

# INTRODUCTION

By selecting this device, you have acquired advanced active access-prevention technology. With **BANDIT** we offer you an affordable system which guarantees operational reliability, top performance and a discrete design.

More and more private and public buildings are being equipped with a protection system against burglary. When armed, these systems detect a burglary attempt. The detection is generally communicated by means of a siren and/or strobe or sometimes an automatic phone call to an alarm control centre or police station. In real terms these notifications are satisfying, but the subsequent human intervention often arrives more than 10 minutes after the event! Burglars are aware of this and use this time to steal the most valuable things and get away in time.

**BANDIT** offers a unique and active solution to this problem. For this system is totally capable of filling a large office, store or other room, within a few seconds, with a non transparent fog. This fog prevents persons from entering the room for at least 10 minutes after setting off the alarm, since they cannot see a thing. The ejected fog has a soft mint smell (to avoid possible fire interpretation by outsiders), it is colourless and leaves no traces. So the fog safely and quickly disables the vision capabilities of unwanted visitors.

**BANDIT** is installed in those rooms that contain the most valuable objects; by doing so, burglary damage is effectively limited to a strict minimum.

## Advantages:

- Fills 28 m<sup>3</sup> of space per second of fog expulsion.
- Extremely compact and discrete design.
- A system free of maintenance with very high operational reliability (by lack of moving components), with a warranty of 3 years.
- The standard integrated "Power saver" and good thermal isolation, maintains a very low energy consumption, between 30 and 40 W/h, depending on the adjusted fog expulsion period.
- Continuous control of liquid level.
- In case of interrupted power supply voltage (230 VAC), operation is guaranteed: electronics ~24 hours, fog generator ~2 hours.
- The PCB is equipped with 3 dipswitch blocks (with a total of 12 dips). It gives you the possibility to easily program all elementary adjustments in a rather simple way without the need of other adjustment devices, such as PC/laptop and/or adjustment links.
- The PCB is equipped with a jumper [Blue jump], by removing this jumper the device will behave to conform to the EN 50131-8 (no visual indications by the 6 front LED's), see also page 14.
- The device is prepared through plug-in connectors, to be extended with a control box and/or a wireless remote control.
- If mentioned while ordered, the device can be equipped with additional options, such as: straight ejection mouth, elongated ejection mouth, etc
- The outer case is painted in a scratch resistant dark granite-like paint. As an additional option while ordering, you can choose an optional colour (blu, red, white or beige)

### **Location:**

- To prevent fire or shock hazard, do not expose this appliance to rain or moisture.
- Install the device in such a way to allow a good airflow.
- Only install the appliance as described, i.e. In vertical position, with the text on the front panel being readable from the floor. The maximum angle of inclination is 15° to the front and 10° in all other directions.
- System malfunction is possible at ambient temperatures above 50°C. Keep the appliance away from heat sources such as radiators, heating elements, stoves or other heat producing devices.
- The appliance is unexpectedly heavy, ~28 kg. It needs to be fixed on a sufficiently solid surface. Use sufficiently strong fixing materials, preferably our 240 floor or wall mounting, which are very solid and reliable supports for your unit.

### **Fog ejection control:**

- The ejection nozzle is normally about 5°C warmer than the temperature of the environment, so not warm enough to get burned by. However during fog ejection and the first two minutes after, this nozzle can reach a temperature up to 120° C . Avoid direct contact with the nozzle after a fog ejection to prevent skin burns.
- A fog ejection test only should be performed when:
  - a) All persons in the surrounding area and fire safety personnel have been notified.
  - b) There is nobody in the immediate surroundings and/or direction of ejection.
- During a fog ejection test, it is prohibited to look towards the direction of the ejection nozzle from a distance less than 1 metres.

### **Standards:**

- Complies with European CE and EMC Standards.
- Complies with the Dutch Standard of the NCP: IWC11201-M and REQ 0248
- Complies with the French Standard of the CNPP: test report AI 100017  
approval nr 2010-0032
- Complies with the Danish Standard of the F&P: class 2, AIA 212  
F&P registration n°: 10.212-00418
- Complies with the Swedish standard of the INTYG, certification n° 11 - 400
- Complies with the Norwegian standard of the FG
- Complies with the 'offendicula' report of the Italian legislation.
- Complies with the new European regulations within the EN50131-8  
CNPP approval n°2010-0032
- Certified by an accredited body to comply with EN50131-8 system 5,  
APPLICA P20760-01-15-INT
- Certalarm, European Quality norm, certificate 000172/01
- Certified ISO 9001:2008

### **Industrial property:**

- **BANDIT** is a registered trade mark.
- **HY-3** is a registered trade mark.
- The **BANDIT** fog generator process is internationally protected by several patents.

### **Producer:**

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The unit is packed in a cardboard box:

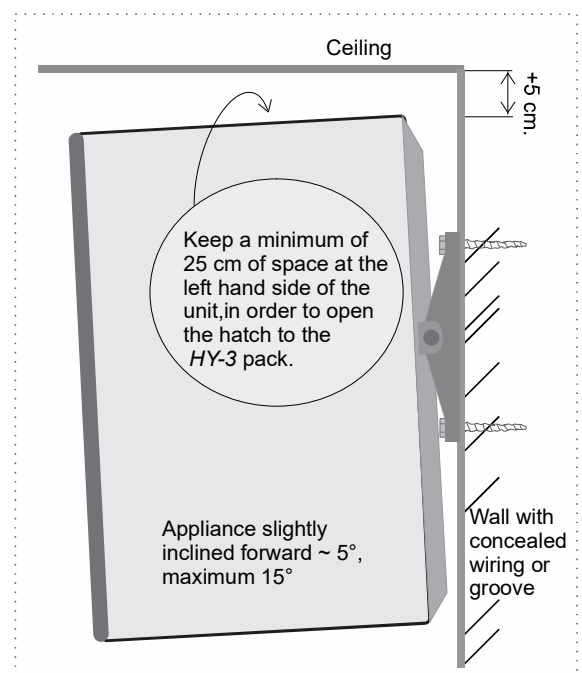
39 x 39 x 40 cm which contains:

- **BANDIT 240 DB** device.
- double sided warning sticker “Burglary...”
- this installation manual.
- "HY-3 grip" tool

## INSTALLATION

As a professional, you'll have to consider properly, what would be the most effective place to install the appliance. Here are some guidelines which can help you with your decision:

- ☑ Logically, you'll place the appliance so that the fog expulsion points in the direction of the supposed burglary entrance or in the area which contains the most valuable objects. Should this entrance provide a potential air passage to outside (i.e. a garage door, a glass frontage which is sensitive for break-in, etc.), You'll have to prevent the ejection nozzle being pointed in this direction to avoid the potential fog ejection to be blown outside. In this case, you'll have to point the nozzle towards a side wall to break the ejection pressure. This way, the fog will “cloud out” and only a small amount of fog will be blown directly to the outside.
- ☑ Avoid the ejected fog forming a oneway trap. The ejected fog is supposed to form a strong take-away reducing barrier. Burglars are not supposed to be caught. Further, if there is a false alarm, the chances of trapping innocent persons is greater than catching burglars in a real burglary!
- ☑ Determine the place in such a way that the ejection nozzle does not point in the direction of fragile objects. The powerful fog expulsion could blow down these objects.
- ☑ There has to be a free passage area for the ejected fog, of at least 5 to 6 metres before it bounces against a fog blocking obstacle, i.e. a frontwall. The space of about 6 metres in front of the ejection nozzle will be the first to be filled out with fog, and this within 2 seconds.
- ☑ If there are already PIR-sensors installed in the room to be guarded and you don't want to take any risks with false triggering because of fog expulsion, you'll have to replace these PIR's with combi-sensors (PIR/radar). If you have to install a new installation, use combi-sensors for volumetric detection in areas where **BANDIT** is installed. Radar never detects floating clouds, but most PIR's do sporadically...
- ☑ Make sure that no burglar can come near the unit without being detected first by a sensor. This sensor has to start a fog expulsion, independently of an eventual entrance delay.

