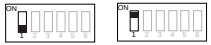
Fig.6 PCB Position v Range @ 2.9m (Ground strike)

Position	Down Angle	Range
1.	5°	15m+
2.	10°	15m
3.	15°	8m
4.	20°	6m
5.	25°	4m

DIL Switch Functions

Control of the unit is through a bank of six DIL switches situated on the rear of the PCB. The switches are marked 1-6 (see Fig 7).

DIL Switch 1 Shadow Algorithm System (SAS) Disable



SAS Enable SAS Disable

With SAS Enabled the unit will provide greater stability in areas with increased thermal noise, improved signal to noise ratio and greater discrimination against small targets. Note there will be a reduction in range when SAS is enabled.

DIL Switches 2&3 Pulse Count

Pulse Count1 Pulse Count2 Pulse Count3 Pulse Count4

DIL Switches 4, 5 & 6

These switches control the display modes of the Yellow and Red LEDs. If the DIS(able) terminal is to be used for external control of the LEDS, switches 4, 5, & 6 should be in the OFF position.

The following terminology is used for the LEDS.

Gard LED A state when the Yellow LED flashes once every 2 seconds (typical)

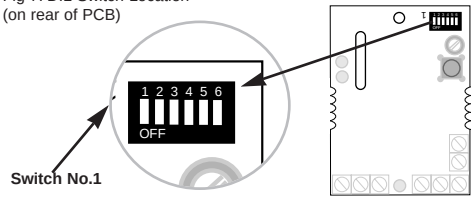
Pre Alarm Warning System A 2 second (typical) flash of the Yellow LED when a signal not great enough to count as a pulse or alarm has been processed.

Pulse Count A brief pulse of the relevant LED as a Pulse Count is processed.

Full Alarm A 2 second (typical) illumination of the Red LED and the activation of the alarm relay when a Full Alarm is processed.

ON if SET When +12V applied to Latch Terminal

Fig 7. DIL Switch Location (on rear of PCB)



LED Configuration Switches

	LED Displays			
	Gard LED	Pre Alarm	Pulse Count	Full Alarm
	OFF	ON	Red LED	Red LED
	Gard LED	Pre Alarm	Pulse Count	Full Alarm
	OFF	OFF	OFF	OFF
	Gard LED	Pre Alarm	Pulse Count	Full Alarm
	OFF	OFF	Yellow LED	Red LED
	Gard LED	Pre Alarm	Pulse Count	Full Alarm
	OFF	OFF	Red LED	Red LED
	Gard LED	Pre Alarm	Pulse Count	Full Alarm
	ON	OFF	Red LED	Red LED
	Gard LED	Pre Alarm	Pulse Count	Full Alarm
	ON	OFF	OFF	OFF
	Gard LED	Pre Alarm	Pulse Count	Full Alarm
	ON if SET	OFF	Yellow LED	Red LED
	Gard LED	Pre Alarm	Pulse Count	Full Alarm
	ON if SET	OFF	Red LED	Red LED

LED Displays with Latch

When the latch terminal is used, the Red LED indicates if a detector was triggered whilst the system was set. A Red LED flashes on the first detector to be triggered in a group with subsequent detectors in that group having the Red LED permanently lit*. Any Latched LEDs will be reset when the system is next Set/Unset. All displays are inhibited whilst the system is set. *Not on Any to Alarm.

Specification	MX+	QX+
Voltage Range 9.5-16V d.c	✓	✓
Current Consumption 13mA	✓	✓
Max Ripple 4V Pk to Pk	✓	✓
N/C Alarm Output	✓	✓
2 Second Alarm Period (typical)	✓	✓
N/C Tamper Output (0.5A @24V)	✓	✓
-10°C to +50°C Operating Temp	✓	✓
15 metres Nominal Range	✓	✓
110°Coverage Angle	✓	✓
20V/m to 1000MHz RFI Protection	✓	✓
1, 2, 3, 4 Pulse Count	✓	✓
Optical Light Pipe		✓
Advanced Temperature Compensation (ATC)	✓	✓
Pre-Alarm Warning System (PAWS)	✓	✓
Intelligent Detection Algorithms (IDA)	✓	✓
Shadow Algorithm System (SAS)	✓	✓

GARDINER TECHNOLOGY

The Gardscan MX+ & QX+ Microprocessor Controlled PIR

Installation Instructions

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PR4726 Rev1.3

Introduction

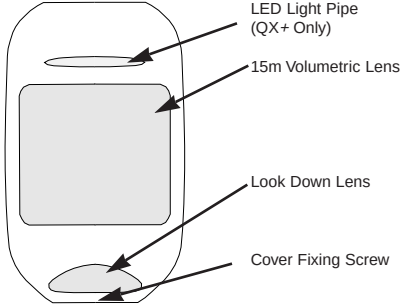
The Gardscan MX+ & QX+ Infra-Red detectors are high quality latching PIRs incorporating the latest SMT (surface mount technology) production techniques. Microprocessor based Intelligent Detection Algorithms and Advanced Temperature Compensation give you the ultimate PIR detector that is efficient, reliable and compact.

