

INTERNATIONAL STANDARD

IEC 61076-2-101

First edition
2003-10

Connectors for electronic equipment –

Part 2-101:

Circular connectors –

Detail specification for circular connectors M8 with screw- or snap-locking, M12 with screw-locking for low voltage applications

Connecteurs pour équipements électroniques –

Partie 2-101:

Connecteurs circulaires –

Spécification particulière pour les connecteurs circulaires M8 à vis ou à encliquetage, M12 à vis pour applications basse tension



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

CONNECTORS FOR ELECTRONIC EQUIPMENT –**Part 2-101: Circular connectors –
Detail specification for circular connectors M8
with screw- or snap-locking, M12 with screw-locking
for low voltage applications**

FOREWORD

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International Standard IEC 61076-2-101 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

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

FDIS	Report on voting
48B/1362/FDIS	48B/1384/RVD

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.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated when a new edition is prepared.

The committee has decided that the contents of this publication will remain unchanged until 2005. At this date, the publication will be

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- withdrawn;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

A bilingual edition of this standard may be issued at a later date.

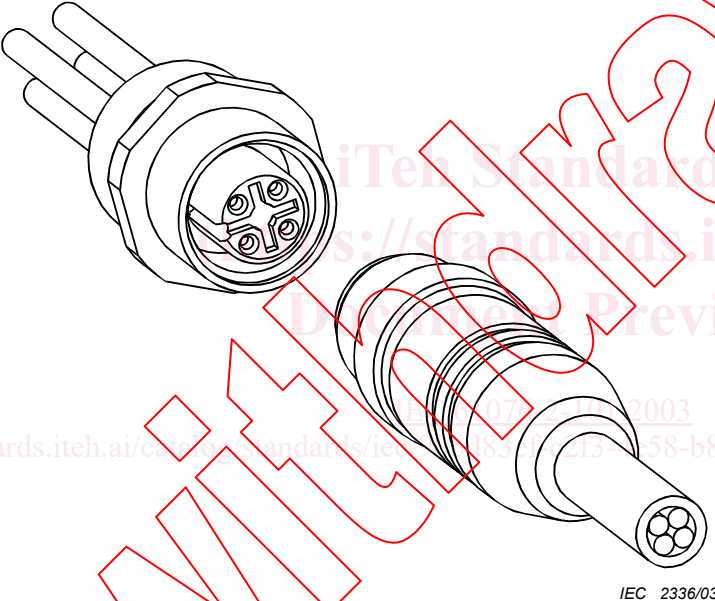
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**CONNECTORS FOR ELECTRONIC EQUIPMENT –
Part 2-101: Circular connectors –
Detail specification for circular connectors M8
with screw- or snap-locking, M12 with screw-locking
for low voltage applications**

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC SC 48B – Connectors	IEC 61076-2-101
ELECTRONIC COMPONENTS in accordance with IEC 61076-1	Blank detail specification IEC 61076-2-001
 <p align="right">IEC 2336/03</p>	Circular connectors M8/Ø8 mm 3 and 4 poles M12 2 to 8 poles Pin and socket connectors Rewireable – Non-rewireable
	Free cable connectors Straight and right angle connectors Fixed connectors Flange mounting Single hole mounting Pin sockets
Information on the availability of components qualified to this detail specification is given in the qualified products list.	

1 General information

Throughout this detail specification dimensions are in mm.

1.1 Scope

This part of IEC 61076 describes circular connectors for use in industrial control circuits devices like switchgear and controlgear. These connectors consist of fixed and free connectors either rewirable or non-rewirable, M8 with screw-locking or \varnothing 8 mm with snap-locking, M12 with screw-locking.

Male connectors have round contacts \varnothing 0,8 mm and \varnothing 1,0 mm.

1.2 Recommended method of termination

The contact terminations shall be of the following types: screw, crimp, solder, insulation piercing or insulation displacement.

1.2.1 Number of contacts or contact cavities

Connectors type D	M12	2 to 8 contacts
Connectors type E	M8/ \varnothing 8 mm	3 and 4 contacts

1.3 Ratings and characteristics

Rated voltage:	Connectors type D:	2 to 4 poles	250 V AC/DC
		5 poles	60 V AC/DC
		6 to 8 poles	30 V AC/DC

Connectors type E:	3 poles	60 V AC/DC
	4 poles	30 V AC/DC

Current rating:	Type D	2 to 5 poles	= 4 A
		6 to 8 poles	= 2 A
	Type E	3 poles	= 3 A
		4 poles	= 3 A

Insulation resistance: $> 10^8 \Omega$

Climatic category: see 4.1 and Table 8

Contact spacing: see Clause 3

Information on the availability of components or manufacturer who have components qualified to this detail specification is given in the qualified products list.

