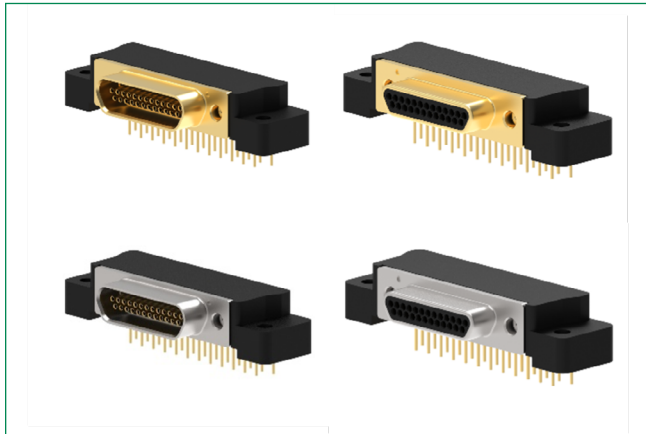


# MDM Series

## Micro D connectors

### PCB right angle termination NXTMC – CS FR022



Type	Mating/Unmating Force (N max)	Unmating Force (N min)	Max weight without accessories (g)
Size 9	25	1.3	7.4
Size 15	42	2.0	7.8
Size 21	58	2.9	8.5
Size 25	70	3.5	10.2
Size 31	86	4.3	12.2
Size 37	103	5.1	14.4
Size 51	142	7.1	16.5

#### 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 Board to Cable space 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.

## Packaging

Individual plastic tube.

Each MDM connector is sold with a dust cap.

Each MDM socket connector is sold with an interfacial seal.

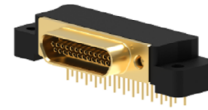
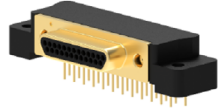
# MDM Series

## Micro D connectors

### 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, you need. To order, select desired option from each category and place it in the appropriate box.



Pin connectors with shell Gold plated or shell Nickel plated

Socket connectors with shell Gold plated or shell Nickel plated

FR022 specification:

### MDM - 9 P FR136 - 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

**Profile and contact termination type:**

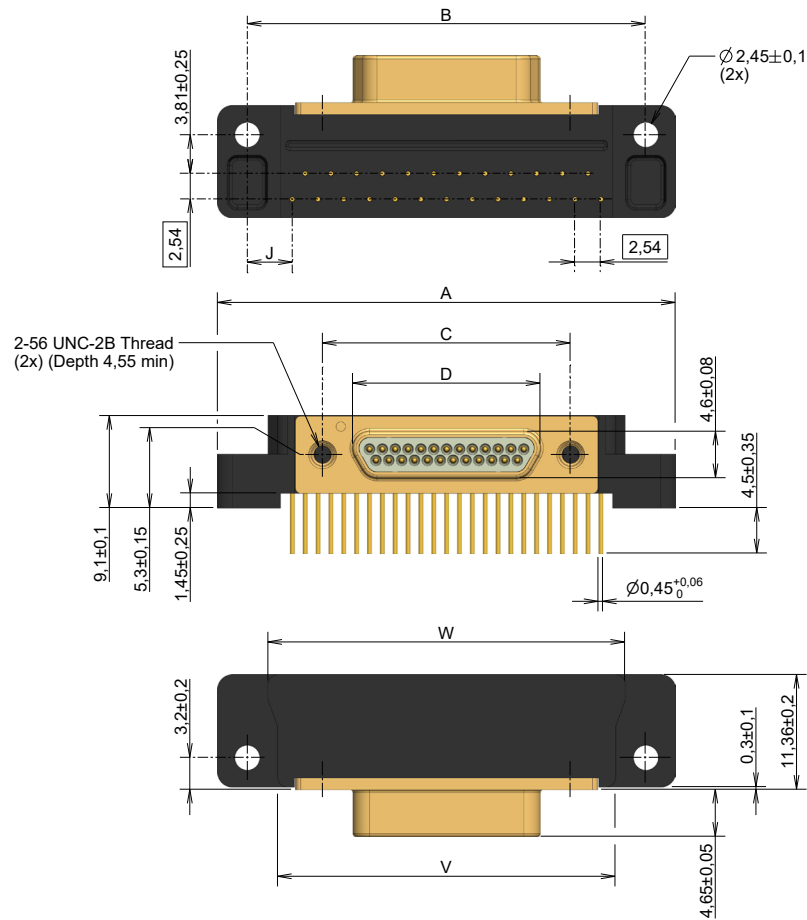
- FR136:** MDM standard profile with PCB right angle contacts, length 4.50 mm (all sizes)
- FR136A:** MDM narrow profile with PCB right angle contacts, length 3.50 mm (Only in size 9)

