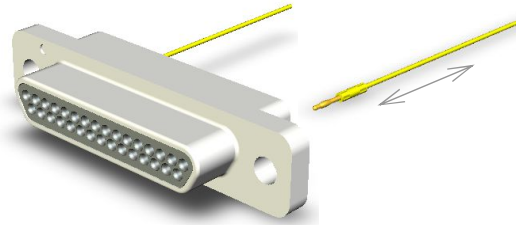


Features/Benefits

- **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 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 un-insulated 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 un-insulated 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 | 5.3 |
| 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), 3401/41 (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.

How to Order Connector

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



MDMB Series

Fixing Option:

Nothing: Standard (no hardware)

E Captive nut

Y Float mount

Shell Size: Number of Contacts

- 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:

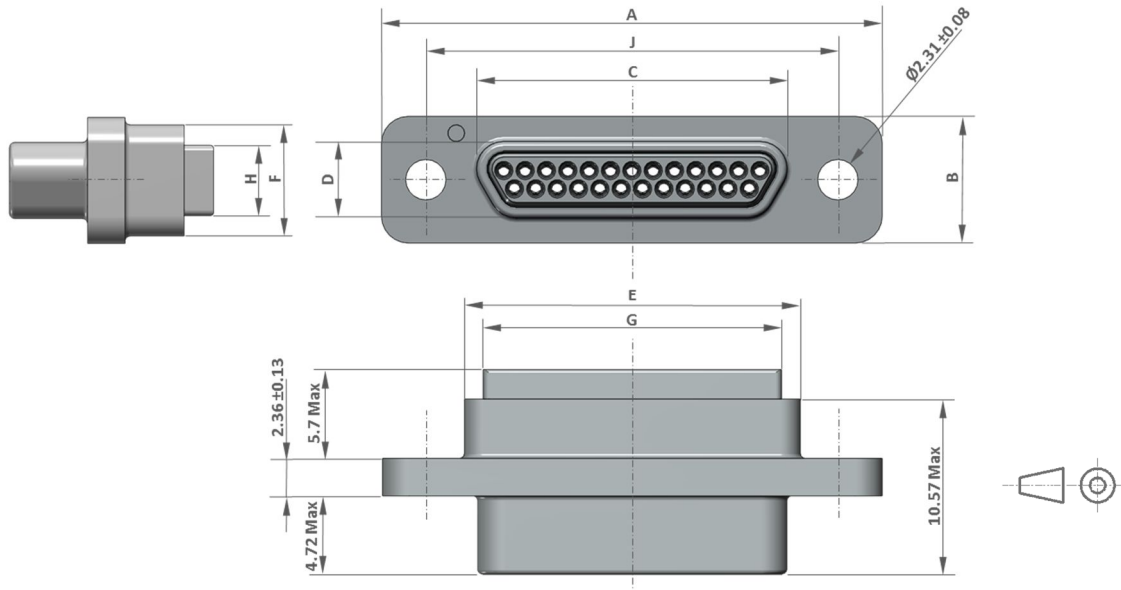
P Pin (Male)

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 (Y & E) | Stainless Steel | 303 type, passivated |
| Interfacial Seals | Fluorosilicone elastomer | Pink color |
| Dust Cap | Polyethylene | Black color, antistatic. |

