



ILIA

ILIA INSTRUCTION MANUAL



RILEVATORI LINEARI ANTINCENDIO
SMOKE AND FIRE BEAM DETECTORS

www.setronicverona.com

ILIA ERHS0712 – VERSION TRANSMITTER/RECEIVER

sw. 131010

Contents	2
1. ILIA ERHS0712 – sw 131010—TRANSMITTER – RECEIVER VERSION	3
1.1. Basic characteristics	3
1.2. System description	4
1.3. Working principle	5
2. Installing the detector	6
2.1. Mounting	6
2.2. Opening the detector	8
2.3. Installation procedure	9
2.4. Dip-Switch for the address of beam detector	10
2.5. Dip-Switch for “End Line” resistor	11
2.6. Detector wiring	11
2.7. Closing the detector	12
3. Installing the controller	13
3.1. Opening the controller	13
3.2. Installation procedure	14
3.3. Controller wiring	15
3.4. Closing the controller	16
4. System wiring	17
4.1. Cable Choice	17
4.2. Caution for installation	17
4.3. Wiring typology 1	17
4.4. Wiring typology 2	18
4.5. Wiring typology 3	19
5. Adjustment Procedure	20
5.1. First calibration procedures	20
5.2. Calibration procedures	22
5.3. Procedure for further adjustments	22
5.4. Setting the sensitivity and the range of distance	23
6. Summary of functions	25
6.1. Normal operation	25
6.2. Fire alarm	25
6.3. Fault condition	25
6.4. Fire alarm / fault check table	27
7. Troubleshoots	28
8. Technical features	31

**1. ILIA ERHS0712 - sw. 131010
VERSION TRANSMITTER/RECEIVER**

1.1 BASIC CHARACTERISTICS

Detector: Project, Technology, Design and Production fully made in Italy

- Suitable for use in all civil and industrial premises
- Very easy to install and program
- Low cost for mounting, cabling and maintenance
- The Detector can be installed horizontally or vertically and can work at any angle
- Micrometric adjustment for alignment
- Integrated diaphragm with a wide range of adjustment

Control Unit for programming, calibration and performing of remote test on line beam detectors

- Basic configuration for two Detectors
- Expansion board for connection up to 3 to 8 detectors and line loop closure (optional)
- Ground level installation for the Control Unit
- Alarm and Fault outputs can be programmed for each individual detector
- Operational access to keyboard protected by password
- Control Unit or Control Panel reset facility or by the MRS module

Mounting Base for fixing detector and cabling

- Plug-in base to detector connection
- Base complete with back up board short circuit isolator to ensure continued work even after a short circuit

Special Allen Key suitable for mechanical alignment, diaphragm regulation, unhook of detector base and open/close of control unit

Product characteristics

- Power supply 24V DC
- Protection rating IP65 (Transmitter Unit, Receiver Unit and Controller Unit)
- RoHS Compatibility
- Operating distance 32.8 ÷ 656.2ft (10 ÷ 200m)
- Width of cover up to 49ft (15m)
- 4-wires connections
- Allowable misalignment angle: $\pm 1^\circ$ max (on RX unit)
- Complete directional stability over time
- Sensitivity adjustable and selectable over a wide range, using the control unit model CSRLS
- Automatic reset of detector after break in infrared beam
- Self tester for RS485 communication
- Fault relay output delayed up to 90 seconds

1.2 SYSTEM DESCRIPTION

The ILIA MODEL ERHS0712 WITH SW. 131010 detector consists of a Transmitter Unit, a Receiver Unit and a Beam Controller Unit for programming, setting and testing. The Beam Controller Unit is used to remotely manage the detector or detectors in the field using a single line. The Beam Controller Unit is put at a place on ground level from where the detector can be controlled without having to climb up to the detector, as regards all normal operations. The Beam Controller Unit is made of plastic, has a keyboard for programming and a backlight 16x2 display.

By entering a password of 4 digits you can program the system from ground level to determine the detector's signal level, to check environmental disturbances, to set the required thresholds based on these and to check the alarm threshold; the default password FFFF can be changed by the programmer by following the instructions in the remote programming menu.

The system configuration menu becomes available when

you just touch any of the 5 buttons on the keyboard and by then entering the default password FFFF on the first programming session, customising the password from then on (the password can be reset if lost or forgotten by use of the Beam Controller Unit hardware reset).

The Beam Controller Unit electronic base permits direct connection of two detector units; by means of an expansion circuit (SMLS), it is able to pilot up to 8 detectors connected together and a connection with two stub lines or by a closed loop. With this second typology the system continue proper working even if the cables are cut or in the case of a short circuit by the protection circuit inserted in each single detector. There are also programmable relay contacts in the Unit for each individual detector connected. These relays can have their polarity reversed with the use of the software and permit the transmission to a single central unit of the individual alarm and fault signals. Any breakdown in communication between Beam Controller Unit and the detectors connected to it will be immediately signalled by the simultaneous flashing of the yellow Led and the green Led on the Transmitter and the Receiver, as well as being indicated on the display of the Beam Controller Unit itself.

1.3 WORKING PRINCIPLE

The working voltage of the system is 24 Volts DC. The Transmitter Unit emits a beam of modulated infrared light at 1 KHz in the form of a cone which crosses the space under surveillance to reach the Receiver Unit. As the modulated infrared crosses the environment under surveillance, it collects along its path all information that could suggest the start of a fire. The events that intervene between Transmitter and Receiver affect the infrared carrier. The Receiver Unit demodulating from the infrared received the information that is optically gathered, transforms each symptom of a possible fire into corresponding electrical signals referable to "smoke".

If an obstacle blocks the beam, thus abruptly reducing the received beam level, a fault signal is emitted. The same error signal is emitted when reception signals increase abruptly (oversignal).

Such signals are electronically assessed by means of a special algorithm local to the Receiver Unit, and are transmitted to the Beam Controller Unit. All the units have a microcontroller that carries out a full scan of the working mode, i.e. not only of the alarm, but also of faults and blinding. The messages are clearly given on the display and repeated by the four Leds on the Unit, as well as with the local Led's on every individual piece of equipment. A message on the display will indicate the type of event and the detector number.

The connection of one or more detectors is with leads of a cross-section from 14 to 20 AWG. For the type of cable to use please refer to current regulations.

The detection of the start of a fire will mean information is sent from the field (Beam Detector) to the Beam Controller Unit which will in turn send an alarm signal to a central control unit. System resetting is possible both from the Beam Controller with a dedicated command or from the central control unit or closing, by a normally open contact, the two terminal blocks of the MRS module.

The Beam Controller Unit can be used to set the blinding fault relay switching delay for every individual detector, for times from 0 to 90 seconds.

2. INSTALLING THE DETECTOR

2.1 MOUNTING

Select a suitable position for the installation of both Transmitter and Receiver, such that there are no visible obstructions between them. Remember that the beam detector works on the principle of reduction of light between the Receiver and Transmitter. If there is any possibility of an object remaining within the beam for a few seconds then the siting of the detector is

unsuitable.

For mounting either the Transmitter or Receiver it is important to establish that the mounting place such as the wall is solid and that the beam detector alignment will be rigid. The wall may appear to be solid, but may be subject to twisting or other changes when the temperature outside the building varies greatly during one day, for instance on cold, frosty days. The installer must ensure that the beam will not be subject to misalignment due to changes in the building itself.



