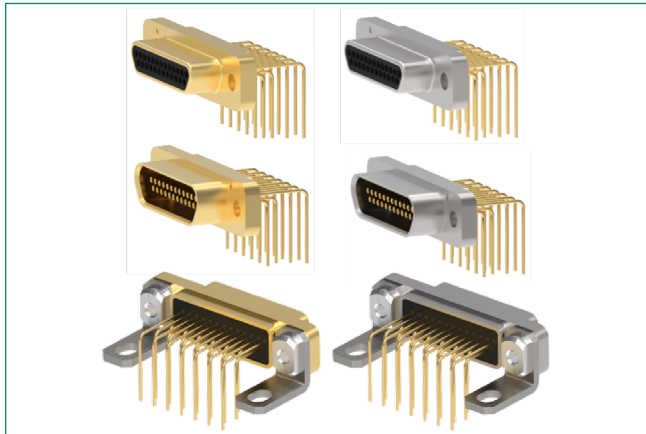


MDM Series

Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022



Type	Mating/ Unmating Force (N max)	Unmating Force (N min)	Max weight without accessories (g) for FR171	Max weight without accessories (g) for FR171M1 FR171M2
Size 9	25	1.3	2.5	5.2
Size 15	42	2.0	3.5	6.2
Size 21	58	2.9	4.5	7.2
Size 25	70	3.5	5.1	7.8
Size 31	86	4.3	6.1	8.8
Size 37	103	5.1	7.1	9.8
Size 51	142	7.1	9	12

Add : 0.4 g for float mount (FR171 code F)

Add : 1 g for captive nut (FR171 code E)

Electrical & Mechanical Characteristics

Characteristics	Specifications	
Working voltage	150	Vrms max (at sea level)
	100	Vrms max (33000 m of altitude)
Rated current	2.5	A max
Contact resistance (Low level current)	25	mΩ max (10mA / 20 mV DC)*
Contact resistance	25	mΩ max (Rated current)*
Insulation resistance	5000	MΩ min (500 V DC)
Voltage proof	600	Vrms / 2mA (leakage current)
Contact retention in insert	22.25	N min (no axial move allowed)
Engagement force	1.667	N max per contact
Separation force	0.137	N min per contact
Mechanical endurance	500	Cycles (mating / unmating)
Soldering temperature	260°	°C (10 seconds max)
Temperature range	-55/+125	°C
Storage temperature	-55/+125	°C

*Include all parts of the contact including the contact body and the wire leads.

Description

High performance microminiature connectors for space applications. Meet the performance and dimensional requirements of the ESCC 3401 specifications.

Compliant to ESCC specification 3401/029.

Suitable for use in space, Board to Cable applications.

Twist Pin contacts technology.

Sizes available : 9, 15, 21, 25, 31, 37, 51 ways

Pitch between two contacts rows : 1.09 mm (.043")

Pitch between two horizontally adjacent contacts : 1.27 mm (.050")

Features & Benefits

- Enhanced grade
- Compliant with commercial space grade quality level
- High performance Micropin™ contact system: "Twist pin" spring male contact and tubular socket contact
- Solder type contacts
- Non-outgassing
- Low size connectors
- Low weight

Applications

- Space equipment
- Satellites harnesses and payloads

Quality Level

Enhanced grade according to specification FR022.

Connector Options

Optional captive nuts or float mounting.

Packaging

Individual plastic tube.

Each MDM connector is sold with a dust cap.

Each MDM socket connector is sold with an interfacial seal.

MDM Series

Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

How To Order Connector

Our easy build-a-connector concept allows you to mix and match options to create the MDM, PCB right angle type narrow profile, you need. To order, select desired option from each category and place it in the appropriate box.



FR022 specification:

MDM - 25 P - FR171 - A174 - FR022

MDM Series

Contact arrangement:

Number of contacts

- 9
- 15
- 21
- 25
- 31
- 37
- 51

Type of contact:

- P: Pin (Male)
- S: Socket (Female)

Connector specification for Enhanced grade

Shell finish:

- A174: 25.4 µm min Ni
- FR172: 0.7 µm min Au over 25.4 µm min Ni

Attachement options

- 171: Standard (no hardware)
- 171E: Captive nut
- 171F: Floating mount
- 171M1: with bracket
- 171M2: with floating bracket

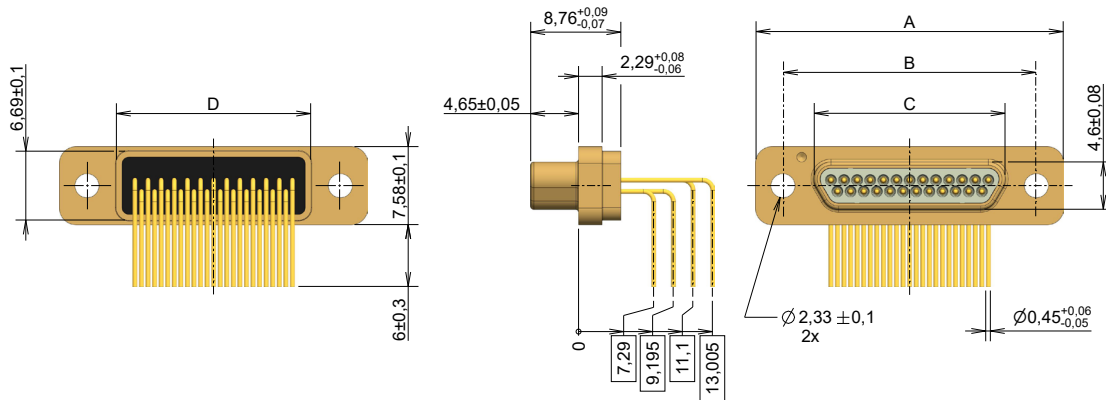
Materials & Finishes

Components	Materials	Finishes
Shell	Aluminum alloy	01 : 25.4 µm min Electroless Nickel 02 : 0.7 µm min Gold over 25.4 µm min Electroless Nickel
Insulator	LCP	UL 94-V0, Glass-filled, Black color
Female contacts	Copper alloy	1.27 µm min Gold over Copper
Male contacts	Copper alloy	1.27 µm min Gold over Copper
Brackets (M1 & M2)	Stainless steel	Passivated
Accessories (E & F , M1 & M2)	Stainless steel	Passivated
Interfacial seal	Fluorosilicone elastomer	Pink color
Dust cap	Polyethylene	Black color, antistatic
Encapsulant	Epoxy	Black color
Female screwlocks	Stainless steel	Passivated

MDM Series

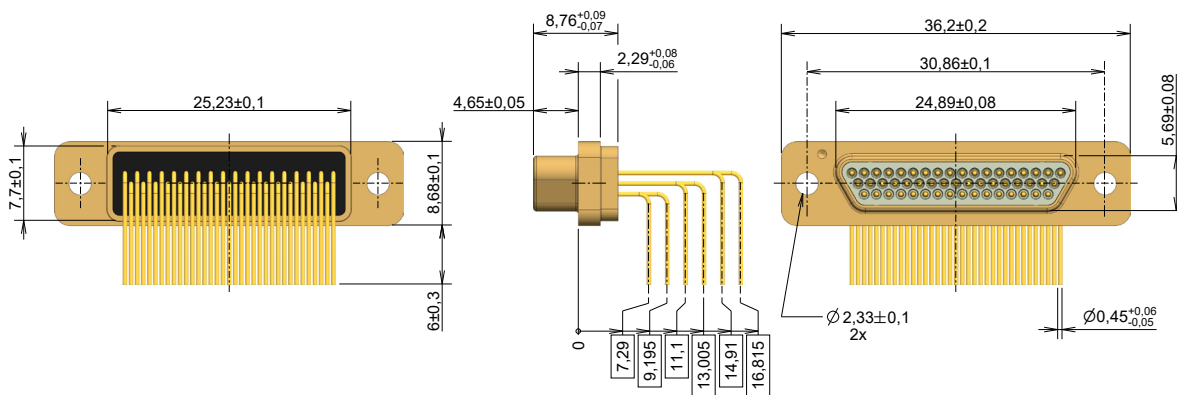
Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

Pin connector dimensions - FR171 - Size 9 to 37



Shell Size	A ±0.2	B ±0.1	C ±0.08	D ±0.1
9P	19.70	14.35	8.38	8.72
15P	23.50	18.16	12.19	12.53
21P	27.30	21.97	16.00	16.34
25P	29.85	24.51	18.54	18.88
31P	33.70	28.32	22.35	22.69
37P	37.50	32.13	26.16	26.50

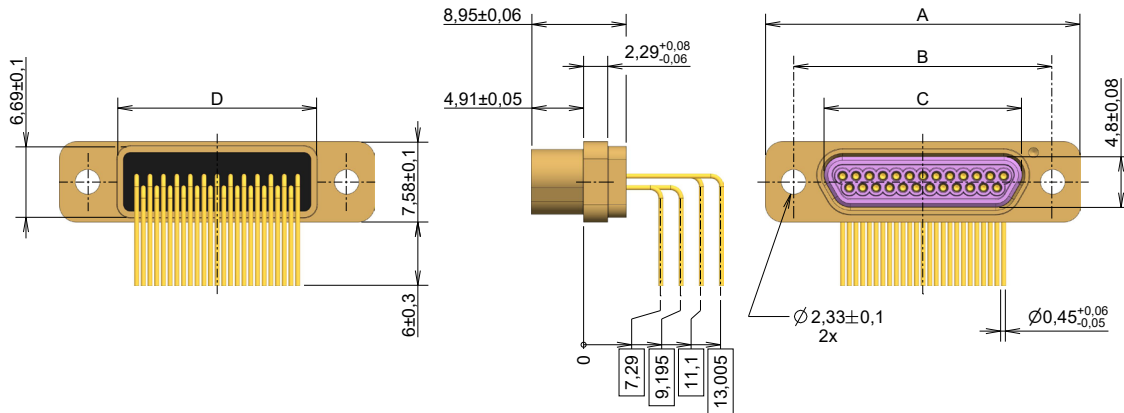
Pin connector dimensions - FR171 - Size 51



