

These are low installed cost connectors rated for up to 13 A and 240 V ac. They are typically used for circuit board and internal wiring applications. Snap Together connectors facilitate easy assembly and removal of equipment such as motors, fans, transformers, etc. All Snap Together - Rectangular connectors are RoHS Compliant.

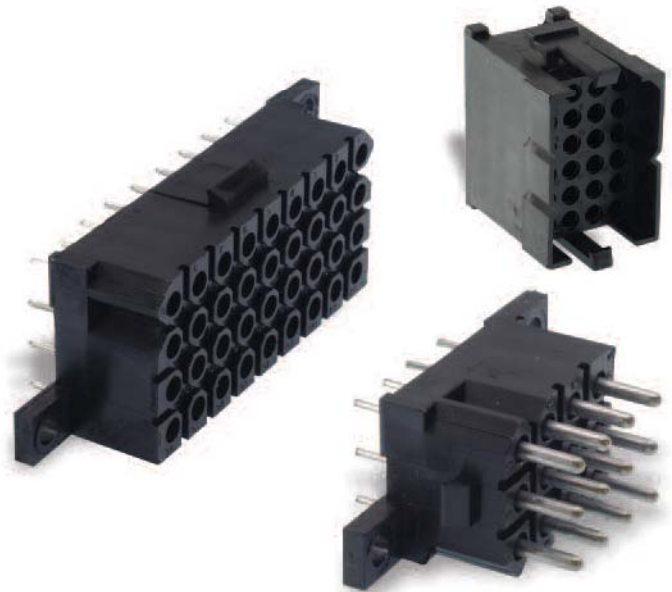


Applications:

- Vehicle Dashboards.
- Circuit board connections.
- Internal connections.

Product Features

- Easy cost effective installation.
- Integrally molded latches and connector polarization.
- Recognized under the component program of UL Inc.
- Inter-connector discrimination facilities available.
- Accepts formed (stamped) or machined contacts, see page 64.



Performance Specifications

Operating Voltage ¹	Up to 250 V ac rms
Contact Current Rating ²	Up to 13 A
Operating Temperature	-55°C to +105°C (-67°F to +221°F) for free Plug and Receptacles -40°C to +105°C (-40°F to +221°F) for PCB Mounted Receptacles
Insulation Resistance	5000MΩ min. at 500 V dc
Durability ³	Up to 500 Mating Cycles
Connector Latching Force	150 N min. with latches engaged
Panel Retention Force	500 N min.
Flammability	UL 94 V-0

¹ Depends on contacts used, layout, and degree of pollution

² Depends on number and type of contacts used

³ Depends on plating and type of contacts used

Materials and Finishes

Insulator	Black Nylon, UL 94 V-0
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How to Order

Typical Nomenclature:

TST 02 P A 0 0 *



Series

TST = Trident Snap Together

Number of Contacts

02
03
04
06
12
24
36

Plating Style

T = Tin
Y = Gold
Z = Gold Flash
* = None (no contacts)

Contact Type

0 = No Contacts (Standard for Plug and Panel Mounted Receptacle)
1 = Machined Solder Tail Pin
2 = Machined Solder Tail Socket
5 = Formed Stamped Solder Tail Pin
6 = Formed Stamped Solder Tail Socket

Color of Moulding

0 = Black

Type	
PA	Plug; Free
RB	Receptacle; For PCB, with Mounting Lugs
RA	Receptacle; Panel Mounting (delivered without any contacts)
RR	Receptacle, For PCB, 90° Right Angle Mounting (only for 12 position connectors with machined contacts)
AS	Accessory; Receptacle Shroud
AH	Accessory; Plug Strain Relief Hood

Test Specifications

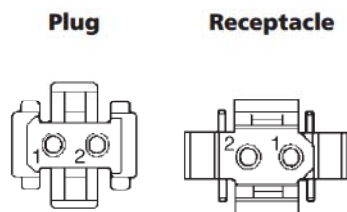
The table below summarizes the results of key tests. Data is applicable to standard connectors with standard contacts. Variations may affect this data, so please consult factory for further information on your requirements.

Test	Method	Criteria of Acceptance
Dielectric Withstanding Voltage	2000 V ac	No breakdown
Thermal Shock	-55°C to +125°C (-67°F to +257°F), 5 cycles	No physical damage
Physical Shock	50 g's peak, 3 axes, 11 millisecond duration half-sine pulse	No physical damage. No loss of continuity >1 sec
Vibration	10 g's peak, 10-500 Hz, 9 hours	No physical damage, No loss of continuity >1 sec
Durability	500 cycles of mating and unmating, 500 mating cycles max	No mechanical or electrical defects
Salt Spray	48 hours	Shall be capable of mating and unmating and meet contact resistance requirements
High Temperature Endurance	1000 hours at 125°C (+257°F)	Insulation Resistance > 100 MΩ
Humidity Steady State	RH 90-95%, 40°C (+104°F), 504 hours	Insulation Resistance > 100 MΩ
Moisture Resistance	10 Cycles	Insulation Resistance > 100 MΩ

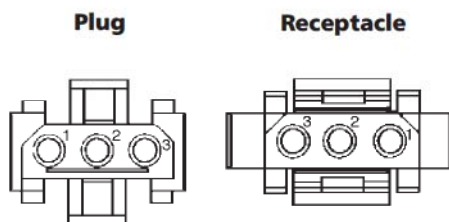


Contact Cavity Arrangements — Mating Face View

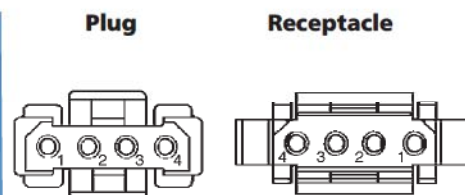
2-way



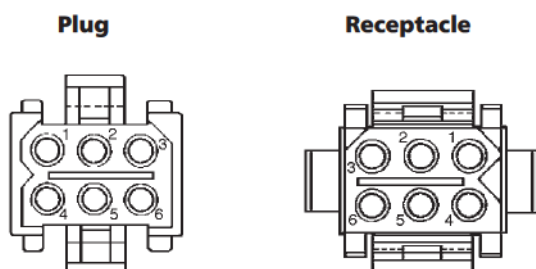
3-way



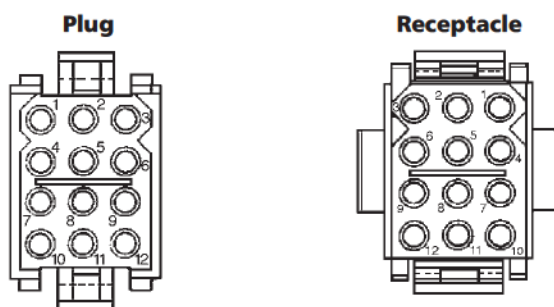
4-way



6-way



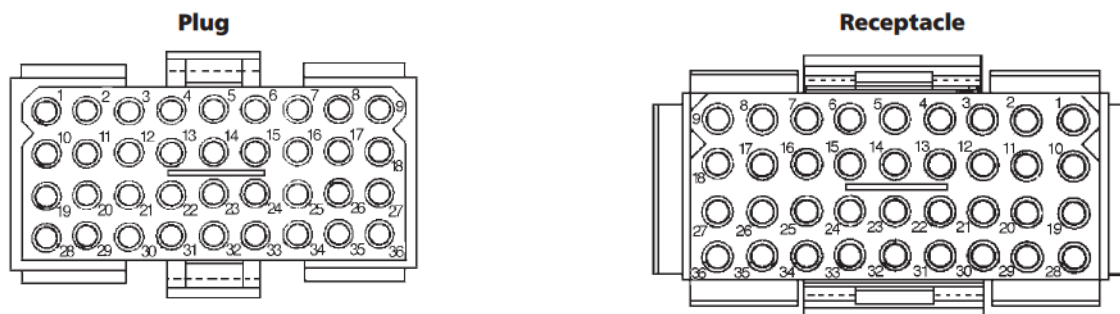
12-way

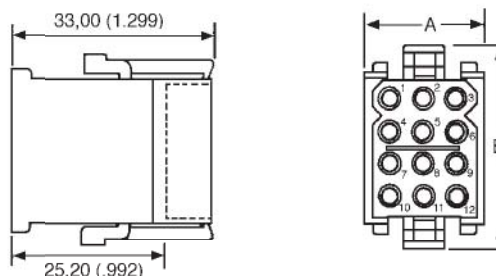


24-way



36-way

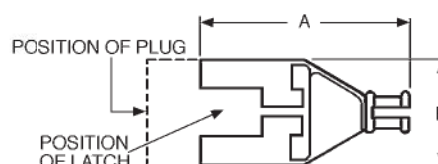




Free Plug

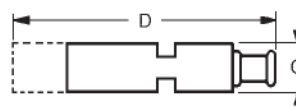
- Accepts Pin or Socket contacts.
- Contacts to be ordered separately, see page 64.
- Mates with panel mounted receptacles, see page 11.
- Mates with PCB mounted receptacles, see pages 12-13.
- Connector Discriminating (Keying) Pins available, see page 73.

