cannon

High Temperature Micro-MDM Connector Series

Features & Benefits

ITT

Reliable. Durable. Versatile.

ITT Cannon's High Temperature Micro-MDM Connectors are designed to perform in the harshest and most demanding environments

With the increasing demand for ruggedized interconnect solutions that can withstand extreme temperatures and operating conditions, ITT Cannon's **High Temperature Microminiature Connector Series** continues to lead the industry with high reliability products and customized solutions for multiple markets and applications.

Aerospace & Defense
UAVs, Satellites, Military Electronics, Missile Systems

Space & Satellites
Rocket Boosters, Launch Systems, Data Transmission

Oil & Gas
Oil Exploration, Down-Hole Drilling, Offshore Drilling

Transportation & Industrial
High-Speed Rail, Instrumentation, Test Equipment

From Standard to Ultra, ITT Cannon Offers a Full Range of Ruggedized, High Temp Microminiature Connectors

Drawing on 100 years of interconnect excellence and more than two decades of industry-leading innovation with High Temp Micro-MDM Connectors, ITT Cannon is committed to delivering solutions that are truly Engineered for Life.

Our family of reliable and versatile Micro-MDM Connectors withstand temperatures ranging from -55°C to 230°C and are designed to MIL-DTL-83513 specifications.

The Cannon Difference:

- 20+ years of experience in the design and manufacture of High Temp Micro-MDM connectors
- Highly engineered Micro-MDM interconnects offer exceptional durability, reliability and versatility in high temperature applications
- Designed to MIL-DTL-83513 specifications
- A commitment to delivering the best solution for standard and custom design requirements

Cannon Standard Micro-MDM — 150 °C

- Designed to MIL-DTL-83513 specifications
- Micro Twist Pin recessed into plug insulators
- Current rating: 3A
- Durability: 500 mating cycles
- Contacts: copper alloy; gold plated
- Low profile configurations available
- Operating temperature: -55°C to +150°C

Cannon High Temp Micro-MDM F222 — 200 °C

- Designed to MIL-DTL-83513 specifications
- Standard or low profile, cable-to-cable and board mount configurations
- Micro Twist Pin recessed into plug insulators
- Current rating: 3A
- Durability: 500 mating cycles
- Contacts: copper alloy; gold plated
- Low profile configurations available
- Operating temperature: -55°C to +200°C

NEW Cannon Ultra-High Temp Micro-MDM F300 — 230 °C

- Withstands 230° Celsius continuous operating temperature for 500 hours
- Stainless steel shells (passivation only)
- High temp Liquid Crystal Polymer insulator material
- Nickel plated copper wire PTFE jacket per M22759/87
- Designed for critical cable-to-cable applications
- High reliability Micro Twist Pin and Socket contacts
- Durability: 500 mating cycles
- Operating temperature: -55°C to 230°C

Specifications and Options

For Standard MDM and High Temp MDM / MDLM

Specifications

Configurations

- Terminations
  - Stranded wire
  - Solid wire
  - Solder pots
  - PCB
    - Straight
    - Right angle
    - Condensed right angle
- Signal contacts: 9, 15, 21, 25, 31, 37, 51, 100

Electrical Wire Size

- Stranded wire:
  - 24 AWG thru 32 AWG
- Solid wire:
  - 25 AWG
- Solder pots:
  - 26 AWG or smaller
- PC tails:
  - 24 AWG

Material and Finishes

- Shell material
  - Aluminum alloy
- Shell plating
  - Electroless nickel
  - Yellow chromate /cadmium over nickel
- Insulator
  - Liquid crystal polymer per MIL-M-24519, type GLCP-30F
- At temperatures above 175°C, yellow chromate over cadmium can cause shell discoloration and deterioration of the chromate conversion coating.

