

new

# UTO

Dynamic IP68 / IP69K  
High salt spray resistance  
RoHS compliant



## Metal circular connector

### Description

"UTO" industrial circular connectors are a range of multiway connectors available in 8 shell sizes and 8 insert arrangements all interchangeable, interchangeable and intermountable with the TRIM TRIO "UTG" and "UTP" industrial connector families.

"UTO" is equipped with identical shells from military connectors complying to MIL-C-26482 spec.

Strong and rugged built to resist every environmental and mechanical requirement for indoor and outdoor applications.

Amongst several characteristics, "UTO" offers possibilities on: Shielding, High levels on sealing and salt spray. UTO is also the perfect solution to connect cat5e Ethernet applications in combination with other signals, using the same TRIM TRIO contacts (consult factory for more info).

### Features and benefits (see p2)

- Suitable for shielding applications
- Available in 8 shell sizes and 9 insert arrangements.
- Available in plug and receptacle versions for both male and female contacts.
- Different insert orientations possible.
- Plastic inserts with flammability rating: UL94-V0.
- **2 levels of water protection:** Dynamic IP67 and IP68 both versions are IP69K
- **2 levels of salt spray:** 48h and 96h Higher salt spray resistance (200/500h) upon request
- Cat5e Ethernet compatible. Can be combined with other signals offering the advantage to use same contacts (consult factory).
- UL recognition in process.
- Metal bayonet ring:
  - Metal wave spring loaded
  - Locks with audible positive "click"
  - Assures 500 matings and unmatings
- RoHS compliant



### Performance characteristics

|                                                                                                                                        |                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Operating temp:                                                                                                                        | -40°C to +105°C                                                                                       |
| Insulation resistance:                                                                                                                 | 5000 MΩmin.                                                                                           |
| Test potential:                                                                                                                        | 2000 VAC                                                                                              |
| Durability:                                                                                                                            | 500 matings and unmatings.                                                                            |
| Vibration resistance:                                                                                                                  | Per MIL-STD202 method 204                                                                             |
| Thermal shock:                                                                                                                         | Per MIL-STD202 method 207                                                                             |
| Corrosion:                                                                                                                             | Salt spray per MIL-STD 202 method 101<br>48h (standard version)<br>96h (black anodised coupling ring) |
| Higher salt spray resistance (200/500h) upon request                                                                                   |                                                                                                       |
| Shielding effectiveness: 95 dB at 1 Mhz                                                                                                |                                                                                                       |
| Degree of water protection per DIN 40050:<br>Dynamic IP67 / IP68 / IP69K in mated condition and in combination with sealed back shell. |                                                                                                       |

### Construction

|                              |                                  |
|------------------------------|----------------------------------|
| Shells:                      | Zinc alloy                       |
| Backshells and cable glands: | Brass                            |
| Coupling ring:               | Aluminium alloy                  |
| Coupling spring:             | Spring stainless steel           |
| Insert:                      | Glass-filled thermoplast UL94-V0 |
| RoHS compliant               |                                  |

### Contact accommodation

- "UTO" connectors accept TRIM TRIO size 16 removable snap-lock contacts (see contacts section)
- Contacts to be ordered separately.

### How to order

|                             | UTO                                                                                                                                                                                | 0 | 14 | 12 | P | - | H or H6 | -- | -- |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----|----|---|---|---------|----|----|
|                             | UTO                                                                                                                                                                                | 6 | 14 | 12 | S | - | H       |    |    |
| <b>Body variation:</b>      | <b>0</b> : Wall mounting receptacle<br><b>6</b> : Cable plug<br><b>7</b> : Jam nut receptacle for rear panel mounting                                                              |   |    |    |   |   |         |    |    |
| <b>Shell size:</b>          |                                                                                                                                                                                    |   |    |    |   |   |         |    |    |
| <b>Insert arrangement:</b>  |                                                                                                                                                                                    |   |    |    |   |   |         |    |    |
| <b>Type of contacts:</b>    | <b>P</b> : Pin contacts<br><b>S</b> : Socket contacts                                                                                                                              |   |    |    |   |   |         |    |    |
| <b>Insert polarisation:</b> | <b>No letter</b> : Standard version<br><b>W, X, Y, Z</b> : Different orientations (consult factory)                                                                                |   |    |    |   |   |         |    |    |
| <b>Application:</b>         | <b>H</b> : Standard version, water protected IP 67 & IP 69K<br><b>H6</b> : Water protected IP 68 & IP 69K (only needed for wall mounting & jam nut receptacles)                    |   |    |    |   |   |         |    |    |
| <b>Design variation:</b>    | <b>No letter</b> : Standard version<br><b>Others</b> : Special versions                                                                                                            |   |    |    |   |   |         |    |    |
| <b>Plating:</b>             | <b>No letter</b> : Standard is nickel plating (48h salt spray)<br><b>01</b> : Black anodised jam nut (96h salt spray)<br><b>02</b> : Black anodised coupling ring (96h salt spray) |   |    |    |   |   |         |    |    |

