

MULTIPIN RECTANGULAR CONNECTORS

MPX Series

MIL-C-83527A

AECMA EN 3682



ISO 9001 APPROVED



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Head Office - Rosny sous Bois

Since 1952, **RADIALL** has specialized in the field of coaxial connectors and cables assemblies. **RADIALL's** experience and high technology focus, combined with our large worldwide production capability have made the company a major supplier of RF coaxial connectors in the world and the number one in Europe.

RESEARCH & DEVELOPMENT

The ever increasing sophistication of microwave communication systems is continually requiring components to meet a higher level of performance. **RADIALL's** research and development groups understand these needs and are committed to searching for product solutions that will be needed in the future. They also are providing continued improvements to our already extensive lines of high performance products. All our engineer teams are equipped with state of the art equipment and facilities, in an effort to provide the best solutions to our customers.



CAD workstation



Numerical control lathe

MANUFACTURING

RADIALL knows that the quality of the connector's components is directly related to the mechanical precision of the machining process, along with good quality procedures. In an effort to continually meet the highest quality standards, all our production plants are equipped with the latest state of the art production equipment. **RADIALL's** manufacturing process maintains strict control of all procedures and incorporates all tooling, machining, surface treatment and assembly operations into the manufacturing process of each production group.

INTRODUCTION

RADIALL MPX series connectors conform to both MIL-C-83527A American standard and EN 3682 European standard. RADIALL MPX high density rectangular rack and panel connectors give significant improvement over ARINC 404 connectors by offering a modular concept. Connector, shell, inserts and contacts can be supplied separately or pre-assembled. These connectors are used to form the mechanical and electrical interface between avionics equipment box and rack.

In response to the continuing development of electronic systems used in ever harsher environments, filtered connectors are offered to improve the EMC effectiveness against electromagnetic, radiofrequency interferences and electromagnetic pulses.

DESCRIPTION

A MPX series connector is made of three main parts.

- The contacts.
- The inserts.
- The shell.

The contacts are low insertion / extraction force. The following sizes are available:

- size 22 signal contacts.
- sizes 20, 16, and 12 power contacts.
- sizes 12, 16, 5 and 8 coaxial contacts.
- size 8 twinax contacts for shielded twisted pairs.
- the MPX series contacts are offered in crimp and pc tail termination.

Size 22 contacts in pc tail termination are offered in both rear release rear removable and front release front removable style. Other sizes are offered in the rear release rear removable style only.

Pin contacts are installed in the receptacle shell and socket contacts in the plug shell except size 22 contacts for which pin contacts are installed in the plug shell and socket contacts in the receptacle shell. Contacts are installed and removed using simple standard tooling.

Inserts are made of thermosetting resin or of aluminum alloy. They have metallic retention clips to retain the contacts. Each insert has one polarization slot which has its corresponding pin in each shell cavity. Environmental inserts have:

- a) a silicon rubber ring that ensures sealing between the insert and the shell.
- b) a rear grommet which ensures sealing around each wire crimped on a contact.
- c) an interfacial seal which ensures sealing around each protruding contact once the connector is mated.

Non environmental inserts do not have parts b) and c).

There are only two inserts for front release front removable contacts, they are contact arrangements 150 and 100 which are also available for rear release rear removable contacts.

Shells are machined from solid aluminum alloy and have a conductive plating (cadmium yellow chromate). There are 3 shell sizes (sizes 2, 3 and 4) which can respectively be fitted with 2, 4 and 6 inserts.

The plug shell is designed to be fitted with inserts for size 22 pin contacts and inserts for socket contacts for all other contact sizes. The plug shell has a field replaceable EMI spring and a coupling seal on each shell cavity and 3 polarization posts.

The receptacle shell is designed to be fitted with inserts for size 22 socket contacts and inserts for pin contacts for the other contact sizes. The receptacle shell has 3 polarization keys.

HOW TO ORDER SHELLS

MPX 3 R 00 01

Series

Shell size

2 : size 2

3 : size 3

4 : size 4

Shell type

R : Receptacle shell

A : Plug shell

Modification code

see page 30.

Polarization code

see pages 31 & 32.

HOW TO ORDER INSERTS

	MPX	E	2	P	11	T2	A	S
Series _____								
Class (see note 1) _____								
E : insert with interfacial seal, rear grommet and o-ring.								
N : insert with o-ring, without interfacial seal and rear grommet.								
T : insert with o-ring and interfacial seal without rear grommet.								
Insert size _____								
1 : insert for A, C and E shell cavities.								
2 : insert for B, D and F shell cavities.								
Insert type _____								
P : insert for plug shell.								
R : insert for receptacle shell.								
Contact arrangement _____ see pages 14 to 18.								
Triax contact grounding (see note2) _____								
Letter omitted : triax contacts are grounded								
A : triax contacts not grounded.								
Contact delivery _____								
Letter omitted : insert is delivered without contacts.								
S : insert is delivered with crimp signal and power contacts (no coax, triax or twinax contacts).								

notes:

- 1** : E, N and T classes apply to inserts for rear release rear removable contacts.
- 2** : When A is omitted triax contacts cavities are grounded to the shell.
- 3** : Inserts "2-100" and "1-150" for front release front removable contacts are available, see page 18 for part numbers.

remark:

Dummy inserts part numbers are the following:

MPXE10 = dummy insert p/n for A,C and E shell cavities.

MPXE20 = dummy insert p/n for B,D and F shell cavities.

HOW TO ORDER ASSEMBLED CONNECTORS

	MPX	E	2	R	202	A	S	00	01
Series _____									
Class (see note 1) _____									
E : insert with interfacial seal, rear grommet and o-ring.									
N : insert with o-ring, without interfacial seal and rear grommet.									
T : insert with o-ring and interfacial seal without rear grommet.									
Shell size _____									
2 : size 2									
3 : size 3									
4 : size 4									
Shell type _____									
R : Receptacle shell.									
A : Plug shell.									
Insert combination code (see pages 12 to 13) _____									
Triax contact grounding _____									
Letter omitted : triax contacts are grounded.									
A : triax contacts not grounded.									
Contact type _____									
X : without contacts.									
S : crimp contacts.									
Y : pc tail contacts .025 (0.635) dia, .250 (6.35) length.									
YA : pc tail contacts .025 (0.635) dia, .150 (3.80) length.									
YB : pc tail contacts .025 (0.635) dia, .374 (9.50) length.									
Z : same as Y but with pre-tinned pc tail.									
ZA : same as YA but with pre-tinned pc tail.									
ZB : same as YB but with pre-tinned pc tail.									
Modification code (see page 30) _____									
Polarization code (see pages 31 & 32) _____									

notes:

- 1** : E, N and T classes apply to inserts for rear release rear removable contacts.
- 2** : Coaxial, triaxial, twinax contacts must be ordered separately.

MATERIALS

Description	Material	Plating
shell and backshell	aluminum alloy	cadmium yellow chromate over electroless nickel
contacts	copper alloy	gold over electroless nickel
inserts	thermosetting resin	/
	aluminum	cadmium yellow chromate over electroless nickel
retention clip	copper alloy	/
seals and o-ring	fluorinated silicon rubber	/
insert retention plate	aluminum alloy	blue anodized
polarization key	zinc alloy	cadmium olive drab
polarization post	aluminum alloy	cadmium yellow chromate
screws	brass	cadmium yellow chromate
washers	copper alloy	cadmium yellow chromate
EMI spring	copper alloy & fluorinated silicon rubber	tin-lead alloy over electroless nickel

ELECTRICAL CHARACTERISTICS

Insulation resistance (MIL-STD-1344A method 3003) : $\geq 1000\text{M}\Omega - 500\text{Vdc}$.

Dielectric withstanding voltage (MIL-STD-1344A method 3001) : sea level : 1300Vac for size 22 contacts & 1500Vac for other sizes.
50000 feet : 800Vac

Shell to shell conductivity (MIL-STD-1344A method 3007) : $\leq 2,5\text{mV}$.

Size 8 cavity grounding (MIL-STD-1344A method 3007) : $\leq 10\text{mV}$.

Shielding effectiveness (MIL-C-83527A) : see table below

Frequency (Mhz)	Attenuation (dB)
100	65
200	65
300	63
400	62
800	60
1000	60

Contacts : see table below.

Contact size	Wire				Max current (A)	Contact resistance (mΩ)
	AWG	Cross section (mm ²)	Min diameter inch (mm)	Max diameter inch (mm)		
22	22	0.38	.030 (0.76)	.052 (1.32)	5	17
	24	0.21			3	23
	26	0.14			2	38
20	20	0.6	.035 (0.89)	.060 (1.52)	7.5	11
	22	0.38			5	17
	24	0.21			3	23
16	16	1.34	.048 (1.21)	.080 (2.03)	13	6
	18	0.91			10	8
	20	0.6			7.5	10
12	12	3.18	.091 (4.85)	.216 (5.49)	23	3.35
	14	1.91			17	4.24

MECHANICAL AND ENVIRONMENTAL

Temperature range : -65°C / +150°C

Temperature life : 1000 hours at 100°C

Salt spray (MIL-STD-1344A method 1001) : 500 hours

Humidity (MIL-STD-1344A method 1002 type I test condition letter A) : 10 days.

Shock (MIL-STD-1344A method 2004 test condition letter H) : 30g / 11ms / half sine

Vibration : see MIL-C-83527A

Mating and separating forces : size 2 = 800 N max
size 3 = 1400 N max
size 4 = 1950 N max

MASSES

Shells

Receptacle g (oz)			Plug g (oz)		
Shell size 2	Shell size 3	Shell size 4	Shell size 2	Shell size 3	Shell size 4
160 (5.64)	240 (8.47)	335 (11.82)	165 (5.82)	245 (8.64)	342 (12.06)

Inserts

Description	Insert for plug shell g (oz)	Insert for receptacle shell g (oz)
MPXE2*T6	44 (1.55)	26 (0.92)
MPXE2*11T2	41 (1.45)	25 (0.88)
MPXE2*11C2	41 (1.45)	25 (0.88)
MPXE2*20T4	37 (1.31)	22 (0.78)
MPXE2*34	44 (1.55)	27 (0.95)
MPXE2*62T2	34 (1.20)	22 (0.78)
MPXE2*100	25 (0.88)	21 (0.74)
MPXE1*24	51 (1.80)	31 (1.10)
MPXE1*C12T6	55 (1.94)	33 (1.17)
MPXE1*47T2	57 (2.01)	35 (1.24)
MPXE1*60	63 (2.23)	39 (1.38)
MPXE1*126	47 (1.66)	31 (1.10)
MPXE1*150	41 (1.45)	27 (0.95)

Contacts

Contact size	Pin g (oz)	Socket g (oz)
22	0,12 (0.0043)	0,15 (0.0053)
20	0,22 (0.0078)	0,37 (0.0130)
16	0,73 (0.0258)	0,75 (0.0265)
12	1,50 (0.0530)	1,45 (0.0512)

DOD-STD-1842 CODES (USA)

Insert combination code	Shell size	Insert combination on shell					
		Cavity A	Cavity B	Cavity C	Cavity D	Cavity E	Cavity F
001	#2	1-47T2	2-100				
002	#2	1-47T2	2-20T4				
003	#2	1-47T2	2-34				
004	#3	1-150	2-34	1-150	2-20T4		
005	#3	1-150	2-100	1-47T2	2-100		
006	#3	1-60	2-100	1-60	2-100		
007	#3	1-150	2-100	1-150	2-100		
008	#3	1-60	2-34	1-60	2-34		
009	#4	1-150	2-34	1-150	2-20T4	1-150	2-20T4
010	#4	1-24	2-34	1-150	2-100	1-150	2-20T4
011	#4	1-150	2-34	1-150	2-20T4	1-150	2-T6
012	#4	1-24	2-34	1-150	2-0	1-150	2-20T4

STTEA CODES (EUROPE)

Insert combination code	Shell size	Insert combination on shell					
		Cavity A	Cavity B	Cavity C	Cavity D	Cavity E	Cavity F
201	#2	1-150	2-34				
202	#3	1-150	2-20T4				
203	#2	1-126	2-100				
204	#2	1-150	2-11C2				
205	#3	1-150	2-T6				
206		canceled see DOD code 004 above					
207	#2	1-150	2-20T4				
208	#3	1-150	2-20T4	1-150	2-0		
209	#2	1-47T2	2-11C2				
210	#3	1-150	2-11C2	1-24	2-100		
211	#2	1-150	2-11T2				
212	#2	1-60	2-11T2				
213	#3	1-24	2-34	1-24	2-20T4		
214	#3	1-24	2-34	1-0	2-20T4		
215	#3	1-150	2-100	1-C12T6	2-11C2		
216	#2	1-150	2-100				
217	#2	1-24	2-11C2				
218	#3	1-24	2-11C2	1-24	2-T6		
219	#4	1-24	2-11C2	1-47T2	2-34	1-24	2-20T4
220	#4	1-150	2-100	1-150	2-100	1-150	2-100
221	#4	1-24	2-34	1-150	2-20T4	1-150	2-T6
222	#3	1-150	2-11T2	1-24	2-100		
223	#3	1-150	2-11C2	1-150	2-11C2		
224	#2	1-150	2-62T2				
225	#2	1-60	2-20T4				
226	#3	1-150	2-34	1-150	2-100		
227	#3	1-150	2-20T4	1-24	2-0		
228	#3	1-150	2-100	1-150	2-20T4		
229	#3	1-150	2-20T4	1-24	2-11C2		
230	#2	1-47T2	2-0				
231	#2	1-24	2-0				
232	#2	1-24	2-34				
233	#3	1-150	2-34	1-150	2-34		
234	#3	1-24	2-11C2	1-150	2-100		
235	#3	1-150	2-0	1-150	2-20T4		

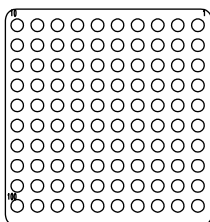
STTEA CODES (continued)

Insert combination code	Shell size	Insert combination on shell					
		Cavity A	Cavity B	Cavity C	Cavity D	Cavity E	Cavity F
236	#4	1-24	2-34	1-24	2-0	1-150	2-20T4
237	#2	1-24	2-100				
238	#3	1-0	2-11C2	1-0	2-20T4		
239	#3	1-24	2-34	1-24	2-34		
240	#3	1-47T2	2-34	1-24	2-34		
241	#4	1-24	2-34	1-24	2-34	1-24	2-34
242	#3	1-0	2-11C2	1-0	2-34		
243	#3	1-60	2-34	1-24	2-34		
244	#4	1-60	2-34	1-60	2-34	1-24	2-34
245	#3	1-150	2-11C2	1-24	2-11C2		
246	#4	1-24	2-34	1-60	2-100	1-150	2-20T4
247	#4	1-24	2-34	1-24	2-100	1-150	2-20T4
248	#4	1-60	2-T6	1-60	2-T6	1-24	2-T6
249	#4	1-60	2-T6	1-0	2-T6	1-150	2-T6
250	#3	1-24	2-0	1-150	2-20T4		
251	#3	1-126	2-34	1-126	2-20T4		
252	#3	1-150	2-34	1-0	2-11C2		
253	#3	1-24	2-100	1-150	2-20T4		
254	#3	1-150	2-62T2	1-150	2-62T2		
255	#3	1-150	2-11C2	1-0	2-34		
256	#2	1-60	2-11C2				
257	#3	1-150	2-100	1-C12T6	2-34		
258	#3	1-150	2-11C2	1-150	2-34		
259	#4	1-150	2-20T4	1-24	2-T6	1-150	2-11T2
260	#3	1-150	2-T6	1-150	2-34		
261	#3	1-150	2-11C2	1-126	2-34		
262	#3	1-150	2-100	1-150	2-62T2		
263	#2	1-60	2-34				
264	#3	1-150	2-T6	1-150	2-100		
265	#3	1-C12T6	2-11C2	1-150	2-100		
266	#2	1-47T2	2-11T2				
267	#4	1-150	2-34	1-150	2-100	1-150	2-34
268		CANCELED					
269	#2	1-126	2-11T2				
270	#3	1-150	2-11T2	1-150	2-20T4		
271	#3	1-150	2-11T2	1-150	2-11T2		
272	#4	1-150	2-34	1-150	2-100	1-150	2-20T4
273	#4	1-126	2-100	1-150	2-100	1-126	2-100
274	#3	1-C12T6	2-11C2	1-0	2-100		
275	#3	1-150	2-T6	1-150	2-0		
276	#2	1-150	2-T6				
277	#3	1-C12T6	2-34	1-60	2-34		
278	#3	1-150	2-20T4	1-150	2-20T4		
279	#3	1-60	2-20T4	1-60	2-20T4		
280	#4	1-150	2-100	1-150	2-100	1-150	2-62T2
281	#3	1-150	2-11C2	1-150	2-100		
282	#3	1-150	2-11T2	1-150	2-100		
283	#3	1-0	2-20T4	1-150	2-20T4		
284	#3	1-150	2-20T4	1-150	2-100		
285	#3	1-150	2-20T4	1-150	2-11C2		
286	#3	1-126	2-T6	1-150	2-20T4		
287	#3	1-150	2-11C2	1-150	2-20T4		

