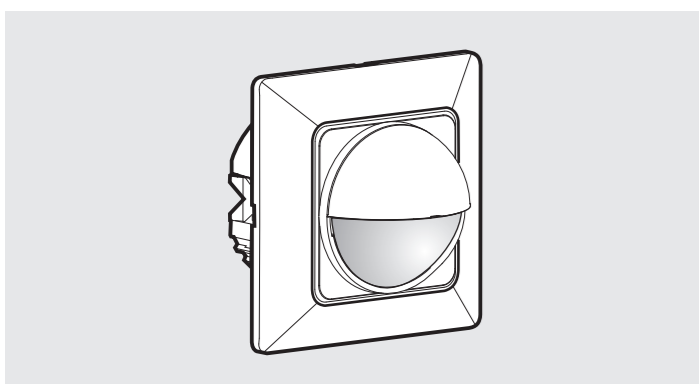


Wall Switch Presence Detector for DALI Lighting Control KDP-DALI-04 (Broadcast version)



INSTRUCTION MANUAL

TECHNICAL SPECIFICATIONS

Rated Voltage	220-240V~ 50/60Hz
Output	Max. 50pcs DALI electronic ballasts or LED drivers can be connected
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
Power Consumption	Approx. 0.5W
Auto Off Time Adjustment	Adjustable from approx. 30sec to 30min
Lux Adjustment	Adjustable from approx. 10Lux to 2000Lux and "∞" (learning range: 10Lux to 2000Lux), Test
Meter Adjustment	Adjustable from about "-" (approx. 2m) to "+" (approx. 9m)
Delay off time under 2-level mode	5min or ∞ (unlimited), light level is fixed at approx. 10%
Manual Switch (3 modes)	ON 4hrs / AUTO / OFF 4hrs
Environmental Protection	IP40
Operating Temperature	-20°C to +50°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!

- 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	Quantity
	KDP DALI 04	1
	Lens shield	1
	Manual	1

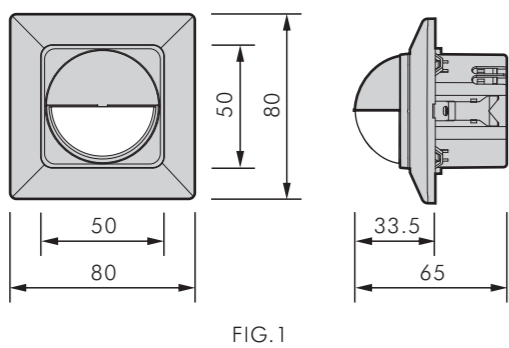
2 PRODUCT DESCRIPTION

KDP DALI 04 is a PIR wall switch presence detector integrated with DALI (Digital Addressable Lighting Interface) for achieving intelligent lighting management and energy saving benefits.

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 to ensure quick and secure installation.
- Appropriate to cover frames of different height and thickness.
- By using Learning "∞", ambient Lux value can be read in if the provided Lux values do not match the desired values, and it provides flexible management and wide selection.
- Can be programmed by IR remote control for easy and quick settings or Manual ON / OFF / DIM Function (IR remote control is for optional purchase).
- Easy wiring as no polarity for connecting to DALI system.
- 2-level light function is enabled to provide comfortable and safe environment.
- Manual ON / OFF / DIM function is feasible by using an external push button to control.

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



2.3 Decomposed pattern (See FIG.2)

FIG.2 shows the individual part of KDP DALI-04. The internal size of plastic frame is 50 x 50mm which can replace European standard plastic frame directly.

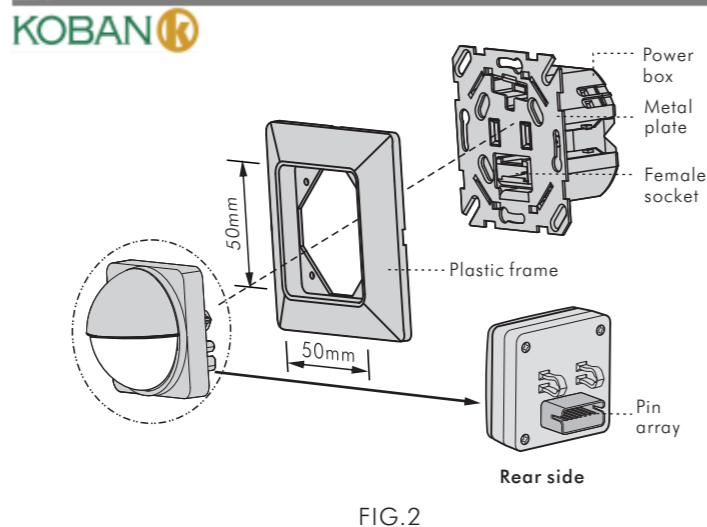


FIG.2

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
It is recommended to be installed at height 1.2m - 2.0m. The detection range is up to 9m at the height 1.2m - 1.5m (See FIG.3-A), and up to 8m at the height 1.8m - 2.0m (See FIG.3-B). The min. height of moving object is above 0.5m or 1m can be detected in a fan-shaped whose radius is 8m or 9m.

