

Standard Profile Metal Shell Cryo Temp Connectors

Winchester Interconnect Micro offers Micro-D Cryogenic Temperature Solder Cup Connectors designed for soldering to superconducting wires such as NbTi CuNi clad, manganin, and others. Based on the M83513 specification, these connectors use a special epoxy rated for cryogenic service down to 4 Kelvin. Operating within a temperature range of 4 K (-269.15°C) to $+121^{\circ}\text{C}$, they provide exceptional reliability for quantum computing and other cryogenic applications. Available with 9 to 100 contacts.

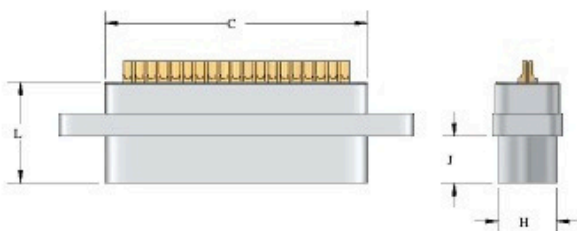


KEY FEATURES & BENEFITS

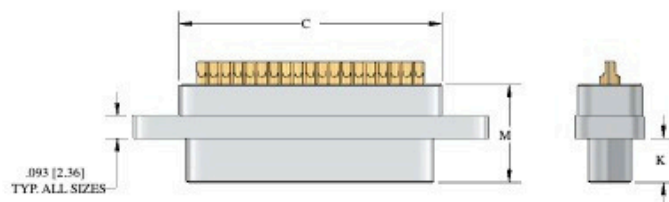
- Cryogenic Rated Design – Operates from 4 K (-269.15°C) to $+121^{\circ}\text{C}$ for extreme environments.
- Special Epoxy Formula – Ensures reliability and performance at cryogenic temperatures.
- M83513-Based Construction – Built on the proven Micro-D specification for consistency.
- Supports Superconducting Wires – Ideal for NbTi CuNi clad, manganin, and similar materials.
- Broad Application Use – Suitable for quantum computing and cryogenic systems.
- Multiple Contact Options – Available with 9 to 100 solder cup contacts for design flexibility.
- Reliable Performance – Maintains mechanical and electrical integrity at ultra-low temperatures.

Micro-D Soldercup SPMS Cryo Temp

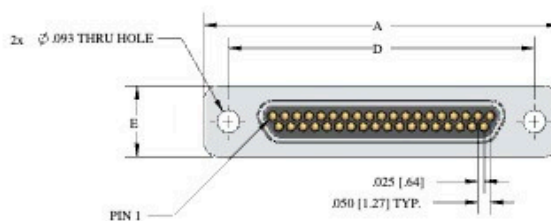
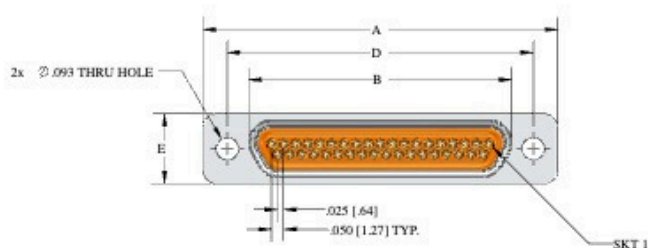
DIMENSIONAL



RECEPTACLE (SOCKETS)



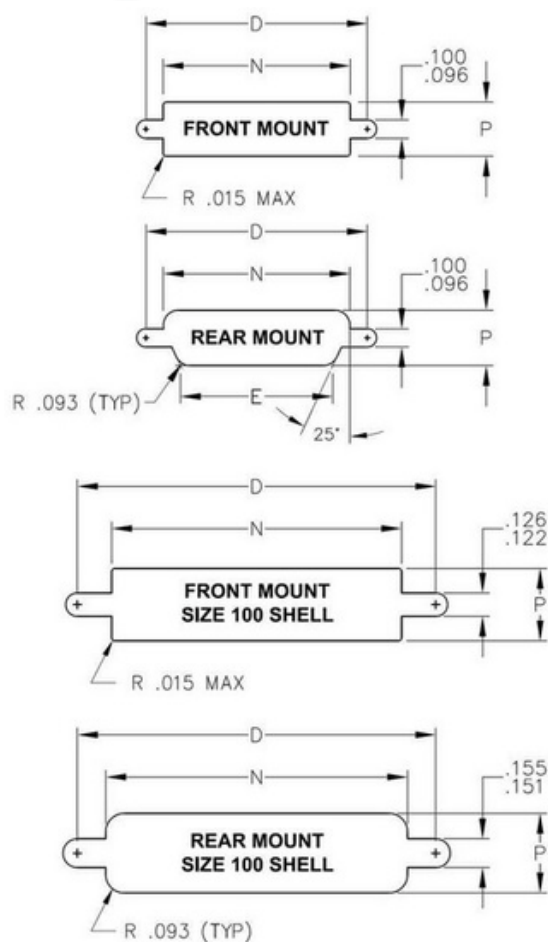
PLUG (PINS)