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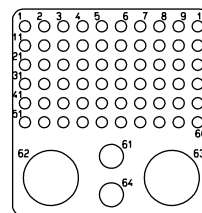
2-100

Number of contacts	Contact size	Location
100	22	1 to 100



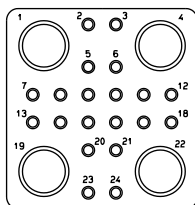
2-62T2

Number of contacts	Contact size	Location
60	22	1 to 60
2	16	61 & 64
2	8	62 & 63



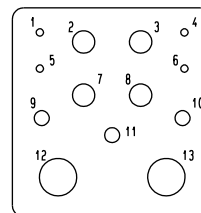
2-20T4

Number of contacts	Contact size	Location
20	20	2, 3, 5 to 18, 20,21,23,24
4	8	1, 4, 19, 22



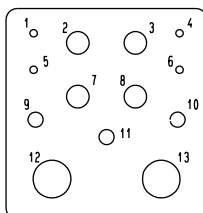
2-11C2

Number of contacts	Contact size	Location
4	20	1, 4, 5, 6
3	16	9, 10, 11
4	12	2, 3, 7, 8
2	5	12 & 13



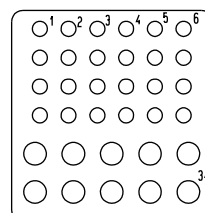
2-11T2

Number of contacts	Contact size	Location
4	20	1, 4, 5, 6
3	16	9, 10, 11
4	12	2, 3, 7, 8
2	8	12 & 13



2-34

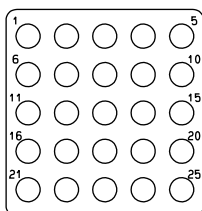
Number of contacts	Contact size	Location
24	20	1 to 24
10	16	25 to 34



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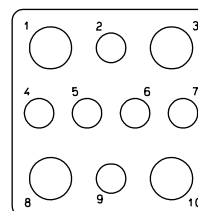
2-25

Number of contacts	Contact size	Location
25	16	1 to 25



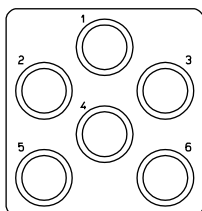
2-6T4

Number of contacts	Contact size	Location
4	8	1,3,8 & 10
6	12	2,4,5,6,7 & 9



2-T6

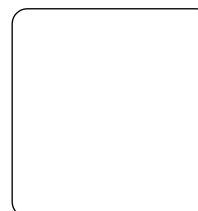
Number of contacts	Contact size	Location
6	8	1 to 6



This insert is metallic

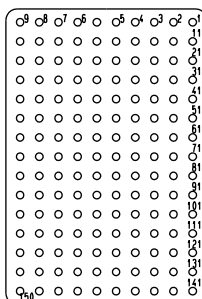
2-0

Number of contacts	Contact size	Location
/	/	/



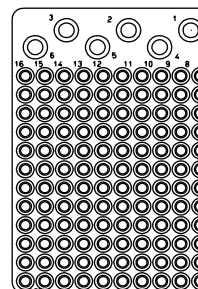
1-150

Number of contacts	Contact size	Location
150	22	1 to 150



1-126

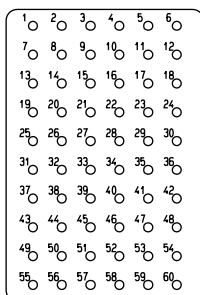
Number of contacts	Contact size	Location
120	22	7 to 126
6	16	1 to 6



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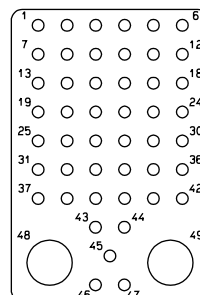
1-60

Number of contacts	Contact size	Location
60	20	1 to 60



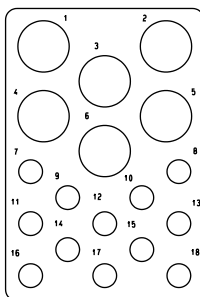
1-47T2

Number of contacts	Contact size	Location
47	20	1 to 47
2	8	48 & 49



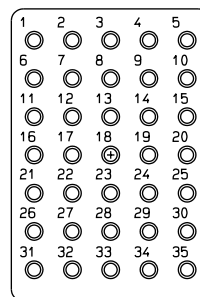
1-C12T6

Number of contacts	Contact size	Location
12	12	7 to 18
6	8	1 to 6



1-35

Number of contacts	Contact size	Location
35	16	1 to 35

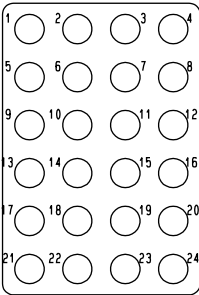


This insert is metallic

PIN INSERT MATING SIDE SHOWN

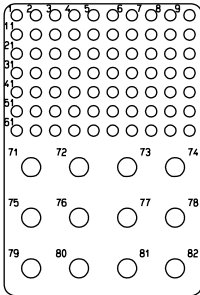
1-24

Number of contacts	Contact size	Location
24	12	1 to 24



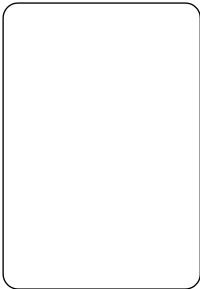
1-70C12

Number of contacts	Contact size	Location
70	22	1 to 70
12	12	71 to 82



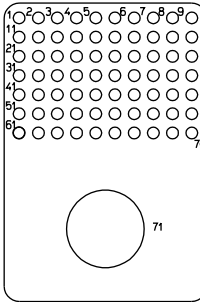
1-0

Number of contacts	Contact size	Location
/	/	/



1-70C1

Number of contacts	Contact size	Location
70	22	1 to 70
1	1	71

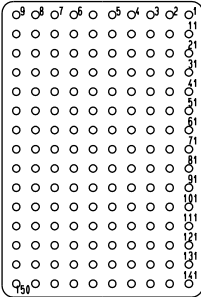


These inserts are available for receptacle shell only and are designed to be fitted with front release front removable size 22 pc tail contacts and thus do not have any rear grommet.

Socket insert mating side shown.

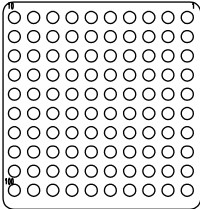
618500061

Number of contacts	Contact size	Location
150	22	1 to 150



618500081

Number of contacts	Contact size	Location
100	22	1 to 100



SIGNAL AND POWER CRIMP CONTACTS

Crimp contacts are rear release rear removable.

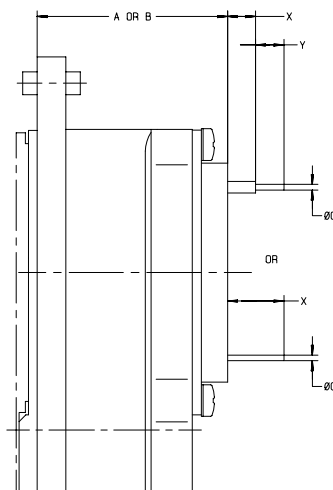
Contact size	Wire				Pin p/n	Socket p/n	Crimping tool RADIAL P/N (MIL P/N)	Positioner p/n	Selector p/n	Ins/ext tool p/n
	AWG	Cross section (mm ²)	Wire outside dia. inch (mm)	Striping length inch (mm)						
22	22	0.38	.030	.137 (3.5)	618200	618300	282281 (M22520/2-01)	282970 (M22520/2-23)	3	282885 (M81969/1-01)
	24	0.21	(0.76) to .052						3	
	26	0.14	(1.32)						4	
20 reduced crimp barrel	22	0.38	.030	.157 (4.0)	/	618311	282281 (M22520/2-01)	282971 (M22520/2-08)	4	282886 (M81659/1-02)
	24	0.21	(0.76) to .052						3	
	26	0.14	(1.32)						3	
20	24	0.21	.035	.157 (4.0)	618210	618310	282281 (M22520/2-01)	282971 (M22520/2-08)	5	282886 (M81659/1-02)
	22	0.38	(0.89) to .060						6	
	20	0.60	(1.52)						7	
16	20	0.60	.048	.236 (6.0)	618230	618330	282291 (M22520/1-01)	282972 (M22520/1-02)	4	282546 (M81969/1-03)
	18	0.93	(1.21) to .080						5	
	16	1.34	(2.03)						6	
12	14	3.18	.091	.236 (6.0)	618240	618340	282291 (M22520/1-01)	282579 (M22520/1-11)	7	282547 (M81969/28-02)
	12	1.91	(2.31) to .114 (2.90)						8	
12 reduced crimp barrel	20	0.60	.048	.236 (6.0)	/	618341	282291 (M22520/1-01)	282579 (M22520/1-11)	4	282547 (M81969/28-02)
	18	0.93	(1.21) to .080						5	
	16	1.34	(2.03)						6	
12 enlarged crimp barrel	10	5.0	.234 (5.7)	.354 (9.0)	/	618342	282296 (DANIELS M300 BT) see note 1	282579 (M22520/1-11)	1	282549004 (M81969/14-04)
8	10	5.0	.234 (5.7)	.354 (9.0)	618270 see note 2	618370 see note 2	282296 (DANIELS M300 BT) see note 1	282586	6	282549001 (M22520/28-03)

Notes:

- 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.
- 2 : Add 001 to the end of the contact p/n to be provided with a contact plus a sealing boot.

SIGNAL & POWER PC TAIL CONTACTS

For A & B Dimensions
See page 37



SIZE 22 FRONT RELEASE FRONT REMOVABLE PC TAIL CONTACTS

Contact size	Contact arrangement	Pin	Socket	Ext. tool	X inch (mm)	Y inch (mm)	C inch (mm)
22	618500061 & 618500081	/	618304001	282500	.163/.191 (4.15/4.85)	.173/.181 (4.40/4.60)	.024/.027 (0.60/0.70)
		/	618304002		.085/.112 (2.15/2.85)	.232/.240 (5.90/6.10)	
		/	618360		.150/.180 (3.80/4.60)	NA	
		/	618361		.252/.283 (6.40/7.20)	NA	
		/	618362		.374/.405 (9.50/10.3)	NA	

SIZE 22 FRONT RELEASE FRONT REMOVABLE PRE-TINNED PC TAIL CONTACTS

Contact size	Contact arrangement	Pin	Socket	Ext. tool	X inch (mm)	Y inch (mm)	C inch (mm)
22	618500061 & 618500081	/	618304003	282500	.163/.191 (4.15/4.85)	.173/.201 (4.40/5.10)	.031 (0.80) max
		/	618304004		.085/.112 (2.15/2.85)	.232/.260 (5.90/6.60)	
		/	618360001		.150/.201 (3.80/5.10)	NA	
		/	618361001		.252/.303 (6.40/7.70)	NA	
		/	618362001		.374/.425 (9.50/10.80)	NA	

SIZE 22 REAR RELEASE REAR REMOVABLE PC TAIL CONTACTS

Contact size	Contact arrangement	Pin	Socket	Ext. tool	X inch (mm)	Y inch (mm)	C inch (mm)
22	1-150 1-126 1-70C12 2-100 2-62T2	/	618302	282885 (M81969/1-01)	.059/.087 (1.50/2.20)	.145/.154 (3.70/3.90)	.024/.027 (0.60/0.70)
		/	618303001		.209/.248 (5.30/6.30)	NA	
		/	618303002		.391/.431 (9.95/10.95)	NA	
		/	618303003		.138/.177 (3.50/4.50)	NA	
		/	618303004		.150/.169 (3.80/4.30)	.145/.154 (3.70/3.90)	
		/	618303005		.303/.343 (7.70/8.70)	NA	

SIZE 22 REAR RELEASE REAR REMOVABLE PRE-TINNED PC TAIL CONTACTS

Contact size	Contact arrangement	Pin	Socket	Ext. tool	X inch (mm)	Y inch (mm)	C inch (mm)
22	1-150 1-126 1-70C12 2-100 2-62T2	/	618302001	282885 (M81969/1-01)	.059/.107 (1.50/2.70)	.145/.174 (3.70/4.40)	.031(0.80) max
		/	618303007		.209/.268 (5.30/6.80)	NA	
		/	618303008		.391/.451 (9.95/11.45)	NA	
		/	618303009		.138/.197 (3.50/5.00)	NA	
		/	618303010		.150/.189 (3.80/4.80)	.145/.174 (3.70/4.40)	
		/	618303011		.303/.363 (7.70/9.20)	NA	

SIZE 20 REAR RELEASE REAR REMOVABLE PC TAIL CONTACTS

Contact size	Contact arrangement	Pin	Socket	Ext. tool	X inch (mm)	Y inch (mm)	C inch (mm)
20	2-11T2 2-11C2, 2-34 1-60, 1-47T2 2-20T4	618213001	/	282886 (M81969/1-02)	.281/.321 (7.15/8.15)	NA	.037/.040 (0.95/1.01)
		618213002	/		.137/.177 (3.5/4.5)	NA	
		618213005	/		.517/.557 (13.15/14.15)	NA	.032/.034 (0.81/0.86)
		/	618316001		.391/.431 (9.95/10.95)	NA	.024/.027 (0.60/0.70)

SIZE 20 REAR RELEASE REAR REMOVABLE PRE-TINNED PC TAIL CONTACTS

Contact size	Contact arrangement	Pin	Socket	Ext. tool	X inch (mm)	Y inch (mm)	C inch (mm)
20	2-20T4 2-11T2 2-11C2, 2-34 1-60, 1-47T2	618213006	/	282886 (M81969/1-02)	.281/.341 (7.15/8.65)	NA	.045 (1.15) max
		618213007	/		.137/.197 (3.50/5.00)	NA	
		618213008	/		.517/.577 (13.15/14.65)	NA	.037 (0.95) max

SIZE 16 REAR RELEASE REAR REMOVABLE PC TAIL CONTACTS

Contact size	Contact arrangement	Pin	Socket	Ext. tool	X inch (mm)	Y inch (mm)	C inch (mm)
16	2-62T2, 2-11C2, 2-11T2 2-25, 2-34 1-35, 1-126	618233001	/	282546 (M81969/1-03)	.281/.321 (7.15/8.15)	NA	.057/.061 (1.45/1.55)
		618233002	/		.370/.409 (9.40/10.40)	NA	
		618233003	/		.137/.177 (3.50/4.50)	NA	

