



## **BLADEC**

Curtain double technology detector with anti-blinding for central protection of doors and windows

090060829



IMQ-SISTEMI DI SICUREZZA

IT08020000001624



## FOREWORD

### FOR INSTALLERS

Please follow carefully the specifications about electric and security systems realization further to the manufacturer's prescriptions indicated in the manual provided.

Provide the user the necessary indication for use and system's limitations, specifying that there exist precise specifications and different safety performance levels that should be proportioned to the user needs. Have the user read carefully the instructions provided in this document.

### FOR USERS

Carefully check the system functionality at regular intervals making sure all enabling and disabling operations were made correctly.

Have skilled personnel make the periodic system's maintenance. Contact the installer to verify correct system operation in case its conditions have changed (e.g.: variations in the areas to protect due to extension, change of the access modes, etc.)

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This device has been designed, assembled and tested with the maximum care, adopting control procedures in accordance with the laws in force. The full correspondence to the functional characteristics is given exclusively when it is used for the purpose it was projected for, which is as follows:

### **Curtain double technology detector with anti-blinding for central protection of doors and windows**

Any use other than the one mentioned above has not been forecast and therefore it is not possible to guarantee the correct functioning of the device. Similarly, any other use of this technical manual other than the one it has been compiled for - that is: to illustrate the devices technical features and operating mode - is expressly prohibited.

The manufacturing process is carefully controlled in order to prevent defaults and bad functioning. Nevertheless, an extremely low percentage of the components used is subjected to faults just as any other electronic or mechanic product.

As this item is meant to protect both property and people, we invite the user to proportion the level of protection that the system offers to the actual risk (also taking into account the possibility that the system was operated in a degraded manner because of faults and the like), as well reminding that there are precise laws for the design and assemblage of the systems destined to these kind of applications.

**The system's operator is hereby advised to see regularly to the periodic maintenance of the system, at least in accordance with the provisions of current legislation, as well as to carry out checks on the correct running of said system on as regular a basis as the risk involved requires, with particular reference to the control unit, sensors, sounders, dialler(s) and any other device connected. The user must let the installer know how well the system seems to be operating, based on the results of periodic checks, without delay.**

Design, installation and servicing of systems which include this product, should be made by skilled staff with the necessary knowledge to operate in safe conditions in order to prevent accidents. These systems' installation must be made in accordance with the laws in force. Some equipment's inner parts are connected to electric main and therefore electrocution may occur if servicing was made before switching off the main and emergency power. Some products incorporate rechargeable or non rechargeable batteries as emergency power supply. Their wrong connection may damage the product, properties and the operator's safety (burst and fire).

## DISPOSAL INSTRUCTIONS - USERS INFORMATIONS



According to Directive 2012/19/EU on the Waste of Electric and Electronic Equipment (WEEE), it is here specified that this Electrical-Electromechanical Device started to be commercialized after 13<sup>th</sup> August 2005, and it shall be disposed of separately from ordinary waste products.



## 1. GENERALS

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The detector BladeC is a double technology detector with high performance, designed for the window and door-window protection thanks to its curtain coverage. It must be installed in central horizontal position on the door or window.

**A key point of the detector is the digital PIR to obtain high immunity and accuracy of detection.**

The MW section is equipped by DRO planar antenna with reduced dimensions with pulsed piloting and anti-masking device. The IR section is equipped with sectoral FRESNEL lens, digital PIR sensor, silicon filter with white light protection, DAM double anti-masking device that allow to detect the masking.

For the installation between the shutter/roll-up shutter and the window or door/window, the detector is equipped with proper path in the housing bottom and seals to avoid the water entry.

The anti-masking protection is always active and can be select through dipswitch; the masking condition is signalled.

The return to the normal operation occurs at the next motion detection on the part of the two technologies or after the removal of the cause of the masking.

BladeC can be programmed through proper selectors. It is possible also to test it remotely.

The pleasant housing allows the installation in every environment.

