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**Električna oprema za merjenje, kontrolo in laboratorijsko uporabo - Zahteve za elektromagnetno združljivost (EMC) - 2-3. del: Posebne zahteve - Preskusna konfiguracija, obratovalni pogoji in merila za delovanje pretvornikov z vgrajenim ali daljinskim kondicioniranjem signalov**

Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-3: Particular requirements - Test configuration, operational conditions and performance criteria for transducers with integrated or remote signal conditioning

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Elektrische Mess-, Steuer-, Regel- und Laborgeräte - EMV-Anforderungen - Teil 2-3: Besondere Anforderungen - Prüfanordnung, Betriebsbedingungen und Leistungsmerkmale für Messgrößenumformer mit integrierter oder abgesetzter Signalaufbereitung

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Matériel électrique de mesure, de commande et de laboratoire - Exigences relatives à la CEM - Partie 2-3: Exigences particulières - Configurations d'essai, conditions de fonctionnement et critères de performance des transducteurs avec un système de conditionnement du signal intégré ou à distance

**Ta slovenski standard je istoveten z: prEN IEC 61326-2-3:2019**

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**ICS:**

19.080	Električno in elektronsko preskušanje	Electrical and electronic testing
33.100.01	Elektromagnetna združljivost na splošno	Electromagnetic compatibility in general

**oSIST prEN IEC 61326-2-3:2019**

**en,fr,de**

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## COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: <b>IEC 61326-2-3 ED3</b>	
DATE OF CIRCULATION: <b>2019-08-23</b>	CLOSING DATE FOR VOTING: <b>2019-11-15</b>
SUPERSEDES DOCUMENTS: <b>65A/906/CD, 65A/916A/CC</b>	

IEC SC 65A : SYSTEM ASPECTS	
SECRETARIAT: United Kingdom	SECRETARY: Mr Petar Luzajic
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 77, SC 77A	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 checked="" 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	
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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.	
The CENELEC members are invited to vote through the CENELEC online voting system.	

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TITLE: <b>Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 2-3: Particular requirements – Test configuration, operational conditions and performance criteria for transducers with integrated or remote signal conditioning</b>
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PROPOSED STABILITY DATE: 2023

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48 INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**ELECTRICAL EQUIPMENT FOR MEASUREMENT,  
CONTROL AND LABORATORY USE –  
EMC REQUIREMENTS –**

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**Part 2-3: Particular requirements –**

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**Test configuration, operational conditions and performance criteria  
for transducers with integrated or remote signal conditioning**

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**FOREWORD**

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1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

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8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.

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9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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This International Standard IEC 61326-2-3 has been prepared by subcommittee 65A: System aspects, of IEC technical committee 65: Industrial-process measurement, control and automation.

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This third edition cancels and replaces the second edition published in 2012. This edition constitutes a technical revision.

100

101

This edition includes the following significant technical change with respect to the previous edition:

102

– update of the document with respect to IEC 61326-1:20xx.

103

104 The text of this standard is based on the following documents:

FDIS	Report on voting
65A/xxx/FDIS	65A/xxx/RVD

105  
106 Full information on the voting for the approval of this standard can be found in the report on  
107 voting indicated in the above table.

108 This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

109 This part of the IEC 61326 series is to be used in conjunction with IEC 61326-1:20xx and  
110 follows the same numbering of clauses, subclauses, tables and figures.

111 When a particular subclause of IEC 61326-1 is not mentioned in this part, that subclause  
112 applies as far as is reasonable. When this standard states “addition”, “modification” or  
113 “replacement”, the relevant text in IEC 61326-1 is to be adapted accordingly.

114 NOTE The following numbering system is used:

- 115 – subclauses, tables and figures that are numbered starting from 101 are additional to those in  
116 IEC 61326-1;
- 117 – unless notes are in a new subclause or involve notes in IEC 61326-1, they are numbered starting from  
118 101 including those in a replaced clause or subclause;
- 119 – additional annexes are lettered AA, BB, etc.

120 A list of all parts of the IEC 61326 series, under the general title *Electrical equipment for*  
121 *measurement, control and laboratory use, control and laboratory use – EMC requirements,*  
122 can be found on the IEC website.

123 The committee has decided that the contents of this publication will remain unchanged until  
124 the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data  
125 related to the specific publication. At this date, the publication will be

- 126 • reconfirmed,
- 127 • withdrawn,
- 128 • replaced by a revised edition, or
- 129 • amended.

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## ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL AND LABORATORY USE – EMC REQUIREMENTS –

### Part 2-3: Particular requirements – Test configuration, operational conditions and performance criteria for transducers with integrated or remote signal conditioning

#### 142 **1 Scope**

143 In addition to the requirements of IEC 61326-1, this part specifies more detailed test  
144 configurations, operational conditions and performance criteria for transducers with integrated  
145 or remote signal conditioning.

146 This standard applies only to transducers characterized by their ability to transform, with the  
147 aid of an auxiliary energy source, a non-electric quantity to a process-relevant electrical  
148 signal, and to output the signal at one or more ports. This standard includes transducers for  
149 electrochemical and biological measured quantities.

