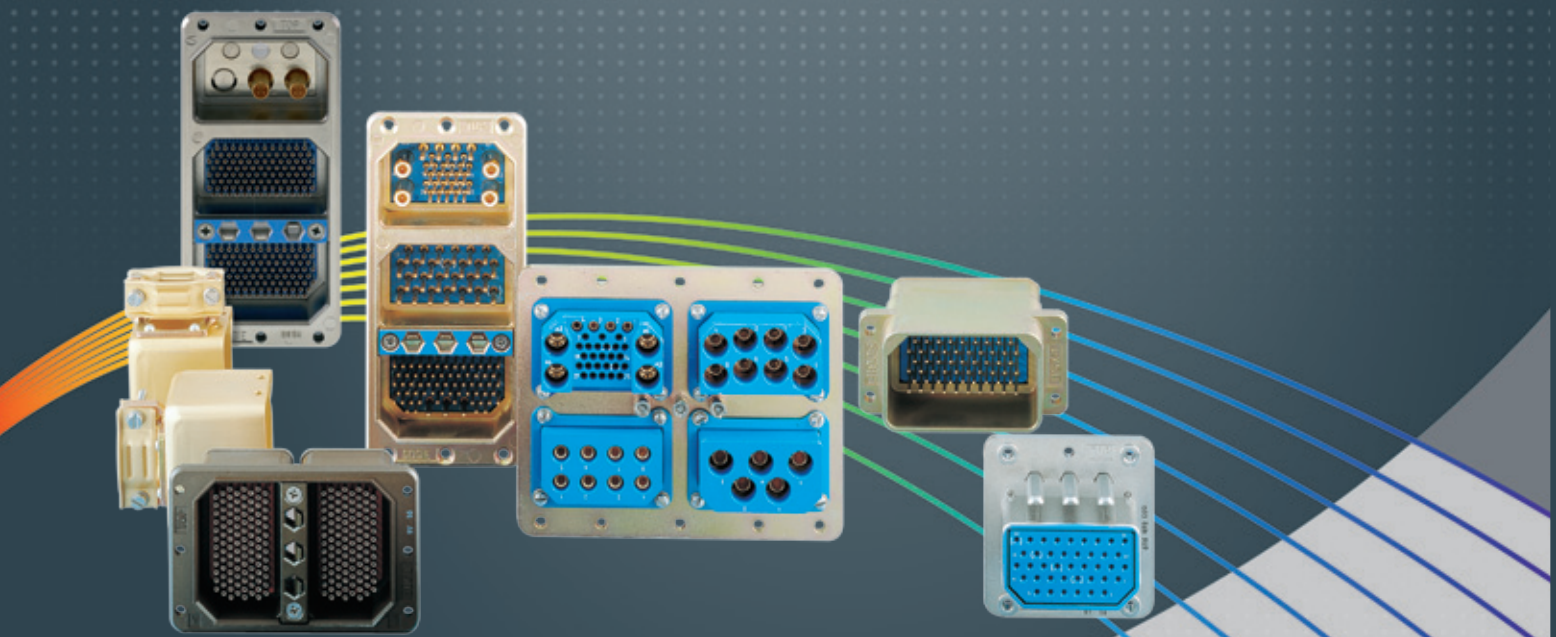

DSX Series

SAE AS81659
ARINC 404

RADIALL
The next conneXion

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INTRODUCTION

The Radiall **DSX** rack and panel series are multipin rectangular connectors used to electrically interface avionics equipment to equipment rack. Usually the plug is installed on the avionic rack and the receptacle on the equipment box. The mated locking mechanism is provided for the equipment and cabinet and is not a part of the connector pair.

These connectors are widely used in applications such as:
- Commercial / military aircraft and helicopters,
- Radar systems,
- Power circuits,
- In-flight electronic instrumentation,
- Flight simulators, etc.....

The following versions are offered:

DSX – SAE AS81659: connectors conforming to SAE AS81659 including connectors listed on the QPL81659
DSX – ARINC 404 shell type B: connectors conforming to ARINC 404 shell type B - polarized shells
DSX – ARINC 404 shell type A: connectors conforming to ARINC 404 shell type A - single shell (without polarization)
DSX – F: connectors for front release front removable contacts (receptacle only)
DSX – DATA BUS: connectors for interconnection of multiplexed digital links
DSX – EMI/RFI: shielded connectors

DSX – SAE AS81659

These connectors fully conform to SAE AS81659 specification and are listed the associated Qualified Product List. They are available in four shell sizes (1, 2, 3 and 4) which can respectively accept 1, 2, 3 and 4 inserts. Inserts are offered in various contact arrangements accommodating rear release rear removable signal (size 22), power (sizes 20HD, 16,12 and 5), coaxial (sizes 1, 3, 5, 7, 9 and 15), concentric twinax (sizes 9 and 5), triax (sizes 5 and 9) contacts in crimp, wire wrap or PC tail termination. Fiber optic contacts are also offered. Both environmental and non environmental connectors are available.

Mismating is prevented by a polarizing system which provides 216 polarizing positions. For MIL part numbers, applicable polarizing positions range goes from 00 through 99 only.

DSX – ARINC 404 shell type B

These connectors are the commercial version. Compared to the military version:
- They use both size 20HD and size 20 contacts.
- They are non environmental. Inserts are fitted with a rubber separator on their wiring rear face which does not provide sealing but wire protection.
- Removable size 5 and 9 coaxial contacts are not interchangeable with those of the military type.
- Insert retention plate is yellow anodized instead of blue anodized on the military version.

DSX – ARINC 404 shell type A

DSX - ARINC 404 shell type A connectors are available in shell size 1 only. They accommodate ARINC 404 shell type B inserts ; only one insert can be installed in the connector shell. They have no polarizing system, mismating is prevented by keystone shaped shells. DSX ARINC 404 shell type A size 1 connectors cannot be fitted with any backshell.

INTRODUCTION

DSX - F

DSX - F receptacle connectors are available in four shell sizes (1, 2, 3 and 4) and are designed to be fitted with front release front removable contacts offered in pc tail and wire wrap termination. Inserts are offered fitted or not with an interfacial seal (in both cases they are not fitted with a separator) and are available in the following contact arrangements : 106, 67, 57, 45, 40, 33C4, 26.

DSX - F connectors are fully intermateable with connectors of the ARINC 404 shell type B and SAE AS81659 types.

DSX - DATA BUS

These connectors have been designed to ensure the interconnection of multiplexed digital links used in military equipments.

DSX - EMI / RFI

In response to the continuing development of electronic systems used in ever harsher environments, these connectors have been designed to improve the shielding effectiveness against electromagnetic and radiofrequency interferences (EMI/RFI) as well as electromagnetic pulses (EMP).

APPLICATIONS

These connectors are used to form the electrical interface between avionics equipment to rack equipment.

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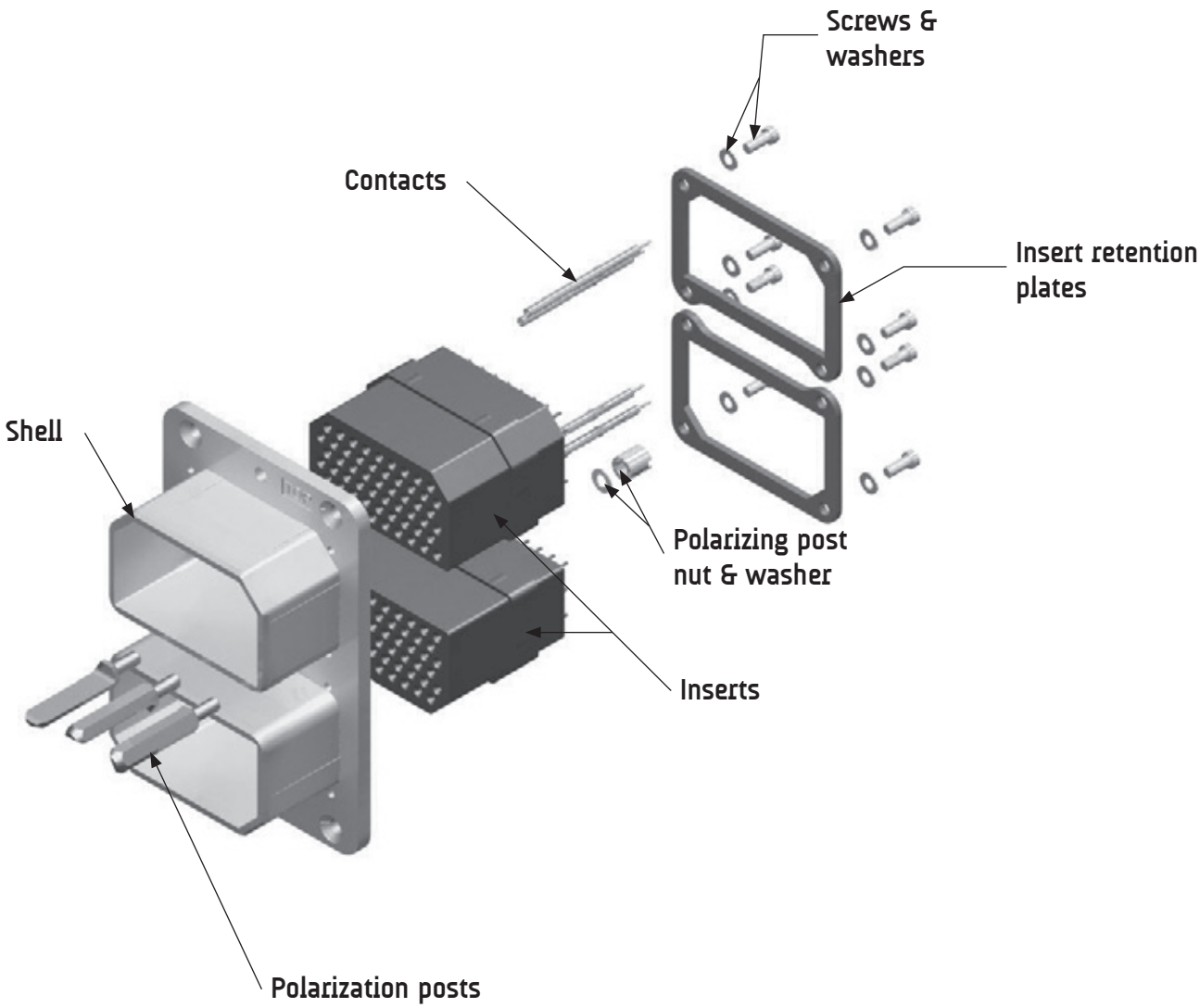
PRODUCT OVERVIEW

Detailed view of the various parts of this series connector.



ELECTRICAL

Magnetic permeability: <2 µ
Insulation resistance: >5000 MΩ
Dielectric withstanding voltage: see contact arrangement on pages 6-10 to 6-12
Contact resistance: according to requirements of SAE AS39029.

Coax contacts electrical characteristics
Nominal impedance: 50 Ω
VSWR
- Sizes 5,7,9: 1.3 from DC to 1500MHz
- Sizes 1 and 3: 1.3 from DC to 5000 MHz

Contact size	AWG	Cross section mm² (sq.in)	Min. Outside dia. mm (inch)	Max. outside dia. mm (inch)	Max current (A)
22	22	0.38 (0.015)	0.76 (0.030)	1.4 (0.055)	5
	24	0.21 (0.008)			3
	26	0.14 (0.006)			2
20HD	20	0.60 (0.024)	1 (0.039)	1.8 (0.071)	7.5
	22	0.38 (0.015)			5
	24	0.21 (0.008)			3
16	16	1.34 (0.053)	1.70 (0.067)	2.6 (0.102)	13
	18	0.93 (0.037)			10
	20	0.60 (0.024)			7.5
12	12	3.18 (0.125)	2.4 (0.094)	3.4 (0.134)	23
	14	1.91 (0.075)			17
	16	1.34 (0.052)			13
For cavity 5	8	9.00 (0.354)	3.4 (0.134)	6.48 (0.255)	46
	10	5.00 (0.197)			33
	12	3.18 (0.125)			23
	14	1.91 (0.075)			17

MECHANICAL & ENVIRONMENTAL

Temperature range: -65°C (-85°F) / +125°C (+257°F)
Temperature life: 1000 hours at +125°C (+257°F)
Salt spray: EIA 364-26 (MIL-STD-1344A method 1001.1 test condition B (48 hours))
Altitude moisture injection: Insulation resistance > 100 M Ω altitude 50000 feet
Fluid resistance: resistance to 20 hours immersion in fluids MIL PRF 5606 & MIL PRF 23699
Durability: 500 matings & unmating cycles
Vibration: EIA 364-28 (MIL-STD-1344A method 2005 test condition IV (20g – 10-2000Hz))
Shock: EIA 364-27 (MIL-STD-1344A method 2004 test condition A (50g -11ms – half sine))
Mating force: < 200N (45 pds) per insert
Insert retention force: > 534N (120 lbs) in each direction
Contact retention force: max axial displacement = 0.3mm (0.012 inches)

Contact size	22	20HD	16	12
Axial load N (lbs)	66N (15)	89N (20)	111N (25)	133.5N (30)

TECHNICAL CHARACTERISTICS

MATERIALS

Description	Material	Plating
Shell	Aluminium alloy	Cadmium yellow chromate*
Insert	Thermosetting resin	/
Metallic insert	Aluminium alloy	Cadmium clear chromate*
Interfacial seal & grommet	Silicone rubber	/
Retention clip	Copper alloy	/
Contact	Copper alloy	Gold over nickel under plate
Insert retention plate	Aluminium alloy	Blue anodised*
Polarizing posts	Stainless steel	/
Polarizing keys	Zinc alloy	Cadmium yellow chromate
Polarizing keys retention plate	Aluminium alloy	Cadmium yellow chromate*
Screws, washers, clinch-nuts	Corrosion resistant steel	/
Sealing plugs and filler plugs	PTFE	/
Sealing boots and sleeves	Fluorinated silicon rubber	/
Sealing bushing	PEI	/
Junction shells	Aluminium alloy	Yellow anodized or nickel plated

* More platings are available, see descriptions in modification codes

MASSES

Description	Weight g (oz)
Plug shell size 1	30 (1.05)
Plug shell size 2	45 (1.60)
Plug shell size 3	60 (2.15)
Plug shell size 4	85 (3)
Receptacle shell 1	30 (1.05)
Receptacle shell 2	50 (1.75)
Receptacle shell 3	85 (3)
Receptacle shell 4	115 (4.05)
Thermosetting insert	20 (0.70)
Metallic insert	35 (1.25)
Junction shells	25 (0.88)

HOW TO ORDER CONNECTORS

DSX	N	4	P	G	S	40	S	S8S	S26S	S45P	00	01

Series

Class
N: Non environmental (without grommet and interfacial seal)
E: Environmental (with grommet and interfacial seal)
T: Connector with interfacial seal on insert with protruding contacts only

Shell size
1 : One gang shell
2 : Two gang shell
3 : Three gang shell
4 : Four gang shell

Shell type
R : Receptacle
P : Plug

Grounding EMI/RFI
G: (Only for plug connector) with grounding spring

Termination style
X : Without contacts (for crimp contacts only)
S : Crimp (1)
V : Wire wrap two levels (4)
W : Wire wrap three levels (4)
Y : PC tail contact (4)

Gang A

Contact arrangement (2)
See available contact arrangements on pages 6-10 to 6-12

Contact type
S : Socket
P : Pin

Gang B

Gang C

Gang D

Modification code
See pages 6-13 to 6-19 for selection
Modification code will help in choosing the appropriate plating for your application.

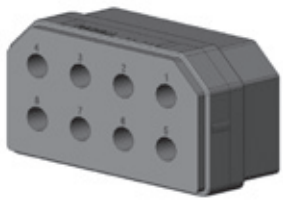
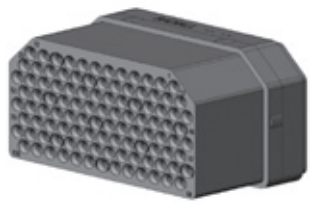
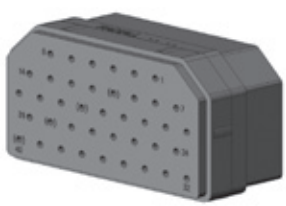
Polarization code (3)
See pages 6-20 to 6-21 for selection

Important note: If you want to get connectors marked with the military part number (i.e. M81659/66A2-0083) you must order by using the military part number. Radiall part numbers qualified to SAE AS81659 versus military part numbers are listed from pages 6-36 to 6-39.

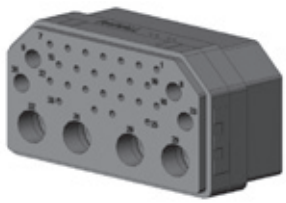
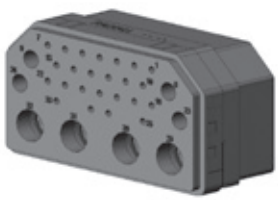
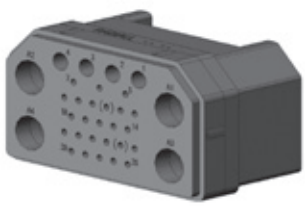
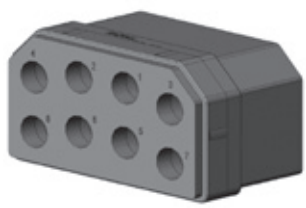
NOTES:
(1) If you need to use reduced crimp barrel, thermocouple or fiber optic contacts, use code X and order contact separately.
(2) For MC2, MC3 and C8 contact arrangements which include coax contacts, use termination code X and order coax contacts separately.
(3) Without polarization code the connector is delivered with the polarizing system unassembled. With polarization code 00: the connector is delivered without polarizing system. With polarization code from 01 to 216: the connector is delivered with polarization hardware assembled as defined by code. Polarization codes for connector qualified to SAE AS81659 are ranging from 00 to 99 only.
(4) PC tail and wire wrap contacts are delivered installed. For 67, 32C4 and 33C4 contact arrangements, size 16 contacts are delivered not installed and in crimp termination.

