MILNEC
INTERCONNECT SYSTEMS

CONNECTING YOUR
ENGINEERING PASSION

MILITARY & DEFENSE EDITION

DS Series

MIL-DTL-38999 Series 2

MILITARY STYLE CONNECTORS

- IP67 Rated Waterproof Connectors
- Covers, Gaskets, Mounting Plates
- Hermetic Receptacles, Tooling

GET THE WHOLE KIT & CABOODLE WITHOUT THE PAIN IN THE BOODLE

Advanced Connectors
Ruggedized and environmentally protected connectors that feature a wide variety of contacts, materials, and finishes for the ultimate in design flexibility.

EMI/RFI Backshells
For mission-critical applications, EMI/RFI environmental backshells offer total protection from environmental hazards and radiated interference.

Protective Covers
Quickly match the correct cover with your custom connector to protect contacts and ensure a reliable environmental seal when it is not in use.

Contacts
Gold plated contacts ensure superior signal and power fidelity and are included with every connector.

Mounting Hardware
Securely mount and seal your connector with a mounting bracket, sealing gasket, and stainless steel sealing screws.

Order Matching Accessories—Every Time!

The search for matching connector accessories is over! Our simple part builders make it easy to build a complete connector kit with everything you need for mission-critical applications. Kits include protective covers, gaskets, mounting hardware, and a variety of backshells. Get complete protection with Milnec connector kits.

MILNEC® INTERCONNECT SYSTEMS

About Us

MILNEC INTERCONNECT SYSTEMS is a leader in the design, manufacture, and supply of high-performance cylindrical interconnect systems. From research stations in the Antarctic to spacecraft on the plains of Mars, our high-reliability connector systems conquer the most demanding environments. Milnec is a supplier to leading companies in 24 countries in the following industries:

- Military & Defense
- Aerospace & Space
- Railway & Mass Transit
- Industrial & Heavy Equipment
- Alternative Energy, Nuclear, Oil & Gas

Logistics Solutions for Global Applications

Global logistics and support means we deliver products on time every time to any destination. To support your immediate requirements, we have extensive inventories, making most systems readily available for today's compressed design and production schedules. On average, custom connector solutions made to your exact configuration ship within seven days from the time of order placement.

- Worldwide shipping (restricted to NATO countries only)
- Web access to inventory, prices, & delivery information
- A large stock of popular parts for greater availability
- Competitive pricing and short lead times
- Impeccable customer service & technical support

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Downingtown, PA 19335

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(1-855-464-5632)

technical-support@milnec.com

U.S. Military Cage Code: 6STX5

NAICS Code: 423690

High Reliability—Simplified

Just because your interconnect problem is complicated does not mean acquiring the solution has to be. Milnec connector systems and our "all-in-one" kits provide engineers the most complete and professional connector solutions with ease and technical clarity.

- Complete, high-reliability solutions
- Simple to understand technical data & configurations
- Online part builder tools, drawings, & documentation
- Field installable & serviceable

Performance With Environmental Responsibility

RoHS compliant products are available to support environmental responsibility and legislative conformity. Through simple modification codes, Milnec provides a wide variety of material options to easily provide customers with fully compliant and eco-friendly connector components.

- RoHS compliant materials & finishes
- Simple material modification codes
- Lead-free solder contacts

Highest Manufacturing Quality

We invest in the finest equipment and modern production processes to ensure that our connectors will exceed your quality and performance expectations. Our production processes include advanced computer numerical control machining, cosmetic and metal finishing, heat treatment, and stainless steel passivation.

- Traceability on 100% of the parts
- Quick production lead times
- Quantity support from R&D to production
- "Just-in-time" delivery, kitting, & special packaging
- Rapid tooling & prototyping for custom designs

DS

Rev. 2219

MIL-DTL-38999 Series II Style Connectors

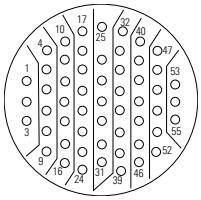
The DS Series of connectors is based on the MIL-DTL-38999 Series II specification and is fully compatible with all commercial and military derivatives. The series features bayonet coupling for simple and secure mating in a compact, lightweight, space-saving shell design. All connectors in the DS Series provide environmental sealing rated to IP67. Plugs with optional grounding fingers and a full array of backshells offer EMI/RFI protection for mission-critical applications. In addition, the series provides a number of modern upgrades to the mil-spec, including alternate contact options, RoHS finishes, hermetic connectors, and a variety of protective accessories.

- MIL-DTL-38999 Series II compatibility
- Quick-disconnect bayonet coupling
- Compact form factor
- IP67 environmental sealing
- Hermetic receptacles available for vacuum applications

Contact Flexibility for Modern Designs

The DS Series provides extensive flexibility in contact design, density, and shell size. Insert patterns with up to 128 x #22D contacts are available. The series can accommodate power and coax contacts. In addition, thermocouple contacts are available in many popular sizes and material types.

- High-density insert patterns—up to 128 x #22D contacts
- 70 insert patterns
- Coax contacts
- Thermocouples



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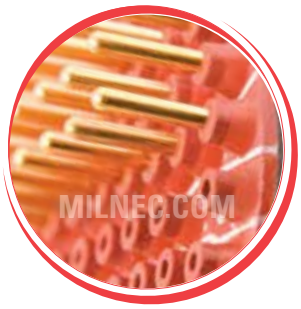
Matching EMI/RFI & Environmental Backshells

The series offers a wide selection of EMI/RFI environmental backshells for complete system protection and reliability from the harshest conditions. Options include metal backshells as well as the latest EMI/RFI banding backshells with a boot option.

Rev. 2219

IP67 Environmental Protection



The DS Series offers an integrated interfacial seal that provides environmental resistance to mated connectors, as well as an elastomer seal to prevent moisture penetration from the rear of the connector. The series offers excellent component corrosion resistance with standard olive drab cadmium and electroless nickel plating options.

- Moisture resistance comparable to MIL-PRF-7808, MIL-PRF-23699, MIL-PRF-5606, SAE ASM1424 Type 1
- Individual wire seals around each contact
- Interfacial seal and wire sealing grommet
- IP67 rated for environmental protection

Hermetic Connectors for Vacuum Applications

Hermetics are the best option for applications that require a true airtight seal or the ultimate in environmental protection. Hermetic receptacles feature stainless steel shells and dielectric glass-fused inserts and are rigorously tested to ensure the highest reliability.

- Four hermetic receptacles available
- Compression glass inserts
- Stainless steel shells for high pressure and vacuum applications

Add Accessories to Connectors

Milnec's simple part builder is the best in the industry. Custom connectors can be easily built and matched with a full line of accessories for applications that demand the highest level of protection. With only a small identification code you can order backshells, dust covers, gaskets, mounting brackets, and all the necessary installation tooling.

- Mounting brackets & sealing screws
- Sealing & EMI/RFI gaskets
- Protective dust covers
- Dummy stowage receptacles

RFI Gasket's Conductive Weave

Features & Benefits

Plug
- Straight w/ optional RFI grounding fingers

Receptacles
- Wall mount (front mount)
- Wall mount (rear mount)
- Box mount (front mount)
- Box mount (rear mount)
- Jam nut
- Cable mount

Hermetic Receptacles
- Wall mount, box mount
- Jam nut, solder mount

Backshells
- Strain relief, EMI/RFI environmental
- Shrink boots with EMI/RFI banding

Contacts
- Crimp power, coax, thermocouple

Inserts
- Heat & fluid resistant
- 70 insert combinations
- 6 alternate key positions

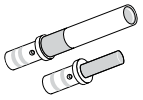
Accessories
- Protective cover with wire rope
- Stowage receptacle
- Mounting gasket
- Mounting bracket with sealing screws

Material
- Aluminum
- Stainless steel (hermetics)

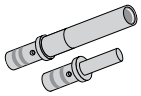
Finishes
- Olive drab cadmium
- Electroless nickel
- RoHS compliant finishes available

Coupling
- Bayonet coupling
- 1/3 turn for complete coupling
- Vibration resistant locking mechanism

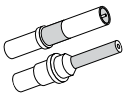
Contacts



Power
p. R-9

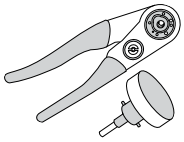


Thermocouple
p. R-9

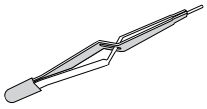


Coax
p. R-10

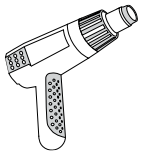
Tools



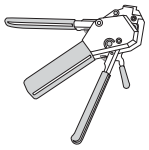
Crimper & Positioner
p. R-59



Insertion/Extraction
p. R-9



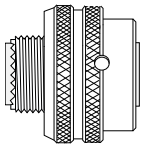
Heat Gun
p. R-58



Band Tool
p. R-59

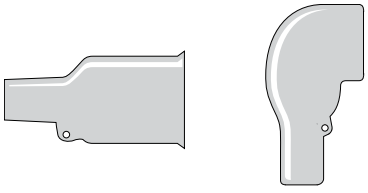
Band
p. R-59

Plugs



Plug
p. R-22

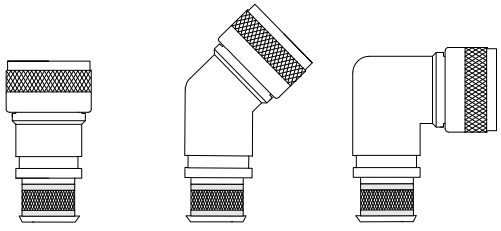
Backshells



Shrink Boots

Straight
p. R-48

90°
p. R-49

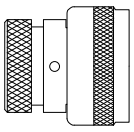


EMI/RFI Banding Boot Adapters

Straight
p. R-51

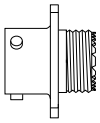
45°
p. R-51

90°
p. R-51

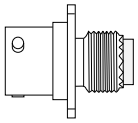


Boot Adapter
p. R-50

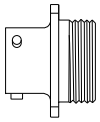
Receptacles



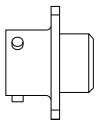
Wall Mount (Front Mount)
p. R-24



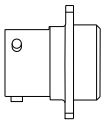
Wall Mount (Rear Mount)
p. R-25



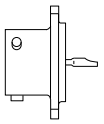
Wall Mount (Hermetic)
p. R-30



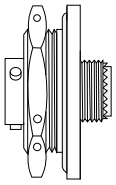
Box Mount (Front Mount)
p. R-26



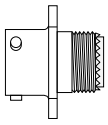
Box Mount (Rear Mount)
p. R-27



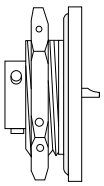
Box Mount (Hermetic)
p. R-31



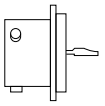
Jam Nut
p. R-29



Cable Mount
p. R-28

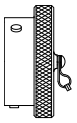


Jam Nut (Hermetic)
p. R-32

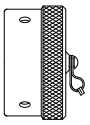


Solder Mount (Hermetic)
p. R-33

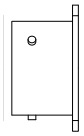
Covers



Plug Cover
p. R-52

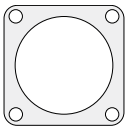


Receptacle Cover
p. R-52

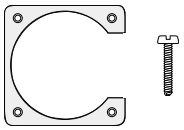


Stowage Receptacle
p. R-53

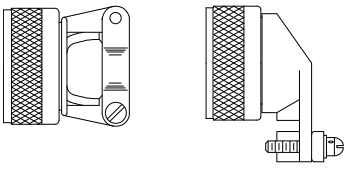
Mounting



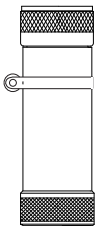
Gasket
p. R-54



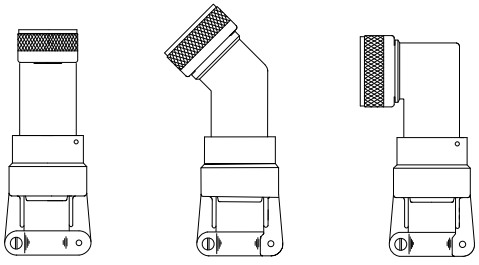
Bracket & Screws
p. R-55



Strain Relief
Straight p. R-36
90° p. R-36



Shorting Cap
p. R-46



EMI/RFI Environmental
Straight p. R-38
45° p. R-42
90° p. R-44

DS

Performance Specifications

Built to meet or exceed MIL-DTL-38999 specifications
Guaranteed fully compatible and interchangeable with respect to physical and performance characteristics with all existing MIL-DTL-38999 Series II commercial, military, NASA, ESA (European Space Agency) derivatives

Environmental Characteristics

Temperature Range
-67° to +392°F (-55° to +200°C)
Service life varies with the maximum internal hot spot temperature resulting from any combination of electrical load or ambient temperature:
77°F (25°C): Continuous
221°F (105°C): 45,000 hours
392°F (200°C): 1,000 hours

Water Pressure
IP67 rating (environmental sealing) when used in conjunction with proper sealing accessories
Fully submersible to 3.3 ft (1m) for minimum of 30 min

Air Leakage Rate

Environmental
Air leakage not to exceed 1 $inch^3$/hr (4.55 $x10^{-3}$ cm^3/sec) at 30 psi (2.11 kg/cm^2) pressure differential with all contact cavities filled

Hermetic
Helium leakage not to exceed 0.01 micron per ft^3/hr (1.0 x 10^{-6} cc^3/sec) at 15 psi (1.1 kg/cm^2)
Hermetic inserts rated up to 14,000 psi (984 kg/cm^2) when precision welded or solder mounted

Thermal Vacuum Outgassing
Outgassed at high vacuum (5 x 10^{-5} torr) for 48 hours at 350°F (176°C); components shall not release greater than 1.0% total mass loss (TML) and 0.1% collected volatile condensable material (CVCM)

Salt Spray Rating
See Materials & Finishes, p. R-13

Humidity
Mated connectors shall maintain an insulation resistance of 100 megohms or greater at 77°F (25°C) with 95% humidity for duration of 20 days

Chemical Resistance to Fluids
20-hour full immersion (unmated) in hydraulic fluid and lubricating oil without damage or material degradation

Lightning Strike Resistance
Per EIA/ECA-364-75, mated connectors with full wire braid shield assembly will show resistance to indirect lightning strike with the following peak currents (amps):
Aluminum & Stainless Steel Shells: 10,000A

Physical Characteristics

Coupling
3-point bayonet, stainless steel bayonet pins spaced at 120° on receptacle shells, corresponding ramps on plug coupling ring with locking detent
1/3 turn to couple and uncouple

Coupling Torque
Engagement & Disengagement Force (max / min)
Shell Size 8: .67 ft-lb_f (.904 N-m) / .08 ft-lb_f (.113 N-m)
Shell Size 10: .83 ft-lb_f (1.13 N-m) / .08 ft-lb_f (.113 N-m)
Shell Size 12: 1.17 ft-lb_f (1.58 N-m) / .17 ft-lb_f (.226 N-m)
Shell Size 14: 1.42 ft-lb_f (1.92 N-m) / .33 ft-lb_f (.452 N-m)
Shell Size 16: 1.92 ft-lb_f (2.60 N-m) / .33 ft-lb_f (.452N-m)
Shell Size 18: 2.17 ft-lb_f (2.94 N-m) / .33 ft-lb_f (.452 N-m)
Shell Size 20: 2.58 ft-lb_f (3.50 N-m) / .50 ft-lb_f (.678 N-m)
Shell Size 22: 3.16 ft-lb_f (4.29 N-m) / .58 ft-lb_f (.791N-m)
Shell Size 24: 3.16 ft-lb_f (4.29 N-m) / .58 ft-lb_f (.791 N-m)

Polarization
Single master key and keyway on top position of shell
Four minor keys and keyways on shell

Insert Arrangements
70 standard, custom inserts available

Alternate Keying
Normal polarization (N), plus 4 alternate shell keying polarizations (A, B, C, D)

Endurance Characteristics

Coupling Cycles
500 coupling cycles (minimum)

Shock
Half-sine wave with 300g's (±15%) magnitude with duration of 3 milliseconds with less than 1 microsecond maximum discontinuity with no cracking, loosening of parts, or other failures

High-Impact Shock
Per MIL-S-901, a 400 lbs (181 kg) hammer dropped onto assembly from height of 1 ft (30 cm), 3 ft (91 cm), and 5 ft (152 cm) applied to connector assembly in 3 axes, totaling 9 impacts, connector assembly experienced less than 1 microsecond maximum discontinuity with no cracking, loosening of parts, or other failures

Sine Vibration
Random vibration at 10 to 2,000 Hz (15 g's) experienced less than 1 microsecond maximum discontinuity with no cracking, loosening of parts, or other failures

Random Vibration
Per MIL-STD-1344, method 205, V & VI or EIA-364-28

Material Characteristics

Shell

Environmental

Aluminum, solid, one piece, seamless construction

Hermetic

Stainless Steel, solid, one piece, seamless construction

Shell Plating (Standard Finishes)

W Finish

Electrically conductive cadmium plate finish with an olive drab chromate after-treat for additional corrosion resistance (500 hr salt spray rating)

N Finish

Electrically conductive electroless nickel plating (48 hr salt spray rating)

G Finish

Electrically conductive electroless nickel plating (48 hr salt spray rating)

RFI Grounding Fingers

Beryllium copper alloy or stainless steel

Shell Conductivity (Standard Finishes)

Per MIL-STD-1344, method 3008, maximum conductivity potential drop shall not exceed the following:

W Finish

2.5 millivolts across assembly shell-to-shell
5.0 millivolts across assembly shell-to-braid

N Finish

1.0 millivolts across assembly shell-to-shell
3.5 millivolts across assembly shell-to-braid

G Finish

1.0 millivolts across assembly shell-to-shell
3.5 millivolts across assembly shell-to-braid

HA, HB, HG Finishes

10.0 millivolts across assembly shell-to-shell
15.0 millivolts across assembly shell-to-braid

Magnetic Permeability

Less than 2.0 mu when measured to EIA-364-54

Insert

Glass filled liquid crystal polymer (LCP)
Non-removable and mechanically bonded to shell

Hermetic Insert

Vitreous (glass compression)
Non-removable and mechanically bonded to shell

Protective Cover Chain

Passivated stainless steel, wire rope able to withstand a 25 lb (11.3 kg) tensile force without damage

