

Connectors with assessed quality, for use in d.c., low-frequency analogue and in digital high-speed data applications —

Part 3: Rectangular connectors —

Section 101: Detail specification for a
range of shielded connectors with
trapezoidal shaped shells and
non-removable rectangular contacts on
a $1,27 \times 2,54$ mm centre-line

ICS 31.220.10

National foreword

This British Standard is the UK implementation of EN 61076-3-101:1997. It is identical to IEC 61076-3-101:1997, incorporating corrigendum April 2010. It supersedes BS EN 61076-3-101:1998 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee EPL/48, Electromechanical components for electronic equipment, to Subcommittee EPL/48/2, Connectors for electronic equipment.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard, having been prepared under the direction of the Electrotechnical Sector Board, was published under the authority of the Standards Board and comes into effect on 15 January 1998

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31 July 2010	Implementation of IEC corrigendum April 2010; Table in Figure 25 replaced. BSI and CENELEC publication dates aligned

Connectors with assessed quality, for use in d.c.
low-frequency analogue and in digital high-speed data
applications Part 3: Rectangular connectors
Section 101: Detail specification for a range of shielded
connectors with trapezoidal shaped shells and
non-removable rectangular contacts on
a 1,27 mm × 2,54 mm centre-line

(IEC 61076-3-101:1997)

Connecteurs sous assurance de la qualité, pour utilisation dans le cadre d'applications analogiques en courant continu et à basse fréquence et dans le cadre d'applications numériques utilisant des débits élevés pour le transfert des données
Partie 3: Connecteurs rectangulaires
Section 101: Spécification particulière pour une famille de connecteurs blindés avec boîtiers trapézoïdaux et contacts non-démontables de section rectangulaire au pas de 1,27 mm × 2,54 mm
(CEI 61076-3-101:1997)

Steckverbinder mit bewerteter Qualität für Gleichspannungs- und Niederfrequenz-anwendungen sowie digitale Anwendungen mit hoher Übertragungsrate
Teil 3: Rechteckige Steckverbinder
Hauptabschnitt 101: Bauartspezifikation für eine Reihe von geschirmten Steckverbindern mit trapezförmigen Kragen und nicht auswechselbaren rechteckigen Kontakten im Raster von 1,27 mm × 2,54 mm
(IEC 61076-3-101:1997)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of document 48B/531/FDIS, future edition 1 of IEC 61076-3-101, prepared by SC 48B, Connectors, of IEC TC 48, Electromechanical components and mechanical structures for electronic equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61076-3-101 on 1997-10-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1998-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1998-07-01

Annexes designated “normative” are part of the body of the standard.

In this standard, Annex A, Annex B, Annex C and Annex ZA are normative. Annex ZA has been added by CENELEC.

Endorsement notice

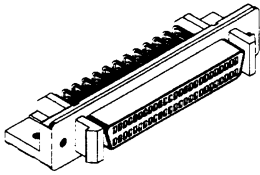
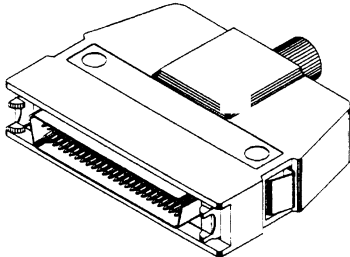
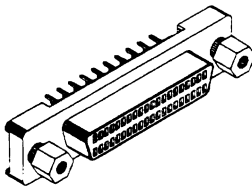
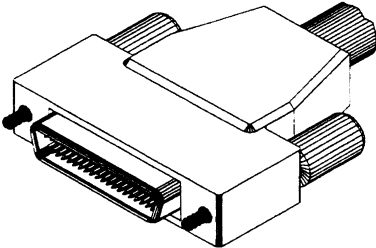
The text of the International Standard IEC 61076-3-101:1997 was approved by CENELEC as a European Standard without any modification.

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IEC SC 48B/TC 48: Connectors/Electromechanical components and mechanical structures to electronic equipment.		QC 480201XX0002
Electronic components of assessed quality Detail specification in accordance with IEC 61076-1		
 Right-angle fixed connector with female contacts and latch blocks  Free connectors with male contacts and latches  Straight fixed connector with female contacts and screw locks  Free connector with male contacts and jack-screws		Connectors for printed boards, panel mounting, and cable-to-board applications Trapezoidal shaped 10 to 120 pole shielded connector. Straight and right-angle fixed and free connectors. Fixed is mounted on printed boards. Free connectors terminated via insulation displacement. Performance level: 1 Assessment level: G Combination of performance and assessment levels: 1G

1 General data

1.1 Recommended method of mounting

A complete connector which can have the fixed connector mounted on a printed board and/or panel-mounted. The fixed connector can have male or female contacts and be soldered or press-in terminated to the printed board.

1.2 Ratings and characteristics

Rated voltage:	250 V a.c.
Current rating:	1 A at 30 °C (maximum temperature rise) (50 % energized)
Insulation resistance:	1 GΩ minimum
Climatic category:	55/100/21
Printed board thickness:	1,6 mm (0,062 in) 2,4 mm (0,093 in) 3,2 mm (0,125 in)
Contact spacing:	1,27 mm × 2,54 mm (0,050 in × 0,100 in)
Minimum/maximum number of contacts:	10 min. to 120 max.

Information on the availability of components qualified according to this detail specification is given in the qualified products list (QPL).

1.3 Reference documents

IEC 60050(581):1978, *International Electrotechnical Vocabulary (IEV) — Chapter 581: Electromechanical components for electronic equipment*.

IEC 60326-2:1990, *Printed boards — Part 2: Test methods*.

IEC 60352-4:1994, *Solderless connections — Part 4: Solderless non-accessible insulation displacement connections — General requirements, test methods and practical guidance*.

IEC 60410:1973, *Sampling plans and procedures for inspection by attributes*.

IEC 60512, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods*.

IEC 60512-1:1994, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods — Part 1: General*.

IEC 60512-2:1985, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods — Part 2: General examination, electrical continuity and contact resistance tests, insulation tests and voltage stress tests*.

IEC 60512-3:1976, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods — Part 3: Current-carrying capacity tests*.

