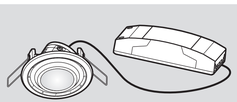
FLUSH MOUNT PRESENCE DETECTOR

OS-565Pi / OS-565PAi / OS-565S



INSTRUCTION MANUAL

TECHNICAL SPECIFICATIONS

Rated Voltage	220V-240V~ 50/60Hz

Load

OS-565Pi

Load 1 (L1) for Lighting:

Incandescent Lamp	: max. 2000W
AC Halogen Lamp	: max. 1000W
LV Halogen Lamp	: max. 1000VA / 600W (traditional) max. 1000VA / 900W (electronic)
Fluorescent Lamp	: max. 1000VA / 600W (uncompensated) max. 900VA / 100μF 25 x (1 x 18W); 12 x (2 x18W) 15 x (1 x 36W); 7 x (2 x 36W) 10 x (1 x 58W); 5 x (2 x 58W)
LED Lamp	: max. 400W
Energy Saving Lamp:	max. 600VA / 400W (include CFL & PL lamp)

Load 2 (D1 - D2) for HVAC (voltage free contact, Lux is invalid):

Max. 5A ($\cos\varphi = 1$)

Motor: 1/10HP (approx. 73W)

OS-565PAi

Load for Lighting:

Incandescent Lamp	: max. 2000W
AC Halogen Lamp	: max. 1000W
LV Halogen Lamp	: max. 1000VA / 600W (traditional) max. 1000VA / 900W (electronic)
Fluorescent Lamp	: max. 1000VA / 600W (uncompensated) max. 900VA / 100μF 25 x (1 x 18W); 12 x (2 x18W) 15 x (1 x 36W); 7 x (2 x 36W) 10 x (1 x 58W); 5 x (2 x 58W)
LED Lamp	: max. 400W
Energy Saving Lamp:	max. 600VA / 400W (include CFL & PL lamp)

OS-565S **(for optional purchase)**

It is a slave detector which can be used to transfer detecting singal to master detector. Max. 5pcs slave detectors can be connected to one master detector by means of 1- to 2 RJ-12 socket with 7m cable.

TECHNICAL SPECIFICATIONS

Time Adjustment	
OS-565Pi	Time 1(for lighting): Adjustable from approx. 5sec to 30min, Test & 测试 Time 2 (for HVAC) : Adjustable from approx. 10sec to 60min
OS-565PAi	Adjustable from approx. 5sec to 30min, Test & 测试
Lux Adjustment	Adjustable from approx. 10Lux to ☼ (∞) and "☼" (learning range: 10Lux - 2000Lux)
Meter Adjustment	Adjustable from approx. Φ1m ("-") to approx. Φ7m ("+") at height of 2.5m
Detection Range	360° circular, Φ7m at height of 2.5m
Operating Temperature	0°C to +45°C
Environmental Protection	Detector head: IP44 Power box : IP20

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 1 shall be installed in the fixed wiring for protection.
- A circuit breaker (250VAC, 6A) type C according to En60898-1 of load 2 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

- **OS-565Pi / OS-565PAi**

Pattern					
Item	Detector head	Power box	Lens shield	Manual	IR remote controller (For optional purchase)
Quantity	1	1	2	1	1

- **OS-565S (For optional purchase)**

Pattern			
Item	Detector head	7m 1-to-2 RJ-12 signal cable for Master / Slave connection	Lens shield
Quantity	1	1	2

2 PRODUCT DESCRIPTION

2.1 Features

OS-565Pi / OS-565PAi is a ceiling flush mount presence detector for indoor application in office and home such as conference room, garage, kitchen, dining room etc. for lighting and HVAC automatic control. The adjustment of time and Lux value can be set either by its knobs or IR-11 infrared remote control.

- User friendly down light construction with spring clips for matching different thickness of ceiling board mounting and easy as well as quick installation.
- Powerful relay and advanced technology are used to enable controlling all kinds of lighting loads.
- IR remote control is available for easy and quick setting.
- The ambient Lux value can be learned as the threshold for switching on / off the loads by IR and VR if the offered Lux values do not match user's requirement.
- Manual switching for lighting on / off is enabled by using an external switch to control.
- To enlarge the detection range by connecting the slave detector (OS-565S) to master detector, max. 5pcs slave detectors can be connected.
- A red LED is equipped as an indicator for test triggering and IR setting.
- Adjustable detector head is capable of 30° downward and 350° horizontally for setting desired detection angle.
- RJ-12 plug and socket for detector and power box quick and easy connection.