#### Materials & Finishes

Components	Materials	Finishes
Shell	Aluminum alloy	A174 : 25.4 µm min Electroless Nickel FR172 : 0.7 µm min Gold over 25.4 µm min Electroless Nickel
Insulator	LCP	UL 94-V0, Glass-filled, Black color
Housing	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
Interfacial seal	Fluorosilicone elastomer	Pink color
Dust cap	Polyethylene	Black color, antistatic
Encapsulant	Epoxy	Black color

**MDM Series**  
 Micro D connectors  
 PCB right angle termination NXTMC – CS FR022

Pin connector dimensions - FR136 - Size 9 to 37

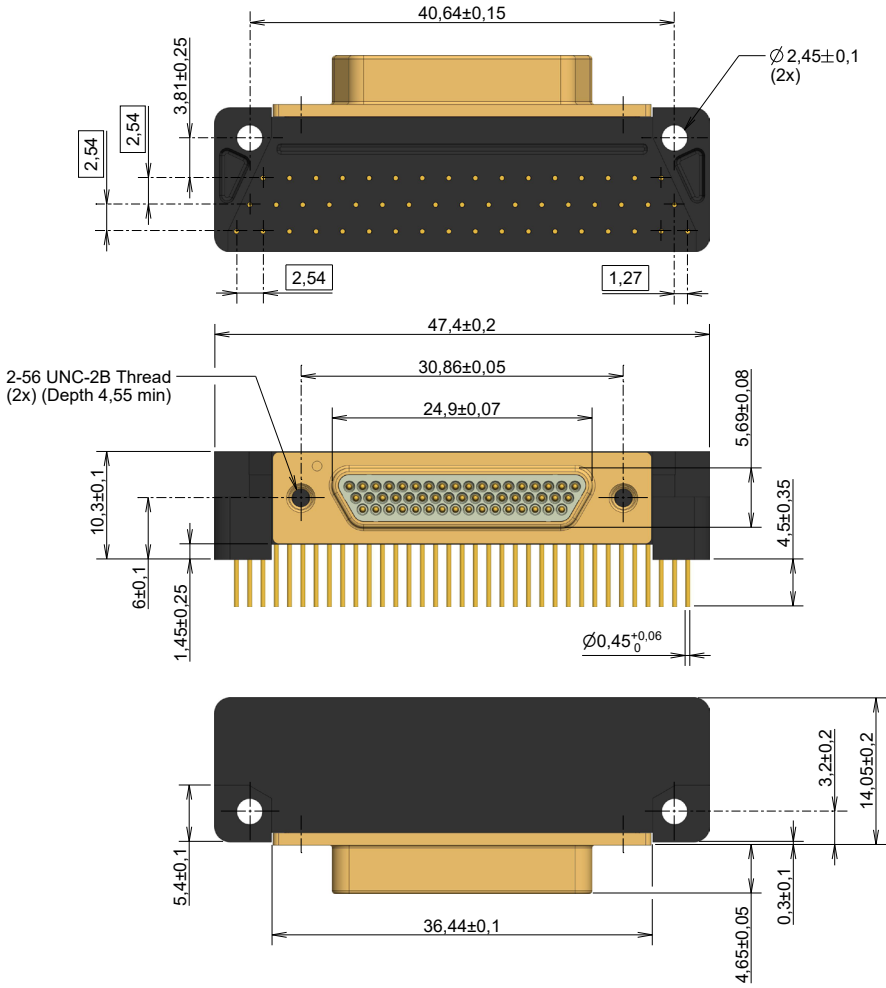


Shell Size	A $\pm 0.15$	B $\pm 0.15$	C $\pm 0.05$	D $\pm 0.07$	J Typ.	V $\pm 0.10$	W $\pm 0.15$
9P	35.10	29.21	14.35	8.39	9.525	23.15	25.05
15P	38.95	33.02	18.16	12.20	7.62	26.95	28.85
21P	42.80	36.83	21.97	16.01	5.715	30.80	32.70
25P	45.30	39.37	24.51	18.55	4.445	33.40	35.30
31P	$51.65 \pm 0.2$	45.72	28.32	22.36	3.81	39.70	41.60
37P	$59.20 \pm 0.2$	53.34	32.13	26.17	3.81	47.25	49.15

