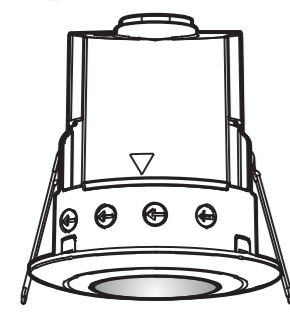


PRESENCE DETECTOR For DALI Lighting Control KDP-DALI-PR2

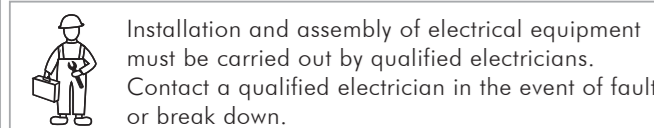


KDP-DALI-PR2

INSTRUCTION MANUAL

TECHNICAL SPECIFICATIONS

Rated Voltage	100 - 240V~ 50 / 60Hz
DALI Output	1 channel, 64 DALI ballasts/drivers Max. 250mA, 180mA guaranteed
Power Consumption	Approx. 0.5W
Detection Range	360° circular, up to Φ8m at height of 2.5m
Auto Off Time Adjustment	Adjustable from approx. 1min to 60min and Test
Lux Adjustment	Adjustable from approx. 5Lux to 2000Lux and "▲" (learning range: 10Lux to 2000Lux)
Load on time in standby mode (STBY)	Selectable: 5min, 10min, 15min and ∞
Load on illumination in standby mode (STBY%)	Selectable: 10%, 20%, 30% and OFF (Load is off in standby mode)
Operating Temperature	-20°C to +50°C
Environmental Protection	IP44
EMC Standard	EN61000-6-1 / EN61000-6-3 / EN301489-1 / EN301489-2 / EN55014-1 / EN55014-2
DALI Standard	EN62386-101 / EN62386-103 / EN62386-303 / EN62386-304



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

● KDP-DALI-PR2

Pattern				
Item	Detector	Lens shield	Manual	RC-DALI (optional purchase)
Quantity	1	2	1	1

● Optional accessories for surface mounting

Pattern			
Item	Junction box	EVA washer	Wood screws Φ4x25.4mm
Quantity	1	1	2

Pattern			
Item	Supporter	Wood screws Φ2.6x14mm	Cable tie
Quantity	1	2	2

- Manual operation function is feasible by connecting with a N.O. type push button switch.
- Flat lens design for blending into the existing environment perfectly.
- Inbuilt both of movement and ambient light detecting functions.
- Easy wiring as no polarity required for DALI cables connection.
- Semi-automatic operation mode operable.
- In compliance with DALI-2 IEC 62386 standard parts.
 - 101 (System components)
 - 103 (Control device)
 - 303 (Occupancy sensors)
 - 304 (Light sensor)
- Application examples: offices, schools, conference rooms, hotels, corridors/hallways...etc.

2.2 Dimension

- KDP-DALI-PR2: Φ75 x 78mm

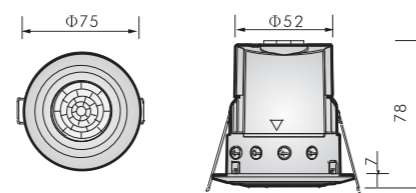


FIG.1-A

- RC-DALI Remote control (optional purchase)

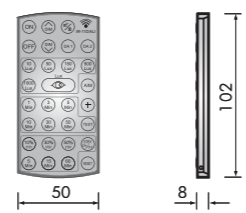


FIG.1-B

- With surface mounting Junction box (for optional purchase)

