NANONICS ENVIRONMENTALLY SEALED CIRCULAR CONNECTORS

RUGGED

- Metal shell
- Environmental O-ring seal

FLEXIBLE CONFIGURATIONS

- 7, 19 and 44 positions
- Choice of coupling:
  Push-pull quick disconnect
  Threaded

CUSTOMIZABLE

- Factory wired to your specifications
- Contact TE Connectivity for custom configurations

NANONICS environmentally sealed circular connectors represent one of the industry's smallest and most reliable connector designs. These connectors are ideally suited for applications where high density, reliability, and reduced size and weight are serious design parameters. Along with these attributes, they also meet the immersion requirements of IP68, more specifically, a mated pair immersed in 1 m of water for 2 hours.

Using the same contact system and materials as the DUALOBE rectangular series of connectors, the circular connectors are manufactured to the performance specifications of MIL-DTL-83513.

Plug connectors are offered in both quick-disconnect or threaded coupling configurations. Receptacle connectors are offered in front-panel-mount or rear-panel-mount configurations. The quick-disconnect plug will mate with both the front and rear-panel-mount receptacles, while the threaded coupling plug will only mate with the rear-mount receptacle.

The connectors are available in pin counts of 7, 19, and 44.

Optional backshells are also available for the plug connectors and the rear panel mount receptacle.

Ideal for cable-to-cable, cable-to-panel, or cable-to-board applications, TE Connectivity can also accommodate harness assemblies and custom configurations.

Performance Characteristics

ELECTRICAL

- **Contact Resistance:** .003–.008 ohms
- **Current Rating:** 1 amp max. per contact
- **Dielectric Withstanding Voltage:** Volts RMS 60 Hz at room ambient conditions
  500 V @ sea level
  150 V @ 70,000 ft.
- **Insulation Resistance:**
  5000 MΩ min. (@ 500 VDC) at room ambient conditions
- **Magnetic Permeability:** 2 mu max.

MATERIALS

- **Contacts:** Beryllium copper alloy, plated gold over nickel
- **Plastic Insulators and Shells:** PPS
- **Metal Shells:** 6061-T6 aluminum with electroless nickel plating. Stainless steel shells available. Gold plated or matte black nickel also available (consult TE for details)

ENVIRONMENTAL

- **Temperature Range:** -55°C to +200°C
- **Durability:** 250 mating cycles
  With mated pair of stainless steel shells: 1000 cycles
  (consult TE for part numbers)

MECHANICAL

- **Jam Nut and Coupling Nut Torque:**
  7 Pos.—6 in-lb max.
  19 Pos.—8 in-lb max.
  44 Pos.—10 in-lb max.

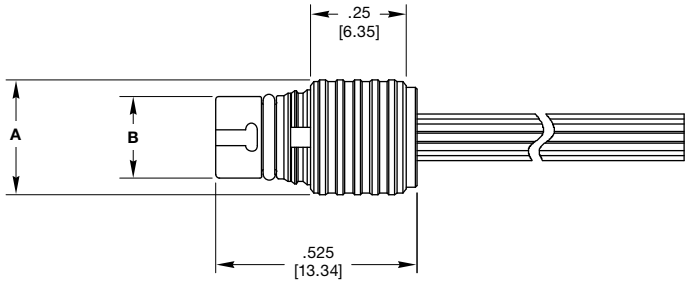
NANONICS Environmentally Sealed Circular Connectors

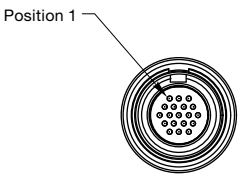
At a Glance: NANONICS Environmentally Sealed Circular Connectors

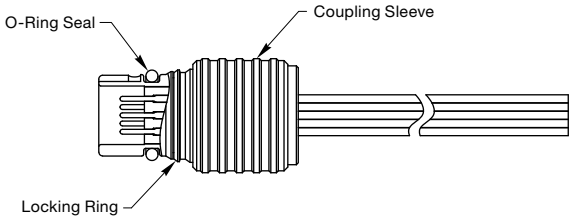
Type	Coupling/Mounting	Backshell	Drawing No.		
			7 Pos.	19 Pos.	44 Pos.
Plug	Quick Disconnect	None	1589055	1589057	1589059
		Straight	1589691	1589692	1589693
		Right Angle	1925026	1925027	1925028
	Threaded	None	1589063	1589064	1589065
		Straight	1589686	1589688	1589694
		Right Angle	1925029	1925030	1925031
Receptacle	Quick Disconnect, Flush Mount	None	1589056	1589058	1589690
	Quick Disconnect/Threaded, Panel Mount*	None	1589060	1589061	1589062
		Straight	1589685	1589687	1589695
	PCB Mount	—	1589953	1589954	1589955

