

Coaxial Contacts Technical Data

Mechanical Data

Mating & unmating force (pair of contacts)	≤ 7 N
Recommended temperature range:	-55°C to 135°C
Mating Cycles:	Standard: ≥ 500 Low cost ≥ 200

Electrical Data

Characteristic Impedance	50 ohm / 75 ohm
Insulation resistance	10^7 M ohm
Contact resistance inner conductor	$\leq 2,7$ M ohm
Contact resistance outer conductor	$\leq 2,7$ M ohm
Proof voltage	750V / 50Hz
Current rating (DC)	2A

Materials

Outer conductor	Cu alloy
Inner conductor	Cu alloy
Retaining clip	Cu alloy
Insulators	PTFE / PBTP / PI

Co-axial Contacts**50 Ohm Cable Co-axial Contacts**

CABLE TYPE	TYPE	PLUG	SOCKET
RG178BU; RG196AU	Straight Solder	31D-0172-**-**	31D-0173-**-**
RG404U	Rt. Angle Solder	31D-0255-**-**	31D-0256-**-**

RG174U; RG188AU	Straight Solder	31D-0170-**-**	31D-0171-**-**
RG316U	Straight "Snap in" Crimp	31D-0247-**-**	31D-0248-**-**
	Rt. Angle Solder	31D-0253-**-**	31D-0254-**-**
	Rt. Angle "Snap in"	31D-0259-**-**	31D-0260-**-**

RG180BU	Straight Solder	31D-0178-**-**	31D-0179-**-**
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RG58CU; RG141AU	Straight Solder	31D-0215-**-**	31D-0216-**-**
	Straight "Snap in" Crimp	31D-0251-**-**	31D-0252-**-**

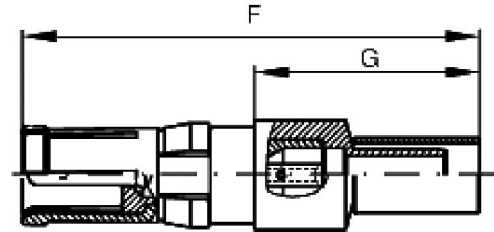
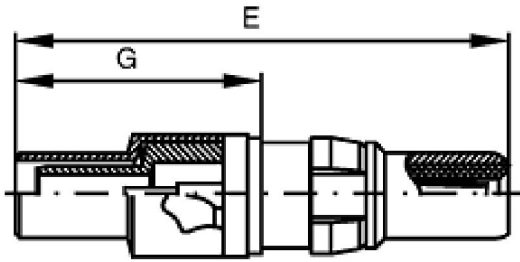
RG316U (Double Braid)	Straight Solder	31D-0217-**-**	31D-0218-**-**
	Straight "Snap in" Crimp	31D-0249-**-**	31D-0250-**-**
	Rt. Angle Solder	31D-0257-**-**	31D-0258-**-**

75 Ohm Cable Co-axial Contacts

CABLE TYPE	TYPE	PLUG	SOCKET
RG179BU; RG187AU	Straight Solder (short)	31D-0230-**-**	31D-0231-**-**
	Straight Solder	31D-0226-**-**	31D-0227-**-**
	Straight "Snap in" crimp	31D-0263-**-**	31D-0264-**-**
	Rt. Angle "Snap in" crimp	31D-0267-**-**	31D-0268-**-**

RG180BU	Straight "Snap in" crimp	31D-0265-**-**	31D-0266-**-**
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Cable Co-axial Contacts



Straight Cable Plugs - 50 ohm

Part No.	E	G
31D-0172-**	22.5 (0.886)	11.2 (0.441)
31D-0170-**	22.5 (0.886)	11.2 (0.441)
31D-0178-**	22.5 (0.886)	11.2 (0.441)
31D-0247-**	22.5 (0.886)	11.2 (0.441)
31D-0249-**	22.5 (0.886)	11.2 (0.441)
31D-0215-**	26.3 (1.035)	14.8 (0.583)
31D-0217-**	23.5 (0.925)	12.2 (0.480)
31D-0251-**	22.2 (0.874)	10.9 (0.429)

