

PUBLICLY AVAILABLE SPECIFICATION

PRE-STANDARD

**Connectors for electronic equipment – Product requirements –
Part 2-108: Circular connectors – Detail specification for glass to metal seal
style M12 connectors with screw-locking intended to mate with connectors
conforming to IEC 61076-2-101**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**CONNECTORS FOR ELECTRONIC EQUIPMENT –
PRODUCT REQUIREMENTS –****Part 2-108: Circular connectors – Detail specification for
glass to metal seal style M12 connectors with screw-locking
intended to mate with connectors conforming to IEC 61076-2-101**

FOREWORD

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A PAS is a technical specification not fulfilling the requirements for a standard, but made available to the public.

IEC-PAS 61076-2-108 has been prepared by subcommittee 48B: Connectors, of technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

The text of this PAS is based on the following document:

This PAS was approved for publication by the P-members of the committee concerned as indicated in the following document

Draft PAS	Report on voting
48B/1975/PAS	48B/2037/RVD

Following publication of this PAS, which is a pre-standard publication, the technical committee or subcommittee concerned may transform it into an International Standard.

This PAS shall remain valid for an initial maximum period of 3 years starting from the publication date. The validity may be extended for a single 3-year period, following which it shall be revised to become another type of normative document, or shall be withdrawn.

This PAS complements IEC 61076-2-101 Ed.2 by adding glass to metal seal styles and the required testing. The following notable additions have been made:

- the introduction of glass to metal seal fixed connector styles WM, XM, YM and ZM;
- the glass to metal styles are intermateable with free connector styles in IEC 61076-2-101 Ed.2;
- pressure differential test has been added to the test groups;
- additional contact termination types added:
 - eyelet – the termination end is flattened and pierced with a hole to provide both mechanical retention of the wire as well as solder attachment,
 - rounded – terminal post with rounded (domed) end,
 - PCB – termination suitable for insertion into printed circuits.

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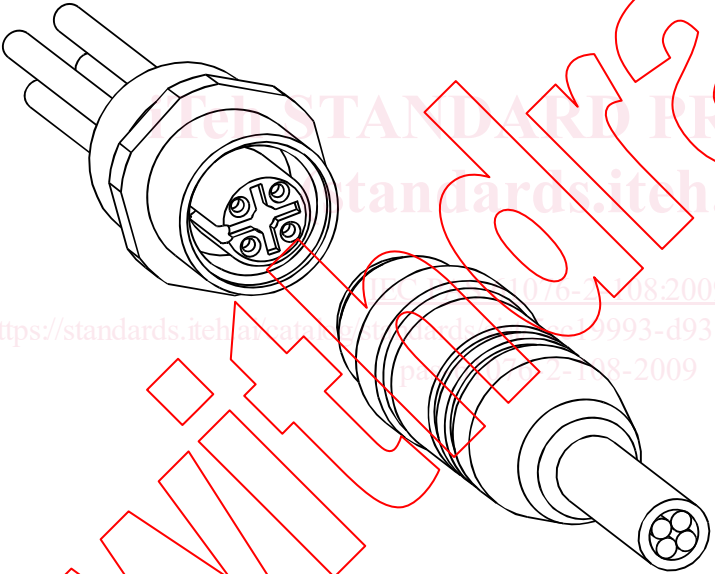
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Withdawn

**CONNECTORS FOR ELECTRONIC EQUIPMENT –
PRODUCT REQUIREMENTS –**

**Part 2-108: Circular connectors – Detail specification for
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intended to mate with connectors conforming to IEC 61076-2-101**

<p>IEC SC 48B – Connectors</p> <p>Specification available from: IEC General secretariat or from the addresses shown on the inside cover.</p>	<p>IEC/PAS 61076-2-108 Ed.1</p>
<p>ELECTRONIC COMPONENTS</p> <p>DETAIL SPECIFICATION in accordance with IEC 61076-1</p>	<p>Page 5 of 17</p>
 <p>Fixed connector with glass to metal seal</p> <p>Free connector shown is representative only and shall conform to IEC 61076-2-101</p>	<p>Circular connectors M12 2 to 12 way Male contacts Female connectors Rewireable</p> <p>Fixed connectors with glass to metal seals</p> <p>Flange mounting Single hole mounting</p> <p>Pin contacts only</p>

1 General information

Throughout this standard dimensions are in mm.

1.1 Scope

This PAS describes circular connectors M12 typically used for industrial process measurement and control. These connectors consist of fixed glass to metal sealed styles with rewirable male contacts. Female connectors have round contacts \varnothing 0,6 mm, \varnothing 0,76 mm, \varnothing 0,8 mm and \varnothing 1,0 mm.

The different codings prevent the mating of these coded male or female connectors to any other interfaces and cross-mating between the different codings.