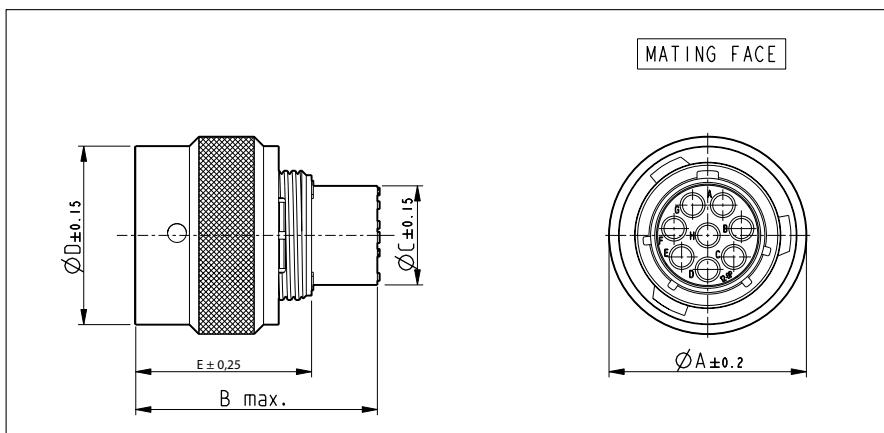
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## Cable plug for pin contacts (UT06- - -PH)

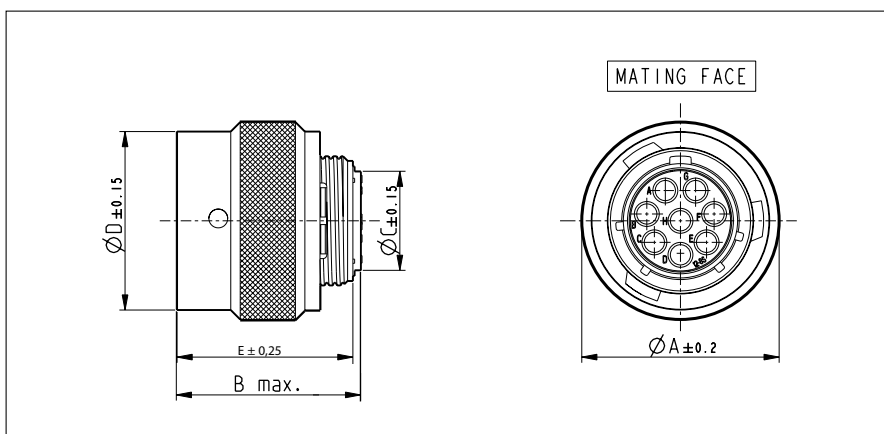


| Part number | Shell size | Ø A ±0.2 | B max. | Ø C ±0.15 | Ø D ±0.15 | E ±0.25 |
|-------------|------------|----------|--------|-----------|-----------|---------|
| UT06104PH   | 10         | 21.80    | 33.00  | 10.2      | 20.00     | 23.25   |
| UT06128PH   | 12         | 26.10    |        | 13.4      | 23.60     |         |
| UT061412PH  | 14         | 29.30    |        | 16.7      | 26.80     |         |
| UT061619PH  | 16         | 32.45    |        | 19.7      | 30.00     |         |
| UT061823PH  | 18         | 35.25    |        | 21.7      | 33.30     |         |
| UT062028PH  | 20         | 38.80    | 25.20  | 24.9      | 36.55     | 25.20   |
| UT062235PH  | 22         | 42.00    |        | 28.1      | 39.50     |         |
| UT062448PH  | 24         | 45.05    |        | 31.2      | 42.60     |         |

Part numbers are suitable for both IP67 and IP68 water protection

For 96h salt spray version add "02" behind "H" e.g. UT061412PH02 (only bayonet ring will be black anodised)