MDM Series

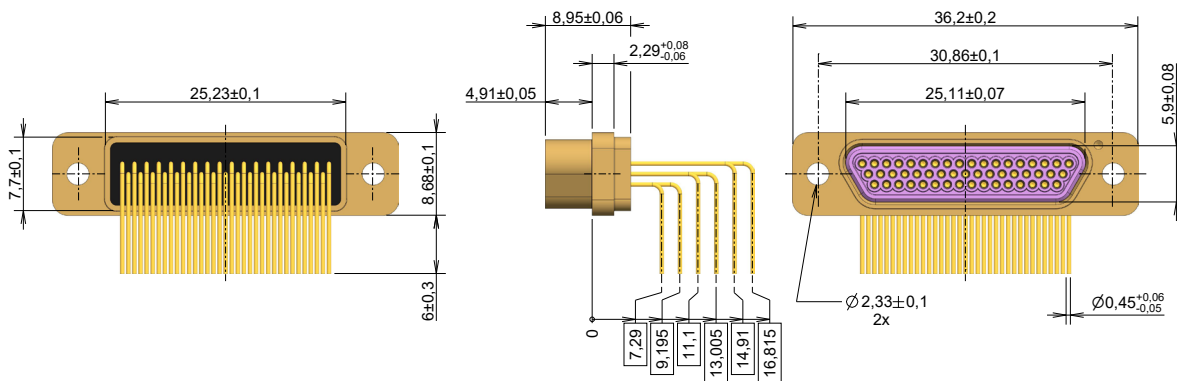
Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

Socket connector dimensions - FR171 - Size 9 to 37



Shell Size	A ±0.2	B ±0.1	C ±0.07	D ±0.1
9S	19.70	14.35	8.60	8.72
15S	23.50	18.16	12.41	12.53
21S	27.30	21.97	16.22	16.34
25S	29.85	24.51	18.76	18.88
31S	33.70	28.32	22.57	22.69
37S	37.50	32.13	26.38	26.50

Socket connector dimensions - FR171 - Size 51

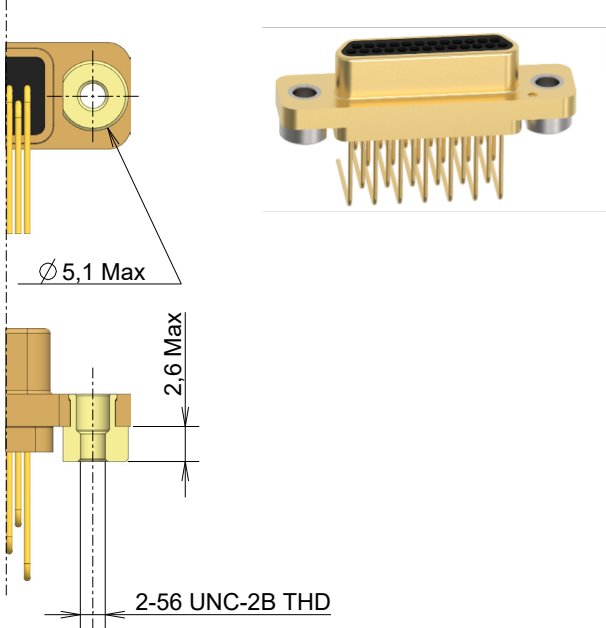


MDM Series

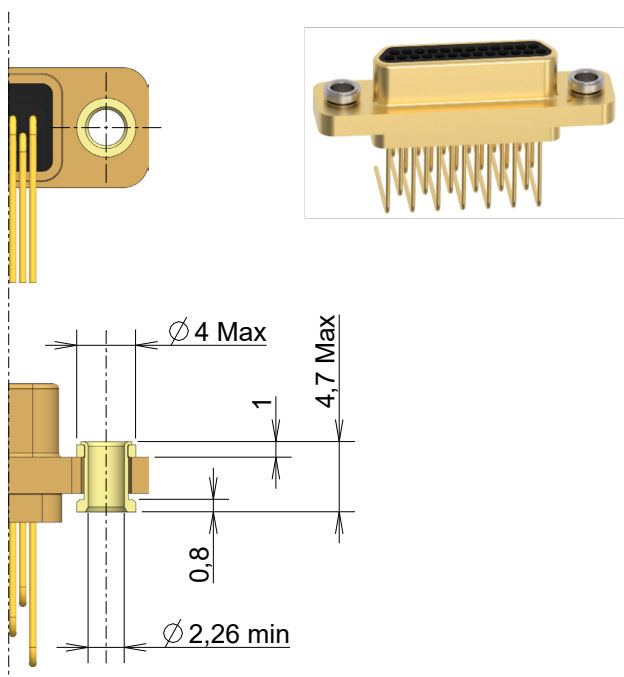
Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

Attachment options

Captive nut (Option E)



Floating mount (Option F)

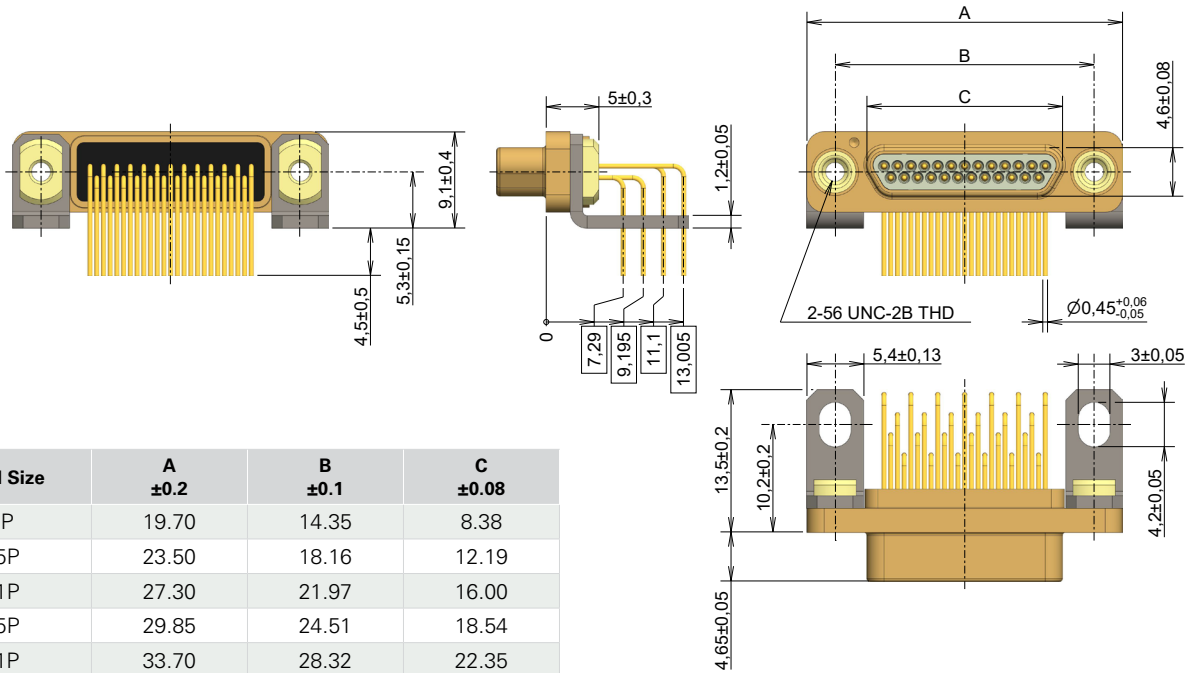


Allowable float	(mm)
Lateral	0.40
Axial	0.40

MDM Series

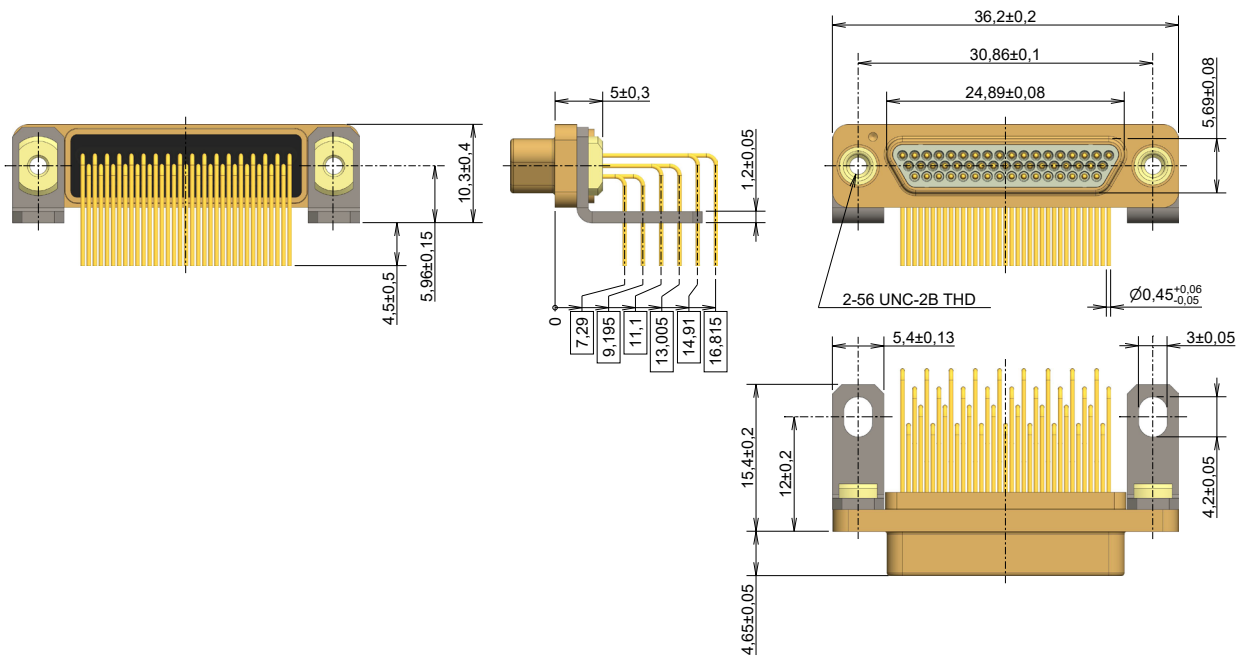
Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

Pin connector dimensions - FR171M1 - Size 9 to 37



Shell Size	A ±0.2	B ±0.1	C ±0.08
9P	19.70	14.35	8.38
15P	23.50	18.16	12.19
21P	27.30	21.97	16.00
25P	29.85	24.51	18.54
31P	33.70	28.32	22.35
37P	37.50	32.13	26.16

