

SERIES 10

GISMA

**STECKVERBINDER
GMBH**



**ELEKTRISCHE STECKVERBINDER FÜR
MEERES- UND MARINETECHNIK**

**HIGH PERFORMANCE
UNDERWATER ELECTRICAL
CONNECTORS**



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This catalogue supersedes all previous editions. This catalogue is available as PDF file as well. GISMA reserves the right to modify products because of technical improvements and development without prior notice. Dimensions are given for information purposes only and must be confirmed by GISMA.

ATTENTION: Catalogue data apply to standard connectors only. Technical data of special designs (p/n LV XXX) may differ. Upon request, technical data sheets are available.

COMPANY PROFILE

With more than 4000 different types, GISMA today is one of the leading manufactures of high-performance electrical and fibre optic and hybrid underwater and explosion proof connectors.

GISMA's success is based on:

1. A quality management system meeting the requirements of DIN ISO 9001 with DNV (Det Norske Veritas) certificate.
2. Consistency in meeting the needs of the customer.
3. Short and reliable delivery times.
4. Several services ranging from advising individual customers to the delivery of fully-tested, terminated and pressure tested cable assemblies.

Special orders are carried out quickly and efficiently using GISMA's own computer-aided design department, tooling and ultramodern computer controlled machines for production. With more than 95% of GISMA's production carried out in house, maximum flexibility is assured.

GISMA connectors are used world-wide in submarines, the offshore and chemical-, pump-, renewable industries and for underwater research. GISMA offers an extensive family of standard connectors with contact numbers from 1 - 265, voltages up to 11 kV and current ratings up to 1000 A in 18 different series.

All types of optical fibres, both single- and multi-mode, can be assembled with GISMA connectors.

Certificates of approval from well known test organisations such as TÜV (Technical Supervision Association), GL (German LLoyd), DNV (Det Norske Veritas) etc. are available at extra charge.

GISMA SERIES 10

The SERIES 10 described in this catalogue is designed for underwater operations down to 10.000 metres' depth. Thanks to the very high load capacity of the locking-screw thread, SERIES 10 is especially suitable for robust and frequent mating operations in the offshore industry. Except of those with high-voltage inserts (size 6 and 7), SERIES 10 connectors can be mated wet or underwater, up to a max. water-depth of 100 m. For underwater mating we recommend our fluid filled pressure balanced connectors SERIES 80. All SERIES 10 connectors can be exposed open-faced to water pressure.

With contact numbers from 3 - 61, current ratings up to 150 A and voltages up to 6.6 kV, the GISMA SERIES 10 comprises a wide range of high performance underwater electrical connectors.

At series 10 special designs are available on request

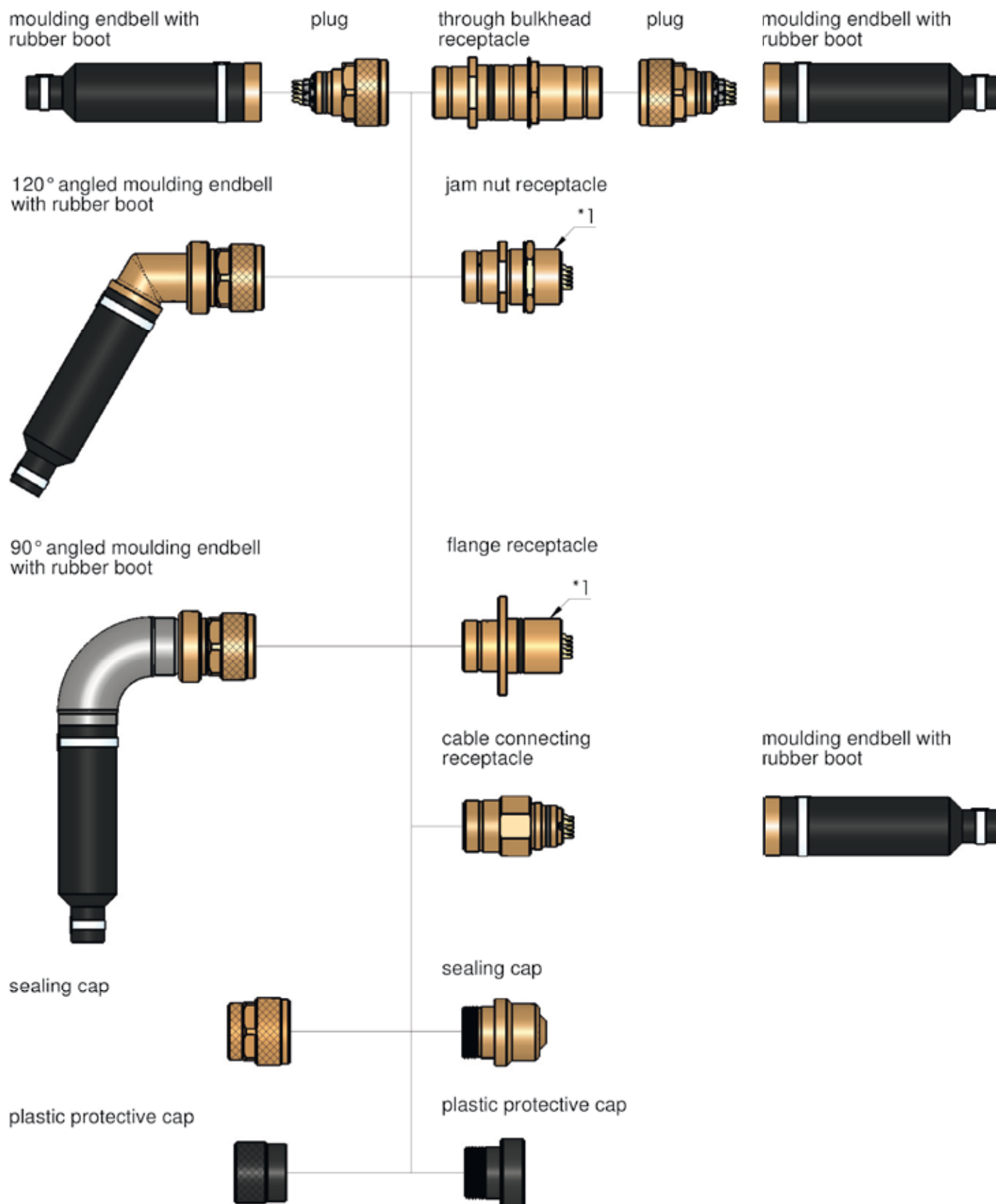
ATTENTION

Further documents have to be considered:

- Cabling instruction No.: Verkabelungsanleitung BR 10 BR 22 Stand 2010-48 (or newest version)
- Handling instruction No.: HI-2007-001 (or newest version)

If series 10 connectors should be used for pressure balanced oil filled systems, please contact GISMA application engineering.