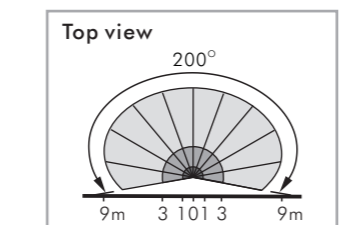
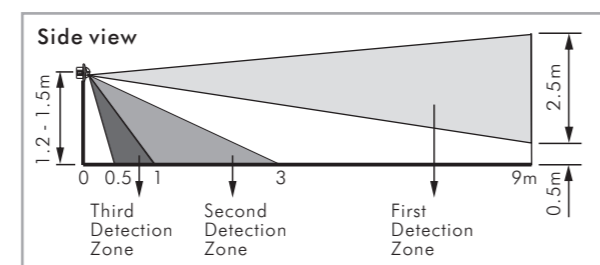


FIG.3-A At the height of 1.2 - 1.5m

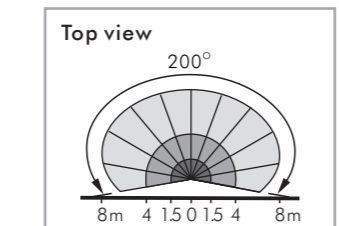
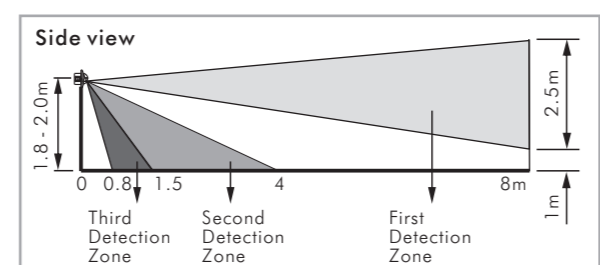


FIG.3-B At the height of 1.8 - 2.0m

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 facing 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.

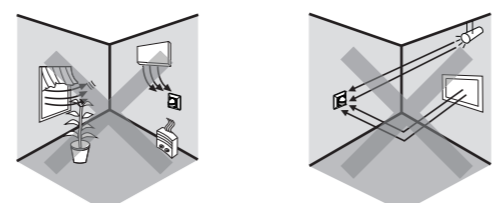


FIG.4-A

FIG.4-B

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

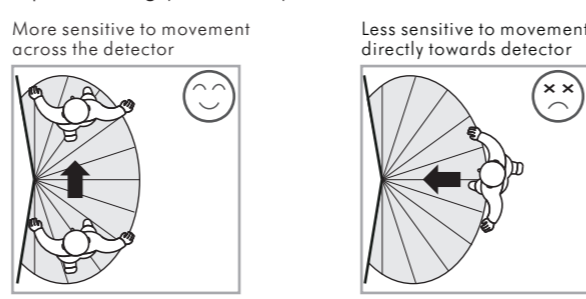


FIG.5

3.2 Functions

3.2.1 Auto mode

- Under auto mode, the load will turn 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 turn off or switch to standby mode automatically.
- According to the changeable ambient light level, detector can postpone delay time of turning on and off of load(light) to avoid unnecessarily switching on or off due to rapid ambient light change:

Ambient light level changes from bright to dark:
To avoid unnecessary switching ON/OFF load due to temporary ambient light value change caused via nature, e.g. a passing cloud, the detector has been designed with a 10 seconds delay for activating the light on and the detector will ignore any movement within the 10 seconds delay time, and the red LED will be continuous on as indication, but the detector has no reaction during the 10 seconds delay time.

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.

3.2.2 Standby mode function

3.2.2.1 5min standby function (☺☹)
The load will automatically dim to 10% standby illumination when the delay off time has expired and the time knob is pre-set to leftward (☺☹). During the following 5min, load will change to turn on with the setting illumination (100% or the dimmed illumination) once a movement is detected and then dim to 10% illumination when the delay off time has expired and there is no movement detected. Otherwise, load will turn off 5min later.

3.2.2.2 2-Level function (☺☹)

Set "Time" knob to "☺☹" under auto mode, detector will enter into 2-level mode when the delay off time is expired, and load will change to turn on with 10% illumination. During which, if the movement is detected, load will turn on with the setting illumination (100% or the dimmed illumination) and then turn to the 10% illumination if no movement detected and the delay off time expired. It will be cycled until the ambient light level is higher than the switch off Lux value and lasts for 5min, then turns off and detector enters into standby mode. During which, if the ambient light level is below the pre-set Lux value again, detector will enter into 2-level mode automatically.

