On/off Control HF Sensor

HC005S/I

Super-compact Version with Photocell Advance™

HYTRONIK®

Applications

Occupancy detector with on/off control suitable for indoor use.

Suitable for building into the fixture:

- Office / Commercial Lighting
- Meeting rooms
- Classroom

Use for new luminaire designs and installations

Features

- Special photocell to measure and differentiate natural light from LED light from behind the fixture cover
- Zero crossing detection circuit reduces in-rush current and prolongs relay life
- Loop-in and loop-out terminal for efficient installation
- 5 Year, 50,000hr Warranty

Technical Data

Input Characteristics

Model No.	HC005S/I
Mains voltage	220~240VAC 50/60Hz
Stand-by power	<0.5W
Load ratings:	
Capacitive	400W
Resistive	800W
Warming-up	20s

Safety and EMC

EMC standard (EMC)	EN55015, EN61000
Safety standard (LVD)	EN60669, AS/NZS 60669
Radio Equipment (RED)	EN300440， EN301489, EN301489, EN62479
Certification	Semko, CB, CE , EMC, RED, RCM

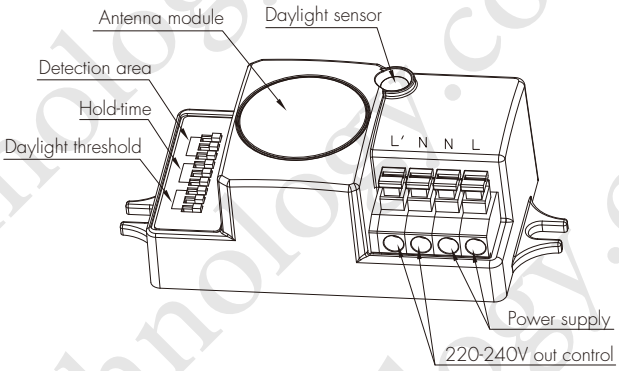
CE emc RED CB IP20

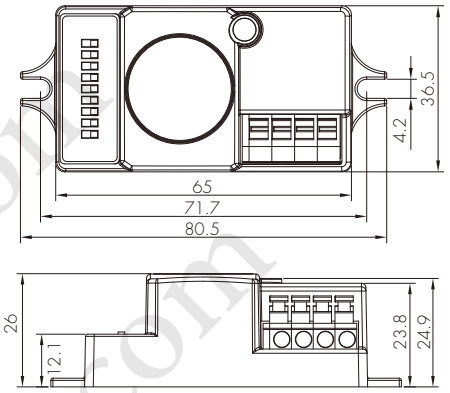
Sensor Data

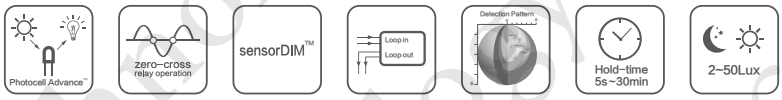
Model No.	HC005S/I
Sensor principle	High Frequency (microwave)
Operation frequency	5.8GHz +/- 75MHz
Transmission power	<0.2mW
Detection range	Max. (Øx H) 12m x 6m
Detection angle	30° ~ 150°
Setting adjustments:	
Sensitivity	OFF / 30% / 50% / 75%/ 100%
Hold-time	5s ~ 30min (selectable)
Daylight threshold	2 ~ 50 lux, disabled

Environment

Operation temperature	Ta: -35°C ~ +70°C
Case temperature (Max.)	Tc: +80°C
IP rating	IP20







