

A photograph of an industrial welding environment. In the foreground, a car's metal chassis is being welded by a robotic arm, creating a large, bright spray of orange sparks. Another car chassis is visible in the background, also undergoing welding. The scene is dimly lit, with the primary light source being the intense heat of the welding process.

Souriau UTGX series overview

# UTGX:

The next generation  
of bayonet connectors  
for harsh environments

**EATON**

*Powering Business Worldwide*

Typical applications



Off-road vehicles



Heavy equipment



Energy



Power



Metal work



Instrumentation



Measurement



Robotic



Building automation & control



Infrastructure



Machinery

## A versatile, ruggedized solution for industrial applications

Waterproof, shock-proof and UV resistant, the UTGX series can withstand continuous underwater immersion, routine pressure washing, dirt and dust and other harsh conditions.

Ideal for both indoor and outdoor applications with a lifespan of up to 27 years in-application, the UL/IEC certified UTGX series connectors are **a safe and reliable solution**.

## Improve efficiency with lightweight, versatile and quick mating connectors

The UTGX series can be used in a wide range of configurations and electrical layouts, allowing you **to save space on your equipment**.

While the bayonet locking mechanism ensures a quick and secure connection and disconnection, other updates to the lightweight design make the UTGX series connectors easier than ever for operators to handle quickly. Especially in high-mating cycle applications, **UTGX will save time and money for your business**.

## Upgrading has never been easier

The new Souriau UTGX Series uses Trim Trio® contacts. A single design for machined, stamped and formed and highspeed contacts, making **it quicker, easier and more cost effective to upgrade**. By using the same contacts, the switch from one connector series to another doesn't require tool or panel cut-out modifications.