3.2.2.3 Remark: Standby illumination system defaults to 10%, other standby illumination can be set via RC DALI (optional purchase).

3.2.3 Auto dimming (constant light level control)

According to the changeable ambient light level, the load can brighten or darken automatically to match the Lux setting value (Lux setting value by IR or knob is measured the mixed light level of artificial light and the ambient light).

3.2.4 Manually ON / OFF switching function

Terminal R and push button (N.O. type) can be series connected to manually switch on / off load. (case 1: on → off; case 2: off → on). While pressing push button (≤ 1sec):
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 be 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 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 be 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 Case 1).

3.2.5 Master / master function

Up to 10pcs detectors can be respectively connected in parallel to the S terminal of the detector for expanding detection range to meet large space application. Please see FIG.6-B for wire connection.
In this case, when one of the detectors is triggered by the movement, the triggering (ON) signal will spread out via S terminal to other detectors and once the shortest pre-set time of detectors has reached, the time reaching (OFF) signal will be spread out to other detectors too, therefore, all detectors can react synchronously, but every detector still can have individual settings in order to match different using environments.

3.2.6 Manual dimming via external push button

Detector can dim the light level of lighting manually via operating the push button connected to "R" terminal. Press (≥ 2sec) the push button, the light level of the load will change, then release the push button while the light level of the load matches the desired value.
Remark: It will lead to opposite dimming direction if next dimming is carried out. The dimming way is unidirectional and non-recyclable.

3.2.7 Dimming via IR-11 DALI remote control

- RC DALI is locked: Press "☺☹" or "☹☺" button to start dimming, then again pressing "☺☹" or "☹☺" button to stop dimming while the light level matches user's desire, but the value will not be saved in detector, and it will be dimmed automatically according to last Lux setting value while the light is switched on next time.
- RC DALI is unlocked: Press "☺☹" or "☹☺" button to start dimming, then again pressing "☺☹" or "☹☺" button to stop dimming while the light level matches user's desire and the value will be saved in detector as pre-set value, and it will be dimmed to this light level automatically while the light is switched on next time.

3.2.8 Semi-auto mode (Operation with RC DALI only)

- Detector enters into semi-auto mode by pressing "☺☹" button on RC DALI.
- 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 be on if the movements are detected constantly. Load will turn off if movement is no longer detected and the delay time has expired.
- Load can also be manually switched off by operating external push button.

3.3 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.

3.3.1 Normal operation (See FIG.6-A)

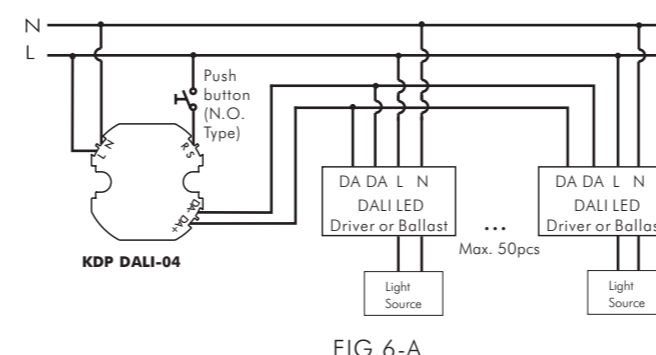


FIG.6-A

3.3.2 Master / master operation: Up to 10 detectors can be connected in parallel on the master via "S" terminal (See FIG.6-B). The maximum cable length between the first master and the last master device must not exceed 100m, and each two detectors should be at least 1m.

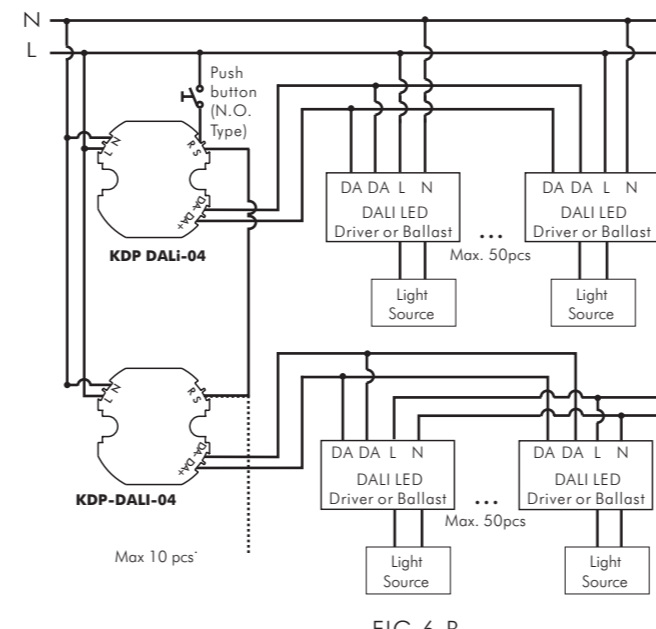


FIG.6-B

3.4 Installation procedure

KDP DALI 04 can be fixed on the wall either by European standard junction box or by Koban accessory (0767961 reference), please refer to step 3.4.1 & 3.4.2 respectively.

