ICP DAS

PIR-230-E/WF
PIR-231-E/WF

Motion, Temperature, and Humidity Sensor Module

Features

- Adjustable Time-Delay / Lux / Sensitivity (Lux/Sensitivity PIR-230 Only)
- Internal Photosensor for Smart Switch Control
- LED Indicator for PIR/Temperature Sensor
- Temperature Sensor for Measuring Room Temperature
- Suitable as either Temperature or Fire Alarm
- Relay Output Can be Used to Control Light Via the PIR/Temperature Sensor
- Suitable for loads up to 1500 W (Incandescent) and 300 W (Fluorescent)
- Fluorescent (T8) Loading Capability
- Wide range of Communication Interfaces and Protocols
- Compatible with IEEE802.11b/g/n standards (PIR-230/PIR-231 Only)
- Support infrastructure and limit-AP modes for wireless networks (PIR-230-WF/PIR-231-WF Only)
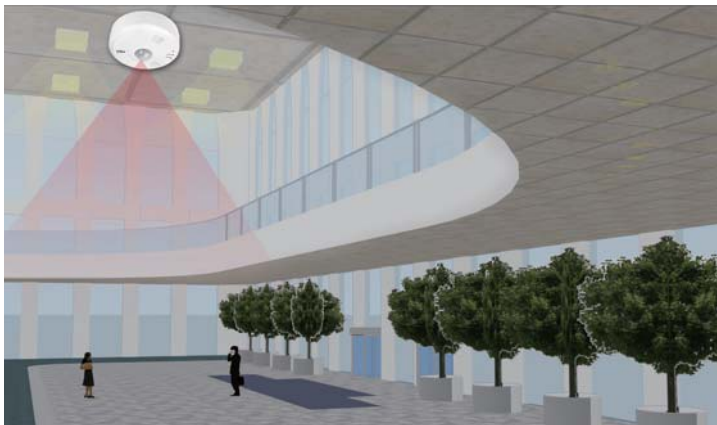- Ceiling or Surface-Mount Design

Introduction

PIR series modules have the ability to detect infrared waves generated by the human body within a diameter of approximately 8 meters, with a coverage area of 360° for indoor motion detection. The modules can be configured to automatically switch on a light if motion is detected. The modules also contain a temperature and humidity sensor for measuring indoor temperature and humidity, or it can be configured to activate a fire alarm. A wide range of interface connections can be selected to suit individual needs, including RS-485/Ethernet/Wi-Fi, provide support for the DCON and Modbus RTU/TCP protocols, and can be easily integrated into existing HMI/SCADA/central control systems. A free Utility is also included that allows configuration information and data to be displayed in a powerful chart format that can be exported to Microsoft Excel.
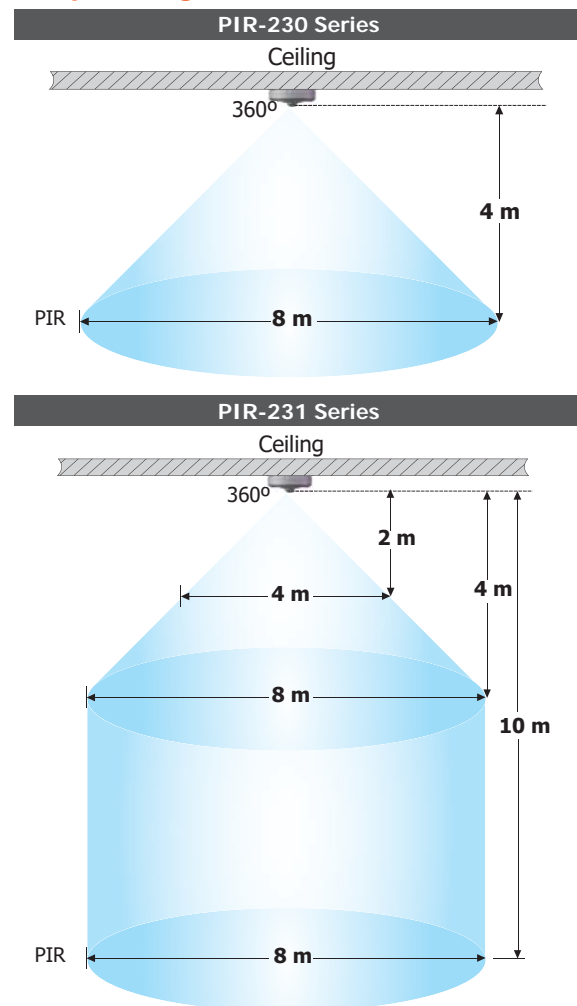
The screw-free quick-connect connector and the DIP and rotary switches make the modules easy to install, repair, and maintain. The casing of each module is made from UL94-V2 rated fireproof material, and the white minimalist exterior design ensures that it is easy to match with interior decoration.

