

# D-TECT X

GJD390 250 & 500m Range models



## INTRODUCTION

The D-TECT X is a wireless CCTV intruder detector designed to transmit reliable even triggers that individually or simultaneously control and activate CCTV cameras, security lights, DVR's, autodialler and virtually any low-voltage switching device.

The detector unit utilises two independent passive infrared detectors combined in a T05 package. Both sensors have to be triggered before the detector signals an alarm. These are very reliable high precision wireless presence detectors, Which have a line of sight range to the received of up to 250 or 500 metres. Each D-TECT X detector transmits radio signals to the receiver and has over 16.7 million individual codes. The receiver only responds to the transmissions of the detector that has been linked to the channel that identifies it. The receiver can only analyses this information after the individual codes has been transferred via the secure wire code learning link (see 'SET-UP' information). This transfer is only required on the initial set-up and any subsequent changes to the detector programming will be relayed automatically and wirelessly to the receiver. (see PROGRAMMING CHART on page 3).

The weatherproof D-TECT X detectors automatically send out a signal every 2 minutes to confirm that every one of up to 16 detectors are active. If a signal is not received within 6 minutes from a registered detector an 'RF loss of active signal indicator' and output is activated on the receiver/ The D-TECT X receiver can be mounted internally or externally but reductions in signal strength can occur when a line of sight is obstructed by a wall or any other object.

## DETECTOR PROGRAMMABLE PARAMETERS

Programmable parameters for the detector include:

- Contact active timer
  - Pulse count feature
- and a choice of detection ranges from 8 to 30 metres

## DETECTOR FEATURES

• There are independent front and rear tamper circuits which are combined to provide a volt-free tamper alarm contact.

• The flexibility of the various outputs and timers allows the D-TECT X to be used in multiple situations without the need for any further customised equipment - and of course, as these are wireless movement detectors the installation work is minimal.

• The integral dual axis title sensor allows 180 degrees of pan and 90 degrees of tilt. This increases the speed of the outdoor installation and provides incredibly accurate aiming of the detection pattern, particularly important for BS 8418 installations.

• The electronic module is acrylic coated for additional component stability.

• The sensors are encased in a vandal-resistant high impact zinc alloy IP55 housing with a UV stabilised translucent front cover, ensuring the sensor is impervious to and unaffected by adverse weather conditions.

• The combination of precision electronics, digital white light filter and double shielding eliminates false and nuisance alarms from the sun and other visible light sources.

• When a low battery is detected a signal is sent to the receiver unit which displays a low battery indication and operates the 'LOW BATTERY' contacts for the relevant detector.

• The D-TECT X design has a neat and aesthetically pleasing appearance with no visible indication of the orientation of the detector head

SEE INSTALLATION DIAGRAMS, MULTI-BEAM LENS DATA,  
TROUBLE SHOOTING CHART AND SPECIFICATIONS

## DETECTOR SET-UP

Before the detector is mounted in its desired position the detector and receiver must be able to communicate with each other, therefore the detector's identification and communication codes must be transferred to the relevant channel on the receiver unit in the following way -

1. Connect 12-24 volt power source to the receiver (see Diagram 1) and insert the 3 AA alkaline batteries into the detector, as described in Diagram 2. Always check that the batteries have been inserted correctly. Alternatively the detector module can be powered from the 4.5 Volt output plug on the receiver (see Diagrams 1 & 4). When powered up the detector takes approximately 2-3 minutes to stabilise and the red LED in the detector module will flash 3 times when the power is connected.
2. Plug in the Programmable Link Wire from the detector into the code transfer socket in the receiver (see Diagram 4).
3. Press the 'Programme button' on the detector once (see Diagrams 1 & 5). The red LED will light.
4. Within 2 seconds press the respective 'Channel button' on the receiver module once and the LED's will light up for the selected channel. When the red LED on the detector turns off the code is transferred and the 3 LED's on the selected channel will flash once. The code has not been transferred from the detector to the receiver.
5. Remove the link wire from the receiver module and plug it into the Tamper PCB Connector on the top of the detector (see Diagram 5) Detection signals will be immediately transmitted to the receiver. Repeat Steps 2 to 5 for all the detectors to be on the receiver module. The receiver box is equipped with one 4 way PCB module as standard, but can accept up to 3 additional expander modules in total. As each module can communicate with 4 detectors, each receiver box is able to monitor 16 separate wireless D-TECT X detectors.
6. To verify that a code has been stored for any individual detector - press the appropriate Channel button on the receiver module once (see Diagram 1) and 4 LED's will flash 3 times to indicate a code has been stored.
7. To delete a code from a channel, press and hold the Channel Button all four LED's will light. Keep the Channel Button pressed for approximately 4 seconds until the alarm LED flashes then release the button. The channel is now blank.

