
Digitalni naslovljivi vmesnik za razsvetljavo - 303. del: Posebne zahteve - Vhodne naprave - Tipalo zasedenosti - Dopolnilo A1

Amendment 1 - Digital addressable lighting interface - Part 303: Particular requirements - Input devices - Occupancy sensor

Digital adressierbare Schnittstelle für die Beleuchtung - Teil 303: Besondere Anforderungen - Eingabegeräte - Präsenzmelder

Amendement 1 - Interface d'éclairage adressable numérique - Partie 303: Exigences particulières - Dispositifs d'entrée - Capteur de présence

Ta slovenski standard je istoveten z: EN 62386-303:2017/prA1:2023

ICS:

29.140.50	Instalacijski sistemi za razsvetljavo	Lighting installation systems
35.200	Vmesniška in povezovalna oprema	Interface and interconnection equipment

SIST EN 62386-303:2018/oprA1:2023 **en,fr,de**



34/1013/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: IEC 62386-303/AMD1 ED1	
DATE OF CIRCULATION: 2023-03-17	CLOSING DATE FOR VOTING: 2023-06-09
SUPERSEDES DOCUMENTS: 34/780/CD, 34/801A/CC	

IEC TC 34 : LIGHTING	
SECRETARIAT: United Kingdom	SECRETARY: Mr Petar Luzajic
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: <input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input type="checkbox"/> SAFETY	
<input checked="" type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING	<input type="checkbox"/> NOT SUBMITTED FOR CENELEC PARALLEL VOTING
<p>Attention IEC-CENELEC parallel voting</p> <p>The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.</p> <p>The CENELEC members are invited to vote through the CENELEC online voting system.</p>	

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of

- any relevant patent rights of which they are aware and to provide supporting documentation,
- any relevant "in some countries" clauses to be included should this proposal proceed. Recipients are reminded that the enquiry stage is the final stage for submitting "in some countries" clauses. See AC/22/2007.

TITLE:

Amendment 1 - Digital addressable lighting interface - Part 303: Particular requirements - Input devices - Occupancy sensor

PROPOSED STABILITY DATE: 2026

NOTE FROM TC/SC OFFICERS:

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1 FOREWORD

2 This amendment has been prepared by committee TC34 Lighting / WG11 Control Interface.

3 The text of this amendment is based on the following documents:

FDIS	Report on voting
34C/XX/FDIS	34C/XX/RVD

4
5 Full information on the voting for the approval of this amendment can be found in the report on
6 voting indicated in the above table.

7 The committee has decided that the contents of this amendment and the base publication will
8 remain unchanged until the maintenance result date¹⁾ indicated on the IEC web site under
9 "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication
10 will be

- 11 • reconfirmed,
- 12 • withdrawn,
- 13 • replaced by a revised edition, or
- 14 • amended.

15

16 The following proposals serve to amend
17 IEC 62386-303:2017 according to the decisions of IEC TC34 WG 11 at their meeting in October
18 2021.

19
20 **Proposal**

21
22 All pages

23 *Delete all references to IEC 62386-101:2014/AMD1.*

24 *Delete all references to IEC 62386-103:2014/AMD1.*

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

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

27 *Re-number tables 2 to table 5 and their references, to accommodate the new table 2 inserted in
28 clause 9.3.3.*

29 *Re-number tables 6 to 10 and their references, to accommodate the new table 2 inserted in clause
30 9.3.3 and the new table 7 in clause 9.5.6.*

31
32
33 Page 6

34
35 **INTRODUCTION**

36
37 *Replace the existing Figure 1 by the following new figure 1.*

38

1) The National Committees are requested to note that for this publication the maintenance result date is

