if "n" detector are managed on the first serial line and "n" detectors on the second detection line (useable only in the case in which the expansion module is installed)

PRESS OK

Pressing the arrows ▲▼ activates (ON) or deactivates (OFF). Checks the serial communication.

Note: user only in the event of problems or on checking the data line during the first installation.

Com Error check
OFF

PRESS OK

Pressing the arrows ▲▼ activates (ON) or deactivates (OFF) Pre-Alarm management

Prealarm output
OFF

PRESS OK

Menu in English. Currently it is not possible to change this setting.

Select language
ENG

PRESS OK

8. Modify of the password for menu access

PRESS OK

Enter default password

PRESS OK

Insert password
FFFF

If the wrong password is entered, after confirming with OK the message Password error appears. Check and repeat the procedure.

Password error

Enter the correct password to go to the menu

PRESS OK

Insert password
FFFF

Press ► until you see <Change password>

PRESS OK

<Change password

Set NEW password
12CA

Pressing the arrows ►◄ and moving the flashing cursor with the arrows ▲▼ you change the characters of the password (from 0 to 9 and from A to F).

PRESS OK

Password changed
OK to exit

The password has then been changed

PRESS OK

9. Display messages for events

PRESS OK

Insert password
FFFF

Enter the password

PRESS OK

<Fault Event

Press ► until you see <Fault Event>

PRESS OK

Sat_Ev:-2-
Man_Ev:1--

The display shows the status of the detectors with excess signal and with maintenance request.
E.g. detector 2 saturated (excess signal) and detector 1 with maintenance request made.

PRESS OK

The display shows the status of the detectors with fault due to interruption of the beam.
Press OK to exit screen without cancelling the events.

Int_Ev:--3
OK to exit

or press ▲ to cancel the events.

Int_Ev:--3
OK to reset even

PRESS OK

10. View working status

- Indication of *NORMAL WORKING*

Main screen in Normal Working mode

SETRONIC Verona
Normal Operation

- Indication of *ALARM*

E.g. with alarm at zones 1, 5 and 6 (the stroke indicates the areas not concerned with the event).

Note: the Alarm LED goes on and the contact closes in the corresponding zone

Alarm:1---56--

- Indication of *FAULT*

E.g. with fault at zones 2 and 6 (the stroke indicates the areas not concerned with the event).

Note: the Trouble LED goes on and there is a status change in the contact at the corresponding zone (opening/closure according to configuration)

Fault:-2---6--

- Indication of *MAINTENANCE*

```
Maint:----5---
```

E.g. with request of maintenance at zone 5 (the stroke indicates the areas not concerned with the event).

Note: the Maintenance LED goes on and there is a status change in the breakdown/trouble LED in the corresponding zone (opening/closure according to configuration)

- Indication of *SERIAL LINE PROBLEM*

```
A-Err:123-----  
B-Err:---45678
```

Example of interrupted loop. In this case the pieces of equipment (zones 1, 2 and 3) connected to the first serial connection (A) do not communicate, but work with the second serial (B) – see stroke on the second line. The pieces of equipment corresponding to the zones from 4 to 8 work with first serial port (A). So the cut is between zones 3 and 4.

Note: the Trouble LED goes on and there is a change in the **zone 1 contact**.

If the interruption is between the Tx and a Rx, the zone number concerned will be present on both serial ports (see following example).

```
A-Err:123-----  
B-Err:--345678
```

Example of interrupted loop between Tx and Rx at zone 3. This only happens in the case of an interruption between Transmitter and Receiver.

Note: the Trouble LED goes on and there is a change in the **zone 1 contact**. If it is an open line the contacts from 3 to 8 will also activate.

```
C-Err:-2345678  
Fault:-2345678
```

Example with only one detector actually connected and the system set up with 8 Detectors or isolated in the event of short circuit after the first detector in the open line configuration.

Note: the Trouble LED goes on and there is a change in the **zone 1 contact**.

```
IsoTx:---4-----  
IsoRx:---4-----
```

The unit that has isolated the short circuit is indicated with the message IsoTx, IsoRx or with both pieces of information (as in the example) in the case of TRx. The message will end with the number of the corresponding detector.

WARNING: in all conditions indicated above, if there is an alarm in one or more zones, the first line of the display will always be used for alarm displays.

CHOICE OF CABLE TO USE FOR CONTROLLER - DETECTOR AND DETECTOR – DETECTION LINE

- Cable minimum section of 0.5 sqmm with four wires, tested EN50-200
- Maximum admissible cable diameter for ingress into PG9 barrier gland: 8 mm
- Maximum capacity 65pF/m
- Max resistance 50 Ohm/km

CAUTION FOR INSTALLATION

- If the installation occurs in environments subject to disturbances and/or in the presence of strong currents it is necessary to use double-screened cable (one for power the other for the RS485).
- Clearly with installation distances at the limit of the physical capacity of the RS485 standard (1.2km) better characteristics need to be considered.
- Do not put in any joints along the lengths concerned.
- Particular attention needs to be paid to screen connection as, where there is one, it must be connected to ground on one side only, at the start or at the end of the line. Inside the detectors' base, use jumpers for the screen so it is continuous from the start to the end of the line.
- The RS485 standard provides for multi-drop, daisy chain, connection of several pieces of equipment, so therefore no shunts or T-junctions in the line are permitted. In other words you have to take the wires to the first detector, then got from this to the second and so on until you reach the last in the line.

