



MDMB SERIES

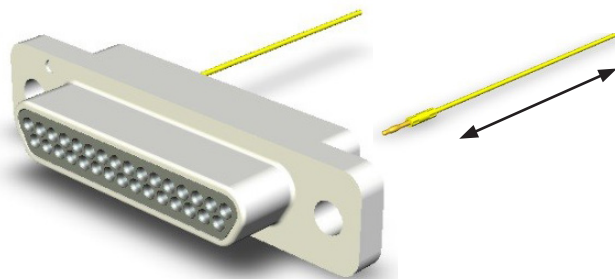
Microminiature connectors
with removable crimp contacts
CS FR048

Features and Benefits

- High performance Micropin™ contact system (“twist pin” spring male contact and tubular socket contact)
- Removable crimp type contacts
- Harnesses length flexibility
- Non-Outgassing
- Low Size Connectors
- Low Weight

Typical Applications

- Space equipment (engineering model)
- Satellites harnesses and payloads
- Avionics / Military
- Automotive / Medical / Industrial applications



Specification

- High performance Micro-miniature connectors meet stringent tests for outgassing and residual magnetism and are suitable for use in Space Engineering Model, Avionics, Military, Medical and Industrial applications.
- Suitable for Board to Board, Board to Cable or Cable to Cable applications.
- Removable contacts (Twist Pin contact technology).
- Sizes available: 9, 15, 21, 25, 31, 37 and 51 ways.
- Connector 9, 15, 21, 25, 31 and 37 ways, accepted wires size:
 - 1 insulated wire AWG24, AWG26 and AWG28 (external diameter at 0.97mm max).
 - 1 uninsulated solid wire AWG25.
 - 2 insulated wires AWG28 (external diameter at 0.82mm max).
- Connector 51 ways, accepted wires size:
 - 1 insulated wire AWG24, AWG26 and AWG28 (external diameter at 0.97mm max).
 - 1 uninsulated solid wire AWG25.
- Distance between 2 adjacent contacts: 1.27mm (.050 inch).
- Distance between 2 contacts rows: 1.09mm (.043 inch).

Electrical & Mechanical Characteristics

CHARACTERISTIC	SPECIFICATION
Working Voltage (sea level)	150 Vrms
Rated Current AWG 24	3.5 A
Rated Current AWG 25	2.5 A
Rated Current AWG 26	2.5 A
Rated Current AWG 28	1.5 A
Contact Resistance	5 mΩ (rated current)
Insulation Resistance	5000 MΩ min
Voltage Proof	600 Vrms /2.0mA (leakage current)
Temperature range	-55/+ 125 °C
Contact Retention Force	22.25 N max

TYPE	MATING/UNMATING FORCE (N MAX)	UNMATING FORCE (N MIN)	WEIGHT (G)
Size 9	20	1.3	2.3
Size 15	33	2.0	3.1
Size 21	47	2.9	3.9
Size 25	55	3.5	4.4
Size 31	69	4.3	5.2
Size 37	82	5.1	6.0
Size 51	147	7.1	7.3

Quality Level

- “Commercial Space Grade”:
C&K Connector Specification CS FR048, for low cost products manufactured:
 - In the same ESA qualified site.
 - Through the same piece parts.
 - With lighter controls, documentation and traceability.
- The connectors are totally compatible, interchangeable and intermateable with ESA quality level connectors ESCC 3401/029 (MDM connectors), 3401/041 (connector Savers), 3401/032 (accessories), 3401/077 (MDMA connectors), 3401/078 (contacts) and 3401/087 (backshells).

Process Contact and Cable Insertion

- Wire stripping.
- Cables crimping onto contacts with standard MDMA Crimping tool M22520/2-01 and dedicated locators (to be ordered separately).
- Wires cable installed by the end user.

Test Retention

- A dedicated tool is available to make the retention test of each contacts in the connectors.

Process Contact and Cable Extraction

- A dedicated tool is available to remove the contacts from the connectors.

Options

- Optional interfacial seal can be applied for female connectors (to be ordered separately).
- Optional captive nuts or float mounting.