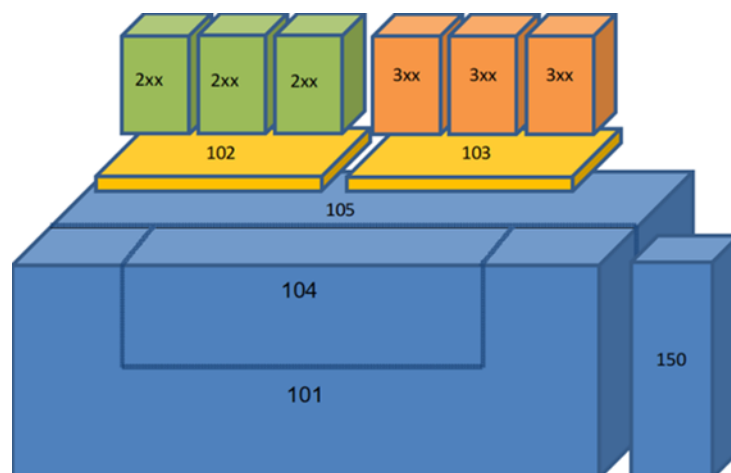


Figure 1 – IEC 62386 graphical overview

39

40

41

42 Page 8

43

44 **1 Scope**

45

46 *Replace the existing Scope by the following new Scope:*

47

48 This part of IEC 62386 specifies a bus system for control by digital signals of electronic lighting
49 equipment.50 This document is only applicable to IEC 62386-103:2022 input devices that deliver occupancy
51 information to the lighting control system through movement or presence sensing.

52

53 Page 8

54

55 **2 Normative references**

56

57 *Replace the existing reference to IEC 62386-333 with the following reference:*58 IEC 62386-333:2018, *Digital addressable lighting interface – Part 333: Particular requirements*
59 *for control devices – Manual configuration (feature type 33)*

60

61 Page 10

62

63 **9.3.2 Input signal mapping for movement sensors**

64

65 *Replace the first and the second paragraph by the following new paragraphs, and add a note:*

66

67 For movement sensors, the input signal shall directly map onto movement (only). Depending on
68 the type of sensor used, it is possible that a very short pulse may be produced only when
69 movement is first detected, or a longer signal may be produced whilst movement continues to be
70 detected. In any case, the instance shall change “*inputValue*” to 0xFF immediately if movement
71 is detected, remaining in this state for at least 1 s, thus reporting an occupied area state as well.
72 See Figure 2.73 NOTE This means that an instance receiving a rapid succession of movement signals which are less than 1 s apart,
74 will remain in the occupied and movement state, and will create a movement event only at the time it entered this state.75 A movement sensor shall support a hold timer, with timeout value T_{hold} , which shall be (re)started
76 each time movement is detected. A transition of “*inputValue*” to 0x00 shall only take place at the
77 moment the hold timer expires or is cancelled. In such a case the ‘vacant’ trigger shall be
78 generated. (Re)starting the hold timer means: “discard any remaining hold time and start timing
79 a new hold time period”.80 *Update figure 2 as follows:*

- 81 • *In state 0xFF, replace the text “(Re-)trigger hold timer” with “Stop hold timer”.*
- 82 • *Delete all three instances of the text, “ / (Re-)trigger report timer”*
- 83 • *In the arrow exiting from state 0xFF into state 0xAA, append the text “(Re-)start hold*
84 *timer” after “No movement detected /'No movement' trigger”.*

