Motion Detector

Installation
and
Operating Instructions

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Introduction

The Rytec motion detector operates on microwave technology. It detects motion in the area of the detector. It can be used to detect vehicles only or pedestrians and vehicles. This instruction book will explain installation, operation and troubleshooting of motion detectors.

NOTE: This manual is intended for the Motion Detector only. Installation and operation information specific to your door is detailed in the Installation and Owner's manuals that were shipped with the door.

The installation and operation of the Motion Detector is not difficult providing you follow the procedures outlined in this manual. Any unauthorized changes to these procedures, or failure to follow the steps as outlined, will automatically void our warranty. Any changes to the working parts, assemblies, or specifications as written, not authorized by Rytec Corporation, will also cancel our warranty. The responsibility for the successful operation and performance of this motion detector lies with the owner of the door.

DO NOT INSTALL, OPERATE, OR PERFORM MAINTENANCE ON THIS MOTION DETECTOR UNTIL YOU READ AND UNDERSTAND THE INSTRUCTIONS IN THIS MANUAL.

If you have any questions, contact your Rytec representative or call the Rytec Customer Support Department at 800-628-1909. Always refer to the serial number of the door that your motion detector is connected to when calling the representative or Customer Support. Refer to the installation manual or the Owner's manual provided with your door for the location of the serial number plate.

The wiring connections and schematics in this manual are for general information purposes only. A wiring schematic is provided with each individual door specifically covering the control panel and electrical components of that door. That schematic was shipped inside the control panel.

All electrical and mechanical work must be performed in accordance with local and state building codes by qualified installers and electricians.

This product is covered by the Rytec door warranty. The warranty is in the door Owner's manual.

How to use manual

Throughout this manual, the following key words are used to alert the reader of potentially hazardous situations, or situations where additional information to successfully perform the procedure is presented:

WARNING is used to indicate the potential for personal injury, if the procedure is not performed as described.

CAUTION is used to indicate the potential for damage to the product or property damage, if the procedure is not followed as described.

IMPORTANT: IMPORTANT is used to relay information CRITICAL to the successful completion of the procedure.

NOTE: NOTE is used to provide additional information to aid in the performance of the procedure or operation of the door, but not necessarily safety related.

Installation

Mount the motion detector so it is aimed at the center of the area around the door to be monitored. It is designed to be mounted on the wall or ceiling at a maximum height of 20'.

Installation Considerations

There are a number of things that should be considered when installing the motion detector.

- Mount the detector on a stable, vibration free surface.
- Do not mount it behind anything that may block the detector's view.
- Avoid aiming the detector at moving things that will not be passing through the door.
- There should not be any fluorescent tubes in the field of the detector.
- If the motion detector is exposed to rain or snow, it should be adjusted to approaching traffic.

Activation Patterns

Reference Figure 1 for approximate detection zones when mounted at 16 ft. at a 30° angle.

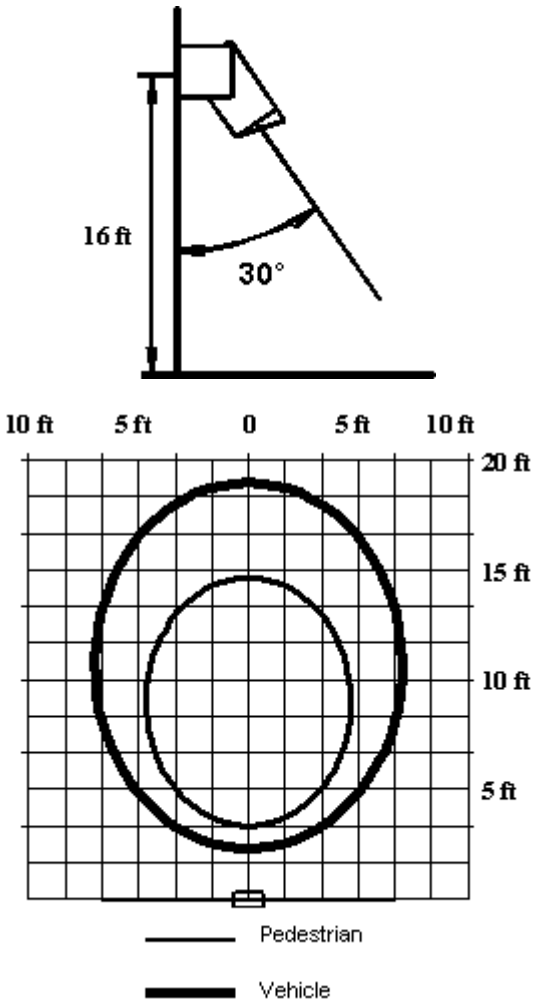


Figure 1

Electrical Connections

Refer to Figure 2 for description of electrical connections.