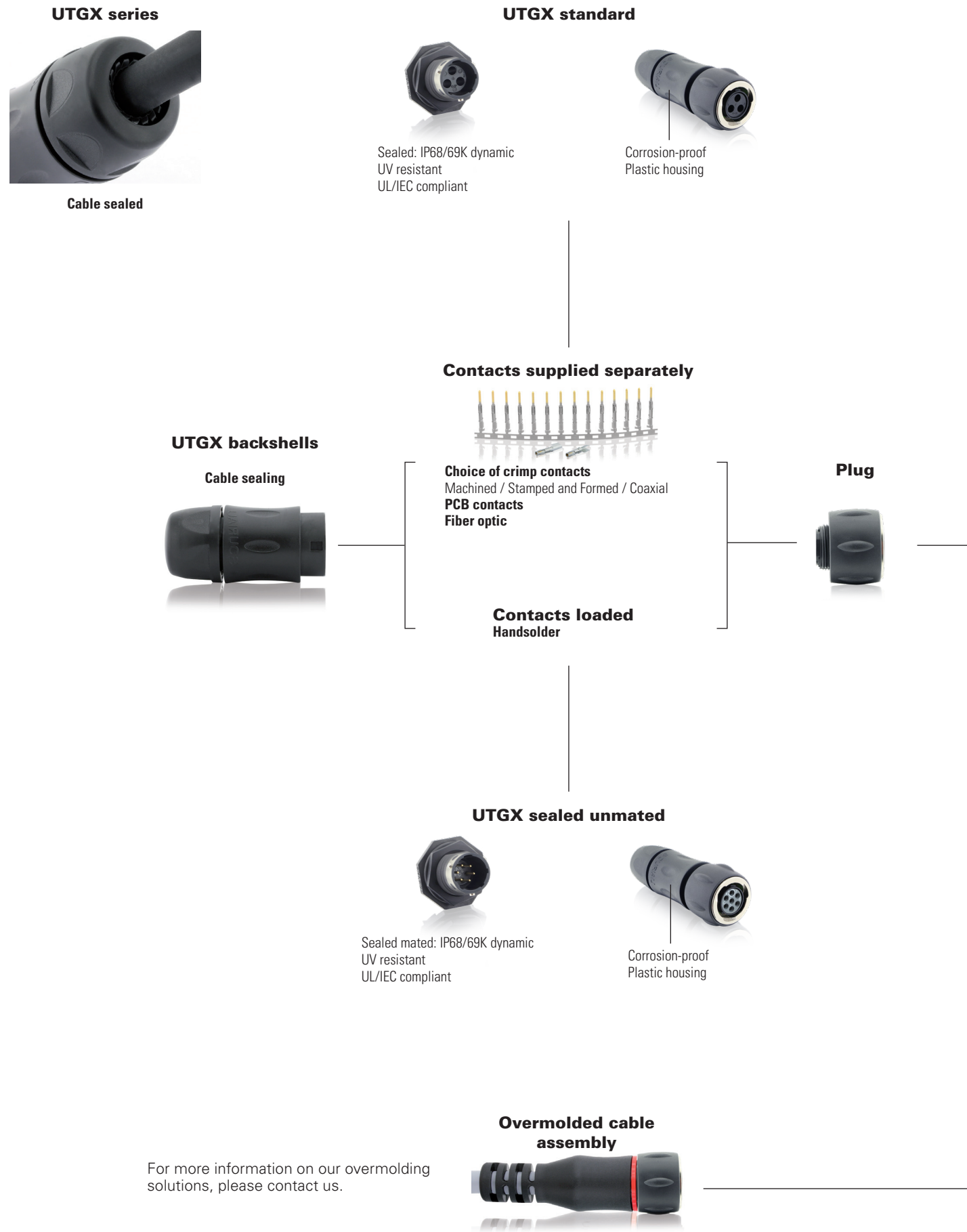
Outdoor & shock proof

Waterproof

UV resistant

Quick mating

# UTGX range overview



## UTGX standard receptacle

Jam nut



Square flange



### Contacts supplied separately



#### Choice of crimp contacts

Machined / Stamped and Formed / Coaxial

**PCB contacts**

Fiber optic

In-line



Square flange



### Contacts supplied separately



#### Choice of crimp contacts

Machined / Stamped and Formed / Coaxial

**PCB contacts**

Fiber optic

## UTGX backshells

Cable sealing



## UTGX sealed unmated receptacle

Jam nut



Square flange

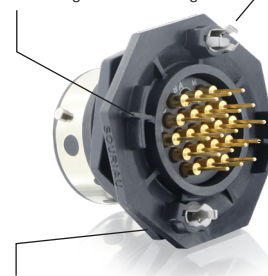


### Contacts loaded PCB Hand solder

## UTGX PCB contacts

Stand-offs to allow cleaning after soldering

Metal hold down clips lock the connector easily on the PCB and release stress on solder joints. They are also suitable for soldering the connector to the PCB through metal holes.



Low profile housing to limit space between panel and PCB

Pre-assembled PCB contacts

- machined or Stamped versions available
- different solder tail lengths possible
- different plating options



Technical features

Materials

- Body connector and backshell: Thermoplastic
- Insert:
  - UTGX Standard, UTGX Single Wire Sealed, UTGX Screw Termination Contacts: Thermoplastic
  - UTGX Sealed Unmated Handsolder & UTGX Sealed Unmated with PC Tails Contacts: Elastomer
- Nut: Metal
- Contacts: See page 12
- Halogen free
- RoHS compliant & conforms to the Chinese standard SJ/T1166-2006 (Chinese RoHS equivalent)



Environmental

- Temperature class: **IEC61984** from -40°C to +105°C
- Flammability rating:
  - **UL94 V-0** for UTGX standard
  - **UL94 HB** for UTGX Hi-seal
  - R22 HL2 / R23 HL2 according to NF EN 45545 for UTGX standard only
- Salt spray: Per EIA-364-26: 500 hours
- UV resistant: Connector made with (f1) material according to **UL746C**
- Outdoor used following level 6/6P according to UL50/UL50E
- Aging validation: **ISO 21207 Method B, 5 cycles**. Corresponding to 27 years in an industrial environment
- Sealing:
  - UTGX Standard: **IP68/IP69K** dynamic (mated)
  - UTGX Sealed Unmated version: **IP68/IP69K** dynamic (unmated)

- UTGX Single Wire Sealed: **IP67/69K** (up to IP68 with double sealing backshell)
- UTGX Screw Termination Contacts: IP68/IP69K dynamic (mated)

**Note:** IP68=10 m underwater during 1 week

- Fluid resistance:
  - Gas and oil
  - Mineral oil
  - Acid bath
  - Basic bath
  - Chlorine

Electrical 

- In accordance with:
  - **UL 1977:** Category ECBT2 File number: E169916
  - **C22.2 n°182.3:** Category ECBT8 File number: E169916
  - **IEC61984**



**Notes:** Scan the QR code to download the certificate.

- Voltage and current information available on page 7

Mechanical

- Durability: 500 matings and unmatings according to **IEC 60512-9a**
- Vibration Sinus from 10 to 2000Hz ; 20grms according to **IEC60512-6-4**
- Thermal shock: According to **MIL-DTL-26482** and **EIA364 32**
- IK resistors: See table below for shock resistance

| Connector type    | Size 10                                | Size 12                                | Size 14                                |
|-------------------|----------------------------------------|----------------------------------------|----------------------------------------|
| UTGX0 / UTGX6JC   | IK05 (0.7J) according to IEC62262      | IK06 (1J) according to IEC62262        | IK06 (1J) according to IEC62262        |
| UTGX7 / UTGX6JC   | IK06 (1J) according to IEC62262        | IK07 (2J) according to IEC62262        | IK07 (2J) according to IEC62262        |
| UTGX1JC / UTGX6JC | Impact test (6.8J) according to UL746C | Impact test (6.8J) according to UL746C | Impact test (6.8J) according to UL746C |

## Layouts face male contact

Electrical parameter according to IEC61984 for a pollution degree IV and overvoltage category III.