SHELL STYLES

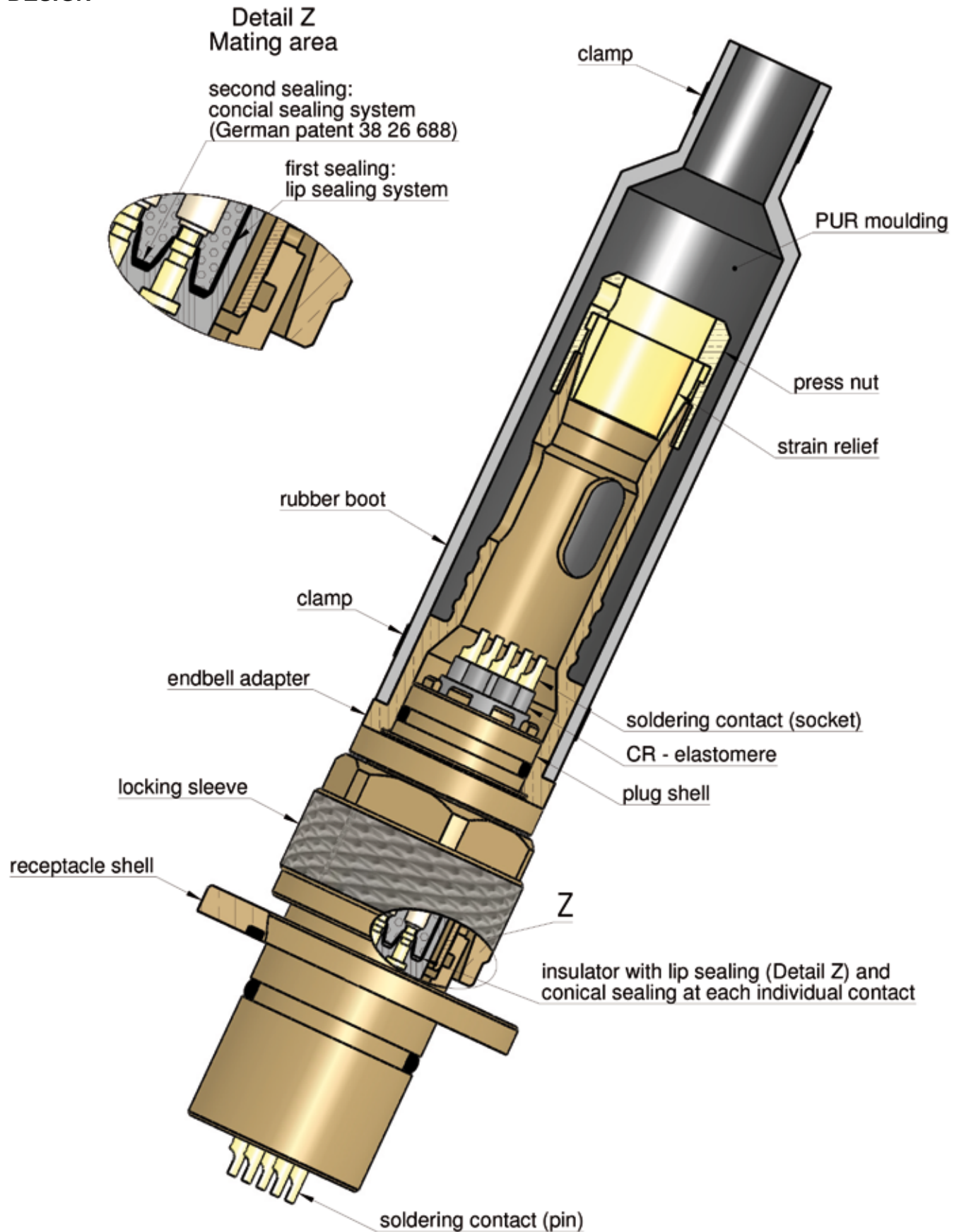


At series 10 special designs are available on request

*1 Special receptacles with spacer thread are available on request



DESIGN



MECHANICAL FEATURES

| | | |
|--|--------------------------|----------------------|
| <u>Max. working pressure at 20°C :</u> | Size 1 – 4 max. 500 bars | Size 7 max. 200 bars |
| | Size 5 – 6 max. 300 bars | Size 71 max 600 bars |

The described pressure rates are only valid for standard components made of bronze. For extra high pressure ratings, inverse pressure receptacles and other shell materials, please contact GISMA application engineering. For all Series 10 special product designs, please pay attention to separate data sheets.

| | | |
|-----------------------------|---------|--|
| <u>Shell material :</u> | - | Seawater-resistant bronze CW307G/UA10N/BS2874 / alternative Titanium 3.7164/65 Grade 5 |
| <u>Boot material :</u> | - | NBR (standard) / alternative FVMQ (special resistance about solar radiation) |
| <u>Clamp material :</u> | - | 316 L (standard) / alternative Titanium Grade 1/2 equivalent WST 3.7025/35 |
| <u>Insulator material :</u> | - | CR-elastomere shore A or alternative silicon-elastomere |
| <u>Contact materials :</u> | Sockets | - Hardened beryllium bronze |
| | Pins | - Copper alloy |
| <u>Contact connection :</u> | - | Soldering contacts (Ø 1 / 1.5 mm) |
| | - | Crimp cable shoes (Ø 4 / 5 / 10 mm) |
| <u>Contact plating :</u> | - | min. 1 µm gold at 5 µm nickel |
| | - | contact Ø ≥ 10 mm |
| | - | min. 2 µm silver at 5 µm nickel |
| <u>Temperature range :</u> | - | -30°C up to +80°C |
| | - | Extended temperature range available on request |
| <u>Mating operations :</u> | - | Min. 200 |

ELECTRICAL FEATURES

| Contact-Ø (mm) | Current I _{max} (A) eff | Contact resistance R _{c max} (m-Ω) | Max. working voltage ¹ | Test voltage | Wire-size max. (mm ²) |
|---|-------------------------------------|--|--------------------------------------|-----------------------------|--------------------------------------|
| Low voltage connectors | | | | | |
| 1 | 8 | 5 | 250 V ² | 2.5 kV DC | 1 |
| 1.5 | 15 | 2 | 250 V ^{2/3} | 2.5 kV DC | 2.5 |
| 4 | 50 | 1.2 | 320 V ² | 2.5 kV DC | 6 |
| 5 | 70 | 1 | 450 V ² | 5 kV DC | 16 |
| High voltage connectors dry mate-able! | | | | | |
| 5 | 70 | 1 | 4 kV eff. ⁴ | 9 / 5,6 kV AC ⁵ | 25 |
| 10 | 150 | 0.5 | 6.6 kV eff. ⁴ | 13 / 8,2 kV AC ⁵ | 95 |

General:

- Please contact GISMA application engineer to verify your installation and insulation condition.
- Insulation resistance at 20°C :
 - dry typical 10 G Ω
 - after wet mating typical 1 G Ω

¹. Values of working voltage only apply for clean environment mating. In other cases the values may deviate.

². Class for insulation and max. working voltage comply with the insulation classification VDE 0110 / 4 wet mating.

³. Special insulation bodies made of silicon can be used up to max. 320 V.

⁴. Class for insulation and max. working voltage comply with the insulation classification VDE 0110 / 2 dry mating.

