
**Industrial-process control valves - Part 8: Noise consideration - Section 2:
Laboratory measurement of noise generated by hydrodynamic flow through
control valves (IEC 60534-8-2:1991)**

Industrial-process control valves -- Part 8: Noise considerations -- Section 2: Laboratory measurement of noise generated by hydrodynamic flow through control valves

Stellventile für die Prozeßregelung -- Teil 8: Geräuschemission -- Hauptabschnitt 2:
Laboratoriumsmessungen von Geräuschen bei flüssigkeitsdurchströmten Stellventilen
(standards.iteh.ai)

Vannes de régulation des processus industriels -- Partie 8: Considérations sur le bruit --
Section 2: Mesure en laboratoire du bruit créé par un écoulement hydrodynamique dans
une vanne de régulation
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Ta slovenski standard je istoveten z: EN 60534-8-2:1993

ICS:

17.140.20	Emisija hrupa naprav in opreme	Noise emitted by machines and equipment
23.060.40	Tlačni regulatorji	Pressure regulators
25.040.40	Merjenje in krmiljenje industrijskih postopkov	Industrial process measurement and control

SIST EN 60534-8-2:1998**en**

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SIST EN 60534-8-2:1998

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UDC 621.646.2-553.4:681.523:681.533.38:620.1:534.6:534.83

Descriptors: Industrial-process, control valves, noise generated by hydrodynamic flow through control valves, laboratory measurement of noise

ENGLISH VERSION

Industrial-process control valves
 Part 8: Noise considerations
 Section 2: Laboratory measurement of noise
 generated by hydrodynamic flow through control
 valves
 (IEC 534-8-2:1991)

Vannes de régulation des
 processus industriels
 Partie 8: Considérations sur le
 bruit
 Section 2: Mesure en
 laboratoire du bruit créé par un
 écoulement hydrodynamique dans
 une vanne de régulation
 (CEI 534-8-2:1991)

Stellventile für die
 Prozeßregelung
 Teil 8: Allgemeine
 Geräuschbetrachtungen
 Hauptabschnitt 2:
 Laboratoriumsmessungen von
 Geräuschen bei hydrodynamisch
 durchströmten Stellventilen
 (IEC 534-8-2:1991)

TECHNICAL STANDARD REVIEW
 (standard internal)

This European Standard was approved by CENELEC on 1992-12-09. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B-1050 Brussels

FOREWORD

The CENELEC questionnaire procedure, performed for finding out whether or not the International Standard IEC 534-8-2:1991 could be accepted without textual changes, has shown that no common modifications were necessary for the acceptance as European Standard.

The reference document was submitted to the CENELEC members for formal vote and was approved by CENELEC as EN 60534-8-2 on 9 December 1992.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1993-12-01
- latest date of withdrawal of conflicting national standards (dow) 1993-12-01

For products which have complied with the relevant national standard before 1993-12-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1998-12-01.

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Annexes designated "normative" are part of the body of the standard. In this standard, annex ZA is normative.

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ENDORSEMENT NOTICE

The text of the International Standard IEC 534-8-2:1991 was approved by CENELEC as a European Standard without any modification.

ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD
WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

When the international publication has been modified by CENELEC common modifications, indicated by (mod), the relevant EN/HD applies.

IEC Publication	Date	Title	EN/HD	Date
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534-1	1987	Industrial-process control valves Part 1: Control valve terminology and general considerations	EN 60534-1	1993
534-2-3	1983	Part 2: Flow capacity Section Three - Test procedures	EN 60534-2-3	1993
534-8-4 (65B(CO)86)	-	Part 8: Noise considerations Section 4: Prediction of noise generated by hydrodynamic flow	-	-
651	1979	Sound level meters	HD 425 S1	1983

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Other publications quoted: (standards.iteh.ai)

ISO 7-1	1982	Pipe threads where pressure-tight joints are made on the threads Part 1: Designation, dimensions and tolerances		
ISO 65	1981	Carbon steel tubes suitable for screwing in accordance with ISO 7-1		
ISO 3744	1981	Acoustics - Determination of sound power levels of noise sources - Engineering methods for free-field conditions over a reflecting plane		
ISO 3745	1977	Acoustics - Determination of sound power levels of noise sources - Precision methods for anechoic and semi-anechoic rooms		
ISO 4200	1985	Plain end steel tubes, welded and seamless - General tables of dimensions and masses per unit length		

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**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
IEC
534-8-2**

Première édition
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1991-05

Vannes de régulation des processus industriels

Partie 8:

Considérations sur le bruit

Section 2: Mesure en laboratoire du bruit
créé par un écoulement hydrodynamique
dans une vanne de régulation

[SIST EN 60534-8-2:1998](https://standards.iteh.ai/catalog/standards/sist/c268d283-d277-4c95-a0fc-f0e55dd1ccea/sist-en-60534-8-2-1998)

<https://standards.iteh.ai/catalog/standards/sist/c268d283-d277-4c95-a0fc-f0e55dd1ccea/sist-en-60534-8-2-1998>

Industrial-process control valves

Part 8:

Noise considerations

Section 2: Laboratory measurement of
noise generated by hydrodynamic flow
through control valves

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ITC STANDARD PREVIEW
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 SIST EN 60534-8-2:1998
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

INDUSTRIAL-PROCESS CONTROL VALVES

Part 8: Noise considerations
Section 2: Laboratory measurement of noise generated by
hydrodynamic flow through control valves

FOREWORD

- 1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

iTech STANDARD PREVIEW
 (standards.iteh.ai)

This section of the International Standard IEC 534-8 has been prepared by Sub-Committee 65B: Elements of systems of IEC Technical Committee No. 65: Industrial-process measurement and control.

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

Six Months' Rule	Report on Voting
65B(CO)75	65B(CO)80

Full information on the voting for the approval of this section can be found in the Voting Report indicated in the above table.

INDUSTRIAL-PROCESS CONTROL VALVES

Part 8: Noise considerations

Section 2: Laboratory measurement of noise generated by hydrodynamic flow through control valves

1 Scope

This section of IEC 534-8 includes the method for measuring the sound pressure level due to liquid flow through a control valve and the method for determining the characteristic increase of noise due to the onset of cavitation. It also defines the equipment, methods and procedures for the laboratory measurement of the airborne sound needed to determine these characteristics. The airborne sound includes that radiated from the control valve and the associated piping configuration, including fixed flow restrictions through which the test fluid (water) is passing (see note 1).

The primary purpose of this section of IEC 534-8 is to provide a method for determining the characteristic increase of noise due to cavitation, including a method for measuring noise generated in control valves by hydrodynamic flow. Methods of measuring the noise radiated from the valve and associated test piping allows a comparison of various measured data which is beneficial to the user and the manufacturer. The noise to be measured takes into account the noise radiated from the control valve itself and the noise generated by the valve but radiated from the associated piping system. The test data are expressed as sound pressure levels of the valve under consideration using water as the test fluid. Determination of sound power levels is beyond the scope of this section of IEC 534-8. The noise characteristics are useful for the following reasons:

- a) to determine the characteristic pressure ratio factor x_{Fz} of a control valve;
- b) to predict valve noise for given process conditions;
- c) to compare the performance of different valves;
- d) to plan measures for increasing service life and noise abatement.

NOTES

1 Test fluids other than water or valves without downstream piping are not within the scope of this section of IEC 534-8.

2 The factor x_{Fz} is used in a noise prediction method which is covered in IEC 534-8-4 (under consideration).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this section of IEC 534-8. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this section of IEC 534-8 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 534-1: 1987, *Industrial-process control valves - Part 1: Control valve terminology and general considerations.*

IEC 534-2-3: 1983, *Industrial-process control valves - Part 2: Flow capacity - Section Three: Test procedures.*

IEC 534-8-4, *Industrial-process control valves - Part 8: Noise considerations - Section Four: Prediction of noise generated by hydrodynamic flow through control valves (under consideration).*

IEC 651: 1979, *Sound level meters.*

ISO 7-1: 1982, *Pipe threads where pressure-tight joints are made on the threads - Part 1: Designation, dimensions and tolerances.*

ISO 65: 1981, *Carbon steel tubes suitable for screwing in accordance with ISO 7-1.*

ISO 3744: 1981, *Acoustics - Determination of sound power levels of noise sources - Engineering methods for free-field conditions over a reflecting plane.*

ISO 3745: 1977, *Acoustics - Determination of sound power levels of noise sources - Precision methods for anechoic and semi-anechoic rooms.*

ISO 4200: 1985, *Plain end steel tubes, welded and seamless - General tables of dimensions and masses per unit length.*

3 Definitions

For the purpose of this section, the following definition applies as well as the definitions given in other parts of IEC 534.

3.1 test specimen: Valve or combination of valve, reducer, expander, or other fittings for which test data are required. All parts/accessories necessary to operate the specimen properly shall be included.