



SLOVENSKI STANDARD
oSIST prEN 50436-7:2023

01-junij-2023

Alkoholne zapore - Preskusne metode in zahtevane lastnosti - 7. del: Navodilo za namestitvev

Alcohol interlocks - Test methods and performance requirements - Part 7: Installation document

Alkohol-Interlocks - Prüfverfahren und Anforderungen an das Betriebsverhalten - Teil 7: Einbaudokument

Ethylotests anti-démarrage - Méthodes d'essais et exigences de performance - Partie 7: Document d'installation

Ta slovenski standard je istoveten z: prEN 50436-7:2023

ICS:

13.200	Preprečevanje nesreč in katastrof	Accident and disaster control
43.040.80	Sistemi za zaščito pri trku in sistemi za zadrževanje potnikov	Crash protection and restraint systems

oSIST prEN 50436-7:2023

en

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 50436-7

April 2023

ICS 43.040.10; 71.040.40

Will supersede EN 50436-7:2016

English Version

Alcohol interlocks - Test methods and performance requirements - Part 7: Installation document

Ethylotests anti-démarrage - Méthodes d'essais et
exigences de performance - Partie 7: Document
d'installation

Alkohol-Interlocks - Prüfverfahren und Anforderungen an
das Betriebsverhalten - Teil 7: Einbaudokument

This draft European Standard is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2023-07-21.

It has been drawn up by CLC/BTTF 116-2.

If this draft becomes a European Standard, CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CENELEC in three official versions (English, French, German).
A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

1	Contents	Page
2	European foreword	3
3	Introduction	4
4	1 Scope	5
5	2 Normative references	5
6	3 Terms and definitions	5
7	4 Installation of an alcohol interlock	7
8	5 Time behaviour	8
9	6 Layout and contents of the installation document	8
10	6.1 General	8
11	6.2 General content and layout	9
12	6.3 Header	9
13	6.4 Footer	10
14	6.4.1 General	10
15	6.4.2 Document identification number	10
16	6.5 Connection schematics	10
17	6.6 Safety risks at installation and items to be considered	10
18	6.7 Assembly instruction	10
19	6.8 Modification of vehicle operation	11
20	6.9 Mounting position of alcohol interlock handset and alcohol interlock control unit	11
21	Annex A (informative) Time behaviour	12
22	Annex B (normative) General layout of the installation document	13
23	Annex C (normative) Connection schematics	14
24	Annex D (informative) Assembly instruction	16
25	Bibliography	18
26	Figures	
27	Figure 1 — Traditional installation schematics for an alcohol interlock	8
28	Figure A.1 — Time behaviour diagram	12
29	Figure D.1 — Location of ground installation point	16
30	Figure D.2 — Taking apart to reach an installation point by minimizing damages	16
31	Figure D.3 — Location of the connector and of the pins in the connector	17
32	Tables	
33	Table B.1 — Layout of the installation document	13
34	Table C.1 — Information of the connection schematics	14

35 European foreword

36 This document (prEN 50436-7:2023) has been prepared by CLC/BTTF 116-2 "Alcohol Interlocks".

37 This document is currently submitted to the Enquiry.

38 The following dates are proposed:

- latest date by which the existence of this document has to be announced at national level (doa) dor + 6 months
- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) dor + 12 months
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) dor + 36 months (to be confirmed or modified when voting)

39 This document will supersede EN 50436-7:2016 and all of their amendments and corrigenda (if any).

40 prEN 50463-7:2023 includes the following significant technical changes with respect to EN 50436-7:2016:

- 41 — Clause 2, Normative references: ISO 16750-2:2012 was added;
- 42 — Clause 6.7, Assembly instruction: details of the databus connection were updated;
- 43 — Clause 6.9, Mounting position of alcohol interlock handset and alcohol interlock control unit: complete
44 clause was updated to define the responsibility for installation of retrofitted devices;
- 45 — Table C.1, Information of the connection schematics: cell of item 1 under the column "Function" was
46 updated to differentiate between "operational mode" and "low power consumption";
- 47 — Footnote "a" and footnote "c" of Table C.1 were updated;
- 48 — Bibliography: item 1 was replaced with the information of the published standard.

