

FAKRA/USCAR series

RII4-RI97

ISO TS 16949
CERTIFIED



RADIALL 
The next connexion

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Automotive electronic is a key function in any vehicle. The number of cars has quickly increased over the last twenty years, driving up the number of connectors of all types used inside vehicles. In particular for RF connectors, the growth was driven by multimedia and telematics applications such as AM/FM and digital Satellite Radio (SDARS), Cellular phone (GSM), Global Positioning System (GPS), Mobile TV, Vehicular internet Access, keyless entry, tire pressure monitoring, remote toll payment, ...

To cope with this new demand, Automotive industry created new interface standards called **FAKRA: ISO 20860-1 / DIN72594-1** (mainly used in Europe) and **USCAR: SAE 2, 17, 18** (mainly used in USA). Both are based on the coaxial SMB interface. FAKRA and USCAR Connectors are fully intermateable. The main common characteristics of these two standards are:

- RF electrical performances identical to SMB coaxial connector.
- Plastic housing featuring mechanical and color coding.
- Each coding refers to a specific application.
- High mechanical performances meeting the requirements of the automotive industry.

In this catalogue, you will find the complete range of **Radial Automotive Connectors** available for cable assembly, harnesses and equipment dedicated for automotive applications.

All **Radial Automotive connectors** are developed to support Customers in their continuous efforts to reduce cost. Our products use the latest technologies available in metal stamping, plastic molding, die casting and are designed to comply with the latest automation assembly machines and processes.



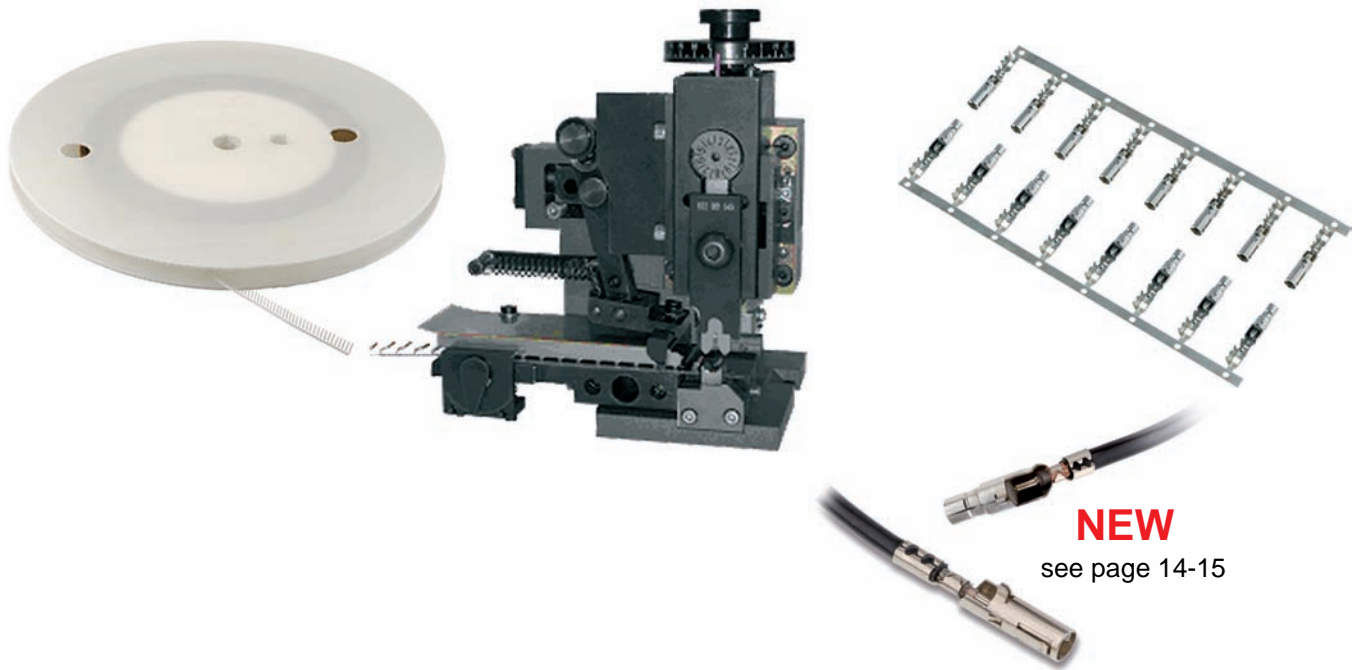
View	Coding	Color	RAL	SINGLE WAY		MULTI WAY
				Application in Europe	Application in USA	Application in USA
	A	Black	RAL9005	Radio with phantom supply	Radio with phantom supply	Not defined
	B	Cream White	RAL9001	Radio without phantom supply	Radio without phantom supply	Not defined
	C	Blue	RAL5005	GPS telematics OR navigation	GPS	GPS/GSM
	D	Claret Violet	RAL4004	GSM	GSM	Not defined
	E	Green	RAL6002	TV1	TV (UHF) / SDARS terrestrial (XM)	TV1 (UHF) / TV2
	F	Brown	RAL8011	TV2	TV (VHF) / SDARS terrestrial (Sirius)	TV1 (VHF) / TV2
	G	Grey	RAL7031	Remote control keyless entry	SDARS terrestrial (interoperable)	SDARS satellite / terrestrial
	H	Violet	RAL4003	GPS telematics AND navigation	GPS AND navigation	Not defined
	I	Beige	RAL1001	Remote controlled parking heating	Bluetooth	Not defined
	K	Curry	RAL1027	Diversity radio	SDARS satellite	-
	L	Carmine red	RAL3002	Only specified in USCAR	Not defined	-
	M	Pastel Orange	RAL3003	Only specified in USCAR	Keyless entry / Tire pressure monitoring	-
	N	Pastel Green	RAL6019	Only specified in USCAR	Not defined	-
	Z	Water blue	RAL5021	Neutral (fits all)	Neutral (fits all)	-

LATEST INNOVATION!

Since 1974, Radiall has had a cutting and stamping facility to meet the requirements of its customers. This long experience in high precision mechanical tools for the electronic industry, with highly qualified manpower, allows us to remain on the forefront of the coaxial connector industry.

Radiall propose stamped center contact and molded insulator for both FAKRA2 and USCAR connectors series. Going further Radiall is proud to introduce a new innovative connector, the **R3C (Radiall Car Crimp Connector)**, **the first one-step crimping connector USCAR and FAKRA compliant.**

Thanks to this new technology, customers can reduce their cost while improving their processes.



BENEFITS

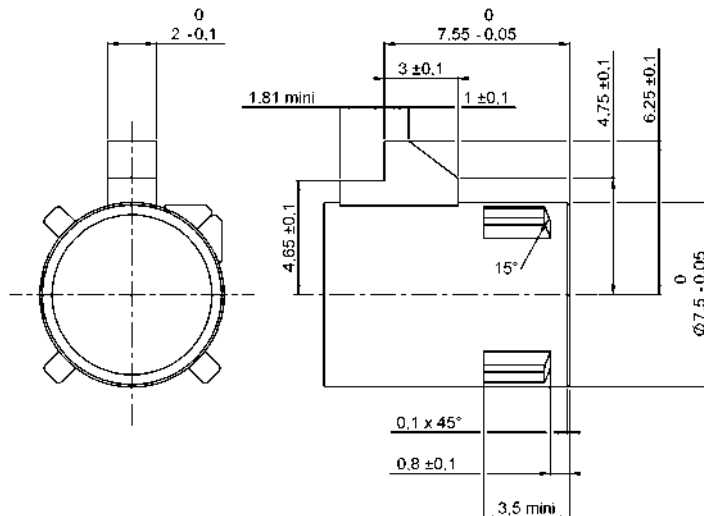
- **Guaranteed center contact positioning,**
- Semi-automatic and fully automatic crimping process possible,
- Improved process control,
- 50% reduction or more of assembly time compared to hand crimping,
- Standard crimping module (mini applicator) usable with all automatic crimping press.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

- **FAKRA** and **USCAR** compliant,
- Fully intermateable with all connectors based on **FAKRA** and **USCAR** standards,
- Available for cable sizes: 2.6 mm/50Ω - 3.2 mm/50Ω* - 5 mm/50Ω - 5 mm/75Ω.

* Under development.

INTERFACE: According to **SAE/USCAR** and **DIN 72594-1 (FAKRA)**



ELECTRICAL CHARACTERISTICS

Impedance	50 Ω
Frequency range	DC - 6 GHz (optimum DC - 4 GHz)
V.S.W.R.	< 1.3 (for more details, please consult our product technical data sheets at www.radiall.com)
Insulation resistance	1 000 MΩ
Dielectric withstanding voltage	1 000 Vrms (at sea level)
Working voltage	335 Vrms (at sea level)

MECHANICAL CHARACTERISTICS

Durability	25 cycles min (mating/unmating)
Mechanical pull test	FAKRA 80 N, USCAR 110 N
Cable retention force	FAKRA 100 N, USCAR 110 N

ENVIRONMENTAL CHARACTERISTICS

Temperature range	- 40° C / + 110° C (for connectors with PTFE insulators)
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All dimensions are in mm



STRAIGHT FEMALE PLUG CRIMP TYPE, MACHINED CENTER CONTACT

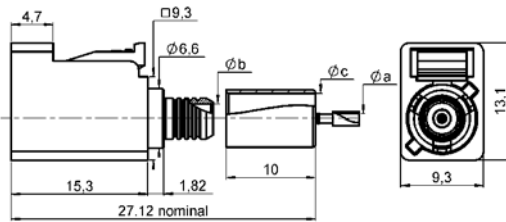
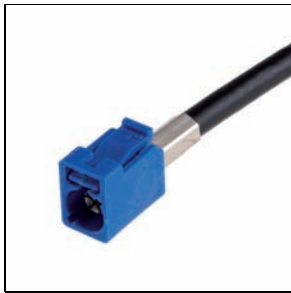


Fig. 1

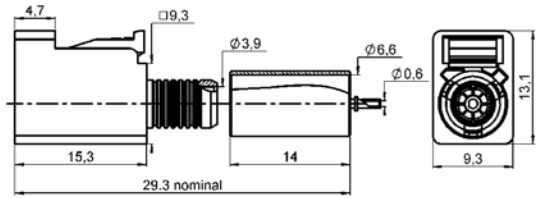
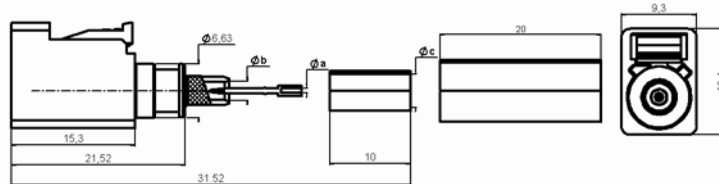
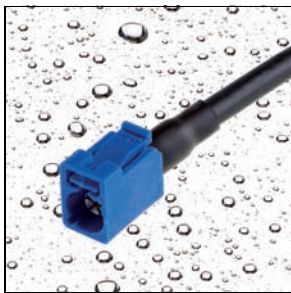


Fig. 2

Cable group	Part number	Fig.	a dia.	b dia.	c dia.	Assembly instructions	Packaging
2.6 / 50 / S	R197 114 _00 ⁽¹⁾	1	0.6	1.7	3.25	M 01	500 ⁽²⁾
5 / 50 / S	R197 114 _01 ⁽¹⁾	1	1.05	3.2	5.55	M 02	
6 / 125 / S	R197 114 A15	2	-	-	-	M 03	

WATERPROOF STRAIGHT FEMALE PLUG CRIMP TYPE, MACHINED CENTER CONTACT



- Waterproof protection according to IP67 rating standard.
- The IP rating characteristics are guaranteed for a mated connection only (waterproof cable jack and plug from Radiall).