*Mates with both quick-disconnect and threaded plugs

Quick-Disconnect Plug Assemblies



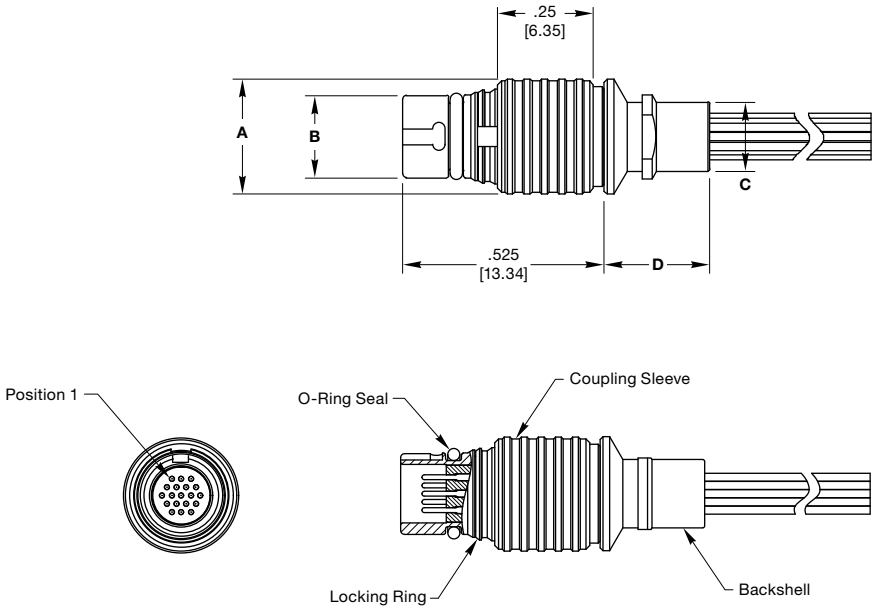




No. of Pos.	Dimensions		Drawing No.
	A (Dia.)	B (Dia.)	
7	.25 (6.35)	.165 (4.19)	1589055
19	.30 (7.62)	.215 (5.46)	1589057
44	.395 (10.03)	.315 (8.00)	1589059

NANONICS Environmentally Sealed Circular Connectors

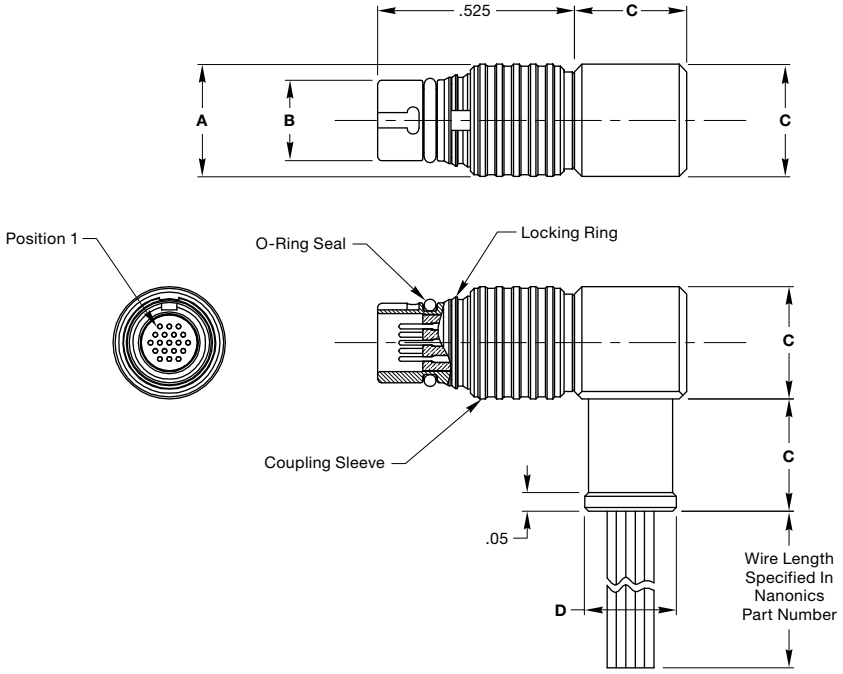
Quick-Disconnect Plug Assemblies with Backshells