Straight Cable Sockets - 50 ohm

Part No.	F	G
31D-0173-**	23.0 (0.906)	11.2 (0.441)
31D-0171-**	23.0 (0.906)	11.2 (0.441)
31D-0179-**	23.0 (0.906)	11.2 (0.441)
31D-0248-**	23.0 (0.906)	11.2 (0.441)
31D-0250-**	23.0 (0.906)	11.2 (0.441)
31D-0216-**	26.8 (1.055)	14.8 (0.583)
31D-0218-**	24.0 (0.945)	12.2 (0.480)
31D-0252-**	22.7 (0.894)	10.9 (0.429)

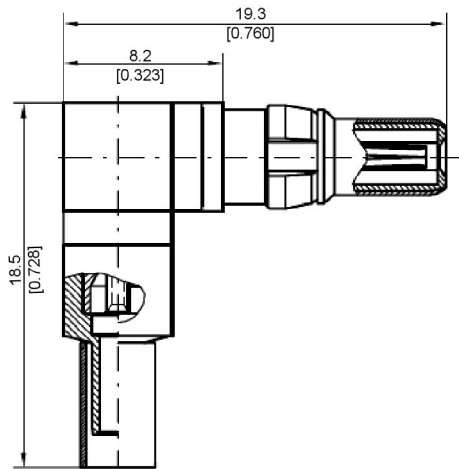
Straight Cable Plugs - 75 Ohm

Part No.	E	G
31D-0230-**	18.55 (0.730)	7.3 (0.287)
31D-0226-**	22.5 (0.886)	11.2 (0.441)
31D-0263-**	22.45 (0.884)	11.2 (0.441)
31D-0265-**	21.65 (0.852)	10.4 (0.409)

Straight Cable Sockets - 75 Ohm

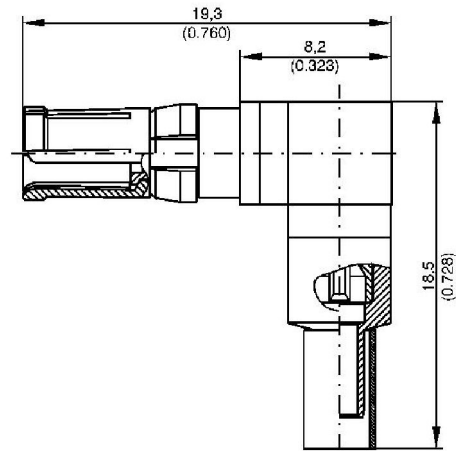
Part No.	F	G
31D-0231-**	19.05 (0.75)	7.3 (0.287)
31D-0227-**	23.00 (0.906)	11.2 (0.441)
31D-0264-**	22.95 (0.904)	11.2 (0.441)
31D-0266-**	22.15 (0.872)	10.4 (0.409)

Cable Co-axial Contacts



Rt. Angle Cable Plugs - 50 Ohm

Part No.	H
31D-0255-**	18.5 (0.728)
31D-0253-**	18.5 (0.728)
31D-0259-**	18.5 (0.728)
31D-0257-**	19.5 (0.768)



Rt. Angle Cable Sockets - 50 Ohm

Part No.	K
31D-0256-**	19.8 (0.780)
31D-0254-**	19.8 (0.780)
31D-0260-**	19.8 (0.780)
31D-0260-**	19.3 (0.760)

Rt. Angle Cable Plugs - 75 Ohm

Part No.	H
31D-0267-**	18.5 (0.728)

Rt. Angle Cable Sockets - 75 Ohm

Part No.	H
31D-0268-**	19.8 (0.780)

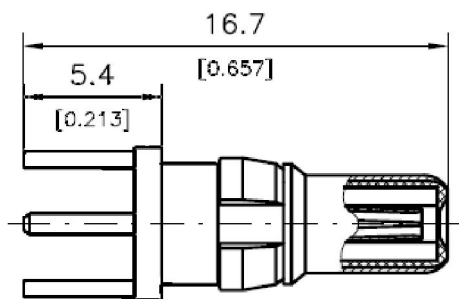
Cable Co-axial Contacts

50 Ohm PCB Co-axial Contacts

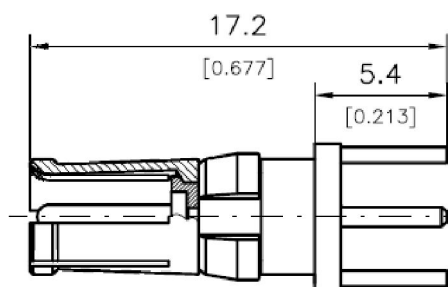
PCB STYLE	TYPE	PLUG	SOCKET
3 pin mounting	Straight PCB	31D-0169-**	31D-0225-**
3 pin mounting	Rt. Angle PCB	31D-0206-**	31D-0207-**
5 pin mounting	Rt. Angle PCB (short)	31D-0176-**	31D-0177-**