2.2 Dimension (See FIG.1-A & FIG.1-B)

Detector head: Φ80 x 54mm

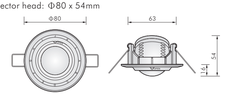


FIG.1-A

Power box: 135 x 58 x 31mm

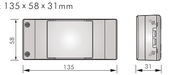


FIG.1-B

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 It is recommended to install at the height of 2.5m, and the detection range can reach up to the diameter of 7m (See FIG.2).

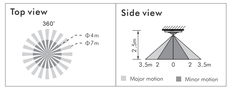


FIG.2

3.1.2 Helpful tips for installation

Since the detector is in response to temperature change, please avoid the following conditions (See FIG.3):

- Avoid the detector aiming towards the objects whose surfaces are highly reflective, such as mirror, monitor, etc.
- Avoid the detector aiming towards the objects which may be swayed in the wind, such as curtain, tall plants, miniature garden, etc.
- Avoid mounting the detector near heat sources, such as heating vent, air conditioning, vent as dryer, light, etc.

FIG.3

3.2 Function

3.2.1 Manual on / off switching by using push button to activate R terminal

An additional push button can be connected between terminal R and L for manual on / off operation (case 1: on → off; case 2: off → on).

While pressing push button (≤1sec):

Please note, this function is invalid when the lighting (detector) is in the On 8hrs & Off 8hrs conditions set by IR remote control.

Case 1: Manual off switching (Lux settings is invalid):

Under the light on status, the light can be manually switched off by short pressing (≤1sec) the push button. During this operation mode, once the detector is triggered by movement, the light keeps off within the set switch off delay time. Until there is no movement detected and the pre-set switch off delay time has reached, the detector resumes to work according to the previous operation mode set by knobs or IR. To press the push button (≤1sec) during the light manual off period will activate the manual light on function (working as the Case 2).

Case 2: Manual on switching (Lux settings is invalid):

Under the light off status, the light can be manually switched on by short pressing (≤1sec) the push button. During this operation mode, once the detector is triggered by movement, the light keeps on within the pre-set switch off delay time. Until there is no movement detected and the pre-set switch off delay time has elapsed, the detector resumes to work according to the previous operation mode set by knobs or IR. To press the push button (≤1sec) during the light manual on period will activate the manual light off function (working as the Case 1).

3.2.2 M/S function

Max. 5pcs slave detectors can be connected to master detector OS-565Pi / OS-565PAi via 7m 1 to 2 type RJ-12 cable for application of expanding detection range if detection range of one OS-565Pi / OS-565PAi does not match user's desire. Slave detector can only be used to transfer detecting signal to master detector for expanding the detection range, the connected loads will only act according to the pre-set values of master detector.

3.2.3 Auto mode

- Under Auto mode, the load will be on automatically when the movement is detected and the ambient light level is below the Lux setting value. When no movement is detected and the delay time has expired, the load will be off automatically.
- According to the changeable ambient light level, detector can postpone load's delay time of turning on and off to avoid load's unnecessarily turning on or off due to rapid ambient light change:

  Ambient light level changes from bright to dark: If the ambient light level keeps to be lower than the preset Lux value for 10sec, the light will be automatically switched on after 10sec. (LED will be on 10sec for indication)

  Ambient light level changes from dark to bright: If the ambient light level continuously exceeds the switch off Lux value for 5min, there are different reactions according to the time setting value. Time setting ≥ 5min, the light will be automatically switched off after 5min.

  Time setting < 5min, the light will be automatically switched off when the set time reached if no movement is detected during the 5min. But if there is movement detected within the 5min, the time will be reset upon detection and until 5min later, the light is switched off.

3.2.4 Semi-auto mode (operation with IR-11 only)

- Detector enters into semi-auto mode by pressing "☼" button on IR-11.
- Under semi-auto mode, load can only be manually switched on by operating external push button.
- When the load is switched on, it will keep on if the movements are detected constantly. Load will turn off if no movement is detected and the delay time has expired.
- Load can also be manually switched off by operating external push button.

3.2.5 Auto sensitivity adjustment function

To raise the sensitivity of sensor after load is switched on can reduce the possibility of false-off problem. When the load is on, the sensitivity of sensor will be raised automatically. When the load is off, the sensitivity of sensor will return to normal standby condition.

