

INTERNATIONAL STANDARD

NORME INTERNATIONALE



AMENDMENT 1
AMENDEMENT 1

**Digital addressable lighting interface –
Part 303: Particular requirements – Input devices – Occupancy sensor**

**Interface d'éclairage adressable numérique –
Partie 303: Exigences particulières – Dispositifs d'entrée – Capteur de présence**

[IEC 62386-303:2017/AMD1:2024](https://standards.iteh.ai/catalog/standards/iec/b51243c2-89f9-4054-8979-785cd2133297/iec-62386-303-2017-amd1-2024)

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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 29.140.50, 29.140.99

ISBN 978-2-8322-8607-4

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

DIGITAL ADDRESSABLE LIGHTING INTERFACE –

**Part 303: Particular requirements – Input devices –
Occupancy sensor**

AMENDMENT 1

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Amendment 1 to IEC 62386-303:2017 has been prepared by IEC technical committee 34: Lighting.

The text of this Amendment is based on the following documents:

Draft	Report on voting
34/1013/CDV	34/1078A/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Amendment is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications/.

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Delete all references to IEC 62386-103:2014/AMD1:—, including the footnote where applicable.

Replace all dated references to IEC 62386-101:2014 with IEC 62386-101:2022.

Replace all dated references to IEC 62386-103:2014 with IEC 62386-103:2022.

INTRODUCTION

Replace the existing Figure 1 with the following new Figure 1.

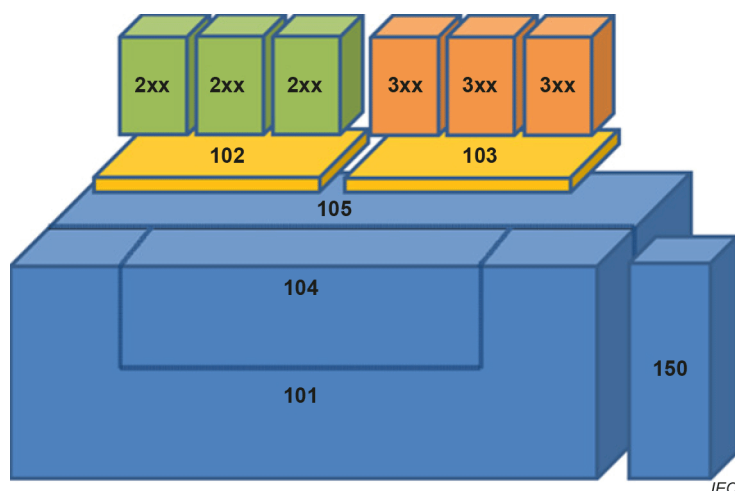


Figure 1 – IEC 62386 graphical overview

1 Scope

Replace the existing text, including the Note, with the following new text:

This part of IEC 62386 is applicable to input devices that provide occupancy information to the lighting control system through movement or presence sensing.

This document is only applicable to input devices complying with IEC 62386-103:2022.

2 Normative references

Replace the existing reference to IEC 62386-333:—, including the footnote, with the following reference:

IEC 62386-333:2018, *Digital addressable lighting interface – Part 333: Particular requirements for control devices – Manual configuration (feature type 33)*

4.3 Insulation

Replace the first paragraph, excluding the Note, with the following new paragraph:

According to applicable safety standards, it can be required that the input device has at least supplementary insulation to accessible parts. This depends on the connected components. In this case special attention should be paid with respect to the sensor(s) being used.

9.3.2 Input signal mapping for movement sensors

Replace the first and second paragraphs with the following new paragraphs and Note 1, renumbering the existing Note 1 and Note 2, after Figure 2, as Note 2 and Note 3:

For movement sensors, the input signal shall directly map onto movement (only). Depending on the type of sensor used, it is possible that a very short pulse can be produced only when movement is first detected, or a longer signal can be produced whilst movement continues to be detected. In any case, the instance shall change "inputValue" to 0xFF immediately if movement is detected, remaining in this state for at least 1 s, thus reporting an occupied area state as well. See Figure 2.