49 Introduction

50 The purpose of alcohol interlocks is to enhance traffic safety by preventing persons with alcohol
51 concentrations exceeding a set limit value from driving a motor vehicle. EN 50436 series specifies test
52 methods and essential performance requirements for alcohol interlocks and gives guidance for authorities,
53 decision makers, purchasers and users.

54 There are several ways in which alcohol interlocks may be used:

- 55 — installed in a vehicle as a general preventive measure for the promotion of traffic safety, on a voluntary
56 basis or required legally in certain vehicles (e.g. vehicles for children transport); or
- 57 — in vehicles as ordered by a court or an administrative authority as part of a drink-driving offender
58 programme; or
- 59 — for persons subject to a medical or rehabilitation programme.

60 Alcohol interlocks are often intended for aftermarket installation. For this purpose, they are connected to the
61 electric and control circuits of the vehicle.

62 This installation of an alcohol interlock should not interfere with the proper performance of the vehicle, should
63 not impair the safety and security of the vehicle and should be as straightforward as possible. Additionally,
64 the installation costs should be low in relation to the total cost of the alcohol interlock.

65 Therefore, it is desirable to have a standardized installation document to give the necessary details to the
66 technicians installing an alcohol interlock into a certain vehicle model, even if the responsibility for the safe
67 installation will remain on the alcohol interlock installer.

(standards.iteh.ai)

[oSIST prEN 50436-7:2023](https://standards.iteh.ai/catalog/standards/sist/5f1eb002-7801-47ab-a493-9c06b522165b/osist-pren-50436-7-2023)

<https://standards.iteh.ai/catalog/standards/sist/5f1eb002-7801-47ab-a493-9c06b522165b/osist-pren-50436-7-2023>

68 1 Scope

69 This document defines the content and the layout of an installation document providing necessary and useful
70 information about the aftermarket installation of an alcohol interlock into a vehicle. It details the type of the
71 vehicle, connection schematics, accessibility instructions and recommendations to avoid safety risks.

72 The contents and layout ensures that the information document is easy to use for installers in different
73 countries and can be available in paper or electronic format.

74 This document is applicable to alcohol interlocks according to EN 50436-1 and EN 50436-2.

75 This document is mostly intended for vehicle manufacturers and manufacturers of alcohol interlocks.

76 This document does not apply to:

- 77 — the process of handling the installation documents;
- 78 — the installation process;
- 79 — information related to education and training for installers;
- 80 — general performance requirements for alcohol interlocks (see EN 50436-1 and EN 50436-2);
- 81 — the installation of the alcohol interlock during the production of the vehicle.

82 2 Normative references

83 The following documents are referred to in the text in such a way that some or all of their content constitutes
84 requirements of this document. For dated references, only the edition cited applies. For undated references,
85 the latest edition of the referenced document (including any amendments) applies.

86 EN 50436-1:2014, *Alcohol interlocks - Test methods and performance requirements - Part 1: Instruments for*
87 *drink-driving-offender programs*

88 EN 50436-2:2014, *Alcohol interlocks - Test methods and performance requirements - Part 2: Instruments*
89 *having a mouthpiece and measuring breath alcohol for general preventive use*

90 EN ISO 216, *Writing paper and certain classes of printed matter - Trimmed sizes - A and B series, and*
91 *indication of machine direction (ISO 216)*

92 ISO 16750-2:2012, *Road vehicles — Environmental conditions and testing for electrical and electronic*
93 *equipment — Part 2: Electrical loads*

94 3 Terms and definitions

95 For the purposes of this document, the following terms and definitions apply.

96 ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- 97 — ISO Online browsing platform: available at <https://www.iso.org/obp/>
- 98 — IEC Electropedia: available at <https://www.electropedia.org/>

prEN 50436-7:2023 (E)

99 **3.1**
 100 **alcohol interlock**
 101 device which is normally in the blocking state when installed to prevent the starting of a vehicle engine, and
 102 which can be brought into the not-blocking state only after the presentation and analysis of a breath sample
 103 with an alcohol concentration below a limit value

104 Note 1 to entry: It normally consists of a handset and a control unit electrically connected to the vehicle.

105 Note 2 to entry: In this document, the expression “starting of the vehicle engine” includes provision of an output
 106 signal from the alcohol interlock to the vehicle to enable the starting, operation or movement of the vehicle.