Size	A Max.	B Max.	C Max.	D Nom.	H Max.	E Max.	J Max.(Skt)	K Max. (Pin)
	ALL	M&B Series						
9	.785(19.94)	.402(10.21)	.390(9.98)	.565(14.35)	.248(6.30)	.308(7.83)	.199(5.05)	.187(4.75)
15	.935(23.75)	.552(14.02)	.540(13.79)	.715(18.16)	.248(6.30)	.308(7.83)	.199(5.05)	.187(4.75)
21	1.085(27.56)	.702(17.83)	.690(17.60)	.865(21.47)	.248(6.30)	.308(7.83)	.199(5.05)	.187(4.75)
25	1.185(30.10)	.802(20.37)	.790(20.14)	.965(24.51)	.248(6.30)	.308(7.83)	.199(5.05)	.187(4.75)
31	1.335(33.91)	.952(24.18)	.940(23.95)	1.115(28.32)	.248(6.30)	.308(7.83)	.199(5.05)	.187(4.75)
37	1.485(37.72)	1.102(27.99)	1.090(27.76)	1.265(32.13)	.248(6.30)	.308(7.83)	.199(5.05)	.187(4.75)
51	1.435(36.45)	1.054(26.77)	1.040(26.44)	1.215(30.86)	.297(7.54)	.351(8.92)	.199(5.05)	.187(4.75)
100	2.165(54.99)	1.505(38.23)	1.432(36.63)	1.800(45.72)	.394(10.00)	.394(10.00)	.199(5.05)	.187(4.75)

Micro-D Soldercup SPMS Cryo Temp

PANEL



Panel Cut-Out Dimensions					
	ALL	N		P	
Size	D	Front Mount	Rear Mount	Front Mount	Rear Mount
9	.565	.400	.405	.280	.265
15	.715	.550	.555	.280	.265
21	.865	.700	.705	.280	.265
25	.965	.800	.805	.280	.265
31	1.115	.950	.955	.280	.265
37	1.265	1.100	1.105	.280	.265
51-3	1.215	1.046	1.057	.320	.305
100	1.800	1.445	1.506	.402	.402