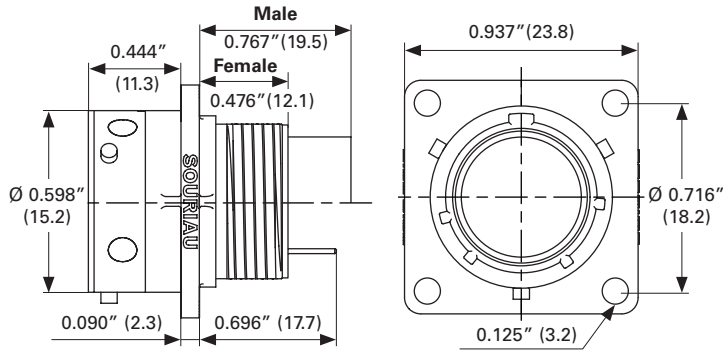
A higher voltage can be applied by selecting the appropriate connectors and contacts. Please consult us for more information.

| Connector size | Contacts                 | Description                                                                         |                                                                                     |                                                                                       |
|----------------|--------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 10             | Contact #16<br>(Ø 1.6mm) |    |    |                                                                                       |
|                |                          | 103<br>16A/300V - 2+ground                                                          | 104<br>13A/150V - 4 contacts                                                        |                                                                                       |
|                | Contact #20<br>(Ø 1.0mm) |    |    |     |
|                |                          | 106 – 10E6/10D6<br>7A/32V - 6 contacts                                              | 10E98/10D98<br>7A/50V - 6 contacts                                                  | 10E7/10D7<br>7A/50V - 7 contacts                                                      |
|                | Hybrid & others          |    |    |                                                                                       |
|                |                          | 102W2<br>25A/150V - 4 contact<br>2xØ2.4 (#12) + 2xØ1.0 (#20)                        | 103W3<br>5A/32V - 6 contacts<br>3xØ1.6 (#16) + 3xØ1.0 (#20)                         |                                                                                       |
| 12             | Contact #16<br>(Ø 1.6mm) |    |    |     |
|                |                          | 12E2/12D2<br>16A/150V - 2 contacts                                                  | 12E3/12D3<br>16A/150V - 3 contacts                                                  | 124 – 12E4/12D4<br>16A/150V - 3 + ground                                              |
|                | Contact #20<br>(Ø 1.0mm) |  |  |   |
|                |                          | 12E8/12D8<br>6A/32V - 8 contacts                                                    | 1210 – 12E10/12D10<br>6A/50V - 10 contacts                                          | 12E14/12D14<br>5A/32V - 14 contacts                                                   |
|                |                          |  |                                                                                     | 128<br>10A/80V - 8 contacts                                                           |
| 14             | Contact #16<br>(Ø 1.6mm) |  |  |   |
|                |                          | 14E5/14D5<br>16A/150V - 5 contacts                                                  | 147 – 14E7/14D7<br>7A/150V - 6+ground                                               | 1412<br>10A/63V - 12 contacts                                                         |
|                | Contact #20<br>(Ø 1.0mm) |  |  |  |
|                |                          | 14E18/14D18<br>5A/50V - 18 contacts                                                 | 1419 – 14E19/14D19<br>5A/32V - 19 contacts                                          | 1492<br>10A/63V - 12 contacts                                                         |
|                | Contact #8<br>(Ø 3.6mm)  |  |                                                                                     |                                                                                       |
|                |                          | 142G1<br>40A/300V - 2 + ground                                                      |                                                                                     |                                                                                       |
|                | Mixed power              |  |  |   |
|                |                          | 148<br>17A/230V - 8 contacts<br>4xØ1.6 (#16) + 3xØ2.4 (#12) + ground                | 14E12/14D12<br>4A/50V - 12 contacts<br>4xØ1.6 (#16) + 8xØ1.0 (#20)                  | 14E15/14D15<br>4A/50V - 15 contacts<br>1xØ1.6 (#16) + 14xØ1.0 (#20)                   |

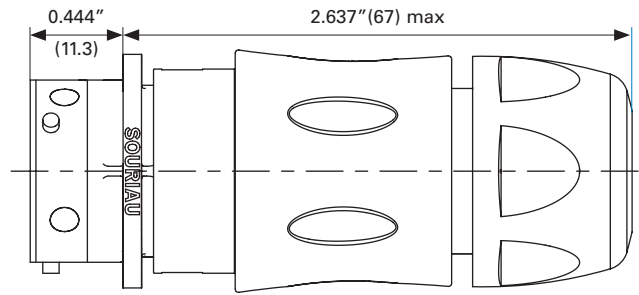
**Note:** Layouts in blue text are UTGX sealed in unmated condition

## UTGX dimensions size 10

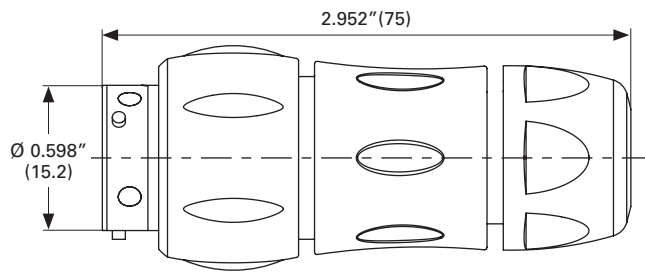
### Square flange receptacle - UTGX0 and UTGX0JC



Cable diameter acceptance: standard seal from 0.098" (2.5) to 0.315" (8), reduced seal from 0.059" (1.5) to 0.196" (5).