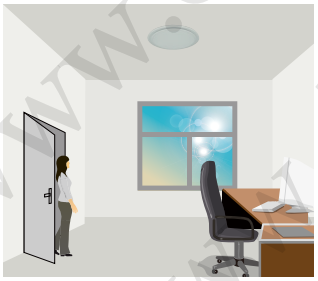
Functions and Features

1 On/off Control with Photocell Advance™ Function

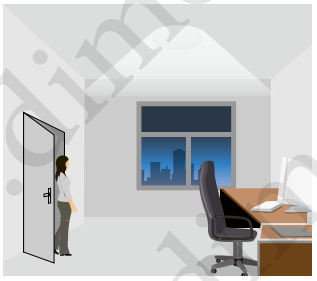
This sensor is a motion switch, which turns on the light upon detection of motion, and turns off after a pre-selected hold-time when there is no movement.
Furthermore, a Hytronik specially designed photocell is also built in to switch on/off the light based upon ambient natural light lux level. It's well known that LED lights have a totally different spectrum from natural light. Hytronik uses this principle and comes up with this special photocell and sophisticated software algorithm to measure and differentiate natural light from LED light from behind the fixture cover, so that this photocell can ignore internal LED light and only respond to the natural light outside.
Our technology has no infringement to the existing patents in the market.

Settings on this demonstration:
Hold-time: 30min Daylight threshold: 50lux

Insufficient natural light and motion detection: light ON

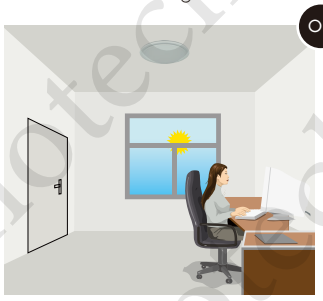


With sufficient natural light, the light does not switch on when presence is detected.

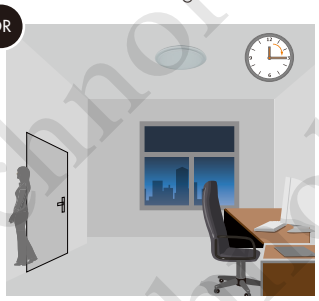


With insufficient natural light, the sensor switches on the light when presence is detected.

Sufficient natural light or no motion after hold-time: light OFF



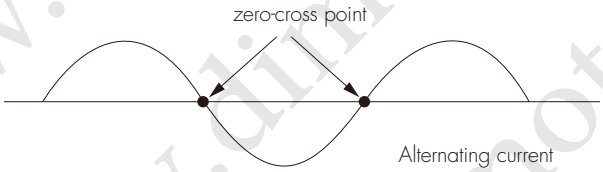
The sensor switches off the light whenever natural light exceeds pre-set daylight threshold, even with presence.



The sensor switches off the light after the hold-time when there is no motion detected.

2 Zero-cross Relay Operation

Designed in the software, sensor switches on/off the load right at the zero-cross point, to ensure that the in-rush current is minimised, enabling the maximum lifetime of the relay.



