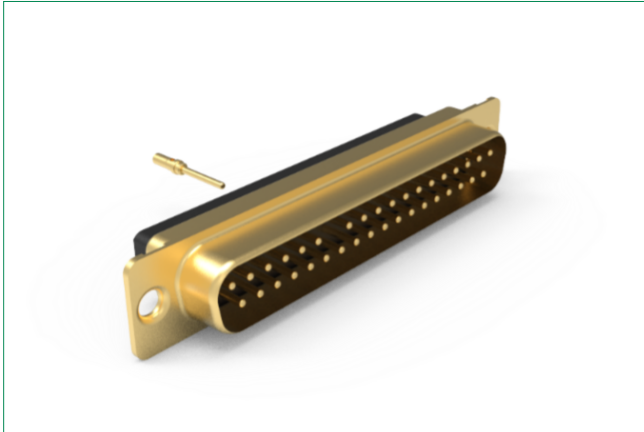


D-Sub Series

D*MA SD Connectors

NXTMC – CS FR022



Type	Mating force (N max)	Unmating force (N min)	Unmating force (N max)	Weight without male contacts nor accessories (g)	Weight without fem. contacts nor accessories (g)
Size E 9 Ways	30	3.5	20	5.5	6
Size A 15 Ways	50	4.5	34	7.6	8.3
Size B 25 Ways	83	8	55	12.5	13.6
Size C 37 Ways	123	11	83	17.4	18.9
Size D 50 Ways	166	14.5	120	20.5	22.3

Max weight	Pin ct	Skt ct
per contact 20/20	0.16 g	0.18 g
per contact 20/26	0.18 g	0.21 g
per contact 20/18	0.30 g	0.32 g

Add : 0.60 g for float mount (code Y)

Add : 0.65 g for captive nut (code E)

Quality Level

Enhanced quality grade according to specification FR022.

Options

Optional captive nuts or float mounting.

Packaging

Individual ESD plastic bag.
Each D*MA connector is sold without dust cap nor insertion / extraction tool.

Description

High performance D-Sub, Standard Density (SD), for space applications.

Connectors compliant to ESCC specification 3401/002.

Removable contacts compliant to ESCC specification 3401/005.

Compatible with ESCC specifications 3401/022 and 3401/072 (Accessories) and 3401/020 (Savers connectors).

Suitable for use in space.

High military performances and aerospace applications :

Board to Board, Board to Cable or Cable to Cable applications.

Standard Density Size 20 (SD) available: 9, 15, 25, 37 and 50 ways

Pitch between two contact rows: 2.84 mm (.112 inch)

Pitch between two horizontally adjacent contacts:

- Size E, A: 2.74 mm (.108 inch)

- Size B, C, D: 2.77 mm (.109 inch)

Features and Benefits

- Enhanced quality grade
- Compliant with commercial space grade quality level
- Socket Starclip contact system
- Removable crimp type contacts
- Harnesses length flexibility
- Non-Outgassing system