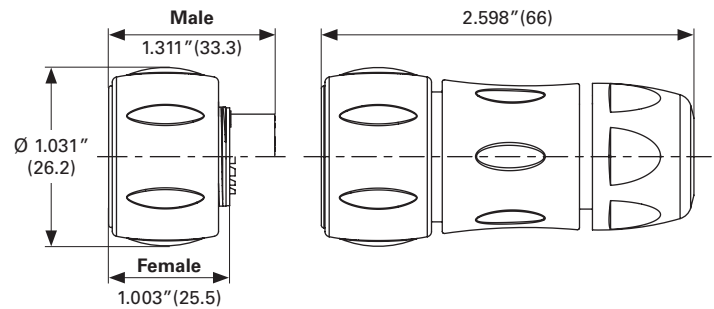


### Free hanging - UTGX1JC



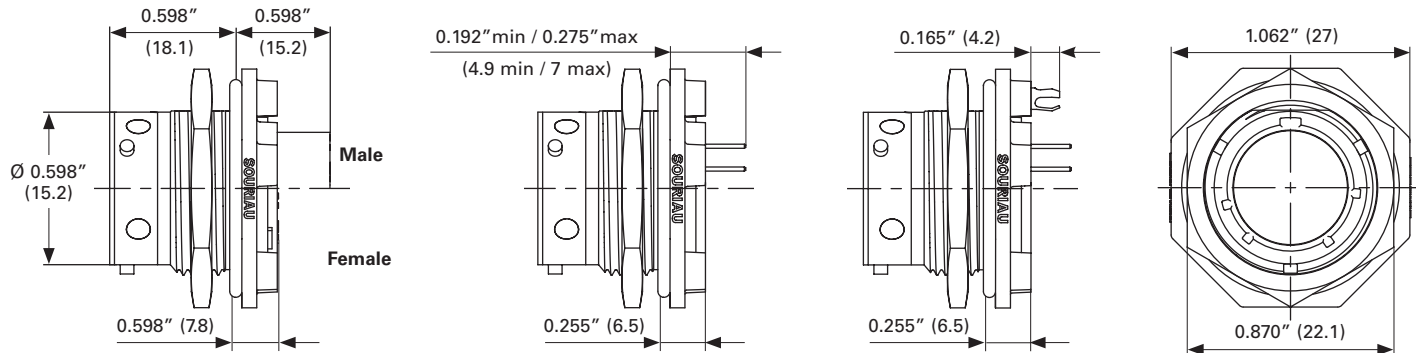
Cable diameter acceptance: standard seal from 0.098" (2.5) to 0.315" (8), reduced seal from 0.059" (1.5) to 0.196" (5).

### Plug - UTGX6 & UTGX6JC



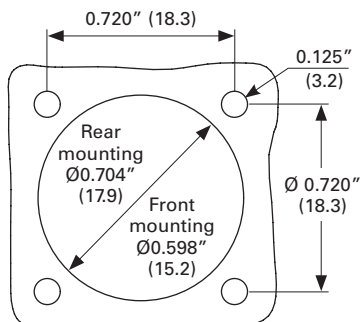
Cable diameter acceptance: standard seal from 0.098" (2.5) to 0.315" (8), reduced seal from 0.059" (1.5) to 0.196" (5).

