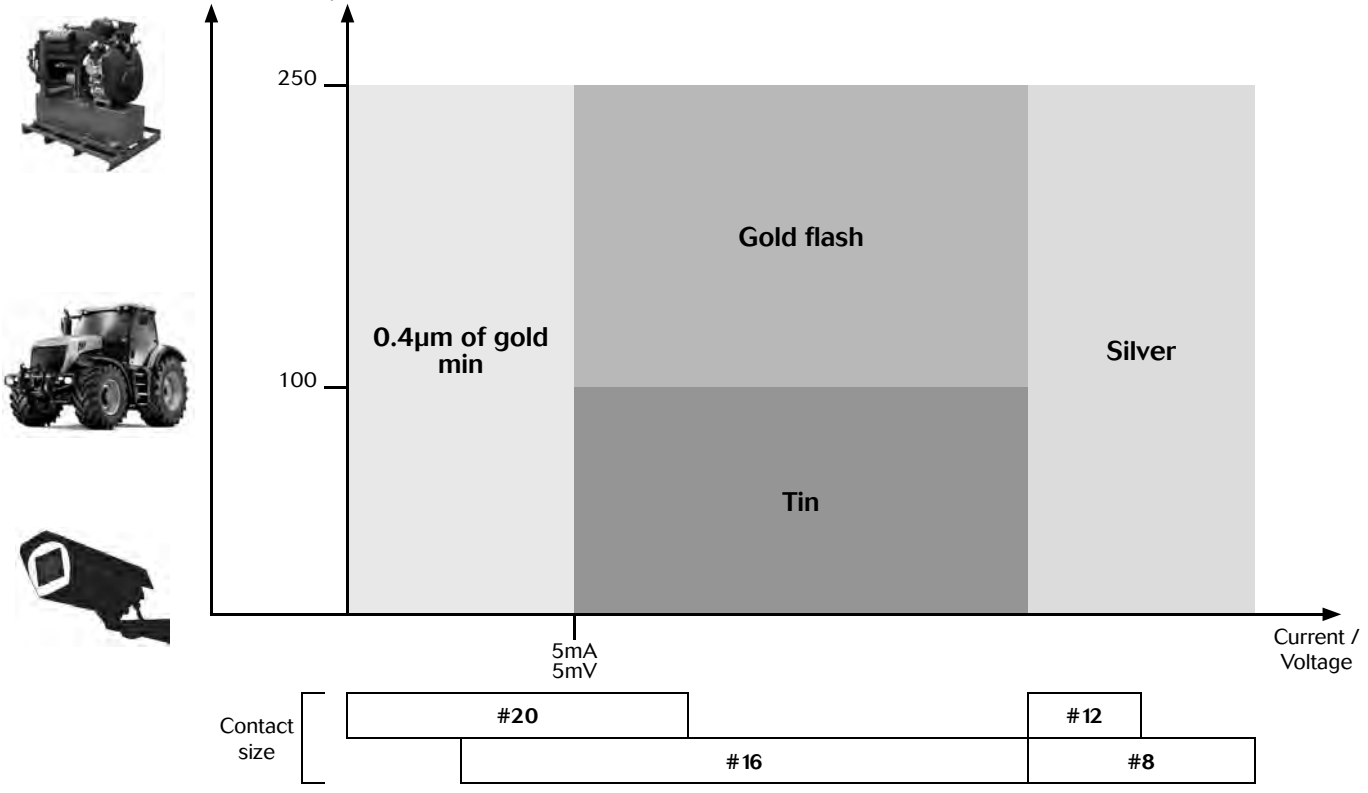
Contact plating selector guide

As soon as you know what contact size you need, you next have to decide on which type to use.
Souriau proposes mainly two different types of electrical contacts:

- Machined
- Stamped & formed

Machined contacts are generally chosen for low quantities purpose as well as a better solution for power applications.
Stamped & formed contacts offer the ability to be crimped automatically which makes them more suitable for high volume production applications.

Then comes the question: What plating should I choose ?
Hereunder is a graph with criteria to guide you:
NB: do not mix different plating (e.g. tin plated pin contact with gold plated socket contact).



Contact selector guide

Contact preloaded

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

Available platings (contact preloaded)
Min 0.4µ gold over 2µ Ni

Contact supply separately

Electrical characteristics: contact resistance		
#20 Ø1mm	Machined	< 6mΩ
	Stamped & formed	< 15mΩ
#16 Ø1.6mm	Machined	< 3mΩ
	Stamped & formed	< 6mΩ
#12 Ø2.4mm	Machined	< 5mΩ
#8 Ø3.6mm	Machined	< 5mΩ

Available platings (contact supply 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
T	T: 2µm Ni mini all over + 3 to 5 µm Sn all over
TK6	2-5µ Sn pre-plated

Packaging

Conscious of the wide variety of applications, contact packaging has been considered for small series (bulk packaging) and high volume production (reeled contacts):