IEC 60512-4:1976, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods — Part 4: Dynamic stress tests*.

IEC 60512-5:1992, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods — Part 5: Impact tests (free components), static load tests (fixed components), endurance tests and overload tests*.

IEC 60512-7:1993, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods — Part 7: Mechanical operating tests and sealing tests*.

IEC 61076-1:1995, *Connectors with assessed quality, for use in d.c. and low frequency analogue applications and in digital high speed data applications — Part 1: Generic specification*.

ISO 468:1982, *Surface roughness — Parameters, their values and general rules for specifying requirements*.

QC 001001:1986, *Basic Rules of the Components IEC Quality Assessment System for Electronic Components (IECQ)*.

QC 001002:1986, *Rules of Procedure of the IEC Quality Assessment System for Electronic Components (IECQ)*.

1.4 Marking

1.4.1 On the connector

Each connector shall have the identification of the contact positions marked upon it as indicated in the detail specification. It shall include the following:

- a) mark of origin (manufacturer's name or trade mark);
- b) year and month (or week) of manufacture, if explicitly required by the detail specification;
- c) IEC type designation, according to 1.5.

However, since the number of characters this requires may exceed the limitations imposed by computer processing systems, the manufacturer may use his own part number, providing that a cross-reference list is made available.

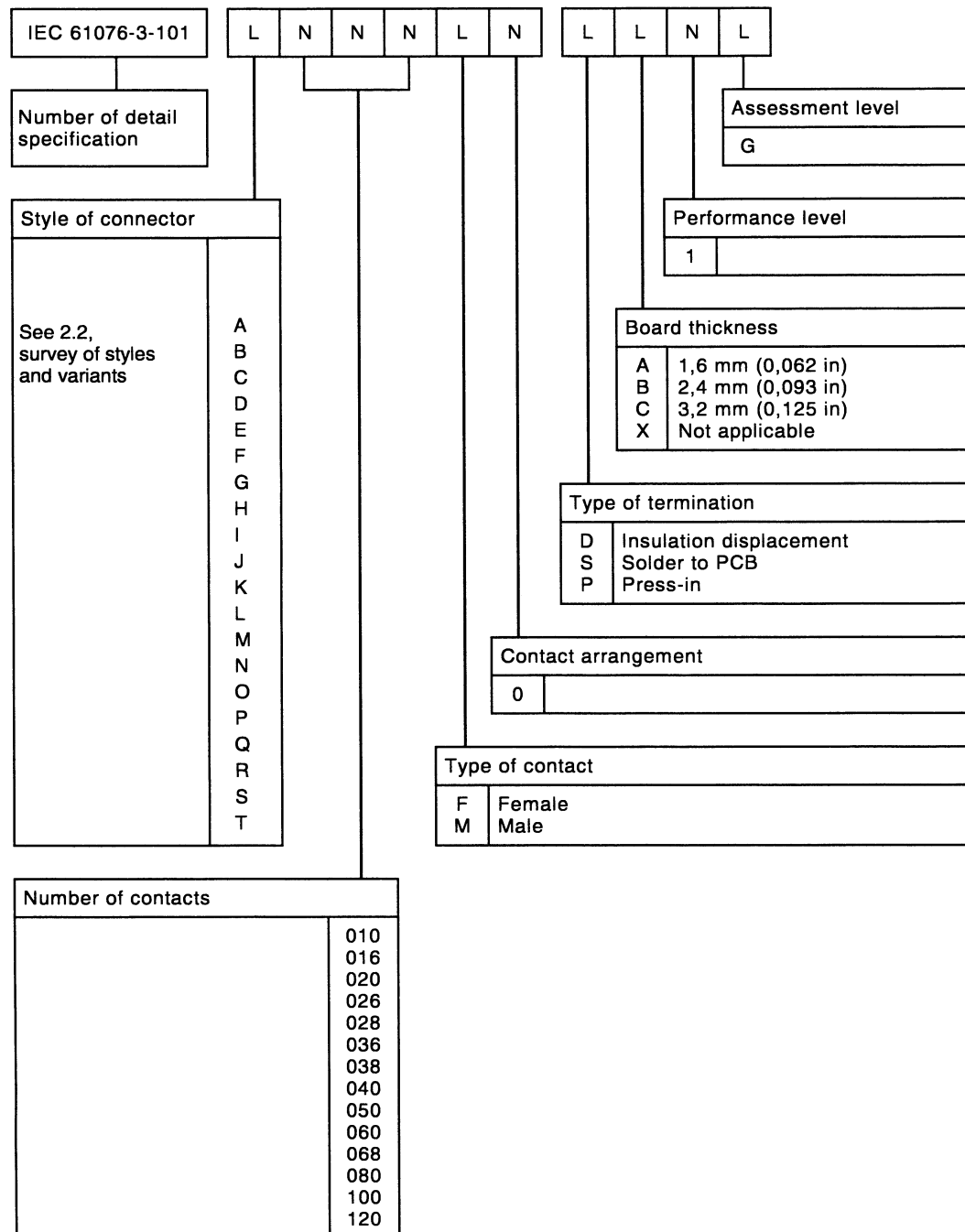
If space does not permit full marking, as much as possible of the information, in the order shown, shall be included.

1.4.2 On the package

The information specified in items a), b) and c) shall always be marked on the package.

1.5 IEC type designation

Connectors according to this standard shall be designated by the following system:



“L” stands for letter.

“N” stands for number.

Example: IEC 61076-3-101 E026M0 – SA1G

26 pole right-angle fixed connector with male contacts and latch blocks with solder termination for a 1,6 mm board

1.6 Ordering information

For ordering connectors according to this detail specification, the type designation described in 1.5 shall be used.

2 Technical data

This standard covers 10 to 120 pole rectangular shielded connectors with rectangular cross-section male contacts on 1,27 mm × 2,54 mm (0,050 in × 0,100 in) contact centre-line spacing. Connector polarization is achieved by the trapezoidal configuration of the shell. The fixed connectors (straight and right-angle) are connected to the printed board (soldered or pressed-in) and the free connector contacts use the insulation displacement type of termination for discrete, round, flat laminated and ribbon cable. The cable shall meet the specifications published by the connector manufacturer.