### Jam nut receptacle - UTGX7

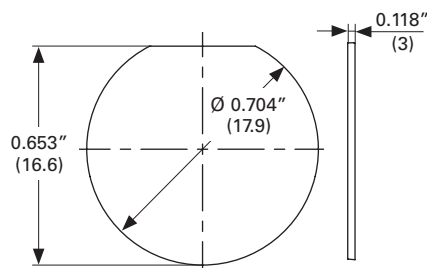


### Panel cut out

### Square flange receptacle - UTGX0

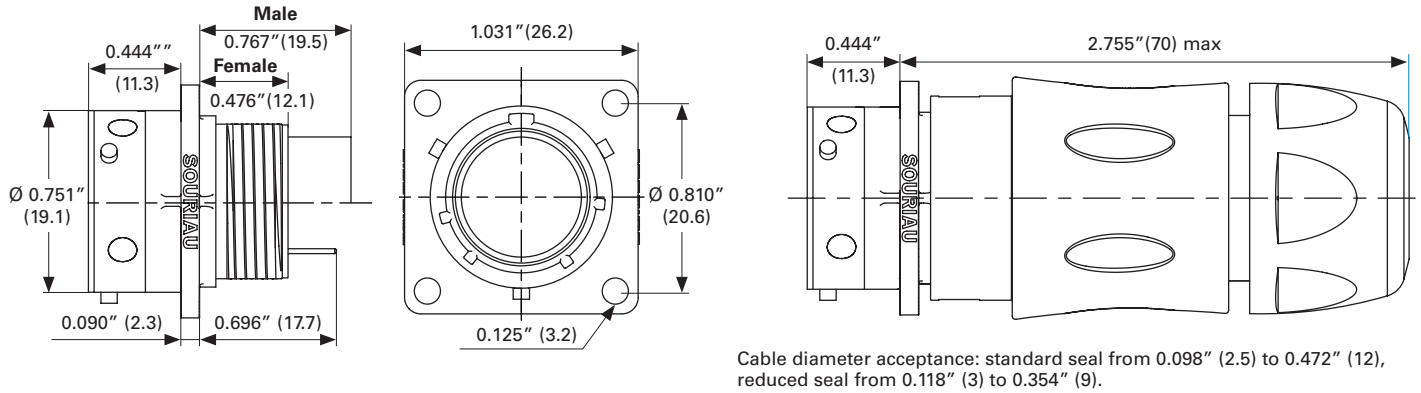


### Jam nut receptacle - UTGX7

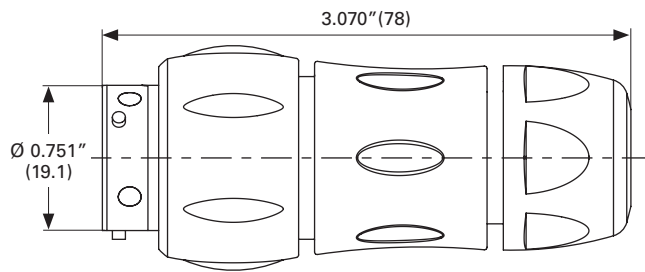


Dimensions: in (mm)

## Square flange receptacle - UTGX0 and UTGX0JC

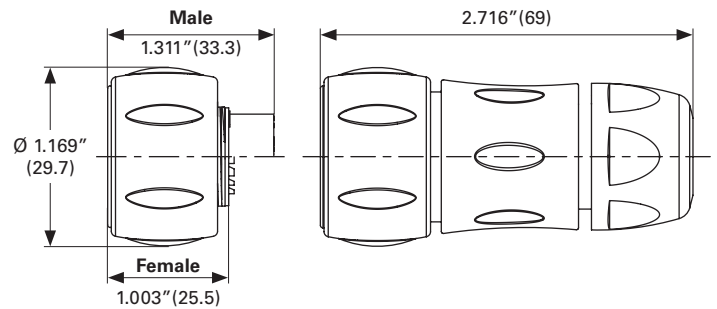


## Free hanging - UTGX1JC



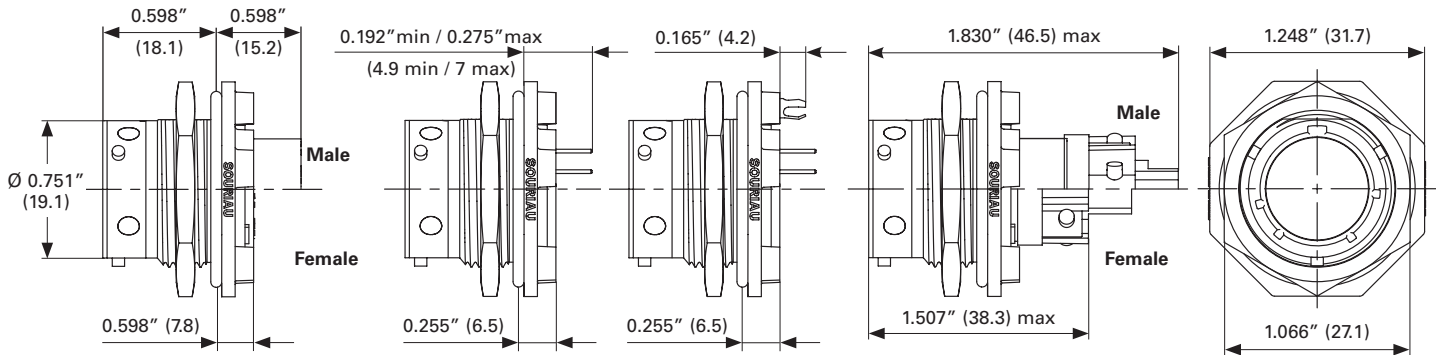
Cable diameter acceptance: standard seal from 0.098" (2.5) to 0.472" (12), reduced seal from 0.118" (3) to 0.354" (9).

## Plug - UTGX6 & UTGX6JC



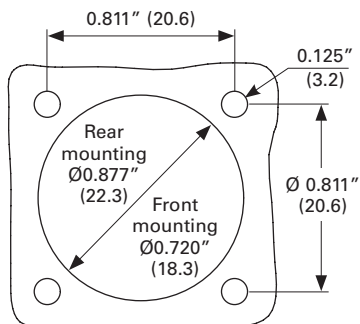
Cable diameter acceptance: standard seal from 0.098" (2.5) to 0.472" (12), reduced seal from 0.118" (3) to 0.354" (9).