Hardware Configurations

Commercial		MIL-DTL-83513	
Code	**Description**	**Code**	**Description**
A	No hardware (.125 dia. hole for sizes 9-51 &.166 dia. hole for size 100")		**Size 9-51**
B	No hardware (standard) (.091 dia. hole for size 9-51 & .120 dia. hole for size 100)	M2	Jackscrew-low profile (allen head)
B1	No hardware (.1475 dia. hole for size 100)	M3	Jackscrew-standard profile (allen head)
F	Float mount	M5	Jackscrew-low profile (slotted head)
K	Jackscrew-standard profile	M6	Jackscrew-standard profile (slotted head)
L	Jackscrew-low profile	M7	Jackpost
P	Jackpost		
			Size 100
	PCB Only	M12	Jackscrew-low profile (allen head)
R1	Rear Panel Mount Jackpost, .032" Panel	M13	Jackscrew-standard profile (allen head)
R2	Rear Panel Mount Jackpost, .047" Panel	M15	Jackscrew-low profile (slotted head)
R3	Rear Panel Mount Jackpost, .062" Panel	M16	Jackscrew-standard profile (slotted head)
R4	Rear Panel Mount Jackpost, .093" Panel	M17	Jackpost
R5	Rear Panel Mount Jackpost, .125" Panel		

Termination Modification Codes

Stranded Teflon® Wire per MIL-W-16878/4 (H)			Solid Uninsulated Wire (L)	
Length	**All Yellow**	**Color Coded**	**Termination Code**	**Length**
3 (76.2)	H020	H027	L61	.125 (3.18)
6 (152.4)	H019	H016	L56	.150 (3.81)
8 (203.2)	H026	H034	L57	.190 (4.83)
10 (254.0)	H029	H025	L39	.250 (6.35)
12 (304.8)	H028	H002	L58	.375 (9.52)
18 (457.2)	H001	H003	L1	.500 (12.70)
20 (508.0)	H038	H023	L14	.750 (19.05)
24 (609.6)	H009	H004	L2	1.000 (25.40)
30 (762.0)	H010	H005	L7	1.500 (38.10)
36 (914.4)	H011	H006	L6	2.000 (50.80)
48 (1219.2)	H013	H048	L16	2.500 (63.50)
72 (1828.8)	H017	H046	L10	3.000 (76.20)
120 (3048.0)	H042	H041		

The above termination MODs are the most frequently ordered. For additional codes please refer to the Micro-D Catalog at www.ittcannon.com

200°C High Temp Micro-MDM F222

How to Order | Part Number Configurator

200 °C

Wired & Solder Pot

R - MDM 25 P H 003 M2 A174 - F222

RoHS Compliance

Series

MDM - Micro-D Metal Shell

Contact Arrangement

9, 15, 21, 25, 31, 37, 51 & 100

Contract Type

P - Pin
S - Socket

Termination Type

H - Insulated Stranded Wire
L - Uninsulated Stranded Wire
S - S - Solderpot

Termination Modified Code

See Termination Modification table for Harness Types (H) & Solid Uninsulated Types (L)

Hardware

Commercial
A - No hardware (.125 dia. hole for sizes 9-51 &.166 dia. hole for size 100")
B - No hardware (standard) (.091 dia. hole for size 9-51 & .120 dia. hole for size 100)
B1 - No hardware (.1475 dia. hole for size 100)
F - Float mount
K - Jackscrew-standard profile
L - Jackscrew-low profile M7 Jackpost
P - Jackpost

Military Size 9-51
M2 - Size Jackscrew-low profile (allen head)
M3 - Jackscrew-standard profile (allen head)
M5 - Jackscrew-low profile (slotted head)
M6 - Jackscrew-standard profile (slotted head)
M7 - Jackpost

Military Size 100
M12 - Jackscrew-low profile (allen head)
M13 - Jackscrew-standard profile (allen head)
M14 - Jackscrew-low profile (slotted head)
M16 - Jackscrew-standard profile (slotted head)
M17 - Jackpost

Shell Finish

Blank - Yellow Chromate/Cadmium (Not RoHS Compliant)
A174 - Electroless Nickel (RoHS Compliant)

