

TABLE 1(a) – COMPONENT TYPE VARIANTS AND RANGE OF COMPONENTS

Variant Number	Shell Finish (See Para. 4.4.1 for details)	Shell Size	Mating / Unmating Forces (N)	Termination Type	Weight Max (g)
01	Nickel	See Note 1	See Note 1	See Note 2	See Note 2
02	Gold				

NOTES:

1. The Mating and Unmating Forces for each shell size are shown in the table below:

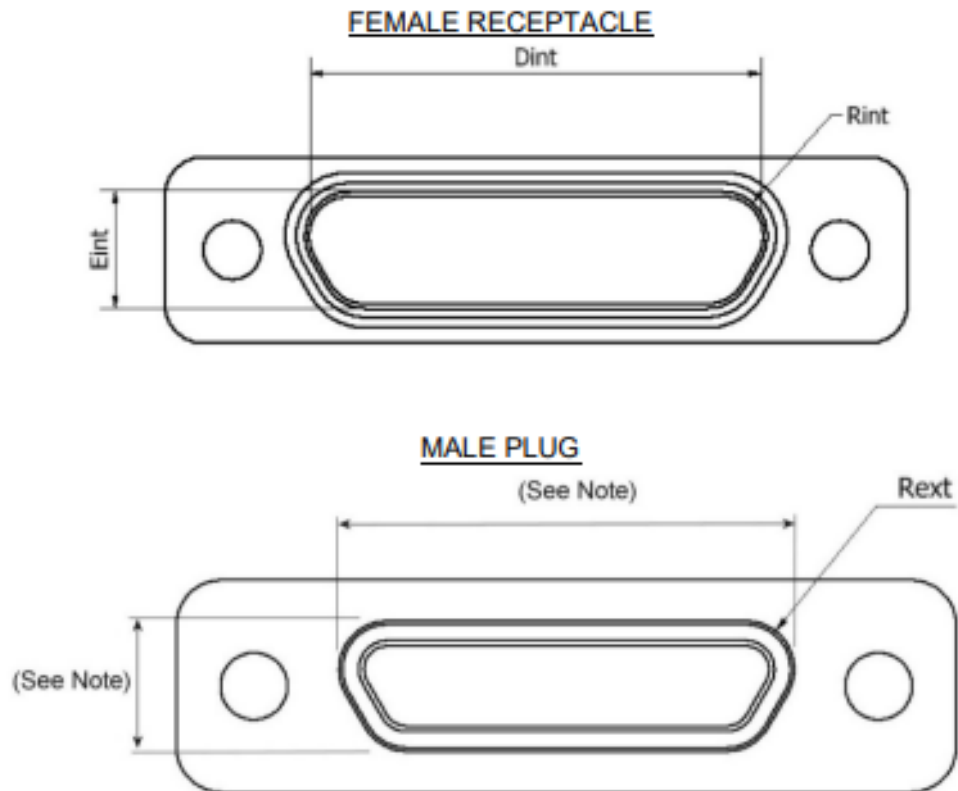
Shell Size (Number of Contacts)	Mating Force N Max	Unmating Force	
		N Max	N Min
9	25	25	1.3
15	42	42	2
21	58	58	2.9
25	70	70	3.5
31	86	86	4.3
37	103	103	5.1
51	142	142	7.1
51-2R	142	142	7.1
69	192	192	9.6
100	278	278	13.9