CONTACT ARRANGEMENTS

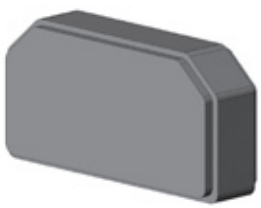
pin insert mating side shown

Insert name	Number of contacts	Dielectric Withstanding Voltage (DWV)	Insert name	Number of contacts	DWV
C5[1]	 5 x #5 (power)	2500V – 60Hz This insert is available in class N only.	**57**[1]	 57 x #20HD	1500v – 60Hz
8	 8 x #12	1500V – 60Hz	**67**	 64 x #20HD 3 x #16	21000V - 60Hz
D8	 4 x #16 4 x #12	1500V – 60Hz	**106**	 106 x #22	1000V - 60Hz
26	 26 x #16	1500V – 60Hz	**40C1**	 1 x #5 (coax) 39 x #20HD	1500V – 60Hz
40	 40 x #20HD	1500V – 60Hz	**40T1**[1]	 1 x #5 (coax) 39 x #20HD	1500V – 60Hz Size 5 contact cavity grounded to the shell
45	 45 x #20HD	1500V – 60Hz	**32C2**	 2 x #5 (coax) 39 x #20HD	1000V - 60Hz

CONTACT ARRANGEMENTS pin insert mating side shown

Insert name	Number of contacts	DWV	Insert name	Number of contacts	DWV
32T2[1]	 2 x #5 (coax) 30 x #20HD	1000V – 60Hz Size 5 contact cavities grounded to the shell	**36C7**[1]	 7 x #5 (coax) 29 x #22	1000V – 60Hz
32C4	 4 x #9 (coax) 4 x #16 24 x #20HD	1500V – 60Hz	**36T7**[1]	 7 x #5 (coax) 29 x #22	1000V – 60Hz Size 5 contact cavities grounded to the shell
32T4[1]	 4 x #9 (coax) 4 x #16 24 x #20HD	1500V – 60Hz Size 9 contact cavities grounded to the shell	**MC2**	 2 x #1 (coax)	This insert is metallic
33C4	 4 x #5 (coax) 4 x #16 25 x #20HD	1000V – 60Hz	**MC3**	 2 x #7 (coax) 1 x #3 (coax)	This insert is metallic
33T4[1]	 4 x #5 (coax) 4 x #16 25 x #20HD	1000V – 60Hz Size 5 contact cavities grounded to the shell	**C8**	 7 x #9 (coax)	1000V – 60Hz

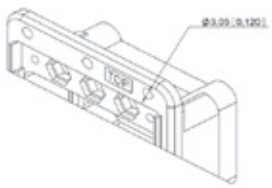
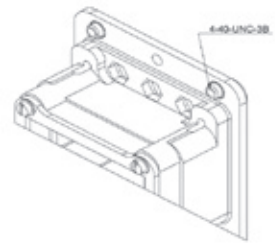
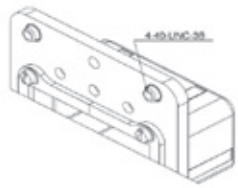
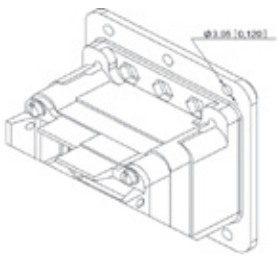
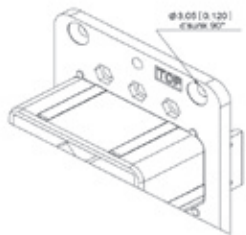
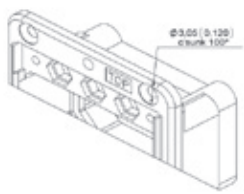
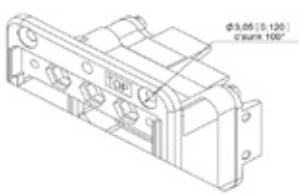
CONTACT ARRANGEMENTS pin insert mating side shown

Insert name	Number of contacts	DWV
T8*	8 x #9 (coax)	Size 9 contact cavities grounded to the shell. Pin contact available only
6CU	6 x #8 Quadrax	Size 8 contact cavities grounded to the shell. Non environmental only
81C3	78 x # 22 3 x #5 (coax)	1000V - 60Hz
00*		Dummy insert-

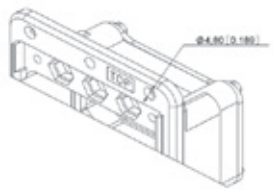
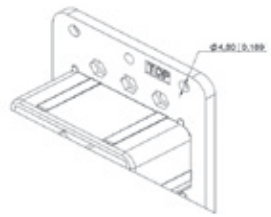
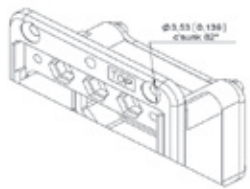
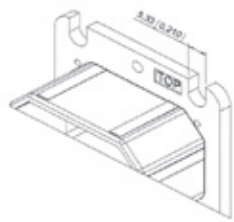
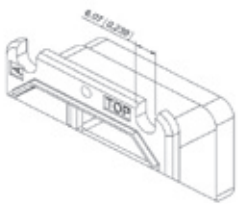
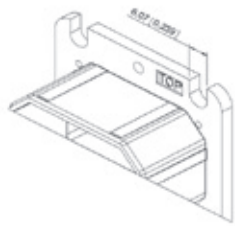
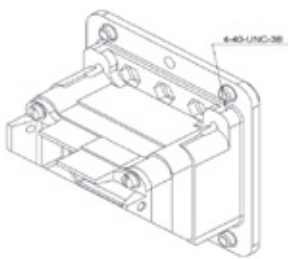
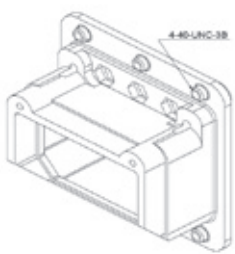
NOTE:
(1) Contact arrangements are not referenced in the MS3157 and SAE AS81659 standards.

MODIFICATION CODE

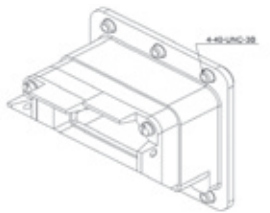
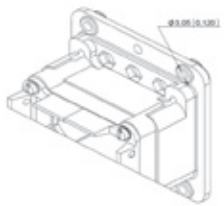
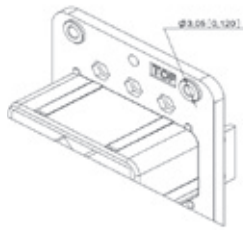
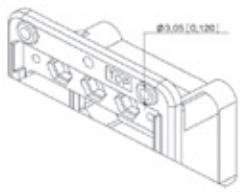
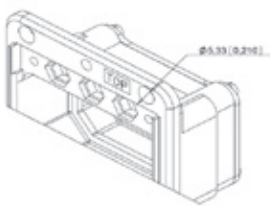
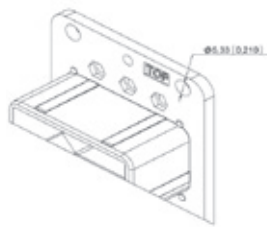
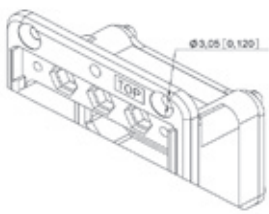
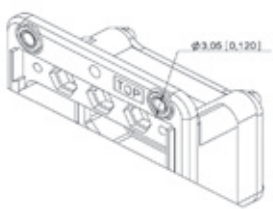
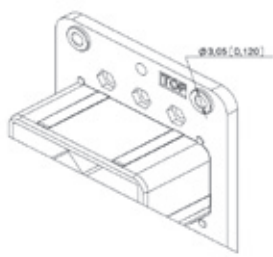
Connectors can be front or rear mount.
It should be noted that there is only 4mm between the connector flanges when fully mated. Then, modification code and screw types shall be selected according to this constraint.

CODE	Receptacle shell		Plug shell	
00		**Sizes 1,2 & 3:** 6 holes Ø3,05 (0.120) **Size 4:** 10 holes Ø3,05 (0.120)		**Sizes 1 & 2:** 4 holes Ø3,05 (0.120) c'sunk 90° **Size 3:** 6 holes Ø3,05 (0.120) c'sunk 90° **Size 4:** 10 holes Ø3,05 (0.120) c'sunk 90°
01		**Sizes 1 & 2:** 4 clinch nuts 4.40 UNC 3B **Size 3 :** 6 clinch nuts 4.40 UNC 3B **Size 4 :** 10 clinch nuts 4.40 UNC 3B		**Sizes 1 & 2:** 4 clinch nuts 4.40 UNC 3B **Size 3 :** 6 clinch nuts 4.40 UNC 3B **Size 4 :** 10 clinch nuts 4.40 UNC 3B
02		**Sizes 1, 2 & 3:** 6 holes Ø3,05 (0.120) with attaching tabs for RADIALL backshell Not Available in Size 4		**Sizes 1 & 2:** 4 holes Ø3,05 (0.120) c'sunk 90° with attaching tabs for RADIALL backshell **Size 3:** 6 holes Ø3,05 (0.120) c'sunk 90° with attaching tabs for RADIALL backshell Not Available in Size 4
03		**Sizes 1 & 2:** 4 holes Ø3,05(0.120) c'sunk 100° **Size 3:** 6 holes Ø3,05(0.120) c'sunk 100° **Size 4:** 10 holes Ø3,05(0.120) c'sunk 100°		**Sizes 1 & 2:** 4 holes Ø3,05(0.120) c'sunk 100° **Size 3:** 6 holes Ø3,05(0.120) c'sunk 100° **Size 4:** 10 holes Ø3,05(0.120) c'sunk 100°
04		Sizes 1 & 2: 4 holes Ø3,05(0.120) c'sunk 100° with attaching tabs for RADIALL backshell Size 3: 6 holes Ø3,05(0.120) c'sunk 100° with attaching tabs for RADIALL backshell Not Available in Size 4		**Sizes 1 & 2:** 4 holes Ø3,05(0.120) c'sunk 100° with attaching tabs for RADIALL backshell **Size 3:** 6 holes Ø3,05(0.120) c'sunk 100° with attaching tabs for RADIALL backshell Not Available in Size 4

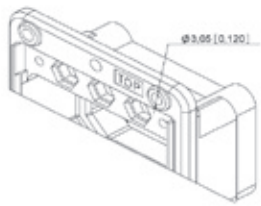
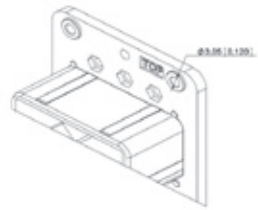
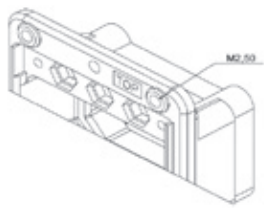
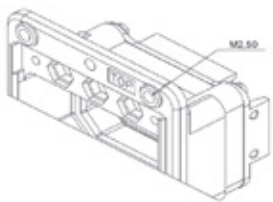
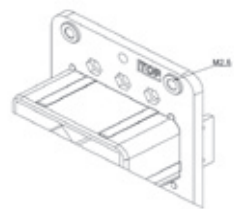
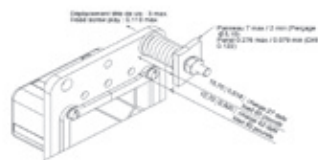
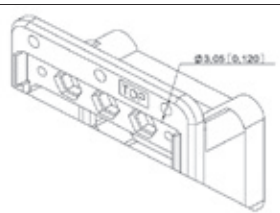
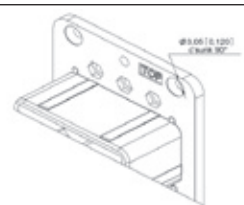
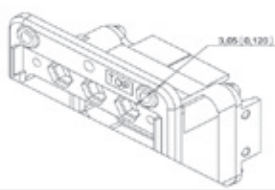
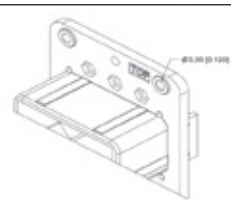
MODIFICATION CODE

CODE	Receptacle shell		Plug shell	
05		**Sizes 1,2 & 3:** 4 holes Ø4,80 (0.189) **Size 4:** 10 holes Ø4,80 (0.189)		**Sizes 1,2 & 3:** 4 holes Ø4,80 (0.189) **Size 4:** 10 holes Ø 4,80 (0.189)
08		**Sizes 1 & 2:** 4 holes Ø3,53 (0.139) c'sunk 82° Size 3: 6 holes Ø3,53 (0.139) c'sunk 82°		**Sizes 1 & 2:** 4 holes Ø3,53 (0.139) c'sunk 82° **Size 3:** 6 holes Ø3,53 (0.139) c'sunk 82°
12	--	--		**Sizes 1, 2 & 3:** 4 mounting slots 5,33 (0.210) wide
13		**Sizes 1, 2 & 3:** 4 mounting slots 6,07 (0.239) wide		**Sizes 1, 2 & 3:** 4 mounting slots 6,07 (0.239) wide
17		**Sizes 1 & 2:** 4 clinch nuts 4.40 UNC 3B with attaching tabs for RADIALL backshell **Size 3:** 6 clinch nuts 4.40 UNC 3B with attaching tabs for RADIALL backshell Not Available in Size 4		**Sizes 1 & 2 :** 4 clinch nuts 4.40 UNC 3B with attaching tabs for RADIALL backshell **Size 3:** 6 clinch nuts 4.40 UNC 3B with attaching tabs for RADIALL backshell Not available in size 4
18		**Sizes 1, 2 & 3:** 6 clinch nuts 4.40 UNC 3B Not Available in Size 4	--	--

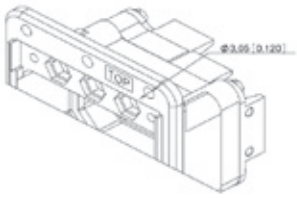
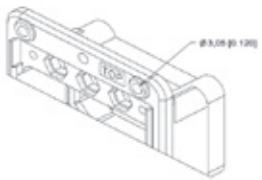
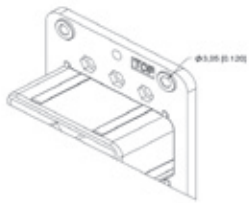
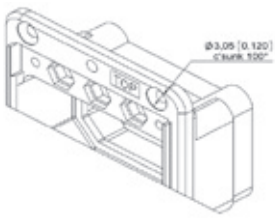
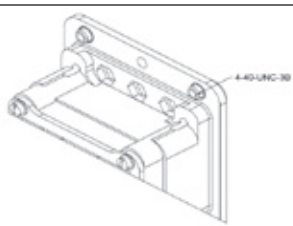
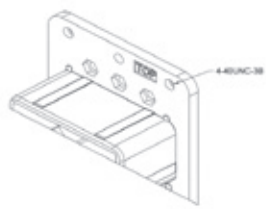
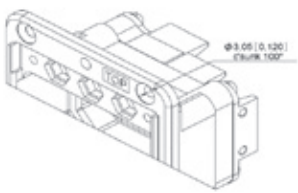
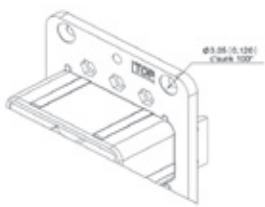
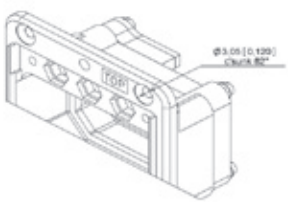
MODIFICATION CODE

CODE	Receptacle shell		Plug shell	
19		**Sizes 1, 2 & 3:** 6 clinch nuts 4.40 UNC 3B with attaching tabs for RADIALL backshell Not Available in Size 4	--	--
22		**Sizes 1 & 2:** 4 floating eyelets Ø3,05 (0.120) with attaching tabs for RADIALL backshell **Size 3:** 6 floating eyelets Ø3,05 (0.120) with attaching tabs for RADIALL backshell Not Available in Size 4		**Sizes 1 & 2:** 4 floating eyelets Ø3,05 (0.120) with attaching tabs for RADIALL backshell **Size 3:** 6 floating eyelets Ø3,05 (0.120) with attaching tabs for RADIALL backshell Not Available in Size 4
23		**Sizes 1 & 2:** 4 floating eyelets Ø3,05 (0.120 **Size 3:** 6 floating eyelets Ø3,05 (0.120) **Size 4:** 10 floating eyelets Ø3,05 (0.120)		**Sizes 1 & 2:** 4 floating eyelets Ø3,05 (0.120) **Size 3:** 6 floating eyelets Ø3,05 (0.120) **Size 4:** 10 floating eyelets Ø3,05 (0.120)
24		**Sizes 1, 2 & 3:** 6 holes Ø5,33 (0.210)		**Sizes 1, 2 & 3:** 6 holes Ø5,33 (0.210)
26		**Sizes 1 & 2:** 4 holes Ø3,05(0.120) c'sunk 90° **Size 3:** 6 holes Ø3,05(0.120) c'sunk 90° **Size 4:** 10 holes Ø 3,05(0.120) c'sunk 90°	--	--
33		**Sizes 1 & 2:** 4 flush front embedded floating eyelets Ø3,05 (0.120) **Size 3:** 6 flush front embedded floating eyelets Ø3,05 (0.120) **Size 4:** 10 flush front embedded floating eyelets Ø3,05 (0.120)		**Sizes 1 & 2:** 4 flush rear embedded floating eyelets Ø3,05 (0.120) **Size 3:** 6 flush rear embedded floating eyelets Ø3,05 (0.120) **Size 4:** 10 flush rear embedded floating eyelets Ø3,05 (0.120)

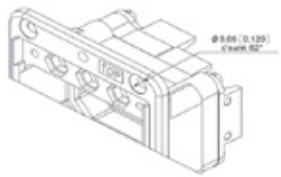
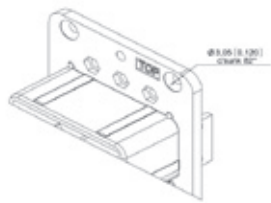
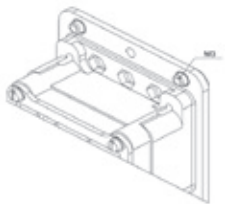
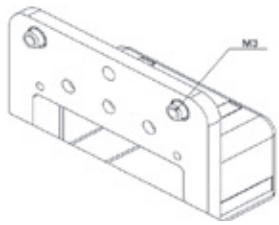
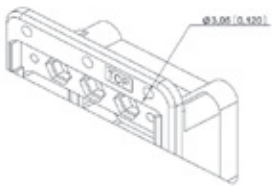
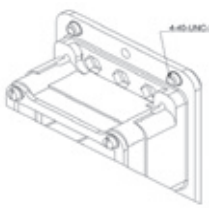
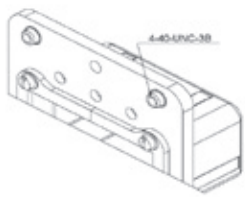
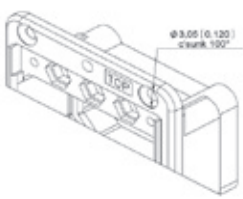
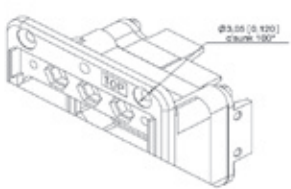
MODIFICATION CODE