# MDM Series

Micro D connectors  
PCB right angle termination NXTMC – CS FR022

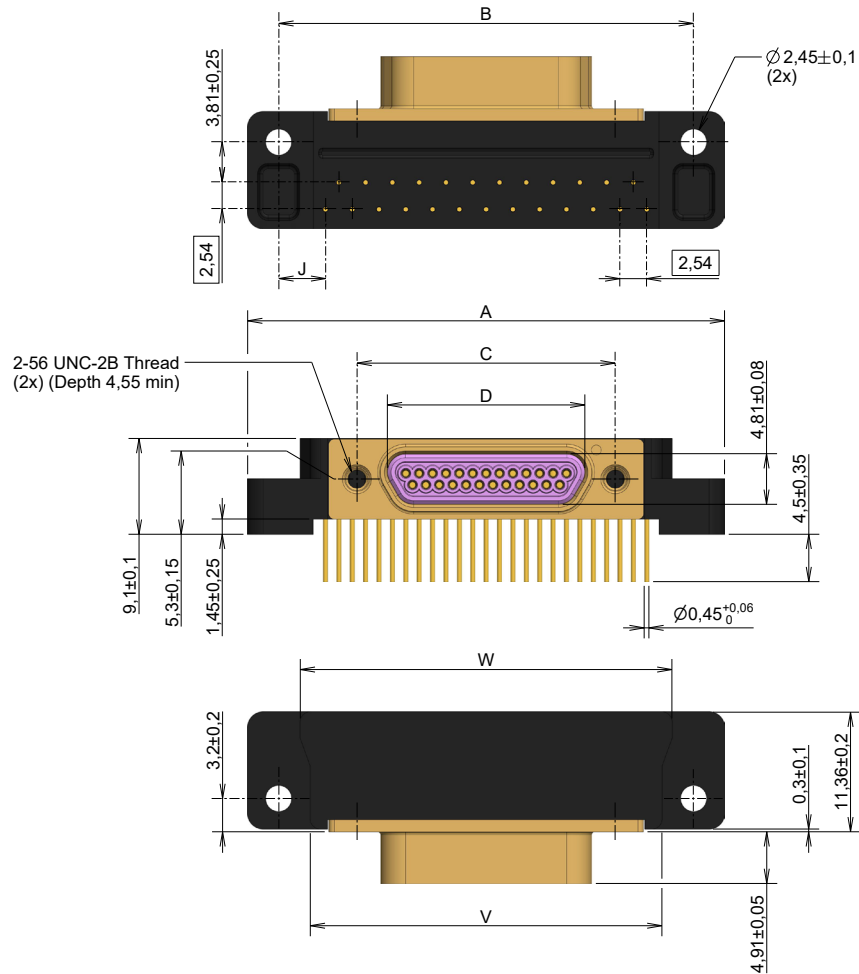
Pin connector dimensions - FR136 - Size 51



# MDM Series

Micro D connectors  
PCB right angle termination NXTMC – CS FR022

Socket connector dimensions - FR136 - Size 9 to 37

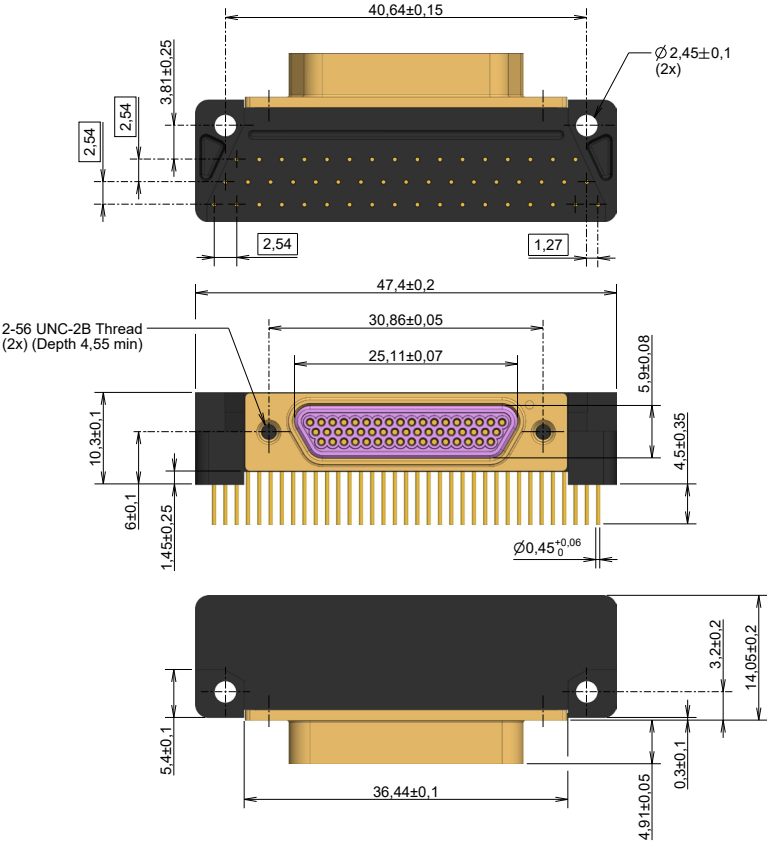


Shell Size	A $\pm 0.15$	B $\pm 0.15$	C $\pm 0.05$	D $\pm 0.07$	J Typ.	V $\pm 0.10$	W $\pm 0.15$
9S	35.10	29.21	14.35	8.60	9.525	23.15	25.05
15S	38.95	33.02	18.16	12.41	7.62	26.95	28.85
21S	42.80	36.83	21.97	16.22	5.715	30.80	32.70
25S	45.30	39.37	24.51	18.76	4.445	33.40	35.30
31S	51.65 $\pm 0.2$	45.72	28.32	22.57	3.81	39.70	41.60
37S	59.20 $\pm 0.2$	53.34	32.13	26.38	3.81	47.25	49.15

