ALPHATRON

ALPHA BNWAS
Bridge Navigational Watch Alarm System

Installation & Operation manual

Lloyd's Register
TYPE APPROVED

Document : Manual Alphatron ALPHA BNWAS
Issue : 1.5

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CAUTION!

DO NOT modify this equipment in any way without obtaining a written permission from ALPHATRON MARINE otherwise you will void the warranty.

CAUTION!

This product is only to be installed by a certified installation company either approved by ALPHATRON MARINE or by one of its distributors, otherwise you will void the warranty. This product must be installed according to the prescribed installation methods in this manual, otherwise you will void the warranty.

CAUTION!

The components of the ALPHA BNWAS system contain no operator serviceable parts. Service and repair of both units shall only be done by trained and certified personal.

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INTRODUCTION :

The ALPHA BNWAS Bridge Navigational Watch Alarm System is flexible in use and complies to the latest International regulations (Approved according to IMO Resolution 128(75)). This BNWAS system is applicable on all sea-going vessels.

The ALPHA BNWAS has an internal buzzer and at the same time a relay for an audio alarm at the bridge. Also there are 2 relays contacts to call the officer and to call the crew.

Between the "call officer" and the "call crew" stage the time is adjustable from 90 to 180 seconds. This time is standard set to 90 seconds.
This time may be adjusted to the maximum time of 180 seconds when the watch alarm is placed on for example a large passenger vessel.

The status of the relays and buzzer are visualized by the three red LED's on the top of the front panel. When the watch alarm is malfunctioning or there is a power supply failure, the watch alarm will make a contact by closing the malfunction contact. This can be used for a alarm monitoring system (if available)

All LED's except for those of the "call officer" and "call crew" are dimmable in two stages which can be performed by holding the reset button for more than 1 second. The reset button is tamper proof because the time system will only recover on the rising edge of the internal and external reset input. The run led will flash when the watch time is running and is also available on the Alarm Buzzer or Remote Reset Button. The BNWAS control unit is provided with an emergency call function, this mode can be activated when immediate help is needed on the bridge.

ALPHA BNWAS HARDWARE

The basic hardware of the ALPHA BNWAS consists of the control unit. The characteristics of this control unit are:

- Dimensions 144x72mm (DIN);
- Power 18-33 Vdc;
- Current: 145 mA max;
- 4x potential free output contact;
- Autopilot input contact;
- Reset input;
- VDR NMEA output;

The mounting details are as following:

Other equipment

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Reset unit
(part of the 1st stage alarm)

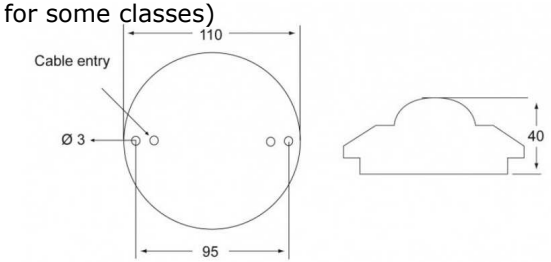
Officers selector switch

Cabin alarm unit
(part of the 2nd stage alarm)

Alarm unit
(Part of the 3rd stage)

Wing reset unit IP66

Motion sensor 24V (not approved for some classes)



Mounting Heights (m)	2.4M	3.0m	3.6m	4.2m
Coverage (Diameter)	6.0m	7.5m	9.0m	10.5m

OPERATION

The ALPHA BNWAS is easy to operate by the push buttons on the front panel of the watch alarm. Adjustments can be made to time and auto/on/off when the key switch is in its vertical position. In this position the key cannot be removed.

When the watch alarm is in the ON position or the auto pilot is on duty, the watch time is between 3 or 12 minutes. When the key is in the horizontal position no changes can be made to time or auto/on/off settings.

When the time exceeds the selected time limit, the reset LED will begin flashing. After 15 seconds the internal buzzer or the bridge siren will sound. The Officer of the Watch has to respond within 15 seconds by pushing the reset button on the front panel or optional remote reset button.

If he or she fails to do so the resting Officer will be alarmed in his cabin via the Alarm Buzzer. If there is still no response the stage 3 call crew will be triggered after 90–180 seconds.

When the emergency mode is activated by pushing the emergency button on the front panel or the optional external emergency button somewhere on the bridge the watch alarm switches to "call officer" stage, and when no response the "call crew" will trigger.