Number of Contacts	Pack of 100		Dimensions (max.)	
	Part Number	Nomenclature	A	B
2	192990-0350	TST02PA00	15,50 (.610)	17,00 (.669)
3	192923-5920	TST03PA00	19,00 (.748)	17,00 (.669)
4	192990-0370	TST04PA00	24,00 (.944)	17,00 (.669)
6	192923-5930	TST06PA00	19,00 (.748)	22,00 (.866)
12	192923-5940	TST12PA00	19,00 (.748)	32,00 (1.259)
24	192923-5950	TST24PA00	24,00 (.944)	42,00 (1.653)
36	192923-5960	TST36PA00	49,50 (1.948)	32,00 (1.259)



Accessory — Plug Strain Relief Hood

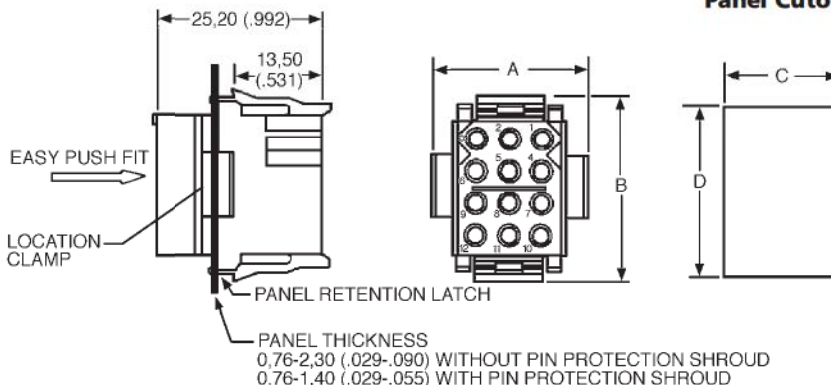
- Provides strain relief and wire protection.
- Secure with a tie-wrap (customer supplies tie-wrap).



Number of Contacts	Pack of 100		Wire Bundle Dia.	Dimensions (max.)			
	Part Number	Nomenclature		A	B	C	D
2	192990-0460	TST02AH00	2,30-8,30 (.090-.326)	46,20 (1.818)	16,10 (.633)	11,00 (.433)	56,50 (2.224)
3	192990-0470	TST03AH00	2,30-8,30 (.090-.326)	46,20 (1.818)	18,60 (.732)	11,00 (.433)	56,50 (2.224)
4	192990-0480	TST04AH00	3,00-10,00 (.118-.393)	46,20 (1.818)	23,70 (.933)	11,00 (.433)	56,50 (2.224)
6	192923-5970	TST06AH00	2,30-8,30 (.090-.326)	46,20 (1.818)	19,00 (.748)	16,40 (.645)	56,50 (2.224)
12	192923-5980	TST12AH00	3,00-10,00 (.118-.393)	45,50 (1.791)	19,00 (.748)	26,40 (1.039)	55,80 (2.196)
24	192923-5990	TST24AH00	4,60-12,70 (.181-.500)	51,00 (2.007)	24,10 (.948)	36,80 (1.448)	60,30 (2.374)
36	192923-6000	TST36AH00	7,00-15,90 (.275-.625)	57,50 (2.263)	49,50 (1.948)	26,40 (1.039)	68,00 (2.677)



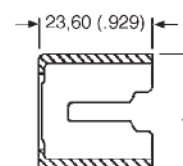
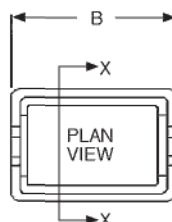
Panel Cutout



Receptacle — Panel Mounted

- Accepts Pin or Socket contacts.
- Contacts to be ordered separately, see page 64.
- Mates with Free Plugs, see page 10.
- Connector Discriminating (Keying) Pins available, see page 73.

Number of Contacts	Pack of 100		Dimensions			
	Part Number	Nomenclature	A	B	C ±0,13 (.005)	D ±0,13 (.005)
2	192990-0360	TST02RA00	19,00 (.748)	14,00 (.551)	11,50 (.452)	11,60 (.456)
3	192923-6010	TST03RA00	24,00 (.944)	14,00 (.551)	16,50 (.649)	11,60 (.456)
4	192990-0380	TST04RA00	29,00 (1.141)	14,00 (.551)	21,70 (.854)	11,60 (.456)
6	192923-6020	TST06RA00	24,00 (.944)	19,00 (.748)	16,50 (.649)	16,70 (.657)
12	192923-6030	TST12RA00	24,00 (.944)	29,00 (1.141)	16,70 (.657)	26,70 (1.051)
24	192923-6040	TST24RA00	29,00 (1.141)	39,00 (1.535)	21,80 (.858)	36,90 (1.452)
36	192923-6050	TST36RA00	54,20 (2.133)	29,00 (1.141)	46,70 (1.838)	26,40 (1.039)



Section X-X

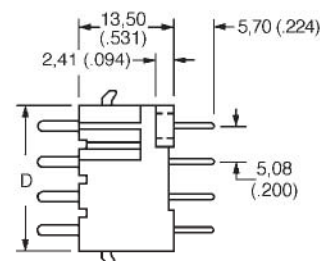
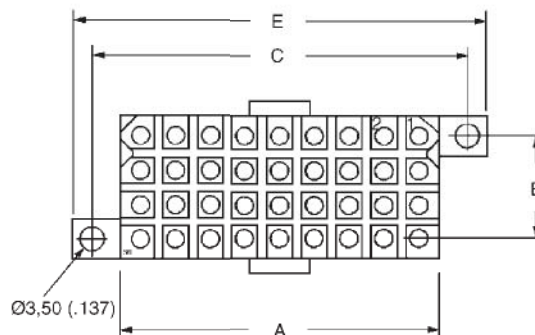
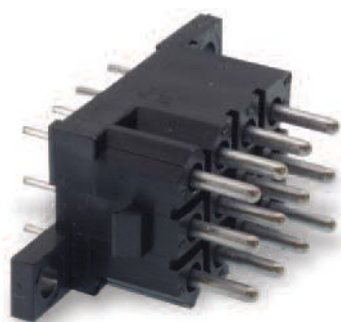
Accessory — Protection Shrouds for Receptacles with Pin Contacts

- Provides protection for panel mounted receptacles with pin contacts.
- Shrouds can be fitted onto panels up to 1,40 (.055) thick.

Number of Contacts	Pack of 100		Dimensions	
	Part Number	Nomenclature	A	B
3	192990-0400	TST03AS00	23,50 (.925)	19,05 (.748)
4	192991-0668	TST04AS00	28,60 (1.126)	19,05 (.748)
6	192990-0420	TST06AS00	23,50 (.925)	24,13 (.948)
12	192990-0430	TST12AS00	23,60 (.929)	34,20 (1.346)
24	192990-0440	TST24AS00	29,70 (1.169)	44,40 (1.748)
36	192990-0450	TST36AS00	54,40 (2.141)	34,00 (1.338)



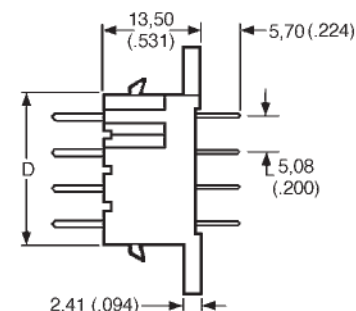
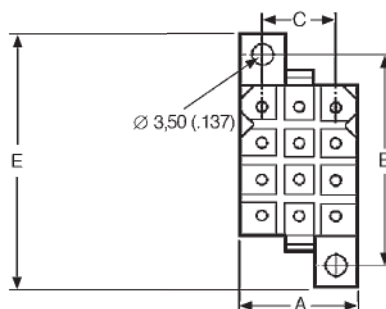
Figure 1



Receptacle — PCB Mounted for Pin Contacts

- Mates with Free Plug, see page 10.
- Integrally molded flanges.
- Contacts are on a 5,08 (.200) grid, symmetrical on center lines.
- Recommended PCB hole Ø1,15 (.045).
- Connector Discriminating Caps available, see page 73.

