



MDMA SERIES

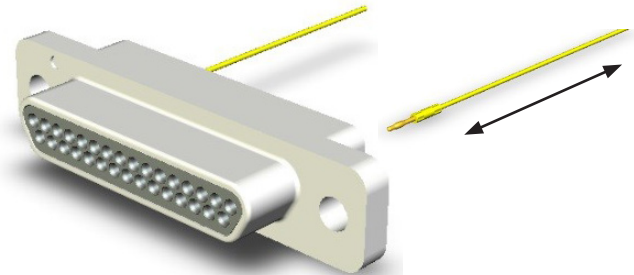
Microminiature connectors
with removable crimp contacts
ESCC 3401/077 - ESCC 3401/078

Features and Benefits

- Compliant with ESA specifications
- 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
- Satellites harnesses and payloads
- Avionics / Military



Specification

- High performance Micro-miniature connectors ESA qualified, for space applications.
- Compliant to ESCC specifications 3401/077 Connectors and 3401/078 Removable Crimp Contacts.
- Compatible with ESCC 3401/029 MDM Connectors, 3401/041 Savers, 3401/032 Accessories and 3401/087 Backshells.
- Suitable for use in Space, and high performance military/aerospace applications: Board to Board, Board to Cable or Cable to Cable applications.
- Removable contacts.
- Sizes available: 9, 15, 21, 25, 31, 37 and 51 ways.
- Connector 9, 15, 21, 25, 31 and 37 ways, accepted wires size:
 - 1 wire insulated AWG24, AWG26 and AWG28 (external diameter at 0.97mm max).
 - 1 uninsulated solid wire AWG25.
 - 2 wires insulated AWG28 (external diameter at 0.82mm max).
- Connector 51 ways, accepted wires size:
 - 1 wire insulated AWG24, AWG26 and AWG28 (external diameter at 0.97mm max).
 - 1 uninsulated solid wire AWG25.
- Twist Pin contact technology.
- 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

- ESA / ESCC: code 3401 (Flying model).
- Qualification reviewed every 2 years.

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.

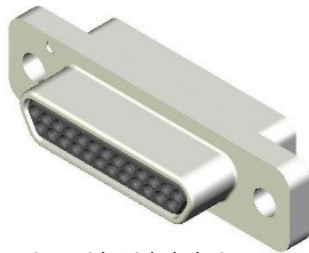
Packaging

- Individual packaging.
- Traceability associated as per ESA/ESCC specifications.
- Each MDMA connector is sold with a dust cap in individual plastic bag.
- Contact extraction tool has to be ordered separately.

HOW TO ORDER

CONNECTOR

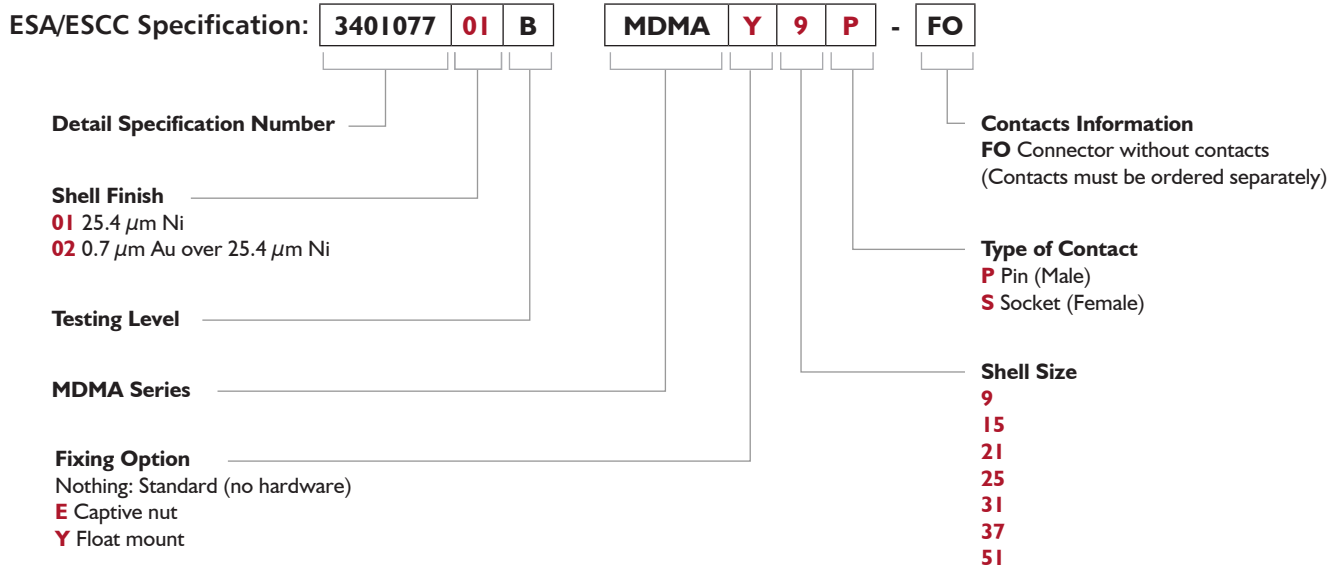
Our easy build-a-connector concept allows you to mix and match options to create the MDMA you need. To order, select desired option from each category and place it in the appropriate box.



