

UTS Series Threaded Receptacle

SOURIAU



Eliminate the need for hard wiring systems with the UTS threaded receptacles

NPT, PG & M threaded receptacle - Threads into existing installation allowing for easy conversion from a hard wired to pluggable solution.

- NPT, PG & M threaded receptacle** ■ No need to change drilling pattern when using the UTS threaded receptacle as your connector solution!
- UL 1977 qualified** ■ Easy qualification of your System by regulation authorities
- Fire & smoke: UL94-VO** ■ Suitable for public environment
- IP68/69K + UV resistant** ■ Suitable for outdoor use
- Hexagonal shape** ■ Easy to fasten to a box with standard wrench

Description

- The UTL Series is a plastic connector range that meets industrial safety standards.
- The «Key hole» of the coupling system allows blind mating. In dark conditions the mechanical discriminations allow easy mating to avoid connector damage.
- The stainless steel latch coupling system is simple to use. With only 1 finger, connectors are mated with an audible click.
- The UTL Series is rated at IP68/69K even in dynamic conditions and remains sealed even when used continuously underwater or cleaned using a high pressure hose while the cable is moving.
- The UTL Series uses an outdoor rated material per Underwriters Laboratories.
- Screw termination contact for an installation only with a screw driver.

Technical features

Materials

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



Environmental

- **Operating temperature:** from -40°C to +105°C 40/100/21 per NFF 61-030
- **Flammability rating:**
 - UL94 V-0 (all UTS except the Sealed Unmated version) see page 180
 - UL94 HB (UTS Sealed Unmated version only) see page 180
 - I2F3 according to NFF 16101 & NFF 16102
- **Salt spray:** per EIA-026A ≥500 hours
- **UV resistant:** No mechanical degradation or important variation of colour after 5 years of exposure in natural environment (equivalence exposure to sun and moisture as per ISO 4892) and F1 rated per UL 746C
- **Sealing:**
 - UTS Standard: IP68/IP69K dynamic (mated)
 - UTS Sealed Unmated version: IP68/IP69K dynamic (unmated)
 - UTS Single Wire Sealed: IP67/69K (up to IP68 with double sealing backshell)
 - UTS 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

Electrical

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



- Also see page ???

Mechanical

- **Durability:** 250 matings & unmatings per MIL-C-26482
- **Vibration resistance (all UTS versions except UTS Screw Termination contacts):** Sinusoidal vibrations per IEC 60512-4 - from 10 to 2000 Hz
- **Thermal shock:** 5 cycles 30 min. from -40°C to 105°C per MIL-STD-1344 method 1003

UTS Series | Threaded Receptacle

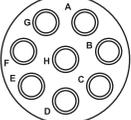
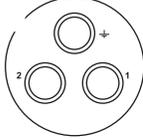
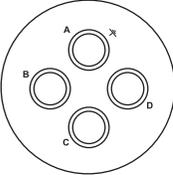
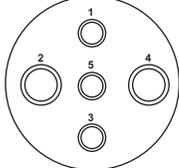
Layouts (Electrical parameter according to IEC)

Contacts #20:
from AWG 26 to 18
0.13 to 0.93 mm²

Contacts #16:
from AWG 30 to 14
0.05 to 2.5 mm²

Contacts #12:
from AWG 22 to 12
0.13 to 4 mm²

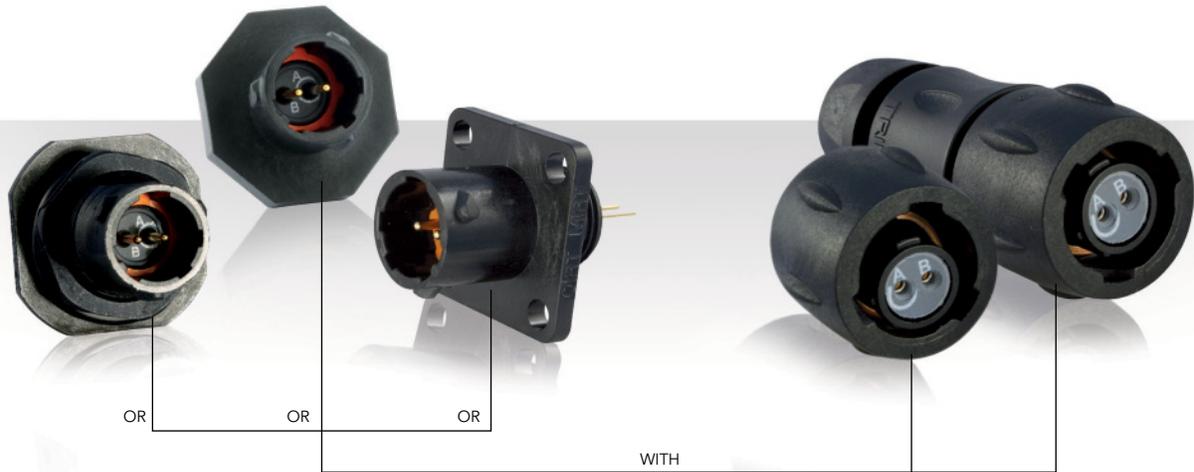
Contacts #8:
from AWG 16 to 8
1.5 to 10 mm²