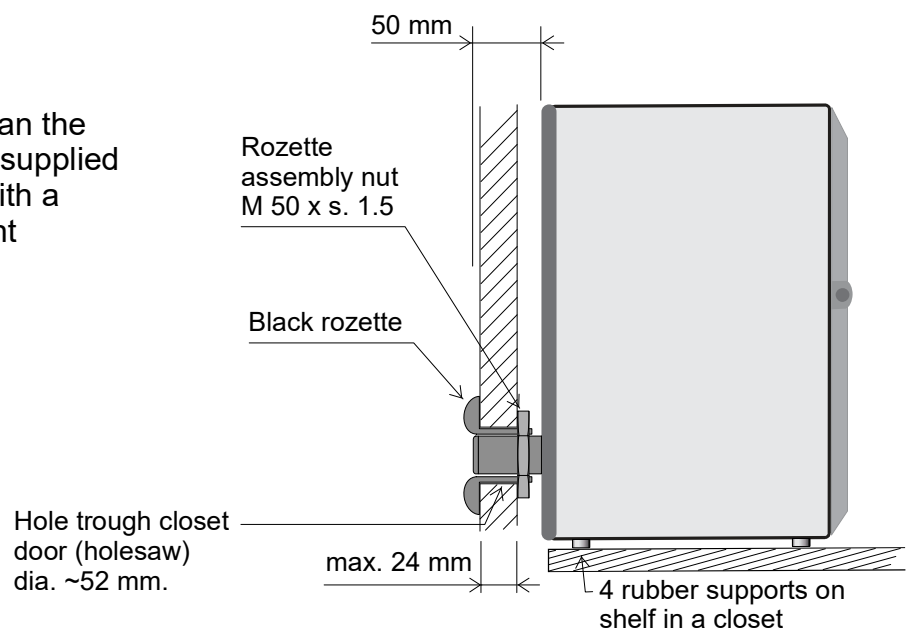


- ☑ Make sure the **BANDIT** is firmly secured to wall or floor, to prevent a burglar with prior knowledge from throwing the unit quickly through a window.  
Use an optional available **BANDIT** wallmounting to install the unit against a wall:  
There are two kinds of wallmounting: flat or swivel. Use the re-usable mounting help "Handy boy" to install the unit, as this tool carries the unit and makes it possible that any person can install the device easily by himself.
  - For wallmounting against a solid brick wall, use plugs and screws supplied within
  - For wallmounting against a double plaster wall, use special metal plaster-plugs available in any hardware store.
  - For wallmounting against a single layer plaster wall: install the unit only in an inner corner and order in addition an optional plaster inner corner support plate. Don't install the unit with a normal wallmounting against these kind of walls to avoid the device falling on the floor after a while, due to its weight.
- ☑ For floor mounting, use **BANDIT** floor mounting. This floor mounting is screwed into the floor or stuck to it with included double-sided adhesive tape. The device is installed at 6 cm off the floor to avoid possible damage due to cleaning tools or water.

### Hidden mounting of the appliance

- ☑ For installation into a closet, order the device with option /L. This unit is supplied with 4 rubber supports, a 50 mm extended ejection nozzle (a standard closet door has a thickness of approximately 20 mm) and a heat resistant black metal door rosette (ejection nozzle passage). This way you can hide the device and at the outside only a little rosette (dia. ~50) will be visible. Make sure you provide a ventilation grid above and beneath to avoid too much rising of the temperature in the closet due to **BANDIT**'s heat loss. With an ambient temperature above 50°C, the unit will activate its technical output [Okout] and you can expect damage on the internal lead battery. Also available option besides the regular /R0 (straith ejection mouth) is the option /L (prolonged ejection mouth).

☞ Do not use any other rosette than the one supplied with the unit. The supplied rosette is made of aluminium with a special heat and steam resistant coating.

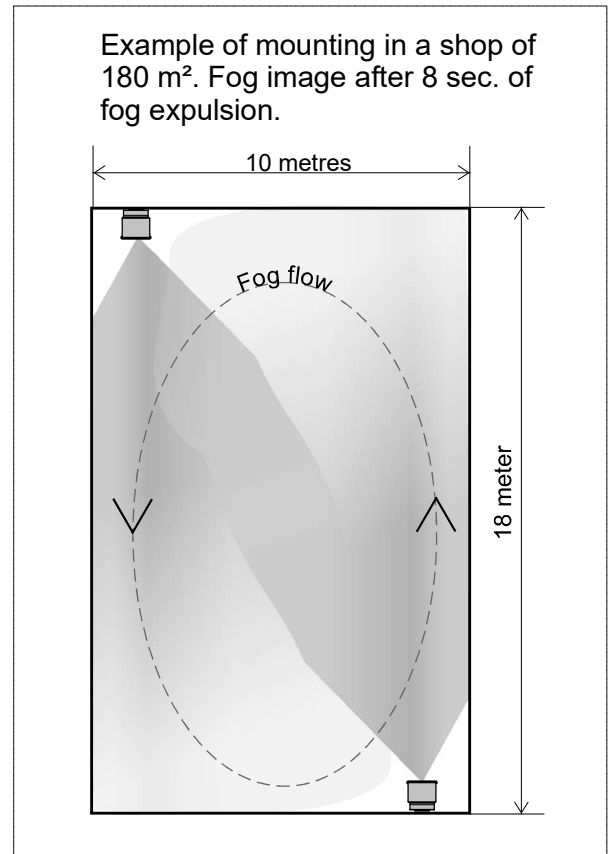
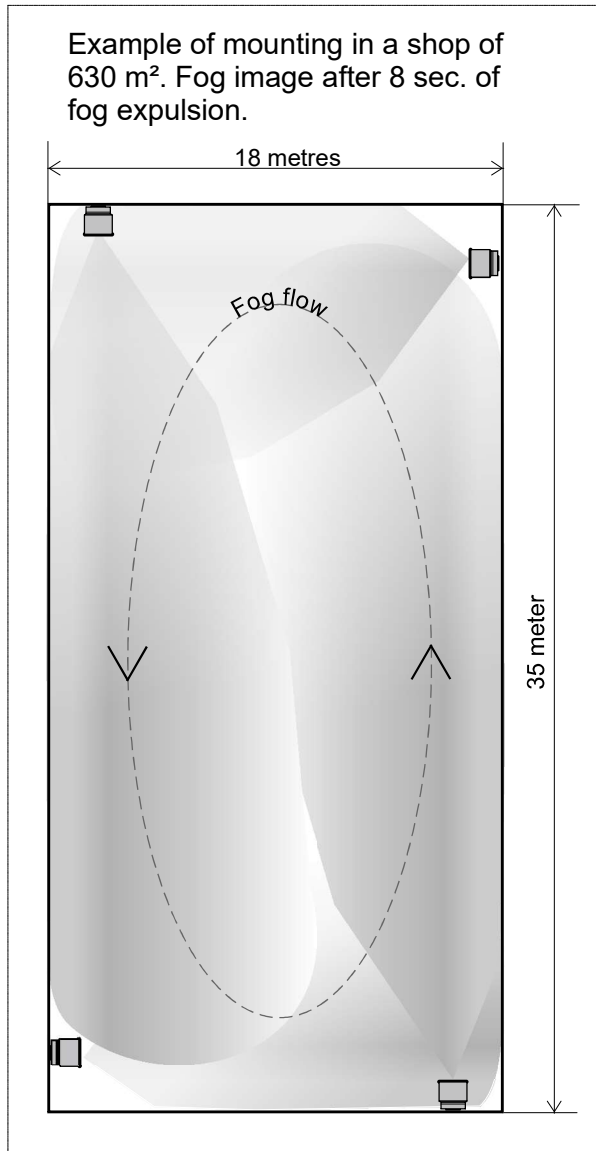