# MDM Series

Micro D connectors  
PCB right angle termination NXTMC – CS FR022

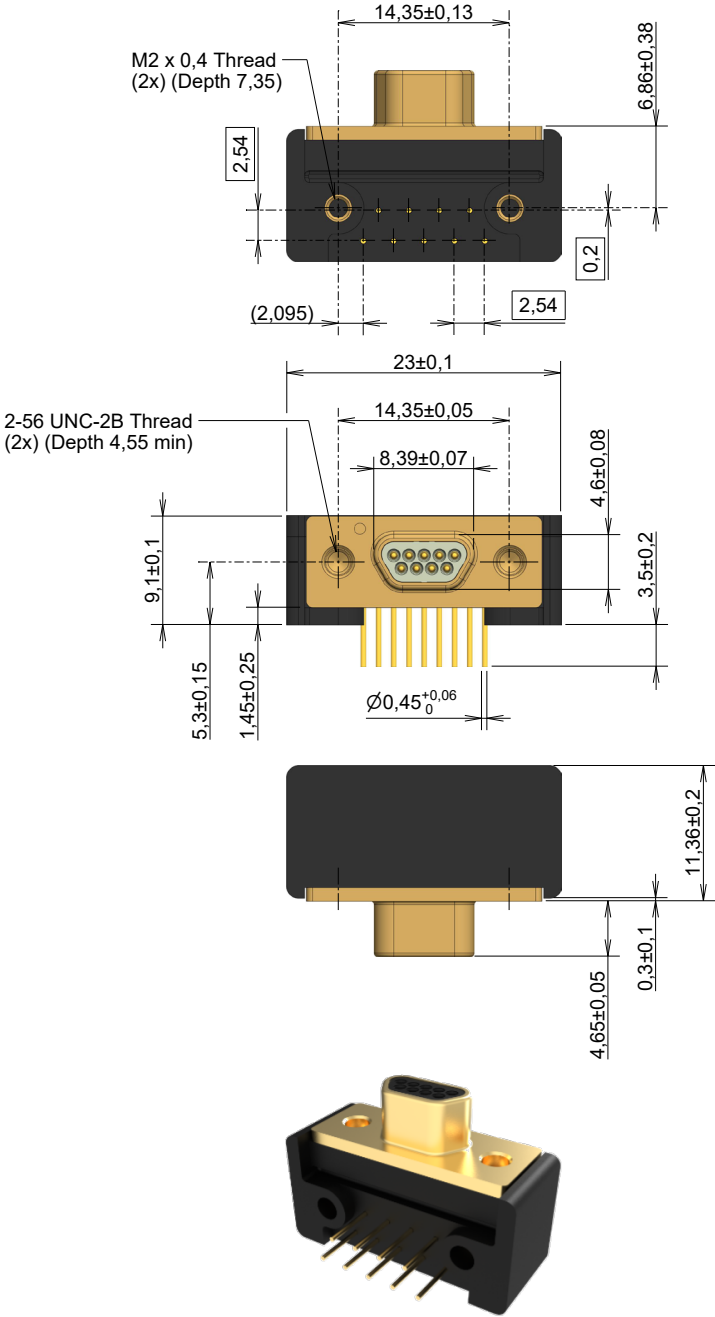
Socket connector dimensions - FR136 - Size 51