INSTALLATION AND TECHNICAL SPECIFICATIONS

Power supply	18-36Volt DC
Max. current	180mA
Relay contacts	4
Transistor outputs	2
Relay switching current	30 Volt DC – 10A
	250 Volt AC – 10A
	30 Volt DC – 300 Watt
	250 Volt AC – 2500 Watt
Transistor current	24 Volt DC – 500mA
	24 Volt DC – 12 Watt
Communication interface	RS485
Protocol	NMEA
Communication parameters	4800,8,N,1
Cutting hole HxW	139 x 67 mm
Outer size HxW	144 x 72 mm
Flush mount size	110 mm incl connector

The time between the 2nd and 3rd stage alarm is adjustable from 90 to 180 seconds in steps of 6 seconds (0=90 , F=180 seconds). When the "Emergency" button is operated the AlphaBNWAS will switch to "call officer" stage without activating acoustic signalling on the bridge. The LEDs on the front panel can be dimmed by holding the reset button for a few seconds.

To disable the internal buzzer remove the jumper positioned next to the 16-position switch.
With the 16-position switch you can adjust the time between the stage "call officer" and "call crew". This time can be adjusted to 90-180 seconds in steps of 6 seconds.
0=90 sec, 1=96sec, F-180Sec

VDR communication interface

The AlphaBNWAS is equipped with an RS485 interface intended to relay all available information of the watch alarm to the VDR (Voyage Data Recorder). The protocol to export data is NMEA, and is supported by almost every VDR. Messages are send every second. The communication parameters and the data message is explained in the following tables.

Parameters communication interface:

Protocol	NMEA
Interface	RS485
Baudrate	4800
Data bits	8
Parity	None
Stop bits	1

NMEA

The BNWAS shall provide an interface according to IEC 61162-1, A LR sentence, with the following message content:

–
hhmmss.ss: this part may be left blank if the BNWAS does not incl ude UTC time information.

–
xxx: Designation of source of alarm or source of reset command. T he automatic
mode is designated as "000".

– A: A = Dormant period exceeded
V = Dormant period not exceeded
– A: A = Alarm acknowledged
V = Alarm unacknowledged

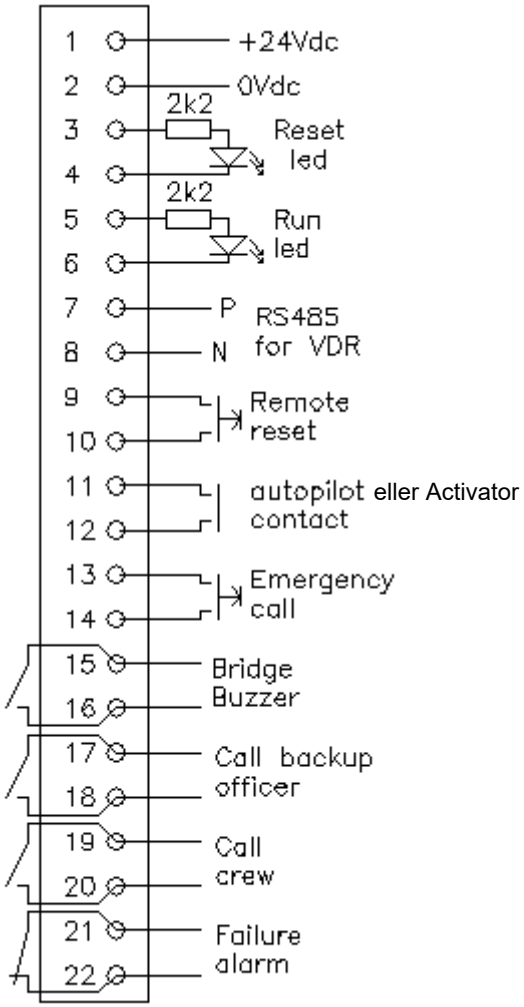
– c - - c: BNWAS mode : c1; c2; c3

c1 = AUT or MAN or OFF
c2 = Dormant period in min, (03 – 12)
c3 = Alarm stage: 1, 2 or 3.
Example