The application of this range of connectors includes use for signals in telecommunication and information processing equipment and systems, and other electronic devices employing similar techniques.

2.1 Definitions

For the purpose of this section of IEC 61076-3, the definitions of IEC 60050(581) apply.

2.2 Survey of styles and variants

	S T Y L E	Mounting (see note)		Contacts		Backshell							Accessories
		Board		Pannel	Male	Female	Latch blocks	Screw locks		Latching	Jack screws		Board locks
		Straight	Right-angle					Male	Female		Male	Female	
F I X E D	A	A			A		A						
	B	B				B	B						
	C	C			C			C					
	D	D				D			D				
	E		E		E		E						
	F		F		F		F						F
	G		G			G	G						
	H		H			H	H						H
	I		I		I			I					
	J		J		J			J					J
F R E E	K		K			K			K				
	L		L			L			L				L
	M				M					M			
	N					N				N			
	O				O						O		
	P					P						P	
	Q			Q	Q		Q						
	R			R		R	R						
	S			S	S			S					
	T			T		T			T				
NOTE All fixed connectors can be used for panel mounting.													

2.3 Information on application

See clause 3.

3 Dimensional information

3.1 General

Dimensions are in inches. Drawings are shown in third-angle projection. The shape of the connector may deviate from those given in the following drawings as long as the specified dimensions are maintained. All dimensions are given in millimetres with inches shown in brackets.

3.2 Isometric view and common features

3.2.1 Common features

3.2.1.1 Connectors with latch blocks and latches

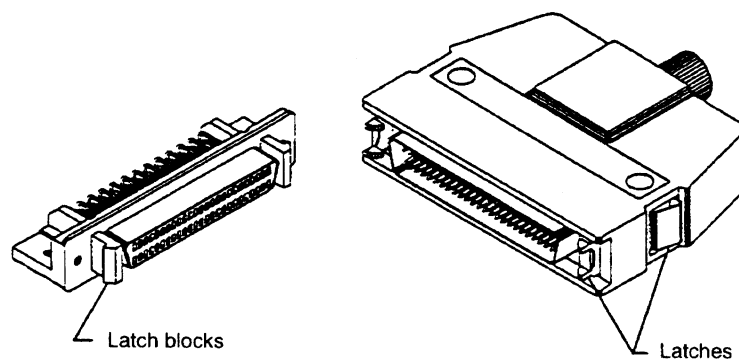


Figure 1a – Right-angle fixed connector with female contacts and latch blocks

Figure 1b – Free connector with male contacts and latches

Figure 1 — Connectors with latch blocks and latches

3.2.1.2 Connectors with screw locks and jack-screws

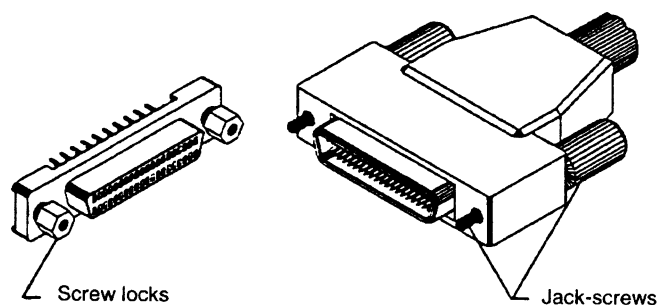


Figure 2a – Straight fixed connector with female contacts and female screw locks

Figure 2b – Free connector with male contacts and jack-screws

Figure 2 — Connectors with screw locks and jack-screws

3.3 Mating information

The trapezoidal design of the shell prevents mismating. The shells mate before the contacts. The connector is fully mated when the locking mechanism on the free connector is engaged with the latch of the fixed connector. When using jack-screws, the connector is considered fully mated when jack-screws are tightened and seated.

3.3.1 Contact arrangement for fixed and free connectors

Table 1 — Contact positioning

Number of poles	Position number		
	A	B	C
10	5	6	10
16	8	9	16
20	10	11	20
26	13	14	26
28	14	15	28
36	18	19	36
38	19	20	38
40	20	21	40
50	25	26	50
60	30	31	60
68	34	35	68
80	40	41	80
100	50	51	100
120	60	61	120