Packaging

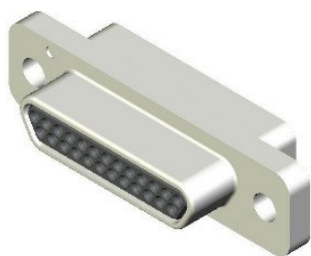
- Individual packaging.
- Contact extraction tool has to be ordered separately.

www.ckswitches.com

HOW TO ORDER

CONNECTOR

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



Pin connection with Nickel Plating



Pin connection with Gold Plating

C&K Specification:

M D M B Y - **25 S** - **A174** - **FO**

MDMB Series

Fixing Option

Blank: Standard (no hardware)

E Captive nut

Y Float mount

Shell Size

9

15

21

25

31

37

51

Contacts Information

FO Connector without contacts
(Contacts must be ordered separately)

Shell Finish

A174 25.4 μm Ni

FR172 0.7 μm Au over 25.4 μm Ni

Type of Contact

P Pin (Male)

S Socket (Female)

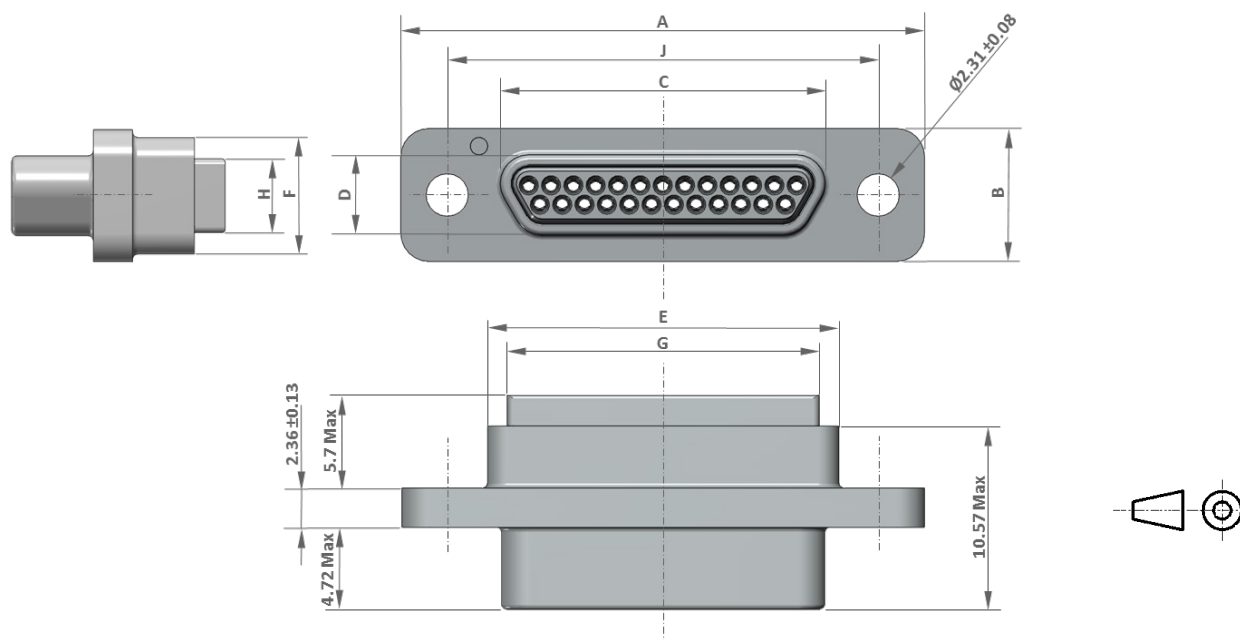
MATERIALS & FINISHES

COMPONENT	MATERIAL	FINISH
Shell	Aluminium alloy	A174: 25.4 μm electroless Nickel over Copper underlay
		FR172: 0.7 μm Gold over 25.4 μm electroless Nickel
Insulator	Liquid Crystal Polymer	UL 94-V0, Glass-filled, Black Color
Female Contacts	Copper Alloy	1.27 μm Gold over Copper underlay
Male Contacts	Copper Alloy	1.27 μm Gold over Copper underlay
Accessories (E & Y)	Stainless Steel	303 type, passivated
Interfacial Seals	Fluorosilicone elastomer	Pink color
Dust Cap	Polyethylene	Black color, antistatic.