CODE	Receptacle shell		Plug shell	
34		**Sizes 1 & 2:** 4 flush rear embedded floating eyelets Ø3,05 (0.120) **Size 3:** 6 flush rear embedded floating eyelets Ø3,05 (0.120) **Size 4:** 10 flush rear embedded floating eyelets Ø3,05 (0.120)		**Sizes 1 & 2:** 4 flush front embedded floating eyelets Ø3,05 (0.120) **Size 3:** 6 flush front embedded floating eyelets Ø3,05 (0.120) **Size 4:** 10 flush front embedded floating eyelets Ø3,05 (0.120)
35		**Sizes 1 & 2:** 4 flush front embedded floating eyelets M2.5 threaded **Size 3:** 6 flush rear embedded floating eyelets M2.5 threaded		**Sizes 1 & 2:** 4 flush rear embedded floating eyelets M2.5 threaded **Size 3**: 6 flush rear embedded floating eyelets M2.5 threaded
36		**Sizes 1 & 2:** 4 flush front embedded floating eyelets M2.5 threaded with attaching tabs for RADIALL backshell **Size 3:** 6 flush front embedded floating eyelets M2.5 threaded with attaching tabs for RADIALL backshell Not Available in size 4		**Sizes 1 & 2:** 4 flush front embedded floating eyelets M2.5 threaded with attaching tabs for RADIALL backshell **Size 3:** 6 flush front embedded floating eyelets M2.5 threaded with attaching tabs for RADIALL backshell Not Available in size 4
55	--	--		**Sizes 1, 2 & 3**: Spring loaded shell 6 places
60		Similar to modification **code 00** except that the shell, keys and keys retention plate are nickel plated.		Similar to modification **code 00** except that the shell, keys and keys retention plate are nickel plated.
61		Similar to modification **code 22** except that the shell, keys and keys retention plate are nickel plated. Not available in size 4		Similar to modification **code 22** except that the shell, keys and keys retention plate are nickel plated. Not available in size 4

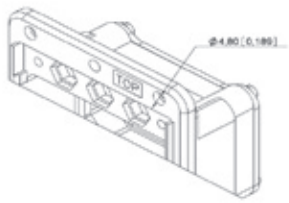
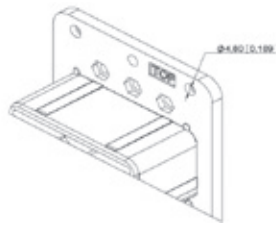
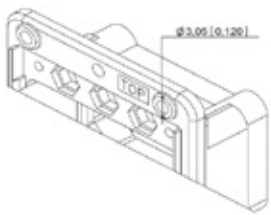
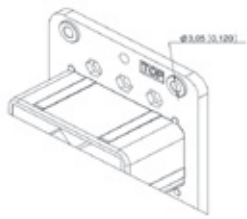
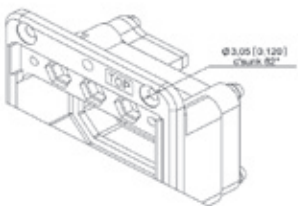
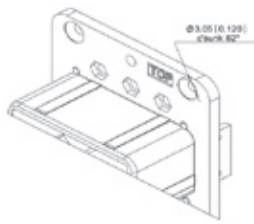
MODIFICATION CODE

CODE	Receptacle shell		Plug shell	
62		Similar to modification **code 02** except that the shell, keys and keys retention plate are nickel plated. Not available in size 4		Similar to modification **code 02** except that the shell, keys and keys retention plate are nickel plated. Not available in size 4
63		Similar to modification **code 23** except that the shell, keys and keys retention plate are nickel plated.		Similar to modification **code 23** except that the shell, keys and keys retention plate are nickel plated.
64		Similar to modification **code 03** except that the shell, keys and keys retention plate are nickel plated.		Similar to modification **code 03** except that the shell, keys and keys retention plate are nickel plated.
66		Similar to modification **code 01** except that the shell, keys and keys retention plate are nickel plated.		Similar to modification **code 01** except that the shell, keys and keys retention plate are nickel plated.
67		**Sizes 1 & 2:** 4 holes Ø3,05 (0.120) c'sunk 100° with attaching tabs for RADIALL backshell **Size 3:** 6 holes Ø3,05 (0.120) c'sunk 100° with attaching tabs for RADIALL backshell Shells are nickel plated. Not Available in size 4		**Sizes 1 & 2:** 4 holes Ø3,05 (0.120) c'sunk 100° with attaching tabs for RADIALL backshell **Size 3:** 6 holes Ø3,05 (0.120) c'sunk 100° with attaching tabs for RADIALL backshell. Shells are nickel plated Not Available for Size 4
73		**Sizes 1 & 2:** 4 holes Ø3,05 (0.120) c'sunk 82° **Size 3:** 6 holes Ø3,05 (0.120) c'sunk 82° **Size 4:** 10 holes Ø3,05 (0.120) c'sunk 82°		**Sizes 1 & 2:** 4 holes Ø3,05 (0.120) c'sunk 82° **Size 3:** 6 holes Ø3,05 (0.120) c'sunk 82° **Size 4:** 10 holes Ø3,05 (0.120) c'sunk 82°

MODIFICATION CODE

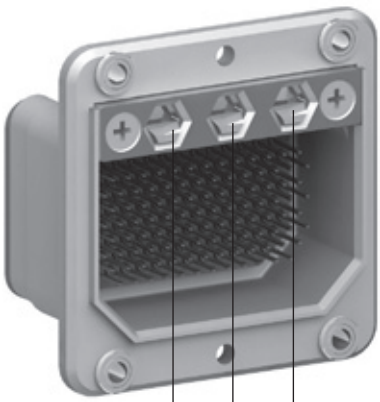
CODE	Receptacle shell		Plug shell	
77		**Sizes 1 & 2:** 4 holes Ø3,05 (0.120) c'sunk 82° with attaching tabs for RADIALL backshell **Size 3:** 6 holes Ø3,05 (0.120) c'sunk 82° with attaching tabs for RADIALL backshell Not Available for Size 4		**Sizes 1 & 2:** 4 holes Ø3,05 (0.120) c'sunk 82° with attaching tabs for RADIALL backshell **Size 3:** 6 holes Ø3,05 (0.120) c'sunk 82° with attaching tabs for RADIALL backshell Not Available for Size 4
79		**Sizes 1 & 2:** 4 M3 clinch nuts **Size 3:** 6 M3 clinch nuts **Size 4:** 10 M3 clinch nuts		**Sizes 1 & 2:** 4 M3 clinch nuts **Size 3:** 6 M3 clinch nuts **Size 4:** 10 M3 clinch nuts
90		**Sizes 1 & 2:** 4 flush rear embedded floating eyelets Ø3,05 (0.120) **Size 3:** 6 flush rear embedded floating eyelets Ø3,05 (0.120) **Size 4:** 10 flush rear embedded floating eyelets Ø3,05 (0.120)		**Sizes 1 & 2:** 4 holes Ø3,05 (0.120) c'sunk 90° with attaching tabs for RADIALL backshell **Size 3:** 6 holes Ø3,05 (0.120) c'sunk 90° with attaching tabs for RADIALL backshell Not Available for Size 4
91		**Sizes 1 & 2:** 4 clinch nuts 4.40 UNC 3B **Size 3** : 6 clinch nuts 4.40 UNC 3B **Size 4** : 10 clinch nuts 4.40 UNC 3B Equivalent to code 01 with olive drab cadmium plating as an option		**Sizes 1 & 2:** 4 clinch nuts 4.40 UNC 3B **Size 3** : 6 clinch nuts 4.40 UNC 3B **Size 4** : 10 clinch nuts 4.40 UNC 3B Equivalent to code 01 with olive drab cadmium plating as an option
93		**Sizes 1 & 2:** 4 holes Ø3,05(0.120) csunk 100° **Size 3:** 6 holes Ø3,05(0.120) c'sunk 100° **Size 4:** 10 holes Ø3,05(0.120) c'sunk 100° Equivalent to code 03 with olive drab cadmium plating as an option		**Sizes 1 & 2:** 4 holes Ø3,05(0.120) csunk 100° **Size 3:** 6 holes Ø3,05(0.120) c'sunk 100° **Size 4:** 10 holes Ø3,05(0.120) c'sunk 100° Equivalent to code 03 with olive drab cadmium plating as an option
94		**Sizes 1 & 2:** 4 holes Ø3,05(0.120) c'sunk 100° with attaching tabs for RADIALL backshell **Size 3:** 6 holes Ø3,05(0.120) c'sunk 100° with attaching tabs for RADIALL backshell Not Available in Size 4 Equivalent to code 04 with olive drab cadmium plating as an option		**Sizes 1 & 2:** 4 holes Ø3,05(0.120) c'sunk 100° with attaching tabs for RADIALL backshell **Size 3:** 6 holes Ø3,05(0.120) c'sunk 100° with attaching tabs for RADIALL backshell Not Available in Size 4 Equivalent to code 04 with olive drab cadmium plating as an option

MODIFICATION CODE

CODE	Receptacle shell		Plug shell	
95		**Sizes 1,2 & 3:** 4 holes Ø4,80 (0.189) **Size 4:** 10 holes Ø4,80 (0.189) Equivalent to code 05 with olive drab cadmium plating as an option		**Sizes 1,2 & 3:** 4 holes Ø4,80 (0.189) **Size 4:** 10 holes Ø4,80 (0.189) Equivalent to code 05 with olive drab cadmium plating as an option
96		**Sizes 1 & 2:** 4 floating eyelets Ø3,05 (0.120 **Size 3:** 6 floating eyelets Ø3,05 (0.120) **Size 4:** 10 floating eyelets Ø3,05 (0.120) Equivalent to code 23 with olive drab cadmium plating as an option		**Sizes 1 & 2:** 4 floating eyelets Ø3,05 (0.120 **Size 3:** 6 floating eyelets Ø3,05 (0.120) **Size 4:** 10 floating eyelets Ø3,05 (0.120) Equivalent to code 23 with olive drab cadmium plating as an option
97		**Sizes 1 & 2:** 4 holes Ø3,05 (0.120) c'sunk 82° **Size 3:** 6 holes Ø3,05 (0.120) c'sunk 82° **Size 4:** 10 holes Ø3,05 (0.120) c'sunk 82° Equivalent to code 73 with olive drab cadmium plating as an option		**Sizes 1 & 2:** 4 holes Ø3,05 (0.120) c'sunk 82° **Size 3:** 6 holes Ø3,05 (0.120) c'sunk 82° **Size 4:** 10 holes Ø3,05 (0.120) c'sunk 82° Equivalent to code 73 with olive drab cadmium plating as an option

POLARIZATION CODE

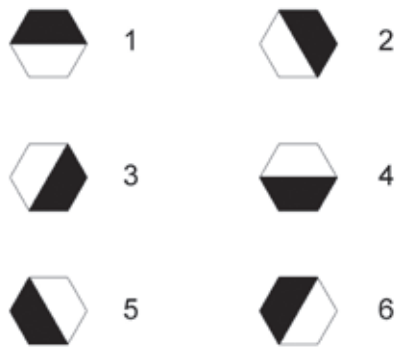
Position of polarization keys and posts.
Connectors are shown front side, with "TOP" upwards.



Left Key

Center Key

Right Key



Position coding
Dark area represents the polarizing post.
Clear position represents the key hole.

POLARIZATION CODE TABLE

Polarization code	Receptacle shell			Plug shell		
	Left key	Center key	Right key	Left post	Center post	Right post
00	/	/	/	/	/	/
01	4	4	4	1	1	1
02	4	4	3	2	1	1
03	4	4	2	3	1	1
04	4	4	1	4	1	1
05	4	4	6	5	1	1
06	4	4	5	6	1	1
07	5	4	4	1	1	6
08	5	4	3	2	1	6
09	5	4	2	3	1	6
10	5	4	1	4	1	6
11	5	4	6	5	1	6
12	5	4	5	6	1	6
13	6	4	4	1	1	5
14	6	4	3	2	1	5
15	6	4	2	3	1	5
16	6	4	1	4	1	5
17	6	4	6	5	1	5
18	6	4	5	6	1	5
19	1	4	4	1	1	4
20	1	4	3	2	1	4
21	1	4	2	3	1	4
22	1	4	1	4	1	4
23	1	4	6	5	1	4
24	1	4	5	6	1	4
25	2	4	4	1	1	3
26	2	4	3	2	1	3
27	2	4	2	3	1	3
28	2	4	1	4	1	3

Polarization code	Receptacle shell			Plug shell		
	Left key	Center key	Right key	Left post	Center post	Right post
29	2	4	6	5	1	3
30	2	4	5	6	1	3
31	3	4	4	1	1	2
32	3	4	3	2	1	2
33	3	4	2	3	1	2
34	3	4	1	4	1	2
35	3	4	6	5	1	2
36	3	4	5	6	1	2
37	4	3	4	1	2	1
38	4	3	3	2	2	1
39	4	3	2	3	2	1
40	4	3	1	4	2	1
41	4	3	6	5	2	1
42	4	3	5	6	2	1
43	5	3	4	1	2	6
44	5	3	3	2	2	6
45	5	3	2	3	2	6
46	5	3	1	4	2	6
47	5	3	6	5	2	6
48	5	3	5	6	2	6
49	6	3	4	1	2	5
50	6	3	3	2	2	5
51	6	3	2	3	2	5
52	6	3	1	4	2	5
53	6	3	6	5	2	5
54	6	3	5	6	2	5
55	1	3	4	1	2	4
56	1	3	3	2	2	4
57	1	3	2	3	2	4

Polarization code	Receptacle shell			Plug shell		
	Left key	Center key	Right key	Left post	Center post	Right post
58	1	3	1	4	2	4
59	1	3	6	5	2	4
60	1	3	5	6	2	4
61	2	3	4	1	2	3
62	2	3	3	2	2	3
63	2	3	2	3	2	3
64	2	3	1	4	2	3
65	2	3	6	5	2	3
66	2	3	5	6	2	3
67	3	3	4	1	2	2
68	3	3	3	2	2	2
69	3	3	2	3	2	2
70	3	3	1	4	2	2
71	3	3	6	5	2	2
72	3	3	5	6	2	2
73	4	2	4	1	3	1
74	4	2	3	2	3	1
75	4	2	2	3	3	1
76	4	2	1	4	3	1
77	4	2	6	5	3	1
78	4	2	5	6	3	1
79	5	2	4	1	3	6
80	5	2	3	2	3	6
81	5	2	2	3	3	6
82	5	2	1	4	3	6
83	5	2	6	5	3	6
84	5	2	5	6	3	6
85	6	2	4	1	3	5
86	6	2	3	2	3	5
87	6	2	2	3	3	5
88	6	2	1	4	3	5
89	6	2	6	5	3	5
90	6	2	5	6	3	5
91	1	2	4	1	3	4
92	1	2	3	2	3	4
93	1	2	2	3	3	4
94	1	2	1	4	3	4
95	1	2	6	5	3	4
96	1	2	5	6	3	4
97	2	2	4	1	3	3
98	2	2	3	2	3	3
99	2	2	2	3	3	3
100	2	2	1	4	3	3
101	2	2	6	5	3	3
102	2	2	5	6	3	3
103	3	2	4	1	3	2
104	3	2	3	2	3	2
105	3	2	2	3	3	2
106	3	2	1	4	3	2
107	3	2	6	5	3	2
108	3	2	5	6	3	2
109	4	1	4	1	4	1
110	4	1	3	2	4	1
111	4	1	2	3	4	1
112	4	1	1	4	4	1
113	4	1	6	5	4	1
114	4	1	5	6	4	1
115	5	1	4	1	4	6
116	5	1	3	2	4	6
117	5	1	2	3	4	6
118	5	1	1	4	4	6
119	5	1	6	5	4	6
120	5	1	5	6	4	6
121	6	1	4	1	4	5
122	6	1	3	2	4	5
123	6	1	2	3	4	5
124	6	1	1	4	4	5
125	6	1	6	5	4	5
126	6	1	5	6	4	5
127	1	1	4	1	4	4
128	1	1	3	2	4	4
129	1	1	2	3	4	4
130	1	1	1	4	4	4
131	1	1	6	5	4	4
132	1	1	5	6	4	4
133	2	1	4	1	4	3
134	2	1	3	2	4	3
135	2	1	2	3	4	3
136	2	1	1	4	4	3
137	2	1	6	5	4	3

Polarization code	Receptacle shell			Plug shell		
	Left key	Center key	Right key	Left post	Center post	Right post
138	2	1	5	6	4	3
139	3	1	4	1	4	2
140	3	1	3	2	4	2
141	3	1	2	3	4	2
142	3	1	1	4	4	2
143	3	1	6	5	4	2
144	3	1	5	5	4	2
145	4	6	4	1	5	1
146	4	6	3	2	5	1
147	4	6	2	3	5	1
148	4	6	1	4	5	1
149	4	6	6	5	5	1
150	4	6	5	6	5	1
151	5	6	4	1	5	6
152	5	6	3	2	5	6
153	5	6	2	3	5	6
154	5	6	1	4	5	6
155	5	6	6	5	5	6
156	5	6	5	6	5	6
157	6	6	4	1	5	5
158	6	6	3	2	5	5
159	6	6	2	3	5	5
160	6	6	1	4	5	5
161	6	6	6	5	5	5
162	6	6	5	6	5	5
163	1	6	4	1	5	4
164	1	6	3	2	5	4
165	1	6	2	3	5	4
166	1	6	1	4	5	4
167	1	6	6	5	5	4
168	1	6	5	6	5	4
169	2	6	4	1	5	3
170	2	6	3	2	5	3
171	2	6	2	3	5	3
172	2	6	1	4	5	3
173	2	6	6	5	5	3
174	2	6	5	6	5	3
175	3	6	4	1	5	2
176	3	6	3	2	5	2
177	3	6	2	3	5	2
178	3	6	1	4	5	2
179	3	6	6	5	5	2
180	3	6	5	6	5	2
181	4	5	4	1	6	1
182	4	5	3	2	6	1
183	4	5	2	3	6	1
184	4	5	1	4	6	1
185	4	5	6	5	6	1
186	4	5	5	6	6	1
187	5	5	4	1	6	6
188	5	5	3	2	6	6
189	5	5	2	3	6	6
190	5	5	1	4	6	6
191	5	5	6	5	6	6
192	5	5	5	6	6	6
193	6	5	4	1	6	5
194	6	5	3	2	6	5
195	6	5	2	3	6	5
196	6	5	1	4	6	5
197	6	5	6	5	6	5
198	6	5	5	6	6	5
199	1	5	4	1	6	4
200	1	5	3	2	6	4
201	1	5	2	3	6	4
202	1	5	1	4	6	4
203	1	5	6	5	6	4
204	1	5	5	6	6	4
205	2	5	4	1	6	3
206	2	5	3	2	6	3
207	2	5	2	3	6	3
208	2	5	1	4	6	3
209	2	5	6	5	6	3
210	2	5	5	6	6	3
211	3	5	4	1	6	2
212	3	5	3	2	6	2
213	3	5	2	3	6	2
214	3	5	1	4	6	2
215	3	5	6	5	6	2
216	3	5	5	6	6	2