## PROGRAMMING THE DETECTOR

The factory default settings are set to suit the most popular applications but can be changed to suit individual requirements, with before installation or on-site. Once changes have been made they are stored in a non-volatile memory.

The default factory settings for the D-TECT X detector are as follows:

Range - 20m  
Pulse Count - 1  
Timer (seconds) - 5

**Once** - transfers code  
**Twice** - sets detector range in metres  
**Three times** - sets the pulse count  
**Four times** - adjusts LUX level  
**Five times** - sets alarm activation time in seconds  
**Six times** - shows existing settings  
**Seven times** - resets detector to factory settings  
**Eight times & hold down** - starts RF continuity test  
**Nine times & hold down** - generates new random communication code

#### PROGRAMMING CHART

Setting	1	2	3	4	5	6	7	8
Press twice - Range ( Mtrs)	8	15	20	25	30			
Press 3 times - Pulse Count	1	2	3					
Press 4 times - 'S' Output LUX Level	2	5	10	20	30	40	50	24hr
Press 5 times - Timer ( secs )	2	5	10	20	30	40	50	60

2. When the 'Program Button' has been pressed the required number of times, wait 4 seconds until the red LED indicator goes off.

3. After a short delay, the LED will then flash a number of times to indicate the existing setting (e.g. in detector range mode, 4 flashes will show that the existing range has been programmed to 25m)

4. To change the setting for that option - wait until the LED stops flashing then press the '**Program Button**' the number of times needed to programmes in the new setting (e.g pressing the button twice in range mode will change the setting to 15 metres) . The LED will blink twice to indicate that the new setting has been saved.

## FUNCTIONS

Range settings are self explanatory but for reference, other settings/ modes are defined below:

**Pulse Count (1,2 or 3)** - this is the number of times the unit has to detect an intruder on both of its sensors before signalling an activation. The range of the detector will decrease if there is little difference in temperature between the moving object and the background.

**1 - will give a fast response**

**2 - gives better immunity with good response**

**3 - gives higher immunity to false activation/alerts**

**Timing 1 (2 & 3<6 seconds)**

**LUX 'S' Output only** - 7 settings from 2 to 240 lux - the 8th setting is the 24 hour mode

**a) LUX** - is a measurement of ambient light levels that must be reached before the 'S' output will become active when there is an activation of the detector. (2 is night and 240 is bright daylight).

**b) 24 HOUR** - the detector will operate the 'S' output day and night, irrespective of light levels.

All other outputs operate day and night irrespective of the 'S' output setting.

#### TIMER 'ALARM' OUTPUT TIMER

This is the time delay in seconds that the 'alarm' volt free output will activate after an activation of the detector.

#### RF CONTINUITY TEST

It is always advisable to test the RF signal at the detector location prior to installation.

To enter the RF continuity test mode - press the **Programme Button** (see **Diagram 5**) on the D-TECT X 8 times.

On the eighth press - 'hold' down the **Programme Button** for 5 seconds until the LED goes out - the LED indicator will then flash and transmit one signal per second to the receiver.

The corresponding Channel Indicator on the receiver module will also flash once per second if a strong enough RF link has been established.

This test mode will automatically cancel after five minutes.

Alternatively, to cancel the RF continuity test immediately - press and hold the **Programme Button** until the LED illuminates then release the button. If it is necessary to conduct a site survey prior to installation of this equipment, it is advisable to power up the receiver temporarily with PP3 (9volt) battery.

Register one detector as described in 'PROGRAMMING THE DETECTOR' then conduct an RF continuity test as detailed above. As the signals to the receiver are sent once per second, the optimum position of both the D-TECT X detector and the receiver box can easily and quickly be established.

## CHANGING THE RANDOM CODE

In the unlikely event of another radio signal interfering with and affecting the correct operation of a single RF channel, the D-TECT X is able to generate an alternative random code.

To do this, press the **Programme Button** on the D-TECT X nine times. On the ninth press, 'hold' down the button down for 5 seconds until the LED goes out, then release the button.

