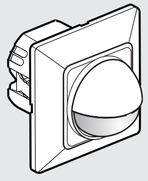
"Genius" WALL SWITCH OS-471D



INSTRUCTION MANUAL

TECHNICAL SPECIFICATION	
Rated Voltage	230V~ 50Hz
Load	Incandescent Lamp: Max. 2000W Halogen Lamp : Max. 1000W Fluorescent Lamp : Max. 900VA / 100μF LV Halogen Lamp : Max. 1000VA PL Lamp : Max. 600VA LED Lamp : Max. 400W
Detection Angle	Up to 200°
Detection Range	Up to 9m at the height of 1.2m - 1.5m Up to 8m at the height of 1.8m - 2.0m
Mounting Height	1.2m - 2.0m
Lux Adjustable	3 precise settings: 5 / 30 / 100 and Slave / "◔" (Learning, range: 5 - 1000LUX) / "☼" (Reset)
Auto Off Timer Adjustment	7 precise settings: 20s. / 1m. / 5m. / 15m. / 30m. / test (2sec) / ⎍ (short impulse: 1sec ON, 9sec OFF)
Meter	Adjustable from about "-" (R=1m) to "+" (R=9m)
Alert Sound	Last 15sec: "Bi" sound sends out Last 10sec: "Bi Bi" sounds send out Last 5sec : "Bi Bi Bi" sounds send out and lamps will turn off within 5sec
Manual Switch (3 modes)	Manual ON 2hrs / AUTO / OFF
Fuse	Time-lag fuse. Rated Current: 10A Dimension : 5*20mm
Environmental Protection	IP40
Operating Temperature	0°C to +45°C

Installation and assembly of electrical equipment must be carried out by qualified electricians. Contact a qualified electrician in the event of fault or break down.

CAUTION!

- A circuit breaker (250VAC, 10A) type C according to EN60898-1 of load I shall be installed in the fixed wiring for protection.
- Do not mount on conductive surface.
- Do not open the enclosure frequently.
- Turn off power when change the light sources.
- High in-rush current would be caused when bulbs of certain brands burned which might damage the unit permanently.

1 PACKAGE CONTENTS

Pattern			
Item	OS-471D	Lens shield	Manual
Quantity	1	1	1

2 PRODUCT DESCRIPTION

OS-471D is an indoor wall switch motion detector, and is ideally to be located in small-scaled stores or factories, offices, homes, such as corridors, staircase, dining rooms, cellars, drawing rooms, bedrooms, garages, etc.

2.1 Features

- Concealed switch, appropriate to European standard power box and frame. Simple installation and easy operation. The hook on the rear of control panel provides easy insertion to connect the detector and power box that ensures quick and secure installation. Appropriate to cover frames of different height and thickness.
- Advanced micro chip design enables to get precise Lux and Time, convenient operation and precise setting.
- By using Learning "◔", Lux can be read in if the 3 fixed Lux values (5 / 30 / 100) do not match the desired values, and it provides flexible management and wide selection.
- Superior lens pattern with well-distributed and concentrated detection beams provides high intensity and sensitivity, such as a small hand waving movement can be detected.
- Unique design with alert " Bi Bi " sound reminds user that light will turn off after 15sec.
- To enlarge detection zone by "Master / Slave" operation for multiple detectors in parallel control of one load, it reacts according to the values setting of master detector.
- Replace two-way switch of staircase by OS-471D to make fully automatic operation.
- Remote ON function, additional push button connects to trigger the detector ON.

2.2 Dimension: 80 x 80 x 65mm (See FIG.1)

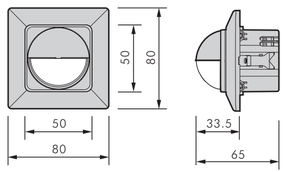


FIG.1

2.3 Decomposed pattern (See FIG.2)

FIG.2 shows the individual part of OS-471D. The internal size of plastic frame is 50 x 50mm which can replace European standard plastic frame directly.