Applications

- Lighting and exhaust fans in public toilets
- Common lighting in staircases
- Lighting in parking areas
- Garden lights
- Lighting for changing rooms in shops
- Corridor lighting, and many more situations

Operating Distance

PIR-230 Series

PIR-231 Series

◼ Specifications

Model	PIR-230-E	PIR-230-WF	PIR-231-E	PIR-231-WF
Motion and Occupancy Sensor				
Delay Time	Hardware: 8-step Switch-selectable (seconds): 6, 16, 33, 66, 131, 262, 524, 1049 Software: 16-step (seconds): 2, 4, 6, 8, 16, 33, 49, 66, 131, 262, 393, 524, 1049, 2097, 3146, 4194			
Lux Control Level	Hardware: 2 modes(Dawn and Dust) / Software: 5-step		-	
Height Detection	4 m Max.		10 m Max.	
Motion Detection Field of View	360º; 8 m Diameter Max.			
Occupancy Detection Field of View	-			
PIR Response Time	1 second			
Temperature Sensor				
Measurement Range	-40 to +120°C			
Fire Alarm	65°C (Programmable)			
Resolution	0.01°C			
Accuracy	±0.5°C (at 0 to 60°C)			
Relative Humidity Measurement				
Range	0 to 100% RH			
Resolution	0.01% RH			
Accuracy	±5% RH			
Digital Input				
Channels	2			
Type	Wet			
On Voltage Level	70 to 220 VAC			
Off Voltage Level	20 VAC Max.			
Input Impedance	68 KΩ, 1 W			
Relay Output				
Channels	1			
Type	Power Relay, Form C			
Max. Load Current	NO: 10 A @ 250 VAC NC: 6 A @ 250 VAC			
Load Wattage	Incandescent Bulb: 1500 W Max.; Fluorescent Lamp: 300 W Max.			
Communication				
Node Address	Hardware: 160 to 191 / Software: 1 to 255			
Protocol	DCON, Modbus RTU, Modbus TCP, MQTT			
Wired Interface	Yes, RS-485 X 1 and Ethernet/PoE X1			
Wireless Interface	-	Wi-Fi	-	Wi-Fi
Supported Standard	-	IEEE 802.11 b/g/n	-	IEEE 802.11 b/g/n
Wireless Mode	-	Infrastructure/Limited AP	-	Infrastructure/Limited AP
Wireless Security	-	WEP, WPA ,WPA2	-	WEP, WPA ,WPA2
Transmission Range	-	50 m (LOS)	-	50 m (LOS)
LED Indicators				
LED Indicators	Yes,1 as Power/Communication Indicator. 1 as Alarm Indicator.			
EMS Protection				
ESD (IEC 61000-4-2)	±4 kV Contact for each Terminal, ±8 kV Air for Random Point			
EFT (IEC 61000-4-4)	±4 kV for Power Line			
Power Requirements				
Power Supply	18 to 48 VDC, PoE			
Reverse Polarity Protection	Yes			
Consumption	2 W	3 W	2 W	3 W
Mechanical				
Installation	Ceiling /surface mounted			
Protection Class	IP20			
Dimensions (D x H)	Ø 150 mm x 53 mm			
Environment				
Operating Temperature	0 to +35°C			
Storage Temperature	-30 to +80°C			
Humidity	10 to 90% RH, Non-condensing			

■ Mounting

■ Ceiling Mounting

1	2
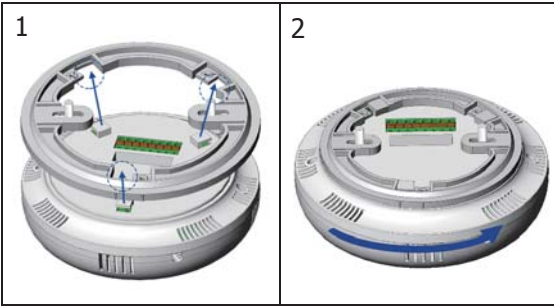
■ Wall Mounting (+ External Wall Box EWB-C150)