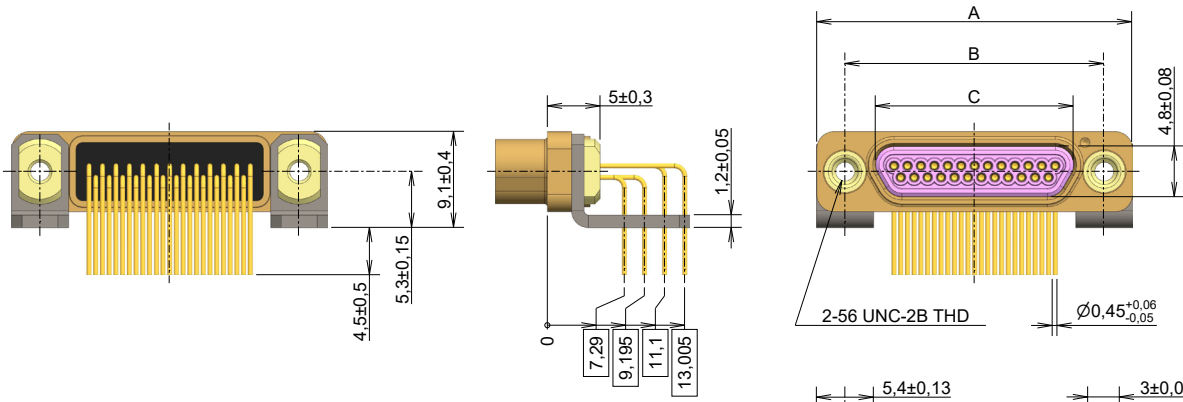
Pin connector dimensions - FR171M1 - Size 51



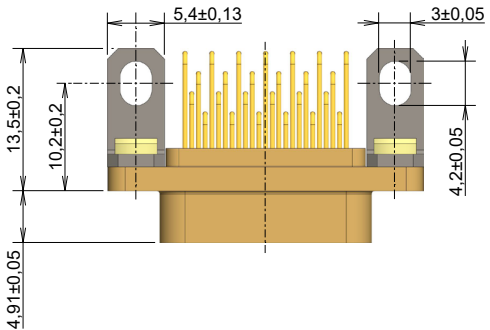
MDM Series

Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

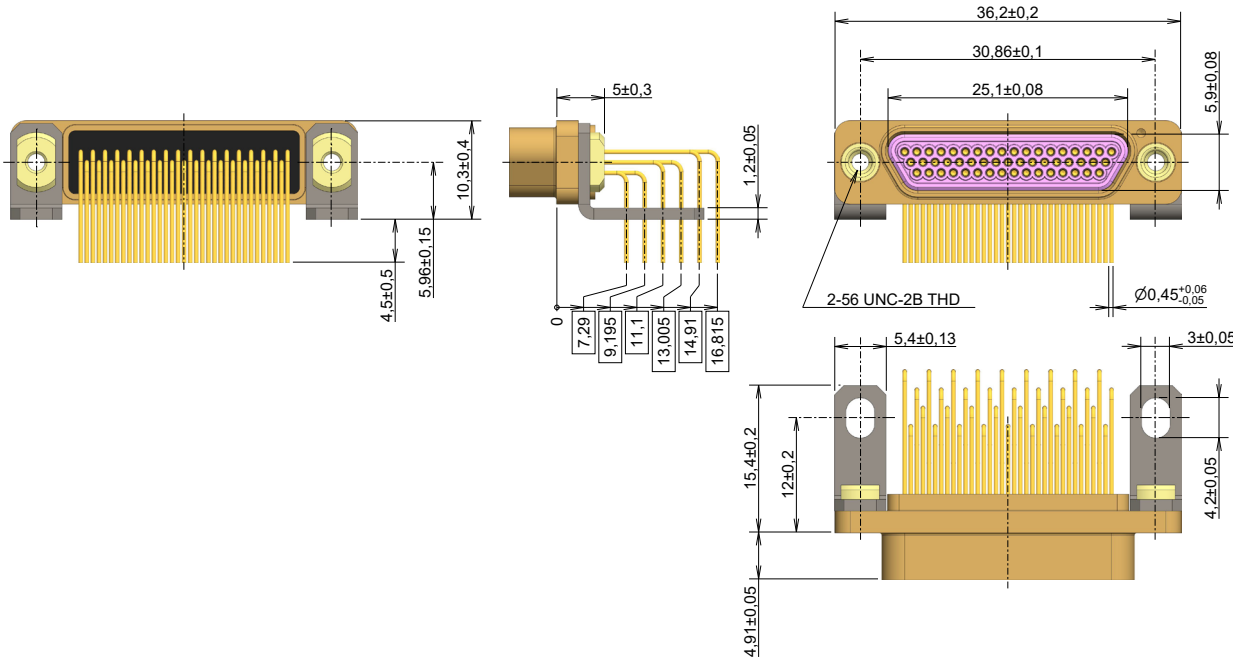
Socket connector dimensions – FR171M1 - Size 9 to 37



Shell Size	A ±0.2	B ±0.1	C ±0.08
9S	19.70	14.35	8.59
15S	23.50	18.16	12.40
21S	27.30	21.97	16.21
25S	29.85	24.51	18.75
31S	33.70	28.32	22.56
37S	37.50	32.13	26.37



Socket connector dimensions – FR171M1 - Size 51

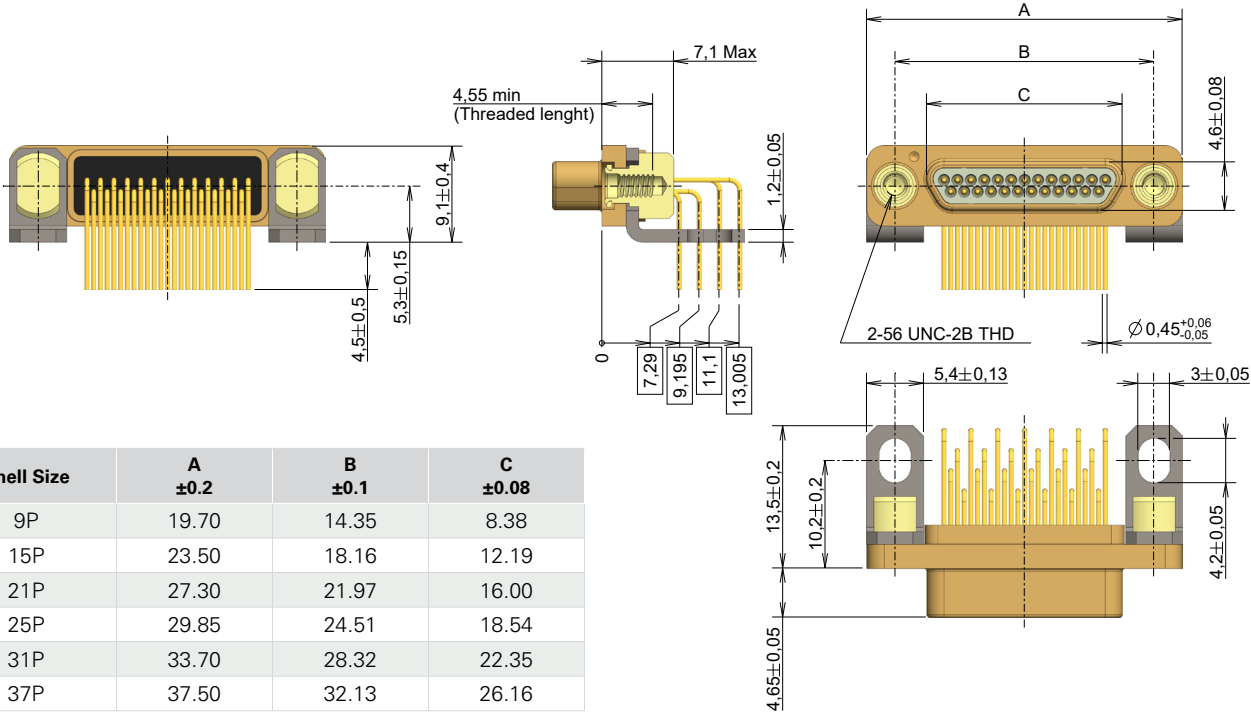


MDM Series

Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

Floating versions with bracket

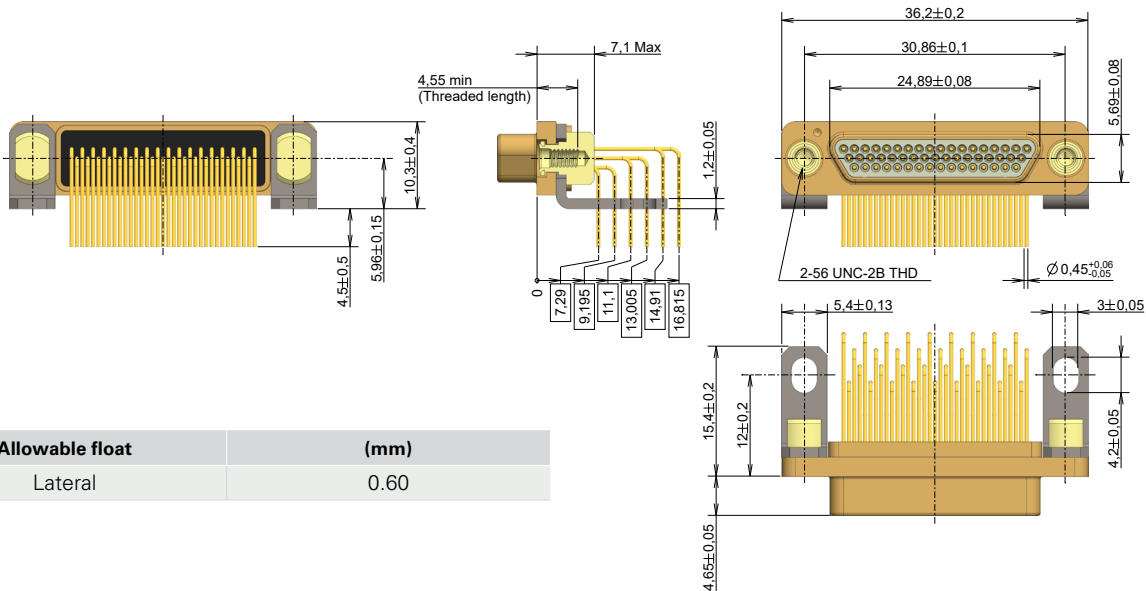
Pin connector dimensions - FR171M2 - Size 9 to 37



Shell Size	A ±0.2	B ±0.1	C ±0.08
9P	19.70	14.35	8.38
15P	23.50	18.16	12.19
21P	27.30	21.97	16.00
25P	29.85	24.51	18.54
31P	33.70	28.32	22.35
37P	37.50	32.13	26.16