Figure 2



Pack of 100

		Formed (Stamped)		Machined		Dimensions						
Number of Contacts	Plating	Part Number	Nomenclature	Part Number	Nomenclature	Figure	B	C	±0,08 (.003)	±0,08 (.003)	D	E
							A					
2	Gold*	192900-0411	TST02RB05Y	192991-0270	TST02RB01Z	1	11,13 (.438)	N/A	19,13 (.753)	6,00 (.236)	25,00 (.984)	
2	Tin	192990-3230	TST02RB05T	192991-0271	TST02RB01T	1	11,13 (.438)	N/A	19,13 (.753)	6,00 (.236)	25,00 (.984)	
3	Gold*	192900-0412	TST03RB05Y	192991-0278	TST03RB01Z	2	16,21 (.638)	14,05 (.553)	10,24 (.403)	6,00 (.236)	20,10 (.791)	
3	Tin	192990-3240	TST03RB05T	192991-0279	TST03RB01T	2	16,21 (.638)	14,05 (.553)	10,24 (.403)	6,00 (.236)	20,10 (.791)	
4	Gold*	192900-0413	TST04RB05Y	192991-0286	TST04RB01Z	2	21,30 (.838)	14,05 (.553)	15,32 (.603)	6,00 (.236)	20,10 (.791)	
4	Tin	192990-3250	TST04RB05T	192991-0287	TST04RB01T	2	21,30 (.838)	14,05 (.553)	15,32 (.603)	6,00 (.236)	20,10 (.791)	
6	Gold*	192900-0414	TST06RB05Y	192991-0294	TST06RB01Z	2	16,20 (.637)	19,12 (.752)	10,23 (.402)	11,00 (.433)	26,00 (1.023)	
6	Tin	192990-3260	TST06RB05T	192991-0295	TST06RB01T	2	16,20 (.637)	19,12 (.752)	10,23 (.402)	11,00 (.433)	26,00 (1.023)	
12	Gold*	192900-0415	TST12RB05Y	192991-0302	TST12RB01Z	2	16,20 (.637)	29,30 (1.153)	10,26 (.404)	21,20 (.834)	35,20 (1.385)	
12	Tin	192990-3270	TST12RB05T	192991-0303	TST12RB01T	2	16,20 (.637)	29,30 (1.153)	10,26 (.404)	21,20 (.834)	35,20 (1.385)	
24	Gold*	192900-0416	TST24RB05Y	192991-0310	TST24RB01Z	2	21,30 (.838)	39,37 (1.550)	15,32 (.603)	31,30 (1.232)	45,60 (1.795)	
24	Tin	192990-3280	TST24RB05T	192991-0311	TST24RB01T	2	21,30 (.838)	39,37 (1.550)	15,32 (.603)	31,30 (1.232)	45,60 (1.795)	
36	Gold*	192900-0417	TST36RB05Y	192991-0402	TST36RB01Z	1	46,60 (1.834)	15,24 (.600)	54,64 (2.151)	21,20 (.834)	60,50 (2.382)	
36	Tin	192990-3290	TST36RB05T	192991-0403	TST36RB01T	1	46,60 (1.834)	15,24 (.600)	54,64 (2.151)	21,20 (.834)	60,50 (2.382)	

* Gold plating for Formed (Stamped) Contacts is 0,75 µm (30 µ in.) min gold. Gold plating for Machined Contacts is gold flash.

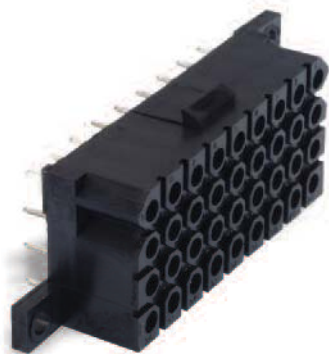
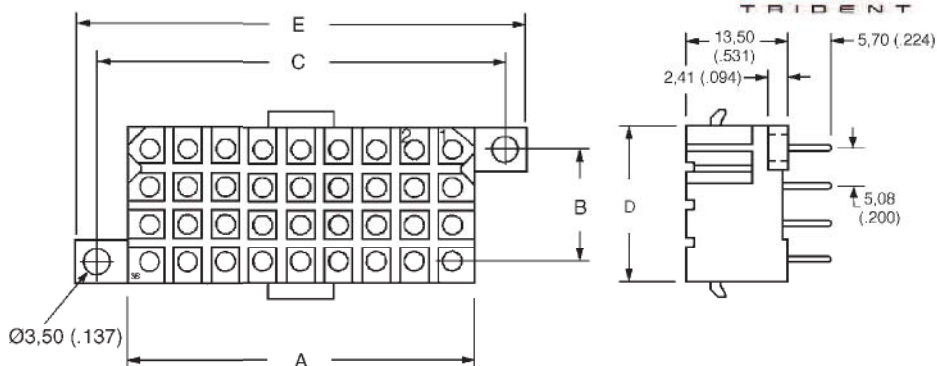


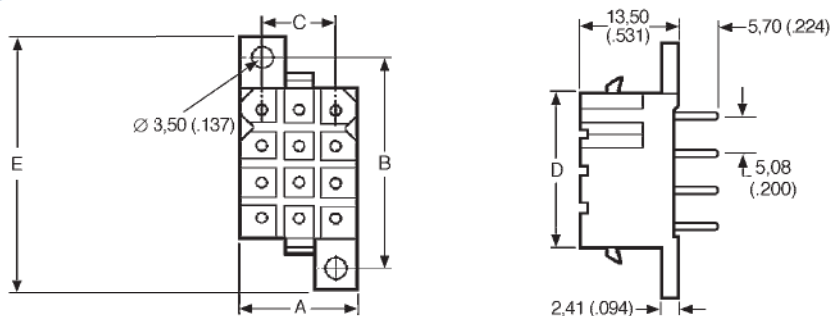
Figure 1



Receptacle — PCB Mounted for Socket Contacts

- Mates with Free Plug, see page 10.
- Integrally molded flanges.
- Contacts are on a 5,08 (.200) grid, symmetrical on center lines.
- Recommended PCB hole Ø 1,15 (.045).
- Connector Discriminating Pegs available, see page 73.

Figure 2



Pack of 100

Number of Contacts	Plating	Formed (Stamped)		Machined		Figure	Dimensions				
		Part Number	Nomenclature	Part Number	Nomenclature		A	B ±0,08 (.003)	C ±0,08 (.003)	D	E
2	Gold*	192900-0418	TST02RB06Y	192991-0213	TST02RB02Z	1	11,13 (.438)	N/A	19,13 (.753)	6,00 (.236)	25,00 (.984)
2	Tin	192990-3300	TST02RB06T	192991-0214	TST02RB02T	1	11,13 (.438)	N/A	19,13 (.753)	6,00 (.236)	25,00 (.984)
3	Gold*	192900-0419	TST03RB06Y	192991-0221	TST03RB02Z	2	16,21 (.638)	14,05 (.553)	10,24 (.403)	6,00 (.236)	20,10 (.791)
3	Tin	192990-3310	TST03RB06T	192991-0222	TST03RB02T	2	16,21 (.638)	14,05 (.553)	10,24 (.403)	6,00 (.236)	20,10 (.791)
4	Gold*	192900-0420	TST04RB06Y	192991-0229	TST04RB02Z	2	21,30 (.838)	14,05 (.553)	15,32 (.603)	6,00 (.236)	20,10 (.791)
4	Tin	192990-3320	TST04RB06T	192991-0230	TST04RB02T	2	21,30 (.838)	14,05 (.553)	15,32 (.603)	6,00 (.236)	20,10 (.791)
6	Gold*	192900-0421	TST06RB06Y	192991-0237	TST06RB02Z	2	16,20 (.637)	19,12 (.752)	10,23 (.402)	11,00 (.433)	26,00 (1.023)
6	Tin	192990-3330	TST06RB06T	192991-0238	TST06RB02T	2	16,20 (.637)	19,12 (.752)	10,23 (.402)	11,00 (.433)	26,00 (1.023)
12	Gold*	192900-0422	TST12RB06Y	192991-0245	TST12RB02Z	2	16,20 (.637)	29,30 (1.153)	10,26 (.404)	21,20 (.834)	35,20 (1.385)
12	Tin	192990-3340	TST12RB06T	192991-0246	TST12RB02T	2	16,20 (.637)	29,30 (1.153)	10,26 (.404)	21,20 (.834)	35,20 (1.385)
24	Gold*	192900-0423	TST24RB06Y	192991-0253	TST24RB02Z	2	21,30 (.838)	39,37 (1.550)	15,32 (.603)	31,30 (1.232)	45,60 (1.795)
24	Tin	192990-3350	TST24RB06T	192991-0254	TST24RB02T	2	21,30 (.838)	39,37 (1.550)	15,32 (.603)	31,30 (1.232)	45,60 (1.795)
36	Gold*	192900-0424	TST36RB06Y	192991-0261	TST36RB02Z	1	46,60 (1.834)	15,24 (.600)	54,64 (2.151)	21,20 (.834)	60,50 (2.382)
36	Tin	192990-3360	TST36RB06T	192991-0262	TST36RB02T	1	46,60 (1.834)	15,24 (.600)	54,64 (2.151)	21,20 (.834)	60,50 (2.382)

* Gold plating for Formed (Stamped) Contacts is 0,75 µm (30 µin.) min gold. Gold plating for Machined Contacts is gold flash.