The beam detector must not be installed in the following locations:

- Where the ceiling height is greater than 131ft (40m)
- A roof top or place where open air circulates
- Where the distance between top and bottom of the space is less than 1.64ft (0.5m)
- In locations where a large amount of dust, fine powder or water vapour is present
- In locations where smoke occurs normally
- In locations which are exposed to extremely high temperatures
- Where access to the detector is impossible for maintenance purposes
- In locations which may be exposed to sunlight exceeding 5000 lux. It is recommended that in locations where the beam detector may be surrounded by glass, then the Receiver Unit should where possible be fitted so that it faces a northerly direction (only relevant to countries in the northern hemisphere)
- Where the rigid fixing of either the Transmitter or Receiver is impossible
- Where access to the beam detector to align and set is impossible

FOR THE INSTALLATION REFER TO NFPA 72

2.2 OPENING THE DETECTOR

Use the SETRONIC "Allen Key" for opening the detector. The detector is fixed to the mounting base by two locking screws.

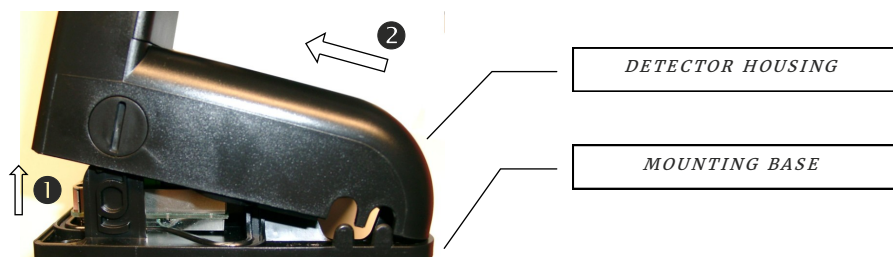
Removal of the detector can be achieved by slackening the locking screws and lifting upwards until it disengages from the mounting base.



LOCKING SCREW: CLOSE POSITION



LOCKING SCREW: OPEN POSITION



DISENGAGE OF THE DETECTOR

2.3 INSTALLATION PROCEDURE



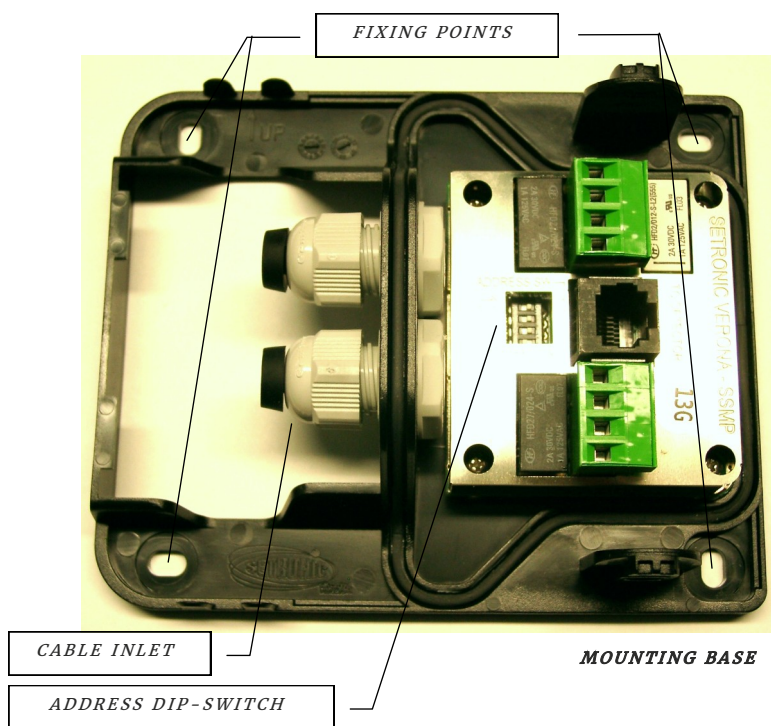
To grant that the mounting base maintain the IP65 protection degree, be sure that it will be fixed in flat surface. If this it is not possible use a bracket or a swivel.

Set the address of the detector between 1 and 8 consequently using the Dip-Switch according to the table on next page. This operation must be done on both unit, so to have the same address on Transmitter and Receiver.

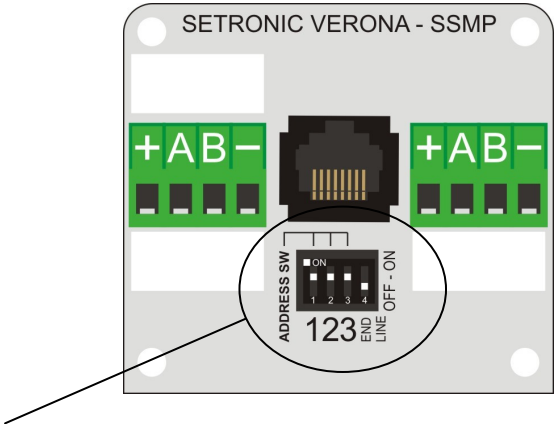
NOTE: The Dip-Switch 4 must be set to ON only in the last mounting base connected to the line open. It must also be set with a single detector.

It's suggested to make these operation before the fixing of the mounting base.

Screw the mounting base firmly to the wall or other suitable mounting point.



2.4 DIP-SWITCH FOR THE ADDRESS OF BEAM DETECTOR



DIP-SWITCH	SW1	SW2	SW3	ADDRESS
	ON	ON	ON	ZONE 1
	OFF	ON	ON	ZONE 2
	ON	OFF	ON	ZONE 3
	OFF	OFF	ON	ZONE 4
	ON	ON	OFF	ZONE 5
	OFF	ON	OFF	ZONE 6
	ON	OFF	OFF	ZONE 7
	OFF	OFF	OFF	ZONE 8

2.5 DIP-SWITCH FOR “END LINE” RESISTOR

Set the Dip-Switch nr. 4 (END LINE) as for typology of wiring, as follow:

TYPOLGY 1 (see page 17) *ONLY ONE COM PORT*: set the Dip-Switch 4 only on the last mounting base (where only one cable is present)

TYPOLGY 2 (see page 18) *TWO COM PORTS (WITH THE EXPANSION CARD PRESENT)*: set the Dip-Switch 4 only on the last mounting base (where only one cable is present) of each stub lines

TYPOLGY 3 (see page 19) *CLOSED LOOP (WITH THE EXPANSION CARD PRESENT)*: don't set the Dip-Switch 4 in any mounting base.

2.6 DETECTOR WIRING

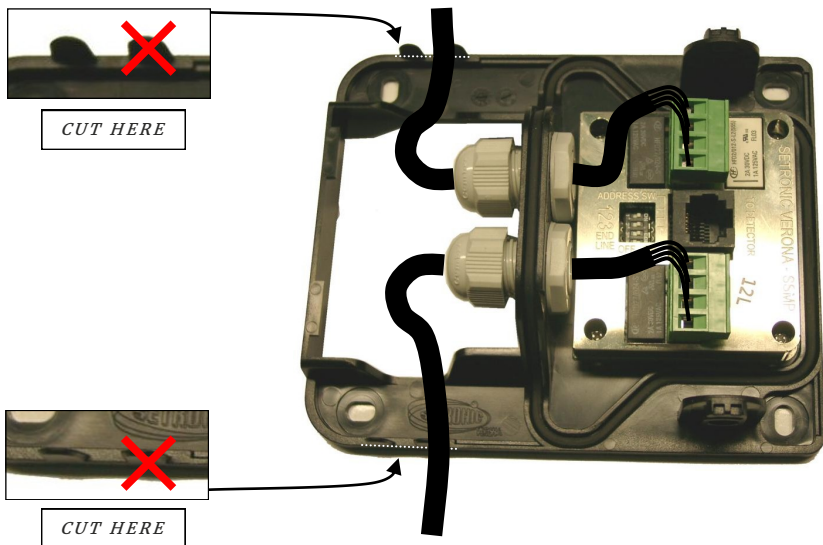
NOTE: use cable with wire sizes ranging form 14 to 20 AWG, and external diameter max 0.31 inches.