Cable group	Part number	a dia.	b dia.	c dia.	Assembly instructions	Packaging
2.6 / 50 / S	R197 114 _11 ⁽¹⁾	0.6	1.7	3.25	M 02	100 ⁽²⁾
3.2 / 50 / S	R197 114 _12 ⁽¹⁾	0.9	2.35	4.15	M 02	

(1) To obtain the correct P/N, please replace "_", with the coding letter (see page 5) corresponding to your application.

(2) For unit packaging, add "W" at the end of the P/N.



STRAIGHT FEMALE PLUG CRIMP TYPE, STAMPED CENTER CONTACT

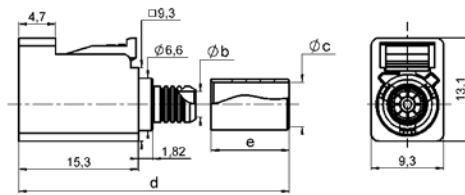
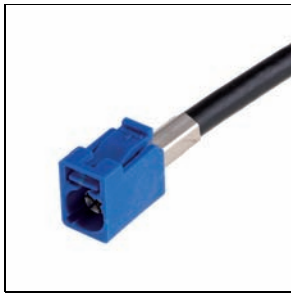


Fig. 1

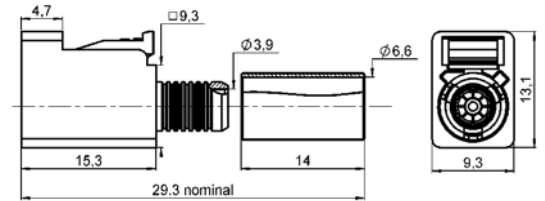


Fig. 2

Center contact to be ordered and delivered separately

Cable group	Part number	Fig.	b dia.	c dia.	d	e	Assembly instructions	Packaging	P/N of center contact Tape & reel packaging (10000 contacts)
2.6 / 50 / S	R197 114 _20 ⁽¹⁾ (3)	1	1.7	3.25	27.12	10	M06	500 ⁽²⁾	250 01 352 to be ordered separately
5 / 50 / S	R197 114 _21 ⁽¹⁾ (3)	1	3.2	5.55	27.12	10	M04		250 01 362 to be ordered separately
5 / 75 / S	R197 114 _23 ⁽¹⁾ (3)	1	3.2	5.3	29.12	12			250 01 352 to be ordered separately
6 / 75 / S	R197 114 A26 ⁽³⁾	2	-	-	-	-			M05
6 / 125 / S	R197 114 A25 ⁽³⁾	2	-	-	-	-			

STAMPED FEMALE CENTER CONTACT

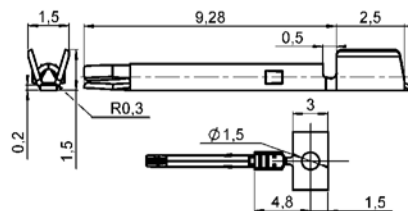


Fig. 1

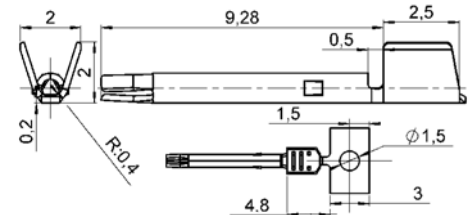


Fig. 2

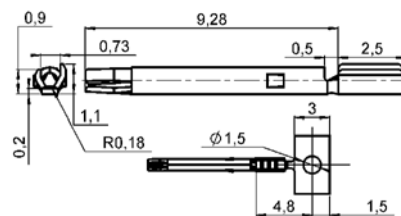


Fig. 3

For cable	Part number	Fig.	Reel dia.	Pitch between contact	Packaging	Plating for
2.6 / 50 / S - 5 / 75 / S - 6 / 75 / S	250 01 352	1	600 mm	5 mm	Tape & reel (10000 contacts)	- contact area: gold 0.5 over nickel 2 - crimp area: tin 1 over nickel 2
3.2 / 50 / S 5 / 50 / S	250 01 362	2				
6 / 125 / S	250 01 382	3				

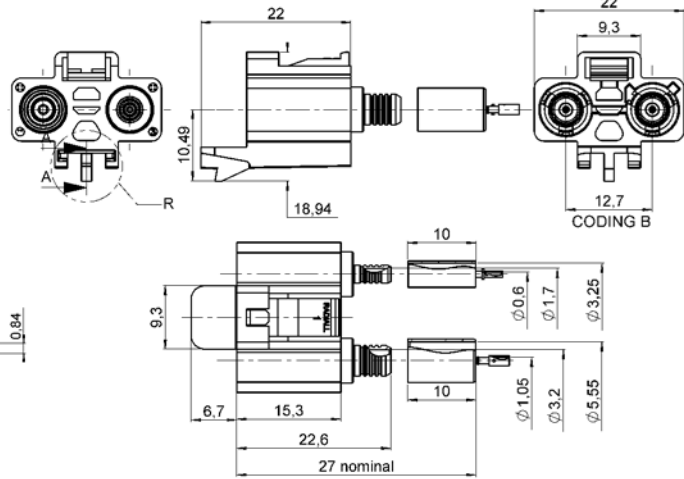
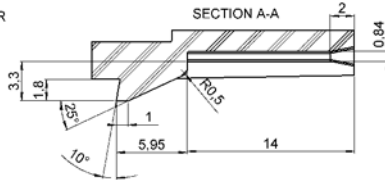
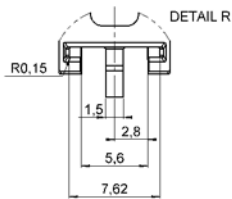
(1) To obtain the correct P/N, please replace "_", with the coding letter (see page 5) corresponding to your application.

(2) For unit packaging, add "W" at the end of the P/N.

(3) Stamped center contact delivered separately.



STRAIGHT DUPLEX FEMALE PLUG CRIMP TYPE, MACHINED CENTER CONTACT, WITH CLIP ACCOMODATION

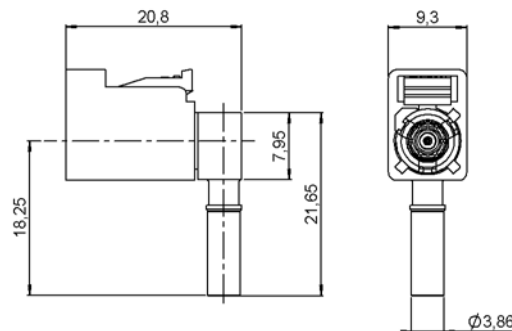


Cable group	Part number	Assembly instructions	Packaging
2.6 / 50 / S - 5 / 50 / S	R197 214 B10	M 01 & M 02	200 ⁽²⁾

Other cable types available, please contact us.

RIGHT ANGLE FEMALE PLUG ROTATABLE

Free cable positioning in all 360° directions - No stress on cable and PCB - Easy to install



Cable group	Part number	Assembly instructions	Packaging
2.6 / 50 / S	R197 124 _00⁽¹⁾	M09	100 ⁽²⁾

(1) To obtain the correct P/N, please replace "_", with the coding letter (see page 5) corresponding to your application.

(2) For unit packaging, add "W" at the end of the P/N.



STRAIGHT MALE JACK CRIMP TYPE, MACHINED CENTER CONTACT

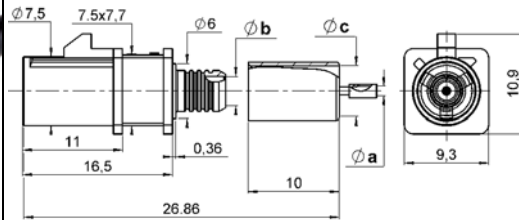


Fig. 1

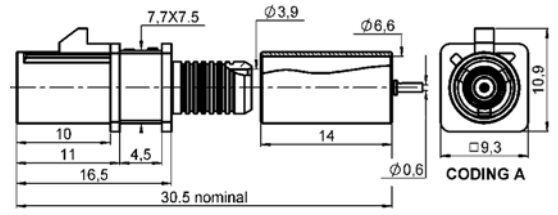
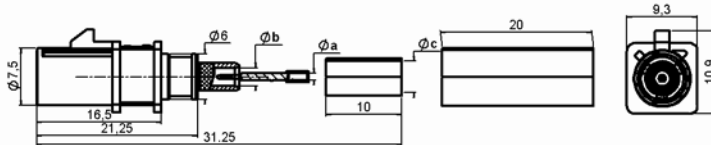


Fig. 2

Cable group	Part number	Fig.	a dia.	b dia.	c dia.	Assembly instructions	Packaging
2.6 / 50 / S	R197 134 _00 ⁽¹⁾	1	0.6	1.7	3.25	M 01	500 ⁽²⁾
5 / 50 / S	R197 134 _01 ⁽¹⁾	1	1.05	3.2	5.55	M 02	
6 / 125 / S	R197 134 A15	2	-	-	-	M 03	

WATERPROOF STRAIGHT MALE JACK CRIMP TYPE, MACHINED CENTER CONTACT



- Waterproof protection according to IP67 rating standard.
- The IP rating characteristics are guaranteed for a mated connection only (waterproof cable jack and plug from Radiall).

Cable group	Part number	a dia.	b dia.	c dia.	Assembly instructions	Packaging
2.6 / 50 / S	R197 134 _11 ⁽¹⁾	0.6	1.7	3.25	M 02	100 ⁽²⁾
3.2 / 50 / S	R197 134 _12 ⁽¹⁾	0.9	2.35	4.15		

(1) To obtain the correct P/N, please replace "_", with the coding letter (see page 5) corresponding to your application.

(2) For unit packaging, add "W" at the end of the P/N.