General recommendations for the selection of Trident contacts are listed below.

Platings: Tin is recommended for most applications (with 50 or fewer mating cycles). It is cost effective and matches well to most wires. Gold is preferred for special situations. Gold resists oxidation, has high surface conductivity, and has a low coefficient of friction. These features make gold the preferred plating for low level signals (a rule of thumb is <100 mA), corrosive environments (for unsealed connectors), and for increased mating cycles. The electrical performance of the contact is determined at the surface of the contact. For this reason, flash gold platings are suitable for applications with 50 or fewer mating cycles. Thicker gold platings are recommended for more than 50 mating cycles. All Trident Contacts are RoHS Compliant.



Stamped versus Machined: The two part stamped contacts are manufactured to precise tolerances and are field proven.



They can be supplied on reels which lowers assembly costs for volume production. Machined contacts offer improved precision and durability. They are recommended for applications with more than 200 mating cycles.

Crimp versus Solder: Crimp contacts offer improved electrical performance, strain relief and quality control compared to solder cup contacts. Solder cup

contacts are recommended for low volume and prototype applications where the added cost of crimp tools is not justified.

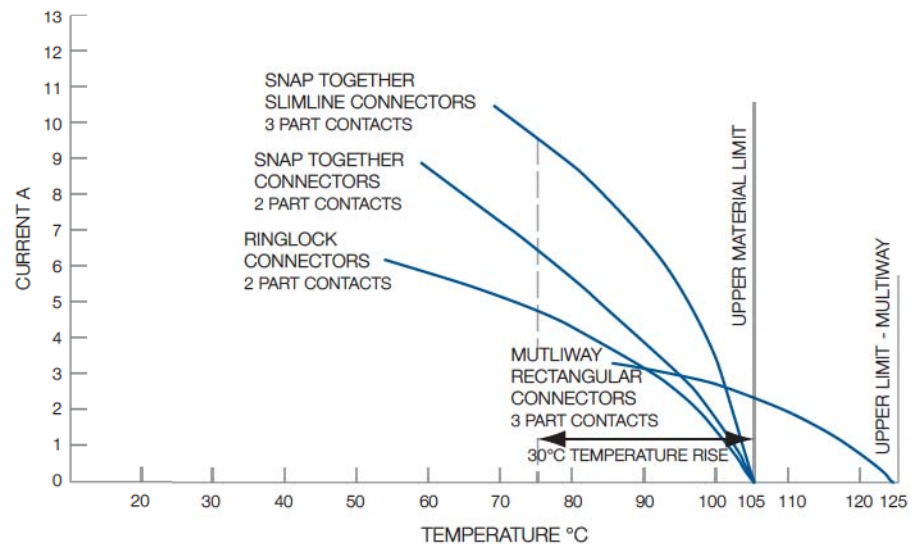
High Conductivity: These contacts use a different base material than the standard contacts. They are recommended for high current applications. These contacts will also reduce the derating of connectors with several high current lines.

Temperature/Current Rating

Derating curves define the max. current that can be applied to a connector at a given ambient temperature so that the additional temperature rise caused by the current does not exceed the material limit of the connector.

The following curves show the max. currents based on the assumption attached: As factors like current load per contact, wire size etc. may be different in your application. This chart is an indication only.

- Derived in accordance with IEC 512-3, Test 5b.
- Figures are for maximum wire sizes. Smaller wires will reduce rating.
- All contacts equally loaded.
- PCB mounted connectors will be limited by PCB performance.
- Bunched cables will further reduce values.
- Cable insulation type will affect temperature and loading.
- Figures are for maximum connector sizes in each range. Smaller connectors will increase rating.





	T2P - Two piece formed (stamped) contact - For up to 200 mating cycles - Full support tooling available		T3P - Three piece machined contact - For up to 500 mating cycles - Full support tooling available		
	Standard Crimp 	High Conductivity Crimp 	Machined Crimp 	Solder Cup 	Flow Solder (PCB)
Technical and Performance Data					
Supported wire sizes	AWG 14 to 26	AWG 14 to 26	AWG 16 to 26	AWG 14 to 26	-
Current rating	13 A	16 A	13 A	13 A	Up to 30 A
Contact Resistance (initial)	5 mΩ	5 mΩ	5 mΩ	5 mΩ	5 mΩ
Mechanical endurance	Up to 200 insertions	Up to 200 insertions	Up to 500 insertions	Up to 500 insertions	Up to 500 insertions
Body material	Brass	Copper Alloy	Brass	Brass	Brass
Retention spring material	Stainless Steel	Stainless Steel	Beryllium Copper	Beryllium Copper	Beryllium Copper
Contact retention force (minimum)	67 N	67 N	67 N	67 N	67 N
Plating Availability					
Tin	Yes	Yes	Yes	Yes	Yes
Gold Flash (0,1 μm)	Yes	Yes	Yes	Yes	Yes
Gold	0,75 μm	0,75 μm	0,4 μm (pin) 0,75 μm (socket)	0,4 μm (pin) 0,75 μm (socket)	0,4 μm (pin) 0,75 μm (socket)
Connector/Contact Capability					
Snap Together Rectangular, Slimline (TST) and Flame Retardant (TFR)	Yes	Yes	Yes	Yes	Yes, pre-installed in connectors
Multiway (TM)	Yes	Yes	Yes	Yes	Yes
Ringlock (TR)	Yes	Yes	Yes	Yes	Yes
Neptune (TN)	Yes	Yes	Yes	Yes	Yes
Neptune Metal (TNM)	Yes	Yes	Yes	Yes	-
High Voltage (THV)	—	—	—	—	—
Page Number					
	67	67	69	70	70



	High Power		Coaxial
	- For mixed Neptune and TNM layouts - Full support tooling available		- Fits into standard Trident Cavities - Full support tooling available
	APK25	D Sub	TC
			
Technical and Performance Data			
Supported wire sizes	AWG 12 to 20	AWG 8 to 14	-
Current rating	30 A	Up to 40 A	n/a
Contact Resistance (initial)	2,5 mΩ	*	2,5 mΩ
Mechanical endurance	Up to 200 insertions	Up to 500 insertions	Up to 200 insertions
Body material	Copper Alloy	Copper Alloy	Brass
Retention spring material	Stainless Steel	*	Beryllium Copper
Contact retention force (minimum)	100 N	*	67 N
Plating Availability			
Tin	Yes	-	-
Gold Flash (0,1 μm)	-	-	-
Gold	-	0,76 μm	0,4 μm (pin) 0,75 μm (socket)
Connector/Contact Capability			
Snap Together Rectangular, Slimline (TST) and Flame Retardant (TFR)	-	-	Yes
Multiway (TM)	-	-	Yes
Ringlock (TR)	-	-	Yes
Neptune (TN)	Yes	-	Yes
Neptune Metal (TNM)	-	Yes	Yes
High Voltage (THV)	Yes	—	—
Page Number			
	71	71	72-73

