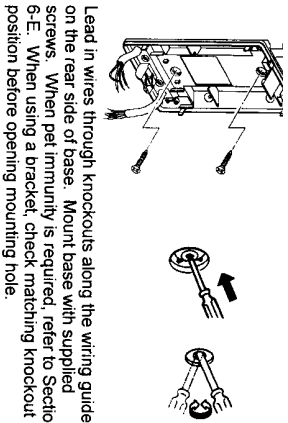
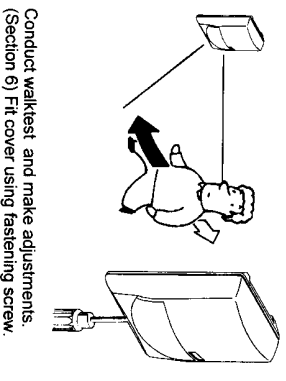
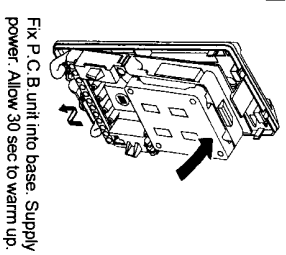
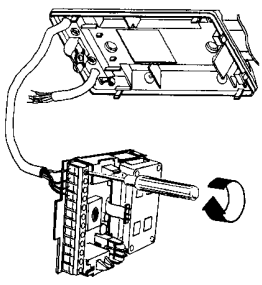


Loosen fastening screw and remove cover.

Release hook at top of unit. Remove P.C.B. unit from base.



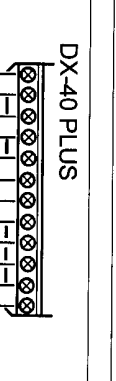
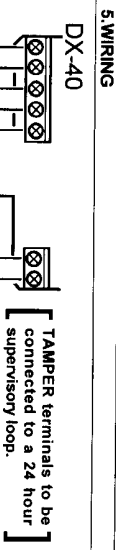
Lead in wires through knockouts along the wiring guide on the rear side of base. Mount base with supplied screws. When pet immunity is required, refer to Section 6-E. When using a bracket, check matching knockout position before opening mounting hole.



Wire according to Section 5.

Fix P.C.B. unit into base. Supply power. Allow 30 sec to warm up.

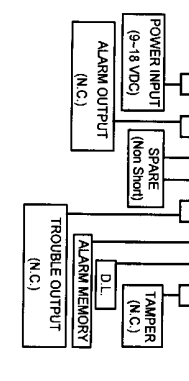
Conduct walktest and make adjustments. (Section 6) Fit cover using fastening screw.



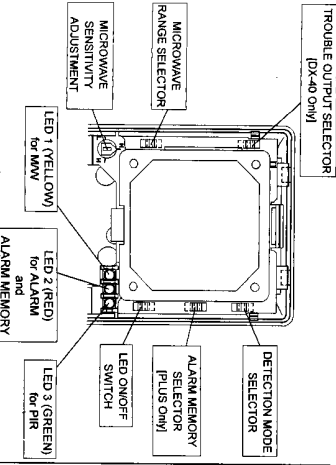
Power wires should not exceed the following lengths.

WIRE SIZE	12V	14V	12V	14V
AWG 22(0.33mm)	16m (53m)	32m (106m)	14m (46m)	28m (93m)
AWG 20(0.5mm)	25m (83m)	50m (165m)	22m (73m)	44m (145m)
AWG 18(0.75mm)	40m (133m)	80m (265m)	35m (115m)	70m (230m)

When using two or more units on one wire, the maximum length is obtained by dividing the maximum wire length listed above by the number of units used.



6. FUNCTIONS



6 - A. LED ON/OFF

Switch On or Off by adjusting the pin switch. LED will turn on under following status even if the pin switch is positioned to Off.

- 1) During warm-up period (approx. 30 seconds)
- 2) Alarm Memory indication
- 3) To indicate TROUBLE status (refer Section 6-C)

* D.L. terminal / LED remote control terminal (DX-40 PLUS Only)
LED can be enabled or disabled remotely from control panel by D.L. terminal. Place jumper pin switch in OFF position.

LED Enabled: Connect D.L. terminal to common ground (with detector).
LED Disabled: No ground to D.L. terminal (open circuit).

6 - C. AUTOMATIC TROUBLE MONITORING

DX-40 series features automatic trouble monitoring which generate trouble signal when detection ability of PIR or Microwave is compromised.

1) PIR detection failure

- Function
- When something is blocking the PIR detection ability very near the detector (up to approx. 20 cm), i.e. by paper, this function will generate a TROUBLE signal. It requires the area to be blocked for approx. 30 seconds or less.
- Reset of TROUBLE Output
- Remove blocking material and conduct a walk test. If PIR detects properly, TROUBLE output will reset.
- Caution
- Do not switch power down the detector during a TROUBLE status. (It will reset TROUBLE output even if blocking material remains.)
- Cannot detect blocking away from the detector (up to approx. 20 cm)
- In order for this feature to activate, an object must be placed within 20cm of the detector which will reflect microwave. After this occurs, the detector counts any PIR detections for or up to 30 seconds, and if there are no PIR detections, the unit will generate a trouble signal. If there is nothing to reflect microwave within 20cm of the detector, the trouble signal will not be sent, even if the PIR is blocked (i.e. Spray).

