CHALLENGER

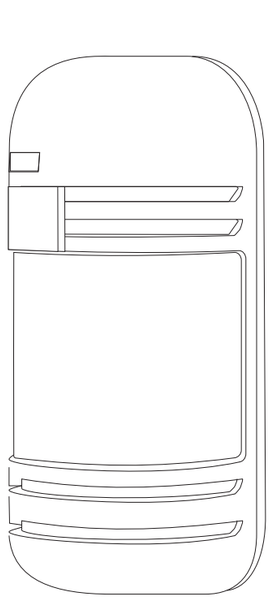
YOUR PARTNER IN A MORE SECURE FUTURE

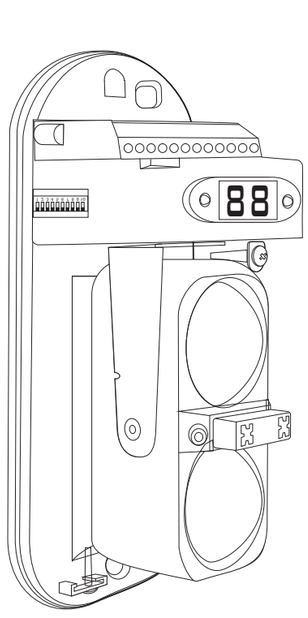
INSTALLATION INSTRUCTION

WIRED INFRA-RED BEAM DETECTORS

INSTALLATION GUIDE

ADB Range

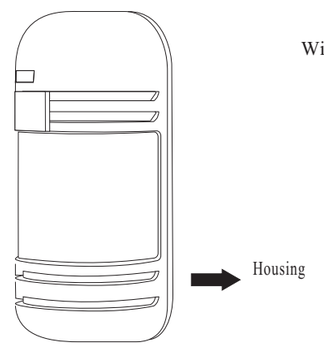


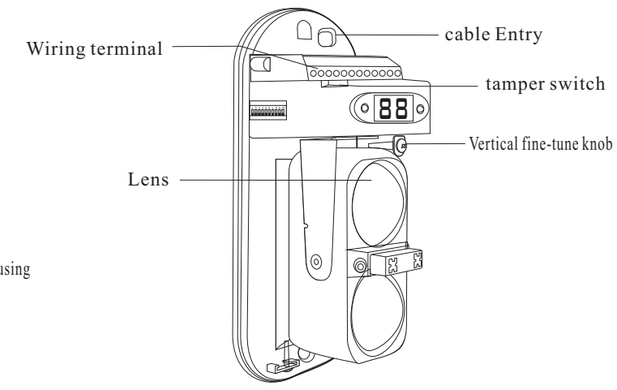


I.Technical parameters:

Model		ADB20D	ADB30D	ADB40D	ADB60D	ADB80D	ADB-100D
Alert distance	(Outdoor)	20m	30m	40m	60m	80m	100m
	(Indoor)	60m	90m	120m	180m	240m	300m
Number of beams		2 beams					
Detection mode		2 beams blocked simultaneous					
Optical source		Infrared digital pulse beam					
Response time		50-240ms (adjustable without degree)					
Power supply		DC13.8～24V 15W					
Alarm output		Relay contact output NO.NC contact rating AC/DC30V 30mAMax					
Trouble output		Relay contact output NC contact rating AC/DC30V 30mAMax					
Tamper output		Relay contact output NC contact rating DC24V 0.5Amax.					
Power consumption		In the bus mode13.8V DC, ≤100mA					
Operation temperature&humidity		-25℃~55℃ 5%-95%RH (relative humidity)					
Optical axis adjustment (H)		180° (±90°)					
Optical axis adjustment (V)		20° (±10°)					
Material		P C resin					
Net weight		430g (receiver+transmitter)					
Gross weight		790g					

II. Part name:



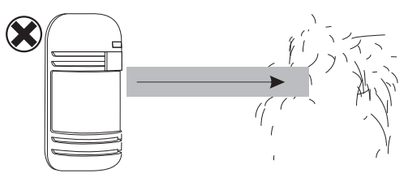


Feature:

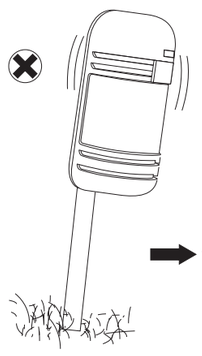
1.Under bus connection mode: The digital display of RX synchronize with the TX after the RX receive the signal from bus.Please Note: Not used on Security Intruder Alarm System.