**Mounting aid:** handy boy.

This optional tool is used to install the device against a wall. It is attached with two pins to the wall mounting and so it makes a solid shelf.

On this temporary shelf, **BANDIT** is wired and adjusted. After installation, the two pins are pulled out, releasing the handy boy, so it can be used again in the next installation. You'll save yourself a lot of trouble to keep the device at a working height while connection works are being performed.

**Mounting more than one BANDIT 240 devices in one large room.**

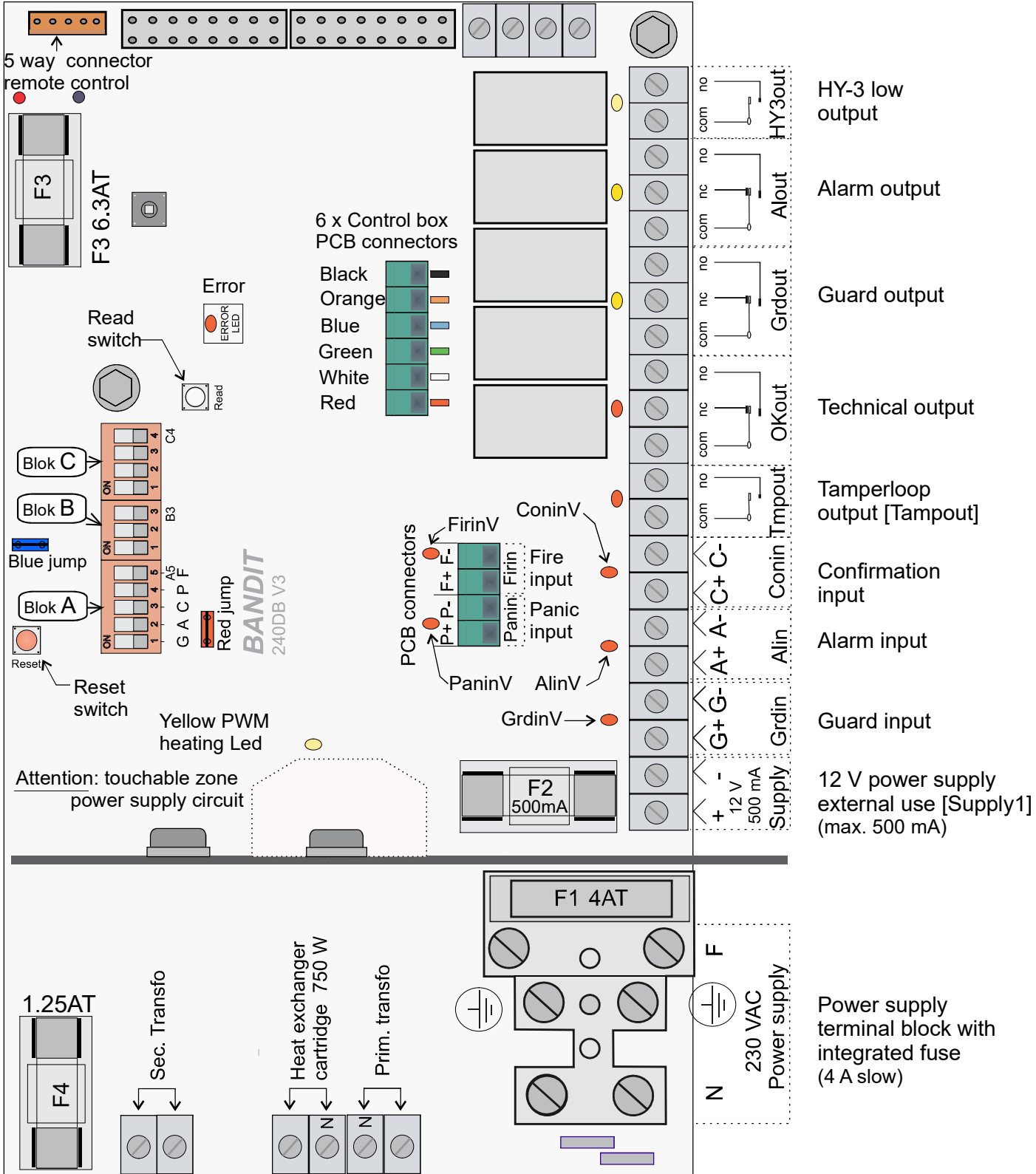


The **BANDIT 240** has a room filling capacity of ~28 m<sup>3</sup> per second. This corresponds with ~10 m<sup>2</sup>/sec. The max. surface area which can be secured with one device is equal to the max. fog expulsion period = 18 s x 10m<sup>2</sup>/s which is 180 m<sup>2</sup>. For larger surfaces, such as: large shops and office spaces, one has to install more devices, one device each 170 m<sup>2</sup>

With normal ceiling height of 2.8 metres. Install the units in such a way that the fog stream of one device points next to, but not in the direction of the next unit. This way, there is a round stream of fog throughout the entire place. This guarantees the fastest filling of the room.

While mounting, keep in mind to provide a free passage for the fog stream. After a while, the store keeper has forgotten about the units and stacks boxes and displays right in front of the fog ejector of the devices.

# PCB layout



# ELECTRICAL CONNECTION

The **BANDIT** 240 DB is equipped with simple and yet versatile wiring schemes. This version is adjustable through internal dip switches. The disadvantage of this system is the restriction of possible adjustments, while the big advantage is that it can be installed and adjusted without using PC/laptop or an external adjustment through data or phone connection.

This unit is intended to be connected to an existing alarm system, without taking care itself of complex tasks.

The built-in electronic system takes care of controlling and securing:

- the fog generator (2 x temperature + frequency control of valve).
- sabotage guard of rear cover, *HY-3* pack hatch and optional connected "Control Box".
- control of front- and PCB LED's.
- read out of inputs and dipswitch adjustments.
- control of tamper-, technical-, guard- and alarm outputs.
- control of internal battery, glass fuses and internal fan.
- digital and analogue communication with the *HY-3* pack.