⁵. Test voltage pin to pin / pin to shell

REFERENCE SYSTEM

RECEPTACLE; CABLE CONNECTING RECEPTACLE; THROUGH BULKHEAD RECEPTACLE; PLUG

Series 10. □ □ . □ □ □ . □ □ □ □

standard connector 0

receptacle 0

cable connecting receptacle 1

through bulkhead receptacle 4

plug 6

keyway type (if necessary)
X keyway 44°
Y keyway 66°
Z keyway 88°
W keyway 110°

shell size - contact arrangement

1.04 4 contacts Ø 1 mm

2.03 3 contacts Ø 1,5 mm

2.07 7 contacts Ø 1 mm

3.07 7 contacts Ø 1,5 mm

3.12 12 contacts Ø 1 mm

4.04 4 contacts Ø 4 mm

4.12 12 contacts Ø 1,5 mm

4.19 19 contacts Ø 1 mm

5.04 4 contacts Ø 5 mm

5.24 24 contacts Ø 1,5 mm

5.37 37 contacts Ø 1 mm

6.04 4 contacts Ø 5 mm

6.37 37 contacts Ø 1,5 mm

6.61 61 contacts Ø 1 mm

7.04 4 contacts Ø 10 mm

71.04 4 contacts Ø 10 mm

00 standard

□1 special-orientation-position

□3 receptacle with spacer thread

1□ flange receptacle

15 flange receptacle prepared for GISMA moulding endbell

shell-material
1 titanium
2 bronze (CW307G)
3 stainless steel on request

PROTECTING CAPS

series 10 . □ □ . □ □ □ . □ □ □ □

cap for receptacle 2

cap for plug 3

standard design 0

shell size 0 - 71

contact arrangement see above
(for plastic cap: 00)

keyway type (if necessary)
1 plastic (not watertight)
2 sealing cap in bronze (CW307G)
3 sealing cap in special orientation position

0 standard
3 with fastening strap

ENDBELLS

series 10 . □ □ . □ □ . XX . □

moulding endbell with rubber boot 90

for plug

PUR-moulding endbell for flange- 91**

receptacle, incl. cabling

shell size 1 - 71

0 standard endbell
1 - 9 special versions (see page 12)

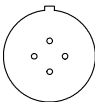
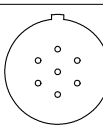
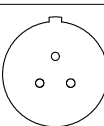
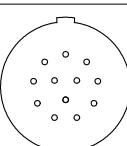
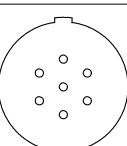
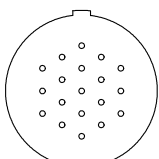
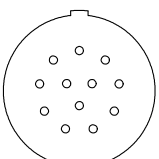
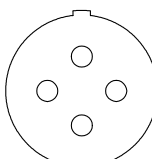
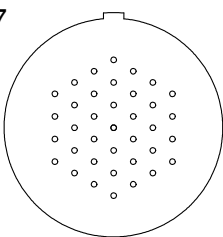
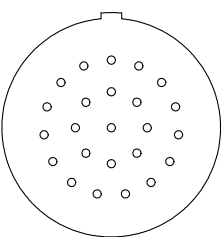
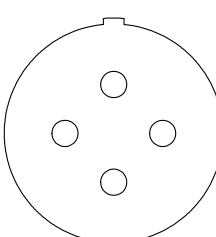
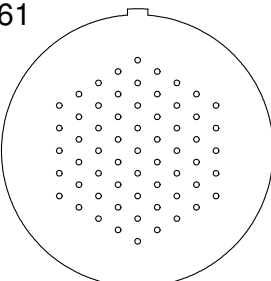
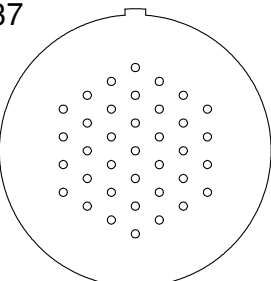
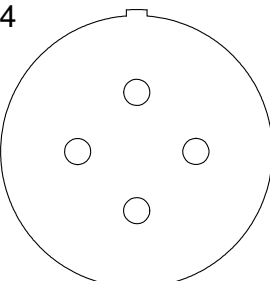
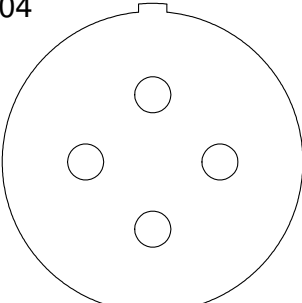
cable-Ø in mm e.g. 17 = cableØ 17 mm
(see page 12)

0 straight
1 angled 90°
2 angled 120°

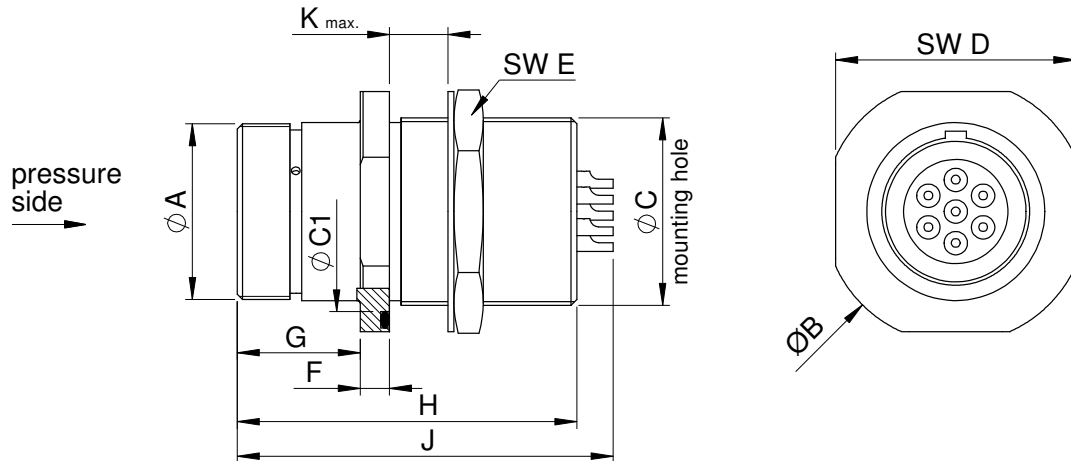
** GISMA should carry out moulding work for these special applications.

N.B. PUR-moulding compound (PUR-VERGUSSMASSE) is not included in the endbell kit.