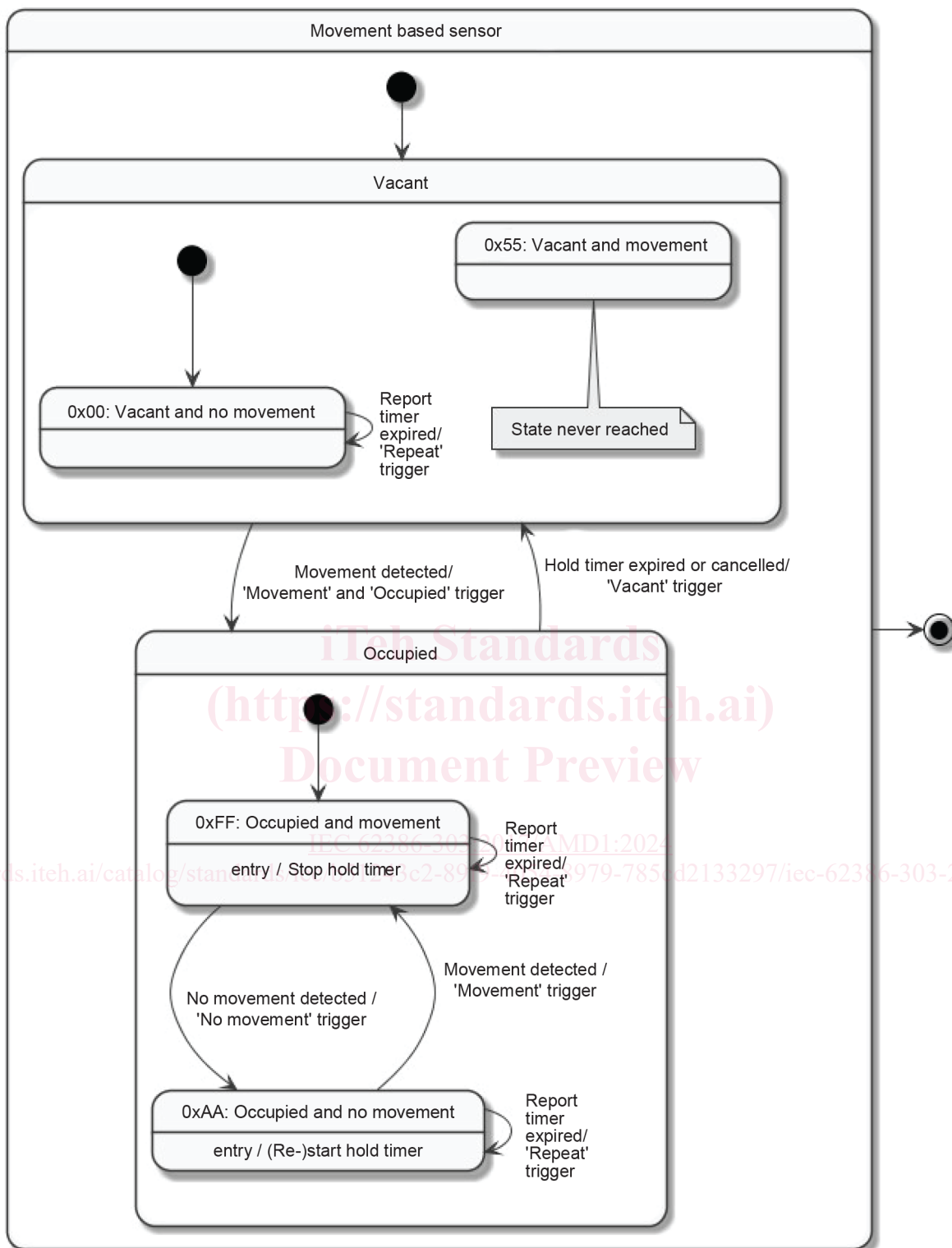
NOTE 1 This means that an instance receiving a rapid succession of movement signals which are less than 1 s apart, will remain in the occupied and movement state, and will create a movement event only at the time it entered this state.

A movement sensor shall support a hold timer, with timeout value T_{hold} . A transition of "inputValue" to 0x00 shall only take place at the moment the hold timer expires or is cancelled. In such a case the "vacant" trigger shall be generated. (Re)starting the hold timer means: "discard any remaining hold time and start timing a new hold time period".