Shell Size	Contact #16 (Ø 1.6mm)	Contact #20 (Ø 1.0mm)	Contact #8 (Ø 3.6mm)	Mixed Power	
8		8E2/8D2⁽¹⁾ 7A 32V 2 contacts  Page 20	8E3/8D3⁽¹⁾ 7A 32V 3 contacts  Page 36	8E3A/8D3A⁽¹⁾ 7A 50V 3 contacts  Page 40	
			8E98/8D98⁽¹⁾ 7A 50V 3 contacts  Page 40	8E33/8D33⁽¹⁾ 7A 50V 3 contacts  Page 44	8E4/8D4⁽¹⁾ 7A 32V 4 contacts  Page 60
10		10E6⁽¹⁾ 7A 32V 6 contacts  Page 84	10E7⁽¹⁾ 7A 50V 7 contacts  Page 96		
	12	128⁽¹⁾ 10A 80V 8 contacts  Page 100			
14			142G1⁽²⁾ 40A 300V 2+ground  Page 32		
18			183G1⁽²⁾ 32A 300V 3+ground  Page 56	18X2M3⁽²⁾ 32A 300V 5 contacts 3xØ1.6 (#16)+2xØ3.6 (#8)  Page 76	

XXXXXX blue highlighted items: UTS Sealed in Unmated Condition

1: M12, M16 and M20 threaded receptacle available

2: NPT available



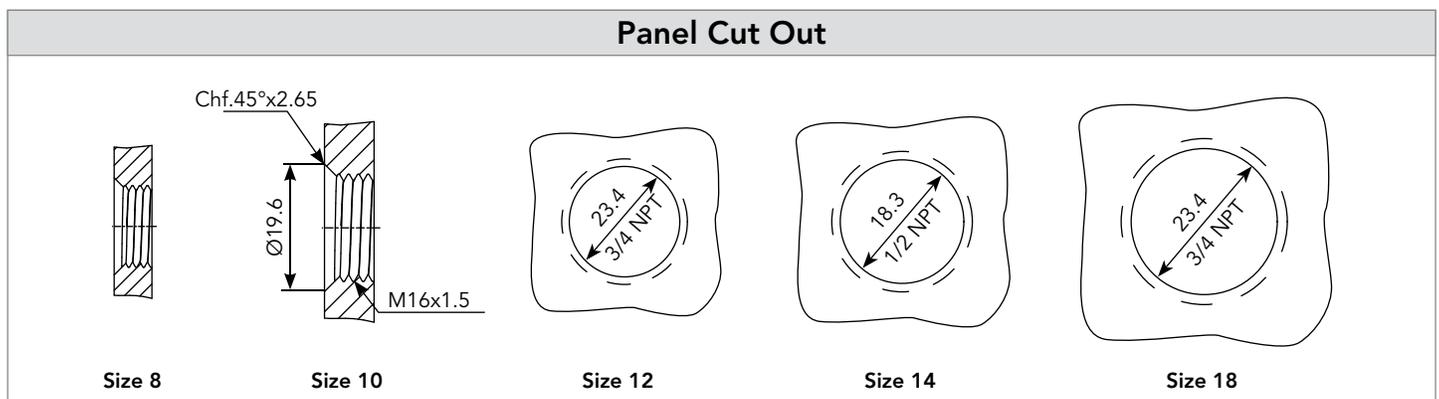
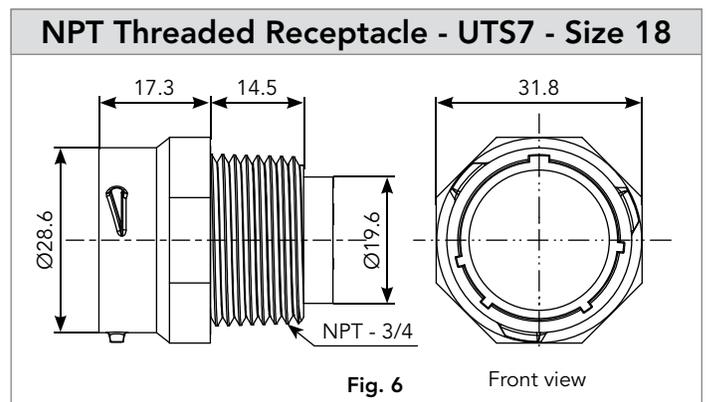
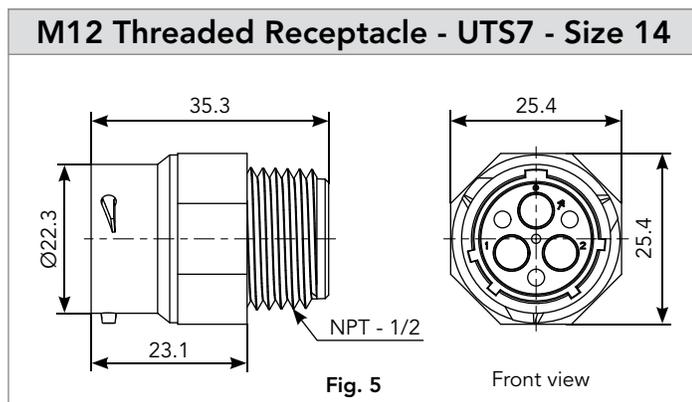
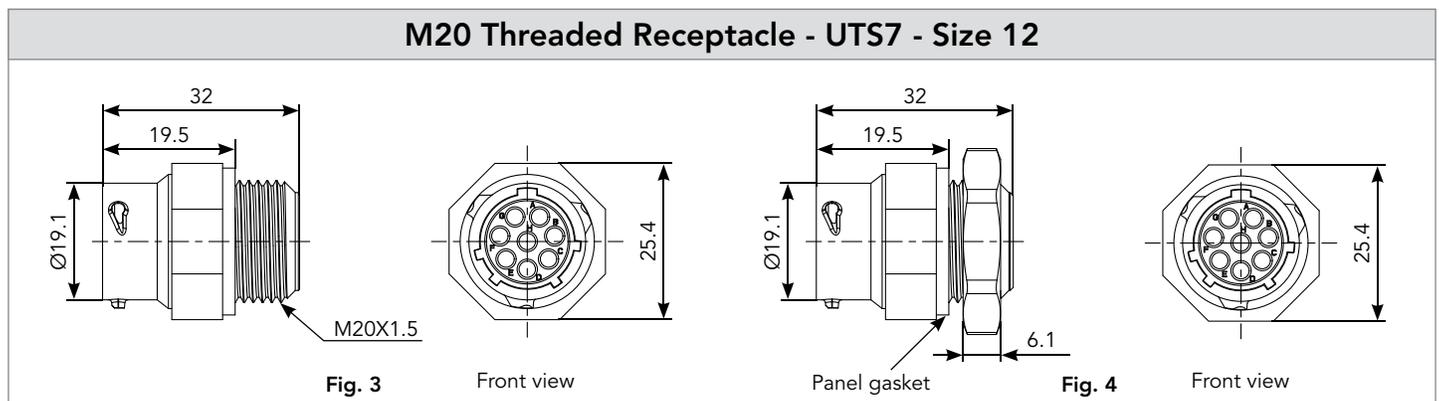
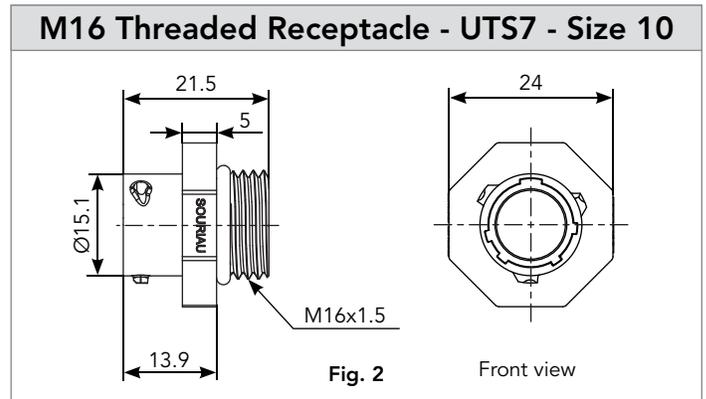
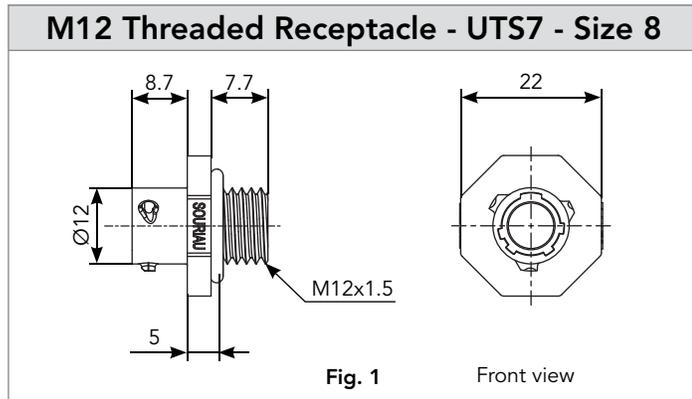
Connector Part Numbers

