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Responsible committee: EPL/48 Electromechanical components and mechanical structures for electronic equipment

Interested committees:

Title: BS EN IEC 61076-2-118 Circular connectors - Detail specification for shielded and unshielded, free and fixed connectors with bayonet-locking size B12, B17, B23 and B40, for power, signal and data transmission

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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UK Vote

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



48B/3081/CD

COMMITTEE DRAFT (CD)

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2024-02-23

SUPERSEDES DOCUMENTS:
48B/3024/CD, 48B/3047A/CC

IEC SC 48B : ELECTRICAL CONNECTORS	
SECRETARIAT: United States of America	SECRETARY: Mr Jeffrey Toran
OF INTEREST TO THE FOLLOWING COMMITTEES: SC 46C, SC 65C, ISO/IEC JTC 1/SC 25	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CD to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY	

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TITLE:

Circular connectors – Detail specification for shielded and unshielded, free and fixed connectors with bayonet-locking size B12, B17, B23 and B40, for power, signal and data transmission

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**CONNECTORS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT –
PRODUCT REQUIREMENTS –****Part 2-118: Circular connectors – Detail specification for shielded and
unshielded, free and fixed connectors with bayonet-locking size B12, B17,
B23 and B40, for power, signal and data transmission**

FOREWORD

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IEC 61076-2-118 has been prepared by subcommittee 48B: Electrical connectors, of IEC technical committee 48: Electrical connectors and mechanical structures for electrical and electronic equipment. It is an International Standard.

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

Draft	Report on voting
48B/2969/ NP	48B/2969/PNW

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

277 This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in
278 accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available
279 at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are
280 described in greater detail at www.iec.ch/publications.

281 The committee has decided that the contents of this document will remain unchanged until the
282 stability date indicated on the IEC website under webstore.iec.ch in the data related to the
283 specific document. At this date, the document will be

- 284 • reconfirmed,
- 285 • withdrawn,
- 286 • replaced by a revised edition, or
- 287 • amended.

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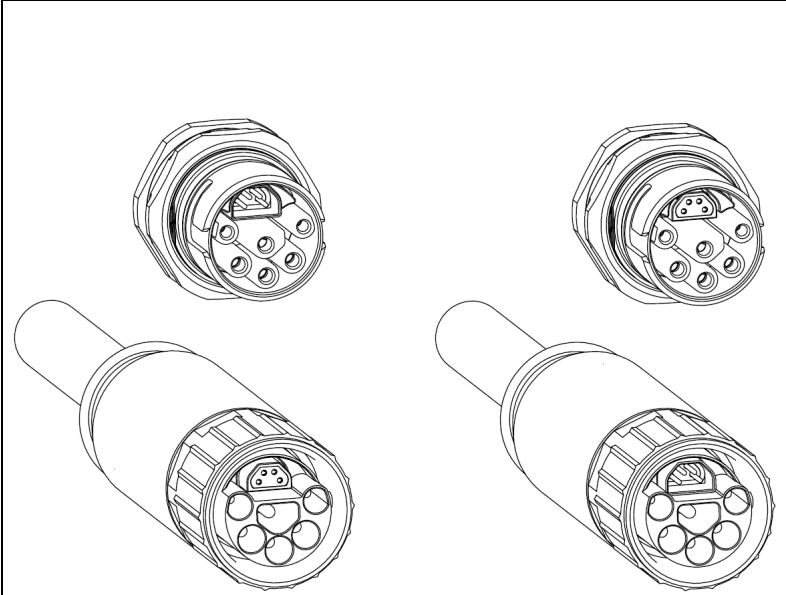
289

290 Editors Note (to be removed at the FDIS stage: the squares, □□, are the intended symbols as a
291 place holder for further details to be defined.

292

INTRODUCTION

293

IEC SC 48B – Electrical connectors Specification available from: IEC General secretariat or from the addresses shown on the inside cover.	IEC 61076-2-118 ED1
DETAIL SPECIFICATION in accordance with IEC 61076-1	
	Circular connectors With bayonet-locking Size B12, B17, B23 and B40, for power, signal and data transmission Male (power and signal) + male (data) and female (power and signal) + female (data) connectors Male (power and signal) + female (data) and female (power and signal) + male (data) connectors Male and female contacts Shielded and unshielded Rewirable Non-rewirable
	Free connectors Straight and angled connectors Fixed connectors Flange mounting Single hole mounting

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295 The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed
296 that compliance with this document may involve the use of a patent. IEC takes no position
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CONNECTORS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT – PRODUCT REQUIREMENTS –

Part 2-118: Circular connectors – Detail specification for shielded and unshielded, free and fixed connectors with bayonet-locking size B12, B17, B23 and B40, for power, signal and data transmission

1 Scope

This part of IEC 61076 specifies circular connectors with size B12, B17, B23 and B40 with bayonet-locking, typically used for power, signal and data transmissions in industrial applications. These connectors consist of fixed and free connectors either rewirable or non-rewirable.

Power contacts of male connectors are round contacts with Ø 1 mm, Ø 1,5 mm, Ø 1,8 mm, Ø 2,25 mm and Ø 4 mm, with current ratings up to 64 A per pole and rated voltage of 50 V, 300 V or 600 V AC/DC. Power contact groups are classified by type and identified throughout this document as “P” followed by two digits “01” through “09” (see 4.3, Table1).

Signal contacts of male connectors are round contacts with Ø 1 mm and Ø 1,8 mm, with current ratings up to 20 A per pole and rated voltage of 50 V AC/DC. Signal contact groups are classified by type and identified throughout this document as “S” followed by “0”, “1”, or “2” (see 4.3 Table 2).

Data contacts of male connectors have round contacts with Ø 0,8 mm and Ø 1 mm, with current ratings up to 8 A and rated voltage of 50 V AC/DC. Data transmission performance with frequencies up to 600 MHz. Data cores are classified by type and identified throughout this standard as “D” followed by “1”, or “2” (see 4.3 Table 3).

Connectors can be identified by data core (D) and complementing power (P) and signal (S) groups and optionally by number of poles, hence by the function provided for field applications.

