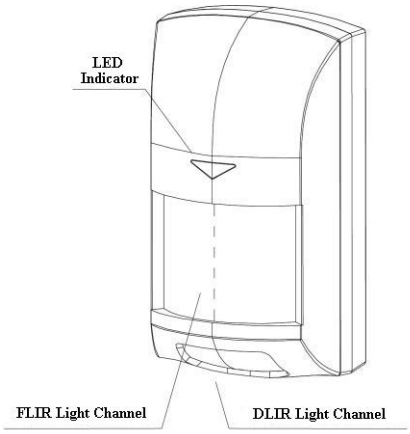
IX30 - Z-Wave PIR Detector User Guide

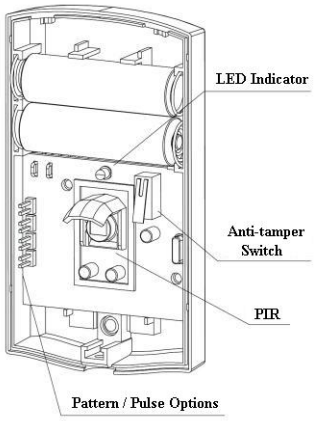
Ⅰ. Introduction

IX30-Z-Wave is a digital micro-control intrusion detector adopting Energy Accumulation Logical Processing & Random Dynamic Time Segmentation Technology. With precise columnar Fresnel lens, IX30-Z-Wave can increase its energy receiving efficiency and sensitivity without false alarm. In conjunction with advanced software technology, it will make an accurate judgment between real intruder & interference factors that may cause false alarm. Superior ability to detect & prevent false positives.

The pulse number is optional, suitable for kinds of residential constructions, preventing false positive & false negative that other ordinary indoor detectors cannot do. Its performance is far beyond other ordinary PIR alarms. Besides, we use large capacity built-in battery & special power saving solution, battery working life is up to 2 years.



Picture 1 Overall Appearance



Picture 2 Internal Structure

Ⅱ. Specification

Model No.: IX30-Z-Wave

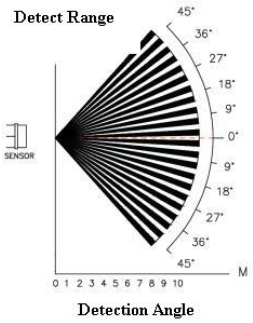
Detection Distance: 10m @ 25℃

RF Range: indoor linear distance <=30m

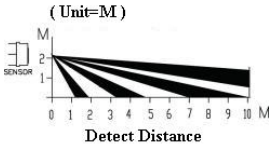
Input Voltage：3VDC(2PCS LR 6 1.5V alkaline battery)

Current：16μA（standby）/35mA（alarm）

Detection Range: as the diagrams



Detection Angle



Detect Distance

Optical Lens Data

Infrared Area：11+8+6+5（typical）

Max. Detection Square：10m*10m/90°

RF Frequency: 868.4MHZ/908.4MHZ

Alarm Indicator: LED indicator on <= 1s

Mount Bracket: 1 PCS (default)

Mounting Height: 2.2~2.7m (87~106 inch)

Operating Temperature: -20℃~50℃

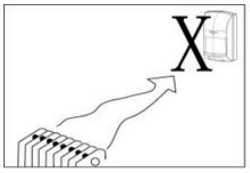
Storage Temperature: -20℃~60℃

Anti White Light (Indoor): >6500LUX

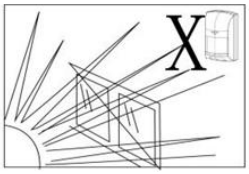
Dimension: 110*62*47mm (L*W*H)

Ⅲ .Installation

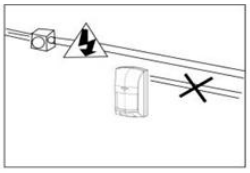
3.1 Installation Guide



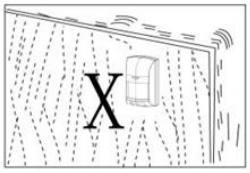
Do not face heat / cold sources



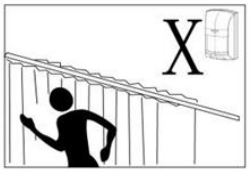
Avoid direct sunshine



Away from high-voltage line



Do not install on the unstable place



Do not face to the metal wall

3.2 Dial Switch Description

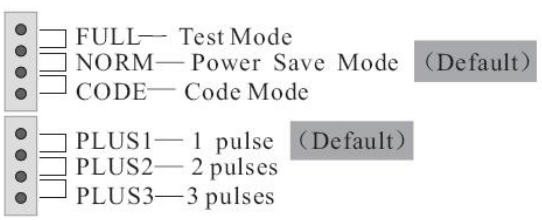
IX30 can be set 3 types of operation modes as below:

Test Mode: Alarm will only betriggered again with above 5s interval from its first alarm. After triggered, it will send alarm elimination signal to the relevant device in at least 30s.

