

SLOVENSKI STANDARD
SIST FprEN IEC 61010-2-
012:2019/oprAA:2020
01-november-2020

Varnostne zahteve za električno opremo za meritve, nadzor in laboratorijsko uporabo - 2-012. del: Posebne zahteve za opremo za klimatska in okoljska preskušanja ter drugo opremo za uravnavanje temperature

Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-012: Particular requirements for climatic and environmental testing and other temperature conditioning equipment

iTeh STANDARD PREVIEW

Sicherheitsbestimmungen für elektrische Mess-, Steuer-, Regel- und Laborgeräte - Teil 2-012: Besondere Anforderungen an Klima- und Umwelttestgeräte und andere Temperatur-Konditionierungsgeräte

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Règles de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire - Partie 2-012: Exigences particulières pour les appareils d'essais climatiques et d'environnement, et autres appareils de conditionnement de température

Ta slovenski standard je istoveten z: FprEN IEC 61010-2-012:2019/prAA

ICS:

19.040	Preskušanje v zvezi z okoljem	Environmental testing
19.080	Električno in elektronsko preskušanje	Electrical and electronic testing
71.040.10	Kemijski laboratoriji. Laboratorijska oprema	Chemical laboratories. Laboratory equipment

SIST FprEN IEC 61010-2-012:2019/oprAA:2020

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
**FprEN IEC 61010-2-
012:2019**

prAA

September 2020

ICS

English Version

**Safety requirements for electrical equipment for measurement,
control and laboratory use - Part 2-012: Particular requirements
for climatic and environmental testing and other temperature
conditioning equipment**

Règles de sécurité pour appareils électriques de mesure,
de régulation et de laboratoire - Partie 2-012: Exigences
particulières pour les appareils d'essais climatiques et
d'environnement, et autres appareils de conditionnement de
température

Sicherheitsbestimmungen für elektrische Mess-, Steuer-,
Regel- und Laborgeräte - Teil 2-012: Besondere
Anforderungen an Klima- und Umwelttestgeräte und andere
Temperatur-Konditionierungsgeräte

iTeh STANDARD PREVIEW

This draft amendment prAA, if approved, will modify the European Standard FprEN IEC 61010-2-012:2019; it is submitted to CENELEC members for enquiry.

Deadline for CENELEC: 2020-11-27.

It has been drawn up by CLC/TC 66X. [SIST FprEN IEC 61010-2-012:2019/oprAA:2020](https://standards.iteh.ai/catalog/standards/sist/a4a63c6e-e526-4d74-945a-31091c674010/sist-fpr-en-iec-61010-2-012-2019-opr-aa-2020)

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

This draft amendment 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.

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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

EN IEC 61010-2-012:2019/prAA:2020 (E)**European foreword**

This document (FprEN 61010-2-012:2019/prAA:2020) has been prepared by CLC/TC 66X "Safety of measuring, control, and laboratory equipment".

This document is currently submitted to the Enquiry.

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)

This document amends FprEN 61010-2-012:2019.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

[SIST FprEN IEC 61010-2-012:2019/oprAA:2020](https://standards.iteh.ai/catalog/standards/sist/a4a63c6e-e526-4d74-945a-438e91c064ab/sist-fpren-iec-61010-2-012-2019-opraa-2020)
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1 Addition to Clause 2, “Normative references”

Add the following normative references to Clause 2:

"EN 809, *Pumps and pump units for liquids - Common safety requirements*

EN 837-1, *Pressure gauges - Part 1: Bourdon tube pressure gauges - Dimensions, metrology, requirements and testing*

EN 837-2, *Pressure gauges - Part 2: Selection and installation recommendations for pressure gauges*

EN 837-3, *Pressure gauges - Part 3: Diaphragm and capsule pressure gauges - Dimensions, metrology, requirements and testing*

EN 1736, *Refrigerating systems and heat pumps - Flexible pipe elements, vibration isolators, expansion joints and non-metallic tubes - Requirements, design and installation*

EN 1779:1999, *Non-destructive testing - Leak testing - Criteria for method and technique selection*

EN 12178, *Refrigerating systems and heat pumps - Liquid level indicating devices - Requirements, testing and marking*

EN 12263, *Refrigerating systems and heat pumps - Safety switching devices for limiting the pressure - Requirements and tests*

EN 12284, *Refrigerating systems and heat pumps - Valves - Requirements, testing and marking*

EN 12693, *Refrigerating systems and heat pumps - Safety and environmental requirements - Positive displacement refrigerant compressors*

EN 13136, *Refrigerating systems and heat pumps - Pressure relief devices and their associated piping - Methods for calculation*

