



Metal-Shell Micro Circular Connectors with Spring Loaded Contacts

Description

- Small, rugged, threaded circular connector for Military and Aerospace, and Industrial applications
- 2 shell sizes M11 (7 pos.) and M14 (19 pos.)

Applications

- Military & Aerospace
- Instrumentation & Test Equipment
- Portable Computing, Data Management, Communications and Sensing Devices
- Rugged Solution for Gigabit Ethernet or High Speed USB 2.0
- Outdoor Applications

Key Features

- High cycle life spring probe and pad contact interface
- Threaded coupling mechanism
- High density for limited space applications
- Jam nut style, rear panel mounting
- Precision, screw machine contacts
- Environmental compression seal (IP67) and shielded
- High performance at lower cost
- Alternate pin and socket contact interface available
- Matte black, low reflectivity finish
- Optimized wiring pattern of standard connector configuration - 8 position Ethernet - exceeds TIA/EIA-568-B.2 standard for Category 5
- Single piece adapter for shield termination and overmolding
- Dual key polarization option
- Selective contact loading options (M11 shell: 2 to 7 pos; M14 shell: 8 to 19 pos)

Mechanical

- Threaded coupling
- 2500 minimum mating cycles with spring probe contacts; 500 cycles with pin contacts
- Environmentally sealed, IP 67 - water immersion, 1M for 30 minutes (in mated condition)
- Overmold or heat-shrink tubing for sealing and strain relieving
- Wire Size: 30-24 AWG [0.06-0.2 mm²] (24 AWG wire is solid or 7-strand only)
- Termination: Solder
- Max. Operating Temperature: -55°C to +150°C

Standards

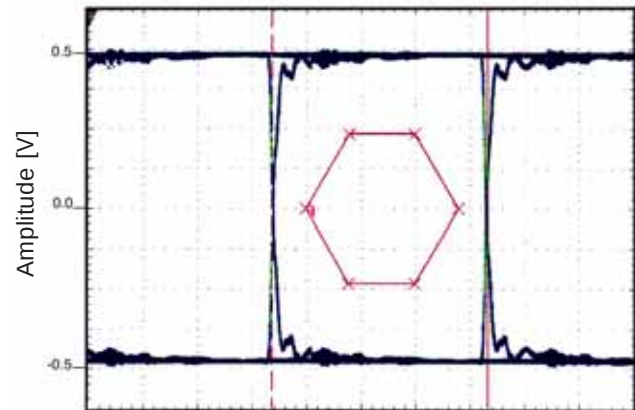
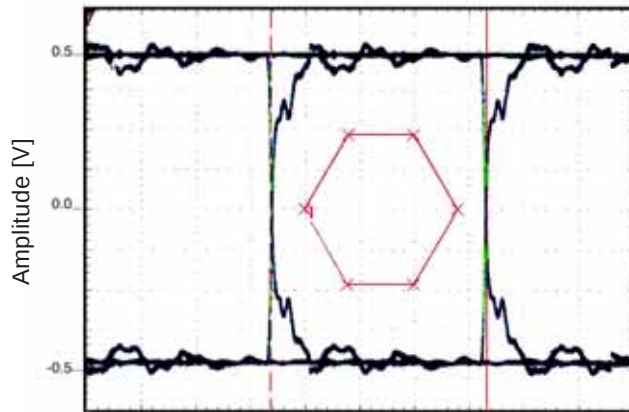
- Design Objectives: 108-2169, 108-2169-1
- Spring Probe Product Specification: 108-1943
- Qualification Report: 501-664, 501-664-1
- Application Specification: 114-13201

Materials

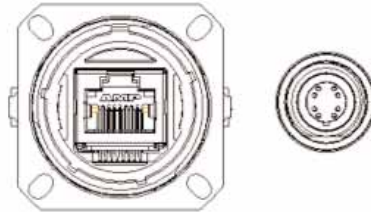
- **Spring Probe Pin:** Brass, 10 μin . [.25 μm] gold finish over nickel on mating end, tin-lead over nickel on solder cup/tail
- **Spring Probe Pad:** Brass, 30 μin . [.76 μm] gold finish over nickel on entire contact
- **Shell:** Black chrome plated (Nickel plated brass option)
- **Insulator:** High temperature thermoplastic, white

Electrical

- Operating Voltage: 200 VAC max.
- Termination Resistance: 30 mOhm max.
- Current Carrying Capacity: 2 amp, signal only



Eye Pattern Mask Created per USB 2.0 Specification
480 Mb/s Data Rate (Refer to 502-1176)



Standard RJ45 in 38999 shell compared to MSMC
Gigabit Ethernet connector
Both at 5:1 scale