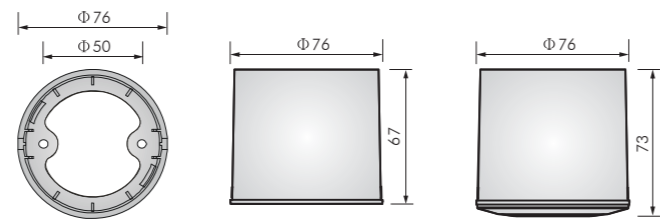


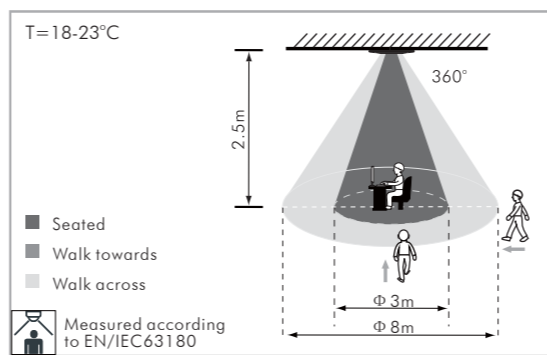
FIG.1-C

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 KDP-DALI-PR2 can be installed at the height of 2 - 4m, it's recommended to install it at the height of 2.5m to gain the optimal detection pattern of 8 meters diameter detection range and 360° field of view. (See FIG.2).



Height	Walk across	Walk towards	Seated
2.0m	Φ 7m	Φ 3m	Φ 3m
2.5m	Φ 8m	Φ 3m	Φ 3m
3.0m	Φ 8m	Φ 3m	Φ 2m
3.5-4.0m	Φ 8m	Φ 3m	—

FIG.2

3.1.2 Pay attention to the walking direction in the test proceeding. It is more sensitive to movement across the detector and less sensitive to movement directly toward to detector which will reduce the detection coverage (See FIG.3).

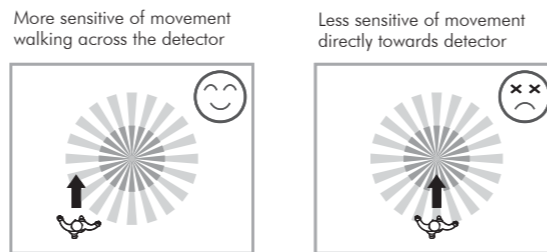


FIG.3

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

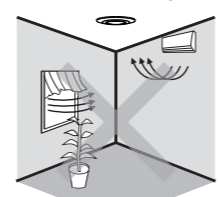


FIG.4-A

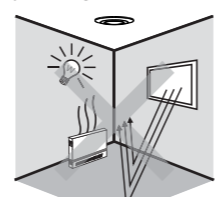


FIG.4-B

3.1.4 Installation tips specially for DALI dimming presence detector

- The detector should be placed in room where it can measure both natural light and artificial light simultaneously.
- Direct light on the detector from any illumination should be avoided.
- You should be away from the detector to avoid affecting the luminous flux that reaches the detector when making Lux value setting.

- Do not install the detector directly next to a window or sun blind which can cause incorrect measurement on the natural light (Refer to FIG.4-C)

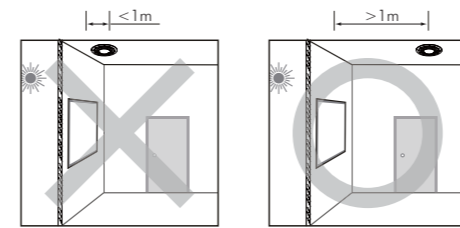


FIG.4-C

3.2 Function

3.2.1 Auto mode

● Detector is used for lighting control and controlled by Lux setting. When the ambient light level is below preset Lux value and the detector detects movement, the load will turn on automatically. As the delay time has expired and movement is no longer detected, the load turns off automatically.

● According to the changeable ambient light level, detector can postpone delay time of turning on and off load to avoid unnecessarily switching 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 by 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 if the STBY% knob set to "OFF", or it will be switched on refer to the STBY% knob setting if the STBY% knob set to the other threshold.

3.2.2 Standby mode function

- Set "STBY" knob to "∞" under auto mode, detector will enter into standby (2-level) mode when the delay off time is expired, and load will change to turn on according to the setting of "STBY%" until the ambient Lux value is higher than pre-set Lux value. 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 setting illumination of "STBY%" 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.

- Set "STBY" knob to position other than "∞" and "OFF (STBY%)" under auto mode, detector will enter into standby (2-level) mode when the delay off time is expired, and load will change to turn on according to the setting of "STBY%" for the time setting by STBY knob or IR remote control. 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 setting illumination of "STBY%" if no movement detected and the delay off time expired. Afterwards, if it is still have no movement detected and the STBY setting time is expired, load will turn off.
- Set "STBY%" knob to "OFF", load will turn off when the delay off time is expired.