- The existing switch with 2-gang or more can be replaced by KDP-DALI-04 (See FIG.7).

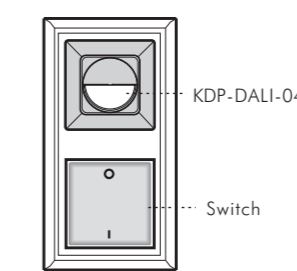


FIG.7 (2-gang switch)

3.4.1 Flush mount with European standard junction box

- 3.4.1.1 Disassemble the detector head and the plastic frame from the power box.
- 3.4.1.2 Unscrew the terminal and refer to the wiring diagrams (See FIG.6-A to FIG.6-B) 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).

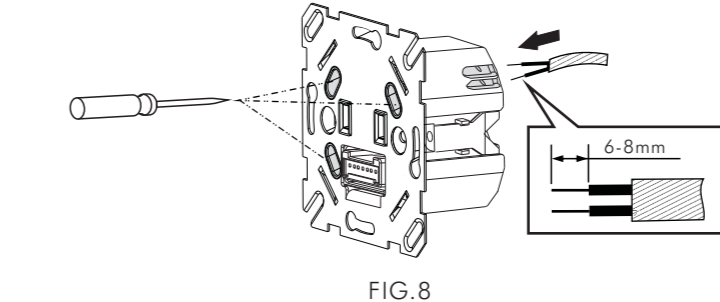


FIG.8

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

- 3.4.1.4 Put the wired power box into the European junction box (See FIG.10-A).
- 3.4.1.5 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).
- 3.4.1.6 Supply power and refer to point 4 carrying out function test to check if KDP-DALI-04 works normally.

- 3.4.2 Surface mount with junction box (Take Surface accessory ref: 0767961 for example, it is for optional purchase)
- 3.4.2.1 surface accessory's 7 knock-outs are designed for various applications (See FIG.9). Break the knock-out you intend the wires going through, then insert the wires into the corresponding hole.

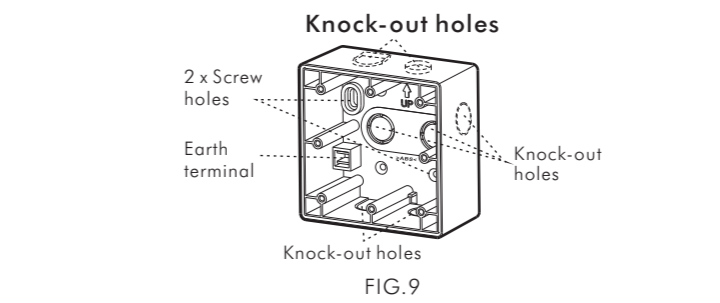


FIG.9

- 3.4.2.2 Fix Surface accessory on the wall with two Φ4 x 25.4mm wood screws (See FIG.11-A). Refer to FIG.9 for position of screw holes.
- 3.4.2.3 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 x 12mm tapping screw to fix the DALI-04 with KDP -Surface Accessory (ref: 0767961).