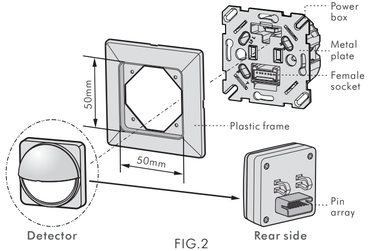


FIG.2

3 INSTALLATION AND WIRING

Please disconnect power completely and read the entire instruction manual carefully before installation.

3.1 Select a proper location

3.1.1 Detection coverage

The detector is recommended to be mounted at the height of 1.2m-2.0m. While mounting it at 1.2m - 1.5m, the moving object of the lowest height 0.5m can be detected within the 9m radius fan shaped detection coverage (See FIG.3-A) and mounting at 1.8m - 2.0m, the moving object of the lowest height 1.0m can be detected within the 8m radius detection coverage (See FIG.3-B).

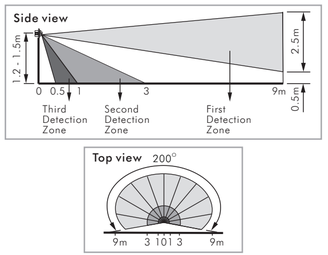


FIG.3-A At the height of 1.2 - 1.5m

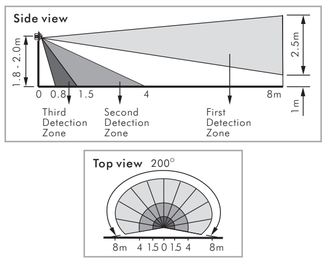


FIG.3-B At the height of 1.8 - 2.0m

3.1.2 Helpful tips for installation

Since the detector is in response to temperature change, please avoid the following conditions (See FIG.4-A & FIG.4-B):

- Avoid directing the detector toward the objects whose surfaces are highly reflective, such as mirror, monitor, etc.
- Avoid mounting the detector near heat sources, such as heating vents, air conditioners, vents as dryers, lights, etc.
- Avoid aiming the detector toward the objects which may be swayed in the wind, such as curtain, tall plants, miniature garden, etc.

FIG.4-A

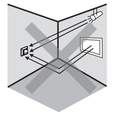


FIG.4-B

3.1.3 Pay attention to the walking direction in the test proceeding (See FIG.5).

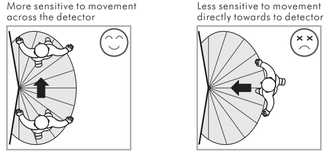


FIG.5

3.2 Wiring diagrams

- Cable specification: 0.8mm² - 0.25mm² (18 - 24AWG). 2.5mm² max. (12AWG).

NOTE

DO NOT connect dimmer or electronic switch to load in series.

3.2.1 Normal operation (See FIG.6-A)

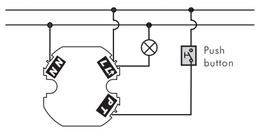


FIG.6-A

3.2.2 The maximum cable length between master and slave should be, if possible, not exceed 20m.
The maximum cable length between the first master and the last slave device must not exceed 100m.
Up to 10 slave units can be connected in parallel on the master (See FIG.6-B).

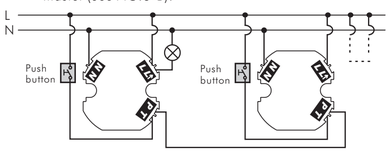


FIG.6-B

3.2.3 Master / master operation: Lux and Time of master detector are independent of each other, load will be activated once the master detector is triggered (See FIG.6-C).

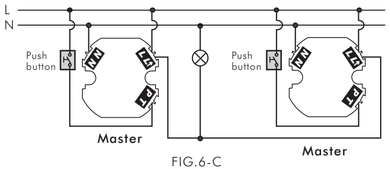


FIG.6-C

3.2.4 Connect to staircase timer (See FIG.6-D)

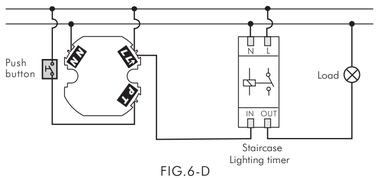


FIG.6-D

NOTE

- When connecting master detector to more than two slave detectors, please do connect them one by one so that the "P" terminal can connect two cables, and use 18 - 24AWG cables.
- Maximum of 10 slave units can be installed.
- Make sure master detector and slave detector are connected at the same power line, otherwise it can't be controlled. Refer to point 4.2 "knob setting" to adjust master and slave detector.