Applications

- Space test equipment
- Satellites harnesses and payloads

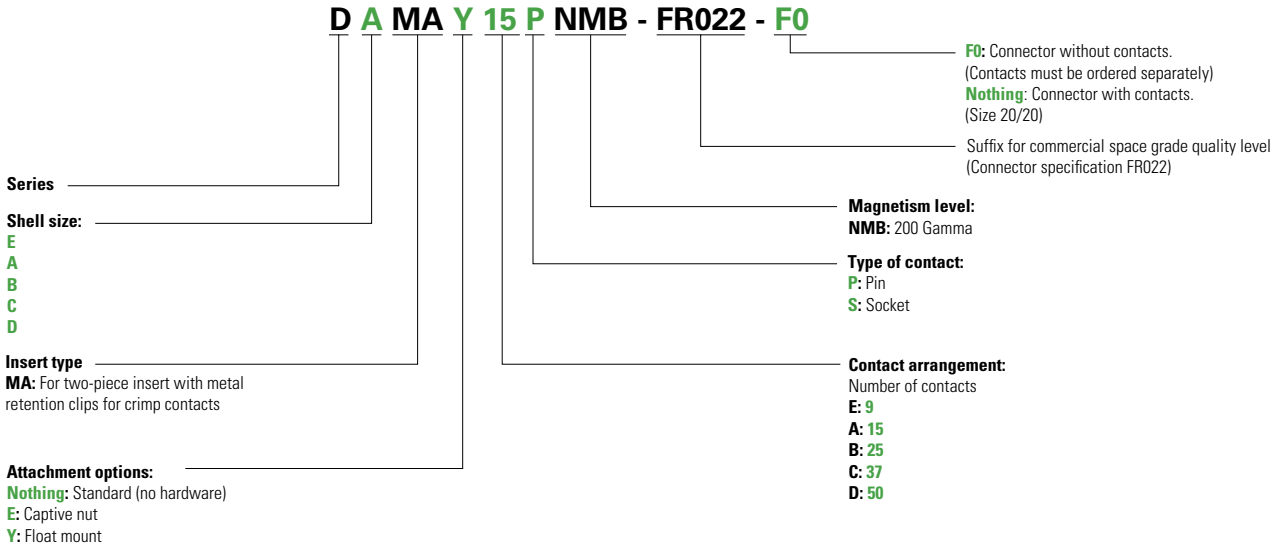
Electrical & Mechanical Characteristics

Characteristics	Specifications
Working voltage	300 Vrms max (at sea level) 250 Vrms max (33000m of altitude)
Rated current	7.5 A max (size 20/20 & 20/18) 3 A max (size 20/26)
Contact resistance (Low level current)	6 mΩ max (10 mA / 20 mV DC)
Contact resistance	5 mΩ max (Rated current)
Insulation resistance	5000 MΩ min (500 V DC)
Voltage proof	1250 Vrms / 2mA (Leakage Current)
Contact retention in insulator	40 N max (axial move 0.3 mm max)
Engagement force	3.33 N max per contact
Seperation force	0.28 N min / 2.22 N max per ct
Temperature range	-55+125 °C
Storage temperature range	-65+125 °C

D-Sub Series
D*MA SD Connectors
NXTMC – CS FR022

How To Order Connector

FR022 Quality level:



Materials & Finishes

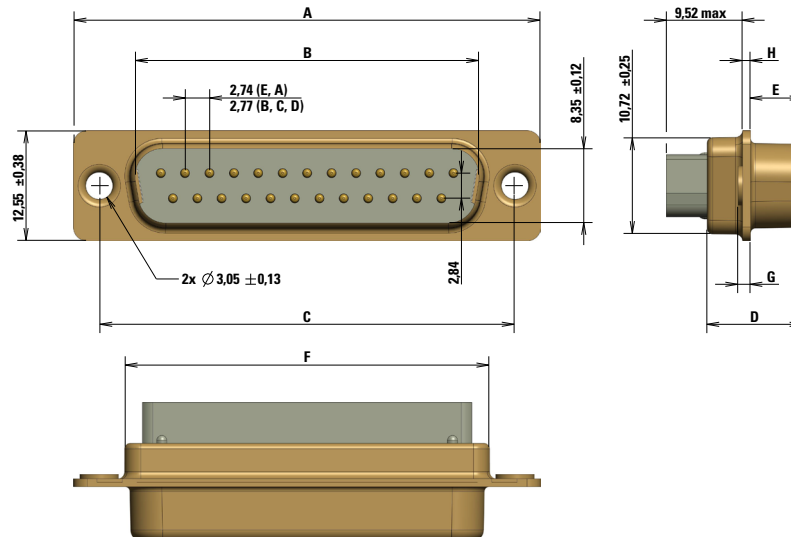
Components	Materials	Finishes
Shell sizes E, A, B, C, D	Copper alloy	0.70 µm min Gold over Copper
Insulator	LCP	UL 94-V0, Glass-filled, Black color
Contact retaining clip	Beryllium copper	None
Contact bodies	Copper alloy	1.27 µm min Gold over Nickel
	Copper alloy	1.27 µm min Gold over Copper
Male screwlocks	Copper alloy	0.70 µm min Gold over Copper
	Stainless steel	Passivated

