

<b>STN</b>	<b>Konektory pre elektrické a elektronické zariadenia Požiadavky na výrobok Časť 2-012: Kruhové konektory Podrobná špecifikácia pre konektory s vnútorným zatlačením na princípe konektorov M12 podľa IEC 61076-2-101, IEC 61076-2-109, IEC 61076-2-111 a IEC 61076-2-113</b>	<b>STN EN IEC 61076-2-012</b>  35 4621
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Connectors for electrical and electronic equipment - Product Requirements - Part 2-012: Circular connectors - Detail specification for connectors with inner push-pull locking based on M12 connector interfaces according to IEC 61076-2-101, IEC 61076-2-109, IEC 61076-2-111 and IEC 61076-2-113

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/20

Obsahuje: EN IEC 61076-2-012:2020, IEC 61076-2-012:2020

**132010**

EUROPEAN STANDARD

**EN IEC 61076-2-012**

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2020

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English Version

**Connectors for electrical and electronic equipment - Product Requirements - Part 2-012: Circular connectors - Detail specification for connectors with inner push-pull locking based on M12 connector interfaces according to IEC 61076-2-101, IEC 61076-2-109, IEC 61076-2-111 and IEC 61076-2-113 (IEC 61076-2-012:2020)**

Connecteurs pour équipements électriques et électroniques  
- Exigences de produit - Partie 2-012 : Connecteurs  
circulaires - Spécification particulière relative aux  
connecteurs avec verrouillage interne de type pousser-tirer  
fondée sur les interfaces de connecteur M12 conformément  
à l'IEC 61076-2-101, l'IEC 61076-2-109, l'IEC 61076-2-111  
et l'IEC 61076-2-113  
(IEC 61076-2-012:2020)

Steckverbinder für elektrische und elektronische  
Einrichtungen - Produktanforderungen - Teil 2-012:  
Rundsteckverbinder - Bauartspezifikation für  
Steckverbinder mit innerer Push-pull-Verriegelung auf Basis  
Steckverbindern mit Schraubverriegelungen M12 nach IEC  
61076-101, IEC 61076-109, IEC 61076-111 und IEC  
61076-113  
(IEC 61076-2-012:2020)

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**EN IEC 61076-2-012:2020 (E)****European foreword**

The text of document 48B/2813/FDIS, future edition 1 of IEC 61076-2-012, prepared by SC 48B "Electrical connectors" of IEC/TC 48 "Electrical connectors and mechanical structures for electrical and electronic equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61076-2-012:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2021-05-31 level by publication of an identical national standard or by endorsement
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## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-581	2008	International Electrotechnical Vocabulary -- Part 581: Electromechanical components for electronic equipment		-
IEC 60068-1	-	Environmental testing - Part 1: General and guidance	EN 60068-1	-
IEC 60512-2-1	-	Connectors for electronic equipment - Tests and measurements - Part 2-1: Electrical continuity and contact resistance tests - Test 2a: Contact resistance - Millivolt level method	EN 60512-2-1	-
IEC 60512-3-1	-	Connectors for electronic equipment - Tests and measurements - Part 3-1: Insulation tests - Test 3a: Insulation resistance	EN 60512-3-1	-
IEC 60512-4-1	-	Connectors for electronic equipment - Tests and measurements - Part 4-1: Voltage stress tests - Test 4a: Voltage proof	EN 60512-4-1	-
IEC 60512-5-1	-	Connectors for electronic equipment - Tests and measurements - Part 5-1: Current-carrying capacity tests - Test 5a: Temperature rise	EN 60512-5-1	-
IEC 60512-6-3	-	Connectors for electronic equipment - Tests and measurements - Part 6-3: Dynamic stress tests - Test 6c: Shock	EN 60512-6-3	-
IEC 60512-6-4	-	Connectors for electronic equipment - Tests and measurements - Part 6-4: Dynamic stress tests - Test 6d: Vibration (sinusoidal)	EN 60512-6-4	-
IEC 60512-9-1	-	Connectors for electronic equipment - Tests and measurements - Part 9-1: Endurance tests - Test 9a: Mechanical operation	EN 60512-9-1	-

