



**SLOVENSKI STANDARD**  
**oSIST prEN IEC 62828-5:2019**  
**01-julij-2019**

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**Referenčni pogoji in postopki za preskušanje industrijskih in procesnih merilnih oddajnikov - 5. del: Posebni postopki za oddajnike pretoka**

Reference conditions and procedures for testing Industrial and process measurement transmitters - Part 5: Specific procedures for flow transmitters

iTeh STANDARD PREVIEW  
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[SIST EN IEC 62828-5:2020](https://standards.iteh.ai/catalog/standards/sist/en-iec-62828-5-2020)

Ta slovenski standard je istoveten z: **prEN IEC 62828-5:2019**

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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.
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TITLE:

**Reference conditions and procedures for testing Industrial and process measurement transmitters - Part 5: Specific procedures for flow transmitters**

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NOTE FROM TC/SC OFFICERS:



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**REFERENCE CONDITIONS AND PROCEDURES FOR TESTING INDUSTRIAL****AND PROCESS MEASUREMENT TRANSMITTERS****Part 5: Specific procedures for flow transmitters**

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International Standard IEC 62828-5 has been prepared by Subcommittee 65B: Measurement & control devices, of IEC Technical Committee 65: Industrial-process measurement, control and automation.

The IEC 62828 series cancels and replaces the IEC 60770 series

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

FDIS	Report on voting
XX/XX/FDIS	XX/XX/RVD

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

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



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

- 164 • reconfirmed,
- 165 • withdrawn,
- 166 • replaced by a revised edition, or
- 167 • amended.

168

169 The National Committees are requested to note that for this publication the stability date  
170 is 2022.

171 THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE DELETED  
172 AT THE PUBLICATION STAGE.

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## INTRODUCTION

175 Most of the current IEC standards on industrial measurement transmitters are rather old and  
176 were developed having in mind devices based on analog technologies. Today's digital  
177 industrial and process measurement transmitters are quite different from those analog  
178 transmitters: they include more functions and newer interfaces, both towards the computing  
179 section (mostly digital) and towards the measuring section (mostly mechanical). Even if some  
180 standards dealing with digital transmitters already exist, they are not sufficient, since some  
181 aspects of the performance are not covered by appropriate test methods.

182 In addition, the existing IEC test standards for industrial and process measurement  
183 transmitters are spread over many documents, so that for manufacturers and users it was  
184 difficult, impractical and time-consuming to identify and select all the standards to be applied  
185 to a device measuring a specific process quantity (pressure, temperature, level, flow, etc.).

186 To help the manufacturers and users, it was decided to review, complete and reorganize the  
187 existing IEC standards on the industrial and process measurement transmitters and to create  
188 a more suitable, effective and comprehensive standard series that provides, in a systematic  
189 way, all the needed specifications and tests for the different industrial and process  
190 measurement transmitters.

191 To solve the issues mentioned above and to provide an added value for the stakeholders, the  
192 new standard series on industrial and process measurement transmitters covers the following  
193 main aspects:

- 194 • Applicable normative references
- 195 • Specific terms and definitions
- 196 • Typical configurations and architectures for the various types of industrial and  
197 measurement transmitters
- 198 • Hardware and software aspects
- 199 • Interfaces (to the process, to the operator, to the other measurement and control  
200 devices)
- 201 • Physical, mechanical and electrical requirements and relevant tests; clear definition of  
202 the test categories: type tests, acceptance tests and routine tests
- 203 • Performances (their specification, tests and verification)
- 204 • Environmental protection, hazardous areas application, functional safety, etc.
- 205 • Structure of the technical documentation.

206 To cover in a systematic way all the topics to be addressed, the standard series is organized  
207 in several parts. At the moment of the publication of this document, IEC 62828 consists of the  
208 following parts:

- 209 • Part 1: General procedures for all types of transmitters
- 210 • Part 2: Specific procedures for pressure transmitters
- 211 • Part 3: Specific procedures for temperature transmitters
- 212 • Part 4: Specific procedures for level transmitters
- 213 • Part 5: Specific procedures for flow transmitters

214 In preparing the IEC 62828 series (all parts), many test procedures were taken, with the  
215 necessary improvements, from the IEC 61298 series (all parts). As the IEC 61298 (all parts) is  
216 currently applicable to all process measurement and control devices, when the IEC 62828 (all  
217 parts) is completed, IEC 61298 (all parts) will be revised to harmonize it with IEC 62828 (all  
218 parts), taking out from its scope the industrial and process measurement transmitters. During  
219 the time when the scope of IEC 61298 (all parts) is being updated, the new IEC 62828 series  
220 takes precedence for industrial and process measurement transmitters.

221

222 When the IEC 62828 series is published, the IEC 60770 series will be withdrawn.

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225 **REFERENCE CONDITIONS AND PROCEDURES FOR TESTING INDUSTRIAL**  
226 **AND PROCESS MEASUREMENT TRANSMITTERS**  
227 **Part 5: Specific procedures for flow transmitters**

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231 **1. Scope**

232 This Part 5 of the IEC 62828 standard series establishes specific procedures for testing flow  
233 transmitters used in measuring and control systems for industrial process and for machinery  
234 control systems. For general test procedures, reference is to be made to Part 1 of the  
235 standard, applicable to all types of transmitters.

236 The IEC 62828 Part 5 – together with Part 1 – is the reference standard for testing every type  
237 of flow transmitters, including not only for liquids but also for gases and for steam.

238 This standard “industrial flow transmitters” consistently covers all types of flow transmitters  
239 used in measuring and control systems for industrial process and for machinery.

240 **2. Normative references**241 **2.1 Normative references**

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

246 The normative references listed in Clause 2 of Part 1 apply.

247 In addition the following standards, specific for flow transmitters, are considered:

248 IEC 60050-300:2006, *International Electrotechnical Vocabulary (IEV)*  
249 – *Electrical and electronic measurements and measuring instruments*  
250 – *Part 113: Physics for electrotechnology*  
251 – *Part 161: Electromagnetic compatibility*  
252 – *Part 311: General terms relating to measurements*

253 IEC 61987-11:2012, *Industrial-process measurement and control - Data structures and*  
254 *elements in process equipment catalogues - Part 11: List of Properties (LOP) of measuring*  
255 *equipment for electronic data exchange - Generic structures*

256 IEC 61987-12 (CD), *Industrial Process Measurement and Control - Data Structures and*  
257 *Elements in Process Equipment Catalogues - Part 12: List of Properties (LOP) for Flow*  
258 *Measuring Equipment for electronic data exchange*

259 ISO IEC Guide 99:2007 *International vocabulary of metrology -- Basic and general concepts*  
260 *and associated terms (VIM)*

261 ISO 4185:1980, *Measurement of liquid flow in closed conduits - Weighing method*

262 ISO 17025: *General requirements for the competence of testing and calibration laboratories*

263 **2.2 Reference to IEC Common Data Dictionary (CDD)**

264 The IEC common data dictionary (CDD) contains a classification of measuring devices with  
265 lists of properties for the device types most often met in practice. These properties can be  
266 used to describe the performance of a device, the effect of any quantities influencing its  
267 performance as well as the reference standards against which it was tested with test results.