Pin connection with Nickel Plating



Pin connection with Gold Plating



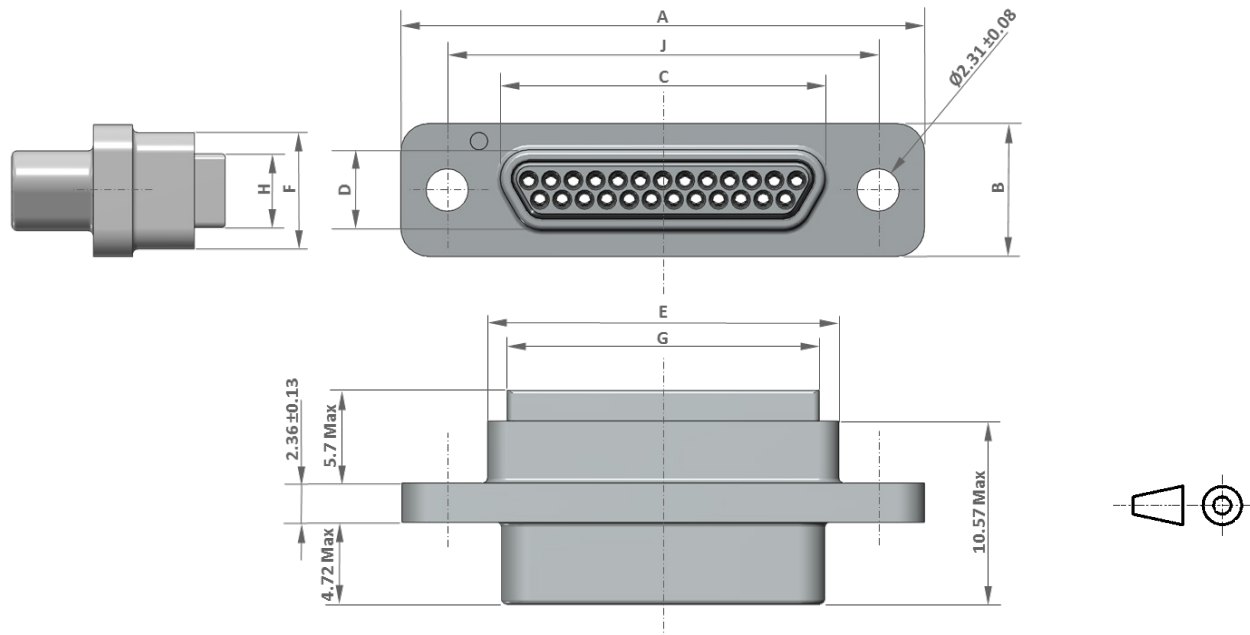
MATERIALS & FINISHES

| COMPONENT | MATERIAL | FINISH |
|---------------------|--------------------------|---|
| Shell | Aluminium alloy | 01: 25.4 μm electroless Nickel over Copper underlay |
| | | 02: 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. |