75 Ohm PCB Coaxial Contacts

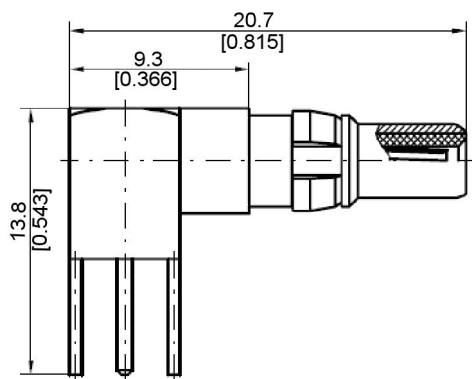
PCB STYLE	TYPE	PLUG	SOCKET
3 pin mounting	Straight PCB	31D-0269-**	31D-0270-**
3 pin mounting	Rt. Angle PCB	31D-0232-**	31D-0214-**
5 pin mounting	Rt. Angle PCB (short)	31D-0233-**	31D-0234-**



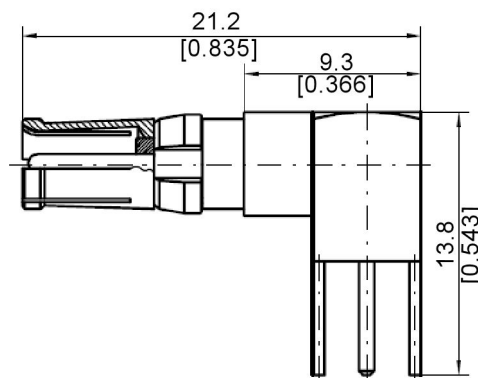
Straight PCB Plug 50/75 Ohm



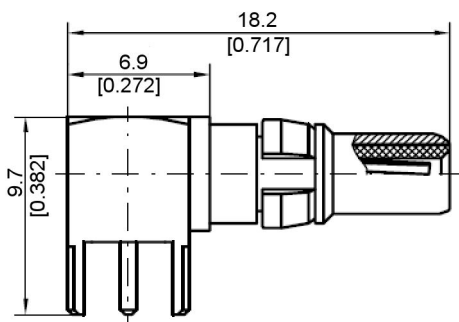
Straight PCB Socket 50/75 Ohm



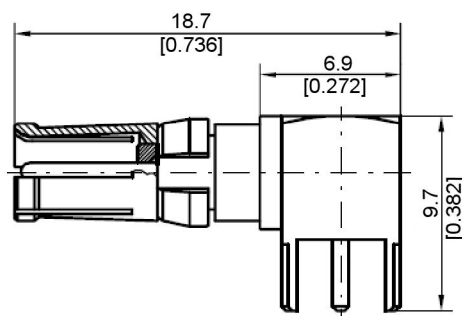
Rt. Angle PCB Plug (3 pin)



Rt. Angle PCB Socket (3 pin)



Rt. Angle PCB Plug short (5 pin)



Rt. Angle PCB Socket short (5 pin)

Press Fit Power Contacts (30A)

Newly developed high power flexible press-fit contacts, with a power rating of up to 30 amps, are now available from Cambridge Connectors. They can be used as single contacts as well as with DIN41612 and D-Subminiature connectors with mixed layouts.