## Jam nut receptacle - UTGX7

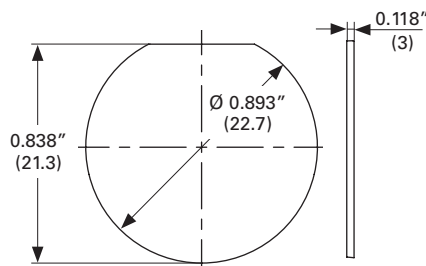


## Panel cut out

### Square flange receptacle - UTGX0



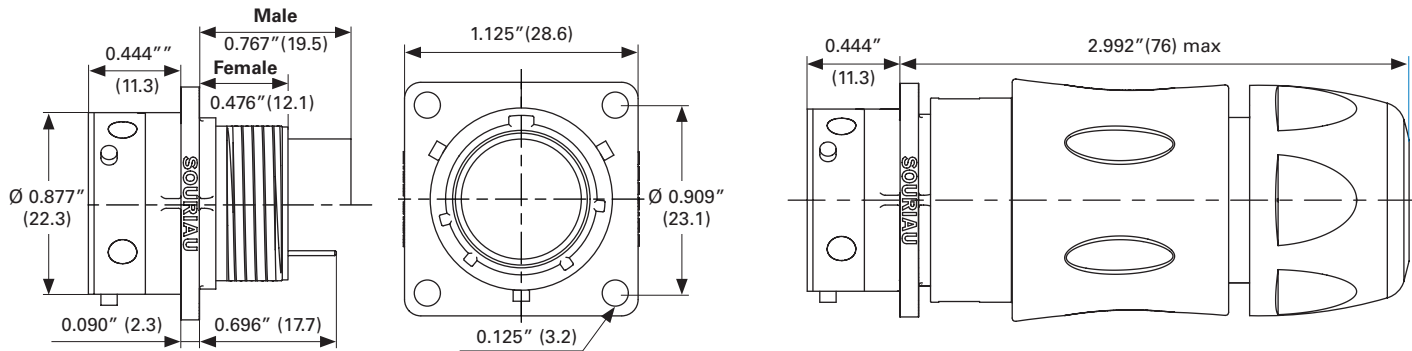
### Jam nut receptacle - UTGX7



Dimensions: in (mm)

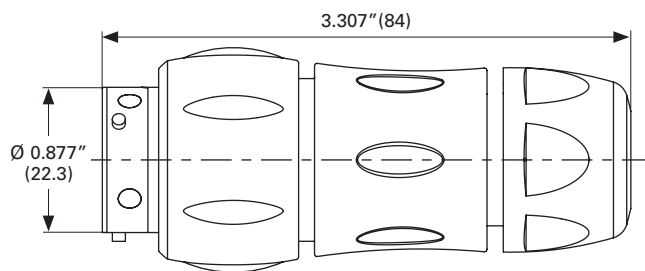
# UTGX dimensions size 14

## Square flange receptacle - UTGX0 and UTGX0JC



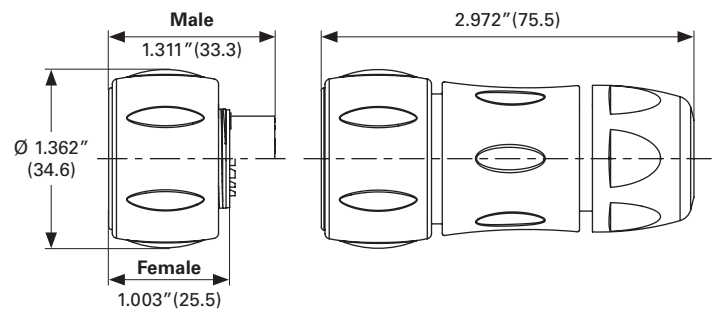
Cable diameter acceptance: standard seal from 0.275" (7) to 0.551" (14), reduced seal from 0.196" (5) to 0.472" (12).

## Free hanging - UTGX1JC



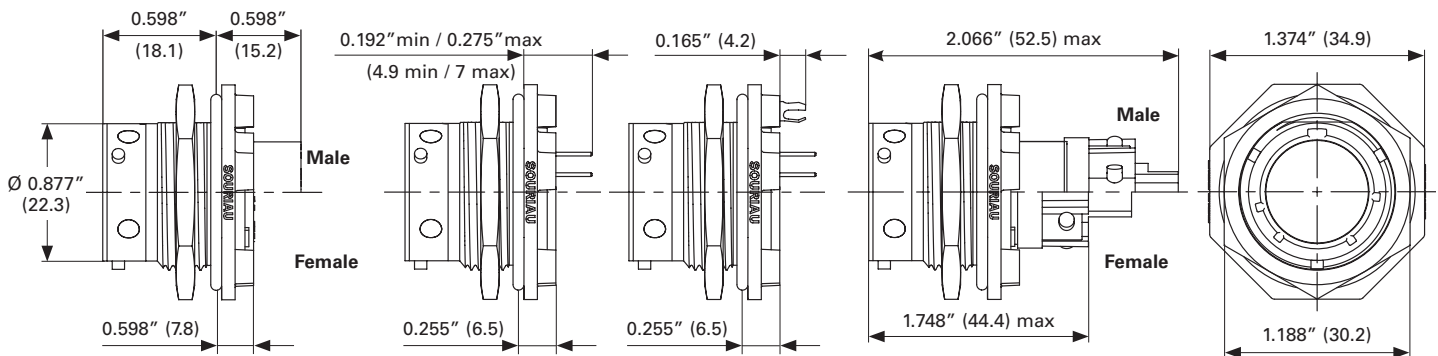
Cable diameter acceptance: standard seal from 0.275" (7) to 0.551" (14), reduced seal from 0.196" (5) to 0.472" (12).