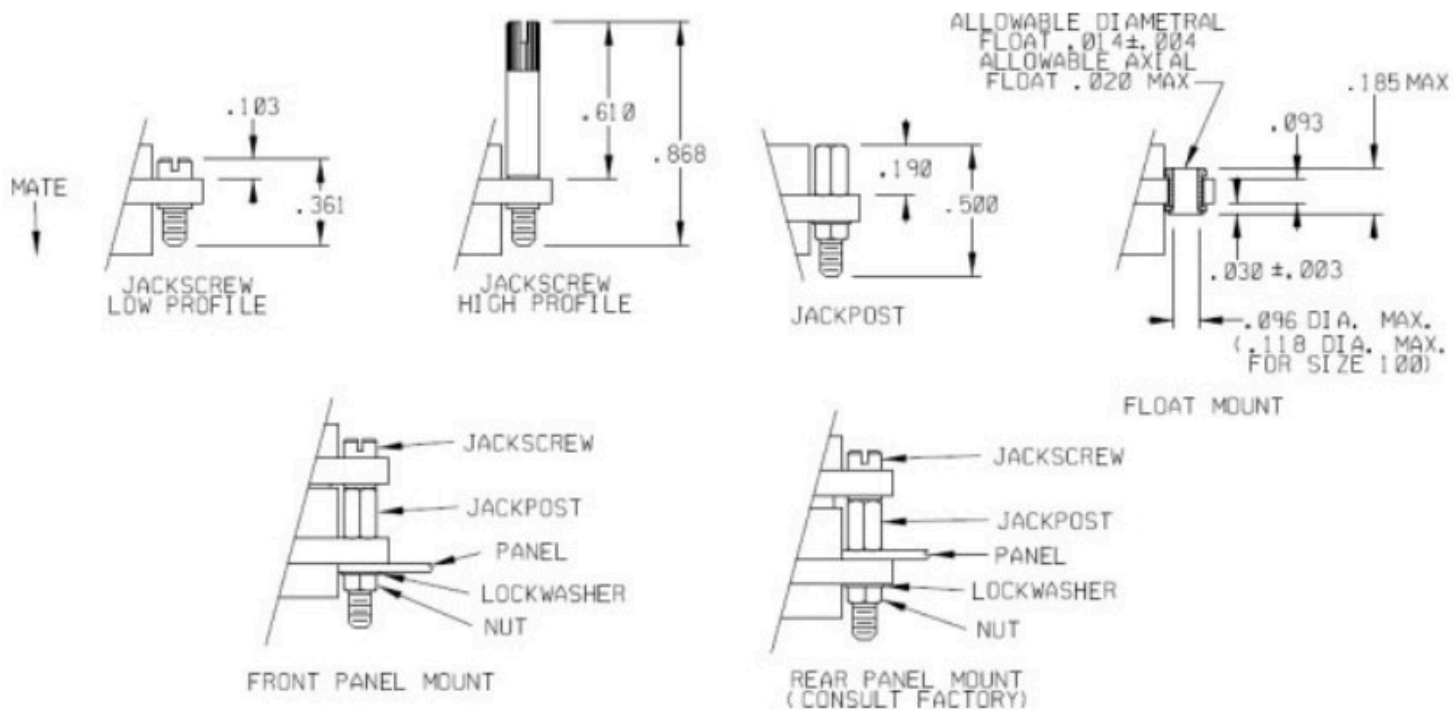
Micro-D Soldercup SPMS Cryo Temp

PERFORMANCE

Electrical Properties	
Contact Resistance	8 milliohm max contact only and 32 milliohms max with 6" wire @ 2.5A at room temperature
Current Rating	3A max. at room temperature
Dielectric WithStanding Voltage	600 VAC at sea level, 150 VAC at 70,000 feet. 1mA leakage current max. at room temperature
Insulation Resistance	500 VDC and 5000 Megohms min. at room temperature

Mechanical Properties	
Engaging Force	6 oz max. at room temperature
Separation Force	.5 oz min. at room temperature
Mating/Unmating Force	10 oz x # of contacts max.at room temperature
Vibration	EIA-364-28 Condition IV, 1 microsecond max discontinuity at room temperature
Shock	EIA-364-27 Condition E, 1 microsecond max discontinuity at room temperature
Durability	500 matings, passes Mating Force, CR, Eng and Sep Forces at room temperature
Salt Spray	EIA 364-26 Condition B-48 hours at room temperature

HARDWARE



MATERIALS

Materials and Finishes	
Signal Pin Contacts	C17200 Beryllium Copper per ASTM B194
Signal Socket Contacts	C31400 Bronze Alloy per ASTM B140
Contact Plating	.000050 Thk Gold Plating per ASTM B488
Shell	6061-T6 Aluminum per SAE-AMS-QQ-A200/8 or Passivated 300 Series Stainless Steel
Shell Plating	Electroless Nickel per AMS 2404 or Cadmium Plated per SAE-AMS-QQ-P-416
Insulator Material	Polyphenylene Sulfide (PPS) Per MIL-M-24519 GST-40F
Hardware	Passivated Stainless Steel Per MIL-DTL-83513/05
Interfacial Seals	Fluorosilicone per MIL-R-25988 Std Profile Receptacles only)

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HOW TO ORDER

Connector definition **

Connector Type M R E 09 P 07 - 26 E 5 - 18.0 - RPM - 0.062 - S01 - F01 - HT - 1 0 0 SPL

M = Metal Shell, Standard Profile
B = Plastic Shell, Standard Profile
A = Metal Shell, Low Profile, Receptacle
AP = Metal Shell, Low Profile, Plug
P = Plastic Shell, Low Profile

Insulator Material R = PPS

Integral EMI Shell (Omit if EMI shell not required) (Only available with standard profile metal shell (M))