2) Microwave detection failure (Self-Check)

Function

This function monitors signal wave shape of PIR and microwave's human detection, and inspect microwave's failure. Analysis requires an average of 10 to 20 minutes.

6 - D. DETECTION MODE

Select STD(Standard) or SP(Special) position according to environment conditions.

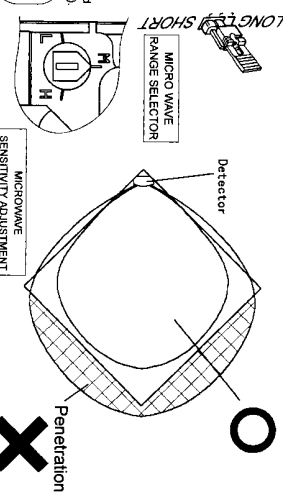
STD: Select this position usually. Signals are analysed twice. High reliability and sharp detection are available in this mode.

SP: For bad environments with moving objects in the detection area (i.e. pets or animals).

6 - E. SPECIAL INSTRUCTIONS FOR PET IMMUNITY

Signals are analyzed 4 times for enhanced reliability. When walk testing, detection can be a little slower than STD mode.

- 1) Installation height must be between 7.0 ft and 8.0 ft (2.1 m and 2.4m).
- 2) DETECTION MODE must be positioned to SP (Special).
- 3) Pet immunity reduces for animals of 1.5 ft. (50cm) or taller.
- 4) When animals or pets jump up on desks or shelves, the detector may detect them. Aim detection area to avoid such places.
- 5) Installation should be made flat on wall or corner mounted. Do not use optional bracket if pet immunity is required.



Microwave "Watchdog" Circuit

When microwave goes into fails, the detector automatically switches to back-up mode. In this mode, the PIR operates independently in order to avoid missing alarms during microwave failure. (Detection mode refer to section 6-D) turns into SP (Special) mode for enhanced reliability.

3) TROUBLE Output Indication

When TROUBLE status occurs, the following output will operate continually until the trouble is restored, i.e. blocking material of PIR is removed.

- LED Operation
- PIR Detection Failure: Yellow and Green LED's flicker.
- Microwave Detection Failure: Red and Yellow LED's flicker.
- Relay Output Terminals

DX-40 TROUBLE signals will output through the ALARM output terminals.

SELECTOR POSITION	ALARM OUTPUT TERMINAL
ON	Output ON
OFF	No Output (LED indication only)

NOTE: When Alarm Output (ON) is selected and the detector goes into a trouble condition, the Alarm Output will open and remain in the open position. When the relay output is latched because of this type of trouble condition, the PIR only mode will not work. If PIR only mode is required, select Alarm Output (OFF) and trouble will be indicated by LED only.

DX-40 PLUS TROUBLE signals will output through TROUBLE output terminals. Yellow and Green LED's flickers in turn.

6 - F. ALARM MEMORY (DX-40 PLUS Only)

Compatible Control Panel is required for Alarm Memory.

Select "POSITIVE" or "NEGATIVE" control.

Connect A.M. terminal to Control Panel's Control Voltage Signal terminal (System Arming Status Voltage Output).

Position	Negative	Positive
System armed	0-1VDC (grounded)	OPEN or +5-18VDC
System disarmed	OPEN or +5-18VDC	0-1VDC (grounded)

* "grounded" = A.M. terminal is electrically connected with power supply terminal (ground).

OPERATION OF ALARM MEMORY

When the unit triggered during armed period, then the system is disarmed, Red LED will remain lit to confirm that it reported an alarm.

Alarm Memory will operate even when LED is switched OFF.

Alarm Memory will not operate while system is disarmed.

After Alarm Memory latches, Alarm Output and Red LED operate normally during armed period.

RESET

Alarm Memory resets automatically when system is re-armed.