Push the cable through the cable gland and pull it out from the other side about 6 inches.

Cut about 2 inches of the outer insulation jacket, make the connections to the terminal connector and push any excess wire lengths through the cable gland.

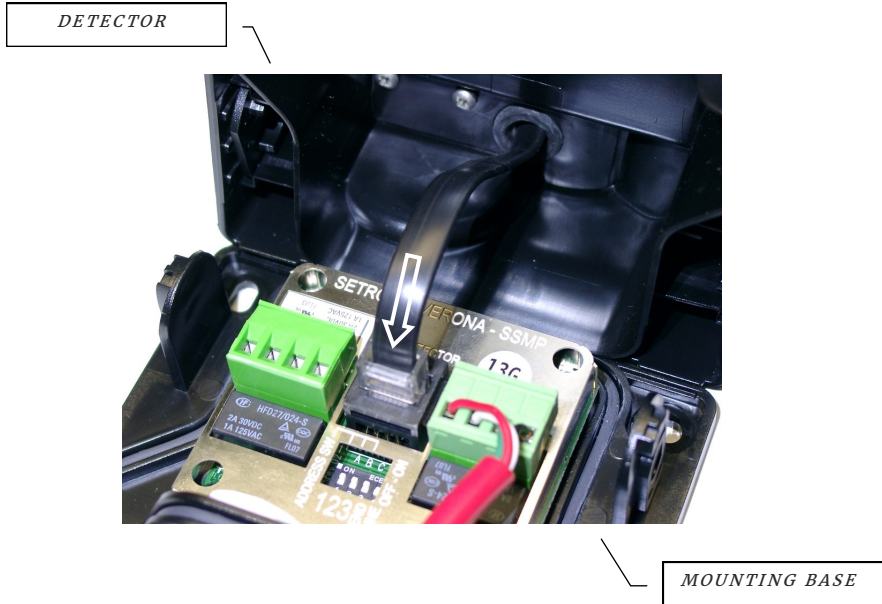
Tighten the cable glands strongly.

Cut the plastic cable protection.



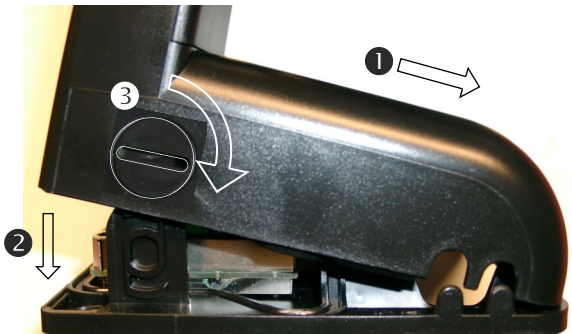
2.7 CLOSING THE DETECTOR

Take the detector and connect the male RJ45 connector to the respective female on the mounting base. Ensure you hear a "click"!



Close the detector like described in the following figure, ensuring that the cables are not trapped or damaged by the detector.

Use the SETRONIC "Allen Key" for closing the detector, turning clockwise the locking screws.



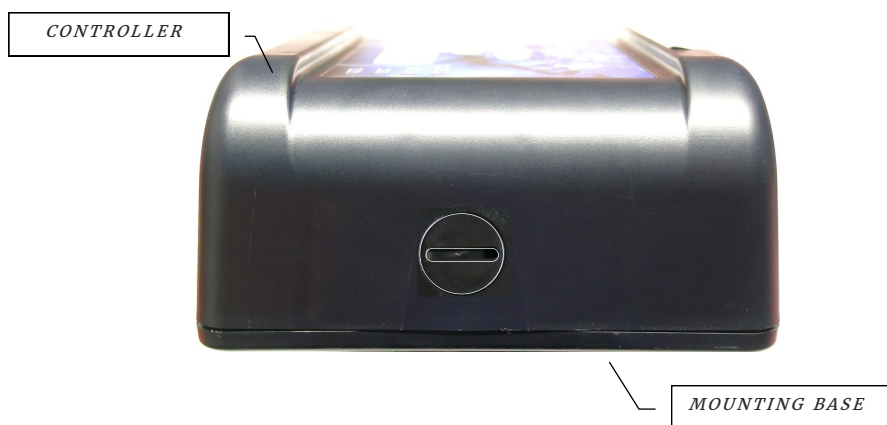
3. INSTALLING THE CONTROLLER

3.1 OPENING THE CONTROLLER

Use the SETRONIC "Allen Key" for opening the controller.

The controller is fixed to the mounting base by two locking screws.

Removal of the controller can be achieved by slackening the locking screws and lifting upwards until it disengages from the mounting base.



LOCKING SCREW: CLOSE POSITION



LOCKING SCREW: OPEN POSITION

3.2 INSTALLATION PROCEDURE

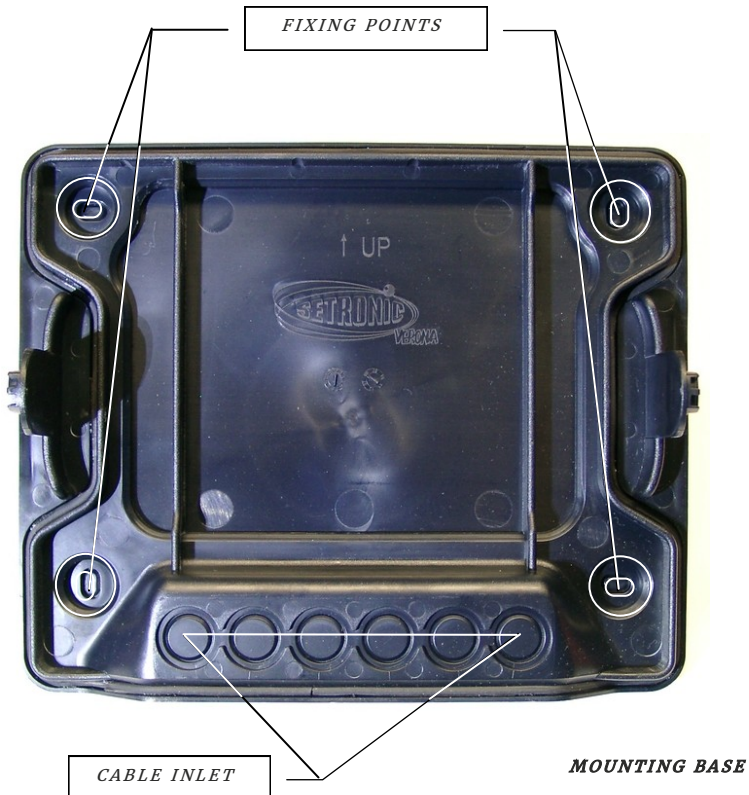


To grant that the mounting base maintain the IP65 protection degree, be sure that it will be fixed in flat surface. If this it is not possible use a bracket.