## Plug - UTGX6 & UTGX6JC



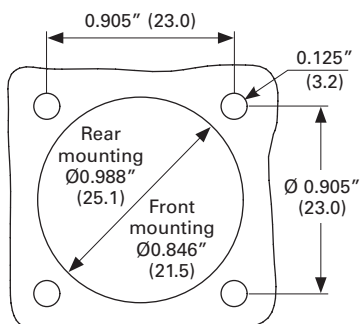
Cable diameter acceptance: standard seal from 0.275" (7) to 0.551" (14), reduced seal from 0.196" (5) to 0.472" (12).

## Jam nut receptacle - UTGX7

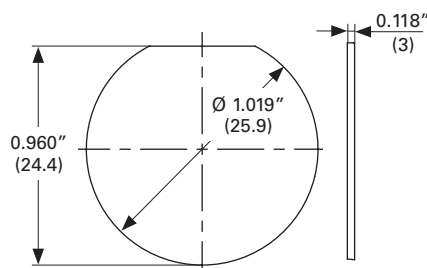


## Panel cut out

### Square flange receptacle - UTGX0



### Jam nut receptacle - UTGX7



Dimensions: in (mm)

### Jam nut & free hanging receptacle sealing caps



| Connector size | Description               | Part number |
|----------------|---------------------------|-------------|
| 10             | IP68/69K                  | UTGX10DCG   |
|                | IP68/69K - Metal terminal | UTGX10DCGR  |
| 12             | IP68/69K                  | UTGX12DCG   |
|                | IP68/69K - Metal terminal | UTGX12DCGR  |
| 14             | IP68/69K                  | UTGX14DCG   |
|                | IP68/69K - Metal terminal | UTGX14DCGR  |

### Square flange sealing cap



| Connector size | Description               | Part number |
|----------------|---------------------------|-------------|
| 10             | IP68/69K - Metal terminal | UTGX10DCGE  |
| 12             | IP68/69K - Metal terminal | UTGX12DCGE  |
| 14             | IP68/69K - Metal terminal | UTGX14DCGE  |

### Plug sealing cap



| Connector size | Description | Part number  |
|----------------|-------------|--------------|
| 10             | IP68/69K    | UTGX610DCG   |
| 12             | IP68/69K    | UTGX612DCG   |
| 14             | IP68/69K    | UTS614DCG133 |

### Plastic protective cap



| Connector size | Part number receptacle cap | Part number plug cap |
|----------------|----------------------------|----------------------|
| 10             | 85005586A                  | 85005595             |
| 12             | 85005587A                  | 85005596             |
| 14             | 85005588A                  | 85005597             |

### Gasket



| Connector size | Part number |
|----------------|-------------|
| 10             | UTFD12B     |
| 12             | UTFD13B     |
| 14             | UTFD14B     |

### Color coding rings

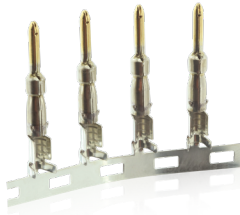


| Connector size | Description  | Part number receptacle | Part number plug |
|----------------|--------------|------------------------|------------------|
| 10             | G for Green  | UTGX710CCRG            | UTGX610CCRG      |
|                | Y for Yellow | UTGX710CCRY            | UTGX610CCRY      |
|                | R for Red    | UTGX710CCRR            | UTGX610CCRR      |
| 12             | G for Green  | UTGX712CCRG            | UTGX612CCRG      |
|                | Y for Yellow | UTGX712CCRY            | UTGX612CCRY      |
|                | R for Red    | UTGX712CCRR            | UTGX612CCRR      |
| 14             | G for Green  | UTGX714CCRG            | UTGX614CCRG      |
|                | Y for Yellow | UTGX714CCRY            | UTGX614CCRY      |
|                | R for Red    | UTGX714CCRR            | UTGX614CCRR      |

# UTGX contacts



**Machined contacts**



**Stamped & Formed contacts**



**Coaxial contacts**



**PCB contacts**



## Description

Trim Trio® contacts offer the unique feature of using the same contact style in any layout, with the same active part size (i.e. #20, #16, #12, etc.). This provides an easy solution allowing you to use only one type of contact to equip all of your Souriau connectors designed for Trim Trio® contacts.

Please note that the **UTGX series** is delivered with solder or PCB contacts for Hi-seal versions and without contacts for standard crimp versions.

The benefit of this standardization is to drastically reduce inventory costs. In addition, it eliminates the need for additional tooling and simplifies the assembly process. Souriau Trim Trio® contacts are designed for simple snap-in installation and further eliminate the need for an insertion tool.

## Packaging

Trim Trio® contacts are available in a wide variety of packaging from very small quantities (small bulk packaging) to very large quantities (reeled parts).