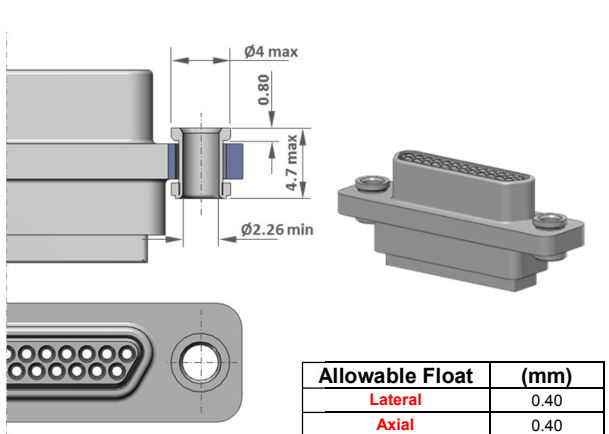
Connector Dimensions



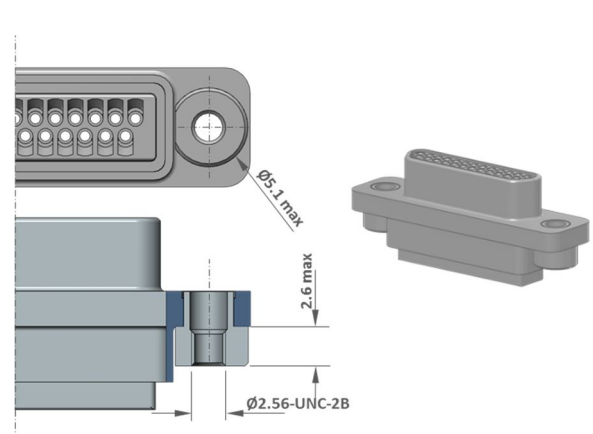
| Shell Size | A ±0.25 | B ±0.22 | C ±0.14 | D ±0.15 | E ±0.25 | F ±0.13 | G ±0.13 | J ±0.13 |
|------------|---------|---------|---------|---------|---------|---------|---------|---------|
| 9P | 19.68 | 7.60 | 8.31 | 4.54 | 9.91 | 6.63 | 7.63 | 14.35 |
| 9S | 19.68 | 7.60 | 8.64 | 4.87 | 9.91 | 6.63 | 7.63 | 14.35 |
| 15P | 23.50 | 7.60 | 12.12 | 4.54 | 13.72 | 6.63 | 11.44 | 18.16 |
| 15S | 23.50 | 7.60 | 12.45 | 4.87 | 13.72 | 6.63 | 11.44 | 18.16 |
| 21P | 27.30 | 7.60 | 15.93 | 4.54 | 17.53 | 6.63 | 15.25 | 21.97 |
| 21S | 27.30 | 7.60 | 16.26 | 4.87 | 17.53 | 6.63 | 15.25 | 21.97 |
| 25P | 29.84 | 7.60 | 18.47 | 4.54 | 20.07 | 6.63 | 17.79 | 24.51 |
| 25S | 29.84 | 7.60 | 18.80 | 4.87 | 20.07 | 6.63 | 17.79 | 24.51 |
| 31P | 33.65 | 7.60 | 22.28 | 4.54 | 23.88 | 6.63 | 21.60 | 28.32 |
| 31S | 33.65 | 7.60 | 22.61 | 4.87 | 23.88 | 6.63 | 21.60 | 28.32 |
| 37P | 37.46 | 7.60 | 26.09 | 4.54 | 27.69 | 6.63 | 25.41 | 32.13 |
| 37S | 37.46 | 7.60 | 26.42 | 4.87 | 27.69 | 6.63 | 25.41 | 32.13 |
| 51P | 36.20 | 8.70 | 24.83 | 5.68 | 26.42 | 7.65 | 24.14 | 30.86 |
| 51S | 36.20 | 8.70 | 25.15 | 4.87 | 26.42 | 7.65 | 24.14 | 30.86 |

Fixing Option

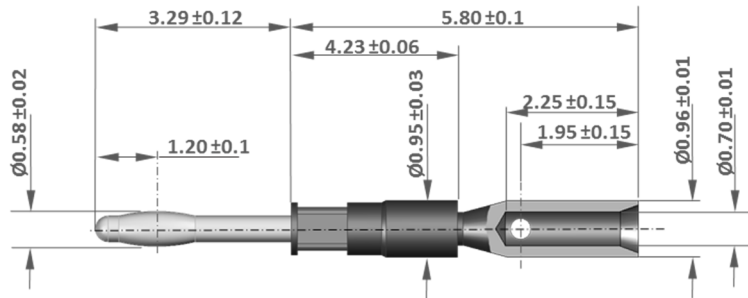
Float Mount (Option Y)