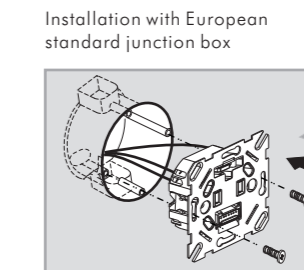


FIG.10-A

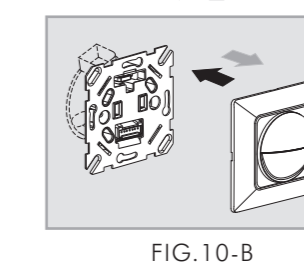


FIG.10-B

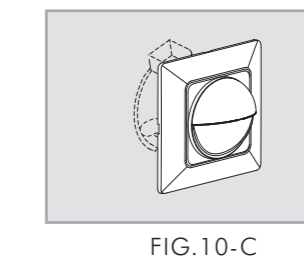


FIG.10-C

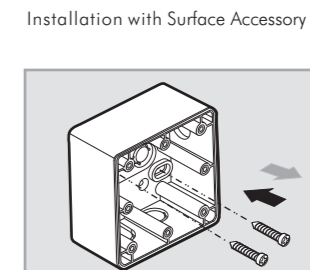


FIG.11-A

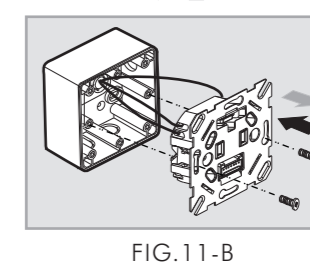


FIG.11-B

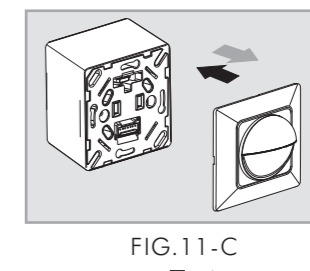


FIG.11-C

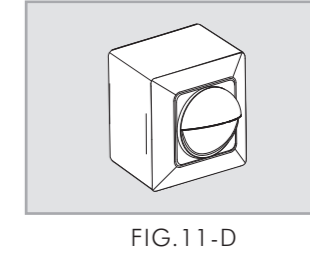


FIG.11-D

- ➡ installation procedure
- ➡ Dismantle procedure

3.5 Dismantle the plastic frame

To dismantle a fixed KDP-DALI-04, 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 of KDP-DALI-04, please refer to FIG.10-B & FIG.11-C respectively.

4 OPERATION

4.1 Pull out the cover of slide switch

- 4.1.1 Use a screwdriver at the position shown in FIG.12-A, pull out the cover of slide switch slightly (See FIG.12-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.12-C).

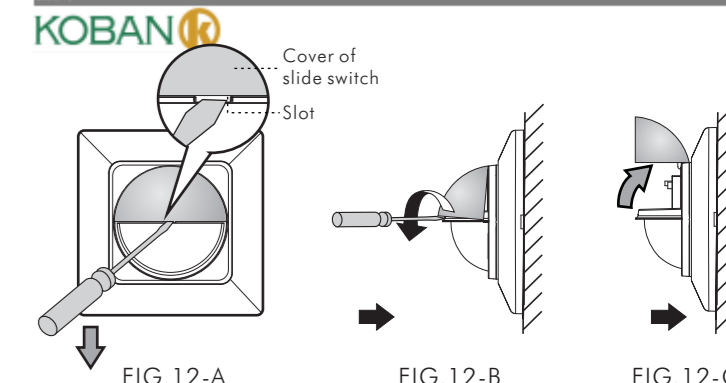


FIG.12-A

FIG.12-B

FIG.12-C

4.1.3 Slide switch function (See FIG.13)

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 4hrs, LED flashes on 1sec and off 5sec, then the detector returns to AUTO mode automatically after 4hrs. 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, OFF mode is activated, load will constant OFF for 4hrs, LED flashes on 1sec and off 5sec, then the detector returns to AUTO mode automatically after 4hrs. Even slide switch is set to OFF, detector enters into OFF mode once the power is re-supplied again.

