

GENERAL DESCRIPTION

The COSMOS family includes the following models:

- **COSMOS PR:** A microprocessor based Passive Infrared detector
- **COSMOS AM:** Passive Infrared detector with anti-masking features.
- **COSMOS PET PR:** A microprocessor based Passive Infrared detector with pet immunity
- **COSMOS PQ:** A Quad PIR with two separate dual element pyroelectric sensors.
- **COSMOS DT:** A Dual Technology detector offering both MW and IR technologies.
- **COSMOS DTAM:** A Dual Technology detector with anti-masking features.
- **COSMOS PET DT:** A Dual Technology detector with pet immunity.

The cosmos DT is available in the following versions:

DTI (UK) (10.687 GHz)	RANGE	FCC (USA) (10.525 GHz)UL Listed
RK - 210DTI	10m/ 33ft	RK - 210FC
RK - 215DTI	15m/ 50ft	RK - 215FC
RK - 225DTI	25m/ 80ft	RK - 225FC

The **IR** responds to changes in the ambient thermal radiation caused when an intruder crosses the protected area.

The **MW** transmits signals and analyzes the frequency changes of the reflected echo from an intruder due to Doppler effect.

An **ALARM** is initiated only when both technologies trigger simultaneously.

Detection occurs only in areas where IR and MW patterns overlap, greatly reducing the chance of false alarms.

Table 1: Available COSMOS DT Lenses and Accessories.

ACCESSORY	RK-225	RK-215	RK-210
Typical Mounting Height	2.5m	2.5m	2m
Wide Angle Lens	RL-115		RL-125
Long Range Lens	***	***	RL-17
Corridor Lens	RL-15		***
Pet Alley set	RA-12		***
Ceiling Mounted Swivel	RA-90		***
Wall/Corner Mounted Swivel	RA-91		***

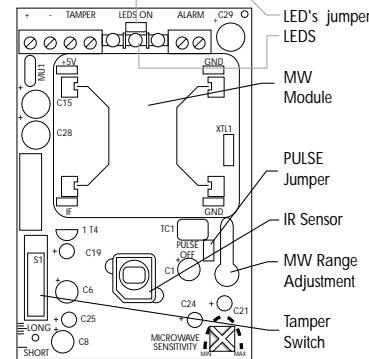
COSMOS DT FEATURES

- Dual IR and MW Technologies
- Creep Zone
- Microprocessor Design
- Automatic True Temperature Compensation
- Microwave Range Adjustment
- Pigmented Lenses
- Alternate Polarity Pulse Count
- Low Current Consumption
- High RFI Immunity
- Anti-Fluorescent Interference Signal Processing
- Wall and Corner Mounting Without Accessories
- Vertical Adjustment
- UL Listed Versions

LED display

When LED's Jumper is IN:

- **YELLOW LED** indicates PIR detection
- **GREEN LED** indicates MW detection
- **RED LED** indicates alarm (simultaneous PIR and MW detection)
- At Power-up period, the LEDs will blink continuously, one after the other, until end of warm-up period.



INSTALLATION

STEP 1 PRELIMINARY CONSIDERATIONS

Before installation, carefully study the space to be protected so as to choose the correct placement of the unit and lens for best coverage. The detector should be installed so that the beam patterns are at 45° (optimal) to the intruder's expected path. Corner installations are recommended. Installation height should be between 1.8m (5'9") and 2m (6'7") for the 225 and at an optional 2.5m (8'2") for the RL-17. Use Fig 3 as reference.

NOTE The IR range is determined by the installation height. Use fig 3 as a reference. For every 10cm (4") of lowering (or increasing) the installation height, the range is reduced (or increased) by 2.8m (9'2").

CAUTION:

THE UNIT SHOULD NOT BE MOUNTED IN DIRECT SUNLIGHT OR NEAR ANY HEAT SOURCES. THE DETECTION SECTORS SHOULD BE POINTED TOWARDS EITHER A WALL OR THE FLOOR (NOT WINDOWS AND CURTAINS). INSTALL ON SMOOTH SURFACES ONLY.