# MDM Series

Micro D connectors  
PCB right angle termination NXTMC – CS FR022

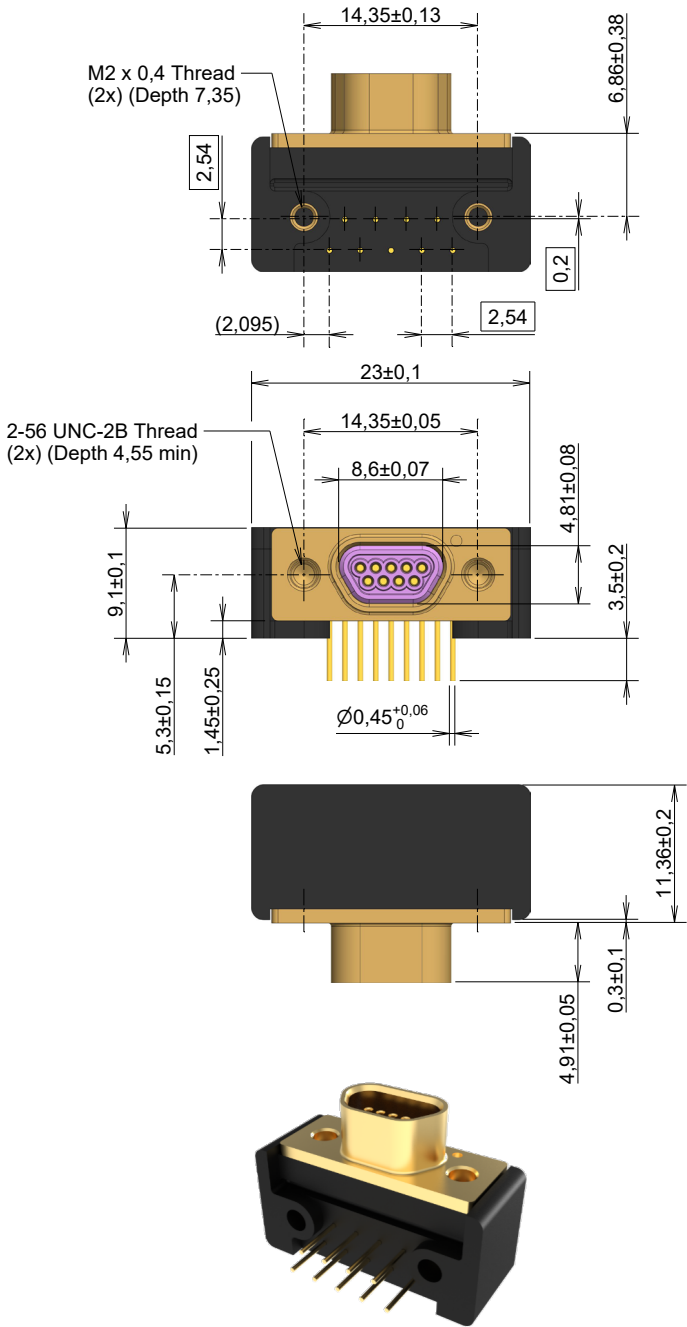
Pin connector dimensions – FR136A : Narrow profile - Size 9



# MDM Series

Micro D connectors  
PCB right angle termination NXTMC – CS FR022

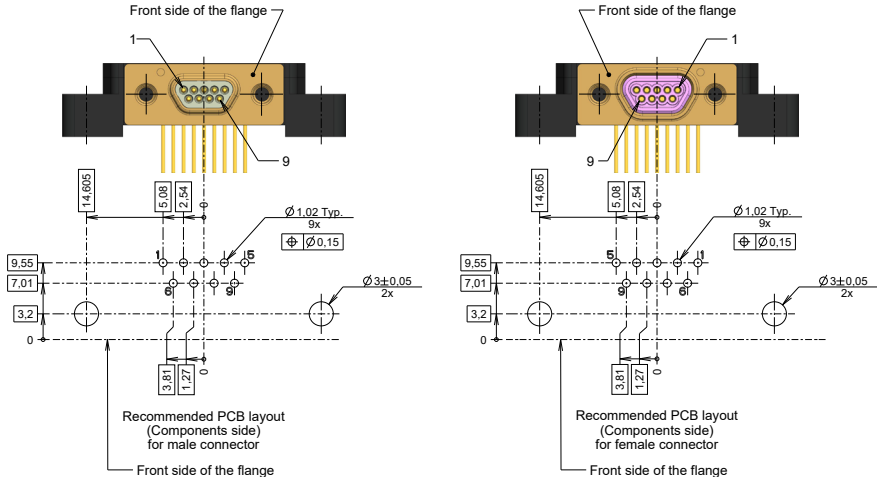
Socket connector dimensions – FR136A : Narrow profile - Size 9