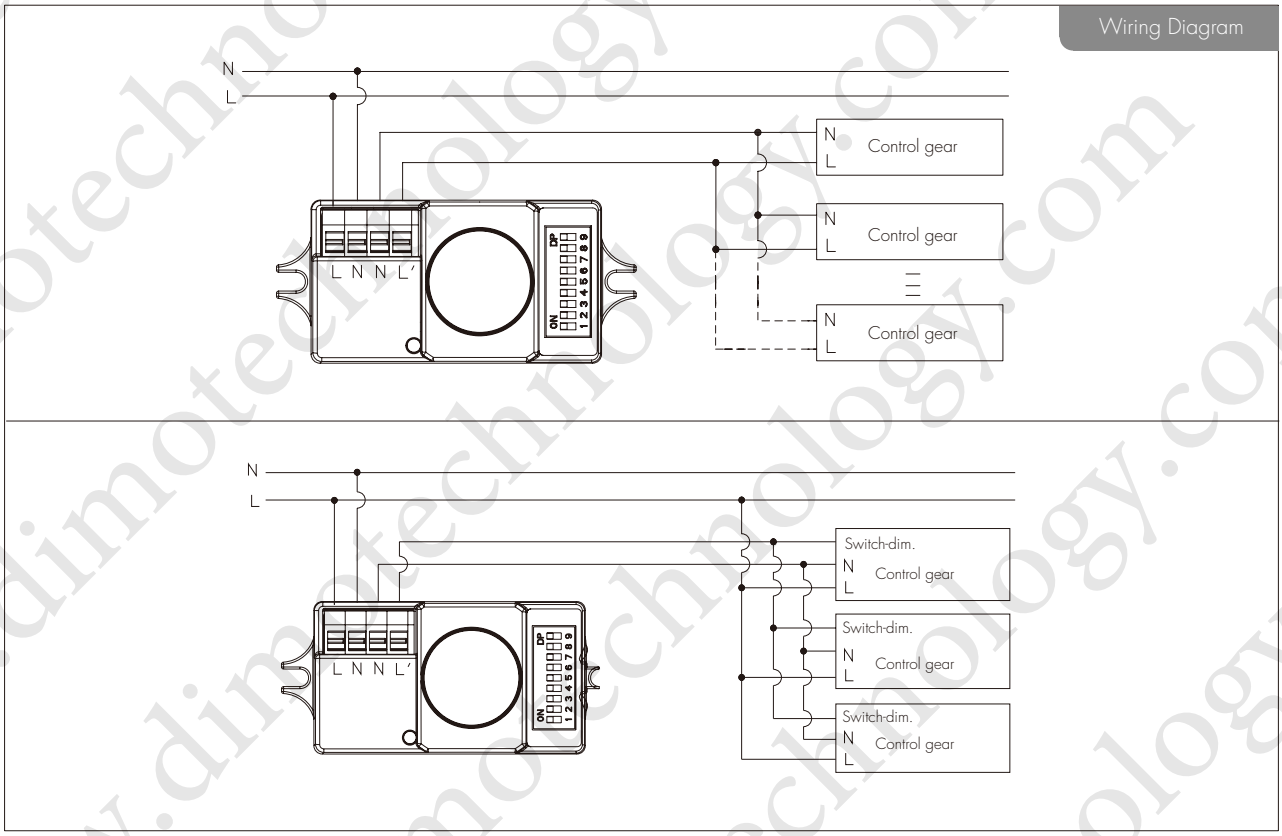
3 Loop-in and Loop-out Terminal

Double L N terminal makes it easy for wire loop-in and loop-out, and saves the cost of terminal block and assembly time.

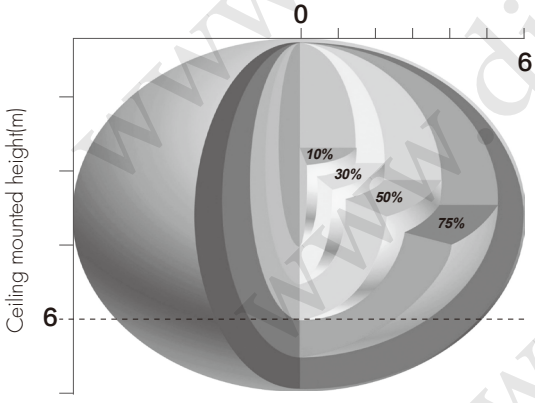
4 SensorDIM™ Function

Working with Switch-dim. control gear (Excel ballast/driver, corridor function), this sensor can also achieve tri-level control.

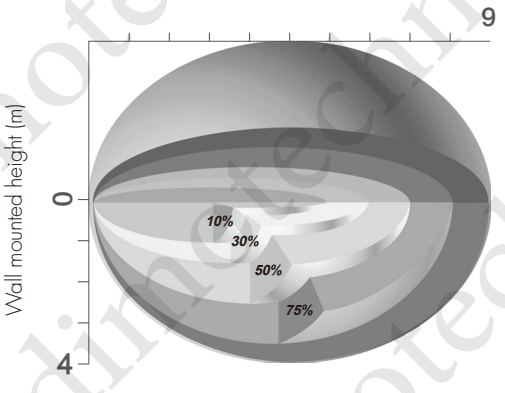
Wiring Diagram



Detection Pattern



Ceiling mounted detection pattern (m)



Wall mounted detection pattern (m)

DIP Switch Settings

1 Detection Range

Sensor sensitivity can be adjusted by selecting the combination on the DIP switches to fit precisely for each specific application.