These connectors are designated for two main target applications, which differ as follows:

- Application A is for data transmission with power over data
- Application B is for data transmission without power over data

Connectors with power, signal and data contacts of the same gender are intended to transmit data with power (Application A), while connectors with data contacts without same gender of power and signal contacts are intended to transmit power through the data contacts (Application B).

The codings provided by this standard prevent the mating to any other connector with similar sized interfaces covered by this standard.

NOTE 1: 12, 17, 23, 40 are the approximate dimensions in millimetres of the contact carrier diameter of these circular connectors.

347

348 2 Normative references

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

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

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

356 IEC 60352-2, Solderless connections – Part 2: Crimped connections – General requirements,
357 test methods and practical guidance

358 IEC 60352-3, Solderless connections – Part 3: Solderless accessible insulation displacement
359 connections – General requirements, test methods and practical guidance

360 IEC 60352-4, Solderless connections – Part 4: Solderless non-accessible insulation
361 displacement connections – General requirements, test methods and practical guidance

362 IEC 60352-5, Solderless connections – Part 5: Press-in connections – General requirements,
363 test methods and practical guidance

364 IEC 60352-6, Solderless connections – Part 6: Insulation piercing connections – General
365 requirements, test methods and practical guidance

366 IEC 60352-7, Solderless connections – Part 7: Spring clamp connections – General
367 requirements, test methods and practical guidance

368 IEC 60512-1-1, Connectors for electronic equipment – Tests and measurements – Part 1-1:
369 General examination – Test 1a: Visual examination

370 IEC 60512-1-2, Connectors for electronic equipment – Tests and measurements – Part 1-2:
371 General examination – Test 1b: Examination of dimension and mass

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

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

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

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

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

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

- 385 IEC 60512-9-1, Connectors for electronic equipment – Tests and measurements – Part 9-1:
386 Endurance tests – Test 9a: Mechanical operation
- 387 IEC 60512-9-2, Connectors for electronic equipment – Tests and measurements – Part 9-2:
388 Endurance tests – Test 9b: Electrical load and temperature
- 389 IEC 60512-11-1, Electromechanical components for electronic equipment – Basic testing
390 procedures and measuring methods – Part 11: Climatic tests – Section 1: Test 11a – Climatic
391 sequence
- 392 IEC 60512-11-4, Connectors for electronic equipment – Tests and measurements – Part 11-4:
393 Climatic tests – Test 11d: Rapid change of temperature
- 394 IEC 60512-11-7, Connectors for electronic equipment – Tests and measurements – Part 11-7:
395 Climatic tests – Test 11g: Flowing mixed gas corrosion test
- 396 IEC 60512-11-9, Connectors for electronic equipment – Tests and measurements – Part 11-9:
397 Climatic tests – Test 11i: Dry heat
- 398 IEC 60512-11-10, Connectors for electronic equipment – Tests and measurements – Part 11-
399 10: Climatic tests – Test 11j: Cold
- 400 IEC 60512-11-12, Connectors for electronic equipment – Tests and measurements – Part 11-
401 12: Climatic tests – Test 11m: Damp heat, cyclic
- 402 IEC 60512-13-2, Connectors for electronic equipment – Tests and measurements – Part 13-2:
403 Mechanical operation tests – Test 13b: Insertion and withdrawal forces
- 404 IEC 60512-13-5, Connectors for electronic equipment – Tests and measurements – Part 13-5:
405 Mechanical operation tests – Test 13e: Polarizing and keying method
- 406 IEC 60512-16-5, Connectors for electronic equipment – Tests and measurements – Part 16-5:
407 Mechanical tests on contacts and terminations – Test 16e: Gauge retention force (resilient
408 contacts)
- 409 IEC 60512-19-3, Electromechanical components for electronic equipment – Basic testing
410 procedures and measuring methods – Part 19: Chemical resistance tests – Section 3: Test 19c
411 – Fluid resistance
- 412 IEC 60529:1989, Degrees of protection provided by enclosures (IP Code)
- 413 IEC 60529:1989/AMD1:1999
- 414 IEC 60529:1989/AMD2:2013
- 415 IEC 60664-1, Insulation coordination for equipment within low-voltage systems – Part 1:
416 Principles, requirements and tests
- 417 IEC 60999-1, Connecting devices – Electrical copper conductors – Safety requirements for
418 screw-type and screwless-type clamping units – Part 1: General requirements and particular
419 requirements for clamping units for conductors from 0,2 mm² up to 35 mm² (included)
- 420 IEC 61076-1:2006, Connectors for electronic equipment – Product requirements – Part 1:
421 Generic specification
- 422 IEC 61984, Connectors – Safety requirements and tests

- 423 IEC 62197-1, Connectors for electronic equipment – Quality assessment requirements – Part
424 1: Generic specification
- 425 ISO 11469, Plastics – Generic identification and marking of plastics products
- 426 ISO 21920-1:2021, Geometrical product specifications (GPS) - Surface texture: Profile - Part 1:
427 Indication of surface texture
- 428 IEC 61076-2-114, Connectors for electronic equipment – Product requirements – Part 2-114
429 Circular connectors – Detail specification for connectors with M8 screw-locking with power
430 contacts and signal contacts for data transmission up to 100 MHz
431

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61076-1, IEC 61076-2, IEC 60512-1, IEC 61984 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

protective conductor

PE

conductor provided for purposes of safety, for example protection against electric shock

Note 1 to entry: In an electrical installation, the conductor identified PE is normally also considered as protective earthing conductor.

[SOURCE: IEC 60050-581:2008, 581-27-26]

3.2

mounting orientation

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

Note 1 to entry: Where the free connector has an angled cable entry (as opposed to a straight cable entry), the angle between the cable entry direction and the polarization keyway should be specified.

4 Technical information

4.1 Systems of levels

4.1.1 Performance levels

Performance levels for these connectors are specified in 6.6.1 Table 73.

4.1.2 Compatibility levels, according to IEC 61076-1

Connectors according to this document are intermateable according to IEC 61076-1.