* For details please consult the factory

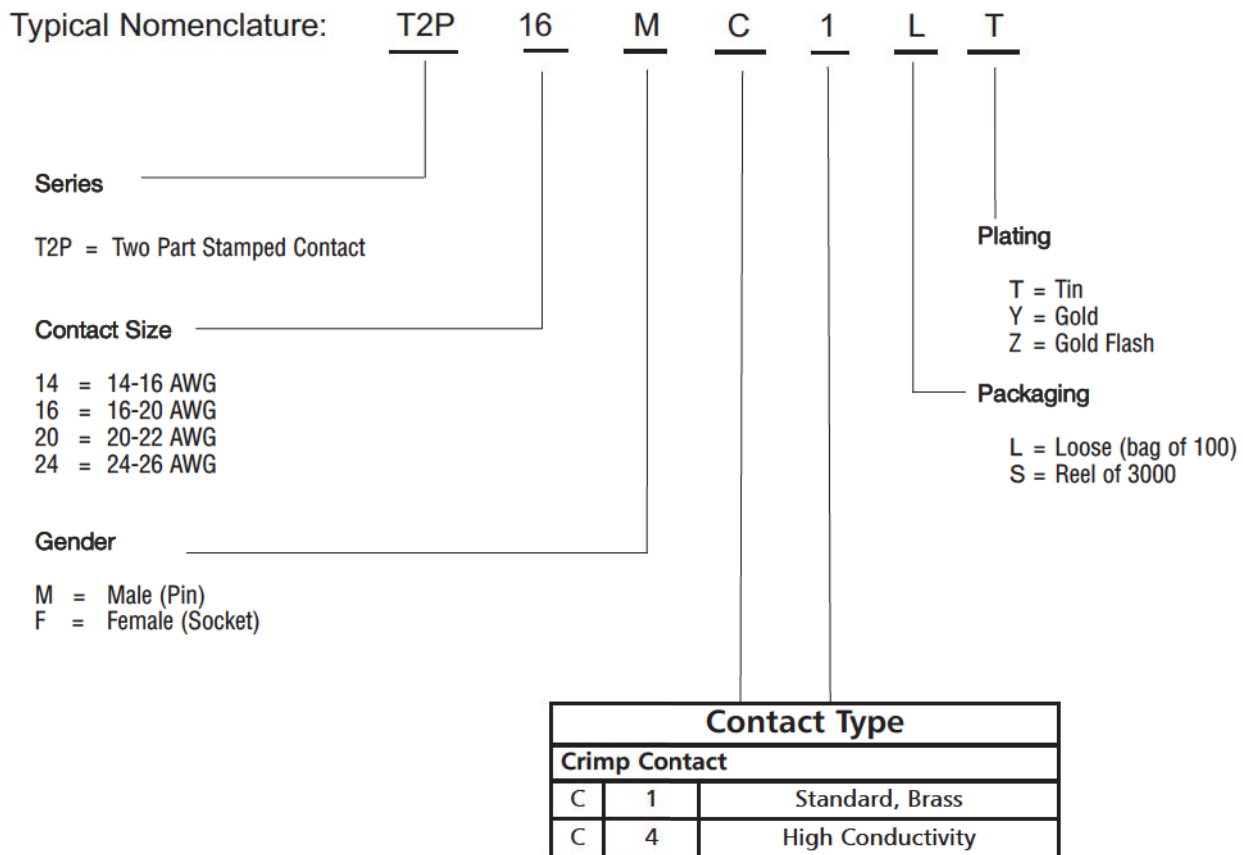
Dimensions shown in mm (inch)

Specifications and dimensions subject to change

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Overview - T2P Contacts



Note: This overview shows available options for formed (stamped) T2P contacts. The T2P nomenclature above appears as our description on ITT paperwork, etc, and this is for reference only. To order use the order codes on the following page.

Formed (Stamped) Crimp Contacts — Standard Brass Material



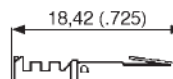
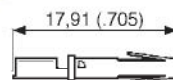
- 13 A current rating.
- Three plating styles available.
- Separate retention spring.
- Up to 200 mating cycles.
- Wide range of wire sizes.
- Full support tooling available, see pages 74-75.
- Two part design.



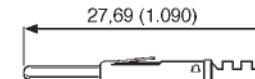
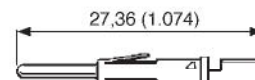
**Size 14 to 16 AWG,
No Insulation Grip**

**Size 16 to 26 AWG,
Insulation Grip**

Socket



Pin



Wire Range mm ²	Wire Size	Contact	Part Number Pack (100)			Part Number Reeled (3000)			Insulation	
			Tin Plating	Gold Flash	Gold Plating	Tin Plating	Gold Flash	Gold Plating	Diameter	Strip Length
0,14 - 0,25	26-24 AWG	Pin	192990-0020	192990-0080	192900-0448	192990-2510	192990-2650	192900-0406	0,89 (.035) - 1,58 (.062)	3,95 (.155)±0,25(.009)
0,14 - 0,25	26-24 AWG	Socket	192990-0030	192990-0090	192900-0452	192990-2550	192990-2690	192900-0410	0,89 (.035) - 1,58 (.062)	3,95 (.155)±0,25(.009)
0,32 - 0,50	22-20 AWG	Pin	192990-0040	192922-1460	192900-0447	192990-2500	192990-2640	192900-0405	1,17 (.046) - 2,08 (.081)	3,95 (.155)±0,25(.009)
0,32 - 0,50	22-20 AWG	Socket	192990-0050	192922-1470	192900-0451	192990-2540	192990-2680	192900-0409	1,17 (.046) - 2,08 (.081)	3,95 (.155)±0,25(.009)
0,75 - 1,50	18-16 AWG	Pin	192990-0060	192990-0100	192900-0446	192990-2490	192990-2630	192900-0404	2,00 (.078) - 2,70 (.106)	3,95 (.155)±0,25(.009)
0,75 - 1,50	18-16 AWG	Socket	192990-0070	192990-0110	192900-0450	192990-2530	192990-2670	192900-0408	2,00 (.078) - 2,70 (.106)	3,95 (.155)±0,25(.009)
1,50 - 2,50	16-14 AWG	Pin	192990-1240	192990-1220	192900-0445	192990-2480	192990-2620	192900-0403	Without insulation support	5,60 (.220)±0,25(.009)
1,50 - 2,50	16-14 AWG	Socket	192990-1250	192990-1230	192900-0449	192990-2520	192990-2660	192900-0407	Without insulation support	5,60 (.220)±0,25(.009)

Formed (Stamped) Crimp Contacts — High Conductivity Material

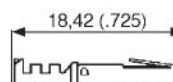
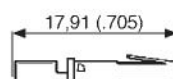
- 16 A current rating.
- Recommended for elevated temperatures.
- High conductivity copper alloy with tin plating.
- For use with standard crimp tooling, see pages 74-75.
- Two part design.
- Up to 200 mating cycles.



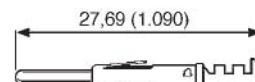
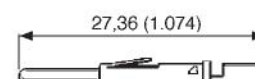
**Size 14 to 16 AWG,
No Insulation Grip**

**Size 16 to 26 AWG,
Insulation Grip**

Socket



Pin

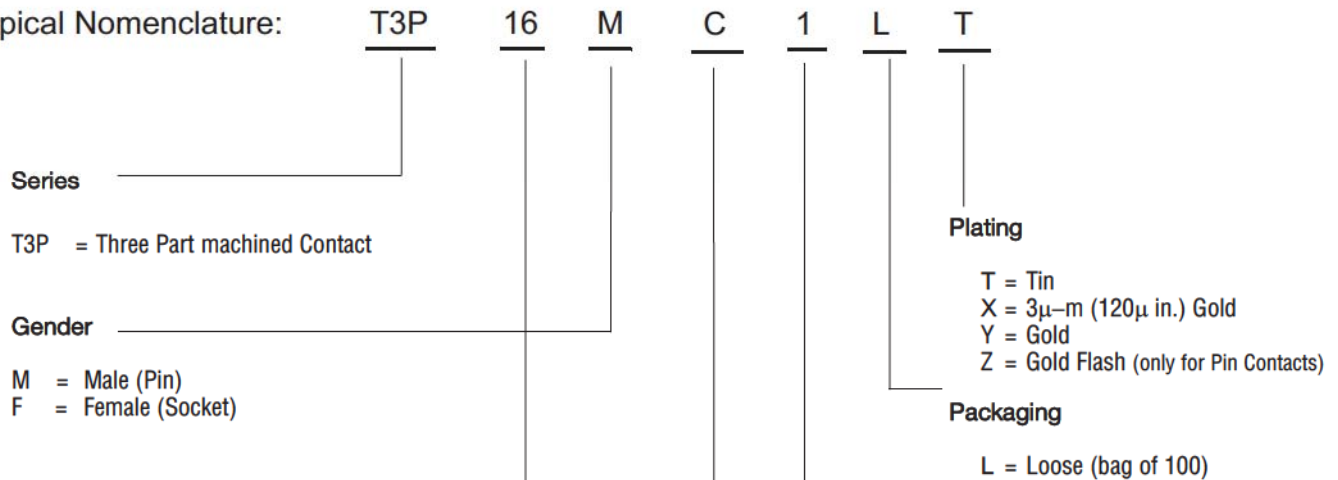


Wire Range mm ²	Wire Size	Contact	Part Number		Insulation Diameter	Strip Length
			Pack (100)	Reeled (3000)		
0,14 - 0,25	26-24 AWG	Pin	192900-0122	192900-0120	0,89 (.035) - 1,58 (.062)	3,95 (.155)±0,25 (.009)
0,14 - 0,25	26-24 AWG	Socket	192900-0123	192900-0121	0,89 (.035) - 1,58 (.062)	3,95 (.155)±0,25 (.009)
0,32 - 0,50	22-20 AWG	Pin	192900-0126	192900-0124	1,17 (.046) - 2,08 (.081)	3,95 (.155)±0,25 (.009)
0,32 - 0,50	22-20 AWG	Socket	192900-0127	192900-0125	1,17 (.046) - 2,08 (.081)	3,95 (.155)±0,25 (.009)
0,75 - 1,50	18-16 AWG	Pin	192900-0002	192900-0000	2,00 (.078) - 2,70 (.106)	3,95 (.155)±0,25 (.009)
0,75 - 1,50	18-16 AWG	Socket	192900-0003	192900-0001	2,00 (.078) - 2,70 (.106)	3,95 (.155)±0,25 (.009)
1,50 - 2,50	16-14 AWG	Pin	192900-0005	192900-0004	Without insulation support	5,60 (.220)±0,25 (.009)
1,50 - 2,50	16-14 AWG	Socket	192900-0007	192900-0006	Without insulation support	5,60 (.220)±0,25 (.009)