EN 13445 (series), *Unfired pressure vessels*

EN 13480 (series), *Metallic industrial piping*

EN 14276-1, *Pressure equipment for refrigerating systems and heat pumps - Part 1: Vessels - General requirements*

EN 14276-2, *Pressure equipment for refrigerating systems and heat pumps - Part 2: Piping - General requirements*

EN 61770, *Electric appliances connected to the water mains - Avoidance of backsiphonage and failure of hose-sets*

IEC 60204-1, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements*

ISO 4126-1, *Safety devices for protection against excessive pressure — Part 1: Safety valves*

ISO 4126-2, *Safety devices for protection against excessive pressure — Part 2: Bursting disc safety devices”*

2 Modification to 5.4.3, “Equipment installation”

Add the following item after n):

“o) Instructions on the prevention of back-siphonage into potable water systems (see 11.101)”

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3 Modification to 6.8.3.1, “The a.c. voltage test”

Replace the first sentence by the following sentence:

“The voltage tester shall be capable of maintaining the test voltage throughout the test **within $\pm 5\%$ of the specified value.**”

4 Modifications to Clause 11, “Protection against HAZARDS from fluids and solid foreign objects”

In 11.1, “General”, delete the added text after the first conformity statement.

Add the following subclause:

“11.101 Protection of hot and cold water services

Back-siphonage from the equipment to the potable water services shall be prevented by means meeting the relevant requirements of EN 61770. Attention is drawn to the existence of national and local regulations. If the means are to be provided by the RESPONSIBLE BODY, this shall be stated in the manufacturer’s installation instructions.

Conformity is checked by inspection and by examination of the manufacturer’s instructions.”

5 Modification to Annex CC, “Safety requirements for components and piping”

Replace Annex CC by the following text:

Annex CC
(normative)

Safety requirements for components and piping

<https://standards.iteh.ai/catalog/standards/sist/a4a63c6e-e526-4d74-945a-999999999999/iec-61010-2-012-2019-999999999999>

The sealed system components can be considered pressure vessels as stated in the Pressure Equipment Directive (PED) 2014/68/EU according to the classification in Table CC.1 and Table CC.2. If the components or piping are classified as a Category II or a higher pressure vessel as stated in the PED, then the requirements of Table CC.3 shall apply including the use of a Notified Body to the PED.

Table CC.1 — Parameters of pressure vessels according to EN 14276-1

Fluid	Nature	PS (bar) ^a	V (L)	PS × V (bar × L)	Category/Article	
if	and	and	and	and	then	
Group 1	Gas	≤ 0,5	-	-	Not subjected to PED ^b	
		> 0,5 and ≤ 200	≤ 1	-	Art. 4.3 ^c	
			> 1	≤ 25		Art. 4.3 ^c
				> 25 and ≤ 50		I
		> 50 and ≤ 200		II		
		> 200 and ≤ 1 000	≤ 1	-	III	
≤ 1 000	> 1	> 200 and ≤ 1 000		III		
		> 1 000		IV		

EN IEC 61010-2-012:2019/prAA:2020 (E)

Fluid	Nature	PS (bar) ^a	V (L)	PS × V (bar × L)	Category/Article
if	and	and	and	and	then
	Liquid ^d	> 1 000	-	-	IV
		≤ 0,5	-	-	Not subjected to PED ^b
		> 0,5 and ≤ 500	≤ 1	-	Art. 4.3 ^c
			≤ 200	-	Art. 4.3 ^c
		> 0,5 and ≤ 10	> 1	> 200	I
		> 10 and ≤ 500			II
		> 500	< 1	-	II
		> 500	> 1	-	III
Group 2	Gas	≤ 0,5	-	-	Not subjected to PED ^b
		> 0,5 and ≤ 1 000	≤ 1	-	Art. 4.3 ^c
			≤ 50	-	Art. 4.3 ^c
			> 50 and ≤ 200	-	I
		> 1 000 and ≤ 3 000	> 1	> 200 and ≤ 1 000	II
			≤ 1	-	III
		> 1 000 and ≤ 3 000	> 1 000 and ≤ 3 000	III	
		> 0,5 and ≤ 4	> 1	> 1 000	III
	> 4	> 3 000		IV	
	> 3 000	-	-	IV	
	Liquid ^d	≤ 0,5	-	-	Not subjected to PED ^b
		> 0,5 and ≤ 10	-	-	Art. 4.3 ^c
		> 10 and ≤ 1 000	≤ 10	-	Art. 4.3 ^c
		> 10 and ≤ 1 000	> 10	≤ 10 000	Art. 4.3 ^c
> 10 and ≤ 500		-	> 10 000	I	
> 1 000		< 10	-	I	
> 500		> 10	> 10 000	II	