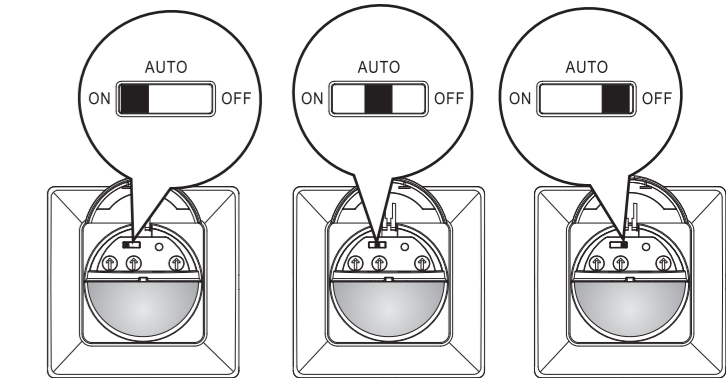


FIG.13

4.2 Time, Meter & Lux knob setting

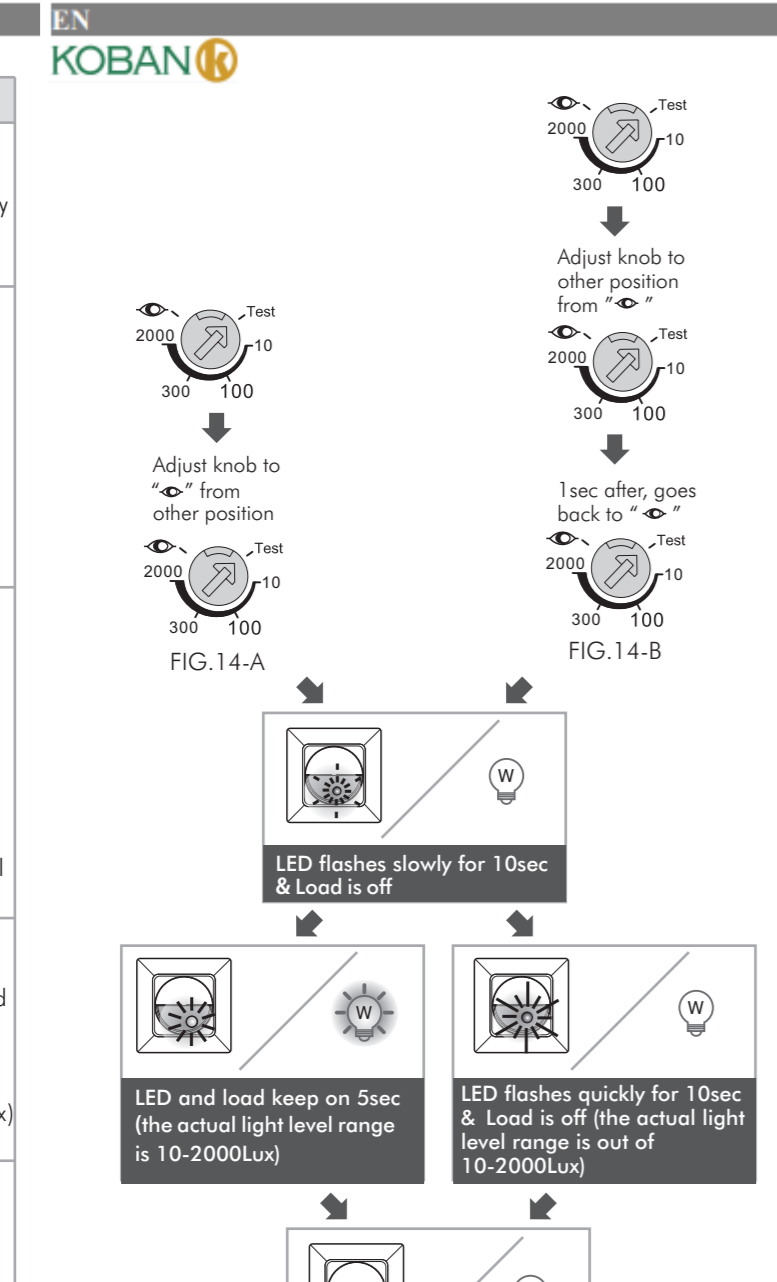
- NOTE**
- Make sure the slide switch is on the position of AUTO while adjusting the knob.
- As there are only scales printed at the right and left knob, please adjust the knob referring to corresponding printing marks (Lux and Time).

Knob	Function	Knob setting
	Set delay off time for load (lighting)	Range: Adjustable from approx. 30sec to 30min which is for setting the delay off time after detector is triggered. 2-level function: 5min While setting the values at the left part of knob, detector will turn on with 100% illumination within the preset time period. Once the preset time has reached, it stays on with approx. 10% illumination for 5min.
	Set the ambient light value for switching on load (lighting)	Range: Adjustable from approx. 10 to 2000Lux. Test mode (Load and red LED will be 2sec on, 2sec off) ◀ (learn): The actual ambient light level (10 - 2000Lux) can be read in.
	Set the Detection range	Range: Adjustable from approx. "-" (R2m) to "+" (R9m)

4.3 Lux learning function with knob

Learning procedure:

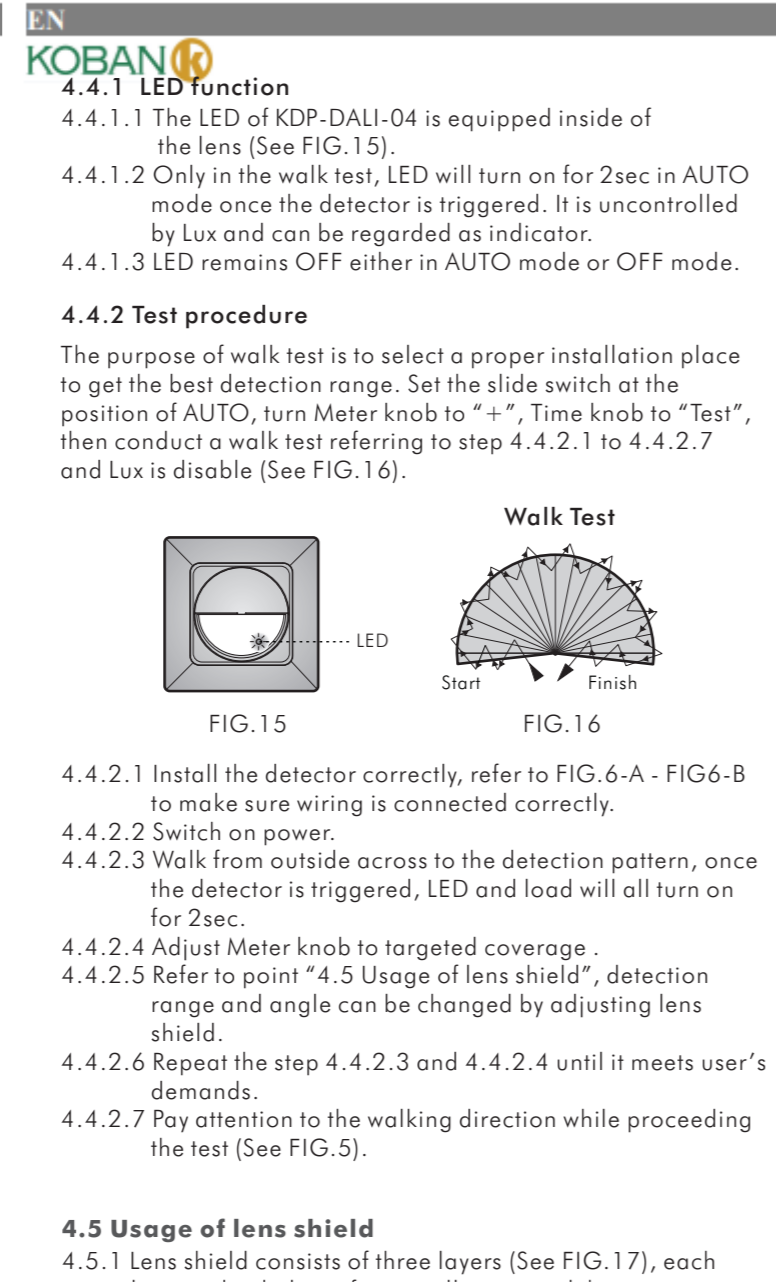
- Adjust the knob to "◀" when the ambient light level matches with the desired value (See FIG. 14-A).
- When the knob is set to "◀" originally, it should be adjusted to other position more than 1 sec, then goes back to "◀" (See FIG. 14-B).
- Then the load is off. LED starts to flash slowly indicating 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. 14-C).
- After learning procedure, the detector returns to AUTO mode with LED and load being off.



NOTE
Learning procedure out of the range 10-2000Lux will be regarded as failure with LED flashing quickly for 10sec and detector works according to the Lux setting.