3.2.3 Standby brightness setting indication

In Auto mode, detector can set the standby brightness through adjusting STBY% knob or IR remote control, regardless of the load state. After user sets the standby brightness, the load will first dim to the standby brightness within 1sec, and then return to the originally set state after 5sec. Therefore, it is convenient for users to select an appropriate standby brightness.

3.2.4 Auto dimming (constant light level control)

According to the changeable ambient light level, the load can dim to be bright or dark 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).

3.2.5 Manually ON / OFF switching function

Terminal of R/S 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 (< 2sec):
Case 1: Manual off switching (Lux settings is invalid): Under the light on status, the light can be manually switched off by short pressing (< 2sec) 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 (< 2sec) 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 (< 2sec) 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 (< 2sec) during the light manual on period will activate the manual light off function (working as Case 1).

3.2.6 Master/slave function

When the detection range of KDP-DALI-PR2 is not enough, it is possible to extend detection range by connecting with the slave detector, and maximum 10 pieces of slave detectors can be connected to one master detector. However, the slave detector will send only detecting signal to master detector and the reaction of load depends on settings of master detector. (Note: Please contact us for the available models of slave detectors)

3.2.7 Manual dimming via external push button

Detector can dim the light level of lighting manually via operating the push button connected to "R/S" 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).

3.2.8 Dimming via IR-11 DALI remote control

- IR-11 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.
- IR-11 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.

3.2.9 Semi-auto mode (Operation with RC-DALI only): Uncontrolled by Lux setting

- Detector enters into semi-auto mode by pressing "▲" button on RC-DALI remote controller.
- Under semi-auto mode, load (Lighting) can only be manually switched on by operating external push button.
- When the load (Lighting) is switched on, it will keep on if the movements are detected constantly.
- Load (Lighting) will turn off automatically if no movement is detected and the delay time has expired.
- Load (Lighting) can also be manually switched off by operating external push button during the switching on period.

3.3 Wiring

3.3.1 Normal operation: Max. 10pcs slave detectors can be connected to R/S terminal of the master detector (See FIG.5). The maximum cable length between the first detector and the last detector must not exceed 100m, and each two detectors should be at least 1m.

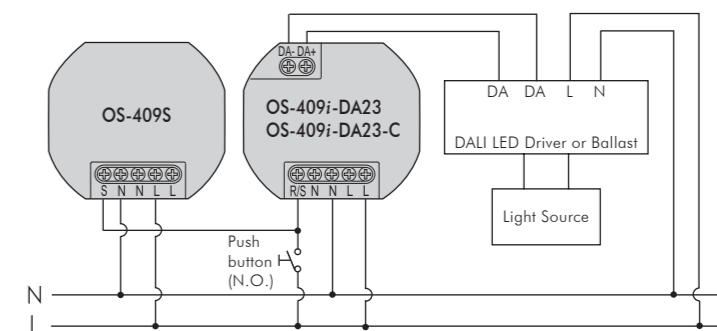


FIG.5

3.4 Installation procedure

3.4.1 Ceiling flush mounting

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

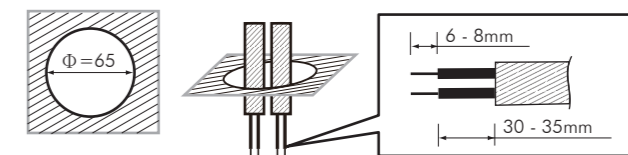


FIG.6

3.4.1.2 Use screwdriver to loose two screws to take down the protection cap and take out the cable clamp from it.

3.4.1.3 Break the rubber gasket, then feed cables through it (See FIG.7). **Note: Cable clamp is only available as optional accessory.**