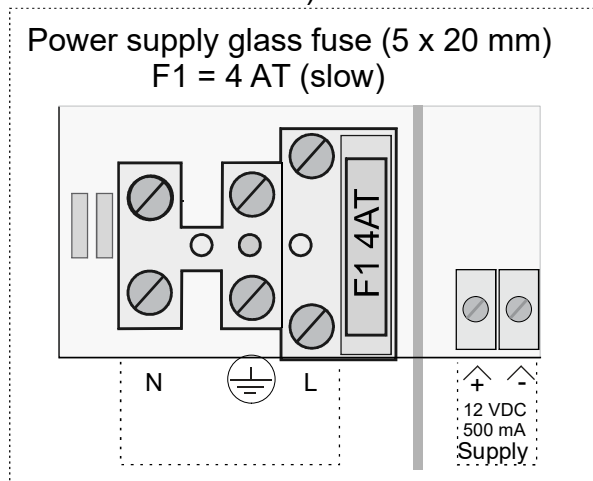
The complete electrical system is accessible by removing the rear cover of **BANDIT** (unscrewing 4 x M4 cross head screw). The rear cover is tamper secured, so be sure that the unit is not in guard mode and that the control room (optional) is warned.

**Connection to the mains power supply:** on the left, beneath the PCB, you'll find a 3 way terminal block with integrated main fuse.

Connect the left connector strip (N) to the mains neutral (blue wire), the middle one to the yellow/green earth grounding wire and the right connector strip (L) to the mains phase (brown or black wire). Switching phase and neutral has no effect to the function of **BANDIT**.

The unit is secured for mains failures and can be practically seen as an Ohmic power load.

Connect the power cable through the strain relief connector (~1 cm beneath the left entrance in the metal back frame).



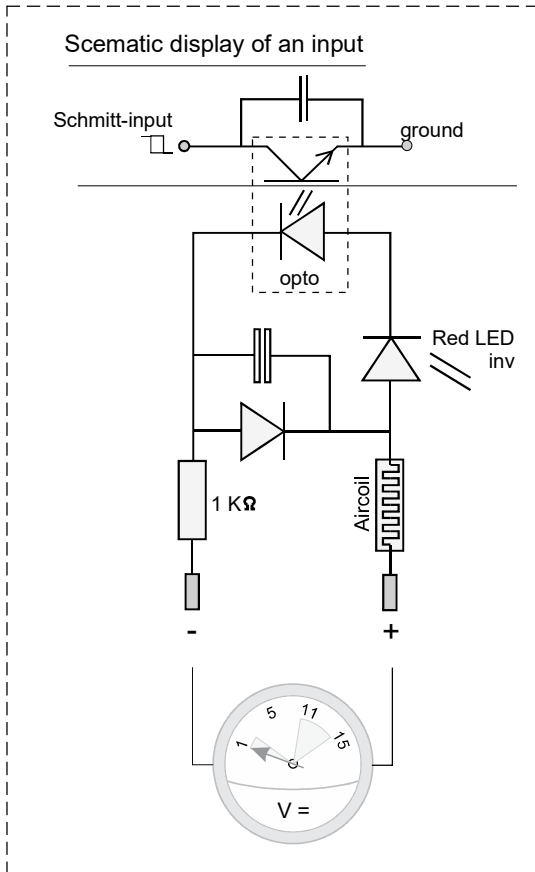
- Preferably use a separate fuse, directly coming from the main power supply or connect to existing power circuit of installed controlling alarm system (**BANDIT** has a peak current consumption of 3.5 A for each unit).
- For easy installing, use flexible connection wires 3 x 1.5 mm<sup>2</sup> with end splices.

**NOTE: DISCONNECTION TO THE MAINS POWER SUPPLY DIRECTLY THROUGH THE MAINS FUSE IN THE ELECTRICAL INSTALLATION**

- For complete PCB (printed circuit board) layout with description of connector strips, see page 6.
- For detailed description of LED functions, see page 13 and 14.

# Inputs

All inputs are equipped with opto-couplers, which provide a perfect separation between the internal **BANDIT** electronics and the “outside world”. This way, all unwanted disturbing signals, caused by lightning, induction or R.F. tensions, are kept outside.



## Electrical properties of an input:

- polarised (+ and - signs beneath connectors on PCB).
- secured for possible polarity reverse and equipped with RC- and LC- filter.
- an input has to be stable for at least 0.2 seconds before the new situation is accepted.
- the connected voltage can be either from an external source or from the 12 V **BANDIT** supply source itself [Supply].
- the input current with 12 V is ~ 10 mA each input.
- each input is equipped with a schmitt-input, after the opto-coupler. The trigger voltage is approximately 6 V with hysteresis of + and - 1V. This way, unreliable input voltages are being avoided as much as possible.

After adjustments: check the voltage over the inputs.

- Consider < 2 V as no volts.
- Consider > 9 V as 12 V .

Voltages between 2 and 9 V are not normal and will cause problems sooner or later.


The device, model 240DBv3 , is equipped with 5 inputs. Unlike other Bandit models, where every in- and output is free adjustable, in this 240DB model, the function of each input is fixed through hardware settings in the PCB structure.

You'll find a detailed description of each input function on the following pages.



## Dipblock A: 5 x INPUTS

### Dip A1: guard input [Grdin] (level)

- A1 on (1): active if 12 V over [Grdin]
-  - A1 off (0): active if 0 V over [Grdin]

LED GrdinV on if 12V over guard input

### Dip A2: alarm input [Alin] (puls) start fog ejection


**ONLY FUNCTIONAL IF** [Grdin] and [Conin] active, [Firin] not active

- A2 on (1): active if puls 12 V over [Alin]
- A2 off (0): active if puls 0 V over [Alin]

LED AlinV lit if 12V over alarm input

### Dip A3: confirmation input [Conin] (puls)

**ONLY FUNCTIONAL IF** [Grdin] and [Alin] active, [Firin] not active

-  - A3 on (1): active if puls 12 V over [Conin]
- A3 off (0): active if puls 0 V over [Conin]

**Note: if [Conin] is not used Dip A3 has to be put on “off (0)” position, else**


**NO FOG EJECTION**

LED ConinV lit if 12V over confirmation input

### Dip A4: panic input [Panin] (level) panic fog ejection, eg panic button

**ONLY FUNCTIONAL IF** [Firin] not active

- A4 on (1): active if 12 V over [Panin]
- A4 off (0): active if 0 V over [Panin]

 LED PaninV lit if 12V over panic input

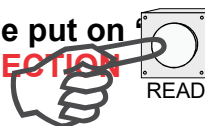
### Dip A5: fire input [Firin] (level) **IF ACTIVE, NO FOG EJECTION**

- A5 on (1): active if 12 V over [Firin]
- A5 off (0): active if 0 V over [Firin]

LED FirinV lit if 12V over fire input

**Note: if [Firin] is not used Dip A5 has to be put on “on (1)” position, else**

**NO FOG EJECTION**





## Dipblock B: OPTIONAL REMOTE CONTROL and CONTROL BOX

DIP B1 and B2 determine the function of both channels (ch1 and ch2) of the transmitter:



dip B1	dip B2	Left transmitter button (ch.1)△	Right transmitter button (ch.2)○
0	0	Guard	Guard
0	1	Panic	Panic
1	0	Guard	Panic
1	1	Guard	Alarm

Dip B3: Announcing "Control Box".

- B3 off (0): "Control Box" is connected and is recognized
- B3 on (1): no "Control Box" connected



## Dipblock C: adjustment of fog ejection period (28m<sup>3</sup> / seconde)

room volume in m <sup>3</sup>	Fog ejection in seconds	dip C1	dip C2	dip C3	dip C4
56	2	0	0	0	0
84	3	0	0	0	1
112	4	0	0	1	0
140	5	0	0	1	1
168	6	0	1	0	0
196	7	0	1	0	1
224	8	0	1	1	0
252	9	0	1	1	1
280	10	1	0	0	0
308	11	1	0	0	1
336	12	1	0	1	0
364	13	1	0	1	1
392	14	1	1	0	0
420	15	1	1	0	1
448	16	1	1	1	0
504	18	1	1	1	1



The lower the adjusted ejection period, the lower the operational temperature.