NOTE M12 is the dimension of the thread of the screw locking mechanism of these circular connectors.

1.2 Recommended method of termination

The contact terminations shall be of the following types: Eyelet, solder PCB, rounded or crimp.

1.2.1 Number of contacts or contact cavities

The number of contacts or contact cavities shall be in accordance with 1.2.1 of IEC 61076-2-101.

1.3 Ratings and characteristics

The ratings and characteristics shall be in accordance with 1.3 of IEC 61076-2-101.

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 (IEV) – Part 581: Electromechanical components for electronic equipment*

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

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

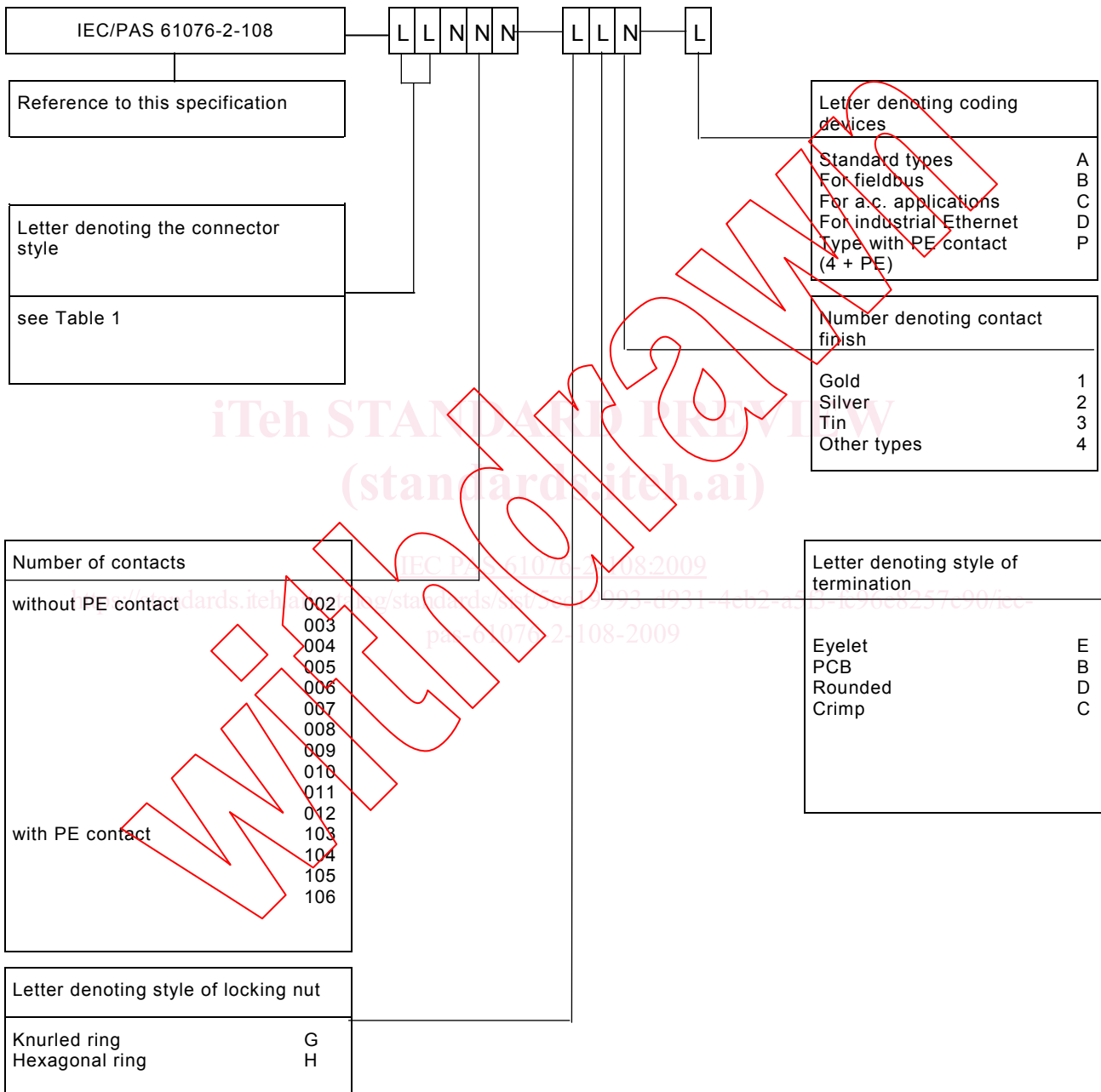
IEC 61076-2-101:2008, *Connectors for electronic equipment – Product requirements – Part 2-101: Circular connectors – Detail specification for M12 connectors with screw-locking*

IEC 61984:2008, *Connectors – Safety requirements and tests*

1.5 Marking

The marking of the connector and the package shall be in accordance with 2.7 of IEC 61076-1.