Drill the mounting base to achieve the fixing holes and the holes for the passage of cables.

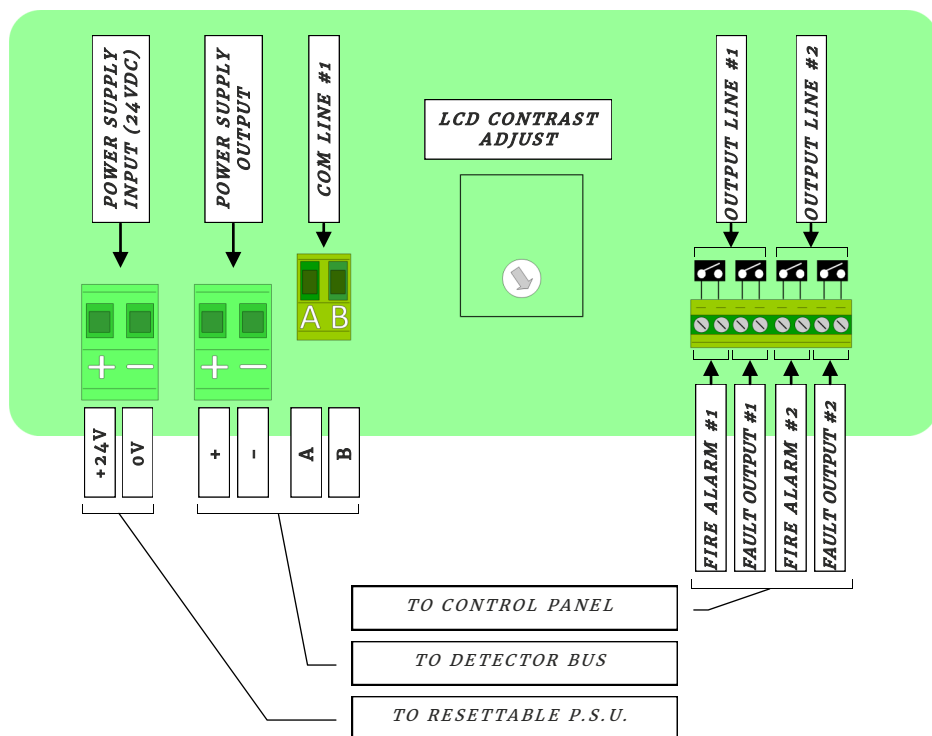
To maintain the degree of protection IP65, use rubber grommets.

Route the cables through the holes and fix the mounting base to the wall or other suitable mounting point.

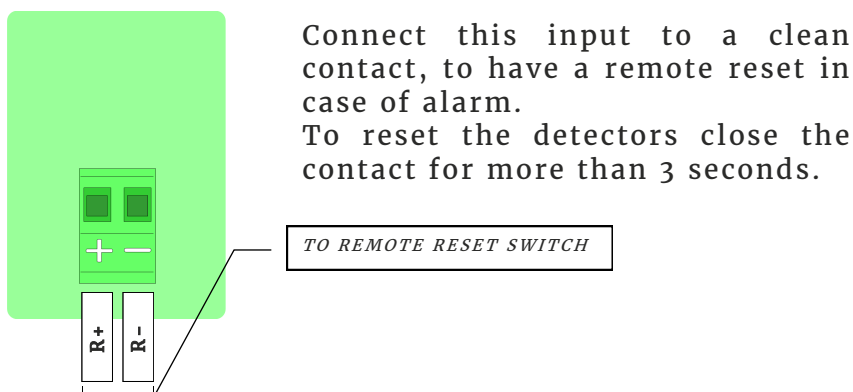


3.3 CONTROLLER WIRING

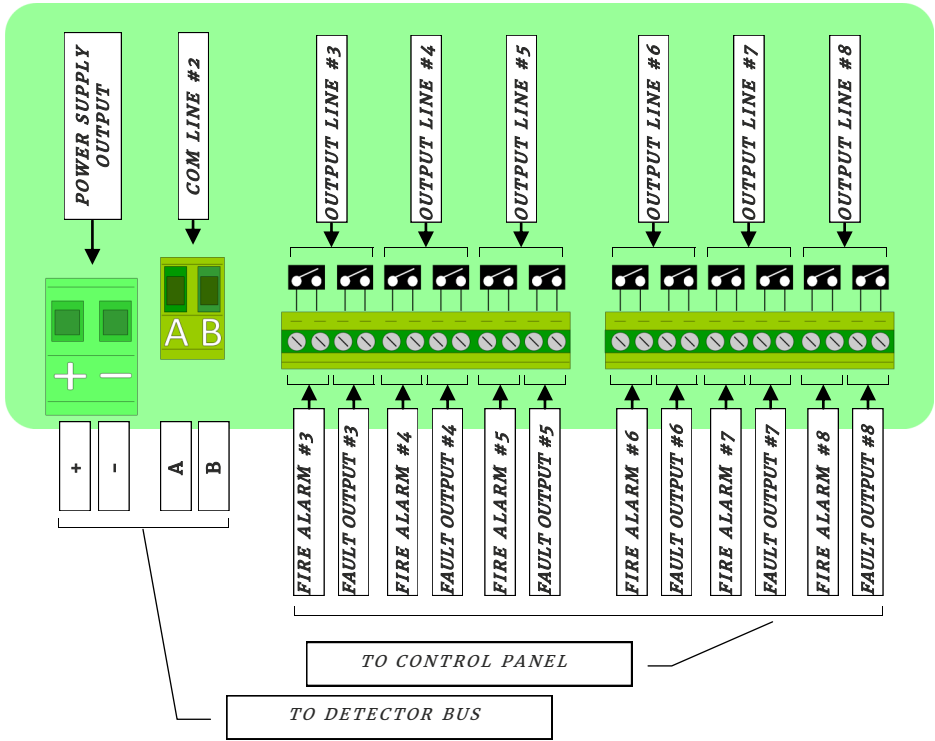
CONTROLLER MAIN BOARD:



CONTROLLER RESET BOARD (MRS):



CONTROLLER EXPANSION BOARD (IF PRESENT):



3.4 CLOSING THE CONTROLLER

Close the controller like described in the following figure, ensuring that the cables are not trapped or damaged by the box.

Use the SETRONIC "Allen Key" for closing the controller, turning clockwise the locking screws.