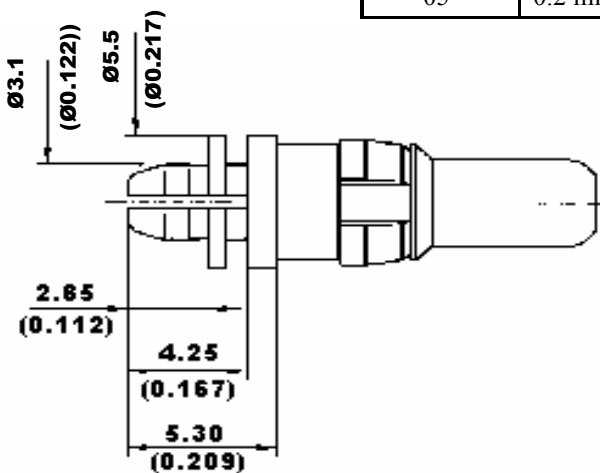
In addition to the exceptional 30 amp power capability the other unique feature of these contacts is the flexible nature of the press-fit. This offers the benefit of a relatively low insertion force of between 80-100N thereby protecting the PCB which may be populated with expensive components. Additional benefits are general PCB drilling tolerances of between 2.8 - 3.0mm and the ability to fit a wide range of PCB thicknesses including multilayer PCB's.



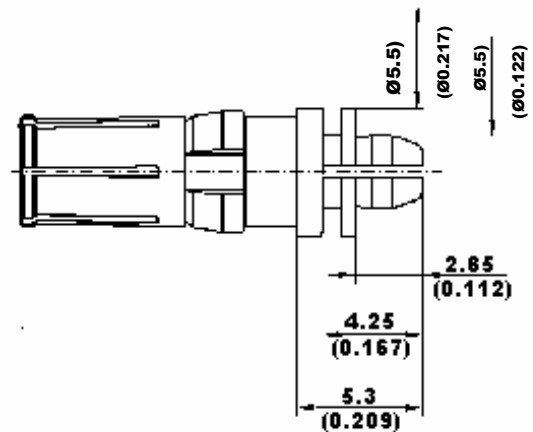
High Power Contacts - PCB Termination

Current Rating	Type	Plug	Socket
30A	Straight Press Fit	31D-0277-**	31D-0278-**
30A	R/A Press Fit	31D-0299-**	31D-0300-**

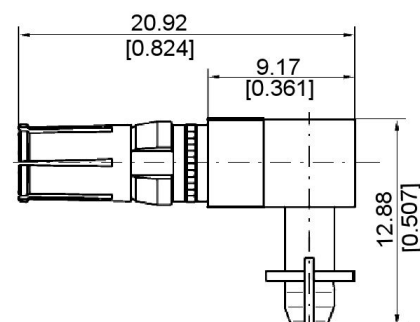
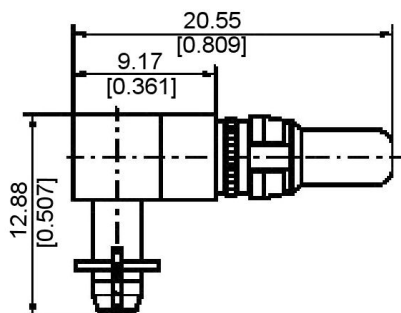
Code Suffix	Mating Area	Termination Area
** = 09	0.8 micron Au	1 micron Sn
** = 05	0.2 micron Au	1 micron Sn



Press Fit Plug



Press Fit Socket



High Power Contacts Technical Data

Mechanical Data

Mating Force (pair of contacts)	≤ 7 N
Temperature Range:	-55°C to 155°C
Mating Cycles:	Standard: ≥ 500 Low cost ≥ 200

Electrical Data

Contact resistance	≤ 1 M ohm
Current rating (DC) with an ambient temperature of 20°C	10-40A

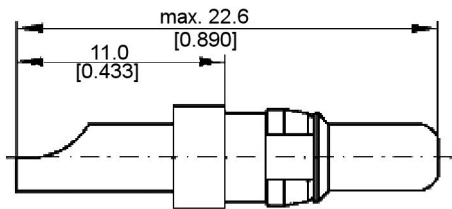
Materials

Pin contact	Cu alloy
Socket contact	Cu alloy
Retaining clip	Cu alloy

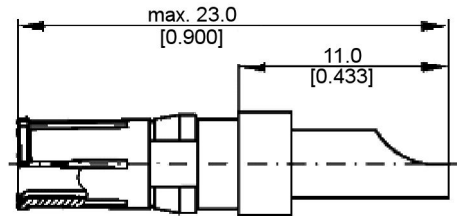
High Power Contacts (10-40 Amps)