85

86 Page 12

87

88 **9.3.3 Input signal mapping for presence sensors**

89

90 *Change the second sentence of the first paragraph to:*

91

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

94

95 *After the note, insert the following paragraph and example:*

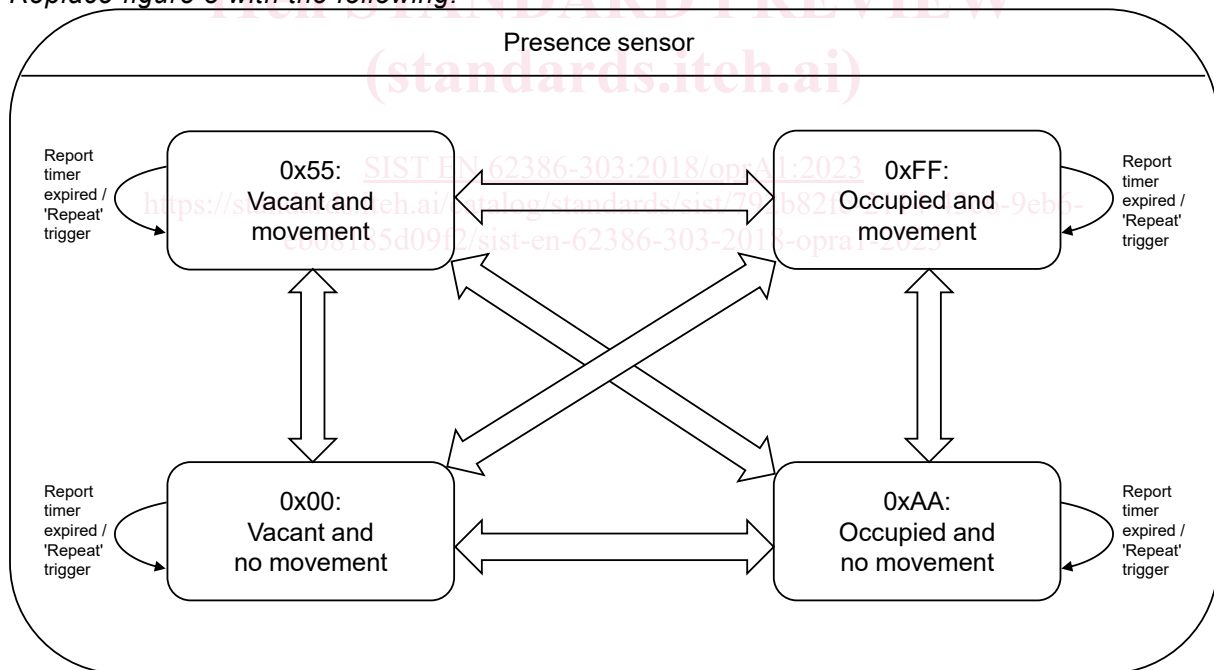
96

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

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

104

105

105 *Replace figure 3 with the following:*

106

107

108

109 *Insert the following paragraph and table after figure 3:*110 Table 2 shows the state transitions with the conditions for exiting each state, and the action upon
111 exit.

112

Table 1 - Presence sensor state transitions

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

113

114

115

116

117

Page 13

9.4.4 Event configuration

118

119

120

Replace the first paragraph with the following:

121

122

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

123

Correct the second paragraph after table 3 to:

124

125

126

127

If the ‘repeat’ event is enabled, on expiration of the report timer the ‘still vacant’ event shall be sent if the ‘vacant’ event is enabled, and the ‘still occupied’ event shall be sent if the ‘occupied’ event is enabled.

128

129

Add at the end of the clause the following new paragraph:

130

131

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.

132

133

Page 14

134

9.4.5 Event generation

135

Cancel in the second paragraph in the first line the word “being”:

136

“event is **being** sent”

137

138 Page 14

139 9.4.6 Movement trigger catching

140 *Replace the existing text of the clause 9.4.6 by the following new text:*

141

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

143 NOTE 1: Application controllers should take care when enabling the 'movement' event as this can result in flooding the
144 bus.

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

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

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

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

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

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

160

161 Page 14

162 9.5.1 Using the hold timer

163 *Replace the second paragraph by the following:*

164

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

167

168 Page 15

169 9.5.2 Using the report timer

170 *Insert the following after the first paragraph, and change the second paragraph to a note :*

171

172 The report timer shall be started,

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

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

179

180 Page 15

181 9.5.3 Using the deadtime timer

182

183 *Replace the existing text of the clause 9.5.3 by the following new text:*

184

185 If the deadtime timer is set, the instance shall not send out an event until the deadtime timer has
 186 expired. If an event was suppressed due to the deadtime timer, then the latest event shall be
 187 sent on expiry of the deadtime timer. The deadtime timer shall be restarted every time an event
 188 is sent.

189 NOTE 1: The following example demonstrates this: The event filter is configured with only the movement event enabled.
 190 The deadtime timer is currently running due to a previous INPUT NOTIFICATION from this instance. A new movement
 191 trigger occurs. The transmission of a new INPUT NOTIFICATION is suppressed because the deadtime timer is still
 192 running. Next, the movement/occupied state ends, with the instance changing to the no-movement/occupied state.
 193 Next, the deadtime timer expires. Due to the suppressed event during the deadtime, a new INPUT NOTIFICATION is
 194 now sent. This will indicate “no movement” and “occupied” because these are the current states.

195 NOTE 2: The purpose of the deadtime timer is to increase the effective bus bandwidth availability. It is not intended to
 196 be used as a hold timer.

197

198 Page 15

199

200 **9.5.4 Setting the timers**

201 *Replace “Event timers” in the first paragraph with “Deadtime, hold and report timers”.*

202

203 *Replace the last four paragraphs by the following new paragraphs:*

204

205 If the hold timer is implemented, “SET HOLD TIMER (DTR0)” shall set “ t_{Hold} ” to “DTR0” unless
 206 “DTR0” equals MASK in which case the command shall be discarded. The minimum time in case
 207 “ t_{Hold} ” equals 0 shall be 1 s.