SHELL SIZE / CONTACT LAYOUTS

| contact number → shell size ↓ | contact Ø 1 mm | contact Ø 1,5 mm | power insulator layouts |
|--|---|--|--|
| | max. wire size: 1 mm ² current rating: 8 A/contact test voltage: 2500 V DC > 7 contacts I max: on request | max. wire size: 2,5 mm ² current rating: 15 A/contact test voltage: 2500 V DC > 7 contacts I max: on request also available as special wet mateable | contact diameter: see below max. wire size: see below current rating: see below test voltage: see below |
| 1. | 04  4 x Ø 1 | | |
| 2. | 07  7 x Ø 1 | 03  3 x Ø 1,5 | |
| 3. | 12  12 x Ø 1 | 07  7 x Ø 1,5 | |
| 4. | 19  19 x Ø 1 | 12  12 x Ø 1,5 | 04  4 x Ø 4 max. 6 mm ² 50 A/contact 2,5 kV DC |
| 5. | 37  37 x Ø 1 | 24  24 x Ø 1,5 | 04  4 x Ø 5 max. 16 mm ² 70 A/contact 5 kV DC |
| 6. | 61  61 x Ø 1 | 37  37 x Ø 1,5 | 04  high voltage layout 4 x Ø 5 max. 25 mm ² 70 A/contact 9 kV AC / 5,6 kV AC dry mateable |
| 7. / 71. | | | 04  high voltage layout 4 x Ø 10 max. 95 mm ² 150 A/contact 13 kV AC / 8,5 kV AC dry mateable |

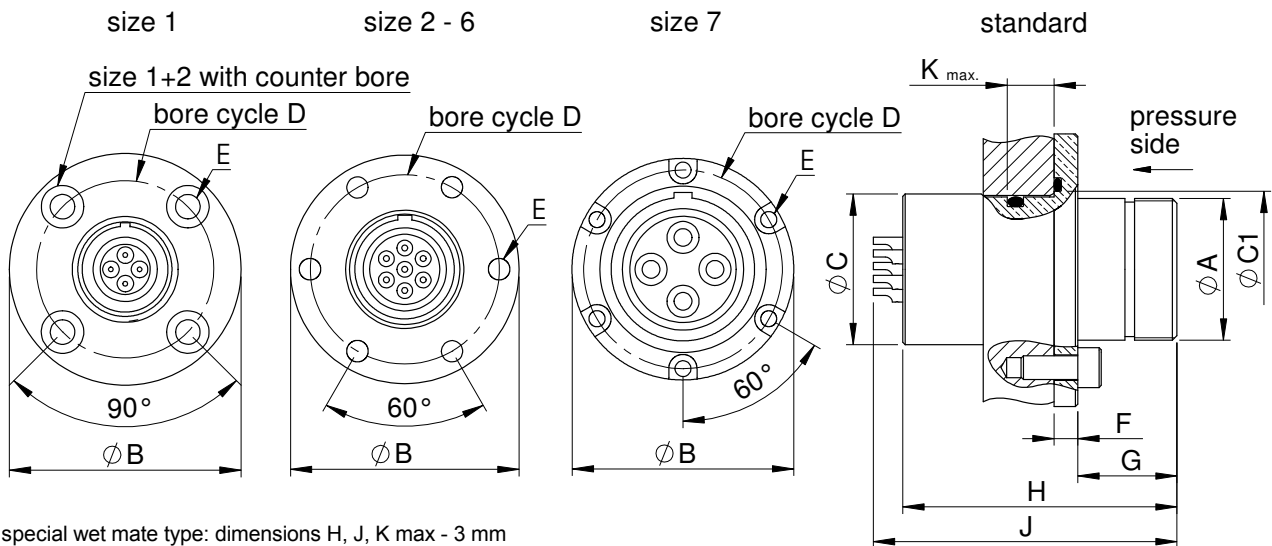
RECEPTACLE



N.B. special wet mate typ: dimensions H, J, K max - 3 mm

| Size | Contact arrangement | Ø A | Ø B | Ø C +0.1 | Ø C 1 | SW D | SW E | F | G | H | J max | K max |
|------|---------------------|------|-----|----------|-------|------|------|---|----|----|-------|-------|
| 1 | 4 x 1 | 22 | 35 | 23.5 | 25 | 32 | 27 | 5 | 19 | 58 | 65 | 28 |
| 2 | 3 x 1.5 ; 7 x 1 | 25 | 38 | 26.5 | 28 | 35 | 32 | 5 | 19 | 58 | 65 | 28 |
| 3 | 7 x 1.5 ; 12 x 1 | 30 | 45 | 32 | 34 | 41 | 36 | 5 | 21 | 58 | 65 | 26 |
| 4 | 12 x 1.5 ; 19 x 1 | 34.5 | 50 | 36.5 | 38 | 46 | 41 | 5 | 21 | 58 | 65 | 26 |
| 5 | 24 x 1.5 ; 37 x 1 | 49 | 68 | 47 | 50 | 62 | 55 | 5 | 24 | 61 | 68 | 25 |
| 6 | 37 x 1.5 ; 61 x 1 | 59 | 77 | 56 | 60 | 75 | 65 | 5 | 26 | 63 | 70 | 25 |