**BLADEC is IMQ - Security Systems certified.**

## 2. FEATURES

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### 2.0.1 General features

- Miniaturized dual-technology detector with high performance
- It can protect a shutter/door-window, roll-up shutter/door-window, roll-up shutter/window, shutter/window etc.
- DIGITAL PIR detector with high immunity with temperature compensation and anti-blinding device.
- Silicon filter against blinding.
- MW section with 24GHz planar antenna with low noise and reduced dimensions. Pulsed circuitation with filter for neon light.
- LEDs for operation signaling through the lens with exclusion possibility.
- Solid status relay outputs, for tampering, fault/masking.
- Terminal input for remote test control.
- Internal dipswitch for operation mode setting.
- Installation at the centre of window or door.
- Adjusting sensitivity in two steps.
- IR lens with vertical curtain protection with 15 degree horizontal opening and 80 degree vertical opening.
- Anti-blinding active circuit in the IR section and DAM double anti-masking circuit with outputs on solid status relay.
- Detection of the low power voltage with activation of the fault output.
- Automatic detection of the fault status of the PIR device with activation of the fault output.
- Very compact dimensions.
- Plastic housing with pleasant design, arrangements on the bottom for cables entry and seals for lateral entry.



## 2.1 Electrical features

<b>Model:</b>	<b>BLADEC</b>	<b>Viewings:</b>	MW section operation, IR section operation, alarm status, fault, blinding.
<b>Performance level:</b>	I° (Rif. CEI 79-2).	<b>LED exclusion:</b>	through dip.
<b>IMQ certified:</b>	<b>EN50131-2-4:</b> grade 2	<b>Adjustments:</b>	dipswitch for setting the various operation mode.
<b>Environmental class:</b>	2	<b>Alarm relay:</b>	normally energized, NC contacts with 10 Ohm resistance, 100 mA contact range.
<b>Power supply:</b>	<b>DC12V</b> (from 7 to DC15V).	<b>Masking relay:</b>	normally energized, NC contacts with 10Ohm resistance, 100 mA contacts range.
<b>Power fault detection:</b>	<b>if less than 7.5V</b>	<b>Tamper:</b>	relay output normally energized, NC contacts with 10 Ohm resistance, capacity 100 mA contacts.
<b>Admitted ripple:</b>	200 mVpp.	<b>IR stage gain:</b>	optimized with the temperature.
<b>Detector consumption @12V:</b>		<b>Operating temperature:</b>	-10 / +55 °C.
<b>idle status:</b>	19 mA (energized relay).	<b>Humidity:</b>	93% U.r.
<b>alarm status:</b>	40 mA (de-energized relay).	<b>power supply:</b>	screws, dowels, technical manual.
<b>Blinding/fault:</b>	30 mA.		
<b>Terminal control voltage:</b>	detector test, active when it is connect to +12V.		
<b>Functions selection:</b>	dipswitch on board, see attached wiring diagram.		
<b>Timings:</b>			
<i>Alarm:</i>	5s		
<i>Stand by at power-on:</i>	20s		
<i>Remote test reaction time:</i>	5s		
<i>Relay activation time for Remote Test:</i>	3s ( <i>Alarm=Ok - Fault =KO</i> )		
<i>Restore time from Remote Test:</i>	1s after the relay will turn.		

MW SECTION	IR SECTION
<b>Against noise digital filter:</b> for neon lamps.	<b>Lens type:</b> vertical curtain lens with white light protection through Silicon filter on PIR detector.
<b>Integration:</b> fixed by 2 pulses.	<b>No. sensitive zones:</b> 2 beams.
<b>TX frequency:</b> <b>24.125 GHz.</b>	<b>Coverage area:</b> see installation diagram.
<b>Emitted power:</b> <b>16 dBm typical.</b>	<b>Range:</b> max 3 meters, see installation diagrams.
<b>Emitted signal:</b> pulsed.	<b>PIR sensor:</b> highly immune to digital RF interference. Equipped with Silicon filter against glare.
<b>Range:</b> max 3 meters, see the installation diagrams.	<b>Timings:</b> alarm with waiting by MW section for 3s.
<b>Coverage area:</b> 30° on horizontal plane, <b>80° on vertical plane.</b>	
<b>Timings:</b> alarm with IR waiting for 3s.	

### EU DECLARATION OF CONFORMITY

Hereby, EL.MO. Spa declares that the radio equipment BLADEC is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following Internet address: [elmospa.com](http://elmospa.com) – registration is quick and easy.

## 2.2 Mechanical features

- **Dimensions:** H 96 - W 35 - D 35 mm.
- **Wheelbase drilling:** 65 mm.
- **Weight:** 60 g.