**EN IEC 61076-2-012:2020 (E)**

IEC 60512-13-1	-	Connectors for electronic equipment -EN 60512-13-1	-
		Tests and measurements - Part 13-1: Mechanical operation tests - Test 13a: Engaging and separating forces	
IEC 60512-13-2	-	Connectors for electronic equipment -EN 60512-13-2	-
		Tests and measurements - Part 13-2: Mechanical operation tests - Test 13b: Insertion and withdrawal forces	
IEC 60512-13-5	-	Connectors for electronic equipment -EN 60512-13-5	-
		Tests and measurements - Part 13-5: Mechanical operation tests - Test 13e: Polarizing and keying method	
IEC 60512-15-6	-	Connectors for electronic equipment -EN 60512-15-6	-
		Tests and measurements - Part 15-6: Connector tests (mechanical) - Test 15f: Effectiveness of connector coupling devices	
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	1991
-	-		+ corrigendum May 1993
+ A1	1999		+ A1 2000
+ A2	2013		+ A2 2013
IEC 60664-1	-	Insulation coordination for equipment within low-voltage supply systems - Part 1: Principles, requirements and tests	EN IEC 60664-1 -
IEC (mod)	60998-2-12002	Connecting devices for low-voltage circuits for household and similar purposes - Part 2-1: Particular requirements for connecting devices as separate entities with screw- type clamping units	EN 60998-2-1 2004
IEC 61076-1	2006	Connectors for electronic equipment -EN 61076-1	2006
		Product requirements - Part 1: Generic specification	
IEC 61076-2-010	-	Connectors for electrical and electronic- equipment - Product requirements - Part 2- 010: Circular connectors - Detail specification for push pull connectors with outer locking mechanism, based on mating interfaces according to IEC 61076-2-101, IEC 61076-2-109, IEC 61076-2-111 and IEC 61076-2-113	-
IEC 61076-2-101	2012	Connectors for electronic equipment -EN 61076-2-101	2012
		Product requirements - Part 2-101: Circular connectors - Detail specification for M12 connectors with screw-locking	
IEC 61076-2-109	2014	Connectors for electronic equipment -EN 61076-2-109	2014
		Product requirements - Part 2-109: Circular connectors - Detail specification for connectors with M 12 x 1 screw-locking, for data transmission frequencies up to 500 MHz	

**EN IEC 61076-2-012:2020 (E)**

IEC 61076-2-111	2017	Connectors for electrical and electronic equipment - Product requirements - Part 2-111 111: Circular connectors - Detail specification for power connectors with M12 screw-locking	EN IEC 61076-2-2018
IEC 61076-2-113	2017	Connectors for electronic equipment - Product requirements - Part 2-113: Circular connectors - Detail specification for connectors with M12 screw locking with power and signal contacts for data transmission with frequency up to 100 MHz	EN 61076-2-113 2017
IEC 61984	-	Connectors - Safety requirements and tests	EN 61984 -



# IEC 61076-2-012

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# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

**Connectors for electrical and electronic equipment – Product requirements – Part 2-012: Circular connectors – Detail specification for connectors with inner push-pull locking based on M12 connector interfaces according to IEC 61076-2-101, IEC 61076-2-109, IEC 61076-2-111 and IEC 61076-2-113**

**Connecteurs pour équipements électriques et électroniques – Exigences de produit – Partie 2-012: Connecteurs circulaires – Spécification particulière relative aux connecteurs avec verrouillage interne de type pousser-tirer fondée sur les interfaces de connecteur M12 conformément à l'IEC 61076-2-101, l'IEC 61076-2-109, l'IEC 61076-2-111 et l'IEC 61076-2-113**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**CONNECTORS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT –  
PRODUCT REQUIREMENTS –**
**Part 2-012: Circular connectors – Detail specification for connectors with  
inner push-pull locking based on M12 connector interfaces according to  
IEC 61076-2-101, IEC 61076-2-109, IEC 61076-2-111 and IEC 61076-2-113**

