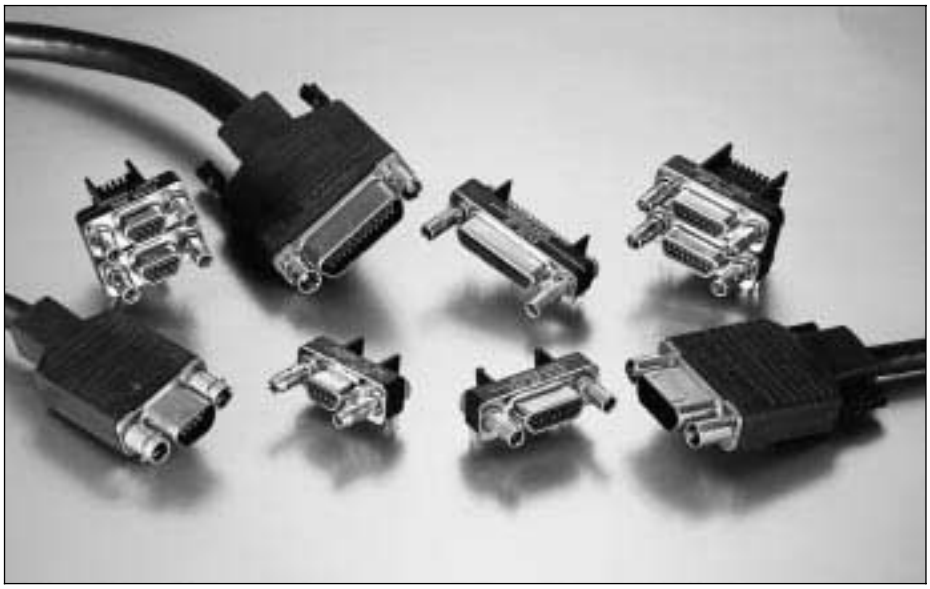
MDSM is the commercial industry's smallest D-type connector for shielded I/O wire-to-board applications. Requiring less than 1/3 the area of a traditional D Subminiature connector, MDSM is designed for situations where space and EMI shielding are the primary design drivers.

Unlike other micro connectors, MDSM's rugged construction and unique contact design combined with a PdNi contact finish provide durability of 10,000 mating cycles. All of this comes in a sleek package that includes a snap together shield can and a slide over boot producing a cable assembly with an overmolded look and a low assembled cost. MDSM is an ideal solution for applications where size, shielding, durability and aesthetics are key design criteria.

Applications:
- Electronic Notepads
- VME Cards
- Multiplexors
- Serial Storage Devices
- Computer Workstations
- Hand Held Devices
- Bar Code Scanners



## Product Features

- 1,27 (.050) Pitch / Saves Space
- Fully Shielded / Reduces EMI
- Crimp Contacts / Applied Cost Savings
- Accessories Included / Fewer Part Numbers
- PdNi Plating / 10,000 Mating Cycles
- Stacked Versions / Saves Horizontal Space
- Slide Over Boot / Results in Overmolded Appearance
- Choice of Two Different Latching Options (Thumbscrew / Push-Pull)
- Approvals & Certifications
  - SSA (Serial Storage Architecture)
  - U.L. File Number E8572
  - ISO 9001

## Specifications

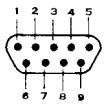
| | |
|---|---|
| Temperature Rating | – 55°C to 125°C |
| Current Rating | 1 A — temp dependent |
| Contact Resistance | 20 mΩ Max. |
| Insulation Resistance | 5000 MΩ Min. |
| Dielectric Withstanding Voltage | 350 V at Sea Level |
| Durability | 10,000 Mating Cycles |
| Shock / Vibration | 50 G's / 50 G's |
| Wire Size | 26 to 30 AWG |

## Materials and Finishes

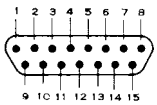
| Description | Material | Finish |
|---|---|---|
| Shell | Steel | Nickel |
| Shield Can | Steel | Tin |
| Cover | Steel | Tin |
| Insulator | Thermoplastic, UL94 V-O | None |
| Contacts | Copper Alloy | Gold flash over 30 microinches PdNi in mating area, Tin on balance |

## Contact Arrangements

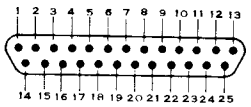
(Face View of Pin Insert — Use Mirror Image for Socket Side)



9 Contacts



15 Contacts



25 Contacts

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Dimensions are shown in mm (inch)
Dimensions subject to change



Downloaded from Arrow.com.