Figure 2

Replace the existing Figure 2 with the following new Figure 2, which includes the following modifications:

- *In state 0xFF, the entry actions "(Re-)trigger report timer, (Re-)trigger hold timer" are replaced with "Stop hold timer".*
- *In state 0x00, the entry action "(Re-)trigger report timer" is deleted.*
- *In state 0xAA, the entry action "(Re-)trigger report timer" is replaced with "(Re-)start hold timer".*



IEC

Figure 2 – State diagram for movement based sensor

Add, after the existing Note 2, renumbered as Note 3, the following new Note 4:

NOTE 4 "Stop hold timer" means the hold timer is frozen. "(Re-)start hold timer" means the hold timer is re-started with the full hold time T_{hold} .

9.3.3 Input signal mapping for presence sensors

Replace the second sentence of the first paragraph with:

If a presence sensor is not able to detect motion, it shall report no movement and shall not enter states 0x55 or 0xFF.

After the note, add the following paragraph and example:

If a presence sensor is not able to detect motion without this also causing occupancy, then the presence sensor shall not enter state 0x55.

EXAMPLE For a presence sensor that is not able to detect motion without this also causing occupancy, example state transitions are as follows: Starting in state 0x00, a person moving into the area is detected, causing simultaneous movement and occupancy triggers and entry to state 0xFF. Without the movement stopping, the person exits the area causing movement and presence to simultaneously end, causing a return to state 0x00. If, instead, the person entering the area then pauses (ceases movement) for a while, this would cause a state change to 0xAA. From this state, a return to 0x00 or 0xFF are both possible.

Figure 3

Replace the existing Figure 3 with the following new Figure 3:

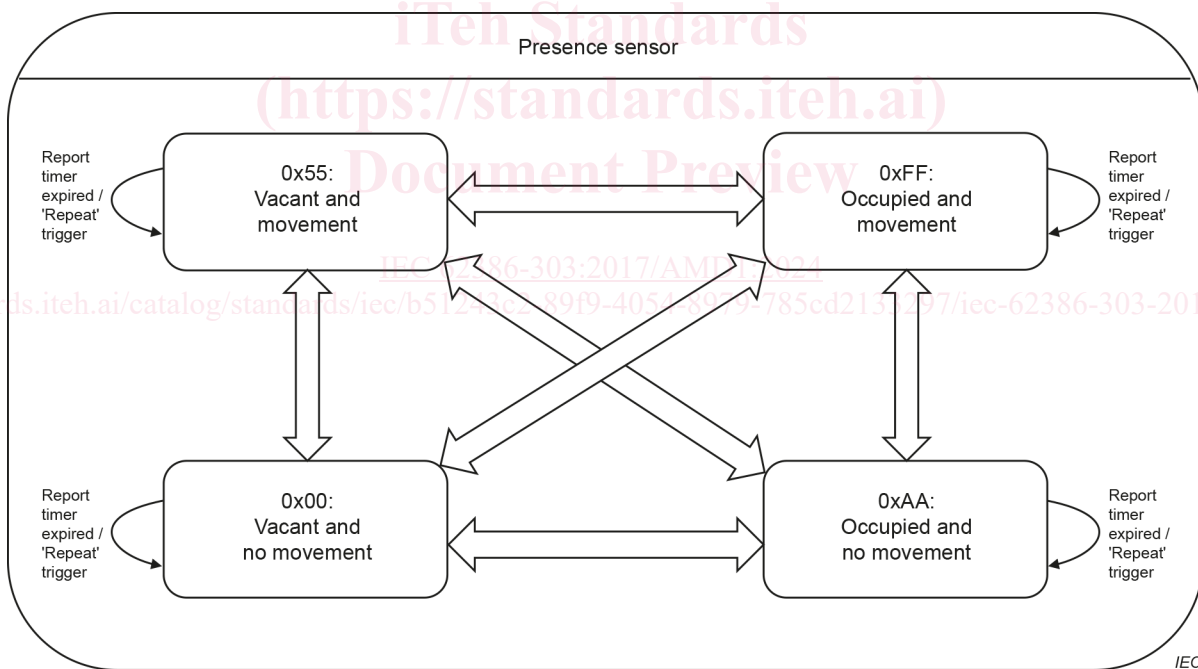


Figure 3 – State diagram for presence sensor

Add, after Figure 3, the following new paragraph and new Table 11:

Table 11 shows the state transitions with the conditions for exiting each state, and the action upon exit.

