ALEPH

QT Series
Quad-Tech Intrusion Detectors

Features Table

Model	Tamper Switch	Lightning Protection	60 lb. Pet Immunity	Pulse Count Select	LED On/Off Select	Security Light	Temp. Comp.
QT-40	X	X	X	X	X		X
QT-40SL	X	X	X	X	X	X	X
QT-60	X	X		X	X		X

Description Available with 40-foot and 60-foot protection patterns, QT Series intrusion detectors provide high quality PIR+microwave security at an outstanding value. Aleph's unique "QT" signal processing evaluates PIR and microwave information while factoring in ambient temperature and light for superior "Quad-Tech" performance.

Installation Select an installation height between 7 ft. (2.1 m) and 8.5 ft. (2.6 m). Optimum mounting height is 7.5 ft. (2.3m). Avoid aiming the intrusion detector towards windows, areas exposed to direct sunlight, and heating/cooling outlets. For best performance, position the detector so its field of view is unobstructed, and the anticipated path of an intruder will cross the PIR beam pattern.

Pet Immunity: For installations where pet immunity is needed, mounting height should be no lower than 7.5 ft. (2.3m). Animal access above floor level (furniture, stairs...) may jeopardize the pet immunity feature of the detector.
To ensure Pet Immunity function, do not point detector towards stairways, furniture or room fixtures to which animals have access.

Separate the front and rear covers by first backing out the cover latch screw three to four full turns. Then use a small screwdriver or similar tool to release the cover latch. To remove the PCB, push the PCB latch away from the board while grasping a terminal block and pulling the PCB out of the cover. Do not pull on the microwave module. Refer to Figures 1 and 2, below.

Wire the detector to the control panel using 18 to 22 AWG conductor, standard non-shielded cable. Avoid running alarm wiring parallel to AC wiring. Wiring knockouts and wire channel are provided in the rear cover for unobtrusive wiring. Terminal block configuration is shown in Fig. 3, below.

Adjustments & Settings Prior to mounting the detector, configure jumper settings as required (see Fig. 2, below).

Pulse Count: When Pulse Count jumper is covering both pins, PC is set at 2: two to three normal steps are required to trigger an alarm. Parking the PC jumper on one pin (or removing jumper) sets PC to 4: four to five steps will trigger an alarm.

LED Enable: When Jumper is covering both pins, the Alarm LED is enabled. The Alarm LED glows through the lookdown lens when an alarm is signaled at the Alarm Output terminals. LED brightness automatically increases when light level in detection area is high. As room light dims so does the LED brightness. Parking the jumper on one pin (or removing jumper) disables the Alarm LED but has no effect on the alarm output.

Microwave Sensitivity: Microwave Sensitivity Adjustment is set to the fully clockwise position at the factory for maximum sensitivity (range). Microwaves can "see" through walls, so in some cases, such as installation in a small room, it may be desirable to reduce microwave sensitivity. Turn the Microwave Sensitivity Adjustment (Fig. 2) counter-clockwise to reduce sensitivity. Setting the adjustment to minimum (fully counter-clockwise) reduces sensitivity to approximately one-third of its maximum value.

SL Front / SL Down: -- Included on Model QT-40SL -- These jumpers independently enable and disable the "Front" and "Down" Security Light (SL) functions. SL Front controls a single white LED which shines through the front (wide angle) lens. SL Down controls two white LEDs which shine through the lookdown lens. When enabled, Security Light operates for at least 10 seconds when motion is detected and room light is dim. Continued motion will cause Security Light to remain on until approximately 10 seconds after motion ceases.
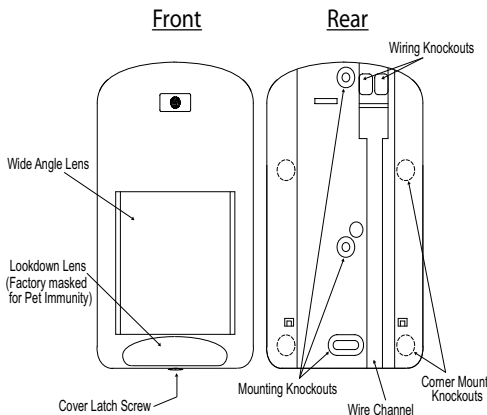
Fig. 1: Cover Component Layout