SIZE 16 REAR RELEASE REAR REMOVABLE PRE-TINNED PC TAIL CONTACTS

Contact size	Contact arrangement	Pin	Socket	Ext. tool	X inch (mm)	Y inch (mm)	C inch (mm)
16	2-62T2, 2-11C2,2-11T2 2-25, 2-34, 1-35, 1-126	618233006	/	282546 (M81969/1-03)	.281/.341 (7.15/8.65)	NA	.067 (1.70) max
		618233007	/		.370/.429 (9.40/10.90)	NA	
		618233008	/		.137/.197 (3.50/5.00)	NA	

SIZE 12 REAR RELEASE REAR REMOVABLE PC TAIL CONTACTS

Contact size	Contact arrangement	Pin	Socket	Ext. tool	X inch (mm)	Y inch (mm)	C inch (mm)
12	2-11C2 2-11T2 2-6T4, 1-24 1-C12T6 1-70C12	618243001	/	282547 (M81969/28-02)	.281/.321 (7.15/8.15)	NA	.076/.080 (1.95/2.05)
		618243002	/		.137/.177 (3.50/4.50)	NA	
		618243003	/		.076/.120 (1.95/3.05)	NA	

SIZE 12 REAR RELEASE REAR REMOVABLE PRE-TINNED PC TAIL CONTACTS

Contact size	Contact arrangement	Pin	Socket	Ext. tool	X inch (mm)	Y inch (mm)	C inch (mm)
12	2-11C2 2-11T2, 1-24 2-6T4, 1-24 1C12T6 1-70C12	618243004	/	282547 (M81969/28-02)	.281/.341 (7.15/8.65)	NA	.087 (2.20) max
		618243005	/		.137/.197 (3.50/5.00)	NA	
		618243006	/		.076/.140 (1.95/3.55)	NA	

COAXIAL CRIMP CONTACTS

SIZE 16 REAR RELEASE REAR REMOVABLE CRIMP COAX CONTACTS

Contact size	Contact arrangement	Cable	Pin	Socket	Center contact			Outer body			Wiring instr.
					Crimping tool RADIAL P/N (MIL P/N)	Positioner RADIAL P/N (MIL P/N)	Sel	Crimping tool RADIAL P/N (MIL P/N)	Positioner RADIAL P/N (MIL P/N)	Sel	
16	1-126 2-62T2 2-11C2 2-11T2 2-34 2-25 1-35	RG179 RG316 KX22DS ASNE0752WS ASNE0632WK	618150	618050	282281 (M22520/2-01)	282555	4	282292 (M22520/4-01)	282556	/	A see p. 44
		ASNE0639XY					1				
		F1703/134 AXON P813859 & P822817 ASNE0690WL	618151	618051			2				
		KX21DS									
		RG178 KX21	618154	618054			1				
		ASNE0633WG									

Ins/ext tool: 282546 (M81969/1-03)

SIZE 12 REAR RELEASE REAR REMOVABLE CRIMP COAX CONTACTS

Contact size	Contact arrangement	Cable	Pin	Socket	Center contact			Outer body			Wiring instr.
					Crimping tool RADIAL P/N (MIL P/N)	Positioner RADIAL P/N (MIL P/N)	Sel	Crimping tool RADIAL P/N (MIL P/N)	Positioner RADIAL P/N (MIL P/N)	Sel	
12	2-11C2, 2-11T2, 1-24 2-6T4 1-C12T6 1-70C12	RG179 RG316 ASNE0639XY	618140	618040	282281 (M22520/2-01)	282580	4	282297 (M22520/31-01)	282581	/	B see p. 44
		ASNE0690WL	618140003	618040003			3				
		BUS 3910 AXON P503031	618141	618041			5			/	C see p. 45
		ASNE0633WG RG178 KX21	618142	618042			4				

Ins/ext tool: 282547 (M81969/28-02)

SIZE 5 REAR RELEASE REAR REMOVABLE CRIMP COAX CONTACTS

Contact size	Contact arrangement	Cable	Pin	Socket	Center contact			Outer body		Wiring instr.
					Crimping tool RADIAL P/N (MIL P/N)	Positioner RADIAL P/N (MIL P/N)	Sel	Crimping tool RADIAL P/N (MIL P/N)	Positioner RADIAL P/N (MIL P/N)	
5	2-11C2	RG 58 KX15	618120*	618020*	282281 (M22520/2-01)	282550	6	282293 (M22520/5-01)	282246 (M22520/5-05 hex A)	E see p. 46
		RG141 ASNE0293XF					8		282246 (M22520/5-05 hex B)	
		RG142 RG223	/	618021001			8			
		RG400					6			
		ASNE0691WM	618124001	618024001			8			
		ASNE0639XY RG179 RG187	618123*	618023*			7		F see p. 46	

*: Add 001 to these part numbers to be provided with environmental contacts (contact + sealing boot).

Ins/ext tool: 282946 (M81969/28-01)

SIZE 8 REAR RELEASE REAR REMOVABLE CRIMP COAX CONTACTS

Non environmental size 8 pin contacts are delivered with an alignment boot (p/n: 618920) to reduce the play at the contact extremity.

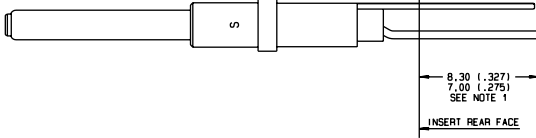
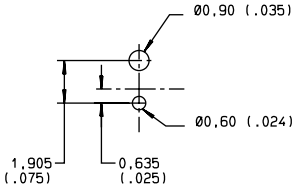
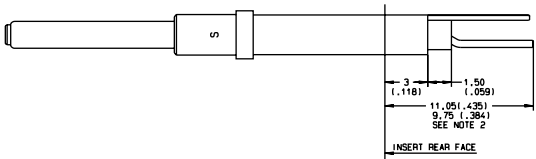
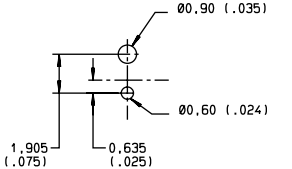
Contact size	Contact arrangement	Cable	Pin	Socket	Center contact			Outer body		Wiring instr.
					Crimping tool RADIAL P/N (MIL P/N)	Positioner RADIAL P/N (MIL P/N)	Sel	Crimping tool RADIAL P/N (MIL P/N)	Positioner RADIAL P/N (MIL P/N)	
8	2-62T2 2-20T4 2-11T2 2-T6 1-47T2 1-C12T6 2-6T4	KX15 RG58 RG316 RG141	/	618030*	282281 (M22520/2-01)	282572	6	282293 (M22520/5-01)	282236 (M22520/5-45 hex A)	G see p. 47
		7								
		8								
		KX22 RG316 RG174	/	618032*			7			
		RG400					/			
		ASNE0691WM	618135	618035*	solder					H see p. 47

*: Add 001 to these part numbers to be provided with environmental contacts.

Ins/ext tool: 282549001 (M81969/28-03)

PC TAIL COAX CONTACTS

SIZE 16 REAR RELEASE REAR REMOVABLE PC TAIL COAX CONTACTS

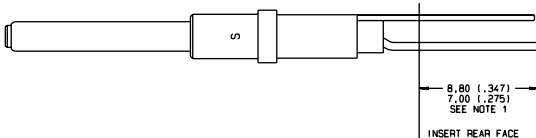
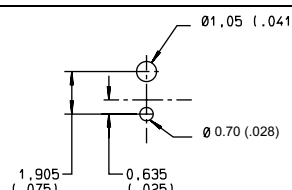
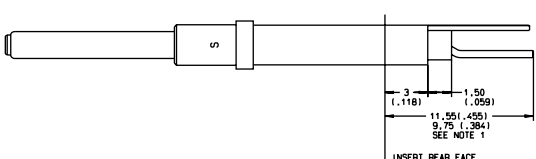
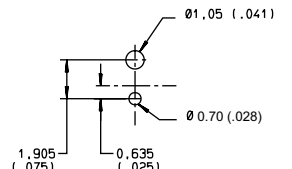
Contact type	P/N	Contact drawing	Rear extension from insert	Pc drill pattern
pin	618153		.275/.327 (7.00/8.30) see note 1	
pin	618153001		.383/.435 (9.75/11.05) see note 2	

Ins/ext tool: 282546 (M81969/1-03)

Note 1: For contact arrangements 1-126 and 2-62T2, rear extension from insert is .297 / .349 (7.55/8.85).

Note 2: For contact arrangements 1-126 and 2-62T2, rear extension from insert is .405 / .457 (10.30/11.60).

SIZE 16 REAR RELEASE REAR REMOVABLE PRE-TINNED PC TAIL COAX CONTACTS

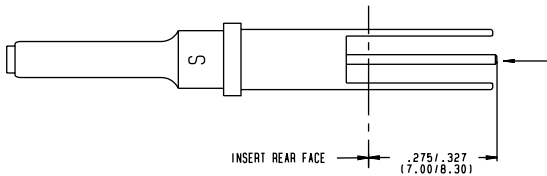
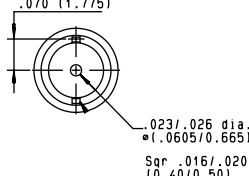
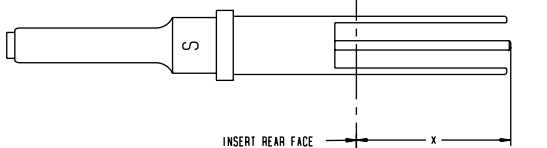
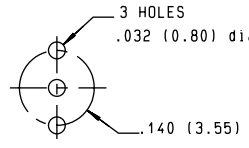
Contact type	P/N	Contact drawing	Rear extension from insert	Pc drill pattern
pin	618153002		.275/.346 (7.00/8.80) see note 1	
pin	618153003		.383/.455 (9.75/11.55) see note 2	

Ins/ext tool: 282546 (M81969/1-03)

Note 1: For contact arrangements 1-126 and 2-62T2, rear extension from insert is .297 / .368 (7.55/9.35).

Note 2: For contact arrangements 1-126 and 2-62T2, rear extension from insert is .405 / .476 (10.30/12.10).

SIZE 12 REAR RELEASE REAR REMOVABLE PC TAIL COAX CONTACTS

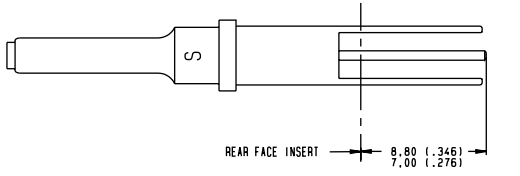
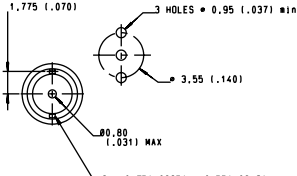
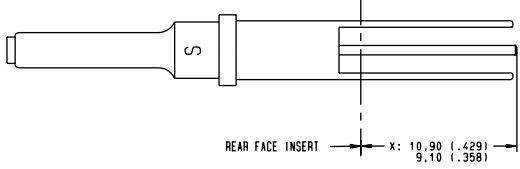
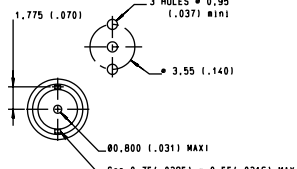
Contact type	P/N	Contact drawing	Rear extension from insert	Pc drill pattern
pin	618149002		.275/.327 (7.00/8.30) see note 1	
pin	618149003		.358/.409 (9.10/10.40) see note 2	

Ins/ext tool: 282546 (M81969/1-03)

Note 1: For contact arrangements 1-70C12, rear extension from insert is .307 / .358 (7.80 / 9.10).

Note 2: For contact arrangements 1-70C12, rear extension from insert is .390 / .441 (9.90 / 11.20).

SIZE 12 REAR RELEASE REAR REMOVABLE PRE-TINNED PC TAIL COAX CONTACTS

Contact type	P/N	Contact drawing	Rear extension from insert	Pc drill pattern
pin	618149006		.275/.347 (7.00/8.80) see note 1	
pin	618149007		.358/.429 (9.10/10.90) see note 2	

Ins/ext tool: 282546 (M81969/1-03)

Note 1: For contact arrangements 1-126 and 2-62T2, rear extension from insert is.

Note 2: For contact arrangements 1-126 and 2-62T2, rear extension from insert is.

CONCENTRIC TWINAX CRIMP CONTACTS

SIZE 8 REAR RELEASE REAR REMOVABLE CRIMP TWINAX CONTACTS

Non environmental size 8 pin contacts are delivered with an alignment boot (p/n: 618920) to reduce the play at the contact extremity.

Contact size	Contact arrangement	Cable	Pin	Socket	Wiring instruction
8	2-6T4 2-62T2, 2-20T4 2-11T2, 2-T6 1-47T2, 1-C12T6	EN 3375-004 EN 3375-005	618160*	618060*	J see p. 48
		EN 3375-003 M17/176-00002	618161*	618061*	
		EN 3375-003 EN3375-004 EN3375-005 M17/176-00002	618162*	618062*	
		ECS 0700	618166*	618066*	
		M17/176-00002	618180*	/	K see p. 49

*: Add 001 to these part numbers to be provided with environmental contacts (contact + sealing boot).

Ins/ext tool: 282549001 (M81969/28-03)

SIZE 8 REAR RELEASE REAR REMOVABLE TWINAX CONTACTS WITH PC TAIL

Contact type	p/n	Contact drawing	Total rear extension from insert (notes 1 & 2)	Pc tail length (notes 1 & 2)	Pc drill pattern (component side shown)
Pin	618163		.275/.327 (7.00/8.30)	.275/.327 (7.00/8.30)	
Pin	618164		.480/.520 (12.20/13.20)	.098/.138 (2.5/3.5)	
Pin	618164001		.518/.557 (13.15/14.15)	.234/.238 (5.95/6.05)	

Ins/ext tool: 282549001 (M81969/28-03)

Note 1: When installed in 2-62T2 insert these contacts have the following rear extension:

618163: .199/.250 (5.05/6.35), 618164: .403/.443 (10.25/11.25), 618164001: .441/.480 (11.20/12.20)

Note 2: These contacts are delivered with an alignment boot (p/n: 618920) to reduce the play at the contact extremity. ***This alignment boot protrudes 2.5mm max from the rear face of the insert; these 2.5mm are taken into account in the dimensions listed above.***

SIZE 8 REAR RELEASE REAR REMOVABLE TWINAX CONTACTS WITH PRE-TINNED PC TAIL

Contact type	p/n	Contact drawing	Total rear extension from insert (notes 1 & 2)	Pc tail length (notes 1 & 2)	Pc drill pattern (component side shown)
Pin	618163005		.275/.347 (7.00/8.80)	.297/.347 (7.55/8.80)	
Pin	618164002		.480/.540 (12.20/13.70)	.098/.157 (2.5/4.0)	
Pin	618164003		.518/.577 (13.15/14.65)	.234/.258 (5.95/6.55)	

Ins/ext tool: 282549001 (M81969/28-03)

Note 1: When installed in 2-62T2 insert these contacts have the following rear extension:

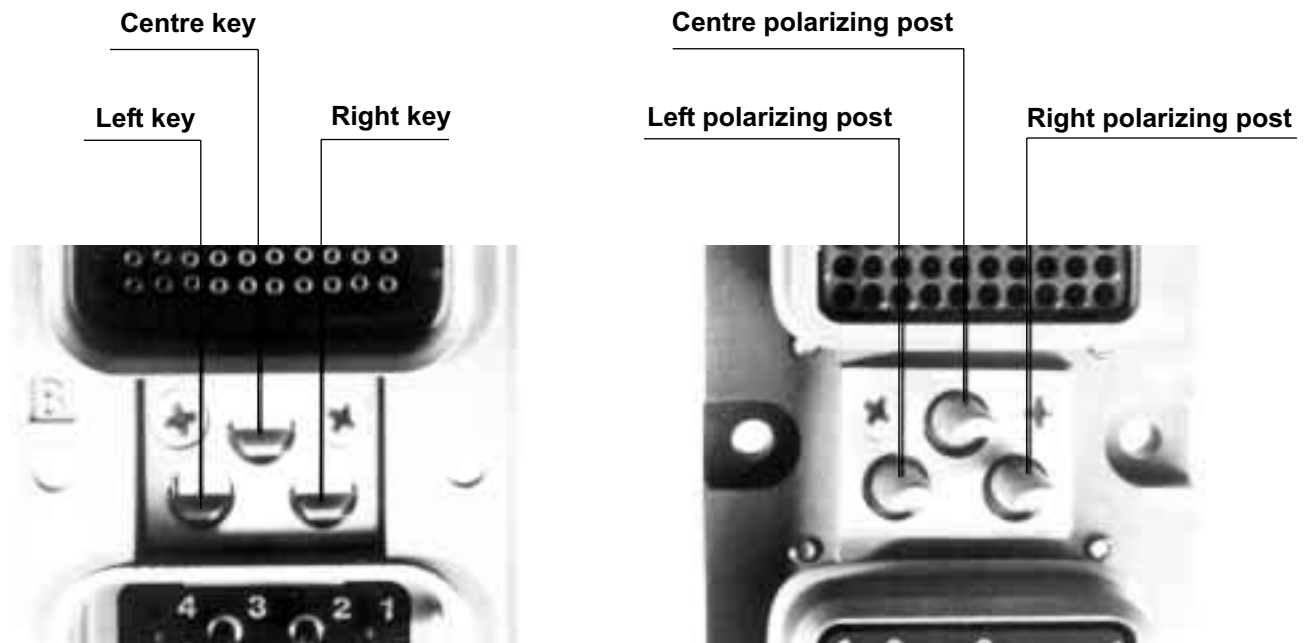
618163005: .199/.270 (5.05/6.85), 618164002: .403/.463 (10.25/11.75), 618164003: .441/.500 (11.20/12.70)

Note 2: These contacts are delivered with an alignment boot (p/n: 618920) to reduce the play at the contact extremity. ***This alignment boot protrudes 2.5mm max from the rear face of the insert.***

Code	Receptacle shell	Plug shell
00	Sizes 2, 3 & 4: all holes .150 (3.80)	Sizes 2, 3 & 4: all holes .150 (3.80)
10	Sizes 2, 3 & 4: all holes fitted with M3 clinch-nuts	Sizes 2, 3 & 4: all holes fitted with M3 clinch-nuts

POSITION OF POLARIZATION KEYS AND POSTS

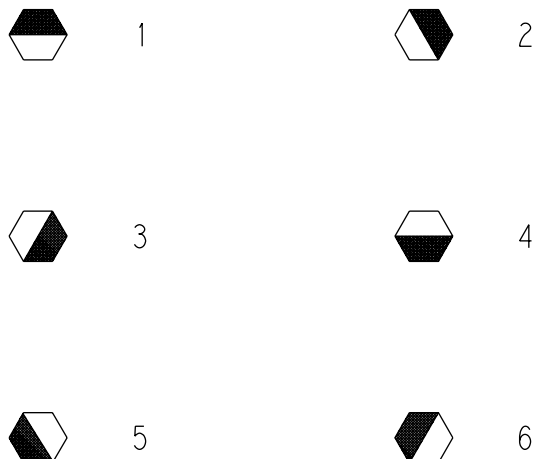
Connectors are shown front side , with cavity A upwards



POSITION CODING

Dark area represents the polarizing post

Clear portion represents the key hole



Code number	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
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

Code number	Receptacle shell			Plug shell		
	Left key	Center key	Right key	Left post	Center post	Right post
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
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

Sealing plugs

Cavity size	Sealing plug p/n	Color
22	616910	black
20	616911	red
16	616912	blue
12	616913	yellow
5	618910 + 618915	red
8	618911 + 618915	red

Filler plugs

Cavity size	Filler plug p/n	Color
22	620920	black
20	620921	red
16	620922	blue
12	620923	yellow
5	618910 for pin 618912 for socket	white
8	618911 for pin 618913 for socket	red

Cavity reducers



The following cavity reducers are not removable from the insert once installed. They are made of copper alloy and are nickel plated to allow contact cavity grounding.

Cavity reducer type	Part number
From pin size 8 to size 12	Environmental: 618940001 Non environmental: 618940
From socket size 8 to size 12	Environmental: 618941001 Non environmental: 618941

BACKSHELLS

Backshells are made of aluminum alloy and are cadmium yellow chromate plated. To order for one complete backshell you must order separately for an EMI backshell plus a combination of backshell terminations (i.e one complete backshell for cavity A= 4 each 618802011 + 1 each 618802010 + 1 each 618801002).

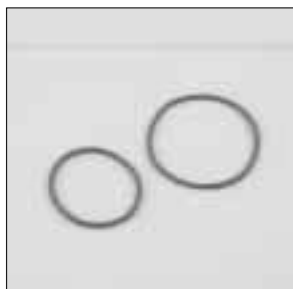
Designation	Part number
EMI backshell for cavities A,C & E	618801002
EMI backshell for cavities B,D & F	618800002
Backshell termination	618802010
Backshell blank termination	618802011

DUST CAPS



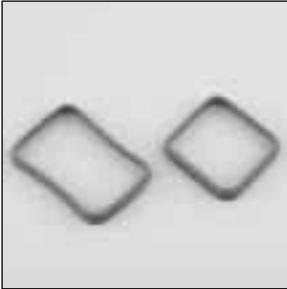
Descriptions	Part number
Conductive dust cap for receptacle shell	618953001
Conductive dust cap for plug shell	618953002
Non conductive dust cap for plug shell	618953

O-RING FOR INSERTS



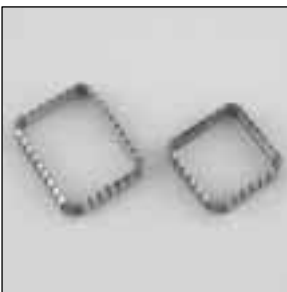
Descriptions	Part number
O-ring for inserts for A, C & E cavities	618953020
O-ring for inserts for B, D & F cavities	618953021

COUPLING SEALS



Descriptions	Part number
Coupling seals for A, C & E shell cavities	618953010
Coupling seals for B, D & F shell cavities	618953011

EMI SPRING



Descriptions	Part number
Kit made of one EMI spring for A, C & E shell cavities and of one EMI spring for B,D & F shell cavities	618810
EMI spring for A, C & E shell cavities	618810001
EMI spring for B, D & F shell cavities	618810002

POLARIZATION RETENTION SCREWS

A kit of two screws that are used to fix the polarization posts or keys retention plate is available

P/n: 618985

INSERTS INSTALLATION INSTRUCTIONS

- 1 - Place the sealing ring in the insert groove by hand, making sure that it is perfectly seated.
- 2 - Apply SICERON KF® “graisse silicone 500” grease on the sealing ring by using a brush.
- 3 - Place the insert from the back of the shell in the shell cavity, then push on the insert by hand ensuring inserts are correctly located, orientated and fully seated.
- 4 - Fix the insert retention plates on the shell with the screws and washers (torque = 1.9 in.lb).

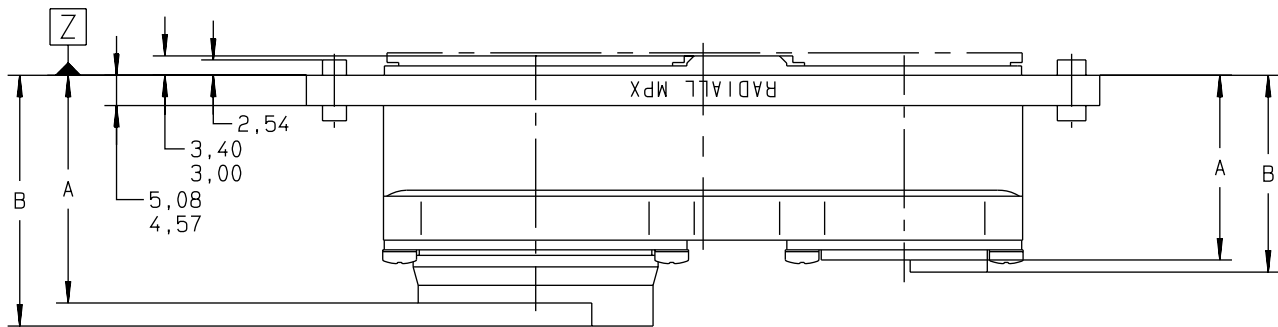
The table below gives A and B dimension values (A and B = distance between the front flange of the connector and the rear face of the insert). See drawings pages 38 to 43 for A and B description.

PLUG

Insert description	A and/or B dimension for plug environmental inch (mm)	A and/or B dimension for plug non environmental inch (mm)
1-60, 2-T6, 2-11C2, 2-34 1- C12T6, 1-24, 1-35, 1-47T2, 2-6T4, 2-11T2, 2-25, 2-20T4	.386/.449 (9.80/11.40)	NO REAR EXTENSION OF INSERTS FROM SHELL
1-150, 2-100	.228/.295 (5.80/7.50)	
2-62T2	A: Signal contacts: .228/.295 (5.80/7.50) B: Power contacts: .468/.512 (11.90/13.00)	
1-70C12, 1-126	A: Signal contacts: .228/.295 (5.80/7.50) B: Power contacts: .386/.449 (9.80/11.40)	

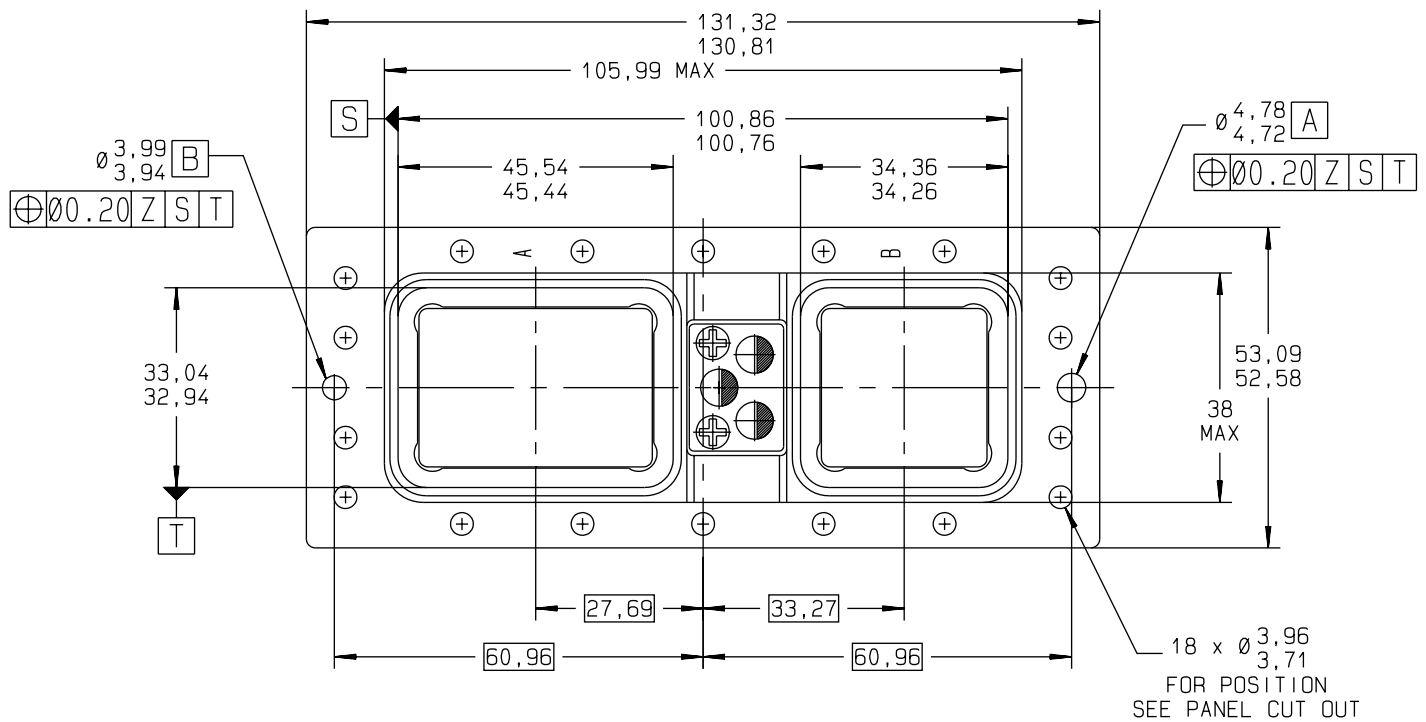
RECEPTACLE

Insert description	A and/or B dimension for receptacle environmental inch (mm)	A and/or B dimension for receptacle non environmental inch (mm)
1-60, 2-T6, 2-11C2, 2-34 1- C12T6, 1-24, 1-35, 1-47T2, 2-6T4, 2-11T2, 2-25, 2-20T4	1.610/1.657 (40.90/42.10)	1.275/1.313 (32.40/33.35)
1-150, 2-100, 1-126	1.441/1.492 (36.60/37.90)	1.171/1.215 (29.75/30.85)
2-62T2	A: Signal contacts: 1.441/1.492 (36.60/37.90) B: Power contacts: 1.512/1.557 (38.40/39.55)	1.171/1.215 (29.75/30.85)
1-70C12	1.457/1.518 (37/38.55)	

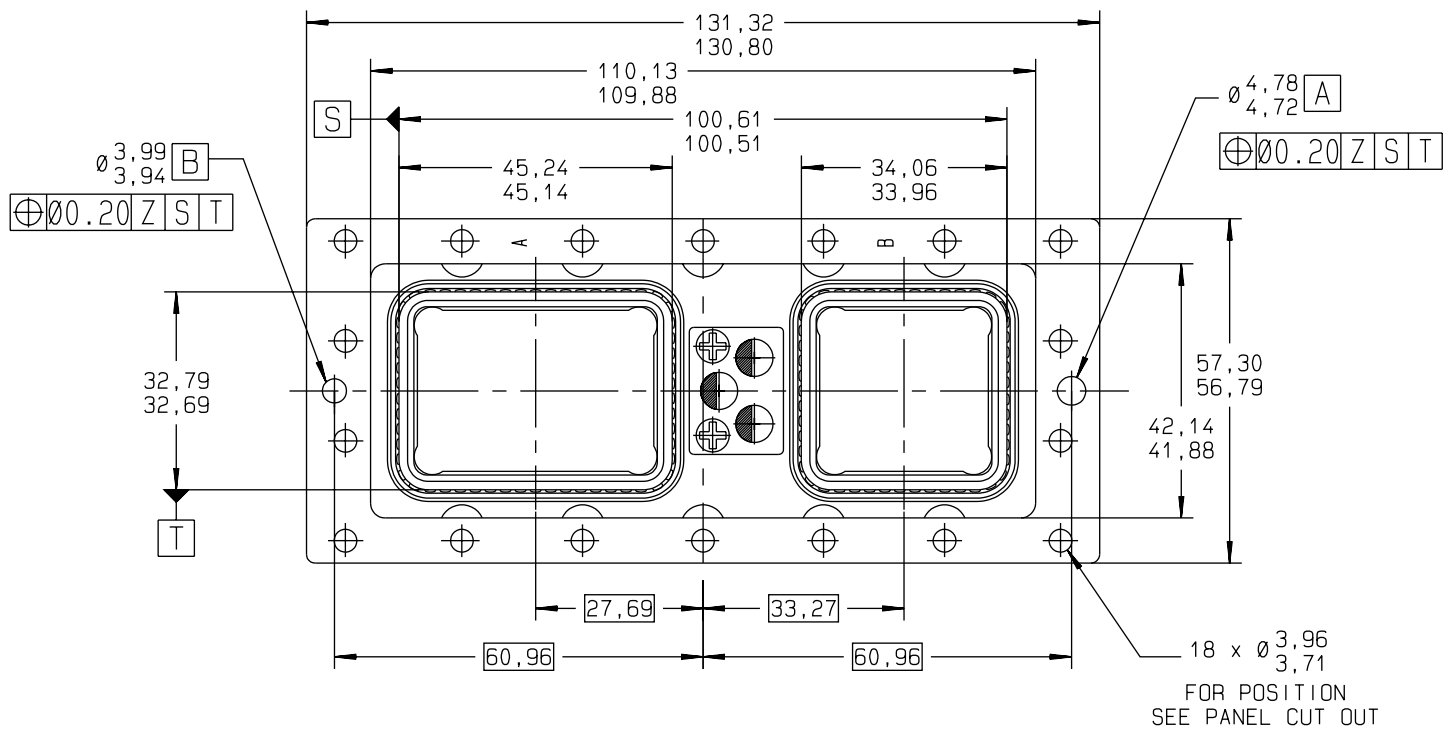
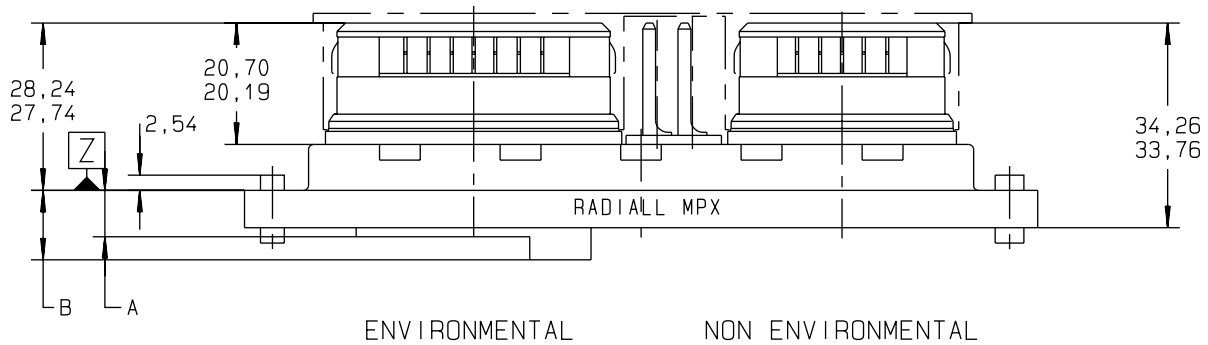