**ATTENTION:** AFTER SETTING OR CHANGING POSITION OF DIPSWITCH, ALWAYS CONFIRM THIS NEW SETTING BY PUSHING THE **READ** SWITCH



## 6 x outputs

### 1. [Supply] = 12 volt supply output (fixed defined), max 500mA

Supply for small external power users such as additional inner sirene, Jumbo-LED, PIR-sensors... Also useful as power supply to external relay contacts, to send back voltage signals to the Bandit units inputs.

**Note:** - never interfere this power supply with the one coming from the controlling alarm system or with other devices with their own power supply.  
- max continuous load rate ~450mA

### 2. [Tmpout] = sabotage report (tamperloop), COM/NO relay contact, max load rate 1 Amp/24 V

- a) COM and NO closed (no report) if:
  - rear cover closed
  - HY-3 pack in unit and side hatch closed
- b) COM and NO open, sabotage report
  - ☞ PCB LED Tmpout lit

common application: integration into the tamperloop of the controlling alarm system

**Note:** opening the sidehatch or rear cover while the unit is in Guard mode, will be considered as a possible sabotage with a fog ejection as result.  
This "sabotage" fog ejection can not be interrupted

### 3. [Okout] = report technical failure, COM/NC/NO relay contact, max load rate 1 Amp/24 V

- a) COM and NO closed, no report (everything ok)
- b) COM and NC closed, report of a possible technical failure (listing failures see info error Led)
  - also - if an abnormal condition (e.g. red jump missing, [Firin] active, control box button still switched on) remains present for over 3 hours
  - if there would occur a lack of presence of mains supply (mains or head fuse F1)
  - if level fog fluid is less than 30% or if no HY-3 pack is present

☞ PCB LED Okout lit

common application: connection to a programmable input of the controlling alarm system or to an auto-dialer.

### 4. [Grdout] = report guard mode, COM/NC/NO relay contact, max load rate 1 Amp/24 V

- a) COM and NC closed, no report
- b) COM and NO closed, report [Grdin] active (guard mode)

☞ PCB LED Grdout lit

common application: connection to a programmable input of the controlling alarm system or to an auto-dialer or to switch directly a Jumbo-Led

### 5. [Alout] = report alarm or panic mode, COM/NC/NO relay contact, max load rate 1 Amp/24 V

- a) COM and NC closed, no report
- b) COM and NO closed, report [Alin] or [Panin] active

☞ PCB LED Alout lit

common application: connection to a programmable input of the controlling alarm system or to an auto-dialer or to activate directly an inner sirene

### 6. [HY-3out] = report liquid level too low, COM/NO relay contact, max load rate 1 Amp/24 V

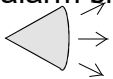
- a) COM and NO open, no report
- b) COM and NO closed, report level fog fluid is less than 30%

☞ PCB LED HY-3 out lit

common application: connection to a programmable input of the controlling alarm system or to an auto-dialer (**report exchange HY-3 pack**)

# SPECIFICATIONS

## Descriptions:

- Dimensions: \_\_\_\_\_ 270 mm wide x 365 mm high x 255 mm deep.
- Weight: \_\_\_\_\_ 28 kg.
- Max. Mains supply failure: \_\_\_\_\_ Fog generator +2 hours and electronics +24 hours.
- Reaction time: \_\_\_\_\_ 0.1 second between alarm signal and fog ejection.
- Fog ejection image: \_\_\_\_\_ /R60, 60° (standard)  , or

\_\_\_\_\_ /R0, straight ahead 

## Fog generator:

- Fog ejection capacity: \_\_\_\_\_ 28 m<sup>3</sup> filling of space / second with 25 cm eye<-> object.
- Fog ejection pressure: \_\_\_\_\_ 16 BAR (1.6 Mpa).
- Maximum fog ejection period: \_\_\_\_\_ 18 seconds.
- Warm-up time: \_\_\_\_\_ 50 minutes from cold condition.
- Max./min. Environmental temp.: \_\_\_\_\_ maximum 50°C and minimum 0°C.
- Maximum heat loss: \_\_\_\_\_ 40 W/hour
- Nominal ejected droplet size: \_\_\_\_\_ section 0,0004 mm (full aerosol)
- Protection index: \_\_\_\_\_ IP21 - IK08
- Environmental class: \_\_\_\_\_ Class II

## HY-3 pack:

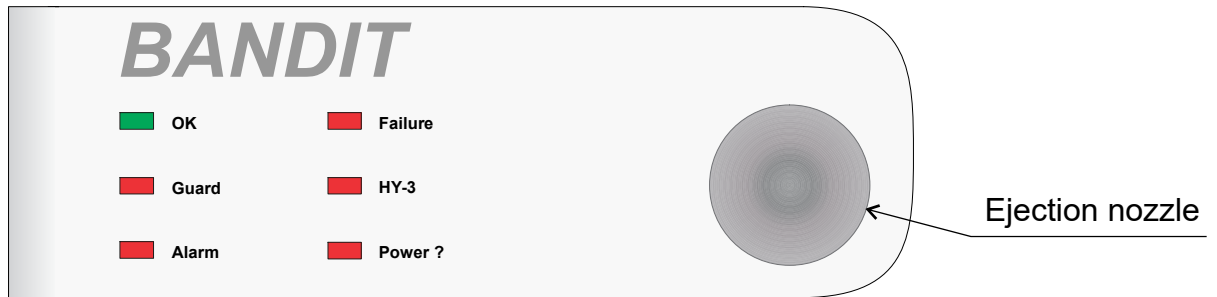
- HY-3 fluid contents: \_\_\_\_\_ 1.4 litre.
- Nominal working pressure: \_\_\_\_\_ 16 BAR (1.6 Mpa)
- Construction material: \_\_\_\_\_ rvs 304L and aluminium AlMgS1.
- Built-in electronics: \_\_\_\_\_ digital temperature sensor and analogue/digital E<sup>2</sup>prom memory level.  
 \_\_\_\_\_ Tamper switch and control LED.  
 \_\_\_\_\_ integrated propellant-expulsion security  
 \_\_\_\_\_ direct working 12 V NC valve
- Weight: \_\_\_\_\_ 6 kg

## Electrical:

- Min./max mains power supply: \_\_\_\_\_ 208 to 240 VAC
- Frequency: \_\_\_\_\_ 50 to 60 Hz.
- Nominal 12 V low voltage: \_\_\_\_\_ 13.1 V DC from 0 tot max. 1 A of load.
- Max peak current at 230 VAC: \_\_\_\_\_ 3.5 A.
- Average power consumption: \_\_\_\_\_ 40 W/hour.
- Capacity heating element: \_\_\_\_\_ 750 W.
- Inputs: \_\_\_\_\_ all inputs are insulated by an opto-coupler.
- Outputs: \_\_\_\_\_ all outputs are relais outputs
- Current back-up: \_\_\_\_\_ 12 V / 1.9 - 2.4 Ah (sealed lead/acid battery)
- Value glass fuses: \_\_\_\_\_ F1 = 4 AT      F2 = 500 mA  
 \_\_\_\_\_ F3 = 6.3 AT    F4 = 1.25 AT
- Tension/freq./disp.: \_\_\_\_\_ 12VDC / 500 mA / Supply
- Max. outgoing ondulation supply: \_\_\_\_\_ Primary 220VAC / Secondary 17 VAC