Overview - T3P Contacts



Typical Nomenclature:



Type and Configuration Variant				
AWG Size	Gender	Crimp Contacts		
16		C	1	No insulation support, Black colorband
20		C	1	Insulation dia Ø1,6 (.062)-2,1 (.082), Green colorband
22		C	1	Insulation dia Ø1,6 (.062)-2,15 (.084), Red colorband
24		C	1	Insulation dia Ø1,05 (.041)-1,6 (.062), Blue colorband
26		C	1	Insulation dia Ø0,9 (.035)-1,4 (.055), Black colorband
		Earth Contact		
16		E	1	Extended contractzone, Black colorband
20		E	1	Green colorband
		Solder Cup Contact		
16		S	1	
		Flow Solder Contact		
20		F	1	Ø0,76 (.030) short (female only)
20		F	3	Ø0,76 (.030) long (female only)
20		F	5	Ø0,71 (.028)
20		F	11	Ø1,50 (.059) (TN)

Note: This overview shows available options for formed (stamped) T3P contacts. The T3P nomenclature above appears as our description on ITT paperwork, etc, and this is for reference only. To order use the order codes on the following page.

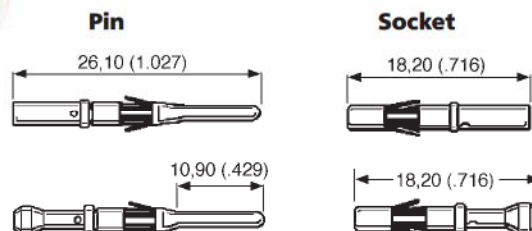
Machined Crimp Contacts

- 13 A current rating.
- Separate contact and retention spring.
- Up to 500 mating cycles.
- Variety of plating options.
- Full support tooling available, see pages 74-75.



**Size 16 AWG,
No Insulation Grip**

**Size 20 to 26 AWG,
Insulation Grip**



Wire Range mm ²	Wire Size	Contact	Part Number (Pack of 100)			Insulation Diameter	Strip Length	Color Band
			Gold Plating(X)	Gold Plating(Y)	Tin Plating			
0,08 - 0,23	26 AWG	Pin	192991-0101	192991-0100	192991-0102	0,90 (.035) - 1,40 (.055)	5,08 (.200)±0,25 (.009)	Black
0,08 - 0,23	26 AWG	Socket	192991-0054	192991-0042	192991-0048	0,90 (.035) - 1,40 (.055)	5,08 (.200)±0,25 (.009)	Black
0,20 - 0,24	24 AWG	Pin	192991-0093	192991-0092	192991-0094	1,05 (.041) - 1,60 (.062)	5,08 (.200)±0,25 (.009)	Blue
0,20 - 0,24	24 AWG	Socket	192991-0055	192991-0043	192991-0049	1,05 (.041) - 1,60 (.062)	5,08 (.200)±0,25 (.009)	Blue
0,25 - 0,50	22 AWG	Pin	192991-0097	192991-0096	192991-0098	1,60 (.062) - 2,15 (.084)	5,08 (.200)±0,25 (.009)	Red
0,25 - 0,50	22 AWG	Socket	192991-0056	192991-0044	192991-0050	1,60 (.062) - 2,15 (.084)	5,08 (.200)±0,25 (.009)	Red
0,44 - 0,64	20 AWG	Pin	192991-0089	192991-0088	192991-0090	1,60 (.062) - 2,10 (.082)	5,08 (.200)±0,25 (.009)	Green
0,44 - 0,64	20 AWG	Socket	192991-0058	192991-0046	192991-0052	1,60 (.062) - 2,10 (.082)	5,08 (.200)±0,25 (.009)	Green
0,60 - 1,51	16 AWG	Pin	192991-0085	192991-0084	192991-0086	Without insulation support	7,11 (.279)±0,25 (.009)	Black
0,60 - 1,51	16 AWG	Socket	192991-0059	192991-0047	192991-0053	Without insulation support	7,11 (.279)±0,25 (.009)	Black

(Y) Gold plating Pin: 0,4 µm (16 µ in.). Gold plating Socket: 0,75 µm (30 µ in.).

(X) Gold plating Pin & Socket: 3 µm (120 µ in.).

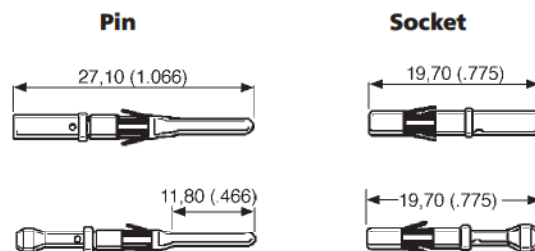
Machined Earth (First Mate/Last Break) Contacts

- 13 A current rating.
- Separate contact and retention spring.
- Up to 500 mating cycles.
- Variety of plating options.
- Full support tooling available, see pages 74-75.



**Size 16 AWG,
No Insulation Grip**

**Size 20 AWG,
Insulation Grip**



Wire Range mm ²	Wire Size	Contact	Part Number (Pack of 100)		Insulation Diameter	Strip Length	Color Band
			Gold Plating(Y)	Description			
0,44 - 0,64	20 AWG	Pin	192991-0164	T3P20ME1LY	1,60 (.062) - 2,10 (.082)	5,08 (.200)±0,25 (.009)	Green
0,44 - 0,64	20 AWG	Socket	192991-0207	T3P20FE1LY	1,60 (.062) - 2,10 (.082)	5,08 (.200)±0,25 (.009)	Green
0,60 - 1,51	16 AWG	Pin	192991-0160	T3P16ME1LY	Without insulation support	7,11 (.279)±0,25 (.009)	Black
0,60 - 1,51	16 AWG	Socket	192991-0208	T3P16FE1LY	Without insulation support	7,11 (.279)±0,25 (.009)	Black

(Y) Gold plating Pin: 0,4 µm (16 µ in.). Gold plating Socket: 0,75 µm (30 µ in.).
For Gold Flash Plating, please consult the factory.

Dimensions shown in mm (inch)

Specifications and dimensions subject to change

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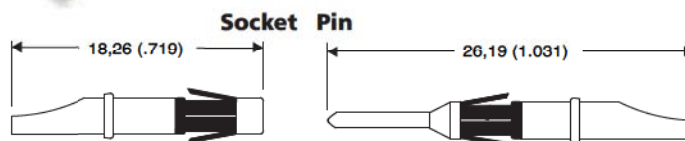
Solder Cup Contacts

- 13 A current rating.
- Ideal for prototypes and small volume applications.
- Fits into all Trident connectors.
- Simple solder, then insert.



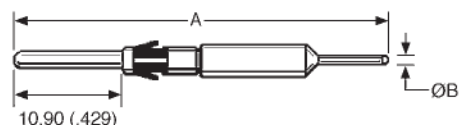
Description	Part Number	
	Tin Plating	Gold Plating (Y)
Socket	192900-0634	192900-0635
Pin	192900-0632	192900-0633

(Y) Gold plating 0,4 µm (16 µ in.)



Flow Solder (PCB) Contacts

- 13 A current rating.
- Available in different lengths depending on connector.
- Socket versions available.
- High Volume packaging available.
- 30 A power version available.