4.2 Classification into climatic categories

Classification into climatic categories is specified in 6.3 Table 59

4.3 Current-carrying capacity

Current rating according to Table 1 to Table 4.

Table 1 – Ratings of connector power part

Type	Number of contacts	Function	Male contact Ø mm	Rated voltage AC or DC V	Rated current A	
P00	No power contacts	-	-	-	-	
P01	2-pin	2	1	50	8	
P02	3-pin	2 + PE	1,8	300	20	
P03	3-pin	2 + PE	1,5	600	16	
P04	4-pin	3 + PE			14	
P05	5-pin	4 + PE			12	
P06	4-pin	3 + PE			26	
P07	5-pin	4 + PE	2,25		64	
P08	4-pin	3 + PE				
P09	5-pin	4 + PE	4			
NOTE 1: The current-carrying capacity depends on the terminated wire size and other influences.						
NOTE 2: Rated current referred to ambient temperature 40 °C per IEC 60512-5-2						
NOTE 3: Reduced rating of P6 & P8 due to the connector signal part						

Table 2 – Ratings of connector signal part

Type	Number of contacts	Male contact Ø mm	Rated voltage AC or DC V	Rated current A
S0	No signal contacts	-	-	-
S1	2-pin	1,8	50	20
S2	2-pin	1	50	8
NOTE 1: The current-carrying capacity depends on the terminated wire size and other influences.				
NOTE 2: Rated current referred to ambient temperature 40 °C per IEC 60512-5-2				

Table 3 – Ratings of connector data part

Type	Number of contacts	Male contact Ø mm	Rated voltage AC or DC V	Rated current A
D1	4-pin	0,8	50	4
D2	2-pin	1	50	8
NOTE 1: The current-carrying capacity depends on the terminated wire size and other influences.				
NOTE 2: Rated current referred to ambient temperature 40 °C per IEC 60512-5-2				

4.4 Type designation

Type designation is defined as follows:

- First three digits denotes the connector size (B12, B17, B23 or B40);
- the 4th and 5th digit denotes the power contact group (see 4.3 Table 1);
- the 6th digit denotes the signal contact group (see 4.3 Table 2)
- the 7th digit denotes the data core type (see 4.3 Table 3);
- the 8th digit denotes application of the connector (A or B as describes in 1)

See table 5 for details.

Table 4 – Type designation

B	1	7	0	1	0	1	1	
								Application
								1 A
								2 B
								Data Module
								1 D1
								2 D2
								Signal Contacts
								0
								1 S1
								2 S2
								Power Contacts
								01 P01
								02 P02
								03 P03
								04 P04
								05 P05
								06 P06
								07 P07
								08 P08
								09 P09
								Size
								B12
								B17
								B23
								B40

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Table 5 – Combination possibilities of power, signal and data

Type	Size	Combination of types (see Table 1, Table 2, Table 3)	Number of contacts	Function	Application
B1201011	B12	P01 + D1	6-pin	2×P + 4×D	A
B1201012					B
B1201021		P01 + D2	4-pin	2×P + 2×D	A
B1201022					B
B1702011	B17	P02 + D1	7-pin	2×P + PE + 4×D	A
B1702012					B
B1702021		P02 + D2	5-pin	2×P + PE + 2×D	A
B1702022					B
B1703011		P03 + D1	7-pin	2×P + PE + 4×D	A
B1703012					B
B1703021		P03 + D2	5-pin	2×P + PE + 2×D	A
B1703022					B
B1704011		P04 + D1	8-pin	3×P + PE + 4×D	A
B1704012					B
B1704021		P04 + D2	6-pin	3×P + PE + 2×D	A
B1704022					B
B1705011		P05 + D1	9-pin	4×P + PE + 4×D	A
B1705012					B
B1705021		P05 + D2	7-pin	4×P + PE + 2×D	A
B1705022					B
B1706211		P06 + S2 + D1	10-pin	3×P + PE + 2×S + 4×D	A
B1706212					B
B1706221		P06 + S2 + D2	8-pin	3×P + PE + 2×S + 2×D	A
B1706222					B

Table is continued on the next page

Type	Size	Combination of types (see Table 1, Table 2, Table 3)	Number of contacts / Type	Function (Number of poles × purpose)	Application
B2307011	B23	P07 + D1	9-pin	4×P+ PE + 4×D	A
B2307012					B
B2307021		P07 + D2	7-pin	4×P+ PE + 2×D	A
B2307022					B
B2308111		P08 + S1 + D1	10-pin	3×P + PE + 2×S + 4×D	A
B2308112					B
B2308121		P08 + S1 + D2	8-pin	3×P + PE + 2×S + 2×D	A
B2308122					B
B4009011	B40	P09 + D1	9-pin	4×P+ PE + 4×D	A
B4009012					B
B4009021		P09 + D2	7-pin	4×P+ PE + 2×D	A
B4009022					B

NOTE 1: Application A and B connectors with the same type are not intermateable due to inverse gender of the data contacts.

4.5 Marking

The marking of the connector and the package shall be in accordance with 2.7 of IEC 61076-1:2006.

4.6 Safety aspects

For safety aspects, IEC 61984 shall apply.

Size B12 connectors covered by this document are only for extra-low voltage (ELV) applications being without PE contact. For these, IEC 61984 is applicable as a guidance.

5 Dimensional information

5.1 General

Throughout this standard, dimensions are in mm. Drawings are shown in the first angle projection. The shape of the connectors may deviate from those given in the following drawings as long as the specified dimensions are not influenced.

Missing dimensions shall be chosen according to common characteristics and intended use.

5.2 Survey of styles and variants

5.2.1 General

For all connector styles with cables, the length L of the cable shall be agreed between manufacturer and user. For interface dimensions see 5.3.

Alternative installation situations are possible and shall be specified upon between manufacturer and user. Requirements defined in this document must be adhered to.