^a 1 bar = 0,1 Mpa.
^b PED = Pressure Equipment Directive
^c Art. 4.3 = reference to Article 4.3 of the Pressure Equipment Directive
^d Liquids are considered to be fluids having a vapour pressure of not more than 0,5 bar above the normal atmospheric pressure (1 013 mbar)

EN IEC 61010-2-012:2019/prAA:2020 (E)

Table CC.2 — Parameters of piping according to EN 14276-2

Fluid	Nature	PS (bar) ^a	DN	PS × DN (bar) a	Category/Article
if	and	and	And	and	then
Group 1	Gas	≤ 0,5	-	-	Not subjected to PED ^b
		> 0,5	≤ 25	-	Art. 4.3 ^c
			> 25 and ≤ 100	≤ 1 000	I
			> 100 and ≤ 350	> 1 000 and ≤ 3 500	II
			> 350	> 3 500	III
	Liquid ^d	≤ 0,5	-	-	Not subjected to PED ^b
		> 0,5	≤ 25	-	Art. 4.3 ^c
			-	≤ 2 000	Art. 4.3 ^c
		> 0,5 and ≤ 10	-	> 2 000	I
		> 10 and ≤ 500	-		II
> 500	> 25	-	III		
Group 2	Gas	≤ 0,5	-	-	Not subjected to PED ^b
		> 0,5	≤ 32	-	Art. 4.3 ^c
			> 32 and ≤ 100	≤ 1 000	Art. 4.3 ^c
			> 100 and ≤ 250	> 1 000 and ≤ 3 500	I
			> 250	> 3 500 and ≤ 5 000	II
	Liquid ^d	≤ 0,5	-	-	Not subjected to PED ^b
		> 0,5 and ≤ 10	-	-	Art. 4.3 ^c
		-	-	≤ 5 000	Art. 4.3 ^c
		-	≤ 200	-	Art. 4.3 ^c
		> 10 and ≤ 500	> 200	> 5 000	I
		> 500	> 200	-	II

^a 1 bar = 0,1 Mpa.
^b PED = Pressure Equipment Directive.
^c Art. 4.3 = reference to Article 4.3 of the Pressure Equipment Directive.
^d Liquids are considered to be fluids having a vapour pressure of not more than 0,5 bar above the normal atmospheric pressure (1 013 mbar).

Table CC.3 — Components and piping requirements

Components	Related standards and requirements
Heat exchangers: – pipe coil without air (tube in tube) – multi-tubular (shell and tubes)	EN 14276-1 or EN 13445 series if applicable combined with 11.7. 2 of the present standard
Plate heat exchangers	EN 14276-1 or EN 13445 series if applicable combined with 11.7. 2 of the present standard
Headers and coils with air as secondary fluid	EN 14276-2 combined with a production leak tightness test based on guidance from EN 1779
Receiver/accumulator/economizer	EN 14276-1 or EN 13445 series if applicable combined with 11.7. 2 of the present standard
Oil separator	EN 14276-1 or EN 13445 series if applicable combined with 11.7. 2 of the present standard
Drier	EN 14276-1 or EN 13445 series if applicable combined with 11.7. 2 of the present standard
Filter	EN 14276-1 or EN 13445 series if applicable combined with 11.7. 2 of the present standard
Muffler	EN 14276-1 or EN 13445 series if applicable combined with 11.7. 2 of the present standard
Hermetic positive displacement compressor	IEC 60335-2-34 or EN 12693
Semi hermetic positive displacement compressor	IEC 60335-2-34 or EN 12693
Open positive displacement compressor	EN 12693
Non-positive displacement compressor	EN 14276-1 or EN 13445 if applicable combined with IEC 60204-1
Pump General requirements Additional requirements for pumps in REFRIGERATING SYSTEMS and heat pumps with R717	EN 809 combined with IEC 60204-1, and combined with a production leak tightness test based on guidance from EN 1779 and the marking requirements from 5.1.101 of the present standard
Piping	EN 14276-2 or EN 13480 series
Piping joints Permanent joints Detachable joints	EN 14276-2 combined with a production leak tightness test based on guidance from EN 1779 and an evaluation of the suitability of the joint for the pipe, piping material, pressure, temperature and fluid
Flexible piping	EN 1736
Valves	EN 12284
Safety valve	EN 13136 and ISO 4126-1 combined with a production leak tightness test based on guidance from EN 1779
Safety switching devices for limiting the pressure	EN 12263 combined with a production leak tightness test based on guidance from EN 1779
Isolating valves	EN 12284
Hand operated valves	EN 12284