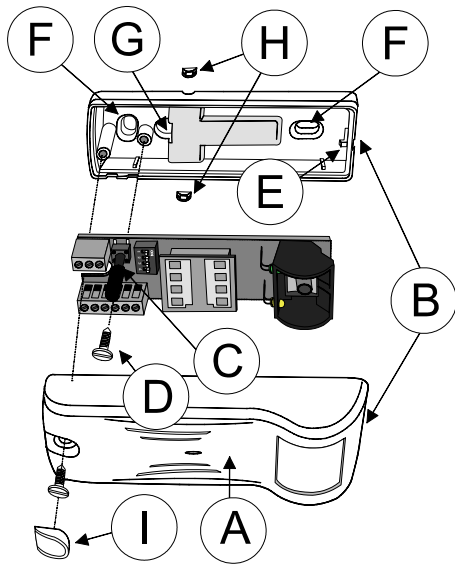


### 3. INSTALLATION

#### 3.1 General warnings

- The curtain detector must be inserted between window/door-window and shutter/roll-up shutter. The opening of the protection area is about 80 degrees longitudinally and 15 degrees transversely.
- During installation, the detector must be placed with the lens at the centre of the door or window. It is recommended to consult the examples on page 5.
- Installation it is not recommended with venetian blinds and metal shutters.

#### 3.2 Opening, fixing and reclosing housing operation



- 1) Unscrew the cover fixing screw on the top of the housing, indicated with **A**.
- 2) Separate the front cover by releasing the latches indicated by **B** by performing a rotation with **B** fulcrum.
- 3) The cover reclosing required the inverse operation previously exposed, taking the utmost care to ensure that the closing spring of the tamper protection microswitch indicated by **C** is in place, finally the fixing operation by tightening the self-tapping screw of the cover. Finally you will have to insert the cap **I** to mask the front screw.

##### Release operations and board hooking:

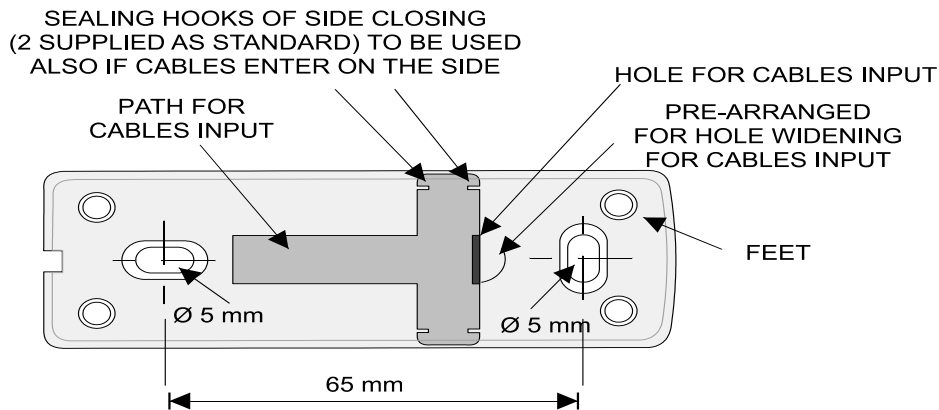
- 1) Remove the fixing screw securing the printed circuit indicated with **D**.
- 2) Pull out the printed circuit by turning gently forward and moving upward until it is free from the lower hook indicated with **E**.
- 3) The hook operation of the board at the housing bottom requires the inverse operations of previously reported methods.

##### Drilling and installation wall:

- 1) Proceed to the position and fix the bottom using the holes indicated with **F** as a template (wheel-base 65mm).