Disabling the motion detection function will put the sensor into photocell only mode.

	1	2	3	
I	●	●	●	100%
II	○	●	●	75%
III	○	●	○	50%
IV	○	○	●	30%
V	○	○	○	Sensor OFF

I – 100%
II – 75%
III – 50%
IV – 30%
V – Sensor OFF

2 Hold Time

Select the DIP switch configuration for the light on-time after presence detection. This function is disabled when natural light is sufficient.

	4	5	6	
I	●	●	●	5s
II	●	○	●	30s
III	●	○	○	1min
IV	○	●	●	5min
V	○	●	○	10min
VI	○	○	●	20min
VII	○	○	○	30min

I – 5s
II – 30s
III – 1min
IV – 5min
V – 10min
VI – 20min
VII – 30min

3 Daylight Threshold

Set the level according to the fixture and environment. The light will not turn on if ambient lux level exceeds the daylight threshold preset. In Photocell Advance™ mode this level will determine at which point the light turns off.
Please note that the ambient lux level refers to internal light reaching the sensor.

Disabling the daylight sensor will put the sensor into occupancy detection only mode.

	7	8	9	
I	●	●	●	Disable
II	○	●	●	50Lux
III	○	●	○	20Lux
IV	○	○	●	5Lux
V	○	○	○	2ux

I – Disable
II – 50 Lux
III – 20 Lux
IV – 5 Lux
V – 2 Lux

Test Verification of Conformity

Verification Number: 190925152GZU-VOC001

On the basis of the referenced test report(s), sample(s) tested of the below product have been found to comply with the standards harmonized with the directives listed on this verification at the time the tests were carried out. Other standards and Directives may be relevant to the product. This verification is part of the full test report(s) and should be read in conjunction with it <them>. This verification replaces previous verification dated: 16-08-2018: 140625045GZU-001

Once compliance with all product relevant CE mark directives are verified, including any relevant e.g. risk assessment and production control, the manufacturer may indicate compliance by signing a Declaration of Conformity themselves and applying the mark to products identical to the tested sample(s).

Applicant Name & Address:	Hytronik Electronics Co., Ltd. 3rd Floor, block C, Complex building 155#, Bai'gang Road South Bai'gang Village, Xiao Jin Kou Town Huicheng District, Huizhou, Guangdong, China
Product Description:	Lighting control switch (Motion sensor)
Ratings & Principle Characteristics:	See appendix
Models/Type References:	See appendix
Brand Name:	HYTRONIK
Relevant Standards:	EN 60669-2-1: 2004 +A1: 2009+ A12: 2010; EN 60669-1: 2018; EN 62493: 2015
Verification Issuing Office Name & Address:	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China
Date of Tests:	25 September 2019 to 31 October 2019
Test Report Number(s):	190925152GZU-001

Additional information in Appendix.

Signature

Name: Shelley Ying
Position: Technical Manager
Date: 19 November 2019

APPENDIX: Test Verification of Conformity

This is an Appendix to Test Verification of Conformity Number: 190925152GZU-VOC001