## Locking/Latching Options

Jackscrew



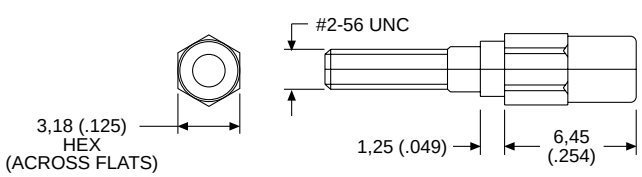
The jackscrew locking system is designed for applications which require a secure connection. Utilize thumbscrews when the connectors are infrequently unmated.

Push/Pull



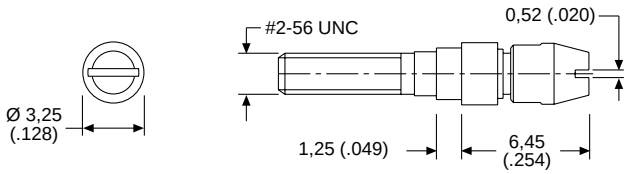
The push/pull latching system is designed for applications which require a quick connect and disconnect. A spring retention mechanism latches to a post on the board side to prevent unintentional unmatings.

Z10 Jackpost




Note: Two Jackposts supplied with boardside connectors.

Z42 Jackpost

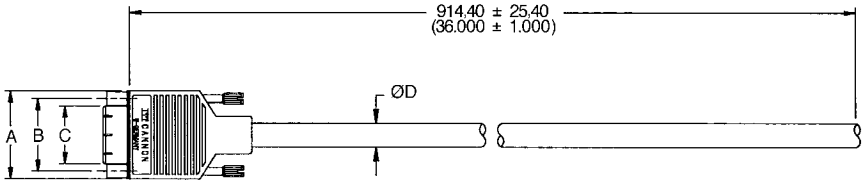



Note: Two Jackposts supplied with boardside connectors.

## Cable Assemblies

Pigtail






| Layout | Jackscrew Part Numbers | Push/Pull Part Numbers | A max. | B 0,10±(.004) | C 0,10±(.004) | Ø D Cable Max. |
|---|---|---|---|---|---|---|
| 9 | CA111972-22 | CA111972-43 | 19,90 (.783) | 14,35 (.565) | 9,45 (.372) | 5,70 (.224) |
| 15 | CA111972-11 | CA111972-44 | 23,70 (.993) | 18,16 (.715) | 13,17 (.519) | 6,70 (.264) |
| 25 | CA111972-12 | CA111972-45 | 30,05 (1.183) | 24,51 (.965) | 19,52 (.758) | 7,90 (.311) |



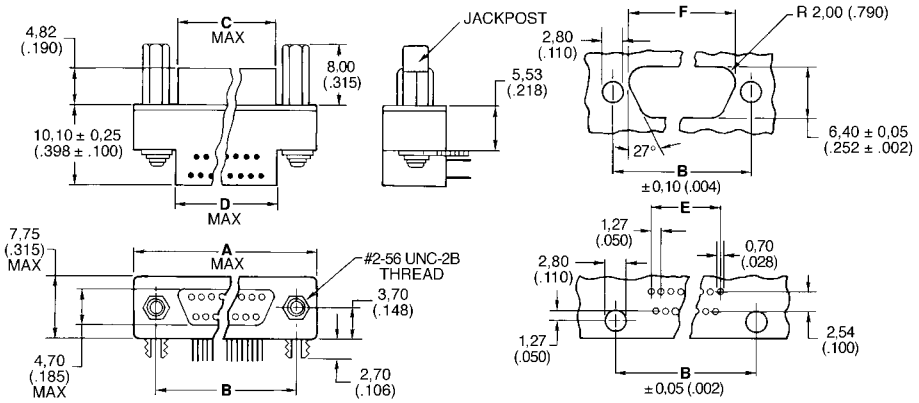
ITT Cannon

Dimensions are shown in mm (inch)
Dimensions subject to change

Downloaded from Arrow.com.