CONTACTS

SIGNAL AND POWER CRIMP CONTACTS SIZES 22, 20HD, 16, 12 & 5

Contact size	AWG	Cross section (mm^2)	Wire outside dia mm (inch)	Striping length mm (inch)	PIN	SOCKET	Crimping tool	Positionner	SEL	*Ins/Ext tool*
22	22 24 26	0.38 0.21 0.14	1.4 (0.055)	3.5 (0.138)	**616200** (M39029/ 11-144)	**616300** (M39029/ 12-148)	**282281** (M22520/ 2-01)	**282970** (M22520/ 2-23)	4 3 3	***282885*** *(M81969/ 1-01*
22 reduced crimp barrel	28 30	0.093 0.055	1.2 (0.047)	3.5	**616201**	**616301**			5 4	
20HD	20 22 24	0.60 0.38 0.21	1.8 (0.071)	4.0 (0.157)	**616210** (M39029/ 11-145)	**616310** (M39029/ 12-149)		**282971** (M22520/ 2-08)	7 6 5	***282886*** *(M81969/ 1-02)*
20HD reduced crimp barrel	26 28 30	0.14 0.093 0.055	1.25 (0.049)	4.0 (0.157)	**616211**	**616311**			6 5 4	
16	16 18 20	1.34 0.93 0.60	2.6 (0.236)	6.0 (0.236)	**616230** (M39029/ 11-146)	**616330** (M39029/ 12-150)	**282291** (M22520/1- 01)	**282972** (M22520/ 1-02)	6 5 4	***282546*** *(M81969/ 1-03)*
16 reduced crimp barrel	20 22 24	0.60 0.38 0.21	1.80 (0.071)	6.0 (0.236)	**616231**	**616331**			5 4	
12	12 14 16	3.18 1.91 1.34	3.4 (0.134)	6.0 (0.236)	**616240** (M39029/ 11-147)	**616340** (M39029/ 11-151)		**282579** (M22520/ 1-11)	8 7 6	***282547*** *(M81969/ 28-02)*
For cavity 5	12 14	3.18 1.91	3.4 (0.134)	8.0 (0.315)	**616261**	**616361**	**282296** (DANIELS M300BT) [1]		1 1	***282946*** *(M81969/ 28-01)*
	10 8	5.0 9.0	5.7 (0.234)		**616266**	**616366**		**282557**	5 8	

THERMOCOUPLE CONTACTS SIZES 22 & 20HD MADE OF CHROMEL

Contact size	AWG	Cross section (mm^2)	Wire outside dia mm (inch)	Striping length mm (inch)	PIN	SOCKET	Crimping tool	Positionner	SEL	*Ins/Ext tool*
22	22 24 26	0.38 0.21 0.14	1.4 (0.055)	3.5 (0.138)	**620280**	**620380**	**282281** (M22520/ 2-01)	**282970** (M22520/ 2-23)	4 3 3	***282885*** *(M81969/ 1-01)*
20HD	20 22 24	0.60 0.38 0.21	1.8 (0.071)	4.0 (0.157)	**620290**	**620390**		**282971** (M22520/ 2-08)	7 6 5	**282886** (M81969/ 1-02)

THERMOCOUPLE CONTACTS SIZES 22 & 20HD MADE OF ALUMEL

Contact size	AWG	Cross section (mm^2)	Wire outside dia mm (inch)	Striping length mm (inch)	PIN	SOCKET	Crimping tool	Positionner	SEL	*Ins/Ext tool*
22	22 24 26	0.38 0.21 0.14	1.4 (0.055)	3.5 (0.138)	**620281**	**620381**	**282281** (M22520/ 2-01)	**282970** (M22520/ 2-23)	4 3 3	***282885*** *(M81969/ 1-01)*
20HD	20 22 24	0.60 0.38 0.21	1.8 (0.071)	4.0 (0.157)	**620291**	**620391**		**282971** (M22520/ 2-08)	7 6 5	**282886** (M81969/ 1-02)

NOTE:
(1) Daniels WA27-309-EP air pressure tool with crimp setting 5 can also be used. Crimp setting 5 is not adjustable and must be set by the factory.

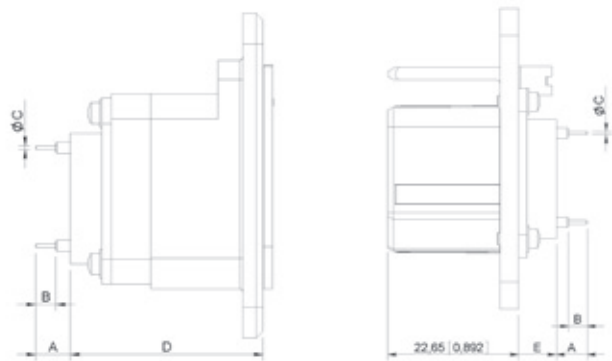
FIBER OPTIC TERMINI SIZES 16 & 12

Fiber optic contacts are called Termini. Fiber optic termini are shown in the table below. Tooling used to connect the fiber optic cable to the termini is available. For more information, contact your nearest Radiall local representative.

Contact size	Version	Cable dia. mm (inch)	Fiber size	Pin	Socket	*Ins/Ext tool*
16	Ceramic	1.5 (0.059)	50/125	**F724005000**	**F724104000**	*Ins. 282929 Ext. 282892*
			100/140	**F724002000**	**F724101000**	
	Metal	1.8 (0.071)	HCS200	**F724041000**	**F724140000**	
			HCS400	**F724045000**	**F724144000**	
12		2.5 (0.098)	HCS200/280	**F724241200**	**F724341200**	*Ext. 282945*

SIZES 22 & 20HD PC TAIL CONTACTS

Contact size	Contact arrangement	Pin	Socket	Ext. Tool	Dimensions mm (inch)				
					A	B	C	D	E
22	106	/	**616379**	282890	6.1/5.3 (0.240/0.209)	6.5 (0.256)	0.6 (0.023)	25.25/25.75 (0.994/1.013)	1.55/1.75 (0.061/0.069)
			616303		14.4/13.6 (0.567/0.535)	9.4 (0.370)			
		616206*	**616306***		5.9/6.7 (0.232/0.263)	3.8 (0.149)			
	36C7 for pin contacts		/		0.82/0.10 (0.032/0.004)			/	7.85/7.44 (0.293/0.309)
	36C7 for socket contacts	/	**616306**		4/3.3 (0.157/0.130)			28.50/28.15 (1.122/1.108)	/
		/	**616303**		11.72/11 (0.461/0.433)	9.4 (0.370)			
20HD	40-45-57-32C2-32C4-40C1	**616216***	/	282891	6.6/7.6 (0.259/0.299)	/	0.8 (0.031)	31.25/31.75 (1.23/1.25)	7.45/7.75 (0.293/0.305)
	67-33C4				6.3/7.3 (0.248/0.287)				
	40-45-57-32C2-32C4-40C1	**616223**	**616323***		3.5/4.3 (0.138/0.169)	3.2 (0.126)	0.6 (0.023)		
	67-33C4				3.2/4 (0.126/0.157)				

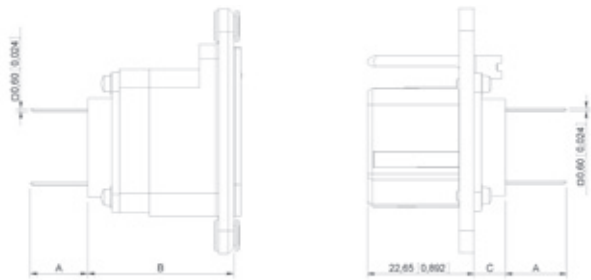


NOTE: * Connectors delivered in the "Y" termination style will be fitted with contacts marked by "*" (see above table). If you want to used an other kind of pc tail contact,use termination style "x" when ordering the connector and order contacts separately.

CONTACTS

SIZES 22 & 20HD WIRE WRAP CONTACTS

Contact size	AWG	Contact arrangement	Pin	Socket	Ins. tool	Dimensions A	Dimensions B	Dimensions C
22	26 28 30	106	**610203** (2 wrap levels)	**610303** (2 wrap levels)	**282527**	10/11 (0.393/0.433)	25.25/25.75 (0.994/1.013)	1.55/1.75 (0.061/0.069)
			610204 (3 wrap levels)	**610304** (3 wrap levels)		12.5/13.5 (0.492/0.531)		
		40-45-57-32C2-32C4-40C1	**610214** (2 wrap levels)	**610314** (2 wrap levels)		10.3/11.3 (0.405/0.445)	31.25/31.75 (1.203/1.250)	7.45/7.75 (0.293/0.305)
	26 28 30	67-33C4				9.85/10.95 (0.387/0.431)		



COAXIAL CRIMP CONTACTS SIZE 1 (design as per MS3168-3169 specifications)

Contact size	Contact arrangement	Cable [1]	Pin	Socket	Center contact: Crimping tool	Center contact: Positioner	Center contact: SEL.	Outer body: Crimping tool	Outer body: Die	Outer body: Hex
1	MC2	UT 141 RG 402	**616005**	/	Solder contact					
		RG 58 RG 141 KX 15	**616006 right angle**	/	Solder contact			282293 (M22520/5-01)	282246 (M22520/5-05)	A
		RG 213 KX 4	/	**616102001**	282291 (M22520/1-01)	282997 (M22520/1-13)	8		282247 (M22520/5-61)	A
		RG 214	/	**616103001**						
		RG 225	**616003**	/						
		RG 142	**616007 right angle**	/	Solder contact				282246 (M22520/5-05)	A
		RG 142 RG 223	/	**616107001**	282291 (22520/1-01)	282997 (M22520/1-13)	7			
		RG 174 KX 22	/	**616100**	Solder contact					
		RD 316	**616004 right angle**	/	Solder contact					B
		/	**616009**	/	SMA Termination					

Part number	616004 – 616006 - 616007	616009 – 616100 – 616103001 616106 - 616102001	616003 – 616005 616107001
Dielectric withstanding voltage at sea level (V rms)	1000	1500	2500

NOTE:
(1) For other cable, please contact Radiall.

COAXIAL CRIMP CONTACTS SIZE 3

Contact size	Contact arrangement	Cable (1)	Pin	Socket	Center contact			Outer body		
					Crimping tool	Positioner	SEL	Crimping tool	Die	Hex
3	MC3	RG 142 RG 223	616013	/	Solder			282293 (M22520/5-01)	282246 (M22520/5-05)	A
		/	616113		282291 (M22520/1-01)	282997 (M22520/5-05)	7			
		RG 316	616015 Right angle (1)	/	solder					B
		UT 141 RG 402	616014	/	solder					
		RG 214 RG 225	/	616111	282291 (M22520/1-01)	282997 (M22520/5-05)	8	282293 (M22520/5-01)	282247 (M22520/5-61)	A
		RG 213 KX 4	/	616112						

COAXIAL CRIMP CONTACTS SIZE 5 (design as per MS3172 specifications)

The following contacts have to be fitted with a sealing boot when used in DSX E connectors (see page 6-29). Coaxial cavities without any contact can be fitted with sealing plugs when used in DSX E connectors.

Contact size	Contact arrangement	Cable (1)	Pin (3)-(4)	Socket (3)-(4)	Center contact			Outer body		
					Crimping tool	Positioner	SEL	Crimping tool	Die	Hex
5	32C2 32T2 33C4 33T4 36C7 36T7 40C1 40T1	RG 58 KX 15	616120	616020	282281 (M22520/2-01)	282974	6	282293 (M22520/5-01)	282246 (M22520/5-05)	A
		RG 141	616120	616020			8			
		RG 142 RG 223 KX 23	616121	616021			8			
		RG 179 RG 188 RG 174 RG316 KX 22	616122	616022			7			B
		RG 179 RG 187	/	616022002		282550 DANIELS K345				
		RG 196 RG 178 KX 21	616123	616023		282974	6			
		RG 195 RG 180	616124	616024						
		RG 316 DS	616163	616026			7			
		UT .085	616125	/	solder					
		UT .141	616128	616028						

NOTES:
(1) For other cable, please contact Radiall.
(2) Dielectric withstanding voltage at sea level: 1500 V rms. Except 1000 V rms for 616015.
(3) Dielectric withstanding voltage at sea level: 750 V rms.
(4) Extraction tool: 282946 (M81969/28-01).

CONTACTS

COAXIAL CRIMP CONTACTS SIZE 7

Contact size	Contact arrangement	Cable (1)	Pin (2)-(3)	Socket (2)-(3)	Center contact			Outer body		
					Crimping tool	Positioner	SEL	Crimping tool	Die	Hex
7	MC3	RG 58 RG 141 KX 15	**610120**	/	solder			282293 (M22520/5-01)	282246 (M22520/5-05)	A
		RG 174 RG 316 KX 22 RG 188	**610126**	/						B
		RG 58 KX 15	/	**616030**	282281 (M22520/2-01	282550 (DANIELS K345)	6			A
		RG 141	/	**616030**			8			A
		RG 142 RG 223 KX 23	/	**616031**			8			A
		RG 174 RG 316 KX 22	/	**616032**			7			B

COAXIAL CRIMP CONTACTS SIZE 9

Add **001** at the end of each part number pin or socket to order environmental size 9 coax contacts. Coaxial cavities without any contact can be fitted with sealing plugs when used in DSX E connectors.

Contact size	Contact arrangement	Cable (1)	Pin (2)-(3)	Socket (2)-(3)	Center contact			Outer body		
					Crimping tool	Positioner	SEL	Crimping tool	Die	Hex
9	C8 T8 32C4 32T4	RG 58 KX 15	**616140**	**616040**	282281 (M22520/2-01)	282974	6	282293 (M22520/5-01)	282246 (M22520/5-05)	A
		RG 141					8			
		RG 142 RG 223 KX 23	**616141**	**616041**			8			
		RG 174 RG 179 RG 188 RG 316 KX 22	**616142**	**616042**			7			B
		RG 178 RG196 KX 21	**616143**	**616043**			6			
		RG 180 RG 195	**616144**	**616044**			6			

COAXIAL CRIMP CONTACTS SIZE 15

Contact size	Contact arrangement	Cable (1)	Pin (2)-(3)	Socket (2)-(3)	Center contact			Outer body		
					Crimping tool	Positioner	SEL	Crimping tool	Die	Hex
15	D8 26 67 32C4 32T4 33C4 33T4	RG 316 RG 179	**616154**	**618050**	282281 (M22520/2-01)	282974	2	282293 (M22520/5-01)	282246 (M22520/5-05)	/
		KX 22 DS	**616150**							
		KX 21 DS	**616151**	**618053**						
		RG 178 KX 21	**616153**	**618054**						

NOTES:

(1) For other cable, please contact Radiall. - (2) Dielectric withstanding voltage at sea level: 750 V rms.
(3) Extraction tool: 282946 (M81969/28-01). - (4) Dielectric withstanding voltage at sea level: 350 V rms.

CONCENTRIC TWINAX CRIMP CONTACTS SIZE 5 (design as per 17B9E4005 specifications)

Contact size	Contact arrangement	Cable	Pin	Socket
The following contacts have to be installed in the **non environmental** inserts.				
5	32C3 32T2 40C1 40T1 36C7 36T7 33C4 33T4	MIL-C-17/176-00002	**616195001**	**616095001**
		PAN 6421	**616195005**	**616095005**
The following contacts have to be installed in the **environmental** inserts				
5	32C3 32T2 40C1 40T1 33C4 33T4	MIL-C-17/176-00002	**616195009**	**616095009**
	36C7 36T7		**616195012**	/

CONCENTRIC TWINAX CRIMP CONTACTS SIZE 9 (design as per 17B9E4005 specifications)

Contact size	Contact arrangement	Cable	Pin	Socket
The following contacts have to be installed in the **non environmental** inserts.				
9	C8 T8 32C4 32T4	MIL-C-17/176-00002	**616196003**	**616096003**
The following contacts have to be installed in the **environmental** inserts				
9	C8 T8	MIL-C-17/176-00002	/	**616096006**
	32C4 32T4		**616196004**	**616096004**

TRIAX CRIMP CONTACTS SIZE 5

Contact size	Contact arrangement	Cable	Pin	Socket
The following contacts have to be installed in the **non environmental** inserts.				
5	33C4 33T4 32C2 32T2 40C1 40T1 36C7 36T7	RGX 179	**616195004**	**616095004**
		ST5M 1323-1	**616195007**	**616095007**
		HS4863-1 HS4863-2	**616195000**	**616095000**
The following contacts have to be installed in the **environmental** inserts				
5	36C7 36T7	RGX 179	/	**616095010**

TRIAX CRIMP CONTACTS SIZE 9

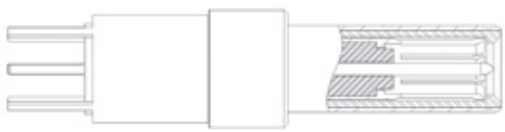
Contact size	Contact arrangement	Cable	Pin	Socket
The following contacts have to be installed in the **non environmental** inserts.				
9	C8 T8 32C4 32T4	RGX 179	**616196001**	**616096001**
The following contacts have to be installed in the **environmental** inserts				
9	36C4 36T4	RGX 179	/	**616096002**

CONTACTS

TRIAX CONTACTS WITH PC TAIL SIZE 5

The contacts shown in the table below are **rear release rear removable** contacts.

Contact type	Part number	Contact drawing	Rear extension from the insert mm (inch)
Pin	**616195003**		32C2, 32T2, 33C4,33T4 40C1, & 40T1 = 3.2/4.0 (0.125/0.158) 36C7 & 36T7 = 5.40/6.10 (0.212/0.240)
	616195008		

Contact type	Part number	Contact drawing	Rear extension from the insert mm (inch)
Pin	**616196005**		C8 & T8 = 1.30/2.15 (0.051/0.085) 32C4 & 32T4 = 6.45/7.30 (0.253/0.288)
	616196007		C8 & T8 = 0 32C4 & 32T4 = 3.70/4.35 (0.145/0.172)

ACCESSORIES

SEALING PLUGS AND FILLER PLUGS

Filler plugs are used in non environmental connectors and sealing plugs are used in environmental connectors and conform to MS27488.

Contact size	Sealing plugs	Filler plugs
Size 22	**616910**	**620920**
Size 20HD	**616911**	**610941**
Size 16	**616912**	**620922**
Size 12	**616913**	**616923**
Size 5	See notes	**620924, 616923** [1] **or 616917** [2] for pin contact cavity **620925** for socket contact cavity
Size 9	See notes	**616915** [2]

NOTES:
(1) 616923 is made of aluminium and is nickel plated.
(2) 616917 and 616915 are providing interfacial sealing on class T connectors.

SEALING BOOTS

The sealing boots of table 1 are to be used in all inserts with size 5 contact cavities except 36C7 and 36T7 inserts which use the sealing bushing plus one of the sealing sleeves of table 2.

Table 1

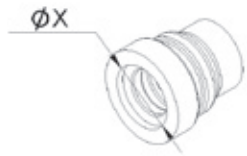
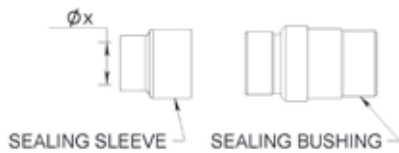
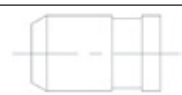
Cable	X dia. mm (inch)	Part number	Drawing
RG58, RG142	4.3 (0.169)	**92505490**	
RG 174	2 (0.079)	**92505470**	
RG 178	1.4 (0.055)	**92505460**	
RG180	3.1 (0.122)	**92505480**	
/	0	**92505450**	

Table 2

Cable	X dia. mm (inch)	Sealing bushing	Sealing sleeve	Part number
RG58, RG141, RG142, RG223, KX15, KX23	4.7 (0.185)	**92505590**	**92505591**	
RG174, RG179, RG187, RG188, RG316, KX22, UT.085	2.15 (0.085)		**92505593**	
RG178, RG196	1.5 (0.059)		**92505594**	
RG180, RG195, UT.141	3.05 (0.120)		**92505592**	
/	0	**616914010** (1)		

DUST CAPS

Conductive dust caps are made of thermoplastic and non conductive ones are made of polyethylene.