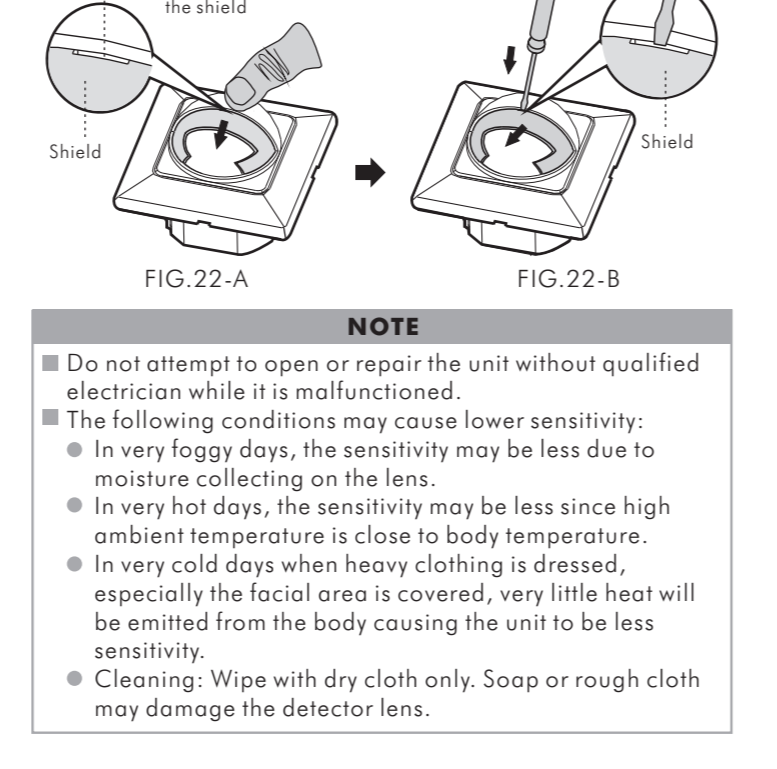
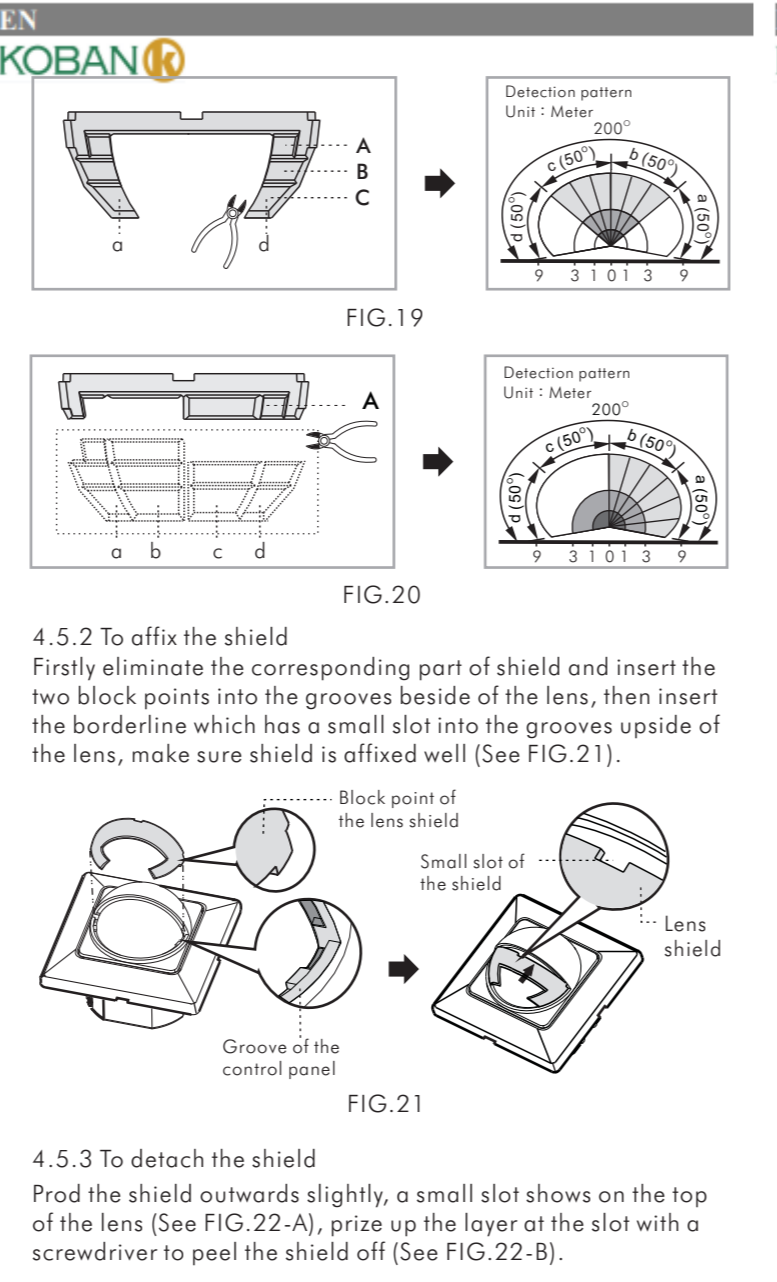
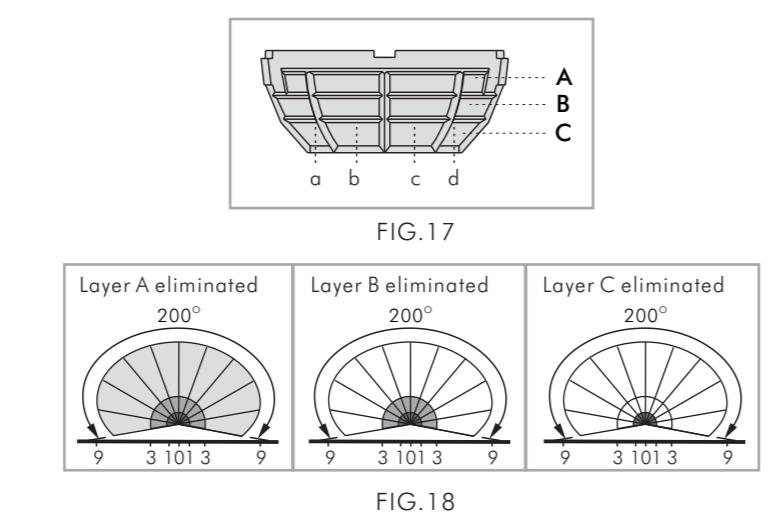
4.4 Walk test

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.



4.5 Usage of lens shield

- Lens shield consists of three layers (See FIG. 17), 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. 18 for detection angle of KDP-DALI-04. Separate lens shield can be eliminated as each user's desired detection area (See FIG. 19 & FIG. 20).



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.