Allowable float	(mm)
Lateral	0.60

Pin connector dimensions - FR171M2 - Size 51

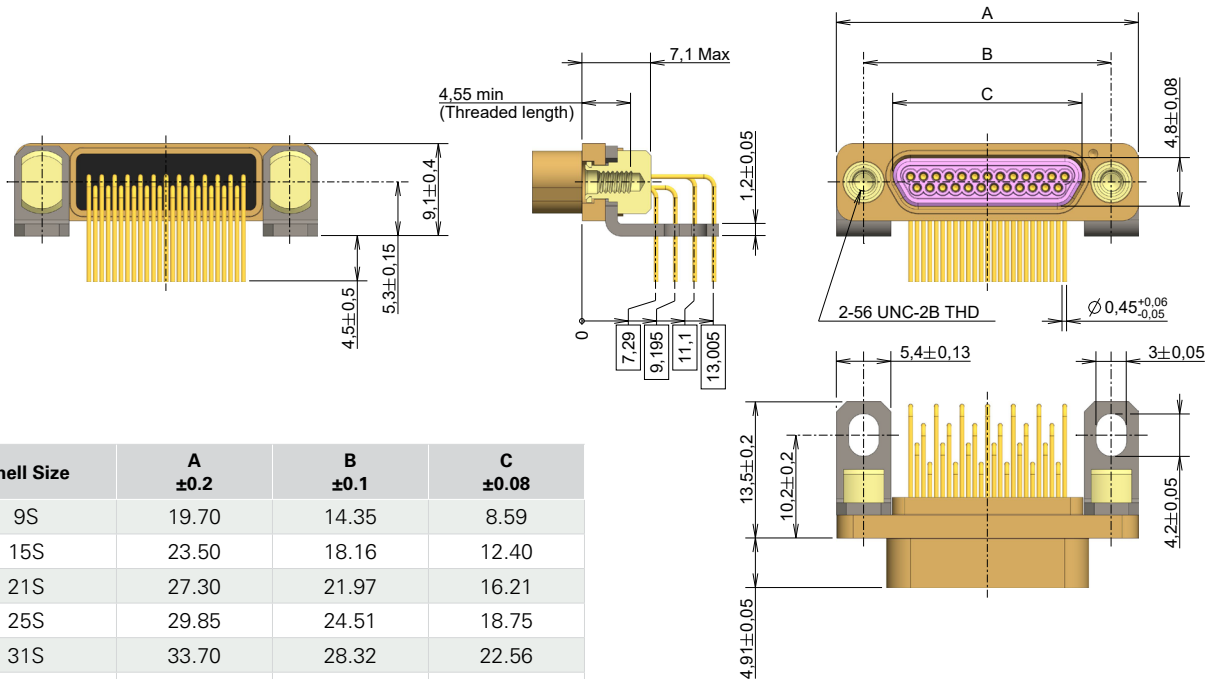


Allowable float	(mm)
Lateral	0.60

MDM Series

Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

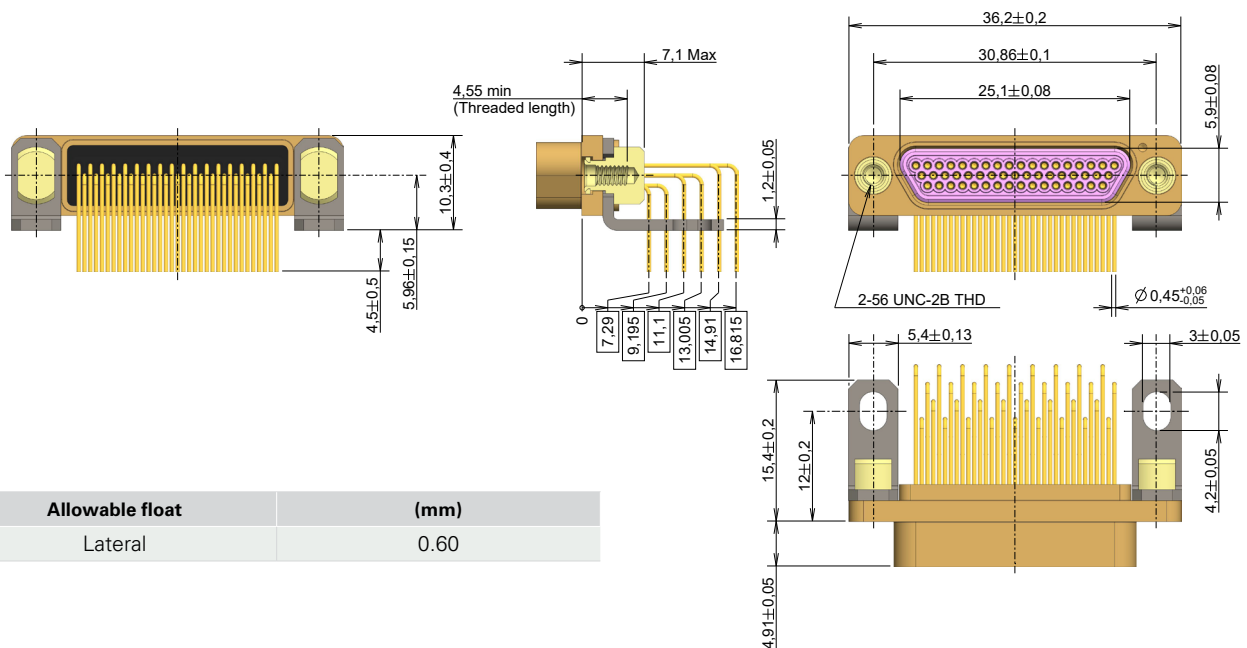
Socket connector dimensions - FR171M2 - Size 9 to 37



Shell Size	A ±0.2	B ±0.1	C ±0.08
9S	19.70	14.35	8.59
15S	23.50	18.16	12.40
21S	27.30	21.97	16.21
25S	29.85	24.51	18.75
31S	33.70	28.32	22.56
37S	37.50	32.13	26.37