Performance Test	Test Method	100 MHz Required Performance (dB)	100 MHz Average Test Results (dB)
NEXT	TIA/IA-568-B.2 Category 5e	>43	60
FEXT		>35	61
Insertion Loss		<0.40	0.05
Return Loss		>20	29

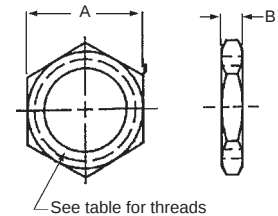
TIA568 Summary for Gigabit Ethernet 8 Position Connectors

Accessories

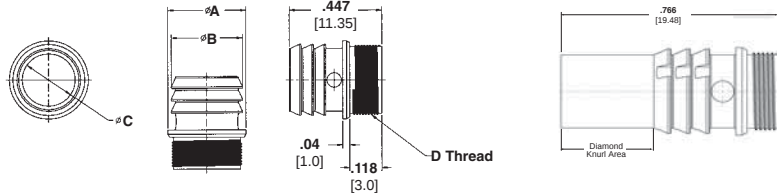
Jam Nuts

Shell Size	Dimensions		Thread	Finish	Part Number
	A	B			
M11 0.553 [14.05]	0.093 [2.36]		7/16-28 UNEF-2B	Black Chrome	1811424-3
M14 0.750 [19.05]	0.093 [2.36]		9/16-24 UNEF-2B	Black Chrome	1811277-5

Note: Bright nickel finish available.



Overmold/Shield Termination Adapters



ADAPTER TYPE	OVERMOLD/SHRINK TUBE ADAPTER	INSIDE DIAMETER	OVERMOLD/SHRINK TUBE & SHIELD TERMINATION ADAPTER	INSIDE DIAMETER	SHRINK BOOT
CRIMP*	1604386-4	4.9mm [193]	1604386-7 with crimp ferrule TBD	5.84mm [230]	VERSAFIT SERIES or RW-175 SERIES (high temp)
TINEL RING**	TXS1650X00-1405A1		TXS1650X00-1405A1 with Tinel Ring TC03A1	4.9mm [193]	202K1XX SERIES, 202D1XX SERIES, 202D2XX SERIES, or 202C6XX SERIES
BAND STRAP**	BNS1650X00-1103A		BNS1650X00-1103A with Bandstrap BND-1225S/P		
SHRINK BOOT**	SCA165 11-XXX		-	-	

* CABLE NEEDS TO BE DEFINED FOR CRIMP FERRULE

** RAYCHEM SUPPLIED PARTS

M14 SHELL - 19 POSITION

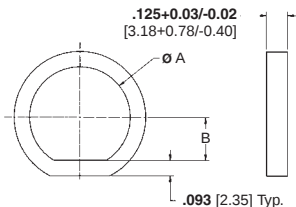
ADAPTER TYPE	OVERMOLD/SHRINK TUBE ADAPTER	INSIDE DIAMETER	OVERMOLD/SHRINK TUBE & SHIELD TERMINATION ADAPTER	INSIDE DIAMETER	SHRINK BOOT
CRIMP*	1604386-3	7.2mm [284]	1-1604386-1 with crimp ferrule TBD	7.2mm [284]	VERSAFIT SERIES or RW-175 SERIES (high temp)
TINEL RING**	TXS1660X00-1405A1		TXS1660X00-1405A1 with Tinel Ring TR05A1		202K1XX SERIES, 202D1XX SERIES, 202D2XX SERIES, or 202C6XX SERIES
BAND STRAP**	BNS1660X00-1103A		BNS1660X00-1103A with Bandstrap BND-1225S/P		
SHRINK BOOT**	SCA166 11-XXX		-		

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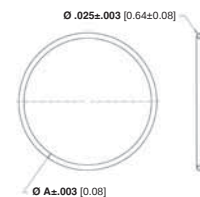
Panel Seals – Closed Cell Neoprene Sponge (color - black)

Shell Size	Dimensions		Part Number	Panel Mount
	A	B		
M11	0.430 [10.9]	0.177 [4.5]	1445420-3	Rear
M14	0.551 [14.0]	0.236 [6.0]	1445420-5	Rear



Panel Seals – Fluorosilicone O-Ring* (color - blue)

Shell Size	Dimension		Part Number	Panel Mount
	A			
M11	.437±.005 [11.10±0.13]		1877244-4	Rear
M14	.571±.005 [14.52±0.13]		1877244-2	Rear



Dust Caps - Receptacle Connector

Shell Size	Dimension B±0.25	Thread	Finish	Part Number
M11	14	7/16-28 UNEF-2B	Black Chrome	1738941-2
M14	17	9/16-24 UNEF-2B	Black Chrome	1738941-4

Note: Bright Nickel finish available.