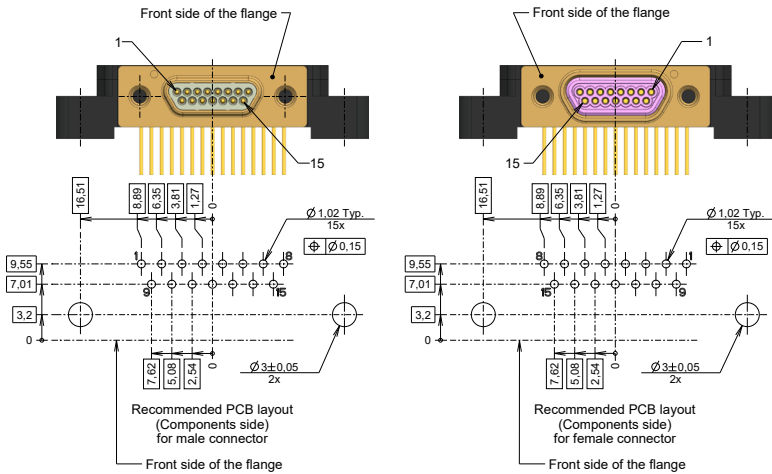
# MDM Series

Micro D connectors  
PCB right angle termination NXTMC – CS FR022

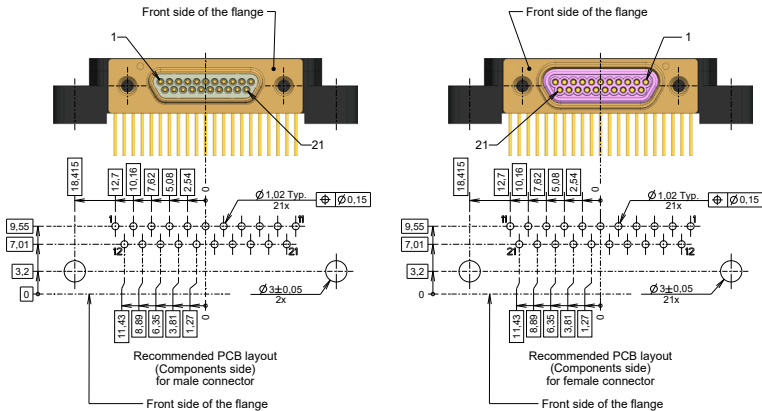
### PCB layout – FR136 - 9 positions



### PCB layout – FR136 - 15 positions



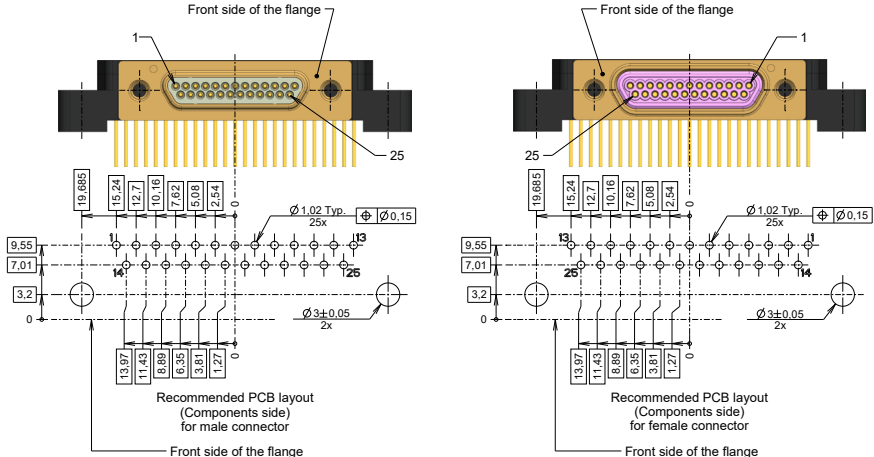
### PCB layout – FR136 - 21 positions



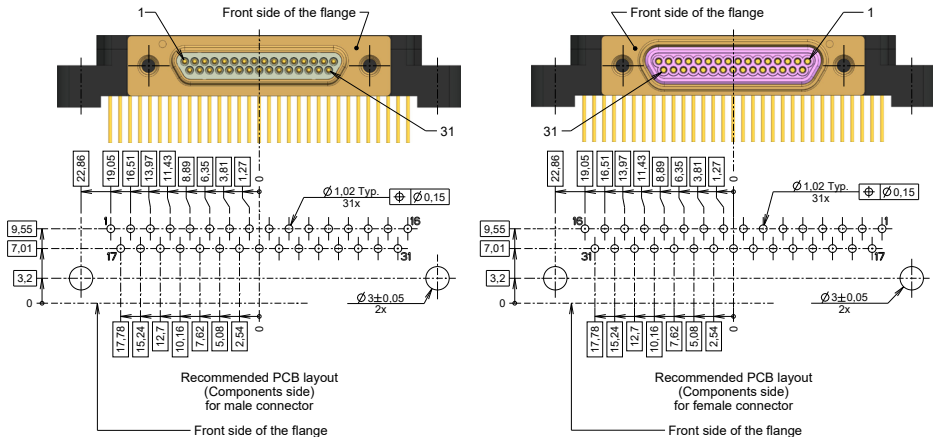
# MDM Series

Micro D connectors  
PCB right angle termination NXTMC – CS FR022

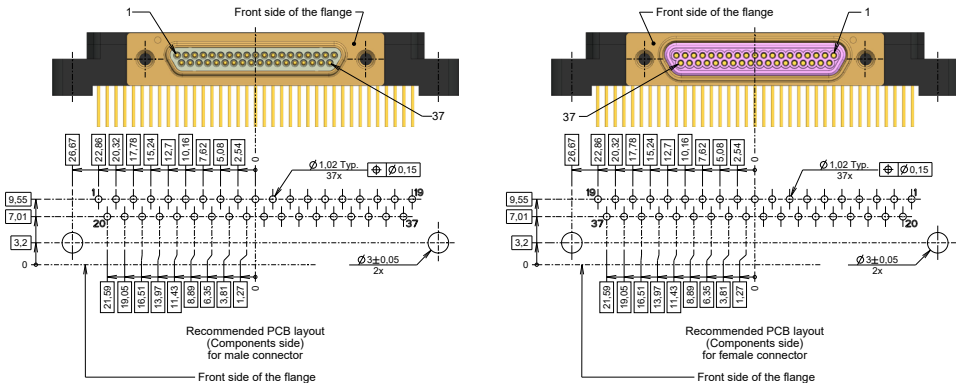
### PCB layout – FR136 - 25 positions



### PCB layout – FR136 - 31 positions



### PCB layout – FR136 - 37 positions

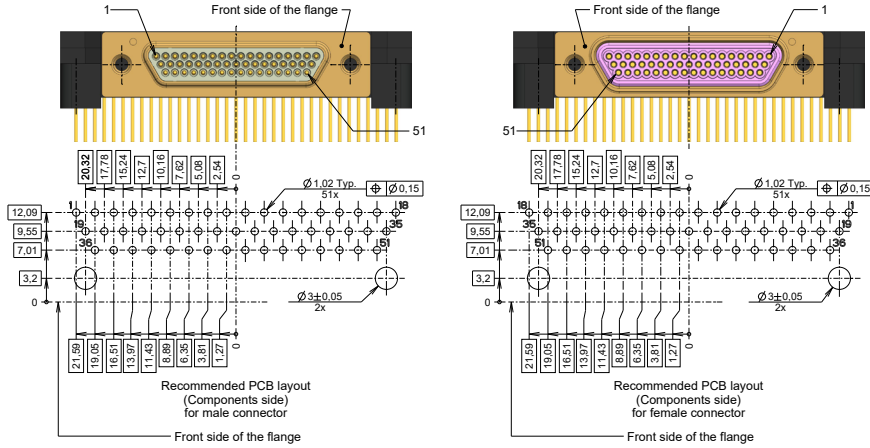


# MDM Series

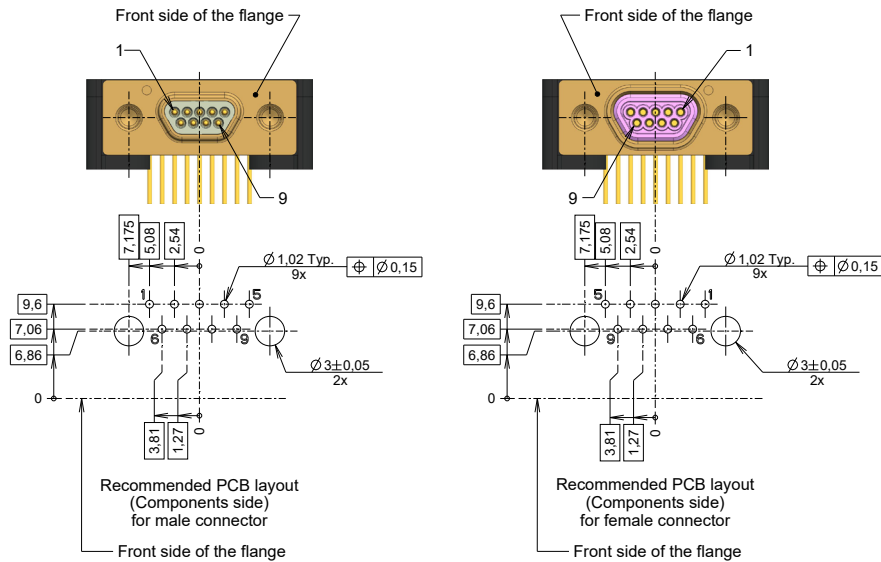
## Micro D connectors

### PCB right angle termination NXTMC – CS FR022

#### PCB layout – FR136 - 51 positions




#### PCB layout – FR136A : NARROW PROFILE - 9 positions




# MDM Series

Micro D connectors  
PCB right angle termination NXTMC – CS FR022

## Accessories

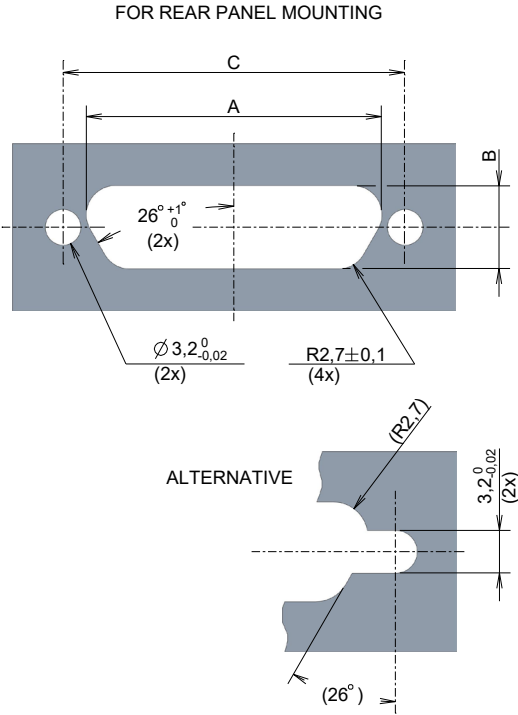
Dust cap (if additional need)	Size	Description	P/N
	9P	MDM-DUSTCAP-9P-FR022	C115288-6927
	9S	MDM-DUSTCAP-9S-FR022	C115288-6928
	15P	MDM-DUSTCAP-15P-FR022	C115288-6929