Shell size	Layout	Connector type	Contact type*	Part number	
				Male insert	Female insert
8	8E2/8D2 (2x#20)	M12 threaded receptacle (Fig. 1)	Handsoldier	UTS78E2PM12	UTS78E2SM12
		M12 threaded receptacle (Fig. 1)	PCB	UTS78D2PM12	UTS78D2SM12
	8E3/8D3 (3x#20)	M12 threaded receptacle (Fig. 1)	Handsoldier	UTS78E3PM12	UTS78E3SM12
		M12 threaded receptacle (Fig. 1)	PCB	UTS78D3PM12	UTS78D3SM12
	8E3A/8E98 (3x#20)	M12 threaded receptacle (Fig. 1)	Handsoldier	UTS78E3APM12	UTS78E3ASM12
		M12 threaded receptacle (Fig. 1)	PCB	UTS78E98PM12	UTS78E98SM12
	8D3A/8D98 (3x#20)	M12 threaded receptacle (Fig. 1)	Handsoldier	UTS78D3APM12	UTS78D3ASM12
		M12 threaded receptacle (Fig. 1)	PCB	UTS78D98PM12	UTS78D98SM12
	8E33/8D33 (3x#20)	M12 threaded receptacle (Fig. 1)	Handsoldier	UTS78E33PM12	UTS78E33SM12
		M12 threaded receptacle (Fig. 1)	PCB	UTS78D33PM12	UTS78D33SM12
	8E4/8D4 (4x#20)	M12 threaded receptacle (Fig. 1)	Handsoldier	UTS78E4PM12	UTS78E4SM12
10	106 - 10E6/10D6 (6x#20)	M16 threaded receptacle (Fig. 2)	Handsoldier	UTS710E6PM16	UTS710E6SM16
	10E7/10D7 (7x#20)	M16 threaded receptacle (Fig. 2)	Handsoldier	UTS710E7PM16	UTS710E7SM16
12	128 (8x#16)	M20 threaded receptacle with panel gasket and nut (Fig. 3)	Crimp	UTS7128PM20NUT	UTS7128SM20NUT
		M20 threaded receptacle with panel gasket (Fig. 4)	Crimp	UTS7128PM20	UTS7128SM20
14	142G1 (2 + ground, 3x#8)	NPT threaded receptacle (Fig. 5)	Crimp	-	UTS7142G1SNPT
		NPT threaded receptacle (Fig.5)	PCB	-	UTS7142G1SNPTNUT
18	183G1 (3 + ground, 4x#8)	NPT threaded receptacle (Fig. 6)	Crimp	-	UTS7183G1SNPT
		NPT threaded receptacle (Fig. 6)	PCB	-	UTS7183G1SNPT
	18X2M3 (3x#16, 2x#8)	NPT threaded receptacle (Fig. 6)	Crimp	UTS718X2M3PNPT	UTS718X2M3SNPT
		NPT threaded receptacle (Fig. 6)	PCB	UTS718X2M3PNPT	UTS718X2M3SNPT

Possibilities of discrimination/keying methods see page 208

Sealed unmatred

Dimensions



Note: all dimensions are in mm

Accessories

Sealing Caps



IP68/69K

Size	Part number
8	UTS8DCG
10	UTS10DCG
12	UTS12DCG
14	UTS14DCG
18	UTS18DCG



IP68/69K

Metal terminal

Size	Part number
8	UTS8DCGR
10	UTS10DCGR
12	UTS12DCGR
14	UTS14DCGR
18	UTS18DCGR

Plastic Protective Cap



Part numbers

Size	Part numbers	
	Receptacle cap	Plug cap
8	85005585A	85005594
10	85005586A	85005595
12	85005587A	85005596
14	85005588A	85005597
18	85005590A	85005599

Gasket



Size	Part number
8	UTFD11B
10	UTFD12B
12	UTFD13B
14	UTFD14B
18	UTFD16B

Color Coding Rings



G for Green

Y for Yellow



R for Red

Part numbers

Size	Part numbers	
	Receptacles	Plugs
8	UTS78CCRR	UTS68CCRR
	UTS78CCRY	UTS68CCRY
	UTS78CCRG	UTS68CCRG
10	UTS710CCRR	UTS610CCRR
	UTS710CCRY	UTS610CCRY
	UTS710CCRG	UTS612CCRG
12	UTS712CCRR	UTS612CCRR
	UTS712CCRY	UTS612CCRY
	UTS712CCRG	UTS612CCRG
14	UTS714CCRR	UTS614CCRR
	UTS714CCRY	UTS614CCRY
	UTS714CCRG	UTS614CCRG
18	UTS718CCRR	UTS618CCRR
	UTS718CCRY	UTS618CCRY
	UTS718CCRG	UTS618CCRG

