

**M**DSM 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

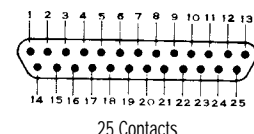
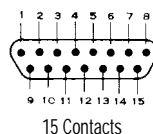
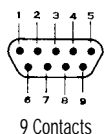
Temperature Rating	- 55°C to 125°C
Current Rating	1 A — temp dependent
Contact Resistance	20 mΩ Max.
Insulation Resistance	5000 MΩ Min.
Dielectric Withstanding Voltage	350 V at Sea Level
Durability	10,000 Mating Cycles
Shock / Vibration	50 G's / 50 G's
Wire Size	26 to 30 AWG

## 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)



Locking/Latching Options

Jackscrew



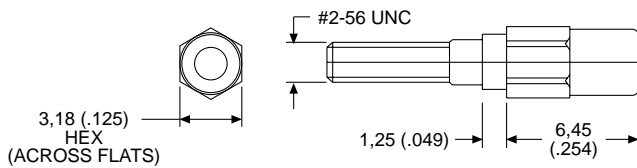
The jackscrew locking system is designed for applications which require a secure connection. Utilize thumbscrews when the connectors are infrequently unmated.

Push/Pull



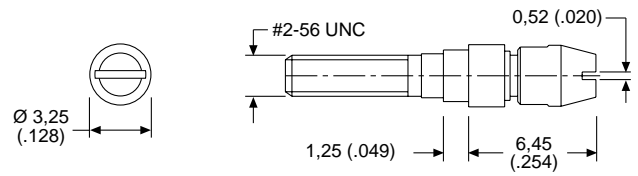
The push/pull latching system is designed for applications which require a quick connect and disconnect. A spring retention mechanism latches to a post on the board side to prevent unintentional unmatings.

Z10 Jackpost



Note: Two Jackposts supplied with boardside connectors.

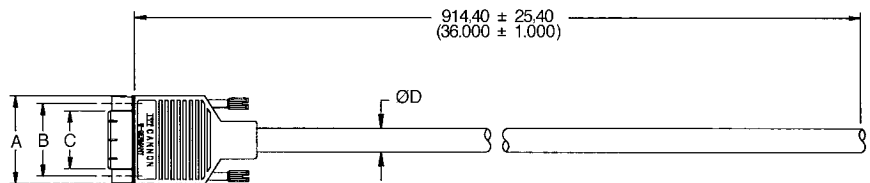
Z42 Jackpost



Note: Two Jackposts supplied with boardside connectors.

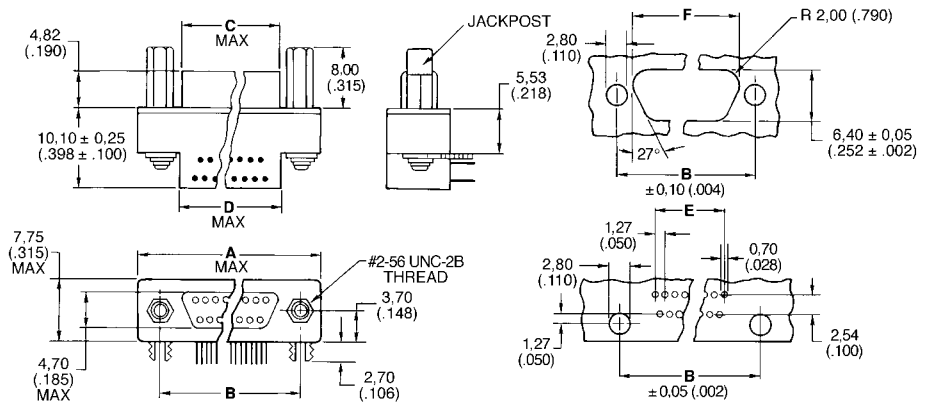
Cable Assemblies

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)