Dimensions shown in: mm
Specifications and dimensions subject to change

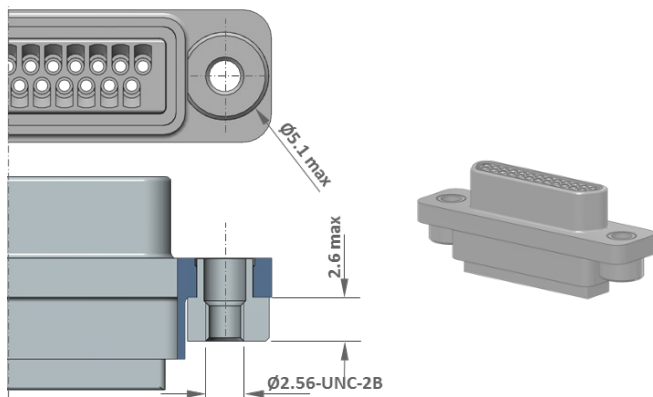
CONNECTOR DIMENSIONS



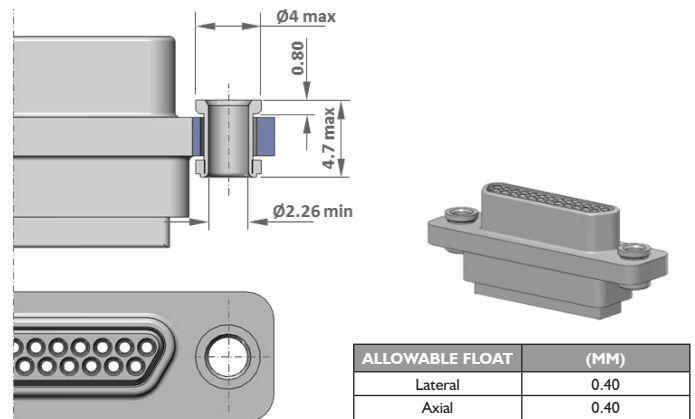
| SHELL SIZE | A ±0.25 | B ±0.22 | C ±0.14 | D ±0.15 | E ±0.25 | F ±0.13 | G ±0.13 | J ±0.13 |
|------------|---------|---------|---------|---------|---------|---------|---------|---------|
| 9P | 19.68 | 7.60 | 8.31 | 4.54 | 9.91 | 6.63 | 7.63 | 14.35 |
| 9S | 19.68 | 7.60 | 8.64 | 4.87 | 9.91 | 6.63 | 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 | 6.01 | 26.42 | 7.65 | 24.14 | 30.86 |

ATTACHMENT OPTIONS

Captive Nut (Option E)

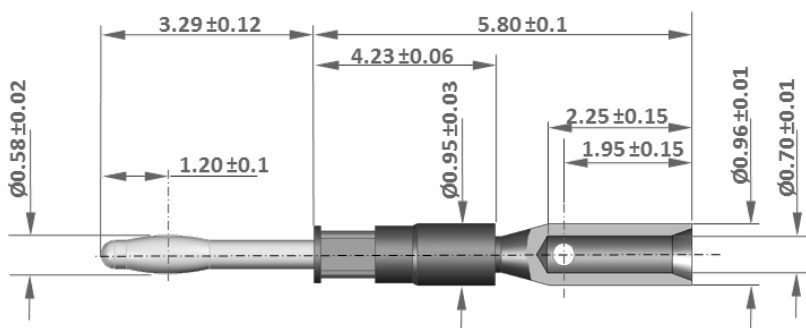
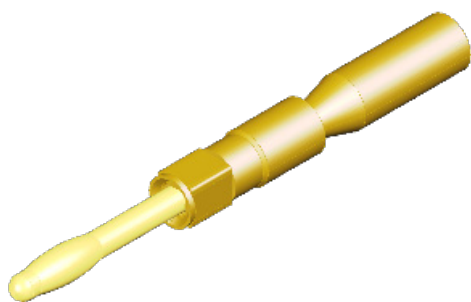