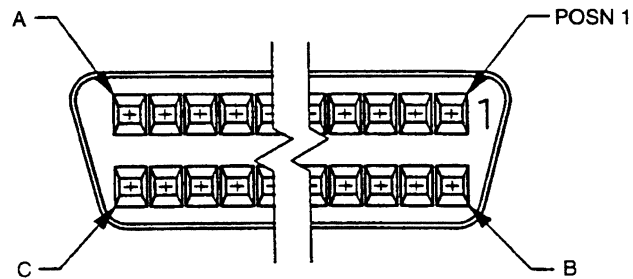


Figure 3a – Mating face of connector with female contacts

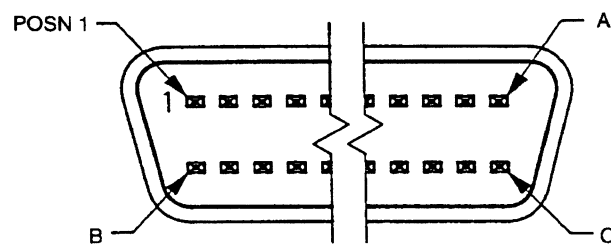


Figure 3b – Mating face of connector with male contacts

Figure 3 — Contact arrangement for fixed and free connectors

3.4 Fixed connectors

3.4.1 Dimensions

3.4.1.1 Straight fixed connector with male contacts and latch blocks — Style A

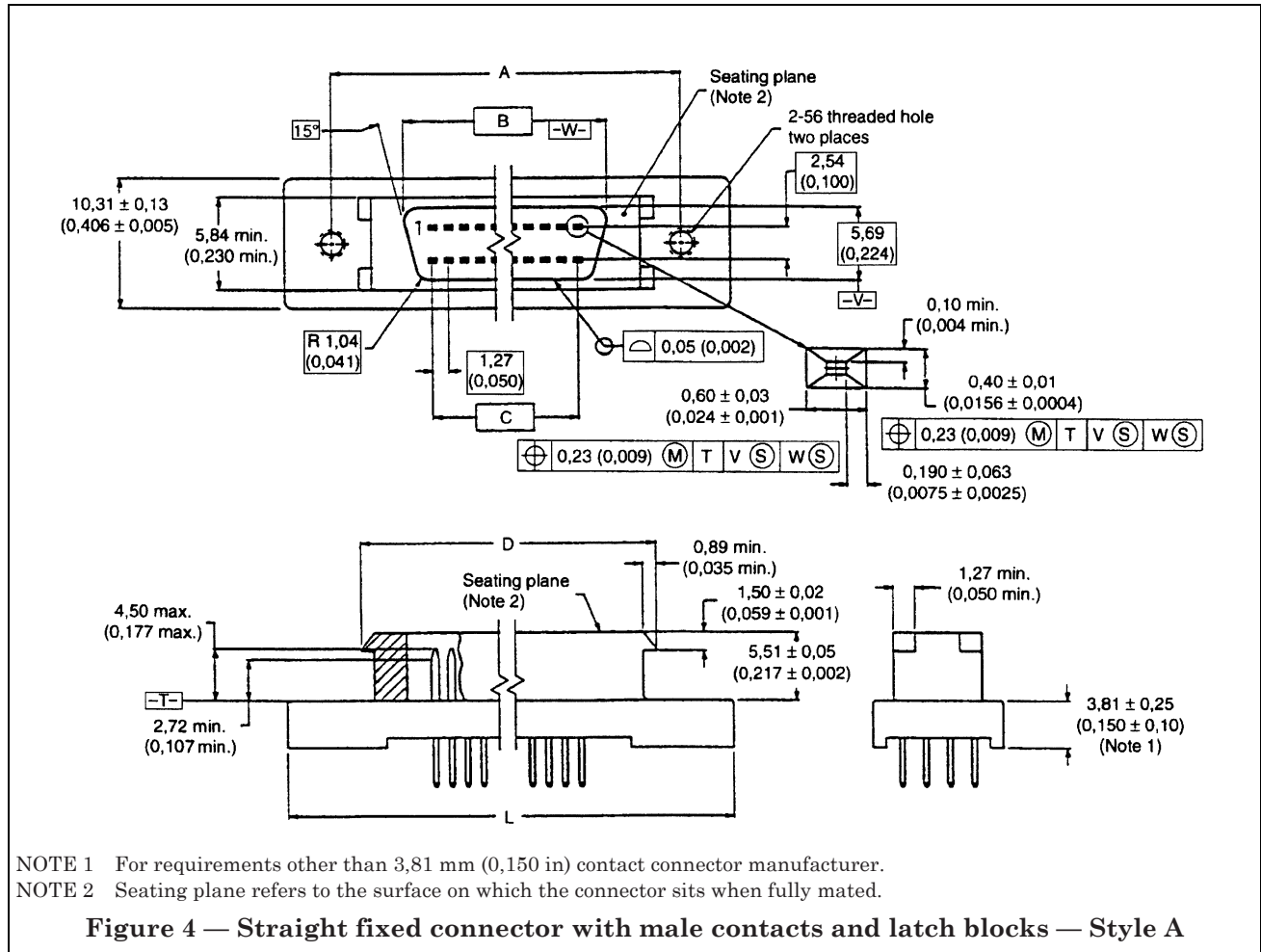


Table 2 — Dimensions for style A

Number of poles	A				B		C		D				L			
	mm		in		mm	in	mm	in	mm		in		mm		in	
	Min.	Max.	Min.	Max.	Basic	Basic	Basic	Basic	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
10	20,96	21,21	0,825	0,835	9,45	0,372	5,08	0,200	16,79	16,99	0,661	0,669	26,94	27,19	1,060	1,070
16	24,77	25,02	0,975	0,985	13,26	0,522	8,89	0,350	20,60	20,80	0,811	0,819	30,74	31,00	1,210	1,220
20	27,31	27,56	1,075	1,085	15,80	0,622	11,43	0,450	23,14	23,34	0,911	0,919	33,28	33,53	1,310	1,320
26	31,12	31,37	1,225	1,235	19,61	0,772	15,24	0,600	26,95	27,15	1,061	1,069	37,09	37,34	1,460	1,470
28	32,39	32,64	1,275	1,285	20,89	0,822	16,51	0,650	28,22	28,42	1,111	1,119	38,36	38,61	1,510	1,520
36	37,47	37,72	1,475	1,485	25,96	1,022	21,59	0,850	33,30	33,50	1,311	1,319	43,45	43,70	1,710	1,720
38	38,74	38,99	1,525	1,535	27,23	1,072	22,86	0,900	34,57	34,77	1,361	1,369	44,72	44,97	1,760	1,770
40	40,01	40,26	1,575	1,585	28,50	1,122	24,13	0,950	35,84	36,04	1,411	1,419	45,98	46,23	1,810	1,820
50	46,36	46,61	1,825	1,835	34,85	1,372	30,48	1,200	42,19	42,39	1,661	1,669	52,33	52,58	2,060	2,070
60	52,71	52,96	2,075	2,085	41,20	1,622	36,83	1,450	48,54	48,74	1,911	1,919	58,68	58,93	2,310	2,320
68	57,79	58,04	2,275	2,285	46,28	1,822	41,91	1,650	53,62	53,82	2,111	2,119	63,76	64,01	2,510	2,520
80	65,41	65,66	2,575	2,585	53,90	2,122	49,53	1,950	61,24	61,44	2,411	2,419	71,38	71,63	2,810	2,820
100	78,11	78,36	3,075	3,085	66,60	2,622	62,23	2,450	73,94	74,14	2,911	2,919	84,08	84,33	3,310	3,320
120	90,81	91,06	3,575	3,585	79,30	3,122	74,93	2,950	86,64	86,84	3,411	3,419	96,78	97,03	3,810	3,820