Connector Series	Type	Part Number (Pack of 100)		A ±1,00 (.039)	ØB
		Tin Plating	Gold Flash Plating		
Ringlock Standard Receptacle	Socket	***	192991-0524		0,76 (.030)
Ringlock Standard Receptacle	Socket	***	192991-0066		0,76 (.030)
Ringlock Reversed Receptacle, Multiway	Pin	192991-0122	192991-0119	34,70 (1.366)	0,76 (.030)
Neptune	Pin	192900-0465	192900-0356	40,75 (1.604)	0,71 (.028)
Neptune Power**	Pin	192991-0617	192991-0618	40,60 (1.598)	1,50 (.059)

** Note: Appearance differs slightly from the picture.

*** For details please consult the factory

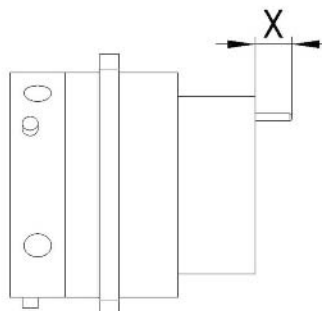
Nominal lengths (x) of Flow Solder Contacts out of the connector*

Ringlock Standard Receptacle

Shell Size	192991-0066	192991-0524
10	4,5 (.177)	11,6 (.456)
12	2,7 (.106)	9,8 (.386)
14	4,5 (.177)	11,6 (.456)
16	2,7 (.106)	9,8 (.386)
18	2,7 (.106)	9,8 (.386)
20	3,0 (.118)	10,1 (.398)
22	2,0 (.079)	9,1 (.358)
24	1,2 (.047)	8,3 (.327)

Ringlock Reversed Receptacle

Shell Size	192991-0119 192991-0122
10	4,7 (.177)
12	4,7 (.177)
14	4,7 (.177)
16	4,7 (.177)
18	4,7 (.177)
20	4,6 (.181)
22	4,6 (.181)
24	4,6 (.181)



* For other connector series please consult the factory



Dimensions shown in mm (inch)
Specifications and dimensions subject to change

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APK Power Contacts

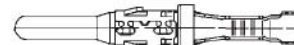
- 30 A current rating.
- For use with Neptune connectors.



Socket

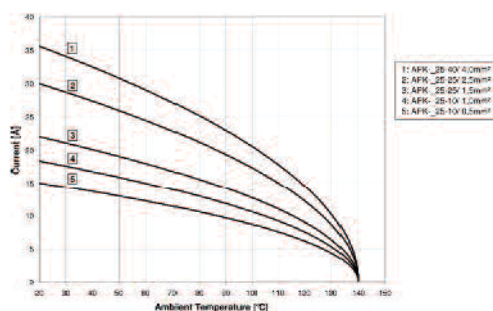


Pin



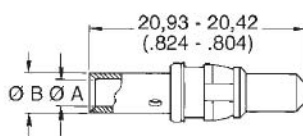
Wire Range mm ²	Wire Size	Contact	Description*	Part Number		Insulation Diameter	Strip Length
				Loose (100) Tin Plated	Reeled (3000) Tin Plated		
0,50 - 1,00	20-18 AWG	Pin	APK-PB25A10	031-8717-020	121668-0000	1,40 (.055) - 2,00 (.078)	5,00 (.196)±0,25 (.009)
0,50 - 1,00	20-18 AWG	Socket	APK-SB25A10	031-8717-120	121668-0100	1,40 (.055) - 2,00 (.078)	5,00 (.196)±0,25 (.009)
1,50 - 2,50	16-14 AWG	Pin	APK-PB25A25	031-8717-021	121668-0001	2,00 (.078) - 2,90 (.114)	5,00 (.196)±0,25 (.009)
1,50 - 2,50	16-14 AWG	Socket	APK-SB25A25	031-8717-121	121668-0101	2,00 (.078) - 2,90 (.114)	5,00 (.196)±0,25 (.009)
2,50 - 4,00	14-12 AWG	Pin	APK-PB25A40	031-8717-022	121668-0002	2,90 (.114) - 3,60 (.141)	5,00 (.196)±0,25 (.009)
2,50 - 4,00	14-12 AWG	Socket	APK-SB25A40	031-8717-122	121668-0102	2,90 (.114) - 3,60 (.141)	5,00 (.196)±0,25 (.009)

* Referring to reeled contacts

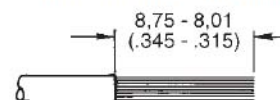


D Subminiature Loose Contacts, Size 8- High Power-Crimp

Plug

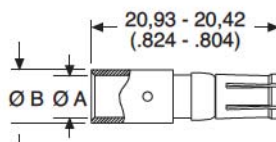


Recommended Wire Trim Length

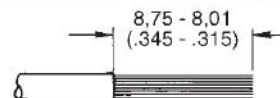


Part Number (30 µin) 0,76µm Gold over Copper	A	B	Current Rating A	Wire Size AWG
DM130338	4,60 (.181)	5,84 (.230)	40 A	8 AWG
DM130339	2,54 (.100)	5,54 (.218)	20 A	12 AWG

Receptacle



Recommended Wire Trim Length



Part Number (30 µin) 0,76µm Gold over Copper	A	B	Current Rating A	Wire Size AWG
DM130341	4,60 (.181)	5,84 (.230)	40 A	8 AWG
DM130342	2,54 (.100)	5,54 (.218)	20 A	12 AWG

Dimensions shown in mm (inch)

Specifications and dimensions subject to change

Note: For crimp tooling please consult the factory.

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Coaxial Contacts

- Up to 200 mating cycles.
- Fits all Trident contact cavities.
- Full range of tooling available.
- For twisted pair and coaxial cable use.
- All contact assemblies sold in packs of 100.
- Ideal for high frequency applications up to 2 GHz.



Performance Specifications

Temperature Range	-55°C to 125°C
Operating Voltage	230 V dc

Materials and Finishes

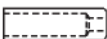
Description	Material	Finish
Inner Contact	Brass	0,75 µm (30 µ in.) Gold
Outer Contact	Brass	0,40 µm (16 µ in.) Gold

Outer Female Contact Assembly

Ring



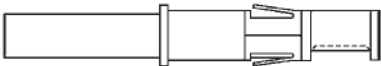
Support Sleeve



Inner Male



Outer Female



Outer Male Contact Assembly

Ring



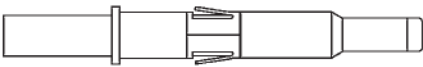
Support Sleeve



Inner Female



Outer Male



Description	Part Number (Pack of 100)	Nomenclature	Cable Type*
Outer Female Contact Assembly	192945-4380	TC1FCLY	A**
Outer Male Contact Assembly	192945-4390	TC1MCLY	A**
Outer Female Contact Assembly	192945-4930	TC2FCLY	B and Twisted Pair
Outer Male Contact Assembly	192945-4530	TC2MCLY	B and Twisted Pair

Note: Sold as complete sets. Please contact Cannon for other packaging options.
* For Cable Type, see page 73
** Support sleeve not used

Coaxial Contacts — Cable Type and Cable Strip Length

Cable Type — A

T3203	T3306	RG174
T3204	T3385	RG179
T3264	T3388	RG187
T3289	T3390	RG188
		7528A/31

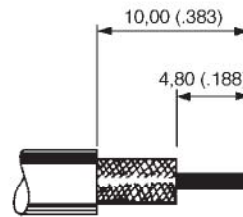
Cable Type — B

T3201	T3293	RG178
T3202	T3294	RG196
T3261	T3386	7530A/1114
T3263	UR94	5088A/1317
	LN00029	7530D/1114
	C06C030	LGRZ/4016

Cable Type — Twisted Pair

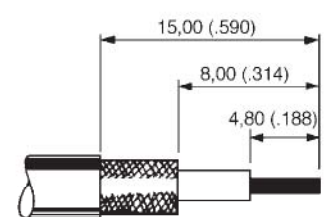
Insulation Diameter	Dimension	
	X	Y
0,56 (.022) - 1,12 (.044)	4,80 (.189)	6,30 (.248)
Less than 0,56 (.022)	5,10 (.200)	13,00 (.512)

Outer Male Contact Assembly



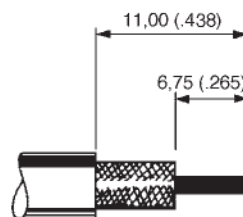
Part Number: 192943-4580

Outer Male Contact Assembly



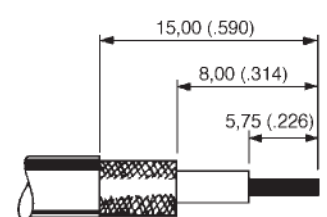
Part Number: 192945-4390

Outer Male Contact Assembly

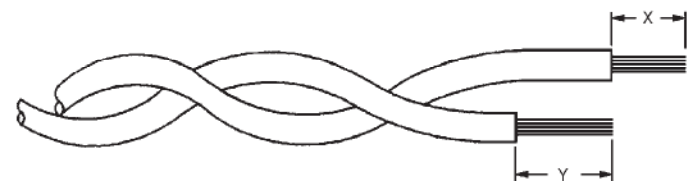


Part Number: 192945-4930

Outer Male Contact Assembly



Part Number: 192945-4530



Part Number: 192945-4930 & 192945-4530

Accessories



Discriminating (Keying) Pins and Caps

Discriminating (Keying) Pins are used to prevent cross-mating of similar connectors. These pins are used in place of a pin contact. The corresponding socket cavity must be left open. If a socket contact is present, the discriminating pin will prevent mating. There are two types of discriminating pins. Board Mount PCB connectors have caps and pegs. All other connectors have signal or power pins.

