

DALI-2 D4i PIR4L, PIR4L-BLE

Datasheet

DALI-2 D4i Sensor Module



DALI-2 D4i sensor module for measurement of motion and Illuminance threshold

factory default setting: **input device** activated



DALI-2 D4i Sensor Module

Overview

- Zhaga book18 socket, IP65 rating design.
- Movement detection (PIR) instance type 2(IEC62386-303) and light intensity measurement instance type 3 (IEC62386-304)
- can work in '**input device**' or '**application controller**' mode:
 - **input device** : generate event messages that are interpreted and processed by higher-level control units (support IEC62386-103), higher-level control units (support IEC62386-103) gives direct DALI control commands that are immediately executed by the DALI drivers.
 - **application controller**: gives direct DALI control commands that are immediately executed by the DALI drivers.
- 2 operating modes:
 - Movement triggered
 - Movement triggered with Illuminance threshold.
- easy configuration via CORSL DMUmini interface and DALI-Config Software Tool.
- Bluetooth variant for simple, contactless configuration with the smartphone app(for PIR4L-BLE)
- Supply via the DALI bus, no additional power supply needed.
- Standards: IEC62386-101, IEC62386-102, IEC62386-103, IEC62386-303, IEC62386-304, IEC62386-351



Specification, Characteristics

Model No	PIR4L		PIR4L-BLE	
	white	black	white	black
color	white	black	white	black
article number	8980150321120	8980150121120	8980160321120	8980160121120
factory default setting	input device	input device	input device	input device

electrical data

Model No	PIR4L	PIR4L-BLE
supply	via DALI signal line (DALI-voltage according IEC62386)	
Marking terminals	DA, DA	
typ. current consumption DALI (at 16,5V)	4mA	7mA
Max. current consumption DALI (Inrush current at 22.5 V)	8mA	16mA
control	DALI	

technical data

Model No	PIR4L	PIR4L-BLE
Motion Detection(IEC62386-303) principle	PIR	
detection range	4m	
typical mounting height	8m	
horizontal	±60°	
vertical	±50°	
light sensor (IEC62386-304)	range: 0 ~ 910lux events: 0 ~ 1023(10bit)	
function	configurable	

environmental conditions

storing and transportation temperature	-20°C ... +70°C
operational ambient temperature	-20°C ... +60°C
rel. humidity, none condensing	15% ... 90%

general data

Model No	PIR4L	PIR4L-BLE
protection class	II in intended use	
protection degree housing	IP65	
functional versions	input device and application controller	

standards

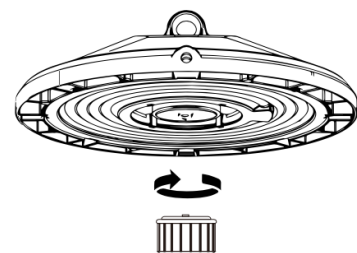
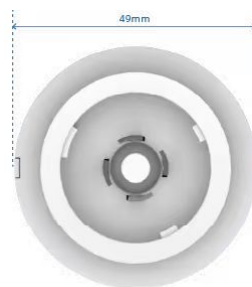
Model No	PIR4L	PIR4L-BLE
DALI	IEC62386-101, IEC62386-102, IEC62386-103, IEC62386-303, IEC62386-304, IEC62386-351	
EMC	EN IEC 61547, EN IEC 55015	
ROHS	IEC 62321	
markings	DALI-2, D4i, CE	

Installation

- the sensor module is directly connected and supplied by the DALI bus. A DALI bus power supply is required.
- National regulations for setting up electrical systems must be followed.



Dimensions



installation

Movement Detection

For movement detection a temperature difference between the moving object and environment. Heat sources such as copiers or heaters may have a negative influence on motion detection.

Light Sensor

PIR4L&PIR4L-BLE include a light sensor, The light sensor measures the reflected illuminance in a range from 0 to 910 lux.

The incident light is rated by the spectral sensitivity of the human eye and thus comparable to the subjective visual perception of brightness. The incident light is accumulated over the area covered by the lens and can be interpreted as average value in the detection area. A reference to the reflecting surface below the sensor can be established with the help of a reference measurement and adjustable offset value.