Adhesives

RTV and epoxies

Grommet, Peripheral Seal, O-Ring, & Interfacial Seal

Blended fluorosilicone (70%) and silicone (30%) elastomer

Contact Characteristics

Contact Design

Environmental

Removable, rear-release crimp contacts

Hermetic

Solder style, permanently bonded to insert

Contact Sizes

#12, #16, #20, #22, #22M, #22D

Contacts Crimp

Beryllium copper alloy, per ASTM B197

Contacts Hermetic

Nickel-iron (Type 52 alloy), per ASTM F30

Contact Plating

Standard Crimp

Gold plate over nickel, 50 µinches (1.27 µm) minimum

Hermetic

Gold plate over nickel, 50 µinches (1.27 µm) minimum

Socket Contact Hood

Stainless steel, passivated

Max Number of Contacts

128 x #22D contacts standard, custom inserts available

Max Contact Resistance

Size #22D: 14.6 milliohm maximum
Size #20: 7.3 milliohm maximum
Size #16: 3.8 milliohm maximum
Size #12: 1.7 milliohm maximum

Max Voltage Drop

Crimp Contacts

<73 millivolt maximum drop (initial)

Hermetic Contacts

<85 millivolt maximum drop (initial)

Contact Retention

Pin and socket contacts are designed to resist severe vibration and repeated connection and disconnection

Electrical Characteristics

Current Rating

23 amps (test current) at 68°F (20°C)

Max Operating Voltage

900 VAC (RMS) at sea level

Insulation Resistance

>5,000 megohms at 77°F (25°C)

Wire Size

12 to 28 (AWG)

Wire Sealing Range

Designed for individual wire sealing
Sealing is only guaranteed if wires meet MIL-W-5086 or within permitted ranges

Wire & Crimp Contact Dimensions

Contact Size	Wire Range		Potential Drop (Millivolts)	Crimp Well Diameter	Min Crimp Well Depth	Wire Jacket Diameter Sealing Range		Contact Retention Min Axial Load Pounds (Newtons)
	AWG	Dia				Min	Max	
#22D	22, 24, 26, 28	.012–.025 (.32–.64)	<73	.035 (.89)	.141 (3.58)	.030 (.76)	.054 (1.37)	10 (44.5)
#22M	24, 26, 28	.012–.020 (.32–.51)	<45	.028 (.71)	.141 (3.58)	.030 (.76)	.054 (1.37)	10 (44.5)
#22	22, 24, 26	.016–.025 (.41–.64)	<73	.037 (.93)	.141 (3.58)	.034 (.86)	.086 (2.18)	10 (44.5)
#20	20, 22, 24	.020–.032 (.51–.81)	<55	.047 (1.19)	.209 (5.31)	.040 (1.02)	.083 (2.11)	15 (66.7)
#16	16, 18, 20	.032–.050 (.81–1.29)	<49	.067 (1.70)	.209 (5.31)	.065 (1.65)	.109 (2.77)	25 (111.2)
#12	12, 14	.064–.080 (1.62–2.05)	<42	.100 (2.54)	.209 (5.31)	.097 (2.46)	.142 (3.61)	30 (133.4)

Dimensions are in inches (mm) unless otherwise noted.

Wire & Solder Contact Dimensions (Hermetic)

Contact Size	Wire Range		Potential Drop (Millivolts)	Solder Well Diameter	Min Solder Well Depth
	AWG	Dia			
#22D	22, 24, 26, 28	.012–.025 (.32–.64)	<85	.036 (.91)	.094 (2.39)
#22M	24, 26, 28	.012–.020 (.32–.51)	<60	.029 (.74)	.094 (2.39)
#22	22, 24, 26	.016–.025 (.41–.64)	<85	.036 (.91)	.094 (2.39)
#20	20, 22, 24	.020–.032 (.51–.81)	<60	.044 (1.12)	.125 (3.18)
#16	16, 18, 20, 22	.025–.050 (.64–1.29)	<85	.078 (1.98)	.141 (3.58)
#12	12, 14	.064–.080 (1.62–2.05)	<82	.116 (2.95)	.141 (3.58)

Dimensions are in inches (mm) unless otherwise noted.

Current Rating By Contact Size & Wire Size

Wire Size (AWG)	Contact Size					
	#22D	#22M	#22	#20	#16	#12
28	1.5A	1.5A		-	-	-
26	2A	2A		-	-	-
24	3A	3A	3A	3A	-	-
22	5A	5A	5A	5A	-	-
20	-			7.5A	7.5A	-
18	-			-	10A	-
16	-			-	13A	-
14	-			-	-	17A
12	-			-	-	23A

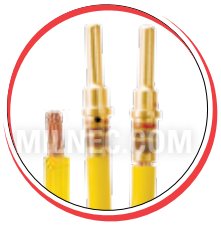
Test ratings only. A connector cannot withstand maximum current through all contacts continuously. Please note that the establishment of electrical safety factors is left entirely in the designer's hands, since he or she is in the best position to know what peak voltage, switching surges, transients, etc. can be expected in a particular circuit.

Contact Derating Specifications

Service Rating	Max Operating Voltage (Sea Level)		Test Voltage			
	AC (RMS)	DC	Sea Level AC (RMS)	50,000 ft AC (RMS)	70,000 ft AC (RMS)	110,000 ft AC (RMS)
M	400	500	1,300	550	350	200
N	300	450	1,000	400	260	200
I	600	850	1,800	600	400	200
II	900	1,250	2,300	800	500	200

Test ratings only. A connector cannot withstand maximum current through all contacts continuously. Please note that the establishment of electrical safety factors is left entirely in the designer's hands, since he or she is in the best position to know what peak voltage, switching surges, transients, etc. can be expected in a particular circuit.

Foolproof Crimp Tool
A crimp tool provides reliable crimp termination of contacts for mission-critical applications. Our tools feature an 8-impression crimp, which ensures maximum tensile strength between wire and contact. See p. R-56 for complete crimping tool kits.



Get the Right Positioner
DS Series contact sizes #22, #22M, and #22D require specific positioners to ensure accurate crimps. Reference the Contacts, Sealing Plugs, & Tooling chart on p. R-9 for positioner selection.

Shielding Effectiveness

Freq Range (Mhz)	Attenuation Minimum (dB)
100	90
200	88
300	88
400	87
800	85
1,000	85
1,500	69
2,000	65
3,000	61
4,000	58
6,000	55
10,000	50

Effective over a range of 100 MHz to 10 GHz with a minimum 50 dB effectiveness at 10 GHz, in accordance with test method EIA-364-10.

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Contacts, Sealing Plugs, & Tooling

Contact Size	Contact Style	Part Number	Wire Size (AWG)	Wire Range (Dia)	Jacket Strip Length	Crimping Tool	Positioner	Insertion Tool	Extraction Tool
#22D	Standard Pin	DSPP22	22, 24, 26, 28	.012–.025 (.32–.64)	.157 (4.00)	TK201	TP209	TN801	TX802
	Standard Socket	DSSS22					TP206		
	Sealing Plug	DSSP22					No Tooling Required		
#22M	Standard Pin	DSPP22M	24, 26, 28	.012–.020 (.32–.51)	.157 (4.00)	TK201	TP209	TN801	TX802
	Standard Socket	DSSS22M					TP206		
	Sealing Plug	DSSP22M					No Tooling Required		
#22	Standard Pin	DSPP22A	22, 24, 26	.016–.025 (.41–.64)	.157 (4.00)	TK201	TP209	TN803	TX804
	Standard Socket	DSSS22A					TP206		
	Sealing Plug	DSSP22A					No Tooling Required		
#20	Standard Pin	DSPP20	20, 22, 24	.020–.032 (.51–.81)	.197 (5.00)	TK101A	TP104 (Turret)	TN805	TX806
	Standard Socket	DSSS20							
	Sealing Plug	DSSP20					No Tooling Required		
#16	Standard Pin	DSPP16	16, 18, 20	.032–.050 (.81–1.29)	.236 (6.00)	TK101A	TP104 (Turret)	TN807	TX808
	Standard Socket	DSSS16							
	Sealing Plug	DSSP16					No Tooling Required		
#12	Standard Pin	DSPP12	12, 14	.064–.080 (1.62–2.05)	.236 (6.00)	TK101A	TP104 (Turret)	TN809	TX810
	Standard Socket	DSSS12							
	Sealing Plug	DSSP12					No Tooling Required		

Dimensions are in inches (mm) unless otherwise noted.

Thermocouple Contacts

Contact Size	Contact Style	Part Number	Wire Size (AWG)	Wire Range (Dia)	Jacket Strip Length	Crimping Tool	Positioner	Insertion Tool	Extraction Tool
#22D Alumel	Pin	DSPA22	22, 24, 26, 28	.012–.025 (.32–.64)	.157 (4.00)	TK201	TP209	TN801	TX802
	Socket	DSSA22					TP206		
#22D Chromel	Pin	DSPR22					TP209		
	Socket	DSSR22					TP206		
#22D Constantan	Pin	DSPK22					TP209		
	Socket	DSSK22					TP206		
#22D Iron	Pin	DSPE22					TP209		
	Socket	DSSE22					TP206		
#20 Alumel	Pin	DSPA20	20, 22, 24	.020–.032 (.51–.81)	.197 (5.00)	TK101A	TP104 (Turret)	TN805	TX806
	Socket	DSSA20							
#20 Chromel	Pin	DSPR20							
	Socket	DSSR20							
#20 Constantan	Pin	DSPK20							
	Socket	DSSK20							
#20 Iron	Pin	DSPE20							
	Socket	DSSE20							
#16 Alumel	Pin	DSPA16	16, 18, 20	.032–.050 (.81–1.29)	.236 (6.00)	TK101A		TN807	TX808
	Socket	DSSA16							
#16 Chromel	Pin	DSPR16							
	Socket	DSSR16							
#16 Constantan	Pin	DSPK16							
	Socket	DSSK16							
#16 Iron	Pin	DSPE16							
	Socket	DSSE16							

Dimensions are in inches (mm) unless otherwise noted.

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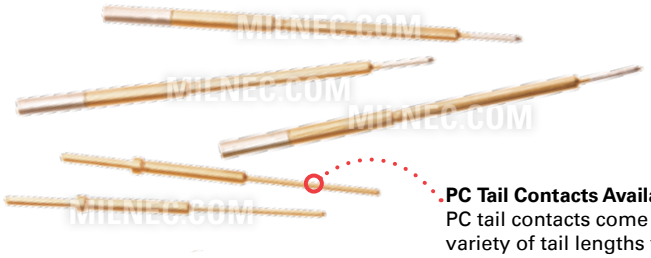
Coax Contacts

Cable	Contact Size	Part Number		Crimping Tools		Positioners		Installation Tools	
		Pin	Socket	Inner	Outer	Inner	Outer	Insertion	Extraction
RG-178B/U RG-196A/U	#16	DSPX16-002	DSSX16-003		TK401	TP235	TP402	TN807	TX808
		DSPX16-004	DSSX16-005						
RG-161/U RG-174A/U RG-179B/U RG-187A/U RG-188A/U RG-316/U Haveg 8100207 Times (HS-179) AA3248 Teledyne 11299		DSPX12-006	DSSX12-007	TK201					
	#12				TK3101	TP234	TP3102	TN809	TX810
RG-180B/U RG-195A/U Raychem 9528A1318		DSPX12-008	DSSX12-009						

Custom PC Tail Lengths & Dimensions

We realize that every engineering application is different, that's why we're able to provide custom PC tail contacts for MIL-DTL-38999 Series II connectors. Options include custom tail lengths, shoulder extensions, or 90° angled configurations. For applications requiring high-speed data transmission, we can also provide coax, twinax, and quadrax contacts with PC tails for termination directly to your PC board to provide the highest signal integrity. Please contact an authorized distributor for ordering assistance.

Get PC Tail Contacts Easily
Ordering connectors pre-loaded with PC tail contacts ready for termination to PC boards or flex cable has never been easier!



PC Tail Contacts Available
PC tail contacts come in a variety of tail lengths to meet your design requirements.

PROTECTIVE ACCESSORIES FOR HARSH ENVIRONMENTS

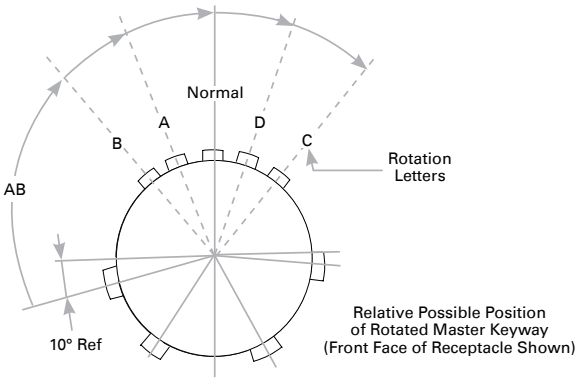
Maintain System Integrity — Anywhere

Keep equipment running by using perfectly matched accessories to protect your connectors. Our full line of protective accessories is designed for mil-spec plugs and receptacles to ensure a reliable installation. Don't let your connectors go into battle alone. Protect them with covers, gaskets, mounting brackets, and sealing screws.

MILNEC
INTERCONNECT SYSTEMS

DS Series Shell Keying

Alternate key positions should be used to avoid cross-mating of connectors with the same (or similar) insert pattern that are in close proximity to one another, such as on a high-density control panel. A plug with a given key position letter will only mate with a receptacle with the same letter. Inserts maintain a fixed position regardless of keying. For example, receptacle "N" will only mate with plug "N," and a second receptacle with an "A" keying will only mate with the "A" cable plug. In this manner, cross-mating of similar connectors by accident becomes impossible. ■



Master Key/Keyway Position

Shell Size	Normal	A	B	C	D
8	100°	82°	--	--	118°
10	100°	86°	72°	128°	114°
12	100°	80°	68°	132°	120°
14	100°	79°	66°	134°	121°
16	100°	82°	70°	130°	118°
18	100°	82°	70°	130°	118°
20	100°	82°	70°	130°	118°
22	100°	85°	74°	126°	115°
24	100°	85°	74°	126°	115°

Cable Clamp Screw Torque

Screw Size	Min	Max
#2-56	1.5 (.2)	2.5 (.3)
#4-40	3.5 (.4)	4.5 (.5)
#6-32	5 (.6)	7 (.8)
#8-32	7 (.8)	9 (1.0)
#10-32	9 (1.0)	11 (1.2)
#.250-20	11 (1.2)	13 (1.5)

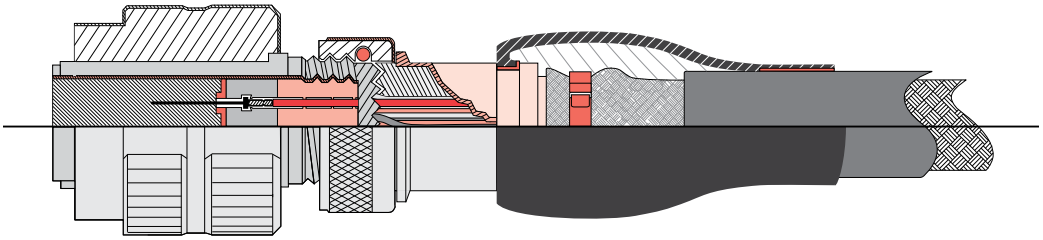
Units are in inch pounds (Newton meters).

DS

Accessory & Jam Nut Torque

Shell Size	Connector Accessory Metric Thread Dimension	Aluminum & Stainless Steel			
		Accessory Thread Torque		Jam Nut Torque	
		Min	Max	Min	Max
8	.4375-28 UNEF	70 (7.9)	75 (8.5)	30 (3.4)	36 (4.1)
10	.5625-24 UNEF	80 (9.0)	85 (9.6)	40 (4.5)	46 (5.2)
12	.6875-24 UNEF	100 (11.3)	110 (12.4)	55 (6.2)	60 (6.8)
14	.8125-20 UNEF	140 (15.8)	150 (17.0)	70 (7.9)	75 (8.5)
16	.9375-20 UNEF	160 (18.1)	170 (19.2)	80 (9.0)	85 (9.6)
18	1.0625-18 UNEF	210 (23.7)	230 (26.0)	90 (10.2)	95 (10.7)
20	1.1875-18 UNEF	260 (29.4)	280 (31.6)	100 (11.3)	110 (12.4)
22	1.3125-18 UNEF	280 (31.6)	300 (33.9)	110 (12.4)	120 (13.6)
24	1.4375-18 UNEF	300 (33.9)	325 (36.7)	120 (13.6)	130 (14.7)

Units are in inch pounds (Newton meters).



DS Series Materials & Finishes

The material of a connector is the foundation of its protective ability, providing strength and durability. The finish (or plating) offers the foundation material added corrosion resistance along with an aesthetic look. Each material and finish combination offers unique properties and should be selected according to your application requirements.

The DS Series features aluminum and stainless steel as standard materials, with electroless nickel and olive drab cadmium as finish options. In addition to the standard options, a wide variety of special materials and finishes is available, including space-grade approved materials and RoHS compliant finishes for eco-friendly designs. ■

Standard DS Series Materials & Finishes

Finish Code	Finish	Hermetic Only	Electrically Conductive	RoHS Compliant	Appearance	Shell Material	Salt Spray Rating	Recommended Operating Temperature Range
W	Olive Drab Cadmium		✓		Drab Olive Green	Aluminum	500 hrs	-85° to +347°F (-65° to +175°C)
N	Electroless Nickel		✓+	✓	Bright Metal	Aluminum	48 hrs	-85° to +392°F (-65° to +200°C)
G	Electroless Nickel (Space-Grade)‡		✓+	✓	Bright Metal	Aluminum	48 hrs	-85° to +392°F (-65° to +200°C)
HA	Passivated	✓	✓	✓	Matte Metal	SST Steel	1,000 hrs	-85° to +392°F (-65° to +200°C)
HB	Electrodeposited Nickel	✓	✓+	✓	Bright Metal	SST Steel	48 hrs	-85° to +392°F (-65° to +200°C)
HG	Electroless Nickel (Space-Grade)‡	✓	✓+	✓	Bright Metal	SST Steel	48 hrs	-85° to +392°F (-65° to +200°C)

‡ Outgassed per NASA specifications ATSM E-595 and EEE-INST-002.
✓+ Indicates improved conductivity for shielding effectiveness.

Special DS Series Materials & Finishes*

Finish Code	Finish	Hermetic Only	Electrically Conductive	RoHS Compliant	Appearance	Shell Material	Salt Spray Rating	Recommended Operating Temperature Range
T	Hard Anodic			✓	Grey Metal	Aluminum	500 hrs	-85° to +347°F (-65° to +175°C)
Z	Zinc Nickel		✓	✓	Black	Aluminum	500 hrs	-85° to +347°F (-65° to +175°C)

* Please consult an authorized distributor for lead time information and minimum quantity requirements for special order finishes.
‡ Outgassed per NASA specifications ATSM E-595 and EEE-INST-002. ✓+ Indicates improved conductivity for shielding effectiveness.