Floating Mount (Option Y)



Dimensions shown in: mm
Specifications and dimensions subject to change

CONTACT PIN – 340107803B (WIRE SIZE AWG 24, 25, 26, 28 OR 2X28)

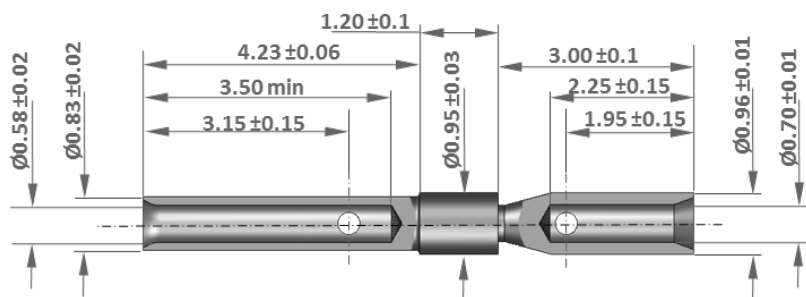
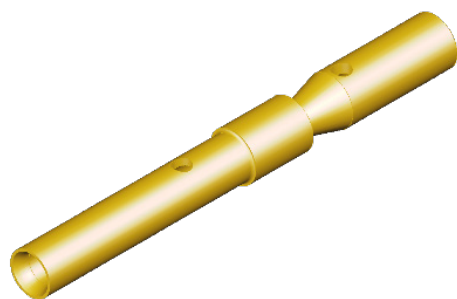


C&K Part Number: **C331-8754-000H**

ESA/ESCC Description: **340107803B**

| 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 – 340107804B (WIRE SIZE AWG 24, 25, 26, 28 OR 2X28)



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

ESA/ESCC Description: **340107804B**

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

Nota:

Other products available:

- Male Contact 340107801B, compatible with wire size AWG 25, 26 or 28.
- Female Contact 340107802B, compatible with wire size AWG 25, 26, 28.



Dimensions shown in: mm
Specifications and dimensions subject to change

PROCESS – CONTACT AND CABLE INSERTION

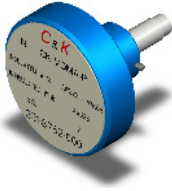
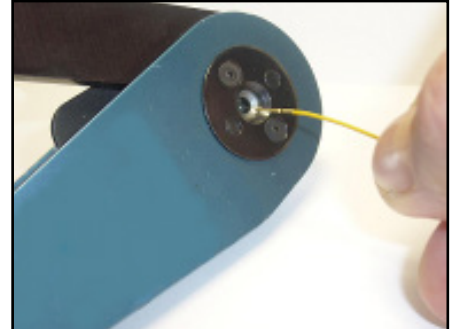
Cable Crimping

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-P-02 (P/N: CI 15373-0002)

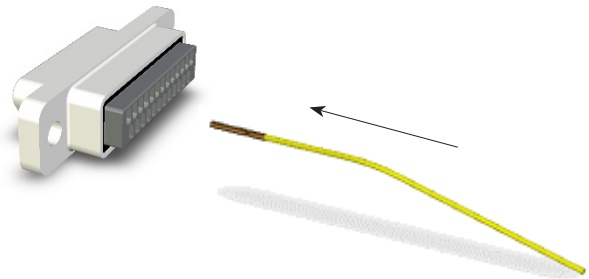
Contact Insertion

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:

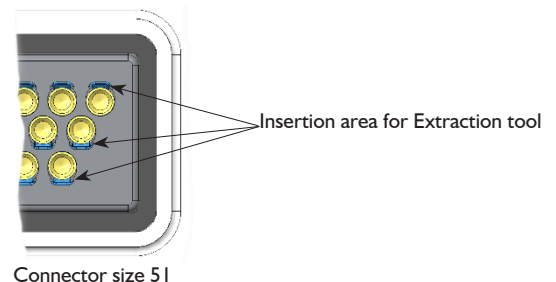
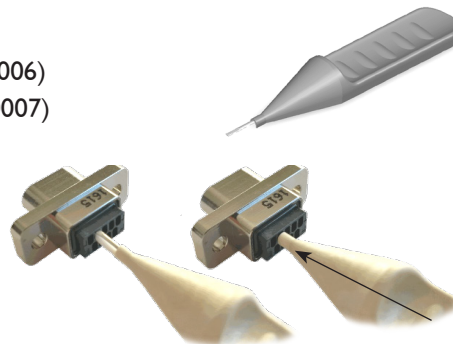
- Connector size 9 to 37 ->MDMA-Extract tool-01 (P/N: CI 15373-0006)
- Connector size 51 ->MDMA-Extract tool-02 (P/N: CI 15373-0007)