Addressing and Configuration

- After installation, the device can already be used in 'input device' mode(default factory settings), the device can be operated by higher-level central control units (support IEC62386-103). you can use central control units(support IEC62386-103) to address and set the function of the control device.
You can use the DMUmini with DALI-Config software to address and localize. For PIR4L-BLE, you can also use APP to set the address、sensitivity、localize.
- If no higher-level central control units or central control unit doesn't support IEC62386-103 on the DALI Bus, with the help of DALI-Config software and DMUmini or APP(only for PIR4L-BLE), you can address the device first and activate it to 'application controller' mode, then configuration or location.

Operation and function

The Sensor Module can work in 'input device' or 'application controller' mode. It is necessary to distinguish between 'input device' and 'application controller'.

- **input device:** generates input notifications(event messages) that are interpreted and processed by control units(support IEC62386-103), the control units gives direct DALI control commands that are immediately executed by the DALI drivers.
- **application controller:** gives direct DALI control commands that are immediately executed by the DALI drivers.

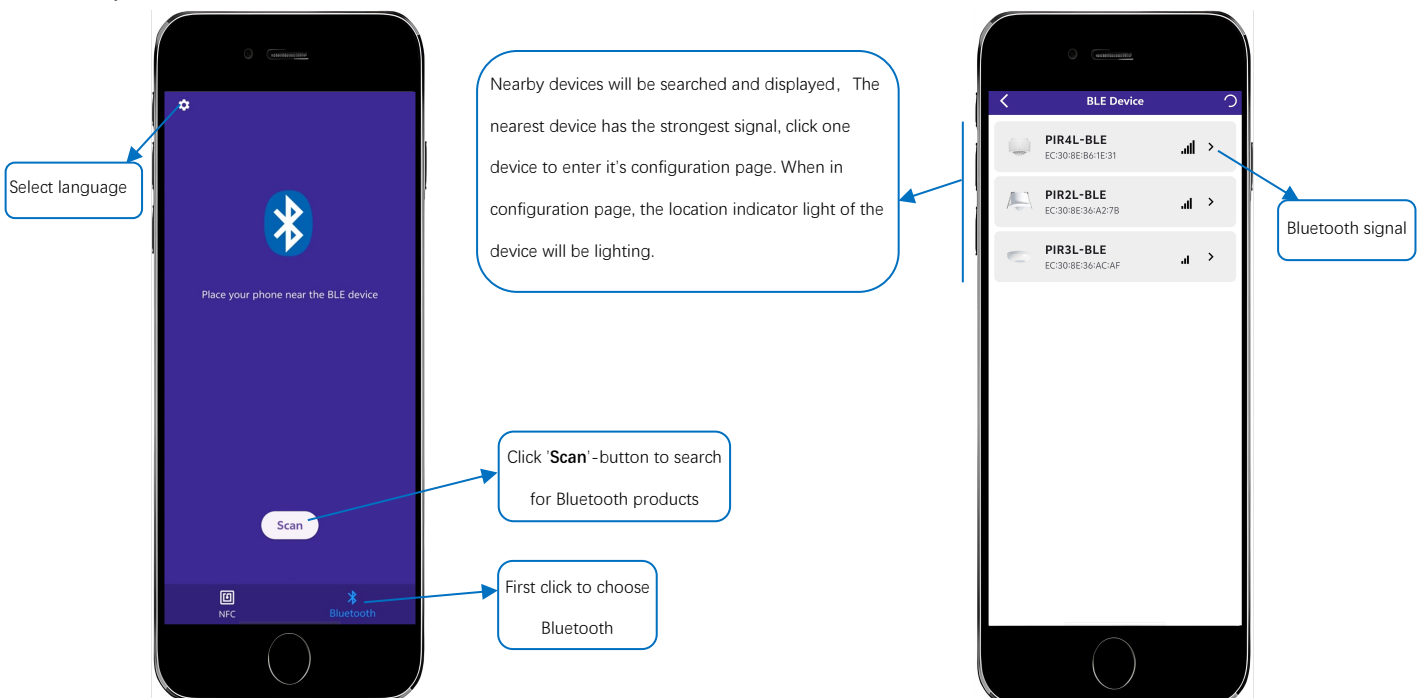
Mode 1: input device(default factory settings)

In this mode, The function can be set individually. luminaires are not controlled directly by the device. The device serves as such an input device results in input notifications (event messages) that are interpreted and processed by central control units (support IEC62386-103), Addressing and device configurations can be made with the central control units(support IEC62386-103).