Power-save Mode: Alarm will only be triggered again with above 3min interval from its first alarm. After triggered, it will send alarm elimination signal to the relevant device in at least 3 minutes.

Code Mode: without any function

Jumper Setting



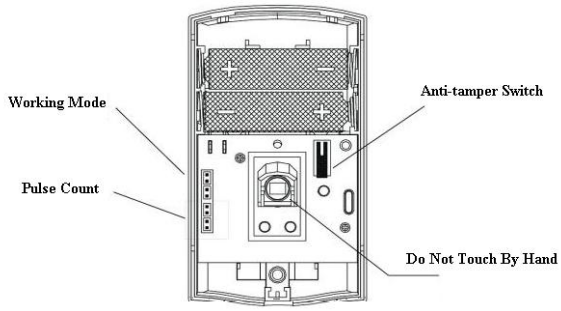
IX 30 has the following 3 types of pulse options:

One pulse: The detector alarms when it detects one pulse.

Two pulses: The detector alarms when it detects two pulses.

Three pulses: The detector alarms when it detects three pulses.

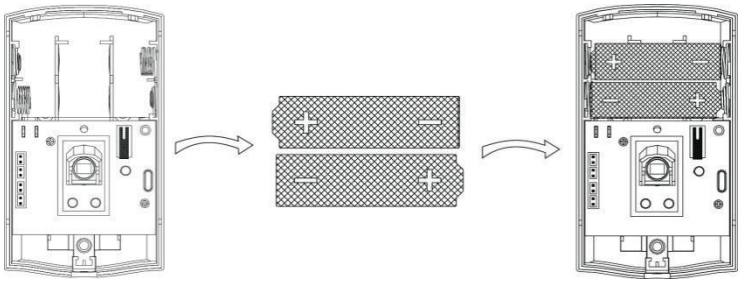
The higher the pulse count is, the lower the sensitivity will be, but high pulse count can reduce false alarm.



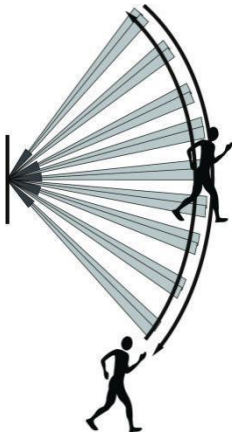
3.3. Battery Replacement:

When in low voltage status, detector will send signal to the alarm control, then the user should replace the battery in time.

Remove the bottom cover, and put the new battery in right polarity. (As the picture)



Ⅳ.Walking Test in Detection Area



1. Set the detector to test mode to perform walking test. Pulse count can be set by PULSE 1, 2, 3.
2. Walk breadthwise from any direction at the remote detection coverage at the speed of 0.75m/s, then the LED indicator blinks for 1 second and alarm triggered. (As the right picture)
3. Test in different direction to confirm the two boundaries of detection. Ensure the detector rightly points to the central detection zone.
4. The center of detection zone should not uphill inclined. In order to obtain a good detection range, please adjust the vertical detection range, to ensure the detector is in right position.
5. Perform the walk test again as above when you have adjusted the detection range.
6. When the detector passed the walking test, please adjust the test mode to normal mode

Please don't invert the detector while installing. Here advice user to have a walk test every week.

V. IX30-Z-Wave Operation

1. Add & Remove

Add : enter the Inclusion Mode of gateway, and press the tamper switch 3 times within 1.5s, then the PIR sensor will stay in enrollment state until successfully enrolled into network or enrollment time out after 30s.

Remove: enter the Exclusion Mode of gateway, and press the tamper switch 3 times within 1.5s, then the PIR sensor will be removed after a period of time.

2. Association Groups Description

The sensor has 2 associations Inclusion Mode in groups, Lifeline group can support 1 device only, Group 2 can

support 2 devices.

It will send “NOTIFICATION_REPORT”to the device in Lifeline group when the PIR sensor is triggered/ recovered , tamper switch is triggered / recovered.