PARAMETER OF SIMPLE «AUTONOMOUS» ISOLATOR

Parameters	Value	Notes
Vmax	32,0 V	Maximum tension
Vnom	27,2 V	Nominal tension
Vmin	20,0 V	Minimum tension
RSOmax	25 Ω	Maximum resistance at which the device isolates (switching from closed to open)
RSOmin	10 Ω	Maximum resistance at which the device isolates (switching from closed to open)
RSCmax	50 Ω	Maximum resistance at which the device reconnects (switching from open to closed)
RSCmin	35 Ω	Maximum resistance at which the device reconnects (switching from open to closed)
ILmax	140 mA	Maximum current dispersion in state of isolation

ENGLISH



**SET OF DIP SWITCH 4 (END LINE) FOR END LINE RESISTOR
AS FOR TYPOLOGY OF CABLING**

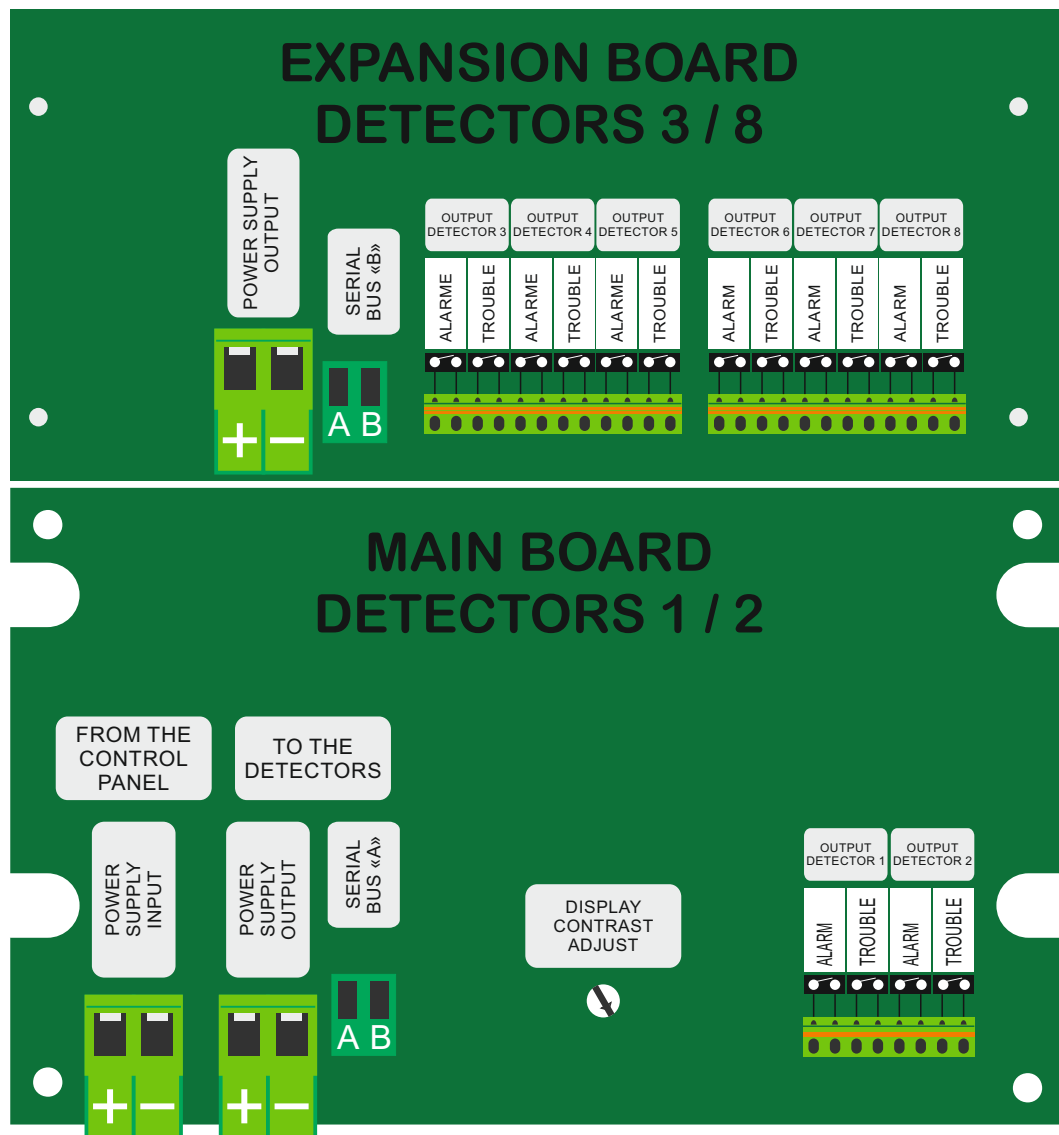
DIP SWITCH 4 (END LINE) MUST ALSO BE SET EVEN WITH ONLY ONE DETECTOR.