## Cable plug for socket contacts (UT06- - -SH)



| Part number | Shell size | Ø A ±0.2 | B max. | Ø C ±0.15 | Ø D ±0.15 | E ±0.25 |
|-------------|------------|----------|--------|-----------|-----------|---------|
| UT06104SH   | 10         | 21.80    | 33.00  | 10.2      | 20.00     | 23.25   |
| UT06128SH   | 12         | 26.10    |        | 13.4      | 23.60     |         |
| UT061412SH  | 14         | 29.30    |        | 16.7      | 26.80     |         |
| UT061619SH  | 16         | 32.45    |        | 19.7      | 30.00     |         |
| UT061823SH  | 18         | 35.25    |        | 21.7      | 33.30     |         |
| UT062028SH  | 20         | 38.80    | 27.30  | 24.9      | 36.55     | 25.20   |
| UT062235SH  | 22         | 42.00    |        | 28.1      | 39.50     |         |
| UT062448SH  | 24         | 45.05    |        | 31.2      | 42.60     |         |

Part numbers are suitable for both IP67 and IP68 water protection

For 96h salt spray version add "02" behind "H" e.g. UT061412SH02 (only bayonet ring will be black anodised)

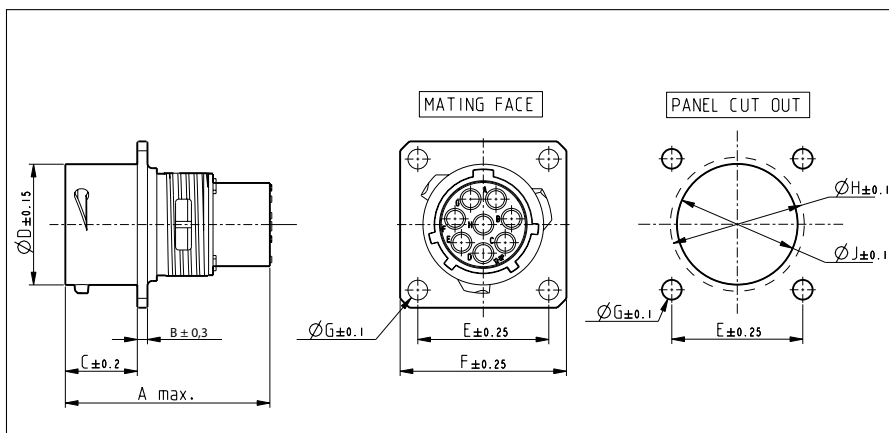
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## Wall mounting receptacle for pin contacts (UT00---PH/PH6)