STRAIGHT MALE JACK CRIMP TYPE, STAMPED CENTER CONTACT

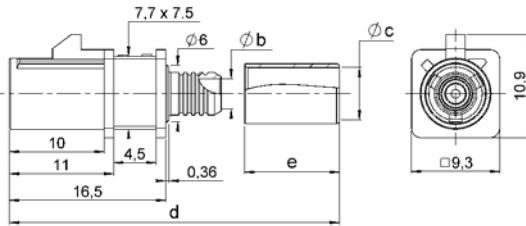
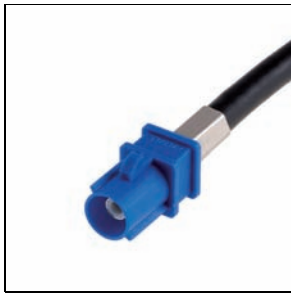


Fig. 1

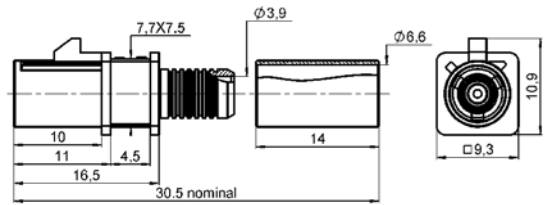


Fig. 2

Center contact to be ordered and delivered separately

Cable group	Part number	Fig.	b dia.	c dia.	d	e	Assembly instructions	Packaging	P/N of center contact Tape & reel packaging (10000 contacts)
2.6 / 50 / S	R197 134 _20 ^{(1) (3)}	1	1.7	3.25	26.86	10	M 06	500 ⁽²⁾	250 56 172 to be ordered separately
5 / 50 / S	R197 134 _21 ^{(1) (3)}	1	3.2	5.55	26.86	10	M 08		250 56 182 to be ordered separately
5 / 75 / S	R197 134 _23 ^{(1) (3)}	1	3.2	5.3	28.86	12			250 56 172 to be ordered separately
6 / 75 / S	R197 134 A26 ⁽³⁾	2	-	-	-	-	M 05		250 56 192 to be ordered separately
6 / 125 / S	R197 134 A24 ⁽³⁾	2	-	-	-	-			

STAMPED MALE CENTER CONTACT

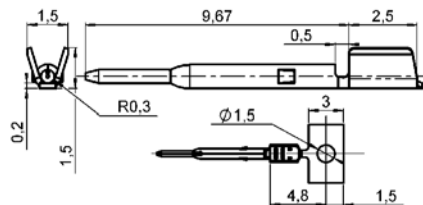


Fig. 1

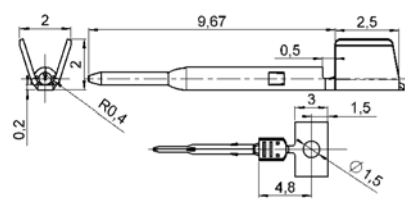


Fig. 2

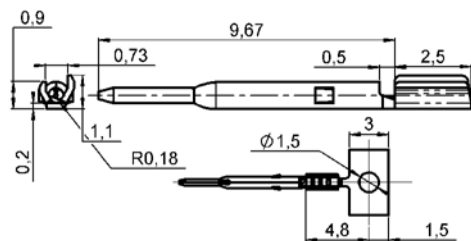


Fig. 3

For cable	Part number	Fig.	Reel dia.	Pitch between contact	Packaging	Plating for
2.6 / 50 / S - 5 / 75 / S - 6 / 75 / S	250 56 172	1	600 mm	5 mm	Tape & reel (10000 contacts)	- contact area: gold 0.5 over nickel 2 - crimp area: tin 1 over nickel 2
3.2 / 50 / S - 5 / 50 / S	250 56 182	2				
6 / 125 / S	250 56 192	3				

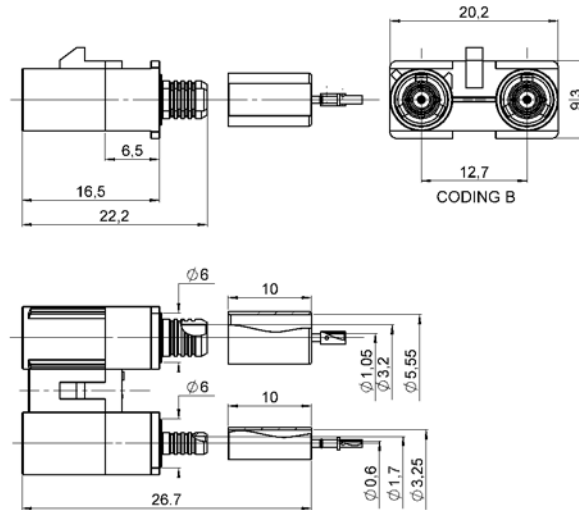
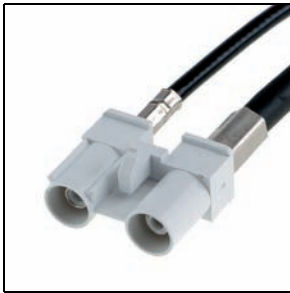
(1) To obtain the correct P/N, please replace "_", with the coding letter (see page 5) corresponding to your application.

(2) For unit packaging, add "W" at the end of the P/N.

(3) Stamped center contact delivered separately.



STRAIGHT DUPLEX MALE JACK CRIMP TYPE, MACHINED CENTER CONTACT



Cable group	Part number	Assembly instructions	Packaging
2.6 / 50 / S - 5 / 50 / S	R197 234 B10	M 01 & M 02	400 ⁽²⁾

Other cable types available, please contact us.

(2) For unit packaging, add "W" at the end of the P/N.



FEMALE COAXIAL CONTACT

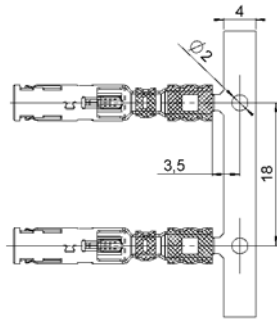


Fig. 1

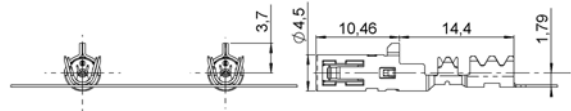
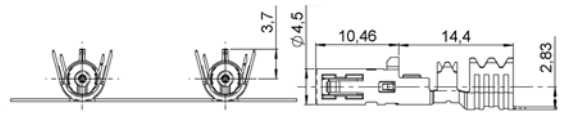


Fig. 2



Cable group	Part number	Fig.	Packaging
2.6 / 50 / S	R299 197 200	1	Tape & reel
5 / 50 / S	R299 197 230	2	
5 / 75 / S	R299 197 260		

HOUSING

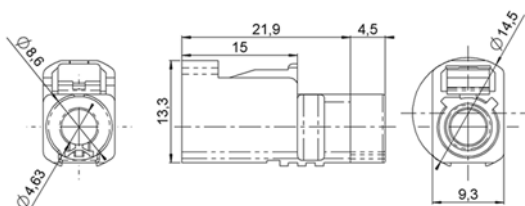


Fig. 1

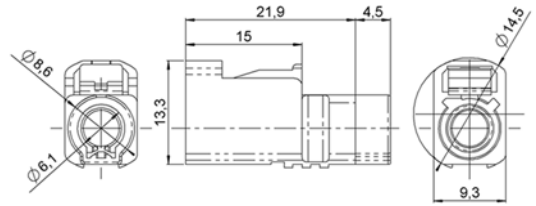


Fig. 2

Cable group	Part number	Fig.	Packaging
2.6 / 50 / S	R197 115 _80	1	100 ⁽²⁾
5 / 50 / S - 5 / 75 / S	R197 115 _81	2	

(2) For unit packaging, add "W" at the end of the P/N.



MALE COAXIAL CONTACT

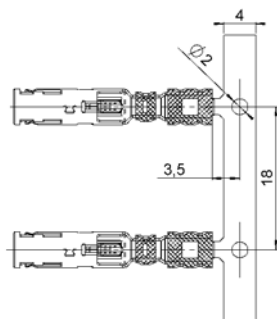


Fig. 1

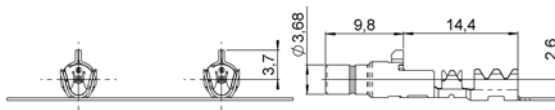
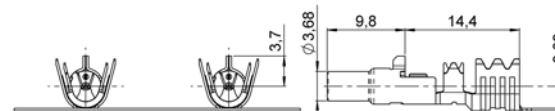


Fig. 2



Cable group	Part number	Fig.	Packaging
2.6 / 50 / S	R299 197 000	1	Tape & reel
5 / 50 / S	R299 197 030	2	
5 / 75 / S	R299 197 060		

HOUSING

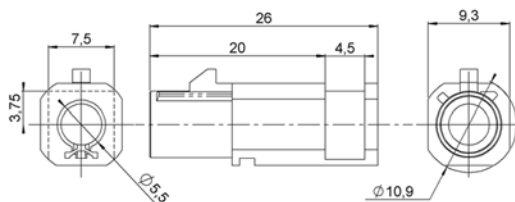


Fig. 1

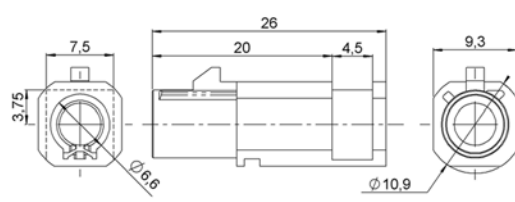


Fig. 2

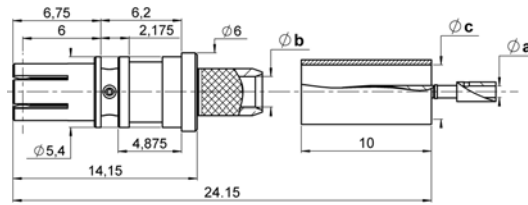
Cable group	Part number	Fig.	Packaging
2.6 / 50 / S	R197 135 _80⁽¹⁾	1	100 ⁽²⁾
5 / 50 / S - 5 / 75 / S	R197 135 _81⁽¹⁾	2	

(1) To obtain the correct P/N, please replace "_", with the coding letter (see page 5) corresponding to your application.

(2) For unit packaging, add "W" at the end of the P/N.



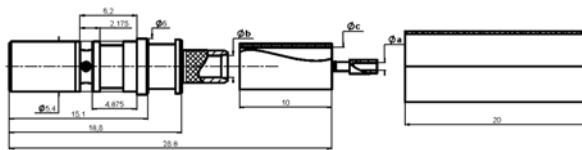
STRAIGHT FEMALE CONTACT CRIMP TYPE, MACHINED CENTER CONTACT



Used with housing R197 112 _90⁽¹⁾

Cable group	Part number	a dia.	b dia.	c dia.	Assembly instructions	Packaging
2.6 / 50 / S	R114 082 325	0.6	1.7	3.25	M 02	100 ⁽²⁾
3.2 / 50 / S	R114 086 325	0.9	2.35	4.15		
5 / 50 / S	R114 089 325	1.05	3.2	5.45		

WATERPROOF STRAIGHT FEMALE CONTACT CRIMP TYPE, MACHINED CENTER CONTACT

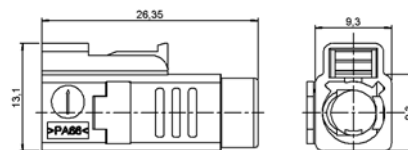


Used with housing R197 112 _90⁽¹⁾

- Waterproof protection according to IP67 rating standard.
- The IP rating characteristics are guaranteed for a mated connection only (waterproof cable jack and plug from Radiall).