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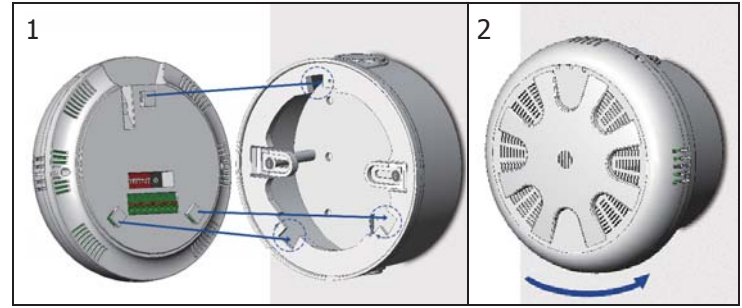
■ DIP Switch Settings

SW1

Address

SW1	ON	OFF
1	DCON	Modbus
2	SW Config.	HW Config.
3	High Node	Low Node
4	INIT	Run
5*	Dawn	Dust
6*	Sensitivity	
7*		
8	ON Time Control	
9		
10		

∗ (5, 6, 7 for PIR-230 Series Only)

■ Pin Assignments

Live Wire — A.C — Neutral Wire — COM
LOAD — NO
LOAD — NC
Live Wire — A.C — Neutral Wire — AC_N
AC_L1
AC_L0
RS-485 — D-
D+
+18 V$_{DC}$ ～ +48 V$_{DC}$ — GND
+Vs

■ Dimensions (Units: mm)

Left View	Front View	Right View	Rear View	Bottom View

65.4 — 150 — 150 — 83.7 — 60.8 — ⌀4.0 — Top View
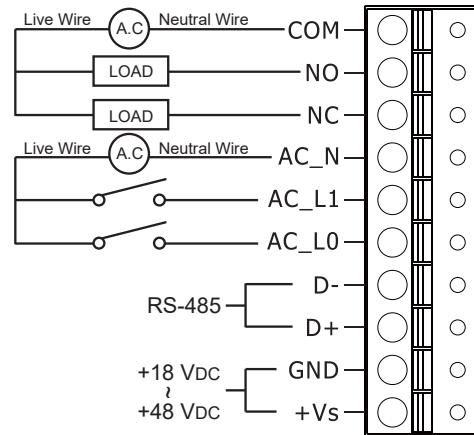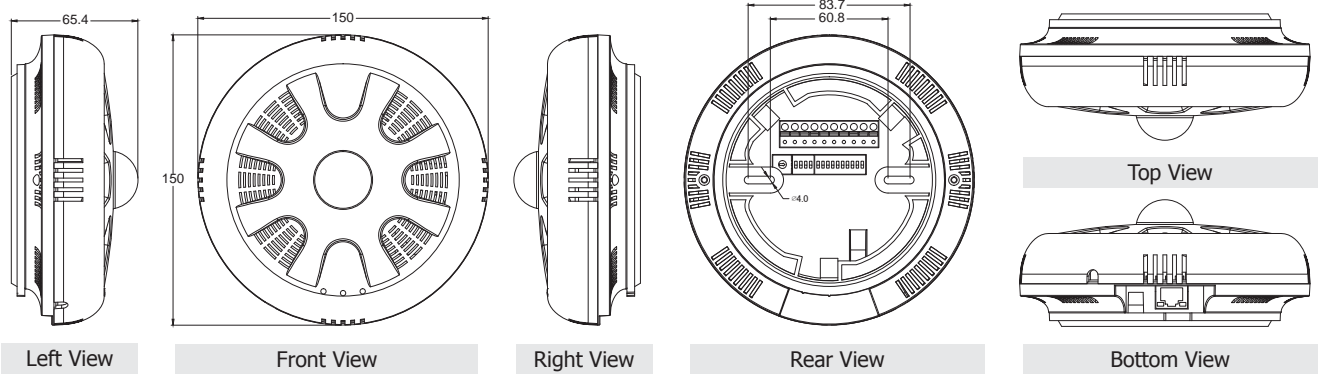
■ Ordering Information

PIR-230-E	PIR Motion Sensor, Temperature and Humidity Sensor Module (Ethernet)
PIR-230-WF	PIR Motion Sensor, Temperature and Humidity Sensor Module (WiFi)
PIR-231-E	PIR Motion Sensor, Temperature and Humidity Sensor Module (Ethernet)
PIR-231-WF	PIR Motion Sensor, Temperature and Humidity Sensor Module (WiFi)

■ Accessories

EWB-C150	External Wall Box for PIR-200 series
CA-RJ45-04	RJ45 Cable, Male-Female, 30cm