	15S	MDM-DUSTCAP-15S-FR022	C115288-6930
	21P	MDM-DUSTCAP-21P-FR022	C115288-6931
	21S	MDM-DUSTCAP-21S-FR022	C115288-6932
	25P	MDM-DUSTCAP-25P-FR022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

Female screwlocks for rear panel mounting (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

Female screwlocks, mounting without panel (To be ordered separately)	NXTMC description	P/N
 Weight for one pair: 1.32 g max	MDM-115288-6922-FR022	C115288-6922

**MDM Series**  
 Micro D connectors  
 PCB right angle termination NXTMC – CS FR022

**Panel cutouts – FR136 & FR136A – 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  
PCB right angle termination NXTMC – CS FR022

## Connectors description and Part Numbers

Shell plating	Contact type	Number of contacts	Standard profile FR136	
			NXTMC description	P/N
Nickel plated	Pin	9	MDM-9PFR136-A174-FR022	C115288-6607
		15	MDM-15PFR136-A174-FR022	C115288-6609
		21	MDM-21PFR136-A174-FR022	C115288-6611
		25	MDM-25PFR136-A174-FR022	C115288-6613
		31	MDM-31PFR136-A174-FR022	C115288-6615
		37	MDM-37PFR136-A174-FR022	C115288-6617
		51	MDM-51PFR136-A174-FR022	C115288-6619
	Socket	9	MDM-9SFR136-A174-FR022	C115288-6608
		15	MDM-15SFR136-A174-FR022	C115288-6610