4. SYSTEM WIRING

4.1 CABLE CHOICE



Section of cable: 14 to 20 AWG

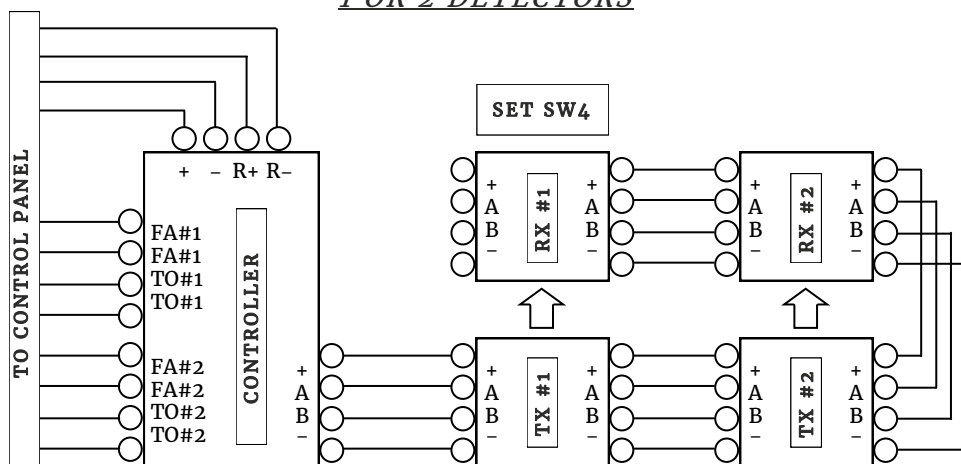
Max capacitance: 100nF/km

Max resistance: 50 Ohm/km

4.2 CAUTION FOR INSTALLATION

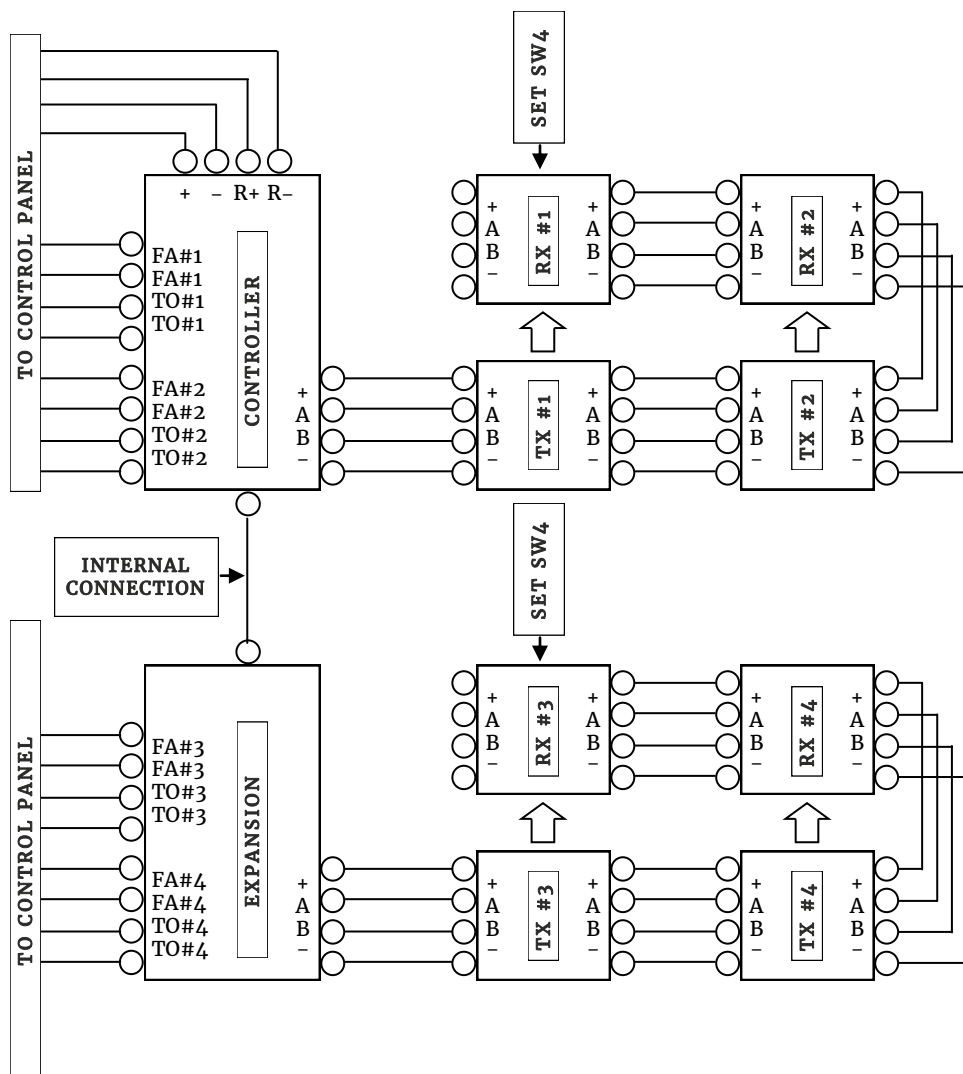
- When the installation is in electrically noisy environment and/or with the presence of strong currents, it is necessary to use a cable with two shielded bight cable (one for power supply and one for the RS485).
- It is clear that working to the limit of RS485 line, better features of cable must be considered.
- Do not make junction along the lines
- Be careful that the connection of the shield, if used, must be connected to the mass only in one side, at the beginning or at the end of the line. Inside the socket of the detector, make a bridge with the shield so that it is continuous from beginning to the end of the line.
- The RS485 standard is made for the connection of many numbers of devices in multidrop (daisy-chain). So that they are not allowed shunts or connection in T line mode (star). This means that the wire must pass from the first to the second detector and so on up to the last one.

4.3 WIRING TYPOLOGY 1 - ONLY ONE COM PORT 1 OR 2 DETECTORS



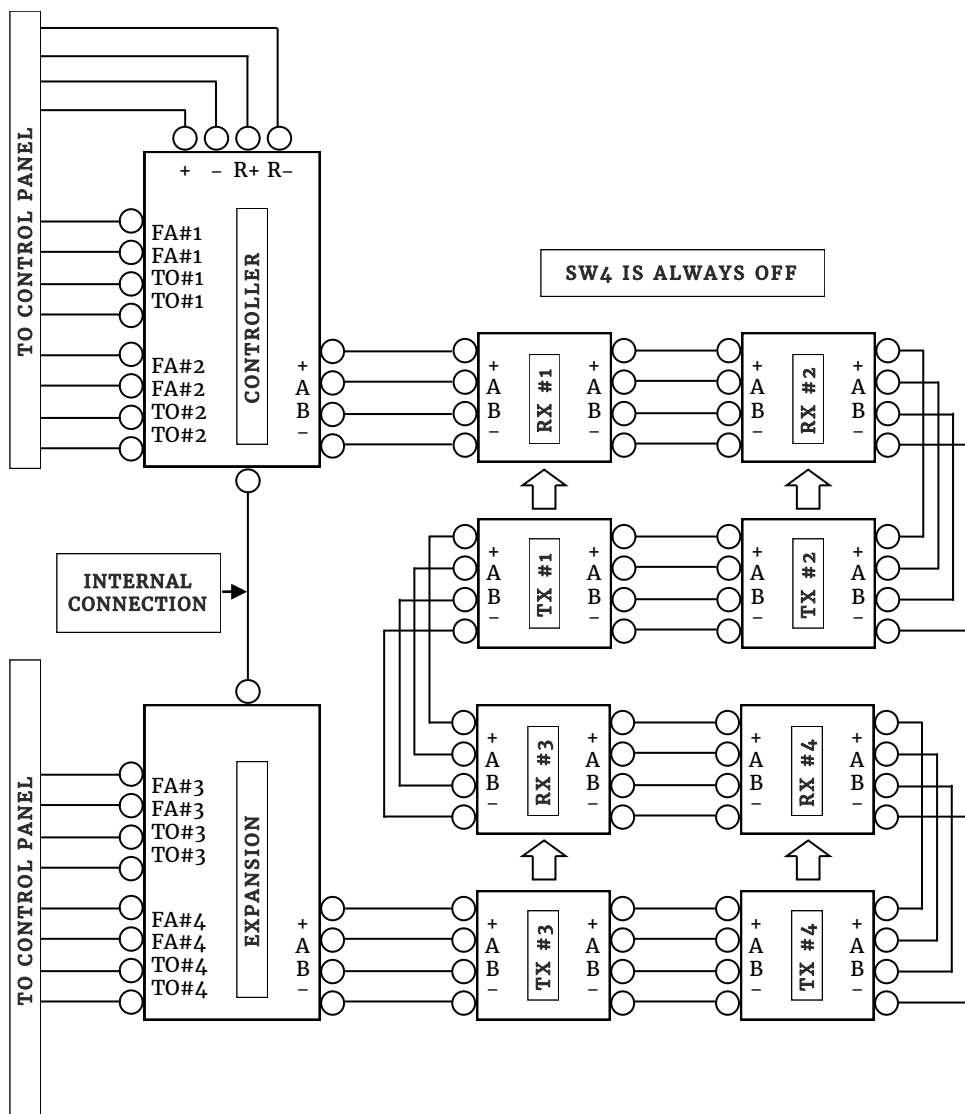
NOTE: IN SYSTEM SETUP, SET "COM LINE 2 OFF"