D-Sub Series

D*MA SD Connectors

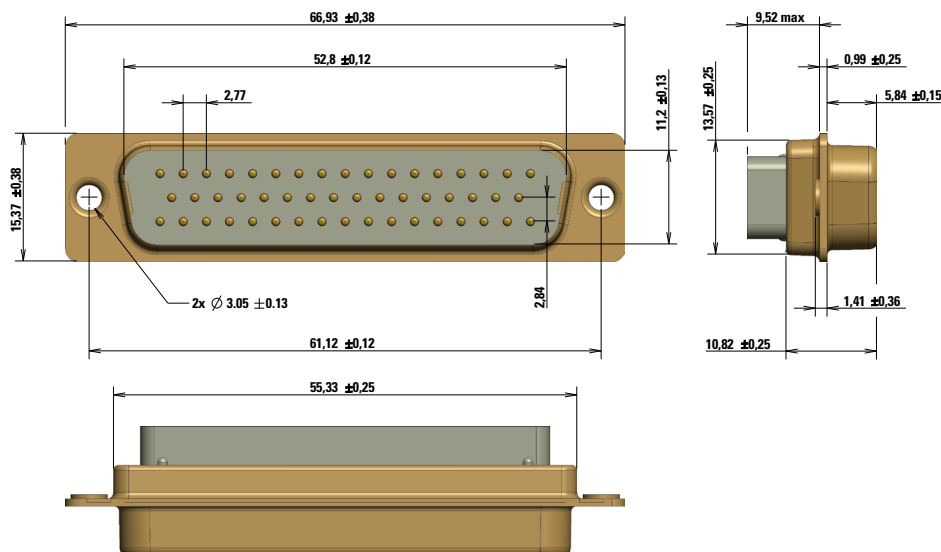
NXTMC – CS FR022

Pin connector dimensions - Sizes E-A-B-C



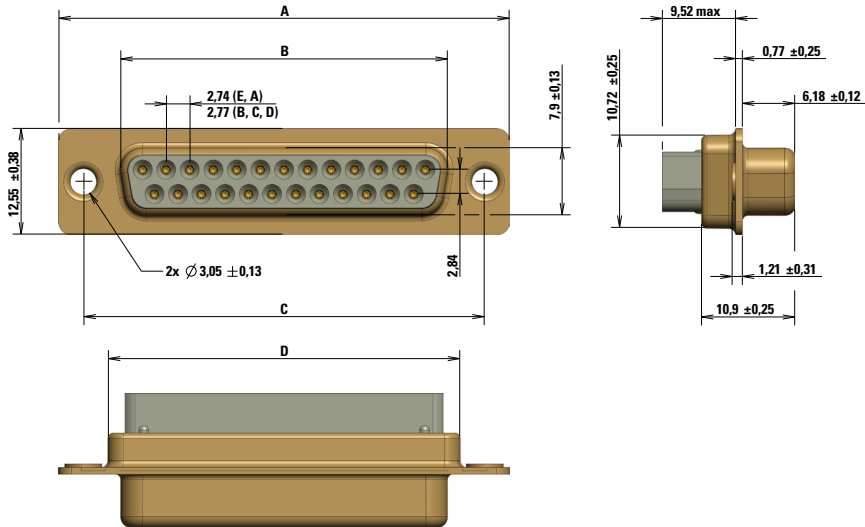
Shell Size	Contact Arrangement	Gender	A ±0.38	B ±0.12	C ±0.12	D ±0.25	E ±0.11	F ±0.25	G ±0.31	H ±0.25
E	9	Pin	30.81	16.91	24.99	10.72	5.94	19.28	1.21	0.77
A	15	Pin	39.14	25.24	33.32	10.72	5.94	27.51	1.21	0.77
B	25	Pin	53.04	38.96	47.04	10.82	5.84±0.15	41.28	1.41±0.36	0.99
C	37	Pin	69.32	55.42	63.50	10.82	5.84±0.15	57.71	1.41±0.36	0.99

Pin connector dimensions - Size D



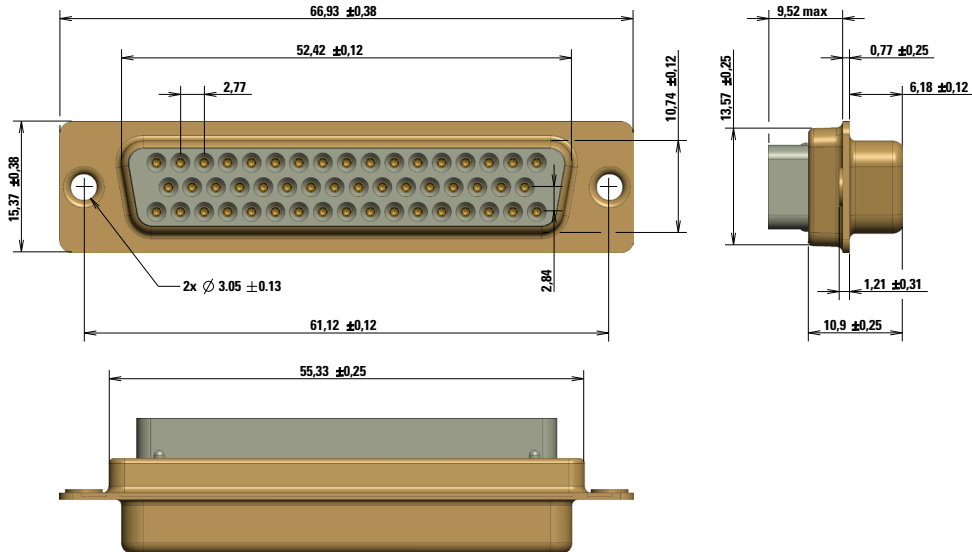
D-Sub Series
D*MA SD Connectors
NXTMC – CS FR022

Socket connector dimensions - Sizes E-A-B-C



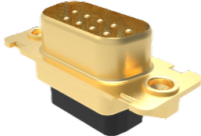
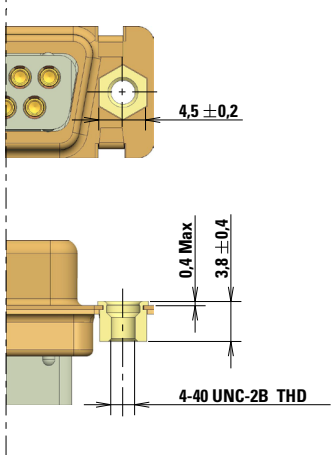
Shell Size	Contact Arrangement	Gender	A ±0.38	B ±0.12	C ±0.12	D ±0.25
E	9	SKT	30.81	16.33	24.99	19.28
A	15	SKT	39.14	24.66	33.32	27.51
B	25	SKT	53.04	38.38	47.04	41.28
C	37	SKT	69.32	54.84	63.50	57.71

Socket connector dimensions - Size D

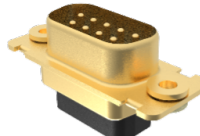
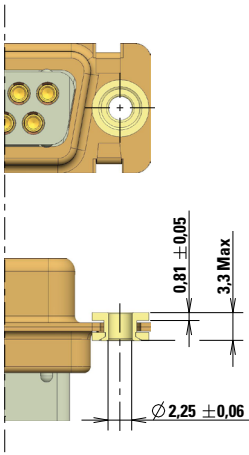


D-Sub Series
 D*MA SD Connectors
 NXTMC – CS FR022

Captive nut (Option E)



Floating mount (Option Y)