- When in 'input device' mode, you can also use the APP(DaliConfig) to set the address and sensitivity of the device, you also can location with the APP.

HINT: You need to enable the permissions of 'Location' and 'Nearby devices' for the APP in your smartphone's Bluetooth.

HINT: only for PIR4L-BLE



After configuration or location, must exit the configuration page by click it. When not in configuration page, the location indicator light of the device will be off.
HINT: close the APP won't exit location tracking, you need to return to the previous page to exit location tracking.

set the sensitivity of Sensor Module, higher value, higher sensitivity

Read: read the configuration of the device

Quick Configuration:
 Save the device's configuration (excluding address) as a QR code image to the phone.

select an unoccupied address from the drop-down menu

- When activate, it work in 'application controller' mode.
- When deactivate, it work in 'input device' mode.

Quick Configuration:
Import: First, read the product's configuration information via the 'Read'-button, then import the saved QR code image of the same product model from your phone. Make adjustments as needed, finally click the 'Write' button to save the configuration to the product.
HINT: only applicable for the quick configuration of same model product.

Write: after configuration, click 'Write'-button to save. After write, Click the 'Read'- button to check if the configuration has been saved correctly.

Mode 2: application controller

If the central control unit on the DALI Bus doesn't support IEC62386-103 or no central control unit on the DALI BUS. with the help of DMUmini and DALI-Config software, you can address the control device first. With the selection of the device in the component tree, the device settings page is split in two tabs: one for 'General' settings and one for 'Application Controller' settings. Activate it to 'Application Controller' mode in "General" tab first then configuration it in the "Application Controller" tab.

You can also use the APP(for model no: PIR4L-BLE) to activate it to 'Application Controller' mode in "General" tab first then configuration it in the "Application Controller" tab.

Motion detection

When motion is detected the sensor switches to the 'Presence level'. While further motion is detected or the 'Run-on time' is running the light level stays on – either on a fix light level or controlled by a constant light control algorithm.

If no further motion was detected, the count down of 'Run-on time'.

After the 'Run-on time' elapsed the sensor changes to the 'Absence level' for a 'Delay-off time', the 'Absence level' is a user defined value(no constant light control).if motion is detected in this state, the sensor switches to the 'Presence level'. In case no further motion is detected the Off command is sent.

HINT: set the "absence level" to a low value, otherwise it could be higher than the light level set by the constant light control.

Light intensity

PIR4L&PIR4L-BLE include a light sensor. The light sensor measures the reflected illuminance in a range from 0……910 lux.

The incident light is rated by the spectral sensitivity of the human eye and thus comparable to the subjective visual perception of brightness.

The incident light is accumulated over the area covered by the lens and can be interpreted as average value in the detection area. A reference to the reflecting surface below the sensor can be established with the help of a reference measurement and adjustable offset value. the currently measured light value can be read out via the "Refresh light level"-button. if necessary, you can enable 'Enable light control' first then set the value for the Illuminance threshold.

➤ Configuration by DMUmini with DALI-Config software

You can select an unoccupied address from the drop-down menu and click the 'SET'-button to save.

activate/deactivate the 'Application Controller Enable'. It will automatically be saved.

- When activate the 'Application Controller Enable', it will work in 'application controller' mode.
- When deactivate the 'Application Controller Enable', it will work in 'input device' mode.

Assignment of the device to the 32 control device groups(attention: these are not the luminaire/gear groups)

activate 'Application Controller Enable' in 'General' tab first, then configuration the device in 'Application Controller' tab. After configuration in 'Application Controller' tab, you need to click the 'save'-button on the top right side to save.

Activation of the notification after a PowerUp

Here you can set which devices are affected, up to 4 different target address can be defined. following options are available:
None, Broadcast, G00~G15, A00 ~ A63

Fade time: Synchronize the parameters of the 'Destination Address'.
Run-on time: it is the time of keep presence level if no further motion was detected.
Delay-off time: it is the time of keep absence level after Run-on time. If activate the 'Never off', it will keep absence level, otherwise after the Delay-off time, it will switch the 'target area' to OFF.

Reset: reset the device, keep address.
Read: read the configuration of the device.
Save: after configuration, click 'save'-button to save.