	Conductive (black)	Non Conductive (red)	Drawing
Plug	**610804**	**610803**	
Receptacle	**610806**	**610805**	

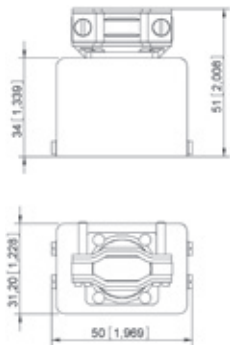
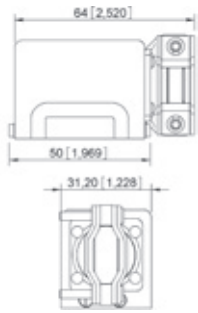
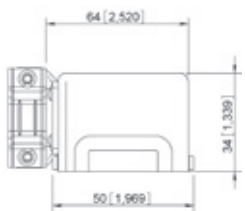
NOTE:
(1) 616914010 is made of PTFE.

ACCESSORIES

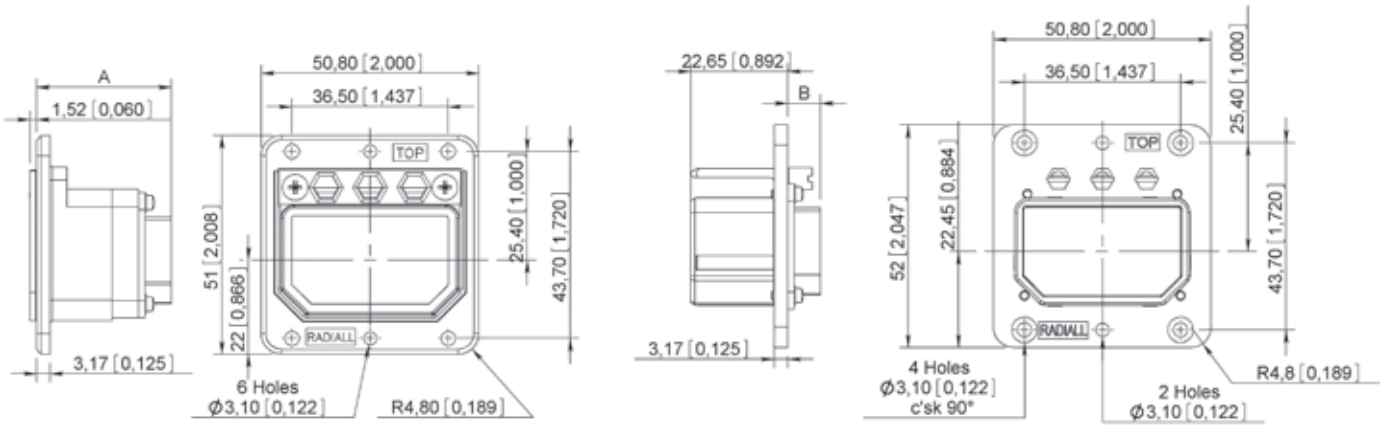
BACKSHELLS

The following backshells are only for use with SAE AS81659 and ARINC 404 shell type B connectors for the following modification codes 02 - 04 - 17 - 19 - 22 - 36 - 61 - 67 and 77.

Backshells cannot be installed on side 4 connectors due to limited screw access.

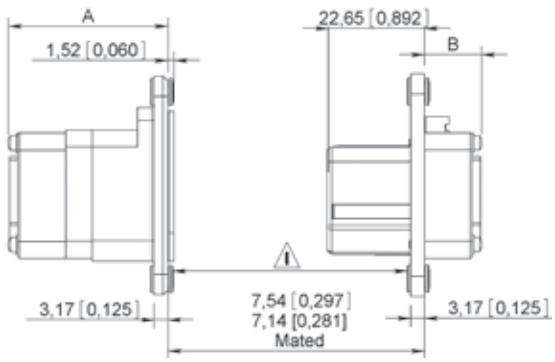
Entry type	Plating	Part number	Drawing
Top entry	Yellow anodized	**610902**	
	Nickel	**610906**	
Right entry	Yellow anodized	**610900**	
	Nickel	**610910**	
Left entry	Yellow anodized	**610901**	
	Nickel	**610911**	

SHELL SIZE 1 NON ENVIRONMENTAL (without grommet seal)



Max dimension mm (inch)	All crimp contact arrangements except 106	Contact arrangement 106	Arrangements with coax contacts size 1 & 3	Contact arrangement 36C7 & 36T7	Arrangements with coax contacts size 5 & 9 except 36C7
A	32 (1.260)	25.8 (1.016)	26.85 (1.057)	28.5 (1.122)	37.42 (1.473)
B	7.9 (0.311)	1.9 (0.075)	3 (0.118)	7.85 (0.309)	13.5 (0.531)

SHELL SIZE 1 ENVIRONMENTAL (with grommet seal)

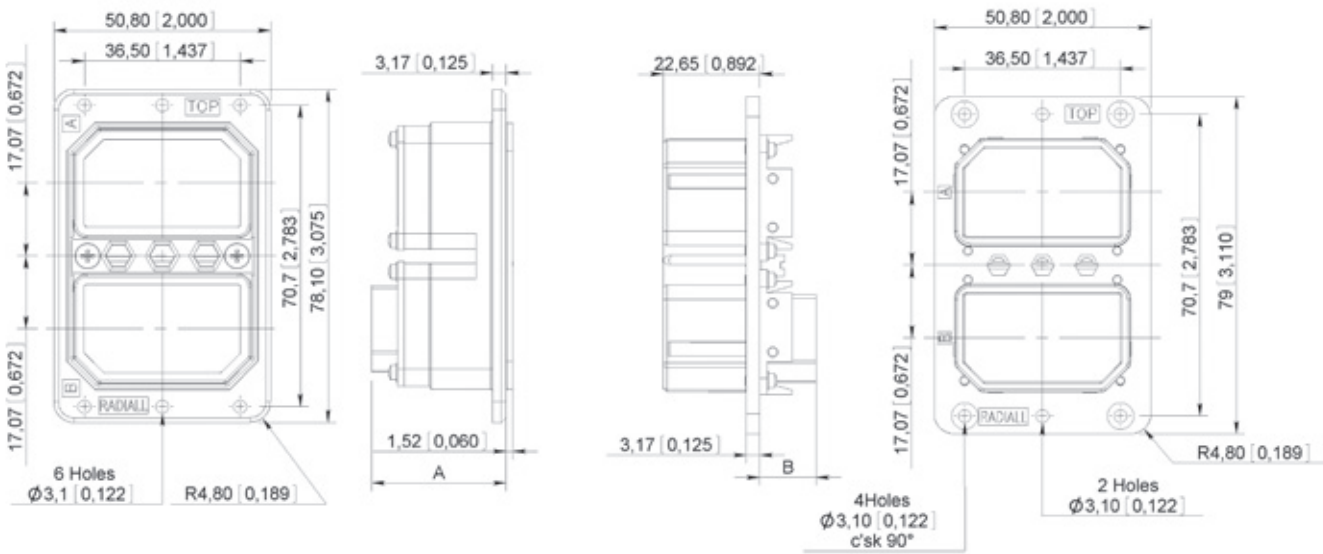


Max dimension mm (inch)	All crimp contact arrangements except MC2 – MC3 - 106	Contact arrangement 106
A	38.5 (1.516)	33.5 (1.319)
B	14.2 (0.559)	9.5 (0.374)

⚠ Important space available is only 4mm careful on the modification code selection.

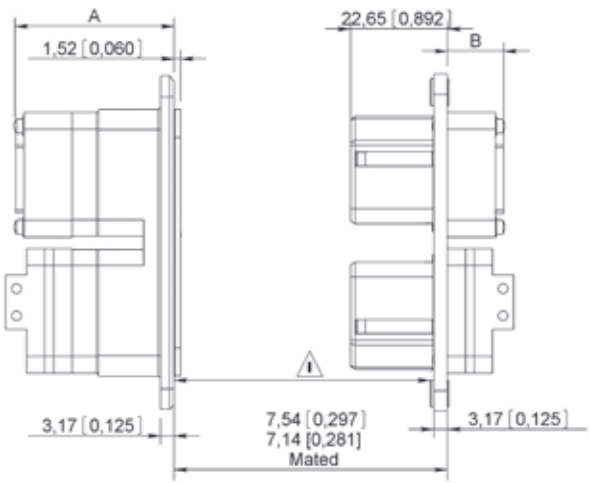
DIMENSIONS

SHELL SIZE 2 NON ENVIRONMENTAL (without grommet seal)



Max dimension mm (inch)	All crimp contact arrangements except 106	Contact arrangement 106	Arrangements with coax contacts size 1 & 3	Contact arrangement 36C7 & 36T7	Arrangements with coax contacts size 5 & 9 except 36C7
A	32 (1.260)	25.8 (1.016)	26.85 (1.057)	28.5 (1.122)	37.42 (1.473)
B	7.9 (0.311)	1.9 (0.075)	3 (0.118)	7.85 (0.309)	13.5 (0.531)

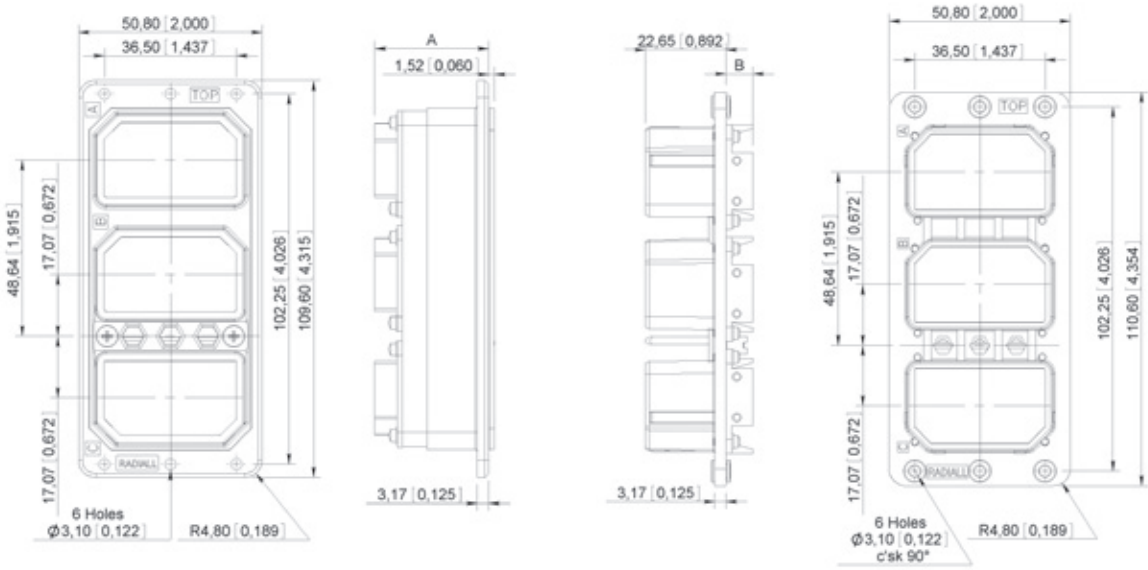
SHELL SIZE 2 ENVIRONMENTAL (with grommet seal)



Max dimension mm (inch)	All crimp contact arrangements except MC2 – MC3 - 106	Contact arrangement 106
A	38.5 (1.516)	33.5 (1.319)
B	14.2 (0.559)	9.5 (0.374)

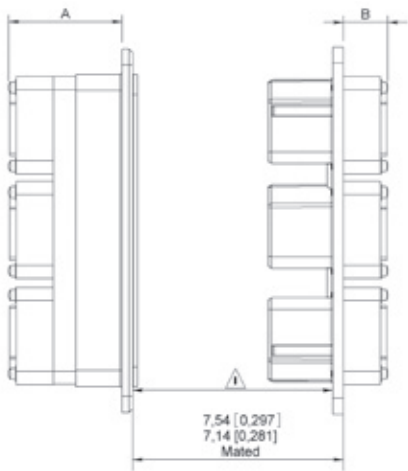
⚠ Important space available is only 4mm careful on the modification code selection.

SHELL SIZE 3 NON ENVIRONMENTAL (without grommet seal)



Max dimension mm (inch)	All crimp contact arrangements except 106	Contact arrangement 106	Arrangements with coax contacts size 1 & 3	Contact arrangement 36C7 & 36T7	Arrangements with coax contacts size 5 & 9 except 36C7
A	32 (1.260)	25.8 (1.016)	26.85 (1.057)	28.5 (1.122)	37.42 (1.473)
B	7.9 (0.311)	1.9 (0.075)	3 (0.118)	7.85 (0.309)	13.5 (0.531)

SHELL SIZE 3 ENVIRONMENTAL (with grommet seal)

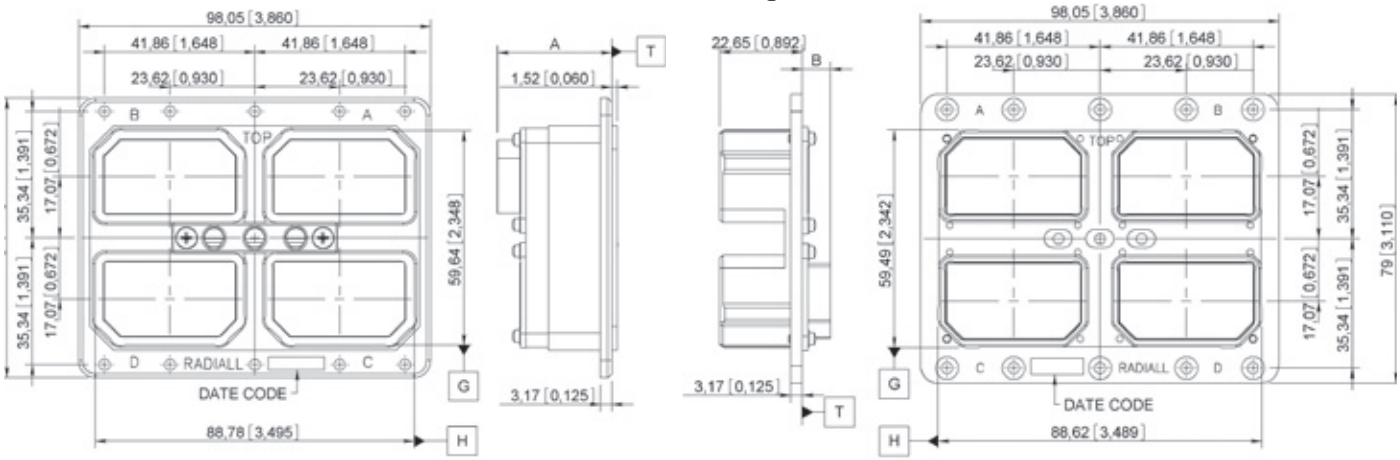


Max dimension mm (inch)	All crimp contact arrangements except MC2 – MC3 - 106	Contact arrangement 106
A	38.5 (1.516)	33.5 (1.319)
B	14.2 (0.559)	9.5 (0.374)

⚠ Important space available is only 4mm careful on the modification code selection.

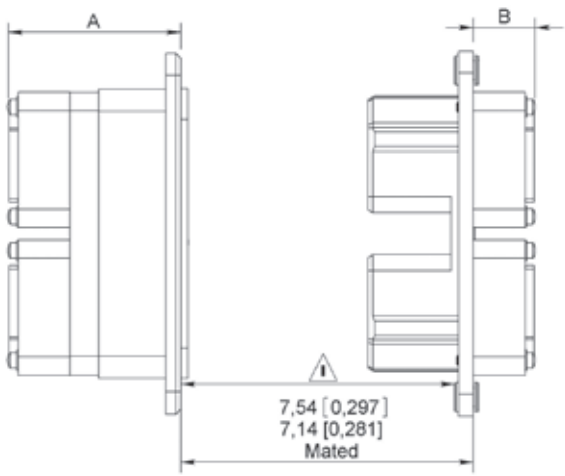
DIMENSIONS

SHELL SIZE 4 NON ENVIRONMENTAL (without grommet seal)



Max dimension mm (inch)	All crimp contact arrangements except 106	Contact arrangement 106	Arrangements with coax contacts size 1 & 3	Contact arrangement 36C7 & 36T7	Arrangements with coax contacts size 5 & 9 except 36C7
A	32 (1.260)	25.8 (1.016)	26.85 (1.057)	28.5 (1.122)	37.42 (1.473)
B	7.9 (0.311)	1.9 (0.075)	3 (0.118)	7.85 (0.309)	13.5 (0.531)

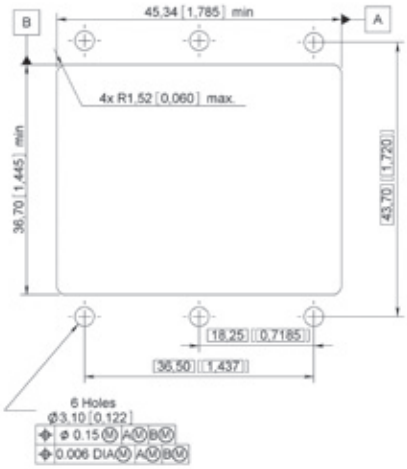
SHELL SIZE 4 ENVIRONMENTAL (with grommet seal)



Max dimension mm (inch)	All crimp contact arrangements except MC2 – MC3 - 106	Contact arrangement 106
A	38.5 (1.516)	33.5 (1.319)
B	14.2 (0.559)	9.5 (0.374)

⚠ Important space available is only 4mm careful on the modification code selection.