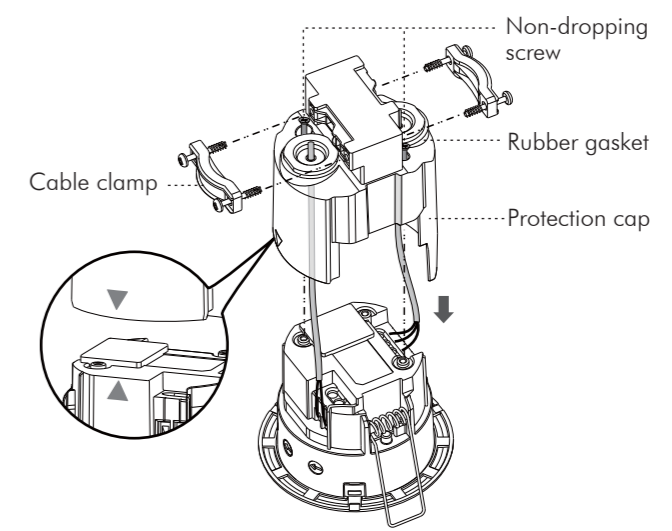


FIG.7

3.4.1.4 Please refer to illustration of FIG.5 for correct wiring and get "▼" symbol of the power box cap to be aligned with the "▲" symbol of housing (See FIG.7), then screw the power box cap tightly.

3.4.1.5 For product with cable clamp, the clamp has offered two grooves for holding cables in different diameters (See FIG.8).

	Big groove	Small groove
Small groove	For round cable of Φ5 - Φ12.5mm	For round cable of Φ3 - Φ5mm
Big groove	For 2 round cables of Φ5 - Φ6mm	For 2 round cables of Φ3mm
	For one or two flat cable(s) of 4 x 8mm	

FIG.8

3.4.1.6 Close up two spring clips of detector and insert detector into the drilled hole on ceiling (See FIG.9).

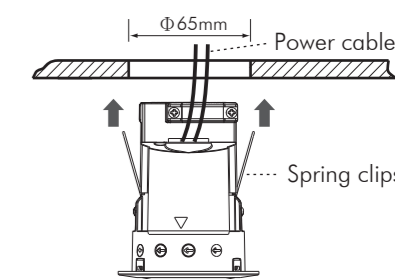


FIG.9

3.4.1.7 Restore the power supply.

3.4.2 Surface mount

KDP-DALI-PR2 also can be surface mounted with surface mount junction box as optional accessory.

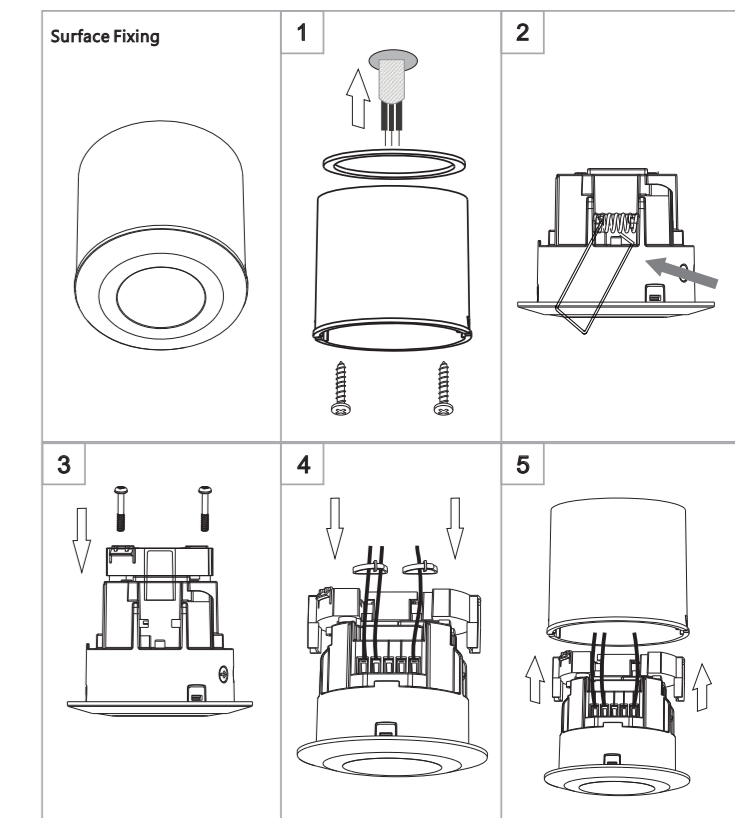


FIG.10

4 OPERATION AND FUNCTION

4.1 Time, Lux, STBY and STBY% knobs

Knob	Function	Knob setting
	Set delay off time for load (lighting)	Range: Adjustable approx. 1min to 60min Test : Test mode (Load and red LED will be 2sec on, 2sec off)
	Set the ambient light value for switching on load (lighting)	Range : Adjustable from approx. 5 to 2000Lux. Learn: The actual ambient light level (10 - 2000Lux) can be read in.
	Set load on time in standby mode	Selectable: 5min, 10min, 15min, and ∞.
	Set load illumination in standby mode	Selectable: 10%, 20%, 30% and OFF (Load is off in standby mode)