3.3 Installation procedure

OS-471D can be fixed on the wall either by European standard junction box or by JB-40, please refer to step 3.3.1 & 3.3.2 respectively.

- The existing switch with 2-gang or more can be replaced by OS-471D (See FIG.7).

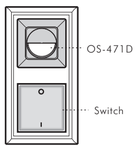


FIG.7 (2-gang switch)

3.3.1 Flush mount with European standard junction box

3.3.1.1 Disassemble the detector head and the plastic frame from the power box.

3.3.1.2 Unscrew the terminal and refer to the wiring diagrams (See FIG.6-A to FIG.6-D) to insert the power cables into the corresponding terminal pin jack. Please be noted to strip off 6-8mm of cable sheathing by tool (See FIG.8).

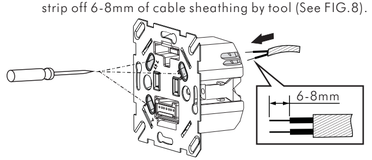


FIG.8

3.3.1.3 Screw the terminal and make sure the wires are securely fixed.

3.3.1.4 Put the wired power box into the European junction box (See FIG.10-A).

3.3.1.5 Put the detector head and the plastic frame together, then insert the combination of detector head and plastic frame into the power box by means of hook aiming at the notch. Please ensure the pin array and female socket are well fixed (See FIG.2).

3.3.1.6 Supply power and refer to point 4 carrying out function test to check OS-471D works normally.

3.3.2 Surface mount with junction box (Take JB-40 for example, it is for optional purchase)

3.3.2.1 JB-40's 7 knock-outs are designed for various application (See FIG.9). Break the knock-out you intend the wires going through, then insert the wires into the corresponding hole.

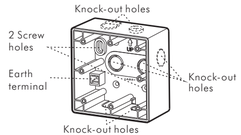


FIG.9

3.3.2.2 Fix JB-40 on the wall with two Φ4x25.4mm wood screws (See FIG.11-A). Refer to FIG.9 for position of screw holes.

3.3.2.3 Refer to step 3.5.1.2 to 3.5.1.6 to finish the installation (See FIG.11-B & FIG.11-C & FIG.11-D).

NOTE

Do use Φ3*12mm tapping screw to fix the OS-471D with JB-40.

Installation with European standard junction box

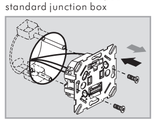


FIG.10-A

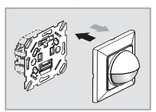


FIG.10-B

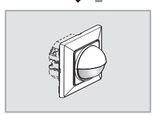


FIG.10-C

Installation with JB-40

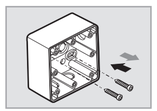


FIG.11-A

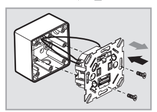


FIG.11-B

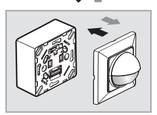


FIG.11-C

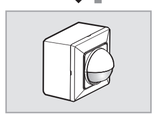


FIG.11-D

➡ Installation procedure

➡ Dismantle procedure

3.4 Dismantle the plastic frame

To dismantle a fixed OS-471D please put the head of screwdriver at the nick of frame, then prize up the frame. To remove a flush mounted or surface mounted on junction box (JB-40) of OS-471D, please refer to FIG.10-B & FIG.11-C respectively.

3.5 Replacement of fuse

⚠ Please disconnect power completely before replacing the fuse.