5.2.2 Terminations

The contact terminations shall be of the following types: wrapped, crimped, accessible insulation displacement (ID), non-accessible insulation displacement (ID), press-in, insulation piercing spring clamp, compression mount, ultrasonic welded connections according to IEC 60352 series, screw-type or screwless type connections according to IEC 60999-1, or solder connections.

5.2.3 Fixed connectors

5.2.3.1 General

The following table shows styles of fixed connectors.

Table 6 – Styles of fixed connectors

Style	Description
DM	Fixed connector, with wire ends, male power contacts, male data contacts, with bayonet locking notch, square flange front mounting
EM	Fixed connector, with wire ends, male power contacts, male data contacts, with bayonet locking notch, single hole front mounting, keyway orientation
FM	Fixed connector, with wire ends, male power contacts, male data contacts, with bayonet locking notch, single hole rear mounting, keyway orientation
DF	Fixed connector, with wire ends, female power contacts, female data contacts, with bayonet locking notch, square flange front mounting
EF	Fixed connector, with wire ends, female power contacts, female data contacts, with bayonet locking notch, single hole front mounting, keyway orientation
FF	Fixed connector, with wire ends, female power contacts, female data contacts, with bayonet locking notch, single hole rear mounting, keyway orientation

5.2.3.2 Style DM

This shows a fixed connector, with wire ends, male power contacts and male data contacts, with bayonet locking notch, square flange front mounting.

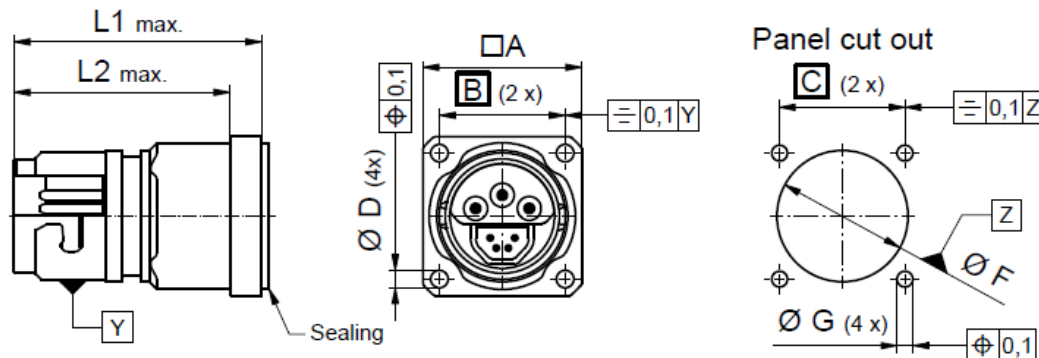


Figure 1 – Fixed connector, with wire ends, male power contacts, male data contacts, with bayonet locking notch, square flange front mounting

The following table shows the related dimensions.

Table 7 – Dimensions of style DM

Dimensions in millimetres								
Size	L1 max.	L2 max.	A max.	B	Ø D max.	C	Ø F min.	Ø G
B12	37	33	20	14	2,8	14	16,2	2,8 max.
B17	40	36	25	19,8	2,8	19,8	20,6	2,8 max.
B23	48	44	26	19,8	3,3	19,8	20	3,3 max.
B40	66	62	45	30	4,5	30	32	4,5 max.

5.2.3.3 Style EM

This shows a fixed connector, with wire ends, male power contacts and male data contacts, with bayonet locking notch, single hole front mounting, keyway orientation.

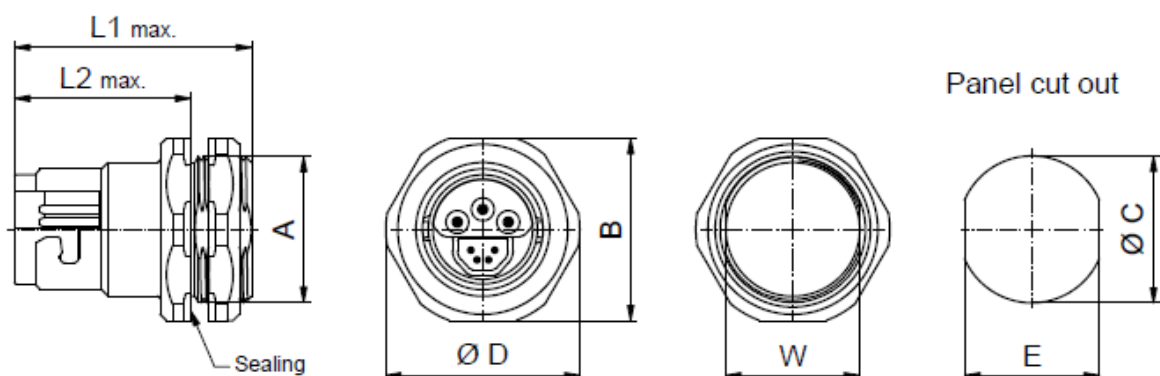


Figure 2 – Fixed connector, with wire ends, male power contacts, male data contacts, with bayonet locking notch, single hole front mounting, keyway orientation

The following table shows the related dimensions.

Table 8 – Dimensions of style EM

Dimensions in millimetres

Size	L1 max.	L2 max.	A	B	Ø D max.	W max. (optional)	Ø C min.	E min. (optional)
B12	37	28	M18x1	SW 24	27	16,5	18,2	16,7
B17	40	31	M24x1	SW 30	33	22	24,2	22,2
B23	48	39	M25x1	SW 30	33	23,8	25,2	24
B40	70	60	M42x1,5	SW 47	52	40	42,2	40,2

5.2.3.4 Style FM

This shows a fixed connector, with wire ends, male power contacts and male data contacts, with bayonet locking notch, single hole rear mounting, keyway orientation.