Manufacturer:	Hytronik Electronics Co., Ltd. 3rd Floor, block C, Complex building, 155#, Bai'gang road south, Bai'gang village, Xiao Jin Kou town, Huicheng district, Huizhou, Guangdong, China
Ratings & Principle Characteristics:	220-240 VAC; 50/60 Hz; Micro-gap; IP20; Integral type; HC005S; DS05; HC005S/I: Max. 800 W for incandescent Lamp and Max. 400 W for fluorescent Lamp; HC017V; HC018V; HC019V; HC019V/I; HC019V/DH: Max. 800 W for fluorescent Lamp; HC018V /RF; HC023RF; HC024RF: Max. 1200 W for incandescent Lamp and Max. 400 W for fluorescent Lamp
Models/Type References:	HC005S; DS05; HC017V; HC018V; HC019V; HC018V /RF; HC023RF; HC024RF; HC005S/I; HC019V/I; HC019V/DH (total 11 models)

Signature

Name: Shelley Ying
Position: Technical Manager
Date: 19 November 2019

IP20 Housing for HF Motion Sensor

HC-IP20

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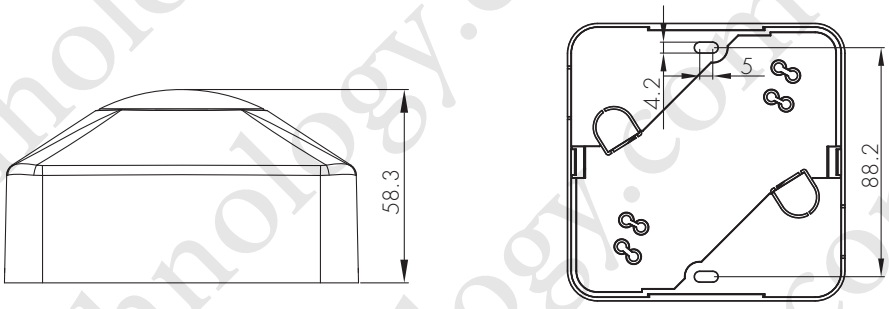
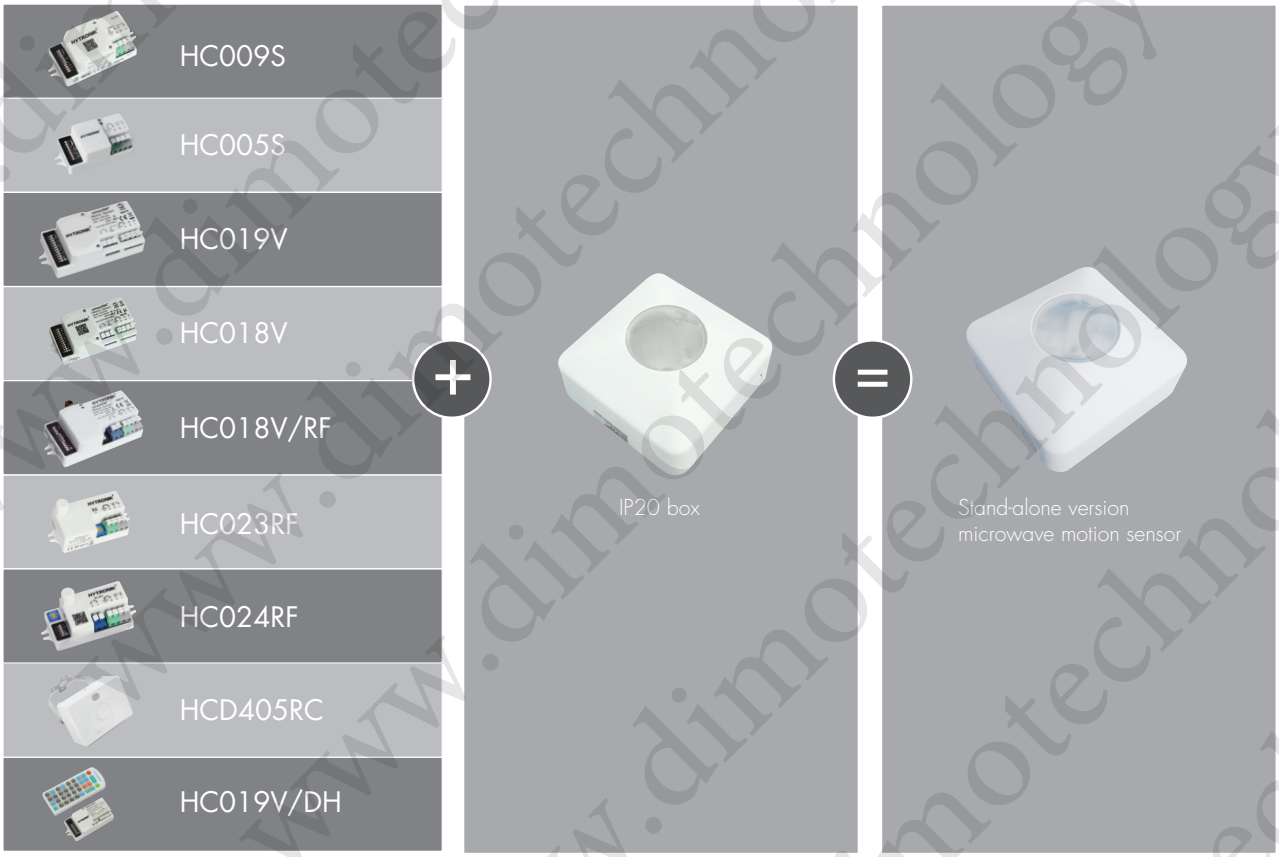
Mechanical structure