Cable Termination

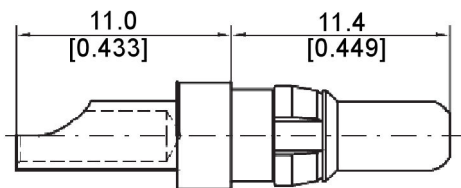
WIRE SIZE	CURRENT RATING	TYPE	PLUG	SOCKET
AWG 16-20	10A	Straight Solder	31D-0180-**	31D-0183-**
AWG 16-20	10A	Straight Crimp	31D-0155-**	31D-0158-**
AWG 12-14	20A	Straight solder	31D-0181-**	31D-0184-**
AWG 12-14	20A	Straight Crimp	31D-0156-**	31D-0159-**
AWG 10-12	30A	Straight Solder	31D-0296-**	31D-0297-**
AWG 10-12	30A	Straight Crimp	31D-0298-**	31D-0280-**
AWG 8-12	40A	Straight Solder	31D-0182-**	31D-0185-**
AWG 8-12	40A	Straight Crimp	31D-0157-**	31D-0160-**



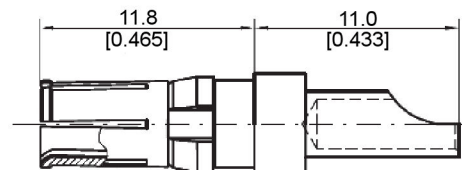
Straight Solder Plug



Straight Solder Socket



Straight Crimp Plug

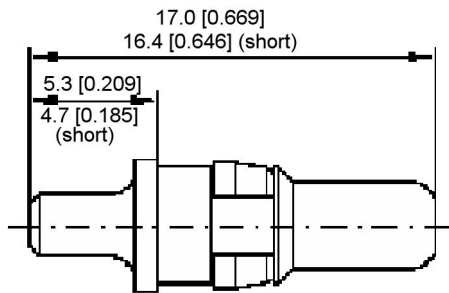


Straight Crimp Socket

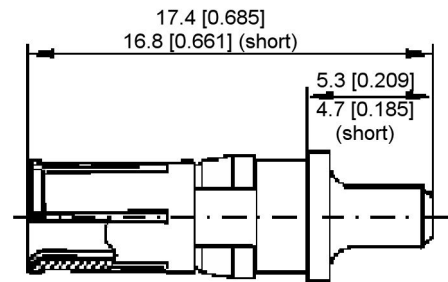
HIGH POWER CONTACTS (20-40 AMPS)

PCB Termination

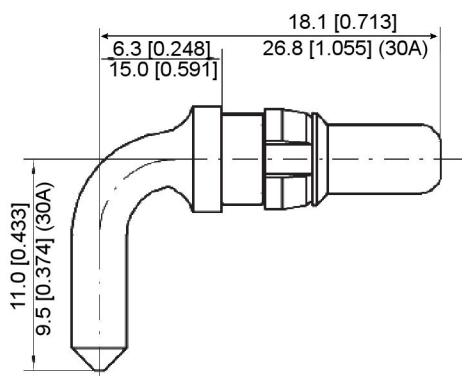
CURRENT RATING	TYPE	PLUG	SOCKET
20A	Straight	31D-0273-**	31D-0274-**
20A	Straight (short)	31D-0162-**	31D-0164-**
20A	Rt. Angle	31D-0186-**	31D-0187-**
30A	Rt. Angle	31D-0275-**	31D-0276-**
40A	Straight	31D-0301-**	31D-0161-**
40A	Rt. Angle	31D-0165-**	31D-0166-**



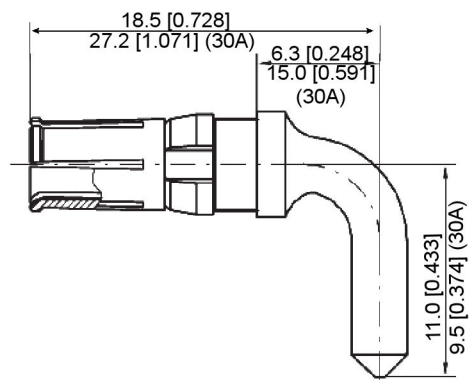
Straight Plug



Straight Soket



Rt. Angle Plug



Rt. Angle Socket

High Voltage Contacts Technical Data

Mechanical Data

Mating force (pair of contacts)	≤ 5 N
Unmating force	Ca 2,5N
Temperature Range:	-55°C to 125°C
Mating Cycles:	Standard: ≥ 500