Cable group	Part number	a dia.	b dia.	c dia.	Assembly instructions	Packaging
2.6 / 50 / S	R114 082 365	0.6	1.7	3.25	M 02	100 ⁽²⁾
3.2 / 50 / S	R114 086 365	0.9	2.35	4.15		

STRAIGHT FEMALE HOUSING FOR ABOVE CONTACTS



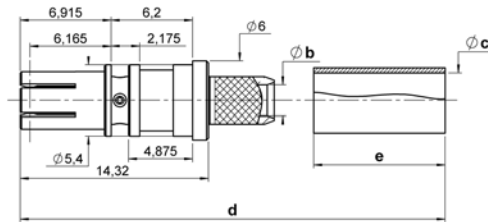
Part number	Assembly instructions	Packaging
R197 112 _90⁽¹⁾	M 10	100 ⁽²⁾

(1) To obtain the correct P/N, please replace "_", with the coding letter (see page 5) corresponding to your application.

(2) For unit packaging, add "W" at the end of the P/N.



STRAIGHT FEMALE CONTACT CRIMP TYPE, STAMPED CENTER CONTACT



Used with housing R197 112 _90⁽¹⁾

Center contact to be ordered and delivered separately

Cable group	Part number	b dia.	c dia.	d	e	Assembly instructions	Packaging	P/N of center contact Tape & reel packaging (10000 contacts)
2.6 / 50 / S	R114 082 375 ⁽³⁾	1.7	3.25	24.32	10	M 04	100 ⁽²⁾	250 01 352 to be ordered separately
3.2 / 50 / S	R114 086 375 ⁽³⁾	2.35	4.15					250 01 362 to be ordered separately
5 / 50 / S	R114 089 375 ⁽³⁾	3.2	5.45					250 01 352 to be ordered separately
5 / 75 / S	R114 087 375 ⁽³⁾		5.3					26.32

STAMPED FEMALE CENTER CONTACT

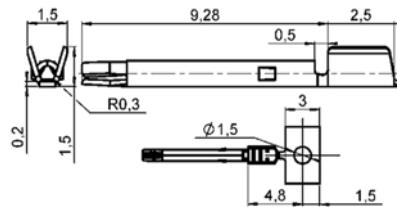


Fig. 1

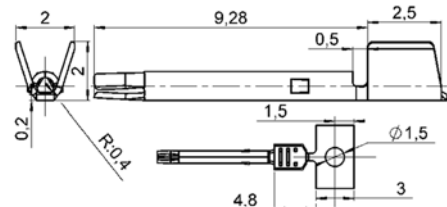
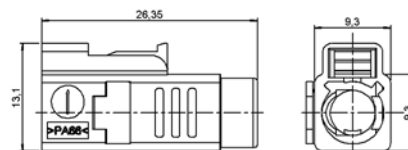


Fig. 2

For cable	Part number	Fig.	Reel dia.	Pitch between contact	Packaging	Plating for
2.6 / 50 / S - 5 / 75 / S - 6 / 75 / S	250 01 352	1	600 mm	5 mm	Tape & reel (10000 contacts)	- contact area: gold 0.5 over nickel 2 - crimp area: tin 1 over nickel 2
3.2 / 50 / S - 5 / 50 / S	250 01 362	2				

STRAIGHT FEMALE HOUSING FOR ABOVE CONTACTS



Part number	Assembly instructions	Packaging
R197 112 _90 ⁽¹⁾	M 10	100 ⁽²⁾

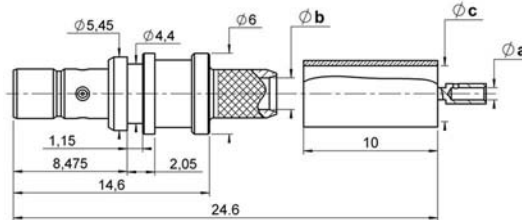
(1) To obtain the correct P/N, please replace "_", with the coding letter (see page 5) corresponding to your application.

(2) For unit packaging, add "W" at the end of the P/N.

(3) Stamped center contact delivered separately.



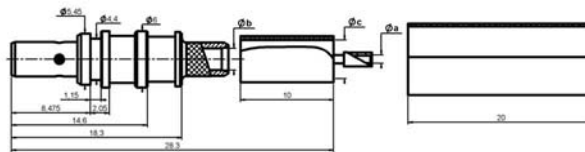
STRAIGHT MALE CONTACT CRIMP TYPE, MACHINED CENTER CONTACT



Used with housing R197 132 _90⁽¹⁾

Cable group	Part number	a dia.	b dia.	c dia.	Assembly instructions	Packaging
2.6 / 50 / S	R114 242 325	0.6	1.7	3.25	M 02	100 ⁽²⁾
3.2 / 50 / S	R114 246 325	0.9	2.35	4.15		
5 / 50 / S	R114 249 325	1.05	3.2	5.45		

WATERPROOF STRAIGHT MALE CONTACT CRIMP TYPE, MACHINED CENTER CONTACT

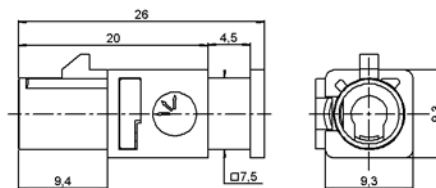


Used with housing R197 132 _90(1)

- Waterproof protection according to IP67 rating standard.
- The IP rating characteristics are guaranteed for a mated connection only (waterproof cable jack and plug from Radiall).

Cable group	Part number	a dia.	b dia.	c dia.	Assembly instructions	Packaging
2.6 / 50 / S	R114 242 365	0.6	1.7	3.25	M 02	100 ⁽²⁾
3.2 / 50 / S	R114 246 365	0.9	2.35	4.15		

STRAIGHT MALE HOUSING FOR ABOVE CONTACTS



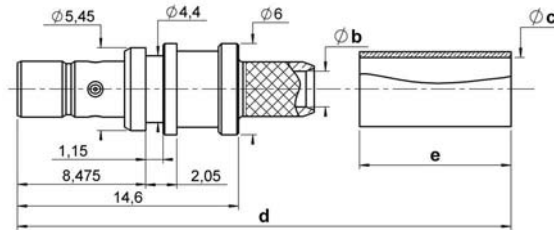
Part number	Assembly instructions	Packaging
R197 132 _90⁽¹⁾	M 10	100 ⁽²⁾

(1) To obtain the correct P/N, please replace "_", with the coding letter (see page 5) corresponding to your application.

(2) For unit packaging, add "W" at the end of the P/N.



STRAIGHT MALE CONTACT CRIMP TYPE, STAMPED CENTER CONTACT



Used with housing R197 132 _90⁽¹⁾

Center contact to be ordered and delivered separately

Cable group	Part number	b dia.	c dia.	d	e	Assembly instructions	Packaging	P/N of center contact Tape & reel packaging (10000 contacts)
2.6 / 50 / S	R114 242 375 ⁽³⁾	1.7	3.25	24.6	10	M 08	100 ⁽²⁾	250 56 172 to be ordered separately
3.2 / 50 / S	R114 246 375 ⁽³⁾	2.35	4.15					250 56 182 to be ordered separately
5 / 50 / S	R114 249 375 ⁽³⁾	3.2	5.45	26.6	12			250 56 172 to be ordered separately
5 / 75 / S	R114 247 375 ⁽³⁾		5.3					250 56 172 to be ordered separately

STAMPED MALE CENTER CONTACT

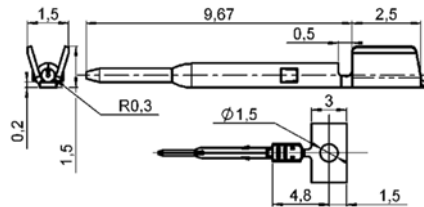


Fig. 1

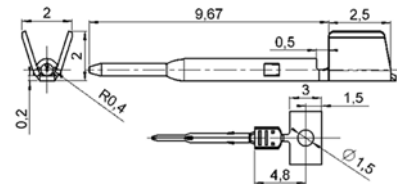
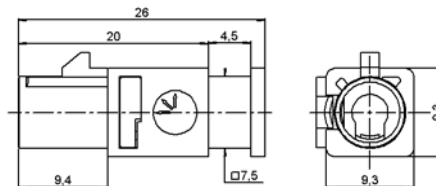


Fig. 2

For cable	Part number	Fig.	Reel dia.	Pitch between contact	Packaging	Plating for
2.6 / 50 / S - 5 / 75 / S - 6 / 75 / S	250 56 172	1	600 mm	5 mm	Tape & reel (10000 contacts)	- contact area: gold 0.5 over nickel 2 - crimp area: tin 1 over nickel 2
3.2 / 50 / S - 5 / 50 / S	250 56 182	2				

STRAIGHT MALE HOUSING FOR ABOVE CONTACTS



Part number	Assembly instructions	Packaging
R197 132 _90 ⁽¹⁾	M 10	100 ⁽²⁾

(1) To obtain the correct P/N, please replace "_", with the coding letter (see page 5) corresponding to your application.

(2) For unit packaging, add "W" at the end of the P/N.

(3) Stamped center contact delivered separately.



RIGHT ANGLE FEMALE PLUG CRIMP TYPE

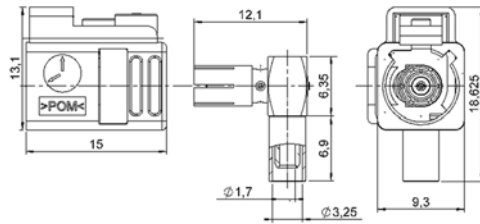
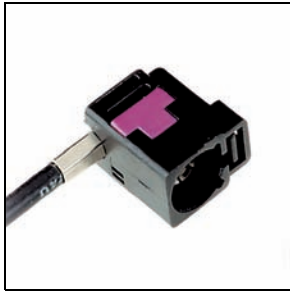


Fig. 1

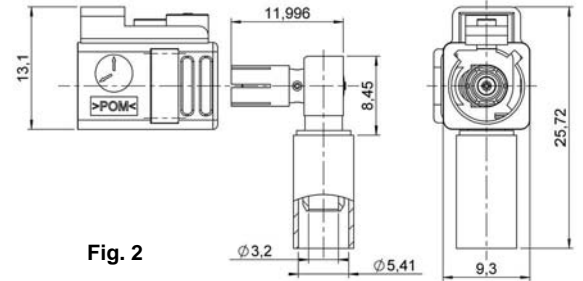


Fig. 2

Cable group	Part number	Fig.	Assembly instructions	Packaging	Note
2.6 / 50 / S	R197 120 _00 ⁽¹⁾	1	M 07	100 ⁽²⁾	Secondary locking
5 / 50 / S	R197 120 _01 ⁽¹⁾	2			

RIGHT ANGLE FEMALE PLUG STANDARD OR WATERPROOF AND ROTATABLE

Free cable positioning in all 360° directions - No stress on cable and PCB - Easy to install

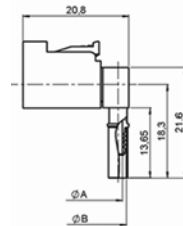


Fig. 1

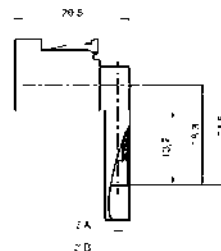
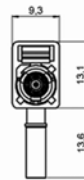


Fig. 2

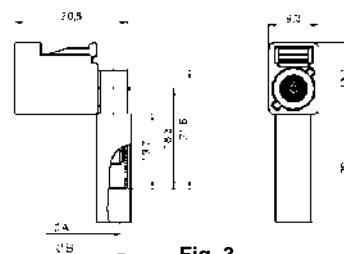
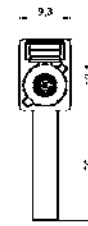


Fig. 3

- Waterproof protection according to IP67 rating standard.
- The IP rating characteristics are guaranteed for a mated connection only (waterproof cable jack and plug from Radiall).