No. of Pos.	Dimensions				Drawing No.
	A (Dia.)	B (Dia.)	C (Dia.)	D	
7	.25 (6.35)	.165 (4.19)	.130 (3.30)	.275 (6.99)	1589691
19	.30 (7.62)	.215 (5.46)	.180 (4.57)	.275 (6.99)	1589692
44	.395 (10.03)	.315 (8.00)	.240 (6.10)	.325 (8.26)	1589693

NANONICS Environmentally Sealed Circular Connectors

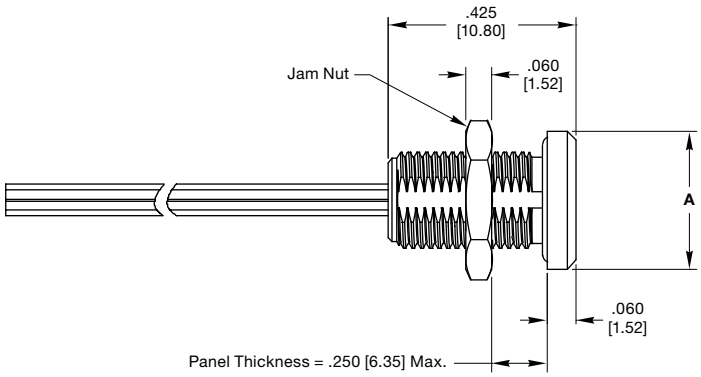
Quick-Disconnect Plug Assemblies with Right-Angle Backshells

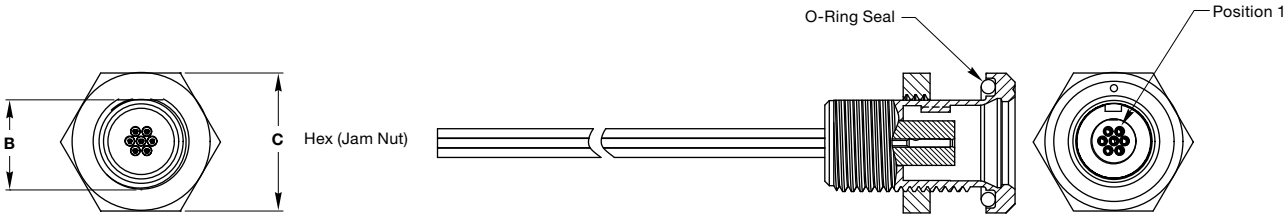


No. of Pos.	Dimensions				Drawing No.
	A (Dia.)	B (Dia.)	C	D (Dia.)	
7	.25 (6.35)	.165 (4.19)	.25	.195	1925026
19	.30 (7.62)	.215 (5.46)	.30	.245	1925027
44	.395 (10.03)	.315 (8.00)	.40	.310	1925028