1.4 Normative references

The following referenced documents are indispensable for the application 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, *International Electrotechnical Vocabulary – Electromechanical components for electronic equipment*

IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*
Amendment 1 (1992)

IEC 60352 (all parts), *Solderless connections*

IEC 60512 (all parts), *Connectors for electronic equipment – Tests and measurements*

IEC 60512-1-100, *Connectors for electronic equipment – Tests and measurements – Part 1-100: General – Applicable publications*

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

IEC 60664-1:1992, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60998-2-1, *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 60999 (all parts), *Connecting devices – Electrical copper conductors – Safety requirements for screw-type and screwless-type clamping units*

IEC 61076-1:1995, *Connectors with assessed quality, for use in d.c., low frequency analogue and in digital high speed data applications – Part 1: Generic specification*
Amendment 1 (1996)

IEC 61076-2, *Connectors for use in d.c., low-frequency analogue and digital high speed data applications – Part 2: Circular connectors with assessed quality – Sectional specification*

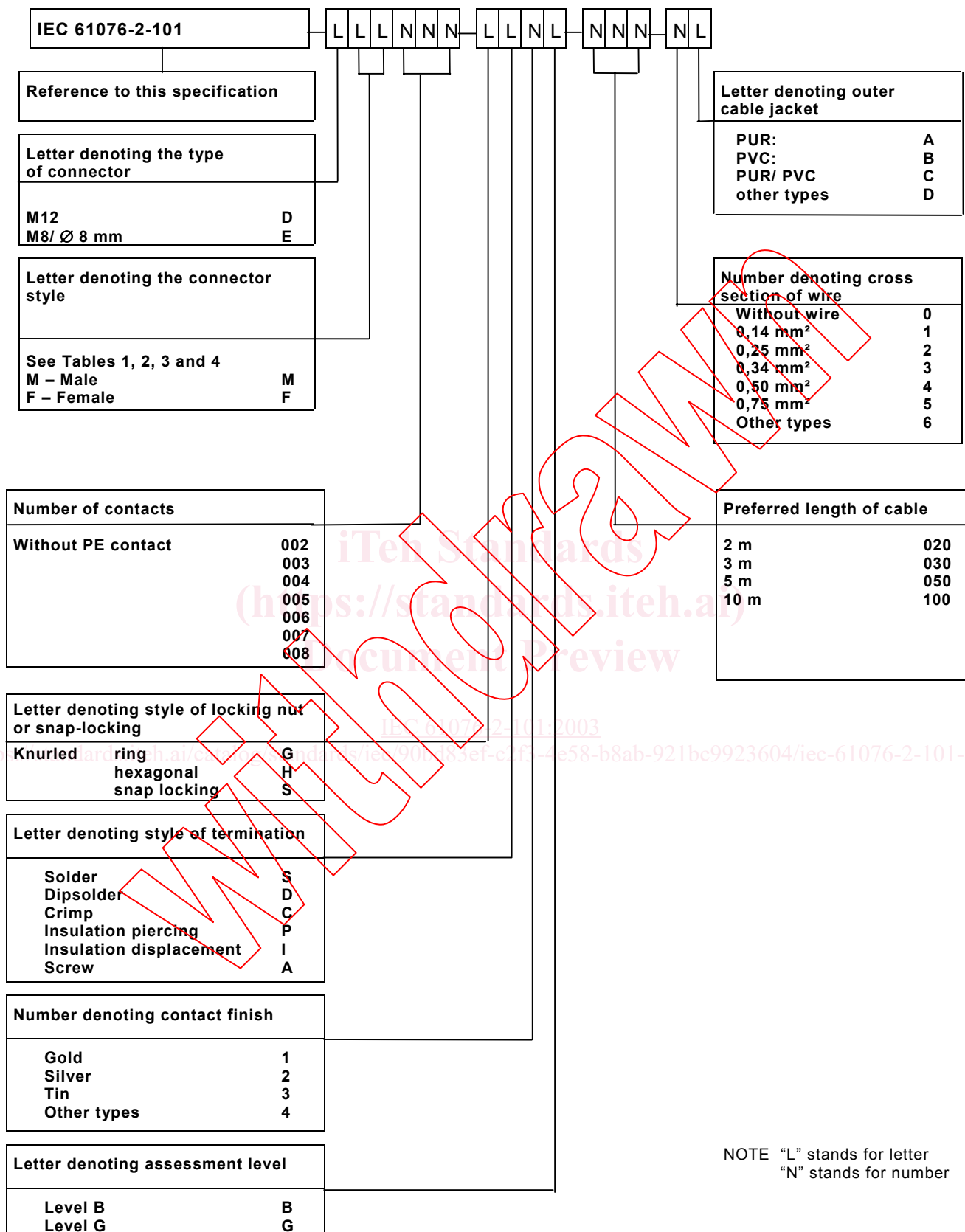
IEC 61076-2-001, *Connectors for electronic equipment – Part 2-001: Circular connectors – Blank detail specification*

ISO 1302, *Geometrical Product Specifications (GPS) – Indication of surface texture in technical product documentation*

1.5 Marking

The marking of the connector and the package shall be in accordance with 2.6 of IEC 61076-2.