2. The specified maximum weights for the available termination types, by shell size, are shown in the table below:

Termination Types (See Para. 4.5.3.3 for details)	Shell Sizes										Remarks
	9	15	21	25	31	37	51	51-2R	69	100	
	Weight Max (g)										
FR112 to FR116, FR112A to FR115A, FR112B to FR115B, FR123, FR123A, FR123B	2.2	3	3.8	4.3	5.1	5.9	7.2	7.2	8.2	11.8	(a)
FR136	7.4	7.8	8.5	10.2	12.2	14.4	16.5				(b)
FR136A	7.4										(b)
FR139	4.6	5	5.4	6.5	7.7	9.2	10.5				(b)
FR164	2.4	3.3	4.2	4.8	5.7	6.7	8.2	8.2	9.1	13.4	(c)
GMR7580, 75SBB, 75SBT	3.6	4.3	5.1	5.4	6.2	7	8.1		14.2	20.9	(b)
GMR7590	3.5	4.3	5	5.6	6.5	7.3	9.2		17	25.5	(b)
75RBB, 75RBT	3.5	4.3	5	5.6	6.5	7.3	9.2			25.5	(b)
CBRB, CBRT	3	3.6	4.3	4.8	6.1	7	9.3				(b)
FR171	2.5	3.5	4.5	5.1	6.1	7.1	9				(c)
FR171M1, FR171M2	5.2	6.2	7.2	7.8	8.8	9.8	12				(c)

FIGURE 2 - PHYSICAL DIMENSIONS

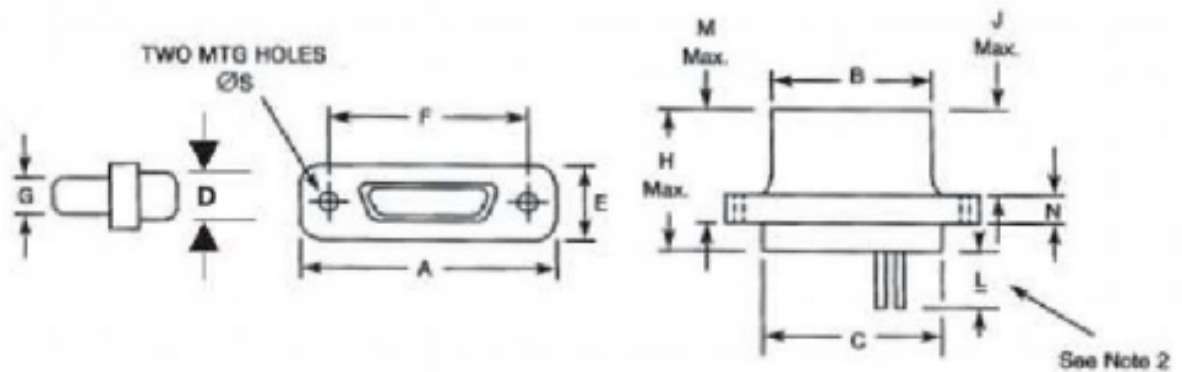
FIGURE 2.0 – MALE AND FEMALE INTERFACE DIMENSIONS



NOTE: These dimensions are specified in the PLUG MALE CONTACTS Figures on the following pages.

Shell Size	Dint Min.	Eint Min.	Rint Min.	Rext Max.
9	8.49	4.7	1.704	1.699
15	12.3	4.7	1.704	1.699
21	16.11	4.7	1.704	1.699
25	18.65	4.7	1.704	1.699
31	22.46	4.7	1.704	1.699
37	26.27	4.7	1.704	1.699
51	25	5.8	1.704	1.699
51-2R	35.16	4.7	1.704	1.699
69	32.67	5.85	1.704	1.699
100	35.19	6.78	1.704	1.699