Erase the existing code from the receiver by holding down that **Channel Button** until the alarm LED flashes, then repeat steps 3 to 6 of the '**SET-UP**' procedure to programme in the new code.

## MOUNTING THE DETECTOR

**IMPORTANT** - During the installation the electronics must be protected against water as trapped moisture can affect or damage the unit.

#### WARNING

- NYLON WASHERS PROVIDED MUST BE USED WITH SCREWS
- ENSURE CABLE ENTRY AND SCREW HOLES ARE SEALED WITH WATER BASED SEALANT
- DO NOT USE SILICONE BASED SEALANT

1. Using the template provided, drill the wall to accept the two wall plugs and fixing screws - and the tamper cup (if used) see **Diagram 8**.

**NOTE:** We recommend using the **Tamper Cup** on uneven wall surfaces

2. Remove the detectors cover assembly by loosening the **Locking Screw** at the bottom of the case using the allen key provided see **Diagram 3**. The cover hinges from the top and will then lift out of its location slot.

3. Swivel the Detector Module and then unscrew the **Aerial SMA Connector** from the rear of the detector PCB and unplug the power lead.

4. Remove the detector module by unscrewing it from its title mechanism see **Diagram 5**.

5. Unscrew the 2 cross head screws to remove the detector back plate. This reveals the battery compartment see **Diagram 2**.

6. Screw the unit to the wall ensuring that the tamper pin is correctly located See **Diagram 8**.

7. Install 3 AA alkaline batteries in to the battery holder observing correct polarity see **Diagram 2**.

8. Always ensure when replacing the detector module that the LED is facing forward so as to ensure correct alignment of the beam pattern.

**(Refer to section entitled 'Multi-beam Alignment & Masking')**

**NOTE** : The D-TECT X can also be mounted on a pole using a special bracket kit available separately.

9. The detector can also be powered from a 12-24AC/DC power supply.

## MULTI-BEAM ALIGNMENT & MASKING

The GJD multifunction lens fitted to the D-TECT X detector produces 7 long range beams and 7 medium to short range curtain beams. Movement across the beams produces the best response and range, whilst movement towards the detector will be less responsive. The unit detects the changes in heat and movement in the beam pattern, therefore objects such as trees, shrubs, ponds, boiler flues and animals should be considered when positioning the detector.

**NOTE: It is important that the front protective cover is fitted to the detector before beam pattern alignment or output testing is undertaken as the range of detector increases without this cover and therefore settings will be incorrect.**

1. The detector module's lens is fitted with two sliding shutters to reduce the detection angle as required (see **Diagram 3**). An additional set of sliding shutters are provided if the beam patterns needs to be narrowed even further. e.g should the minimum detection angle of 10 degrees be required.

2. When mounting the D-TECT X detector higher than the boundary fence, rotate the module and mask off any beams, with vertically or horizontally, that fall outside the required detection area required to prevent problems such as boundary overspill. Use portions of the **Self-adhesive Clear mask** supplied and apply these to the inner smooth side of the lens and shown in **Diagram 3 and Beam Coverage**.

Always replace the lens the correct way up to ensure the correct beam pattern coverage (**the top of the Fresnel lens is marked-TOP**)

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## MULTI-BEAM LENS DATA

All information contained on separate sheet

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## WALK TESTING

The walk test LED is factory set to the OFF position. Pressing the **Programme Button** once (see **Diagram 5**) will illuminate the LED and activate the walk test function for a period of 5 minutes. On detection the red LED will flash momentarily.

**NOTE:** The front cover must be fitted when walk testing. Replace the front cover and locking screw as shown prior to commencing the test. Use the programming table to adjust the range as necessary and pan and title the lens module over the field of view to obtain the correct coverage area ( see **Multi-beam alignment & masking section**)

1. Press the **'Program Button'** momentarily on the D-TECT X detector and the red LED will light up and Pulse Count '1' is automatically selected.

2. Align or realign the unit when a detection takes place the red LED indicator will light up momentarily.

This test mode will automatically cancel five minutes after last detection has been made.

If automatic lighting is required to illuminate the area during a CCTV recording, the D-TECT X will communicate directly into any of the GJD lighting controllers, via the receiver, for simultaneous CCTV recording and automatic lighting at dusk.

The RF signals from the detector to the receiver also provide an audible and visual indication of detection activity 24 hours a day. As the GJD lighting controllers also have a pulse count option, this must be set to '1' on the controller when using the D=TECT X for event recording.

# Engineer Notes

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