Dimensions shown in: mm
Specifications and dimensions subject to change

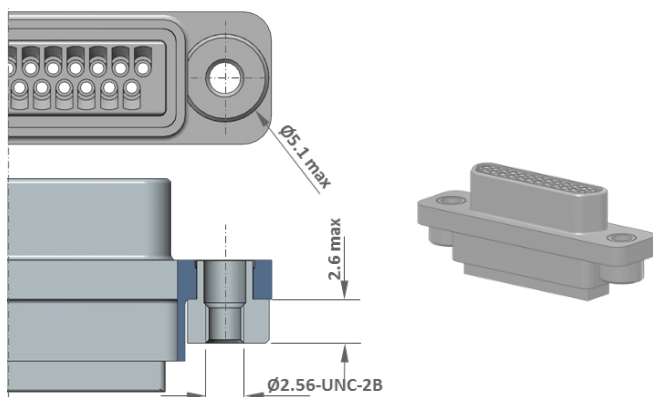
CONNECTOR DIMENSIONS



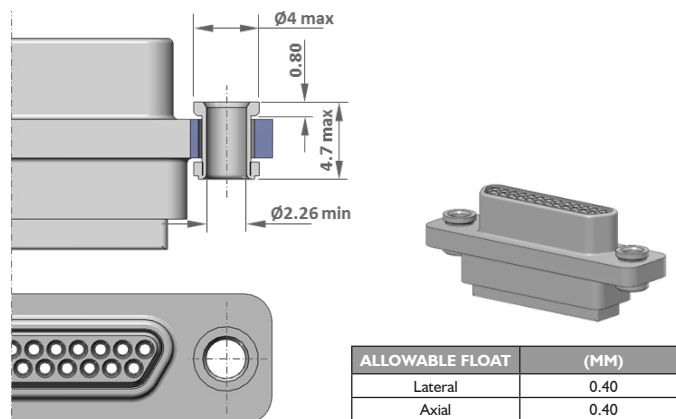
SHELL SIZE	A ±0.25	B ±0.22	C ±0.14	D max	E ±0.25	F ±0.13	G ±0.13	J ±0.13
9P	19.68	7.60	8.31	4.69	9.91	6.63	7.63	14.35
9S	19.68	7.60	9.89	6.38	9.91	6.63	7.63	14.35
15P	23.50	7.60	12.12	4.69	13.72	6.63	11.44	18.16
15S	23.50	7.60	13.70	6.38	13.72	6.63	11.44	18.16
21P	27.30	7.60	15.93	4.69	17.53	6.63	15.25	21.97
21S	27.30	7.60	17.51	6.38	17.53	6.63	15.25	21.97
25P	29.84	7.60	18.47	4.69	20.07	6.63	17.79	24.51
25S	29.84	7.60	20.05	6.38	20.07	6.63	17.79	24.51
31P	33.65	7.60	22.28	4.69	23.88	6.63	21.60	28.32
31S	33.65	7.60	23.86	6.38	23.88	6.63	21.60	28.32
37P	37.46	7.60	26.09	4.69	27.69	6.63	25.41	32.13
37S	37.46	7.60	27.67	6.38	27.69	6.63	25.41	32.13
51P	36.20	8.70	24.83	5.78	26.42	7.65	24.14	30.86
51S	36.20	8.70	26.41	7.47	26.42	7.65	24.14	30.86