SHELL SIZE 1



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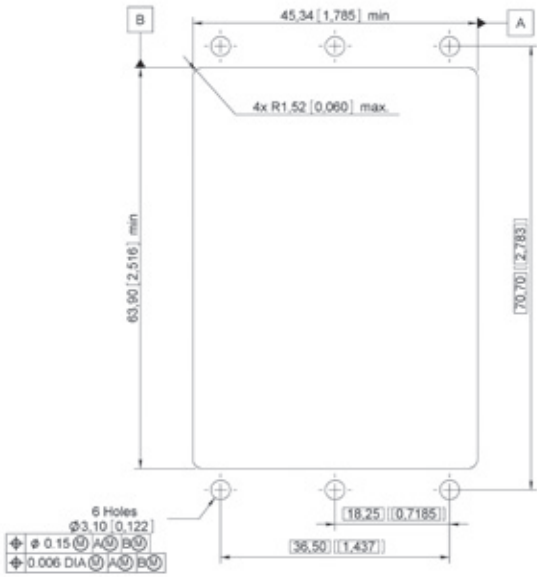

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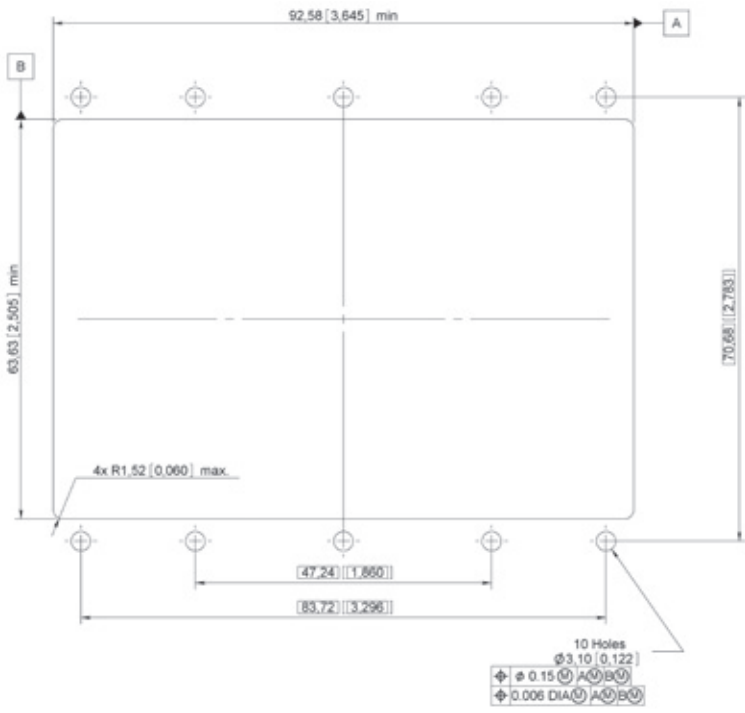

CROSS REFERENCE

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DSXT3RS67PS106SS67P00	M8165963A20079
DSXT3RS67PS67PS106S00	M8165963A20075
DSXT3RS67PS67PS67P00	M8165963A20037
DSXT3RS67PS67PXC8P00	M8165963A20073
DSXT3RXC8PXC8PS106S00	M8165963A20067
DSXT3RXC8PXC8PXC8P00	M8165963A20065
DSXT4RS106SS106SS106SS106S00	M8165964A20048
DSXT4RS106SS106SS67PS67P00	M8165964A20101
DSXT4RS106SS67PS106SSC8P00	M8165964A20097
DSXT4RS106SS67PSC8PSC8P00	M8165964A20099
DSXT4RS106SSC8PS106SS106S00	M8165964A20095
DSXT4RS26PS26PS26PS26P00	M8165964A20007
DSXT4RS40PS40PS40PS40P00	M8165964A20015
DSXT4RS45PS45PS45PS45P00	M8165964A20023
DSXT4RS57PS57PS57PS57P00	M8165964A20031
DSXT4RS67PS67PS33C4PS33C4P00	M8165964A20081
DSXT4RSC8PSC8PS67PS67P00	M8165964A20085

HOW TO ORDER DSX-F CONNECTORS

DSX	F	4	R	Y	40	P	Y40P	Y26P	Y45P	00	01

Series

Class
F: Front release front removable contacts, inserts without interfacial seal
K: Front release front removable contacts, inserts with interfacial seal

Shell size
1 : One gang shell
2 : Two gang shell
3 : Three gang shell
4 : Four gang shell

Shell type
R : Receptacle
P : Plug

Termination style
X : Without contacts
V : Wire wrap two levels
W : Wire wrap three levels
Y : PC tail contact

Contact arrangement (1+2)
To be chosen among the following: (4) 26 – 40 – 45 – 57 -67 33C4 -106 – 81C3

Contact type
S : Socket
P : Pin

Gang A

Gang B

Gang C

Gang D

Modification code
See pages from 6-13 to 6-19 for selection

Polarization code (3)
See page 6-20 for selection

For Technical Characteristics please see page 6-7.

NOTES:
(1) For mixed contact arrangements, order coax contacts separately see contacts available on pages 6-24 to 6-26. Coax contacts are rear release rear removable.
(2) For 33C4 and 67 contact arrangements, size 16 contacts cavities are for front release front removable contacts. Size 16 contacts are to be ordered separately.
(3) Without polarization code the connector is delivered with the polarizing system unassembled.
Polarization code 00: the connector is delivered without polarizing system.
Polarization code from 01 to 216: the connector is delivered with polarization hardware assembled as defined by code.
(4) Contact arrangement 26 and 40 available only in class F connector version.

CONTACTS WITH PC TAIL SIZES 22, 20HD & 16

Contacts are delivered installed in the connector.

Contact size	Contact arrangement	Pin	Socket	Ins / Ext tool	Dimensions mm (inch)	
					A	B
22	81C3 -106	/	**620361**	282500	5.95/6.75 (0.234/0.265)	6 +/-0,03 (0.023)
20HD	40-45-67-33C4-57	**616220**	/	282503	4.3/5.1 (0.169/0.200)	
16 [1]	26-67-33C4	**616235**	/	282504		Max. 1 (0.039)
		616235010	/		3.55/4.32 (0.140/0.170)	
		616234	/		10.20/11 (0.400/0.433)	

CONTACTS WITH WIRE WRAP POST SIZES 22 & 20HD

Contacts are delivered installed in the connector. For 67 and 33C4 contact arrangements, front release front removable size 16 contacts are not delivered with the connector. They must be ordered separately and chosen among size 16 PC tail contacts and 616326 size 16 solder cup contact (rear extension from insert: 4.4/5.2 (0.173/0.204).

Contact size	AWG	Contact arrangement	Pin	Socket	Ins / Ext tool	Dimensions A mm (inch)
22	26 28 30	106	/	**620351** (2 wraps levels)	282500	9.45/10.45 (0.372/0.412)
				620352 (3 wrap levels)		12.75/13.75 (0.502/0.541)
20HD	26 28 30	40-45-67-33C4-57	**616222** (2 wraps levels)	/	282503	10/11 (0.394/0.433)
			616224 (3 wrap levels)			13.3/14.3 (0.523/0.563

COAXIAL CRIMP CONTACTS FOR 33C4 CONTACT ARRANGEMENTS SIZE 5

These coaxial contacts are rear release rear removable and designed to be installed in 33C4 and 81C3 contact arrangement class F or K. They must be ordered separately.

Contact size	Contact arrangement	Cable	Pin	Socket	Center contact			Outer body		
					Crimping tool	Positioner	SEL.	Crimping tool	Die	Hex
5	**33C4 81C3**	Microdot 250.39.37	**616126**	/	282281 (M22550/2-01)	282974	6	282293 (M22520/5-01)	282246 (M22520/5-05)	B
		RG 178 KX 21	**616127**	/						

NOTE:
(1) Front release front removable size 16 contacts PC tail termination are installed only for 26 contact arrangement (which is fitted with 616235 contacts). For 67 and 33C4, contact arrangements front release front removable size 16 contacts must be ordered separately.

HOW TO ORDER DSX-DATA BUS CONNECTORS

DSX	E	2	P	B4TP	S67S	00	01

Series

Class
N: Non environmental (without grommet and interfacial seal)
E: Environmental (with grommet and interfacial seal)
T: Connector with interfacial seal on insert with protruding contacts only

Shell size
1 : One gang shell
2 : Two gang shell
3 : Three gang shell
4 : Four gang shell

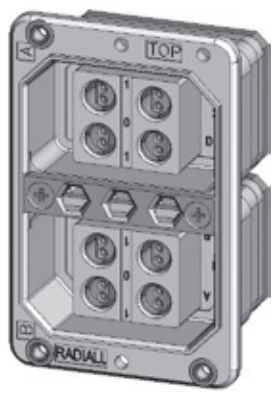
Shell type
R : Receptacle
P : Plug

Gang A BUS contact arrangement (1)
Refer to page 6-43

Gang B contact arrangement
Refer to page 6-43

Modification code
See from page 6-13 to 6-19

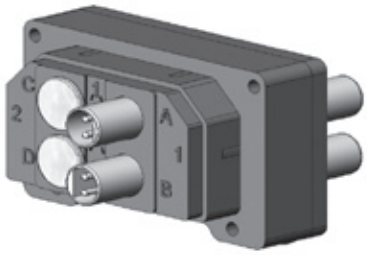
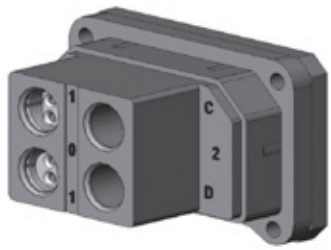
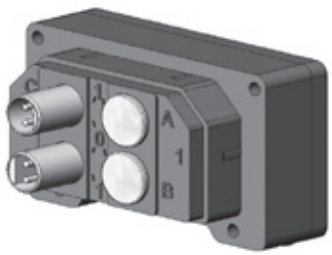
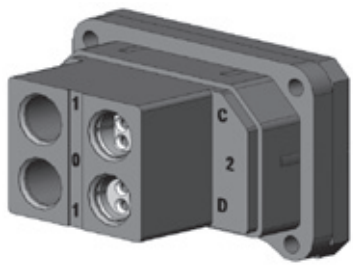
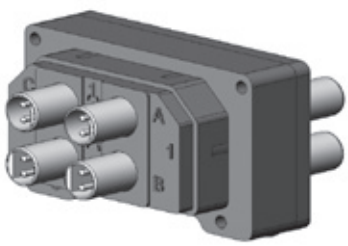
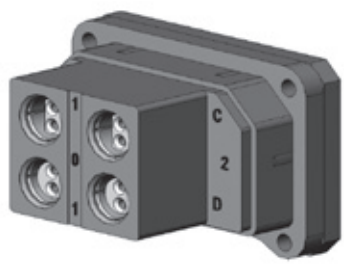
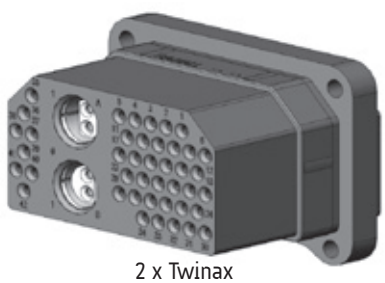
Polarization code
See page 6-20 for selection



For Technical Characteristics please see pages 6-7.
For any additional information ask for the RP2667 DSX Data Bus from Radiall.

NOTES:
(1) Data bus contact arrangements have no interfacial seal and no rear grommet.

PIN INSERT MATING SIDE SHOWN – All inserts DWV 1000 V AC

Insert name	Number of contacts	Insert name	Number of contacts
B2TP1 – H2TP1	 2 x Twinax Location A, B	B2S1	 2 x Twinax Location A, B
B2TP2 – H2TP2	 2 x Twinax Location C, D	B2S2	 2 x Twinax Location C, D
B4TP – H4TP	 4 x Twinax Location A, B, C, D	B4S	 4 x Twinax Location A, B, C, D
S42B2P	2 x Twinax 42 x #20HD Location A, B,	S42B2S	 2 x Twinax 42 x #20HD Location A, B,

DIMENSIONS

B2TP, H2TP, B4TP & H4TP AIRCRAFT CONNECTOR

The aircraft connector is comprised of two sub assemblies.

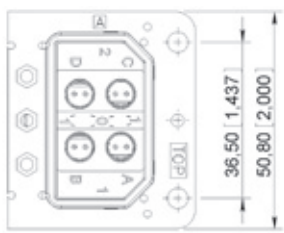
1- A plug shell fitted with an insert incorporating 2 (B2TP or H2TP) or 4 (B4TP or H4TP) twinax pin contacts.
2- One or two connection plugs depending on the number of BUS lines (B2 or B4). If there are two BUS lines (B2TP or H2TP) the two twinax contacts and the connection plug can be installed either in position 1 (B2TP1 or H2TP1) or in position 2 (B2TP2 or H2TP2).

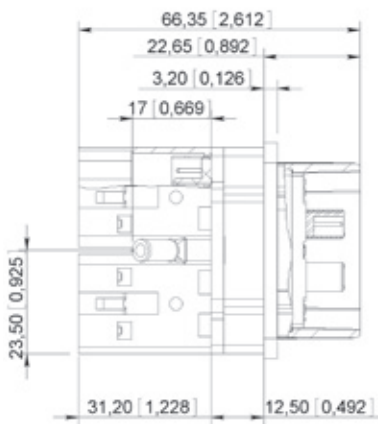
The difference between B2TP1 and H2TP1, B2TP2 and H2TP2, B4TP and H4TP depends on the shielded twisted pairs cable that is used.

For Fileca F2709/12 cable the designation used are B2TP1, B2TP2, B4TP.
Description: differential impedance = 75 ± 5Ω
Shielded twisted pair (each conductor = AWG 20) Outer diameter = 5.35mm (0.206 inch max)

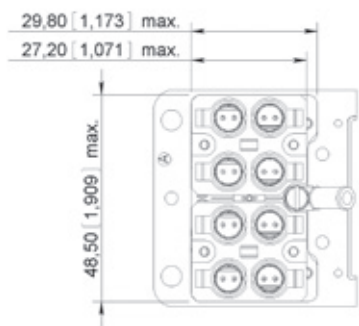
For Fileca F2709/9 cable the designation used are H2TP1, H2TP2, H4TP.
Description: differential impedance = 75 ± 5Ω
Shielded twisted pair (each conductor = AWG 22) Outer diameter = 4.80mm (0.189 inch max)

MATING FACE



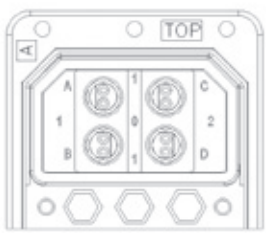


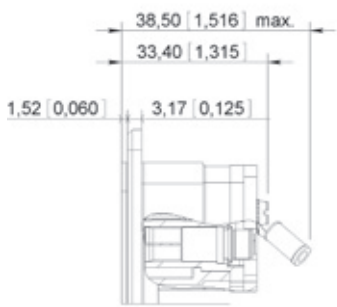
WIRING REAR FACE

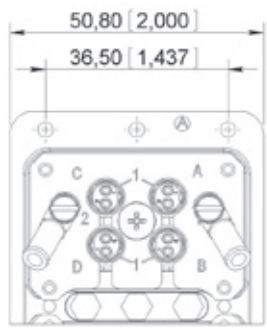


B2TP, H2TP, B4TP & H4TP EQUIPMENT CONNECTOR

The equipment connector is comprised of one receptacle shell fitted with an insert incorporating 2 (B2S) or 4 (B4S) twinax socket contacts.

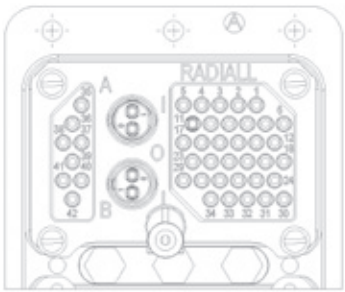


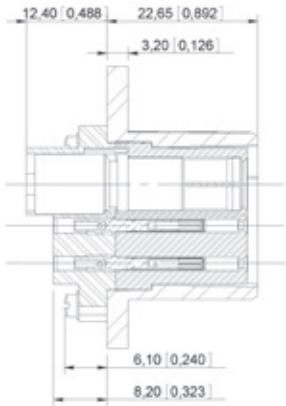


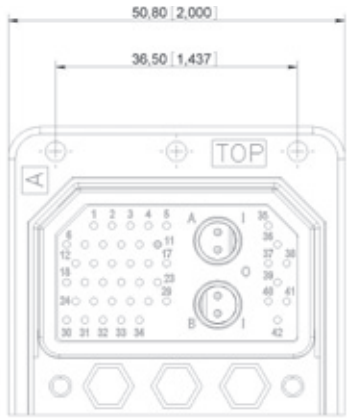


42B2S AIRCRAFT CONNECTOR

The aircraft connector comprises a plug shell fitted with a 42B2S insert.

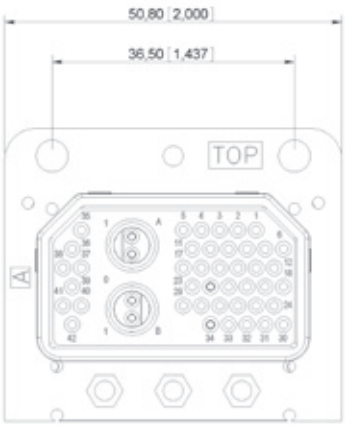


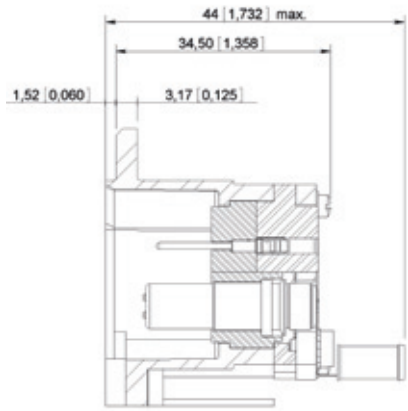




42B2P EQUIPMENT CONNECTOR

The equipment connector comprises a receptacle shell fitted with a 42B2P insert.





CONTACTS

TWINAX

Contact size	Cable	Pin	Socket	Center contact			Outer body	
				Crimping tool	Positioner	SEL	Crimping tool	Die
B2TP B4TP	F2709/12	/	**616090**	282281 (M22520/2-01)	282959	7	282293 (M22520/5-01)	282248 OCETA M1001
H4TP H2TP 42B2S	F2709/9	/	**616091**			8		
B4S B2S	AWG 20 AWG 22 AWG 24	/	**616092**			7 6 5	Not applicable	
42B2P	AWG 20 AWG 22 AWG 24	**616192**	/			7 6 5		

HOW TO ORDER ARINC 404 shell type B CONNECTORS

DSX	4	G	13	S	14S	16S	25S	00	01

Series

Shell size
1 : One gang shell
2 : Two gang shell
3 : Three gang shell
4 : Four gang shell

Shell type
G : Receptacle
H : Plug

Gang A
Contact arrangement
See available contact arrangements on pages 6-48 and 6-49

Termination style (2+3)
X : Without contacts
S : Crimp (1)
Z : Fixed solder cup
K : Wire wrap one levels
V : Wire wrap two levels
W : Wire wrap three levels
Y : PC tail contact
Note 5

Gang B

Gang C

Gang D

Modification code
See from page 6-13 to 6-19 for selection

Polarization code (4)
See page 6-20 for selection

Contact arrangement code table

	00	8	13	26	40	45	57	67	106	32C2	32C4	40C1	C2	C3	C8	D8
Insert for pin contacts	10	12	44	14	16	18	20	22	24	26	40	28	34	36	30	38
Insert for socket contacts	11	13	45	15	17	19	21	23	25	27	41	29	35	37	31	39

NOTES:
(1) If you need to use reduced crimp barrel contacts, use code X and order contacts separately.
(2) For C2, C3 and C8 contact arrangements which include coax contacts, use termination code X and order coax contacts separately.
(3) For mixed layout 32C2, 32C4 and 40C1, the connector is delivered with signal and power contacts but without coax contacts. Order coaxial contacts separately.
(4) Without polarization code: the connector is delivered with polarizing system unassembled.
Polarization code 00: the connector is delivered without polarizing system.
Polarization code from 01 to 216: the connector is delivered with the polarization hardware assembled as defined by code.
(5) For contact arrangement 67 and 32C4 with K, V, W or Y termination styles, size 16 contacts are crimp contacts shipped loose with the connector.