NANONICS Environmentally Sealed Circular Connectors

Quick-Disconnect Receptacle Assemblies, Flush Mount

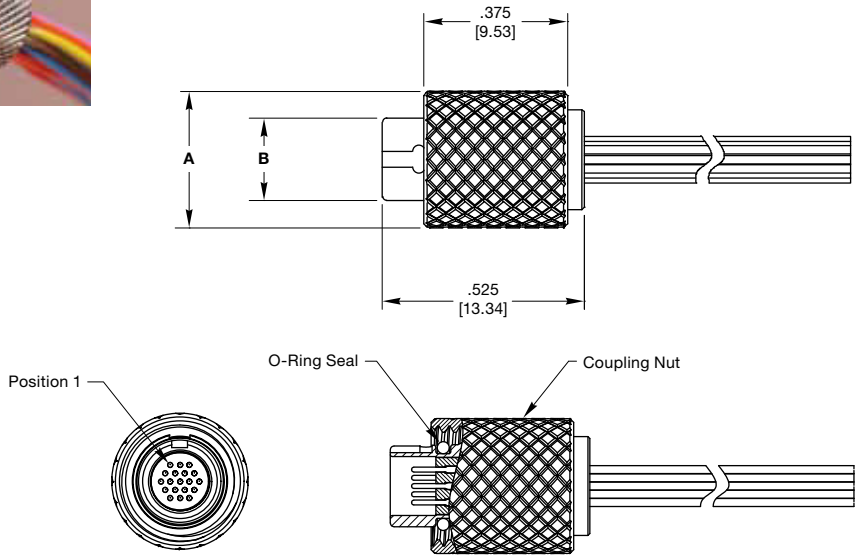




No. of Pos.	Dimensions			Drawing No.
	A (Dia.)	B	C	
7	.312 (7.92)	.204 (5.18)	.312 (7.92)	1589056
19	.375 (9.53)	.258 (6.55)	.375 (9.53)	1589058
44	.500 (12.7)	.375 (9.53)	.500 (12.7)	1589690

NANONICS Environmentally Sealed Circular Connectors

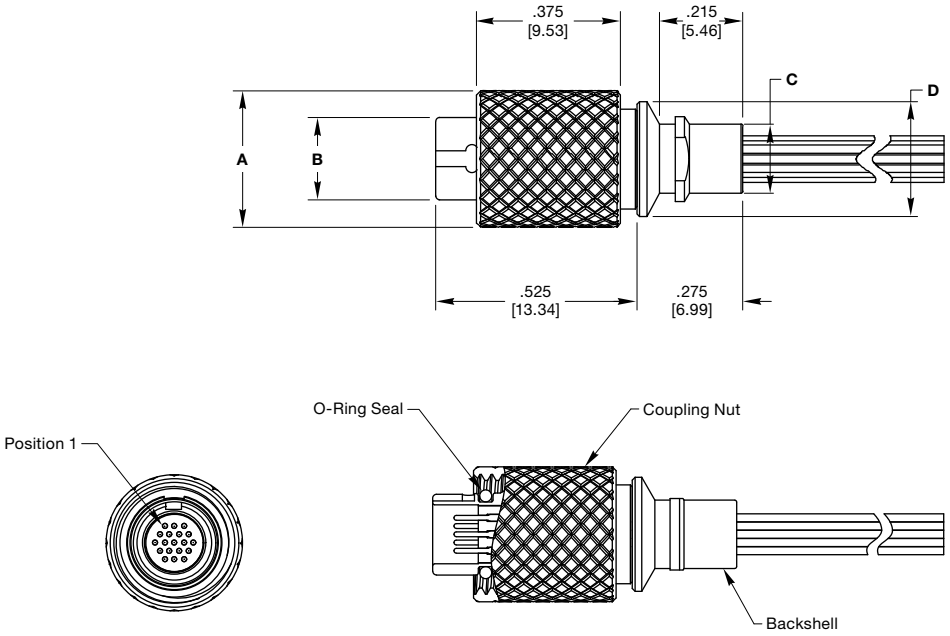
Threaded Plug Assemblies



No. of Pos.	Dimensions		Drawing No.
	A (Dia.)	B (Dia.)	
7	.315 (8.00)	.165 (4.19)	1589063
19	.355 (9.02)	.215 (5.46)	1589064
44	.475 (12.07)	.315 (8.00)	1589065