Electrical Data

Insulation resistance	$\geq 2 * 10^7$ M ohm
Contact resistance outer conductor	≤ 3 M ohm
Proof voltage	4 kV / 50 Hz
Current rating (DC)	2A
Operating voltage	≤ 3 kV

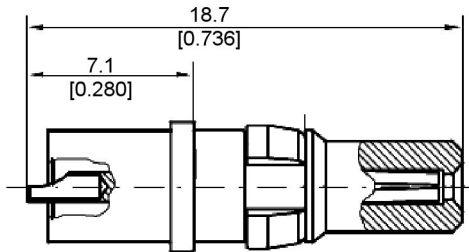
Materials

Plug	Cu alloy
Receptacle	Cu alloy
Retaining clip	PI
Insulators	PTFE

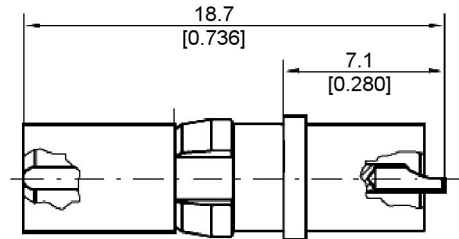
High Voltage Contacts

Cable Termination

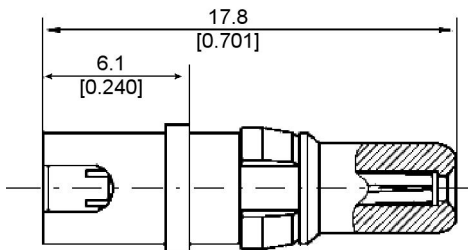
Wire Size	Current Rating	Type	Plug	Socket
AWG 20	1.5A	Straight Solder	31D-0188-**	31D-0189-**
AWG 20	1.5A	Rt. Angle Solder	31D-0190-**	31D-0191-**



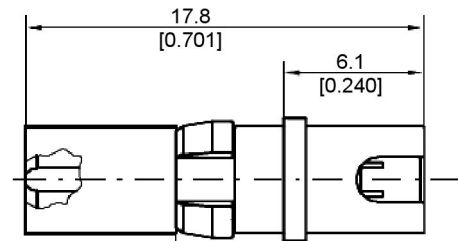
Straight Solder Plug



Straight Solder Socket



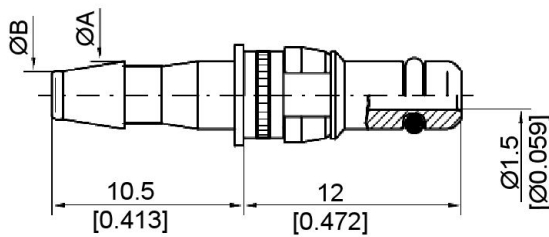
Rt. Angle Solder Plug



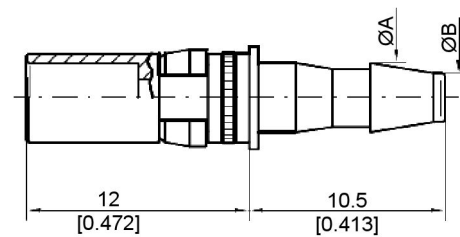
Rt. Angle Solder Socket

Pneumatic Contacts

Technical Data	
Material, Contact	Silver
Material, O Ring	Viton
Maximum Pressure 20°C	7 bar
Temperature Range	-10°C to 60°C