Mod. MIP-E rev. 00

TERMINAL BOX WITH PRE-ALARM DISABLED

WARNING

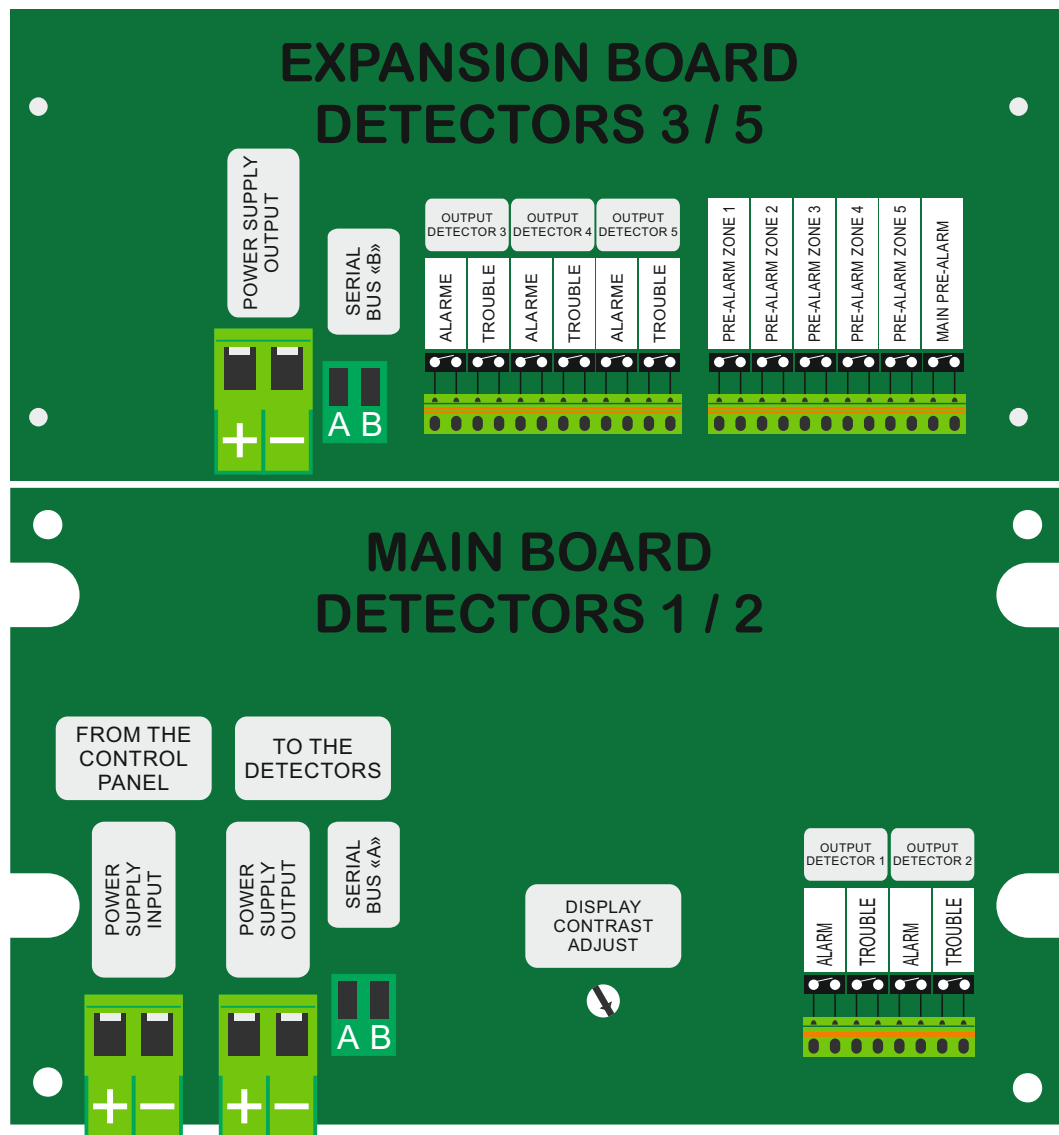
The picture of the outputs board shown here is only valid if the "Pre-Alarm" function is disabled in the settings menu.



TERMINAL BOX WITH PRE-ALARM ENABLED

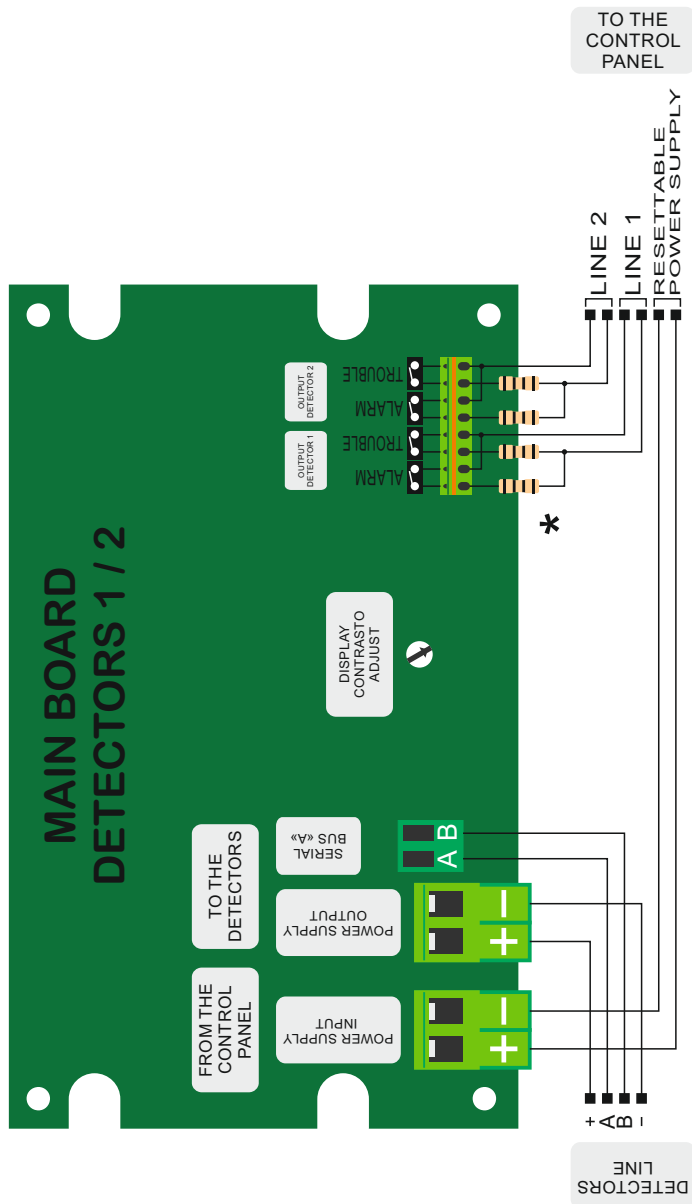
WARNING

The picture of the outputs board shown here is only valid if the "Pre-Alarm" function is enabled in the settings menu and maximum 5 detectors connected only.