4.4 WIRING TYPOLOGY 2 - TWO COM PORTS (WITH THE EXPANSION CARD PRESENT) 2 TO 8 DETECTORS EXAMPLE WITH 4 DETECTORS



**NOTE: IN SYSTEM SETUP, SET "COM LINE 2 ON"
AND "COM LINE LOOP OPEN ERROR"**

4.5 WIRING TYPOLOGY 3 - CLOSED LOOP
(WITH THE EXPANSION CARD PRESENT)
1 TO 8 DETECTORS EXAMPLE WITH 4 DETECTORS



**NOTE: IN SYSTEM SETUP, SET "COM LINE 2 ON"
 AND "COM LINE LOOP CLOSE"**

5. ADJUSTMENT PROCEDURE

5.1 FIRST CALIBRATION PROCEDURES

1. Power the system and enter to menu:

- from the main screen, press OK;
- enter the password (default FFFF), using the direction buttons ◀ or ▶ and ▼ or ▲; press OK;

2. Set up detection lines:

- press ▶ until you get to <System Setup>; press OK;
- press ▼ or ▲ to edit the number of the detection lines, 1 to 8; press OK;
- press ▼ or ▲ to change the delay time for fault outputs; press OK;
- press ▼ or ▲ to change the configuration of fault outputs; press OK;
- press ▼ or ▲ to set the <Com Line> configuration (see pages 17-19); press OK;
- press OK to skip debug function (DON'T USE IT). Exit menu pressing ◀

3. Check for communication errors:

- look at the main screen on lcd; if you see a communication error (A-ERR, B-ERR or C-ERR) check the wiring or the configuration of the address Dip-Switch;
- if you see a Fault message this is normal and can continue to the next step.

4. Detectors calibration:

- At this point the green led of the two detector units should switch on and a short flash confirms the continuous scanning of the line. If on the units is present the condition of led green and yellow flashes together of about 2 sec., means that there is no serial communication (check the wiring for possible errors or inversions) or incorrect configuration of the switch address. In such a case please verify: the cabling for possible mistakes or inversions, the wrong

configuration of the address switches (double same number) or the wrong number of connected detectors (menu system set-up);

- Point the Transmitter through the Allen Key adjustment in order to obtain the led blinking yellow;
- Starting i.e. from the left to move the unit slowly until the yellow led stops flashing. Then rotate the unit to the right (the yellow led starts to flash again). Count how many turns of the key are made to obtain the yellow led off to the opposite side. Reposition the center of movement found by dividing in half the number of revolutions counted. The yellow led continues to blink;
- Do the same for the vertical axis;
- Point the Receiver following the same steps;
- Set the right position of the diaphragm on the Receiver (see page 23);

5. Adjustment of detectors:

- from the main screen, press OK;
- enter the password (default FFFF), using the direction buttons ◀ or ▶ and ▼ or ▲; press OK;
- press ▶ until you get to <AUTO Adjust.>; press OK;
- press ▼ or ▲ to change the number of the detection line to be worked on; press OK;
- wait until the TX value stabilises and press OK;
- the value of the RX must be about 100%
- press OK to confirm the setting.

6. Adjustment of detection line sensitivity:

- press ◀ or ▶ until you get to <Sensitivity>; press OK;
- press ▼ or ▲ to change the number of the detection line to be worked on; press OK;
- choose the right sensitivity threshold in the table 5.4;
- press ▼ or ▲ to change the smoke threshold value; wait for 2 sec and press OK to confirm the setting. Exit menu pressing ◀

5.2 CALIBRATION PROCEDURES

(when the Beam Detectors are already previously installed)

1. Adjustment of detectors:

- from the main screen, press OK;
- enter the password (default FFFF), using the direction buttons ◀ or ▶ and ▼ or ▲; press OK;
- press ▶ until you get to <Adjustment>; press OK;
- press ▼ or ▲ to change the number of the detection line to be worked on; press OK;
- verify the value of the RX: must be about 100%; if not press ▼ or ▲ to change the TX level (Level of the Infrared Beam);
- press OK to confirm the setting.

2. Adjustment of detection line sensitivity:

- press ◀ or ▶ until you get to <Sensitivity>; press OK;
- press ▼ or ▲ to change the number of the detection line to be worked on; press OK;
- choose the right sensitivity threshold in the table 5.4;
- press ▼ or ▲ to change the smoke threshold value; wait for 2 sec and press OK to confirm the setting. Exit menu pressing ◀

5.3 PROCEDURE FOR FURTHER ADJUSTMENTS

1. Enter to the menu:

- from the main screen, press OK;
- enter the password (default FFFF), using the direction buttons ◀ or ▶ and ▼ or ▲; press OK;

2. Fire Alarm simulation:

- press ◀ or ▶ until you get to <Alarm Test>; press OK;
- press ▼ or ▲ to change the number of the detection line to be worked on; press OK;
- press OK to start the alarm simulation; wait about 30 seconds to reach the Fire Alarm (Red Led blinking on Beam Detector and Red Led on the Controller);
- press OK to reset the Beam Detector.

3. Reset the detection lines alarm:

- press ◀ or ▶ until you get to <Reset Alarm>; press OK;
- press OK to reset the alarm.
- It is possible to reset the alarm also by the MRS module, closing a clean contact for more than 3 seconds.

4. Change Password:

- press ◀ or ▶ until you get to <Change Password>; press OK;
- enter the new password, using the directional buttons ◀ or ▶ and ▼ or ▲;
- press OK to save the setting.