## FOREWORD

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International Standard IEC 61076-2-012 has been prepared by subcommittee 48B: Electrical connectors, of IEC technical committee 48: Electrical connectors and mechanical structures for electrical and electronic equipment.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
48B/2813/FDIS	48B/2831/RVD

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

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

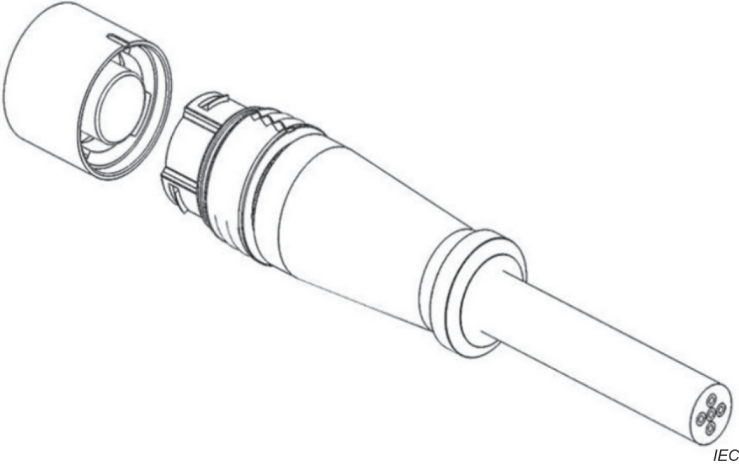
A list of all parts in the IEC 61076 series, published under the general title *Connectors for electrical and electronic equipment – Product requirements*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.



<p>IEC SC 48B – Electrical connectors</p> <p>Specification available from:</p> <p>IEC General secretariat</p> <p>Or from the addresses shown on the inside cover.</p>	<p>IEC 61076-2-012 Ed.1</p>
<p>Detail specification in accordance with IEC 61076-1</p>	
	<p>Circular M12 inner push-pull connectors for power and/or signal and/or data transmission</p> <p>Fixed connectors with female contacts and inner push-pull mechanism, mateable with plugs with inner push-pull locking or M12 screw locking</p> <p>Free cable connectors with male contacts and inner push-pull locking</p> <p>Two types of free cable connectors with female contacts, with inner push-pull mechanism and either M12 screw or outer push-pull mechanism according to IEC 61076-2-010</p> <p>Rewirable – Non-rewirable</p> <p>Fixed connectors, with rear or single hole (front) mounting</p> <p>Straight and right-angled free cable connectors</p>

## CONNECTORS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT – PRODUCT REQUIREMENTS –

### Part 2-012: Circular connectors – Detail specification for connectors with inner push-pull locking based on M12 connector interfaces according to IEC 61076-2-101, IEC 61076-2-109, IEC 61076-2-111 and IEC 61076-2-113

#### 1 Scope

This part of IEC 61076 specifies circular connectors with an inner push-pull locking mechanism of a size derived from and thus being compatible with M12 screw-locking connectors and with mating interfaces according to IEC 61076-2-101, IEC 61076-2-109, IEC 61076-2-111 and IEC 61076-2-113.

A female fixed connector with inner push-pull locking according to this document is intermateable with a correspondingly coded male free connector with M12 screw-locking according to IEC 61076-2-101, IEC 61076-2-109, IEC 61076-2-111 or IEC 61076-2-113.

NOTE 1 M12 is the dimension of the thread of the screw-locking mechanism of circular connectors with M12 screw-locking.

This document covers both:

- a) power connectors with current ratings up to 16 A and voltage ratings up to 630 V, typically used for power supply of electrical equipment used in industrial premises, and
- b) connectors for data and signal transmission with frequencies up to 500 MHz.

NOTE 2 The power connectors are not suitable as power distribution socket-outlets in electrical installations of buildings.

These connectors consist of both fixed and free connectors, either rewirable or non-rewirable, with M12 inner push-pull locking as explained above. Male connectors have round contacts from  $\varnothing 0,6$  mm up to  $\varnothing 1,5$  mm.