Front Rear

Wiring Knockouts
Wide Angle Lens
Lookdown Lens (Factory masked for Pet Immunity)
Cover Latch Screw
Mounting Knockouts
Wire Channel
Corner Mount Knockouts

Fig. 2: PCB Layout

PCB latch
Terminal Block
Tamper Terminal Block
ALARM   TAMPER
Microwave Module
Microwave Sensitivity Adj. 30% ~ 100%
Min.   Max.

Jumper Settings

Pulse Count
Jumper installed on both pins = PC 2
Jumper removed = PC 4

LED Enable
Jumper installed on both pins = LED ENABLED
Jumper removed = LED OFF

Security Light Enable*
Jumper installed on both pins = SL ENABLED
Jumper removed = SL OFF

PULSE COUNT
LED ENABLE
SL FRONT
SL DOWN

SL Front LED*
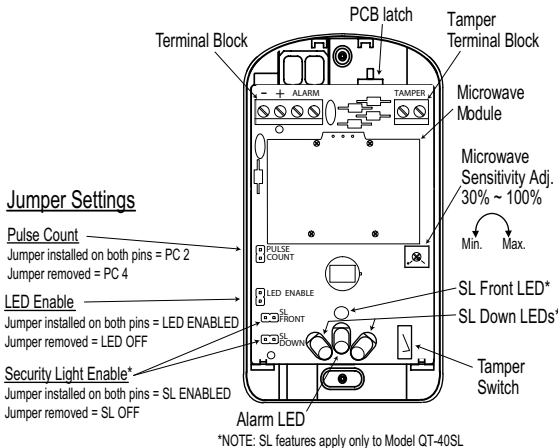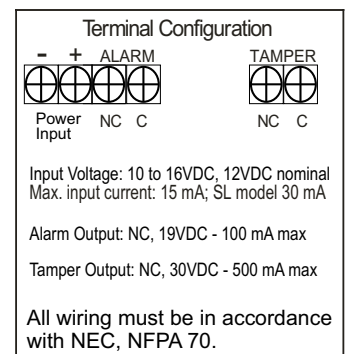SL Down LEDs*
Tamper Switch
Alarm LED
*NOTE: SL features apply only to Model QT-40SL

Fig. 3: Wiring Configuration

Terminal Configuration

- + ALARM   TAMPER
Power Input NC C   NC C

Input Voltage: 10 to 16VDC, 12VDC nominal
Max. input current: 15 mA; SL model 30 mA

Alarm Output: NC, 19VDC - 100 mA max

Tamper Output: NC, 30VDC - 500 mA max
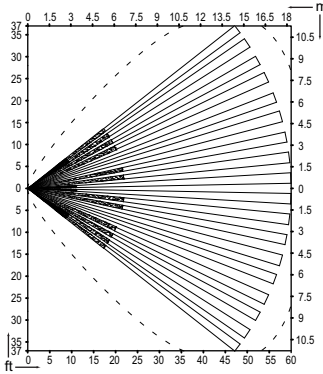
All wiring must be in accordance with NEC, NFPA 70.

Compliance Information:

Detection Patterns

Top View

QT-40 & QT-40SL Main Lens: 40WAPET Wide Angle
40ft (12m) L X 56ft (17m) W

Side View

Lookdown (Masked for PI) Mid Range Long Range
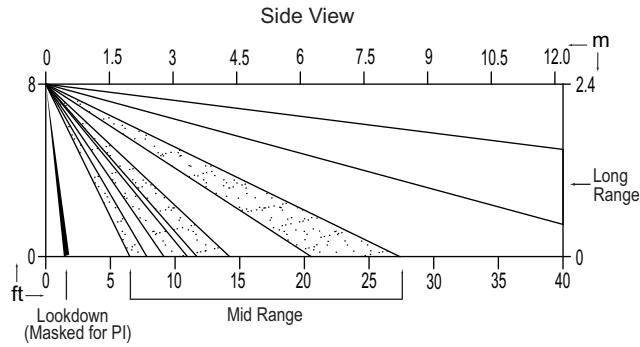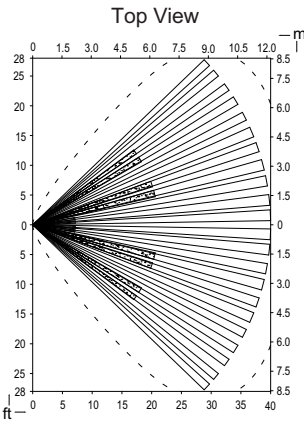
Note: Dashed lines indicate typical microwave coverage.

QT-60 Main Lens: 60STD
60ft (18.3m) L X 74ft (22.6m) W

Lookdown Mid Range Long Range

Note
• This detector is designed to be incorporated into an alarm system. As it is part of a system, Aleph cannot assume responsibility for theft or damage if the system fails to operate.

Patent information
US & international patents pending

Troubleshooting

Trouble	Likely Causes	Remedy
Unit does not power up.	No or low input power. Input power polarity reversed.	Apply proper input voltage. Correct wiring polarity.
Alarm LED does not light.	Input power polarity reversed. Incorrect sensor mounting height or aiming. Pulse count setting incorrect for protection area.	Set LED jumper to "LED ENABLED". Alter the mounting height or aim. Set pulse count jumper to suit the detection requirements.
Alarm LED / Relay triggers without movement in the protection area.	Animal / rodents in protection area. Heating or air conditioning outlets in sensor view. Pet access to furniture or room fixture in view of the detector (pet immune unit).	Block access of animals / rodents. Re-aim sensor. Ensure that pets can not climb up onto furniture / fixtures in protection area.
An alarm is indicated at the LED but not at the alarm output.	Incorrect wiring at the alarm output terminals. Lightning damage.	Correct the wiring fault. Replace sensor.
Alarm LED on constantly, no fault in protected area or wiring.	Defective unit.	Replace sensor.
Unit continues to operate after input power has been disconnected.	The wire to the "-" power input was disconnected, the "+" is still connected. The power is finding a return path through the Alarm Output protection device and alarm wiring.	Disconnect wire from the "+" power input.

Maintenance

• **INSPECTION:**	An inspection of this unit should be made periodically, including, but not limited to all mounting, wiring, and the condition of the interior area and components.	
• **CLEANING:**	Clean the external plastic parts of this unit with a soft, clean, cloth dampened with water.	
• **TESTING:**	This unit should be tested routinely for proper operation. At a minimum, operation should be fully checked yearly.	

Automatic LED Brightness Feature

The QT Series alarm LED indicator includes an automatic brightness feature. In order to allow for a less noticeable installation, LED brightness is reduced as the ambient light level in the room drops.

The LED can be fully disabled by removing the ALARM LED jumper.

Available accessories
• 100PET -- 100 lb pet immune lens (for QT-40 & QT-40SL only)

Specifications

Microwave Freq.	10.525 GHz, pulsed
Input Voltage	10 to 16 VDC, 12 VDC nominal
Input Current	15 mA max. (SL model 30 mA), 11 mA quiescent (approx.)
Pyro Type	Dual Element
Pulse Count	Jumper selectable: PC2, PC4
Warm-up Time	25 - 45 seconds
Alarm Period	2.4 seconds, retriggerable
Visual Indicator	Red Alarm LED (Selectable On / Off)
Alarm Output	NC, solid state, 19 VDC, 100 mA, 13 ohms resistance typ.
Tamper Output	NC, dry contact, 30 VDC, 500 mA, 5 W max.
Mounting Height	7 to 8.5 ft (2.1 to 2.6 m)
Operating Temp.	14° to 131° F (-10° to 55° C)
Environmental	95% humidity non-condensing
Weight	3 oz / 85 g
Dimensions	4.8" H x 2.5" W x 1.7" D / 12.2cm x 6.4cm x 4.3cm

Contact Aleph