Size contacts #20 & #16

- **25 pieces bulk packing (stamped & formed contacts)**

- **50 pieces bulk packing (machined contacts)**

- **1000 pieces bulk packing (machined contacts)**

- **3000 pieces reeled (stamped & formed contacts)**

- **5000 pieces reeled (machined contacts)**

Size contacts #12 & #8

- **100 pieces bulk packing (stamped & formed contacts)**

Crimp contacts

Standard version

Contact size	Type	Wire size		Part number		Max wire Ø	Max insulator Ø	Plating available
		AWG	mm²	Male	Female			
#20 Ø1 mm	Machined	26-24	0.13-0.20	**RM24W3K**	**RC24W3K**		1.58 max	K
	Stamped & Formed	26-24	0.13-0.25	**SM24W3-**(1)	**SC24W3-**(1)		0.89-1.58	TK6 S25 (female) S26 (male)
				SM24WL3-(2)	**SC24WL3-**(2)			
	Machined	22-20	0.32-0.52	**RM20W3K**	**RC20W3K**		1.58 max	K
	Stamped & Formed	22-20	0.35-0.5	**SM20W3-**(1)	**SC20W3-**(1)		1.17-2.08	TK6 S25 (female) S26 (male)
				SM20WL3-(2)	**SC20WL3-**(2)			
	Machined	20-18	0.50-0.93	**RM18W3K**	**RC18W3K**		2.10 max	K
#16 Ø1.6 mm	Machined	30-28	0.05-0.08	**RM28M1-**	**RC28M1-**	0.55	1.1	K, J, T
	Machined	26-24	0.13-0.2	**RM24M9-**	**RC24M9-**	0.8	1.6	K, J, T
	Stamped & Formed	26-24	0.13-0.25	**SM24M1-**(1) **SM24ML1-**(2)	**SC24M1-**(1) **SC24ML1-**(2)	0.89-1.28	Insulation grip	S31, S18, TK6
	Machined	22-20	0.32-0.52	**RM20M13-**	**RC20M13-**	1.18	1.8	K, J, T
				RM20M12-	**RC20M12-**		2.2	
	Stamped & Formed	22-20	0.35-0.5	**SM20M1-**(1) **SM20ML1-**(2)	**SC20M1-**(1) **SC20ML1-**(2)	1.17-2.08	Insulation grip	S31, S18, TK6
	Machined	20-16	0.52-1.5	**RM16M23-**	**RC16M23-**	1.8	3.2	K, J, T
	Stamped & Formed	18-16	0.8-1.5	**SM16M1-**(1) **SM16ML1-**(2)	**SC16M1-**(1) **SC16ML1-**(2)	3.0	No insulation grip	S31, S18, TK6
	Stamped & Formed	18-16	0.8-1.5	**SM16M11-**(1) **SM16ML11-**(2)	**SC16M11-**(1) **SC16ML11-**(2)	2.0-3.0	Insulation grip	S31, S18, TK6
	Machined	16-14	1.5-2.5	**RM14M50-**	**RC14M50-**	2.05	3.2	K, J, T
	Machined	16-14	1.5-2.5	**RM14M30-**	**RC14M30-**	2.28	3.2	K, J, T
	Stamped & Formed	14	2.0-2.5	**SM14M1-**(1) **SM14ML1-**(2)	**SC14M1-**(1) **SC14ML1-**(2)	3.2	No insulation grip	S31, S18, TK6
#12 Ø2.4 mm	Machined	22	0.13-0.4	**82911457NA**	**82911456A**	-	4.9	A, K
		20	0.5	**82911459NA**	**82911458A**			
		18	0.75-1.0	**82911461NA**	**82911460A**			
		16	1.5	**82911463NA**	**82911462A**			
		14	2.5	**82911465NA**	**82911464A**			
		12	4	**82911467NA**	**82911466A**			
#8 Ø3.6 mm	Machined	16	1.5	**82913601A**	**82913600A**	-	6.5	A
		14	2.5	**82913603A**	**82913602A**			
		12	4	**82913605A**	**82913604A**			
		10	6.0	**82913607A**	**82913606A**			
		8	10.0	**82913609A**	**82913608A**			

(1) contact reeled (2) loose contact
Exemple: **RM24W3K** - Size #20, Machined, AWG24 wire.

Crimp contacts

First Mate Last Break contacts

Contact size	Type	Wire size		Part number		Max wire Ø	Max insulator Ø	Color band		Plating available
		AWG	mm²	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	□ = K, J or T
		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	**RM14M50GE1**□		2.05	-	-	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	□ = K, J or T
		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		**RC14M50GE7**□	2.05	-	-	Blue	
		16-14	1.5-2.5		**RC14M30GE7**□	2.28	-	-	Blue	

Exemple: RM16M3GE1K - Size #16, Machined, Longer male, AWG16 wire.

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 earth symbol. For cavities marked with the earth symbol, standard contacts will fulfill the same role as a first mate, last break contact used in a standard cavity.