DS

About RoHS Finishes

The European Union's Restriction of Hazardous Substances (RoHS) 2002/95/EC Directive and its subsequent amendments restricts the incorporation of six hazardous materials in the manufacture of various types of electronic and electrical equipment. It is closely linked with the Waste Electrical and Electronic Equipment Directive (WEEE) 2002/96/EC, which sets collection, recycling, and recovery targets for electrical goods and equipment.

RoHS ☑ Milnec provides a full offering of RoHS compliant finishes in conductive and non-conductive versions to best suit your application requirements.

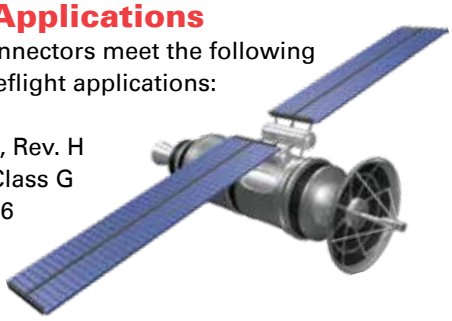
Please consult the latest European Union general and regional regulations to ensure materials are appropriate for your application and compliance requirements.

MIL-DTL-38999 Series II Style Connectors for Spaceflight Applications

For spaceflight applications, Milnec offers specialized space-grade connectors ("G" Finish) with a conductive electroless nickel finish that are rigorously outgassed at high vacuum (5×10^{-5} torr) for 48 hours at 350°F (176°C). This process guarantees that all metallic materials such as rubber, plastic, ink, adhesives, and potting compounds shall not release greater than 1.0% total mass loss (TML) and 0.1% collected volatile condensable material (CVCM).

Milnec space-grade connectors meet the following specifications for spaceflight applications:

- NASA SSP-30423, Rev. H
- MIL-DTL-38999, Class G
- ESA/SCC 3401/056
- ATSM E-595
- EEE-INST-002



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How to Build Your DS Connector Part Number

A part number is comprised of a string of characters that represent the different elements of a connector. High-performance connectors are built to order from component form using a unique part number as a blueprint to specify particular characteristics. Each modifier of the part number represents a particular configuration.

Below is an example part number for a DS Series connector that designates, 1) DS Series wall mount receptacle, 2) electroless nickel finish over aluminum, 3) 14-35 insert arrangement, 4) pin contacts, 5) normal keying, 6) EMI/RFI environmental backshell (dash number indicates size, length, and cable range), and 7) integrated accessory kit. ■

DS00	N	14-35	P	N	-	R2(025)	-	03
1	2	3	4	5		6		7

1 Series Shell Style

Standard Environmental Shells

DS06	Plug, p. R-22
DS05	Plug (with RFI grounding fingers), p. R-22
DS00	Wall mount recept. (front mount), p. R-24
DS04	Wall mount recept. (rear mount), p. R-25
DS02	Box mount recept. (front mount), p. R-26
DS03	Box mount recept. (rear mount), p. R-27
DS01	Cable mount receptacle, p. R-28
DS07	Jam nut receptacle, p. R-29

For non-standard shell styles including hermetic receptacles, please see specific datasheet for part numbering and kit options.

2 Material & Finish

Aluminum

N	Electroless nickel
G	Electroless nickel (space-grade)
W	Olive drab cadmium

For complete material and finish options, including RoHS finishes, see p. R-13.

3 Shell Size & Insert Arrangement

See Insert Arrangement Selection table, p. R-16

4 Contact Style

Standard Power Contacts

P	Pin, p. R-9
S	Socket, p. R-9
A	Pin insert, supplied without contacts
B	Socket insert, supplied without contacts

5 Alternate Keying

Normal Keying

N	Normal

Alternate Keying

A, B, C, D	Alternate keying

6 Optional Backshell Kit (Omit for None)

Strain Relief Backshell (Self-Locking)

B2	Straight, p. R-36
B4	90°, p. R-36

EMI/RFI Environmental Backshell*

R2 ( )	Straight, p. R-38
R3 ( )	45°, p. R-42
R4 ( )	90°, p. R-44

Supply specific Dash No. on referenced datasheet page for appropriate connector shell size.

Shrink Boot & Boot Adapter*

K2	Straight boot, p. R-48, & adapter, p. R-50
K4	90° boot, p. R-49, & adapter, p. R-50

K2 supplied with recommended boot in 100 material, p. R-48.
K4 supplied with recommended boot in 100 material, p. R-49.

Shrink Boot, EMI/RFI Banding Boot Adapter, & Band*

D2	Straight adapter, p. R-51, w/ boot & band
D4	90° adapter, p. R-51, w/ boot & band

Supplied with recommended straight boot in 100 material, p. R-48, and TB250 band, p. R-59.

* Backshell kits will be supplied with matching connector material, except stainless steel.

7 Optional Accessory Kit (Omit for None)

01	**For Plugs:** Protective cover, p. R-52
02	**For Receptacles:** Protective cover, p. R-52 + Mounting gasket, p. R-54
03	**For Receptacles:** Protective cover, p. R-52 + Mounting gasket, p. R-54 + Mounting bracket, p. R-55 with (4x) sealing screws

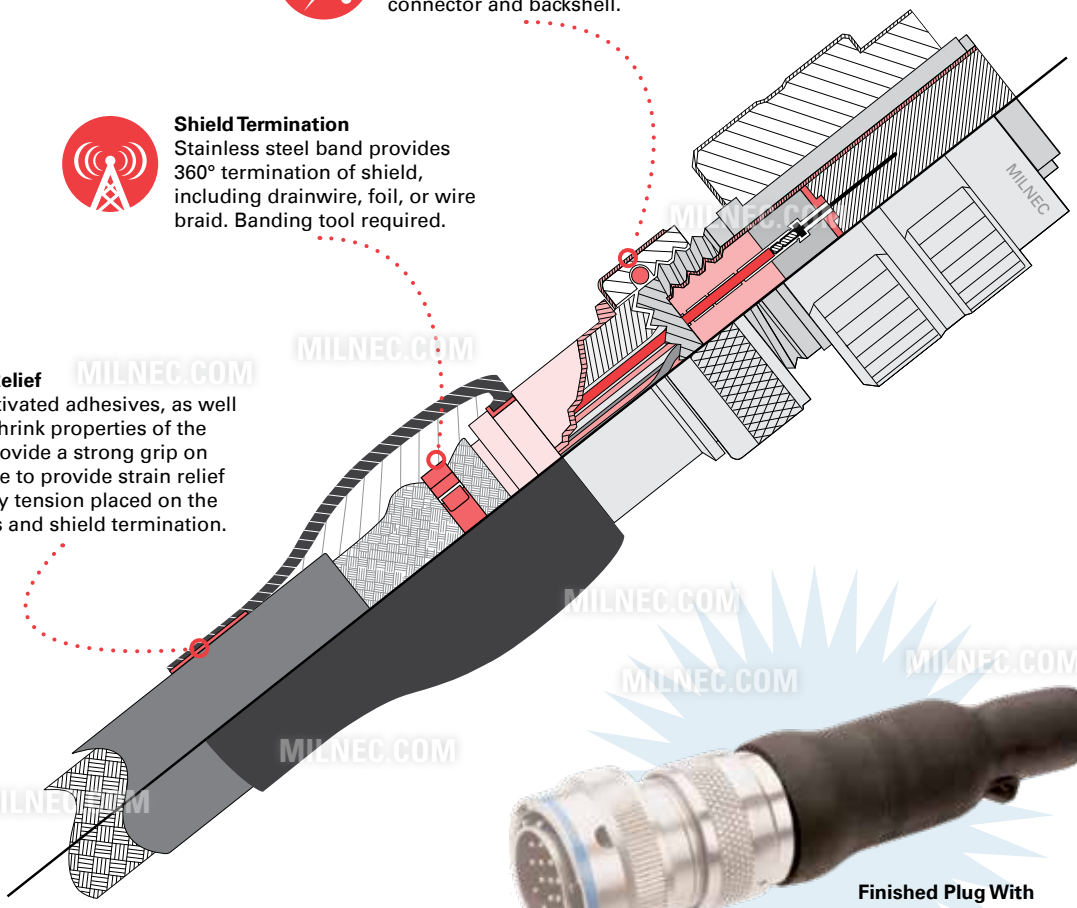
Kits with EMI/RFI backshells will be supplied with DSGS RFI shielding gaskets.

COMPLETE PROTECTION, LOW-PROFILE DESIGN

O-Ring
Seals threads on backshell's rear assembly and the junction between connector and backshell.

Shield Termination
Stainless steel band provides 360° termination of shield, including drainwire, foil, or wire braid. Banding tool required.

Strain Relief
Heat activated adhesives, as well as the shrink properties of the boot, provide a strong grip on the cable to provide strain relief from any tension placed on the contacts and shield termination.



Finished Plug With Banding Boot Adapter & Shrink Boot

360° EMI/RFI & Environmental Protection

Get complete protection from shrink boots with a banding boot adapter. The adapter attaches easily to connectors via a spin coupling and offers 360° shield termination. The overlaying boot provides superior strain relief and environmental sealing for applications that require low-profile backshells.

MILNEC® INTERCONNECT SYSTEMS

Selecting Your Insert Arrangement

Below is a chart that represents every available shell and insert arrangement within the series. To choose the proper insert arrangement, you must first distinguish your application requirements for contact size and quantity.

Each insert arrangement has a unique number to identify its size and contact arrangement. The first number is the shell size. The second number is the contact arrangement. It does not, however, always equal the total number of contacts. ■

Insert Arrangement Selection

Insert Arragement	Total Contacts	Hermetic Available	Service Rating	Contact Size					
				#22D	#22M	#22	#20	#16	#12
8-2 ‡	2		M				2		
8-3 ‡	3		M				3		
8-6	6		M		6				
8-35	6	✓	M	6					
8-44	4		M			4			
8-97 ‡	4		M		2		2		
8-98	3	✓	I				3		
10-4	4		I				4		
10-5	5	✓	I				5		
10-13	13		M		13				
10-35	13	✓	M	13					
10-98	6		I				6		
10-99	7		I				7		
12-3	3		II					3	
12-4	4		I					4	
12-8	8		I				8		
12-22	22		M		22				
12-35	22	✓	M	22					
12-98	10	✓	I				10		
14-4 ‡	4		I						4
14-5	5	✓	II					5	
14-15	15		I				14	1	
14-18	18	✓	I				18		
14-19 ‡	19	✓	I				19		
14-35	37	✓	M	37					
14-37	37		M		37				
14-68 ‡	8		1					8	
14-97	12	✓	I				8	4	
16-6	6	✓	I						6
16-8	8	✓	II					8	
16-13 ‡	13		I					13	
16-26	26		I				26		
16-35	55	✓	M	55					
16-42	42		M			42			
16-55	55		M		55				
16-99	23	✓	I				21	2	
18-11	11		II					11	
18-28	28		I				26	2	
18-30	30		I				29	1	
18-32	32	✓	I				32		
18-35	66	✓	M	66					

(Continued on next page)

Insert Arrangement Selection (Continued from previous page)

Insert Arrangement	Total Contacts	Hermetic Available	Service Rating	Contact Size					
				#22D	#22M	#22	#20	#16	#12
18-53	53		M			53			
18-66	66		M		66				
18-68 ‡	18		I					18	
18-96 ‡	9		I						9
20-1	79		M		79				
20-2	65		M			65			
20-11 ‡	11		I						11
20-16	16		II					16	
20-35	79	✓	M	79					
20-39	39	✓	I				37	2	
20-41	41	✓	I				41		
22-1	100		M		100				
22-2	85		M			85			
22-14 ‡	14		I						14
22-21	21	✓	II					21	
22-32	32		I				32		
22-35	100	✓	M	100					
22-53 ‡	53		I				53		
22-55	55		I				55		
24-1	128		M		128				
24-2	100		M			100			
24-4	56		I				48	8	
24-19 ‡	19		I						19
24-24	24	✓	I					12	12
24-29	29		I					29	
24-35	128		M	128					
24-37	37		I					37	
24-43 ‡	43		I				23	20	
24-61	61		I				61		

‡ Special order contact configuration.

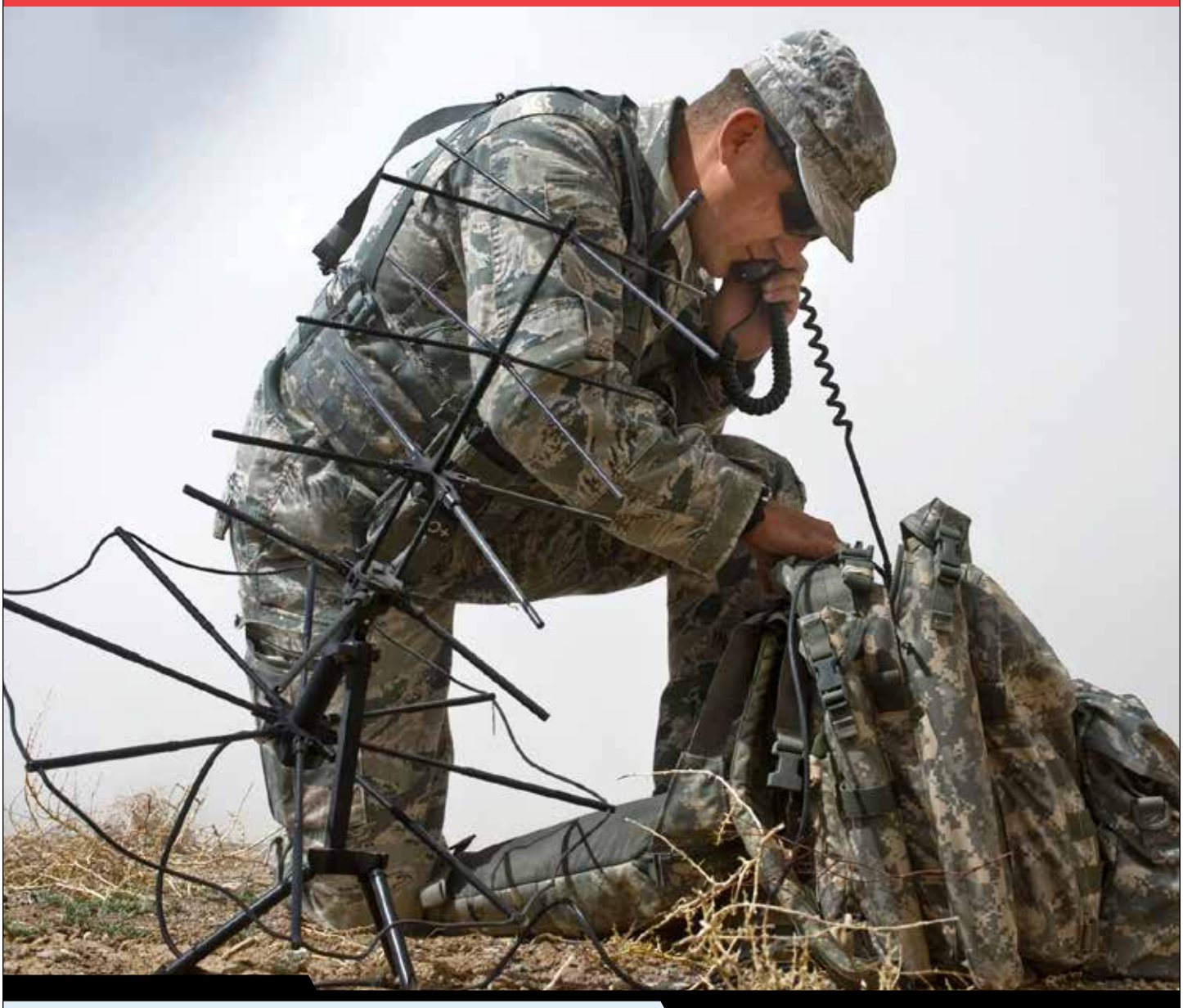
MILNEC CUSTOM CONNECTORS
BUILT IN ONE WEEK OR LESS

World Class Service, Worldwide

We know your project can't wait, so we provide tailor-made flexibility with off-the-shelf lead times. We employ the latest assembly and quality-control processes to build and test every connector we ship.

- Knowledgeable and friendly technical support staff
- Average build time is 3-7 days on most products
- Expedited builds available for critical requirements
- Large component inventory to support large orders

CONNECTOR SELECTION IS CRITICAL
MAKE THE RIGHT CALL

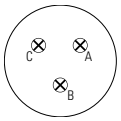
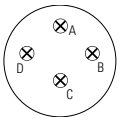
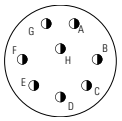
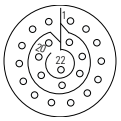


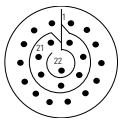
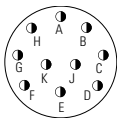
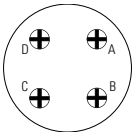
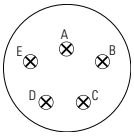
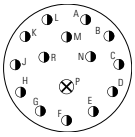
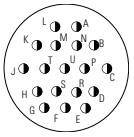
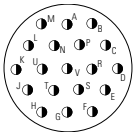
Connectors For Military Applications

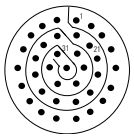
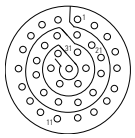
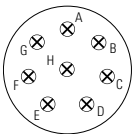
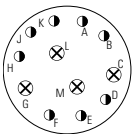
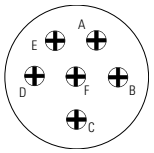
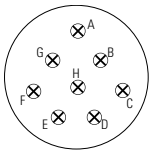
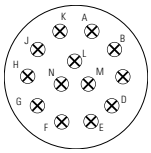
We specialize in providing engineers with ruggedized cylindrical connectors built to meet military specifications. In addition, we offer a wide selection of protective accessories, backshells, and mounting hardware for even greater battlefield reliability. When specifying connectors for your next application, make the right call — Milnec.