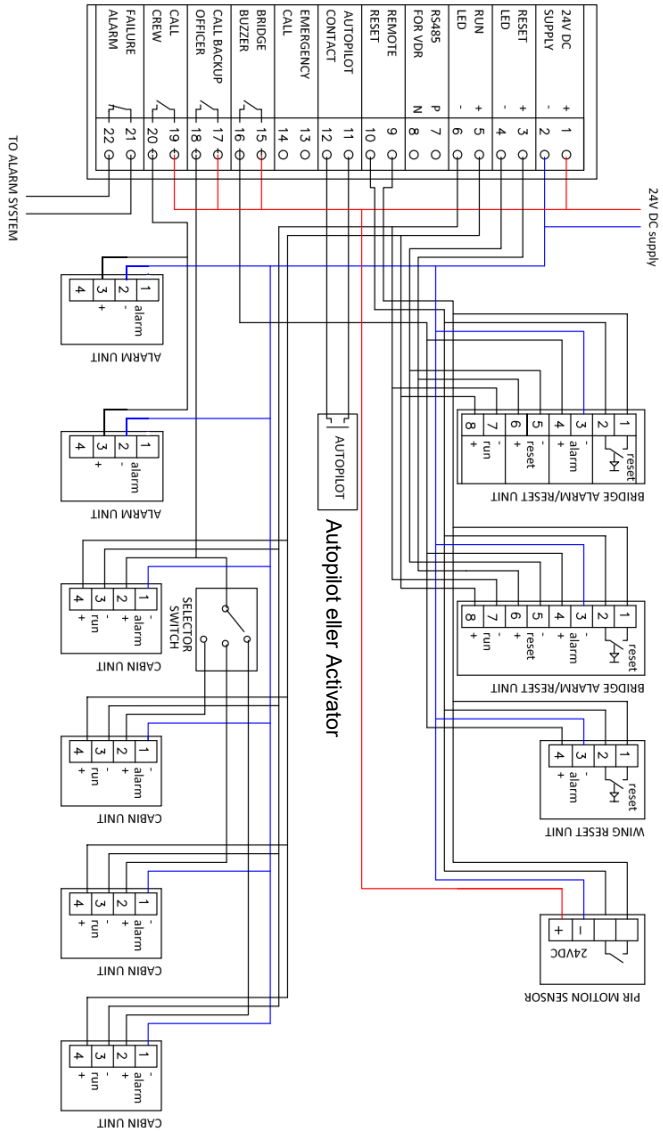
$BNALR,hhmmss.ss,000,A,V,C1=AUT;C2=03;C3=1*hh<CR><LF>

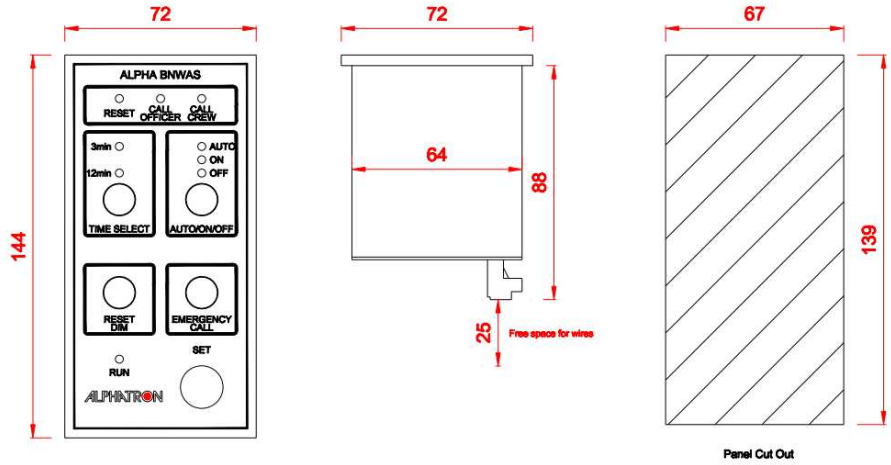
The alarm message shall be sent with any change of the BNWAS s ettings for mode or dormant
period, and with any activated and reset alarm.

TECHNICAL DRAWINGS



Below you can find an Example connection diagram with officers selector switch.





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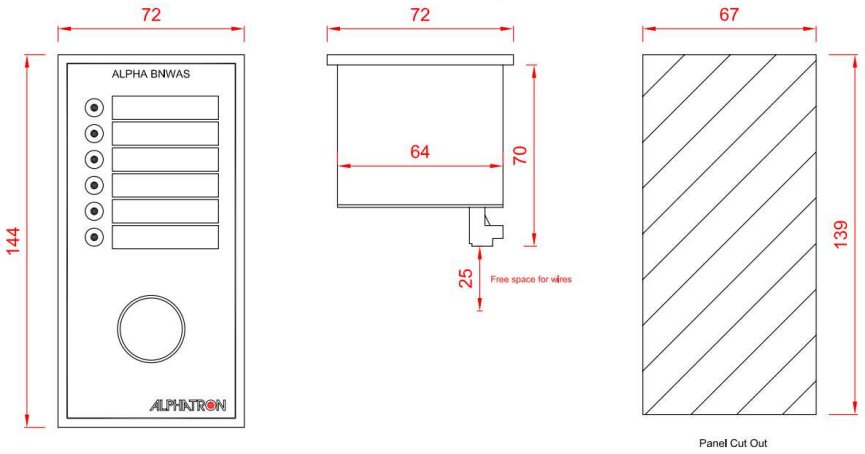