Cable group	Part number	Fig.	Assembly instructions	Packaging	Note
2.6 / 50 / S	R197 124 _00 ⁽¹⁾	1	M 09	100 ⁽²⁾	standard
2.6 / 50 / S	R197 124 _11 ⁽¹⁾	2			waterproof
3.2 / 50 / S	R197 124 _12 ⁽¹⁾	3			

(1) To obtain the correct P/N, please replace "_", with the coding letter (see page 5) corresponding to your application.

(2) For unit packaging, add "W" at the end of the P/N.



FEMALE COAXIAL CONTACT

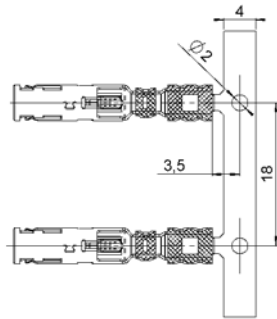


Fig. 1

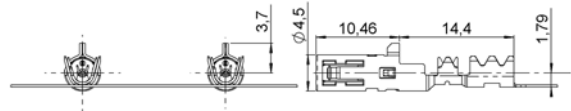
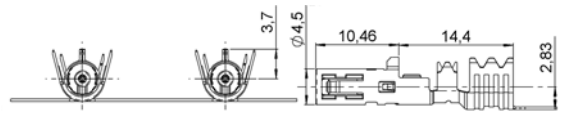


Fig. 2



Cable group	Part number	Fig.	Packaging
2.6 / 50 / S	R299 197 200	1	Tape & reel
5 / 50 / S	R299 197 230	2	
5 / 75 / S	R299 197 260		

HOUSING

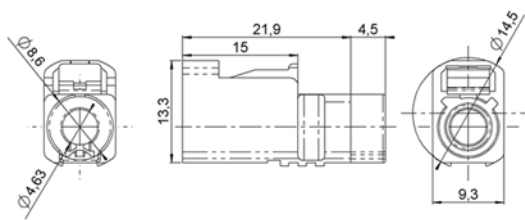


Fig. 1

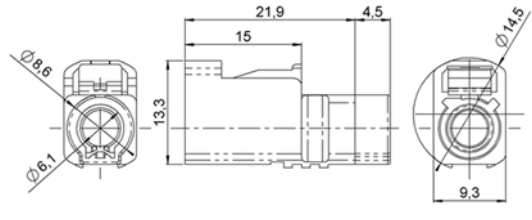


Fig. 2

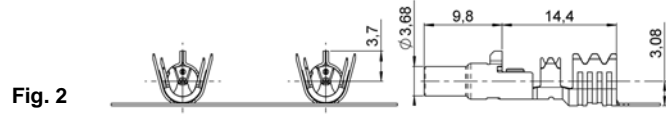
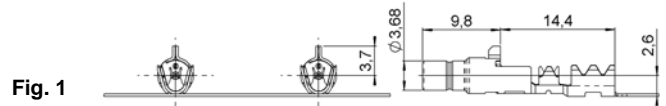
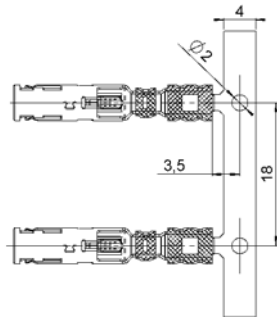
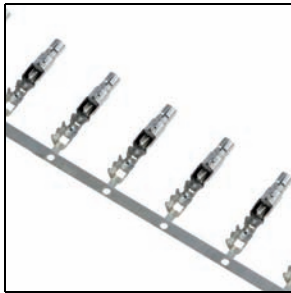
Cable group	Part number	Fig.	Packaging
2.6 / 50 / S	R197 115 _80⁽¹⁾	1	100 ⁽²⁾
5 / 50 / S - 5 / 75 / S	R197 115 _81⁽¹⁾	2	

(1) To obtain the correct P/N, please replace "_", with the coding letter (see page 5) corresponding to your application.

(2) For unit packaging, add "W" at the end of the P/N.

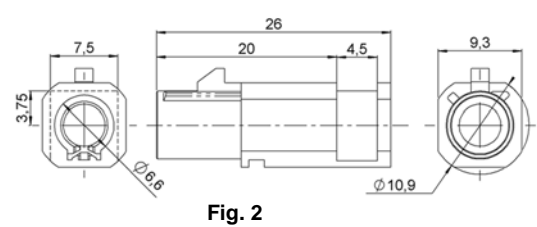
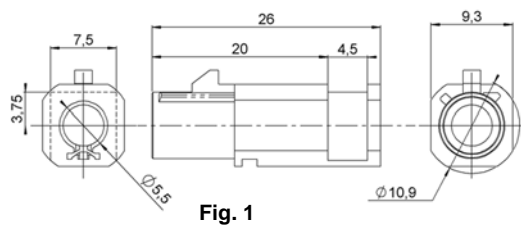


MALE COAXIAL CONTACT



Cable group	Part number	Fig.	Packaging
2.6 / 50 / S	R299 197 000	1	Tape & reel
5 / 50 / S	R299 197 030	2	
5 / 75 / S	R299 197 060		

HOUSING

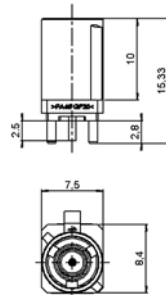
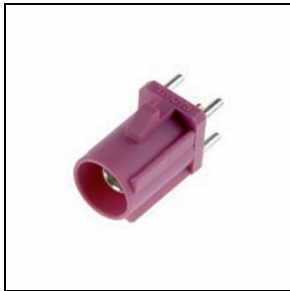


Cable group	Part number	Fig.	Packaging
2.6 / 50 / S	R197 135 _80⁽¹⁾	1	100 ⁽²⁾
5 / 50 / S - 5 / 75 / S	R197 135 _81⁽¹⁾	2	

(1) To obtain the correct P/N, please replace "_", with the coding letter (see page 5) corresponding to your application.

(2) For unit packaging, add "W" at the end of the P/N.

STRAIGHT PCB RECEPTACLE



Part number	Panel drilling	Packaging	Note
R197 150 _07 ⁽¹⁾	P 02	100 ⁽²⁾	Soldering pins

RIGHT ANGLE PCB RECEPTACLE

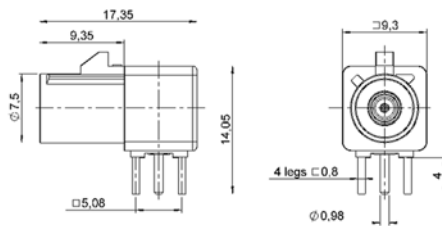


Fig. 1

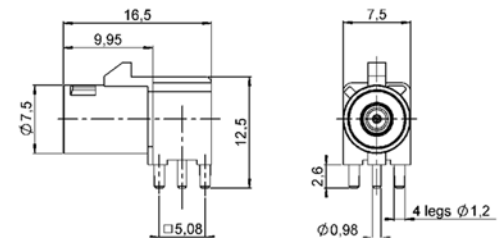


Fig. 2

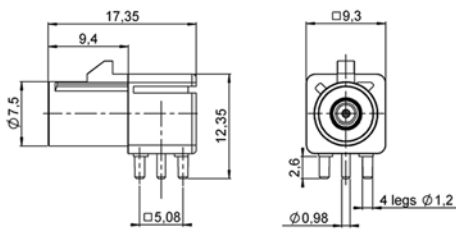


Fig. 3

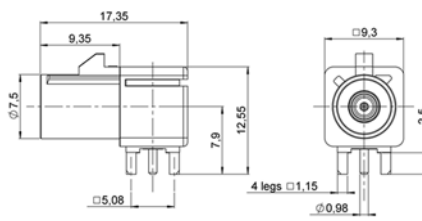


Fig. 4

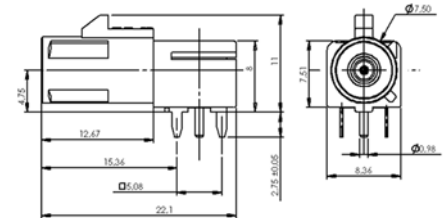


Fig. 5

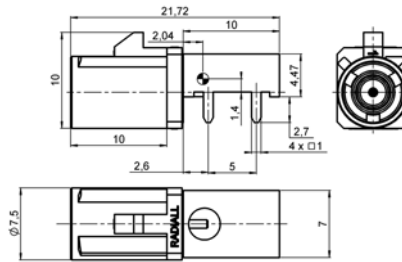
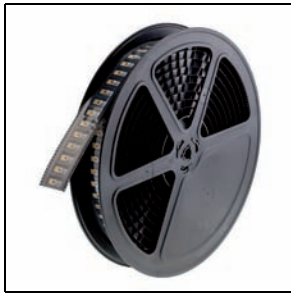
Part number	Fig.	Panel drilling	Packaging	Note
R197 160 _00 ⁽¹⁾	1	P 01	100 ⁽²⁾	Machined body with plastic housing
R197 160 _11 ⁽¹⁾	2			Full die cast version
R197 160 _10 ⁽¹⁾	3	P 03		Die cast body version with plastic housing
R197 160 _21 ⁽¹⁾	4			Reinforced machined body version with plastic housing
R197 166 _20 ⁽¹⁾	5	P 02		Stick (24 pcs) ⁽²⁾

(1) To obtain the correct P/N, please replace "_", with the coding letter (see page 5) corresponding to your application.

(2) For unit packaging, add "W" at the end of the P/N.

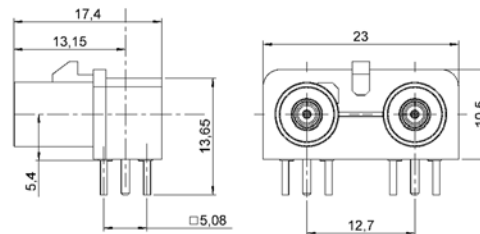
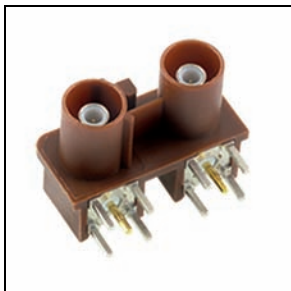


PIN IN PASTE RIGHT ANGLE RECEPTACLE



Part number	Assembly instructions	Packaging	Note
R197 160_07 ⁽¹⁾	M 11	Tape and reel 350 ⁽²⁾ contacts	Pin in paste
R197 160_18 ⁽¹⁾			Pin in paste, die cast body

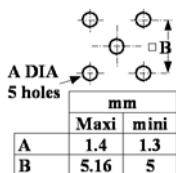
RIGHT ANGLE DUPLEX PCB RECEPTACLE



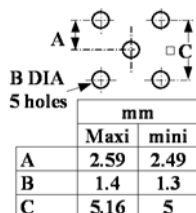
Part number	Coding	Panel drilling	Packaging	Note
R197 260 E00	E – green color	P 02	50 ⁽²⁾	Soldering pins
R197 260 F00	F – brown color			
R197 260 K00	K – curry color			

PANEL DRILLING

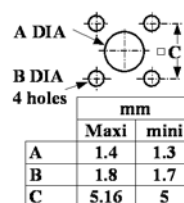
P01



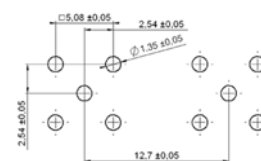
P02



P03



P04



(1) To obtain the correct P/N, please replace "_", with the coding letter (see page 5) corresponding to your application.