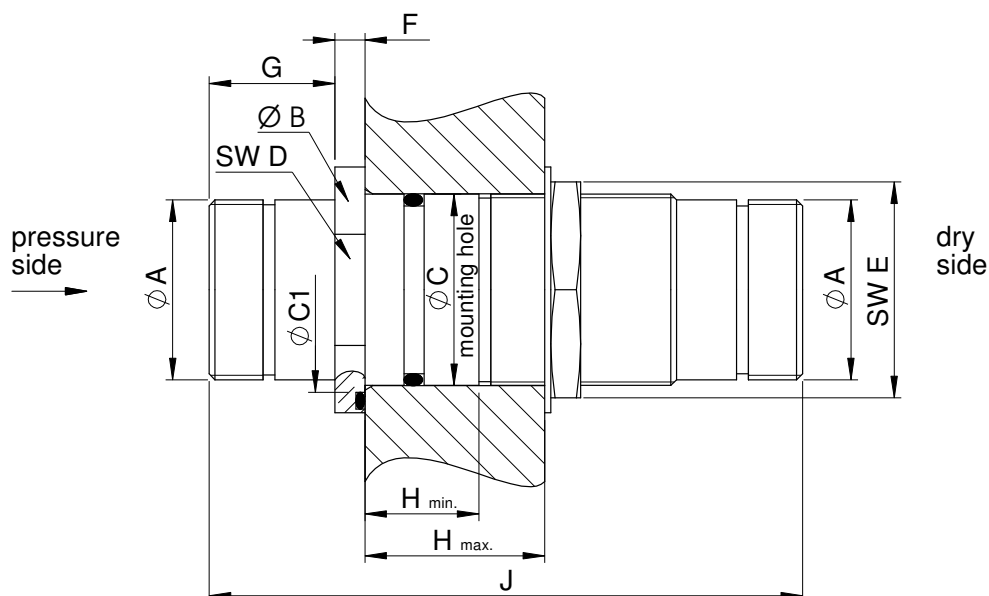
FLANGE RECEPTACLE



N.B. special wet mate typ: dimensions H, J, K max - 3 mm

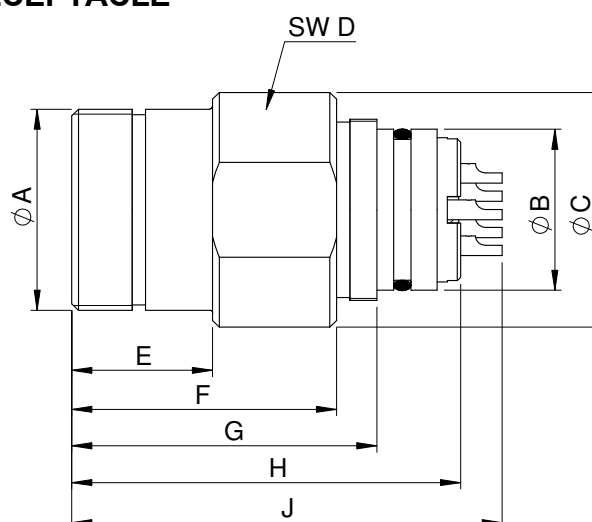
| Size | Contact arrangement | Ø A | Ø B | Ø C ±0,05 | Ø C 1 | D | E | F | G | H | J max | K max |
|------|---------------------|------|-----|-----------|-------|------|-----|------|----|-----|-------|-------|
| 1 | 4 x 1 | 22 | 49 | 23.5 | 25 | 37.5 | 5.4 | 7 | 19 | 58 | 65 | 11 |
| 2 | 3 x 1.5 ; 7 x 1 | 25 | 50 | 26.5 | 28 | 40 | 5.4 | 7 | 19 | 58 | 65 | 10 |
| 3 | 7 x 1.5 ; 12 x 1 | 30 | 58 | 32 | 34 | 48 | 5.4 | 5 | 21 | 58 | 65 | 10 |
| 4 | 12 x 1.5 ; 19 x 1 | 34.5 | 62 | 36.5 | 38 | 52 | 5.4 | 5 | 21 | 58 | 65 | 10 |
| 5 | 24 x 1.5 ; 37 x 1 | 49 | 77 | 47 | 50 | 67 | 5.4 | 5 | 24 | 61 | 68 | 11 |
| 6 | 37 x 1.5 ; 61 x 1 | 59 | 87 | 56 | 60 | 77 | 5.4 | 5 | 26 | 63 | 70 | 15.5 |
| 7 | 4 x 10 | 94 | 125 | 85 | 90 | 112 | 8.5 | 17 | 52 | 186 | 186 | ---- |
| 71 | 4 x 10 | 102 | 141 | 91 | 97 | 122 | 9 | 14.5 | 88 | 203 | 241 | 16.4 |

THROUGH BULKHEAD RECEPTACLE



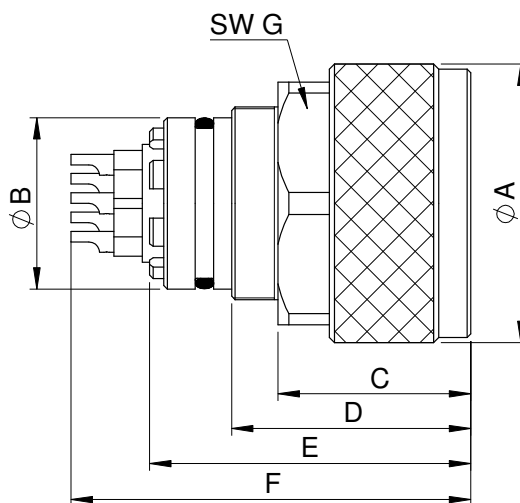
| Size | Contact arrangement | A | ϕB | ϕC | $\phi C1$ | SW D | SW E | F | G | H min | H max | J |
|------|---------------------------|------|----------|----------|-----------|------|------|---|----|-------|-------|-------|
| 1 | 4 x 1 | 22 | 35 | 23.5 | 25 | 32 | 27 | 5 | 19 | 21 | 47 | 97 |
| 2 | 3 x 1.5 ; 7 x 1 | 25 | 38 | 26.5 | 28 | 35 | 32 | 5 | 19 | 21 | 47 | 99 |
| 3 | 7 x 1.5 ; 12 x 1 | 30 | 45 | 32 | 34 | 41 | 36 | 5 | 21 | 21 | 47 | 99 |
| 4 | 4 x 4 ; 12 x 1.5 ; 19 x 1 | 34.5 | 50 | 36.5 | 38 | 46 | 41 | 5 | 21 | 21 | 47 | 99 |
| 5 | 4 x 5 ; 24 x 1.5 ; 37 x 1 | 49 | 70 | 51 | 53 | 64 | 60 | 5 | 24 | 20 | 50 | 104.5 |
| 6 | 37 x 1.5 ; 61 x 1 | 59 | 80 | 61 | 63 | 75 | 70 | 5 | 26 | 20 | 56 | 112.5 |

CABLE CONNECTING RECEPTACLE



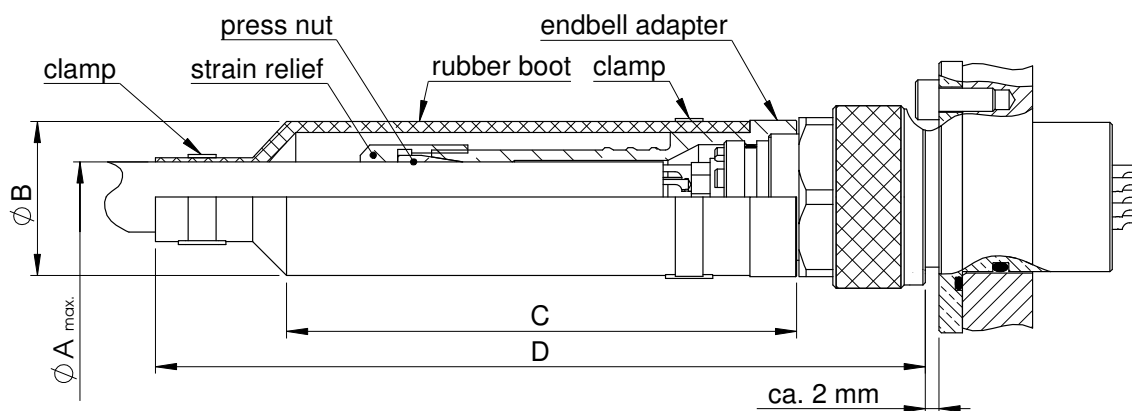
| Size | Contact arrangement | ϕA | ϕB | ϕC | SW D | E | F | G | H | J ca. |
|------|---------------------|----------|----------|----------|------|----|------|------|-----|-------|
| 1 | 4 x 1 | 22 | 16.9 | 28 | 24 | 19 | 37,5 | 43,5 | 56 | 64 |
| 2 | 3 x 1.5 ; 7 x 1 | 25 | 19.9 | 30 | 26 | 19 | 37,5 | 43,5 | 56 | 63 |
| 3 | 7 x 1.5 ; 12 x 1 | 30 | 24 | 35 | 32 | 21 | 39,5 | 47,5 | 58 | 65 |
| 4 | 12 x 1.5 ; 19 x 1 | 34.5 | 28.5 | 40 | 36 | 21 | 41,5 | 47,5 | 58 | 65 |
| 5 | 24 x 1.5 ; 37 x 1 | 49 | 41 | 54 | 50 | 24 | 43 | 54 | 61 | 68 |
| 6 | 37 x 1.5 ; 61 x 1 | 59 | 48 | 64 | 60 | 26 | 47 | 55,5 | 63 | 70 |
| 7 | 4 x 10 | 94 | 77 | 110 | 100 | 52 | 98 | 130 | 141 | 184 |