Over load connection or incorrect wiring may cause the detector malfunction. Please follow the steps below to replace a new fuse with the same type:

3.5.1 Dismantle plastic frame, then take fuse holder out with a screwdriver (See FIG.13).

3.5.2 Replace defective fuse with a new one.

3.5.3 Push fuse holder with new fuse back to normal position.

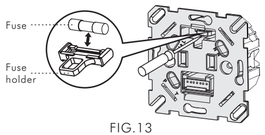


FIG.13

4 OPERATION

4.1 Pull out the cover of slide switch

4.1.1 Use a screwdriver at the position shown in FIG.14-A, pull out the cover of slide switch slightly (See FIG.14-B).

4.1.2 Turn it upwards to adjust the knob, then turn it downwards and fasten it at the original place after the setting is completed (See FIG.14-C).

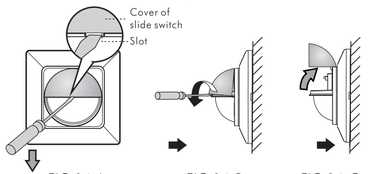


FIG.14-A FIG.14-B FIG.14-C

4.1.3 Manual switch function (See FIG.15)

AUTO: Set slide switch in the middle, detector is in AUTO mode.

ON : Slip the slide switch leftward to ON position, ON mode is activated, load will continue ON for 2hrs, LED flashes on 1sec and off 5sec, then the detector returns to AUTO mode automatically after 2hrs. Even slide switch is set to ON, detector enters into AUTO mode once the power is re-supplied again.

OFF : Slip the slide switch rightward to OFF position, detector is in OFF mode, lighting stay OFF permanently.

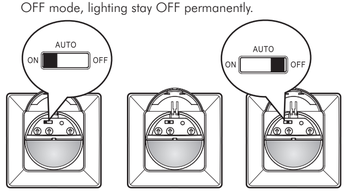


FIG.15

4.1.4 "BI-BI" sound knob setting (See FIG.16)

The "BI-BI" sound function keeps OFF status before ex-factory. Push the switch, it will switch on with a "Bi" sound, and push it again, it will switch off with a "Bi-Bi" sound (See FIG.16).

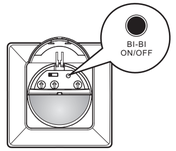
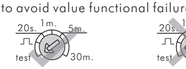


FIG.16

4.2 Time, Meter & Lux knob setting

NOTE

- Make sure the slide switch is on the position of AUTO while adjusting the knob.
- As there are only scales printed at the right and left knob, please adjust the knob referring to corresponding printing marks (Lux and Time).
- Time and Lux knobs must be set at right position of value figure marked. DO NOT adjust knobs between two value figures to avoid value functional failure or value confusion.



Knob	Function	Knob setting
Time 	Set delay off time for lighting	Time: 7 precise settings: 20s. / 1m. / 5m. / 15m. / 30m. / test (2sec) / ⎍ (short impulse: 1sec ON, 9sec OFF). Test : Test mode (Load and red LED will be 2sec on, 2sec off) ⎍ : Short impulse for staircase timer switch control (1sec on, 9sec off).
Meter 	Set the detection range	Range: Adjustable from approx. "-" (R1m) to "+" (R9m)
Lux 	Set the light value for switching on load	Range : 3 precise settings: 5 / 30 / 100 and Slave / "☼" (Learning, range: 5 - 1000Lux) / "☼" (Reset). 👁 (learn): The actual ambient light level (5 -1000 Lux) can be read in.

4.3 Lux learning function with knob

Learning procedure:

4.3.1 Adjust the knob to "👁" when the ambient light level matches with the desired value (See FIG.17-A).

4.3.2 When the knob is set to "👁" originally, it should be adjusted to other position more than 1sec, then goes back to "👁" (See FIG.17-B).

4.3.3 Then the load is off. LED starts to flash slowly indicating entering into learning mode. Learning will be completed within 10sec. Afterwards, the LED and load will keep on 5sec or LED flash quickly for 10sec and load is off to confirm successful learning (See FIG.17-C).