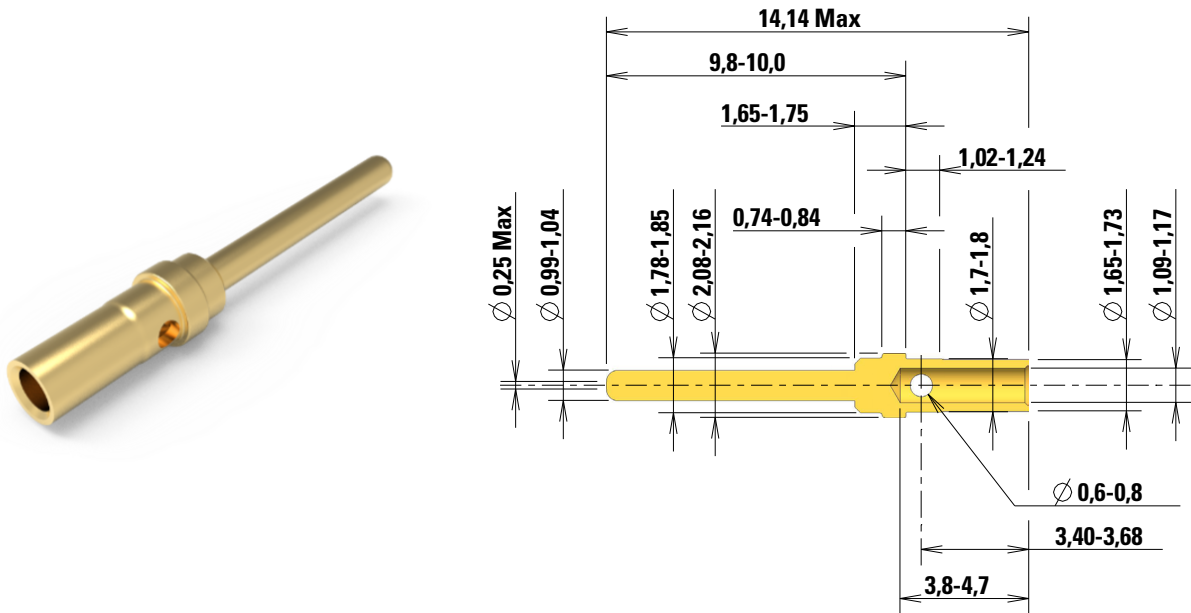


Allowable Float	(mm)
Lateral	0.78
Axial	0.20

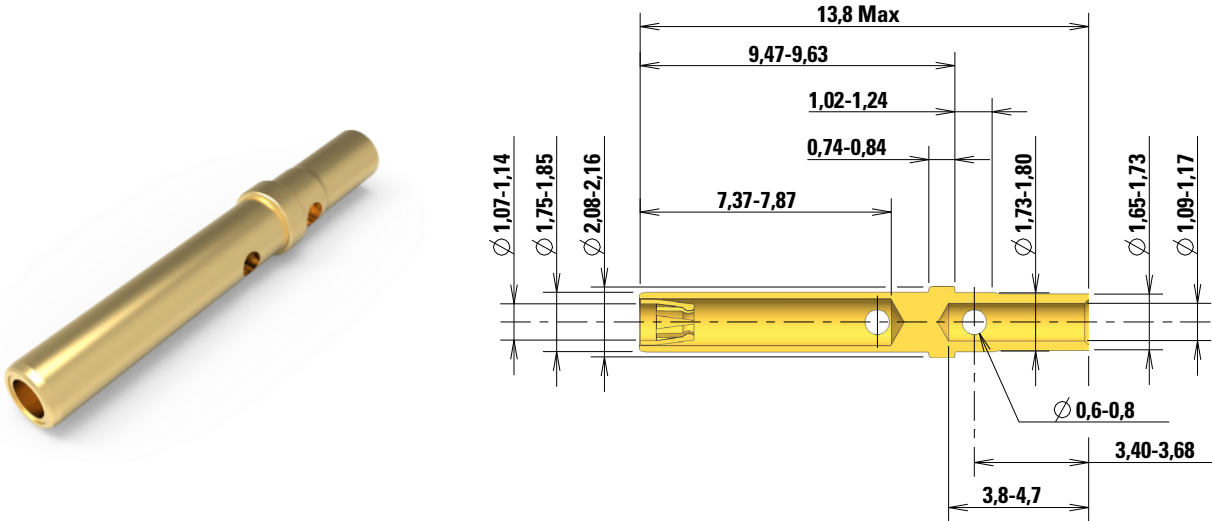
D-Sub Series

D*MA SD Connectors
NXTMC – CS FR022

Pin contact – 20/20 – Wire size AWG 20, 22, 24

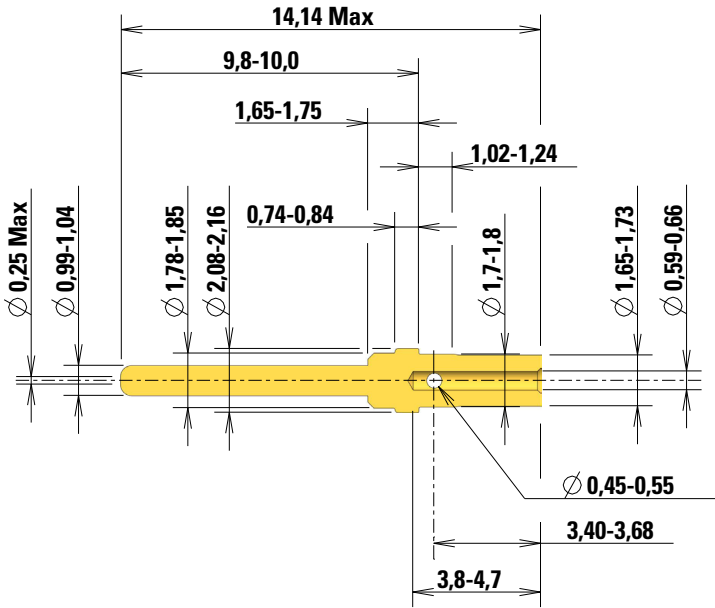
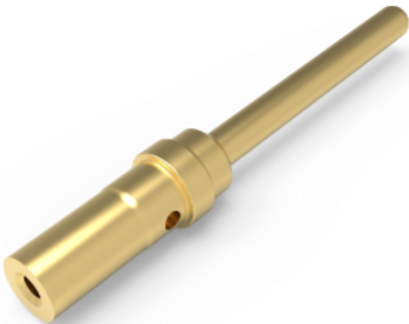