4.2 Lux learning function with knob

Learning procedure:

- Adjust the knob to "☞" when the ambient light level matches with the desired value (See FIG.11-A).
- When the knob is set to "☞" originally, it should be adjusted to other position more than 1sec, then goes back to "☞" (See FIG.11-B).
- Then the load is off. red LED starts to flash slowly indicating entering into learning mode. Learning will be completed within 25 seconds. Afterwards, the red LED and load will keep on 5sec or red LED flashes quickly for 5sec and load is off to confirm successful learning (See FIG.11-C).
- After learning procedure, the detector returns to AUTO mode with red LED and load being off.

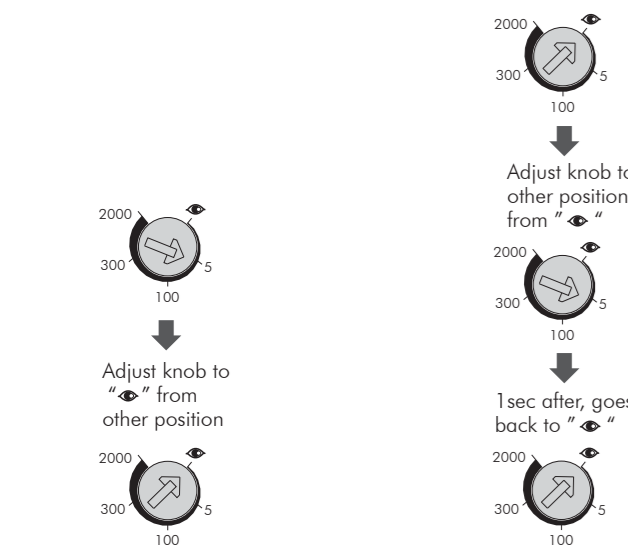


FIG.11-A

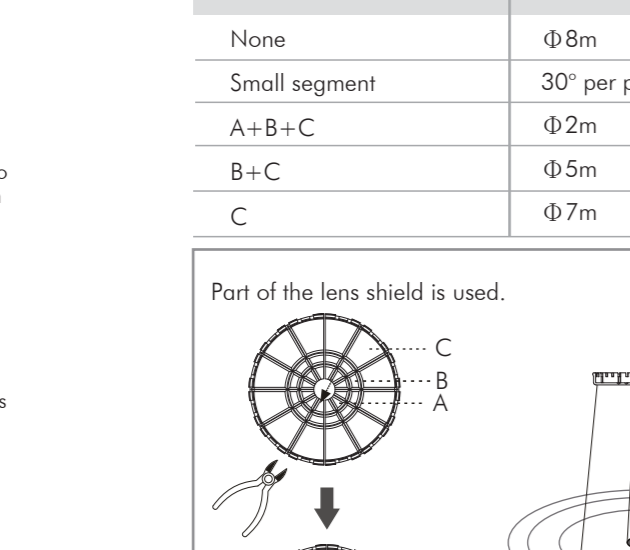


FIG.11-B

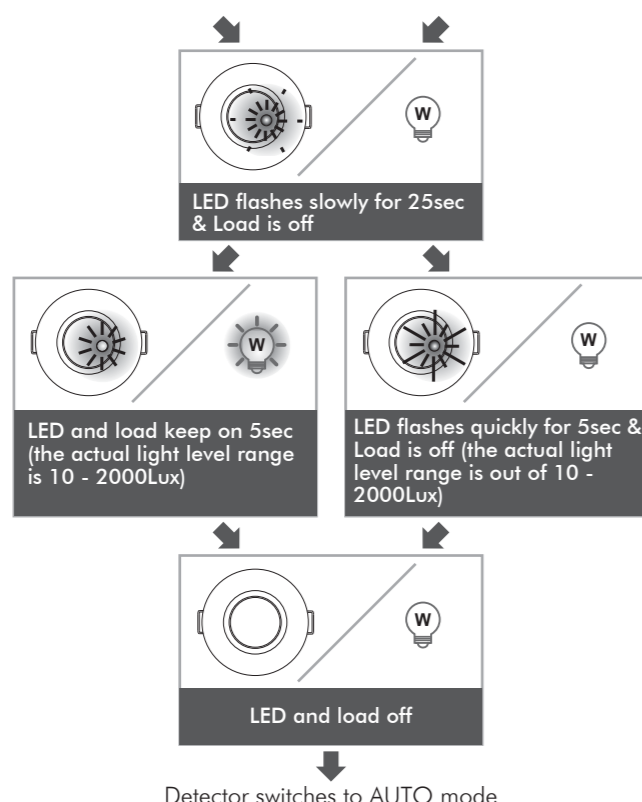


FIG.11-C

NOTE

- When the actual light level is in 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 2000Lux.
- 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

- KDP-DALI-PR2 has provided 2 lens shields for masking the undesired detection area (See FIG.12).

Used lens shield	Covered detection range
None	Φ8m
Small segment	30° per piece
A+B+C	Φ2m
B+C	Φ5m
C	Φ7m

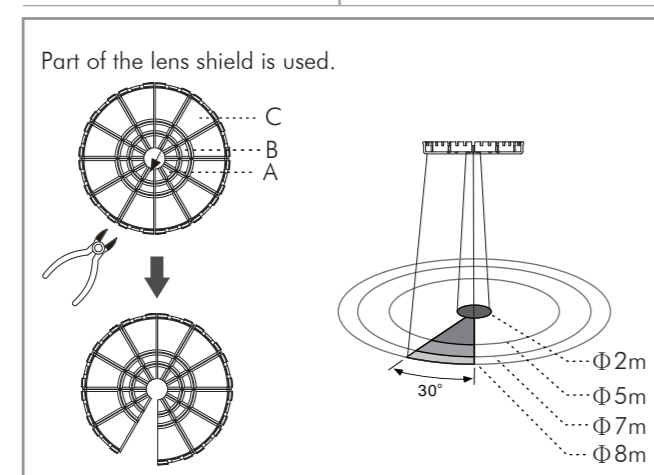


FIG.12

- The shadow part of the lens shields in the FIG.12 is referring to the cut off parts.