2.Anti-fog function: when signal strength decrease slowly to 0.8V the detector will active anti-fog alarm (TBL out put), when signal decrease to 0.4V, will active alarm. When signal get back to 1.2v cancel alarm.

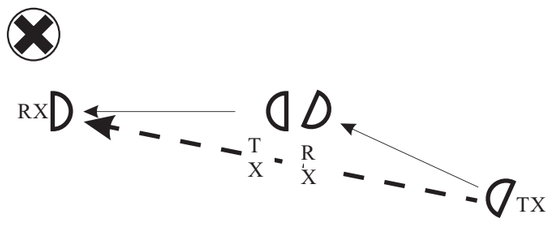
III.Precautions for setting:



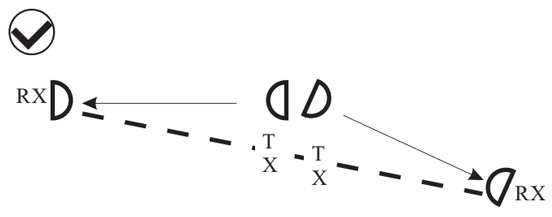
Impediment presents during setup



The base is unstable

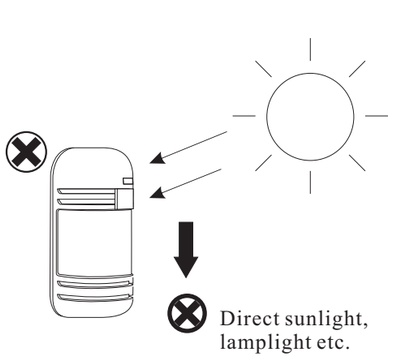


Multi sensors may be used for long-distance guarding.Please install according to the below diagram to avoic interference between beams.

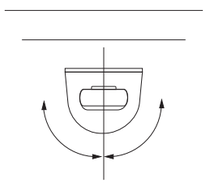


● Adjustable angle:horizontal±90°

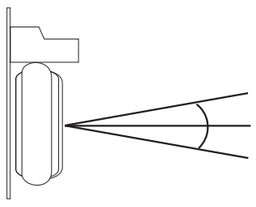
vertical±10°



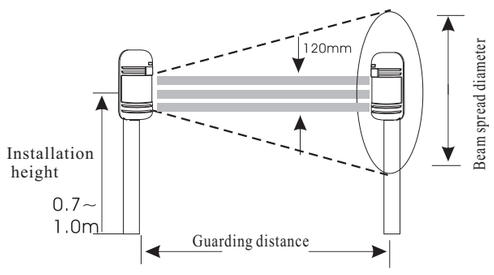
Direct sunlight, lamplight etc.



Horizontal180° （±90° ）



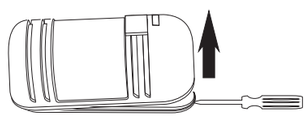
Vertical±10°



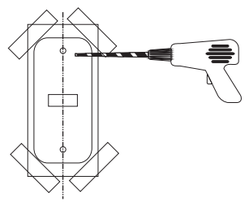
Style	Guarding distance	Beam spead diameter
ADB-20	20m	0.6m
ADB-30	30m	0.7m
ADB-40	40m	1.0m
ADB-60	60m	1.5m
ADB-80	80m	1.8m
ADB-100	100m	2.1m

IV.Setting procedure

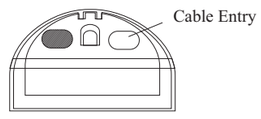
1、Remove the cover



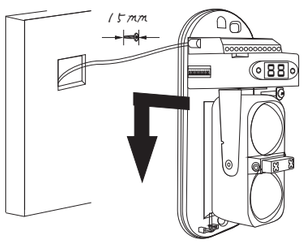
2、Attach the paper stencil onto the location where the equipment is to be mounted,and drill the holes in the positions on its mark.