Tooling - Contacts # 16

Handle (without Head)



Part number
SHANDLES

Tool Kit



Part number
TOOLKIT

Crimp Tooling #16 (without Shandles)



Contacts	Contact size	Part number of head
RM/RC 28M1K ⁽¹⁾	Standard contacts #16 Ø 1.6mm	S16RCM20*
RM/RC 24M9K ⁽¹⁾		S16RCM20*
RM/RC 20M13K ⁽¹⁾		S16RCM20*
RM/RC 20M12K ⁽¹⁾		S16RCM20*
RM/RC 16M23K ⁽¹⁾		S16RCM16*
RM/RC 14M30K ⁽¹⁾		S16RCM14*
SM/SC 24ML1TK6 ⁽¹⁾		S16SCM20*
SM/SC 20ML1TK6 ⁽¹⁾		S16SCM20*
SM/SC 16ML1TK6 ⁽¹⁾		S16SCML1*
SM/SC 14ML1TK6 ⁽¹⁾		S16SCML1*
SM/SC 16ML11TK6 ⁽¹⁾		S16SCML11*

(1): Example of plating, for other plating options see page 164
* Heads to be used with handle PN: SHANDLES



Extraction Tool #16



Part number
RX2025GE1

Tooling - Contacts # 8

Hand Tool



Part number
M317

Positioner + Locator Setting #8



Part number
VGE10078A

Extraction Tool #8



Part number
51060210936

Contacts

#20	Contact type	Plating	Cable acceptance (AWG)	Wire stripping length
Hand solder	Loaded in the connector	Min 0.4μ gold over 0.8μ Ni	22 to 18	5 mm
PCB	Machined ⁽³⁾	Min 0.4μ gold over 0.8μ Ni	-	-

#16	Contact type	Wire size		Part number		Max wire Ø	Max insulator Ø
		AWG	mm ²	Male	Female		
Crimp	Machined	30-28	0.50-0.08	RM28M1K	RC28M1K	0.55	1.00
		26-24	0.13-0.25	RM24M9K	RC24M9K	0.80	1.60
		22-20	0.32-0.52	RM20M13K	RC20M13K	1.15	1.80
		22-20	0.32-0.52	RM20M12K	RC20M12K	1.15	2.20
		20-16	0.52-1.50	RM16M23K	RC16M23K	1.80	3.20
		16-14	1.50-2.50	RM14M30K	RC14M30K	2.30	3.20
	Stamped & Formed reeled contacts See note (2) for loose piece	26-24	0.13-0.25	SM24M1TK6 ⁽¹⁾⁽²⁾	SC24M1TK6 ⁽¹⁾⁽²⁾	-	0.90-1.60
		22-20	0.32-0.52	SM20M1TK6 ⁽¹⁾⁽²⁾	SC20M1TK6 ⁽¹⁾⁽²⁾	-	1.20-2.10
		18-16	0.80-1.50	SM16M1TK6 ⁽¹⁾⁽²⁾	SC16M1TK6 ⁽¹⁾⁽²⁾	-	3.20
		18-16	0.80-1.50	SM16M11TK6 ⁽¹⁾⁽²⁾	SC16M11TK6 ⁽¹⁾⁽²⁾	-	3.00
14		2.50	SM14M1TK6 ⁽¹⁾⁽²⁾	SC14M1TK6 ⁽¹⁾⁽²⁾	-	3.20	

#8	Contact type	Wire size		Part number		Max wire Ø	Max insulator Ø
		AWG	mm ²	Male	Female		
Crimp	Machined	16	1.50	82913601A ⁽¹⁾	82913600A ⁽¹⁾	1.72	6.50
		14	2.50	82913603A ⁽¹⁾	82913602A ⁽¹⁾	2.22	
		12	4.00	82913605A ⁽¹⁾	82913604A ⁽¹⁾	2.82	
		10	6.00	82913607A ⁽¹⁾	82913606A ⁽¹⁾	3.50	
		8	10.00	82913609A ⁽¹⁾	82913608A ⁽¹⁾	4.35	
PCB	Machined ⁽³⁾	-	-	82911685NPC ⁽¹⁾	82911684NPC ⁽¹⁾	-	-