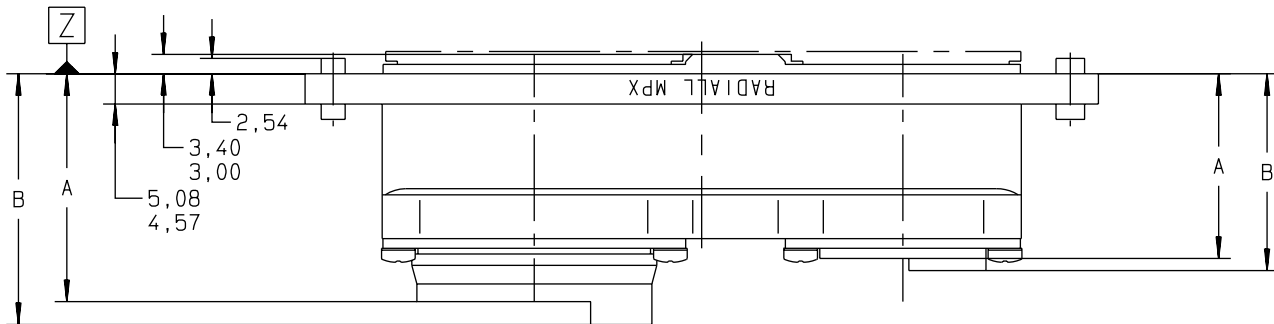
ENVIRONMENTAL

NON ENVIRONMENTAL



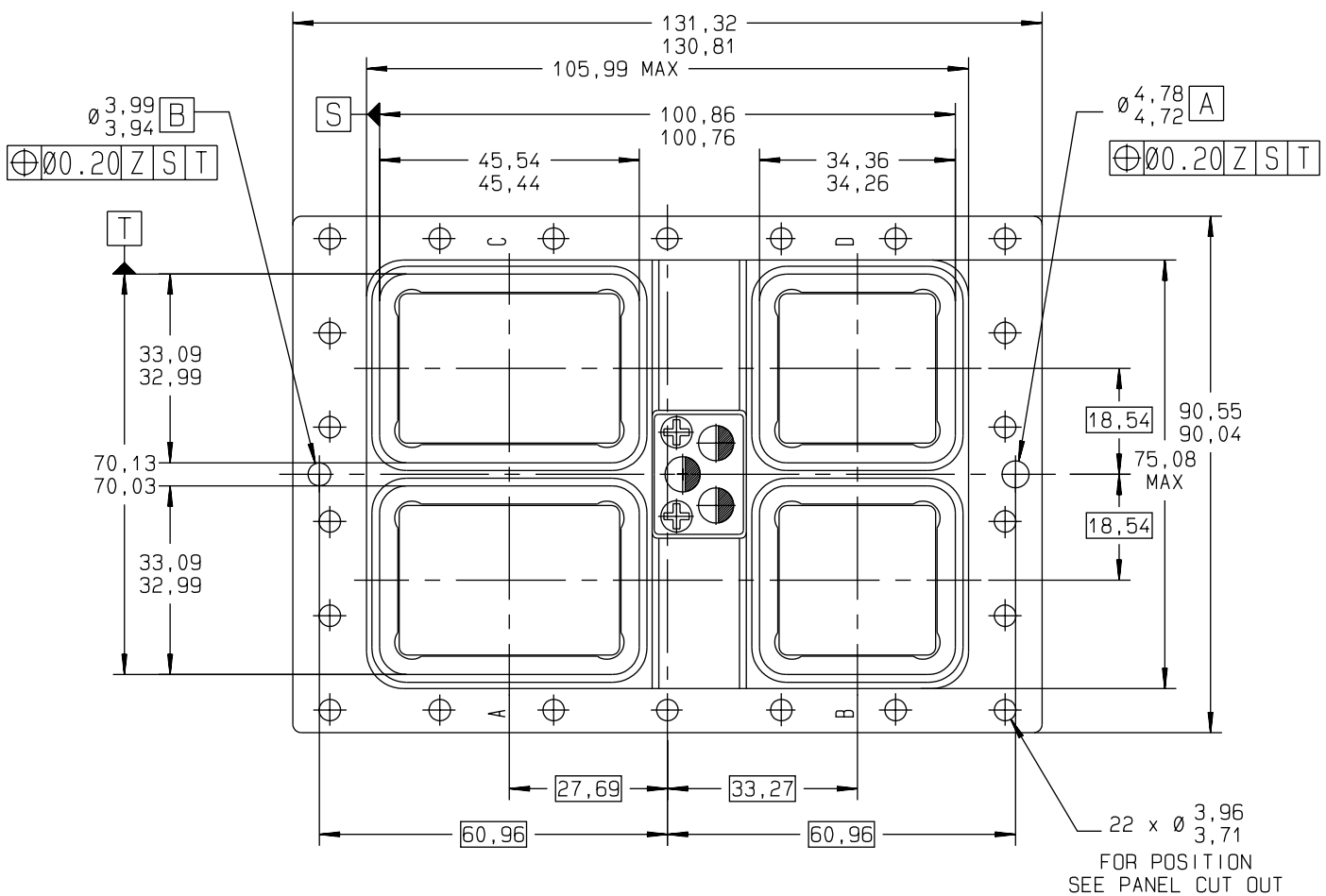
18 x $\varnothing 3,96$
3,71
FOR POSITION
SEE PANEL CUT OUT

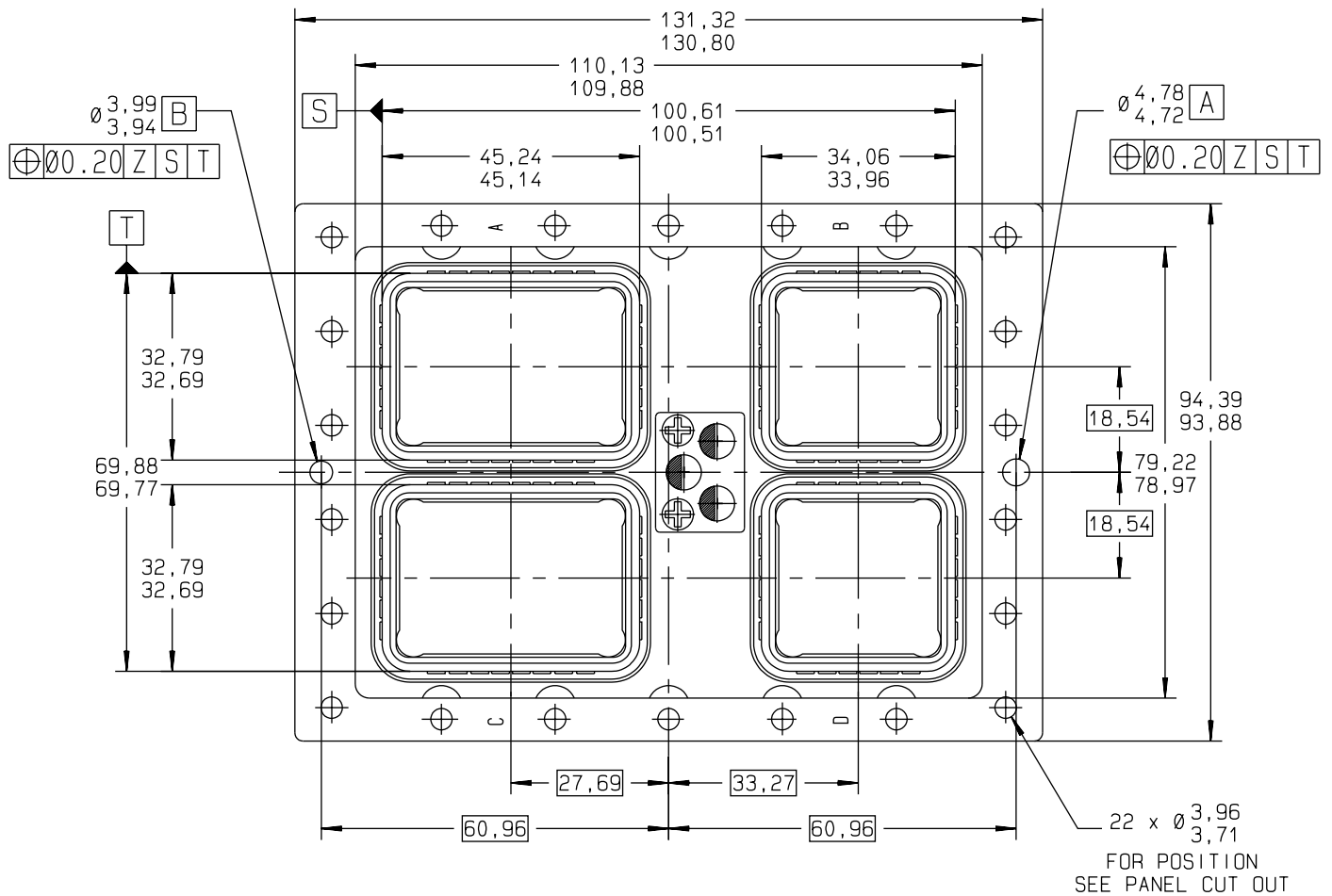
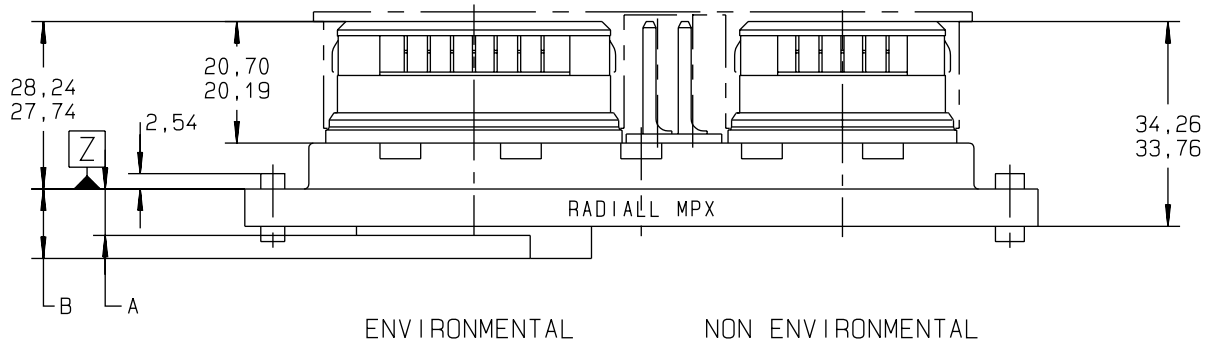