- After user choosing the desired detection area, the redundant lens shield should be eliminated.
- Fixing lens shield: There is slot around the lens and insert the lens shield into slot (See FIG.13).

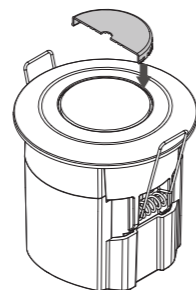


FIG.13

4.4 Walk test (Lux setting is inactive)

The purpose of conducting walk test is to check and adjust detection coverage. Set Time knob to "Test", then conducting a walk test.

NOTE

It takes approx. 60sec for detector to warm up after power is supplied, then detector enters into normal operation to carry out a walk test.

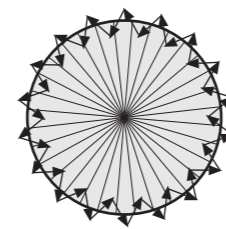


FIG.14

4.4.1 Test procedure

- Tester must be within the detection coverage.
- Switch power on.
- It takes approx. 60sec for detector to warm up with load and red LED on, then turns off after warming up time.
- Walk from outside across to the detection pattern until red LED turns on for approx. 2sec then off, the next trigger should be 2sec interval (See FIG.14).
- Adjust lens shield for desired detection range.
- Repeat step 4.4.1.4 and 4.4.1.5 until it meets user's demands.

5 TROUBLE SHOOTING

When KDP-DALI-PR2 works abnormally, please check assumptive problems and suggested solutions in below table that will hopefully solve your problem.