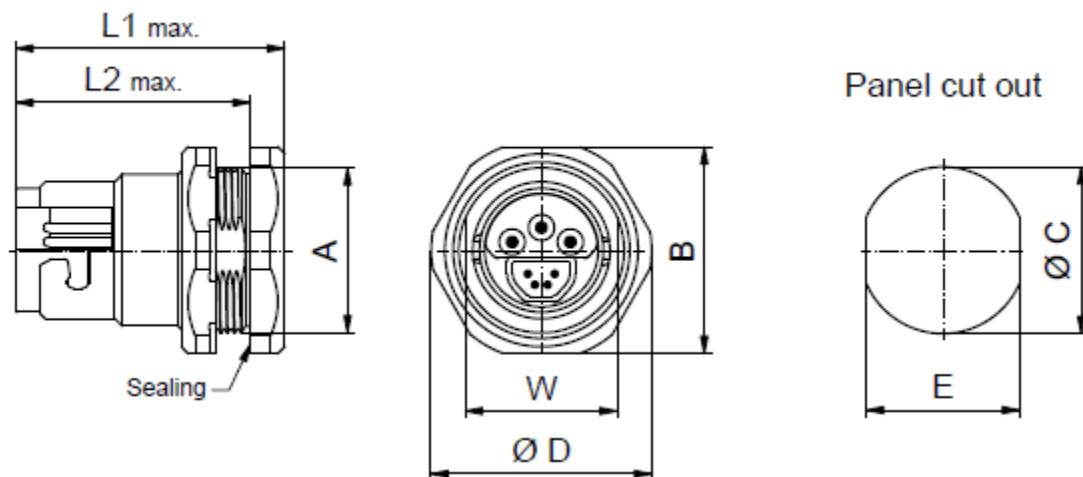


Figure 3 – Fixed connector, with wire ends, male power contacts, male data contacts, with bayonet locking notch, single hole rear mounting, keyway orientation

The following table shows the related dimensions.

Table 9 – Dimensions of style FM

Dimensions in millimetres

Size	L1 max.	L2 max.	A	B	Ø D max.	W max. (optional)	Ø C min.	E min. (optional)
B12	37	33	M18x1	SW 24	27	16,5	18,2	16,7
B17	40	36	M24x1	SW 30	33	22	24,2	22,2
B23	48	44	M25x1	SW 30	33	23,8	25,2	24
B40	70	66	M42x1,5	SW47	52	40	42,2	40,2

5.2.3.5 Style DF

This shows a fixed connector, with wire ends, female power contacts and female data contacts, with bayonet locking notch, square flange front mounting.

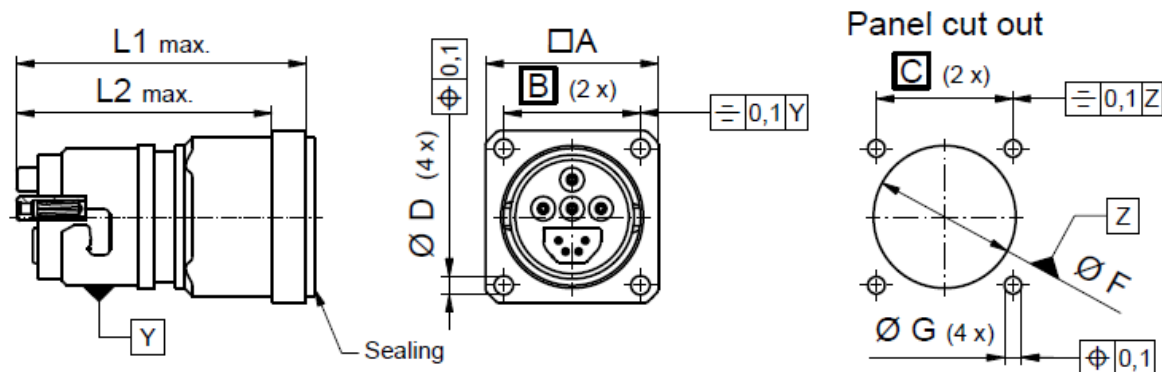


Figure 4 – Fixed connector, with wire ends, female power contacts, female data contacts, with bayonet locking notch, square flange front mounting

The following table shows the related dimensions.

Table 10 – Dimensions of style DF

Dimensions in millimetres

Size	L1 max.	L2 max.	A max.	B	Ø D max.	C	Ø F min.	Ø G
B12	37	33	20	14	2,8	14	16,2	2,8 max.
B17	43	39	25	19,8	2,8	19,8	20,6	2,8 max.
B23	43	39	26	19,8	3,3	19,8	20	3,3 max.
B40	61	57	45	30	4,5	30	32	4,5 max.

5.2.3.6 Style EF

This shows a fixed connector, with wire ends, female power contacts and female data contacts, with bayonet locking notch, single hole front mounting, keyway orientation.

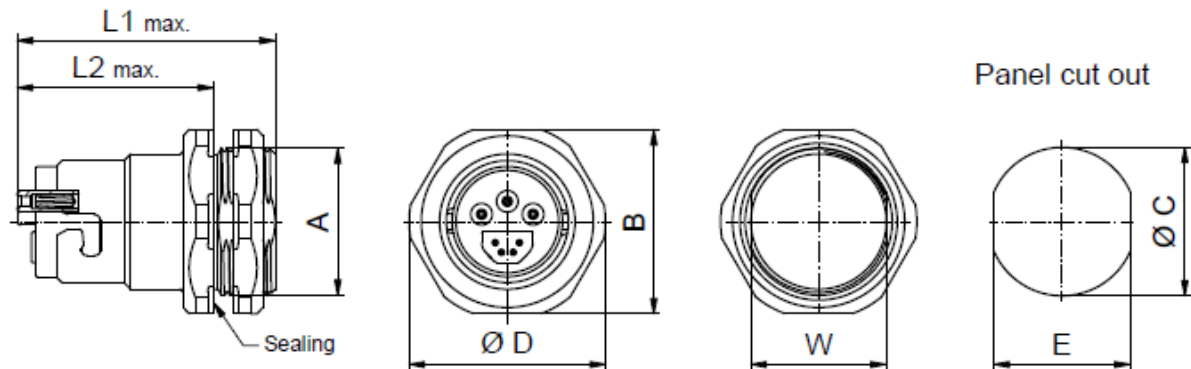


Figure 5 – Fixed connector, with wire ends, female power contacts, female data contacts, with bayonet locking notch, single hole front mounting, keyway orientation

The following table shows the related dimensions.