ATTACHMENT OPTIONS

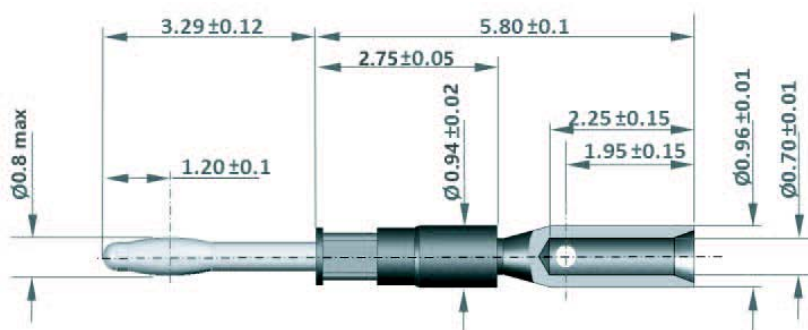
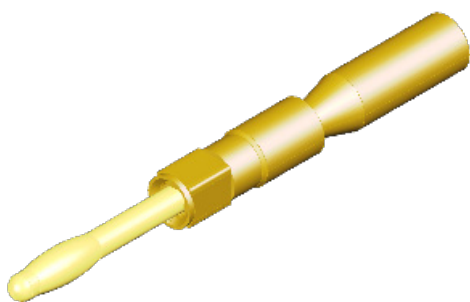
Captive Nut (Option E)



Floating Mount (Option Y)



CONTACT PIN – MDMB-CTPIN02 (WIRE SIZE AWG 24, 25, 26, 28 OR 2X28)

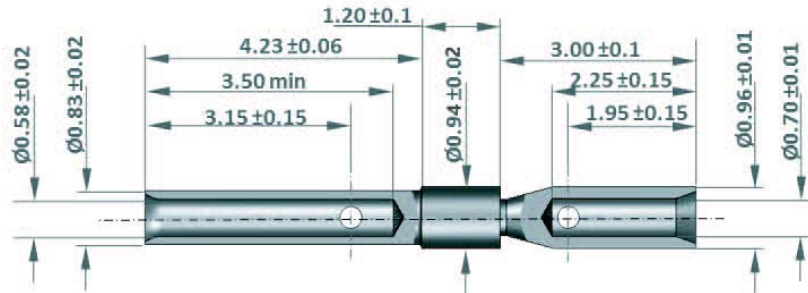
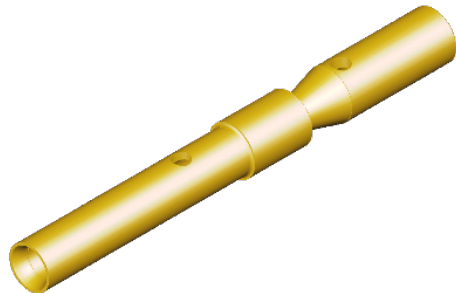


C&K Part Number: **C331-8754-000D**

C&K Description: **MDMB-CTPIN02**

COMPONENT	MATERIAL	FINISH
Sleeve	Copper alloyed	1.27 μm min. Gold over Copper underlay
Bundle	Cupro-Beryllium	1.27 μm min. Gold over Copper underlay

CONTACT SOCKET – MDMB-CTSKT02 (WIRE SIZE AWG 24, 25, 26, 28 OR 2X28)



C&K Part Number: **C252-8844-000D**

C&K Description: **MDMB-CTSKT02**

COMPONENT	MATERIAL	FINISH
Sleeve	Copper alloyed	1.27 μm min. Gold over Copper underlay

Nota:

Other products available:

- Male Contact MDMB-CTPIN01, compatible with wire size AWG 25, 26 or 28.
- Female Contact MDMB-CTSKT01, compatible with wire size AWG 25, 26, 28.



Dimensions shown in: mm
Specifications and dimensions subject to change

PROCESS – CONTACT AND CABLE INSERTION

Cable Crimping

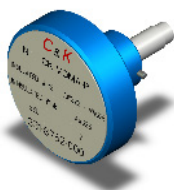
1 – Insert wire into contact body.



2 – Insert the unit into the crimping tool (selector position 2) with dedicated locator.