Description	Part Number	Pack Size
Discriminating (Keying) Pin, Signal Contacts	192990-0000	Bulk Pack (25)
Discriminating (Keying) Pin, Power Contacts	192900-0189	Bulk Pack (25)
Discriminating (Keying) Cap, Pin Contacts	192990-0010	Bulk Pack (100)
Discriminating (Keying) Peg, Socket Contacts	192990-7650	Bulk Pack (100)



Hand Tools for Formed (Stamped) contacts

Ratcheted Hand Tool



A range of single action, factory calibrated tools are available to support the stamped contacts and 30 A power contacts.

Signal Contact	Power Contact	Part Number
14-16 AWG	N/A	121586-5238
16-18 AWG	N/A	121586-5237
20-22, 24-26 AWG	N/A	121586-5236
N/A	12-14, 14-16, 18-20 AWG	121586-5241

Hand Tools for Machined and Coaxial Contacts



This is a ratcheted, four indent crimptool that is fully adjustable. They crimp all sizes of machined and coaxial contacts.

Description	Hand Tool Part Number	Locator
Machined Crimp*	995-0001-585	192990-7600 (Calibrated) ¹
Coaxial Outer	274-7613-000	326-7512-000
Coaxial Inner	995-0001-584	326-7511-000

¹Nomenclature: TH-Trident

* M22520-1-01

Extraction Tools



Contacts can readily be removed from the housings using an extraction tool. The tool is placed over the contact and the sleeve rotated slightly as it is pushed home to release the spring. Light pressure on the knob then ejects the contact from the rear of the housing.

	Part Number
For Signal Contact	192922-1450
For Power Contact	192900-0176



	Part Number
For Power Contact	121086-3278



Mini Applicators (for Stamped Contacts)

Mini Applicators are interchangeable modules that will fit into many standard crimping machines. They are available for all sizes of stamped signal and power contacts.

AWG Size	Contact Description	Mecal Part Number
14-16	Trident Signal	121586-5240
16-18	Trident Signal	121586-5217
20-26	Trident Signal	121586-5239
12-14	Trident 30 A Power	*
14-16	Trident 30 A Power	*
18-20	Trident 30 A Power	*

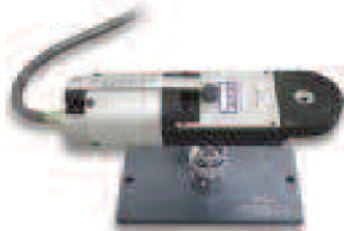
* For details please consult the factory



Testing Gauge (for Stamped Contacts)

The testing gauge will be helpful to check whether a crimp is ok or not. The contact should be inserted into the test fixture without scratching the test hole (diameter 3.3 mm).

Description	Part Number
Testing Gauge	317-8675-133



Pneumatic Table Crimp Tool (for Machined Contacts)

This Hand Crimp Tool fully meets the requirements of specification MIL-C-22520. The tool produces eight-indent crimp terminations of excellent quality. Together with the bench mount BM-2 and the foot pedal WA-10 it becomes an installed tool facilitating the work: The Hands of the operator are free to insert the contact and the wire and to remove the terminated contact.

Nomenclature	Description	Part Number	AWG
WA27F-CE	Pneumatic Crimp Tool	121586-5067	12-20
WA22F-CE	Pneumatic Crimp Tool	121586-5070	20-32
BM-2	Bench Mount	121586-5068	
WA10	Foot Pedal	121586-5069	



Semi-Automated Crimp Machine HACS-5 (for Machined Contacts)

With the semi-automated crimp machine HACS-5 machined contacts are terminated fast and reliably. 20 to 25 crimp terminations per minute can be achieved. The user has the choice between automatic and manual operation.

Nomenclature	Description	Part Number
HACS-5	Semi-Automated Crimp Machine	120090-0118

Electrical Data

Protection Class: IP51
Electrical Power: 240 V ac, 50 Hz



Crimping Instructions — Formed (Stamped) Crimp Contacts

Assembly Instructions:

1. Strip wires to length. For wire strip lengths, see page 67.
2. Open the hand tool and place the contact in the chosen die, ensuring that the locating plate is positioned between the collar and crimp saddle. Then squeeze tool gently to hold the contact in place.
3. Insert the wire.
4. Cycle the tool.
5. Remove the wire and inspect the crimp. The strands should be visible at both ends of the crimp. There should be no loose strands (see Figures 1-3). The contact should be co-linear with the wire (see Figure 4). Bent contacts are unacceptable (see Figure 5).

Figure 1 - Correct

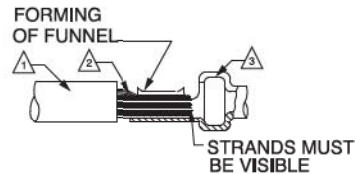


Figure 2 - Unacceptable

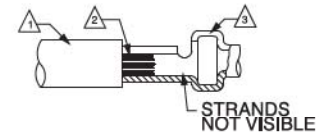


Figure 3 - Unacceptable

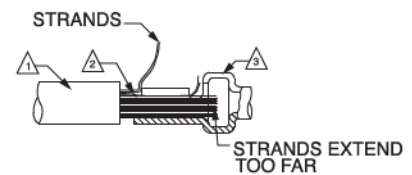
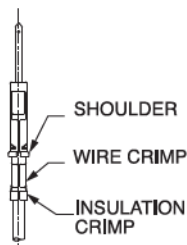


Figure 4 - Correct

Side View



Front View

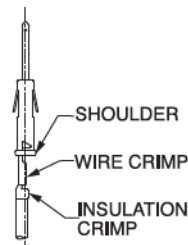
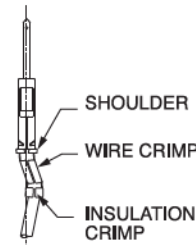
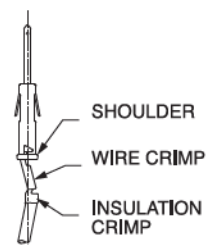


Figure 5 - Unacceptable

Side View



Front View



Crimping Instructions — Machined Crimp Contacts

Assembly Instructions:

1. Strip wires to length. For wire strip lengths, see page 69.
2. Attach the correct locator (turret) to the hand tool.

Contact Type	Locator Color
Pin	Blue
Socket	Green
Earthing	Black

3. Adjust the dial for the wire gauge.
4. Place the contact into the locator and insert the wire into the contact as indicated on the locator (turret) label.

Figure 6 - Correct

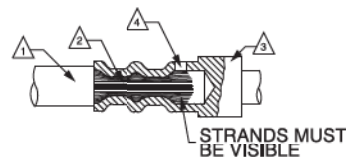
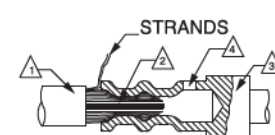


Figure 7 - Unacceptable



Notes:

- △ Wire Insulation.
- △ Wire Strands.
- △ Contact.
- △ Inspection Window. Strands must be visible.

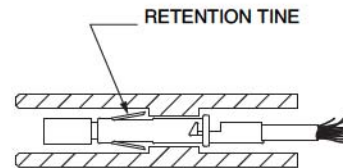
5. Cycle the tool.
6. Remove and inspect the contact. Strands should be visible through the inspection window (see Figure 6). There should be no loose strands (see Figure 7).



Contact Insertion

No insertion tool is required. Trident contacts are inserted from the rear of the connector and held in place by retention tines (cantilever springs). These tines compress during insertion. They expand once contact is in place and prevent the contact from backing out.

Proper Insertion of Trident Contact



Contact Retention Forces

- Minimum retention force of the contact to the insulator.

Contact	Newton(s)
Signal Contacts	67
(Formed Crimp, Machined Crimp, Solder Cup, Flow Solder)	
Coaxial Contacts	67
30 A Power Contacts	100

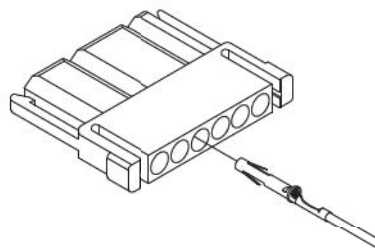
Note: Newton is a metric unit of force. One pound = 4.45 Newtons

Trident Assembly Instructions (For Neptune and TNM Assembly, see page 78)

Assembly instructions:

1. Grasp the crimped or soldered contact just behind where the wire enters the contact.
2. Push the contact into the connector cavity until it locks into place.
3. Pull on the wire slightly to verify that the contact is secure.
4. Inspect the mating face of the connector. The contacts should extend the same distance into the connector.

Contact Insertion - Slimline



Contact Insertion - Ringlock