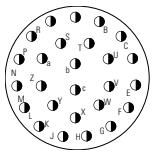
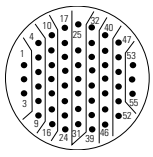
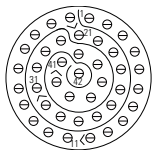
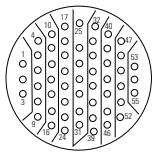
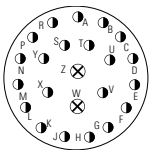
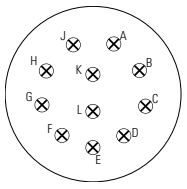
MILNEC®
INTERCONNECT SYSTEMS

8-2	8-3	8-6	8-35	8-44	8-97	8-98	10-4	10-5	
M	M	M	M	M	M	I	I	I	Arrangement
2 x #20	3 x #20	6 x #22M	6 x #22D	4 x #22	2 x #22M 2 x #20	3 x #20	4 x #20	5 x #20	Number of Contacts

10-13	10-35	10-98	10-99	12-3	12-4	12-8	12-22	
								
M	M	I	I	II	I	I	M	Arrangement
13 x #22M	13 x #22D	6 x #20	7 x #20	3 x #16	4 x #16	8 x #20	22 x #22M	Number of Contacts

12-35	12-98	14-4	14-5	14-15	14-18	14-19	
							
M	I	I	II	I	I	I	Arrangement
22 x #22D	10 x #20	4 x #12	5 x #16	14 x #20, 1 x #16	18 x #20	19 x #20	Number of Contacts

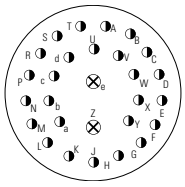
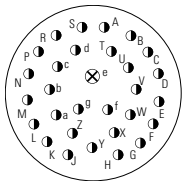
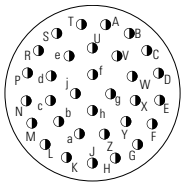
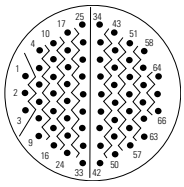
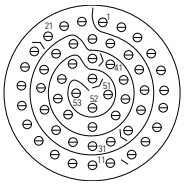
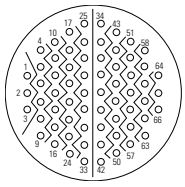
14-35	14-37	14-68	14-97	16-6	16-8	16-13	
							
M	M	I	I	I	II	I	Arrangement
37 x #22D	37 x #22M	8 x #16	8 x #20 , 4 x #16	6 x #12	8 x #16	13 x #16	Number of Contacts

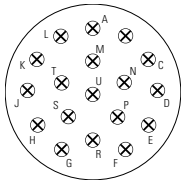
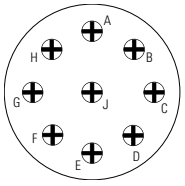
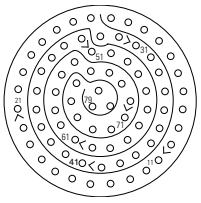
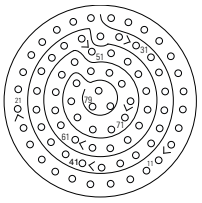
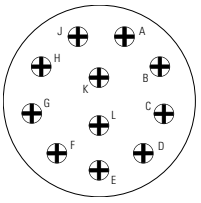
16-26	16-35	16-42	16-55	16-99	18-11	
						
I	M	M	M	I	II	Arrangement
26 x #20	55 x #22D	42 x #22	55 x #22M	21 x #20, 2 x #16	11 x #16	Number of Contacts

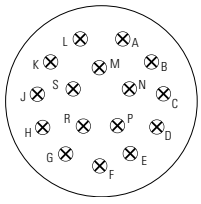
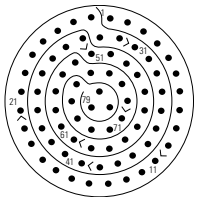
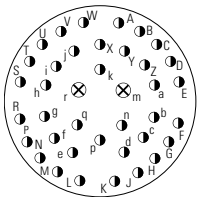
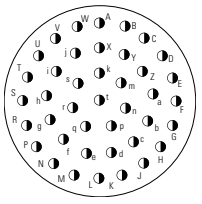
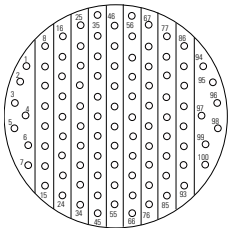
Contact Legend: ⊕ 12 ⊗ 16 ◑ 20 ⊖ 22 ○ 22M • 22D

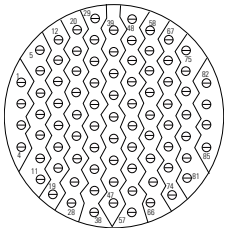
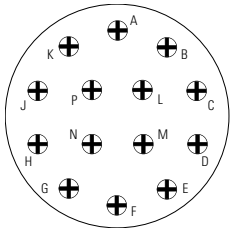
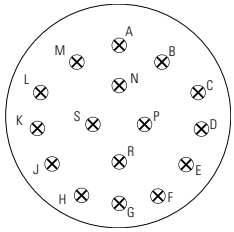
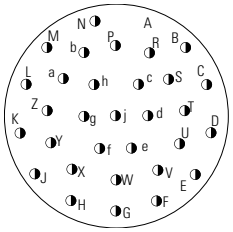
(Continued on next page)

(Continued from previous page)

						
Arrangement	**18-28**	**18-30**	**18-32**	**18-35**	**18-53**	**18-66**
Service Rating	I	I	I	M	M	M
Number of Contacts	26 x #20, 2 x #16	29 x #20, 1 x #16	32 x #20	66 x #22D	53 x #22	66 x #22M

					
Arrangement	**18-68**	**18-96**	**20-1**	**20-2**	**20-11**
Service Rating	I	I	M	M	I
Number of Contacts	18 x #16	9 x #12	79 x #22M	65 x #22	11 x #12

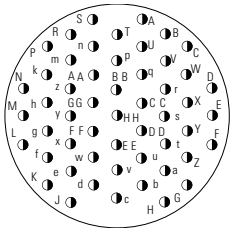
					
Arrangement	**20-16**	**20-35**	**20-39**	**20-41**	**22-1**
Service Rating	II	M	I	I	M
Number of Contacts	16 x #16	79 x #22D	37 x #20, 2 x #16	41 x #20	100 x #22M

					
Arrangement	**22-2**	**22-14**	**22-21**	**22-32**	
Service Rating	M	I	II	M	
Number of Contacts	85 x #22	14 x #12	21 x #16	32 x #20	

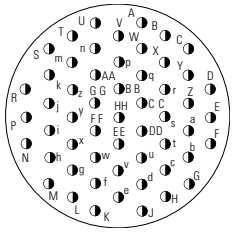
Contact Legend: ⊕ 12 ⊗ 16 ◑ 20 ⊖ 22 ○ 22M • 22D

(Continued on next page)

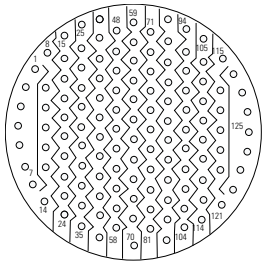
(Continued from previous page)



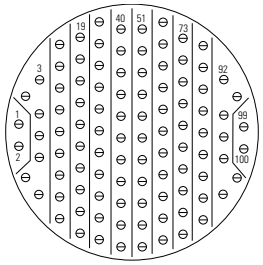
22-53
I
53 x #20



22-55
I
55 x #20

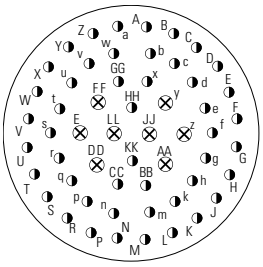


24-1
M
128 x #22M

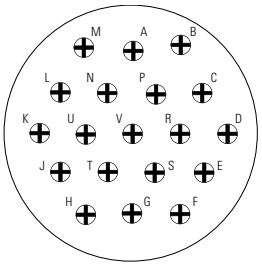


24-2
M
100 x #22

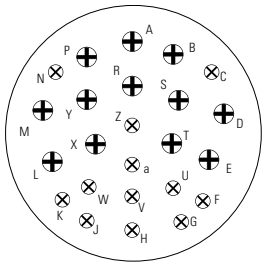
Arrangement
Service Rating
Number of Contacts



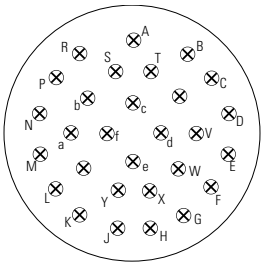
24-4
I
48 x #20,
8 x #16



24-19
I
19 x #12

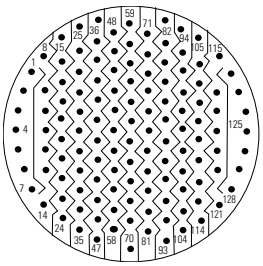


24-24
I
12 x #16, 12 x #12

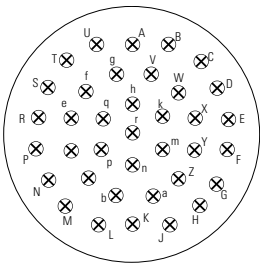


24-29
I
29 x #16

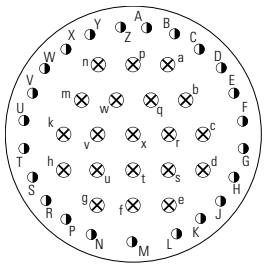
Arrangement
Service Rating
Number of Contacts



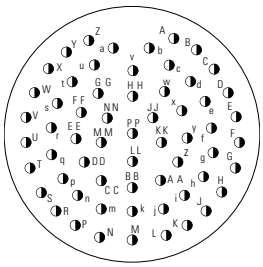
24-35
M
128 x #22D



24-37
I
37 x #16



24-43
I
23 x #20, 20 x #16



24-61
I
61 x #20

Arrangement
Service Rating
Number of Contacts

Contact Legend: ⊕ 12 ⊗ 16 ◑ 20 ⊖ 22 ○ 22M • 22D

DS06 N 14-35 P N - R2(019) - 01

1 2 3 4 5 6 7

1 BASIC PART NUMBER
- **DS06** Plug
- **DS05** Plug with RFI grounding fingers

2 MATERIAL & FINISH
- **N** Aluminum, electroless nickel
- **W** Aluminum, olive drab cadmium

3 SHELL SIZE & INSERT ARRANGEMENT
See Insert Arrangement Selection table, p. R-16

4 CONTACT STYLE
- **P** Pin
- **S** Socket

5 ALTERNATE KEYING
- **N** NORMAL or A, B, C, D

6 OPTIONAL BACKSHELL KIT (OMIT FOR NONE)
- **B2** Straight strain relief (self-locking), p. R-36
- **R2( )** Straight EMI/RFI environmental, p. R-38
(Add dash number for appropriate shell size, see p. R-38)
- **K2** Boot adapter, p. R-50, & straight shrink boot, p. R-48

7 OPTIONAL ACCESSORY KIT (OMIT FOR NONE)
- **01** Protective cover

Note: See part builder (p. R-14) for additional kit options.

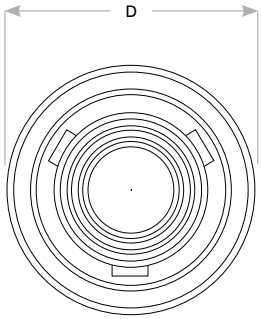
DS06 Cross-Reference & Compatibility

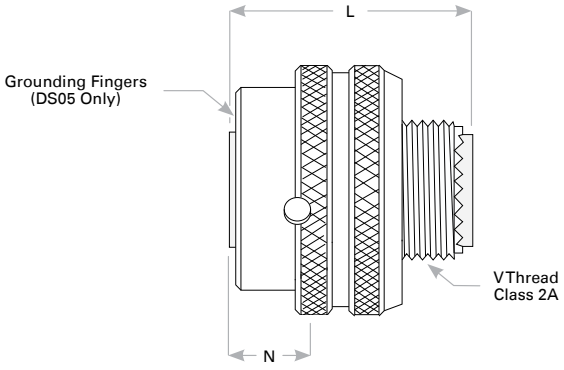
Compatible Brands	Equivalents	Mates
MIL-DTL-38999 Series II	MS27473, MS27484	MS27472, MS27474, MS27497, MS27499, MS27508, MS27513
Aero / Conesys	AE273, AE284	AE208, AE213, AE272, AE274, AE297, AE299
Amphenol	JT06, JTG06	JT00, JTPQ00, JT01, JT02, JTP02, JT07
ITT Cannon	KJ6, KJG6	KJ0, KJ2, KJ3, KJ5, KJ7
Souriau	8T6	8T1, 8T2, 8L3, 8T7

Plug Dimensions

Shell Size	D Max	L Max	N	V Thread Class 2A
8	.750 (19.1)	.916 (23.3)	.257 (6.5)	.4375-28
10	.859 (21.8)	.916 (23.3)	.257 (6.5)	.5625-24
12	1.031 (26.2)	.916 (23.3)	.257 (6.5)	.6875-24
14	1.156 (29.4)	.916 (23.3)	.257 (6.5)	.8125-20
16	1.281 (32.5)	.916 (23.3)	.257 (6.5)	.9375-20
18	1.406 (35.7)	.916 (23.3)	.257 (6.5)	1.0625-18
20	1.531 (38.9)	.916 (23.3)	.257 (6.5)	1.1875-18
22	1.641 (41.7)	.916 (23.3)	.257 (6.5)	1.3125-18
24	1.766 (44.8)	.984 (25.0)	.257 (6.5)	1.4375-18

Dimensions are in inches (mm).





Rev. 2219

CONNECTOR SOLUTIONS FOR THE MODERN BATTLEFIELD

DS

Mil-Spec Reliability with COTS Flexibility

DS Series connectors are built to the MIL-38999 Series II standard and are compatible with all mil-spec components. They feature bayonet coupling for quick-disconnect convenience and crimp contacts for reliability, in addition to a wide array of protective accessories and mounting hardware that is unavailable in the mil-spec.

MILNEC
INTERCONNECT SYSTEMS

DS00 N 14-35 S N - R2(019) - 03

1 2 3 4 5 6 7

1. **BASIC PART NUMBER**
   - **DS00** Wall mount receptacle (front mount)
2. **MATERIAL & FINISH**
   - **N** Aluminum, electroless nickel
   - **W** Aluminum, olive drab cadmium
3. **SHELL SIZE & INSERT ARRANGEMENT**
   - See Insert Arrangement Selection table, p. R-16
4. **CONTACT STYLE**
   - **P** Pin
   - **S** Socket
5. **ALTERNATE KEYING**
   - **N** NORMAL or A, B, C, D
6. **OPTIONAL BACKSHELL KIT** (OMIT FOR NONE)
   - **B2** Straight strain relief (self-locking), p. R-36
   - **R2( )** Straight EMI/RFI environmental, p. R-38
   - (Add dash number for appropriate shell size, see p. R-38)
   - **K2** Boot adapter, p. R-50, & straight shrink boot, p. R-48
7. **OPTIONAL ACCESSORY KIT** (OMIT FOR NONE)
   - **02** Protective cover + mounting gasket
   - **03** 02 kit + mounting bracket + sealing screws

DS00 Cross-Reference & Compatibility

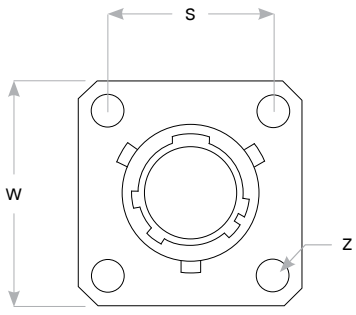
Compatible Brands	Equivalents	Mates
MIL-DTL-38999 Series II	MS27472	MS27473, MS27484
Aero / Conesys	AE272	AE273, AE284
Amphenol	JT00	JT06, JTG06
ITT Cannon	KJ0	KJ6, KJG6
Souriau	–	8T6

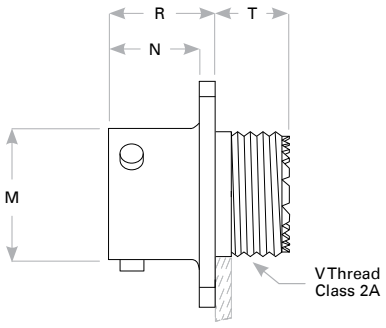
Note: See part builder (p. R-14) for additional kit options.

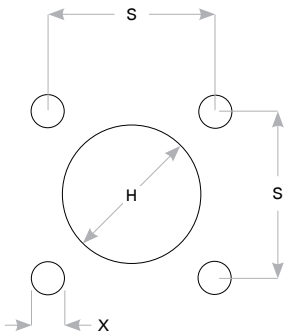
Receptacle Dimensions

Shell Size	W	Z	R	T	M	N	V Thread Class 2A	S	X	H Front Mount
8	.812 (20.6)	.120 (3.0)	.380 (9.7)	.500 (12.7)	.473 (12.0)	.322 (8.2)	.4375-28 UNEF	.594 (15.1)	.130 (3.3)	.516 (13.1)
10	.938 (23.8)	.120 (3.0)	.380 (9.7)	.500 (12.7)	.590 (15.0)	.322 (8.2)	.5625-24 UNEF	.719 (18.3)	.130 (3.3)	.625 (15.9)
12	1.031 (26.2)	.120 (3.0)	.380 (9.7)	.500 (12.7)	.750 (19.1)	.322 (8.2)	.6875-24 UNEF	.812 (20.6)	.130 (3.3)	.750 (19.1)
14	1.125 (28.6)	.120 (3.0)	.380 (9.7)	.500 (12.7)	.875 (22.2)	.322 (8.2)	.8125-20 UNEF	.906 (23.0)	.130 (3.3)	.906 (23.0)
16	1.219 (31.0)	.120 (3.0)	.380 (9.7)	.500 (12.7)	1.000 (25.4)	.322 (8.2)	.9375-20 UNEF	.969 (24.6)	.130 (3.3)	1.016 (25.8)
18	1.312 (33.3.)	.120 (3.0)	.380 (9.7)	.500 (12.7)	1.125 (28.6)	.322 (8.2)	1.0625-18 UNEF	1.062 (27.0)	.130 (3.3)	1.141 (29.0)
20	1.438 (36.5)	.120 (3.0)	.380 (9.7)	.500 (12.7)	1.250 (31.8)	.322 (8.2)	1.1875-18 UNEF	1.156 (29.4)	.130 (3.3)	1.266 (32.2)
22	1.562 (39.7)	.120 (3.0)	.380 (9.7)	.500 (12.7)	1.375 (34.9)	.322 (8.2)	1.3125-18 UNEF	1.250 (31.8)	.130 (3.3)	1.375 (34.9)
24	1.688 (42.9)	.147 (3.7)	.380 (9.7)	.500 (12.7)	1.500 (38.1)	.322 (8.2)	1.4375-18 UNEF	1.375 (34.9)	.154 (3.9)	1.484 (37.7)

Dimensions are in inches (mm).