FIGURE 2.1A CONNECTOR SHELLS - PLUG MALE CONTACT – FR11x TO FR12x

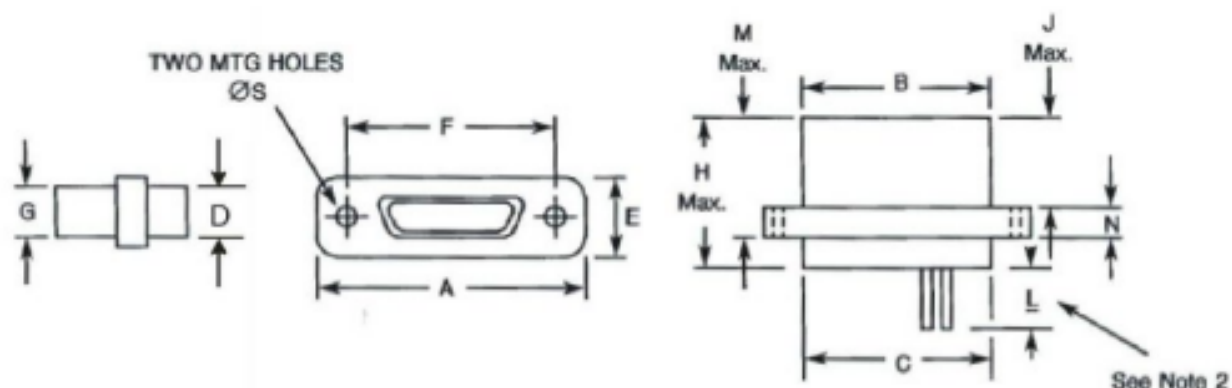


Shell Size	A Max.	B Max.	C Max.	D Max.	E Max.	F		G Max.	H Max.	J Max.	M Max.	N		ØS	
						Min.	Max.					Min.	Max.	Min.	Max.
9	19.94	8.48	10.16	6.86	7.82	14.22	14.48	4.69	10.57	4.72	7.21	2.23	2.49	2.23	2.44
15	23.75	12.29	13.97	6.86	7.82	18.03	18.29	4.69	10.57	4.72	7.21	2.23	2.49	2.23	2.44
21	27.56	16.1	17.78	6.86	7.82	21.84	22.1	4.69	10.57	4.72	7.21	2.23	2.49	2.23	2.44
25	30.1	18.64	20.32	6.86	7.82	24.38	24.64	4.69	10.57	4.72	7.21	2.23	2.49	2.23	2.44
31	33.91	22.45	24.13	6.86	7.82	28.19	28.45	4.69	10.57	4.72	7.21	2.23	2.49	2.23	2.44
37	37.72	26.26	27.94	6.86	7.82	32	32.26	4.69	10.57	4.72	7.21	2.23	2.49	2.23	2.44
51	36.45	24.99	26.67	7.87	8.92	30.73	30.99	5.79	10.57	4.72	7.21	2.23	2.49	2.23	2.44
51-2R	46.61	35.15	36.83	6.86	7.82	40.89	41.15	4.69	10.57	4.72	7.21	2.23	2.49	2.23	2.44
69	44.07	32.61	34.29	7.87	8.92	38.35	38.61	5.79	10.57	4.72	7.21	2.23	2.49	2.23	2.44
100	55.12	35.15	36.63	9.14	10.01	45.59	45.85	6.88	10.57	4.72	7.21	2.23	2.49	3.73	3.86

NOTES:

1. All dimensions are in millimetres.
2. For wire dimensions including Length L, refer to Para. 4.5.3.3 and Figures 2.4 and 2.5, as applicable.
3. For floating mount and captive nut mounting options, see Figures 2.7 and 2.8 respectively.