208 “SET REPORT TIMER (DTR0)” shall set “ t_{Report} ” depending on “DTR0”. If “ t_{Report} ” is set to 0,
 209 the report timer shall be disabled immediately.

210 “SET DEADTIME TIMER (DTR0)” shall set “ $t_{Deadtime}$ ” depending on “DTR0”. If “ $t_{Deadtime}$ ” is set
 211 to 0, the deadtime timer shall be disabled immediately, but shall not affect T_{report} until the report
 212 timer is (re-)started. Disabling of the deadtime timer shall not cause previously suppressed events
 213 to be sent.

214 If $T_{report} < T_{deadtime}$, T_{report} shall be $T_{deadtime}$ (independent of the value of “ t_{Report} ”). This does
 215 not affect the value of “ t_{Report} ”.

216 NOTE: If an application controller intends to change a running hold timer, it is recommended to either wait for it to
 217 expire, or first force it to expire using “CANCEL HOLD TIMER”.

218

219

220 Page 16

221

222 **9.5.5 Manual configuration**

223 *Replace rows “bit 3” and “bit 4” in Table 5 (now renumbered to table 6), with the following two*
 224 *rows:*

3	Manual configuration of “ <i>detectionRange</i> ” supported	“1” = “Yes”
4	Manual configuration of “ <i>detectionSensitivity</i> ” supported	“1” = “Yes”

225

226 *Add after 9.5.5 Manual configuration two new clauses “9.5.6 Occupancy sensor capabilities” and*
 227 *“9.5.7 Configuring the sensitivity and range”:*

228

229 **9.5.6 Occupancy sensor capabilities**

230 The supported occupancy capabilities are given in “*occupancyCapabilities*” which can be queried.
 231 The encoding of “*occupancyCapabilities*” shall be as shown in Table 7.

232

Table 7 – “occupancyCapabilities” values

Bit	Description	Value
0	Configuration and querying of “ <i>detectionRange</i> ” supported.	“1” = “Yes”
1	Configuration and querying of “ <i>detectionSensitivity</i> ” supported.	“1” = “Yes”
2	Reserved	“0”
3	Reserved	“0”
4	Reserved	“0”
5	Reserved	“0”
6	Reserved	“0”
7	Reserved	“0”

233

234 9.5.7 Configuring the sensitivity and range

235 Depending on the value of “*occupancyCapabilities*”, the input device instance may allow
 236 adjustment of the sensor’s detection sensitivity and detection range. If the corresponding
 237 capability is present, the input device instance shall implement the following SET instructions to
 238 set the corresponding variables, with the corresponding QUERY commands always implemented:

- 239 • Adjustable detection range: “SET DETECTION RANGE (*DTR0*)”, “QUERY DETECTION
 240 RANGE” to set or query “*detectionRange*”
- 241 • Adjustable detection sensitivity: “SET SENSITIVITY (*DTR0*)”, “QUERY SENSITIVITY” to set
 242 or query “*detectionSensitivity*”

243 Values of “*detectionRange*” and “*detectionSensitivity*” shall have the following meaning:

- 244 • [0,100]: 0-100%. 0 is the lowest detection range or detection sensitivity. 100 is the highest.
- 245 • 255: Adjustment not supported

246

247

248

Page 17 <https://standards.iteh.ai/catalog/standards/sist/792b82fc-2114-43c6-9eb6-eb08185d09f2/sist-en-62386-303-2018-opra1-2023>

249 Table 7

250

251

Now renumbered to Table 9, change the table contents as shown:

252

Table 9 - Declaration of device variables

Variable	Default value (factory)	Reset value	Power on value	Range of validity	Memory type
“ <i>extendedVersionNumber</i> ”	2.1	no change	no change	00001001b	ROM

253

254

255 Page 17

256 Table 8

257

258

Renumbered to table 10, insert a new row and new footnote in the table:

259

260

Table 10 – Restrictions to instance variables defined in IEC 62386-103:2022

“ <i>instanceConfiguration[x]</i> ” ^c	reserved	reserved	reserved	reserved	reserved
^c Where x is in the range [0,190]					

261

262 Page 18