Socket contact – 20/20 – Wire size AWG 20, 22, 24

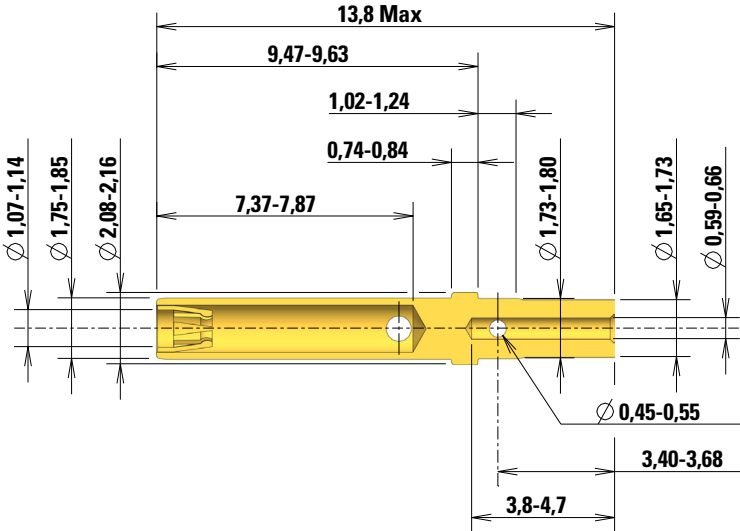


D-Sub Series
D*MA SD Connectors
NXTMC – CS FR022

Pin contact – 20/26 – Wire size AWG 26, 28

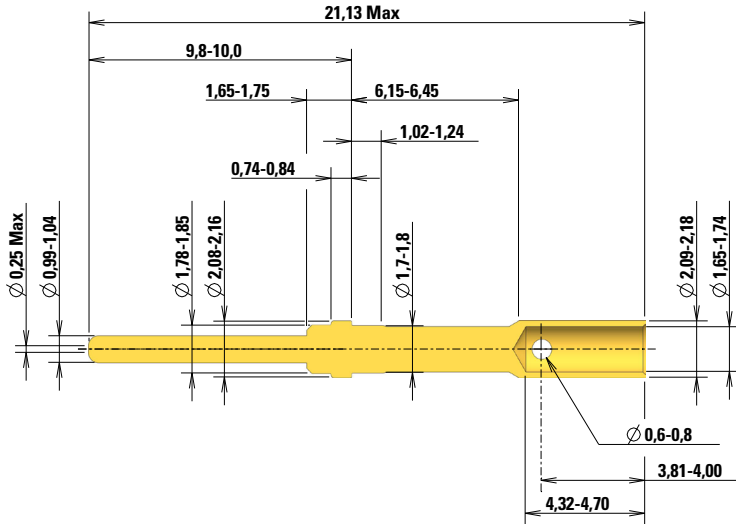
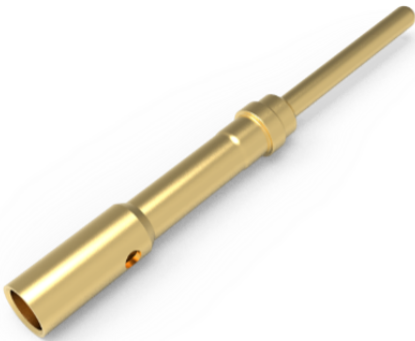