Captive Nut (Option E)



Contact Pin – MDMB-CTPIN02 (wire size AWG 24, 25, 26, 28 or 2x28)

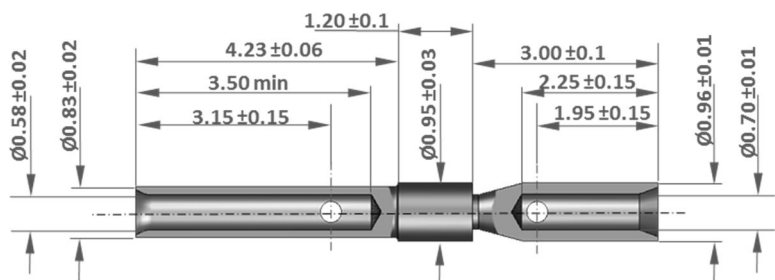
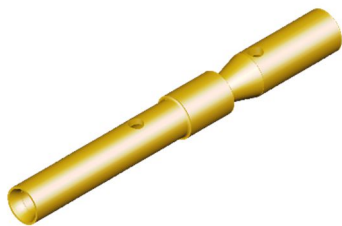


Part Number: **C331-8754-000D**

Description: **MDMB-CTPIN02**

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

Contact Socket – MDMB-CTSKT02 (wire size AWG 24, 25, 26, 28 or 2x28)



Part Number: **C252-8844-000D**

ESA/ESCC Description: **MDMB-CTSKT02**

| COMPONENT | MATERIAL | FINISH |
|-----------|----------------|---|
| Sleeve | Copper alloyed | 1.27 μ m 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.

Process – Contact and Cable Insertion

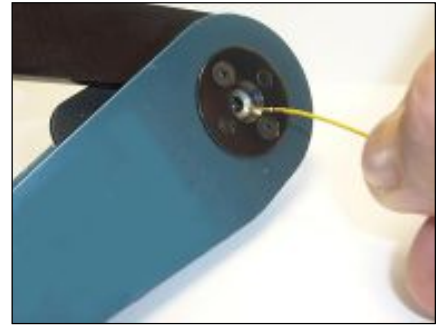
Cable crimping:

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)



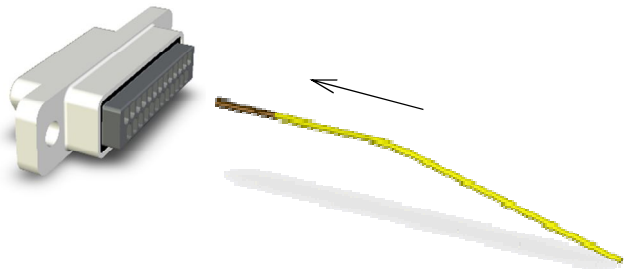
Locator for Male Contact:
MDMA-Locator-P-01 (P/N: C115373-0001)
Locator for Female Contact:
MDMA-Locator-P-02 (P/N: C115373-0002)

Contact insertion:

1 – 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: C115373-0003).



Process – Contact and Cable Extraction

1 – Select contact extraction tool:

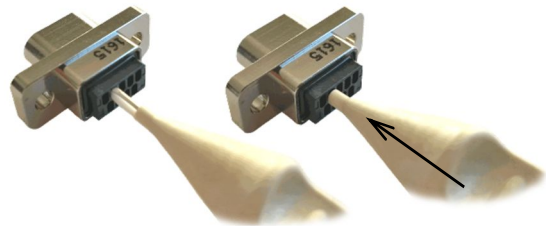
Connector size 9 to 37 →
Connector size 51 →

MDMA-Extract tool-01 (P/N: C115373-0006)
MDMA-Extract tool-02 (P/N: C115373-0007)

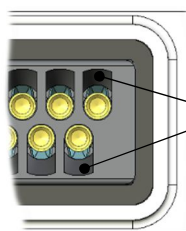


2 – Insert tool tip into contact cavity until tip bottoms against contact shoulder, releasing tine.