## Contact selector guide

### Machined contacts

| Contact size                | Contact type               | Active area                           |
|-----------------------------|----------------------------|---------------------------------------|
| <b>#20</b><br><b>Ø1mm</b>   | K                          | 0.4µm Gold over 2µm Nickel min        |
| <b>#16</b><br><b>Ø1.6mm</b> | K                          | 0.4µm Gold over 2µm Nickel min        |
|                             | J                          | Gold flash over Nickel<br>2µm min     |
|                             | T                          | Tin 3µm (-0/+2) over 1.3µm Nickel min |
|                             | D28 for Coax contacts only | 0.75µm min Gold over 2µm Nickel min   |
| <b>#12</b><br><b>Ø2.4mm</b> | A                          | 2µm Nickel + 2µm Ag                   |
|                             | K                          | 0.4µm Gold over 2µm Nickel min        |
| <b>#8</b><br><b>Ø3.6mm</b>  | A                          | 2µm Nickel + 2µm Ag                   |

### Stamped & Formed contacts

| Contact size                | Plating code | Plating description         |                                         |
|-----------------------------|--------------|-----------------------------|-----------------------------------------|
|                             |              | Active area                 | Inactive area                           |
| <b>#20</b><br><b>Ø1mm</b>   | S25 (female) | 0.75µm Gold min over Nickel | Gold flash over Nickel                  |
|                             | S26 (male)   | 0.75µm Gold min over Nickel | Gold flash over Nickel                  |
|                             | TK6          | 0.5µm - 2.5µm Sn pre-plated | -                                       |
| <b>#16</b><br><b>Ø1.6mm</b> | S31          | Gold flash over Nickel      | Crimped area: 1.3µm Tin min over Nickel |
|                             | S18          | 0.75µm Gold min over Nickel | Other areas: 1.3µm Tin min              |
|                             | D70          | 0.13µm Gold min over Nickel | Gold flash over Nickel                  |
|                             | TK6          | 0.5µm - 2.5µm Sn pre-plated | -                                       |

## Extraction tool



RX20D44



RX2025GE1



51060210924



51060210936



RX2031J

| Contact size            | Part number |
|-------------------------|-------------|
| #20                     | RX20D44     |
| #16                     | RX2025GE1   |
| #16 Long endurance tool | RX2031J     |
| #12                     | 51060210924 |
| #8                      | 51060210936 |

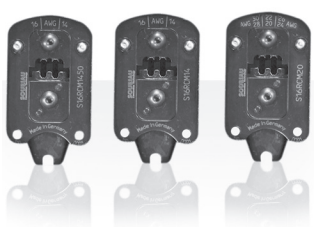
## Crimp tooling

### Tooling



| Description                                     | Part number |
|-------------------------------------------------|-------------|
| Handle (without head)                           | Shandles    |
| Box containing handle and several crimp tooling | Toolkit     |

### Crimp tooling (without Shandles)



| Contact size                        | Contacts                       | Part number of head |
|-------------------------------------|--------------------------------|---------------------|
| Standard contacts<br>#16<br>Ø 1.6mm | RM/RC 28M1K <sup>(1)</sup>     | S16RCM20*           |
|                                     | RM/RC 24M9K <sup>(1)</sup>     | S16RCM20*           |
|                                     | RM/RC 20M13K <sup>(1)</sup>    | S16RCM20*           |
|                                     | RM/RC 20M12K <sup>(1)</sup>    | S16RCM20*           |
|                                     | RM/RC 16M23K <sup>(1)</sup>    | S16RCM16*           |
|                                     | RM/RC 14M30K <sup>(1)</sup>    | S16RCM14*           |
|                                     | SM/SC 24ML1TK6 <sup>(1)</sup>  | S16SCM20*           |
|                                     | SM/SC 20ML1TK6 <sup>(1)</sup>  | S16SCM20*           |
|                                     | SM/SC 16ML1TK6 <sup>(1)</sup>  | S16SCML1*           |
|                                     | SM/SC 14ML1TK6 <sup>(1)</sup>  | S16SCML1*           |
| Standard contacts<br>#20<br>Ø 1mm   | SM/SC 16ML11TK6 <sup>(1)</sup> | S16SCML11*          |
|                                     | RM/RC 24W3K <sup>(1)</sup>     | S20RCM*             |
|                                     | RM/RC 20W3K <sup>(1)</sup>     | S20RCM*             |
|                                     | RM/RC 18W3K <sup>(1)</sup>     | S20RCM*             |
|                                     | SM/SC 24WL3 <sup>(1)(2)</sup>  | S20SCM20*           |
|                                     | SM/SC 20WL3 <sup>(1)(2)</sup>  | S20SCM20*           |

### Crimp tooling #12 and #8



| Contact size                        | Part number hand tool | Part number positioner + locator setting |
|-------------------------------------|-----------------------|------------------------------------------|
| Standard contacts<br>#12<br>Ø 2.4mm | M317                  | VGE10077A                                |
| Standard contacts<br>#8<br>Ø 3.6mm  | M317                  | VGE10078A                                |





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