3.3 Wiring diagrams

3.3.1 OS-565Pi

3.3.1.1 OS-565Pi for standard application (See FIG.4).

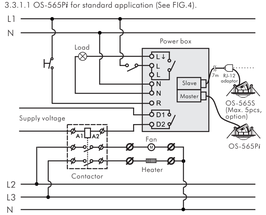


FIG.4

3.3.1.2 One load is controlled by two detectors (See FIG.5).

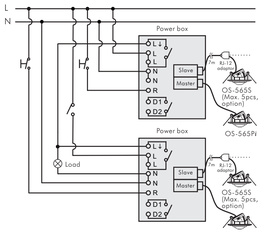


FIG.5

3.3.1.3 OS-565Pi controls staircase timer (See FIG.6).

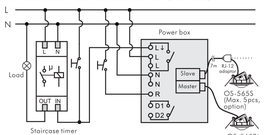


FIG.6

3.3.2 OS-565PAi

3.3.2.1 OS-565PAi for standard application (See FIG.7).

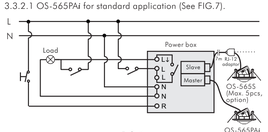


FIG.7

3.3.2.2 One load is controlled by two detectors (See FIG.8).

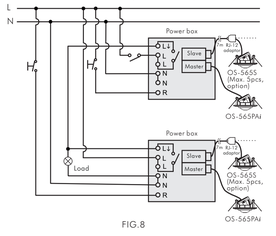


FIG.8

3.3.2.3 OS-565PAi controls staircase timer (See FIG.9).

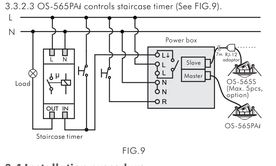


FIG.9

3.4 Installation procedure

3.4.1 To install the detector, please drill a hole with diameter of 65mm on movable ceiling board and keep the power cables outside. Please strip off 6-8mm of cable sheathing for wiring (See FIG.10).

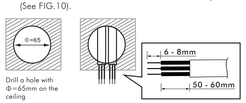


FIG.10

NOTE

During installation, all the requirements of mentioned standard must be fulfilled when installing, also insulation and requirements of interconnection cord between power box and detector shall be considered.

3.4.2 Unscrew protection cover on power box with screwdriver. RJ-12 sockets are for detector connection and terminals are for power and load, then put the protection cover back and screw it tightly (See FIG.11).

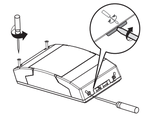


FIG.11-A

FIG.11-B

- Knock-outs on protection cover is for cables entry. Please refer to following illustration for application.
- No knock-out is used: Φ3 - Φ6mm (See FIG.12-A).

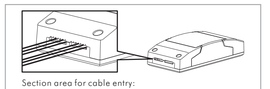


FIG.12-A

- Knock-out on bottom case is used: Φ7 - Φ8mm (See FIG. 12-C).

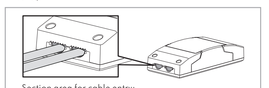


FIG.12-B

- Knock-out on protection cover is used: Φ9 - Φ10mm (See FIG.12-B).

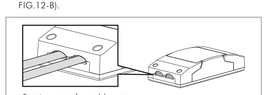


FIG.12-C

- All knock-outs are used: Max. Φ12.5mm (See FIG.12-D).

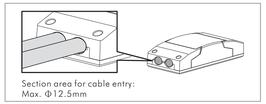


FIG.12-D

3.4.3 Feed cables through the ceiling and refer to wiring diagram to connect cables, then insert power box into ceiling through the drilled hole (See FIG.13).

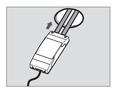


FIG.13

3.4.4 Put two spring clips of detector head into the drilled hole, then push detector into ceiling (See FIG.14).

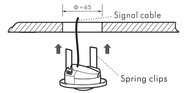


FIG.14

NOTE

- Adjust detector head's position and assure bottom of detector head's stuck firmly on ceiling (See FIG.15).
- Recheck and wipe slightly with a clean and dry cloth if detector surface is dirty.