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

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

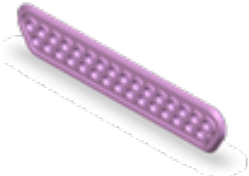
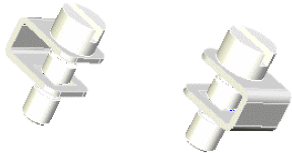
Be careful to put extraction tool in the good position!

Each contact cavity has flat area to place tool tip.



Dimensions shown in: mm
Specifications and dimensions subject to change

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 | | ESA/ESCC DESCRIPTION | C&K P/N |
|  | | 340103207B | CI15366-9218 |
| 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 | | 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) | |
| | | | ESA/ESCC DESCRIPTION | C&K P/N | ESA/ESCC DESCRIPTION | C&K P/N | ESA/ESCC DESCRIPTION | C&K P/N |
| Nickel | Pin | 9 | 340I07701B MDMA9P-FO | CI15373-2100C | 340I07701B MDMAE9P-FO | CI15373-2124C | 340I07701B MDMAY9P-FO | CI15373-2112C |
| | | 15 | 340I07701B MDMA15P-FO | CI15373-2102C | 340I07701B MDMAE15P-FO | CI15373-2126C | 340I07701B MDMAY15P-FO | CI15373-2114C |
| | | 21 | 340I07701B MDMA21P-FO | CI15373-2104C | 340I07701B MDMAE21P-FO | CI15373-2128C | 340I07701B MDMAY21P-FO | CI15373-2116C |
| | | 25 | 340I07701B MDMA25P-FO | CI15373-2106C | 340I07701B MDMAE25P-FO | CI15373-2130C | 340I07701B MDMAY25P-FO | CI15373-2118C |
| | | 31 | 340I07701B MDMA31P-FO | CI15373-2108C | 340I07701B MDMAE31P-FO | CI15373-2132C | 340I07701B MDMAY31P-FO | CI15373-2120C |
| | | 37 | 340I07701B MDMA37P-FO | CI15373-2110C | 340I07701B MDMAE37P-FO | CI15373-2134C | 340I07701B MDMAY37P-FO | CI15373-2122C |
| | | 51 | 340I07701B MDMA51P-FO | CI15373-2142C | 340I07701B MDMAE51P-FO | CI15373-2146C | 340I07701B MDMAY51P-FO | CI15373-2144C |
| | Socket | 9 | 340I07701B MDMA9S-FO | CI15373-2101C | 340I07701B MDMAE9S-FO | CI15373-2125C | 340I07701B MDMAY9S-FO | CI15373-2113C |
| | | 15 | 340I07701B MDMA15S-FO | CI15373-2103C | 340I07701B MDMAE15S-FO | CI15373-2127C | 340I07701B MDMAY15S-FO | CI15373-2115C |
| | | 21 | 340I07701B MDMA21S-FO | CI15373-2105C | 340I07701B MDMAE21S-FO | CI15373-2129C | 340I07701B MDMAY21S-FO | CI15373-2117C |
| | | 25 | 340I07701B MDMA25S-FO | CI15373-2107C | 340I07701B MDMAE25S-FO | CI15373-2131C | 340I07701B MDMAY25S-FO | CI15373-2119C |
| | | 31 | 340I07701B MDMA31S-FO | CI15373-2109C | 340I07701B MDMAE31S-FO | CI15373-2133C | 340I07701B MDMAY31S-FO | CI15373-2121C |
| | | 37 | 340I07701B MDMA37S-FO | CI15373-2111C | 340I07701B MDMAE37S-FO | CI15373-2135C | 340I07701B MDMAY37S-FO | CI15373-2123C |