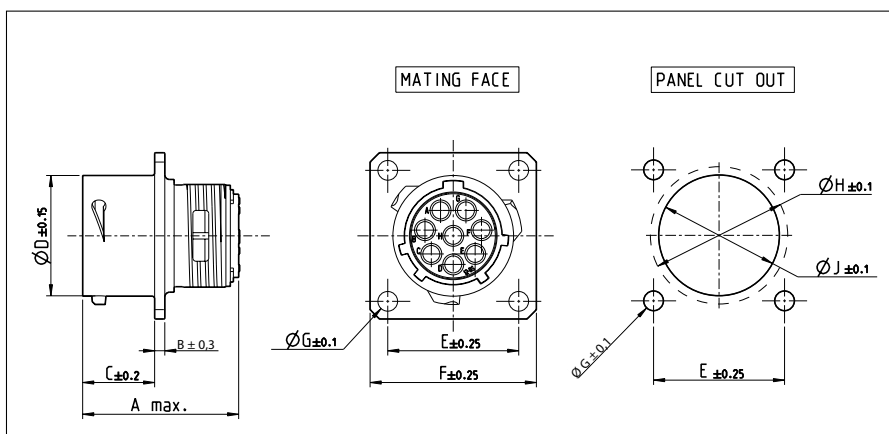


| Part number |             | Shell size | A max. | B ± 0.3 | C ± 0.2 | Ø D ± 0.15 | E ± 0.25 | F ± 0.25 | Ø G ± 0.1 | Ø H ± 0.1 | Ø J ± 0.1 |
|-------------|-------------|------------|--------|---------|---------|------------|----------|----------|-----------|-----------|-----------|
| IP67        | IP68        |            |        |         |         |            |          |          |           |           |           |
| UT00104PH   | UT00104PH6  | 10         | 33.23  | 1.6     | 11.35   | 15.0       | 18.3     | 23.8     | 3.2       | 17.3      | 14.2      |
| UT00128PH   | UT00128PH6  | 12         |        |         |         | 19.0       | 20.6     | 26.2     |           | 21.8      | 18.4      |
| UT001412PH  | UT001412PH6 | 14         |        |         |         | 22.2       | 23.0     | 28.6     |           | 25.0      | 21.5      |
| UT001619PH  | UT001619PH6 | 16         |        |         |         | 25.3       | 24.6     | 31.0     |           | 28.1      | 24.6      |
| UT001823PH  | UT001823PH6 | 18         | 34.75  | 2.4     | 14.55   | 28.5       | 26.9     | 33.3     | 3.9       | 31.3      | 27.8      |
| UT002028PH  | UT002028PH6 | 20         |        |         |         | 31.7       | 29.4     | 36.5     |           | 34.5      | 30.9      |
| UT002235PH  | UT002235PH6 | 22         |        |         |         | 34.9       | 31.8     | 39.7     |           | 37.7      | 34.1      |
| UT002448PH  | UT002448PH6 | 24         |        |         |         | 38.0       | 34.9     | 42.9     |           | 40.9      | 37.3      |

Part numbers are suitable for both 48h and 96h salt spray.

A square sealing has to be ordered separately to guarantee a sealing with equipment. Refer to "Circular accessories" section (UTFD--).

## Wall mounting receptacle for socket contacts (UT00---SH/SH6)



| Part number |             | Shell size | A max. | B ± 0.3 | C ± 0.2 | Ø D ± 0.15 | E ± 0.25 | F ± 0.25 | Ø G ± 0.1 | Ø H ± 0.1 | Ø J ± 0.1 |
|-------------|-------------|------------|--------|---------|---------|------------|----------|----------|-----------|-----------|-----------|
| IP67        | IP68        |            |        |         |         |            |          |          |           |           |           |
| UT00104SH   | UT00104SH6  | 10         | 25.20  | 1.6     | 11.35   | 15.0       | 18.3     | 23.8     | 3.2       | 17.3      | 14.2      |
| UT00128SH   | UT00128SH6  | 12         |        |         |         | 19.0       | 20.6     | 26.2     |           | 21.8      | 18.4      |
| UT001412SH  | UT001412SH6 | 14         |        |         |         | 22.2       | 23.0     | 28.6     |           | 25.0      | 21.5      |
| UT001619SH  | UT001619SH6 | 16         |        |         |         | 25.3       | 24.6     | 31.0     |           | 28.1      | 24.6      |
| UT001823SH  | UT001823SH6 | 18         | 29.00  | 2.4     | 14.55   | 28.5       | 26.9     | 33.3     | 3.9       | 31.3      | 27.8      |
| UT002028SH  | UT002028SH6 | 20         |        |         |         | 31.7       | 29.4     | 36.5     |           | 34.5      | 30.9      |
| UT002235SH  | UT002235SH6 | 22         |        |         |         | 34.9       | 31.8     | 39.7     |           | 37.7      | 34.1      |
| UT002448SH  | UT002448SH6 | 24         |        |         |         | 38.0       | 34.9     | 42.9     |           | 40.9      | 37.3      |

Part numbers are suitable for both 48h and 96h salt spray.

A square sealing has to be ordered separately to guarantee a sealing with equipment. Refer to "Circular accessories" section (UTFD--).