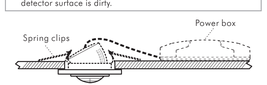


FIG.15

3.4.5 Restore power.

4 OPERATION AND FUNCTION

4.1 Time, Lux, Meter knob(OS-565S has Meter knob only)

Knob	Function	Knob setting
Time2 60m 10s 30m 15m OS-565Pi only	Set delay off time for HVAC	Range: Approx. 10sec to 60min (Reaction is regardless of Lux value)
Time1 TEST 30m 5s 15m 5m OS-565Pi Time TEST 30m 5s 15m 5m OS-565PAi	Set delay off time for lighting	Range: Approx.5sec to 30min Test : Test mode (Load and red LED will be 2sec on, 2sec off) : Short impulse mode for staircase timer switch control (Load will be 1sec on, 9sec off)
Lux 200lx 10 300 100	Set the light value for switching on load	Range : Adjustable from approx. 10Lux to "☼" (∞). (learn): The actual ambient light level (10Lux - 2000Lux) can be read in.
Meter + −	Set the range of detection	Range: From "-"(Φ1m) to "+" (Φ7m).

4.2 Lux learning function with knob

Learning procedure:

4.2.1 Adjust the knob to "◔" when the ambient light level matches with the desired value (See FIG.16-A).

4.2.2 When the knob is set to "◔" originally, it should be adjusted to other position more than 1sec, then goes back to "◔" (See FIG.16-B).

4.2.3 Then the load is off. LED starts to flash slowly indicating entering into learning mode. Learning will be completed within 25 seconds. Afterwards, the LED and load will keep on 5sec or LED flashes quickly for 5sec and load is off to confirm successful learning (See FIG.16-C).

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

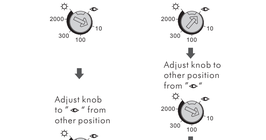


FIG.16-A FIG.16-B FIG.16-C

NOTE

- When the actual light level is out of the range 10 - 2000Lux, detector will learn 25sec, then the red LED flashes quickly for 5sec. When the actual light level is below 10Lux, Lux value is set to 10Lux, 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.

4.3 Usage of lens shield

4.3.1 OS-565Pi / OS-565PAi / OS-565S has provided 2 lens shields for masking the undesired detection area. Each lens shield has 3 layers (Layer A / Layer B / Layer C), each layer includes 6 small segments and each small segment can cover 30° detection angle. For example, install the detector at the height of 2.5m, the detection range can reach up to 1m diameter if the two complete lens shields have been used, and up to 4m diameter if the A & B layers of two lens shield has been used, and up to 6m diameter if only the A layer of two lens shield has been used, and up to 7m diameter if no lens shield has been used.

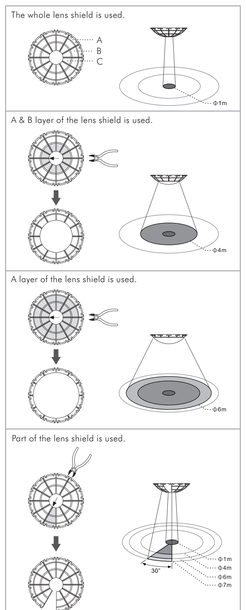


FIG.17

- The shadow part of the lens shields in the FIG.17 is referring to the cut off parts.

4.3.2 Fixing lens shield: There is circular hook on the back of the decorative frame and the lens shield is designed with a circular groove. The lens shield can be fitted by joining the groove of lens shield with its corresponding hook on the decorative frame (See FIG.18).

FIG.18

4.4 Test mode

4.4.1 LED function (OS-565Pi / OS-565PAi only)

There is a built-in red LED as an indicator for IR remote control signal reception and test mode status (See FIG.19).

4.4.1.1 In case the IR-11 remote control is used, once the detector receives signal from it, then red LED will flash 2sec quickly to indicate successful signal reception.

4.4.1.2 LED can be used as an indicator in walk test (refer to 4.4.2) and load is no need to be connected.

FIG.19

4.4.2 Walk test

The purpose of walk test is to select a proper installation place to get the optimal detection range. Set meter knob at "+", Time / Time1 knob at "TEST" (refer to step 4.1), then you can conduct a walk test and the detector is uncontrolled by Lux setting (See FIG.20).

NOTE

When the power is connected the first time or it is re-supplied after shutting off, the detector will enter into 60sec warm up mode. During which, LED and the load can be switched on for 60sec regardless of the time knob of detector is set to any modes, and then off. After warming up is finished, the mode selected will be active automatically.

FIG.20

4.4.2.1 OS-565Pi / OS-565PAi Test procedure

4.4.2.1.1 Tester must be within the detection coverage.

4.4.2.1.2 Switch on the power.

4.4.2.1.3 Walk from outside across to the detection pattern. Once the detector is triggered, red LED will turn on for 2sec.