4.3.4 After learning procedure, the detector returns to AUTO mode with LED and load being off.

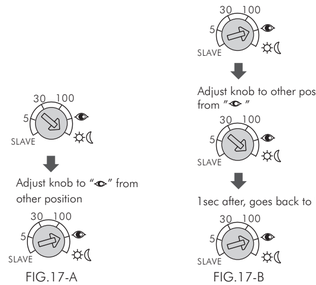


FIG.17-A FIG.17-B

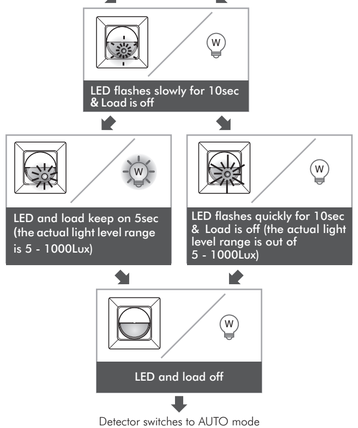


FIG.17-C

NOTE

When the ambient light level is out of the range 5 - 2000Lux, detector will learn 10sec, then the red LED flashes quickly for 5sec to indicate learning failure. When the light level is below 5Lux, Lux value is set to 5Lux, or is above 2000Lux, Lux value is set to ∞ (uncontrolled by lux setting). Installer should be away from the detector to avoid affecting the luminous flux that reaches the detector when learning Lux value.

4.4 Walk test

NOTE

LED will be turned on for 30sec at first to switch the power on of the detector or power is re-supplied again after the power is shut off, then turn off. During the period of warming up, the load is uncontrolled by Lux. Once any movement is detected after warm up, it will then enter into normal mode. If no movement is detected within 15sec,the load will then turn off automatically and won't be controlled by pre-set timer but enter into standby mode immediately.

4.4.1 LED function

4.4.1.1 The LED of OS-471D is equipped inside of the lens (See FIG.18).

4.4.1.2 Only in the walk test, LED will turn on for 2sec in AUTO mode once the detector is triggered. It is uncontrolled by Lux and can be regarded as indicator.

4.4.1.3 LED remains OFF either in AUTO mode or OFF mode.

4.4.2 Test procedure

The purpose of the walk test is to select a proper installation place to get the best detection range. Set the slide switch at the position of AUTO, turn Meter knob to "+", Time knob to "Test", then conduct a walk test referring to step 4.4.2.1 to 4.4.2.7 and Lux is disable (See FIG.19).

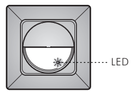


FIG.18

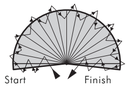


FIG.19

4.4.2.1 Install the detector correctly, refer to FIG.6-A to FIG.6-D to make sure wiring is connected correctly.

4.4.2.2 Switch the power on.

4.4.2.3 Walk from outside across to the detection pattern, once the detector is triggered, LED and load will all turn on for 2sec.

4.4.2.4 Adjust Meter knob to targeted coverage .

4.4.2.5 Refer to point "4.6 Usage of lens shield", detection range and angle can be changed by adjusting lens shield.

4.4.2.6 Repeat the step 4.4.2.3 and 4.4.2.4 until it meets user's demands.

4.4.2.7 Pay attention to the walking direction while proceeding the test (See FIG.5).

4.5 Manual ON operation with external switch

Additional pushbutton (switch) can be connected between the terminal T and L with wiring (See FIG.20). Load will turn on when the button is pushed, and will turn off as the setting time expired, it is uncontrolled by the Lux.

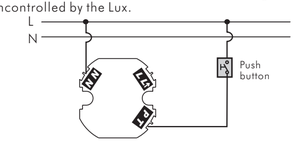


FIG.20

4.6 Usage of lens shield

4.6.1 Lens shield consists of three layers (See FIG.21), each layer is divided into four small units, and the unit can mask an angle of approx. 50°. When mounting the detector at the height of 1.2m - 1.5m, the detection range is:
Layer A: mask the zone with a circle about from 0m to 9m.
Layer B: mask the zone with a circle about from 0m to 3m.
Layer C: mask the zone with a circle about from 0m to 1m.
Refer to FIG.22 for detection angle of OS-471D.
Separate lens shield can be eliminated as each user's desired detection area (See FIG.23 & FIG.24).