Table 11 – Dimensions of style EF

Dimensions in millimetres

Size	L1 max.	L2 max.	A	B	Ø D max.	W max. (optional)	Ø C min.	E min. (optional)
B12	37	28	M18x1	SW 24	27	16,5	18,2	16,7
B17	43	34	M24x1	SW 30	33	22	24,2	22,2
B23	43	34	M25x1	SW 30	33	23,8	25,2	24
B40	70	60	M42x1,5	SW 47	52	40	42,2	40,2

5.2.3.7 Style FF

This shows a fixed connector, with wire ends, female power contacts and female data contacts, with bayonet locking notch, single hole rear mounting, keyway orientation.

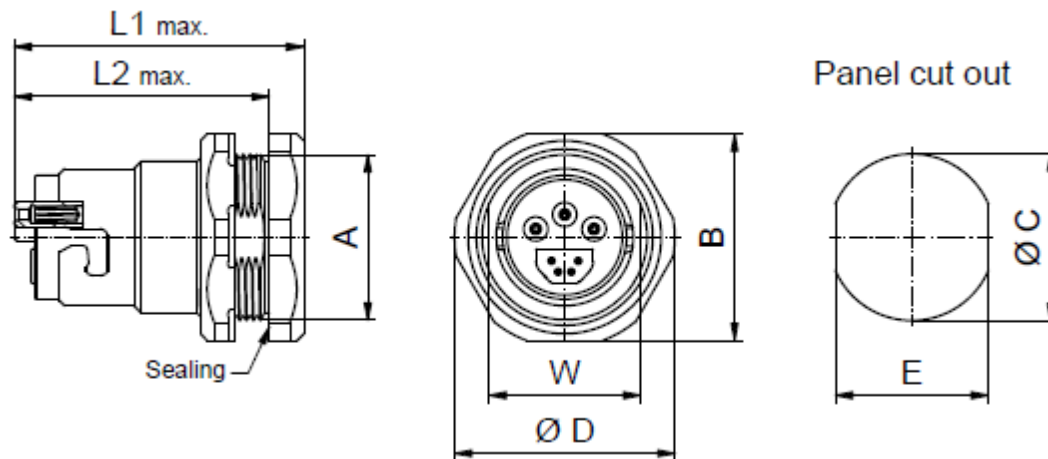


Figure 6 – Fixed connector, with wire ends, female power contacts, female data contacts, with bayonet locking notch, single hole rear mounting, keyway orientation

The following table shows the related dimensions.

Table 12 – Dimensions of style FF

Dimensions in millimetres

Size	L1 max.	L2 max.	A	B	Ø D max.	W max. (optional)	Ø C min.	E min (optional)
B12	37	33	M18x1	SW24	26	16,5	18,2	16,7
B17	43	39	M24x1	SW30	32	22	24,2	22,2
B23	43	39	M25x1	SW30	32	23,8	25,2	24
B40	70	65	M42x1,5	SW47	52	40	42,2	40,2

5.2.4 Free connectors

5.2.4.1 General

The following table shows styles of free connectors.

Table 13 – Styles of free connectors

Style	Description
GM	Rewirable connector, male power contacts, male data contacts, straight version, with bayonet locking nut
HM	Rewirable connector, male power contacts, male data contacts, angled version, with bayonet locking nut
IM	Non-rewirable connector, male power contacts, male data contacts, straight version, with bayonet locking nut
JM	Non-rewirable connector, male power contacts, male data contacts, angled version, with bayonet locking nut
KM	Rewirable connector, male power contacts, male data contacts, straight version, with bayonet locking notch
LM	Non-rewirable connector, male power contacts, male data contacts, straight version, with bayonet locking notch
GF	Rewirable connector, female power contacts, female data contacts, straight version, with bayonet locking nut
HF	Rewirable connector, female power contacts, female data contacts, angled version, with bayonet locking nut
IF	Non-rewirable connector, female power contacts, female data contacts, straight version, with bayonet locking nut
JF	Non-rewirable connector, female power contacts, female data contacts, angled version, with bayonet locking nut
KF	Rewirable connector, female power contacts, female data contacts, straight version, with bayonet locking notch
LF	Non-rewirable connector, female power contacts, female data contacts, straight version, with bayonet locking notch

5.2.4.2 Style GM

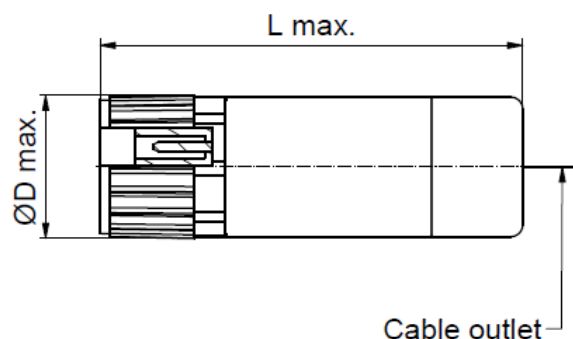


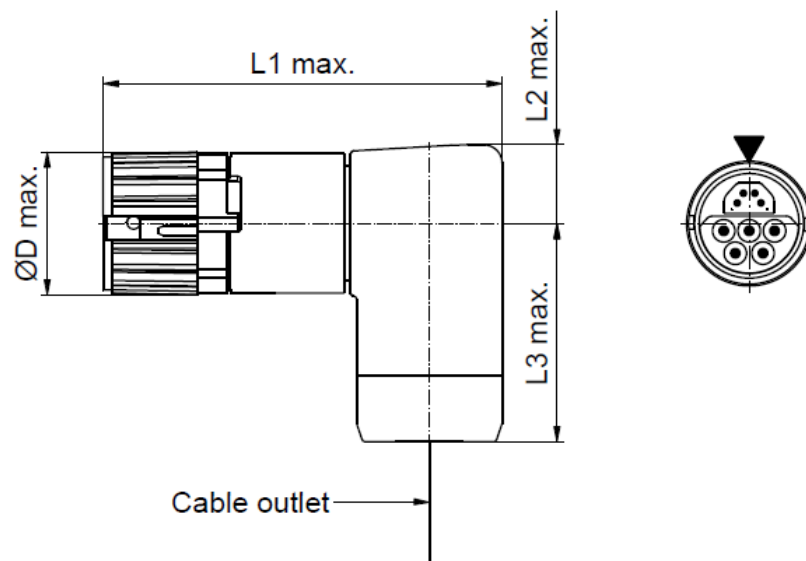
Figure 7 – Rewirable connector, male, straight version, with bayonet locking nut

The following table shows the related dimensions.