(2) For unit packaging, add "W" at the end of the P/N.

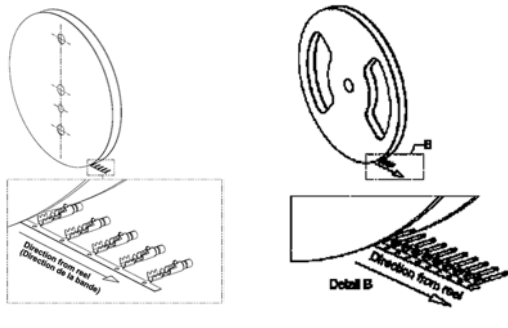
RECEPTACLE PACKAGING







For connector	Packaging
R197 160 _07 ⁽¹⁾	Tape and reel (350 pcs) ⁽²⁾
R197 160 _18 ⁽¹⁾	

For connector	Packaging
R197 166 _20 ⁽¹⁾	Stick (24 pcs) ⁽²⁾

STAMPED CONTACT PACKAGING

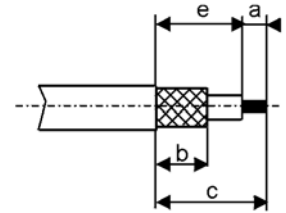


For center contacts		Diameter of the reel	Pitch between contacts	Packaging
	250 01 352 250 01 362 250 01 382	600 mm	5 mm	Tape & reel packaging (10 000 contacts)
	250 56 172 250 56 182 250 56 192			
For coaxial contacts				
	R299 197 000 R299 197 030 R299 197 060	600 mm	18 mm	Tape & reel packaging
	R299 197 200 R299 197 230 R299 197 260			

(1) To obtain the correct P/N, please replace "_", with the coding letter (see page 5) corresponding to your application.

(2) For unit packaging, add "W" at the end of the P/N.

M 01

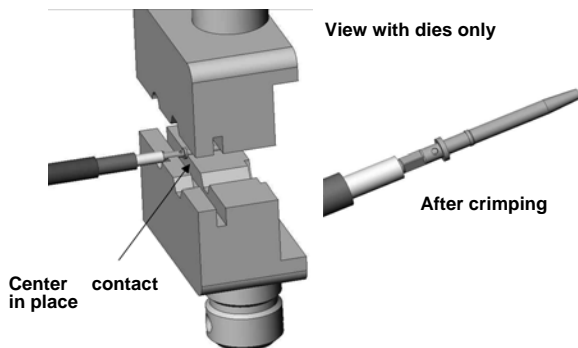


Connectors	Cable	Stripping length (mm)				Center contact only	Crimping tool MIL standard R282 293 000 (M22520/5-01) + dies
		a	b	c	e		
R197 114 _00	2.6/50/S	2.4	5.5	9.4	7	R282 281 000 (2 x 4 pts 3 pos) + positioner R282 967 034	R282 235 915 sq .72 for center contact and hex 3.25 for ferrule
R197 134 _00				10.2	7.8	R282 281 000 (2 x 4 pts 3 pos) + positioner R282 967 034	
R197 214 B10 Only 2.6/50/S cable				9.4	7	R282 281 000 (2 x 4 pts 3 pos) + positioner R282 967 034	
R197 234 B10 Only 2.6/50/S cable				10.2	7.8		

- 1**
- Slide the ferrule onto the cable.
 - Strip the cable.



- 2**
- Slide the center contact on until it butts against the cable dielectric.
 - Crimp the center contact with crimping tool (see table).



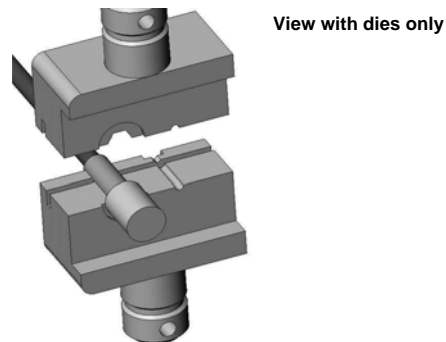
- 3**
- Fan the braid.



- 4**
- Slide the cable into the body until it bottoms against insulator.

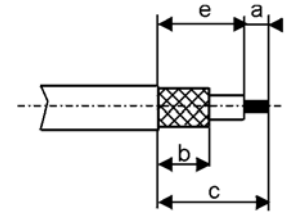


- 5**
- Slide the ferrule over the braid.
 - Crimp the ferrule as shown on this picture with crimping tool (see table).



Right tool orientation: after crimping the bump must be closer to the cable than to the body.

M 02



Connectors	Cable	Stripping length (mm)				Dies included	Crimping tool MIL standard R282 293 000 (M22520/5-01) + dies
		a	b	c	e		
R114 082 325	2.6/50/S	2.4	5.5	9.4	7	R282 271 000 hex 3.25 sq .72	R282 235 003 (M22520/5-03)
R114 082 365*				12.5	10.1		-
R114 086 325	3.2/50/S			9.4	7	-	R282 235 911 hex 4.3 sq 1.2
R114 086 365*				13.4	11		
R114 089 325	5/50/S			9.4	7	-	R282 235 910 hex 5.35 sq 1.1
R114 242 325	2.6/50/S			10.2	7.8	R282 271 000 hex 3.25 sq .72	R282 235 003 (M22520/5-03)
R114 242 365*				13.5	11.1		-
R114 246 325	3.2/50/S			10.2	7.8	-	R282 235 911 hex 4.3 sq 1.2
R114 246 365*				13.4	11		
R114 249 325	5/50/S			10.2	7.8	-	R282 235 910 sq 1.1 for center contact, hex 5.35 for ferrule
R197 114 _01	5/50/S			9.4	7	R282 281 000 (2 x 4 pts 7 pos) + positioner R282 967 034	R282 235 910 sq 1.1 R282 235 011 hex 5.41
R197 114 _11*	2.6/50/S			13.4	11	R282 271 000 Hex 3.25 sq .72	-
R197 114 _12*	3.2/50/S	-	R282 235 911 hex 4.3 sq 1.2				
R197 134 _01	5/50/S	10.2	7.8	R282 281 000 (2 x 4 pts 7 pos) + positioner R282 967 034	R282 235 910 sq 1.1 R282 235 011 hex 5.41		
R197 134 _11*	2.6/50/S	13.5	11.1	R282 271 000 Hex 3.25 sq .72	-		
R197 134 _12*	3.2/50/S	13.4	11	-	R282 235 911 hex 4.3 sq 1.2		
R197 214 B10 Only 5/50/S cable	5/50/S	9.4	7	R282 281 000 (2 x 4 pts 7 pos) + positioner R282 967 034	R282 235 910 sq 1.1 R282 235 011 hex 5.41		
R197 234 B10 Only 5/50/S cable		10.2	7.8				

* The waterproof guarantee requires a heatshrink sleeve.

1

- Slide the heatshrink sleeve onto the cable (optional).
- Slide the ferrule onto the cable.
- Strip the cable.

2

- Slide the center contact on until it bottoms against the cable dielectric.
- Crimp the center contact with crimping tool (see table).

3

- Fan the braid.

4

- Slide the cable into the body until it bottoms against insulator.

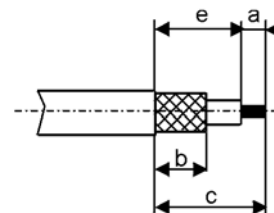
5

- Slide the ferrule over the braid.
- Crimp the ferrule with crimping tool (see table).

6

- Cut the excess of braid if necessary.
- Slide the heatshrink sleeve over the ferrule and heat it (optional).

M 03



Connectors	Cable	Stripping length (mm)				Center contact only	Crimping tool	
		a	b	c	e		Dies included	MIL standard R282 293 000 (M22520/5-01) + dies
R197 114 A15	6/125/S	2.5	7.5	10	-	R282 281 000 (2 x 4 pts 3 pos) + positioner R282 967 034	R282 223 000 hex 6.48	R282 235 013 (M22520/5-13) hex 6.48
R197 134 A15			8.5	13	10.5			

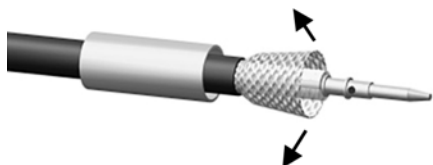
- 1**
- Slide the ferrule onto the cable.
 - Strip the cable.



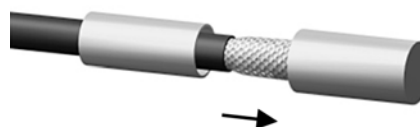
- 2**
- Slide the center contact on until it bottoms against the cable dielectric.
 - Crimp the center contact with crimping tool and positioner (see table).



- 3**
- Fan the braid.



- 4**
- Slide the cable into the body until it bottoms against insulator.

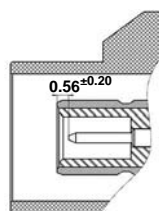


- 5**
- Slide the ferrule over the braid.
 - Crimp the ferrule as shown on this picture with crimping tool (see table).

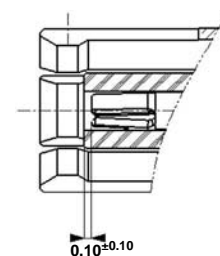


- 6**
- Check the position of the center contact extremity (see drawing here under).

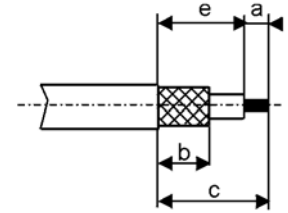
R197 134 A15



R197 114 A15



M 04



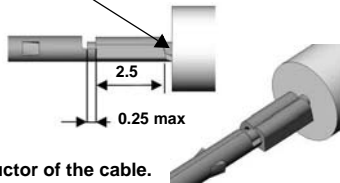
Connectors	Cable	Stripping length (mm)				X dim (mm)	Y dim (mm)	Dies included	Crimping tool
		a	b	c	e				
R114 082 375	2.6/50/S	3	5.5	10	7	1±0.05	.8±0.03	R282 271 000 hex 3.25	R282 235 003 (M22520/5-03)
R114 086 375	3.2/50/S					1.46±0.05	.8±0.04	-	R282 235 911 hex 4.3
R114 087 375	5/75/S					1±0.05	.78±0.03		R282 235 011 (M22520/5-11) hex 5.41
R114 089 375	5/50/S					1.48±0.05	.9±0.04		R282 235 910 hex 5.35
R197 114 _21									
R197 114 _23	5/75/S					5.6	10.2	7.2	1±0.05
R197 114 A26	6/75/S	8.5	11.5	7			R282 223 000 hex 6.48	R282 235 013 (M22520/5-13) hex 6.48	

1 - Strip the cable.