## PCB Connector 90° - Single





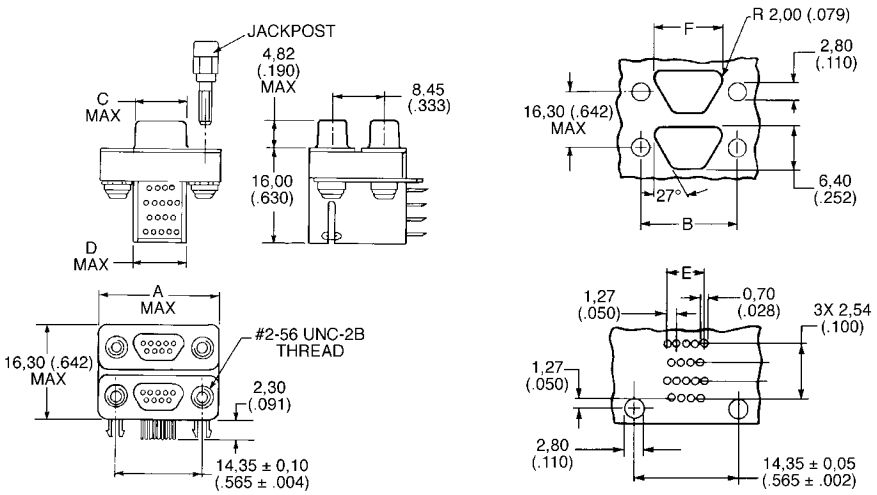

Note: Standard jackpost offering recommended for use with .060 panel.

| No. of Contacts | Part Numbers - Single | | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| | Thumbscrew | Push/Pull | max. | | max. | max. | | ±0,05 (.002) |
| 9 | MDSM-9PE-Z10-VR25* | MDSM-9E-Z42-VR25* | 19,90 (.783) | 14,35 (.565) | 8,60 (.339) | 9,00 (.354) | 5,08 (.200) | 10,24 (.403) |
| 15 | MDSM-15PE-Z10-VR22 | MDSM-15PE-Z42-VR22 | 23,60 (.929) | 18,16 (.715) | 12,30 (.484) | 12,90 (.508) | 8,89 (.350) | 14,01 (.551) |
| 25 | MDSM-25PE-Z10-VR17 | MDSM-25PE-Z42-VR17 | 29,95 (1.179) | 24,51 (.965) | 18,65 (.734) | 19,25 (.758) | 15,24 (.600) | 20,35 (.801) |

*For use with SSA applications

## PCB Connector 90° - Stacked






| No. of Contacts | Part Numbers - Stacked | | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| | Thumbscrew | Push/Pull | max. | | max. | max. | | |
| 18 | MDSM-18PE-Z10-VR25* | MDSM-18PE-Z42-VR25* | 19,90 (.783) | 14,35 (.565) | 8,60 (.339) | 9,00 (.354) | 5,08 (.200) | 10,24 (.403) |
| 30 | MDSM-30PE-Z10-VR22 | MDSM-30PE-Z42-VR22 | 23,50 (.925) | 18,16 (.715) | 12,30 (.484) | 12,71 (.500) | 8,89 (.350) | 14,00 (.551) |

*For use with SSA applications



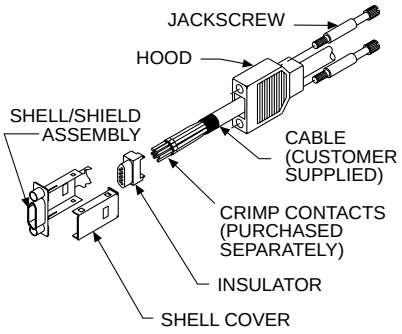
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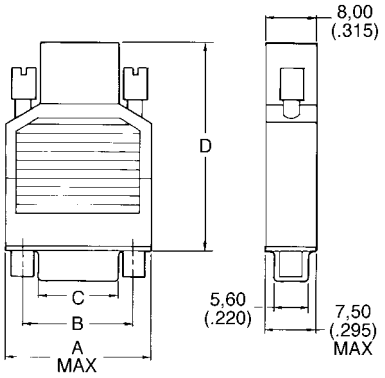
## Cable Connectors (Unassembled Components)

### Jackscrew



Cable connectors are supplied as complete kits with insulator, hood, locking hardware, shell/shield assembly, and cover, bulk packaged.

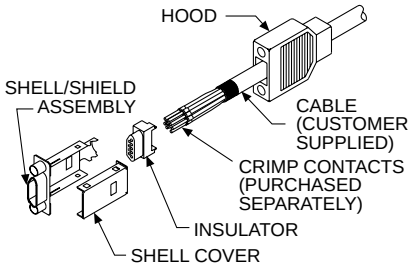


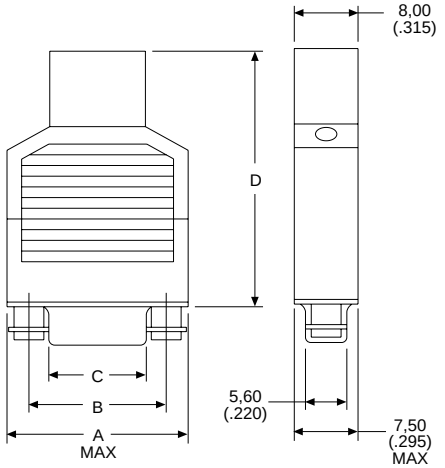




### Push/Pull



Cable connectors are supplied as complete kits with insulator, hood, shell/shield assembly, and cover, bulk packaged.