(1): Example of plating, for other plating see page 12

(2): Loose piece contact available if putting L. Example: **SM20ML1TK6**

(3): For dimensions see page 168

Note: all dimensions are in mm

Electrical Characteristics per UL1977

UTS 8E2/8D2

UL
7A 250V UL94 HB

CSA
7A 250V UL94 HB

IEC
7A 32V 1.5kV 3

**UTS 8E3/8D3 - 8E3A/8E98
8D3A/8D98 - 8E33/8D33**

UL
7A 250V UL94 HB

CSA
7A 250V UL94 HB

IEC
7A 32V 1.5kV 3

UTS 8E4/8D4

UL
7A 250V UL94 HB

CSA
7A 250V UL94 HB

IEC
7A 32V 1.5kV 3

UTS 10E6

UL
6A 250V UL94 HB

CSA
6A 250V UL94 HB

IEC
7A 32V 1.5kV 3

UTS 10E7

UL
6A 250V UL94 HB

CSA
6A 250V UL94 HB

IEC
7A 50V 1.5kV 3

UTS 128

UL
10A 500V UL94 V-0

CSA
7A 500V UL94 V-0

IEC
10A 80V 1.5kV 3

UTS 142G1

UL
44A 600V UL94 V-0

CSA
30A 600V UL94 V-0

IEC
40A 300V 4kV 3

UTS 183G1

UL
44A 600V UL94 V-0

CSA
26A 600V UL94 V-0

IEC
32A 300V 4kV 3

UTS 18X2M3

UL
44A 600V UL94 V-0

CSA
34A 600V UL94 V-0

IEC
32A 300V 4kV 3

Contact Selector Guide

Contact supplied separately

Electrical characteristics: contact resistance		
#20 Ø1mm	Machined	< 6mΩ
	Stamped & Formed	< 6mΩ
#16 Ø1.6mm	Machined	< 3mΩ
	Stamped & Formed	< 6mΩ
#8 Ø3.6mm	Machined	< 5mΩ

Available platings (contact supplied separately)	
A	2μ Ni + 2μ Ag
J	Gold flash over 2μ Ni
K	Min 0.4μ gold over 2μ Ni
S31	Active part: Gold flash over Ni Crimp area: Nickel
S18	Active part: 0.75μ gold min over 2μ Ni Crimp area: 1.3μ tin over Ni Other: Nickel
S25 S26	Active part: 0.75μ Au over Ni Crimp area: flash Au over Ni
TK6	2-5μ Sn pre-plated
D70	Superseded by S31
S6	Superseded by S18

Contact preloaded

Electrical characteristics: contact resistance		
#20 Ø1mm	Machined	< 4mΩ
#16 Ø1.6mm	Machined	< 3mΩ

Available plating (contact preloaded)
Min 0.4μ gold over 0.8μ Ni

Packaging

Due to the wide variety of applications, contact packaging is offered for small series (bulk package) and high volume production (reeled contacts):

Size contacts #20 (Ø1mm) & #16 (Ø1.6mm)



- 25 pieces loose package (Stamped & Formed contacts)



- 50 pieces bulk package (Machined contacts)



- 1,000 pieces bulk package (Machined contacts)



- 3,000 pieces reeled (Stamped & Formed contacts)



- 2,000 pieces reeled (Machined contacts)

Size contacts #8 (Ø3.6mm)



- 100 pieces bulk package (Machined contacts)

Note: 1,000 pieces bulk package available by adding 1000 at the end of the part number: e.g. RC16M23K1000
2,000 pieces reeled package available by adding K at the beginning of the part number: e.g. KRC16M23K

Crimp Contacts

First Mate Last Break Contacts

Contact size	Type	Wire size		Part number		Max wire Ø (mm)	Max insulator Ø (mm)	Color band		Available plating see p. 12
		AWG	mm ²	Male	Female			Front	Rear	
#16 Ø1.6 mm Longer male contact (+1mm)	Machined	30-28	0.05-0.08	RM28M1GE1-	-	0.55	1.1	-	Red	KorJ
		26-24	0.13-0.2	RM24M9GE1-		0.8	1.6	Red	Red	
		22-20	0.32-0.52	RM20M13GE1-		1.18	1.8	Black	Red	
				RM20M12GE1-			2.2	Blue	Red	
		20-16	0.52-1.5	RM16M23GE1-		1.8	3.2	-	Red	
		16-14	1.5-2.5	RM14M30GE1-		2.28	-	-	Red	
#16 Ø1.6 mm Shorter female contact (-0.7mm)	Machined	30-28	0.05-0.08	-	RC28M1GE7-	0.55	1.1	-	Blue	KorJ
		26-24	0.13-0.2		RC24M9GE7-	0.8	1.6	Red	Blue	
		22-20	0.32-0.52		RC20M13GE7-	1.18	1.8	Black	Blue	
					RC20M12GE7-		2.2	Blue	Blue	
		20-16	0.52-1.5		RC16M23GE7-	1.8	3.2	-	Blue	
		16-14	1.5-2.5		RC14M30GE7-	2.28	-	-	Blue	

How to Make FMLB / LMFB Connection

Contact 1 \ Contact 2	Standard male contact	Standard female contact	Longer male contact
Standard male contact		✓	
Standard female contact	✓		✓ FMLB
Shorter female contact	✓ LMFB		

First Mate Last Break contacts should be chosen only if the cavity is not marked with the ground symbol. For cavities marked with the ground symbol, standard contacts will fulfill the same role as a first mate, last break contact used in a standard cavity.