Problem	Possible cause	Suggested solution
Load does not turn on	1. No power is supplied.	1. Switch on the power.
	2. Incorrect wiring.	2. Connect the load referring to the wiring diagrams (See FIG.5).
	3. Incorrect Lux knob setting.	3. Set Lux knob to "2000" and check if the load will be on.
	4. Malfunctioned load.	4. Replace with a new one.

Problem	Possible cause	Suggested solution
Load does not turn off	1. Incorrect time knob setting.	1. Set the time knob to a shorter time and check if the load will be off.
	2. Detector is nuisance triggered.	2. Keep be away from the detector while doing the walk test.
	3. Incorrect wiring.	3. Connect the load referring to the wiring diagrams (See FIG.5).
LED does not turn on	1. Time knob is not set to "Test".	1. Set the time knob to "Test" to check if LED will be on.
	2. Exceed the effective detection coverage.	2. Walk within the effective detection coverage (Φ8m).
Dimmer function is invalid.	1. Incorrect wiring.	1. Connect the load referring to the wiring diagrams (See FIG.5).
	2. Malfunctioned DALI electronic ballast or LED driver.	2. Replace with a new DALI electronic ballast or LED driver.
Slave detector can't enlarge detection range when it's connected to master detector	1. Master detector and slave detector are connected incorrectly.	1. Connect cables referring to the wiring diagrams (See FIG.5).
	2. Master detector has the incorrect settings, so that the connected load can't be switched on.	2. Adjust the settings of Time & Lux 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 conditioners, electric fans, heaters or any highly reflective surfaces. Make sure there are no swaying objects within the detection coverage.

6 OPTIONAL ACCESSORY

- For easy and safe setting operations, it is highly recommended to purchase our high quality IR remote controller RC-DALI together with KDP-DALI-PR2.

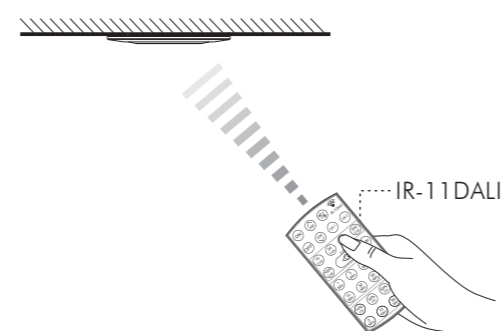


FIG.15

6.2 IR remote control function:

NOTE

The KDP-DALI-PR2 has only one channel (e.g. DA1), which means the function; related to DA2 is invalid for setting.

Button	Function
	To set load on for 8hrs <ul style="list-style-type: none"> 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 can be led to off mode by pressing "OFF" button under on mode. Pressing "ON" is inactive under lock mode.
	To set load off for 8hrs <ul style="list-style-type: none"> 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 can be led to on mode by pressing "ON" button under off mode. Pressing "OFF" is inactive under lock mode.
	To lock/unlock RC-DALI buttons <ul style="list-style-type: none"> Detector load on (except 8hrs on mode): By pressing "Lock" button, if load switches off and detector's LED flashes quickly for 5sec, meaning the detector is unlocked and enters into IR setting mode. If load keeps on and detector's LED keeps on 5 sec, detector is locked and no adjustments of IR are workable. Detector load off (except 8hrs off mode): By pressing "Lock" button, if load switches on / off sequentially and detector's LED flashes quickly for 5sec, meaning the detector is unlocked and enters into IR setting mode. If load keeps off and detector's LED keeps on for 5sec, then the detector is locked. Detector will be locked automatically when power resupply after power went off. When all IR settings were finished without pressing "Lock" button, the detector will be locked automatically after 2min if no buttons were pressed. Under locked status, no buttons are workable (except "ON" & "OFF" buttons).
	To dim the brightness of light <ul style="list-style-type: none"> RC-DALI is locked: Press "Dim Up" or "Dim Down" button to start dimming, then pressing "Dim Up" or "Dim Down" button to stop dimming while the ambient light level matches user's desire, but the value will not be saved in detector and it, will be dimmed automatically according to lastLux setting value while the lighting is switched on next time. RC-DALI is unlocked: Press "Dim Up" or "Dim Down" button to start dimming, then pressing "Dim Up" or "Dim Down" button to stop dimming while the ambient light level matches user's desire and the value will be saved in detector pre-set Lux value, and it will be dimmed to this light level automatically while the lighting is switched on next time. Remark: "Dim Up" is to increase the brightness of load. "Dim Down" is to decrease the brightness of load.