Allowable float	(mm)
Lateral	0.60

Socket connector dimensions - FR171M2 - Size 51

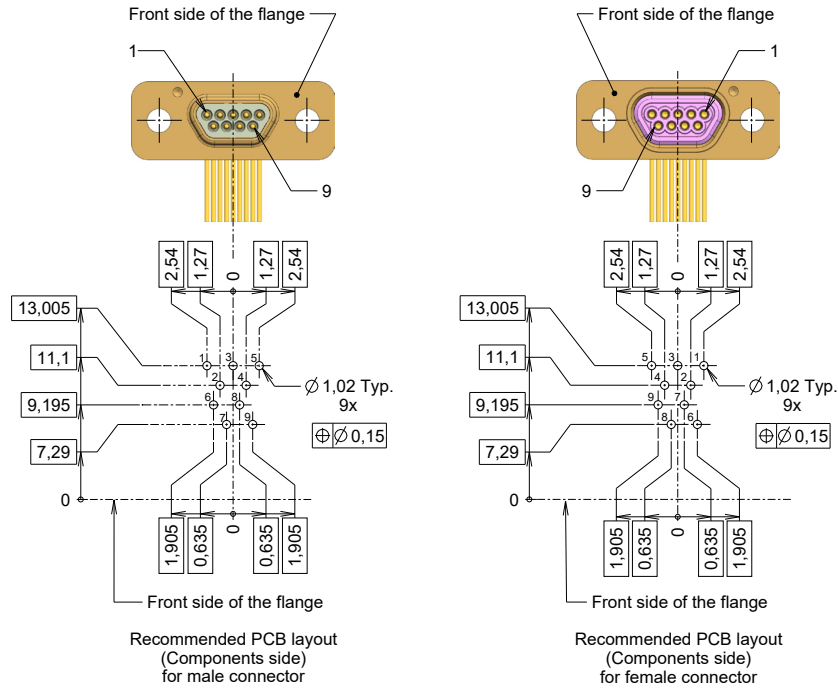


Allowable float	(mm)
Lateral	0.60

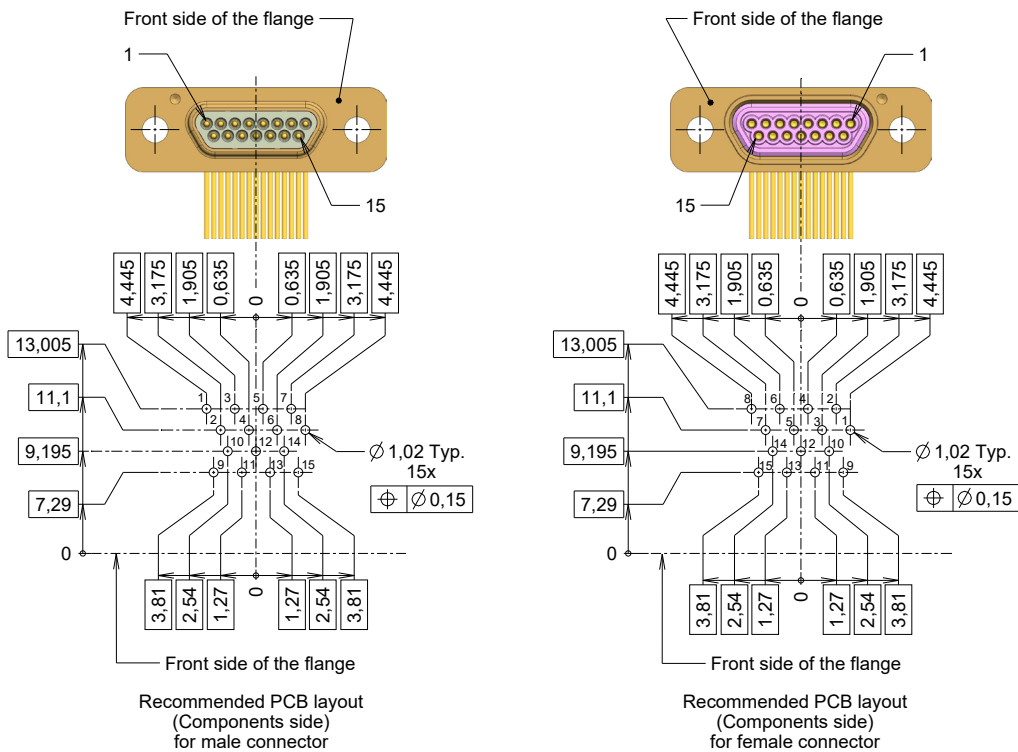
MDM Series

Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

PCB layout – FR171 - 9 positions



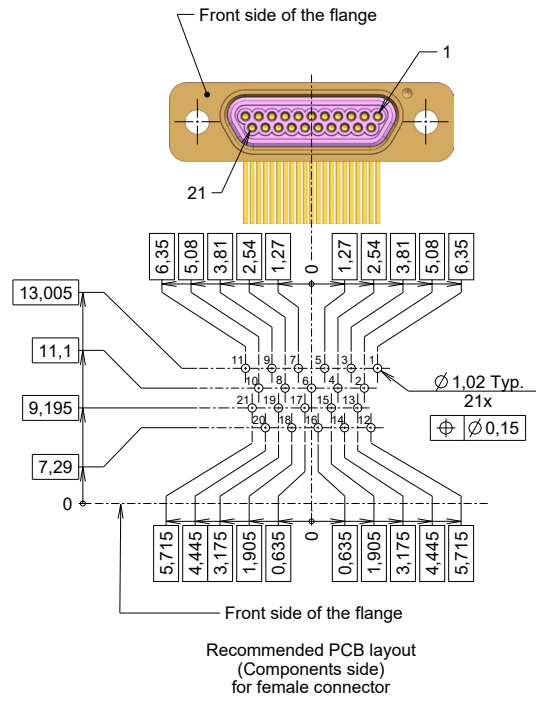
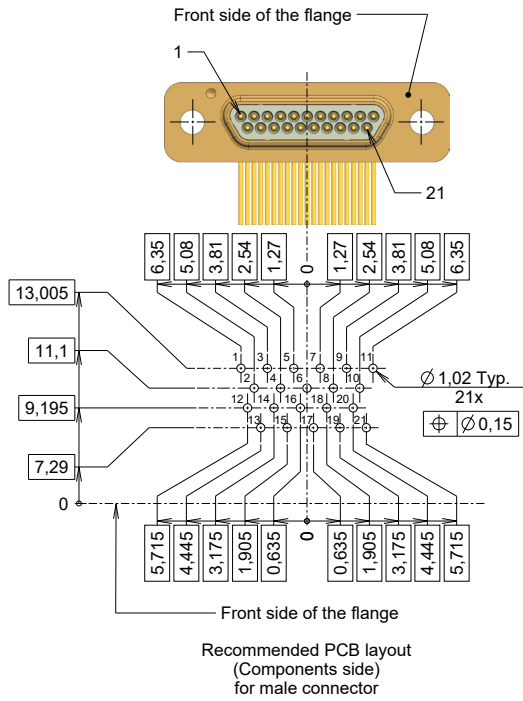
PCB layout – FR171 - 15 positions



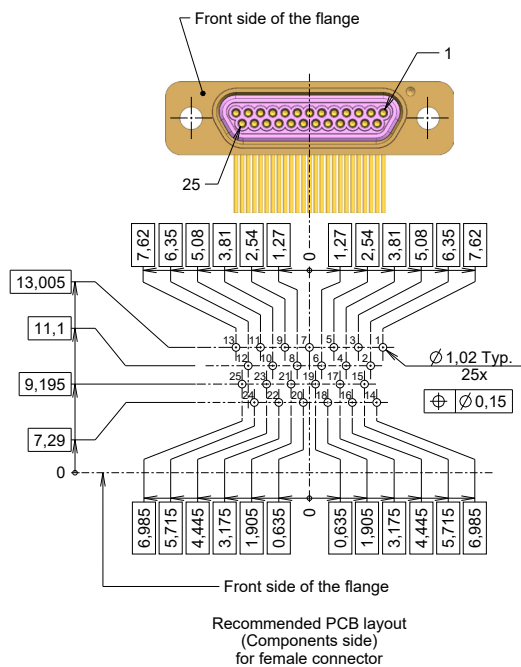
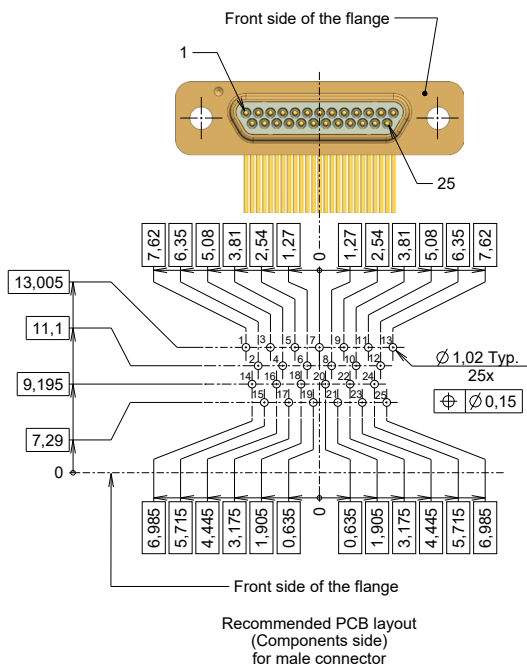
MDM Series

Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

PCB layout – FR171 - 21 positions



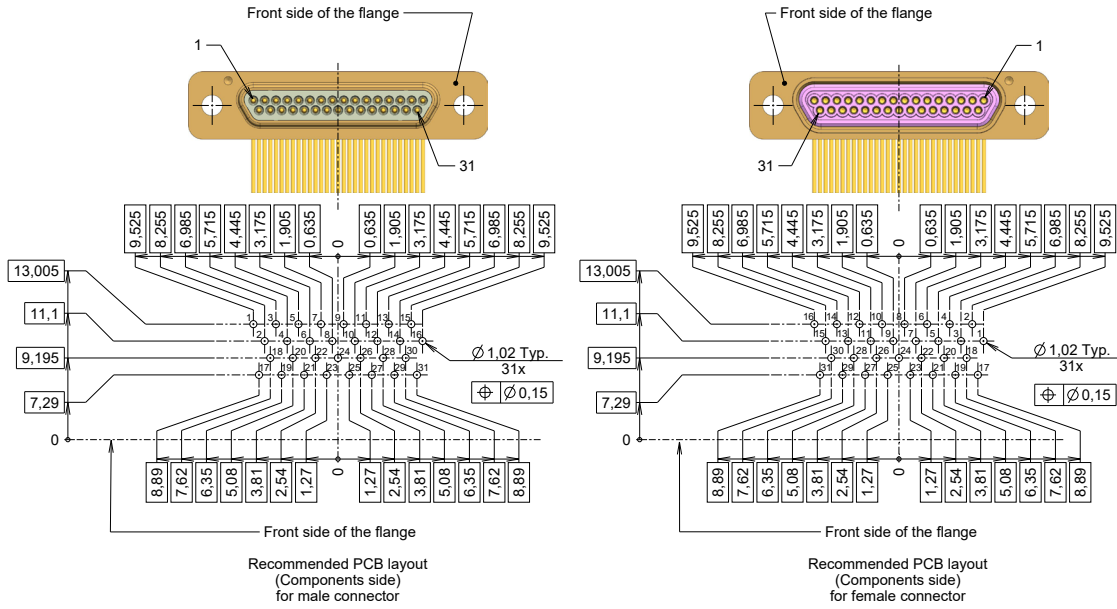
PCB layout – FR171 - 25 positions



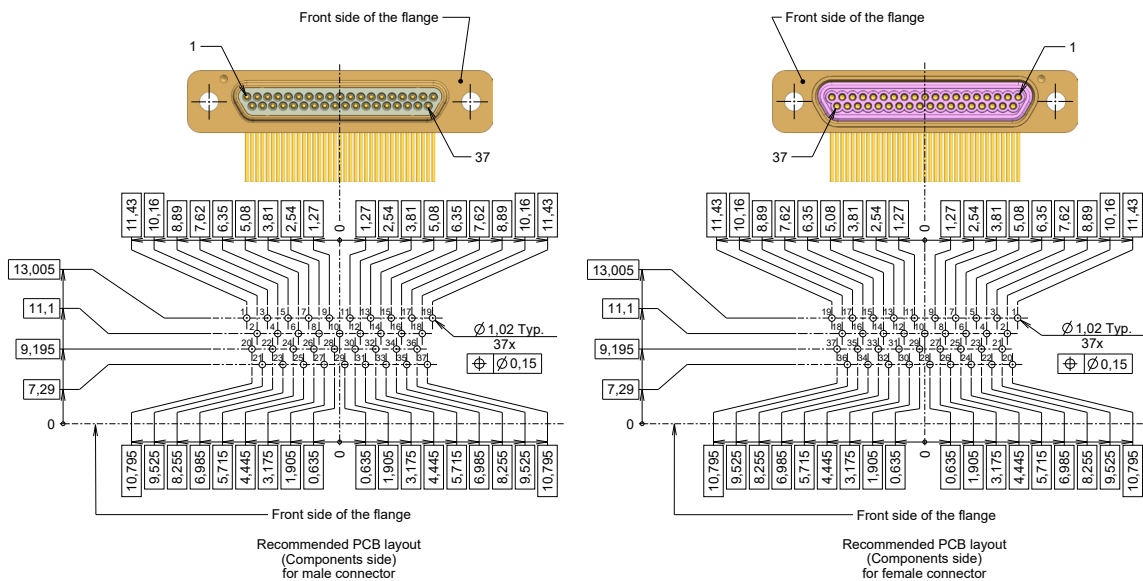
MDM Series

Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

PCB layout – FR171 - 31 positions



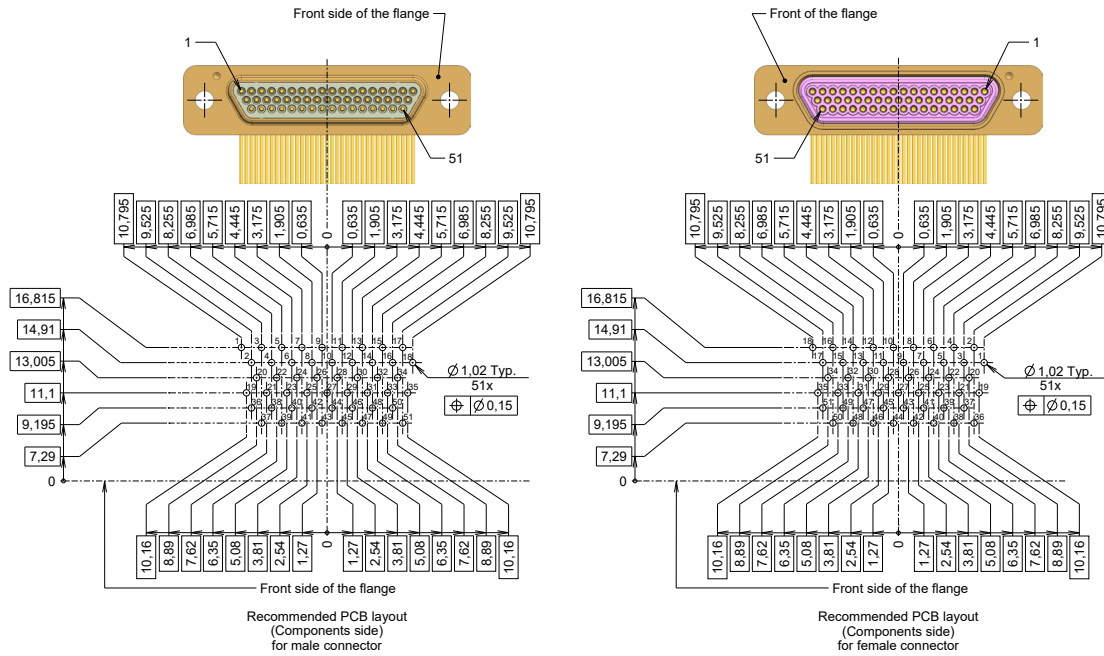
PCB layout – FR171 - 37 positions



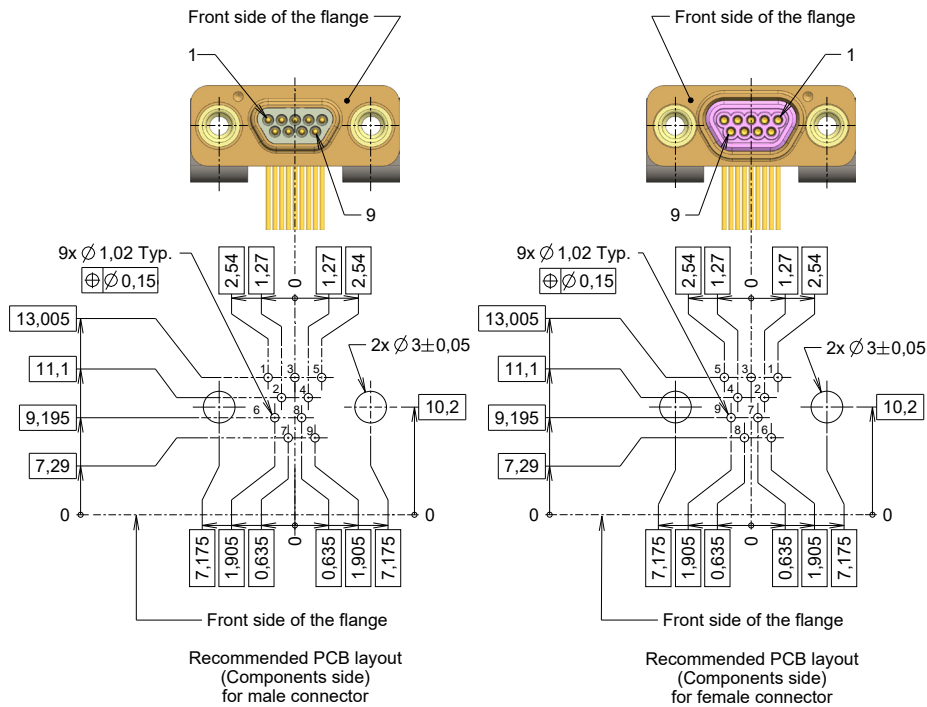
MDM Series

Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

PCB layout – FR171 - 51 positions



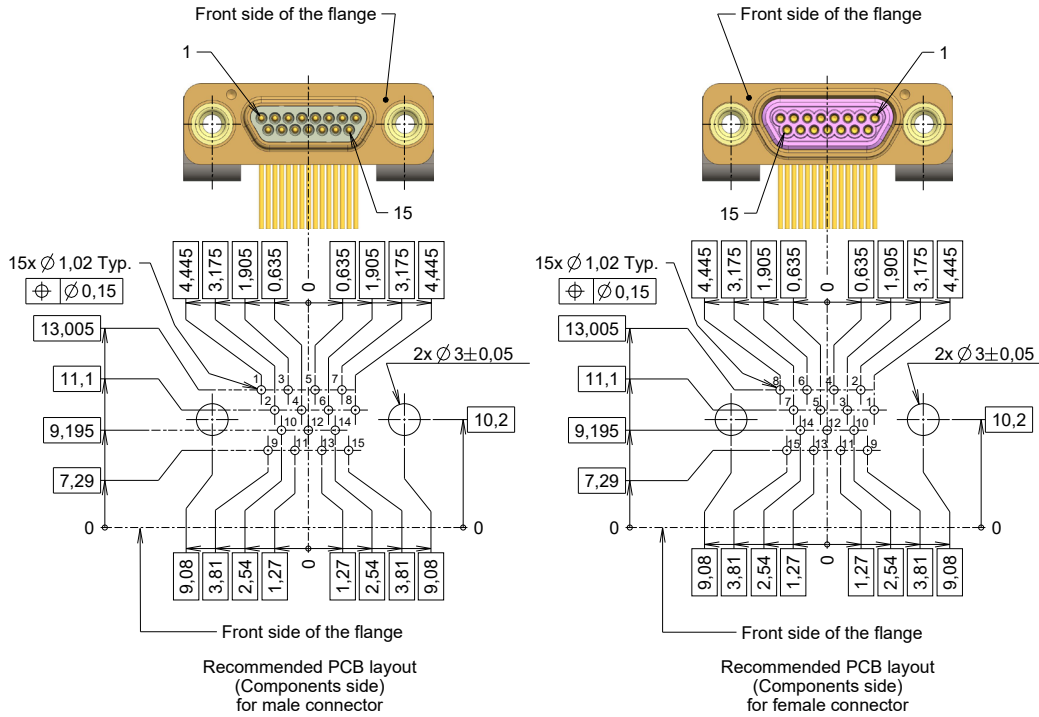
PCB layout – FR171M1 & FR171M2 - 9 positions



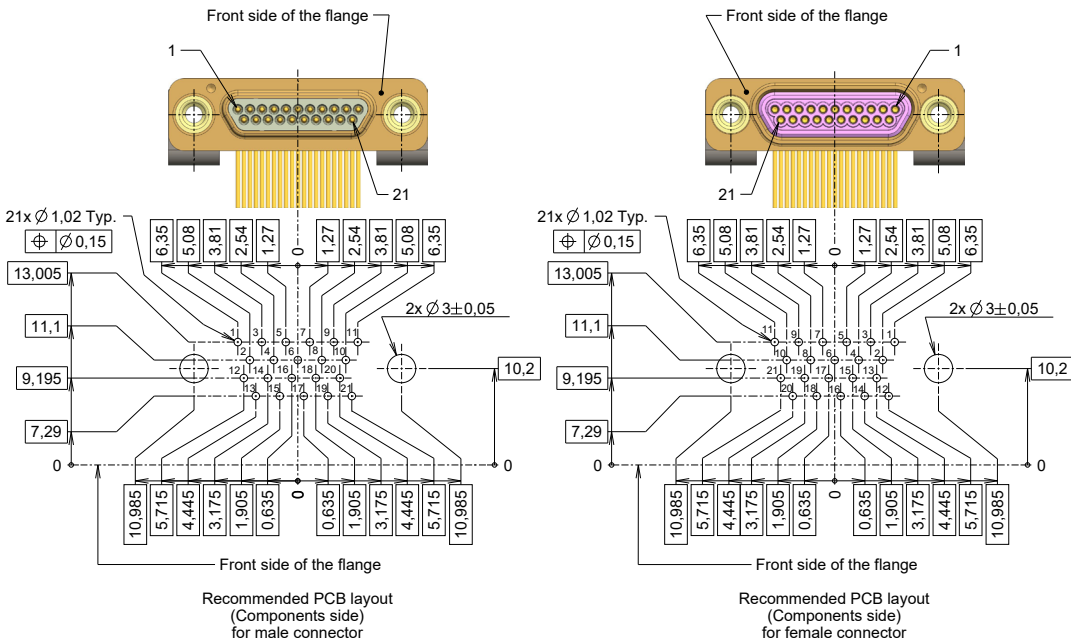
MDM Series

Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

PCB layout – FR171M1 & FR171M2 - 15 positions



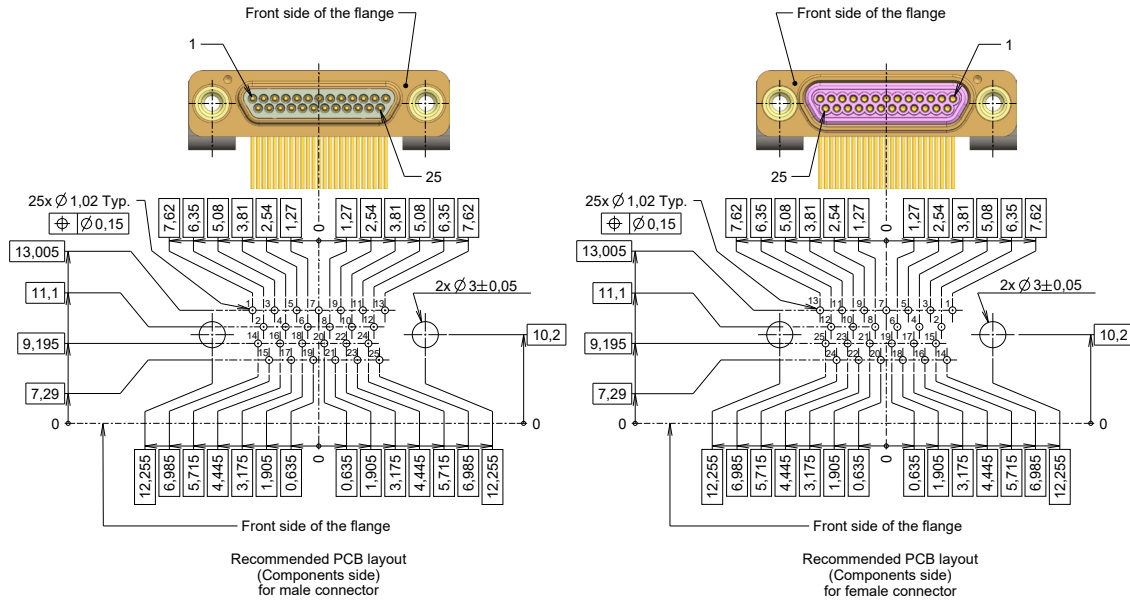
PCB layout – FR171M1 & FR171M2 - 21 positions