FIGURE 2.1B CONNECTOR SHELLS - RECEPTACLE FEMALE CONTACTS – FR11x TO FR12x



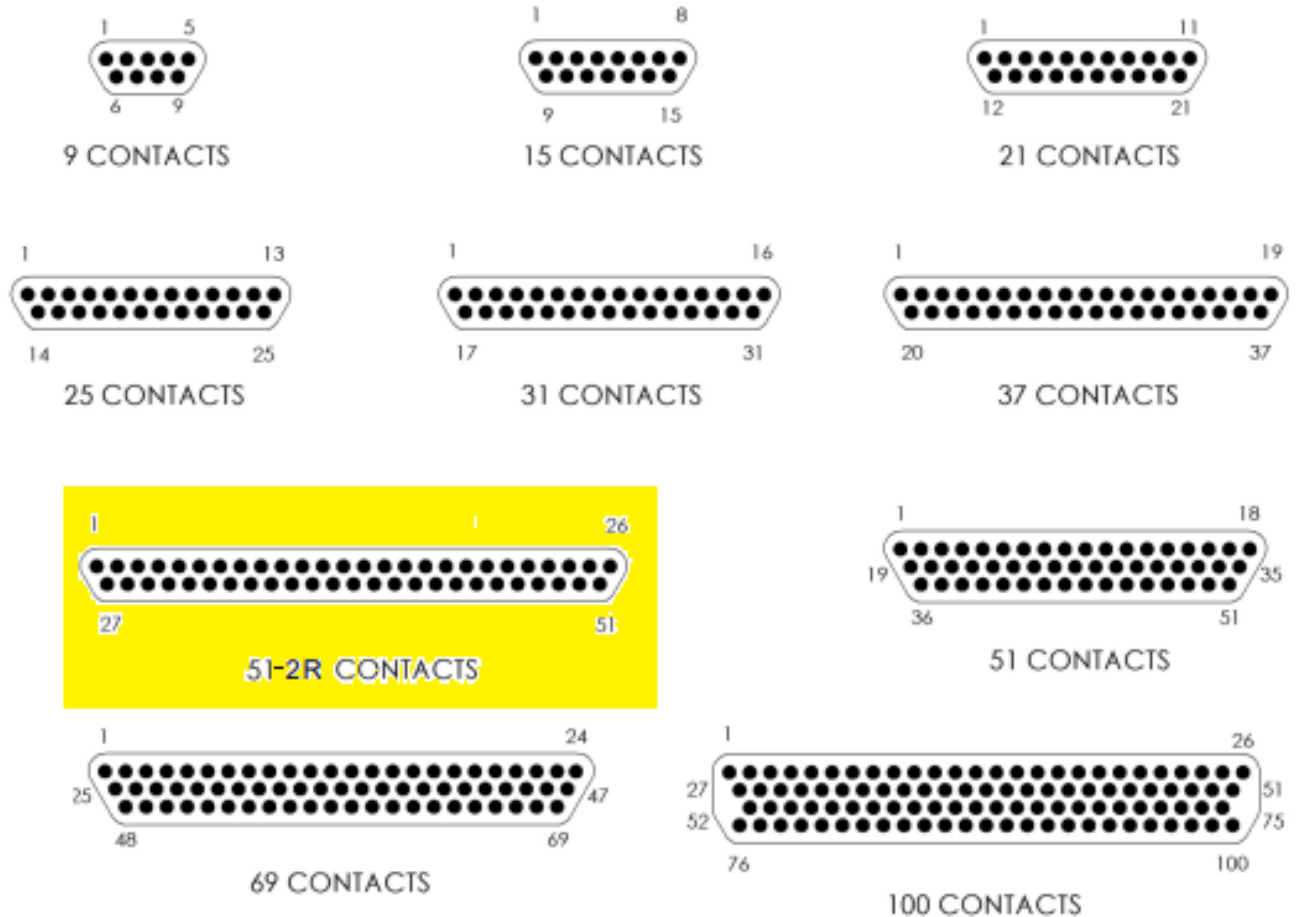
Shell Size	A Max.	B Max.	C Max.	D Max.	E Max.	F		G Max.	H Max.	J Max.	M Max.	N		ØS	
						Min.	Max.					Min.	Max.	Min.	Max.
9	19.94	10.16	10.16	6.86	7.82	14.22	14.48	6.38	10.9	5.05	7.54	2.23	2.49	2.23	2.44
15	23.75	13.97	13.97	6.86	7.82	18.03	18.29	6.38	10.9	5.05	7.54	2.23	2.49	2.23	2.44
21	27.56	17.78	17.78	6.86	7.82	21.84	22.1	6.38	10.9	5.05	7.54	2.23	2.49	2.23	2.44
25	30.1	20.32	20.32	6.86	7.82	24.38	24.64	6.38	10.9	5.05	7.54	2.23	2.49	2.23	2.44
31	33.91	24.13	24.13	6.86	7.82	28.19	28.45	6.38	10.9	5.05	7.54	2.23	2.49	2.23	2.44
37	37.72	27.94	27.94	6.86	7.82	32	32.26	6.38	10.9	5.05	7.54	2.23	2.49	2.23	2.44
51	36.45	26.67	26.67	7.87	8.92	30.73	30.99	7.52	10.9	5.05	7.54	2.23	2.49	2.23	2.44
51-2R	46.61	36.83	36.83	6.86	7.82	40.89	41.15	6.38	10.9	5.05	7.54	2.23	2.49	2.23	2.44
69	44.07	34.29	34.29	7.87	8.92	38.35	38.61	7.52	10.9	5.05	7.54	2.23	2.49	2.23	2.44
100	55.12	38.3	36.63	9.14	10.01	45.59	45.85	10.01	10.9	5.05	7.54	2.23	2.49	3.73	3.86