3.4.1.2 Straight fixed connector with female contacts and latch blocks — Style B

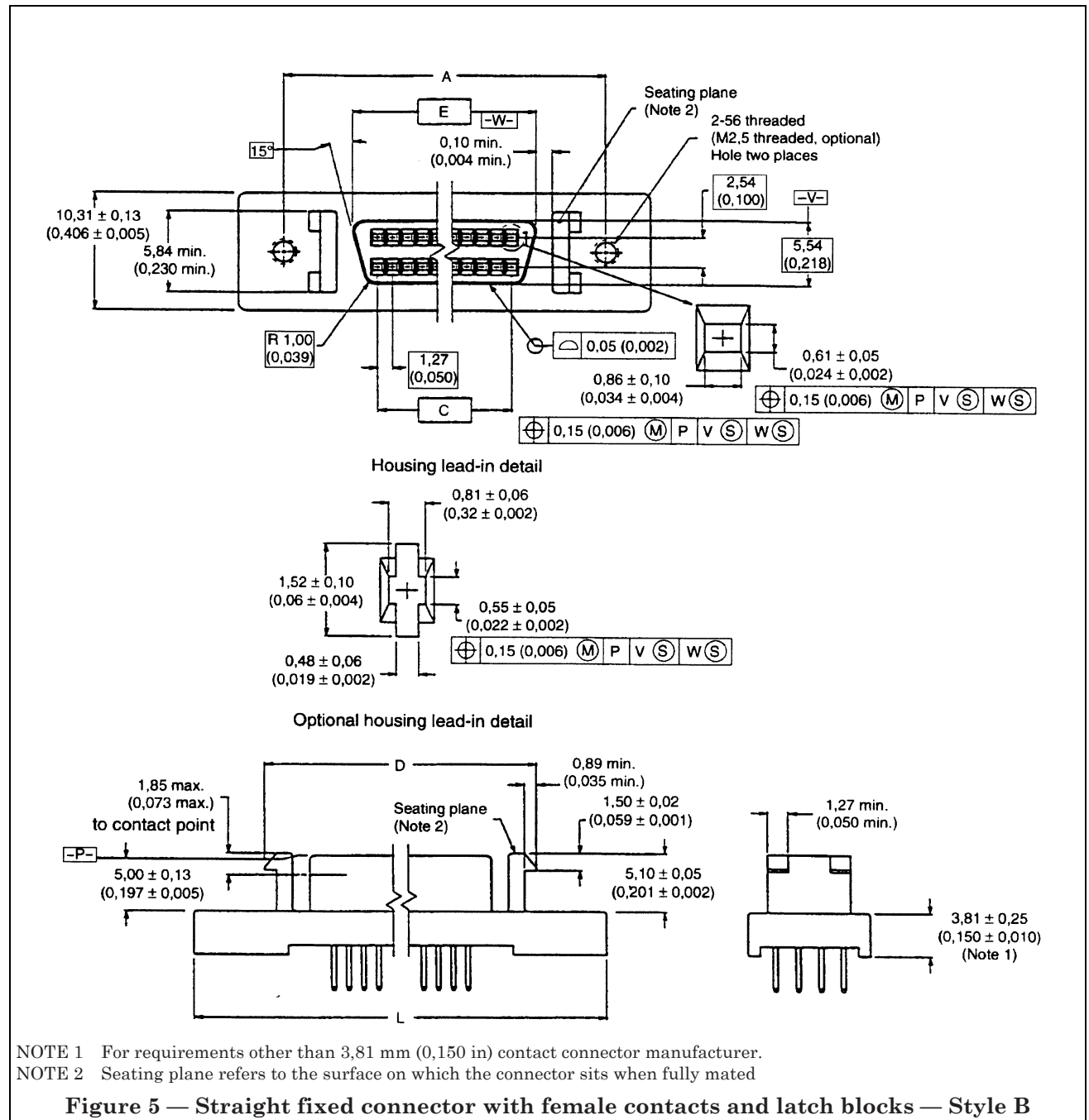


Table 3 — Dimensions for style B

Number of poles	A				C		D				E		L			
	mm		in		mm	in	mm		in		mm	in	mm		in	
	Min.	Max.	Min.	Max.	Basic	Basic	Min.	Max.	Min.	Max.	Basic	Basic	Min.	Max.	Min.	Max.
10	20,96	21,21	0,825	0,835	5,08	0,200	16,79	16,99	0,661	0,669	9,30	0,366	26,94	27,19	1,060	1,070
16	24,77	25,02	0,975	0,985	8,89	0,350	20,60	20,80	0,811	0,819	13,11	0,516	30,74	31,00	1,210	1,220
20	27,31	27,56	1,075	1,085	11,43	0,450	23,14	23,34	0,911	0,919	15,65	0,616	33,28	33,53	1,310	1,320
26	31,12	31,37	1,225	1,235	15,24	0,600	26,95	27,15	1,061	1,069	19,46	0,766	37,09	37,34	1,460	1,470
28	32,39	32,64	1,275	1,285	16,51	0,650	28,22	28,42	1,111	1,119	20,73	0,816	38,36	38,61	1,510	1,520
36	37,47	37,72	1,475	1,485	21,59	0,850	33,30	33,50	1,311	1,319	25,81	1,016	43,45	43,70	1,710	1,720
38	38,74	38,99	1,525	1,535	22,86	0,900	34,57	34,77	1,361	1,369	27,08	1,066	44,72	44,97	1,760	1,770
40	40,01	40,26	1,575	1,585	24,13	0,950	35,84	36,04	1,411	1,419	28,35	1,116	45,98	46,23	1,810	1,820
50	46,36	46,61	1,825	1,835	30,48	1,200	42,19	42,39	1,661	1,669	34,70	1,366	52,33	52,58	2,060	2,070
60	52,71	52,96	2,075	2,085	36,83	1,450	48,54	48,74	1,911	1,919	41,05	1,616	58,68	58,93	2,310	2,320
68	57,79	58,04	2,275	2,285	41,91	1,650	53,62	53,82	2,111	2,119	46,13	1,816	63,76	64,01	2,510	2,520
80	65,41	65,66	2,575	2,585	49,53	1,950	61,24	61,44	2,411	2,419	53,75	2,116	71,38	71,63	2,810	2,820
100	78,11	78,36	3,075	3,085	62,23	2,450	73,94	74,14	2,911	2,919	66,45	2,616	84,08	84,33	3,310	3,320
120	90,81	91,06	3,575	3,585	74,93	2,950	86,64	86,84	3,411	3,419	79,15	3,116	96,78	97,03	3,810	3,820