| | | 51 | 340I07701B MDMA51S-FO | CI15373-2143C | 340I07701B MDMAE51S-FO | CI15373-2147C | 340I07701B MDMAY51S-FO | CI15373-2145C |
| Gold | Pin | 9 | 340I07702B MDMA9P-FO | CI15373-2150C | 340I07702B MDMAE9P-FO | CI15373-2174C | 340I07702B MDMAY9P-FO | CI15373-2162C |
| | | 15 | 340I07702B MDMA15P-FO | CI15373-2152C | 340I07702B MDMAE15P-FO | CI15373-2176C | 340I07702B MDMAY15P-FO | CI15373-2164C |
| | | 21 | 340I07702B MDMA21P-FO | CI15373-2154C | 340I07702B MDMAE21P-FO | CI15373-2178C | 340I07702B MDMAY21P-FO | CI15373-2166C |
| | | 25 | 340I07702B MDMA25P-FO | CI15373-2156C | 340I07702B MDMAE25P-FO | CI15373-2180C | 340I07702B MDMAY25P-FO | CI15373-2168C |
| | | 31 | 340I07702B MDMA31P-FO | CI15373-2158C | 340I07702B MDMAE31P-FO | CI15373-2182C | 340I07702B MDMAY31P-FO | CI15373-2170C |
| | | 37 | 340I07702B MDMA37P-FO | CI15373-2160C | 340I07702B MDMAE37P-FO | CI15373-2184C | 340I07702B MDMAY37P-FO | CI15373-2172C |
| | | 51 | 340I07702B MDMA37P-FO | CI15373-2192C | 340I07702B MDMAE51P-FO | CI15373-2196C | 340I07702B MDMAY51P-FO | CI15373-2194C |
| | Socket | 9 | 340I07702B MDMA9S-FO | CI15373-2151C | 340I07702B MDMAE9S-FO | CI15373-2175C | 340I07702B MDMAY9S-FO | CI15373-2163C |
| | | 15 | 340I07702B MDMA15S-FO | CI15373-2153C | 340I07702B MDMAE15S-FO | CI15373-2177C | 340I07702B MDMAY15S-FO | CI15373-2165C |
| | | 21 | 340I07702B MDMA21S-FO | CI15373-2155C | 340I07702B MDMAE21S-FO | CI15373-2179C | 340I07702B MDMAY21S-FO | CI15373-2167C |
| | | 25 | 340I07702B MDMA25S-FO | CI15373-2157C | 340I07702B MDMAE25S-FO | CI15373-2181C | 340I07702B MDMAY25S-FO | CI15373-2169C |
| | | 31 | 340I07702B MDMA31S-FO | CI15373-2159C | 340I07702B MDMAE31S-FO | CI15373-2183C | 340I07702B MDMAY31S-FO | CI15373-2171C |
| | | 37 | 340I07702B MDMA37S-FO | CI15373-2161C | 340I07702B MDMAE37S-FO | CI15373-2185C | 340I07702B MDMAY37S-FO | CI15373-2173C |
| | | 51 | 340I07702B MDMA51S-FO | CI15373-2193C | 340I07702B MDMAE51S-FO | CI15373-2197C | 340I07702B MDMAY51S-FO | CI15373-2195C |

CONTACTS DESCRIPTION AND C&K PART NUMBERS

| USED FOR WIRE SIZE AWG | CONTACT TYPE | ESA/ESCC DESCRIPTION | C&K PART NUMBER |
|--------------------------|--------------|----------------------|-----------------|
| 25 / 26 / 28 | Pin | 340I07801B | C331-8752-000H |
| | Socket | 340I07802B | C252-8838-000H |
| 24 / 25 / 26 / 28 / 2x28 | Pin* | 340I07803B | C331-8754-000H |
| | Socket* | 340I07804B | C252-8844-000H |

*To be preferred. Designed for all wires combination.

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