TECHNICAL CHARACTERISTICS

MATERIALS

Description	Material	Plating
Shell	Aluminium alloy	Cadmium yellow chromate*
Insert	Thermosetting resin	/
Metallic insert	Aluminium alloy	Cadmium clear chromate
Rear spacer	Silicone rubber	/
Retention clip	Copper alloy	/
Contact	Copper alloy	Gold over nickel under plate
Insert retention plate	Aluminium alloy	Yellow anodized
Insert retention plate with attaching tabs	Aluminium alloy	Cadmium yellow chromate*
Polarizing posts	Stainless steel	/
Polarizing keys	Zinc alloy	Cadmium yellow chromate*
Polarizing keys retention plate	Aluminium alloy	Yellow anodised*
Screws, washers, clinch-nuts	Corrosion resistant steel	/

* More platings are available, see descriptions in modification codes

ELECTRICAL CHARACTERISTICS

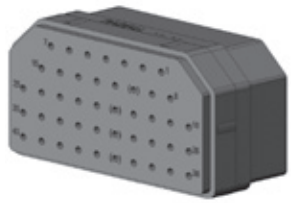
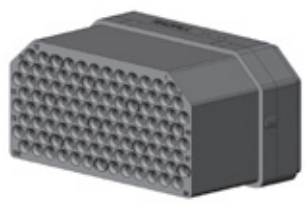
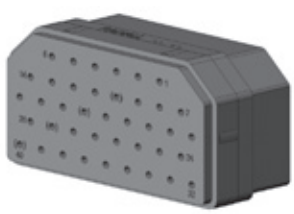
They are the same as those described for SAE AS81659 connectors on page 6-7.

MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

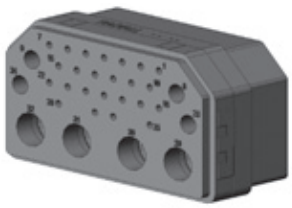
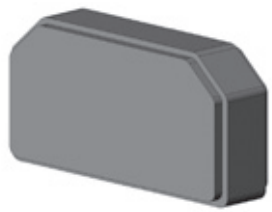
They are the same as those described for SAE AS81659 except that for ARINC 404 connectors no altitude moisture injection test is performed. This test is replaced by a moisture resistance test performed according to method 1002.2 type II of MIL-STD-1344A.

CONTACT ARRANGEMENTS

Pin insert mating side is shown below in the table

Insert name	Number of contacts	DWV	Termination availability	Insert name	Number of contacts	DWV	Termination availability
8	8 x #12	1500V – 60Hz	S- Z	**45**	 45 x #20	1500V – 60Hz	For pin S-Z-Y-K-V-W For socket S-Z-W
13	13 x #16	1800V – 60Hz	S - Z For pin Y	**57**	57 x #20	1500V – 60Hz	For pin S-Z-Y-K-V-W For socket S-Z-W
D8	4 x #16 4 x #12	1500V – 60Hz	S – Z	**67**	64 x #20HD 3 x #16	1000V – 60Hz	For pin S-Z-Y-K-V-W For socket S-Z-W
26	26 x #16	1500V – 60Hz	For pin S-Z-Y-K-V-W For socket S-Z-W	**106**	 106 x #22	1000V – 60Hz	S-Y-V-W
40	 40 x #20	1500V – 60Hz	For pin S-Z-Y-K-V-W For socket S-Z-W	**40C1**	1 x #5 (coax) 39 x #20	1500V – 60Hz	For pin S-Z-Y-K-V-W For socket S-Z-W

CONTACT ARRANGEMENTS

Insert name	Number of contacts	DWV	Termination availability	Insert name	Number of contacts	DWV	Termination availability
32C2	 2 x #5 (coax) 30 x #20	1500V – 60Hz 1000V for coax cavity	For pin S-Z-Y-K-V-W For socket S-Z-W	**C3**	 2 x #7 (coax) 1 x #3	Metallic	S
32C4	 4 x #9 (coax) 4 x #16 24 x #20	1500V – 60Hz 1000V for coax cavity	For pin S-Z-Y-K-V-W For socket S-Z-W	**C8**	 8 x #9 (coax)	1000V – 60Hz	S
C2	 2 x #1 (coax)	Metallic	S	**00**			Dummy insert

CONTACTS

SIGNAL AND POWER CRIMP CONTACTS SIZES 22, 20HD,16 & 12

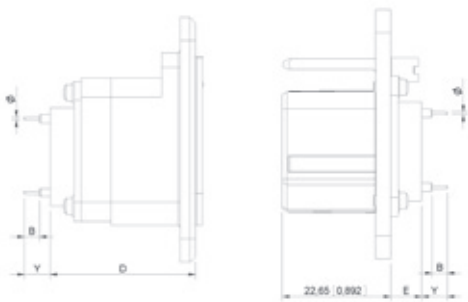
Contact size	Wire				Pin Radiall P/N MIL P/N	Socket Radiall P/N MIL P/N	Crimping tool	Positioner	SEL.	Ins/Ext Tool
	AWG	Cross section (mm)	Wire outside dia. (inch)	Striping length mm (inch)						
22	22 24 26	0.38 0.21 0.14	1.4 (0.055)	3.05 (0.138)	**616200** (MIL 39029/11-144)	**616300** (MIL 39029/12-148)	282281 (M22520/2-23)	282970 (M22520/2-23)	4 3 3	282885 (M81969/1-01)
22 reduced crimp barrel	28 30	0.093 0.055	1.4 (0.055)	3.05 (0.138)	**616201**	**616301**			5 4	
20HD	20 22 24	0.60 0.38 0.21	1.8 (0.071)	4.0 (0.157)	**616210** (MIL 39029/11-145)	**616310** (MIL 39029/12-149)		282971 (M22520/2-08)	7 6 5	282886 (M81969/1-02)
20HD reduced crimp barrel	26 28 30	0.14 0.093 0.055	1.8 (0.071)	4.0 (0.157)	**616211**	**616311**			6 5 4	
20	20 22 24	0.60 0.38 0.21	1.8 (0.071)	4.0 (0.157)	**610220**	**610325**	282971 (M22520/1-01)	282972 (M22520/1-02)	4 3 3	282943
20 reduced crimp barrel	26 28 30	0.14 0.093 0.055	1.8 (0.071)	4.0 (0.157)	**610221**	**610321**			3 3 2	
16	16 18 20	1.34 0.93 0.60	2.6 (0.102)	6.0 (0.236)	**616230** (MIL 39029/11-146)	**616330** (MIL 39029/12-150)			6 5 4	282546 (M81969/1-03)
16 reduced crimp barrel	20 22 24	0.60 0.38 0.21	2.6 (0.102)	6.0 (0.236)	**616231**	**616331**			5 5 4	
12	12 14 16	3.18 1.91 1.34	3.4 (0.134)	6.0 (0.236)	**616240** (MIL 39029/11-174)	**616340** (MIL 39029/12-151)		282579 (M22520/1-11)	8 7 6	282547 (M81969/28-02)

PC TAIL CONTACTS SIZES 22, 20HD & 20 PC TAIL CONTACTS

PC tail contacts are delivered installed in the connector. Connectors with PC tail contacts have no wire separator. For 32C4 and 67 contact arrangements, size 16 contacts are delivered in crimp termination and are shipped loose with the connector.

Contact size	Contact arrangement	Pin	Socket	Extraction tool	Dimensions mm (inch)				
					Y	B	Dia	D	E
22	106	**616206***	**616379**	282890	6.1/5.3 (0.240/0.209)	6.5 (0.256)	0.6 (0.023)	25.25/25.75 (0.0994/1.013)	1.55/1.75 (0.061/0.069)
			616303		14.4/13.6 (0.567/0.535)	9.4 (0.370)			
			616306*		5.9/6.7 (0.232/0.263)	3.8 (0.149)			
20HD	67	**610216***	/	282891	5.75/6.65 (0.226/0.262)	/	0.08 (0.031)	29.20/29.80 (1.149/1.173)	5.40/5.80 (0.212/0.228)
	32C4				6.35/7.55 (0.250/0.297)			29.70/30.30 (1.169/1.192)	
	67	**610219**			3.35/4.25 (0.131/0.168)		0.75 (0.029)	29.20/29.80 (1.149/1.173)	
	32C4				3.95/5.15 (0.155/0.203)			29.70/30.30 (1.169/1.192)	
20	40-45-57 32C2-40C1	**610226***	/	282943	6.10/7.40 (0.240/0.291)	/	0.8 (0.031)	28.55/29.15 (1.124/1.147)	5.40/5.80 (0.212/0.228)

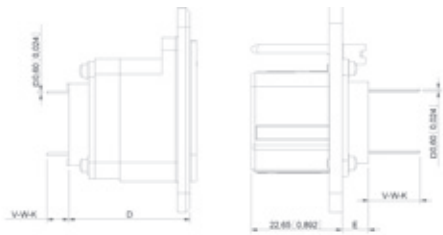
Connectors delivered in the "Y" termination style will be fitted with contacts marked by "*". If you want to use another kind of PC tail contact use termination "x" when ordering the connector and order contacts separately.



CONTACTS WITH WIRE WRAP POST SIZES 22, 20HD & 20

Wire wrap contacts are delivered installed in the connector. Connectors with wire wrap contacts have no wire separator. For 32C4 and 67 contact arrangements, size 16 contacts are delivered in crimp termination and are shipped loose with the connector.

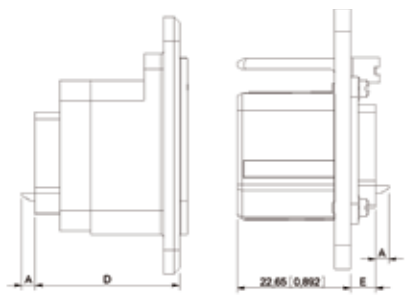
Contact size	AWG	Contact arrange-ment	Pin	Socket	Extraction tool	Dimensions mm (inch)				
						D	E	K (1 wrap)	V (2 wrap)	W (3 wrap)
22	26 28 30	106	**610203** (2 wrap levels) **610204** (3 wrap levels)	**610303** (2 wrap levels) **610304** (3 wrap levels)	282948	25.25/25.75 (0.0994/1.013)	1.55/1.75 (0.061/0.069)		10/11 (0.394/0.433)	12.50/13.50 (0.492/0.531)
20HD	26 28 30	67	**610217** (1 wrap level) **610215** (2 wrap levels) **610214** (3 wrap levels)	**610314** (3 wrap levels)		28.8/29.2 (1.133/1.150)	5.40/5.80 (0.212/0.228)	6.35/7.35 (0.250/0.289)	9.35/10.35 (0.368/0.407)	11.85/12.85 (0.466/0.506)
		32C4				29.70/30.30 (1.169/1.192)	5.40/5.80 (0.212/0.228)	6.95/8.25 (0.273/0.325)	9.95/11.25 (0.391/0.443)	12.45/13.75 (0.490/0.541)
20	26 28 30	40-45-57 32C2-40C1	**610228** (1 wrap level) **610225** (2 wrap levels) **610224** (3 wrap levels)	**610324** (3 wrap levels)	282949	28.55/29.15 (1.147/1.124)	5.40/5.80 (0.212/0.228)	6.95/8.25 (0.273/0.325)	9.95/11.25 (0.391/0.443)	12.60/13.8 (0.496/0.543)



SOLDER CUP CONTACTS SIZES 20HD, 20, 16 & 12

Solder cup contacts are fixed contacts delivered installed in the connector. Connectors with solder cup contacts have no wire separator.

Contact size	Contact arrangement	Stripping length	Dimensions mm (inch)		
			A	D	E
20HD	67	2.5 (0.098)	3 (0.118)	29.20/29.80 (1.149/1.173)	5.40/5.80 (0.212/0.228)
	32C4			29.70/30.30 (1.169/1.192)	
20	40-45-57-32C2-40C1			28.55/29.15 (1.124/1.147)	
16	26-67	5 (0.197)	4.5 (0.177)	29.20/29.80 (1.149/1.173)	
	32C4			29.70/30.30 (1.169/1.192)	
12	8-D8			28.55/29.15 (1.124/1.147)	



THERMOCOUPLE CONTACTS SIZES 22 & 20HD refer to page 6-22

FIBER OPTIC TERMINI SIZES 16 & 12 refer to page 6-23

CONTACTS

COAXIAL CRIMP CONTACTS SIZE 1

Contact size	Contact Arrange-ment	Cable	Pin	Socket	Center contact			Outer body		
					Crimping tool	Positioner	SEL	Crimping tool	Die	Hex
1	C2	UT 141 RG 402	**616005**	/	Solder contact					
		RG 58 RG 141 KX 15	**616005** Right angle	/	Solder contact			282293 (M22520/5-01)	282246 (M22520/5-05)	A
		RG 214 RG 225	/	**610108**					282247 (M22520/5-61)	A
		SMA	**616009**	/	SMA termination					

For other cables, please consult Radiall.

COAXIAL CRIMP CONTACTS SIZE 3

Contact size	Contact Arrange-ment	Cable	Pin	Socket	Center contact			Outer body		
					Crimping tool	Positioner	SEL	Crimping tool	Die	Hex
3	C3	RG 214 RG 225	/	**610118**	Solder			282293 (M22520/5-01)	282247 (M22520/5-61)	A
		UT 141 RG 402	**616014**	/	Solder contact					

For other cables, please consult Radiall.

Dielectric withstanding voltage at sea level: 1500 V rms

COAXIAL CRIMP CONTACTS SIZE 5

Contact size	Contact Arrange-ment	Cable	Pin	Socket	Center contact			Outer body		
					Crimping tool	Positioner	SEL	Crimping tool	Die	Hex
5	**32C2 40C1**	RG 58 RG 141 KX 15	**610120**	**610020001**	Solder			282293 (M22520/5-01)	282246 (M22520/5-05)	A
		RG 142 RG 223 KX 23	**610122**	**610022001**						
		RG 316 KX 22	**610126**	**610026**						B
		KX 21 DT	**610127**	/						
		RG 178	**610119**	/						
		UT 085	**610123**	/						
		UT 141	**616009**	/	Solder					

For other cables, please consult Radiall.

Extraction tool: 282946 (M81969/28-01)

COAXIAL CRIMP CONTACTS SIZE 7

Contact size	Contact Arrange-ment	Cable	Pin	Socket	Center contact			Outer body		
					Crimping tool	Positioner	SEL	Crimping tool	Die	Hex
7	C3	RG 58 RG 141 KX 15	**610120**	**610020001**	Solder			282293 (M22520/5-01)	282246 (M22520/5-05)	A
		RG 174 RG 316 RG 188	**610126**	**610026**						

For other cables, please consult Radiall.

Extraction tool: 282946 (M81969/28-01)

Dielectric withstanding voltage at sea level: 750 V rms

COAXIAL CRIMP CONTACTS SIZE 9

Contact size	Contact Arrange-ment	Cable	Pin	Socket	Center contact			Outer body		
					Crimping tool	Positioner	SEL	Crimping tool	Die	Hex
9	C8 32C4	RG 316 KX 22	**610146**	**610046**	Solder			282293 (M22520/5-01)	282246 (M22520/5-05)	B
		RG 178 KX 21	**610147**	**610047**						
		RG 58 RG 141 KX 15	**610140**	**610040**						A
		RG 142	**610149**	**610049**						
		S280W 503-2	/	**610044**	282281 (M22520/2-01)	DANIELS K345	6		282236 (M22520/5-45)	B
		UT 085	**610148**	/	Solder					

For other cables, please consult Radiall.

Extraction tool: 282946 (M81969/28-01)

FILLER PLUGS

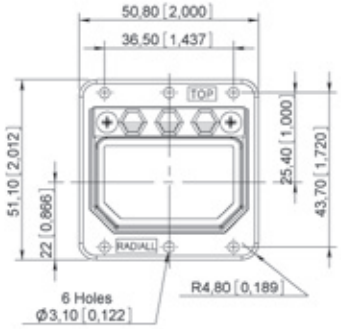
Designation	Filler Plugs Part Number
Size 22 (black)	**620920**
Size 20 (white)	**610940**
Size 20HD (red)	**610941**
Size 16 (blue)	**620922**
Size 12 (yellow)	**616923**
Size 5 (white)	**616802**
Size 9 (white)	**616802**

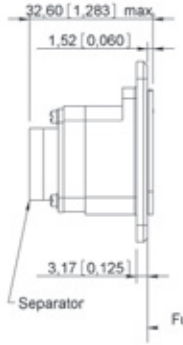
For Dust caps & backshells please refer to page 6-29 and 6-30

DIMENSIONS

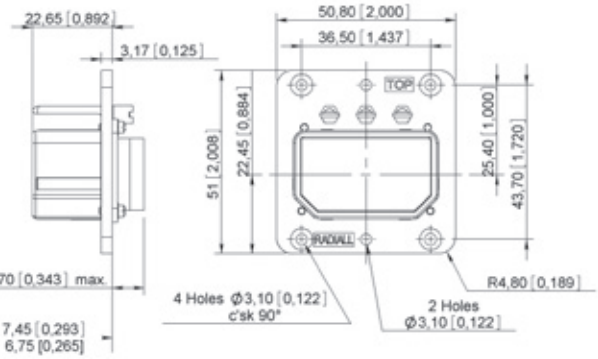
SHELL SIZE 1

PLUG



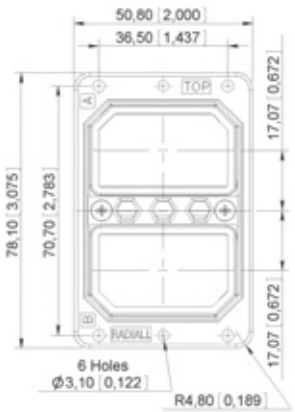


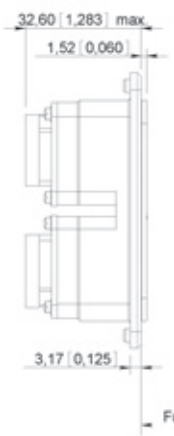
RECEPTACLE



SHELL SIZE 1

PLUG





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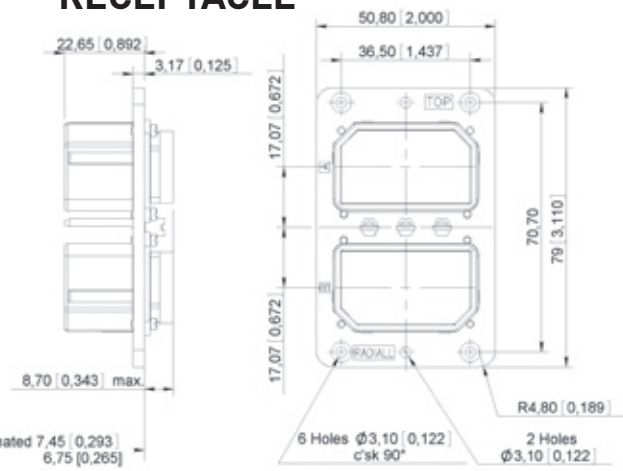
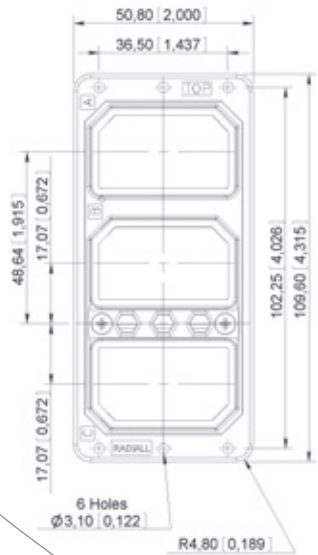
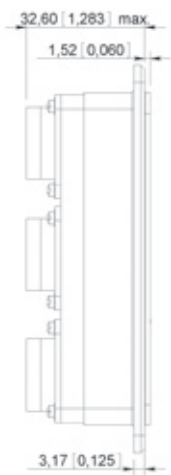