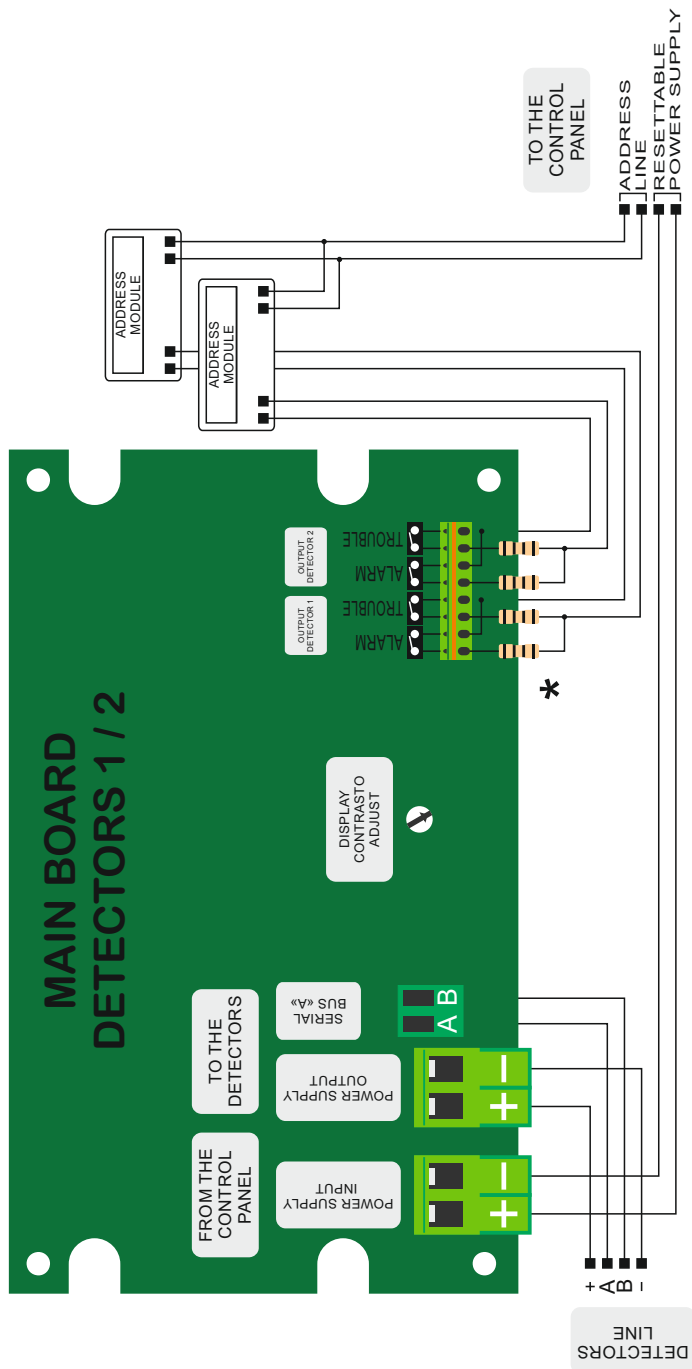
BALANCED LINE

EXAMPLE OF CONNECTION TO CONTROL UNIT WITH BALANCED LINE



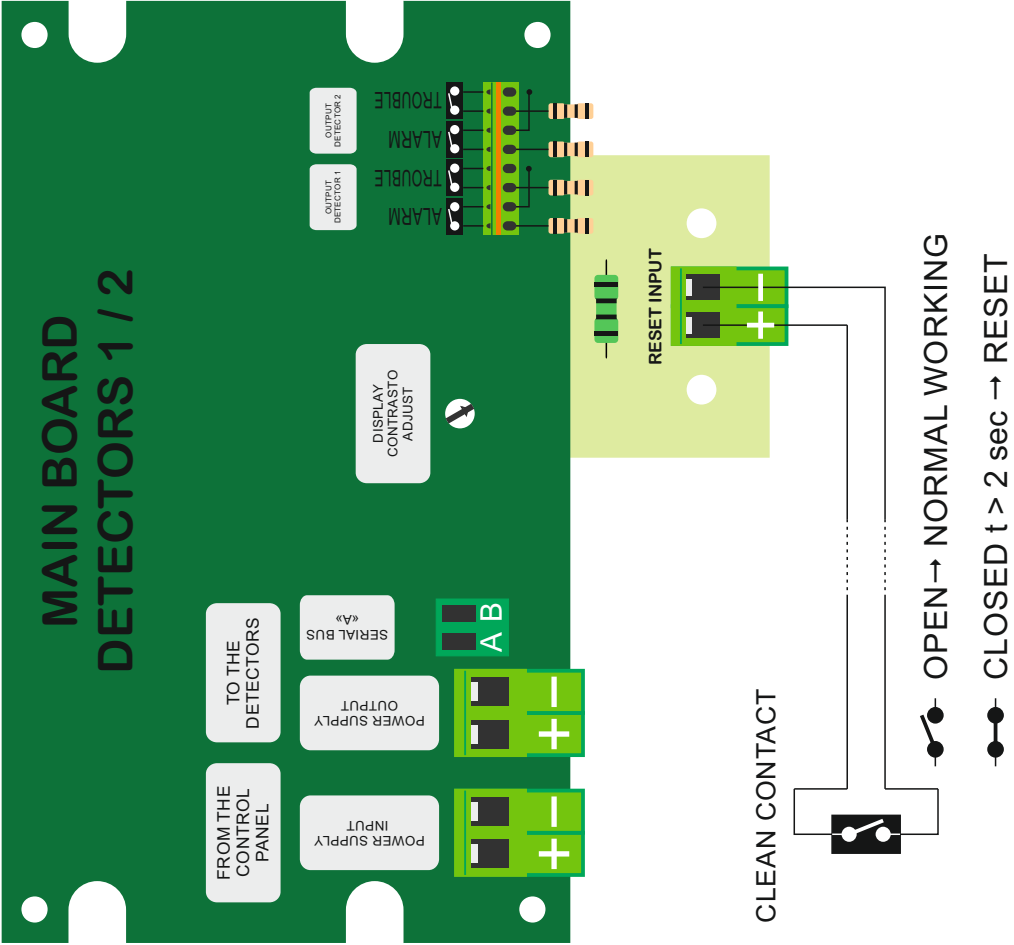
* THE RESISTANCES DEPEND ON THE CONTROL UNIT USED.
SEE THE PRODUCT SPECIFIC DOCUMENTATION.

EXAMPLE OF CONNECTION TO CONTROL UNIT WITH BALANCED LINE



* THE RESISTANCES DEPEND ON THE CONTROL UNIT USED.
SEE THE PRODUCT SPECIFIC DOCUMENTATION.