Button	Function
	Ex-changing auto mode and semi auto mode <ul style="list-style-type: none"> By pressing the "A/M" button, LED will flash quickly for 2 sec to indicate detector entering into Auto mode. Press "A/M" button again, LED will keep on 2 sec to indicate detector entering into Semi-auto mode.
	To reset settings on presence detector <p>By pressing "RESET" button aiming to the detector, all settings on presence detector will go back to potentiometers' settings.</p>
	To adjust Lux value <ul style="list-style-type: none"> Under unlock mode, press corresponding button to selected light level threshold is set to presence detector for switching on the connected load. Users can set the desired Lux value through pressing "+" button.
	To read-in the actual ambient light level <ul style="list-style-type: none"> Actual ambient light level can be read-in as threshold for switching the connected load, if the provided Lux values do not match user's requirement. The steps are as below: Press "Eye" button till detector's red LED flashing to enter into learning mode, learning time is 10sec. Then the actual ambient light level is read-in confirmed by both load and LED turn on for 5sec to indicate IR-11 DALI 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 2000Lux value will be stored depending on under 10Lux or above 2000Lux value.
	DA1 or DA2 setting selection <p>These two buttons are invalid.</p>
	Set delay off time of <ul style="list-style-type: none"> Under unlock mode, press corresponding button to set the exactly delay off time. Users can set the desired delay off time through pressing "+" button.
	Test mode <ul style="list-style-type: none"> 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 and detector's LED turn on 2sec once detector is triggered (Reaction is regardless of Lux value).
	Set load on time in standby mode <ul style="list-style-type: none"> Under unlock mode, press corresponding button to set the desired load on time. Users can set the desired load on time through pressing "+" button.

Button	Function
	Switch off load in standby mode <ul style="list-style-type: none"> Under unlock status, By pressing "STBY" firstly, detector enters into standby on mode, with detector's LED flashing quickly for 2sec and load on. Then, press it again, detector enters into standby off mode, with detector's LED keeps on for 2sec. Under standby on mode, load will keep on with standby illumination (according to STBY% setting) when detector's delay time has expired. Under standby off mode, load will switch off when detector's delay time has expired.
	Set illumination of load in standby mode <ul style="list-style-type: none"> Under unlock mode, press corresponding button to set the desired load on illumination for standby mode.

6.3 Trouble shooting of RC-DALI

When remote controller RC-DALI works abnormally, please check assumptive problems and suggested solutions in following chart that hopefully solve your problem.

Problem	Possible cause	Suggested solution
Detector fails to receive signal	1. Exceed the transmission range.	1. Operate within transmission range (<10m), and ensure IR-11 DALI aiming directly to the detector.
	2. Low battery power.	2. Replace a new battery.
	3. Detector works abnormally.	3. Check the trouble of detector, then refer the TROUBLE SHOOTING of detector manual for repairing.
No signal	1. Low battery power.	1. Replace a new battery.
	2. Press two or more buttons once.	2. Press one button once.
	3. The battery insulation sheet is not took out.	3. Take out the battery insulation sheet.
Fail to transmit signal	In locked mode.	Unlock RC-DALI

GARANTÍA/GUARANTEE/GARANTIE

3 años/anos/years/années

E- T.E.I. garantiza este aparato por 3 años ante todo defecto de fabricación. Para hacer válida esta garantía, es imprescindible presentar el ticket o factura de compra.
P- T.E.I garantiza este aparelho contra defeitos de fábrica ate 3 anos.
F- T.E.I garantit cet appareil pour le durée de 3 années contre tout défaut de fabrication.
GB- T.E.I guarantees this device during 3 years against any manufacturing defect



TEMPERENERGYINTERNATIONAL.SL
Polígono Industrial, Nave 18
E-33199 Granda-Siero (Asturias) España
Teléfono: +34 985 733 204
Fax: +34 985 986 341
Email: info@grupotemper.com

Una empresa del grupo