Refresh light level: The current illumination value is displayed on the right when the button is clicked.
Enable light control: If it is activated, the illumination value is maintained on the right. If it is deactivated, the illumination function is disabled.

Presence level: If motion is detected the sensor switches the "target area" to the defined light level.
Absence level: If motion is not detected the sensor switches the "target area" to the defined light level.
Sensitivity: set sensitivity of the Sensor Module, higher value, higher sensitivity.

➤ Configuration by APP(DaliConfig)

HINT: You need to enable the permissions of 'Location' and 'Nearby devices' for the APP in your smartphone's Bluetooth.

HINT: only for PIR4L-BLE.

Select language

Nearby devices will be searched and displayed, The nearest device has the strongest signal, click one device to enter it's configuration page. When in configuration page, the location indicator light of the device will be lighting.

Bluetooth signal

Click 'Scan'-button to search for Bluetooth products

First click to choose Bluetooth

After configuration or location, must exit the configuration page by click it. When not in configuration page, the location indicator light of the device will be off.

HINT: close the APP won't exit location tracking, you need to return to the previous page to exit location tracking.

Here you can set which devices are affected ,up to 4 different target address can be defined

Fade time: Synchronize the parameters of the 'Destination Address'.

Run-on time: it is the time of keep presence level if no further motion was detected.

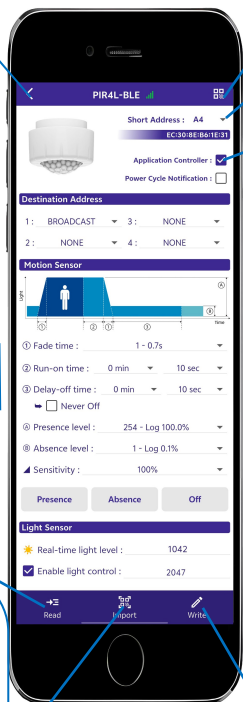
Delay-off time: it is the time of keep absence level after Run-on time. If activate the 'Never off', it will keep absence level, otherwise after the Delay-off time, it will switch the 'target area' to OFF.

Read: read the configuration of the device

Quick Configuration:

Import: First, read the product's configuration information via the 'Read'-button, then import the saved QR code parameters of the same product model from your phone. Make adjustments as needed, finally click the 'Write'-button to save the configuration to the product.

HINT: only applicable for the quick configuration of same model product.



Quick Configuration:

Save the device's configuration (excluding address) as a QR code image to the phone.



select an unoccupied address from the drop-down menu

- When activate, it work in 'application controller' mode.
- When deactivate, it work in 'input device' mode.

Presence level: If motion is detected the sensor switches the target area to the defined light level.

Absence level: If motion is not detected the sensor switches the target area to the defined light level.

Sensitivity: set sensitivity of the Sensor Module. higher value, higher sensitivity. After configuration, you can click 'Presence', 'Absence', 'Off'-button to test the brightness.

Refresh light level: The current illumination value is displayed on the right when the button is clicked.

Enable light control: If it is activated, the illumination value is maintained on the right. If it is deactivated, the illumination function is disabled.

Write: after configuration, click 'Write'-button to save. After write, Click the 'Read'-button to check if the configuration has been saved correctly.

Localize

Whether Sensor Module is working in 'input device' mode or 'application controller' mode, after it has an address, you can use DMUmini to locate the device. first you need to active 'Localize', left click the address of the Sensor Module in the component tree on the left will lead to flashing of the red LED of the currently selected sensor. So you can know the address of the device. After localization, you must inactive 'Localize' to exit.

For PIR4L-BLE, you can also use the APP to locate the device, when in the device's configuration interface will lead to flashing of the red LED of the currently selected sensor.



Additional Information and Equipment

- CORSL DALI products folder
<https://www.corsl-tech.com/index.html>
- DALI-Config : DALI system configuration tool, free when using DMUmini interface device
<https://www.corsl-tech.com/software.html>
- DaliConfig: APP(NFC、Buletooth)
 - Android: <https://www.corsl-tech.com/software.html>
 - IOS: [DaliConfig](#)

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Disclaimer

Subject to change. Information provided without guarantee. The datasheet refers to the current delivery.

The function in installations with other devices must be tested for compatibility in advance.