When in low battery status, PIR sensor will send “BATTERY_REPORT” to Lifeline group device periodically.

The PIR sensor will send “DEVICE_RESET_LOCALLY_NOTIFICATION” to Lifeline group device when the device recovers to factory settings.

When the PIR sensor is opened, it will send “BASIC SET” command to control these devices in Group2.

3. Restore Factory Settings

Press the anti-tamper switch for 6 times within 2.5 seconds to restore factory settings(Please include a request to use the reset procedure only when the primary controller is missing or inoperable).

4.**Wake-up**

a) Manual Wake-up

Quickly press tamper switch once, the PIR sensor will automatically send wake-up information, and there will be 10s after wake-up to receive gateway setting information.

b) Automatic Wake-up

Default time of automatic wake-up is 24 hours, and there will be 10s after wake-up to receive gateway setting information, the max automatic report time = 24 hours, minimum=30min

5. Lifeline Group

a)When an alarm is triggered or eliminated, it will send “Notification Report” commands to the device under Lifeline group.

When alarm is triggered :

Notification Report, Notification Type = 0x07, Event = 0x08

When alarm is eliminated:

Notification Report, Notification Type = 0x07, Event = 0x00

b)When tamper switch is triggered or recovered, the PIR sensor will send “Notification Report” command to the device under Lifeline group.

Tamper Triggered:

Notification Report, Notification Type = 0x07, Event = 0x00

Tamper recover (press tamper switch for 0.5s):

Notification Report, Notification Type = 0x07, Event = 0x00

c) Low Battery Report: Battery Report

When the PIR sensor is wake-up from sleep mode, it will check its battery status; once low battery, it will send Battery Report command to the device under Lifeline group every hour;

Battery Report, Battery Level = 0xFF

6. Association Group2

If there is any device under Association Group2, the PIR sensor will send “BASIC SET” command to control those devices when the PIR sensor is triggered. For example: when the PIR sensor is triggered, it sends adjustable parameter “BASIC SET” command to a lamp under Group2, you can adjust the lamp’s luminance through the

parameters of this command; if the set light-up time out (see the Configuration Description), the sensor will send "BASIC SET"command to turn-off the lamp.

When sensor is triggered:
[Command Class Basic， Basic Set,Value = 0xFF(default 0xFF, configurable, see the Configuration Description)]
When light-up time out:
[Command Class Basic， Basic Set,Value = 0x00]

7. Configuration Description

a) "Basic Set" configuration

If there is any device under Association Group2, the PIR sensor will send "Basic Set = value" command to control that device when the PIR sensor is alarm. "Value" configuration rule is as below:

Function	Parameter	Byte	Range	Default
Basic Set Level	1	1	0xFF(-1) 1~100	0xFF(-1)

b) Turn Off Light Time Configuration

If there is any device under Association Group2, the PIR sensor will send "Basic Set = value" command to Group2, and send "Basic Set = 0x00" command to turn-off light after "5 x t" seconds

Function	Parameter	Byte	Range	Default
Turn Off Light Time	2	1	1~24	4

c) PIR Sensor Alarm Elimination Time Configuration

Min set time is 5s. If the configuration is 1, that means it will eliminate alarm after 5 seconds, if t, will eliminate alarm after "5 x t" seconds.

Function	Parameter	Byte	Range	Default
Alarm Elimination Time	3	1	1~24	4

Z-Wave Supportive Commands

Generic Deice Type =
GENERIC_TYPE_SENSOR_BINARY
Specific Device Type =
SPECIFIC_TYPE_ROUTING_SENSOR_BINARY
Support Command Class =
COMMAND_CLASS_ZWAVEPLUS_INFO_V2
COMMAND_CLASS_ASSOCIATION_V2
COMMAND_CLASS_WAKE_UP_V2
COMMAND_CLASS_BATTERY
COMMAND_CLASS_ZWAVEPLUS_INFO_V2
COMMAND_CLASS_ASSOCIATION_GRP_INFO

COMMAND_CLASS_NOTIFICATION_V4
COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2
COMMAND_CLASS_VERSION_V2
COMMAND_CLASS_POWERLEVEL
COMMAND_CLASS_DEVICE_RESET_LOCALLY

Commands to Control Other Devices:
COMMAND_CLASS_BASIC

Warning: If the problems caused by user's incorrect operation, our company will not be responsible for it!

This product can be included and operated in any Z-Wave network with other Z-Wave certifid devices from other manufacturers and/or other applications. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network