CONNECTION TO MRS RESET MODULE

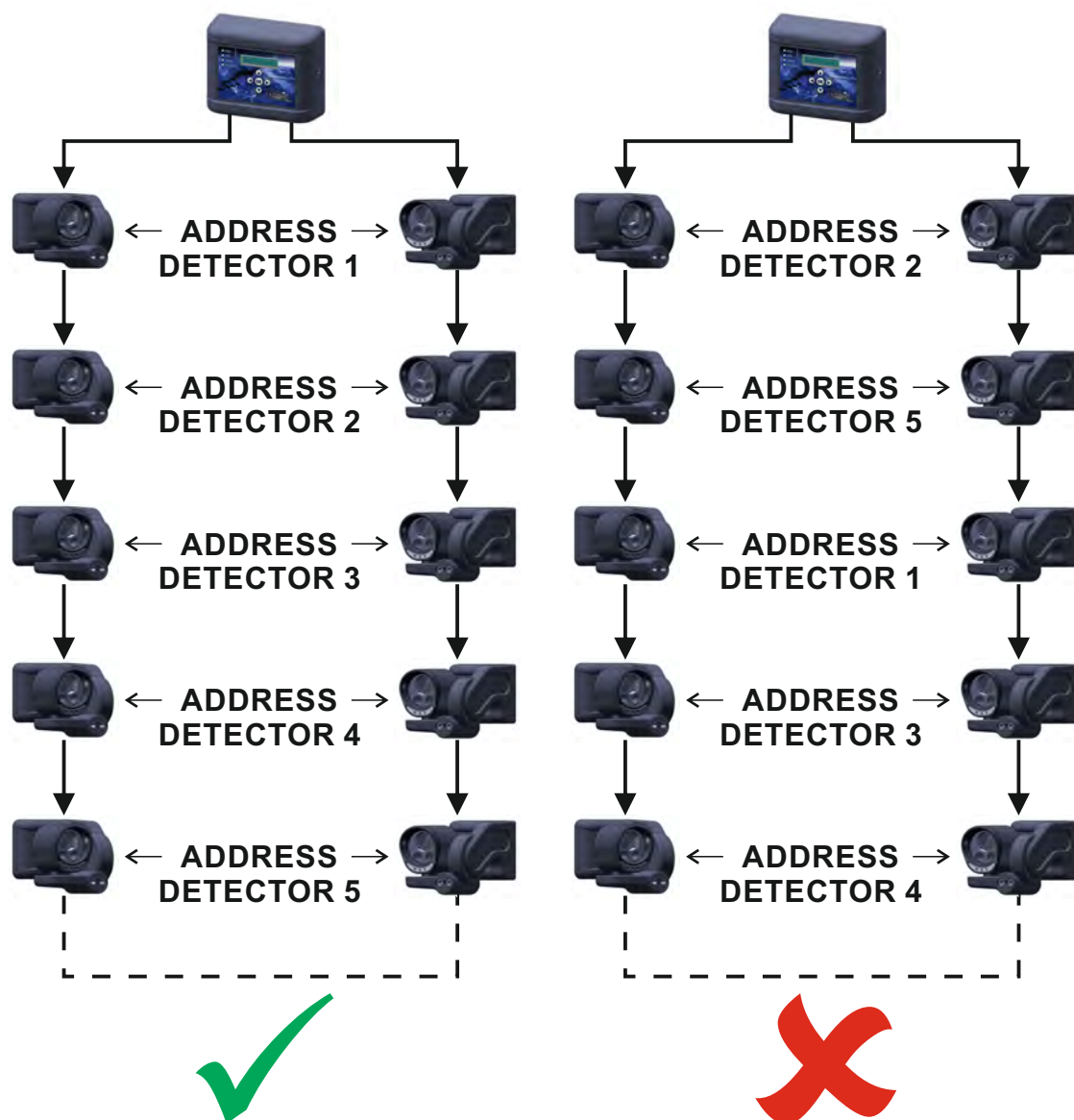


TYPICAL OF POSSIBLE CONNECTION

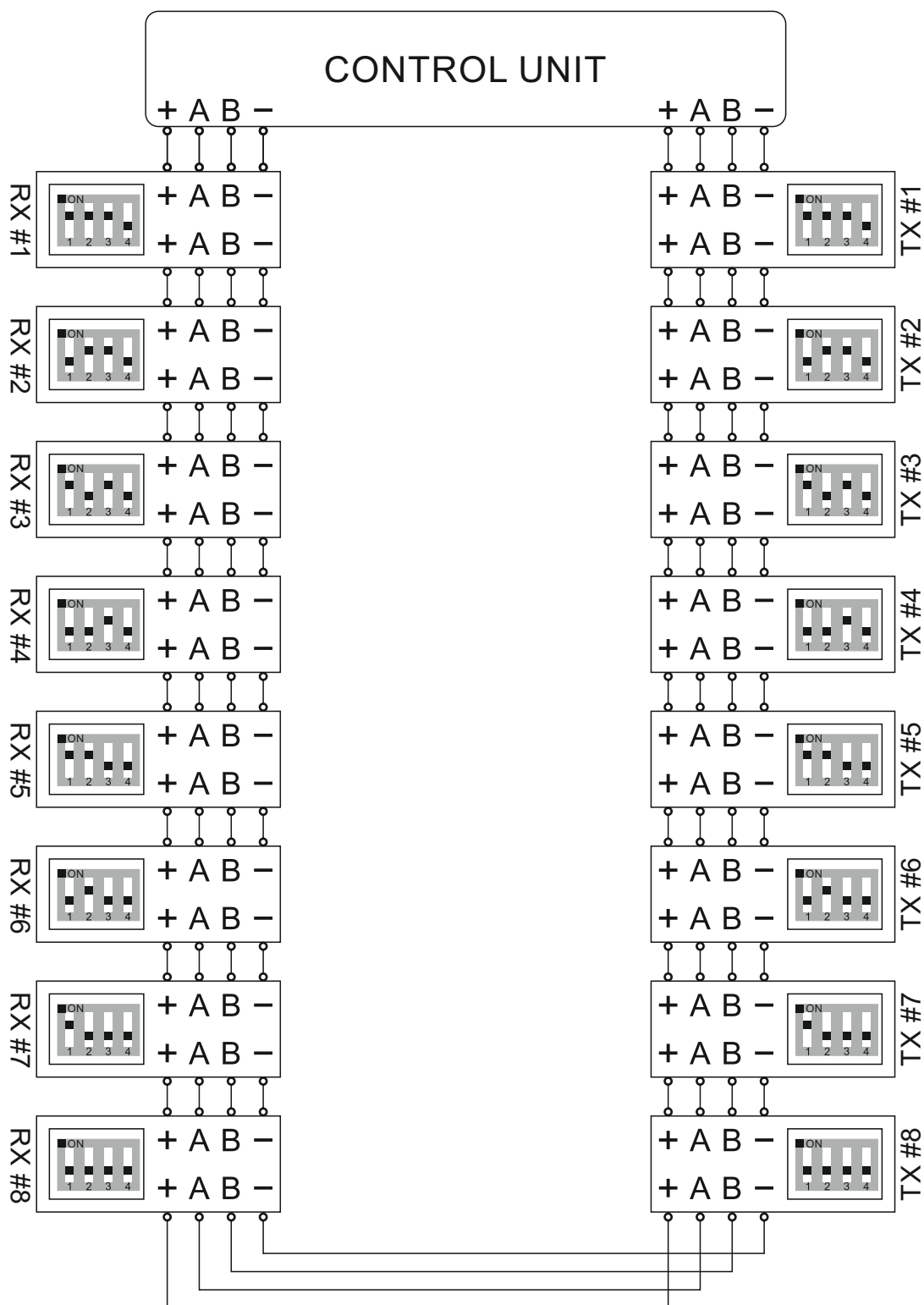


When connecting from the controller to the detectors, it is mandatory to get to the detector with **address 1**.

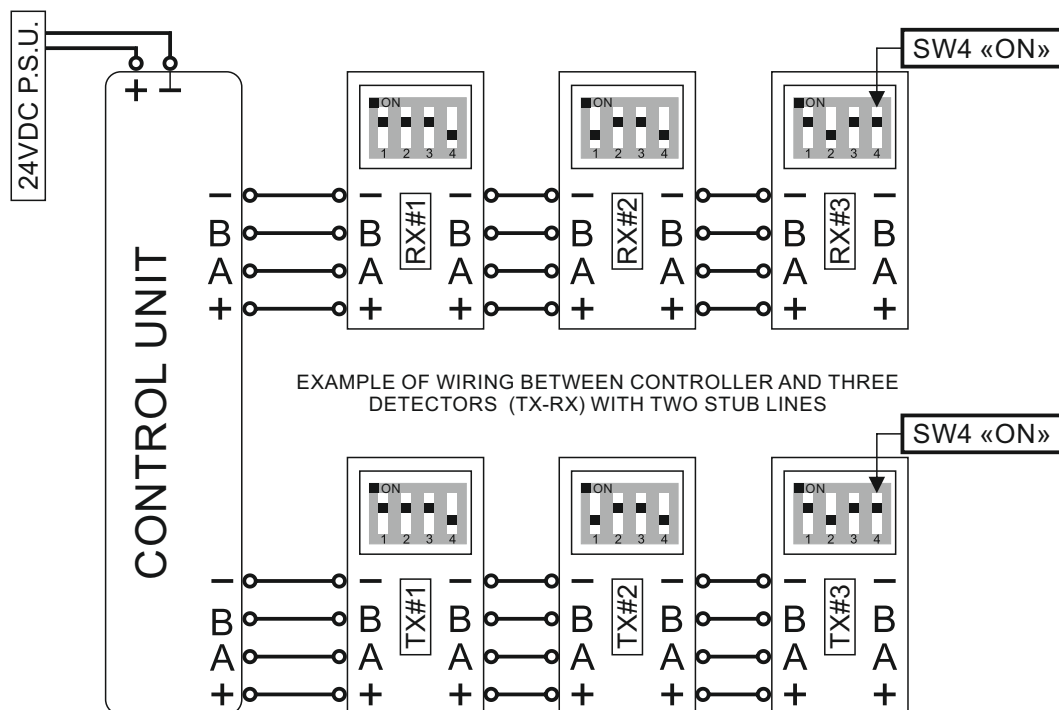
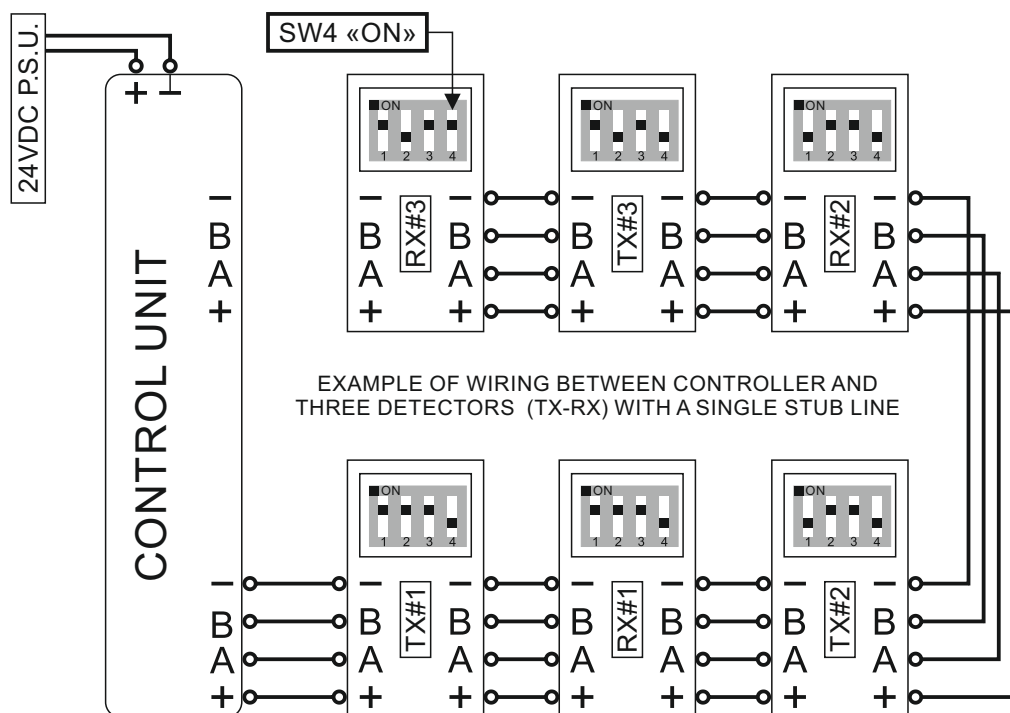
It is also necessary to connect the rest of the detectors while maintaining the numeric address sequence. Only in this way will it be possible and easier to determine the position of any problem (eg. line cut, short circuit, fault of detector)



TYPICAL OF POSSIBLE CONNECTION



TYPICAL OF POSSIBLE CONNECTION



BEAM DETECTOR ILIA MAINTENANCE AND CONTROL

The normal installation conditions for the barriers require the maintenance intervals indicated in the National Standards in force.