Crimping tool - Position #2:

M22520/2-01 (P/N: C995-0001-584)

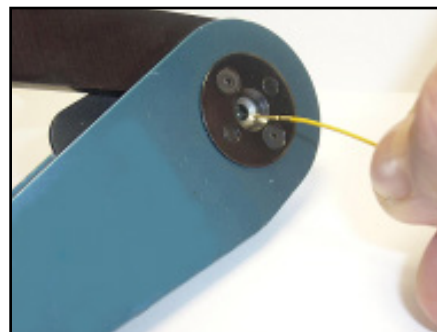


Locator for Male Contact:

MDMA-Locator-P-01 (P/N: CI 15373-0001)

Locator for Female Contact:

MDMA-Locator-S-01 (P/N: CI 15373-0002)



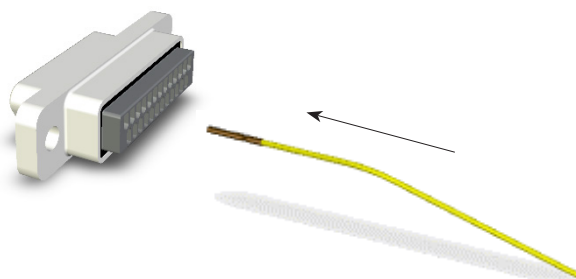
Contact Insertion

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

To avoid stress onto retention clip, insert contact in the axis (no insertion angle).

To be sure contact is locked securely, pull back lightly on wire or use calibrated test retention tool.

MDMA-Retention tool (P/N: CI 15373-0003).



PROCESS – CONTACT AND CABLE EXTRACTION

1 – Select contact extraction tool:

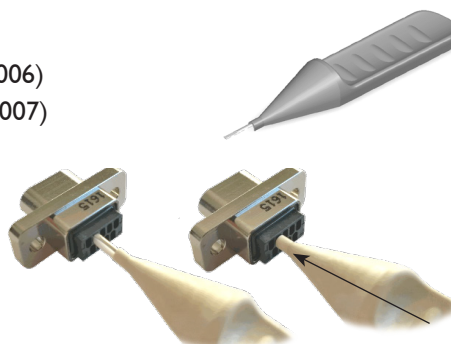
- Connector size 9 to 37 -> MDMA-Extract tool-01 (P/N: CI 15373-0006)
- Connector size 51 -> MDMA-Extract tool-02 (P/N: CI 15373-0007)

2 – Insert tool tip into contact cavity until tip bottoms against contact shoulder, releasing time.

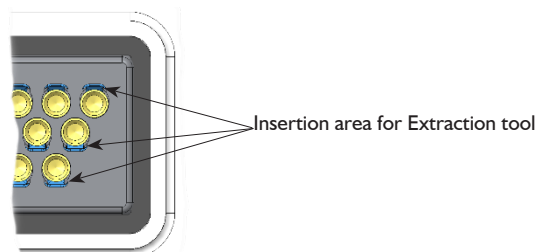
Hold wire against tool with finger and remove tool and contact.

Be careful to put extraction tool in the good position!

Each contact cavity has flat area to place tool tip.



Connector size 9 to 37

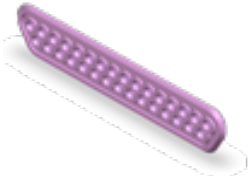
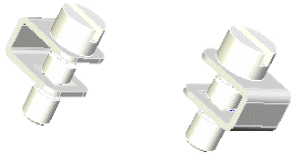
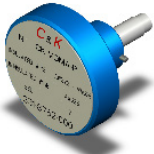
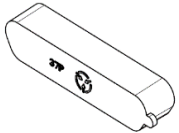


Connector size 51



Dimensions shown in: mm
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ACCESSORIES