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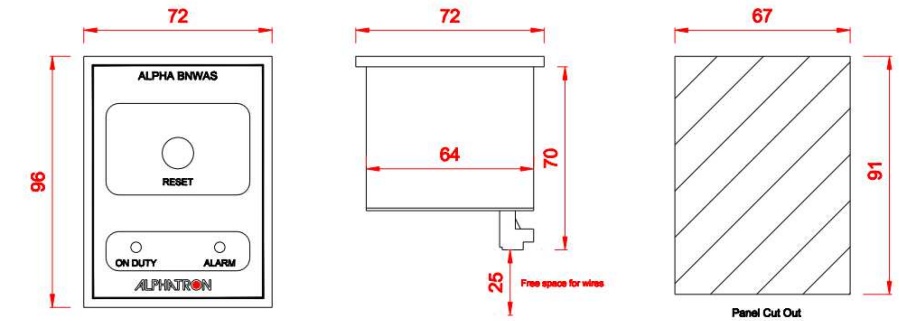

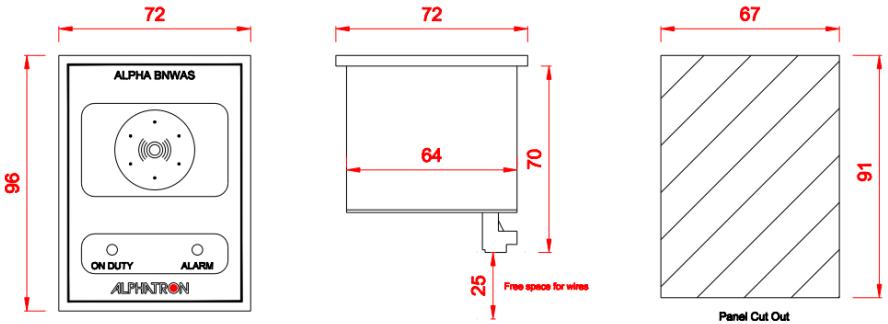

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The information in this Manual is subject to change without notice and does not represent a commitment on the part of ALPHATRON MARINE B.V.

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AlphaBNWAS NMEA Activator

Aktivatoren benyttes for å aktivere BNWAS når båten oppnår 3 knops fart.

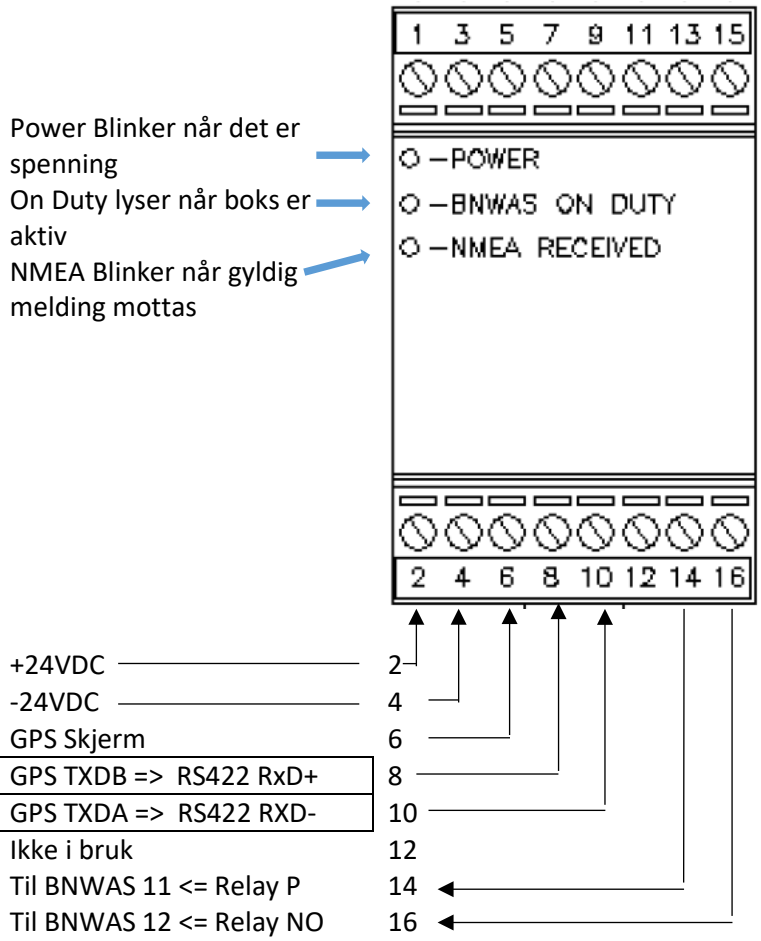
AlphaBNWAS NMEA Activator tilkobles en GPS med en av følgende NMEA setninger aktivert:

$--HTC,
$--HTD,
$--VTG. (Testet med NMEA ver 1.5 og nyere, med og uten sjekksum og statusfelt.)

KUN NMEA data sendt med **RS422** protokoll og Baudrate 4800 vil mottas som data.

Alpha BNWAS NMEA Activator

Tilkoblingene på denne side er ikke i bruk



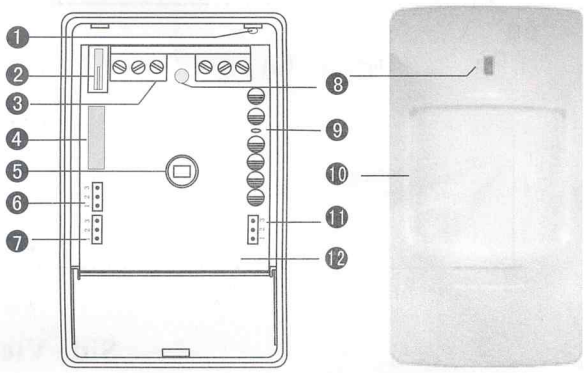
JLR 7600 Utgang		
1	2	3
9 Hvit	10 Rosa	13 Brun
8 Grå	11 L Blå	12 L Grønn

Pronav AS
Hovlandsveien 52
4374 Egersund
Tlf. 51464300

PRODUCT INTRODUCTION

The product is passive infrared detector with high stability. It has adopted advanced technology in signal processing and provided superhigh detection ability and anti error alarm. The detector will detect movement of human automatically when intruder passes through the detection area, and it will send out alarm signal to alarm host if there is movement. The product is suitable for the safety of residential house, villas, factories, markets, warehouses, office building etc.

PRODUCT PROFILE



Notes:LED indicator should be kept over the lens when installation

1. Wire Exit
2. Anti-dismantle Switch
3. Terminal Block
4. Relay
5. Infrared Sensor
6. LED Jumper
7. Relay Jumper
8. LED Indicator
9. Thermistor Resistance
10. Lens
11. Pulse Jumper

MAIN FEATURE

- Intelligent logic control, anti false alarm efficiently
- Auto temperature compensation
- Pulse count adjustment
- Anti white light interference
- Anti RF interference (20V/m-1GHz)
- Fresnel lens
- Wall/ceiling installation
- SMT design adopted
- Alarm output N.C. / N.O. Optional

TECHNICAL SPECIFICATION

Operating voltage:DC 12-24V
Current comsuption: ≤18mA(DC12V)
Detecting distance: 12m
Detecting angle: 110°
Self-testing time: 60S or so
Operating temperature: -10℃~+50℃
Alarm indicator: red LED
Alarm output:N.C. or N.O., DC28V,100mA
Anti dismantle output: N.C., DC28V 100mA
Range of coverage: 11 distance, 8 middle, 5 vicinities
Sensor: dual element infrared sensor
Operating temperature: -10℃ to +50℃
Environment humidity: ≤ 95% RH (no congelation)
Anti RF interference: 10MHz—1GHz 20V/m
Installation mode: wall mounted or hanged in corner
Installation height: 1.7 to 2.5m (2.2m is Proposed)
Outline Size: 59L*39.5W*107H mm

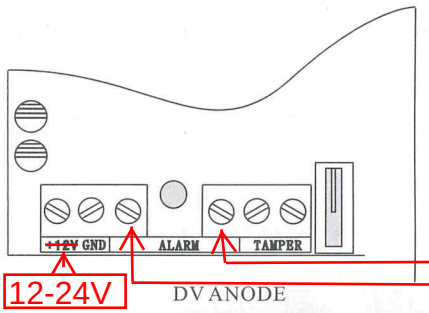
INSTALLATION

1. Installation at the out door,place with pets, air-condition nearby, direct sunshine, heat source and under the rotating objects should be avoided.
2. Surface of installation should be firm with no vibration.
3. Installing the detector in the place where intruder passes easily.