This document covers various types of connectors identified by their "codings" with different contact arrangement, not mutually interchangeable.

The design of the inner push-pull mechanism prevents the unintended mating of the male inner push-pull free connector with the female connector with M12 screw-locking even for identical coding.

Some styles of free connectors with female contacts covered in this document are equipped with both inner and outer push-pull locking for intermateability also with correspondingly coded male fixed or free connectors according to IEC 61076-2-010.

#### 2 Normative references

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

IEC 60050-581-2008, *International Electrotechnical Vocabulary – Part 581: Electromechanical components for electronic equipment*

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IEC 60068-1, *Environmental testing – Part 1: General and guidance*

IEC 60512-2-1, *Connectors for electronic equipment – Tests and measurements – Part 2-1: Electrical continuity and contact resistance tests – Test 2a: Contact resistance – Millivolt level method*

IEC 60512-3-1, *Connectors for electronic equipment – Tests and measurements – Part 3-1: Insulation tests – Test 3a: Insulation resistance*

IEC 60512-4-1, *Connectors for electronic equipment – Tests and measurements – Part 4-1: Voltage stress tests – Test 4a: Voltage proof*

IEC 60512-5-1, *Connectors for electronic equipment – Tests and measurements – Part 5-1: Current-carrying capacity tests – Test 5a: Temperature rise*

IEC 60512-6-3, *Connectors for electronic equipment – Tests and measurements – Part 6-3: Dynamic stress tests – Test 6c: Shock*

IEC 60512-6-4, *Connectors for electronic equipment – Tests and measurements – Part 6-4: Dynamic stress tests – Test 6d: Vibration (sinusoidal)*

IEC 60512-9-1, *Connectors for electronic equipment – Tests and measurements – Part 9-1: Endurance tests – Test 9a: Mechanical operation*

IEC 60512-13-1, *Connectors for electronic equipment – Tests and measurements – Part 13-1: Mechanical operation tests – Test 13a: Engaging and separating forces*

IEC 60512-13-2, *Connectors for electronic equipment – Tests and measurements – Part 13-2: Mechanical operation tests – Test 13b: Insertion and withdrawal forces*

IEC 60512-13-5, *Connectors for electronic equipment – Tests and measurements – Part 13-5: Mechanical operation tests – Test 13e: Polarizing and keying method*

IEC 60512-15-6, *Connectors for electronic equipment – Tests and measurements – Part 15-6: Connector tests (mechanical) – Test 15f: Effectiveness of connector coupling devices*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

IEC 60529:1989/AMD1:1999

IEC 60529:1989/AMD2:2013

IEC 60664-1, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60998-2-1:2002, *Connecting devices for low-voltage circuits for household and similar purposes – Part 2-1: Particular requirements for connecting devices as separate entities with screw-type clamping units*

IEC 61076-1:2006, *Connectors for electronic equipment – Product requirements – Part 1: Generic specification*

IEC 61076-2-010, *Connectors for electronic equipment – Product requirements – Part 2-010: Circular connectors – Detail specification for push-pull connectors with outer locking mechanism, based on mating interfaces according to IEC 61076-2-101, IEC 61076-2-109, IEC 61076-2-111 and IEC 61076-2-113*<sup>1</sup>

IEC 61076-2-101:2012, *Connectors for electronic equipment – Product requirements – Part 2-101: Circular connectors – Detail specification for M12 connectors with screw-locking*

IEC 61076-2-109:2014, *Connectors for electronic equipment – Product requirements – Part 2-109: Circular connectors – Detail specification for connectors with M 12 × 1 screw-locking, for data transmission frequencies up to 500 MHz*

IEC 61076-2-111:2017, *Connectors for electrical and electronic equipment – Product requirements – Part 2-111: Circular connectors – Detail specification for power connectors with M12 screw-locking*

IEC 61076-2-113:2017, *Connectors for electronic equipment – Product requirements – Part 2-113: Circular connectors – Detail specification for connectors with M12 screw locking with power and signal contacts for data transmission with frequency up to 100 MHz*

IEC 61984, *Connectors – Safety requirements and tests*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**