PLUG



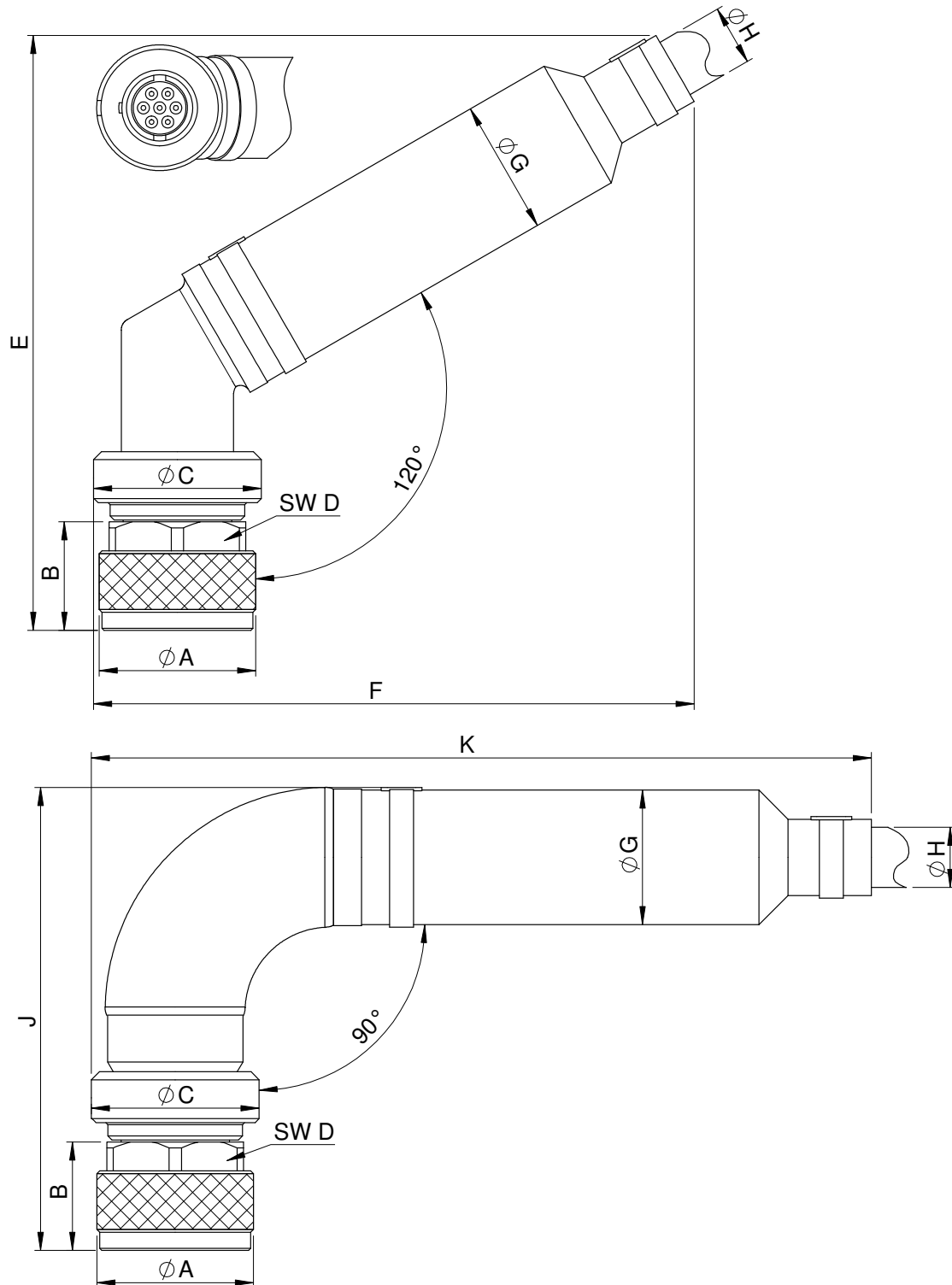
| Size | Contact arrangement | Ø A | Ø B | C | D | E | F | SW G |
|------|---------------------|------|------|-------|------|------|-----|------|
| 1 | 4 x 1 | 30 | 16.9 | 27 | 33.5 | 45.5 | 55 | 26 |
| 2 | 3 x 1.5 ; 7 x 1 | 37 | 19.9 | 27 | 33.5 | 44 | 56 | 32 |
| 3 | 7 x 1.5 ; 12 x 1 | 39 | 24 | 27 | 33.5 | 45 | 56 | 34 |
| 4 | 12 x 1.5 ; 19 x 1 | 46.5 | 28.5 | 27 | 33.5 | 45 | 55 | 41 |
| 5 | 24 x 1.5 ; 37 x 1 | 58 | 41 | 30 | 37.2 | 50.5 | 55 | 55 |
| 6 | 37 x 1.5 ; 61 x 1 | 70 | 48 | 31 | 37 | 50 | 56 | 65 |
| 7 | 4 x 10 | 110 | 77 | 66.5 | 78 | 138 | 153 | 100 |
| 71 | 4 x 10 | 120 | 105 | 104.5 | 154 | 184 | 223 | 110 |

ENDBELL



| Size | Contact arrangement | standard endbell | | | | large cable Ø endbell |
|------|---------------------|------------------|-------|-------|-------|----------------------------|
| | | max. cable Ø A | B ca. | C ca. | D ca. | max. cable Ø A 1 |
| 1 | 4 x 1 | 14 | 28 | 98 | 142 | 16 (see dimensions size 3) |
| 2 | 3 x 1.5 ; 7 x 1 | 14 | 28 | 98 | 142 | 16 (see dimensions size 3) |
| 3 | 7 x 1.5 ; 12 x 1 | 16 | 34 | 109 | 160 | 22 (see dimensions size 4) |
| 4 | 12 x 1.5 ; 19 x 1 | 20 | 42 | 107 | 157 | 31 (see dimensions size 5) |
| 5 | 24 x 1.5 ; 37 x 1 | 31 | 52 | 113 | 219 | 42 (dimensions on request) |
| 6 | 37 x 1.5 ; 61 x 1 | 31 | 52 | 113 | 207 | 52 (dimensions on request) |
| 7 | 4 x 10 | 57 | 83 | 229 | 342 | --- |
| 71 | 4 x 10 | 57 | 83 | 128 | 433 | --- |