INTERFACIAL SEAL	SIZE	ESA/ESCC DESCRIPTION	C&K P/N
	9S	340103212B	CI15373-0050C
	15S	340103213B	CI15373-0051C
	21S	340103214B	CI15373-0052C
	25S	340103215B	CI15373-0053C
	31S	340103216B	CI15373-0054C
	37S	340103217B	CI15373-0055C
	51S	340103219B	CI15373-0056C
MALE SCREWLOCK		C&K DESCRIPTION	C&K P/N
		MDM-115288-6916-FR022	CI15288-6916
CRIMPING TOOL		DESCRIPTION	C&K P/N
		M22520/2-01	C995-0001-584
LOCATOR	TYPE	DESCRIPTION	C&K P/N
	Male contacts	MDMA-Locator-P-01	CI15373-0001
	Female contacts	MDMA-Locator-S-01	CI15373-0002
EXTRACTION TOOL	TYPE	DESCRIPTION	C&K P/N
	9 to 37	MDMA-Extract tool-01	CI15373-0006
	51	MDMA-Extract tool-02	CI15373-0007
TEST RETENTION TOOL		DESCRIPTION	C&K P/N
	Male and Female Contacts	MDMA-Retention tool	CI15373-0003
DUST CAP	SIZE	DESCRIPTION	C&K P/N
	9P	MDM-DUSTCAP-9P-FR022	CI15288-6927
	9S	MDM-DUSTCAP-9S-FR022	CI15288-6928
	15P	MDM-DUSTCAP-15P-FR022	CI15288-6929
	15S	MDM-DUSTCAP-15S-FR022	CI15288-6930
	21P	MDM-DUSTCAP-21P-FR022	CI15288-6931
	21S	MDM-DUSTCAP-21S-FR022	CI15288-6932
	25P	MDM-DUSTCAP-25P-FR022	CI15288-6933
	25S	MDM-DUSTCAP-25S-FR022	CI15288-6934
	31P	MDM-DUSTCAP-31P-FR022	CI15288-6935
	31S	MDM-DUSTCAP-31S-FR022	CI15288-6936
	37P	MDM-DUSTCAP-37P-FR022	CI15288-6937
	37S	MDM-DUSTCAP-37S-FR022	CI15288-6938
	51P	MDM-DUSTCAP-51P-FR022	CI15288-6939
	51S	MDM-DUSTCAP-51S-FR022	CI15288-6940

For the complete range of accessories and details, consult our MDM accessories datasheet.