STEP 2 PRELIMINARY CONSIDERATIONS

If a fixing screw is used to secure the front cover, turn the screw 3 full turns in the counterclockwise direction. With the screw now loosened, press it in to release the front cover.

If a screw is not used, press the tab located behind the screw hole. The front cover can now be removed.

STEP 3 PC BOARD REMOVAL

Loosen the holding screw located on the right side of the PCB and slide the PCB up until the screw enters the widened region. The PCB can now be lifted off.

STEP 4 MOUNTING

The COSMOS DT can be mounted either on flat surface or at corner.

- Open the knockout holes on the rear cover.
- Insert the cable through the cable hole.
- Mount the rear cover in its final location.
- Seal the remaining holes with sealant.
- After mounting the back cover replace the PCB in its position.

STEP 5 PC BOARD ADJUSTMENT

After the Detector base has been mounted, reinstall the PCB. Use the scale on the bottom left side of the PCB to choose the correct vertical adjustment position as follows:

For **WIDE ANGLE LENS** RK210/RK 215 installed at a height of 2.5m (8'2") (for UL).

SCALE POSITION	ROOM SIZE
short	3-6m (9-18ft)
long	6-15m (18-50ft)

RK-225 install at 2m (6'7") at Long position only

Fine Tuning of Protected Area:

Slide the board up - to lower the beams and reduce the range. Slide the board down - to raise the beams and increase the range. For **LONG RANGE:** Select select position, **LONG**, Pulse Count of 1 and a mounting height of 2.5m.

When completed, fasten the screw to secure the PCB in the desired position.

STEP 6 TERMINAL WIRING

Wire cable to the terminal block at the top of the PCB as follows:

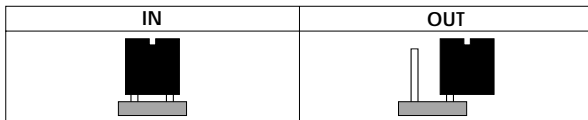
- 12 VDC:** Power supply input.
ALARM: Normally closed output.
TAMPER: Normally closed dry output.

STEP 7 JUMPER SETTING

The COSMOS DT has two jumpers that can be either IN (used) or OUT (unused).

Unused jumpers should be placed on one leg only to prevent their loss.

Fig 2: Jumper positions.



- LEDS:** IN - Enables all LEDs
 OUT - Disables all LEDs
PULSE: IN - NO Pulse Count (1 pulse)
 OUT -Alternative Polarity Pulse Count (2 pulses)

STEP 8 WALK TEST

Two minutes after applying power (a warm-up period), walk test the detector over the entire protected area to verify proper operation of the unit. The RK-225 needs a longer warm-up period of FOUR minutes. It enables a powerful long range sensing capability and has increased sensitivity.

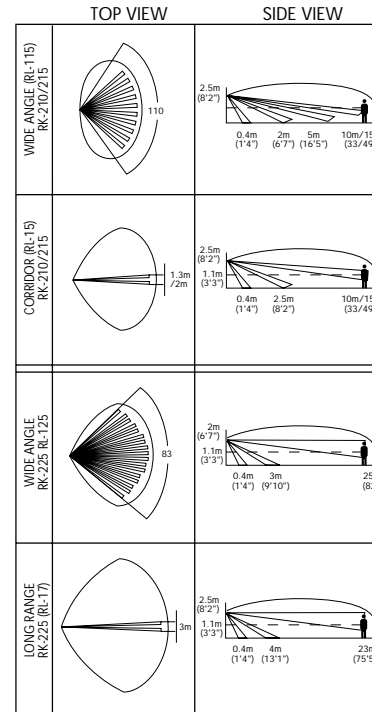
- NOTE**
- Make sure to replace front cover before Walk Test.
 - The MW range can be adjusted using the potentiometer located at the bottom of the PCB. It is important to set the potentiometer to the lowest possible setting that will still provide coverage for the entire protected area.

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STEP 9 FINAL SETUP

After completing the installation and testing stages, ensure all jumpers are at their desired positions. The unit is now ready for normal use.