NANONICS Environmentally Sealed Circular Connectors

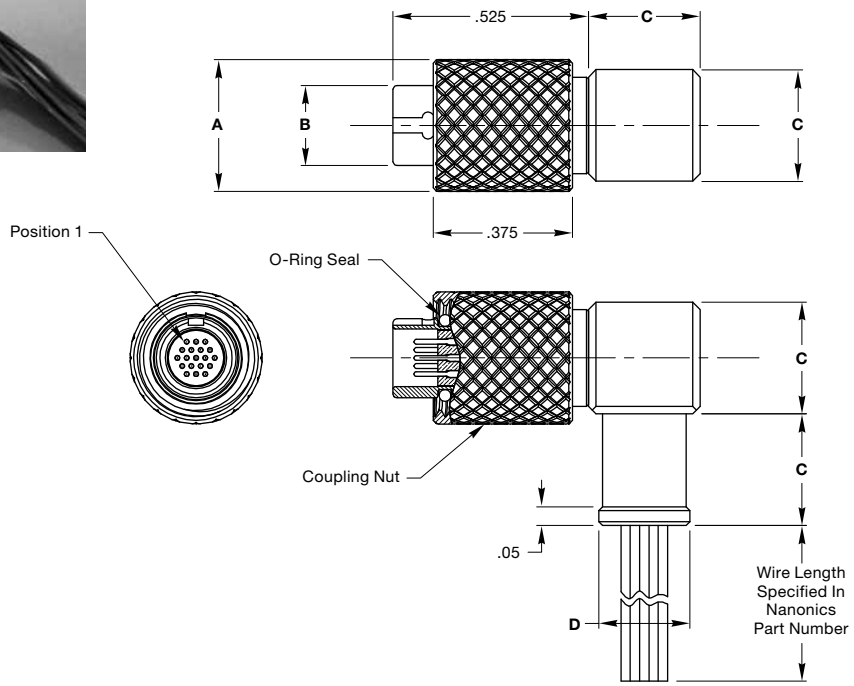
Threaded Plug Assemblies with Backshell



No. of Pos.	Dimensions				Drawing No.
	A (Dia.)	B (Dia.)	C	D (Dia.)	
7	.315 (8.00)	.165 (4.19)	.130 (3.30)	.250 (6.35)	1589686
19	.355 (9.02)	.215 (5.46)	.180 (4.57)	.300 (7.62)	1589688
44	.475 (12.07)	.315 (8.00)	.240 (8.10)	.395 (10.03)	1589694

NANONICS Environmentally Sealed Circular Connectors

Threaded Plug Assemblies with Right-Angle Backshell

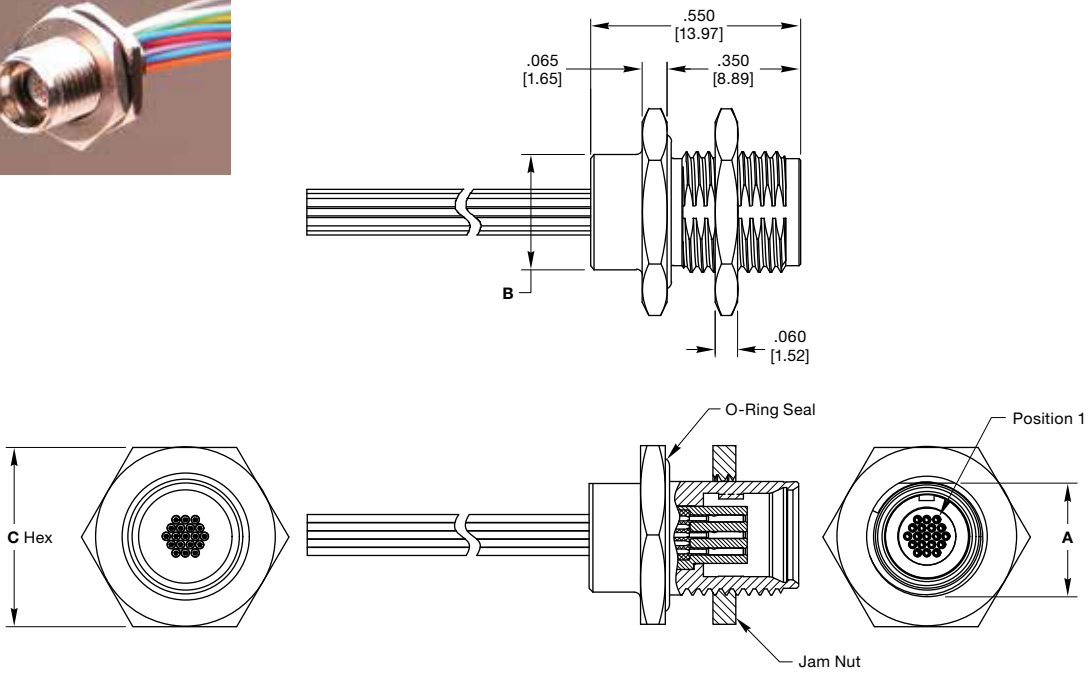


No. of Pos.	Dimensions				Drawing No.
	A (Dia.)	B (Dia.)	C	D (Dia.)	
7	.315 (8.00)	.165 (4.19)	.250	.195	1925029
19	.355 (9.02)	.215 (5.46)	.300	.245	1925030
44	.475 (12.07)	.315 (8.00)	.400	.310	1925031