# COMMUNICATION STATUS

**FRONT LEDs:** For conformity with EN-50131-8, see next page: [Blue jump]



## OK LED (green)

- blinks: unit is warming up
- lit: unit is ready and standby (no other LED's are lit or blinking)
- blinks simultaneously with red failure LED:  
indication abnormal condition such as:
  - \* red jump not inserted
  - \* HY-3 pack not present
  - \* wrong type of HY-3 pack
  - \* Fire input active (NO FOG EJECTION POSSIBLE)
  - \* control box button still active (pushed in)
- blinks alternatively with red failure LED  
indication of beginning of failure display (times that red failure LED will blink)

## GUARD LED (red)

lit: unit is in guard mode

## ALARM LED (red)

- lit: unit is in alarm mode
- blinks: unit is in panic mode

## FAILURE LED (red)

- blinks simultaneously with OK LED: indication abnormal condition (see OK LED)
- blinks alternatively with OK LED: indication of failure display by frequency of blinking (times that red failure LED will blink, see table PCB error LED)

## HY-3 LED (red)

blinks: indication to exchange HY-3 pack

## POWER ? LED (red)

blinks: indication lack of mains power supply



When **BANDIT** is in Guard mode the green OK LED is lit even if the unit is not ready and standby. Also abnormal conditions, indications of possible failures or fluid shortage will not be displayed. In Guard mode, the unit will never reveal a possible function problem.

## Informative PCB LED

### Error LED (red):



**BANDIT** reports an eventual internal failure through its [Okout] output. The “Failure” frontLED as well as the PCB error LED will display more info on the nature of the failure and the eventual action to undertake. The frequency of blinking of these LED’s will identify the possible cause of the failure.

Blink-frequency	Reported failure	Action installer
1 x	Glass fuse F2 and/or F3 blown	Check F2 and/or F3
2 x	Charge of disconnected battery too low	Battery problem
3 x	Charge of connected battery too low	Battery- or power supply problem.
4 x	HY-3 pack above 50°C.	Environmental temperature too high or dusty textile front
5 x	The MCU measures unreal value(s) on the Control Box PCB-connector.	Control Box connecting cable and/or check position dip B3.
6 x	Internal MCU failure	Push-in reset switch, if no success, back to factory
7 x	Incorrect temperature of heat exchanger	Back to factory
8 x	Ventilator doesn't turn	Back to factory
9 x	The MCU measures unreal value(s)	Back to factory

With simultaneous failure reports, e.g. "F3 blown"(1x blinking) and "charge fo connected battery too low"(3 x blinking), these LED’s will first blink 1 time. If this failure is restored, the LED’s will blink 3 times to report the next failure following the list above.

### Isolating the fog ejection Red jump

While installing the unit or performing a maintenance on it, it is highly recommended to isolate the fog ejection by removing the [Red jump].

As long this [Red jump] is not inserted, no “accidental” fog ejection will be possible. The failure frontLED will blink simultaneously with the OK LED to indicate this abnormal condition. This situation will restore itself the moment [Red jump] will be reinserted.

### Conformity EN-50131-8



Blue jump

Under this EN-norm (and the governing EN 50131-1:2006 clause 8.5.2) no indication or visual information from an I&HAS may be shown to users or public (Acces level 1).

If the installation is intended to conform to this norm remove the [Blue jumper], as a result the 6 front LED’s will show no indication (LED’s off) as long this jumper is off.

## 10 STEPS TO CONNECT **BANDIT**

- 1 Open rear hatch (access to pcb), 4 x cross screw  
Remove red jump = security, no fog ejection possible
- 2 Open side hatch (access to battery and HY-3 pack), use handy **BANDIT** tool  
Connect battery and install HY-3 pack = fluid reservoir
- 3 Connect mains supply = start initial heating cycle ( $\pm$  50 minutes)
- 4 Connect inputs and outputs

☞ Minimum required functional connection **BANDIT** :  
Input GUARD (arming the system) AND  
Input ALARM (fog ejection)

- 5 Check if Front LED's react to incoming signals  
Simulation GUARD mode = simulation arming the system  
☞ FRONT LED'S "OK" (green) AND "GUARD" (red) are lit  
Internal fan (blower) activates for a few seconds  
Simulation Alarm mode = simulation fog ejection  
☞ FRONT LED'S "OK" (green) AND "GUARD" (red) AND "ALARM" are lit

**Note:** No real fog ejection because red jump is still removed

- 6 If check and simulation are ok, system back to STANDBY  
☞ FRONT LED'S "OK" (green) AND "FAILURE" blinking simultaneous
- 7 Put red jump back.  
☞ FRONT LED "OK" (green) blinks = system still heating  
lit fix = system ready to be used
- 8 close side hatch (use **BANDIT** tool)  
☞ Internal fan (blower) activates for a few seconds
- 9 close back hatch
- 10 make sure the unit is well fixed (use **BANDIT** mountings)

## MAINTENANCE

**BANDIT** is practically maintenance free (no mechanical components)

Functional maintenance: each 2 years, exchange 12V battery

- **BANDIT** has to be in standby mode (only Front LED "OK" (green) lit)
- if tamper circuit is connected, eventually report maintenance
- open side hatch (use **BANDIT** tool)
- remove HY-3 pack (use **BANDIT** tool)
- exchange battery
- install HY-3 pack (use **BANDIT** tool)
- close side hatch (use **BANDIT** tool)
- check if **BANDIT** is back into standby mode  
(only Front LED "OK"(green) lit fix)

**Note:** - Because the HY-3 pack has to be removed while doing maintenance, one could also exchange it (refill cost is neglectable)

- **BANDIT** "control box" is a handy tool to do the maintenance and to perform the yearly test (obligatory in certain countries). With this control box you can block the fog ejection and the tamper signal, and also perform a 1 second fog ejection test. The useful LED bar also indicates the fluid level in reserve.

**FOR MORE TECHNICAL INFO, PLEASE CHECK OUR SITE [WWW.BANDIT.BE](http://WWW.BANDIT.BE)**



The ejected fog is completely harmless for human beings and warm-blooded animals (although it is harmful for flying insects), even when staying more than 10 minutes in a completely sealed area ( $< 1 \text{ ml HY-3 aerosol} / \text{m}^3 \text{ air}$ ).

The only problem to be considered arise from the power of the fog expulsion and possible panic reaction to this sudden event.

However, following persons should avoid staying in those spaces filled with fog:

- persons suffering from claustrophobia (panic instantly)
- persons who are over sensitive to stressing situations, e.g. hyperventilate, racing pulse, etc....
- persons who are strong asthmatic or exceptionally sensitive to irritation of the respiratory system.
- children beneath the age of 9 (possible traumatic experience)

Although harmless, experience tells us, dogs (even trained guard dogs) refuse to enter a room filled with fog.

If requested, your **BANDIT**-dealer can always provide you with a copy of the *HY-3* MSDS (Material Safety Data Sheet) and/or the approval test of the Belgian Ministry of Health Affairs and/or the German TÜV report. You can always surf to our web site, [www.bandit.be](http://www.bandit.be), select documents and load the needed files as printable PDF files.