Control of the advanced Microprocessor features that are available is achieved through a bank of six DIL switches situated on the rear of the PCB.

The unit offers a 110° field of view and is supplied with volumetric lens giving a maximum range of 15 metres. Incorporated into the moulding is a look down lens that utilises mirrored optics to give detection directly beneath the detector. The QX+ also offers the benefit of an optical light pipe for the main LED giving a wider angle of view than the standard LED configuration.

Range adjustment of the unit is achieved via five preset notches on the PCB and a sensitivity pot giving simple but accurate range adjustment. The units are suitable for corner or wall mounting and an optional ceiling mount bracket is also available.

Fig1. Gardscan QX



Mounting Location

The surface that the PIR is to be mounted to should be of firm construction and free from vibration.

Do not Mount the unit in a position where direct or reflected sunlight can fall on the lens.

Do not Mount the unit in draughty locations.

Do not Mount the unit over or facing heat sources.

Do not Run cabling to the unit parallel to mains wiring.

Mounting

To mount the PIR to the wall proceed as shown in the steps below:-

a) Slacken (but do not remove) the cover fixing screw and remove the cover.

b) Unscrew the PCB retaining screw.

c) Remove the PCB and store in a safe place.

d) Referring to Fig 2. remove the desired cable entry and fixing blanks (only remove necessary blanks).

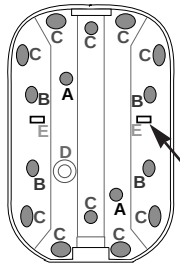
e) Using the PIR base as a template mark the wall (do not drill through the base under any circumstances).

f) Using a suitable drill bit, drill the wall and fit the rawl plugs (supplied).

g) Whilst feeding the cable through the cable entry offer the base to the wall then screw the base to the wall using the screws provided.

h) After wiring and adjusting the PCB (see relevant sections) replace the cover and tighten the cover retaining screw.

Fig 2. Gardscan QX+ & MX+ Base



A= Knockouts for flat wall mounting.

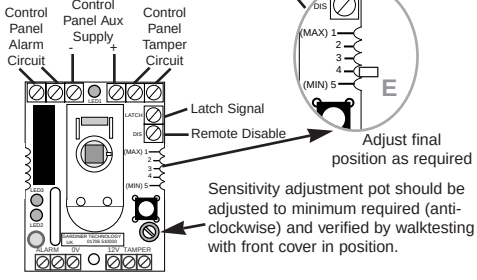
B= Knockouts for corner mounting.

C= Knockouts for cable entry.

D= PCB retaining screw pillar.

E= PCB adjustment locating lugs.

Fig 3. Gardscan QX+ & MX+ Wiring



Note: LED positions will vary dependant on model

Wiring

Wiring to the PIR should be six core 7/02 security cable. This cable should be fitted in accordance with good wiring practice. Connection details are given in Fig 3.

Latch Terminal

Wiring to the latch terminal should be from the control panel SW+ terminal for any to alarm indication. For first / other to alarm indication the 47k resistor (supplied) should be placed in series with the SW+ wire. Only one resistor should be used for each group of PIRs using the first to alarm feature.

DIS (Disable) Terminal

This terminal acts in conjunction with the DIL switches. Provided the correct mode of operation is selected through the DIL switches, the LEDs may be disabled by a remote signal from the control equipment that provides 12V+ to this terminal.

Coverage

The coverage pattern of the Gardscan MX+ & QX+ is shown in Fig 4. & Fig 5.

Fig 4. Coverage Pattern (plan view)

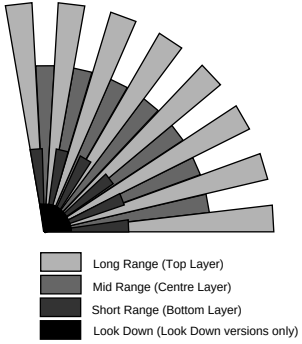
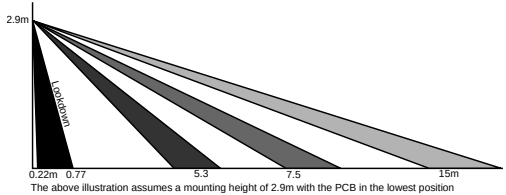


Fig 5. Coverage Pattern (side view)



The above illustration assumes a mounting height of 2.9m with the PCB in the lowest position

Range Adjustment

The Gardscan MX+ & QX+ range may be adjusted by moving the PCB into one of the five preset notches. With the unit mounted at the recommended 2.9 metres and counting the top notch as No.1 the ranges shown in Fig.6 may be achieved. If necessary use the PCB screw to hold the PCB in position. Final adjustment is via the sensitivity adjustment pot to minimum required (see Fig 3) for details.