3.4.1.3 Straight fixed connector with male contacts and male screw locks — Style C

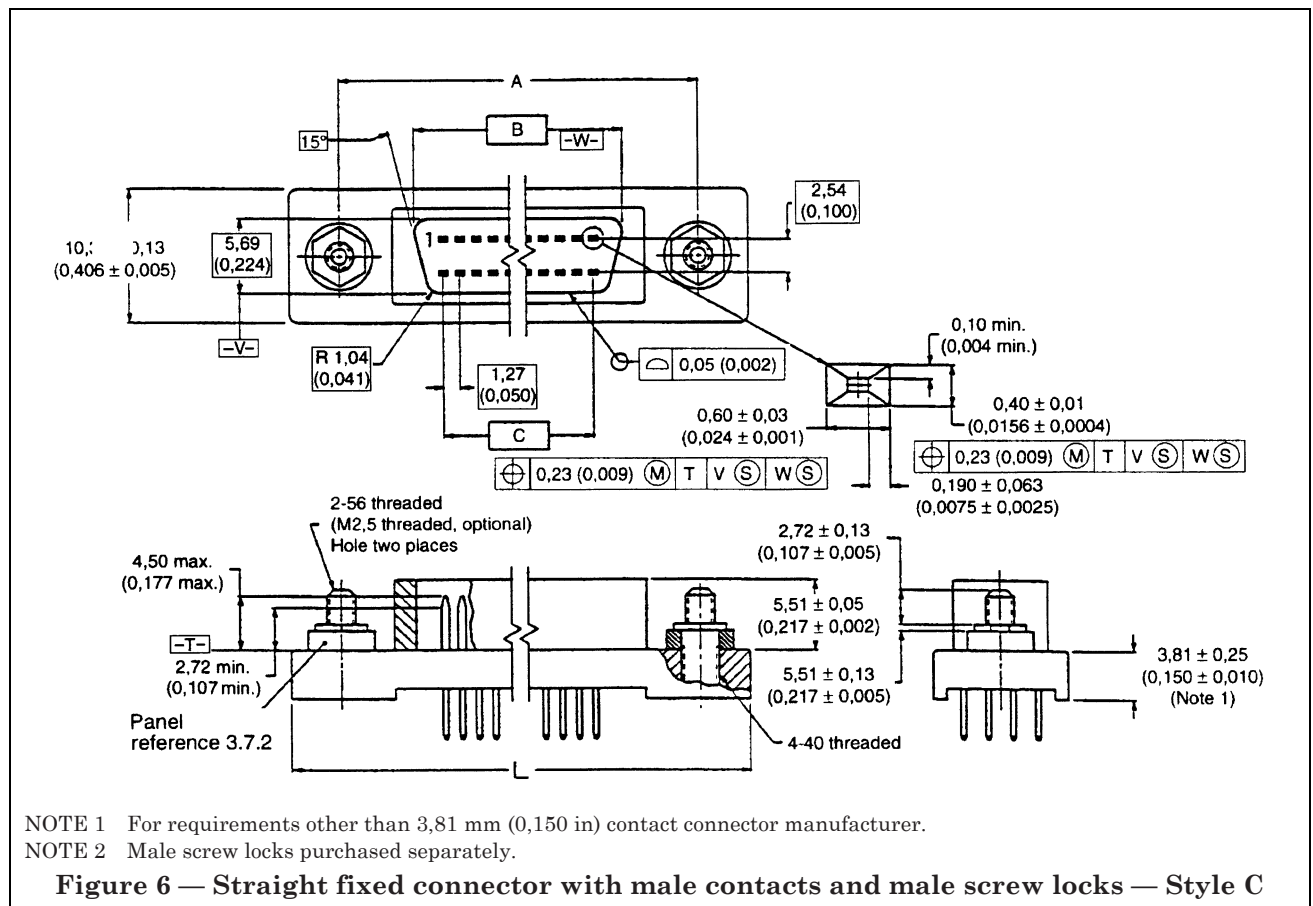


Table 4 — Dimensions for style C

Number of poles	A				B		C		L			
	mm		in		mm	in	mm	in	mm		in	
	Min.	Max.	Min.	Max.	Basic	Basic	Basic	Basic	Min.	Max.	Min.	Max.
10	20,96	21,21	0,825	0,835	9,45	0,372	5,08	0,200	26,94	27,19	1,060	1,070
16	24,77	25,02	0,975	0,985	13,26	0,522	8,89	0,350	30,74	31,00	1,210	1,220
20	27,31	27,56	1,075	1,085	15,80	0,622	11,43	0,450	33,28	33,53	1,310	1,320
26	31,12	31,37	1,225	1,235	19,61	0,772	15,24	0,600	37,09	37,34	1,460	1,470
28	32,39	32,64	1,275	1,285	20,89	0,822	16,51	0,650	38,36	38,61	1,510	1,520
36	37,47	37,72	1,475	1,485	25,96	1,022	21,59	0,850	43,45	43,70	1,710	1,720
38	38,74	38,99	1,525	1,535	27,23	1,072	22,86	0,900	44,72	44,97	1,760	1,770
40	40,01	40,26	1,575	1,585	28,50	1,122	24,13	0,950	45,98	46,23	1,810	1,820
50	46,36	46,61	1,825	1,835	34,85	1,372	30,48	1,200	52,33	52,58	2,060	2,070
60	52,71	52,96	2,075	2,085	41,20	1,622	36,83	1,450	58,68	58,93	2,310	2,320
68	57,79	58,04	2,275	2,285	46,28	1,822	41,91	1,650	63,76	64,01	2,510	2,520
80	65,41	65,66	2,575	2,585	53,90	2,122	49,53	1,950	71,38	71,63	2,810	2,820
100	78,11	78,36	3,075	3,085	66,60	2,622	62,23	2,450	84,08	84,33	3,310	3,320
120	90,81	91,06	3,575	3,585	79,30	3,122	74,93	2,950	96,78	97,03	3,810	3,820