Such intervals, generally every 6 months, may in some cases be more frequent because of the multiple applications in which the detector may be used, especially if in an environment of an industrial type, where there is dust and stationary vapours or products in particular stages of working.

MAINTENANCE

The maintenance of the ILIA-PRO detector does not require special equipment and is simple and fast.

These operations are carried out with the following procedure:

1. Clean the detector with water and/or neutral soap without using abrasive cloths or solvents. Clean the front side of all units with a soft cloth. If the surfaces are very scratched, yellowed or very dulled they must be replaced by qualified personnel these can compromise the proper working of the detector.
2. It is necessary to replace detectors that have mechanical damage or damage to the optics, with new detectors
3. Check on the infrared signal level using the <adjustment> menu, observing the compliance of the signals with those shown by the LEDs. It is advisable in any case to set the Rx level at 100% (see notes on page 20). If the RX value is too long, repeat the alignment procedure up to the saturation point and repeat the <AUTO Adjust> procedure
4. Check the Alarm conditions, the Fault conditions, and the corresponding outputs following the "Alarm Test" and "Fault Test" procedures.

NOTE The control unit does not require its own specific maintenance; during detector maintenance work ascertain the proper working of the keyboard and that correspondence of the messages in the menu as well as the proper working of the repeating LEDs.

ADDITIONAL CONTROLS

DROP IN SIGNAL

If the infra signal carrier emitted by the detector tends to fall away over time with respect to the initially set intensity, the system will carry out proportional adjustment constantly over time. If the infrared signal falls to reach the set threshold, due to an accumulation of dust or due to settling of the structure to which the detector is secured, there will be a flashing green optical LED signal and the consequent opening of the fault contact will send to the signal centre a maintenance request.

ALARM

A red LED signal on the detector indicates the start of a fire without enabling the output.

After the analysis time has passed, typically 16 seconds, the red LED starts flashing and the output is enabled to signal alarm confirmation. The alarm indication will be seen both on the display and by the red LED of the control unit (when the alarm has stopped, depending on the detector software, the alarm could be viewed until a reset, or only on the control unit, or on the control unit and the Receiver).

RESET

When there has been a fire alarm given, the reset of the detector requires electrical de-activation (switching power off and on) for at least one second, or a reset can be carried with the control unit menu, or by means of the MRS reset (if present, see page 34).

LOOP CONFIGURATION TEST DURING MAINTENANCE OPERATIONS

Before starting the test, check that the system is working and the control unit display reads «Normal Operation»

1. Disconnect the two "power output" and "serial line A" terminals on the main module.
2. Wait for 5 seconds and check that the display shows: "A-Err:123..." (up to the last of the programmed detectors) and "B-Err:-----"
3. Connect the terminals back up and carry out the same procedure with the two terminals "power output" and "serial line B" of the expansion module.
4. Wait for 5 seconds and check that the display shows: "A-Err:-----" and "A-Err:123..." (up to the last of the detectors programmed).
5. If on the display reads "C-Err:123..." (up to the last of the programmed detectors) and "Fault:123..." (up to the last of the programmed detectors) even after the 5 second wait, then there is a break in the power supply line.
6. Reconnect the terminals to the boards, ensuring they are well inserted.

TROUBLESHOOTING

PROBLEM	CHECKS AND SOLUTION
The control unit does not go on	<ul style="list-style-type: none"> ➤ Check the of the power cables the power unit and that the terminals is inserted correctly
The detector does not switch on (green LED off). The display shows the message communication error .	<ul style="list-style-type: none"> ➤ Check that the detector plug is in the socket on the base. ➤ Check the connections between the bases and the control unit. ➤ Possible inversion of the power supply.
On one or more of the detectors the yellow and green LEDs are flashing together at a 2 second frequency and the display shows the message communication error.	<ul style="list-style-type: none"> ➤ Check the configuration of the control unit (total number of detectors connected as against those configured). ➤ Check the connection of the serial line (probable cable inversion serial A and B) check the connections from the control unit to the first and/or last base, and between one base and another. ➤ Check that there have not been set one or more end of line switches on the loop line, and more than one (the last) on a connection on an open line. ➤ Check the correspondence of the addresses or that there are not for example two receivers or two transmitters with the same address. In this case check the addresses of the units that give the error signal. When you have found the problem reset the address, switch off and switch back on the control unit and check there is correct communication.
After switching on the system, the control unit display reads C-err and the only lights still on are the ALARM TROUBLE LEDS after the switching off of the automatic lights test.	<ul style="list-style-type: none"> ➤ Check the connections ! Possible inversion of A and B on the serial line, or reversal of the power supply to the bases. ➤ If two separate branches are used make sure that the second serial line is enabled (COM LINE 2: ON)

TROUBLESHOOTING

PROBLEM	CHECKS AND SOLUTION
Immediately after the alarm test the detector does not reset from "Reset Alarm" menu	<ul style="list-style-type: none"> ➤ The detector is still affected by the alarm event. Wait about one minute then carry out another reset from the menu "Reset Alarm". If the transaction is carried out after a fire test, wait for the evacuation of the smoke, then do the reset.
Signal for maintenance	<ul style="list-style-type: none"> ➤ Check the front is clean. Possible deterioration of the signal received due to deposits on the front of the detector or misalignment outside tolerance levels. It is possible to check received signal levels through the "adjust" menu (with reading of Rx > 50% maintenance is necessary). If the problem returns, check the mechanical alignment of the two units. ➤ Maintenance request signals are also possible where there are vapours, fog, dust in the environment or layers of ice on the front of the unit.
Sporadic signals for a fault	<ul style="list-style-type: none"> ➤ Read the signal value from the "Adjustment" menu. If the Rx value is between 104% and 107% lower the Tx level, taking the Rx figure to 100%. If necessary check the rigidity of the structure to which the detector is attached or the fastening fixture itself. ➤ It is also possible that the ambient is cleaner than it was at the time of the calibration, so the signal received is increased with a consequent signal saturation. In this case adjust the transmitter by means of the <Adjustment> menu until you reach 100% of the read Rx value.