Below sensors can be mounted inside the IP20 box, for stand alone independent electrical installation.
(the milky lens allows natural light come through)



Installation Instructions

step1

Choose your wiring

Break here

Fig. 1

Option 1: For cables buried in the walls

Break here

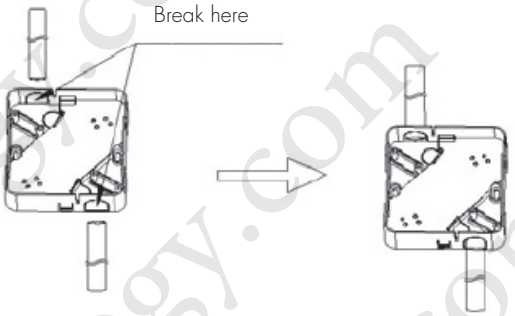
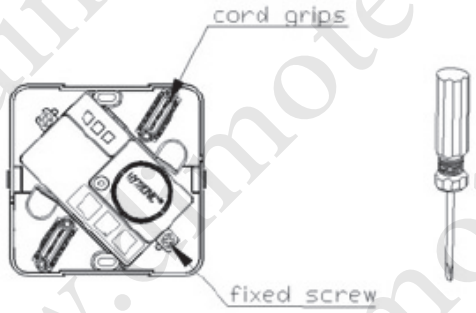