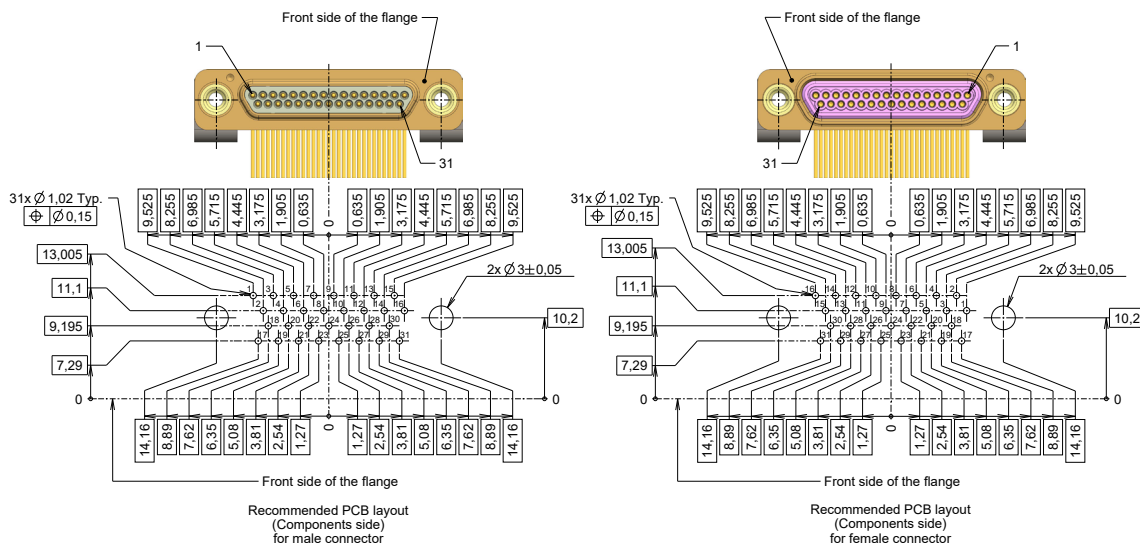
MDM Series

Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

PCB layout – FR171M1 & FR171M2 - 25 positions



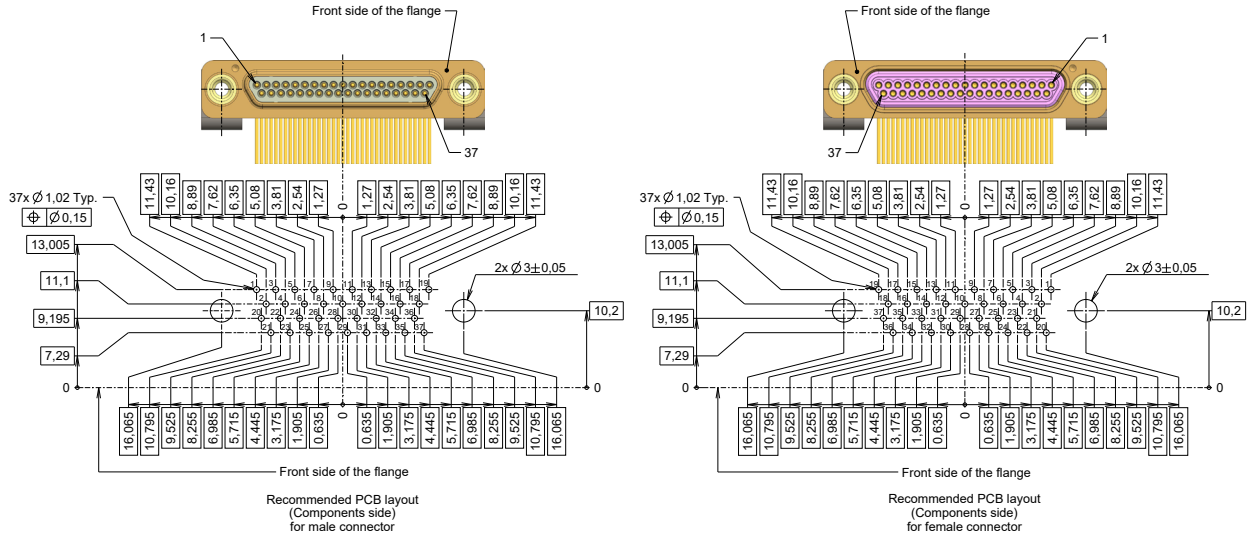
PCB layout – FR171M1 & FR171M2 - 31 positions



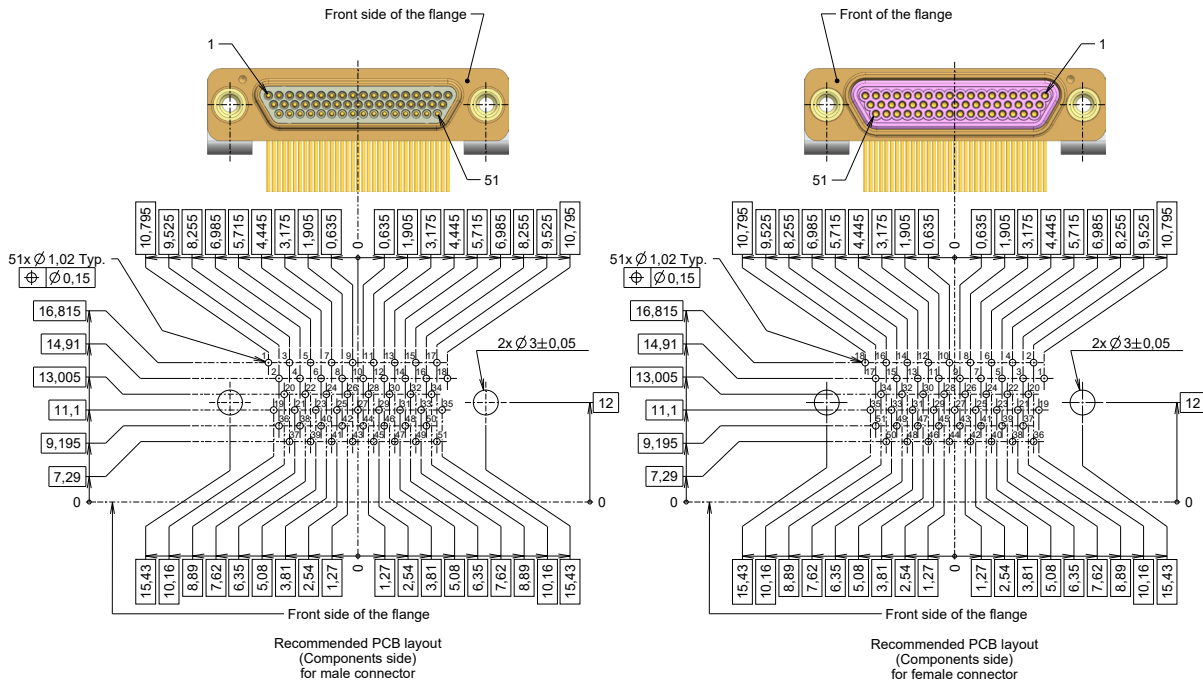
MDM Series

Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

PCB layout – FR171M1 & FR171M2 - 37 positions





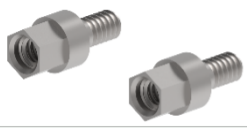

PCB layout – FR171M1 & FR171M2 - 51 positions



MDM Series


Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

Accessories

Female screwlocks. MDM connector mounted without panel (FR171 & FR171M1) (To be ordered separately)		NXTMC description	P/N	
	Weight for one pair: 1.32 g max	MDM-115288-6917-FR022	C115288-6917	
Female screwlocks. MDM connector mounted on panel by rear side. (FR171 & FR171M1) (To be ordered separately)		Panel thickness (mm)	NXTMC description	P/N
	Weight for one pair: 1.20 g max	0.7 < Thickness < 1.1	MDM-115288-6918-FR022	C115288-6918
		1.1 < Thickness < 1.5	MDM-115288-6919-FR022	C115288-6919
		1.5 < Thickness < 2.0	MDM-115288-6920-FR022	C115288-6920
		2.0 < Thickness < 2.4	MDM-115288-6945-FR022	C115288-6945
		2.4 < Thickness < 2.8	MDM-115288-6946-FR022	C115288-6946
Female screwlocks. MDM connector mounted without panel (FR171M2) (To be ordered separately)		NXTMC description	P/N	
	Weight for one pair: 1.32 g max	MDM-115288-6922-FR022	C115288-6922	
Female screwlocks. MDM connector mounted on panel by rear side (FR171M2) (To be ordered separately)		Panel thickness (mm)	NXTMC description	P/N
	Weight for one pair: 0.86 g max	0.7 < Thickness < 1.1	MDM-115288-6923-FR022	C115288-6923
		1.1 < Thickness < 1.5	MDM-115288-6924-FR022	C115288-6924
		1.5 < Thickness < 2.0	MDM-115288-6925-FR022	C115288-6925

MDM Series

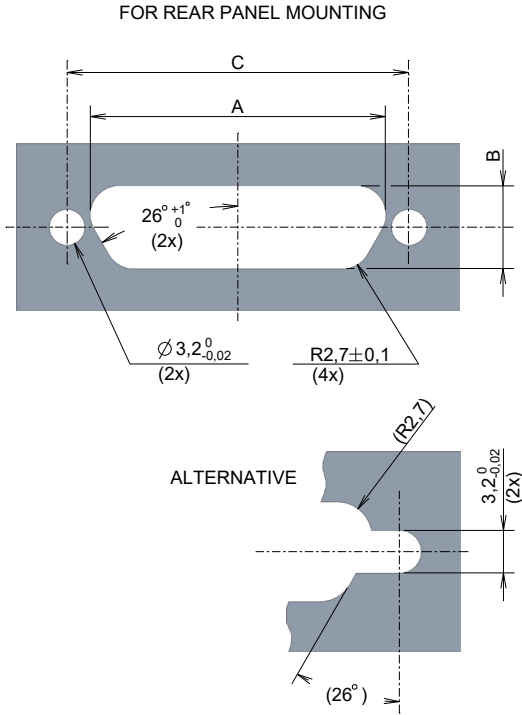
Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

Dust cap (if additional need)	Size	Description	P/N
	9 P	MDM-DUSTCAP-9P-FR022	C115288-6927
	9 S	MDM-DUSTCAP-9S-FR022	C115288-6928
	15 P	MDM-DUSTCAP-15P-FR022	C115288-6929
	15 S	MDM-DUSTCAP-15S-FR022	C115288-6930
	21 P	MDM-DUSTCAP-21P-FR022	C115288-6931
	21 S	MDM-DUSTCAP-21S-FR022	C115288-6932
	25 P	MDM-DUSTCAP-25P-FR022	C115288-6933
	25 S	MDM-DUSTCAP-25S-FR022	C115288-6934
	31 P	MDM-DUSTCAP-31P-FR022	C115288-6935
	31 S	MDM-DUSTCAP-31S-FR022	C115288-6936
	37 P	MDM-DUSTCAP-37P-FR022	C115288-6937
	37 S	MDM-DUSTCAP-37S-FR022	C115288-6938
	51 P	MDM-DUSTCAP-51P-FR022	C115288-6939
	51 S	MDM-DUSTCAP-51S-FR022	C115288-6940
	51-2R P	MDM-DUSTCAP-51-2R-P-FR022	C115288-6947
	51-2R S	MDM-DUSTCAP-51-2R-S-FR022	C115288-6948

MDM Series

Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

Panel cutouts – FR171 / FR171M1 / FR171M2 – Size 9 to 51



Rear panel mounting			
Shell Size	A ±0.05	B ±0.05	C ±0.1
9	10.56	6.77	14.35
15	14.37	6.77	18.16
21	18.18	6.77	21.97
25	20.72	6.77	24.51
31	24.53	6.77	28.32
37	28.34	6.77	32.13
51	27.07	7.86	30.86