Mod Code

F222 - High Temperature 200°C

200°C High Temp Micro-MDM F222

How to Order | Part Number Configurator

200 °C

Board Mount, PCB

R - MDM 25 P BR P T L39 A714 - F222

RoHS Compliance

Series

MDM - Micro-D Metal Shell

Contact Arrangement

9, 15, 21, 25, 31, 37, 51 & 100

Contract Type

P - Pin
S - Socket

Termination Type

BS - Straight
BR - Right Angle
CBR - Condensed Right Angle

Hardware

Commercial
A - No hardware (.125 dia. hole for sizes 9-51 &.166 dia. hole for size 100")
B - No hardware (standard) (.091 dia. hole for size 9-51 & .120 dia. hole for size 100)
B1 - No hardware (.1475 dia. hole for size 100)
P - Jackpost
R1 - Rear Panel Mount Jackpost, .032" Panel
R2 - Rear Panel Mount Jackpost, .047" Panel
R3 - Rear Panel Mount Jackpost, .062" Panel
R4 - Rear Panel Mount Jackpost, .093" Panel
R5 - Rear Panel Mount Jackpost, .125" Panel

Military Size 9-51
M7 - Jackpost

Military Size 100
M17 - Jackpost

Mounting Hardware for PCB

T - Threaded Insert
- Thru-Hole

Termination Modified Code

See Termination Modification table for Harness Types (H) & Solid Uninsulated Types (L)

Shell Finish

Blank - Yellow Chromate/Cadmium (Not RoHS Compliant)
A174 - Electroless Nickel (RoHS Compliant)

Mod Code

F222 - High Temperature 200°C

200°C Low Profile Micro-MDLM F222

How to Order | Part Number Nomenclature

200 °C

Wired

MDLM - 25 P 6 P Y 18 L - A174 F222

Series
MDLM - MDM Low Profile / RMDLM - MDM Low Profile RoHS

Contact Arrangement
9, 15, 21, 25, 31, 37 & 51

Contact Type
P Pin / **S** Socket

Wire Gauge (AWG)
4 #24 Gauge / **6** #26 Gauge (Standard) / **8** #28 Gauge / **0** #30 Gauge

Wire Type
P Teflon (PTFE Insulated) Wire Per MIL-W-16878/4 (Standard) / **T** - Teflon (TFE) Wire Per MIL-W-22759/11
E Cross-Linked Tefzel (ETFE Insulated) Wire Per MIL-W-22759/33

Wire Colour
W White / **Y** Yellow (Standard) / **S** Color Coded pet MIL-STD-681, System 1 / **T** Ten Color Repeat / **C** Custom Wire Coloring

Overall Wire Length (Inches)
1 Inch Minimum Rounded to the Nearest Whole Inch Examples: 5 - 5 inches, 18 - 18 inches, 50 - 50 inches, 120 - 120 inches

Hardware
Commerical B, A, P, K, L, F / **Military** M2, M3, M5, M6, M7

Shell Finish
Blank Standard Shell Finish Electroless Nickel (RoHS Compliant) / **A172** Gold over Nickel (RoHS Compliant)
A141 Irridite/Alodine (RoHS Compliant) / **A30** Black Anodize (RoHS Compliant)

Mod Code
F222 High Temperature 200°C
(Consult Factory for all other Mod Codes)

200°C Low Profile Micro-MDLM F222

How to Order | Part Number Configurator

200 °C

Board Mount PCB

MDLM - 25 P CBR P T L67 A172 - F222

Series
MDLM - MDM Low Profile / RMDLM - MDM Low Profile RoHS

Contact Arrangement
9, 15, 21, 25, 31, 37 & 51

Contact Type
P Pin / **S** Socket

Termination Type
CBR Right Angle Narrow Profile PCB Termination

Hardware
Blank No hardware, Ø.092 Hole / **M*** Military Specification Hardware per: MIL-DTL-83513/5 / **M7** Jackpost
*There will be a threaded nut behind flange as to allow later optional Jackpost installation

Mounting Hardware for PCB
Blank Thru-Hole / **T** Threaded Insert (Future Offering)

Termination Tail Length (Gold plated Solid 24 AWG Wire)
Blank .109 Inch (Standard) / **L67** .140 inch / **L66** .172 inch

Shell Finish/Mod Codes
Blank Electroless Nickel (RoHS Compliant) / **A172** Gold over Nickel (RoHS Compliant)

Mod Code
F222 High Temperature 200°C
(Consult Factory for all other Mod Codes)