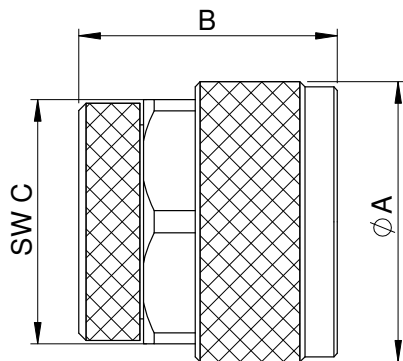
NEW: 120° AND 90° MOULDING ENDBELL WITH RUBBER BOOT



| Size | Ø A | B | Ø C | SW D | E | F | Ø G max. | Ø H | J | K |
|------|------|------|-----|------|-----|-----|----------|-----|-----|-----|
| 1 | 30 | 27 | 35 | 26 | --- | --- | 28 | 13 | 106 | 158 |
| 2 | 37 | 27 | 41 | 32 | --- | --- | 28 | 13 | 99 | 160 |
| 3 | 39 | 27 | 42 | 34 | 156 | 162 | 34 | 15 | 114 | 195 |
| 4 | 46,5 | 27 | 49 | 41 | --- | --- | 47 | 25 | 119 | 196 |
| 5 | 58 | 30 | 59 | 54 | 215 | 203 | 52 | 31 | 172 | 244 |
| 6 | 67 | 31 | 70 | 62 | --- | --- | 52 | 42 | 198 | 280 |
| 7 | 110 | 66,5 | --- | 100 | --- | --- | 83 | --- | --- | --- |

SEALING CAP

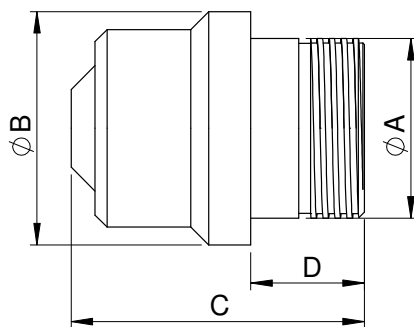
for receptacle



| Size | Ø A | B | SW C |
|------|------------|-------|------|
| 1 | 30 | 31 | 26 |
| 2 | 37 | 31 | 32 |
| 3 | 39 | 36 | 34 |
| 4 | 46.5 | 36 | 41 |
| 5 | 58 | 41 | 54 |
| 6 | 67 | 43 | 62 |
| 7 | on request | | |
| 71 | 119.5 | 119.5 | 105 |

SEALING CAP

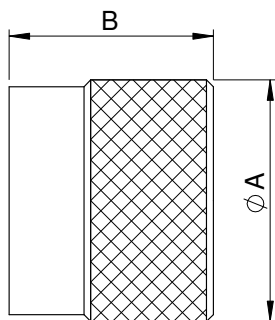
for plug



| Size | Ø A | Ø B | C | D |
|------|------------|------|----|----|
| 1 | 22 | 30 | 47 | 19 |
| 2 | 25 | 37 | 47 | 19 |
| 3 | 30 | 39 | 49 | 19 |
| 4 | 34.4 | 43.5 | 47 | 19 |
| 5 | 49 | 58 | 51 | 22 |
| 6 | 59 | 67 | 56 | 26 |
| 7 | on request | | | |
| 71 | 102 | 120 | 65 | 90 |

PLASTIC PROTECTIVE CAP

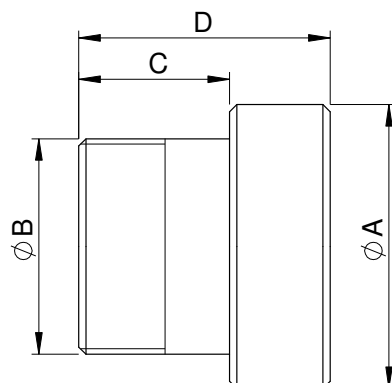
(not pressure watertight) for receptacle



| Size | Ø A | B |
|------|-------|-------|
| 1 | 28 | 30 |
| 2 | 30 | 32 |
| 3 | 35.5 | 30 |
| 4 | 40 | 30 |
| 5 | 55 | 35 |
| 6 | 69 | 38 |
| 7 | 101.5 | 60 |
| 71 | 119.5 | 117.5 |

PLASTIC PROTECTIVE CAP

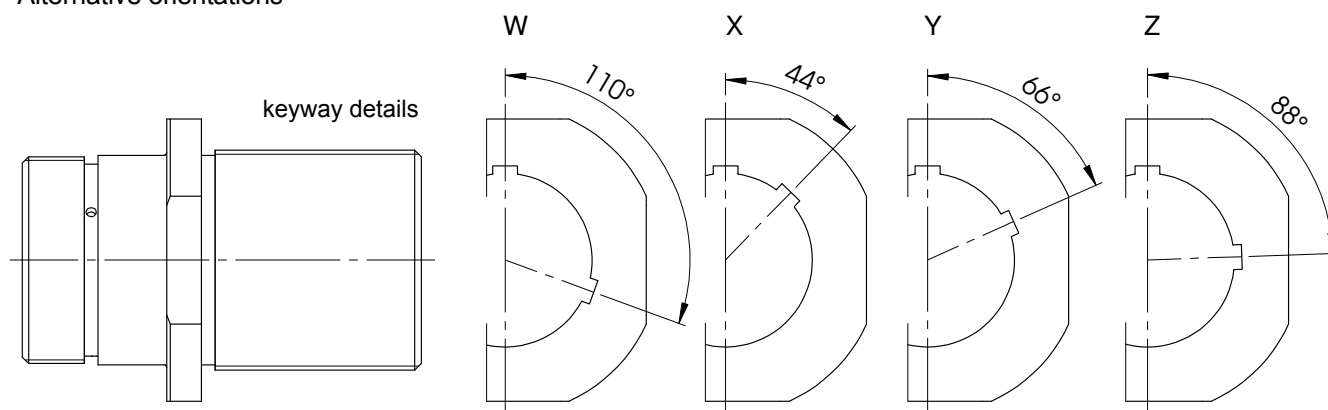
(not pressure watertight) for plug



| Size | Ø A | Ø B | C | D |
|------|------|------|----|----|
| 1 | 31 | 22 | 21 | 35 |
| 2 | 34 | 25 | 21 | 35 |
| 3 | 39.5 | 30 | 21 | 35 |
| 4 | 44.5 | 34.6 | 21 | 35 |
| 5 | 59 | 49 | 24 | 36 |
| 6 | 68.5 | 59 | 27 | 40 |
| 7 | 109 | 94 | 52 | 65 |
| 71 | 109 | 94 | 52 | 65 |

KEYWAYS

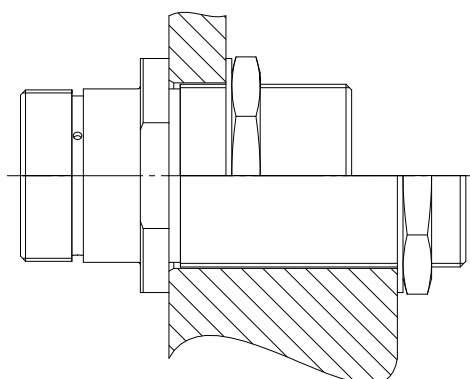
Alternative orientations



To prevent cross coupling of connectors which have the same contact layout, four extra keyways are available. When ordering, please quote additional reference: for plugs and receptacles W, X, Y, Z.

SPACER

Spacer available in two lengths.
Dimensions on request.