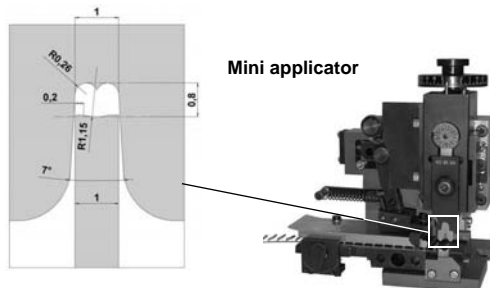
2 - Crimp the centre contact with crimping dies as described, using standard mini applicator.
- Check the crimping height Y and the crimping width X of the center contact (see table).



Dielectric of the cable must be as close as possible from the center contact, not more than 0.5 mm.



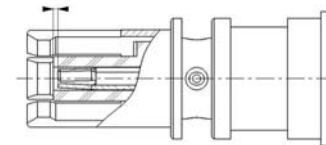
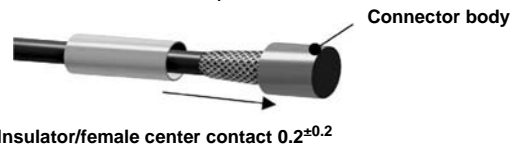
Position of the inner conductor of the cable.



3 - Slide the ferrule.
- Fan the braid.



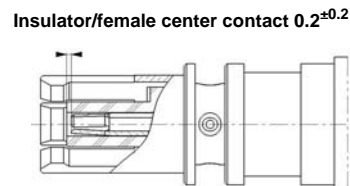
4 - Slide the cable into the connector body to put the center contact in position.



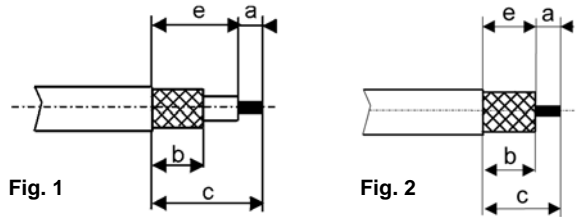
5 - Slide the ferrule over the braid.
- Crimp the ferrule with crimping tool (see table).



6 - Check again the position of the center contact extremity (see drawing here under).

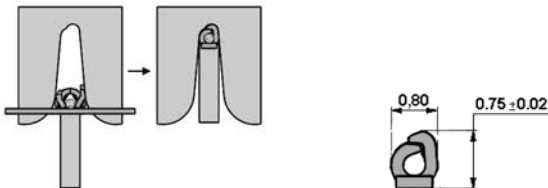


M 05

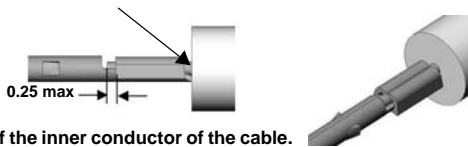


Connectors	Cable	Fig	Stripping length (mm)				Dies included	Crimping tool
			a	b	c	e		
R197 134 A24	6/125/S	1	3	8	12	9	R282 223 000 hex 6.48	MIL standard R282 293 000 (M22520/5-01) + dies
R197 114 A25		2		8.5	11.5	8.5		R282 235 013 (M22520/5-13) hex 6.48

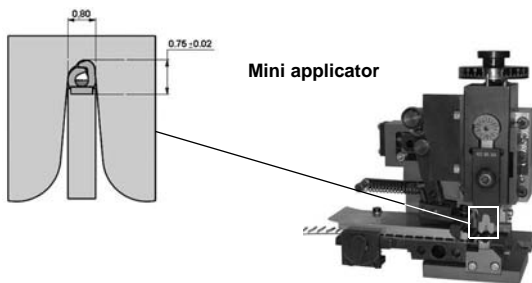
- 1 - Strip the cable.
- 2 - Crimp the centre contact with crimping dies as described, using standard mini applicator.
 - Check the crimping height and the crimping width of the center contact.



Dielectric of the cable must be as close as possible from the center contact, not more than 0.5 mm.



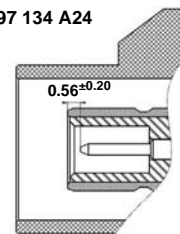
Position of the inner conductor of the cable.



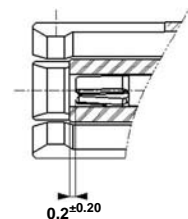
- 3 - Slide the ferrule.
 - Fan the braid.
- 4 - Slide the cable into the connector body to put the center contact in position.



R197 134 A24



R197 114 A25

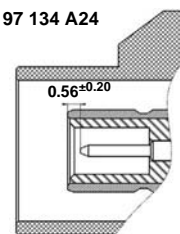


- 5 - Slide the ferrule over the braid.
 - Crimp the ferrule with crimping tool (see table).

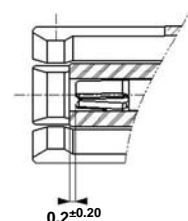


- 6 - Check again the position of the center contact extremity (see drawing here under).

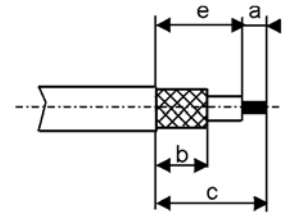
R197 134 A24



R197 114 A25



M 06



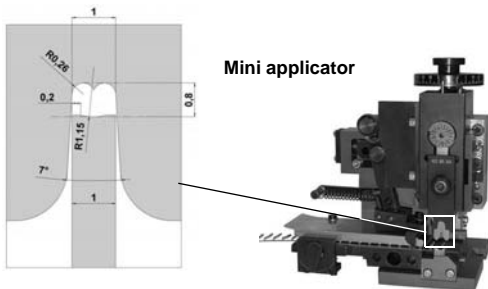
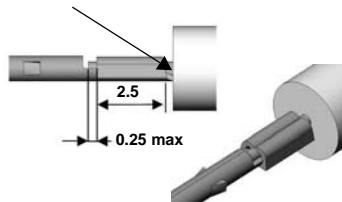
Connectors	Cable	Stripping length (mm)				X dim (mm)	Y dim (mm)	Crimping tool	
		a	b	c	e			Dies included	MIL standard R282 293 000 (M22520/5-01) + dies
R197 114 _20	2.6/50/S	3	5.5	10	7	1 ± 0.05	0.8 ± 0.03	R282 271 000	R282 235 915 hex 3.25 x 2
R197 134 _20				10.5	7.5				

1 - Strip the cable.

2 - Crimp the centre contact with crimping dies as described, using standard mini applicator.
- Check the crimping height Y and the crimping width X of the center contact (see table).



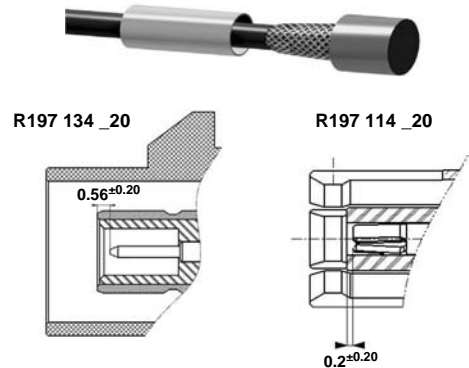
Dielectric of the cable must be as close as possible from the center contact, not more than 0.5 mm.



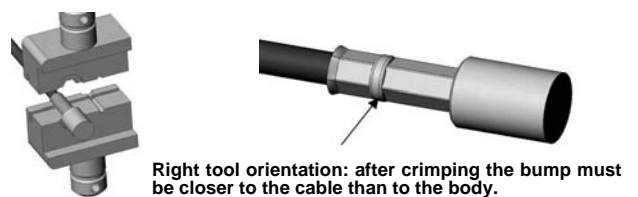
3 - Slide the ferrule.
- Fan the braid.



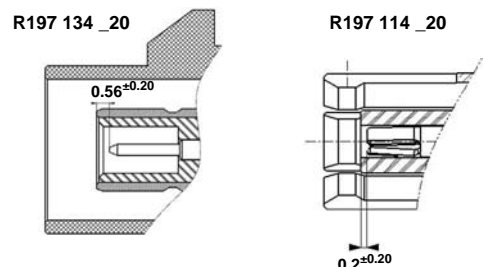
4 - Slide the cable into the connector body to put the center contact in position.



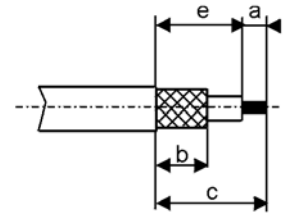
5 - Slide the ferrule over the braid.
- Crimp the ferrule as shown on this picture with crimping tool (see table).



6 - Check again the position of the center contact extremity (see drawing here under).



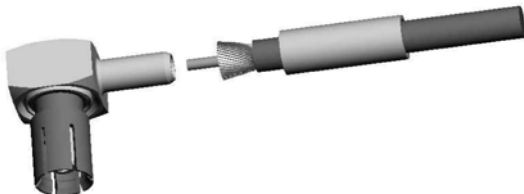
M 07



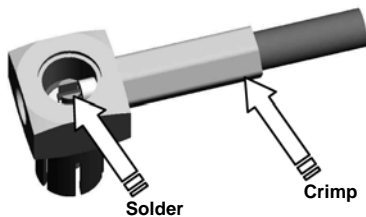
Connectors	Cable	Stripping length (mm)				Dies included	Crimping tool
		a	b	c	e		
R197 120_00	2.6/50/S	2	5	9	7	R282 211 000 hex 3.25	MIL standard R282 293 000 (M22520/5-01) + dies R282 235 003 (M22520/5-03) hex 3.25
R197 120_01	5/50/S	5	8	15	10	R282 223 000 hex 5.41	R282 235 011 (M22520/5-11) hex 5.41

- 1**
- Slide the ferrule onto the cable.
 - Strip the cable.

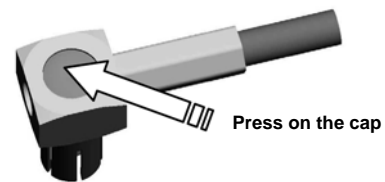
- 2**
- Fan the braid.
 - Push connector body under the braid.
 - Slide the ferrule over the braid.



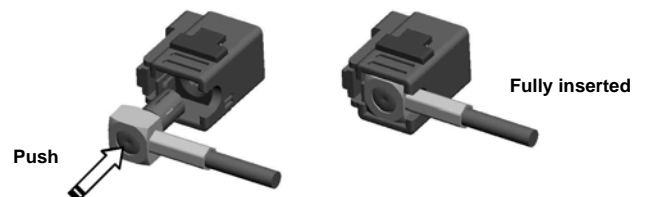
- 3**
- Crimp the ferrule with crimping tool (see table).
 - Solder inner conductor.



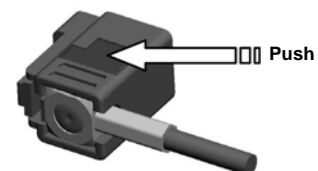
- 4**
- Place the cap.
 - Press cap flush or slightly below surface of body assembly.