Panel Cutout

DS04 N 14-35 S N - R2(019) - 03

1 2 3 4 5 6 7

1 BASIC PART NUMBER
- **DS04** Wall mount receptacle (rear mount)

2 MATERIAL & FINISH
- **N** Aluminum, electroless nickel
- **W** Aluminum, olive drab cadmium

3 SHELL SIZE & INSERT ARRANGEMENT
- See Insert Arrangement Selection table, p. R-16

4 CONTACT STYLE
- **P** Pin
- **S** Socket

5 ALTERNATE KEYING
- **N** NORMAL or A, B, C, D

6 OPTIONAL BACKSHELL KIT (OMIT FOR NONE)
- **B2** Straight strain relief (self-locking), p. R-36
- **R2( )** Straight EMI/RFI environmental, p. R-38
- (Add dash number for appropriate shell size, see p. R-38)
- **K2** Boot adapter, p. R-50, & straight shrink boot, p. R-48

7 OPTIONAL ACCESSORY KIT (OMIT FOR NONE)
- **02** Protective cover + mounting gasket
- **03** 02 kit + mounting bracket + sealing screws

DS04 Cross-Reference & Compatibility

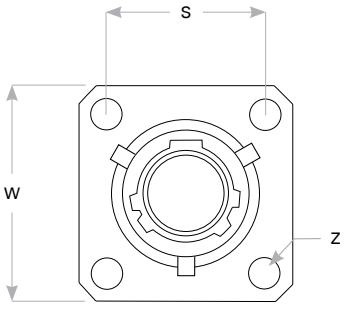
Compatible Brands	Equivalents	Mates
MIL-DTL-38999 Series II	MS27497	MS27473, MS27484
Aero / Conesys	AE297	AE273, AE284
Amphenol	JTPQ00	JT06, JTG06
ITT Cannon	KJ3	KJ6, KJG6
Souriau	8T3	8T6

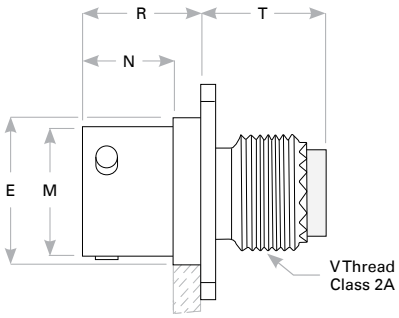
Note: See part builder (p. R-14) for additional kit options.

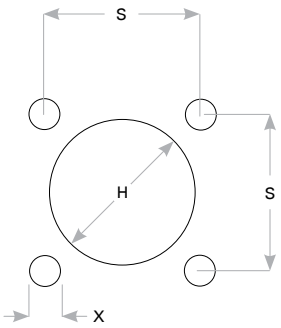
Receptacle Dimensions

Shell Size	W	Z	R	N	T	E	M	V Thread Class 2A	P Max Panel	S	X	H Rear Mount
8	.812 (20.6)	.120 (3.0)	.447 (11.4)	.322 (8.2)	.438 (11.1)	.516 (13.1)	.473 (12.0)	.4375-28 UNEF	.142 (3.6)	.594 (15.1)	.130 (3.3)	.557 (14.2)
10	.938 (23.8)	.120 (3.0)	.447 (11.4)	.322 (8.2)	.438 (11.1)	.633 (16.1)	.590 (15.0)	.5625-24 UNEF	.142 (3.6)	.719 (18.3)	.130 (3.3)	.682 (17.3)
12	1.031 (26.2)	.120 (3.0)	.447 (11.4)	.322 (8.2)	.438 (11.1)	.802 (20.4)	.750 (19.1)	.6875-24 UNEF	.142 (3.6)	.812 (20.6)	.130 (3.3)	.854 (21.7)
14	1.125 (28.6)	.120 (3.0)	.447 (11.4)	.322 (8.2)	.438 (11.1)	.927 (23.5)	.875 (22.2)	.8125-20 UNEF	.142 (3.6)	.906 (23.0)	.130 (3.3)	.979 (24.9)
16	1.219 (31.0)	.120 (3.0)	.447 (11.4)	.322 (8.2)	.438 (11.1)	1.052 (26.7)	1.000 (25.4)	.9375-20 UNEF	.142 (3.6)	.969 (24.6)	.130 (3.3)	1.104 (28.0)
18	1.312 (33.3)	.120 (3.0)	.447 (11.4)	.322 (8.2)	.438 (11.1)	1.177 (29.9)	1.125 (28.6)	1.0625-18 UNEF	.142 (3.6)	1.062 (27.0)	.130 (3.3)	1.229 (31.2)
20	1.438 (36.5)	.120 (3.0)	.447 (11.4)	.322 (8.2)	.438 (11.1)	1.302 (33.1)	1.250 (31.8)	1.1875-18 UNEF	.142 (3.6)	1.156 (29.4)	.130 (3.3)	1.354 (34.4)
22	1.562 (39.7)	.120 (3.0)	.447 (11.4)	.322 (8.2)	.438 (11.1)	1.427 (36.2)	1.375 (34.9)	1.3125-18 UNEF	.142 (3.6)	1.250 (31.8)	.130 (3.3)	1.479 (37.6)
24	1.688 (42.9)	.147 (3.7)	.447 (11.4)	.322 (8.2)	.438 (11.1)	1.552 (39.4)	1.500 (38.1)	1.4375-18 UNEF	.142 (3.6)	1.375 (34.9)	.154 (3.9)	1.604 (40.7)

Dimensions are in inches (mm).







Panel Cutout

Rev. 2219

DS02 N 14-35 S N - 03

1 2 3 4 5 6

1. **BASIC PART NUMBER**
   - **DS02** Box mount receptacle (front mount)
2. **MATERIAL & FINISH**
   - **N** Aluminum, electroless nickel
   - **W** Aluminum, olive drab cadmium
3. **SHELL SIZE & INSERT ARRANGEMENT**
   - See Insert Arrangement Selection table, p. R-16
4. **CONTACT STYLE**
   - **P** Pin
   - **S** Socket
5. **ALTERNATE KEYING**
   - **N** NORMAL or A, B, C, D
6. **OPTIONAL ACCESSORY KIT** (OMIT FOR NONE)
   - **02** Protective cover + mounting gasket
   - **03** 02 kit + mounting bracket + sealing screws

Note: See part builder (p. R-14) for additional kit options.

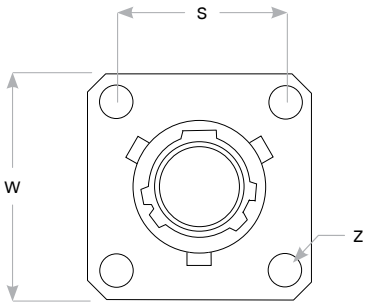
DS02 Cross-Reference & Compatibility

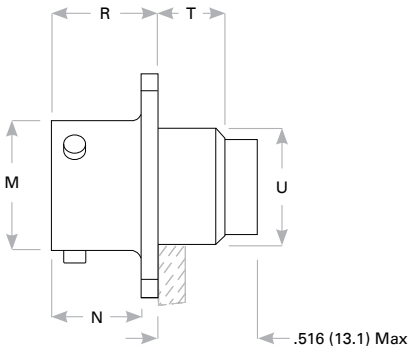
Compatible Brands	Equivalents	Mates
MIL-DTL-38999 Series II	MS27499, MS27513	MS27473, MS27484
Aero / Conesys	AE299	AE273, AE284
Amphenol	JT02	JT06, JTG06
ITT Cannon	KJ2	KJ6, KJG6
Souriau	8T2	8T6

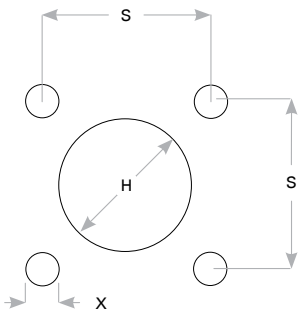
Receptacle Dimensions

Shell Size	W	Z	R	N	T	M	U	S	X	H Front Mount
8	.812 (20.6)	.120 (3.1)	.380 (9.7)	.322 (8.2)	.286 (7.3)	.473 (12.0)	.438 (11.1)	.594 (15.1)	.130 (3.3)	.516 (13.1)
10	.938 (23.8)	.120 (3.1)	.380 (9.7)	.322 (8.2)	.286 (7.3)	.590 (15.0)	.563 (14.3)	.719 (18.3)	.130 (3.3)	.625 (15.9)
12	1.031 (26.2)	.120 (3.1)	.380 (9.7)	.322 (8.2)	.286 (7.3)	.750 (19.1)	.688 (17.5)	.812 (20.6)	.130 (3.3)	.750 (19.1)
14	1.125 (28.6)	.120 (3.1)	.380 (9.7)	.322 (8.2)	.286 (7.3)	.875 (22.2)	.813 (20.7)	.906 (23.0)	.130 (3.3)	.906 (23.0)
16	1.219 (31.0)	.120 (3.1)	.380 (9.7)	.322 (8.2)	.286 (7.3)	1.000 (25.4)	.938 (23.8)	.969 (24.6)	.130 (3.3)	1.016 (25.8)
18	1.312 (33.3)	.120 (3.1)	.380 (9.7)	.322 (8.2)	.286 (7.3)	1.125 (28.6)	1.047 (26.6)	1.062 (27.0)	.130 (3.3)	1.141 (29.0)
20	1.438 (36.5)	.120 (3.1)	.380 (9.7)	.322 (8.2)	.286 (7.3)	1.250 (31.8)	1.172 (29.8)	1.156 (29.4)	.130 (3.3)	1.266 (32.2)
22	1.562 (39.7)	.120 (3.1)	.380 (9.7)	.322 (8.2)	.286 (7.3)	1.375 (34.9)	1.297 (32.9)	1.250 (31.8)	.130 (3.3)	1.375 (34.9)
24	1.688 (42.9)	.147 (3.7)	.380 (9.7)	.322 (8.2)	.286 (7.3)	1.500 (38.1)	1.422 (36.1)	1.375 (34.9)	.154 (3.9)	1.484 (37.7)

Dimensions are in inches (mm).







Panel Cutout

DS03 N 14-35 S N - 03

1 2 3 4 5 6

1 BASIC PART NUMBER
- **DS03** Box mount receptacle (rear mount)

2 MATERIAL & FINISH
- **N** Aluminum, electroless nickel
- **W** Aluminum, olive drab cadmium

3 SHELL SIZE & INSERT ARRANGEMENT
- See Insert Arrangement Selection table, p. R-16

4 CONTACT STYLE
- **P** Pin
- **S** Socket

5 ALTERNATE KEYING
- **N** NORMAL or A, B, C, D

6 OPTIONAL ACCESSORY KIT (OMIT FOR NONE)
- **02** Protective cover + mounting gasket
- **03** 02 kit + mounting bracket + sealing screws

Note: See part builder (p. R-14) for additional kit options.

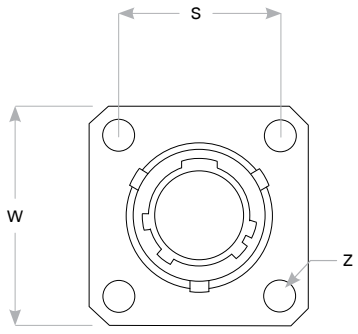
DS03 Cross-Reference & Compatibility

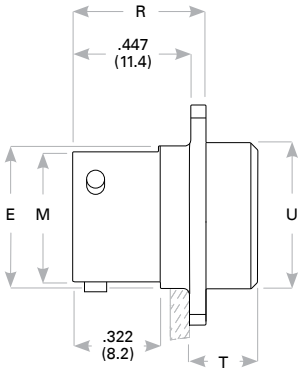
Compatible Brands	Equivalents	Mates
MIL-DTL-38999 Series II	MS27508	MS27473, MS27484
Aero / Conesys	AE208	AE273, AE284
Amphenol	JTP02	JT06, JTG06
ITT Cannon	KJ5	KJ6, KJG6
Souriau	—	8T6

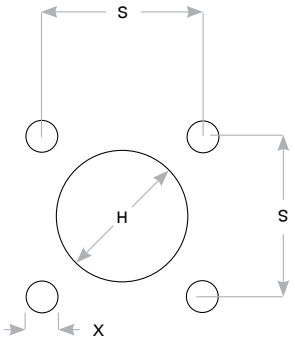
Receptacle Dimensions

Shell Size	W	Z	R	T	E	M	U	P Max Panel	S	X	H Rear Mount
8	.812 (20.6)	.120 (3.1)	.505 (12.8)	.225 (5.7)	.516 (13.1)	.473 (12.0)	.531 (13.5)	.147 (3.7)	.594 (15.1)	.130 (3.3)	.557 (14.2)
10	.938 (23.8)	.120 (3.1)	.505 (12.8)	.225 (5.7)	.633 (16.1)	.590 (15.0)	.656 (16.7)	.152 (3.9)	.719 (18.3)	.130 (3.3)	.682 (17.3)
12	1.031 (26.2)	.120 (3.1)	.505 (12.8)	.225 (5.7)	.802 (20.4)	.750 (19.1)	.828 (21.0)	.152 (3.9)	.812 (20.6)	.130 (3.3)	.854 (21.7)
14	1.125 (28.6)	.120 (3.1)	.505 (12.8)	.225 (5.7)	.927 (23.6)	.875 (22.2)	.953 (24.2)	.152 (3.9)	.906 (23.0)	.130 (3.3)	.979 (24.9)
16	1.219 (31.0)	.120 (3.1)	.505 (12.8)	.225 (5.7)	1.052 (26.7)	1.000 (25.4)	1.078 (27.4)	.152 (3.9)	.969 (24.6)	.130 (3.3)	1.104 (28.0)
18	1.312 (33.3)	.120 (3.1)	.505 (12.8)	.225 (5.7)	1.177 (29.9)	1.125 (28.6)	1.203 (30.6)	.152 (3.9)	1.062 (27.0)	.130 (3.3)	1.229 (31.2)
20	1.438 (36.5)	.120 (3.1)	.505 (12.8)	.225 (5.7)	1.302 (33.1)	1.250 (31.8)	1.328 (33.7)	.179 (4.6)	1.156 (29.4)	.130 (3.3)	1.354 (34.4)
22	1.562 (39.7)	.120 (3.1)	.505 (12.8)	.225 (5.7)	1.427 (36.3)	1.375 (34.9)	1.453 (36.9)	.179 (4.6)	1.250 (31.8)	.130 (3.3)	1.479 (37.6)
24	1.688 (42.9)	.147 (3.7)	.505 (12.8)	.225 (5.7)	1.552 (39.4)	1.500 (38.1)	1.578 (40.1)	.169 (4.3)	1.375 (34.9)	.154 (3.9)	1.604 (40.7)

Dimensions are in inches (mm).







Panel Cutout

Cable Mount Receptacle

DS Series • MIL-DTL-38999 Series II Style Connectors

DS01 Compatibility

Compatible Brands	Mates
MIL-DTL-38999 Series II	MS27473, MS27484
Aero / Conesys	AE273, AE284
Amphenol	JT06, JTG06
ITT Cannon	KJ6, KJG6
Souriau	8T6

DS01 N 12-35 S N - R2(015) - 02

1 2 3 4 5 6 7

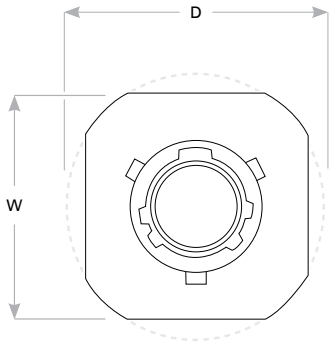
1. **BASIC PART NUMBER**
   - **DS01** Cable mount receptacle
2. **MATERIAL & FINISH**
   - **N** Aluminum, electroless nickel
   - **W** Aluminum, olive drab
3. **SHELL SIZE & INSERT ARRANGEMENT**
   - See Insert Arrangement Selection table, p. R-16
4. **CONTACT STYLE**
   - **P** Pin
   - **S** Socket
5. **ALTERNATE KEYING**
   - **N** NORMAL or A, B, C, D
6. **OPTIONAL BACKSHELL KIT** (OMIT FOR NONE)
   - **B2** Straight strain relief (self-locking), p. R-36
   - **R2( )** Straight EMI/RFI environmental, p. R-38
   - (Add dash number for appropriate shell size, see p. R-38)
   - **K2** Boot adapter, p. R-50, & straight shrink boot, p. R-48
7. **OPTIONAL ACCESSORY KIT** (OMIT FOR NONE)
   - **02** Protective cover

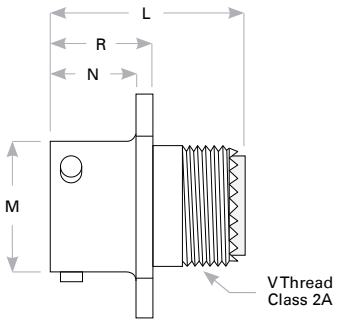
Note: See part builder (p. R-14) for additional kit options.

Receptacle Dimensions

Shell Size	W Max	D Max	L Max	R Max	N Max	M Max	V Thread Class 2A
8	.829 (21.1)	.965 (24.5)	.891 (22.6)	.386 (9.8)	.322 (8.2)	.474 (12.0)	.4375-28 UNEF
10	.955 (24.3)	1.089 (27.7)	.891 (22.6)	.386 (9.8)	.322 (8.2)	.591 (15.0)	.5625-24 UNEF
12	1.048 (26.6)	1.183 (30.0)	.891 (22.6)	.386 (9.8)	.322 (8.2)	.751 (19.1)	.6875-24 UNEF
14	1.142 (29.0)	1.277 (32.4)	.891 (22.6)	.386 (9.8)	.322 (8.2)	.876 (22.3)	.8125-20 UNEF
16	1.236 (31.4)	1.371 (34.8)	.891 (22.6)	.386 (9.8)	.322 (8.2)	1.001 (25.4)	.9375-20 UNEF
18	1.329 (33.8)	1.465 (37.2)	.891 (22.6)	.386 (9.8)	.322 (8.2)	1.126 (28.6)	1.0625-18 UNEF
20	1.455 (37.0)	1.589 (40.4)	.891 (22.6)	.386 (9.8)	.322 (8.2)	1.251 (31.8)	1.1875-18 UNEF
22	1.579 (40.1)	1.715 (43.6)	.891 (22.6)	.386 (9.8)	.322 (8.2)	1.376 (35.0)	1.3125-18 UNEF
24	1.705 (43.3)	1.838 (46.7)	.891 (22.6)	.386 (9.8)	.322 (8.2)	1.501 (38.1)	1.4375-18 UNEF

Dimensions are in inches (mm).