107 [SOURCE: EN 50436-1:2014, 3.1, modified — 'vehicle motor' is replaced by 'vehicle engine']

108 **3.2**
 109 **breath alcohol concentration**
 110 mass concentration of ethanol, expressed in mg/l (milligram ethanol per litre breath air), in a breath sample
 111 delivered into an alcohol interlock

112 [SOURCE: EN 50436-1:2014, 3.2]

113 **3.3**
 114 **breath sample**
 115 breath air sample taken under forced expiration

116 [SOURCE: EN 50436-1:2014, 3.3]

117 **3.4**
 118 **accepted breath sample**
 119 breath sample fulfilling set requirements for volume, flow, exhalation time and other human breath sample
 120 characteristics

121 Note 1 to entry The acceptance of a breath sample is independent from the alcohol concentration.

122 [SOURCE: EN 50436-1:2014, 3.4]

123 **3.5**
 124 **breath test**
 125 test providing a breath sample to an alcohol interlock

126 [SOURCE: EN 50436-1:2014, 3.5]

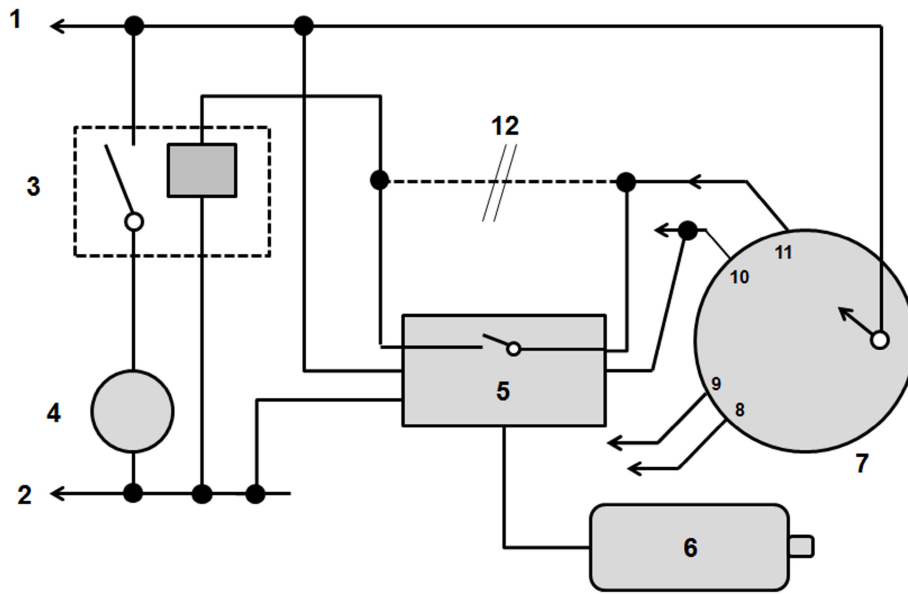
127 **3.6**
 128 **blocking state**
 129 state in which the alcohol interlock inhibits the starting of the vehicle motor

130 [SOURCE: EN 50436-1:2014, 3.7]

131 **3.7**
 132 **not-blocking state**
 133 state in which the vehicle motor can be started

134 [SOURCE: EN 50436-1:2014, 3.8]