⚠WARNING

The disconnect must be in the "OFF" position and properly locked and tagged before connecting the wires.

Function	Terminal no.
Relay - contact normally open	1
Relay - common	2
Relay - contact normally closed	3
Power supply 12-27V AC/DC	4
Power supply 12-27V AC/DC	5

Figure 2

Internal Settings

Device Address

When multiple motion detectors are mounted close together, an address may be assigned to each one. This address allows for the adjustment of an individual detector without affecting the other detectors in range of the remote control. There are four different addresses available by adjusting the jumper field located above the DIP-switches. See Figure 3.

Address	Jumper position
1	
2	
3	
4	

Figure 3

Detection Mode

The motion detector can be set up for traffic moving in various directions. It can be set for traffic approaching and departing the door, which is bi-directional traffic. It also can be adjusted for unidirectional traffic. This could be approaching traffic only or departing traffic only. Adjust the detection mode by using the DIP switches. See figure 4.

Traffic Direction	Dip Switch 1	2
Approaching	 1 2	ON	OFF
Departing	 1 2	OFF	ON
Both	 1 2	OFF	OFF
	 1 2	ON	ON

Figure 4

Adjustments with Internal Buttons

Operational parameters (sensitivity, personal suppression) may be adjusted with the buttons located to the right of the horn antenna.

Left button / yellow LED: select/indicate function

Right button / red LED: change/indicate value

If a function is selected for the first time, the function number is indicated on the yellow LED followed by the currently set value on the red LED.

The adjustment process is automatically terminated 30 seconds after the last button has been pressed or by holding either button for a long time.

Sensitivity Adjustment – Function 1

The sensitivity of the motion detector may be adjusted in levels from 1 to 15. Each time the right button is pressed, the sensitivity is

increased by one level. Level 15 is followed by level 1.

Yellow LED flashes 1x

Red LED flashes 1 x per value of the current level of sensitivity

Pedestrian Detection – Function 2

The motion detector can be set to ignore or detect pedestrian traffic by using the button on the right side. This setting should be left on until after the sensitivity has been set.

Yellow LED flashes 2x

Red LED flashes:
1x for detection of vehicle only
2x for detection of pedestrians and vehicles

Reset Factory Defaults

To reset the parameters to the factory defaults, press and hold both buttons while turning on the power supply. Factory defaults are as follows:

Sensitivity:	*7*
Pedestrian Detection:	*on*

Adjustments Using the Remote Control

⏻	activation of detectors in range
●	LED for transmission
1.. 4	possible device addresses 1..4
◢	sensitivity increase
◣	sensitivity decrease
⁂	pedestrian detection
i	- not used
F- / F+	- not used

Figure 5

Activation of R/C Adjustment Mode

To change the parameters with the remote control, the detector first has to be activated for this adjustment. For this purpose, press the ⏻ -key. All detectors within the range of the remote control will indicate their set address on the red LED. Enter the address of the desired detector within 3 seconds using the numbers on the remote control. The activated detector indicates that it is ready for programming by the yellow LED. All other detectors are not activated and return to their normal mode.

Sensitivity Adjustment – Function 1

The sensitivity of the motion detector may be adjusted using the

◢ and ◣ keys. When the keys are pressed for the first time, the yellow LED indicates the number of the desired function with flash signals. Press the ◢ key to increase the sensitivity by one level and the ◣ key to decrease the sensitivity by one level. After adjusting, the *red LED* will flash a number equal to the current level of sensitivity.

Yellow LED flashes 1x

Red LED flashes 1 x per value of the current level of sensitivity

NOTE: Pedestrian detection should be turned on while adjusting sensitivity.

Pedestrian Detection – Function 2

The key changes the settings for pedestrian detection. This setting should be left on until after the sensitivity has been set.

Yellow LED flashes 2x

Red LED flashes:
1x for detection of vehicle only
2x for detection of pedestrians and vehicles

Exiting the Adjustment mode

The Remote control adjustment mode is terminated by pressing the -key. The motion detector now returns to the normal detection mode. The yellow LED is turned off. The red LED continues to indicate detected objects. The object recognition mode is automatically activated if no entry is made with the key buttons or remote control for 30 seconds.

Startup Procedure

- Test the detector with the pedestrian detection turned on.

- Test the detector with the same or similar equipment that will be detected during normal operation.

- Begin from a point outside of the detection field and approach the detector. The red LED will turn on when the detector it activated. Perform this test from all directions.

- Increase or decrease the size of the detection zone by increasing or decreasing the sensitivity of the detector.