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

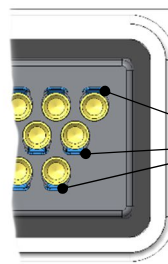


Be careful to put extraction tool in the good position!!
Each contact cavity has flat area to place tool tip.



Connector size 9 to 37

Insertion area for Extraction tool



Connector size 51

Insertion area for Extraction tool

Accessories

| Interfacial seal | Size | Description | P/N |
|---|--------------------------|-----------------------|---------------|
|  | 9S | 340103212B | C115373-0050C |
| | 15S | 340103213B | C115373-0051C |
| | 21S | 340103214B | C115373-0052C |
| | 25S | 340103215B | C115373-0053C |
| | 31S | 340103216B | C115373-0054C |
| | 37S | 340103217B | C115373-0055C |
| | 51S | 340103219B | C115373-0056C |
| Male Screwlock | | Description | P/N |
|  | | MDM-115288-6916-FR022 | C115288-6916 |
| Crimping tool | | Description | P/N |
|  | | M22520/2-01 | C995-0001-584 |
| Locator | Type | Description | P/N |
|  | Male contacts | MDMA-Locator-P-01 | C115373-0001 |
| | Female contacts | MDMA-Locator-S-01 | C115373-0002 |
| Extraction tool | Connector Size | Description | P/N |
|  | 9 to 37 | MDMA-Extract tool-01 | C115373-0006 |
| | 51 | MDMA-Extract tool-02 | C115373-0007 |
| Test retention tool | | Description | P/N |
|  | Male and Female Contacts | MDMA-Retention tool | C115373-0003 |
| Dust Cap | 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 |