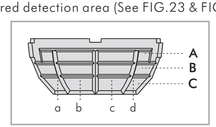


FIG.21

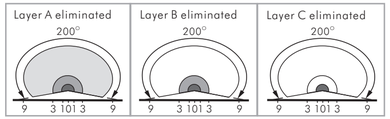


FIG.22

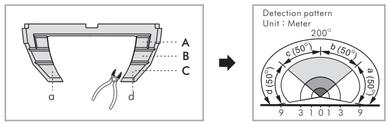


FIG.23

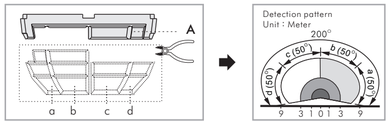


FIG.24

4.6.2 To affix the shield

Firstly eliminate the shield's corresponding part and insert the two block points into the grooves beside of the lens, then insert the borderline which has a small slot into the grooves upside of the lens, make sure shield is affixed well (See FIG.25).

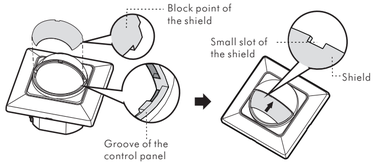


FIG.25

4.6.3 To detach the shield

Prod the shield outwards slightly, a small slot shows on the top of the lens (See FIG.26-A), prize up the layer at the slot with a screwdriver to peel the shield off (See FIG.26-B).

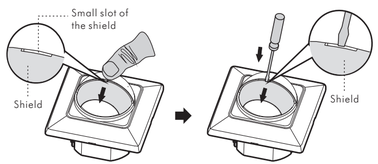


FIG.26-A FIG.26-B

NOTE

- Do not attempt to open or repair the unit without qualified electrician while it is malfunctioned.
- The following conditions may cause lower sensitivity:
  - In very foggy days, the sensitivity may be less due to moisture collecting on the lens.
  - In very hot days, the sensitivity may be less since high ambient temperature is close to body temperature.
  - In very cold days when heavy clothing is dressed, especially the facial area is covered, very little heat will be emitted from the body causing the unit to be less sensitivity.
  - Cleaning: Wipe with dry cloth only. Soap or rough cloth may damage the detector lens.

5 TROUBLE SHOOTING

When OS-471D fails to work normally, check assumptive problems and suggested solutions in following table that will be hopefully to solve your problem.

Problem	Possible cause	Suggested solution
LED does not turn on.	1. Power does not switch on. 2. Incorrect wiring.	1. Switched on the power. 2. Refer to wiring diagrams and connect wiring correspondingly.
Lights do not turn on.	1. Incorrect wiring. 2. Defective load. 3. Meter setting is too short. 4. The slide switch is set at OFF. 5.In Slave mode.	1. Refer to wiring diagrams and connect wiring correspondingly. 2. Replace the defective load with a new one. 3. Setting Meter knob at "+". 4. Adjust slide switch at AUTO or ON. 5.Check the wiring or the position of knob.
Lights do not turn off.	1. Time setting is too long, detector is continuously triggered. 2. Detector is nuisance triggering. 3. Incorrect wiring.	1. Setting Time in test mode, check whether the detector is nuisance. 2. Keep interference be away from detection zone to avoid activating detector. 3. Refer to wiring diagrams and connect wiring correspondingly.
Push button does not work.	1.Incorrect wiring. 2.Defective push button switch.	1. Please check if the push button is connected between T and L. 2. Replace the push button with a new one.
Nuisance triggering	There are heat sources or any objects which may sway in the wind within the detection field.	Avoid aiming the detector toward any heat sources, such as air conditioners, electric fans, heaters or any highly reflective objects. Make sure there are no swaying objects within the detection field.
Have no "BI-BI" sound	The "BI-BI" button is in OFF mode.	Press the "BI-BI" button to switch it in ON mode.

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