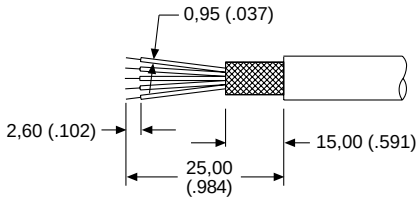



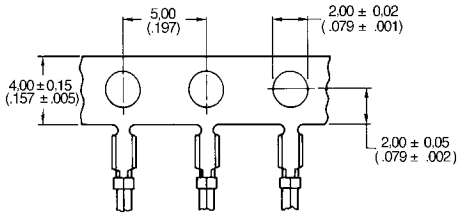

| Layout | Jackscrew Part Numbers | Push/Pull Part Numbers | A max. | B 0,10 (.004) | C 0,10 (.004) | D max. | Max. Cable Entry |
|---|---|---|---|---|---|---|---|
| 9 | MDSM-9SC-Z11-VS1 | MDSM-9SC-Z24-VS1 | 19,90 (.783) | 14,35 (.565) | 9,45 (.372) | 35,50 (1.40) | 5,70 (.224) |
| 15 | MDSM-15SC-Z11-VS1 | MDSM-15SC-Z24-VS1 | 23,70 (.993) | 18,16 (.715) | 13,17 (.519) | 35,50 (1.40) | 6,70 (.264) |
| 25 | MDSM-25SC-Z11-VS1 | MDSM-25SC-Z24-VS1 | 30,05 (1.183) | 24,51 (.965) | 19,52 (.769) | 42,50 (1.67) | 7,90 (.311) |

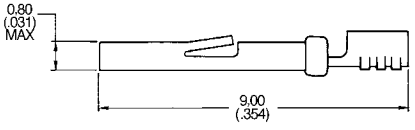
Note: VS1 refers to packaging multiples of 100.
Contacts are sold separately, see this page.

## Crimp Contacts

### Wire Trim Dimensions




| | Part Numbers | |
|---|---|---|
| | 1,000 Piece Reel | 10,000 Piece Reel |
| Socket | MDS-S-TS | MDS-S-RL |

For crimp tooling, see page 101.



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Dimensions are shown in mm (inch)
Dimensions subject to change

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## Contact Crimping Tools

### Parallel Action Low Volume Hand Tool



Part Number: CCTP-MDS

Note: For use with individual contacts (break off reel MDS-S-TS or MDS-S-RL.

### Hand Tool



Part Number: CCTR-MDS

Note: For use with reeled contacts - Part Number MDS-S-TS.

### Semi-Automatic Crimper/Stripper



Part Number: ABT-620-MDS (Lease Only)

Note: For use with reeled contacts - Part Number MDS-S-RL.
For additional information, see page 275.
Crimp dies for SSA Cable will be offered by ITT Cannon. Consult factory for details.

## Contact Insertion/Extraction Tools

### Jackpost Tool



Part Number: CIET-MDSM

Note: For use with Z10 Jackpost.

### Insertion Tool



Part Number: 120090-0102

Note: Contacts cannot be removed from MDSM connectors.

## Shield Crimp Tooling

Shield crimping requires four items; one press, one locator, and one each of the two dies listed below.
Locator and Dies for Shield Termination Ordered Separately

| | Part Numbers | |
|---|---|---|
| Layout | Locator | Die |
| 9 | 317-8666-013 | 274-8649-332/274-8649-333 |
| 15 | 317-8666-014 | 274-8649-334/274-8649-335 |
| 25 | 317-8666-016 | 274-8649-338/274-8649-339 |

Note: For assembly instructions and crimping information, refer to Manual #MY-1/190.

