

5. Functions

Software

This sensor has equipped Artilect SmartLink Application Controller (Smart Engine), and its parameters can be configured via DALI memory banks or by Artilect Configuration tool. Its parameters are affected when application controller is enabled, and its parameters are described below.

Light Sensor

Instance Parameters (DALI Parameters)

Information – The description information.

Name – You may enter a notable name of this sensor instance.

Type – It shows the type of this sensor instance. It should be “4 – Light Sensor” for this sensor instance.

Parameters – The DALI parameters.

Groups – You may provide 3 DALI instance groups to the sensor instance. The first group is also known as the primary group.

Event Scheme – Select the DALI event format of this sensor instance. Different event scheme will insert different data on the head of DALI events.

Value – The row value of the sensor instance. Its meaning or decoded values are shown below.

Resolution – The resolution of the DALI sensor value.

Load Value – Click to load latest value from the sensor instance.

Features – This will show the features available with the sensor instance.

Light Sensor – Here shows the specific parameters for DALI light sensors.

Events – Here lists the event options of light sensors.

Output Illumination Event – If checked, the sensor will send an illumination events (lux changes). The event will only send the most significant 10 bits of 16 bits value.

Parameters – Here lists the parameters of light sensors.

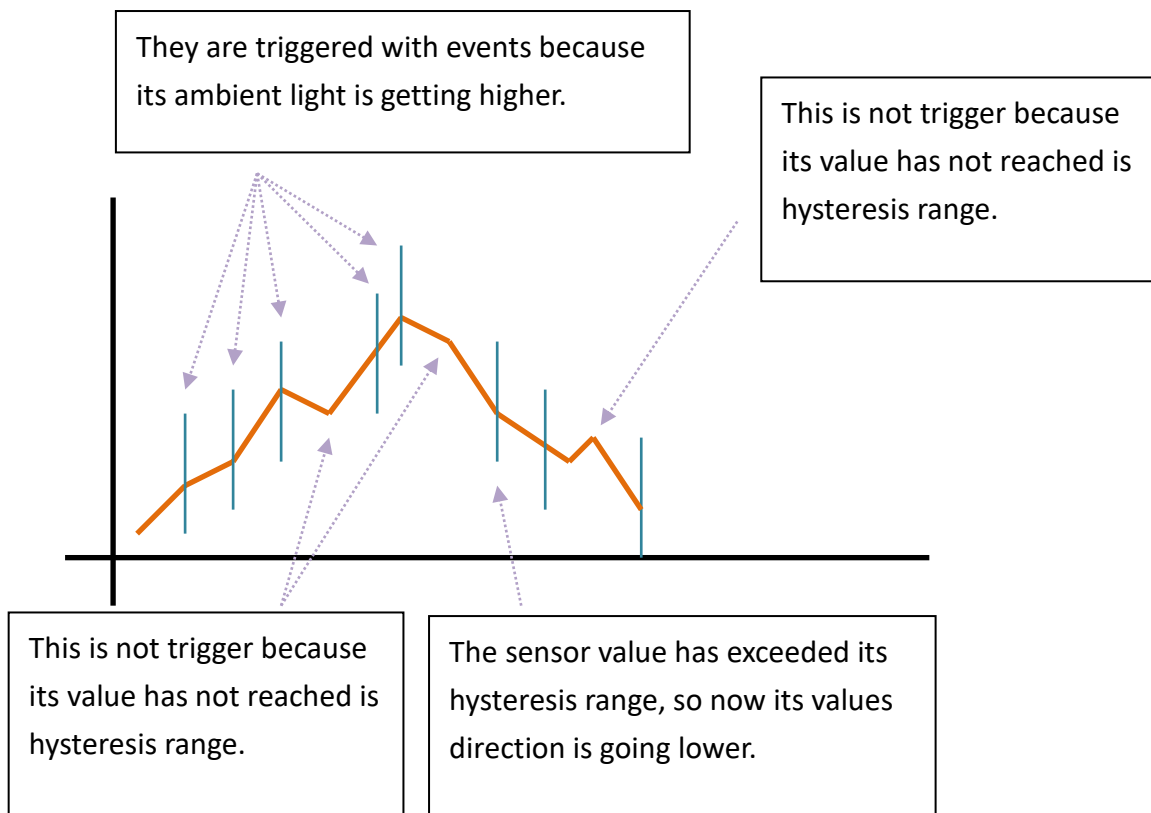
Dead Timer – It sets the idle time between the first event and its next event, to avoid DALI bus flooding. The value must be the multiplier of 50ms.

Report Timer – It sets its repeat time of events. If 0, it will not send repeat events. Its basic unit is 1 second.