Socket contact – 20/26 – Wire size AWG 26, 28

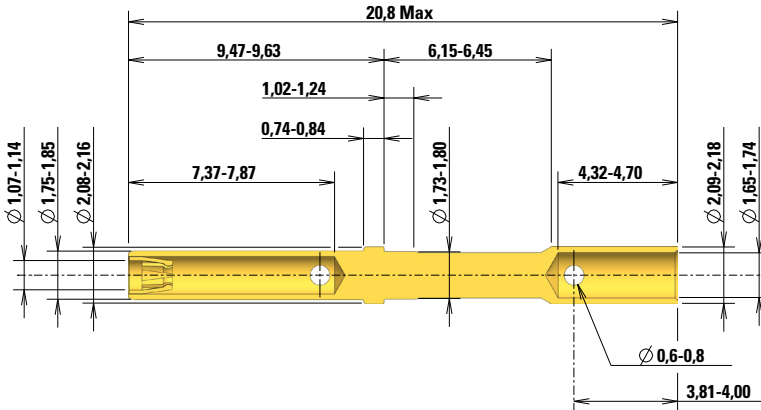
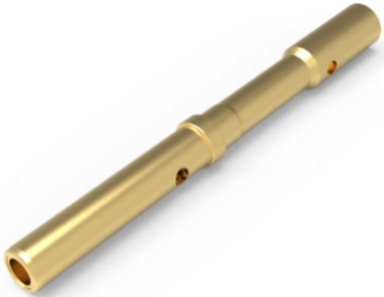


D-Sub Series
D*MA SD Connectors
NXTMC – CS FR022

Pin contact – 20/18 – Wire size AWG 18



Socket contact – 20/18 – Wire size AWG 18



D-Sub Series

D*MA SD Connectors

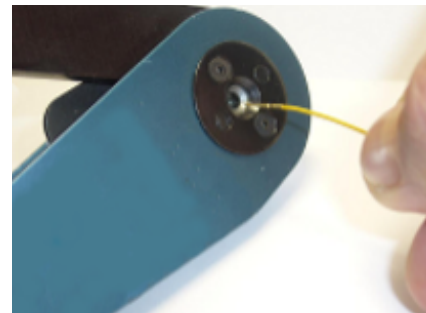
NXTMC – CS FR022

Crimping process & Cable insertion process

- Previously, strip the jacket of the wire : Length of 5.03mm ±0.25
- Contact crimping process:

1. Choose the dedicated locator corresponding to type of contact and install it on the crimping tool.
2. Choose the correct selector position in function of the wire AWG, on the crimping tool (see table below).
3. Insert the wire into the contact body.
4. Insert the equipped contact into the crimping tool (see picture).
5. Crimp till opening of the crimping tool.

Crimping tool :
M22520/2-01
P/N : C995-0001-584



Locator for contact 20/20 :
M22520/2-08
P/N : C995-0001-604



Locator for contact 20/18 :
K250
P/N : C980-0005-722



Wire AWG Sizes	Selector positions
AWG 20	7
AWG 22	6
AWG 24	5

Wire AWG Sizes	Selector positions
AWG 18	8

Locator for contact 20/26 :
M22520/2-08
P/N : C995-0001-604

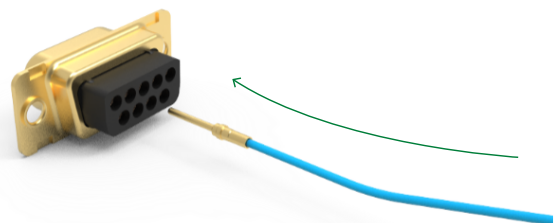
Wire AWG Sizes	Selector positions
AWG 26	7
AWG 28	6

- Contact insertion process:

1. Insert contact with wire into rear insulator cavity until positive stop.

Possibility to use the green side insertion / extraction tool for connectors size 20 Standard Density:
M81969/39-01
P/N : C980-2000-426

2. To avoid any stress on the retention clip, insert contact in the axis (without insertion angle).
3. To be sure contact is securely locked, pull back slightly on the wire or use calibrated test retention tool.



D-Sub Series

D*MA SD Connectors

NXTMC – CS FR022

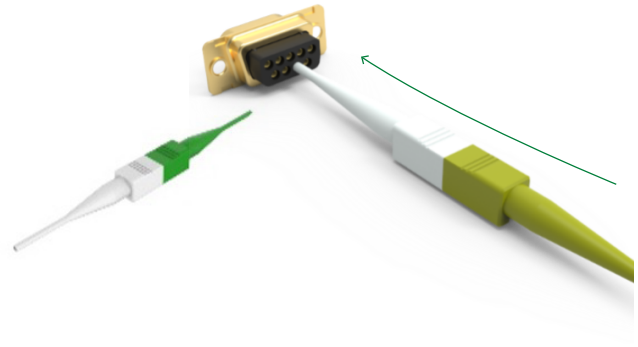
Cable extraction process

1. Select white side insertion / extraction tool for connectors size
20 Standard Density: M81969/39-01
P/N: C980-2000-426

For AWG 18 wire only: Select green extraction tool
CET-20-15 (Picture not shown)
P/N: C274-5016-002