MDM Series

Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

Connectors description and Part Numbers

Shell plating	Contact type	Number of contacts	FR171 - Attachment options					
			Standard connector		Connector with captive nut (E)		Connector with floating mount (F)	
			NXTMC description	P/N	NXTMC description	P/N	NXTMC description	P/N
Nickel plated	Pin	9	MDM-9P-FR171-A174-FR022	C115288-7200	MDM-9P-FR171E-A174-FR022	C115288-7228	MDM-9P-FR171F-A174-FR022	C115288-7214
		15	MDM-15P-FR171-A174-FR022	C115288-7202	MDM-15P-FR171E-A174-FR022	C115288-7230	MDM-15P-FR171F-A174-FR022	C115288-7216
		21	MDM-21P-FR171-A174-FR022	C115288-7204	MDM-21P-FR171E-A174-FR022	C115288-7232	MDM-21P-FR171F-A174-FR022	C115288-7218
		25	MDM-25P-FR171-A174-FR022	C115288-7206	MDM-25P-FR171E-A174-FR022	C115288-7234	MDM-25P-FR171F-A174-FR022	C115288-7220
		31	MDM-31P-FR171-A174-FR022	C115288-7208	MDM-31P-FR171E-A174-FR022	C115288-7236	MDM-31P-FR171F-A174-FR022	C115288-7222
		37	MDM-37P-FR171-A174-FR022	C115288-7210	MDM-37P-FR171E-A174-FR022	C115288-7238	MDM-37P-FR171F-A174-FR022	C115288-7224
		51	MDM-51P-FR171-A174-FR022	C115288-7212	MDM-51P-FR171E-A174-FR022	C115288-7240	MDM-51P-FR171F-A174-FR022	C115288-7226
	Socket	9	MDM-9S-FR171-A174-FR022	C115288-7201	MDM-9S-FR171E-A174-FR022	C115288-7229	MDM-9S-FR171F-A174-FR022	C115288-7215
		15	MDM-15S-FR171-A174-FR022	C115288-7203	MDM-15S-FR171E-A174-FR022	C115288-7231	MDM-15S-FR171F-A174-FR022	C115288-7217
		21	MDM-21S-FR171-A174-FR022	C115288-7205	MDM-21S-FR171E-A174-FR022	C115288-7233	MDM-21S-FR171F-A174-FR022	C115288-7219
		25	MDM-25S-FR171-A174-FR022	C115288-7207	MDM-25S-FR171E-A174-FR022	C115288-7235	MDM-25S-FR171F-A174-FR022	C115288-7221
		31	MDM-31S-FR171-A174-FR022	C115288-7209	MDM-31S-FR171E-A174-FR022	C115288-7237	MDM-31S-FR171F-A174-FR022	C115288-7223
		37	MDM-37S-FR171-A174-FR022	C115288-7211	MDM-37S-FR171E-A174-FR022	C115288-7239	MDM-37S-FR171F-A174-FR022	C115288-7225
		51	MDM-51S-FR171-A174-FR022	C115288-7213	MDM-51S-FR171E-A174-FR022	C115288-7241	MDM-51S-FR171F-A174-FR022	C115288-7227
Gold plated	Pin	9	MDM-9P-FR171-FR172-FR022	C115288-7410	MDM-9P-FR171E-FR172-FR022	C115288-7438	MDM-9P-FR171F-FR172-FR022	C115288-7424
		15	MDM-15P-FR171-FR172-FR022	C115288-7412	MDM-15P-FR171E-FR172-FR022	C115288-7440	MDM-15P-FR171F-FR172-FR022	C115288-7426
		21	MDM-21P-FR171-FR172-FR022	C115288-7414	MDM-21P-FR171E-FR172-FR022	C115288-7442	MDM-21P-FR171F-FR172-FR022	C115288-7428
		25	MDM-25P-FR171-FR172-FR022	C115288-7416	MDM-25P-FR171E-FR172-FR022	C115288-7444	MDM-25P-FR171F-FR172-FR022	C115288-7430
		31	MDM-31P-FR171-FR172-FR022	C115288-7418	MDM-31P-FR171E-FR172-FR022	C115288-7446	MDM-31P-FR171F-FR172-FR022	C115288-7432
		37	MDM-37P-FR171-FR172-FR022	C115288-7420	MDM-37P-FR171E-FR172-FR022	C115288-7448	MDM-37P-FR171F-FR172-FR022	C115288-7434
		51	MDM-51P-FR171-FR172-FR022	C115288-7422	MDM-51P-FR171E-FR172-FR022	C115288-7450	MDM-51P-FR171F-FR172-FR022	C115288-7436
	Socket	9	MDM-9S-FR171-FR172-FR022	C115288-7411	MDM-9S-FR171E-FR172-FR022	C115288-7439	MDM-9S-FR171F-FR172-FR022	C115288-7425
		15	MDM-15S-FR171-FR172-FR022	C115288-7413	MDM-15S-FR171E-FR172-FR022	C115288-7441	MDM-15S-FR171F-FR172-FR022	C115288-7427
		21	MDM-21S-FR171-FR172-FR022	C115288-7415	MDM-21S-FR171E-FR172-FR022	C115288-7443	MDM-21S-FR171F-FR172-FR022	C115288-7429
		25	MDM-25S-FR171-FR172-FR022	C115288-7417	MDM-25S-FR171E-FR172-FR022	C115288-7445	MDM-25S-FR171F-FR172-FR022	C115288-7431
		31	MDM-31S-FR171-FR172-FR022	C115288-7419	MDM-31S-FR171E-FR172-FR022	C115288-7447	MDM-31S-FR171F-FR172-FR022	C115288-7433
		37	MDM-37S-FR171-FR172-FR022	C115288-7421	MDM-37S-FR171E-FR172-FR022	C115288-7449	MDM-37S-FR171F-FR172-FR022	C115288-7435
		51	MDM-51S-FR171-FR172-FR022	C115288-7423	MDM-51S-FR171E-FR172-FR022	C115288-7451	MDM-51S-FR171F-FR172-FR022	C115288-7437

MDM Series

Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

Shell plating	Contact type	Number of contacts	FR171M1 PCB right angle MDM, narrow profile, with bracket	
			NXTMC description	P/N
Nickel plated	Pin	9	MDM-9P-FR171M1-A174-FR022	C115288-7242
		15	MDM-15P-FR171M1-A174-FR022	C115288-7244
		21	MDM-21P-FR171M1-A174-FR022	C115288-7246
		25	MDM-25P-FR171M1-A174-FR022	C115288-7248
		31	MDM-31P-FR171M1-A174-FR022	C115288-7250
		37	MDM-37P-FR171M1-A174-FR022	C115288-7252
		51	MDM-51P-FR171M1-A174-FR022	C115288-7254
	Socket	9	MDM-9S-FR171M1-A174-FR022	C115288-7243
		15	MDM-15S-FR171M1-A174-FR022	C115288-7245
		21	MDM-21S-FR171M1-A174-FR022	C115288-7247
		25	MDM-25S-FR171M1-A174-FR022	C115288-7249
		31	MDM-31S-FR171M1-A174-FR022	C115288-7251
		37	MDM-37S-FR171M1-A174-FR022	C115288-7253
		51	MDM-51S-FR171M1-A174-FR022	C115288-7255
Gold plated	Pin	9	MDM-9P-FR171M1-FR172-FR022	C115288-7452
		15	MDM-15P-FR171M1-FR172-FR022	C115288-7454
		21	MDM-21P-FR171M1-FR172-FR022	C115288-7456
		25	MDM-25P-FR171M1-FR172-FR022	C115288-7458
		31	MDM-31P-FR171M1-FR172-FR022	C115288-7460
		37	MDM-37P-FR171M1-FR172-FR022	C115288-7462
		51	MDM-51P-FR171M1-FR172-FR022	C115288-7464
	Socket	9	MDM-9S-FR171M1-FR172-FR022	C115288-7453
		15	MDM-15S-FR171M1-FR172-FR022	C115288-7455
		21	MDM-21S-FR171M1-FR172-FR022	C115288-7457
		25	MDM-25S-FR171M1-FR172-FR022	C115288-7459
		31	MDM-31S-FR171M1-FR172-FR022	C115288-7461
		37	MDM-37S-FR171M1-FR172-FR022	C115288-7463
		51	MDM-51S-FR171M1-FR172-FR022	C115288-7465

MDM Series

Micro D connectors, Narrow profile
PCB right angle termination NXTMC – CS FR022

Shell plating	Contact type	Number of contacts	FR171M2 PCB right angle MDM, narrow profile, with floating bracket	
			NXTMC description	P/N
Nickel plated	Pin	9	MDM-9P-FR171M2-A174-FR022	C115288-7256
		15	MDM-15P-FR171M2-A174-FR022	C115288-7258
		21	MDM-21P-FR171M2-A174-FR022	C115288-7260
		25	MDM-25P-FR171M2-A174-FR022	C115288-7262
		31	MDM-31P-FR171M2-A174-FR022	C115288-7264
		37	MDM-37P-FR171M2-A174-FR022	C115288-7266
		51	MDM-51P-FR171M2-A174-FR022	C115288-7268
	Socket	9	MDM-9S-FR171M2-A174-FR022	C115288-7257
		15	MDM-15S-FR171M2-A174-FR022	C115288-7259
		21	MDM-21S-FR171M2-A174-FR022	C115288-7261
		25	MDM-25S-FR171M2-A174-FR022	C115288-7263
		31	MDM-31S-FR171M2-A174-FR022	C115288-7265
		37	MDM-37S-FR171M2-A174-FR022	C115288-7267
		51	MDM-51S-FR171M2-A174-FR022	C115288-7269
Gold plated	Pin	9	MDM-9P-FR171M2-FR172-FR022	C115288-7466
		15	MDM-15P-FR171M2-FR172-FR022	C115288-7468
		21	MDM-21P-FR171M2-FR172-FR022	C115288-7470
		25	MDM-25P-FR171M2-FR172-FR022	C115288-7472
		31	MDM-31P-FR171M2-FR172-FR022	C115288-7474
		37	MDM-37P-FR171M2-FR172-FR022	C115288-7476
		51	MDM-51P-FR171M2-FR172-FR022	C115288-7478
	Socket	9	MDM-9S-FR171M2-FR172-FR022	C115288-7467
		15	MDM-15S-FR171M2-FR172-FR022	C115288-7469
		21	MDM-21S-FR171M2-FR172-FR022	C115288-7471
		25	MDM-25S-FR171M2-FR172-FR022	C115288-7473
		31	MDM-31S-FR171M2-FR172-FR022	C115288-7475
		37	MDM-37S-FR171M2-FR172-FR022	C115288-7477
		51	MDM-51S-FR171M2-FR172-FR022	C115288-7479