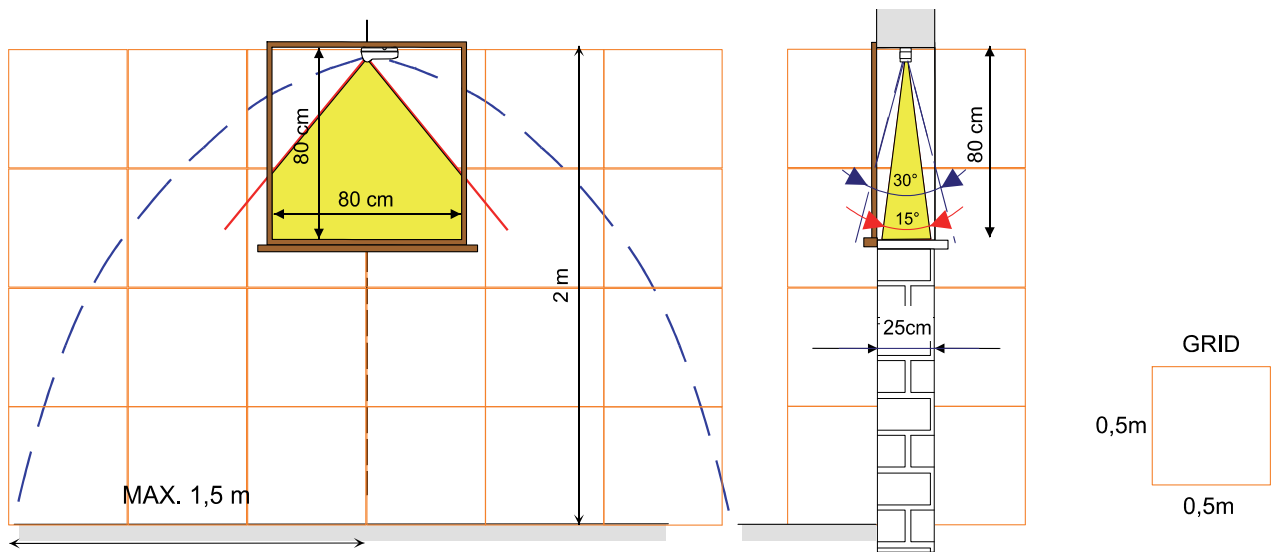
##### Cables routing:

- 1) The cables must be inserted into the **G** hole of the cable cover channel. The cable path is facilitated by the plastic shaped. For the side entrance there are provided two accesses.