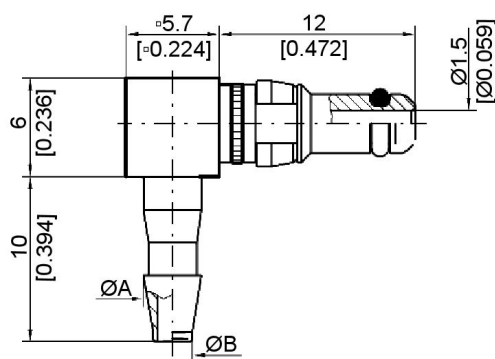


Straight Plug

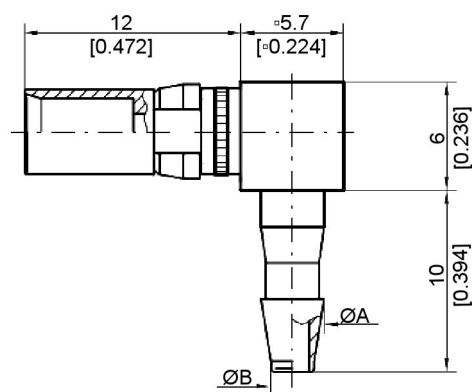


Straight Socket

Air Tube	Tube ID Ømm	ØA mm	ØB mm	Plug Part No.	Socket Part No.
PU2	2	2.6	1.5	31D-0284-00	31D-0285-00
PUN-4 2.5	2.6	3.1	2.0	31D-0286-00	31D-0287-00
PU3	3	3.4	2.3	31D-0288-00	31D-0289-00
PU4	4	4.8	3.7	31D-0290-00	31D-0291-00



Right Angle Plug



Right Angle Socket

Air Tube	Tube ID Ømm	ØA mm	ØB mm	Plug Part No.	Socket Part No.
PU2	2	2.6	1.5	31D-0292-00	31D-0293-00
PU3	3	3.4	2.3	31D-0294-00	31D-0295-00
PU4	4	4.8	3.7	31D-0290-00	31D-0291-00

Contact Plating Codes

All mixed layout contacts are available in a variety of plating thicknesses. For standard contacts these are described in the connectors Ordering Code; crimp contacts are available in platings of 0.8 microns and 0.2 microns. Other contacts are available as follows:-

Coaxial Contacts - Cable & PCB Termination

Code Suffix	Mating Area		Termination Area	
	Inner Conductor	Outer Conductor	Inner Conductor	Outer Conductor
** = 16	1.3 micron Au	0.8 micron Au	1.3 micron Au	0.2 micron Au
** = 17	0.2 micron Au	0.2 micron Au	0.2 micron Au	5 micron Sn
‡	1.3 micron Au	0.8 micron Au	1.3 micron Au	5 micron Sn

‡ Available in PCB styles only

High Power Contacts - Cable Termination

Code Suffix	Mating Area	Termination Area
** = 18	0.8 micron Au	0.2 micron Au
** = 19	0.2 micron Au	5 micron Sn
** = 20 ‡	0.2 micron Au	0.2 micron Au
‡ Crimp Termination only		

High Power Contacts - PCB Termination

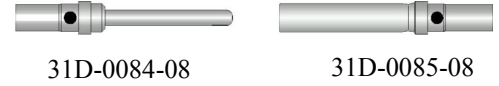
Code Suffix	Mating Area	Termination Area
** = 23	0.8 micron Au	5 micron Sn
** = 19	0.2 micron Au	5 micron Sn

High Voltage Contacts - Cable & PCB Termination

Code Suffix	Mating Area	Termination Area
** = 22	1.3 micron Au	1.3 micron Au

Crimp Contacts and Tools

Crimp Signal contacts available in wire sizes 20-24 AWG and 26-28 AWG



Plastic Insertion/Extraction Tool with Metal Tips for Signal Contacts



Hand Crimp Tool for Co-axial Contacts (outer conductor)



Die set for above



Hand Crimp Tool for Co-axial Contacts (inner conductor)



Hand Crimp Tool for High Power Contacts



Extraction Tool for High Voltage/High Power Contacts



Ordering Code

D P M - 17W2 - S C 1 (01:

Series:

D = D Subminiature

Product Gender:

P = Plus

S = Socket

Product Version:

M = Mixed Layout - standard

R = Mixed Layout - crimp

Contact Arrangements:

Termination Style:

S = Solder Bucket

P - Printed Circuit

W - Wire Wrap

A - Right Angled (2.54mm row to row)

B - Right Angled (2.85mm row to row)

C - Right Angled (2.54mm row to row) short

Z - Where contacts are not applicable, i.e. crimp

Plating Code:

C = 0.8 micron (.000030") Gold over Nickel (standard)

A - 0.2 micron (.000008") Gold over Nickel

Z - Where contacts are not applicable

Mounting Style - Vertical Face:

1 = Standard flanged mounting

(other mounting versions available)

Modification Code:

011 = Socket with tin plated shell

012 = Plug with tin plated indented shell

Note: Coaxial, High Current and High Voltage contacts should be ordered separately.
Crimp signal contacts should be ordered separately.