230oC Ultra-High Temp Micro-MDM F300

How to Order | Part Number Configurator

230 °C

MDM - 25 P R 003 L - F300

Series

MDM - MD Metal Shell

Contact Arrangement

9, 15, 21, 25, 31 & 37

Contact Type

P - Pin / **S** - Socket

Termination Type

R - Insulated Standards Wire / **S** - Solder Pot

Termination Modifier Code

(Consult Factory for all 'R', 'T' and 'U' Mod Codes for Lead Material and Length)

Hardware

P - Jackpost

R1 - Rear Panel Mount Jackpost .032" Panel

R2 - Rear Panel Mount Jackpost .047" Panel

R3 - Rear Panel Mount Jackpost .062" Panel

R4 - Rear Panel Mount Jackpost .093" Panel

R5 - Rear Panel Mount Jackpost .125" Panel

K - Jackscrew-Standard Profile

L - Jackscrew-Low Profile

K - Jackscrew-Standard Profile

L - Jackscrew-Low Profile

F - Float Mount

B - No hardware (Standard)
.091 dia. hole for sizes 9-51
.120 dia. hole for size 100

A - No hardware
.125 dia. hole for sizes 9-51
.166 dia. hole for size 100

B1 - No hardware
.1475 dia. hole for size 100
(Per 83513)

S - Clinch Nut

Hardware per 83513/5
Size 9-25:

M2 - Jackscrew-low profile (Allen Head)

M3 - Jackscrew-standard profile (Allen Head)

M5 - Jackscrew-low profile (Slotted Head)

M6 - Jackscrew-standard profile (Slotted Head)

M7 - Jackpost

Shell Finish / MOD Codes

F300 - Stainless Steel Passivated Only

High-Temp Wires | Callouts				
M22759/87-26-9				
Length	Yellow	White	10-Color Repeat	System 1
1	030	R30	T30	U30
2	024	R24	T24	U24
3	020	R20	T20	U20
4	-	R33	T33	U33
5	031	R31	T31	U31
6	019	R65	T19	072
8	026	R26	T26	U26
9	015	R15	T15	U15
10	029	R29	T29	U29
12	028	R66	T28	073
16	029	R39	T39	U39
17	036	R36	T36	U36
18	001	R67	T01	074
20	038	R38	T38	U38
21	055	R55	T55	U55
24	009	R68	T09	075
30	010	R10	T10	U10
35	018	R18	T18	U18
36	011	R69	T11	076
40	037	R37	T37	U37
42	012	R12	T12	U12
48	013	R70	T13	077
50	040	R40	T40	U40
60	014	R14	T14	U14
72	017	R71	T17	078
80	032	R32	T32	U32
92	022	R22	T22	U22
96	035	R35	T35	U35
120	042	R42	T42	U42
180	043	R43	T43	U43

Specifications & Options for 230°C Ultra-High Temp Micro

Configurations

- Terminations
  - Stranded wire
  - Solid wire
  - Solder pots
  - PCB
    - Straight
    - Right angle
    - Condensed right angle
- Signal contacts: 9, 15, 21, 25, 37, 37

Electrical Wire Size

- Solid wire:
  - Nickel plated copper wire PTFE jacket per M22759/87
  - 26 AWG
- Solder pots:
  - 26 AWG or smaller

Material and Finishes

- Shell material
  - Stainless steel shells (passivation only)
- Insulator
  - High temp Liquid Crystal Polymer insulator material
- Durability
  - 500 mating cycles
- Operating temperature
  -55°C to 230°C

Connect with your ITT Cannon representative today or visit us at www.ittcannon.com

Connect with the experts

From aerospace and defense systems, to specialized solutions for the oil and gas industry, we connect data, signal and power with those who need it most.

ITT

Follow us

CHINA - Shenzhen City
+86.755.2726.7888

FRANCE
+33.1.60.04.93.93

GERMANY - Weinstadt
+49.7151.699.0

HONG KONG
+852.2732.2720

ITALY - Lainate
+39.02938721

JAPAN - Kanagawa
+81.462.57.2010

KOREA
+82.2.702.7111

MEXICO - Nogales
+52.631.311005

SHANGHAI
+ 86.21.2231.2222.2

SINGAPORE
+65 66974205

UK - Basingstoke
+44.1256.347400

USA - Irvine, CA
+1.800.854.3028