Table 14 – Dimensions of style GM

Dimensions in millimetres

Size	L max.	Ø D max.
B12	65	19,5
B17	75	24,5
B23	85	29,5
B40	125	48,5

5.2.4.3 Style HM**Figure 8 – Rewirable connector, male, angled version, with bayonet locking nut**

The following table shows the related dimensions.

Table 15 – Dimensions of style HM

Dimensions in millimetres

Size	L1 max.	L2 max.	L3 max.	Ø D max.
B12	60	12	35	19,5
B17	70	15	40	24,5
B23	80	20	80	29,5
B40	120	30	120	48,5

5.2.4.4 Style IM

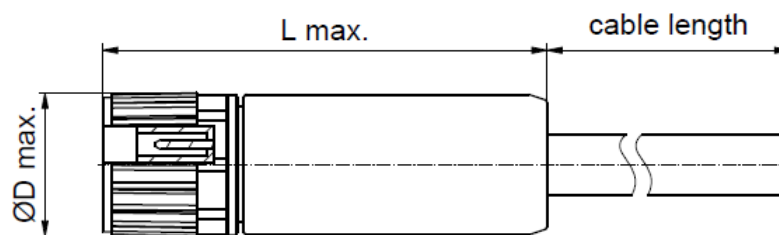


Figure 9 – Non-rewirable connector, male, straight version, with bayonet locking nut

The following table shows the related dimensions.

Table 16 – Dimensions of style IM

Dimensions in millimetres		
Size	L max.	Ø D max.
B12	66	19,5
B17	76	24,5
B23	96	29,5
B40	136	48,5

5.2.4.5 Style JM

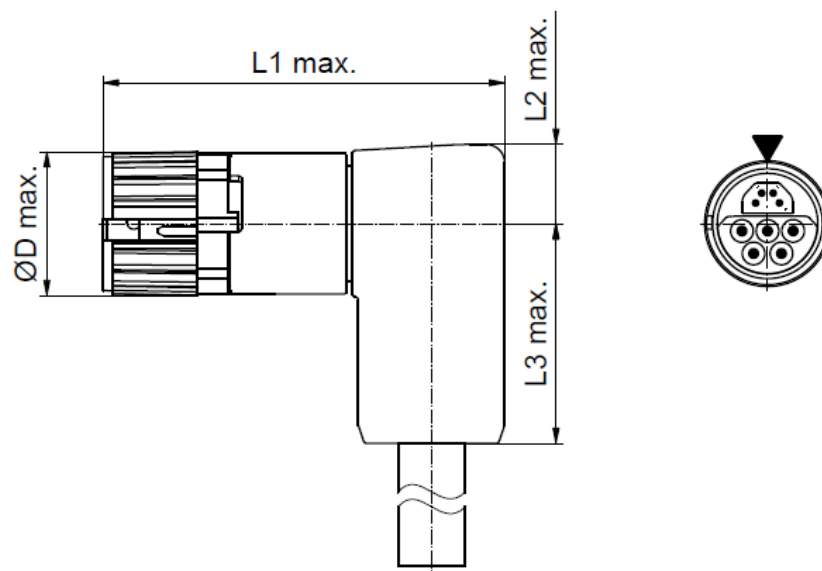


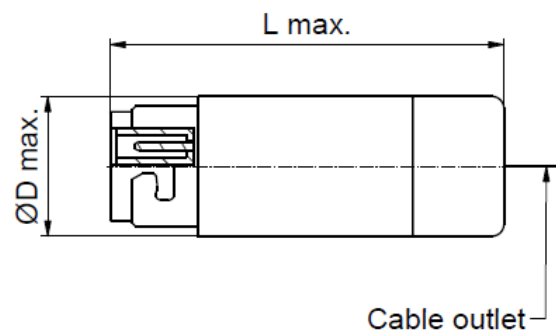
Figure 10 – Non-rewirable connector, male, angled version, with bayonet locking nut

The following table shows the related dimensions.

Table 17 – Dimensions of style JM

Dimensions in millimetres

Size	L1 max.	L2 max.	L3 max.	Ø D max.
B12	60	12	35	19,5
B17	70	15	40	24,5
B23	80	20	80	29,5
B40	120	30	120	48,5

5.2.4.6 Style KM**Figure 11 – Rewirable connector, male, straight version, with bayonet locking notch**

The following table shows the related dimensions.

Table 18 – Dimensions of style KM

Dimensions in millimetres

Size	L max.	Ø D max.
B12	66	19,5
B17	76	24,5
B23	96	29,5
B40	136	48,5

5.2.4.7 Style LM

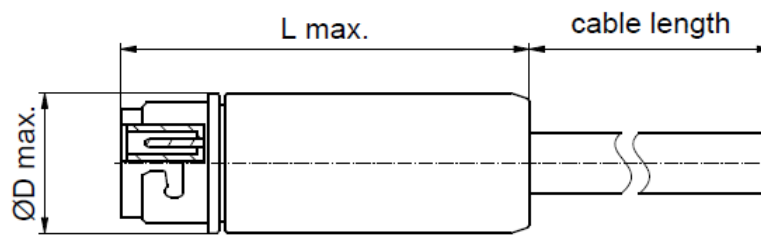


Figure 12 – Non-rewirable connector, male, straight version, with bayonet locking notch

The following table shows the related dimensions.