NANONICS Environmentally Sealed Circular Connectors

Threaded/Quick-Disconnect Panel-Mount Receptacle Assemblies

Mates with both quick-disconnect and threaded plugs

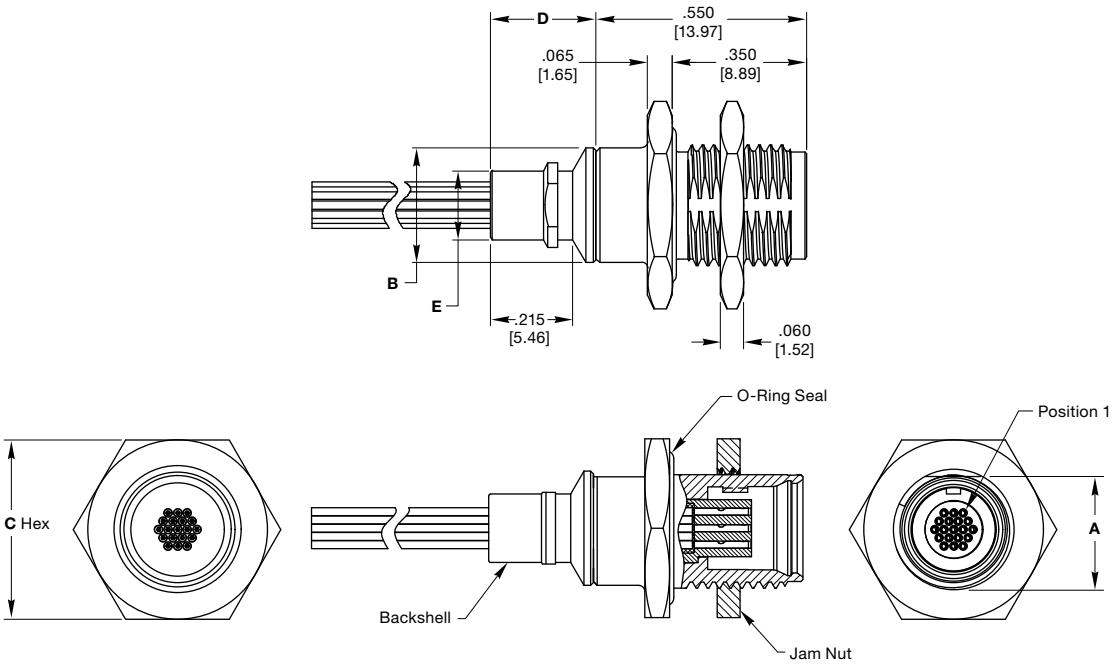


No. of Pos.	Dimensions			Drawing No.
	A (Dia.)	B (Dia.)	C	
7	.258 (6.55)	.250 (6.35)	.406 (10.31)	1589060
19	.298 (7.57)	.300 (7.62)	.469 (11.91)	1589061
44	.414 (10.51)	.395 (10.03)	.563 (14.30)	1589062

NANONICS Environmentally Sealed Circular Connectors

Threaded/Quick-Disconnect Panel-Mount Receptacle Assemblies with Backshell

Mates with both quick-disconnect and threaded plugs



No. of Pos.	Dimensions					Drawing No.
	A (Dia.)	B (Dia.)	C	D	E (Dia.)	
7	.258 (6.55)	.250 (6.35)	.406 (10.31)	.275 (6.99)	.130 (3.30)	1589685
19	.298 (7.57)	.300 (7.62)	.469 (11.91)	.275 (6.99)	.180 (4.57)	1589687
44	.414 (10.51)	.395 (10.03)	.563 (14.30)	.325 (8.26)	.240 (6.10)	1589695

NANONICS Environmentally Sealed Circular Connectors

Part Numbering Guide for NANONICS Environmentally Sealed Circular Connectors

Circular Connectors—Wire Terminations

XXX XXX XX X XX XXX X (XX)

Class/Type
- **QCM** = Quick Disconnect, Circular, Metal
- **TCM** = Threaded Coupling, Circular, Metal *(plugs only)*
- **FCM** = Flanged Coupling, Quick Disconnect, Metal *(plugs only)*

Positions
- **007** = 7 Positions
- **019** = 19 Positions
- **044** = 44 Positions