INSTALLATION STEP

1. Screw the detector bottom off, then open the detector.
2. Screw the PCB off, and remove the PCB.
3. Drill a wire hole in the rear housing.
4. Install the rear housing on the suitable position.
5. Connect the terminal block.
   (Referring to the following figture)

TERMINAL BLOCK FIGTURE



12-24V DV ANODE
GND DV CATHODE
ALARM ALARM OUTPUT PORT
TAMPER ANTI-TEMPER OUTPUT PORT

OPERATING INSTRUCTION

Function Setting

1. Relay Jumper: Short N.C. or N.O. to set the state of alarm output. You should choose different alarm output in accordance with alarm host.
   Short 1&2: N.O.
   Short 2&3: N.C.
2. Pulse Jumper: You can adjust the sensitivity and anti RF interference by choosing the Pulse Jumper.
   Short 1&2: class 1 pulse, the sensitivity and anti RF

interference is general, adapt to general environment.

Short 2&3: class 2 pulse, the sensitivity is highest, and anti RF interference is high, adapt to the environment with strong RF interference.

Shut off: class 3 pulse, the sensitivity is low, and the anti RF interference is highest, adapt to the environment with exceeding RF interference.

3. LED Jumper: Control LED indicator, no effect of detector normal work.

Short 1&2: set LED ON

Short 2&3: set LED OFF

LED can be shut off for concealment of the detector after Test.

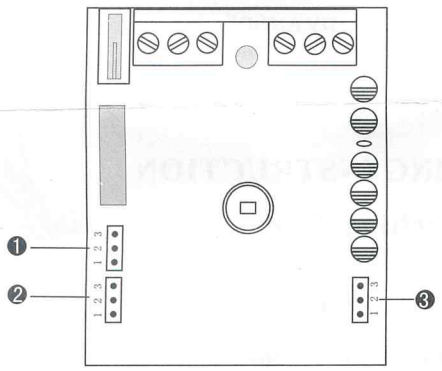
Product testing

Turning on power and LED indicator on, the detector comes into the state of self-check, it takes about 60s, after that it is in the state of normal work. Conner should walk parallel with the wall installed detector in the testing area. LED lighting means the detector is in the state of alarm.

NOTICE

1. Please install and use the detector according to this manual, don't touch the surface of sensor for avoiding affecting the sensitivity of the detector. Please shut off power and then clean the sensor by soft cloth with little alcohol if cleaning needed.
2. The product can reduce accident but may not perform as expected. The user is advised to take all necessary precautions for his/her safety and the protection of his/her property.
3. In order to ensure it can work normally, the power should be kept to supply and get on walking test periodically, once a week is better.

JUMPER SETTING FIGURE

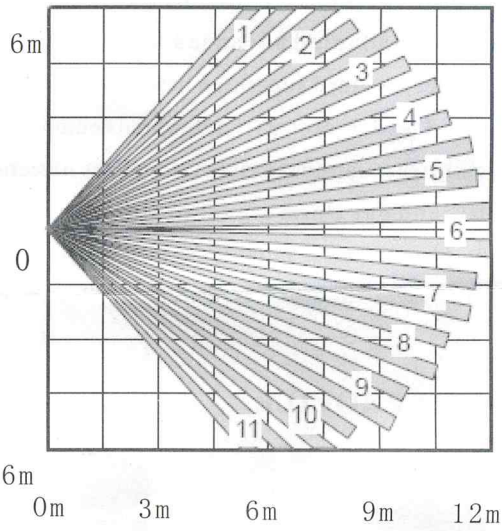


❶LED JUMPER — 1 2 3 ●●● SHUT OFF

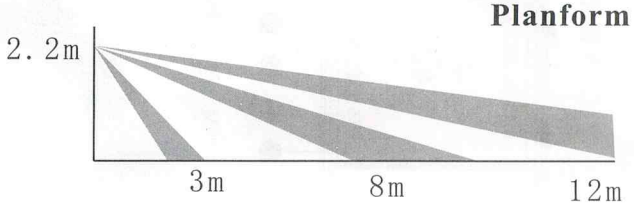
❷RELAY JUMPER — 1 2 3 ■●● 1&2

❸PULSE JUMPER — 1 2 3 ●■● 2&3

Detecting Area View



Planform



Side View