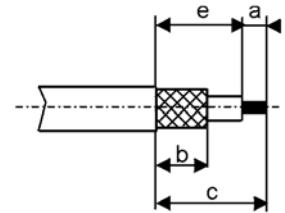
- 5**
- Push the coax contact in the housing until it snaps.



- 6**
- To secure the coax inside the housing, push the secondary lock in final position (audible click).



M 08



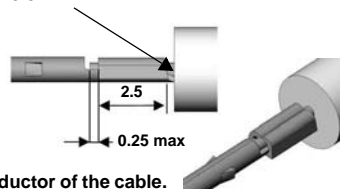
Connectors	Cable	Stripping length (mm)						Dies included	Crimping tool MIL standard R282 293 000 (M22520/5-01) + dies			
		a	b	c	e	x	Y					
R114 242 375	2.6/50/S	3	5.5	10.5	7.5	1 ^{±0.05}	.8 ^{±0.03}	R282 271 000 hex 3.25	R282 235 003 (M22520/5-03) hex 3.25			
R114 246 375	3.2/50/S					1.46 ^{±0.05}	.8 ^{±0.04}		R282 235 911 hex 4.3			
R114 247 375	5/75/S					1 ^{±0.05}	.78 ^{±0.03}		R282 235 011 (M22520/5-11) hex 5.41			
R114 249 375	5/50/S					1.48 ^{±0.05}	.9 ^{±0.04}		R282 235 910 hex 5.35			
R197 134 _21	5/50/S					5.6	10.8		7.8	1 ^{±0.05}	.78 ^{±0.03}	R282 235 011 (M22520/5-11) hex 5.41
R197 134 _23	5/75/S											
R197 134 A26	6/75/S	9	13.8	10.8	R282 223 000 hex 6.48			R282 235 013 (M22520/5-13) hex 6.48				

1 - Strip the cable.

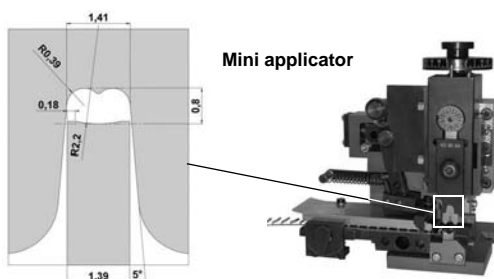
2 - Crimp the centre contact with crimping dies as described, using standard mini applicator.
- Check the crimping height Y and the crimping width X of the center contact (see table).



Dielectric of the cable must be as close as possible from the center contact, not more than 0.5 mm.



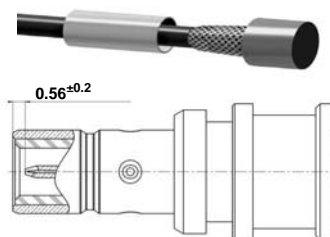
Position of the inner conductor of the cable.



3 - Slide the ferrule.
- Fan the braid.



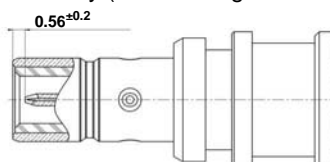
4 - Slide the cable into the connector body until the center contact bottoms against the insulator. Do not apply more than 20N when pushing on the cable.
- Slide the cable into the connector body to put the center contact in position.



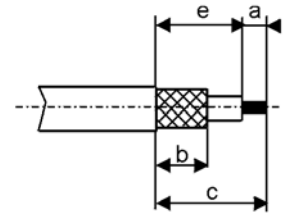
5 - Slide the ferrule over the braid.
- Crimp the ferrule with crimping tool (see table).



6 - Check again the position of the center contact extremity (see drawing here under).



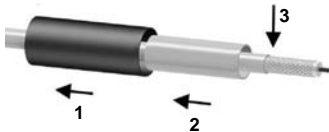
M 09



Connectors	Cable	Stripping length (mm)				Dies included	Crimping tool MIL standard R282 293 000 (M22520/5-01) + dies
		a	b	c	e		
R197 124 _00	2.6/50/S	3.5	7	16.2	12.7	R282 271 000 hex 3.25	R282 235 003 (M22520/5-03) hex 3.25
R197 124 _11*							
R197 124 _12*	3.2/50/S						

* The waterproof guarantee requires a heatshrink sleeve.

- 1**
- Slide the heatshrink sleeve onto the cable (optional).
 - Slide the ferrule onto the cable.
 - Strip the cable.



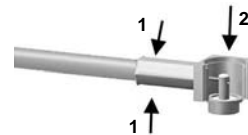
- 2**
- Fan the braid.



- 3**
- Push the connector body under the braid.
 - Slide the ferrule over the braid.



- 4**
- Crimp the ferrule with crimping tool (see table).



- 5**
- Place the cap on the body.



- 6**
- Press on the cap flush or slightly below the surface of the body assembly.
 - Slide the heatshrink sleeve over the ferrule and heat it (optional).

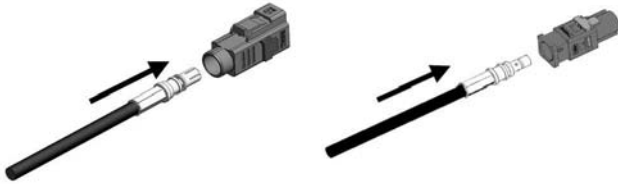


M 10

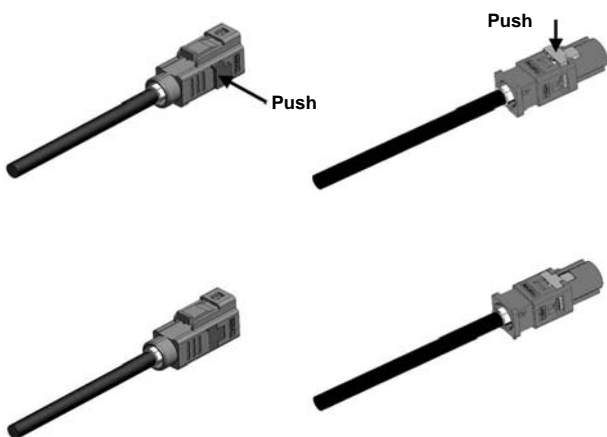
Connectors
R197 112 _90
R197 132 _90

MOUNTING PROCEDURE

- 1** - Push the coax until it stops at the bottom of the housing.

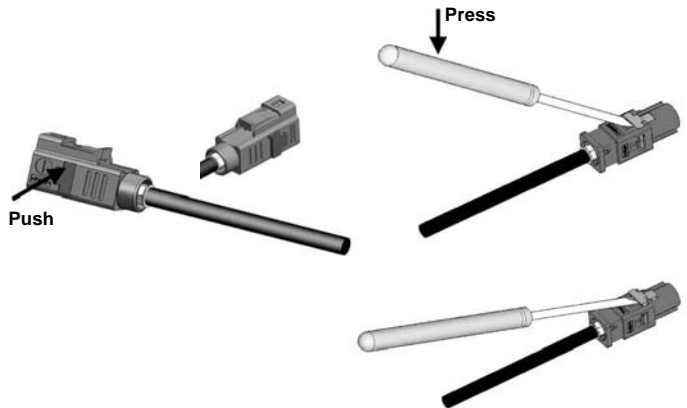


- 2** - Push the secondary lock in final position to secure the coax inside the housing (audible click).

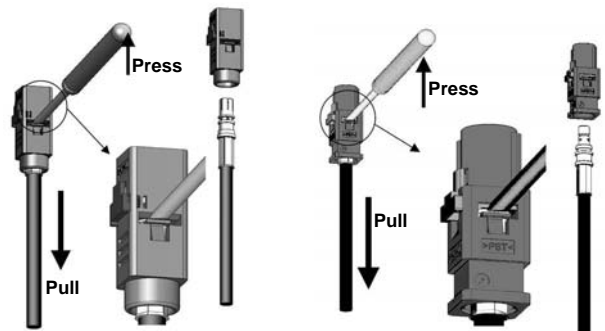


DISASSEMBLING PROCEDURE

- 1** - Insert a screw driver into the slot of the secondary locking as shown on the picture.
 - Apply pressure on screw driver as shown on the picture to lift up the secondary locking.



- 2** - Insert a screw driver between the elastic finger and the secondary locking as shown on the picture.
 - Apply pressure on the screw driver as shown on the picture to lift up the elastic finger and when it is done pull on the cable assembly to remove the coax contact from the housing.



Important note: housing can not be reused. It must be replaced.

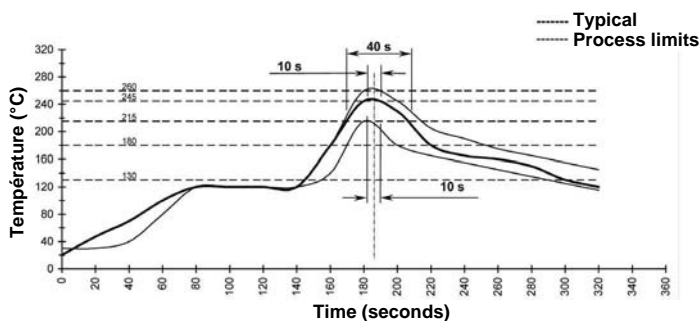
M 11

Connectors
R197 160 _07
R197 160 _18

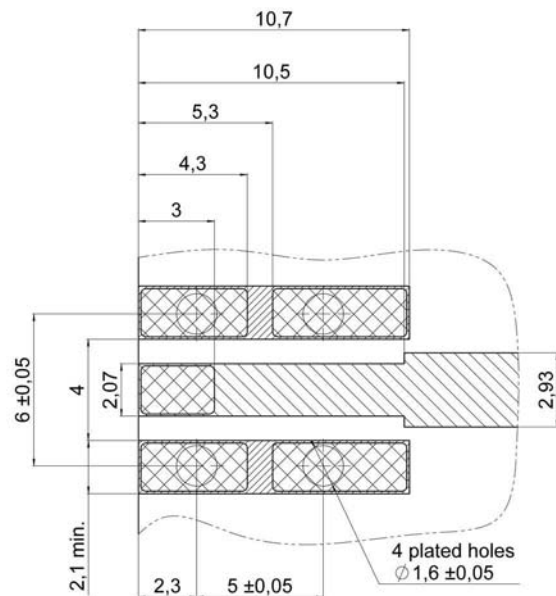
SOLDER PROCEDURE

- Deposit solder paste "Sn63Pb35Ag2" on mounting pad by screen printing application. We recommend a low residue solid flux.
We advise a thickness of 0.2 mm min (0.008 inch min.).
The hole must be totally filled with paste.
Verify that the edges of the zone are clean.
- Placement of the receptacle on the mounting zone with an automatic "pick and place" machine.
Video camera is preferred to check the positioning of the component.
Adhesive agents are forbidden on the receptacle.
- Soldering by reflow process.
The typical profile to use is given below.
- Clean printed circuit boards.
- Check of solder joints and position of the component by visual inspection.

TEMPERATURE PROFILE



MOUNTING PAD FOR RECEPTACLE



- Ground track
- Signal track
- Land for solder

Thickness of PCB: 1.6 mm
Material of PCB: FR4 (εr = 4.6)

Solder paste has to be printed onto the land of solder and into holes to permit Pin in Hole Reflow



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NOTES