1.6 IEC Type designation



1.7 Ordering information

For ordering connectors to this detail specification, the type designation described in 1.6 shall be used.

EXAMPLE 1

non-rewireable free connector.

DMF 004 – G1B – 020 – 3A

Free connector M12 Style MF, non-rewireable, right angled version with female contacts, 4 poles, with knurled ring, gold contact finish, assessment level B, cable length 2,0 m, cross section of wire 0,34 mm², PUR cable jacket.

EXAMPLE 2

rewireable free connector.

DKM 004 – GC3B

Free connector M12 Style KM, rewireable, right angled version with female contacts, with 4 poles, with knurled ring, crimp terminals, tin contact finish, assessment level B.

2 Technical information

Dimensions in mm.

2.1 Definitions

For the purposes of this part of IEC 61076, the terms and definitions given in IEC 581 apply.

2.2 Survey of styles and variants

2.2.1 Fixed connectors type D

Type D denotes M12 connectors. For interface dimensions, see 3.2.1.

Table 1 – Styles of fixed connectors type D

Style	Description
AM	Tube insert mounting without thread, male contacts
BM	Tube insert mounting with thread M12x1, male contacts
DM	Fixed connector, square flange front mounting, male contacts
EM	Fixed connector, with wire ends, single hole mounting Pg9, ¹⁾ , male contacts
FM	Fixed connector, with wire ends, single hole mounting Pg13,5, ¹⁾ , male contacts
GM	Fixed connector, with wire ends, single hole mounting Pg9, ¹⁾ , keyway orientation, male contacts
HM	Fixed connector, with wire ends, single hole rear mounting Pg13,5, ¹⁾ , keyway orientation, male contacts
EF	Fixed connector, with wire ends, single hole mounting Pg9, ¹⁾ , female contacts
FF	Fixed connector, with wire ends, single hole mounting Pg13,5, ¹⁾ , female contacts
GF	Fixed connector, with wire ends, single hole rear mounting Pg9, ¹⁾ , keyway orientation, female contacts
HF	Fixed connector, with wire ends, single hole rear mounting Pg13,5, ¹⁾ , keyway orientation, female contacts

¹⁾ For Pg dimensions, see Annex A.

2.2.1.1 Style AM

Dimensions in mm

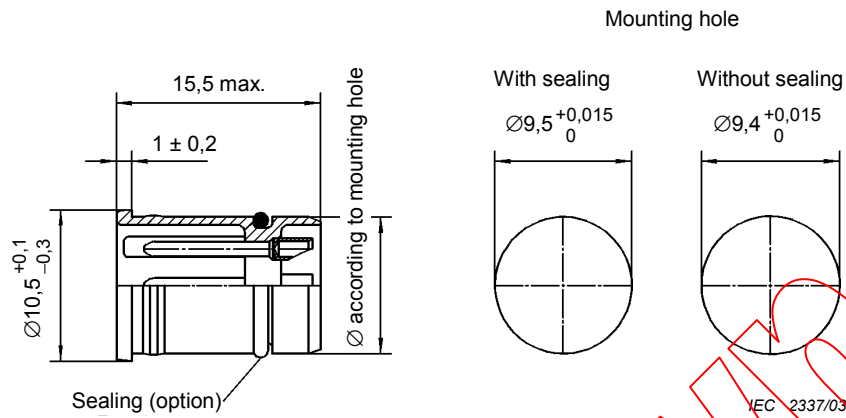


Figure 1 – Tube insert mounting without thread, male contacts

2.2.1.2 Style BM

Dimensions in mm

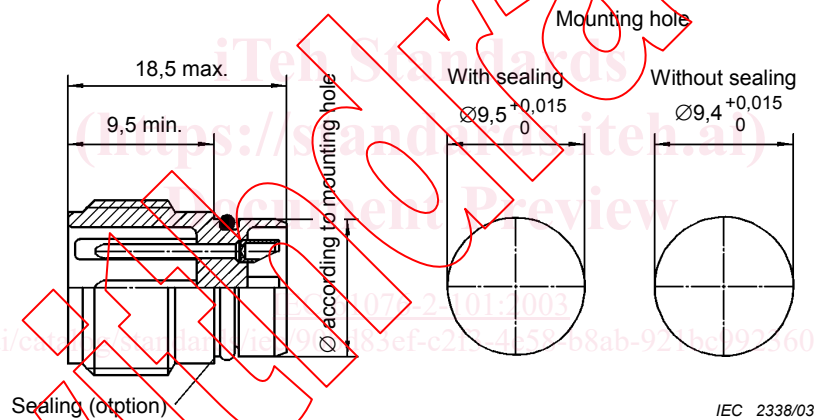


Figure 2 – Tube insert mounting with thread M12x1, male contacts