PCB Connector 90° - Single

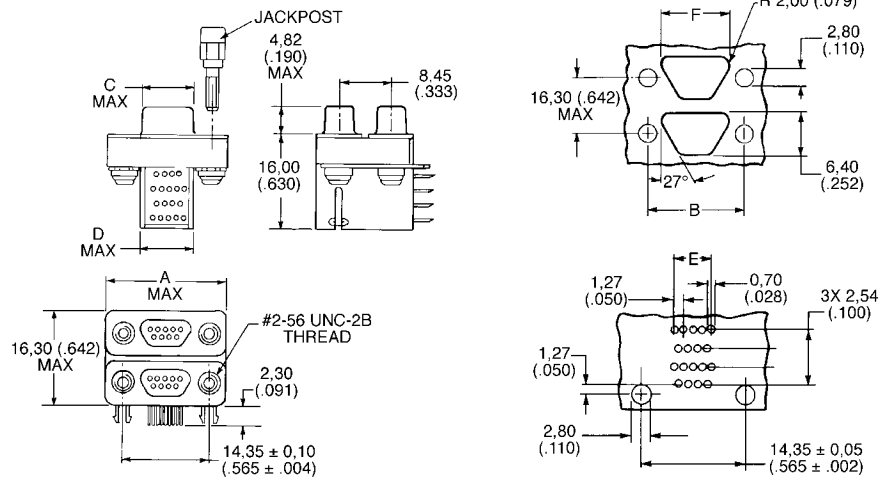


Note: Standard jackpost offering recommended for use with .060 panel.

No. of Contacts	Part Numbers - Single		A max.	B	C max.	D max.	E	F ±0,05 (.002)
	Thumbscrew	Push/Pull						
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 max.	B	C max.	D max.	E	F
	Thumbscrew	Push/Pull						
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)

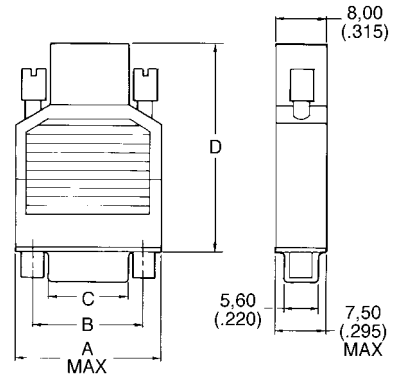
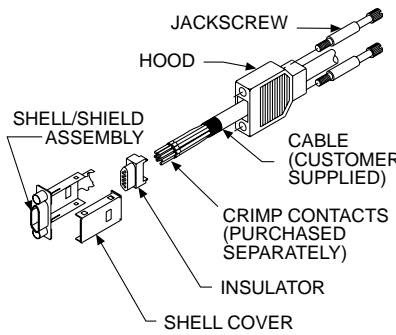
\*For use with SSA applications

Cable Connectors (Unassembled Components)

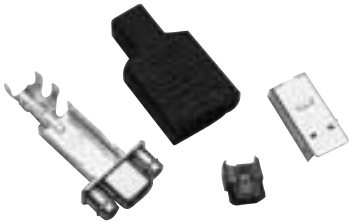
Jackscrew



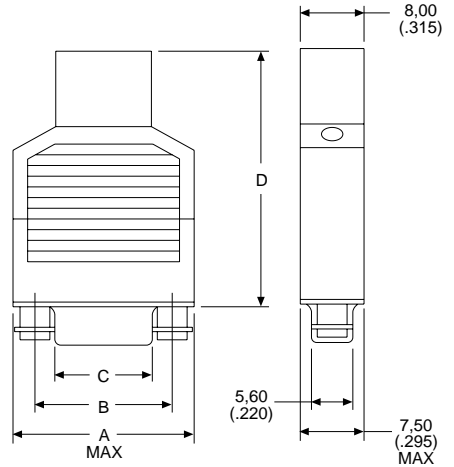
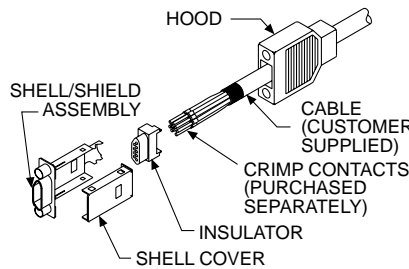
Cable connectors are supplied as complete kits with insulator, hood, locking hardware, shell/shield assembly, and cover, bulk packaged.