2. Insert tool tip into the contact cavity until the tip bottoms
against contact shoulder for releasing tine.

3. Hold wire against tool with finger and remove tool
and equipped contact.



D-Sub Series

D*MA SD Connectors

NXTMC – CS FR022

Connectors description and Part Numbers

Version	Shell type	Gender type	Size	Attachment options							
				Standard connector		Connector with captive nut (E)		Connector with floating mount (Y)			
				NXTMC description	P/N	NXTMC description	P/N	NXTMC description	P/N		
Delivered in ESD bag without contact (Contacts to order separately, see chart below)	Shell gold plated	Pin	E	DEMA9PNMB-FR022-F0	C115370-3210	DEMAE9PNMB-FR022-F0	C115370-3250	DEMAY9PNMB-FR022-F0	C115370-3230		
			A	DAMA15PNMB-FR022-F0	C115370-3212	DAMAE15PNMB-FR022-F0	C115370-3252	DAMAY15PNMB-FR022-F0	C115370-3232		
			B	DBMA25PNMB-FR022-F0	C115370-3214	DBMAE25PNMB-FR022-F0	C115370-3254	DBMAY25PNMB-FR022-F0	C115370-3234		
			C	DCMA37PNMB-FR022-F0	C115370-3216	DCMAE37PNMB-FR022-F0	C115370-3256	DCMAY37PNMB-FR022-F0	C115370-3236		
		D	DDMA50PNMB-FR022-F0	C115370-3218	DDMAE50PNMB-FR022-F0	C115370-3258	DDMAY50PNMB-FR022-F0	C115370-3238			
		Socket	E	DEMA9SNMB-FR022-F0	C115370-3211	DEMAE9SNMB-FR022-F0	C115370-3251	DEMAY9SNMB-FR022-F0	C115370-3231		
			A	DAMA15SNMB-FR022-F0	C115370-3213	DAMAE15SNMB-FR022-F0	C115370-3253	DAMAY15SNMB-FR022-F0	C115370-3233		
			B	DBMA25SNMB-FR022-F0	C115370-3215	DBMAE25SNMB-FR022-F0	C115370-3255	DBMAY25SNMB-FR022-F0	C115370-3235		
			C	DCMA37SNMB-FR022-F0	C115370-3217	DCMAE37SNMB-FR022-F0	C115370-3257	DCMAY37SNMB-FR022-F0	C115370-3237		
		D	DDMA50SNMB-FR022-F0	C115370-3219	DDMAE50SNMB-FR022-F0	C115370-3259	DDMAY50SNMB-FR022-F0	C115370-3239			
		Delivered in ESD bag with contacts Size 20/20	Shell gold plated	Pin	E	DEMA9PNMB-FR022	C115370-3200	DEMAE9PNMB-FR022	C115370-3240	DEMAY9PNMB-FR022	C115370-3220
					A	DAMA15PNMB-FR022	C115370-3202	DAMAE15PNMB-FR022	C115370-3242	DAMAY15PNMB-FR022	C115370-3222
B	DBMA25PNMB-FR022				C115370-3204	DBMAE25PNMB-FR022	C115370-3244	DBMAY25PNMB-FR022	C115370-3224		
C	DCMA37PNMB-FR022				C115370-3206	DCMAE37PNMB-FR022	C115370-3246	DCMAY37PNMB-FR022	C115370-3226		
D	DDMA50PNMB-FR022			C115370-3208	DDMAE50PNMB-FR022	C115370-3248	DDMAY50PNMB-FR022	C115370-3228			
Socket	E			DEMA9SNMB-FR022	C115370-3201	DEMAE9SNMB-FR022	C115370-3241	DEMAY9SNMB-FR022	C115370-3221		
	A			DAMA15SNMB-FR022	C115370-3203	DAMAE15SNMB-FR022	C115370-3243	DAMAY15SNMB-FR022	C115370-3223		
	B			DBMA25SNMB-FR022	C115370-3205	DBMAE25SNMB-FR022	C115370-3245	DBMAY25SNMB-FR022	C115370-3225		
	C			DCMA37SNMB-FR022	C115370-3207	DCMAE37SNMB-FR022	C115370-3247	DCMAY37SNMB-FR022	C115370-3227		
D	DDMA50SNMB-FR022			C115370-3209	DDMAE50SNMB-FR022	C115370-3249	DDMAY50SNMB-FR022	C115370-3229			

Contacts description and Part Numbers

Size	Used for wire size AWG	Contact type	NXTMC description	P/N
20/20	20 / 22 / 24	Pin, Gold over Nickel	330-8996-101-FR022	C330-8996-101D
		Pin, Gold over Copper	330-8996-104-FR022	C330-8996-104D
		Socket, Gold over Nickel	031-8996-101-FR022	C031-8996-101D
		Socket, Gold over Copper	031-8996-104-FR022	C031-8996-104D
20/26	26 / 28	Pin, Gold over Nickel	330-8997-101-FR022	C330-8997-101D
		Pin, Gold over Copper	330-8997-104-FR022	C330-8997-104D
		Socket, Gold over Nickel	031-8997-101-FR022	C031-8997-101D
		Socket, Gold over Copper	031-8997-104-FR022	C031-8997-104D
20/18	18	Pin, Gold over Nickel	330-8995-101-FR022	C330-8995-101D
		Pin, Gold over Copper	330-8995-104-FR022	C330-8995-104D
		Socket, Gold over Nickel	031-8995-101-FR022	C031-8995-101D
		Socket, Gold over Copper	031-8995-104-FR022	C031-8995-104D

D-Sub Series

D*MA SD Connectors

NXTMC – CS FR022

Accessories description and Part Numbers (To order separately)