3.4.1.4 Straight fixed connector with female contacts and female screw locks — Style D

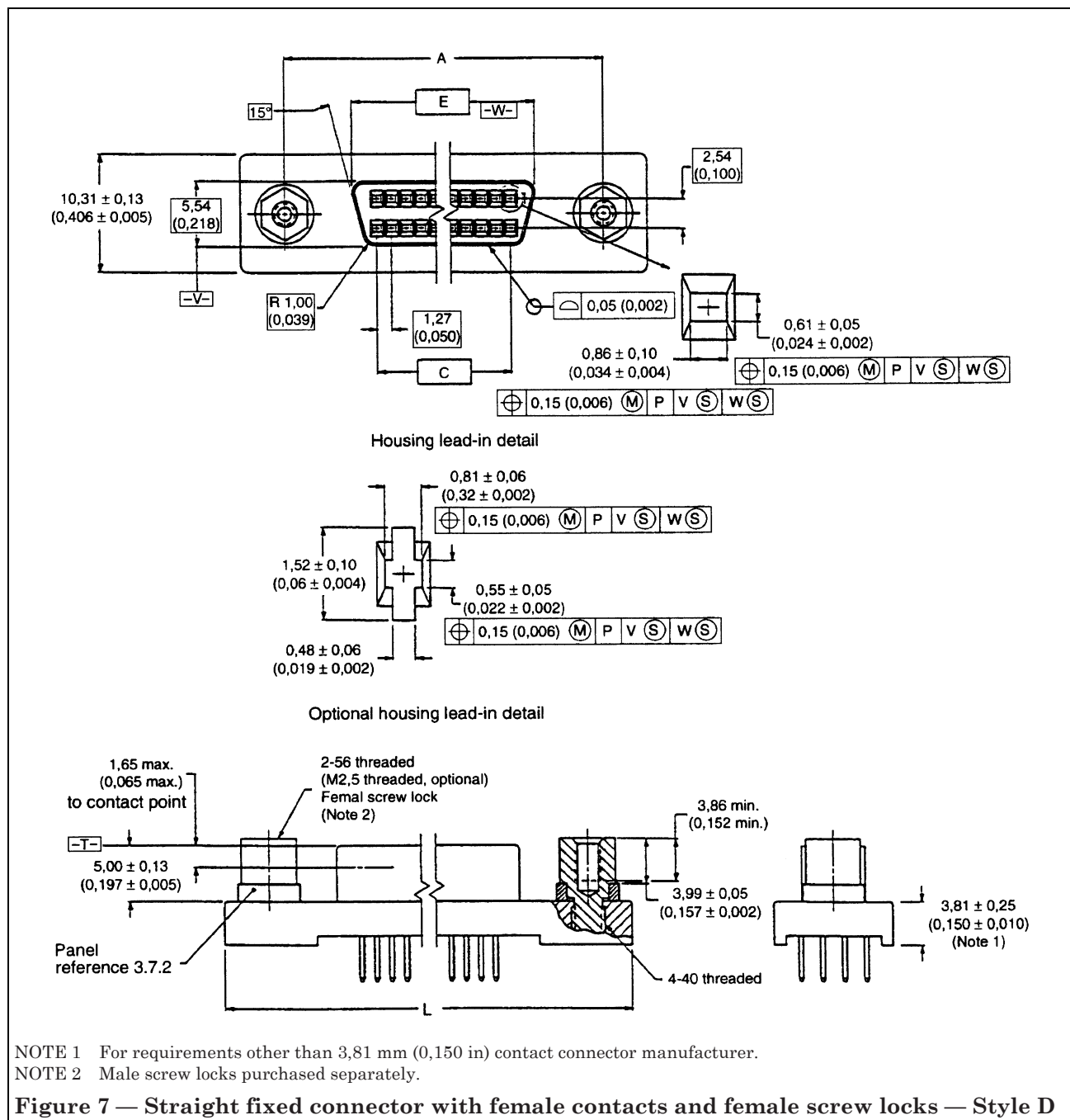
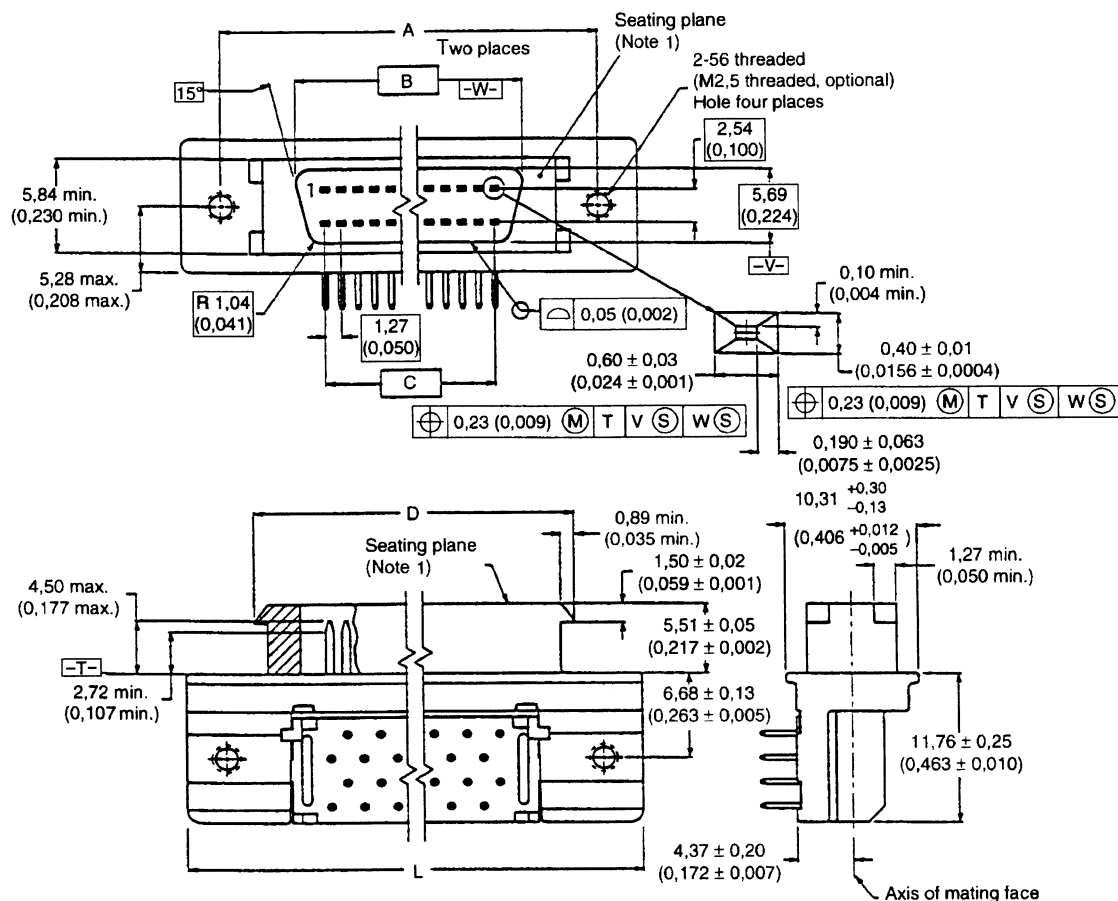