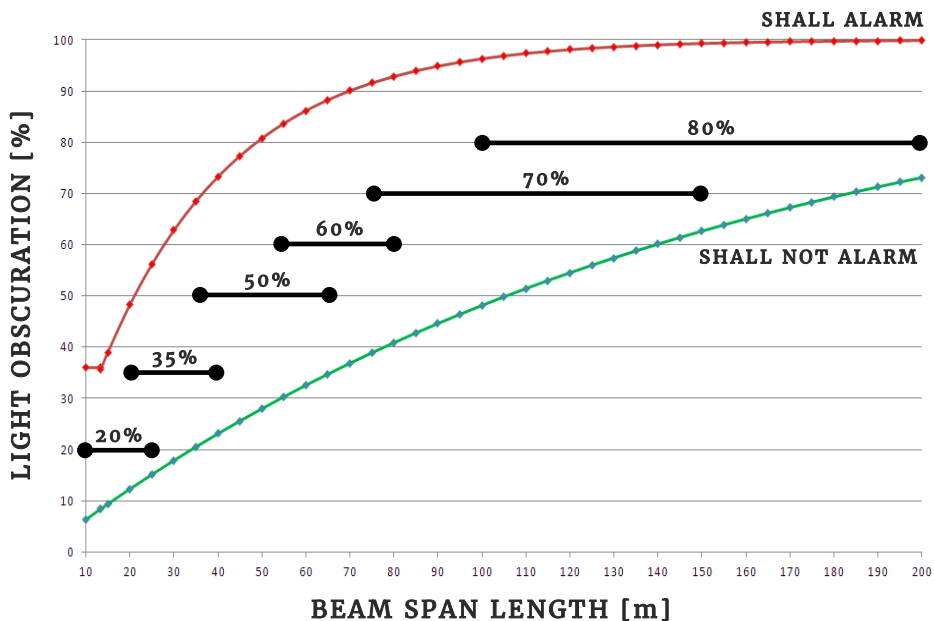
5.4 SETTING THE SENSITIVITY AND THE RANGE OF DISTANCE

Set the distance range using the knob situated in the rear side of the Receiver detector head. Use the SETRONIC "Allen Key" for rotate the knob.

DIAPHRAGM ON RECEIVER UNIT

POS.	DISTANCE	
5	10÷25m	32.808÷82.021ft
4	20÷40m	65.617÷131.23ft
3	35÷60m	114.83÷196.85ft
2	55÷80m	180.45÷262.47ft
1	75÷150m	246.06÷492.13ft
0	100÷200m	328.08÷656.17ft





THRESHOLD	DISTANCE	
20%	10÷25m	32.808÷82.021ft
35%	20÷40m	65.617÷131.23ft
50%	35÷60m	114.83÷196.85ft
60%	55÷80m	180.45÷262.47ft
70%	75÷150m	246.06÷492.13ft
80%	100÷200m	328.08÷656.17ft



If requirements or standards are provided for the sensitivity of the linear beam detector and a test filter (not provided), the selection of sensitivity and its test should be performed in accordance with them. Otherwise, set the sensitivity on the controller so that the sensitivity falls within the sensitivity setting range recommended by the manufacturer in accordance with the monitoring distance.

6. SUMMARY OF FUNCTIONS

6.1 NORMAL OPERATION

- When the system is connected and properly adjusted, the display will show "Setronic Verona - Normal Operation". The green LED "Power" on the Beam Controller will flash indicating the number of detectors connected to it (ie 1 flash every two seconds = 1 sensor connected, 8 flashes every two seconds = 8 detectors connected). Green LED on Beam Detector go off for an instant in time when the Beam Controller will communicate with it. This indicates that the Beam Controller is communicating properly with the Beam Detectors and no Fire Alarm or Fault is occurring.

6.2 FIRE ALARM

- When the Beam Detector is obscured by an amount that exceeds the sensitivity setting of the detector then a Fire Alarm signal is produced and lighting the Red Alarm LED on the Receiver of the Beam Detector and repeated with lighting the Red Alarm LED on the Beam Controller. It should be noted that the ILIA ERHS0712 has an internal algorithm and therefore a fire will not occur immediately the obscuration exceeds the sensitivity value, but will take typically 16 seconds to produce the fire signal.
- The LCD will display the number of the Beam Detector affected by the event (ie Alarm: --3----- indicate the 3rd detector in alarm, the dashes indicate the other detectors not in alarm)

6.3 FAULT CONDITION

- The Beam Detector may produce a fault condition for one of many different reasons, which will depend on whether the detector has just been set up or is in normal operation. The fault signal will be produced

and a Yellow fault LED on both Transmitter and Receiver units and on the Beam Controller.

6.3.1 DURING ADJUSTMENT

The Beam Detector will produce a fault during adjustment for one of the following reasons :

- The units are not properly aligned (infrared level is too low = Yellow LED on the units is ON)
- The units are properly aligned but the signal is still too high (infrared level is too high = Yellow LED on the units is blinking 2 times per second)
- Communication between Beam Controller and Beam Detector is failed (Yellow and Green LED on the units blinking together every 2 seconds)

6.3.2 NORMAL OPERATION

The beam detector will produce a fault during normal operation for one of the following reasons:

- The obscuration is greater than 96% (it's possible to delay the action on the output contact between 0 to 90 seconds)
- The air in the environment is cleaner that when the calibration was carried out, so the signal received is greater (infrared level is too high = Yellow LED on the units is blinking 2 times per second)
- Communication between Beam Controller and Beam Detector is failed (Yellow and Green LED on the units blinking together every 2 seconds)

6.4 FIRE ALARM / FAULT CHECK TABLE

6.4.1 FIRE ALARM

THRESHOLD	TYPE OF TEST	FILTER VALUE
20%	OPERATION	36%
	NO OPERATION	15%
35%	OPERATION	48%
	NO OPERATION	23%
50%	OPERATION	68%
	NO OPERATION	32%
60%	OPERATION	83%
	NO OPERATION	40%
70%	OPERATION	91%
	NO OPERATION	62%
80%	OPERATION	96%
	NO OPERATION	73%

6.4.2 FAULT

THRESHOLD	TYPE OF TEST	FILTER VALUE
20%–80%	FAULT	>96%
	NO FAULT	<95%

7.0 TROUBLESHOOTING

PROBLEM	CHECK AND REMEDY
The controller does not switch on	<ul style="list-style-type: none"> • Check the polarity of the power cables and/or power supply and that the cable is well connected to the terminal blocks.
The display of the controller is blank or shows strange characters	<ul style="list-style-type: none"> • This erroneous visualization is due to the presence of electrostatic discharge applied to the front of the controller (in the display area or on the keyboard). This condition does not affect the operation of the system, which will continue to provide the information by the LED's. The outputs of Fire Alarm and Fault will continue to function properly. To return the system to normal operation will be necessary to remove the source of disturbance and reset the system by removing power to the controller for a few seconds. Please note that the condition of Normal operation, alarm or fault are also locally displayed by dedicated LEDs on the detector itself.
The detector does not switch on (green LED off). The display shows communication error.	<ul style="list-style-type: none"> • Check the beam detector plug is inserted in the mounting base • Check the connections between beam detector and beam controller. • Possible inversion of power supply
On one or more of the detectors the yellow and green LEDs flash together with a frequency of every 2 seconds and the display shows communication error	<ul style="list-style-type: none"> • Check the beam controller configuration (the total number of beam detectors connected compared with the number configured). • Check connections on serial line (probable inversion of serial cables A and B), and check connections from beam controller to the first and/or last mounting base, and between one mounting base and another. • Check that there are not one more end of line switches set on the loop line, or more than one (the last) on an open connection.