ORDERING INFORMATION

See page 8

Receptacle 10 . 00 . 1 . 04 . 2 . 10

Series _____
standard receptacle _____
size 1 _____

flange version
material code (marine bronze)
4 contacts

Plug 10 . 06 . 1 . 04 . 2 . 00

Series _____
standard plug _____
size 1 _____

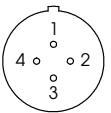
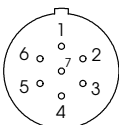
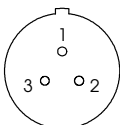
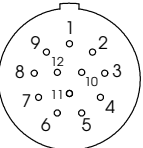
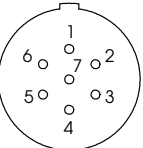
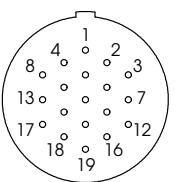
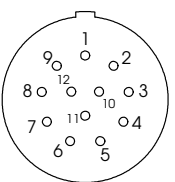
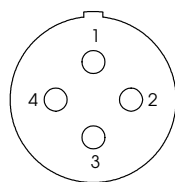
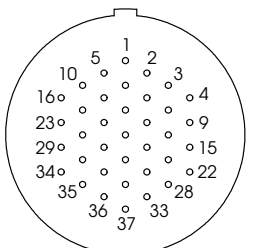
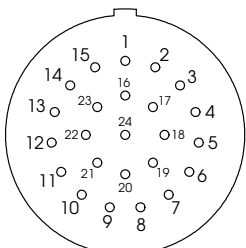
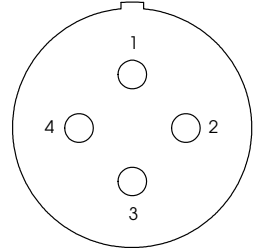
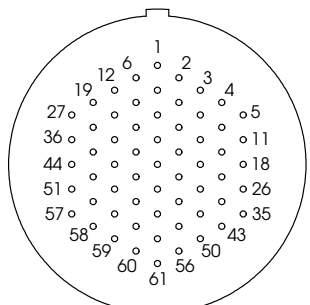
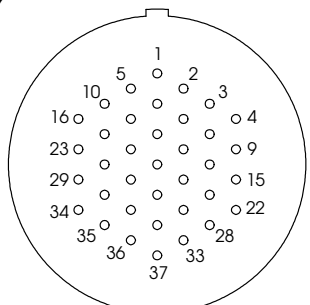
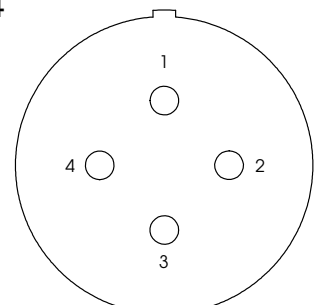
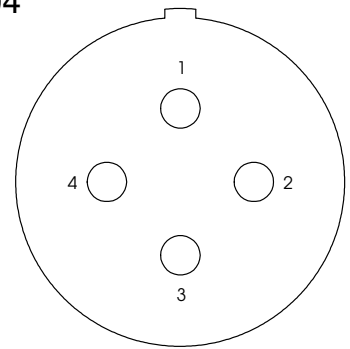
standard version
material code (marine bronze)
4 contacts

Endbell 10 . 90 . 10 . 12 . 0

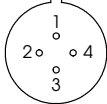
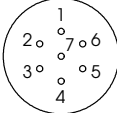
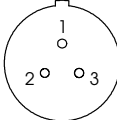
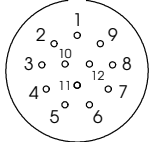
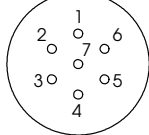
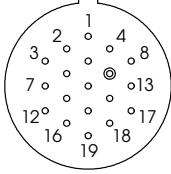
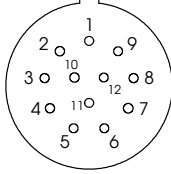
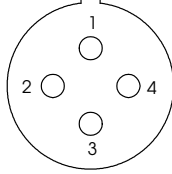
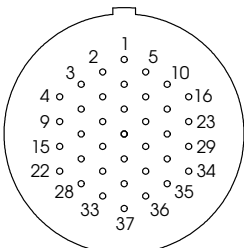
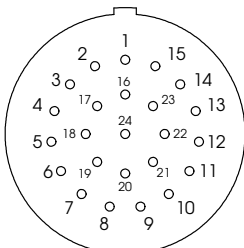
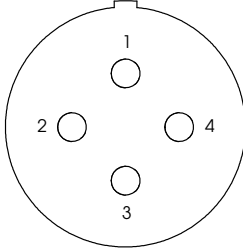
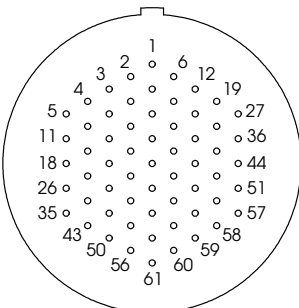
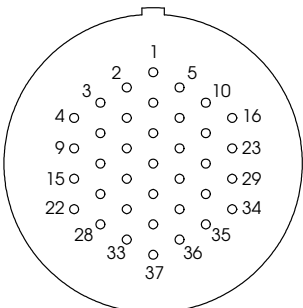
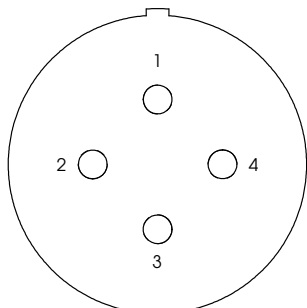
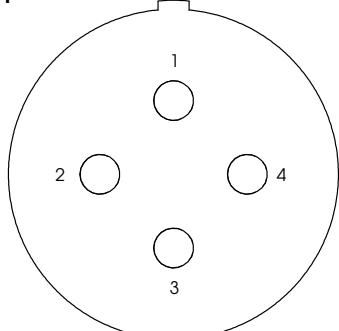
Series _____
for plug _____
size 1 _____

standard version
cable-Ø 12 mm
straight

CONTACT ARRANGEMENTS (NUMBERING SYSTEM, PLUG BACKVIEW)

| shell size | standard contact arrangement (numbering system) plug backview / receptacle frontview | | |
|------------|---|---|---|
| 1. | 04  | | |
| 2. | 07  | 03  | |
| 3. | 12  | 07  | |
| 4. | 19  | 12  | 04  |
| 5. | 37  | 24  | 04  |
| 6. | 61  | 37  | 04  |
| 7./71. | | | 04  |

CONTACT ARRANGEMENTS (NUMBERING SYSTEM, RECEPTACLE BACKVIEW)

| shell size | standard contact arrangement (numbering system) receptacle backview / plug frontview | | |
|-------------|---|---|---|
| 1. | 04  | | |
| 2. | 07  | 03  | |
| 3. | 12  | 07  | |
| 4. | 19  | 12  | 04  |
| 5. | 37  | 24  | 04  |
| 6. | 61  | 37  | 04  |
| 7. / 71. | | | 04  |

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GMBH**



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for more technical details.

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