Fig 3: Cosmos DT Lenses



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PROCEDURE FOR CHANGING LENSES

The pigmented lens is attached to the inside of the front plastic cover using a sensor protective sleeve.

1. Remove the sensor protecting sleeve by pushing up the clip that holds the top part of the sleeve to the front cover.
2. Disconnect the lens from the sleeve by gently lifting it from the holding pins that secure it to the sides of the sleeve.
3. Select the desired lens and make sure that the cut corners are pointed upwards. (Fig. 4).
4. Place the two pins, located on the top and bottom part of the lens, into the matching holes on the sleeve.
5. Place the holes on either side of the lens into their matching holding pins on the sides of the sleeve.
6. Insert the protective sleeve back into place on the front cover.

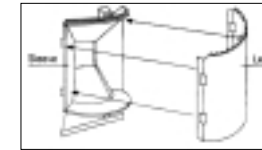


Fig 4.
Lens Change
Procedure

- NOTE**
- This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna
 - Increase the separation between the equipment and the receiver
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
 - Consult the dealer or an experienced radio/TV technician for help.
- Changes or modifications to this equipment not expressly approved by the party responsible for compliance (Rokonet Electronics Ltd.) could void the user's authority to operate the equipment.

SPECIFICATIONS

ELECTRICAL
 Current consumption: 19mA at 12 VDC
 45mA at 16 VDC (MAX with all LED's ON)
 Voltage requirements: 9-16 VDC regulated
 Alarm contacts: 24 VDC, 50 mA
 Tamper contacts: 24 VDC, 0.1A
OPTICAL
 Filtering: White Light Protection
PHYSICAL
 Size: 127.6 x 64.2 x 40.9mm
 (5 x 2.5 x 1.6 in.)
ENVIRONMENTAL
 Operating temperature: -10°C to 55°C (14°F to 131°F)
 Storage temperature: -20°C to 60°C (-4°F to 140°F)

NOTES FOR UL

1. The models have been listed by Underwriters Laboratories for use with the wide angle lens only.
2. The detector is intended to be connected to a listed burglar alarm control unit capable of providing 4 hours of standby power. Specifications are subject to change without prior notice. Should any questions arise, contact your distributor.

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ROKONET LIMITED WARRANTY

Rokonet Electronics, Ltd. and its subsidiaries and affiliates ("Seller") warrants its products to be free from defects in materials and workmanship under normal use for 24 months from the date of production. Because Seller does not install or connect the product and because the product may be used in conjunction with products not manufactured by the Seller, Seller can not guarantee the performance of the security system which uses this product. Seller's obligation and liability under this warranty is expressly limited to repairing and replacing, at Seller's option, within a reasonable time after the date of delivery, any product not meeting the specifications. Seller makes no other warranty, expressed or implied, and makes no warranty of merchantability or of fitness for any particular purpose. In no case shall seller be liable for any consequential or incidental damages for breach of this or any other warranty, expressed or implied, or upon any other basis of liability whatsoever. Seller's obligation under this warranty shall not include any transportation charges or costs of installation or any liability for direct, indirect, or consequential damages or delay.

Seller does not represent that its product may not be compromised or circumvented; that the product will prevent any person; injury or property loss by burglary, robbery, fire or otherwise; or that the product will in all cases provide adequate warning or protection. Buyer understands that a properly installed and maintained alarm may only reduce the risk of burglary, robbery or fire without warning, but is not insurance or a guaranty that such will not occur or that there will be no personal injury or property loss as a result.

Consequently seller shall have no liability for any personal injury, property damage or loss based on a claim that the product fails to give warning. However, if seller is held liable, whether directly or indirectly, for any loss or damage arising from under this limited warranty or otherwise, regardless of cause or origin, seller's maximum liability shall not exceed the purchase price of the product, which shall be complete and exclusive remedy against seller. No employee or representative of Seller is authorized to change this warranty in any way or grant any other warranty. WARNING: This product should be tested at least once a week.



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COSMOS
 DT SERIES
 RK-210,215,225

INSTALLATION
 INSTRUCTIONS

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