150 The transducers covered by this standard may be powered by AC or DC voltage and/or by  
151 battery or with internal power supply.

152 Transducers referred to by this standard comprise at least the following items (see  
153 Figures 101 and 102):

- 154 – one or more elements for transforming a non-electrical input quantity to an electrical  
155 quantity;
- 156 – a TRANSMISSION LINK for transferral of the electrical quantity to a component for signal  
157 conditioning;
- 158 – a unit for signal conditioning that converts the electrical quantity to a process-relevant  
159 electrical signal;
- 160 – an enclosure for enclosing the above-stated components fully or in parts.

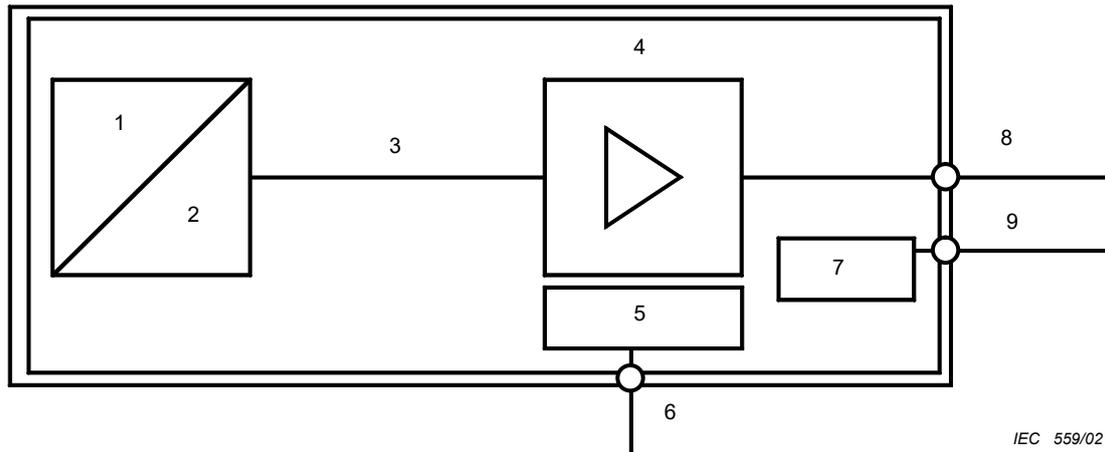
161 Transducers referred to by this standard may also have the following items (see Figures 101  
162 and 102):

- 163 – a communication and control unit;
- 164 – a display unit;
- 165 – control elements such as keys, buttons, switches, etc.;
- 166 – transducer output signals (for example, switch outputs, alarm outputs) which are clearly  
167 assigned to the input signal(s);
- 168 – transducers with signal conditioning which may be integrated or remote.

169 The manufacturer specifies the environment for which the product is intended to be used and  
170 utilizes the corresponding test levels of IEC 61326-1.

171 Additional requirements and exceptions for specific types of transducers are given in the  
172 annexes to this standard.

173



IEC 559/02

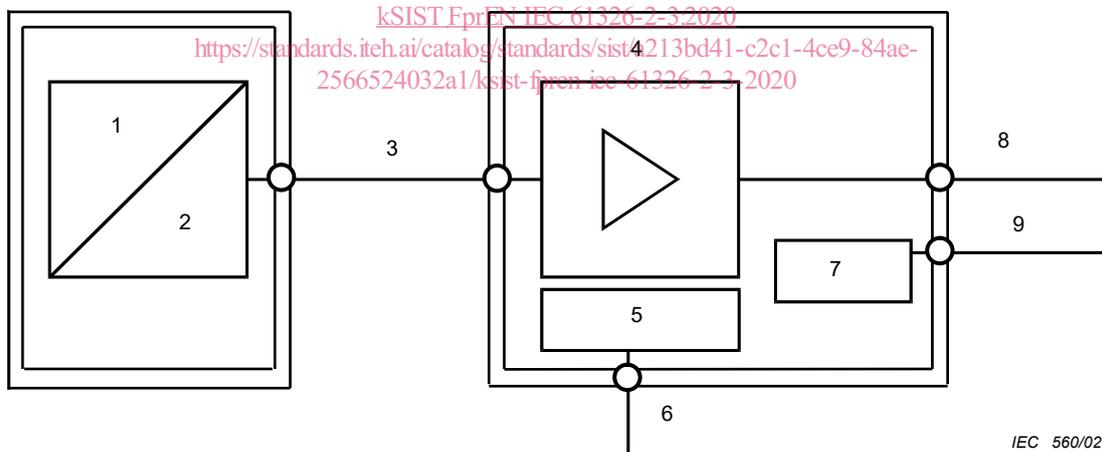
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175 **Key**

- 176 1 Non-electrical quantity
- 177 2 Electrical quantity
- 178 3 TRANSMISSION LINK
- 179 4 Signal conditioning
- 180 5 Communication and control unit
- 181 6 Input/output ports
- 182 7 Power supply
- 183 8 Signal port
- 184 9 AC/DC POWER PORT