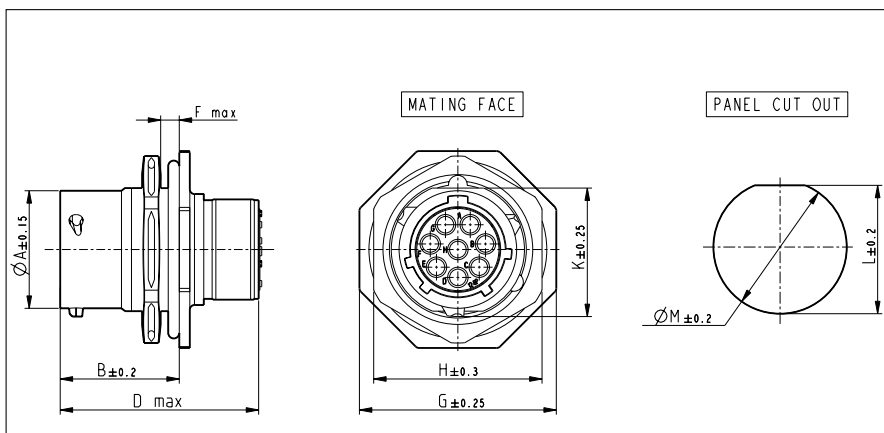
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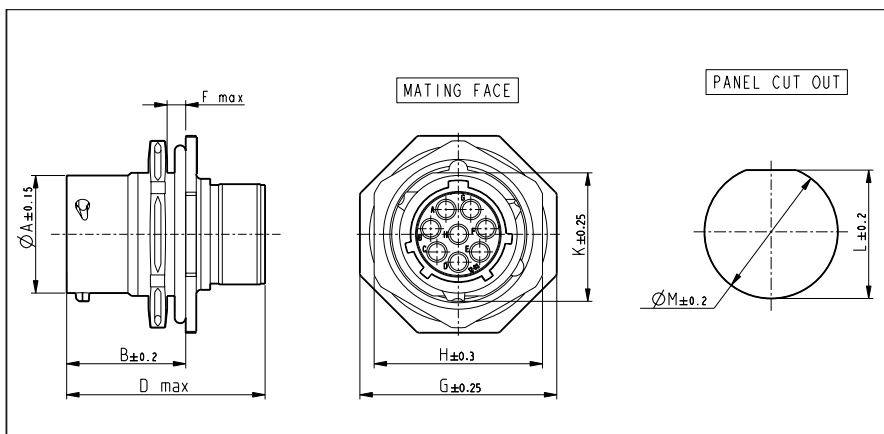
### Jam nut receptacle for pin contacts (UT07---PH/PH6) - suitable for rear panel mounting



| Part number |             | Shell size | Ø A<br>± 0.15 | B<br>± 0.2 | D<br>Max. | F<br>Max. | G<br>± 0.25 | H<br>± 0.3 | K<br>± 0.25 | L<br>± 0.2 | Ø M<br>± 0.2 |
|-------------|-------------|------------|---------------|------------|-----------|-----------|-------------|------------|-------------|------------|--------------|
| IP67        | IP68        |            |               |            |           |           |             |            |             |            |              |
| UT07104PH   | UT07104PH6  | 10         | 14.9          | 19.30      | 33.90     | 3.2       | 27.0        | 22.2       | 16.6        | 17.0       | 17.7         |
| UT07128PH   | UT07128PH6  | 12         | 19.0          |            |           |           | 31.8        | 27.0       | 20.8        | 21.2       | 22.5         |
| UT071412PH  | UT071412PH6 | 14         | 22.2          |            |           |           | 34.9        | 30.2       | 23.9        | 24.3       | 25.7         |
| UT071619PH  | UT071619PH6 | 16         | 25.3          |            |           |           | 38.1        | 33.3       | 27.1        | 27.5       | 28.7         |
| UT071823PH  | UT071823PH6 | 18         | 28.5          |            |           |           | 41.3        | 36.5       | 30.3        | 30.6       | 32.0         |
| UT072028PH  | UT072028PH6 | 20         | 31.7          | 24.70      | 39.00     | 6.4       | 46.1        | 39.7       | 33.4        | 33.8       | 35.2         |
| UT072235PH  | UT072235PH6 | 22         | 34.9          |            |           |           | 49.2        | 42.9       | 36.6        | 37.0       | 38.4         |
| UT072448PH  | UT072448PH6 | 24         | 38.0          |            |           |           | 53.4        | 46.0       | 39.8        | 40.1       | 41.5         |

For 96h salt spray version add "01" at the end of the part number e.g. UT071412PH601 (only jam nut will be black anodised)

### Jam nut receptacle for socket contacts (UT07---SH/SH6) - suitable for rear panel mounting



| Part number |             | Shell size | Ø A<br>± 0.15 | B<br>± 0.2 | D<br>Max. | F<br>Max. | G<br>± 0.25 | H<br>± 0.3 | K<br>± 0.25 | L<br>± 0.2 | Ø M<br>± 0.2 |
|-------------|-------------|------------|---------------|------------|-----------|-----------|-------------|------------|-------------|------------|--------------|
| IP67        | IP68        |            |               |            |           |           |             |            |             |            |              |
| UT07104SH   | UT07104SH6  | 10         | 14.9          | 19.30      | 33.00     | 3.2       | 27.0        | 22.2       | 16.6        | 17.0       | 17.7         |
| UT07128SH   | UT07128SH6  | 12         | 19.0          |            |           |           | 31.8        | 27.0       | 20.8        | 21.2       | 22.5         |
| UT071412SH  | UT071412SH6 | 14         | 22.2          |            |           |           | 34.9        | 30.2       | 23.9        | 24.3       | 25.7         |
| UT071619SH  | UT071619SH6 | 16         | 25.3          |            |           |           | 38.1        | 33.3       | 27.1        | 27.5       | 28.7         |
| UT071823SH  | UT071823SH6 | 18         | 28.5          |            |           |           | 41.3        | 36.5       | 30.3        | 30.6       | 32.0         |
| UT072028SH  | UT072028SH6 | 20         | 31.7          | 24.70      | 39.00     | 6.4       | 46.1        | 39.7       | 33.4        | 33.8       | 35.2         |
| UT072235SH  | UT072235SH6 | 22         | 34.9          |            |           |           | 49.2        | 42.9       | 36.6        | 37.0       | 38.4         |
| UT072448SH  | UT072448SH6 | 24         | 38.0          |            |           |           | 53.4        | 46.0       | 39.8        | 40.1       | 41.5         |