4.4.2.1.4 Adjust the detector detection angle to change coverage.

4.4.2.1.5 Adjust meter knob to change coverage.

4.4.2.1.6 Repeat step 4.4.2.1.4 to 4.4.2.1.5 until it meets user's demands

4.4.2.2 OS-565S Test procedure

4.4.2.2.1 Tester must be within the detection coverage.

4.4.2.2.2 Connect OS-565S to OS-565Pi / OS-565PAi.

4.4.2.2.3 Switch power on.

4.4.2.2.4 OS-565S takes approx. 60sec to warm up with load on then turns off after warming up time.

4.4.2.2.5 Walk from outside across to the detection pattern until load is on 2sec then off. The next trigger should be 7.5sec interval. (see FIG.20)

4.4.2.2.6 Adjust lens shield for desired detection range.

4.4.2.2.7 Repeat step 4.4.2.2.5 to 4.4.2.2.6 until it meets user's demands.

4.4.3 Adjust detector head

- Pull out the detector head with a small "-" type screw driver carefully (See FIG.21).
- The detector head can be pulled down 30° and rotated clockwise or anti-clockwise in range of 350° (See FIG.22).

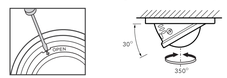


FIG.21 FIG.22

4.4.4 The arrowhead on the detector head had been set to be pointed at one arrowhead before ex-factory. The detector head can be clockwise or anti-clockwise rotated in the range of 350°. Each scale stands for 30°. (See FIG.23-A & FIG.23-B).

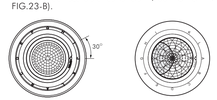


FIG.23-A FIG.23-B

4.4.5 The detector head can be vertically pulled 30° downward, the different detection range can be obtained by setting the detector head at 0°, 10°, 20° and 30° respectively. (Each scale stands for 5°) (See FIG.24-A & FIG.24-B).

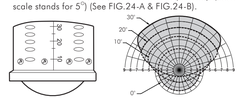


FIG.24-A FIG.24-B

5 TROUBLE SHOOTING

When OS-565Pi / OS-565PAi / OS-565S works abnormally, check assumptive problems and suggested solutions in following table that will hopefully to solve your problem.

Problem	Possible cause	Suggested Solution
Lighting device does not turn on	1. Power failure. 2. Incorrect wiring. 3. Improper knob setting. 4. Malfunctioned load.	1. Switch on the power. 2. Refer to wiring diagrams (FIG.4 to FIG.9) and check if the load is malfunctioned. 3. Check if knobs are set to the correct position, then supply the power to check if the LED will turn on. 4. Replace the disabled load with a new one.
Lighting device does not turn off	1. Incorrect time setting. 2. Detector is nuisance triggered. 3. Incorrect wiring.	1. To test the delay time specified on either Time1 or Time2 knob and check detector is nuisance triggered if lighting device does not turn off as the delay time is reached. 2. Keep away from detection coverage to avoid activating detector while doing the test. 3. Make sure load and wires are connected correctly.
LED does not turn on	1. Out of the detection range. 2. No power supplied. 3. "Time" knob is not set at "TEST". 4. Incorrect wiring.	1. Walk within the effective detection range (Φ7m). 2. Switch on the power. 3. Turn the knob position to "TEST". 4. Refer to wiring diagrams (FIG.4 to FIG.9).
OS-565S can't enlarge detection range when it's connected to master detector	1. Master detector and slave detector are connected incorrectly. 2. Master detector and slave detector has the incorrect settings, so that the connected load can't be switched on.	1. Connect cables referring to the wiring diagrams. 2. Adjust the settings of Time & Lux & Meter for switching on the connected load depending on detector's triggering in such condition.
Nuisance triggering	There are heat sources, highly reflective objects or any objects which may be swayed in the wind within the detection coverage.	Avoid aiming the detector toward any heat sources, such as air conditionings, electric fans, heaters or any highly reflective surfaces. Make sure there are no swaying objects within the detection coverage.

NOTE

The following conditions may cause lower sensitivity:

- In very foggy nights, 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.

6 OPTIONAL ACCESSORY

OS-565Pi / OS-565PAi can also be controlled by the infrared remote controller IR-111 to adjust the operation mode more easier and convenient (See FIG.25).