TROUBLESHOOTING

PROBLEM	CHECKS AND SOLUTION
Multiple fault signals for cuts in the lines	<ul style="list-style-type: none"> ➤ It is possible when there is a cut in the line that there will be an output at address 1, as well as other subsequent outputs and communication error signals (in this case refer to chapter 10 « View working status"to see where the problem arose). ➤ If the central control signals an instant fault for all barriers connected to the control unit and the display reads Normal Operational, it is possible that there has been a short circuit in the power supply between one base and another.(In this case check the power drawn by the Control unit-Detector system connected. If the power drawn value is that in the table, there has been no intervening protection. If on the other hand there was intervening protection or the stretch is short , the draw up the line will be higher, at around 200mA more.) ➤ Short circuits in the data line, in a loop configuration, and isolated by the protective bases, are shown on the display with the activation of the fault contact for zone 1 (e.g. IsoTx:----5---, IsoRx:-----6--). The insulated bases, maintain their line opening status, until a reset of the control unit by means of the cut off of the power (OFF/ON).If after a reset the signal reappears, then there is a short circuit in this section.

COMPARATIVE TABLE VERSIONS

	ILIA	ILIA PRO			
TYPE	TX-RX	TX-RX PRO		Tx-Rx PRO-L	
COLOUR OF THE DETECTOR	BLACK RAL 9005	BLACK RAL 9005		BLACK RAL 9005	
CODE DETECTOR	ERHS0712	ERHS0712-PRO		ERHS0712-PRO-L	
SOFTWARE DETECTOR	ILIA-D 100711	ILIA-D 130226		ILIA-D 130226	
CODE CONTROL UNIT BASIC	CSRLS-2	CSRLS-2-PRO		CSRLS-2-PRO	
SOFTWARE CONTROL UNIT	ILIA-C 100715	ILIA-C 120416		ILIA-C 120416	
THRESHOLD OF SENSITIVITY SETTABLE	200, 284, 371, 461, 581, 673, 752, 825, 914, 984, 1066, 1137, 1219, 1280, 1383, 1462	200, 284, 371, 461, 581, 673, 752, 825, 914, 984, 1066, 1137, 1219, 1280, 1383, 1462, 1600, 1828, 2133, 2694, 3200, 3657, 3938		200, 284, 371, 461, 581, 673, 752, 825, 914, 984, 1066, 1137, 1219, 1280, 1383, 1462, 1600, 1828, 2133, 2694, 3200, 3657, 3938	
NUMBER OF DETECTOR AND OUTPUTS	2 + 6 DETECTORS 1 ALARM/DETECTOR 1 TROUBLE/DETECTOR	5 DETECTORS (MENU: PREALARM OUTPUT ON) 1 ALARM/DETECTOR 1 TROUBLE/DETECTOR 1 PRE-ALARM/DETECTOR 1 GENERAL PRE-ALARM	8 DETECTORS (MENU: PREALARM OUTPUT OFF) 1 ALARM/DETECTOR. 1 TROUBLE/DETECTOR	5 DETECTORS (MENU: PREALARM OUTPUT ON) 1 ALARM/DETECTOR 1 TROUBLE/DETECTOR 1 PRE-ALARM/DETECTOR 1 GENERAL PRE-ALARM	8 DETECTORS (MENU: PREALARM OUTPUT OFF) 1 ALARM/DETECTOR 1 TROUBLE/DETECTOR
TIMING FAULT OUTPUT	0, 30, 60, 90 sec.	0, 30, 60, 90, 125, 254 sec.		0, 30, 60, 90, 125, 254 sec.	
LEVEL REQUEST MAINTENANCE	RX<50%	RX<35%		RX<35%	
TIMING REQUEST MAINTENANCE	40 SECONDS + FAULT OUTPUT DELAY	40 SECONDS + FAULT OUTPUT DELAY (UP TO 494 SECONDS)		40 SECONDS + FAULT OUTPUT DELAY (UP TO 494 SECONDS)	
MEMORY EVENTS	NOT PRESENT	FLAG MODE (MENU: PREALARM OUTPUT ON) SAT_EV: ---- (OVERSIGNAL) MAI_EV: ---- (MAINTENANCE) INT_EV: ---- (BEAM INTERRUPTED)	FLAG MODE (MENU: PREALARM OUTPUT OFF) SAT_EV: ---- (OVERSIGNAL) MAI_EV: ---- (MAINTENANCE) INT_EV: ---- (BEAM INTERRUPTED)	FLAG MODE (MENU: PREALARM OUTPUT ON) SAT_EV: ---- (OVERSIGNAL) MAI_EV: ---- (MAINTENANCE) INT_EV: ---- (BEAM INTERRUPTED)	FLAG MODE (MENU: PREALARM OUTPUT OFF) SAT_EV: ---- (OVERSIGNAL) MAI_EV: ---- (MAINTENANCE) INT_EV: ---- (BEAM INTERRUPTED)

NOTE: the Tx, Rx Units and the Controller of the PRO and PRO-L models has a specific software version; therefore it is not possible use them together with other detectors of ILIA line that has a different software version.



SOHI

Protective Overhousing for Special Environments

Not for ILIA-PRO-L version



FAPO

Frontal dust protection for Overhousing

Not for ILIA-PRO-L version



SACA-G

Adjustable Bracket for ILIA line.

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The suggestions for applications give here, where they are wholly or in part in conflict with future provisions

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products of this compendium are sold outside the national borders, we must remind you that the installation requirements of the individual

countries where they differ from the suggestions made here, must be complied with. We understand them as being followed and complied with in

the plant that is employing our products, and this from the date of the order. Keep this compendium close to hand for future reference.

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