NOTES:

1. All dimensions are in millimetres.
2. For wire dimensions including Length L, refer to Para. 4.5.3.3 and Figures 2.4 and 2.5, as applicable.
3. For floating mount and captive nut mounting options, see Figures 2.7 and 2.8 respectively.

FIGURE 3 - CONTACT ARRANGEMENTS

FRONT VIEW OF MALE INSERT - USE MIRROR VIEW FOR FEMALE INSERT

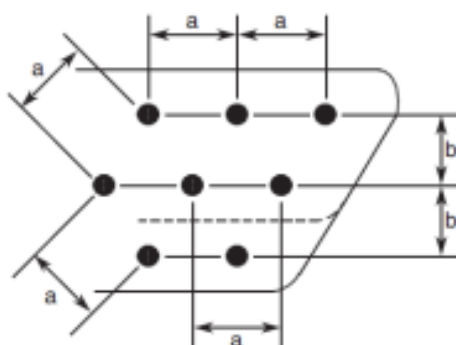


NOTES:

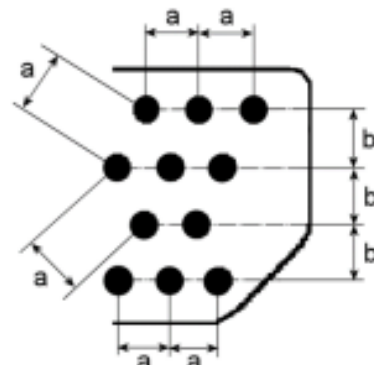
- Only the outside contact cavities on each row are identified in the drawing, the remainder follow sequentially. Contact numbers are shown outside the insert for readability.

CONTACT CENTRES

9 to 69 Contacts (2 Rows / 3 Rows)



100 Contacts (4 Rows)



NOTES:

- a = Distance between contact centres: 1.27mm (typical).
- b = Distance between rows: 1.09mm (typical).

4.5 MARKING

4.5.1 General

The marking of all components delivered to this specification shall be in accordance with the requirements of ESCC Basic Specification No. 21700 and the following paragraphs.

Each component shall be marked in respect of:

- (a) The ESCC qualified components symbol (for ESCC qualified components only).
- (b) The ESCC Component Number.
- (c) Characteristics.
- (d) Traceability Information.

4.5.2 The ESCC Component Number

Each component shall bear the ESCC Component Number which shall be constituted and marked as follows:

Example: 340102901B

- Detail Specification Number: 3401029
- Type Variant (See Table 1(a)): 01
- Testing Level: B

4.5.3 Characteristics

The characteristics to be marked in the following order of precedence are:

- (a) Shell Size.
- (b) Contact Type.
- (c) Termination Type.
- (d) Mounting.

The information shall be constituted and marked as follows:

Example: 51PFR112F

- Shell size: 51
- Contact type: P
- Termination Type: FR112
- Mounting: F

4.5.3.1 *Shell Size*

Shell size shall be designated by the number of contacts.

Specified numbers are: 9, 15, 21, 25, 31, 37, 51, 51-2R, 69 and 100.

4.5.3.2 *Contact Type*

Contact types shall be indicated by the following code letters.

Code Letter	Contact Type
P	Male
S	Female