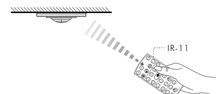


FIG.25

Button	Function
ON	**To set load I (CH1) on for 8hrs** ● By pressing "ON" button, the load of detector will be turned on for 8hrs. ● Load will be turned off after 8hrs and return to auto mode. Or press "ON" button again to exit this "8hrs on mode" during this period, detector will return to auto mode. Or switching off power supply of presence detector for 5sec and re-supply it again to lead detector to auto mode. ● Load I (CH1) can be lead to off mode by pressing "OFF" button under on mode.
OFF	**To set load I (CH1) off for 8hrs** ● By pressing "OFF" button, the load connected to detector will be turned off for 8hrs. ● Detector will return to auto mode after 8hrs. Or press "OFF" button again to exit this "8hrs off mode" during this period, detector will return to auto mode. Or switching off power supply of presence detector for 5sec and re-supply it again to lead detector to auto mode. ● Load I (CH1) can be lead to on mode by pressing "ON" button under off mode.
🔒	**To lock IR-11 buttons** By pressing "🔒" button, IR-11 buttons will be locked and no key function is workable (Except "🔓" button).
🔓	**Unlock IR-11 buttons** By pressing "🔓" button, IR-11 buttons will be unlocked. Thereafter, IR remote controller can be used to set presence detector.

Button	Function
A/M	**Ex-changing auto mode and semi auto mode** By pressing "A/M" firstly, detector enters into auto mode with detector's red LED flashing quickly for 2sec no matter it is locked or not. Then, press it again, detector enters into semi-auto mode with detector's red LED keeps on for 2sec.
MEMO	**To save latest setting values and duplicate to other detector** 1. Set the desired Lux and time values on one detector by using IR remote controller. 2. Then by pressing "MEMO" button for approx. 3sec aiming to above detector, the Lux and time settings of this detector will be saved into this IR remote controller by detector's LED flashing. 3. By pressing "MEMO" button again for approx. 1sec aiming to a new detector, the saved settings can be duplicated to the new detector. 4. Transfer the settings to detectors desired by repeating above last step. If no data is saved in IR remote controller, detector has no reaction after press "MEMO" button. 5. Battery removed for more than 5sec or "MEMO" button is pressed, all the data in IR remote controller will be deleted.
RESET	**To reset settings on presence detector** By pressing "RESET" button aiming to the detector, all settings on presence detector will go back to potentiometers' settings, and all MEMO data will be deleted.
10 LUX ↕ 2000 LUX	**To adjust Lux value** By pressing corresponding button, the selected light level threshold is set to presence detector for switching on the connected load. Load II (CH2) is independent of Lux value.
👁	**To read-in the actual light level** Actual light level can be read-in as threshold for switching the connected load, if the set Lux values do not match user's desired value. The steps are as below: Press "👁" button till detector's red LED flashing to enter into learning mode, learning time is 10sec. Then the actual light level is read-in confirmed by both load and LED turn on for 5sec to indicate IR-11 learning successfully and then turn off. Afterwards it returns to auto mode. **Note:** If the ambient light level is out of the range of 10 - 2000Lux, detector will learn for 10sec, then LED flashes quickly for 5sec, and the alternative of 10Lux or ∞ value will be stored depending on under 10Lux or above 2000Lux value.
1 Min. ↕ 60 Min.	**To set delay off TIME / TIME1 (Lighting)** By pressing corresponding button, the desired switching off delay time of load I (CH1) can be exactly set, it is confirmed by flashing of detector's LED for 2sec.
TEST	**Test mode** ● By pressing "TEST" button to enter into Test mode, it is confirmed by detector's LED flashing for 2sec. Walking through the detection coverage, both load I (CH1) and detector's LED turn on 2sec once detector is triggered (Reaction is regardless of Lux value). ● Load II (CH2) has no reaction in test mode.

Button	Function
15sec	**Short impulse mode for load I (CH1)** By pressing "15sec" button to enter into short impulse mode, it is confirmed by detector's LED flashing for 2sec. Load I (CH1) will be on 1sec and off 9sec when detector detects movement. Detector acts depending on movement and the pre-set Lux value under short impulse mode.
10 Sec. ↕ 60 Min. (OS-565Pi only)	**To set delay off TIME2 (HVAC)** By pressing corresponding button, the desired swithing off delay time of load II (CH2) for HVAC can be exactly set, it is confirmed by detector's LED flashing for 2sec. If detector has only one load, TIME2 is invalid.
15sec (OS-565Pi only)	**This button is invalid**.

3.28.0200005650101