Push/Pull



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

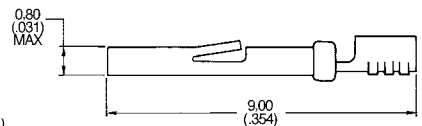
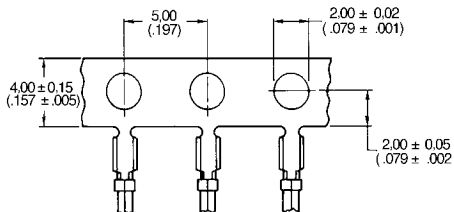
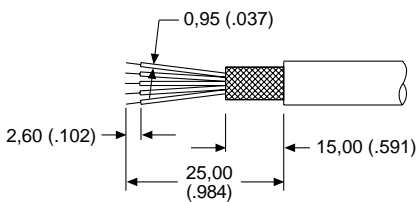


Layout	Jackscrew Part Numbers	Push/Pull Part Numbers	A max.	B 0,10 (.004)	C 0,10 (.004)	D max.	Max. Cable Entry
9	MDSM-9SC-Z11-VS1	MDSM-9SC-Z24-VS1	19,90 (.783)	14,35 (.565)	9,45 (.372)	35,50 (1.40)	5,70 (.224)
15	MDSM-15SC-Z11-VS1	MDSM-15SC-Z24-VS1	23,70 (.993)	18,16 (.715)	13,17 (.519)	35,50 (1.40)	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



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

For crimp tooling, see page 101.

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

Layout	Part Numbers	
	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



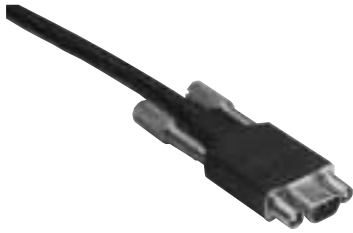
Part Number: CHP-MDSM-SR

Pneumatic Press



Part Number: CPT-MDSM-SR

MDSM SSA Compatible Cable Assemblies

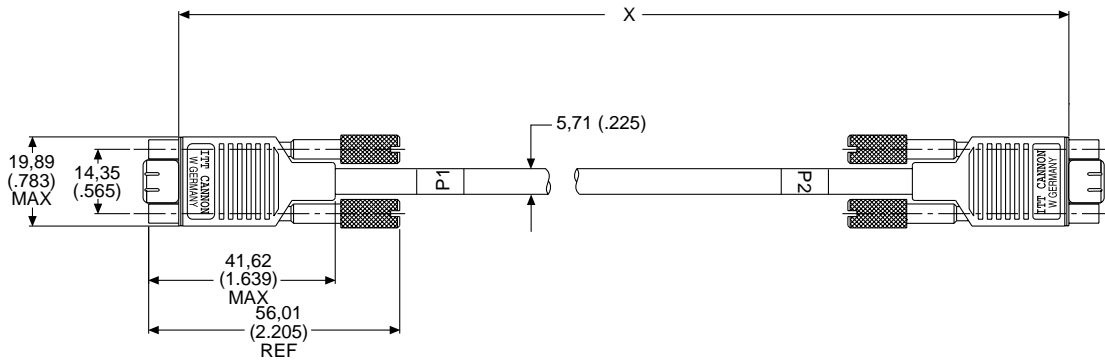


ITT Cannon's 9 position MDSM connectors have been designed into the ANSI specification called SSA, "Serial Storage Architecture," as the external I/O. SSA is a new serial interface for interconnecting storage devices, storage subsystems, servers and workstations. Storage subsystems are increasing in 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 compatible 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.



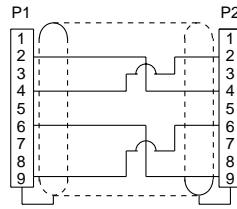
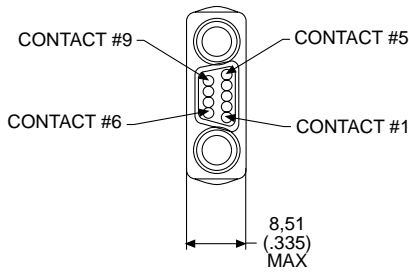
Note: Cables shown with Z50 thumbscrews.

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.

## Pinout

## SSA External Cable Wiring Table



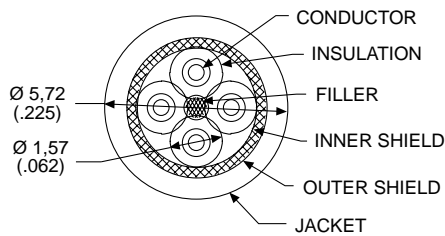
Note: Shield connected to both shells.

### 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