DS07 N 14-35 S N - R2(019) - 02

1 2 3 4 5 6 7

1 BASIC PART NUMBER
- **DS07** Jam nut receptacle

2 MATERIAL & FINISH
- **N** Aluminum, electroless nickel
- **W** Aluminum, olive drab cadmium

3 SHELL SIZE & INSERT ARRANGEMENT
- See Insert Arrangement Selection table, p. R-16

4 CONTACT STYLE
- **P** Pin
- **S** Socket

5 ALTERNATE KEYING
- **N** NORMAL or A, B, C, D

6 OPTIONAL BACKSHELL KIT (OMIT FOR NONE)
- **B2** Straight strain relief (self-locking), p. R-36
- **R2( )** Straight EMI/RFI environmental, p. R-38
- (Add dash number for appropriate shell size, see p. R-38)
- **K2** Boot adapter, p. R-50, & straight shrink boot, p. R-48

7 OPTIONAL ACCESSORY KIT (OMIT FOR NONE)
- **02** Protective cover

Note: See part builder (p. R-14) for additional kit options.

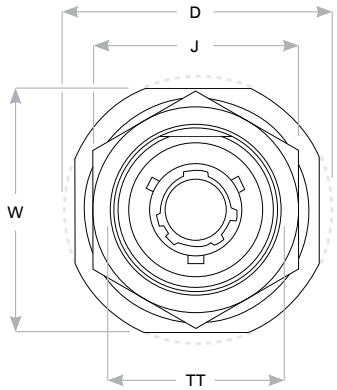
DS07 Cross-Reference & Compatibility

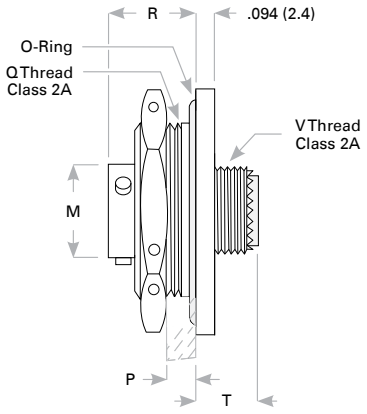
Compatible Brands	Equivalents	Mates
MIL-DTL-38999 Series II	MS27474	MS27473, MS27484
Aero / Conesys	AE274	AE273, AE284
Amphenol	JT07	JT06, JTG06
ITT Cannon	KJ7	KJ6, KJG6
Souriau	8T7	8T6

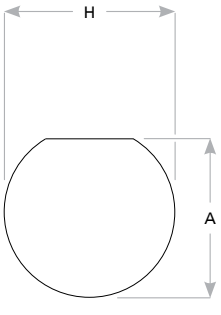
Receptacle Dimensions

Shell Size	W	D	J	R	T	TT	M	Q Thread Class 2A	V Thread Class 2A	P Max Panel	H	A
8	1.250 (31.8)	1.390 (35.3)	1.062 (27.0)	.438 (11.1)	.453 (11.6)	.884 (22.5)	.473 (12.0)	.8750-20 UNEF	.4375-28 UNEF	.109 (2.8)	.885 (22.5)	.830 (21.1)
10	1.375 (34.9)	1.515 (38.5)	1.188 (30.2)	.438 (11.1)	.453 (11.6)	1.007 (25.6)	.590 (15.0)	1.0000-20 UNEF	.5635-24 UNEF	.109 (2.8)	1.010 (25.7)	.955 (24.3)
12	1.500 (38.1)	1.640 (41.7)	1.312 (33.3)	.438 (11.1)	.453 (11.6)	1.134 (28.8)	.750 (19.1)	1.1250-18 UNEF	.6875-24 UNEF	.109 (2.8)	1.135 (28.8)	1.085 (27.6)
14	1.625 (41.3)	1.765 (44.8)	1.438 (36.5)	.438 (11.1)	.453 (11.6)	1.259 (32.0)	.875 (22.2)	1.2500-18 UNEF	.8125-20 UNEF	.109 (2.8)	1.260 (32.0)	1.210 (30.7)
16	1.781 (45.2)	1.953 (49.6)	1.562 (39.7)	.438 (11.1)	.453 (11.6)	1.384 (35.2)	1.000 (25.4)	1.3750-18 UNEF	.9375-20 UNEF	.109 (2.8)	1.385 (35.2)	1.335 (33.9)
18	1.890 (48.0)	2.031 (51.6)	1.688 (42.9)	.438 (11.1)	.453 (11.6)	1.507 (38.3)	1.125 (28.6)	1.5000-18 UNEF	1.0625-18 UNEF	.109 (2.8)	1.510 (38.4)	1.460 (37.1)
20	2.016 (51.2)	2.156 (54.8)	1.812 (46.0)	.464 (11.8)	.422 (10.7)	1.634 (41.5)	1.250 (31.8)	1.6250-18 UNEF	1.1875-18 UNEF	.109 (2.8)	1.635 (41.5)	1.585 (40.3)
22	2.140 (54.4)	2.280 (57.9)	2.000 (50.8)	.464 (11.8)	.422 (10.7)	1.759 (44.7)	1.375 (34.9)	1.7500-18 UNEF	1.3125-18 UNEF	.109 (2.8)	1.760 (44.7)	1.709 (43.4)
24	2.265 (57.5)	2.405 (61.1)	2.125 (54.0)	.464 (11.8)	.422 (10.7)	1.884 (47.9)	1.500 (38.1)	1.8750-16 UNEF	1.4375-18 UNEF	.109 (2.8)	1.885 (47.9)	1.835 (46.6)

Dimensions are in inches (mm).







Panel Cutout

Rev. 2219

Wall Mount Receptacle (Hermetic)

DS Series • MIL-DTL-38999 Series II Style Connectors

DS10 Compatibility

Compatible Brands	Mates
MIL-DTL-38999 Series II	MS27473, MS27484
Aero / Conesys	AE273, AE284
Amphenol	JT06, JTG06
ITT Cannon	KJ6, KJG6
Souriau	8T6

DS10 HA 10-35 P N - R2(010) -03

1 2 3 4 5 6 7

1 BASIC PART NUMBER

DS10 Hermetic wall mount receptacle
Helium leakage < 1.0 x10^{-7} cc^3/sec at
15 psi (1.1 kg/cm^2). Insert rated to 14,000 psi
(984 kg/cm^2) when precision welded or soldered.

2 MATERIAL & FINISH

HA Stainless steel, passivated
HB Stainless steel, electrodeposited nickel

3 SHELL SIZE & INSERT ARRANGEMENT

See Insert Arrangement Selection table, p. R-16

4 CONTACT STYLE

P Pin, gold plated, solder cup termination
H* Socket, gold plated, solder cup termination

5 ALTERNATE KEYING

N NORMAL or A, B, C, D

6 OPTIONAL BACKSHELL KIT (OMIT FOR NONE)

B2 Straight strain relief (self-locking), p. R-36
R2( ) Straight EMI/RFI environmental, p. R-38
(Add dash number for appropriate shell size, see p. R-38)

7 OPTIONAL ACCESSORY KIT (OMIT FOR NONE)

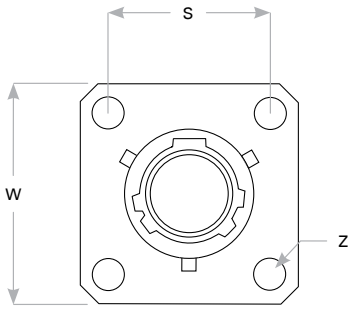
02 Protective cover + mounting gasket
03 02 kit + mounting bracket + sealing screws

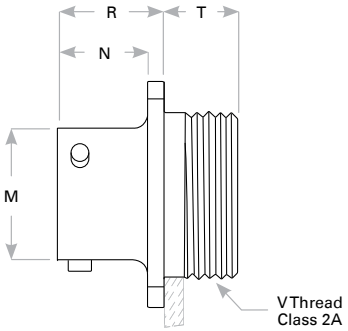
* Please consult an authorized distributor for lead time and minimum quantity requirements.

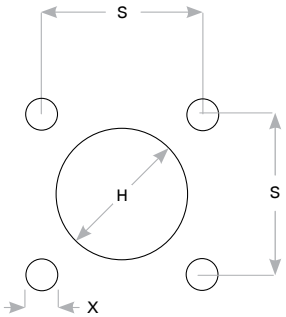
Receptacle Dimensions

Shell Size	W	Z	R	N	T	M	V Thread Class 2A	S	X	H Front Mount
8	.812 (20.6)	.120 (3.1)	.375 (9.5)	.317 (8.1)	.234 (5.9)	.473 (12.0)	.5625-24 UNEF	.594 (15.1)	.130 (3.3)	.625 (15.9)
10	.938 (23.8)	.120 (3.1)	.375 (9.5)	.317 (8.1)	.234 (5.9)	.590 (15.0)	.6875-24 UNEF	.719 (18.3)	.130 (3.3)	.906 (23.0)
12	1.031 (26.2)	.120 (3.1)	.375 (9.5)	.317 (8.1)	.234 (5.9)	.750 (19.1)	.8125-20 UNEF	.812 (20.6)	.130 (3.3)	1.016 (25.8)
14	1.125 (28.6)	.120 (3.1)	.375 (9.5)	.317 (8.1)	.234 (5.9)	.875 (22.2)	.9375-20 UNEF	.906 (23.0)	.130 (3.3)	1.141 (29.0)
16	1.219 (31.0)	.120 (3.1)	.375 (9.5)	.317 (8.1)	.234 (5.9)	1.000 (25.4)	1.0625-18 UNEF	.969 (24.6)	.130 (3.3)	1.266 (32.2)
18	1.312 (33.3)	.120 (3.1)	.375 (9.5)	.317 (8.1)	.234 (5.9)	1.125 (28.6)	1.1875-18 UNEF	1.062 (27.0)	.130 (3.3)	1.375 (34.9)
20	1.438 (36.5)	.120 (3.1)	.375 (9.5)	.317 (8.1)	.234 (5.9)	1.250 (31.8)	1.3125-18 UNEF	1.156 (29.4)	.130 (3.3)	1.484 (37.7)
22	1.562 (39.7)	.120 (3.1)	.375 (9.5)	.317 (8.1)	.234 (5.9)	1.375 (34.9)	1.4375-18 UNEF	1.250 (31.8)	.130 (3.3)	1.610 (40.9)
24	1.688 (42.9)	.147 (3.7)	.375 (9.5)	.317 (8.1)	.313 (8.0)	1.500 (38.1)	1.5625-18 UNEF	1.375 (34.9)	.154 (3.9)	1.719 (43.7)

Dimensions are in inches (mm).







Panel Cutout

Rev. 2219

DS12 HA 10-35 P N - 02

1 2 3 4 5 6

1 BASIC PART NUMBER

DS12 Hermetic box mount receptacle
Helium leakage < 1.0 x10^{-7} cc^3/sec at
15 psi (1.1 kg/cm^2). Insert rated to 14,000 psi
(984 kg/cm^2) when precision welded or soldered.

2 MATERIAL & FINISH

HA Stainless steel, passivated
HB Stainless steel, electrodeposited nickel

3 SHELL SIZE & INSERT ARRANGEMENT

See Insert Arrangement Selection table, p. R-16
(Verify hermetic availability on table)

4 CONTACT STYLE

P Pin, gold plated, solder cup termination
H* Socket, gold plated, solder cup termination

5 ALTERNATE KEYING

N NORMAL or A, B, C, D

6 OPTIONAL ACCESSORY KIT (OMIT FOR NONE)

02 Protective cover + mounting gasket
03 02 kit + mounting bracket + sealing screws

* Please consult an authorized distributor for lead time and minimum quantity requirements.

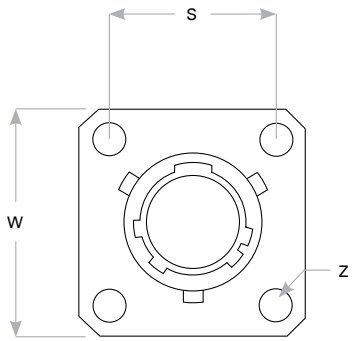
DS12 Compatibility

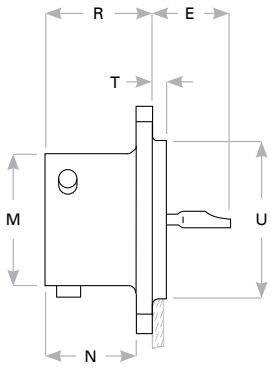
Compatible Brands	Mates
MIL-DTL-38999 Series II	MS27473, MS27484
Aero / Conesys	AE273, AE284
Amphenol	JT06, JTG06
ITT Cannon	KJ6, KJG6
Souriau	8T6

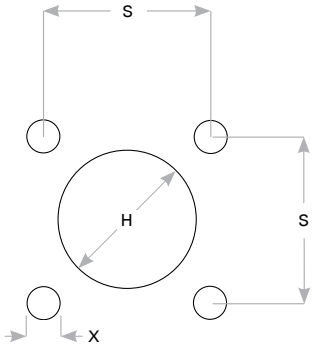
Receptacle Dimensions

Shell Size	W	Z	R	N	T	E	M	U	S	X	H Front Mount
8	.812 (20.6)	.120 (3.1)	.375 (9.5)	.317 (8.1)	.051 (1.3)	.308 (7.8)	.473 (12.0)	.562 (14.3)	.594 (15.1)	.130 (3.3)	.570 (14.5)
10	.938 (23.8)	.120 (3.1)	.375 (9.5)	.317 (8.1)	.051 (1.3)	.308 (7.8)	.590 (15.0)	.672 (17.1)	.719 (18.3)	.130 (3.3)	.690 (17.5)
12	1.031 (26.2)	.120 (3.1)	.375 (9.5)	.317 (8.1)	.051 (1.3)	.308 (7.8)	.750 (19.1)	.781 (19.8)	.812 (20.6)	.130 (3.3)	.820 (20.8)
14	1.125 (28.6)	.120 (3.1)	.375 (9.5)	.317 (8.1)	.051 (1.3)	.308 (7.8)	.875 (22.2)	.906 (23.0)	.906 (23.0)	.130 (3.3)	.940 (23.9)
16	1.219 (31.0)	.120 (3.1)	.375 (9.5)	.317 (8.1)	.051 (1.3)	.308 (7.8)	1.000 (25.4)	1.031 (26.2)	.969 (24.6)	.130 (3.3)	1.070 (27.2)
18	1.312 (33.3)	.120 (3.1)	.375 (9.5)	.317 (8.1)	.051 (1.3)	.308 (7.8)	1.125 (28.6)	1.156 (29.4)	1.062 (27.0)	.130 (3.3)	1.190 (30.2)
20	1.438 (36.5)	.120 (3.1)	.375 (9.5)	.317 (8.1)	.051 (1.3)	.308 (7.8)	1.250 (31.8)	1.250 (31.8)	1.156 (29.4)	.130 (3.3)	1.320 (33.5)
22	1.562 (39.7)	.120 (3.1)	.375 (9.5)	.317 (8.1)	.080 (2.0)	.308 (7.8)	1.375 (34.9)	1.375 (34.9)	1.250 (31.8)	.130 (3.3)	1.440 (36.6)
24	1.688 (42.9)	.147 (3.7)	.375 (9.5)	.317 (8.1)	.080 (2.0)	.308 (7.8)	1.500 (38.1)	1.500 (38.1)	1.375 (34.9)	.154 (3.9)	1.570 (39.9)

Dimensions are in inches (mm).







Panel Cutout

Rev. 2219

Jam Nut Receptacle (Hermetic)

DS Series • MIL-DTL-38999 Series II Style Connectors

DS13 Compatibility

Compatible Brands	Mates
MIL-DTL-38999 Series II	MS27473, MS27484
Aero / Conesys	AE273, AE284
Amphenol	JT06, JTG06
ITT Cannon	KJ6, KJG6
Souriau	8T6

DS13 HA 10-5 P N - 02

1 2 3 4 5 6

1 BASIC PART NUMBER

DS13 Hermetic jam nut receptacle
Helium leakage < 1.0 x10^{-7} cc^3/sec at
15 psi (1.1 kg/cm^2). Insert rated to 14,000 psi
(984 kg/cm^2) when precision welded or soldered.

2 MATERIAL & FINISH

HA Stainless steel, passivated
HB Stainless steel, electrodeposited nickel

3 SHELL SIZE & INSERT ARRANGEMENT

See Insert Arrangement Selection table, p. R-16
(Verify hermetic availability on table)

4 CONTACT STYLE

P Pin, gold plated, solder cup termination
H* Socket, gold plated, solder cup termination

5 ALTERNATE KEYING

N NORMAL or A, B, C, D

6 OPTIONAL ACCESSORY KIT (OMIT FOR NONE)

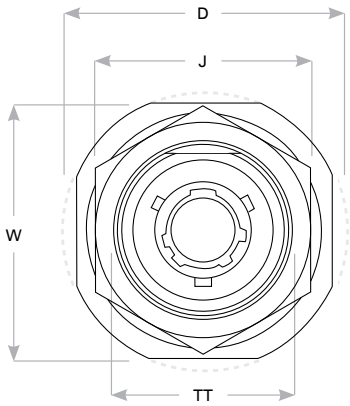
02 Protective cover

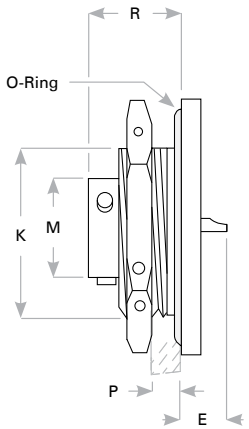
* Please consult an authorized distributor for lead time and minimum quantity requirements.