1.6 IEC Type designation



Notes:

This connector range is fully intermatable and interchangeable with connectors that conform to IEC 61076-2-101.

The range consists of fixed connector styles only, with male contacts. The mating connector is a free connector style with female contacts conforming to IEC 61076-2-101.

In the above type designation "L" stands for letter and "N" stands for number.

1.7 Ordering information

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

Example 1: Glass to metal seal fixed connector YM 004 – HB1-A: Fixed connector Style YM, glass to metal seal, jam nut rear mounting, male contacts with 5 mm long PCB terminations, 4 way, gold contact finish, coding A.

1.8 Safety aspects

For safety aspects IEC 61984 shall be considered unless otherwise specified.

2 Technical information

2.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-581 apply as well as the following.

2.1.1

glass to metal seal

a form of construction whereby the connector contacts are housed in a glass insert which is inside a metal connector shell so as to form a connector with a hermetic seal which may be used to isolate differing environments

2.1.2

matched glass to metal seal

a form of construction whereby the thermal expansion characteristics of the glass, the metallic contacts, and the connector shell are similar and the seal between the glass and the metal is formed by a chemical bond

2.1.3

compression glass to metal seal

a form of construction whereby due to its higher coefficient of expansion the shell contracts around the glass during the solidification phase of manufacture applying a compression force to the glass insert so as to form a seal

2.1.4

mounting orientation

circular mounting position of the connector in relation to the polarization of the mating interface

NOTE Where the free connector has an angled cable entry (as opposed to an in-line cable entry), the angle between the cable entry direction and the polarization keyway should be specified.

2.2 Survey of styles and variants

For all connector styles with cables the length E of the cable/contact shall be agreed between manufacturer and user.

For interface dimensions see 3.2.

The interface dimensions of the female styles shall be chosen according to the common characteristics of the male styles.

For reliable intermateability the dimensions of the female connector body as detailed in Annex A of IEC 61076-2-101 shall be met.

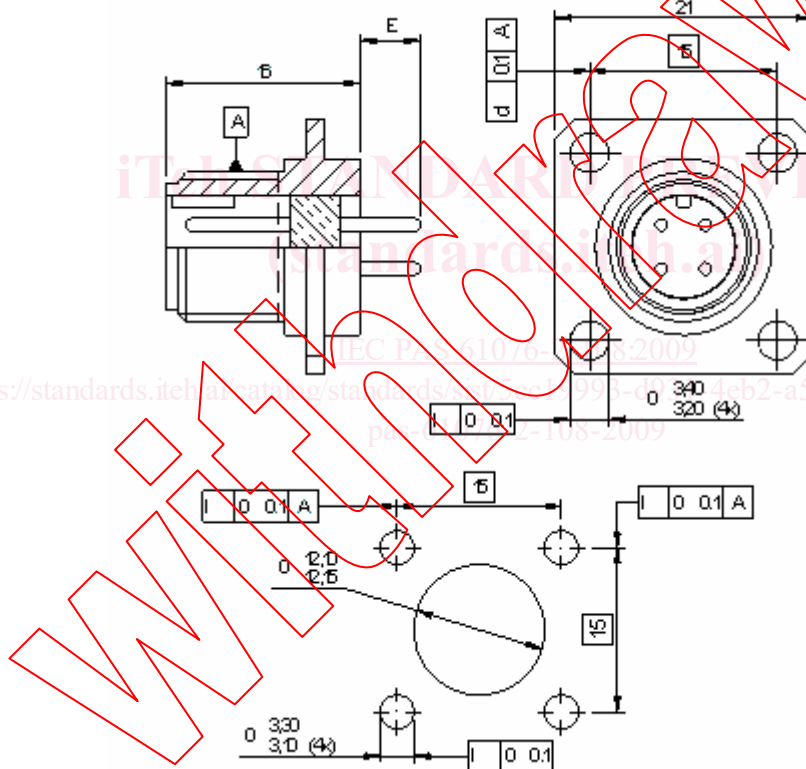
2.2.1 Fixed connectors

Table 1 – Styles of fixed connectors

Style	Description
WM	Fixed connector, glass to metal seal, single hole, rear mounting M14 x 1,5, male contacts
XM	Fixed connector, glass to metal seal, round flange, front mounting, male contacts
YM	Fixed connector, glass to metal seal, jam nut, rear mounting, male contacts
ZM	Fixed connector, glass to metal seal, through flange mounting, male contacts

NOTE For new connectors according to this PAS, Pg screw threads according to DIN 46320 (withdrawn) shall not be applicable. For information on Pg threads, see Annex B of IEC 61076-2-101.

2.2.1.1 Style WM



E Length of contacts

Type of contact shall be Eyelet, solder, PCB or rounded.

Figure 1 – Fixed connector, glass to metal seal, square flange, front mounting, male contacts