continue to next page

PROBLEM	CHECK AND REMEDY
<i>continue from previous page</i>	<ul style="list-style-type: none"> • Check the addresses' correspondence, e.g. that there are not two Receiver or two Transmitter with the same address. In this case check the addresses of the units giving the error signal. Having identified the problem and reset the address, switch off and switch on the beam controller and check correct communication.
After switching on the system, the controller display shows C-ERR and only the ALARM AND TROUBLE LEDs stay on after the switching off of the automatic test lamp	<ul style="list-style-type: none"> • Check the connections! Possible inversion of A and B on the serial line, or inversion of power supply to the mounting bases. • In case of cabling of two stub lines verify that the second serial line (COM LINE2: ON) has been enabled.
After the alarm test the beam detector does not immediately reset from the “Reset Alarm” menu.	<ul style="list-style-type: none"> • The beam detector is still responding to the alarm event. Wait around 1 minute and then repeat the reset from “Reset Alarm” menu. If the operation is carried out after a test fire , wait for the evacuation of the smoke, and then carry out the reset.
Sporadic fault signals	<ul style="list-style-type: none"> • Read the signal received value using the <Adjustment> menu. If the figure is between 104% and 107% lower the Transmitter level to obtain RX=100%. If necessary check the rigidity of the structure to which the beam detector is fastened or the fastening itself. • It is also possible that air in the environment is cleaner than when the calibration was carried out, so the signal received is greater with a consequent oversignal. In this case adjust the transmitter by means of the <Adjustment> menu until you reach a reading of 100%.
Multiple fault signals for cut of line(s) <i>continue to next page</i>	<ul style="list-style-type: none"> • Could happens that, in case of the cut of the line, it will be activated the output of address 1 and also other following

PROBLEM	CHECK AND REMEDY
<i>continue from previous page</i>	<p>outputs in first instance and further communication error signals;</p> <ul style="list-style-type: none"> • In case on the Control Panel is present or recorded the situation of all the detectors together in fault condition, and on the display of the Controller is shown the message of “Normal Operation”, it is possible that happens a temporary short circuit on the line. In this case verify the absorption of the system Beam Controller –Beam Detectors; If the value of absorption are the ones shown in technical information it means that no one socket has gone on protection. If the protection has been activated or the short circuit is still present, the absorption of the line will be superior of around 200 mA respect to the normal operation ones. •The short circuits on the loop configured line and isolated by the socket, are displayed on the controller and the activation of the fault output of zone 1 (i.e. IsoTx:----5---, IsoRx:-----6--). The isolated socket, keep on the open line up to the reset of the controller by switching off and on the power supply. If after the reset the signal is still present it means that the short circuit has not been solved.

NOTE:

Beam smoke detectors generally have a maximum range of 330 feet and a maximum spacing between detectors of 60 feet. This gives the beam smoke detector theoretical coverage of 19,800 square feet. Manufacturer’s recommendations and other factors, such as room geometry, may impose practical reductions of this maximum coverage.

8.0 TECHNICAL FEATURES

ILIA Beam Detector model ERHS0712 – sw. 131010

Working temperature	-4.0°/100.0°F (-20°/+37.8°C)
Storage temperature	-4.0°/158.0°F (-20°/+70°C)
Electromagnetic disturbance	EMC test up to 30 Volt/m
Power supply	24V DC
Cable type	4 wires cable, 14 to 20 AWG
Maximum cable length	up to 4000ft from Controller Unit to Beam Detectors
Maximum permitted cover	19800ft² per detector
Width cover	max 60ft
Operating distance	32.8 ÷ 656.2ft (10 ÷ 200m)
Angle misalignment	± 1 degree max
Detector protection rating	IP65
RAL Colour	9005 jet black
Material	PPE+PS «Noryl» Flame Class Vo UL94 self-extinguishing
Size	63.780x57.087x75.984in (162x145x193mm)
Weight	Tx Unit 25.926oz (735g), Rx Unit 27.337oz (775g)

Beam Controller Unit mod. CSRLS – sw. 131010

Working temperature	-4.0°/100.0°F (-20°/+37.8°C)
Storage temperature	-4.0°/158.0°F (-20°/+70°C)
Electromagnetic disturbance	EMC test up to 30 Volt/m
Power supply	24V DC
Cable type (to Beam Detectors)	4 wires cable, 14 to 20 AWG
Cable type (to P.S.U. or MRS)	2 wires cable, 14 to 20 AWG
Cable type (Fire Alarm / Fault O/P)	4 wires cable, 18 to 20 AWG
Contact capacity, Fire Alarm/Fault O/P	max 150mA (optorelay)
Detector protection rating	IP65
RAL Colour	9005 jet black
Material	PPE+PS «Noryl» Flame Class Vo UL94 self-extinguishing
Size	6.9685x5.7087x2.7165in (177x145x69mm)
Weight	13.228 oz (375g)

Power absorption

System with 1 Beam Detector	48mA (max 51mA) in StandBy, 50mA (max 53mA) in Alarm / Fault
System with 8 Beam Detectors	280mA (max 295mA) in StandBy, 296mA (max 305mA) in Alarm / Fault

Nel quadro del miglioramento costante dei ns. prodotti, si avverte che Setronic Verona si riserva il diritto di apportare in qualsiasi momento tutte le modifiche che verranno ritenute necessarie, senza obbligo di preavviso. Uguale diritto è rivendicato per correzioni su errori di stampa, dati, misure che dovessero essere erroneamente riportati nella presente pubblicazione.

I suggerimenti di applicazione impartiti nel presente manuale, qualora risultassero in tutto od in parte in contrasto con future disposizioni normative italiane e/o europee, debbono intendersi come ritirati alla stessa data dell'eventuale entrata in vigore di tale norme.

Poiché i prodotti di questo manuale hanno una commercializzazione extra nazionale, dobbiamo avvertire che prescrizioni installative dei singoli paesi, eventualmente difforni dai suggerimenti impartiti nel manuale, debbono essere considerate. Noi infatti li intenderemo come eseguiti nell'impianto che impiegherà i nostri prodotti e ciò sin dalla data dell'ordine.

Si consiglia di tenere questo manuale a portata di mano per riferimenti futuri.

Le informazioni di questo manuale sono disponibili in file PDF presso il sito internet:

www.setronicverona.com

You are advised that as Setronic Verona constantly strives to improve its products it reserves the right to make any changes it considers necessary without prior warning. The same reservation applies to any corrections of printing errors including of details and measurements that may have found their way into this booklet.

Any recommendations made in this booklet, must be considered as replaced by any conflicting Italian or European regulations that may come into force in the future, as of the date these come into force.

Since the products herein are sold outside the country in which they are manufactured, we must point out that any installation regulations in force in the country of installation must be followed, even where they do not accord with our suggestions. We shall consider any such regulations as having been followed, as from the date they come into force.

Keep this booklet close to hand for future reference.

The information contained in this booklet is available in PDF files at our website:

www.setronicverona.com

Copyright 2017 Setronic Verona S.r.l.

Doc. MIU - Rev. 04

Si rivendica la proprietà esclusiva dei dati e delle immagini contenute nel presente manuale. È fatto esplicito divieto di duplicare in tutto od in parte anche in formula digitale le immagini e/o i dati senza una formale autorizzazione della nostra Società. Ogni abuso accertato sarà perseguito a termini di legge.

I prodotti descritti godono della garanzia di un anno. I termini di garanzia contrattuali editi dalla nostra Società sono disponibili a richiesta e decorrono dalla data di consegna dei materiali. I termini di garanzia legali normalmente e universalmente usati si intendono applicati ai prodotti descritti.

Setronic is the sole owner of the data and images contained in this booklet. It is expressly forbidden to duplicate, in whole or in part, including in digital form, the images and/or data without formal prior authorisation from our Company. Legal action will be taken in case of infringement.

The products described herein are guaranteed for one year. Our Company's contractual guarantee terms are available on request and run from the date of delivery of the goods. The normally and universally used guarantee terms apply to the products described.



SETRONIC Verona S.r.l.

Via Milano, 13 - Arbizzano di Negrar (VR) - Italy

Tel. +390458347777 • Fax +390458347778

www.setronicverona.com • info@setronicverona.com