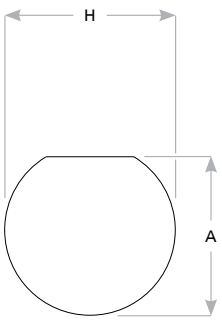
Receptacle Dimensions

Shell Size	W	D Max	J Hex	TT	R	K	M	E	Q Thread Class 2A	P Max Panel	H	A
8	1.250 (31.8)	1.390 (35.3)	1.062 (27.0)	.884 (22.5)	.438 (11.1)	.830 (21.1)	.473 (12.0)	.244 (6.2)	.8750-20UNEF	.109 (2.8)	.885 (22.5)	.830 (21.1)
10	1.375 (34.9)	1.515 (38.5)	1.188 (30.2)	1.007 (25.6)	.438 (11.1)	.955 (24.3)	.590 (15.0)	.244 (6.2)	1.0000-20UNEF	.109 (2.8)	1.010 (25.7)	.955 (24.3)
12	1.500 (38.1)	1.640 (41.7)	1.312 (33.3)	1.134 (28.8)	.438 (11.1)	1.084 (27.5)	.750 (19.1)	.244 (6.2)	1.1250-18UNEF	.109 (2.8)	1.135 (28.8)	1.085 (27.6)
14	1.625 (41.3)	1.765 (44.8)	1.438 (36.5)	1.259 (32.0)	.438 (11.1)	1.208 (30.7)	.875 (22.2)	.244 (6.2)	1.2500-18UNEF	.109 (2.8)	1.260 (32.0)	1.210 (30.7)
16	1.781 (45.2)	1.953 (49.6)	1.562 (39.7)	1.384 (35.2)	.438 (11.1)	1.333 (33.9)	1.000 (25.4)	.244 (6.2)	1.3750-18UNEF	.109 (2.8)	1.385 (35.2)	1.335 (33.9)
18	1.890 (48.0)	2.031 (51.6)	1.688 (42.9)	1.507 (38.3)	.438 (11.1)	1.459 (37.1)	1.125 (28.6)	.244 (6.2)	1.5000-18UNEF	.109 (2.8)	1.510 (38.4)	1.460 (37.1)
20	2.016 (51.2)	2.156 (54.8)	1.812 (46.0)	1.634 (41.5)	.464 (11.8)	1.576 (40.0)	1.250 (31.8)	.218 (5.5)	1.6250-18UNEF	.109 (2.8)	1.635 (41.5)	1.585 (40.3)
22	2.140 (54.4)	2.280 (57.9)	2.000 (50.8)	1.759 (44.7)	.464 (11.8)	1.701 (43.2)	1.375 (34.9)	.218 (5.5)	1.7500-18UNS	.109 (2.8)	1.760 (44.7)	1.709 (43.4)
24	2.265 (57.5)	2.405 (61.1)	2.125 (54.0)	1.884 (47.9)	.464 (11.8)	1.826 (46.4)	1.500 (38.1)	.218 (5.5)	1.8750-16UN	.109 (2.8)	1.885 (47.9)	1.835 (46.6)

Dimensions are in inches (mm).







Panel Cutout

Rev. 2219

DS19 HA 14-15 P N - 02

1 2 3 4 5 6

1 BASIC PART NUMBER

DS19 Hermetic solder mount receptacle
Helium leakage < 1.0 x10^{-7} cc^3/sec at
15 psi (1.1 kg/cm^2). Insert rated to 14,000 psi
(984 kg/cm^2) when precision welded or soldered.

2 MATERIAL & FINISH

HA Stainless steel, passivated
HB Stainless steel, electrodeposited nickel

3 SHELL SIZE & INSERT ARRANGEMENT

See Insert Arrangement Selection table, p. R-16
(Verify hermetic availability on table)

4 CONTACT STYLE

P Pin, gold plated, solder cup termination
H* Socket, gold plated, solder cup termination

5 ALTERNATE KEYING

N NORMAL or A, B, C, D

6 OPTIONAL ACCESSORY KIT (OMIT FOR NONE)

02 Protective cover

* Please consult an authorized distributor for lead time and minimum quantity requirements.

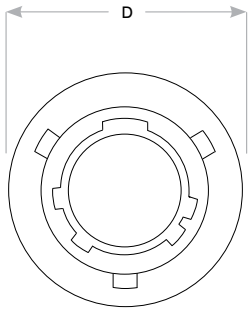
DS19 Compatibility

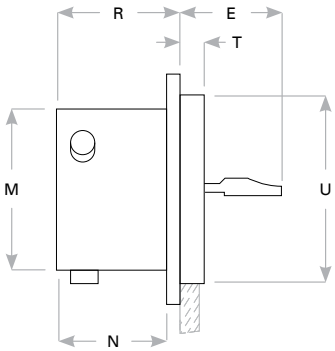
Compatible Brands	Mates
MIL-DTL-38999 Series II	MS27473, MS27484
Aero / Conesys	AE273, AE284
Amphenol	JT06, JTG06
ITT Cannon	KJ6, KJG6
Souriau	8T6

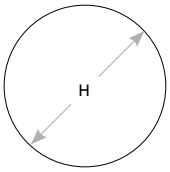
Receptacle Dimensions

Shell Size	D	R	N	T	E	M	U	H Front Mount
8	.687 (17.5)	.348 (8.8)	.317 (8.1)	.078 (2.0)	.340 (8.6)	.473 (12.0)	.562 (14.3)	.592 (15.0)
10	.797 (20.2)	.348 (8.8)	.317 (8.1)	.078 (2.0)	.340 (8.6)	.590 (15.0)	.672 (17.1)	.702 (17.8)
12	.906 (23.0)	.348 (8.8)	.317 (8.1)	.078 (2.0)	.340 (8.6)	.750 (19.1)	.781 (19.8)	.811 (20.6)
14	1.031 (26.2)	.348 (8.8)	.317 (8.1)	.078 (2.0)	.340 (8.6)	.875 (22.2)	.906 (23.0)	.936 (23.8)
16	1.156 (29.4)	.348 (8.8)	.317 (8.1)	.078 (2.0)	.340 (8.6)	1.000 (25.4)	1.031 (26.2)	1.061 (27.0)
18	1.281 (32.5)	.348 (8.8)	.317 (8.1)	.078 (2.0)	.340 (8.6)	1.125 (28.6)	1.156 (29.4)	1.186 (30.1)
20	1.375 (34.9)	.348 (8.8)	.317 (8.1)	.078 (2.0)	.340 (8.6)	1.250 (31.8)	1.250 (31.8)	1.280 (32.5)
22	1.500 (38.1)	.348 (8.8)	.317 (8.1)	.107 (2.7)	.340 (8.6)	1.375 (34.9)	1.375 (34.9)	1.405 (35.7)
24	1.625 (41.3)	.348 (8.8)	.317 (8.1)	.107 (2.7)	.340 (8.6)	1.500 (38.1)	1.500 (38.1)	1.530 (38.9)

Dimensions are in inches (mm).





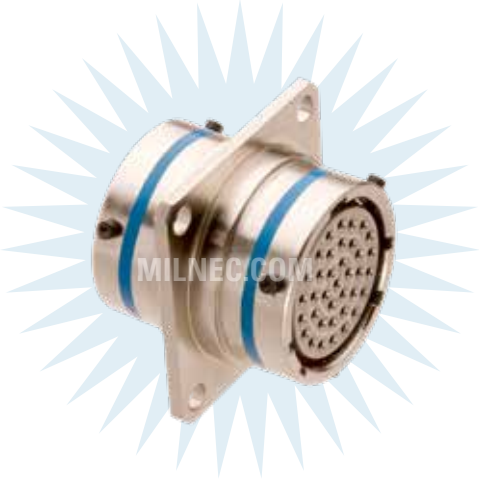


Panel Cutout

Rev. 2219

Thru-Bulkhead Receptacle

DS Series • MIL-DTL-38999 Series II Style Connectors



DS22 Compatibility

Compatible Brands	Mates
MIL-DTL-38999 Series II	MS27473, MS27484
Aero / Conesys	AE273, AE284
Amphenol	JT06, JTG06
ITT Cannon	KJ6, KJG6
Souriau	8T6

DS22 N 14-35 P 1 N - 03

1 2 3 4 5 6 7

1 BASIC PART NUMBER

DS22 Thru-bulkhead receptacle

2 MATERIAL & FINISH

N Aluminum, electroless nickel
W Aluminum, olive drab cadmium
K Stainless steel, passivated (firewall)

3 SHELL SIZE & INSERT ARRANGEMENT

See Insert Arrangement Selection table, p. B-19

4 CONTACT STYLE

P Pins on flange side, sockets opposite
S Sockets on flange side, pins opposite

5 PANEL RANGE

1 .063 (1.6) Min — .125 (3.2) Max
2 .063 (1.6) Min — .250 (6.4) Max
3 .063 (1.6) Min — .500 (12.7) Max

6 ALTERNATE KEYING

N NORMAL or A, B, C, D

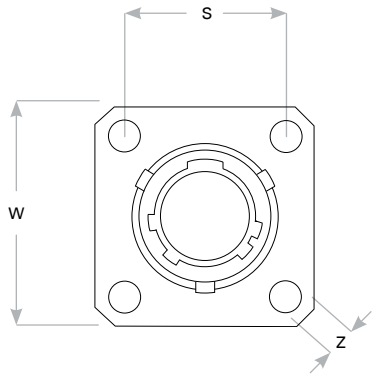
7 OPTIONAL ACCESSORY KIT (OMIT FOR NONE)

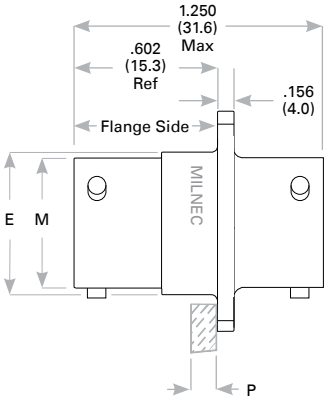
02 Protective cover (2x)
03 02 kit + mounting bracket + sealing screws

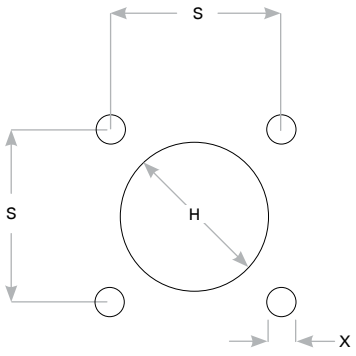
Receptacle Dimensions

Shell Size	W	Z	E	M	S	H	X	P Max Panel‡
8	.812 (20.6)	.120 (3.1)	.516 (13.1)	.473 (12.0)	.594 (15.1)	.580 (14.7)	.130 (3.3)	See Option 5 for Panel Range
10	.938 (23.8)	.120 (3.1)	.633 (16.1)	.590 (15.0)	.719 (18.3)	.697 (17.7)	.130 (3.3)	
12	1.031 (26.2)	.120 (3.1)	.802 (20.4)	.750 (19.1)	.812 (20.6)	.885 (22.5)	.130 (3.3)	
14	1.125 (28.6)	.120 (3.1)	.927 (23.6)	.875 (22.2)	.906 (23.0)	1.010 (25.7)	.130 (3.3)	
16	1.219 (31.0)	.120 (3.1)	1.052 (26.7)	1.000 (25.4)	.969 (24.6)	1.135 (28.8)	.130 (3.3)	
18	1.312 (33.3)	.120 (3.1)	1.177 (29.9)	1.125 (28.6)	1.062 (27.0)	1.260 (32.0)	.130 (3.3)	
20	1.438 (36.5)	.120 (3.1)	1.302 (33.1)	1.250 (31.8)	1.156 (29.4)	1.385 (35.2)	.130 (3.3)	
22	1.562 (39.7)	.120 (3.1)	1.427 (36.3)	1.375 (34.9)	1.250 (31.8)	1.510 (38.4)	.130 (3.3)	
24	1.688 (42.9)	.147 (3.7)	1.552 (39.4)	1.500 (38.1)	1.375 (34.9)	1.635 (41.5)	.154 (3.9)	

Dimensions are in inches (mm). ‡ Max panel thickness will ensure proper coupling clearance.



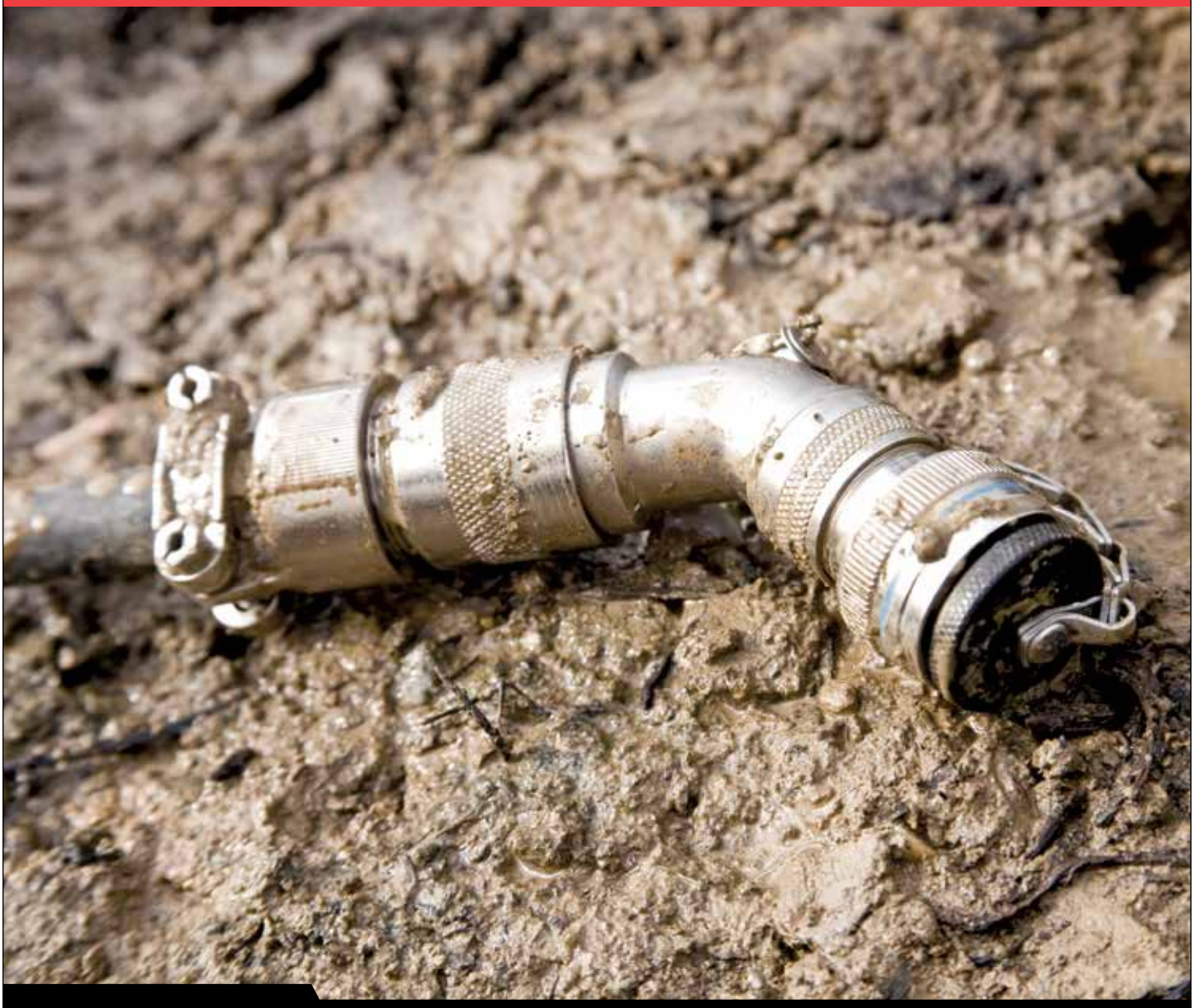




Panel Cutout

Rev. 2219

BATTLEFIELD READY RIGHT OUT OF THE BOX



Ruggedized IP67 Connectors & Accessories

Milnec high-performance connectors can handle the toughest applications in the most demanding environments. Heavy duty construction with a variety of sealing and mounting components ensures IP67 protection for complete system reliability. Keep your equipment ready for action with Milnec ruggedized connectors.

MILNEC® INTERCONNECT SYSTEMS

DSB2 - S - 14 N

1 2 3 4

1. **BASIC PART NUMBER**
   - **DSB2** Straight strain relief backshell
   - **DSB4** 90° strain relief backshell
2. **COUPLING STYLE**
   - **N** Non-self-locking coupling
   - **S** Self-locking coupling
3. **SHELL SIZE**
   - See Strain Relief Dimensions table below
4. **MATERIAL & FINISH**
   - **N** Aluminum, electroless nickel
   - **W** Aluminum, olive drab cadmium

DSB2 Compatibility

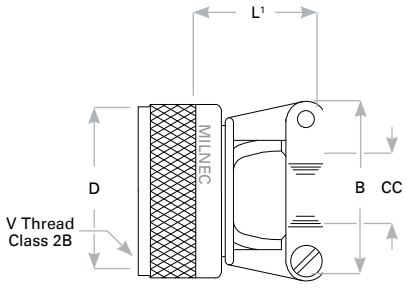
Compatible Brands	Connectors
MIL-DTL-38999 Series II	MS27472, MS27473, MS27474, MS27484, MS27497
Aero / Conesys	AE272, AE273, AE274, AE284, AE297
Amphenol	JT00, JTPQ00, JT01, JT06, JTG06, JT07
ITT Cannon	KJ0, KJ3, KJ6, KJG6, KJ7
Souriau	8T1, 8L3, 8T6, 8T7

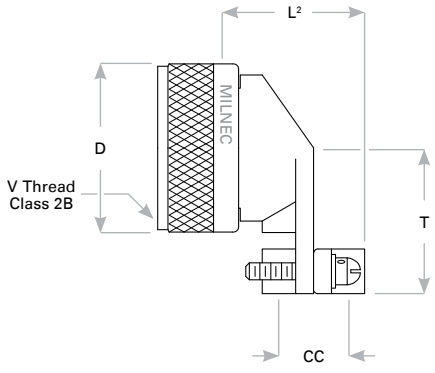
Note: See part builder (p. R-14) for additional kit options.