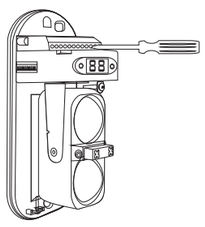
3、Put the cable through the hole for wiring.

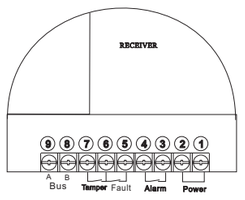


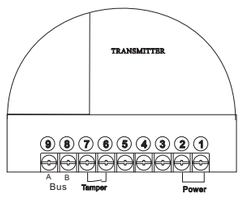
4、Fix the main body onto the wall.



5、Connect the cable to the wire terminal.

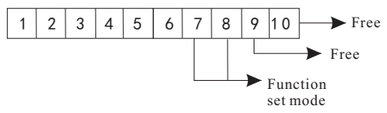




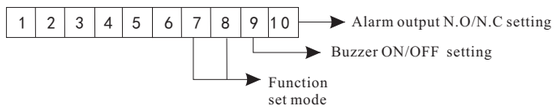


6、DIP switch

Transmitter



Receiver



The Beam can indicate the signal strength on the display: (Useful for alignment)
Signal strength indicator ON: Set DIP Switch 7 & 8 ON,
Signal strength indicator OFF: Set DIP Switch 7 & 8 OFF,

Internal Buzzer ON: Switch Dip Switch 9 On (Receiver Only)
Internal Buzzer OFF: Switch Dip Switch 9 Off (Receiver Only)

Alarm Output N.O. Switch Dip Switch 10 On (Receiver Only)
Alarm Output N.C. Switch Dip Switch 10 Off (Receiver Only)

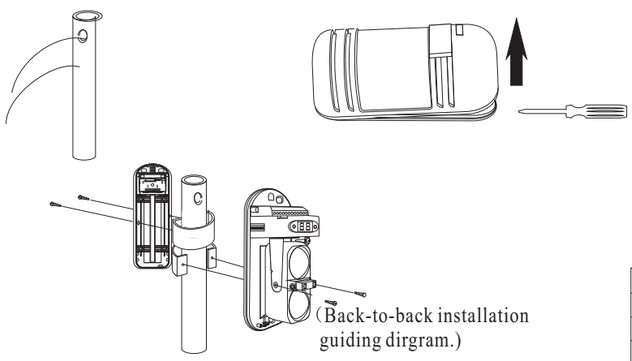
7、Take back the cover after the adjustment of the response time.

● Installation of fixed bracket

1、Drill a hole on the bracket and extend out the cable from it.

2、Take off the cover.

3、Fasten the base-plate to the bracket.



(Back-to-back installation guiding dirgram.)

Note: pleas insert waterproof stopper into the hole of screw.

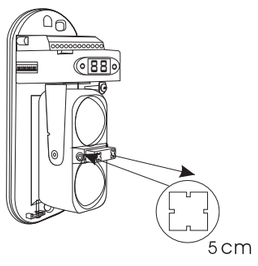
Wiring from power and bus

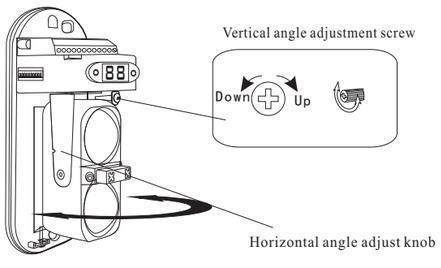
Wire \ Distance \ Voltage	DC13.8V	DC24V
0.5mm² (Diameter Φ0.8)	300m	600m
0.75mm² (Diameter Φ1.0)	400m	800m
1.25mm² (Diameter Φ1.2)	700m	1400m
2.0mm² (Diameter Φ1.6)	1000m	2000m