### Hand Press



Part Number: CHP-MDSM-SR

### Pneumatic Press

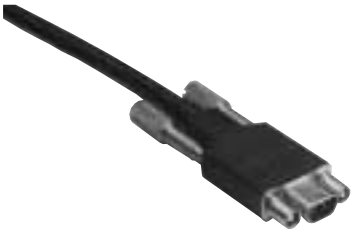


Part Number: CPT-MDSM-SR



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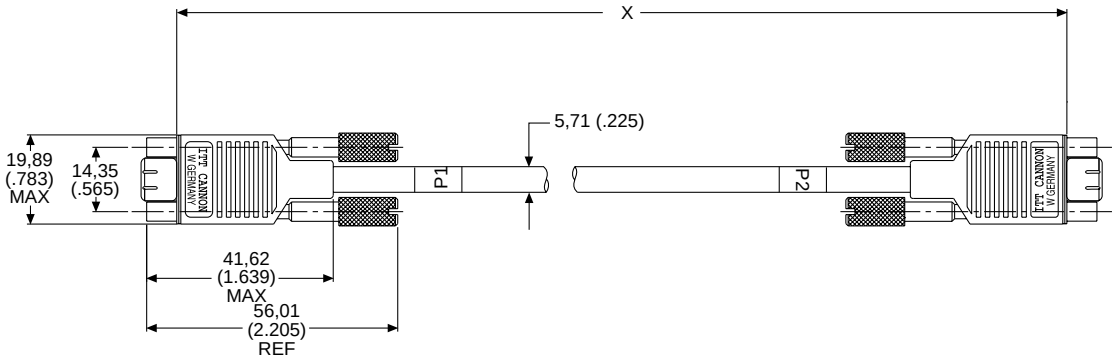
## MDSM SSA Compatible Cable Assemblies



ITT Cannon's 9 position MDSM connectors have been designed into the ANSI specification called SSA, ''Serial Storage Architecture,'' as the external I/O. SSA is a new serial interface for interconnecting storage devices, storage subsystems, servers and workstations. Storage subsystems are increasing in function, availability, density and performance. With this comes the trend for them to become more complex and ITT Cannon has the interconnect system which meets SSA's high performance requirements.

SSA is an architecture which allows these new subsystems to be implemented more easily and at lower costs than other new high speed parallel interfaces. SSA permits the transfer of data at progressively higher speeds - 20 MB/sec interface currently available with 40 MB/sec becoming available in 1997/98. ITT Cannon's MDSM connector not only functions at these high speeds, but also brings to SSA smaller, less cumbersome and higher reliability cables and connectors than current options.

ITT Cannon is offering SSA compatable external cable assemblies in six different lengths to meet your needs. These assemblies consist of two MDSM 9SC type cable connectors terminated to SSA specified external cable.




Note: Cables shown with Z50 thumbscrews.

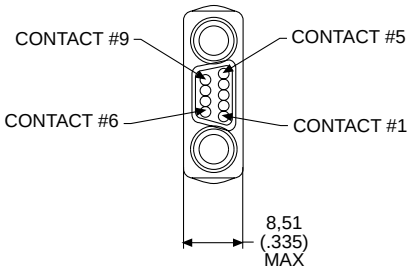
| Part Number | X Meter (Feet) | Tolerance |
|---|---|---|
| CA112104 | 0,50 (1.600) | ±25,00 (1.000) |
| CA112104-1 | 1,00 (2.200) | ±25,00 (1.000) |
| CA112104-2 | 3,00 (9.800) | ±25,00 (1.000) |
| CA112104-3 | 5,00 (16.400) | ±64,00 (2.500) |
| CA112104-4 | 10,00 (32.800) | ±64,00 (2.500) |
| CA112104-5 | 20,00 (65.600) | ±64,00 (2.500) |

Note: For push/pull assemblies or other thumbscrews, please consult the factory.
Crimp dies for SSA applications will be offered by ITT Cannon. Consult factory for details.

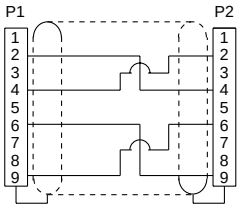


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Pinout




SSA External Cable Wiring Table



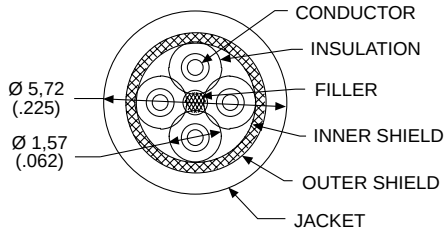

Note: Shield connected to both shells.

External Cable Pinouts

| P1 | | P2 | |
|---|---|---|---|
| Pin | Signal Name | Pin | Signal Name |
| 2 | LineOut– | 4 | LineIn– |
| 6 | LineOut+ | 9 | LineIn+ |
| 4 | LineIn– | 2 | LineOut– |
| 9 | LineIn+ | 6 | LineOut+ |

Note: Pins 1, 3, 5, 7 and 8 are not connected.

SSA External Cable Wire Cross Section (For Reference Only)




Transfer Impedance Performance
Requirements for External SSA Connections

| Frequency MHz | Value (dB-Ohm)(max.) |
|---|---|
| 30 | –25 |
| 159 | –16 |
| 500 | –10 |



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