For 96h salt spray version add "01" at the end of the part number e.g. UT071412PH601 (only jam nut will be black anodised)

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## Insert rotation positions

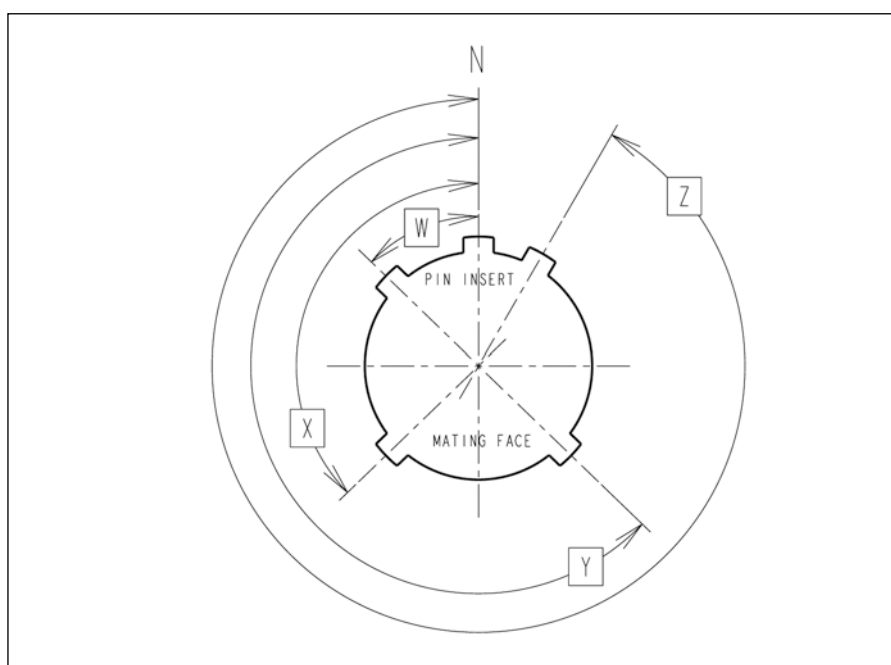
The table shows possible insert rotation positions.

5 positions N,W,X,Y and Z differ in the degree of rotation for the various connectors sizes.

The table indicates the exact degree of rotation.

Note: Insert rotation positions are optional (consult factory)

| Shell size | Contact number | Insert rotation positions |     |     |     |
|------------|----------------|---------------------------|-----|-----|-----|
|            |                | W                         | X   | Y   | Z   |
| 10         | 4              | on request                | -   | -   | -   |
| 12         | 8              | on request                | -   | -   | -   |
| 14         | 12             | 60                        | -   | -   | -   |
| 16         | 19             | 30                        | 165 | -   | 315 |
| 18         | 23             | -                         | 158 | -   | 270 |
| 20         | 28             | 79                        | -   | 259 | -   |
| 22         | 35             | 13                        | 162 | 198 | 265 |
| 24         | 48             | 60                        | 120 | 189 | 351 |



## Extra O-seals for wall mounting (UT00) and jam nut (UT07) receptacle connectors

An extra O-seal must be mounted on the receptacle connectors when a backshell is used. This to guarantee the IP68 sealing level

| Part number   | Shell size |
|---------------|------------|
| UT010REARSEAL | 10         |
| UT012REARSEAL | 12         |
| UT014REARSEAL | 14         |
| UT016REARSEAL | 16         |
| UT018REARSEAL | 18         |
| UT020REARSEAL | 20         |
| UT022REARSEAL | 22         |
| UT024REARSEAL | 24         |