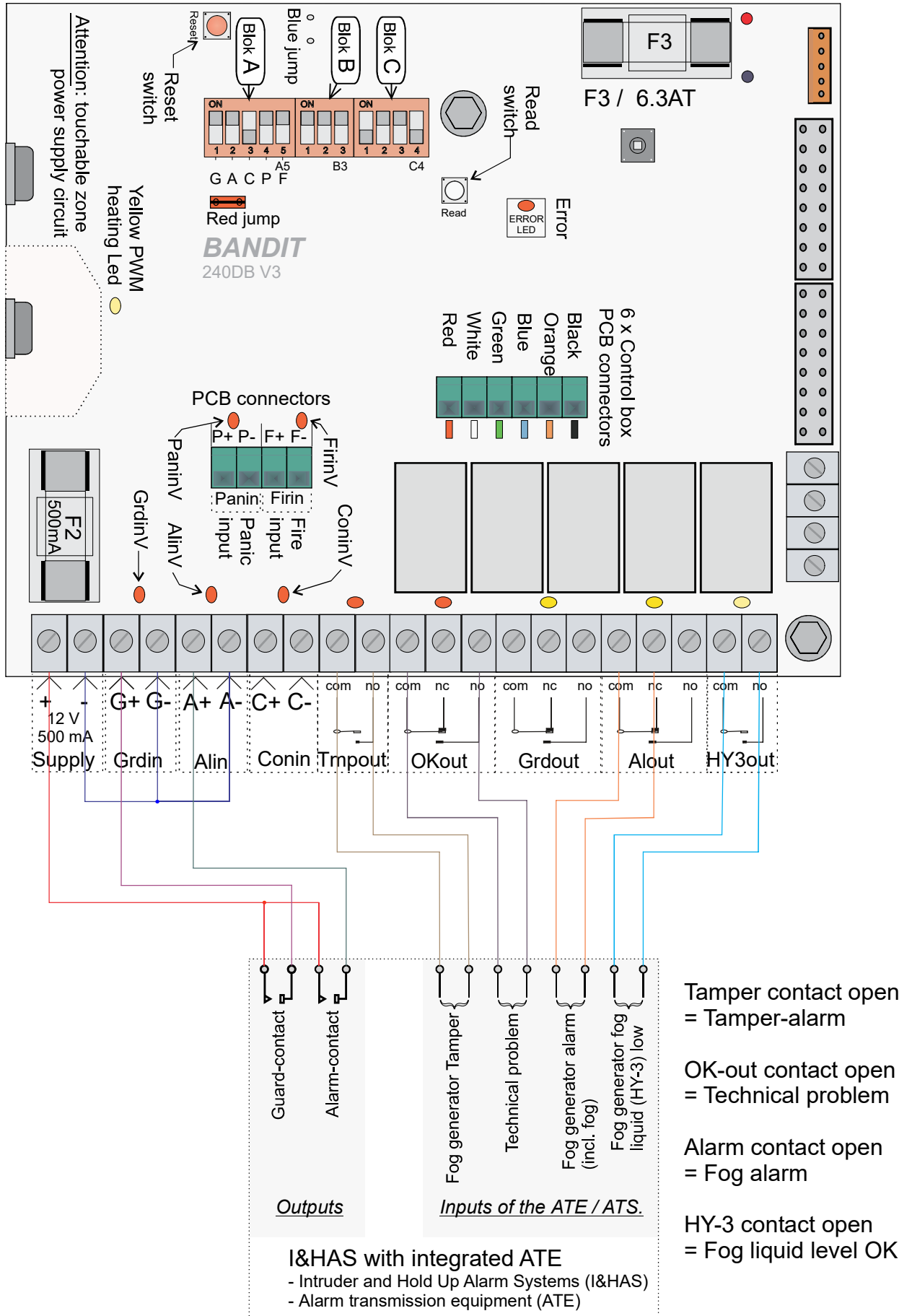
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## **WEEE LOGO**




The symbol above means that according to local laws and regulations your product shall be disposed of separately from household waste. When this product reaches its end of life, take it to a collection point designated by local authorities. The separate collection and recycling of your product at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

## Example scheme: I&HAS with relay contact outputs and integrated ATE



## Setting of Dip-switches for example scheme:

A new dip-switch setting is only carried out after pushing the Read switch 

- A1:** ON = the device is only in the Guard status as long as 12V is over [Grdin].  
So as long the Guard-contact is closed ( the LED GrdinV is on) **BANDIT** is in the Guard status.
- A2:** ON = as soon as a voltage transition from 0V (no voltage) to 12V appears over [Alin] while **BANDIT** is set to Guard status the alarm-mode start (if allowed by Fire input [Firin] and the Confirmation input [Conin] = fog ejection).
- A3:** OFF = Confirmation input not in use
- A4:** ON = Panic input not in use
- A5:** ON = Fire input not in use
  
- B1:** No remote control is connected, so this dip-switch has no function.
- B2:** No remote control is connected, so this dip-switch has no function.
- B3:** No Controlbox is connected, so this dip-switch is set to ON.

**C1 OFF, C2 ON, C3 ON and C4 OFF** = as an example the adjusted fog ejection time is 8 sec (see also pag. 10)

## Setting of Red and Blue jumper for example scheme.

Location of the jumpers: see page 6.

**Red jump:** ON = Normal position, only during installation or maintenance it is advised to take off the jumper (to prevent accidental fog ejections).

**Blue jump:** OFF = No front LED's will light up or indicate any status of the device or installation. This jumper removal is required if the installation is to be conform to EN-50131-8 (no indication or visual information from an I&HAS may be shown to users or public (Acces level 1)).

# Control Box

The "Control Box" is the most used and requested option which comes with the **BANDIT 240DB**. It permits the installer to easily perform unit tests during the annual inspection and easily open the side hatch in order to change the HY-3 pack

## Installation:

The box has to be installed in an access secured housing. Normally the "Control Box" is installed in the housing of an existing alarm panel. The required screws and nuts are delivered with the box. The box cannot be opened, the inner electronics and connecting wire are sealed within. The sealed in connecting wire has a standard length of 10 metres and it can be extended with a max. of 100 metres. In the packing

of the "Control Box" you'll find the mounting screws and nuts, also a 6 way plug-in connector with screw connection. First insert the connecting wire through the input swivel of the unit. Then strip the strands and connect to colours identified on the plug.



If explicitly requested while ordering, the "Control Box" can be delivered with requested length of the connecting wire (max 100 meter)



Slide the male plug on to the 6 way female connector on the PCB . Switch dip B3 to OFF (0) and push the read switch (read = update with dipswitch adjustments).



The wire and signal strains are sabotage secured through the unit.