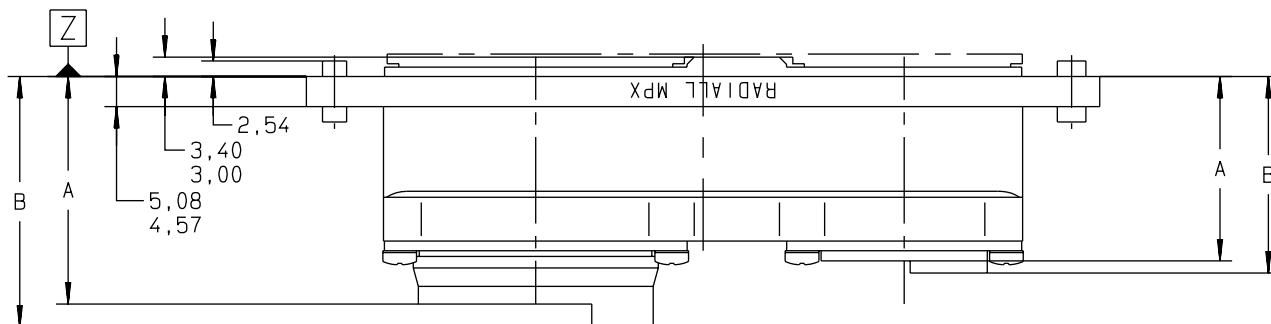


ENVIRONMENTAL

NON ENVIRONMENTAL

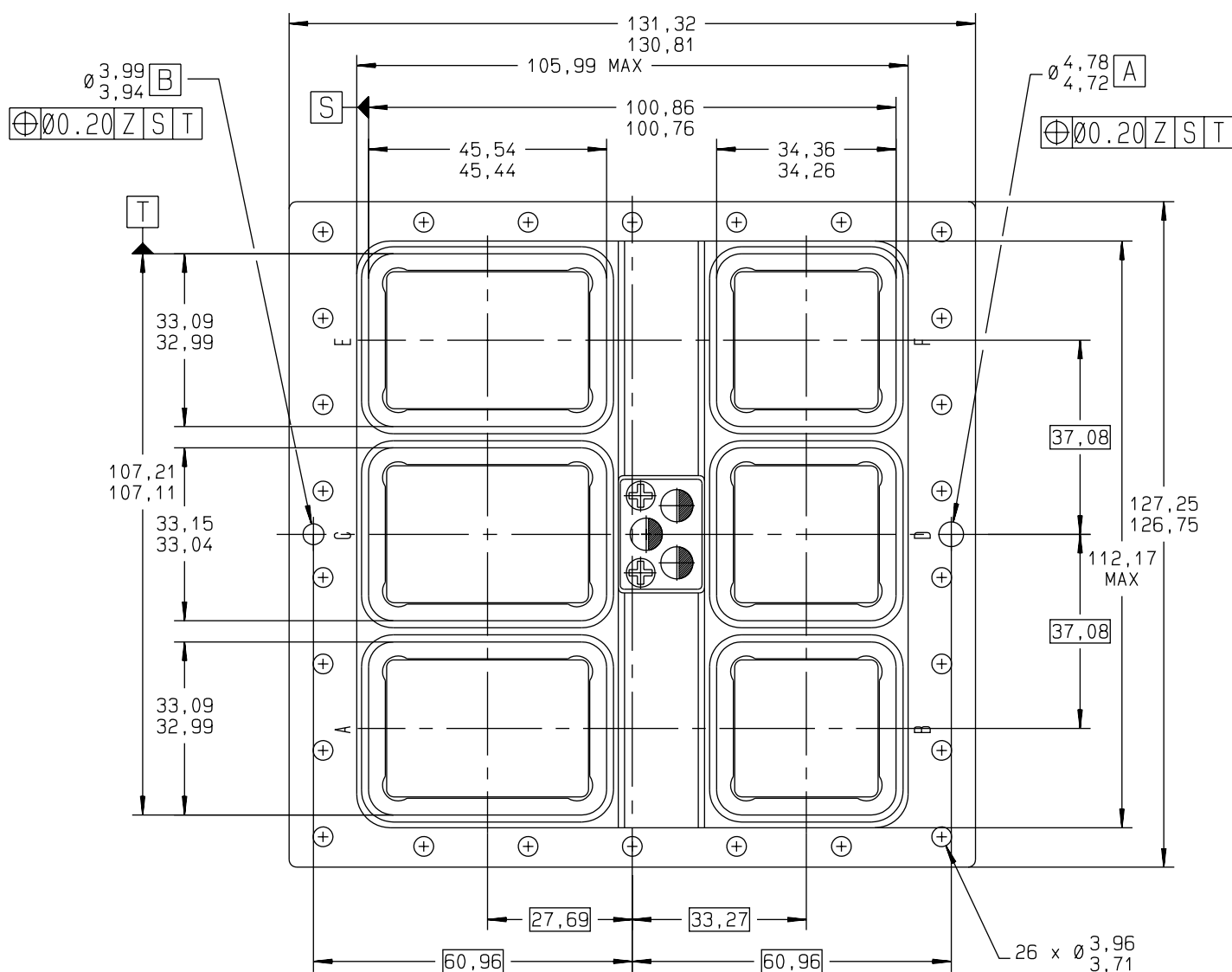




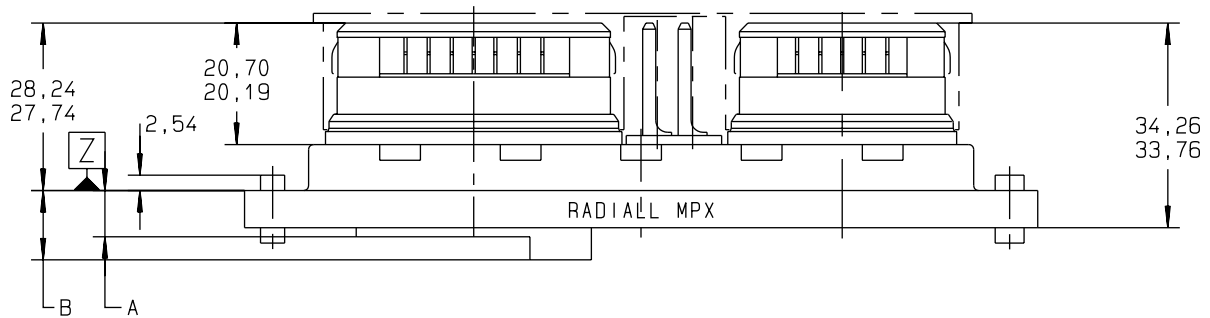


ENVIRONMENTAL

NON ENVIRONMENTAL

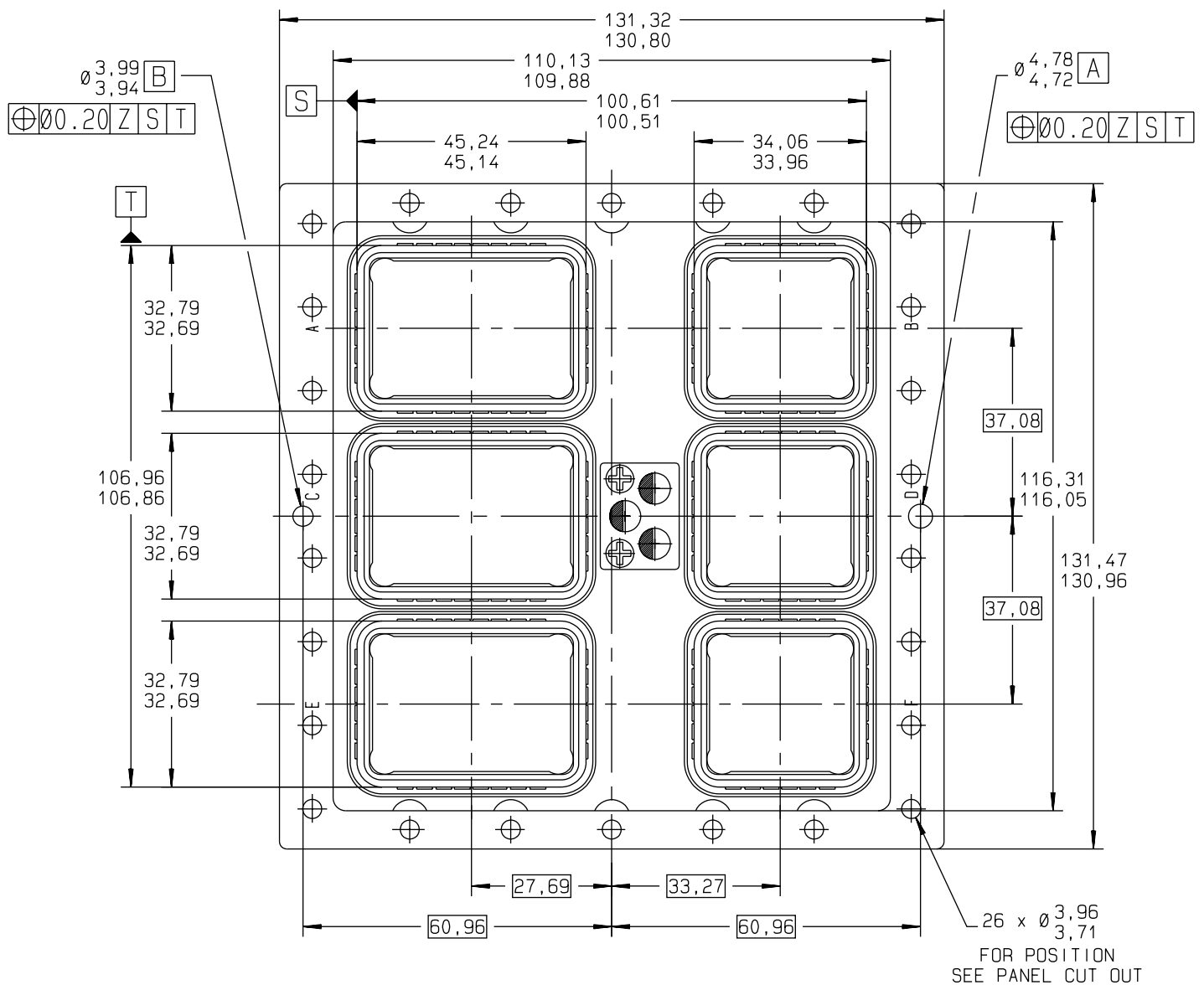


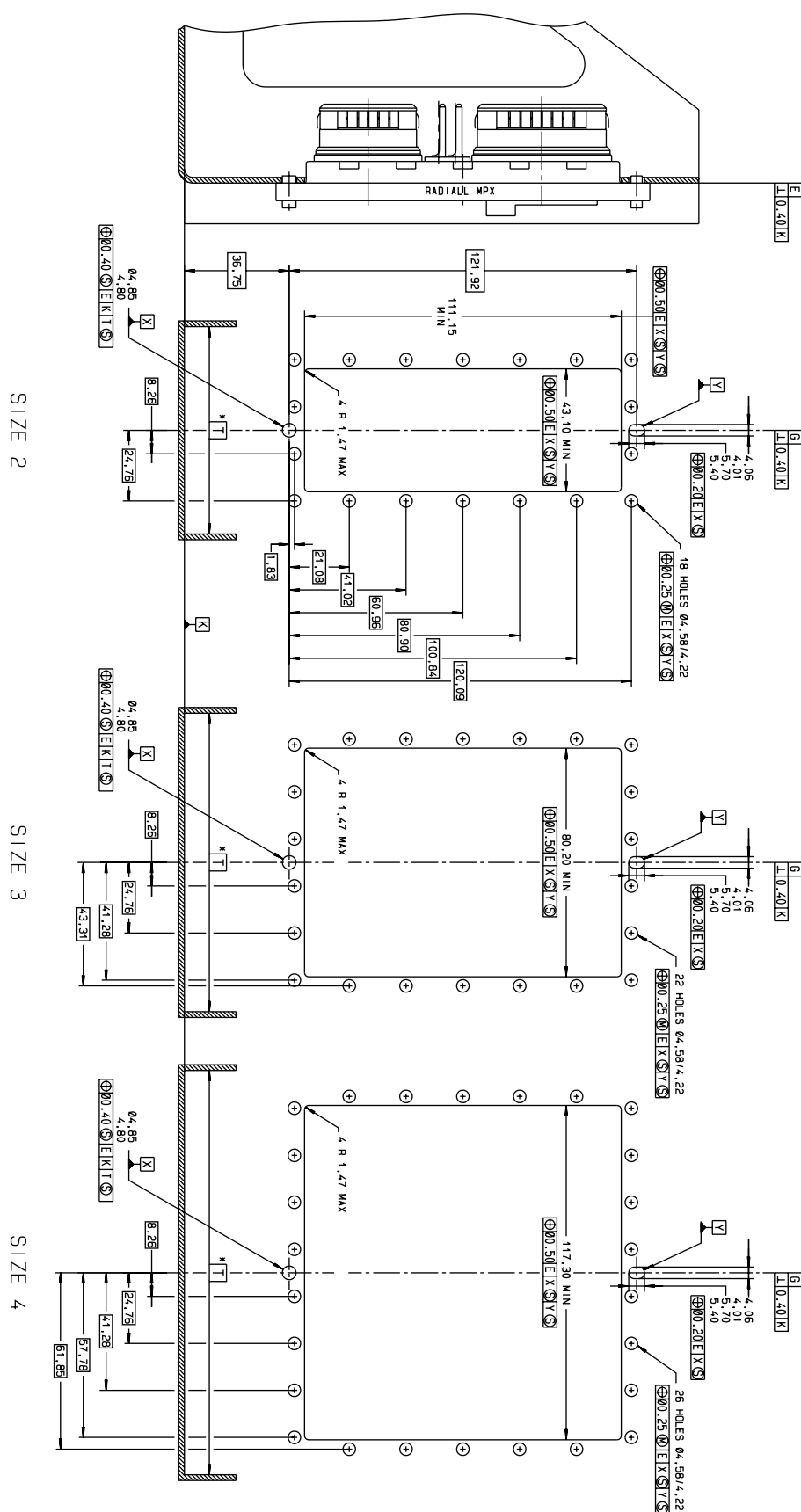
FOR POSITION
SEE PANEL CUT OUT

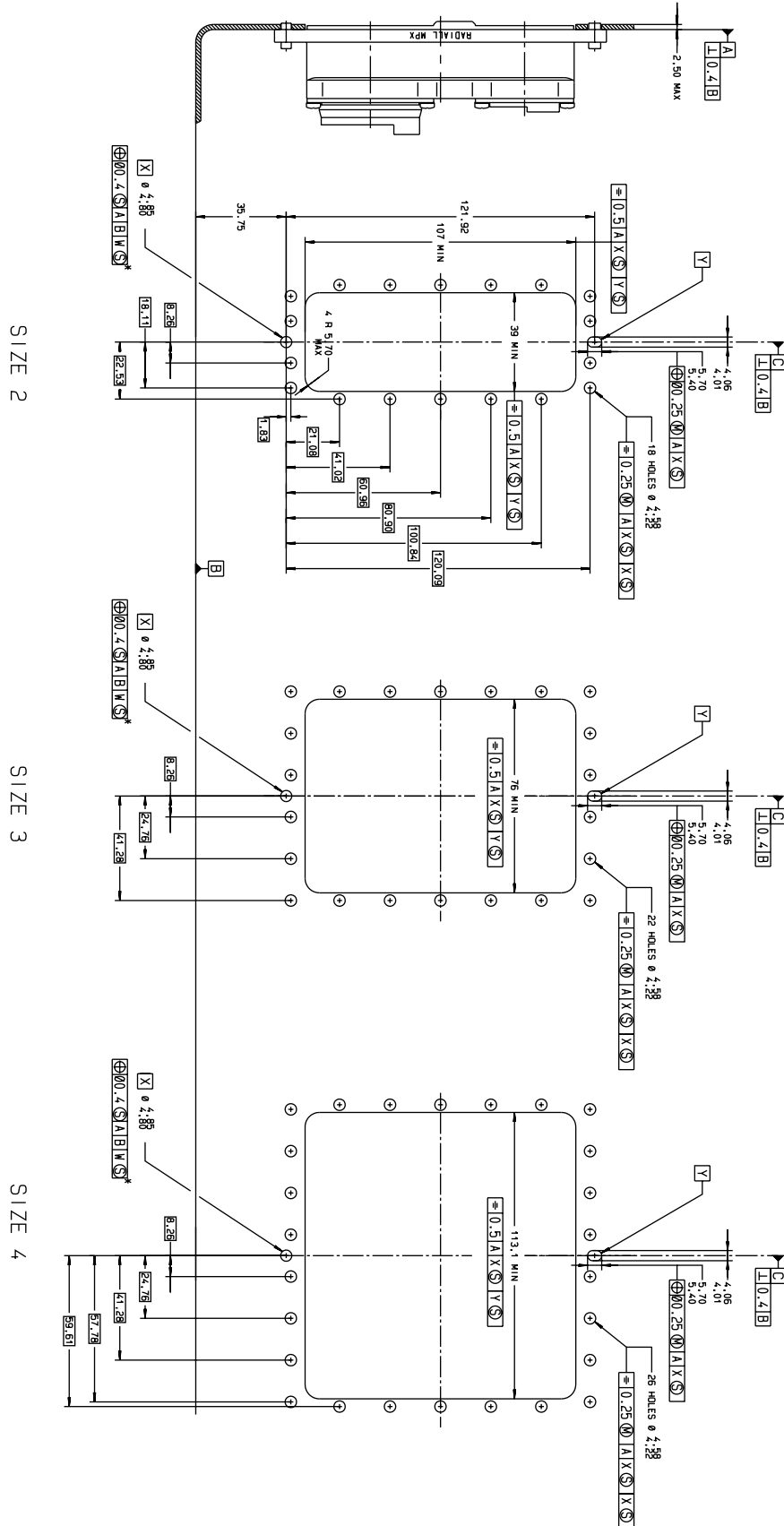


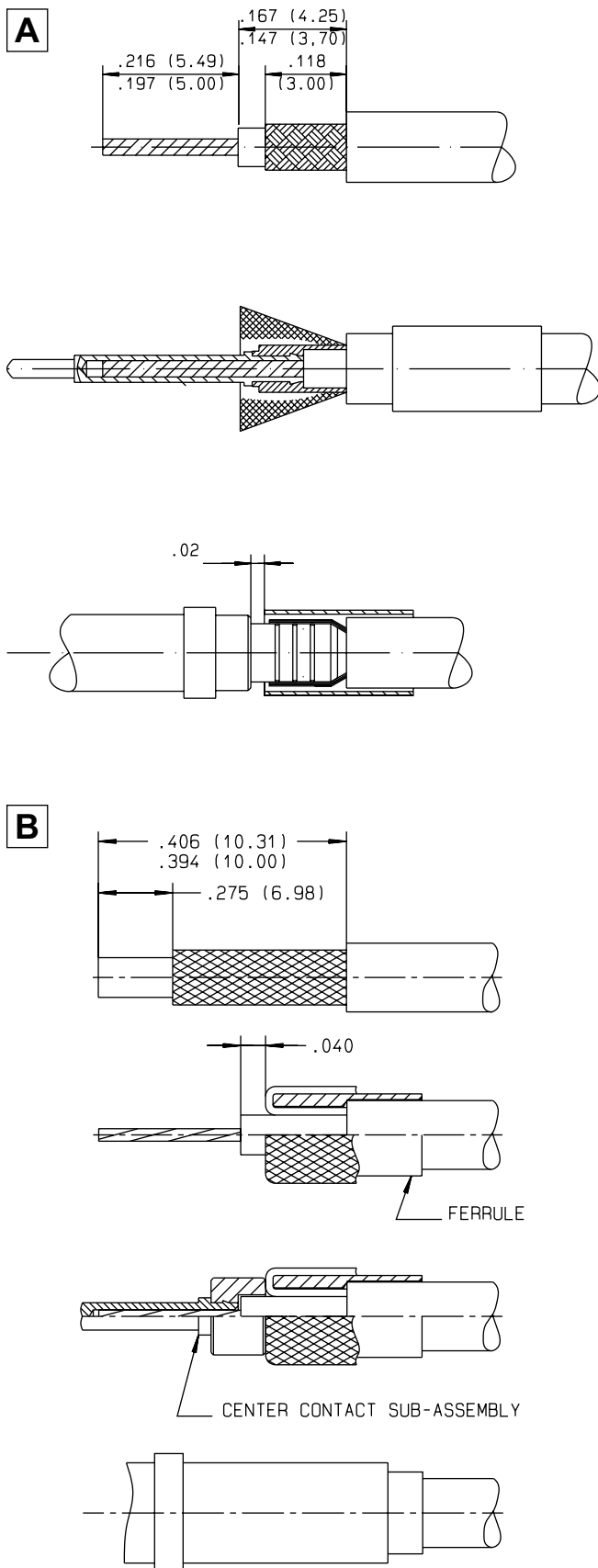
ENVIRONMENTAL

NON ENVIRONMENTAL









A.1 - Strip cable as shown

A.2 - Slide ferrule over sheath

- Fold back the first braid on cable jacket
- Cut high immunity rib on .118 strip off length
- Flare second braid
- Slide center conductor into center contact sub-assembly until it butts
- Crimp center contact
 - . Tool M22520/2-01 (RADIAL 282 281)
 - . Selector set 1 for ASNE0633WG & ASNE0639XY cables
 - set 2 for KX21, KX21DS, RG178, AXON P813859 & P822817, F1703/134, ASNE0690WL
 - . Positioner (DANIELS K 370) (RADIAL 282 555)

A.3 - Push cable assembly into contact outerbody

- Fold braid over barrel
- Slide ferrule to .020 of shoulder barrel
- Crimp the ferrule a first time
- Turn the contact of about 45°
- Crimp the ferrule a second time
 - . Tool M22520/4-01 (RADIAL 282 292)
 - . Positioner (RADIAL 282 556)
 - . INS / EXT tool (RADIAL 282 546)

B.1 - Strip the cable at dimensions shown

B.2 - Slide ferrule over braid until it butts against sheath

- Comb and fold braid over ferrule
- Strip dielectric

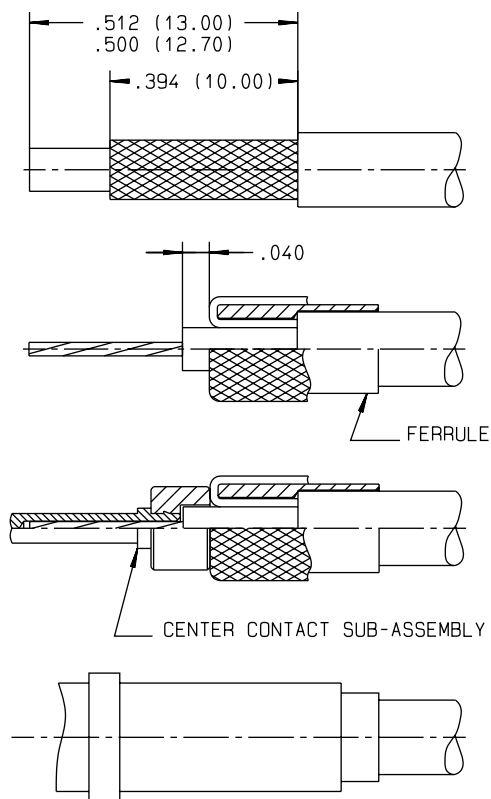
B.3 - Insert inner conductor into center contact sub assembly

- Crimp center contact using:
 - . Crimping tool: M22520/2-01 selector set 4
 - . Positioner: RADIAL 282 580

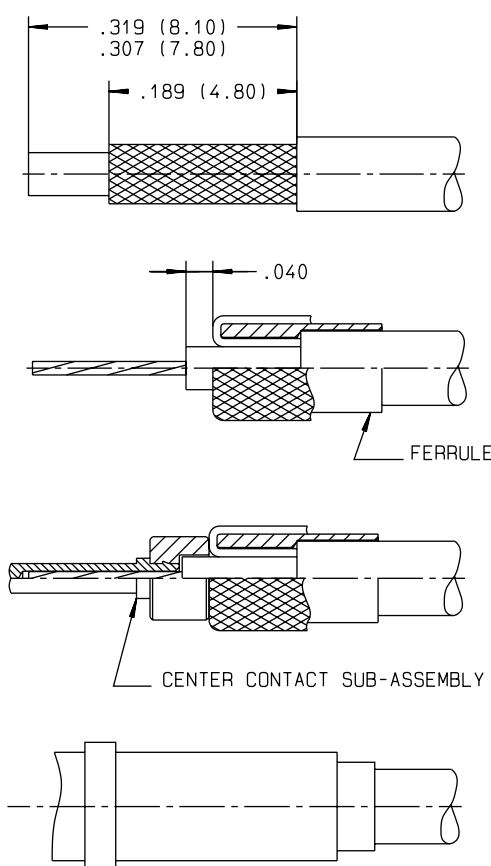
B.4 - Push cable assembly into outer contact

- Crimp outer contact using:
 - . Crimping tool: M22520/31-01 (DANIELS GS200)
 - . Positioner: RADIAL 282 581

C



D



C.1 - For BUS 3910 cable

- . Strip the cable at dimensions shown
- . Fold back outer braid and cut high immunity ribbon
- . Fold braid forward
- For AXON P503031 cable
 - . Strip the cable at dimensions shown
 - . Cut outer braid and high immunity ribbon

C.2 - Slide ferrule over braids until it butts against sheath