Ground symbol

PCB Contacts

PCB Contacts Supplied Separately - UTS Standard Series

PCB soldering

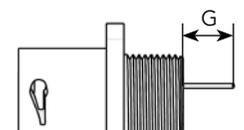
The UTS Series can be used in a wave soldering process, but not reflow soldering process. All high temperature processes are prohibited.



Contact size	Part number		Plating see page 12
	Male	Female	
#20 Ø1mm	RMW50A7K RMW5016K	RCW50A7K RCW5016K	K
#8 Ø3.6mm	82911685NPC	82911684NPC	2 µm Ni

Minimal length G (mm)

Dimension of dipsolder contacts out of connector (contacts to be ordered separately).



UTS18X2M3 with PCB contacts #16 and #8

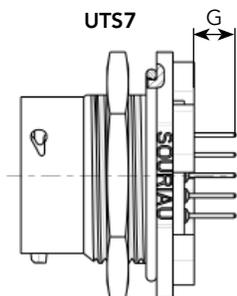
Connector type	Pin contact		Socket contact	
	RM20M12E83K*	82911685NPC*	RC20M12E87K*	82911684NPC*
UTS7142G1P	-	6.4	-	-
UTS7142G1S	-	-	-	8.2
UTS7142G1SNPT	-	5.8	-	5.4
UTS718X2M3	4.9	4.5	3.6	5.2
UTS7183G1SNPT	-	-	-	4.17

* Plating indication see page 12

PCB Contacts Loaded - UTS Sealed Unmated Series

PCB soldering

The UTS Series can be used in a wave soldering process, but not reflow soldering process. All high temperature processes are prohibited.



Nominal length G (mm)

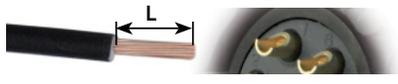
Dimension of dipsolder contacts out of connector (contacts to be ordered separately).

Connector size	Connector Part Number	Pin contact		Socket contact	
		G mini	G maxi	G mini	G maxi
8	8D2 - 8D3 8D4	3.8	6.1	3.7	5.9
	8D3A/8D98 8D33	4.7	7.3	4.7	7

Note: all dimensions are in mm

Crimping instructions

Wire Stripping Crimp Version			
	Part number		Stripping length L
	Male	Female	
Machined contact	#16 (Ø 1.6mm)		
	RM28M1- / RM24M9- RM20M13- / RM20M12-	RC28M1- / RC24M9- RC20M13- / RC20M12-	4.8
	RM16M23- / RM14M30-	RC16M23- / RC14M30-	7.1
	#8 (Ø 3.6mm)		
	82913601- / 82913603- 82913605- / 82913607- 82913609-	82913600- / 82913602- 82913604- / 82913606- 82913608-	6.5 to 7.5
Stamped & Formed	#16 (Ø 1.6mm)		
With insulation support			
	SM24M1- / SM24ML1- SM20M1- / SM20ML1-	SC24M1- / SC24ML1- SC20M1- / SC20ML1-	4
	SM16M11- / SM16ML11-	SC16M11- / SC16ML11-	4.65
Without insulation support	#16 (Ø 1.6mm)		
	SM16M1- / SM16ML1-	SC16M1- / SC16ML1-	6.35
	SM14M1- / SM14ML1-	SC14M1- / SC14ML1-	6.35
Power contacts	#8 (Ø 3.6mm)		
	82913601- / 82913603- 82913605- / 82913607- 82913609-	82913600- / 82913602- 82913604- / 82913606- 82913608-	6.5 to 7.5

Wire Stripping Solder		
Solder contact delivered with connector	#20 (Ø 1mm)	Stripping length L
		5

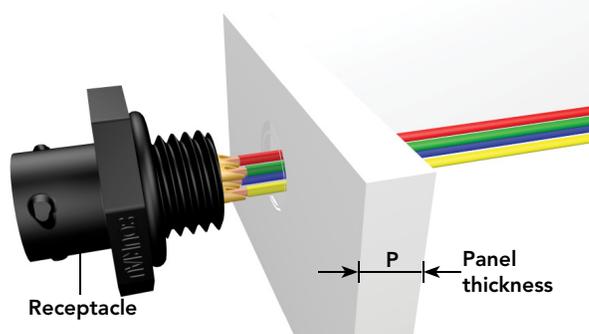
Assembly Instructions

Assembly (Mounting Suggestion)