Ground symbol

#16 coaxial contacts

Coaxial contact range

We provide 2 types of coaxial contacts suitable for 50 or 75Ω, coaxial cable or twisted pair cable.

Monocrimp coaxial contact

• The monocrimp one-piece coaxial contacts offer high reliability plus the economic advantage of a 95% reduction in installation time over conventional assembly methods.

• This economy is achieved by simultaneously crimping both the inner conductor and outer braid or drain wire.

Multipiece crimp coaxial contact

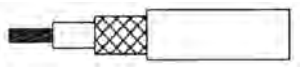
• The inner conductor and outer braid is crimped individually.

• The thermoplastic insulating bushing in the outer body is designed to accept and permanently retain the inner contact.

• An outer ferrule is used to connect the braid to the outer contact and provide cable support to ensure against bending and vibration.

Suitable for Coaxial cable or Twisted cable

• For jacket diameter from 1.78 to 3.05mm
Inner conductor up to 2.44mm diameter



• For jacket diameter from 0.64 to 1.45mm
Inner conductor from AWG30 to AWG24

Contacts for coaxial cable summary

Contact type	Contact range		Contact part number with cable combination	Cabling notice
	Male contact	Female contact		
Multipiece	RMDXK10D28	RCDXK1D28	See page 176	See pages 180 & 181
Monocrimp	RMDX60xxD28	RCDX60xxD28		See page 182

Contacts for twisted pairs cable summary

Contact type	Contact range		Contact part number with cable combination	Cabling notice
	Male contact	Female contact		
Multipiece	RMDXK10D28 + YORK090	RCDXK1D28 + YORK090	See page 177	See page 178
Monocrimp	RMDX60xxD28	RCDX60xxD28		See page 179

PCB contacts

PCB contacts

PCB soldering

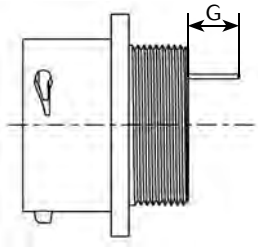
UTS range can be carried out with a wave soldering process, but not reflow soldering process.
All high temperature processes are prohibited.

Contact size	Type	Part number		Plating
		Male	Female	
#20 Ø1mm	Short version	**RMW50A7K**	**RCW50A7K**	K
	Long version	**RMW5016K**	**RCW5016K**	
#16 Ø1.6mm	Short version	**RM20M12E8□**	**RC20M12E8□**	□=K or T
	Long version	**RM20M12E83□**	**RC20M12E83□**	
			RC20M12E84□	

Exemple: **RM50A7K** - Size #20, Short version, male.

Nominal length (G)

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



UTS0

Connector size	Pin contact		Socket contact		
	RM20M12E8*□	RM20M12E83*□	RC20M12E8*□	RC20M12E83*□	RC20M12E84*□
10	4	9.1	3.3	8.5	12.1
12	4	9.1	3.3	8.5	12.1
14	4	9.1	3.3	8.5	12.1
16	4	9.1	3.3	8.5	12.1

UTS7

Connector size	Pin contact				Socket contact			
	RM20M 12E8*□	RM20M 12E83*□	RMW 50A7K	RMW 5016K	RC20M 12E8*□	RC20M 12E83*□	RCW 50A7K	RCW 5016K
10	4.1	9.2	9.51	10.41	4.65	8.5	2.4	3.04
12	4	9.2	9.51	10.41	3.3	8.5	2.4	3.04
14	4	9.2	9.51	10.41	3.3	8.5	2.4	3.04
16	4	9.2	9.51	10.41	3.3	8.5	2.4	3.04

* Plating indication: see plating table

Fibre optic contacts

Description

Size 16 Fibre optic contacts for TRIM TRIO® connectors

Size 16 Fibre optic contacts are optical contacts designed for the integration of optical links in all TRIM TRIO® cable connectors.

The Fibre optic contacts are designed to accommodate:

- Plastic Optical Fibre (POF)
  1 mm core and 2.2 mm jacket
- Plastic Clad Fibre (PCF)
  230µm core and 2.2 mm jacket

Typical features and benefits are:

- Socket contact is spring loaded to avoid any air gap between the two optical faces.
- Low insertion loss is provided by high precision pieces.
- Single jumpers, multiway harness and active device housings can be supplied regarding customer requirement.

Technical characteristics

Performance

- Fibre type: ..... POF

- Wave length: ..... 650 nm
- Optical insertion loss (typ.): ..... 2 dB max.
- Jacketed external diameter: 2.2mm
- Temperature range: ..... -25°C to +70°C
- Cable retention: 49N
- Mating cycles without cleaning: 50
- Max. mating cycles: 500

Construction

- Contact body: Copper alloy

Connector accommodation

Any TRIM TRIO® size 16 contact can be used in any contact position in any connector in the TRIM TRIO® size 16 interconnection system : UTP, UTS, UTG, UTO.