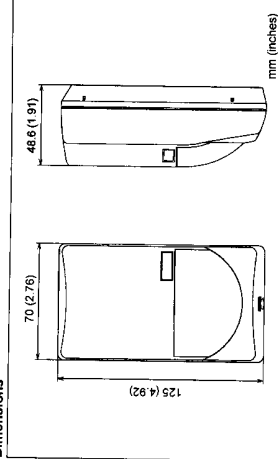
7. TROUBLE SHOOTING AND MAINTENANCE

No Operation.	Power is not supplied. Incorrect wiring. Low power supply.	Supply power Correct wiring Supply power between 9 to 18VDC
Unit is constantly in warm-up mode.		Supply power between 9 to 18VDC
YELLOW SHOOTING Yellow LED does not light (MW does not operate) Green LED does not light (PIR does not operate)	Check if it detects near from. Check if it detects far from.	Remove blocking materials and conduct walk test again.
Yellow LED lights even if no person in detection area (MW detects)	Strong RFT nearby. Moving fan or motor of air-conditioning vents etc. Detection outside through wall. (Persons in the next room. Water pipe in the wall etc.) Movements of animals, curtains etc.	Switch electrical equipment off. Adjust the detection range (section 6-B) and reduce sensitivity. Remove them from the detection area.
Green LED lights even if no person in detection area (PIR detects)	Wind direct hits detector. Strong light hits detector. (Sunlight, car head light etc.) Rapid temperature changes in detection area (heating, air conditioning, incandescent lamp etc.), moving animals, or curtains etc.	Avoid them from hitting detectors directly. Possibly, better to avoid it from the detection area. Remove such objects from detection area.
Red & Yellow LED flicker.	Failure of microwave unit	Replace with new unit
Green & Yellow LED flicker.	Blocking materials in front of detector	Remove blocking materials.
No output although Green & Yellow (or Red & Yellow) LED flicker.	Trouble Output Switch is OFF. Incorrect wiring Relay is broken	Turn it ON. Correct wiring Replace with new unit
No output although Red LED lights.	Incorrect wiring Relay is broken.	Correct wiring Replace with new unit
Red LED continues to light	Incorrect wiring of Alarm Memory Improper Control Voltage from control panel	Correct wiring Check control voltage.

8. SPECIFICATIONS

DX-40	
Detection method	Passive Infrared and Micro Wave
Coverage	40ft x 10ft (12m x 3m) 85° wide
Detection zones	82 zones (PIR)
Mounting Height	5 ~ 8ft (1.5 ~ 2.4m)
Sensitivity	3°F (1.6°C) at 2ft (0.6m) / sec, 40ft (12m) 1 ~ 5ft / sec (0.3 ~ 1.5m) / sec
Detectable speed	Approx. 2 sec
Alarm period	N.C. 28VDC 0.2A max.
Alarm output	N.C. Open when cover is removed.
Tamper switch	Approx. 30 sec
Warm up period	Flicker during warm-up
LED Indicator	RED: ALARM, ALARM MEMORY and TROUBLE indicator YELLOW: MW and TROUBLE indicator GREEN: PIR and TROUBLE indicator
Power input	9 ~ 18VDC
Current draw	12mA (normal), 35mA (max) at 12VDC NO Alarm 30V / m
RF interference	14°F ~ 122°F (-10°C ~ +50°C)
Operating temperature	95% max.
Environmental humidity	10.525GHz
Microwave frequency	10.687GHz : (U.K. Version)
Weight	5.3oz (150g) : PLASTIC ANTENNA Version 8.1oz (230g) : METAL ANTENNA Version

Dimensions



* Specifications and design are subject to change without prior notice.

NOTE

This unit is designed to detect movement of an intruder and activate an alarm control panel. Being only a part of a complete system we cannot accept responsibility for any damages or other consequences resulting from an intrusion. This Product conforms to category of EMC Directive 89/336 EEC.

OPTEX
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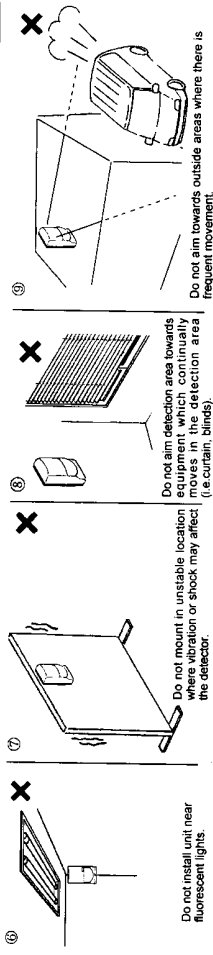
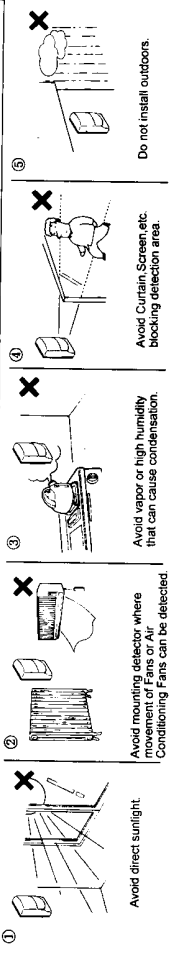
PASSIVE INFRARED and MICROWAVE COMBINATION DETECTOR

DX-40, DX-40 PLUS

FEATURES

- Sealed Optics
- Microwave Area Shaping Technology (Patent Pending)
- 3 LED Walk Test Indication
- Multifocus Optics Design (Patented)
- LED On/Off Switch
- DX-40PLUS Only
- Automatic TROUBLE Monitoring (Patent Pending)
- Pet Immunity
- Microwave "Watchdog" Circuit
- Alarm Memory
- LED Remote Control Terminal
- QUAD Zone Logic
- Temperature Compensation Logic
- Hassle-free Microwave Adjustment
- OPTIONAL BRACKET
- FA-1W : Wall Mount Bracket : adjustable ±45° (Horizontally), 0-20° (Vertically downwards)
- FA-3 : Compact Wall & Ceiling Bracket : adjustable ±45° (Horizontally), 0-10° (Vertically downwards)

1. INSTALLATION HINTS



2. DESCRIPTION AND OPERATION