- Strip wires and crimp contacts (see page 15)
- Insert contacts into connector cavities (insert manually or use tool RTM205 crimp contacts)
- Seat o-ring, place receptacle in the panel cut-out
- Tighten

Shell size	Jam nut torque (Nm) maxi	Threading	P mini (mm)
8	2.5	M12 x 1.5	7.7
10	3.75	M16 x 1.5	
12	3.75	M20 x 1.5	10.4
14	4.18	1/2"	8.3
18	4.76	3/4"	11.6

Threaded version



UTS Coupling Procedure

The pictures below provide step by step instructions on how to mate a plug and receptacle connector in order to avoid damaging any of the contacts.

- Identify the primary key of each connector.



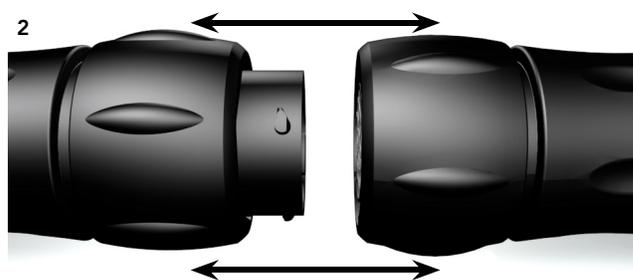
Non correct positioning:



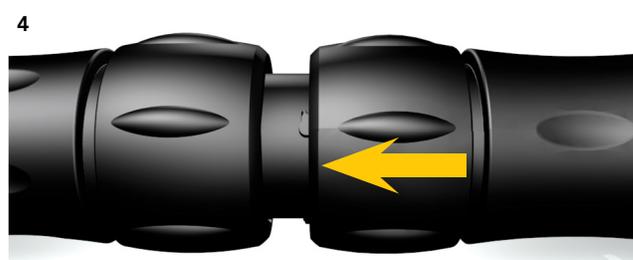
- Turn coupling ring until you hear a 'click'



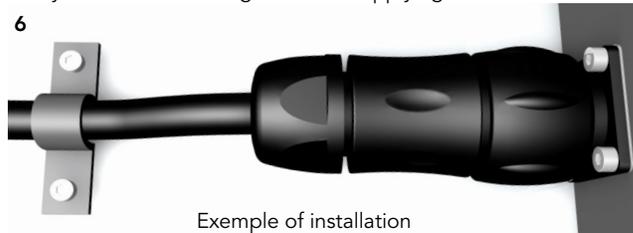
- Align the primary keys of the connectors.



- Offer the plug to the receptacle.



Fastening of cable: In order to avoid any mechanical stress on the connection, cable could be clamp closed to the connector in such a way there is no bending or traction applying on the connector.



Handle & Interchangeable Heads

User Guide

- 1) Fully close then release the tool, keep it open.
Open the 2 pins.



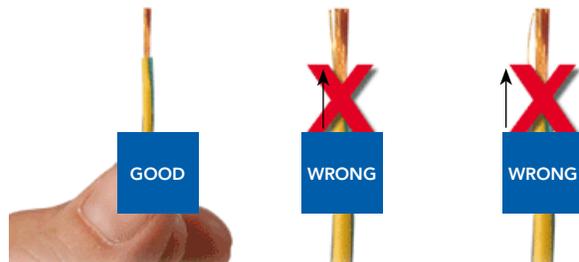
- 2) Choose the adapter head (sold separately), keep vertical and slide it into the handle until the mechanical end.



- 3) Close the two pins simultaneously to maintain the head.



- 4) Strip the cable properly check the recommended size in the catalog on page 176.



- 5) Place conductors, with no deteriorations, in the bucket contact.
All strands to be located in the crimp bucket.



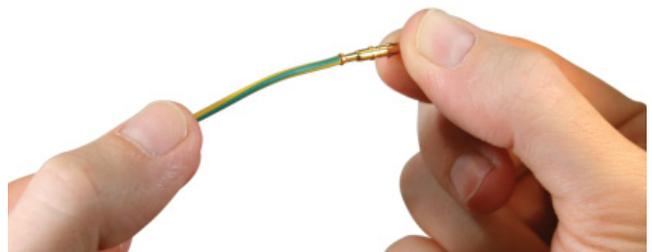
- 6) Position the contact in the bottom of the tool by checking its orientation.



- 7) To crimp contact assembly-cable, tighten sharply the clip to the end of the mechanism (maxi 175N).



- 8) To control crimp quality, slightly pull cable with two fingers to control retention.



For further information contact us at contactindustry@souriau.com
or visit our web site www.souriau-industrial.com