Table 11 – Presence sensor state transitions

Initial state	Exit condition	Action on exit	New state
0x00: Vacant and no movement	Movement detected	"Movement" trigger	0x55: Vacant and movement
	Occupancy detected	"Occupied" trigger	0xAA: Occupied and no movement
	Occupancy and movement detected	"Occupied" and "movement" triggers	0xFF: Occupied and movement
0x55: Vacant and movement	No movement detected	"No movement" trigger	0x00: Vacant and no movement
	Occupancy detected	"Occupied" trigger	0xFF: Occupied and movement
	Occupancy and no movement detected	"Occupied" and "no movement" triggers	0xAA: Occupied and no movement
0xAA: Occupied and no movement	Movement detected	"Movement" trigger	0xFF: Occupied and movement
	Vacancy detected	"Vacant" trigger	0x00: Vacant and no movement
	Vacancy and movement detected	"Vacant" and "movement" triggers	0x55: Vacant and movement
0xFF: Occupied and movement	No movement detected	"No movement" trigger	0xAA: Occupied and no movement
	Vacancy detected	"Vacant" trigger	0x55: Vacant and movement
	Vacancy and no movement detected	"Vacant" and "no movement" triggers	0x00: Vacant and no movement

9.4.4 Event configuration

Replace the first paragraph, excluding the Note, with the following new paragraph:

Events shall be enabled or disabled according to the value of "eventFilter". For this document, "eventFilter" shall be reduced to one byte.

In the last paragraph of 9.4.4, replace "v still occupied" with "still occupied".

Add, at the end of 9.4.4, the following new paragraph:

Disabling an event shall not cancel transmission of an event that has already occurred and is waiting to be sent due to the deadtime timer or bus unavailability.

9.4.5 Event generation

In the first sentence of the second paragraph, delete the word "being":

9.4.6 Movement trigger and catching

Replace the existing text of 9.4.6 with the following new text:

The event filter can be adjusted to enable or disable the "movement" event.

NOTE 1 Application controllers can consider the need to enable the "movement" event as this can result in flooding the bus.

If the movement event is disabled, and the variable "*catching*" is TRUE, then a movement trigger shall cause an "INPUT NOTIFICATION" event to be sent. "*catching*" is set using the command "CATCH MOVEMENT". Each "INPUT NOTIFICATION" that was triggered by movement, shall clear "*catching*", which implies that "CATCH MOVEMENT" is a single-notification request. The instruction shall not change the event filter.

If the "movement" event is disabled and the "CATCH MOVEMENT" command is executed whilst in the "occupied and movement" state, "*catching*" shall be set to TRUE but an "INPUT NOTIFICATION" shall not be triggered until the next change from a "no movement" to a "movement" state.

If the movement event is enabled the "CATCH MOVEMENT" instruction shall be discarded and "*catching*" shall be set to FALSE.

NOTE 2 Another "CATCH MOVEMENT" has no effect if a command has not (yet) led to a notification.

NOTE 3 "*catching*" does not affect event generation due to the "no movement" trigger.

The query "QUERY CATCHING" can be used to verify that no "movement" notification has been sent yet ("*catching*" has been set).

9.5.1 Using the hold timer

Replace the second paragraph with the following new paragraph:

If the hold timer is running, then "CANCEL HOLD TIMER" shall cancel the hold timer and force a transition to the "vacant" state.

9.5.2 Using the report timer

Add, after the first paragraph, the following new paragraphs:

The report timer shall be started,

- at power-on: if enabled, immediately after the receiver has started up, with the time to the first trigger recommended to be shortened to a random time between 0 s and T_{report} s;
- otherwise immediately after enablement.

This implies that the first "INPUT NOTIFICATION" message due to the report timer is sent at a maximum time of T_{report} after starting. This may be delayed by other "INPUT NOTIFICATION" messages, or by bus availability.

Replace the existing last paragraph with the following new Note:

NOTE If multiple devices have the report timer enabled, they might send out conflicting data used by application controllers to control the same control gear. Application controllers can avoid this problem by enabling only the required report timer(s).