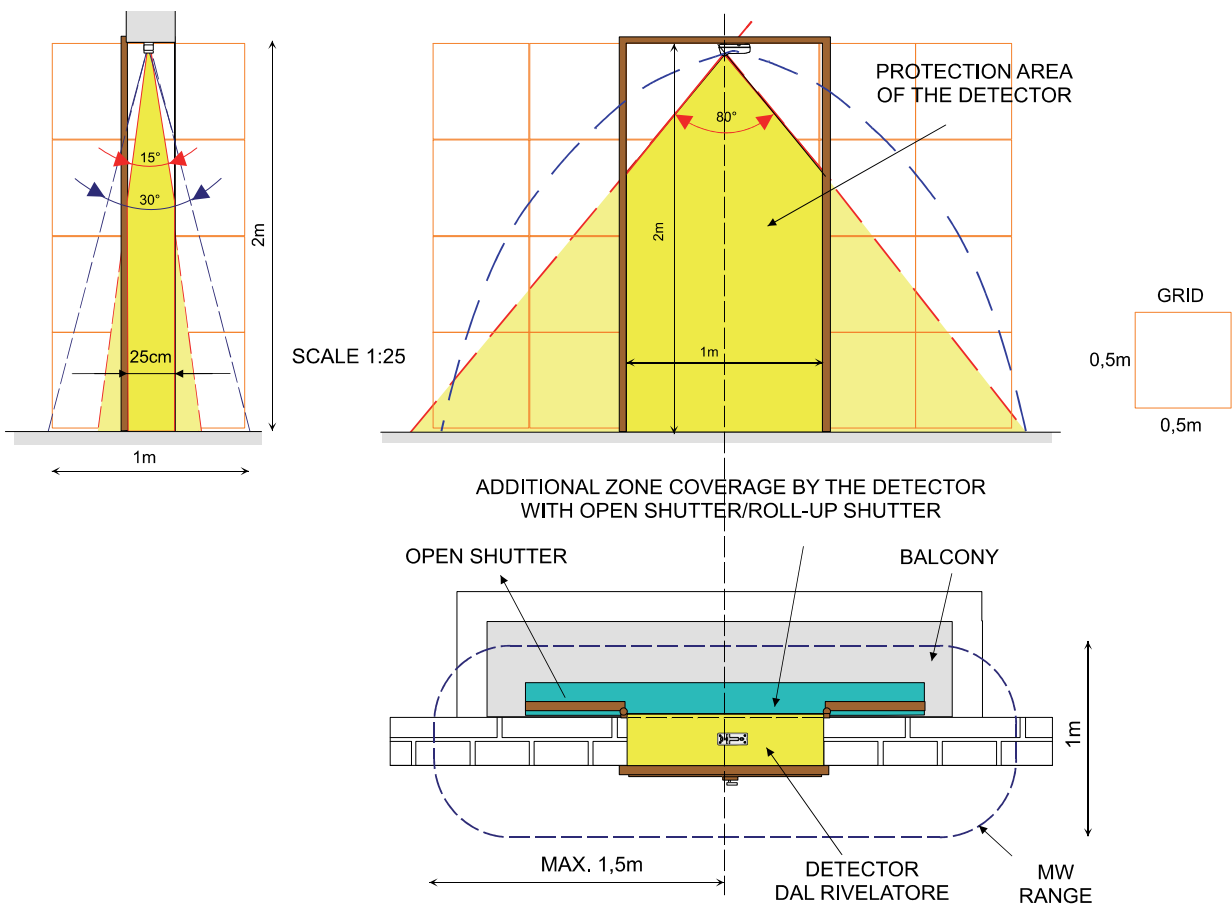




### 3.3 Installation for windows protection and coverage diagram

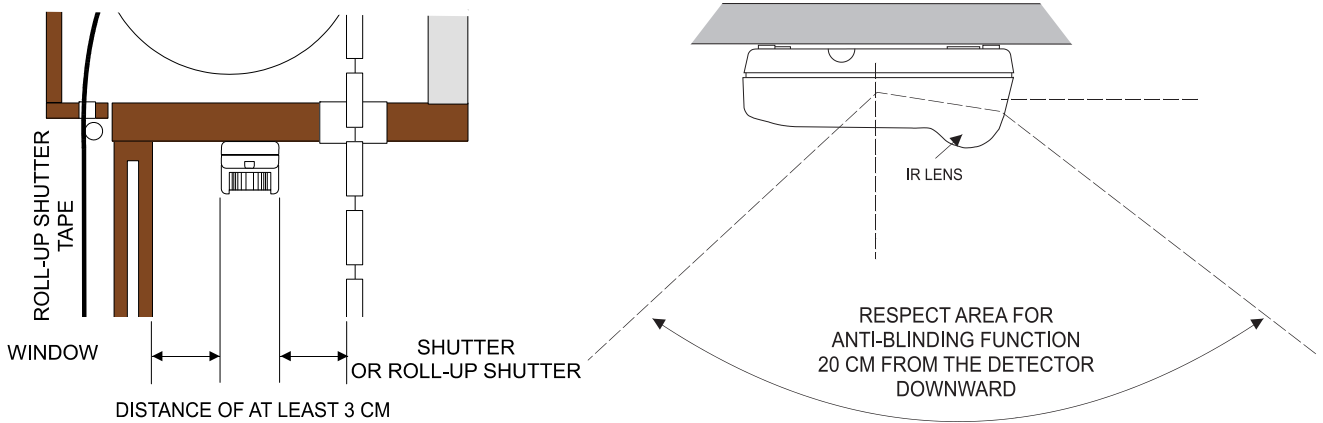


### 3.4 Installation for door protection and coverage diagram





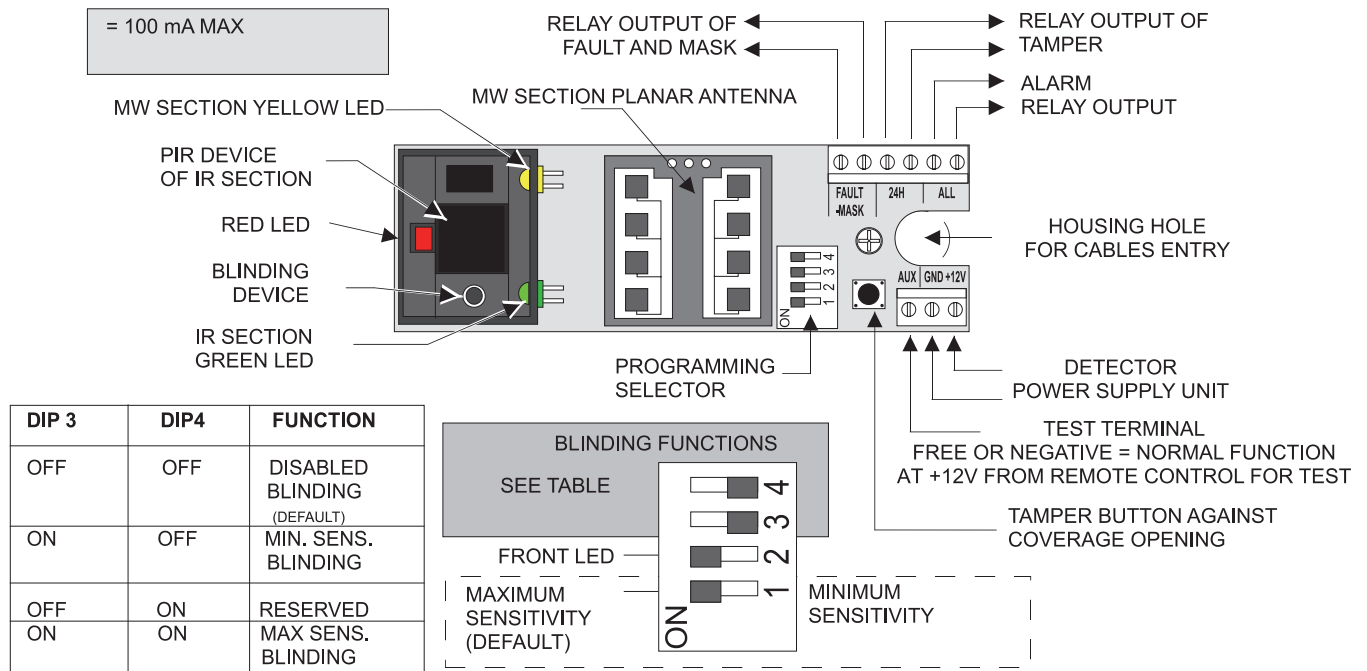
### 3.5 Detector mounting - Suggestions



In the window mounting (door-window) and shutter/roll-up shutter place the detector to at least 3 cm away. Distances less could affect the anti-blinding device, especially with reflective surfaces (ex. white shutters), **in case it is not possible to comply with the minimum distance is recommended to place the dip 3 and 4 to OFF.**

The detector must be installed with the lens placed in the centre of the window or door.

## 4. ELECTRICAL CONNECTIONS



Information provided by the LEDs:

Alarm	IR alarm	MW alarm
Three LEDs are fixed ON.	Green LED fixed ON.	Yellow LED fixed ON.
<b>Power supply fault</b>	<b>Blinding alarm</b>	<b>MW pulse count (max 2)</b>
Flashing three LEDs.	Green LED flashing.	Yellow LED flashing.
<b>Power-on stabilization</b>	<b>Remote control test</b>	
Red led fixed on.	Yellow and green LED flashing for 7s.	

## 5. OPERATION

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### 5.1 Precautions before system arming

- It is recommended that the shutter or roll-up shutter are closed before the system arming.
- In case of arming with shutter/roll-up shutter please attention to the external coverage because people or animals passed less than 20 cm away may be detected.
- The internal window/door-window must be closed before the system arming (there must be no vibration with the wind and air exchange)
- In the case of detector installation with an existing mosquito net it is recommended to rewind the mosquito net before system arming.

### 5.2 Precautions for anti-blinding system

- If it is enabled the anti-blinding function is recommended to set the maximum sensitivity if installation is performed on a door.
- In any case, before anti-blinding function enabling make sure there are no obstacles, reflective objects usually close to the detector, see section 3.5.

**Note:** the best performance obtained by the detector may be obtained if the detector is connected to a power control unit that can separately distinguish the alarm events, tamper and fault and that the device for periodic control can automatically put in test.

### 5.3 Remote test

By applying a specific voltage to DC12V, it is possible to check the operation status of the detector:

- The alarm relay will be activated after 5s if the operation is normal.
- The alarm relay will be activated after 5s if there is a failure condition.

The test status is signalled by a green and yellow LEDs flashing.

**Note:** the detector automatically returns to the operating condition at the end of the test. To perform again the test, cut power from terminal test and reapply.