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

Connectors Description and C&K Part Numbers

| Shell | Contact Type | Contacts # | Fixing Option | | | | | |
|--------|--------------|------------|-------------------|--------------|--------------------|--------------|--------------------|--------------|
| | | | Standard | | Captive Nut (E) | | Float Mount (Y) | |
| | | | Description | P/N | Description | P/N | Description | P/N |
| Nickel | Pin | 9 | MDMB-9P-A174-FO | C115373-1100 | MDMBE-9P-A174-FO | C115373-1124 | MDMBY-9P-A174-FO | C115373-1112 |
| | | 15 | MDMB-15P-A174-FO | C115373-1102 | MDMBE-15P-A174-FO | C115373-1126 | MDMBY-15P-A174-FO | C115373-1114 |
| | | 21 | MDMB-21P-A174-FO | C115373-1104 | MDMBE-21P-A174-FO | C115373-1128 | MDMBY-21P-A174-FO | C115373-1116 |
| | | 25 | MDMB-25P-A174-FO | C115373-1106 | MDMBE-25P-A174-FO | C115373-1130 | MDMBY-25P-A174-FO | C115373-1118 |
| | | 31 | MDMB-31P-A174-FO | C115373-1108 | MDMBE-31P-A174-FO | C115373-1132 | MDMBY-31P-A174-FO | C115373-1120 |
| | | 37 | MDMB-37P-A174-FO | C115373-1110 | MDMBE-37P-A174-FO | C115373-1134 | MDMBY-37P-A174-FO | C115373-1122 |
| | | 51 | MDMB-51P-A174-FO | C115373-1136 | MDMBE-51P-A174-FO | C115373-1140 | MDMBY-51P-A174-FO | C115373-1138 |
| | Socket | 9 | MDMB-9S-A174-FO | C115373-1101 | MDMBE-9S-A174-FO | C115373-1125 | MDMBY-9S-A174-FO | C115373-1113 |
| | | 15 | MDMB-15S-A174-FO | C115373-1103 | MDMBE-15S-A174-FO | C115373-1127 | MDMBY-15S-A174-FO | C115373-1115 |
| | | 21 | MDMB-21S-A174-FO | C115373-1105 | MDMBE-21S-A174-FO | C115373-1129 | MDMBY-21S-A174-FO | C115373-1117 |
| | | 25 | MDMB-25S-A174-FO | C115373-1107 | MDMBE-25S-A174-FO | C115373-1131 | MDMBY-25S-A174-FO | C115373-1119 |
| | | 31 | MDMB-31S-A174-FO | C115373-1109 | MDMBE-31S-A174-FO | C115373-1133 | MDMBY-31S-A174-FO | C115373-1121 |
| | | 37 | MDMB-37S-A174-FO | C115373-1111 | MDMBE-37S-A174-FO | C115373-1135 | MDMBY-37S-A174-FO | C115373-1123 |
| | | 51 | MDMB-51S-A174-FO | C115373-1137 | MDMBE-51S-A174-FO | C115373-1141 | MDMBY-51S-A174-FO | C115373-1139 |
| Gold | Pin | 9 | MDMB-9P-FR172-FO | C115373-1150 | MDMBE-9P-FR172-FO | C115373-1174 | MDMBY-9P-FR172-FO | C115373-1162 |
| | | 15 | MDMB-15P-FR172-FO | C115373-1152 | MDMBE-15P-FR172-FO | C115373-1176 | MDMBY-15P-FR172-FO | C115373-1164 |
| | | 21 | MDMB-21P-FR172-FO | C115373-1124 | MDMBE-21P-FR172-FO | C115373-1178 | MDMBY-21P-FR172-FO | C115373-1166 |
| | | 25 | MDMB-25P-FR172-FO | C115373-1156 | MDMBE-25P-FR172-FO | C115373-1180 | MDMBY-25P-FR172-FO | C115373-1168 |
| | | 31 | MDMB-31P-FR172-FO | C115373-1158 | MDMBE-31P-FR172-FO | C115373-1182 | MDMBY-31P-FR172-FO | C115373-1170 |
| | | 37 | MDMB-37P-FR172-FO | C115373-1160 | MDMBE-37P-FR172-FO | C115373-1184 | MDMBY-37P-FR172-FO | C115373-1172 |
| | | 51 | MDMB-51P-FR172-FO | C115373-1186 | MDMBE-51P-FR172-FO | C115373-1190 | MDMBY-51P-FR172-FO | C115373-1188 |
| | Socket | 9 | MDMB-9S-FR172-FO | C115373-1151 | MDMBE-9S-FR172-FO | C115373-1175 | MDMBY-9S-FR172-FO | C115373-1163 |
| | | 15 | MDMB-15S-FR172-FO | C115373-1153 | MDMBE-15S-FR172-FO | C115373-1177 | MDMBY-15S-FR172-FO | C115373-1165 |
| | | 21 | MDMB-21S-FR172-FO | C115373-1155 | MDMBE-21S-FR172-FO | C115373-1179 | MDMBY-21S-FR172-FO | C115373-1167 |
| | | 25 | MDMB-25S-FR172-FO | C115373-1157 | MDMBE-25S-FR172-FO | C115373-1181 | MDMBY-25S-FR172-FO | C115373-1169 |
| | | 31 | MDMB-31S-FR172-FO | C115373-1159 | MDMBE-31S-FR172-FO | C115373-1183 | MDMBY-31S-FR172-FO | C115373-1171 |
| | | 37 | MDMB-37S-FR172-FO | C115373-1161 | MDMBE-37S-FR172-FO | C115373-1185 | MDMBY-37S-FR172-FO | C115373-1173 |
| | | 51 | MDMB-51S-FR172-FO | C115373-1187 | MDMBE-51S-FR172-FO | C115373-1191 | MDMBY-51S-FR172-FO | C115373-1189 |

Contacts Description and C&K Part Numbers

| Used for Wire Size AWG | Contact Type | Description | 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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