Size (No. of Contacts) 09, 15, 21, 25, 31, 37, 51-3, 65, 69, & 100

Contact Gender & Type P = Pin, Crimp Type
N = Pin, Solder Cup (26 & 24 AWG)
S = Socket, Crimp Type
T = Socket, Solder Cup (26 AWG)
TT = Socket, Solder Cup (24 AWG)

Hardware 0 = No Hardware
02 = Low Profile Hex Head Jackscrew (12 for size 100)
03 = High Profile Hex Head Jackscrew (13 for size 100)
05 = Low Profile Slotted Head Jackscrew (15 for size 100)
06 = High Profile Slotted Head Jackscrew (16 for size 100)
07 = Jackposts (17 for size 100)
22 = Captive Low Profile Hex Head Jackscrews
23 = Captive High Profile Hex Head Jackscrews
0T = Threaded Inserts (2-56) in Flange
07T = Threaded Inserts and Jackposts (17T for size 100)
0F = Float Mount hardware
0G = Guide pins
0GB = Guide Bushings
0R = Retractable low profile jackscrews, allen head

Wire Gauge (Omit for Solder Cup Contacts) 24, 26, 28, & 30 AWG (25 AWG is available with type C solid wire)

Wire Type (Omit for Solder Cup Contacts) C = Solid Wire, Uninsulated Per A-A-59551
E = Stranded Wire, NEMA HP3 Type E
F = Stranded Wire Per NEMA HP3 Type ET
M = Stranded Wire per AS22759/11
U = Stranded Wire per AS22759/12
Y = Stranded Wire per AS22759/33
B = Stranded Wire, PVC Insulated (This wire is no longer used. Does not meet maximum temperature and epoxy adhesion requirement)

Wire Color (Insulated Wire) or Plating (Uninsulated Wire) (Omit for Solder Cup Contacts) 1 = All White
2 = All Yellow
3 = Pure Tin Plated (Uninsulated Wire) (RoHS Compliant)
4 = Gold Plated (Uninsulated Wire) (RoHS Compliant)
5 = Color Code per MIL-STD-681
6 = Color Code per MIL-STD-681, Repeat Solid Colors
L = Tin/Lead Plated (minimum 3% Lead) (Uninsulated Wire) (Not RoHS Compliant) (Not Available with high temp (HT) connectors)

(Omit if EMI shell not required)

Special designator - SPL is to be added to the end of the part number if the connector cannot be fully defined by the rest of the engineering number

Outer Covering 0 = None
1 = M23053/5 Shrink Tubing
2 = M23053/18 Shrink Tubing
3 = Nomex Braid
4 = Expando Plastic Braid

Inner Shield 0 = No Shield
1 = Tin Plated Copper
2 = Nickel Plated Copper
3 = Silver Plated Copper

Cable Exit Angle 1 = Straight
2 = 90° toward short row side
3 = 90° toward long row side
4 = 45° toward short row side
5 = 45° toward long row side

Temperature Rating (Omit for standard Temp, 125°C) Blank = 125°C
HT = 200°C
LO = 4 Kelvin (only available with solder cup contacts)

Float Mount Hardware (Omit if float mounts not required) (This designation is no longer used. Use 0F in hardware position to specify float mount hardware.)

Shell Plating or Material (Omit for plastic shell or cadmium plating) Blank = Cadmium
S01 = Electroless Nickel
S02 = Chem Film
S03 = Black Anodized
S04 = Gold
S05 = Titanium
S06 = Olive-Drab Cadmium
S07 = Black Nickel
S08 = Nickel-PTFE
S09 = Stainless Steel, Passivated
S10 = Zinc Nickel

Panel Thickness (Omit if panel mounting not required) (Thickness in inches) Available for .031, .047, .062, .080, .094, .125 thick panels (Consult Factory for additional Panel Thicknesses)

Panel Mount Options (Omit if panel mounting not required) (Only available on standard profile metal shells) RPM = Rear Panel Mount
FPM = Front Panel Mount
RPMS = Rear Panel Mount, Sealed w/O-ring
FPMS = Front Panel Mount, Sealed w/O-ring
RPMSC = Rear Panel Mount, Sealed w/Conductive O-ring
FPMSC = Front Panel Mount, Sealed w/Conductive O-ring

Lead Length (Omit for Solder Cup contacts) XXL = Length in Inches
MXX = Metric Length (CM)

** For double ended assemblies, include connector definition for both ends separated by a forward slash (/)
Excludes integral Shell assemblies (Option "E")