Table 5 — Dimensions for style D

Number of poles	A				C		E		L			
	mm		in		mm	in	mm	in	mm		in	
	Min.	Max.	Min.	Max.	Basic	Basic	Basic	Basic	Min.	Max.	Min.	Max.
10	20,96	21,21	0,825	0,835	5,08	0,200	9,30	0,366	26,94	27,19	1,060	1,070
16	24,77	25,02	0,975	0,985	8,89	0,350	13,11	0,516	30,74	31,00	1,210	1,220
20	27,31	27,56	1,075	1,085	11,43	0,450	15,65	0,616	33,28	33,53	1,310	1,320
26	31,12	31,37	1,225	1,235	15,24	0,600	19,46	0,766	37,09	37,34	1,460	1,470
28	32,39	32,64	1,275	1,285	16,51	0,650	20,73	0,816	38,36	38,61	1,510	1,520
36	37,47	37,72	1,475	1,485	21,59	0,850	25,81	1,016	43,45	43,70	1,710	1,720
38	38,74	38,99	1,525	1,535	22,86	0,900	27,08	1,066	44,72	44,97	1,760	1,770
40	40,01	40,26	1,575	1,585	24,13	0,950	28,35	1,116	45,98	46,23	1,810	1,820
50	46,36	46,61	1,825	1,835	30,48	1,200	34,70	1,366	52,33	52,58	2,060	2,070
60	52,71	52,96	2,075	2,085	36,83	1,450	41,05	1,616	58,68	58,93	2,310	2,320
68	57,79	58,04	2,275	2,285	41,91	1,650	46,13	1,816	63,76	64,01	2,510	2,520
80	65,41	65,66	2,575	2,585	49,53	1,950	53,75	2,116	71,38	71,63	2,810	2,820
100	78,11	78,36	3,075	3,085	62,23	2,450	66,45	2,616	84,08	84,33	3,310	3,320
120	90,81	91,06	3,575	3,585	74,93	2,950	79,15	3,116	96,78	97,03	3,810	3,820

3.4.1.5 Right-angle fixed connector with male contacts and latch blocks — Style E



NOTE Seating plane refers to the surface on which the connector sits when fully mated.

Figure 8 — Right-angle fixed connector with male contacts and latch blocks — Style E

Table 6 — Dimensions for style E

Number of poles	A				B		C		D				L			
	mm		in		mm	in	mm	in	mm		in		mm		in	
	Min.	Max.	Min.	Max.	Basic	Basic	Basic	Basic	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
10	20,96	21,21	0,825	0,835	9,45	0,372	5,08	0,200	16,79	16,99	0,661	0,669	26,94	27,19	1,060	1,070
16	24,77	25,02	0,975	0,985	13,26	0,522	8,89	0,350	20,60	20,80	0,811	0,819	30,74	31,00	1,210	1,220
20	27,31	27,56	1,075	1,085	15,80	0,622	11,43	0,450	23,14	23,34	0,911	0,919	33,28	33,53	1,310	1,320
26	31,12	31,37	1,225	1,235	19,61	0,772	15,24	0,600	26,95	27,15	1,061	1,069	37,09	37,34	1,460	1,470
28	32,39	32,64	1,275	1,285	20,89	0,822	16,51	0,650	28,22	28,42	1,111	1,119	38,36	38,61	1,510	1,520
36	37,47	37,72	1,475	1,485	25,96	1,022	21,59	0,850	33,30	33,50	1,311	1,319	43,45	43,70	1,710	1,720
38	38,74	38,99	1,525	1,535	27,23	1,072	22,86	0,900	34,57	34,77	1,361	1,369	44,72	44,97	1,760	1,770
40	40,01	40,26	1,575	1,585	28,50	1,122	24,13	0,950	35,84	36,04	1,411	1,419	45,98	46,23	1,810	1,820
50	46,36	46,61	1,825	1,835	34,85	1,372	30,48	1,200	42,19	42,39	1,661	1,669	52,33	52,58	2,060	2,070
60	52,71	52,96	2,075	2,085	41,20	1,622	36,83	1,450	48,54	48,74	1,911	1,919	58,68	58,93	2,310	2,320
68	57,79	58,04	2,275	2,285	46,28	1,822	41,91	1,650	53,62	53,82	2,111	2,119	63,76	64,01	2,510	2,520
80	65,41	65,66	2,575	2,585	53,90	2,122	49,53	1,950	61,24	61,44	2,411	2,419	71,38	71,63	2,810	2,820
100	78,11	78,36	3,075	3,085	66,60	2,622	62,23	2,450	73,94	74,14	2,911	2,919	84,08	84,33	3,310	3,320
120	90,81	91,06	3,575	3,585	79,30	3,122	74,93	2,950	86,64	86,84	3,411	3,419	96,78	97,03	3,810	3,820