V. Beam alignment

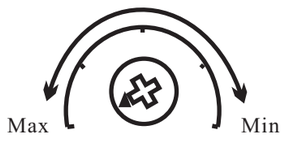
1、Observe the collimation effect at a distance of 5cm from theviewfinder.Adjust the upper/lower angle regulation screw and horizontal adjustment wheel in order that the image of opposite detector falls into the central part of the viewing hole.

2.Vertical and horizontal adjust as below picture showed to get a best signal strength, if signal strength is less than 1.8, please adjust again to get a better signal strength.

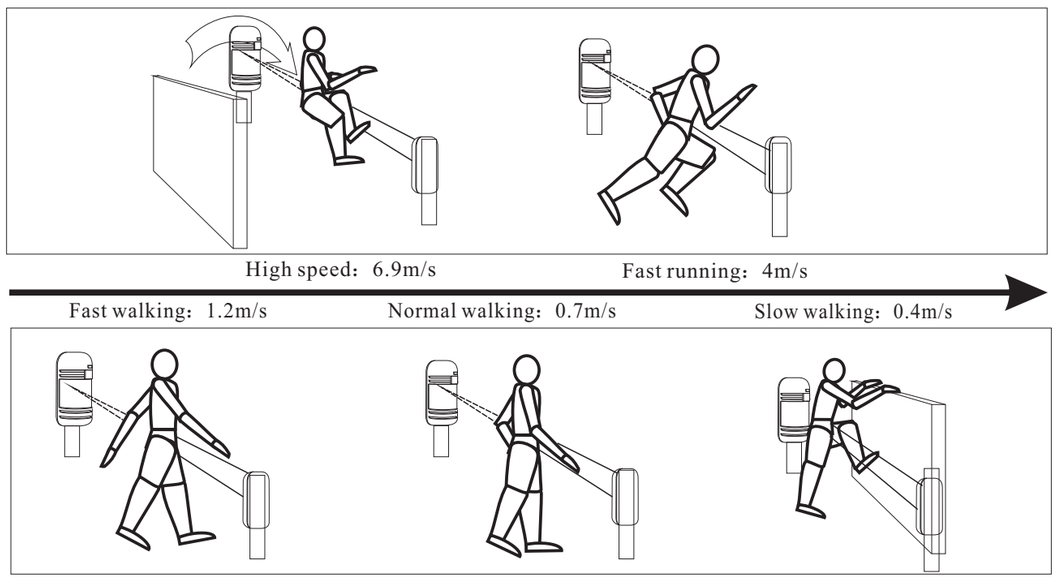




VI.Beam response time adjustment.



Please see the diagram to adjust the response time of the receiver.Usually,the time set shall be less than the time when the intruder corsses the grarding area. The MIN point is the shortest time.
Time:50-240m sec without degree



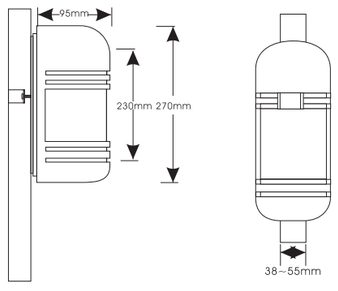
七、LED

After finish setting, please make walk test.

	Green	Red
TX flash when is bus signal	light on when there is no bus signal	always light on
RX flash when is bus signal	light on when there is no bus signal	light on when alarming, light off as normal status

IX . Dimension.