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185 **Figure 101 – Example of a TRANSDUCER WITH INTEGRATED SIGNAL CONDITIONING**



IEC 560/02

186

187 **Key**

- 188 1 Non-electrical quantity
- 189 2 Electrical quantity
- 190 3 TRANSMISSION LINK
- 191 4 Signal conditioning
- 192 5 Communication and control unit
- 193 6 Input/output ports
- 194 7 Power supply
- 195 8 Signal port
- 196 9 AC/DC POWER PORT

197 **Figure 102 – Example of a TRANSDUCER WITH REMOTE SIGNAL CONDITIONING**

## 198 2 Normative references

199 The following documents, in whole or in part, are normatively referenced in this document and  
200 are indispensable for its application. For dated references, only the edition cited applies. For  
201 undated references, the latest edition of the referenced document (including any  
202 amendments) applies.

203 Clause 2 of IEC 61326-1:20xx applies, except as follows:

204 *Addition:*

205 IEC 61326-1:20xx, *Electrical equipment for measurement, control and laboratory use – EMC*  
206 *requirements – Part 1: General requirements*

## 207 3 Terms and definitions

208 For the purposes of this document, the terms and definitions of IEC 61326-1 apply, except as  
209 follows.

210 *Addition:*

### 211 3.101

#### 212 **transducer with integrated signal conditioning**

213 transducer in which all components for signal conditioning are integrated in the enclosure  
214 (see Figure 101)

### 215 3.102

#### 216 **transducer with remote signal conditioning**

217 transducer whose components for signal conditioning are installed in separate enclosures  
218 (see Figure 102)

### 219 3.104

#### 220 **transmission link**

221 connection between the individual components of a transducer with remote signal conditioning

### 222 3.105

#### 223 **(nominal) range**

224 range of indications obtainable with a particular setting of the controls of a measuring  
225 instrument

226 Note 1 to entry: The NOMINAL RANGE is normally stated in terms of its lower and upper limits. Where the lower limit  
227 is zero, the nominal range is commonly stated solely in terms of its upper limit.

228 [SOURCE: IEC 60050-300:2001, 311-03-14]

### 229 3.106

#### 230 **measuring range (of a transducer)**

231 range defined by two values of the measured quantity within which the relationship between  
232 the output and input signals complies with the accuracy requirements

233 [SOURCE: IEC 60050-300:2001, 314-04-04, modified]

234 Note 1 to entry: For a 4 mA to 20 mA system, the output current 4 mA represents the lower limit for the measured  
235 quantity and 20 mA represent the upper limit.

### 236 3.107

#### 237 **span**

238 algebraic difference between the values of the upper and lower limits of the measuring range

239 [SOURCE: IEC 60050-300:2001, 311-03-13]

### 240 **3.108**

#### 241 **intrinsic uncertainty**

242 uncertainty of a measuring instrument when used under reference conditions

243 Note 1 to entry: This term is used in the “uncertainty” approach

244 [SOURCE: IEC 60050-300:2001, 311-03-09]

## 245 **4 General**

246 Clause 4 of IEC 61326-1:20xx applies.

## 247 **5 EMC test plan**

### 248 **5.1 General**

249 Subclause 5.1 of IEC 61326-1:20xx applies.

### 250 **5.2 Configuration of EUT during testing**

251 Subclause 5.2 of IEC 61326-1:20xx applies, except as follows.

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#### 252 **5.2.1 General**

253 Subclause 5.2.1 of IEC 61326-1:20xx applies, except as follows:

254 *Addition:* <https://standards.iteh.ai/catalog/standards/sist/a213bd41-c2c1-4ce9-84ae-2566524032a1/ksist-fpren-iec-61326-2-3-2020>

255 A system for monitoring the behaviour of the EUT and for registering the output values shall  
256 be designed in such a way that the electromagnetic compatibility characteristics of the EUT  
257 are not impaired. The monitoring system shall also be designed such that its response is not  
258 affected by the immunity tests. The input impedance of the monitoring system shall  
259 correspond to the terminating impedance of the transducer, specified by the manufacturer.  
260 The distance between the monitoring system and the EUT should be at least 1,5 m.

261 The measurement uncertainty and the bandwidth of the monitoring system shall be adapted to  
262 the characteristics of the transducer.

263 TRANSMISSION LINKS are considered as separate input and output lines.

264 The tests shall be conducted in compliance with the environmental conditions for the  
265 transducer specified by the manufacturer and using the specified supply voltage.

266 In the case of battery-operated transducers that can also be used when connected with a  
267 power supply, both operating modes (stand-alone and externally supplied) shall be tested.

268 In cases in which the manufacturer's installation instructions stipulate the use of external  
269 protective equipment or particular protective measures that are explicitly stated in the  
270 operating manual, the test requirements given in this part of the standard shall be applied for  
271 use together with the external protective equipment or measures.

### 272 **5.3 Operation conditions of EUT during testing**

273 Subclause 5.3 of IEC 61326-1:20xx applies.