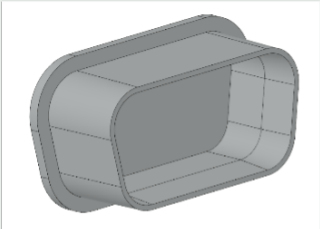
Male screwlocks	Application	Backshell	Material	NXTMC description	P/N
	E, A Pin / E, A, B, C Skt	Without	Brass	D115419-0100-FR022	C115419-0100
	B, C Pin	Without	Brass	D115419-0101-FR022	C115419-0101
	D Skt	Without	Brass	D115420-0100-FR022	C115420-0100
	D Pin	Without	Brass	D115420-0101-FR022	C115420-0101
	E, A Pin / E, A, B, C Skt	With	Brass	D115419-0102-FR022	C115419-0102
	B, C Pin	With	Brass	D115419-0103-FR022	C115419-0103
	D Skt	With	Brass	D115420-0102-FR022	C115420-0102
	D Pin	With	Brass	D115420-0103-FR022	C115420-0103
	E, A Pin / E, A, B, C Skt	Without	Stainless Steel	D115419-1004-FR022	C115419-1004
	B, C Pin	Without	Stainless Steel	D115419-1005-FR022	C115419-1005
	D Skt	Without	Stainless Steel	D115420-1004-FR022	C115420-1004
	D Pin	Without	Stainless Steel	D115420-1005-FR022	C115420-1005
	E, A Pin / E, A, B, C Skt	With	Stainless Steel	D115419-1006-FR022	C115419-1006
	B, C Pin	With	Stainless Steel	D115419-1007-FR022	C115419-1007
	D Skt	With	Stainless Steel	D115420-1006-FR022	C115420-1006
	D Pin	With	Stainless Steel	D115420-1007-FR022	C115420-1007
	E, A Pin / E, A, B, C Skt	Without	Brass	D115419-0074-FR022	C115419-0074
	B, C Pin	Without	Brass	D115419-0048-FR022	C115419-0048
	D Skt	Without	Brass	D115420-0067-FR022	C115420-0067
	D Pin	Without	Brass	D115420-0049-FR022	C115420-0049
	E, A Pin / E, A, B, C Skt	With	Brass	D115419-0073-FR022	C115419-0073
	B, C Pin	With	Brass	D115419-0084-FR022	C115419-0084
	D Skt	With	Brass	D115420-0063-FR022	C115420-0063
	D Pin	With	Brass	D115420-0088-FR022	C115420-0088
	E, A Pin / E, A, B, C Skt	Without	Stainless Steel	D115419-1000-FR022	C115419-1000
	B, C Pin	Without	Stainless Steel	D115419-1001-FR022	C115419-1001
	D Skt	Without	Stainless Steel	D115420-1000-FR022	C115420-1000
	D Pin	Without	Stainless Steel	D115420-1001-FR022	C115420-1001
	E, A Pin / E, A, B, C Skt	With	Stainless Steel	D115419-1002-FR022	C115419-1002
	B, C Pin	With	Stainless Steel	D115419-1003-FR022	C115419-1003
	D Skt	With	Stainless Steel	D115420-1002-FR022	C115420-1002
	D Pin	With	Stainless Steel	D115420-1003-FR022	C115420-1003
	All Sizes Pin / Skt	Without	Brass	D115440-0166-FR022	C115440-0166A
	All Sizes Pin / Skt	With	Brass	D115440-0167-FR022	C115440-0167A
	All Sizes Pin / Skt	Without	Brass	D115440-0164-FR022	C115440-0164A
	All Sizes Pin / Skt	With	Brass	D115440-0165-FR022	C115440-0165A

D-Sub Series

D*MA SD Connectors

NXTMC – CS FR022

Accessories description and Part Numbers (To order separately)

Dust Cap D*MA SD	Size	Description	P/N
	9 P	DUSTCAP-DE-PIN-20-FR022	C025-8900-000A
		DUSTCAP-DE-PIN-20-FR022 EMB 25	C025-8900-000AK
	9 S	DUSTCAP-DE-SKT-20-FR022	C025-8900-001A
		DUSTCAP-DE-SKT-20-FR022 EMB 25	C025-8900-001AK
	15 P	DUSTCAP-DA-PIN-20-FR022	C025-8901-000A
		DUSTCAP-DA-PIN-20-FR022 EMB 25	C025-8901-000AK
	15 S	DUSTCAP-DA-SKT-20-FR022	C025-8901-001A
		DUSTCAP-DA-SKT-20-FR022 EMB 25	C025-8901-001AK
	25 P	DUSTCAP-DB-PIN-20-FR022	C025-8902-000A
		DUSTCAP-DB-PIN-20-FR022 EMB 25	C025-8902-000AK
	25 S	DUSTCAP-DB-SKT-20-FR022	C025-8902-001A
		DUSTCAP-DB-SKT-20-FR022 EMB 25	C025-8902-001AK
	37 P	DUSTCAP-DC-PIN-20-FR022	C025-8903-000A
		DUSTCAP-DC-PIN-20-FR022 EMB 25	C025-8903-000AK
	37 S	DUSTCAP-DC-SKT-20-FR022	C025-8903-001A
		DUSTCAP-DC-SKT-20-FR022 EMB 25	C025-8903-001AK
	50 P	DUSTCAP-DD-PIN-20-FR022	C025-8904-000A
		DUSTCAP-DD-PIN-20-FR022 EMB 25	C025-8904-000AK
	50 S	DUSTCAP-DD-SKT-20-FR022	C025-8904-001A
		DUSTCAP-DD-SKT-20-FR022 EMB 25	C025-8904-001AK