**Consider well while installing that the person who has access to the "Control Box", also is in control of the functioning of the BANDIT fog generator.**

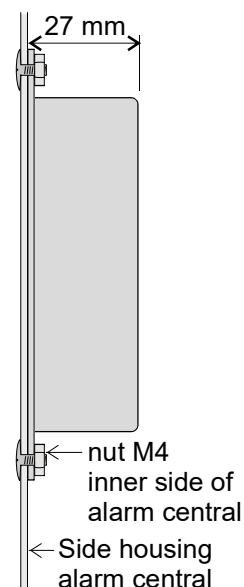
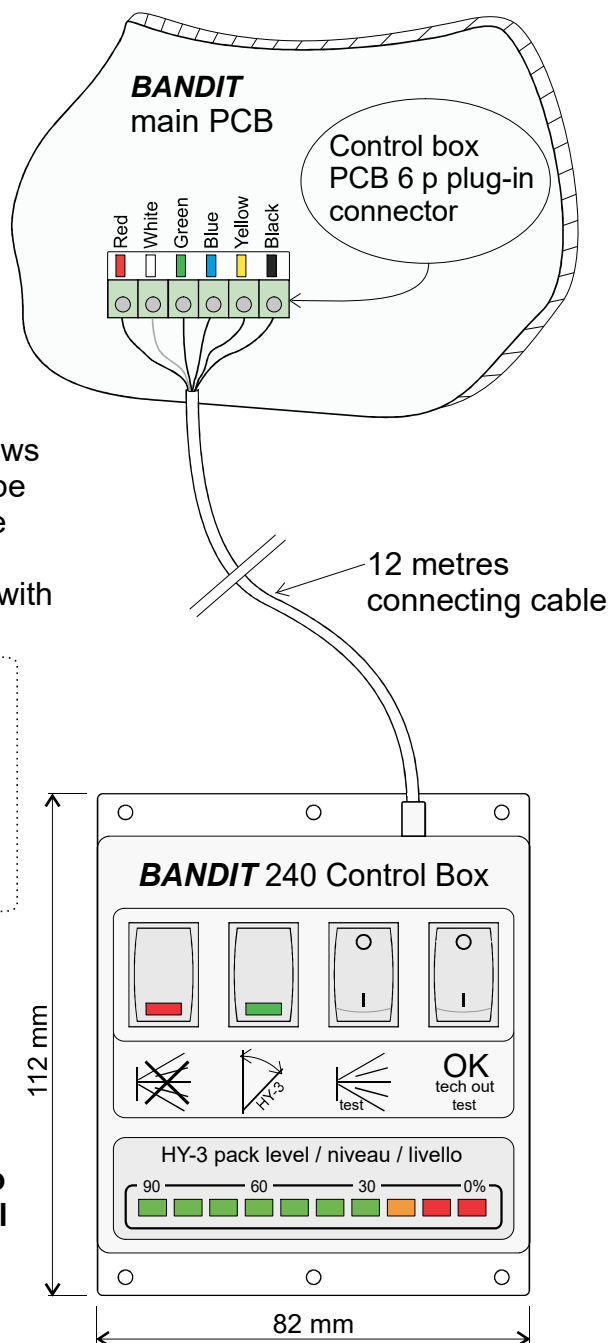
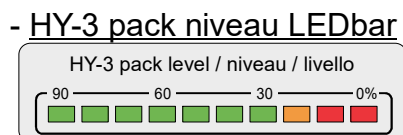
## Operation and function:

 Function idem Red Jump  
With active switch:  
- blocking fog ejection.  
 - frontled Failure blinks fast together with green OK Led.  
- Red LED on switch on.

 Function: HY-3 tamper overrule  
With active switch:  
- no tamper signaling while opening the HY-3 hatch.  
 - frontled Failure blinks fast together with green OK Led.  
- Green LED on switch on.

 Function: 1 sec fog ejection (test)  
Verification of ejection  


 Function: simulation Failure  
Verification of Failure signal transmission  




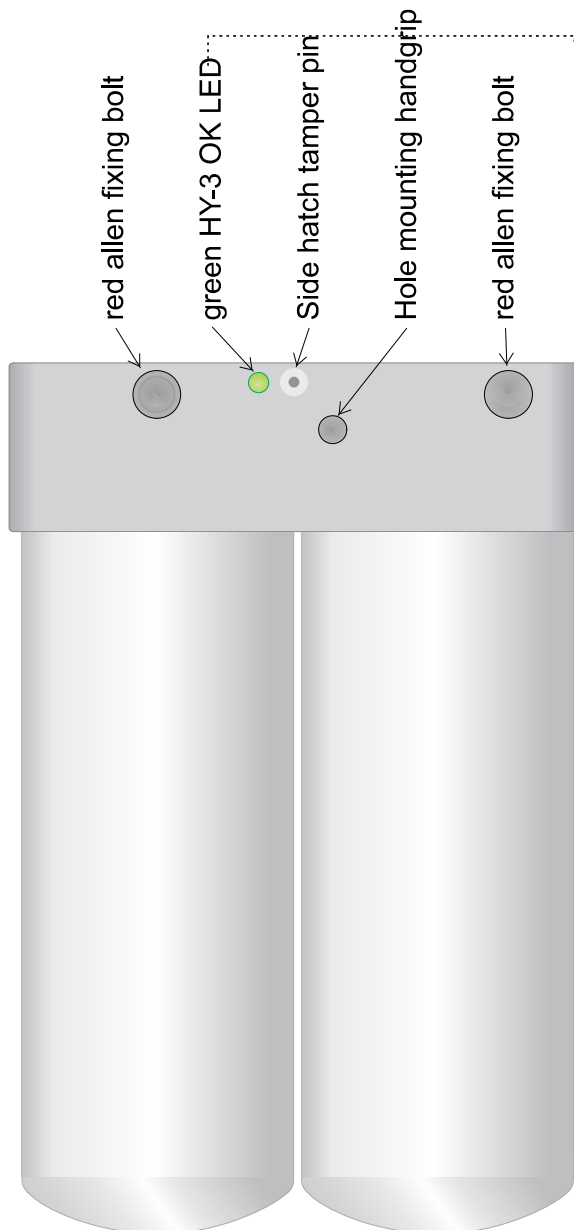
# **HY-3 PACK**

Mechanically, the inside of **BANDIT** consists out of 2 main components:

- The heat exchanger: this chrome-steel cylinder is filled with hot gasifying channels, which take care of ‘steaming-up’ the injected *HY-3* fluid to become a dry fog..
- The *HY-3 pack* with following integrated components: double *HY-3* fluid reservoir, NC valve, fluid filter, over pressure brake plate and electronics for memory data, temperature measurement, expulsion registration and communication. The inside of the *HY-3 pack* is constantly pressurised to ~ 16 BAR.

A filled *HY-3 pack* has a capacity of 1.4 litre (1400 ml) *HY-3* fluid. With a fog ejection, there is approximately 28 ml of fluid consumption each second, which means approximately a total of 54 seconds of fog expulsion available.

The MCU on the main PCB communicates continuously with the present *HY-3 pack* and calculates, by means of the passed through parameters, how much fluid still is available in the *HY-3 pack* .



If the level seems to have gone below the adjusted minimum value , the unit will request the replacement of the *HY-3 pack*. This is shown in different ways:

- *HY-3 pack* front LED blinks.
- The LED bar on the Control Box shows continuously the measured fluid level.
- If the unit has been asking for replacement of the *HY-3 pack*, this abnormal situation will be immediately seen as a technical failure and the [OKout] contacts will be put in rest for reporting this situation (COM and NO open).
- There is also a dedicated output to report the request to replace the *HY-3 pack*

### Functions of green HY-3 OK LED:

- ▶ Continuously on: everything OK
- ▶ Blinks: The *HY-3 pack* isn't accepted, because e.g.: demo *HY-3 pack*, an illegally filled or wrong type *HY-3* fluid (irritant or coloured fog) . The label has to mention RF (Regular Fog).
- ▶ Blinks fast (2 Hz): The *HY-3 pack* has to be replaced, because there isn't enough *HY-3* fluid left (beneath adjusted minimum level).
- ▶ Stays off: there is a fatal communication problem. Check if the sub-D connector is clean, try another *HY-3 pack*.