Configuration
- **PC** = Plug
- **SC** = Receptacle

Conductor Size/Strands
- **0** = 28 AWG Solid
- **1** = 30 AWG Solid
- **2** = 30 AWG 7 Strand
- **3** = 32 AWG 7 Strand
- **4** = 34 AWG 7 Strand

Conductor Type
- **DX** = White PTFE per M16878/6
- **DC** = PTFE Color Coded per M16878/6
- **DM** = PTFE Color Coded per MIL-STD-681 *(10 solid colors repeating)*
- **DT** = White ETFE per M22759/33

Conductor Length
- **XXX** = Three numbers only, length is in inches (i.e. 012 = twelve inches)
- **CXX** = A "C" followed by two numbers, length is in centimeters *(i.e. C06 = 6 centimeters)*
- **MXX** = An "M" followed by two numbers, length is in meter *(i.e. M02 = 2 meters)*

Mounting
(Receptacles Only)
- **P** = Rear Panel Mount
- **F** = Front Panet Mount

Features
(Optional—cannot be used on front panel mount)
- **B** = Straight Backshell
- **RX** = Right Angle Backshell *(refer to catalog image for X backshell orientation)*

Part Numbering Guide for NANONICS Board-Mount Circular Connectors

Circular Connectors—Board Mounted Terminations

QCM XXX M5 P

Class/Type
- **QCM** = Quick Disconnect, Circular, Metal

Positions
- **007** = 7 Positions
- **019** = 19 Positions
- **044** = 44 Positions

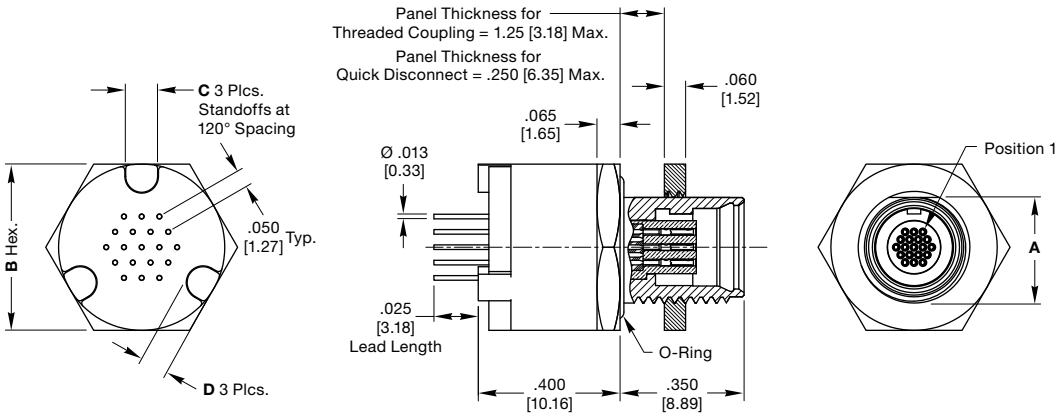
Configuration
- **M5** = Verticle, Thru-Hole

Mounting
- **P** = Rear Panel Mount

NANONICS Environmentally Sealed Circular Connectors

Thru-Hole Receptacle Assemblies, Vertical Mount

Mates with both quick-disconnect and threaded plugs



No. of Pos.	Dimensions				Drawing No.
	A (Dia.)	B	C	D	
7	.258 (6.55)	.406 (10.31)	.080 (2.03)	.070 (1.78)	1589953
19	.298 (7.57)	.469 (11.91)	.090 (2.29)	.080 (2.03)	1589954
44	.414 (10.52)	.563 (14.30)	.090 (2.29)	.080 (2.03)	1589955

ACCESSORIES

Heat-Shrinkable Molded Boots

Hazard Matched

- Different materials to meet different temperature and environmental requirements
- Optional with pre-applied adhesives for quick installation and high-reliability IP67 sealing
- Epoxy sealing kits available

Versatile

- Sealing and strain relief to the wires and cables
- Straight or 90 degree cable exit

Bandstraps

Easy to Use

- Quick, easy, cost-effective and reliable termination of braided shielding

High Performance

- Low profile, one-piece design eliminates EMI leakage paths

Rugged

- Shock, vibration and environmental tested to meet aerospace and defense requirements

Description	Part No.
Bandstrap	BND-0812S