		21	MDM-21SFR136-A174-FR022	C115288-6612
		25	MDM-25SFR136-A174-FR022	C115288-6614
		31	MDM-31SFR136-A174-FR022	C115288-6616
		37	MDM-37SFR136-A174-FR022	C115288-6618
		51	MDM-51SFR136-A174-FR022	C115288-6620
Gold plated	Pin	9	MDM-9PFR136-FR172-FR022	C115288-6621
		15	MDM-15PFR136-FR172-FR022	C115288-6623
		21	MDM-21PFR136-FR172-FR022	C115288-6625
		25	MDM-25PFR136-FR172-FR022	C115288-6627
		31	MDM-31PFR136-FR172-FR022	C115288-6629
		37	MDM-37PFR136-FR172-FR022	C115288-6631
		51	MDM-51PFR136-FR172-FR022	C115288-6633
	Socket	9	MDM-9SFR136-FR172-FR022	C115288-6622
		15	MDM-15SFR136-FR172-FR022	C115288-6624
		21	MDM-21SFR136-FR172-FR022	C115288-6626
		25	MDM-25SFR136-FR172-FR022	C115288-6628
		31	MDM-31SFR136-FR172-FR022	C115288-6630
		37	MDM-37SFR136-FR172-FR022	C115288-6632
		51	MDM-51SFR136-FR172-FR022	C115288-6634

**MDM Series**  
 Micro D connectors  
 PCB right angle termination NXTMC – CS FR022

Shell plating	Contact type	Number of contacts	Narrow profile FR136A	
			NXTMC description	P/N
Nickel plated	Pin	9	MDM-9PFR136A-A174-FR022	C115288-6676
	Socket	9	MDM-9SFR136A-A174-FR022	C115288-6677
Gold plated	Pin	9	MDM-9PFR136A-FR172-FR022	C115288-6678
	Socket	9	MDM-9SFR136A-FR172-FR022	C115288-6679