- 135 **3.8**
136 **breath alcohol concentration limit**
137 set value of the breath alcohol concentration at or above which the vehicle motor will be prevented from
138 being started
- 139 [SOURCE: EN 50436-1:2014, 3.9]
- 140 **3.9**
141 **supply voltage**
142 voltage obtained from the electric power source of the vehicle for operation of the alcohol interlock
- 143 [SOURCE: EN 50436-1:2014, 3.19]
- 144 **3.10**
145 **manufacturer**
146 person or organisation responsible for the design, construction and/or production of the vehicle or the alcohol
147 interlock
- 148 [SOURCE: EN 50436-1:2014, 3.23, modified — 'the vehicle or' has been added]
- 149 **3.11**
150 **aftermarket installation**
151 any installation of an alcohol interlock in a vehicle after the original production of a vehicle
- 152 [SOURCE: EN 50436-1:2014, 3.24]
- 153 **4 Installation of an alcohol interlock**
- 154 This clause describes the basic ("traditional") principle for the installation of an alcohol interlock.
- 155 The alcohol interlock requires connection to the vehicle: supply voltage, ground, ignition line, interruption of
156 the starter wire and detection of engine run.
- 157 The voltage supply between the vehicle's ignition switch (position "Starter relay") and the starter system is
158 interrupted (Figure 1). The alcohol interlock is fitted with its output relay into the interrupted starter circuit.
- 159 NOTE In this document, the expression "starting of the vehicle engine" includes provision of an output signal from
160 the alcohol interlock to the vehicle to enable the starting, operation or movement of the vehicle.

**Key**

1	battery feed (+30)	7	ignition switch
2	ground (-30)	8	off
3	starter relay	9	accessories
4	starter motor	10	ignition / vehicle ready
5	alcohol interlock control unit	11	starter relay
6	alcohol interlock handset	12	interruption

Figure 1 — Traditional installation schematics for an alcohol interlock

The alcohol interlock is normally in the blocking state (output relay open). The closure of this relay may only occur when an accepted breath sample with an alcohol concentration below the pre-set breath alcohol concentration limit has been delivered.

This installation procedure ensures that an alcohol interlock may only intervene in the engine starting process but may never influence a running engine or a moving vehicle. This is an important condition for the operational safety of an alcohol interlock equipped vehicle.

The expression “starting of the vehicle motor/engine” includes provision of an output signal from the alcohol interlock to the vehicle to enable the starting, operation or movement of the vehicle.

5 Time behaviour

When using a vehicle with an alcohol interlock a certain time behaviour of user activities as well as vehicle and alcohol interlock reactions takes place. A typical example is shown in Annex A.

6 Layout and contents of the installation document

6.1 General

The installation document provides necessary and useful information about the aftermarket installation of an alcohol interlock into a vehicle. It details the type of the vehicle, connection schematics, accessibility instructions and recommendations to avoid safety risks.

The installation document should be prepared by vehicle manufacturers and should be provided to alcohol interlock manufacturers and their installers.

182 The installation document may be created as one document covering all vehicle variants. However it is
183 recognized that there can be instances where the position of the connections differ from one vehicle variant
184 to another, and that in these instances it will be necessary to create additional installation documents to
185 cover these differences.

186 **6.2 General content and layout**

187 The general content of the installation document is mandatory. It shall be available in paper or electronic
188 format in at least English language.

189 Its layout shall follow Annex B. This includes the following:

- 190 — header (see 6.3);
- 191 — footer (see 6.4);
- 192 — connection schematics (see 6.5);
- 193 — safety risks at installation and items to be considered (see 6.6);
- 194 — assembly instruction (see 6.7);
- 195 — modification of vehicle operation (if applicable, see 6.8);
- 196 — suggestion for the mounting position of the alcohol interlock handset and the alcohol interlock control
197 unit, (see 6.9).

198 The installation document normally consists of several pages. The header and the footer shall be repeated
199 on all pages.

200 The installation document shall be printable on and readable from ISO A4 format paper (according to
201 EN ISO 216).

202 **6.3 Header**

203 The header consists of four parts.

- 204 1) The first part of the header shall contain the logo(s) of the vehicle brand.
- 205 2) The second part of the header shall contain the name of the vehicle manufacturer.
- 206 3) The third part of the header shall contain information for uniquely identifying a specific vehicle model, for
207 example:
 - 208 — name of the vehicle model;
 - 209 — body type(s) covered by the installation document;
 - 210 — specific version (e.g. hybrid, electric, with/without Stop and Start, country specific version);
 - 211 — version number(s) of the vehicle model;
 - 212 — serial number(s) of the vehicle model;
 - 213 — date of production.

214 The third part of the header shall indicate how the installer can verify that this installation document
215 matches the vehicle. Many vehicles have several parallel versions at the same time depending on
216 where they are produced.

- 217 4) The fourth part of the header shall contain the title of the document.