- Comb and fold braids over ferrule
- Strip dielectric

C.3 - Insert inner conductor into center contact sub-assembly

- Crimp center contact using:
 - . Crimping tool: M22520/2-01 selector set 5
 - . Positioner: RADIAL 282 580

C.4 - Push cable assembly into outer contact

- Crimp outer contact using:
 - . Crimping tool: M22520/31-01 (DANIELS GS200)
 - . Positioner: RADIAL 282 581

D.1 - Strip the cable at dimensions shown

D.2 - Slide ferrule over braid until it butts against sheath

- Comb and fold braid over ferrule
- Strip dielectric

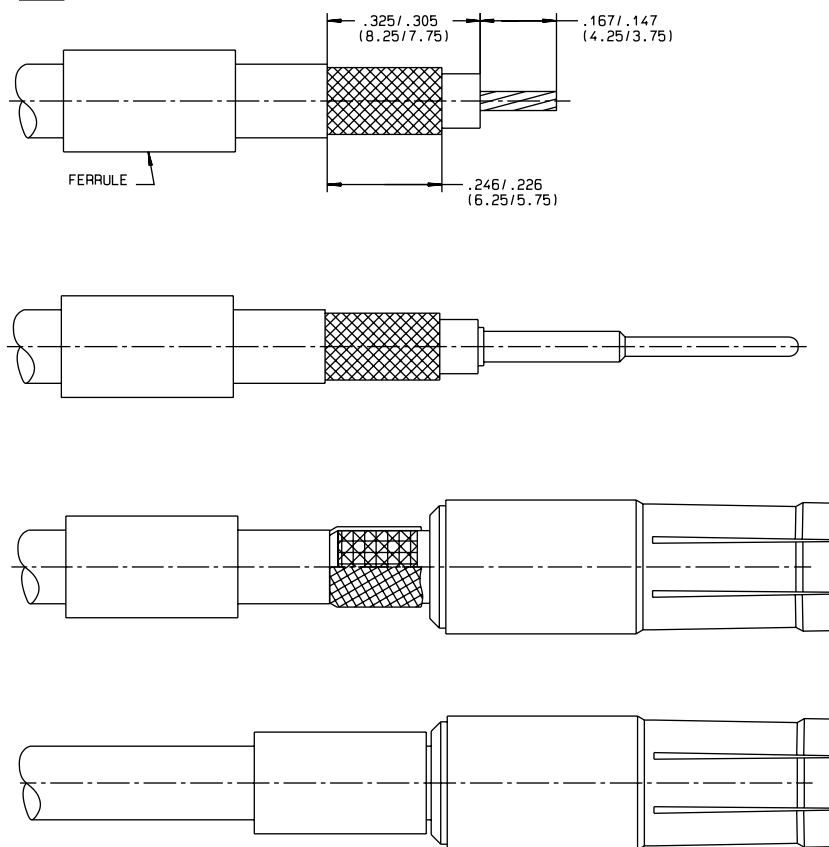
D.3 - Insert inner conductor into center contact sub-assembly

- Crimp center contact using:
 - . Crimping tool: M22520/2-01 selector set 4
 - . Positioner: RADIAL 285 580

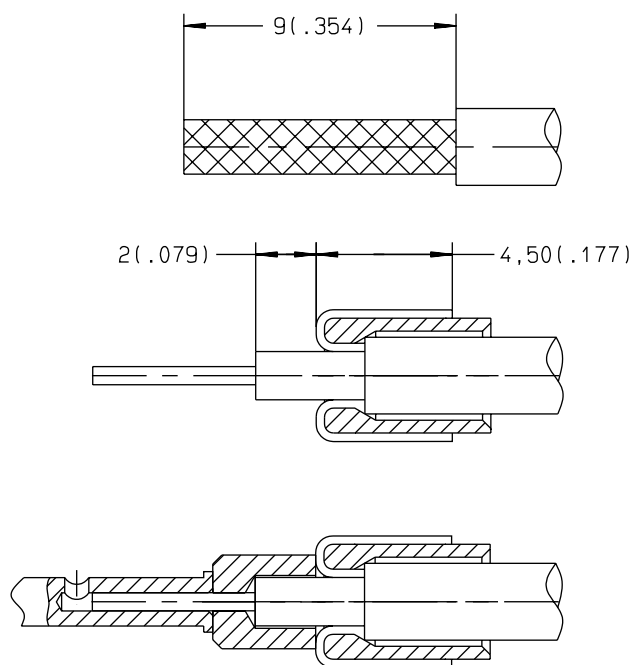
D.4 - Push cable assembly into outer contact

- Crimp outer contact using:
 - . Crimping tool: M22520/31-01 (DANIELS GS200)
 - . Positioner: RADIAL 282 581

E



F



E.1 - Slide sealing booth over cable

E.2 - Slide ferrule over outer jacket, next trim outer jacket, braid and dielectric to dimensions shown

E.3 - Slide center contact over inner conductor and crimp using:

- . Crimping tool: M22520/2-01 (RADIAL 282 281), selector on:
6 for RG400, RG58 & KX15
8 for RG141, RG142, RG223, ASNE0293XF & ASNE0691WM
- . Positioner: DANIELS K345 (RADIAL 282 550)

E.4 - Flare braid and slide outer contact underneath

E.5 - Slide ferrule over braid and crimp ferrule over outer contact using:

- . Crimping tool: M22520/5-01 (RADIAL 282 293)
- . Die: M22520/5-05 (RADIAL 282 246)
Hex B except Hex A for RG58 & KX15 cables

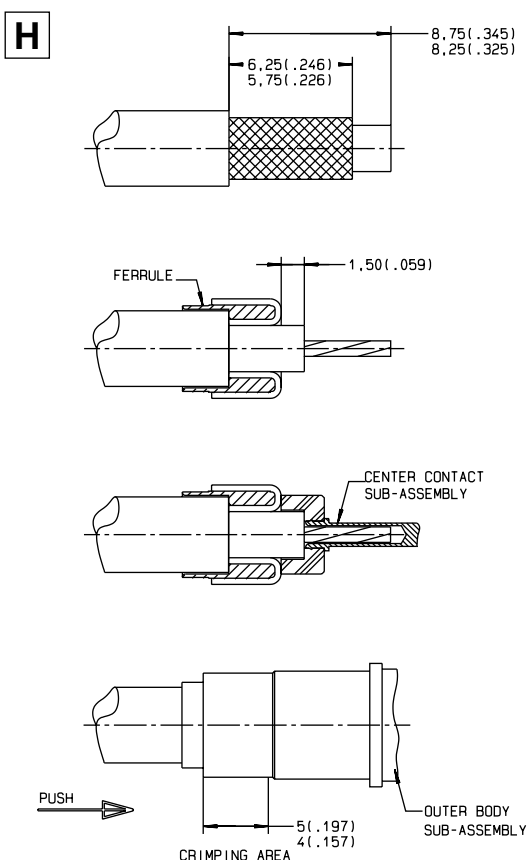
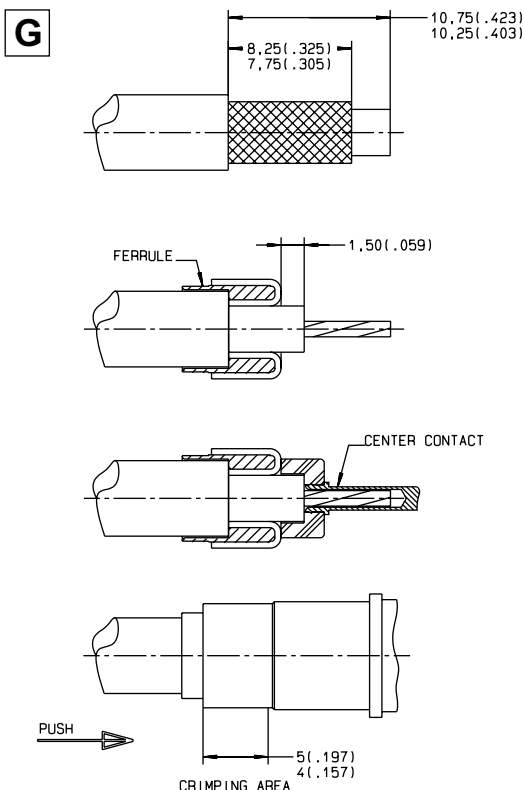
F.1 - Strip the cable as shown

F.2 - Slide ferrule over braid until it butts against sheath

- Comb and fold braid over ferrule
- Cut to dimension
- Then, strip dielectric to dimension shown
- Slide insulator over the center conductor
- Insert center conductor into center contact sub-assembly
- Crimp center contact, using:
 - . Tool M22520/2-01 (RADIAL 282 281) selector no. 7
 - . Positioner: DANIELS K345 (RADIAL 282 550)