Physical appearance&dimension

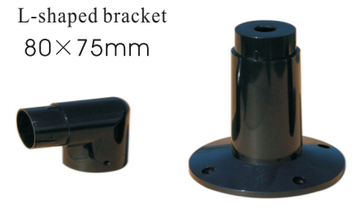


Brackets

T-shaped bracket
T-100
100×120mm
T- 2 00
2 00×120mm

I-shaped bracket
I-100
100mm
I- 2 00
2 00mm

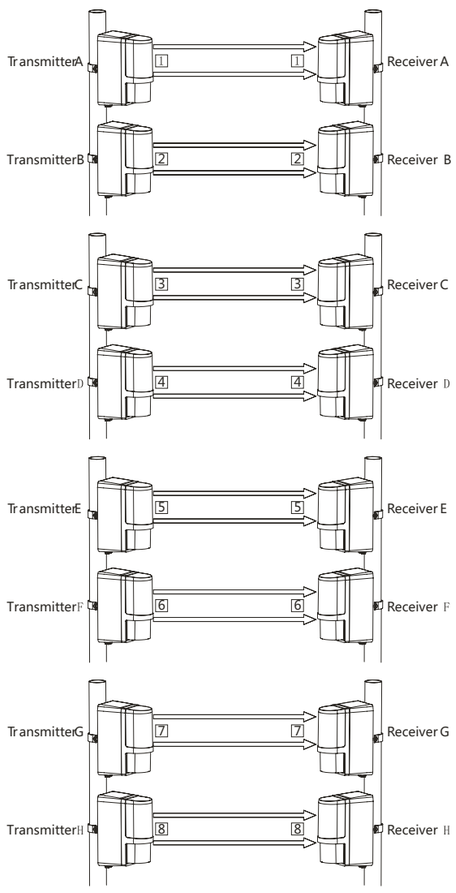
L-shaped bracket
80×75mm



8 CHANNEL BEAMFREQUENCY SELECT OR

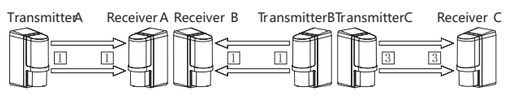
The 8 channel beam frequency selector can be used to avoid unwanted crosstalk that can occur when using multiple photo beams for long distance or beam stacking applications.
To select between 8 separate beam frequencies, use the switch provided.

1. **stackedprotection**



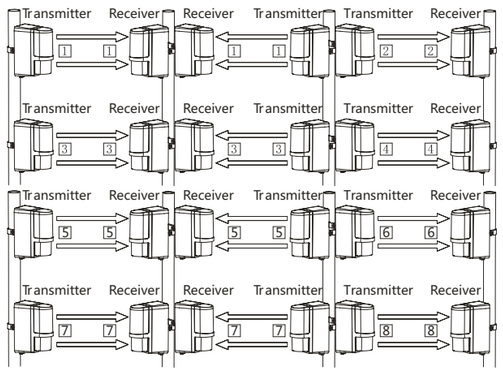
Since Receiver A may receive the infrared beam from Transmitter B.C.D.E.F.G.H,select the frequencies as shown in the figure above (In the figure each number in the square indicate a channel numbers.)

2. **Long distanceprotection**



Since Receiver C may receive the infrared beam from Transmitter A select their frequencies as shown in the figure above.

3. **stackedlongdistanceprotection**



DIP \ Ferquency	1	2	3	4	5	6	7	8
1	OFF	ON	OFF	ON	OFF	ON	OFF	ON
2	OFF	OFF	ON	ON	OFF	OFF	ON	ON
3	OFF	OFF	OFF	OFF	ON	ON	ON	ON

Table1

Set frequency: set DIP 7 at ON, DIP 8 at OFF to enter the frequency setting mode, the digital display shows the frequency. Set frequency on DIP 1,2,3. see table 1.

CHALLENGER SECURITY PRODUCTS
10 Sandersons Way,
Blackpool, FY4 4NB
Email: enquiries.challenger@adivision.co.uk
Web: www.challenger.co.uk