SHELL SIZE 3

PLUG





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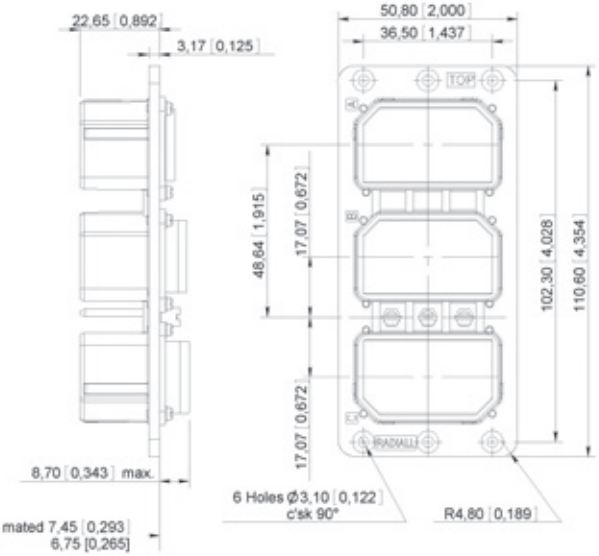
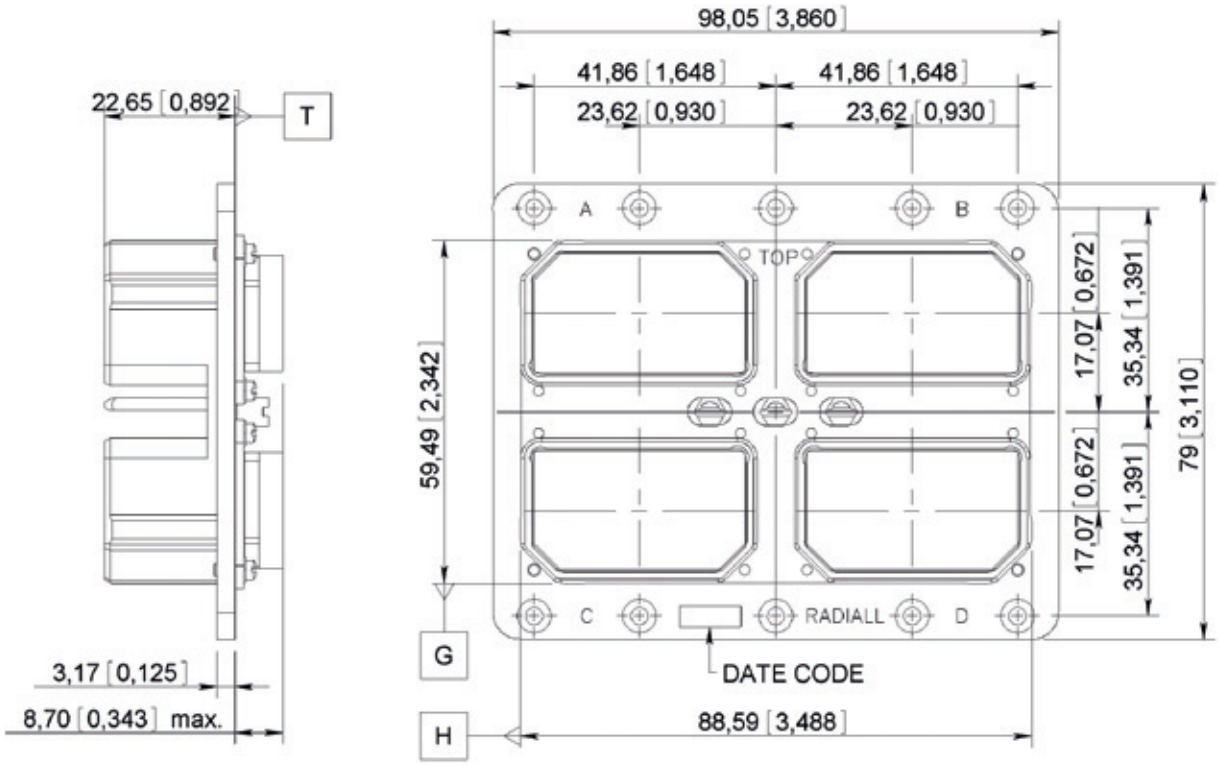
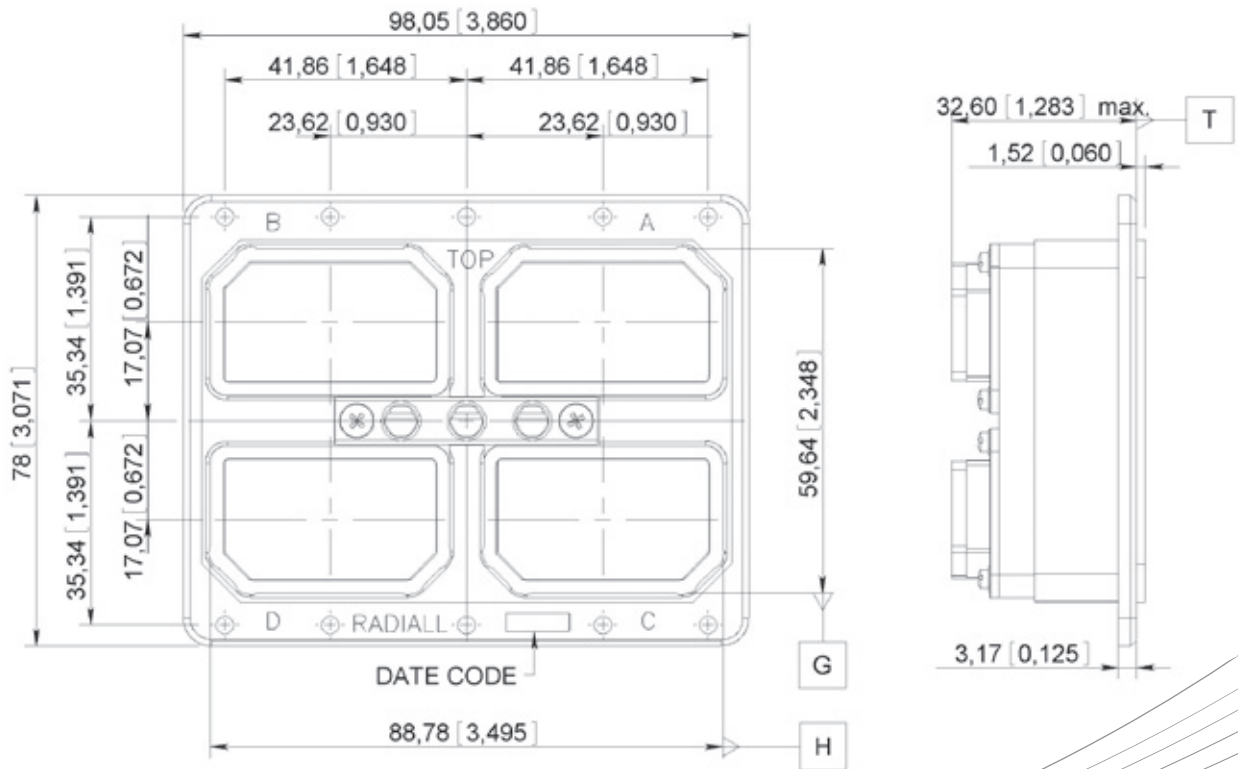


SHELL SIZE 4

PLUG



RECEPTACLE



DSX EMI/RFI INTRODUCTION

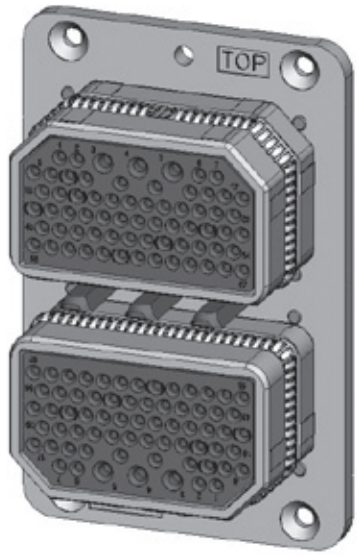
EMI/RFI acts directly on electronics systems whether by conduction mode through the input or output cables or by radiation (coupling).

Electronics equipments are particularly vulnerable to interferences and can be disturbed or damaged by them. The serious consequences which may result, make it essential to protect such installations.

The first stage in protection is to install the equipment in a shielded cabinet which protects it from some of the interferences; particularly those occurring by radiation. At the connector level that means to use metallic shells so as to have a good mass conduction between the equipment box and the rack.

So as to meet these requirements RADIALL offers plug connectors for rack which are fitted with grounding spring fingers.

DSX SAE AS81659 and DSX Arinc 404 shell type B in sizes 1,2,3, and 4
fitted with grounding fingers are available.
These connectors are interchangeable and intermatable with the standard ones.



PART NUMBERING

The part numbering system applies to plug shells only.

To establish the part number of a DSX EMI/RFI connector, simply add the letter "G" after the letter which defines the shell type in the DSX SAE AS81659 or Arinc 404 shell type B standard part number.
Examples of part numbers:

DSXN2P**G**S404SS45S0001
DSX2H**G**41S19S0001

TECHNICAL CHARACTERISTICS

The technical characteristics are the same as those of SAE AS81659 and Arinc 404 shell type B connectors except for the following.

Shell to shell conductivity: 2.5mΩ max. Measured according to method 3007 of MIL-STD-1344A.
Shielding effectiveness: >70 dB @ 4GHz. Measured according to method 3008 of MIL-STD-1344A.

MATERIALS

Description	Material	Plating
Grounding spring fingers	Copper alloy	Nickel

ELECTRICAL, MECHANICAL & ENVIRONMENTAL CHARACTERISITCS

Refer to SAE AS81659 standards page 6-7.

MATERIALS

Description	Material	Plating
Shell	Aluminium alloy	Cadmium yellow chromate
Insert	Thermosetting resin	/
Metallic insert	Aluminium alloy	Cadmium clear chromate
Rear spacer	Silicone rubber	/
Retention clip	Copper alloy	/
Contact	Copper alloy	Gold over nickel underplate
Insert retention plate	Aluminium alloy	Gold anodized
Screws, washers, clinch-nuts	Corrosion resistant steel	/

HOW TO ORDER ARINC 404 shell type A CONNECTORS

DSX	1	F	18	S	00

Series

Shell size
1 : One gang shell

Shell type
E : Receptacle
F : Plug

Contact arrangement
See table below and page 6-48

Termination style (2+3)
X : Without contacts
S : Crimp (1)
Z : Fixed solder cup
K : Wire wrap one levels
V : Wire wrap two levels
W : Wire wrap three levels
Note 4
Y : PC tail contact

Modification code
See from page 6-13 to 6-19

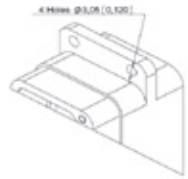
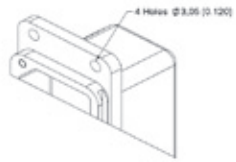
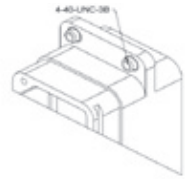
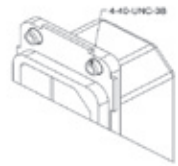
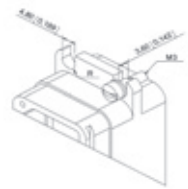
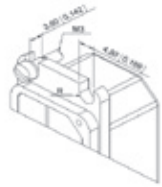
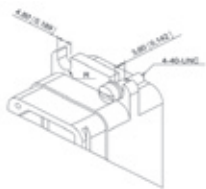
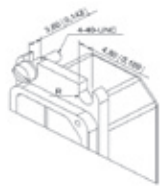
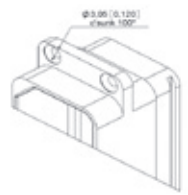
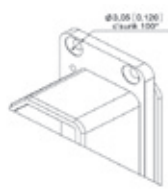
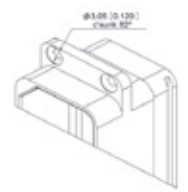
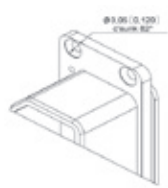
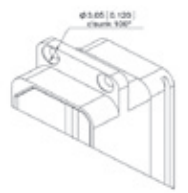
Contact arrangement code table

	00	8	13	26	40	45	57	67	106	32C2	32C4	40C1	C2	C3	C8	D8
Insert for pin contacts	10	12	44	14	16	18	20	22	24	26	40	28	34	36	30	38
Insert for socket contacts	11	13	45	15	17	19	21	23	25	27	41	29	35	37	31	39

NOTES:
(1) If you need to use reduced crimp barrel contacts, use code X and order contacts separately.
(2) For C2, C3 and C8 contact arrangements which include coax contacts, use termination code X and order coax contacts separately.
(3) For mixed layout 32C2, 32C4 and 40C1, the connector is delivered with signal and power contacts but without coax contacts. Order coaxial contacts separately.
(4) For contact arrangement 67 and 32C4 with K, V, W or Y termination styles, size 16 contacts are crimp contacts shipped loose with the connector.

MODIFICATION CODE

Dimensions mm (inch)

CODE	Receptacle shell		Plug shell	
00		4 holes Ø3.05 (0.120)		4 holes Ø3.05 (0.120)
01		Four 4.40 UNC 3B clinch nuts		Four 4.40 UNC 3B clinch nuts
03		4 mounting slots 4.80 (0.189) wide + four M3 shouldered screws + 4 washers		4 mounting slots 4.80 (0.189) wide + four M3 shouldered screws + 4 washers
04		4 mounting slots 4.80 (0.189) wide + four 4.40 UNC shouldered screws + 4 washers		4 mounting slots 4.80 (0.189) wide + four .40 UNC shouldered screws + 4 washers
05		4 holes 3.05 (0.120) dia c'sunk 100°		4 holes 3.05 (0.120) dia c'sunk 100°
06		4 holes 3.05 (0.120) dia c'sunk 82°		4 holes 3.05 (0.120) dia c'sunk 82°
07		4 holes 3.05 (0.120) dia c'sunk 100° + a dust cap		4 holes 3.05 (0.120) dia c'sunk 100° + a dust cap

CONTACT ARRANGEMENTS

They are the same inserts as those used in Arinc 404 shell type B connectors (see page 6-48).

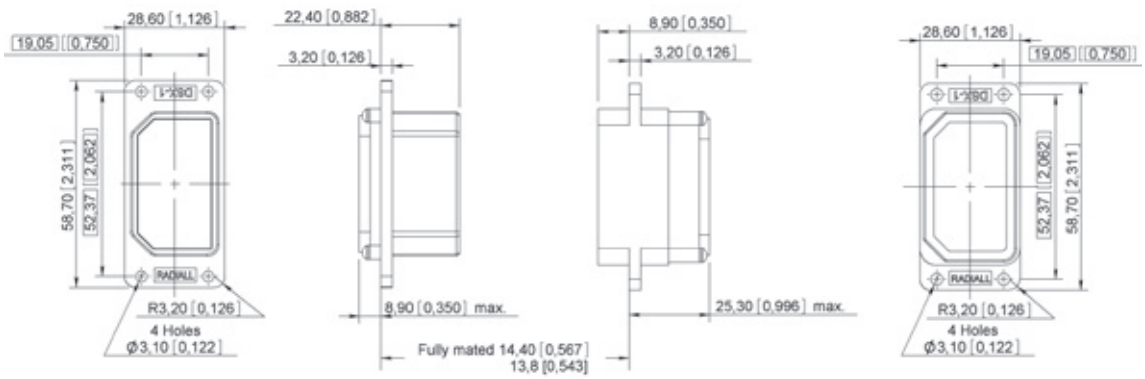
CONTACTS

The contacts used are those shown on page 6-50 to 6-53.

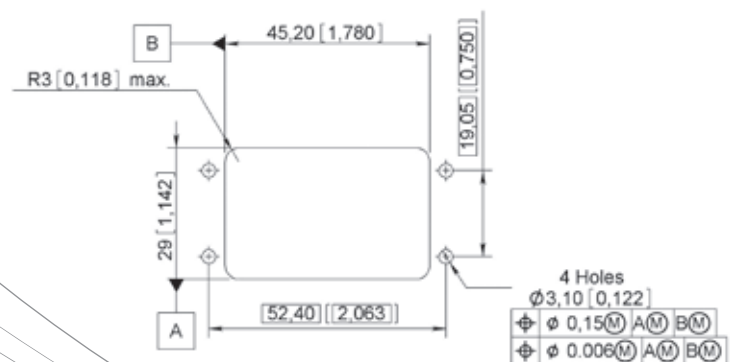
ACCESSORIES

Refer to page 6-53.

DIMENSIONS



PANEL CUT-OUT



CRIMPING TOOLS

Part number	Mil spec P/N
282281	M22520/2-01
282291	M22520/1-01
282296	DANIELS M300BT
282293	M22520/5-01

POSITIONERS

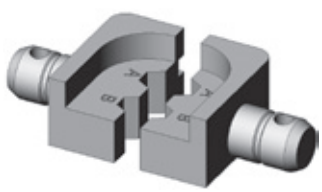
Part number	Mil spec P/N
282970	M22520/2-23
282971	M22520/2-08
282974	/
282550	Daniels K345
282972	M22520/1-02
282579	M22520/1-11
282557	/

INSERTION / EXTRACTION TOOLS

Part number	Mil spec P/N
282885	M81969/1-01
282886	M81969/1-02
282546	M81969/1-03
282547	M81969/28-02
282943	/
282946	M81969/28-01
282890	/
282892	/
282891	/
282929	/
282945	/
282500	/
282503	/
282504	/
282948	/
282949	/

DIE

Part number	Mil spec P/N
282246	M22520/5-05
282247	M22520/5-61
282248	OCETA M1001
282236	M22520/5-45



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