Table 19 – Dimensions of style LM

Dimensions in millimetres

Size	L max.	Ø D max.
B12	66	19,5
B17	76	24,5
B23	96	29,5
B40	136	48,5

5.2.4.8 Style GF

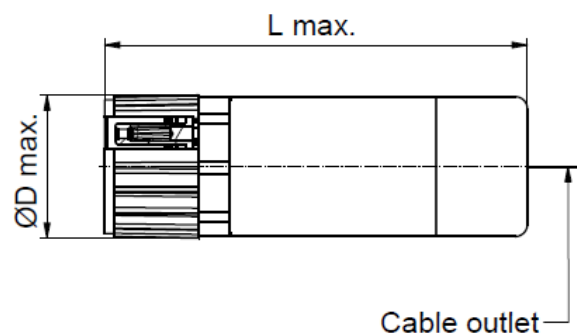


Figure 13 – Rewirable connector, female, straight version, with bayonet locking nut

The following table shows the related dimensions.

Table 20 – Dimensions of style GF

Dimensions in millimetres

Size	L max.	Ø D max.
B12	65	19,5
B17	75	24,5
B23	85	29,5
B40	125	48,5

5.2.4.9 Style HF

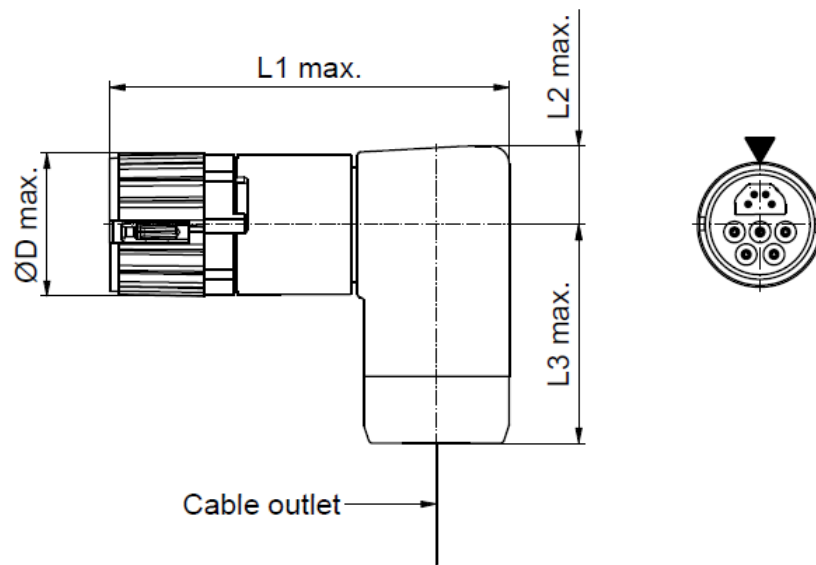


Figure 14 – Rewirable connector, female, angled version, with bayonet locking nut

The following table shows the related dimensions.

Table 21 – Dimensions of style HF

Dimensions in millimetres

Size	L1 max.	L2 max.	L3 max.	Ø D max.
B12	60	12	35	19,5
B17	70	15	40	24,5
B23	80	20	80	29,5
B40	120	30	120	48,5

5.2.4.10 Style IF

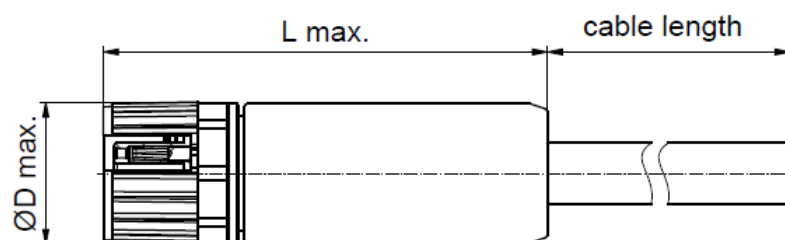
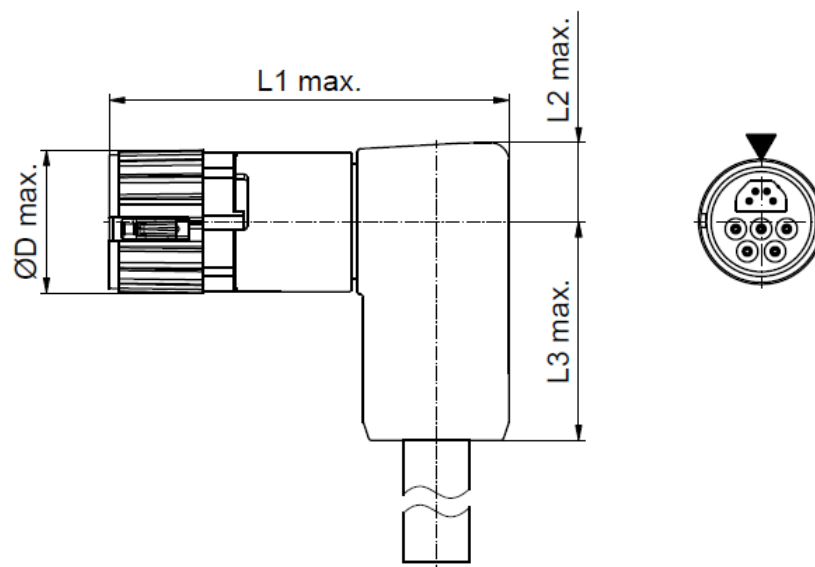


Figure 15 – Non-rewirable connector, female, straight version, with bayonet locking nut

The following table shows the related dimensions.

Table 22 – Dimensions of style IF

Dimensions in millimetres		
Size	L max.	Ø D max.
B12	66	19,5
B17	76	24,5
B23	96	29,5
B40	136	48,5

5.2.4.11 Style JF**Figure 16 – Non-rewirable connector, female, angled version, with bayonet locking nut**

The following table shows the related dimensions.

Table 23 – Dimensions of style JF

Dimensions in millimetres				
Size	L1 max.	L2 max.	L3 max.	Ø D max.
B12	60	12	35	19,5
B17	70	15	40	24,5
B23	80	20	80	29,5
B40	120	30	120	48,5