Hysteresis – Hysteresis is the minimum percentage of change of current sensor value before triggering an event. Please also see Note below.

Hysteresis Min – Hysteresis is the minimum changes of values before triggering an event. Please also see Note below.

Note: Hysteresis and Hysteresis Min is used for reversed bond of changing direction. For example, when the ambient light is getting brighter (higher), any increasement of lux will cause the illumination events. But when the ambient light is reversed and getting darker. The illumination event will be sent when: the current sensor value is less than “Last Triggered Lux event” – “Last Triggered Lux event” * “Hysteresis” AND “Last Triggered Lux event” – “Hysteresis Min”.



Application Controller (Smart Engine)

Stop 3-byte events on Activation

Send DALI Dimming actions on Activation

Sensor Resolution: 10 bits

Working Mode

8 Levels Mode

1 Level Mode

2 Levels Mode

3 Levels Mode

4 Levels Mode

5 Levels Mode

6 Levels Mode

7 Levels Mode

8 Levels Mode

Light Level Adjustor

Stop 3-byte events on Activation: When checked, it will not send 103 events.

Send DALI Dimming actions on Activation: When checked, it will send 102 dimming commands.

Sensor Resolutions: 10 bits: When checked, its sensor value's resolution will be set to 10 bits.

Working Mode: This has two main working modes: 1~8 Levels Modes, and Smart Light Level Adjustor. 1~8 Levels Modes will send different commands on different lux levels. Smart Light Level Adjustor will automatically adjust the luminaires' output according to its sensors and parameters. More Description will be described later.

Sensor Controls

Dead Timer: mS

Report Timer: s

Hysteresis: %

Hysteresis Min:

Gain Rate*:

Amplify Rate*: %

Smart Engine - Controlling Target

Dimming target:

Dead Timer: DALI 304 defined. The silent time between the first and next event and commands.

Report Timer: DALI 304 defined. The repeat time of events and commands.

Hysteresis: DALI 304 defined. The sensor value's thread-hold of re-trigger.

Hysteresis Min: DALI 304 defined. The minimum thread-hold value.

Gain Rate*: The gain rate/amplify rate of light sensors.

Amplify Rate*: The second amplify rate of light sensors. The sensor's values = true values * Gain Rate * Amplify Rate. These values can be used to adjust the light sensitivity.

Dimming target: This sets the 102 dimming target.

When 1~8 Levels Modes are selected, the following option will be displayed.

Smart Dimmer Action	
Command	Threshold
Event 1: Level: 0 / 254	0
Event 2: Level: 254 / 254	48
Event 3: Level: 0 / 254	80
Event 4: Level: 0 / 254	112
Event 5: Level: 0 / 254	144
Event 6: Level: 0 / 254	176
Event 7: Level: 0 / 254	208
Event 8: Level: 0 / 254	255

When 1~8 Level modes are selected, you can put each event's threshold, and its commands. When the sensor's value is equaled or over thresholds, it will trigger the highest event and send its commands.

When Smart Light Level Adjustor is selected, the following option will be displayed. This mode it to auto-adjust luminaires to meet its Target Level.

Light Level Adjustor Parameters	
Target Level: 128	Turn On Arc: 254
Adjustor Speed: 4000 ms	Steps: 1
Quick Adjust T: 180 ms	Quick Adjust H: 16 %
<input type="checkbox"/> Quick Adjust on Dim-Up only	
<input checked="" type="checkbox"/> Dim to off when disabled by 103	Time to off: 20 s
<input checked="" type="checkbox"/> Start/Stop by external dimming commands. (lv 0 = stop, lv 254 = start)	

Target Level: The lux level (or the sensor value) to be meet. When the sensor value is higher than the Target Level * (100% + Hysteresis), it will dim the Dimming Target to lower lumen. When the sensor value is lower than the Target Level * (100% - Hysteresis), it will dim the Dimming Target to higher lumen.

Turn On Arc: The smart engine will dim to this level when this sensor instance is enabled.

Adjustor Speed: The time between the first and next 102 dimming commands. Changing to lower value, it will increase its dimming speed.

Steps: The dimming level to increase or decrease when Adjustor Speed's time is expired.

Quick Adjust T: When the sensor value is out of (Target Level * Quick Adjust H), the engine will increase or decrease the dimming level by Steps.

Quick Adjust H: The percentage of quick adjusting level. When the sensor value is out of quick adjust level, it will try to dim faster to help the sensor to reach its Target Level faster.

Quick Adjust on Dim-Up Only: When checked, the quick adjust function will only work on dimming up. Quick Adjust will not affect on dimming low.

