

Risco RK2000DPC

Risco Lunar PIR 360 Degree Ceiling Motion Sensor

MODEL: RK2000DPC USER MANUAL

1. Introduction

This manual provides essential information for the proper installation, operation, and maintenance of the Risco Lunar PIR 360 Degree Ceiling Motion Sensor (Model RK2000DPC). This device is designed to detect motion within a 360-degree field of view when mounted on a ceiling, utilizing passive infrared (PIR) technology. Please read these instructions carefully before proceeding with installation or use.

2. Safety Information

- Installation should only be performed by qualified personnel in accordance with all local and national electrical codes.
- Disconnect power to the installation area before performing any wiring or maintenance.
- Do not expose the device to moisture or extreme temperatures outside its specified operating range.
- Avoid mounting the sensor near heat sources, direct sunlight, or strong air currents, as these can cause false alarms.
- Ensure proper grounding where required.

3. Package Contents

Verify that all components are present before beginning installation:

- Risco Lunar PIR 360 Degree Ceiling Motion Sensor (RK2000DPC)
- Mounting hardware (screws, anchors)
- User Manual (this document)

4. Setup and Installation

The Risco Lunar PIR sensor is designed for ceiling mount installation. Optimal performance is achieved when mounted at a height of up to 4 meters (13 feet).



Figure 1: Risco Lunar PIR 360 Degree Ceiling Motion Sensor (RK2000DPC). This image shows the compact, low-profile design of the white circular sensor, suitable for discreet ceiling installation.

4.1 Mounting Location

- Choose a central location on the ceiling that provides the desired 360-degree coverage without obstructions.
- Avoid areas with direct drafts from HVAC vents or windows, as rapid temperature changes can trigger the sensor.
- Ensure the mounting surface is stable and can support the device.

4.2 Wiring Instructions

The sensor operates on a DC voltage supply. Refer to the following specifications for wiring:

- **Operating Voltage:** 9 to 16VDC
- **Current Consumption:** 25mA at 12V
- **Alarm Contacts:** 100mA, 24V, N.C. (Normally Closed)
- **Tamper Contacts:** 100mA, 24V, N.C. (Normally Closed)

1. Carefully open the sensor housing to access the terminal block.

2. Connect the power supply wires to the designated terminals (typically marked + and - or VCC and GND).
3. Connect the alarm output wires to your alarm control panel's zone input.
4. Connect the tamper switch wires to the control panel's tamper circuit, if applicable.
5. Ensure all connections are secure and insulated.

4.3 Initial Power-Up and Walk Test

1. After wiring, carefully close the sensor housing.
2. Apply power to the sensor. Allow a few minutes for the sensor to stabilize.
3. Perform a walk test by moving through the detection area. The sensor features a **Walk Test Display (1 LED)** which will illuminate to indicate detection.
4. Adjust the sensor's position or sensitivity if necessary to achieve optimal coverage and avoid false triggers.

5. Operating Principles

The Risco Lunar PIR sensor uses advanced passive infrared technology to detect changes in infrared energy caused by human body movement.

- **Detection Technologies:** Dual element PIR for enhanced reliability.
- **PIR Lens Coverage:** 110° angle, providing a full 360° overview from a ceiling mount.
- **Detection Zones:** 60 zones, comprising 30 Fresnel facets arranged in 3 optical levels (12 external, 12 middle, and 6 internal facets) for comprehensive coverage.
- **Adjustable Sensitivity:** Allows fine-tuning of the sensor's responsiveness to movement.
- **Variable Pulse Count:** Configurable setting (1, 2, or 3 pulses) to adjust the number of detected pulses required to trigger an alarm, helping to reduce false alarms.
- **Temperature Compensation:** Automatic thermistor-controlled compensation ensures stable detection performance across varying ambient temperatures (0°C to 55°C / 32°F to 131°F).
- **Optical Filtering:** Provides white light protection to prevent false alarms from sudden changes in illumination.
- **RF Immunity:** Designed with superior immunity to radio frequency interference (30V/m from 10MHz to 1GHz).

6. Maintenance

To ensure continued optimal performance of your Risco Lunar PIR sensor, follow these maintenance guidelines:

- **Cleaning:** Periodically clean the sensor lens with a soft, dry, lint-free cloth. Do not use abrasive cleaners or solvents.
- **Inspection:** Annually inspect the sensor for any physical damage, loose wiring, or obstructions to its field of view.
- **Functionality Test:** Perform a walk test periodically to confirm the sensor is detecting motion correctly.

7. Troubleshooting

If you encounter issues with your Risco Lunar PIR sensor, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Sensor not detecting motion	No power; incorrect wiring; obstructed view; sensitivity too low; faulty sensor.	Check power supply and wiring; clear obstructions; increase sensitivity; perform walk test; contact support if sensor is faulty.
False alarms	Heat sources (HVAC, sunlight); strong air currents; pets; sensitivity too high; incorrect pulse count setting.	Relocate sensor away from heat/drafts; adjust sensitivity; increase pulse count; ensure pets are not in detection area.
LED not illuminating during walk test	No power; LED malfunction; sensor not detecting.	Verify power; check wiring; perform walk test in different areas; contact support.

8. Specifications

Detailed technical specifications for the Risco Lunar PIR 360 Degree Ceiling Motion Sensor (RK2000DPC):

- **Brand:** Risco
- **Model Number:** RK2000DPC (also referred to as RK2000UPC in some documentation)
- **Color:** White
- **Power Source:** Corded Electric
- **Operating Voltage:** 9 to 16VDC
- **Current Consumption:** 25mA at 12V
- **Alarm Contacts:** 100mA, 24V, N.C.
- **Tamper Contacts:** 100mA, 24V, N.C.
- **Detection Technologies:** Dual element PIR
- **PIR Lens Coverage:** 110° angle, 360° overview
- **Detection Zones:** 60 (30 Fresnel facets in 3 optical levels)
- **Optical Filtering:** White light protection
- **Selectable Pulse Count:** 1, 2, 3
- **Temperature Compensation:** Automatic thermistor-controlled
- **RF Immunity:** 30V/m from 10MHz to 1GHz
- **Walk Test Display:** 1 LED
- **Operating Temperature:** 0°C to 55°C (32°F to 131°F)
- **Storage Temperature:** -20°C to 60°C (-4°F to 140°F)
- **Dimensions (Diameter x Height):** Ø135 x 27mm (Ø5.3" x 1.1")
- **Installation Height:** Up to 4m (13ft)
- **Item Weight:** 4.8 ounces
- **Mounting Type:** Ceiling Mount
- **UPC:** 875586001303
- **ASIN:** B000GLY500

9. Warranty and Support

Risco products are manufactured to high-quality standards. For specific warranty terms and conditions, please refer to the warranty card included with your product or visit the official Risco website. For technical support, troubleshooting assistance, or service inquiries, please contact your authorized Risco dealer or distributor.

Keep your purchase receipt and product serial number handy when contacting support.