Dimensions shown in: mm
Specifications and dimensions subject to change

CONNECTORS DESCRIPTION AND C&K PART NUMBERS

SHELL	CONTACT TYPE	CONTACT #	ATTACHMENT OPTIONS					
			STANDARD CONNECTOR		CONNECTOR WITH CAPTIVE NUT (E)		CONNECTOR WITH FLOATING MOUNT (Y)	
			C&K DESCRIPTION	C&K P/N	C&K DESCRIPTION	C&K P/N	C&K DESCRIPTION	C&K P/N
Nickel	Pin	9	MDMB-9P-A174-FO	CI15373-1100	MDMBE-9P-A174-FO	CI15373-1124	MDMBY-9P-A174-FO	CI15373-1112
		15	MDMB-15P-A174-FO	CI15373-1102	MDMBE-15P-A174-FO	CI15373-1126	MDMBY-15P-A174-FO	CI15373-1114
		21	MDMB-21P-A174-FO	CI15373-1104	MDMBE-21P-A174-FO	CI15373-1128	MDMBY-21P-A174-FO	CI15373-1116
		25	MDMB-25P-A174-FO	CI15373-1106	MDMBE-25P-A174-FO	CI15373-1130	MDMBY-25P-A174-FO	CI15373-1118
		31	MDMB-31P-A174-FO	CI15373-1108	MDMBE-31P-A174-FO	CI15373-1132	MDMBY-31P-A174-FO	CI15373-1120
		37	MDMB-37P-A174-FO	CI15373-1110	MDMBE-37P-A174-FO	CI15373-1134	MDMBY-37P-A174-FO	CI15373-1122
		51	MDMB-51P-A174-FO	CI15373-1136	MDMBE-51P-A174-FO	CI15373-1140	MDMBY-51P-A174-FO	CI15373-1138
	Socket	9	MDMB-9S-A174-FO	CI15373-1101	MDMBE-9S-A174-FO	CI15373-1125	MDMBY-9S-A174-FO	CI15373-1113
		15	MDMB-15S-A174-FO	CI15373-1103	MDMBE-15S-A174-FO	CI15373-1127	MDMBY-15S-A174-FO	CI15373-1115
		21	MDMB-21S-A174-FO	CI15373-1105	MDMBE-21S-A174-FO	CI15373-1129	MDMBY-21S-A174-FO	CI15373-1117
		25	MDMB-25S-A174-FO	CI15373-1107	MDMBE-25S-A174-FO	CI15373-1131	MDMBY-25S-A174-FO	CI15373-1119
		31	MDMB-31S-A174-FO	CI15373-1109	MDMBE-31S-A174-FO	CI15373-1133	MDMBY-31S-A174-FO	CI15373-1121
		37	MDMB-37S-A174-FO	CI15373-1111	MDMBE-37S-A174-FO	CI15373-1135	MDMBY-37S-A174-FO	CI15373-1123
		51	MDMB-51S-A174-FO	CI15373-1137	MDMBE-51S-A174-FO	CI15373-1141	MDMBY-51S-A174-FO	CI15373-1139
Gold	Pin	9	MDMB-9P-FR172-FO	CI15373-1150	MDMBE-9P-FR172-FO	CI15373-1174	MDMBY-9P-FR172-FO	CI15373-1162
		15	MDMB-15P-FR172-FO	CI15373-1152	MDMBE-15P-FR172-FO	CI15373-1176	MDMBY-15P-FR172-FO	CI15373-1164
		21	MDMB-21P-FR172-FO	CI15373-1154	MDMBE-21P-FR172-FO	CI15373-1178	MDMBY-21P-FR172-FO	CI15373-1166
		25	MDMB-25P-FR172-FO	CI15373-1156	MDMBE-25P-FR172-FO	CI15373-1180	MDMBY-25P-FR172-FO	CI15373-1168
		31	MDMB-31P-FR172-FO	CI15373-1158	MDMBE-31P-FR172-FO	CI15373-1182	MDMBY-31P-FR172-FO	CI15373-1170
		37	MDMB-37P-FR172-FO	CI15373-1160	MDMBE-37P-FR172-FO	CI15373-1184	MDMBY-37P-FR172-FO	CI15373-1172
		51	MDMB-51P-FR172-FO	CI15373-1186	MDMBE-51P-FR172-FO	CI15373-1190	MDMBY-51P-FR172-FO	CI15373-1188
	Socket	9	MDMB-9S-FR172-FO	CI15373-1151	MDMBE-9S-FR172-FO	CI15373-1175	MDMBY-9S-FR172-FO	CI15373-1163
		15	MDMB-15S-FR172-FO	CI15373-1153	MDMBE-15S-FR172-FO	CI15373-1177	MDMBY-15S-FR172-FO	CI15373-1165
		21	MDMB-21S-FR172-FO	CI15373-1155	MDMBE-21S-FR172-FO	CI15373-1179	MDMBY-21S-FR172-FO	CI15373-1167
		25	MDMB-25S-FR172-FO	CI15373-1157	MDMBE-25S-FR172-FO	CI15373-1181	MDMBY-25S-FR172-FO	CI15373-1169
		31	MDMB-31S-FR172-FO	CI15373-1159	MDMBE-31S-FR172-FO	CI15373-1183	MDMBY-31S-FR172-FO	CI15373-1171
		37	MDMB-37S-FR172-FO	CI15373-1161	MDMBE-37S-FR172-FO	CI15373-1185	MDMBY-37S-FR172-FO	CI15373-1173
		51	MDMB-51S-FR172-FO	CI15373-1187	MDMBE-51S-FR172-FO	CI15373-1191	MDMBY-51S-FR172-FO	CI15373-1189

CONTACTS DESCRIPTION AND C&K PART NUMBERS

USED FOR WIRE SIZE AWG	CONTACT TYPE	C&K DESCRIPTION	C&K PART NUMBER
25 / 26 / 28	Pin	MDMB-CTPIN01	C331-8752-000D
	Socket	MDMB-CTSKT01	C252-8838-000D
24 / 25 / 26 / 28 / 2x28	Pin*	MDMB-CTPIN02	C331-8754-000D
	Socket*	MDMB-CTSKT02	C252-8844-000D

*To be preferred. Designed for all wires combination.

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