Fig. 2

Option 2: For cables go from cable pipe

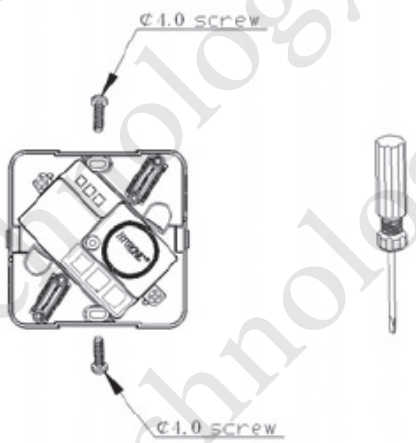
step2

Install the sensor on the box base



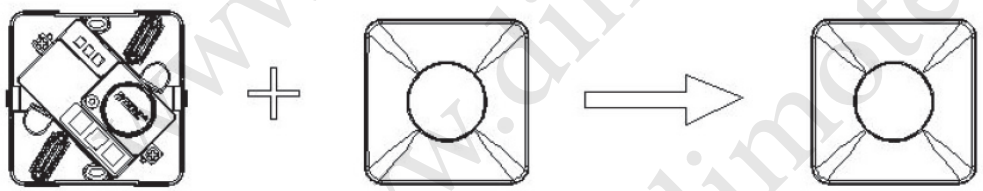
step3

Fixing the base to the ceiling or flat surface with screws



step4

Mount the cover to the base

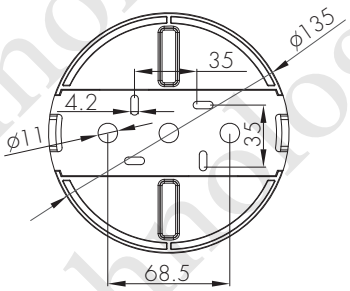


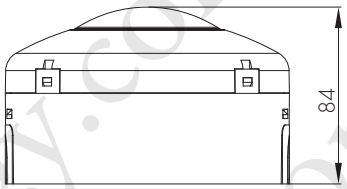
IP65 Housing for HF Motion Sensor

HC-IP65

HYTRONIK®

Mechanical structure





Putting the sensors inside the IP65 box, they are then safe and ready for independent installation.
They are 2 colors of the box: transparent PC for daylight, and white PC when the daylight sensor is not intended to use.

Installation Instructions

step1

Put motion sensor into the IP housing and click the cover on

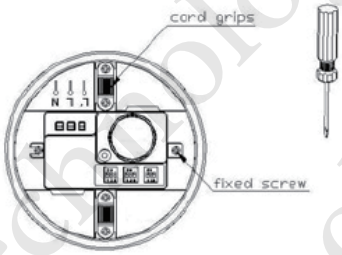


Fig 1.1

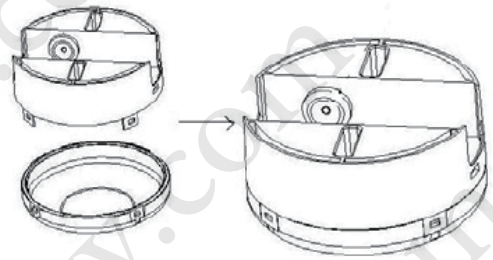


Fig 1.2

step2

Mounting bracket (three options):

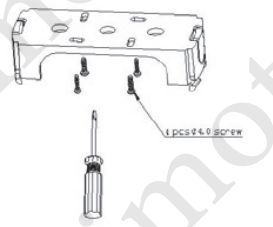


Fig 2.1

Option 1: Mount bracket to flat surface with screws

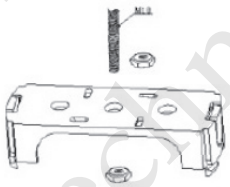


Fig 2.2

Option 2: Mount bracket to ceiling pole with nut

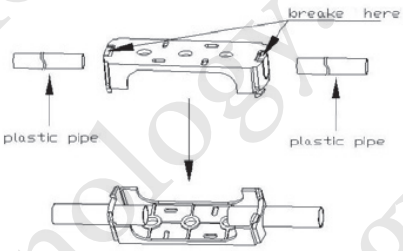


Fig 2.3

Option 3: Put pipe through the bracket hole

step3

Mount the bracket to the cover

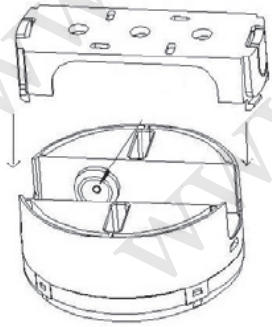


Fig 3.1

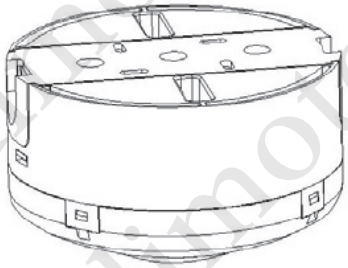


Fig 3.2