Dim to off when disabled by 103: When checked, and this instance is enabled by 103 commands, it will start to dim down to off by the time on Time to off.

Tim to off: This is the total time to dim from 254 to 0 when the instance is disabled by 103 commands.

Start/Stop by external dimming commands: When checked; and on the DALI bus has sent a dimming command to the same Dimming target and with level 0 (off), this instance will be self-disabled; or the DALI bus has been sent a dimming level 254 on the same Dimming target, this instance will be self-enabled. Any value between 1 and 253, they will not change this instance's status.

Motion Sensor

Instance Parameters (DALI Parameters)

Instance Parameters Advanced PIR Sensor

Information

Name:

Type:

Status

Enabled Instance Error

Parameters

Groups:

Event Scheme:

Value: Resolution:

Occupied, Movement

Features

Occupancy Sensor

Events

Occupied Event Vacant Event

Repeat Event Movement Event

No Movement Event

Capability

Support Detection Range: Support Sensitivity:

Parameters

Dead Timer: mS Report Timer: S

Hold Timer: S

Catching movement

Information – The description information.

Name – You may enter a notable name of this sensor instance.

Type – It shows the type of this sensor instance. It should be “3 – Occupancy” for this sensor instance.

Parameters – The DALI parameters.

Groups – You may provide 3 DALI instance groups to the sensor instance. The first group is also known as the primary group.

Event Scheme – Select the DALI event format of this sensor instance. Different event scheme will insert different data on the head of DALI events.

Value – The row value of the sensor instance. Its meaning or decoded values are shown below.

Resolution – The resolution of the DALI sensor value.

Load Value – Click to load latest value from the sensor instance.

Features – This will show the features available with the sensor instance.

Occupancy Sensor – Here shows the specific parameters for DALI occupancy sensors.

Cancel Occupied/Hold Timer – When the sensor is in occupied state, click on this will return itself to vacant state.

Events – Here lists the event options of occupancy sensors.

Occupied Event – If checked, the sensor will send an occupied event when the sensor has detected motion and move to occupied state.

Vacant Event – If checked, the sensor will send a vacant event when no more

motion is detected and hold time is expired (which will cause the sensor to enter vacant state).

Repeat Event – If checked, the sensor will repeat current state's events on Report Timer's period.

Movement Event – If checked, the sensor will send a movement event when the sensor has detected movement.

No Movement Event – If checked, the sensor will send an no movement event when the sensor has detected its last motion is stopped.

Capability – Here shows the sensor's capabilities.

Support Detection Range – If checked, the sensor can change its detection range.

Support Sensitivity – If checked, this sensor can change its detection sensitivity.

Parameters – Here shows the specific parameters of occupancy sensors.

Dead Timer – It sets the idle time between the first event and its next event, to avoid DALI bus flooding. The value must be the multiplier of 50ms.

Report Timer – It sets its repeat time of events. If 0, it will not send repeat events. Its basic unit is 1 second.

Hold Timer – It sets the hold time of occupied state before entering to vacant state. So, when sensor has detected a motion and enter occupied state. It will start hold timer's counter when the motion is stopped, and return to vacant state when the counter is 0. The value must be 1 or the multiplier of 10 seconds.

Catching Movement – It tells if the sensor is waiting and catching a movement.

Application Controller (Smart Engine) – The option of smart engine actions.

Stop 3-byte events on Activation – When checked and application controller is enabled, the sensor will not send any DALI 103 events to the bus.

Send DALI Dimming actions on Activation – If checked, and when the motion sensor is enabled, it will send out DALI dimming commands instantly.

Sensor Controls – The option of motion timing and condition.

Dead Timer – The idle time gap between the early event/commands and the following event/command.

Report Timer – The repeat timer between the early command and the next repeating command.

Hold Timer – The remain-occupy time when motion is not cleared.

Active below Lux – The motion sensor will fire the occupy actions when the light sensor's lux level is under this value.

Get Current Lux – To get light sensor's current lux level.

Smart Engine – Controlling Target

Dimming Target – The dimming target when the motion sensor has detected a motion or idle.

Input Unit (The target of Instance Enable/Disable Commands) – The input instance to be enabled or disabled when motion sensor has detected a motion or idle. You can set to this sensor's light sensor unit to start its smart light adjustor.

Smart Dimmer Action

Dimming Command – The options of DALI gear dimming commands.

Input Unit – The options of enabling or disabling DALI input instances.

Vacant – The option for the motion sensor has detected idle or no movement is found after hold timer.

Occupy – The option for the motion sensor has detected a movement.

Download – To download the parameters from the sensor device.

Upload – To upload the current parameters to the sensor device.