- If the movement of the door triggers the detector, the mounting angle will need to be increased until it no longer detects the door movement.

Troubleshooting

Some possible reasons for the detector to activate for no apparent reason include:

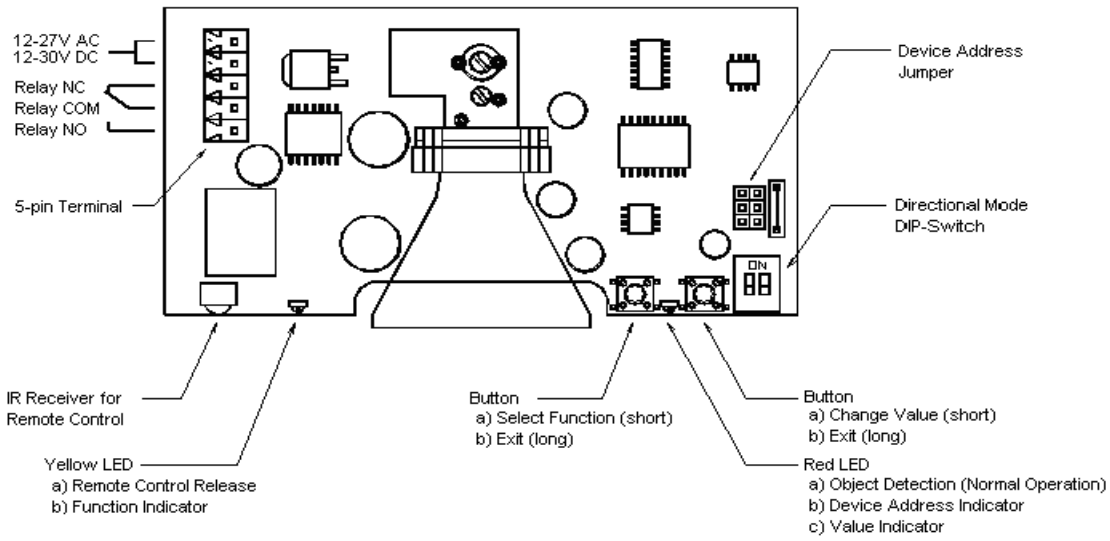
- Moving machinery in the surrounding area.

- Vibrations transmitted to the detector through the wall or other support.

- Electric disturbances in the connecting cable.

- Other electromagnetic fields.

Component Layout of Printed Circuit Board



LED Display Guide

Mode of operation	Yellow LED – left side	Red LED – right side
object detection	off	on = object detected
adjustment with internal buttons	number of flashes indicate function selection i.e. single flash = sensitivity mode	number of flashes indicate parameter value
adjustment with remote control	a) indicates that detector is ready for infrared remote control programming b) number of flashes indicate function selection	a) number of flashes indicate device address b) number of flashes indicate parameter value

Remote Control Keys

Remote Control Key	Function	Flash Signal of LED left right	Adjustment Range
⏻	Activation	Ready Address	1 - 4 (address)
◢ / ◣	Sensitivity	1x current value	1=low 15=high
🚶	Pedestrian detection	2x current value	1=off 2=on
i	-	-	-

Technical Data

Housing	Dimensions (without cable) 5.2 x 6.1 x 2.3 in Color black Housing plastic ASA Support bar plastic ASA Cover plastic PC	
Weight (Incl. Support Bar)	10.6 oz	
Protective System	IP 65	
Distribution Voltage	12-27 V AC 12-30 V DC	
Current Consumption	typ. 1.5 W max. 2.4 W	
Operating Temperature	-34 °C to +55 °C	-30 °F to 131 °F
Storage Temperature	-30 °C to +75 °C	-22 °F to 167 °F
Humidity	< 95 % non fogging	
Frequency	24.125 GHz	
Transmitting Power	typ. 5 mW	
Output Relay max. turn-on voltage max. switching current min. switching current Contact type	 24 V AC/DC 1 A resistive load 1 mA 1 N.O. / N.C. dry contact	
Output Relay	In case of inductive load provide for external protection for the relay contacts. If contacts were used for high current (greater than 100mA) switching, do not use for low-current switching.	
Connecting Cable	Flexible, max. 5x1.0 qmm	
Maximum Mounting Height	20 ft	
Adjustable Functions	By means of sliding switch on printed card Direction recognition - approaching/departing/both directions By means of key button or infrared remote control Sensitivity Pedestrian or vehicle Factory setting (only key buttons)	

FCC ID: PJMMWDBF

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

Unauthorized modifications may void the authority granted under Federal communications Commission Rules permitting the operation of this device.