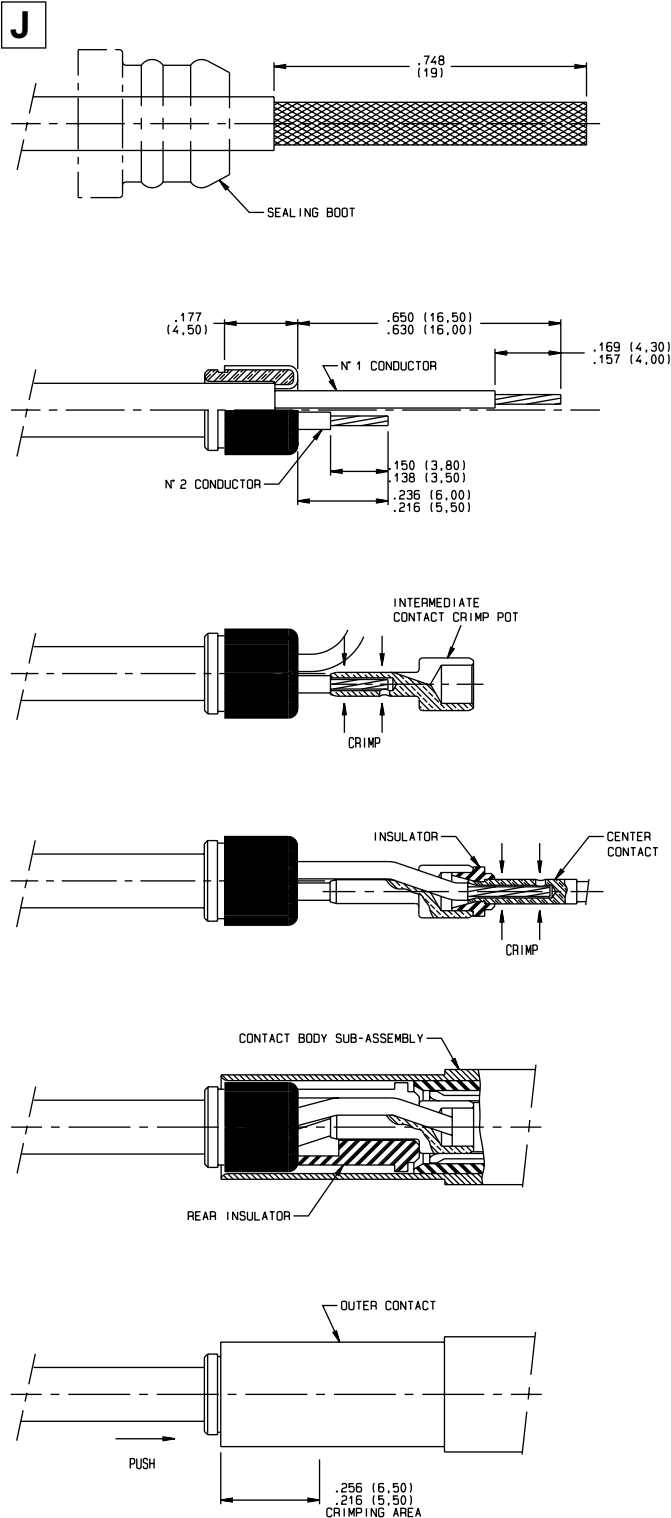
F.3 - Push cable assembly into body contact

- . Crimp using: M22520/5-01 (RADIAL 282 293)
- . Die: M22520/5-05 (RADIAL 282 246)
Hex. B



- G.1** - Strip cable at dimensions shown
- G.2** - Slide ferrule over braid until it butts against the cable jacket
 - Comb and fold back braid over ferrule
 - Strip dielectric to dimension shown
- G.3** - Slide center conductor into center contact until dielectric butts against center contact insulator. Then crimp.
 - . Crimping tool: M22520/2-01 (RADIAL 282 281) selector on:
 - 6 for KX15 and RG58 cables
 - 7 for RG316DU cable
 - 8 for RG141 cable
 - . Positioner: RADIAL 282 572
- G.4** - Push cable assembly into outer body and crimp, using:
 - . Crimping tool: M22520/5-01 (RADIAL 282 293)
 - . Die: M22520/5-45 (RADIAL 282 236)
 - . Hex A: .232 (5.9) on flats
- G.5** - Extraction tool: M81969/28-03 (RADIAL 282 549 001)

- H.1** - Strip cable at dimensions shown
- H.2** - Slide ferrule over braid until it butts against the cable jacket
 - Comb and fold back braid over ferrule
 - Cut the high immunity ribbon and strip dielectric to dimension shown
- H.3** - Slide center conductor into center contact until dielectric butts against center contact insulator.
 - Then, solder or crimp
 - . Crimping tool: M22520/2-01 (RADIAL 282 281) selector on 8
 - . Positioner: RADIAL 282 572
- H.4** - Push cable assembly into outer body and crimp, using:
 - . Crimping tool: M22520/5-01 (RADIAL 282 293)
 - . Die: M22520/5-45 (RADIAL 282 236)
 - . Hex A: .232 (5.9) on flats
- H.5** - Extraction tool: M81969/28-03 (RADIAL 282 549 001)



- For environmental application, before stripping, slide sealing booth over cable
- For non environmental pin contacts (670150, 670151, 618160 and 618161), slide centering boot over cable before stripping

J.1 - Trim cable jacket to length indicated

J.2 - Slide the ferrule over the cable

- Cut the high immunity ribbon if any
- Fold back braid or braids over the ferrule as indicated
- Cut braid or braids as shown
- Cut rod fillers
- Strip the two inner conductors

J.3 - Introduce the no. 2 conductor into the intermediate contact crimp pot

- Crimp the intermediate contact crimp pot:

. Crimping tool: M22520/2-01 (RADIAL 282 281)

. Selector: position 5

. Positioner: RADIAL 282 574

J.4 - Put the no. 1 cable in the slot of the intermediate contact crimp pot

- Slide the center contact over the conductor

- Crimp the center contact:

. Crimping tool: M22520/2-01 (RADIAL 282 281)

. Selector: position 5

. Positioner: RADIAL 282 576

J.5 - Install the rear insulator

- Introduce this cable assembly into the contact body sub-assembly

J.6 - Crimp the outer contact body barrel in the indicated crimping area

. Crimping tool: M22520/5-01 (RADIAL 282 293)

. Die: M22520/5-45 (RADIAL 282 236) hexagonal die closure B (.216 on flats)

. During the operation push on the cable

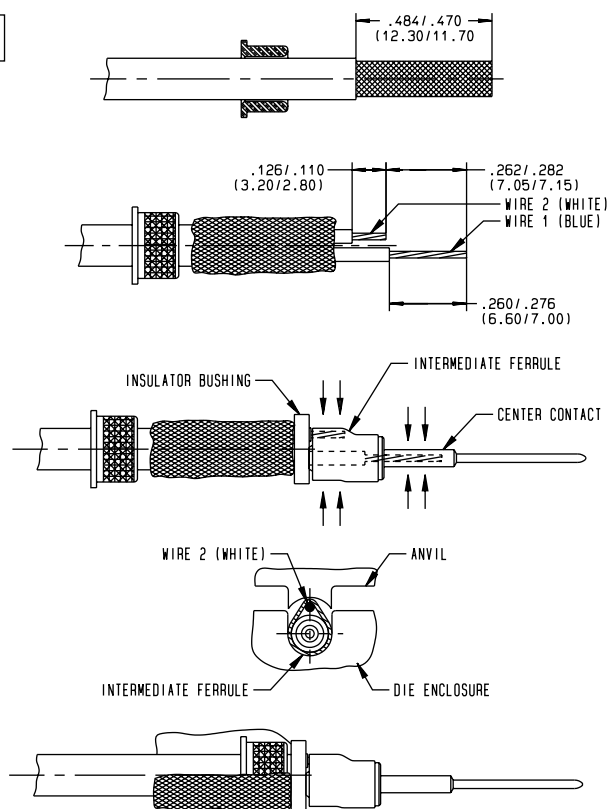
INSPECTION DIMENSIONS AFTER ASSEMBLY

PART NUMBER		DIMENSIONS	
CONNECTOR	CONTACT	A MAX	B MAX
MIL-C-83527A PrEN3682 MPX	618060		.0315 (0,8)
	618061		.0315 (0,8)
	618160	.039 (1)	
	618161	.039 (1)	
MIL-C-81659B DSX	616095001		.097 (2,46)
	616095009		.097 (2,46)
	616096004		.152 (3,86)
	616195001	.078 (1,97)	
	616195009	.078 (1,97)	
	616196003		
	616196004	.033 (0,84)	

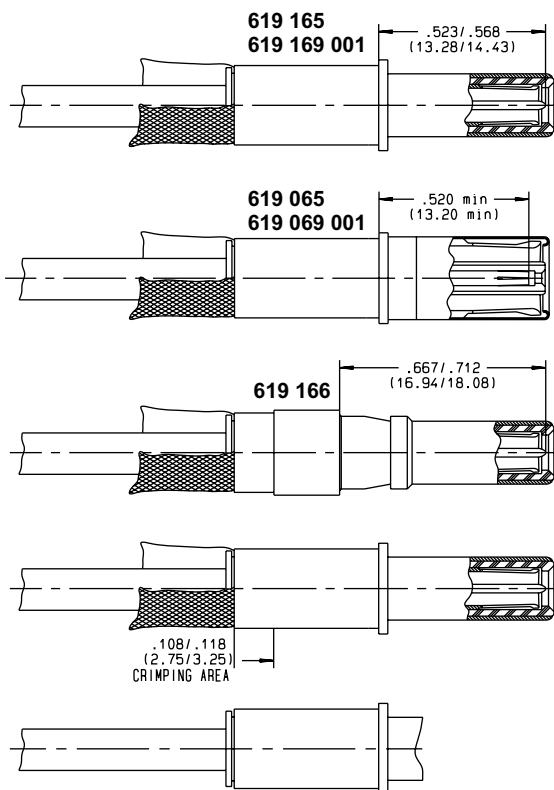
A: Distance between the end of outer pin contact and the end of the center pin contact

B: Distance between the end of outer socket contact and the end of intermediate pin contact

K



INSPECTION DIMENSIONS AFTER ASSEMBLY BEFORE CRIMPING



Before stripping, slide alignment boot or sealing boot over cable

- K.1** - Slide the inner ferrule over cable
 - Trim cable jacket to length indicated
- K.2** - Push the shield braid back and over the cable jacket
 - Cut rod filler
 - Strip the two inner wires to length indicated
- K.3** - Put the two wires in the insulator bushing until it's but against the shield braid
 - Introduce the wire 1 (blue) into the center contact
 - Introduce the wire 2 (white) into the intermediate ferrule
 - Crimp the center contact and the intermediate ferrule using:
 - . Crimping tool: M22520/5-01
 - . Die: DANIELS Y793 or Y793A
- K.4** - Be sure the wire 2 (white) is facing the anvil
- K.5** - Push the shield termination ferrule forward and under the braid until it is against the insulator bushing
- K.6** - Put the cable/center contact assembly in the rear of the outer contact
- K.7** - Crimp the outer contact in the indicated crimping area using:
 - . Crimping tool: M22520/5-01
 - . Die: DANIELS Y793 or Y793A
- K.8** - Cut around the braid so that the braid is flush with the surface of the outer contact

The table below shows examples of cross references. More cross references are available on our web site www.radiall.com

RADIALL P/N	AECMA EN3682 P/N	MIL-C-83527A P/N
618200	EN3155026M2222	
618210	EN3155026M2020	
618230	EN3155026M1616	
618240	EN3155026M1212	
618300	EN3155027F2222	
618310	EN3155027F2020	
618330	EN3155027F1616	
618340	EN3155027F1212	
MPX2A00	EN3682P2	
MPX2A0001	EN3682P201	
MPX2R00**	EN3682R2**	
MPX3A00	EN3682P3	
MPX3A0001	EN3682P301	
MPX3R00	EN3682R3	
MPX3R00**	EN3682R3**	
MPX3R0001	EN3682R301	
MPX4A00	EN3682P4	
MPX4A0001	EN3682P401	
MPX4R00	EN3682R4	
MPXE10	EN36821P0	
MPXE1P126	EN36821P126L	
MPXE1P150	EN36821P150L	M835270701
MPXE1P24	EN36821P24L	
MPXE1P47T2	EN36821P47T2GL	M835270703
MPXE1P60	EN36821P60L	M835270705
MPXE1PC12T6	EN36821PC12T6GL	
MPXE1R150	EN36821R150L	M835270801
MPXE1R47T2	EN36821R47T2GL	
MPXE1R60	EN36821R60L	
MPXE1RC12T6	EN36821RC12T6GL	
MPXE20	EN36822P0	
MPXE2A001S00**	EN36822P2G001**	M8352701A001
MPXE2A001X00**	EN36822P2G001**L	M8352701B001
MPXE2P100	EN36822P100L	M835270106
MPXE2P11C2	EN36822P11C2GL	
MPXE2P11C2A	EN36822P11C2AL	
MPXE2P11T2	EN36822P11T2GL	
MPXE2P11T2A	EN36822P11T2AL	
MPXE2P20T4	EN36822P20T4GL	
MPXE2P20T4A	EN36822P20T4AL	
MPXE2P34	EN36822P34L	M835270709
MPXE2P62T2	EN36822P62T2GL	

RADIALL P/N	AECMA EN3682 P/N	MIL-C-83527A P/N
MPXE2PT6	EN36822PT6GL	
MPXE2R001S00**	EN3682R2G001**	M8352702A001
MPXE2R001X00**	EN3682R2G001**L	M8352702B001
MPXE2R100	EN36822R100L	
MPXE2R11C2	EN36822R11C2L	M835270807
MPXE2R11T2	EN36822R11T2GL	
MPXE2R11T2A	EN36822R11T2AL	
MPXE2R20T4	EN36822R20T4GL	
MPXE2R20T4A	EN36822R20T4AL	
MPXE2R34	EN36822R34L	M835270809
MPXE2R62T2	EN36822R62T2GL	
MPXE3A004S00**	EN3682P3G004**	M8352703A004
MPXE3A004X00**	EN3682P3G004**L	M8352703B004
MPXE3R004S00**	EN3682R3G004**	M8352704A004
MPXE3R004X00**	EN3682R3G004**L	M8352704B004
MPXE4A009S00**	EN3682P4G009**	M8352705A009
MPXE4A009X00**	EN3682P4G009**L	M8352705B009
MPXE4A247S00**	EN3682P4G247**	
MPXE4R009S00**	EN3682R4G009**	M8352706A009
MPXE4R009X00**	EN3682R4G009**L	M8352706B009
MPXE4R247X00	EN3682R4G247**L	

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282246	25	618160	28	618164003	29
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282291	19	618162	28	618213002	22
282292	24	618163	29	618213005	22
282293	25	618164	29	618213006	22
282296	19	618166	28	618213007	22
282297	24	618180	28	618213008	22
282500	20	618200	19	618233001	22
282546	19-22-23-27	618210	19	618233002	22
282547	19-23	618230	19	618233003	22
282550	25	618240	19	618233006	23
282555	24	618270	19	618233007	23
282556	24	618300	19	618233008	23
282572	25	618302	21	618243001	23
282579	19	618310	19	618243002	23
282580	24	618311	19	618243003	23
282581	24	618330	19	618243004	23
282586	19	618340	19	618243005	23
282885	19-21	618341	19	618243006	23
282886	19-22	618342	19	618302001	21
282946	25	618360	20	618303001	21
282970	19	618361	20	618303002	21
282971	19	618362	20	618303003	21
282972	19	618370	19	618303004	21
616910	33	618810	35	618303005	21
616911	33	618910	33	618303007	21
616912	33	618911	33	618303008	21
616913	33	618912	33	618303009	21
618020	25	618913	33	618303010	21
618023	25	618915	33	618303011	21
618030	25	618940	33	618304001	20
618032	25	618941	33	618304002	20
618033	25	618953	34	618304003	20
618035	25	618985	35	618304004	20
618040	24	620920	33	618316001	22
618041	24	620921	33	618360001	20
618042	24	620922	33	618361001	20
618050	24	620923	33	618362001	20
618051	24	282549001	19-25-28-29	618800002	34
618053	24	282549004	19	618801002	34
618054	24	618021001	25	618802010	34
618060	28	618024001	25	618802011	34
618061	28	618040003	24	618810001	35
618062	28	618124001	25	618810002	35
618066	28	618140003	24	618940001	33
618120	25	618149002	27	618941001	33
618123	25	618149003	27	618953001	34
618135	25	618149006	27	618953002	34
618140	24	618149007	27	618953010	35
618141	24	618153001	26	618953011	35
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