Strain Relief Dimensions

Shell Size	D	L¹	L²	T	B	V Thread Class 2B	CC Cable Clearance	
							Min	Max
8	.858 (21.8)	.910 (23.1)	1.200 (30.5)	1.000 (25.4)	.850 (21.6)	.438-28 UNEF	.098 (2.5)	.234 (5.9)
10	.984 (25.0)	.910 (23.1)	1.200 (30.5)	1.100 (27.9)	.900 (22.9)	.562-24 UNEF	.153 (3.9)	.234 (5.9)
12	1.157 (29.4)	1.010 (25.7)	1.400 (35.6)	1.100 (27.9)	1.100 (27.9)	.688-24 UNEF	.190 (4.8)	.328 (8.3)
14	1.279 (32.5)	1.060 (26.9)	1.450 (36.8)	1.250 (31.8)	1.150 (29.2)	.813-20 UNEF	.260 (6.6)	.457 (11.6)
16	1.406 (35.7)	1.160 (29.5)	1.600 (40.6)	1.300 (33.0)	1.300 (33.0)	.938-20 UNEF	.283 (7.2)	.614 (15.6)
18	1.516 (38.5)	1.410 (35.8)	1.700 (43.2)	1.350 (34.3)	1.500 (38.1)	1.063-18 UNEF	.325 (8.3)	.634 (16.1)
20	1.642 (41.7)	1.510 (38.4)	1.850 (47.0)	1.600 (40.6)	1.600 (40.6)	1.188-18 UNEF	.343 (8.7)	.698 (17.7)
22	1.768 (44.9)	1.660 (42.2)	1.950 (49.5)	1.750 (44.5)	1.700 (43.2)	1.313-18 UNEF	.381 (9.7)	.823 (20.9)
24	1.889 (48.0)	1.760 (44.7)	2.100 (53.3)	1.850 (47.0)	1.800 (45.7)	1.438-18 UNEF	.418 (10.6)	.853 (21.7)

Dimensions are in inches (mm).





DON'T GET SHOCKED BY UNEXPECTED SYSTEM FAILURE

Get Complete IP67 & EMI/RFI Protection

Our EMI/RFI environmental backshells offer the ultimate protection for shielded applications. In addition to providing complete IP67 environmental protection, they protect your system against electromagnetic and radio frequency interference, which may cause system malfunction or catastrophic failure. Full protection—complete peace of mind.

MILNEC®
INTERCONNECT SYSTEMS

Photo for example only

DSR2 - 035 N

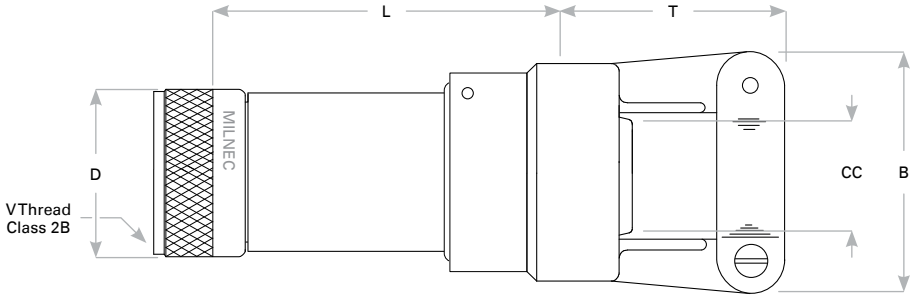
1 2 3

1. **BASIC PART NUMBER**
   - **DSR2** Straight EMI/RFI environmental backshell
2. **DASH NO.**
   - See Backshell Dimensions table below
3. **MATERIAL & FINISH**
   - **N** Aluminum, electroless nickel
   - **W** Aluminum, olive drab cadmium

Note: See part builder (p. R-14) for additional kit options.

DSR2 Compatibility

Compatible Brands	Connectors
MIL-DTL-38999 Series II	MS27472, MS27473, MS27474, MS27484, MS27497
Aero / Conesys	AE272, AE273, AE274, AE284, AE297
Amphenol	JT00, JTPQ00, JT01, JT06, JTG06, JT07
ITT Cannon	KJ0, KJ3, KJ6, KJG6, KJ7
Souriau	8T1, 8L3, 8T6, 8T7



Bachshell Dimensions

Dash No.	Shell Size	V Thread Class 2B	D	T	B	L	CC Cable Clearance	
							Min	Max
001	8	.438-28 UNEF	.571 (14.5)	1.250 (31.8)	.781 (19.8)	1.500 (38.1)	.062 (1.6)	.125 (3.2)
002	8	.438-28 UNEF	.571 (14.5)	1.250 (31.8)	.781 (19.8)	2.500 (63.5)	.062 (1.6)	.125 (3.2)
003	8	.438-28 UNEF	.571 (14.5)	1.250 (31.8)	.969 (24.6)	1.500 (38.1)	.125 (3.2)	.250 (6.4)
004	8	.438-28 UNEF	.571 (14.5)	1.250 (31.8)	.969 (24.6)	2.500 (63.5)	.125 (3.2)	.250 (6.4)
005	10	.562-24 UNEF	.701 (17.8)	1.250 (31.8)	.781 (19.8)	1.500 (38.1)	.062 (1.6)	.125 (3.2)
006	10	.562-24 UNEF	.701 (17.8)	1.250 (31.8)	.781 (19.8)	2.500 (63.5)	.062 (1.6)	.125 (3.2)
007	10	.562-24 UNEF	.701 (17.8)	1.250 (31.8)	.969 (24.6)	1.500 (38.1)	.125 (3.2)	.250 (6.4)
008	10	.562-24 UNEF	.701 (17.8)	1.250 (31.8)	.969 (24.6)	2.500 (63.5)	.125 (3.2)	.250 (6.4)
009	10	.562-24 UNEF	.701 (17.8)	1.250 (31.8)	1.062 (27.0)	1.500 (38.1)	.250 (6.4)	.375 (9.5)
010	10	.562-24 UNEF	.701 (17.8)	1.250 (31.8)	1.062 (27.0)	2.500 (63.5)	.250 (6.4)	.375 (9.5)

Dimensions are in inches (mm).

(Continued on next page)

Backshell Dimensions (Continued from previous page)

Dash No.	Shell Size	V Thread Class 2B	D	T	B	L	CC Cable Clearance	
							Min	Max
011	12	.688-24 UNEF	.831 (21.1)	1.250 (31.8)	.969 (24.6)	1.500 (38.1)	.125 (3.2)	.250 (6.4)
012	12	.688-24 UNEF	.831 (21.1)	1.250 (31.8)	.969 (24.6)	2.500 (63.5)	.125 (3.2)	.250 (6.4)
013	12	.688-24 UNEF	.831 (21.1)	1.250 (31.8)	1.062 (27.0)	1.500 (38.1)	.250 (6.4)	.375 (9.5)
014	12	.688-24 UNEF	.831 (21.1)	1.250 (31.8)	1.062 (27.0)	2.500 (63.5)	.250 (6.4)	.375 (9.5)
015	12	.688-24 UNEF	.831 (21.1)	1.250 (31.8)	1.156 (29.4)	1.500 (38.1)	.375 (9.5)	.500 (12.7)
016	12	.688-24 UNEF	.831 (21.1)	1.250 (31.8)	1.156 (29.4)	2.500 (63.5)	.375 (9.5)	.500 (12.7)
017	14	.813-20 UNEF	.949 (24.1)	1.250 (31.8)	.969 (24.6)	1.500 (38.1)	.125 (3.2)	.250 (6.4)
018	14	.813-20 UNEF	.949 (24.1)	1.250 (31.8)	.969 (24.6)	2.500 (63.5)	.125 (3.2)	.250 (6.4)
019	14	.813-20 UNEF	.949 (24.1)	1.250 (31.8)	.969 (24.6)	3.500 (88.9)	.125 (3.2)	.250 (6.4)
020	14	.813-20 UNEF	.949 (24.1)	1.250 (31.8)	1.062 (27.0)	1.500 (38.1)	.250 (6.4)	.375 (9.5)
021	14	.813-20 UNEF	.949 (24.1)	1.250 (31.8)	1.062 (27.0)	2.500 (63.5)	.250 (6.4)	.375 (9.5)
022	14	.813-20 UNEF	.949 (24.1)	1.250 (31.8)	1.062 (27.0)	3.500 (88.9)	.250 (6.4)	.375 (9.5)
023	14	.813-20 UNEF	.949 (24.1)	1.250 (31.8)	1.156 (29.4)	1.500 (38.1)	.375 (9.5)	.500 (12.7)
024	14	.813-20 UNEF	.949 (24.1)	1.250 (31.8)	1.156 (29.4)	2.500 (63.5)	.375 (9.5)	.500 (12.7)
025	14	.813-20 UNEF	.949 (24.1)	1.250 (31.8)	1.156 (29.4)	3.500 (88.9)	.375 (9.5)	.500 (12.7)
026	14	.813-20 UNEF	.949 (24.1)	1.312 (33.3)	1.250 (31.8)	1.500 (38.1)	.500 (12.7)	.625 (15.9)
027	14	.813-20 UNEF	.949 (24.1)	1.312 (33.3)	1.250 (31.8)	2.500 (63.5)	.500 (12.7)	.625 (15.9)
028	14	.813-20 UNEF	.949 (24.1)	1.312 (33.3)	1.250 (31.8)	3.500 (88.9)	.500 (12.7)	.625 (15.9)
029	16	.938-20 UNEF	1.079 (27.4)	1.250 (31.8)	.969 (24.6)	1.500 (38.1)	.125 (3.2)	.250 (6.4)
030	16	.938-20 UNEF	1.079 (27.4)	1.250 (31.8)	.969 (24.6)	2.500 (63.5)	.125 (3.2)	.250 (6.4)
031	16	.938-20 UNEF	1.079 (27.4)	1.250 (31.8)	.969 (24.6)	3.500 (88.9)	.125 (3.2)	.250 (6.4)
032	16	.938-20 UNEF	1.079 (27.4)	1.250 (31.8)	1.062 (27.0)	1.500 (38.1)	.250 (6.4)	.375 (9.5)
033	16	.938-20 UNEF	1.079 (27.4)	1.250 (31.8)	1.062 (27.0)	2.500 (63.5)	.250 (6.4)	.375 (9.5)
034	16	.938-20 UNEF	1.079 (27.4)	1.250 (31.8)	1.062 (27.0)	3.500 (88.9)	.250 (6.4)	.375 (9.5)
035	16	.938-20 UNEF	1.079 (27.4)	1.250 (31.8)	1.156 (29.4)	1.500 (38.1)	.375 (9.5)	.500 (12.7)
036	16	.938-20 UNEF	1.079 (27.4)	1.250 (31.8)	1.156 (29.4)	2.500 (63.5)	.375 (9.5)	.500 (12.7)
037	16	.938-20 UNEF	1.079 (27.4)	1.250 (31.8)	1.156 (29.4)	3.500 (88.9)	.375 (9.5)	.500 (12.7)
038	16	.938-20 UNEF	1.079 (27.4)	1.312 (33.3)	1.250 (31.8)	1.500 (38.1)	.500 (12.7)	.625 (15.9)
039	16	.938-20 UNEF	1.079 (27.4)	1.312 (33.3)	1.250 (31.8)	2.500 (63.5)	.500 (12.7)	.625 (15.9)
040	16	.938-20 UNEF	1.079 (27.4)	1.312 (33.3)	1.250 (31.8)	3.500 (88.9)	.500 (12.7)	.625 (15.9)
041	16	.938-20 UNEF	1.079 (27.4)	1.375 (34.9)	1.375 (34.9)	1.500 (38.1)	.625 (15.9)	.750 (19.1)
042	16	.938-20 UNEF	1.079 (27.4)	1.375 (34.9)	1.375 (34.9)	2.500 (63.5)	.625 (15.9)	.750 (19.1)
043	16	.938-20 UNEF	1.079 (27.4)	1.375 (34.9)	1.375 (34.9)	3.500 (88.9)	.625 (15.9)	.750 (19.1)
044	18	1.063-18 UNEF	1.201 (30.5)	1.250 (31.8)	1.062 (27.0)	1.500 (38.1)	.250 (6.4)	.375 (9.5)
045	18	1.063-18 UNEF	1.201 (30.5)	1.250 (31.8)	1.062 (27.0)	2.500 (63.5)	.250 (6.4)	.375 (9.5)
046	18	1.063-18 UNEF	1.201 (30.5)	1.250 (31.8)	1.062 (27.0)	3.500 (88.9)	.250 (6.4)	.375 (9.5)
047	18	1.063-18 UNEF	1.201 (30.5)	1.250 (31.8)	1.156 (29.4)	1.500 (38.1)	.375 (9.5)	.500 (12.7)
048	18	1.063-18 UNEF	1.201 (30.5)	1.250 (31.8)	1.156 (29.4)	2.500 (63.5)	.375 (9.5)	.500 (12.7)
049	18	1.063-18 UNEF	1.201 (30.5)	1.250 (31.8)	1.156 (29.4)	3.500 (88.9)	.375 (9.5)	.500 (12.7)
050	18	1.063-18 UNEF	1.201 (30.5)	1.312 (33.3)	1.250 (31.8)	1.500 (38.1)	.500 (12.7)	.625 (15.9)
051	18	1.063-18 UNEF	1.201 (30.5)	1.312 (33.3)	1.250 (31.8)	2.500 (63.5)	.500 (12.7)	.625 (15.9)
052	18	1.063-18 UNEF	1.201 (30.5)	1.312 (33.3)	1.250 (31.8)	3.500 (88.9)	.500 (12.7)	.625 (15.9)
053	18	1.063-18 UNEF	1.201 (30.5)	1.375 (34.9)	1.375 (34.9)	1.500 (38.1)	.625 (15.9)	.750 (19.1)
054	18	1.063-18 UNEF	1.201 (30.5)	1.375 (34.9)	1.375 (34.9)	2.500 (63.5)	.625 (15.9)	.750 (19.1)
055	18	1.063-18 UNEF	1.201 (30.5)	1.375 (34.9)	1.375 (34.9)	3.500 (88.9)	.625 (15.9)	.750 (19.1)
056	18	1.063-18 UNEF	1.201 (30.5)	1.500 (38.1)	1.500 (38.1)	1.500 (38.1)	.750 (19.1)	.875 (22.2)
057	18	1.063-18 UNEF	1.201 (30.5)	1.500 (38.1)	1.500 (38.1)	2.500 (63.5)	.750 (19.1)	.875 (22.2)
058	18	1.063-18 UNEF	1.201 (30.5)	1.500 (38.1)	1.500 (38.1)	3.500 (88.9)	.750 (19.1)	.875 (22.2)

Dimensions are in inches (mm).

(Continued on next page)

Rev. 2219

Backshell Dimensions (Continued from previous page)

Dash No.	Shell Size	V Thread Class 2B	D	T	B	L	CC Cable Clearance	
							Min	Max
059	20	1.188-18 UNEF	1.331 (33.8)	1.250 (31.8)	1.062 (27.0)	1.500 (38.1)	.250 (6.4)	.375 (9.5)
060	20	1.188-18 UNEF	1.331 (33.8)	1.250 (31.8)	1.062 (27.0)	2.500 (63.5)	.250 (6.4)	.375 (9.5)
061	20	1.188-18 UNEF	1.331 (33.8)	1.250 (31.8)	1.062 (27.0)	3.500 (88.9)	.250 (6.4)	.375 (9.5)
062	20	1.188-18 UNEF	1.331 (33.8)	1.250 (31.8)	1.062 (27.0)	4.500 (114.3)	.250 (6.4)	.375 (9.5)
063	20	1.188-18 UNEF	1.331 (33.8)	1.250 (31.8)	1.156 (29.4)	1.500 (38.1)	.375 (9.5)	.500 (12.7)
064	20	1.188-18 UNEF	1.331 (33.8)	1.250 (31.8)	1.156 (29.4)	2.500 (63.5)	.375 (9.5)	.500 (12.7)
065	20	1.188-18 UNEF	1.331 (33.8)	1.250 (31.8)	1.156 (29.4)	3.500 (88.9)	.375 (9.5)	.500 (12.7)
066	20	1.188-18 UNEF	1.331 (33.8)	1.250 (31.8)	1.156 (29.4)	4.500 (114.3)	.375 (9.5)	.500 (12.7)
067	20	1.188-18 UNEF	1.331 (33.8)	1.312 (33.3)	1.250 (31.8)	1.500 (38.1)	.500 (12.7)	.625 (15.9)
068	20	1.188-18 UNEF	1.331 (33.8)	1.312 (33.3)	1.250 (31.8)	2.500 (63.5)	.500 (12.7)	.625 (15.9)
069	20	1.188-18 UNEF	1.331 (33.8)	1.312 (33.3)	1.250 (31.8)	3.500 (88.9)	.500 (12.7)	.625 (15.9)
070	20	1.188-18 UNEF	1.331 (33.8)	1.312 (33.3)	1.250 (31.8)	4.500 (114.3)	.500 (12.7)	.625 (15.9)
071	20	1.188-18 UNEF	1.331 (33.8)	1.375 (34.9)	1.375 (34.9)	1.500 (38.1)	.625 (15.9)	.750 (19.1)
072	20	1.188-18 UNEF	1.331 (33.8)	1.375 (34.9)	1.375 (34.9)	2.500 (63.5)	.625 (15.9)	.750 (19.1)
073	20	1.188-18 UNEF	1.331 (33.8)	1.375 (34.9)	1.375 (34.9)	3.500 (88.9)	.625 (15.9)	.750 (19.1)
074	20	1.188-18 UNEF	1.331 (33.8)	1.375 (34.9)	1.375 (34.9)	4.500 (114.3)	.625 (15.9)	.750 (19.1)
075	20	1.188-18 UNEF	1.331 (33.8)	1.500 (38.1)	1.500 (38.1)	1.500 (38.1)	.750 (19.1)	.875 (22.2)
076	20	1.188-18 UNEF	1.331 (33.8)	1.500 (38.1)	1.500 (38.1)	2.500 (63.5)	.750 (19.1)	.875 (22.2)
077	20	1.188-18 UNEF	1.331 (33.8)	1.500 (38.1)	1.500 (38.1)	3.500 (88.9)	.750 (19.1)	.875 (22.2)
078	20	1.188-18 UNEF	1.331 (33.8)	1.500 (38.1)	1.500 (38.1)	4.500 (114.3)	.750 (19.1)	.875 (22.2)
079	20	1.188-18 UNEF	1.331 (33.8)	1.625 (41.3)	1.625 (41.3)	1.500 (38.1)	.875 (22.2)	1.000 (25.4)
080	20	1.188-18 UNEF	1.331 (33.8)	1.625 (41.3)	1.625 (41.3)	2.500 (63.5)	.875 (22.2)	1.000 (25.4)
081	20	1.188-18 UNEF	1.331 (33.8)	1.625 (41.3)	1.625 (41.3)	3.500 (88.9)	.875 (22.2)	1.000 (25.4)
082	20	1.188-18 UNEF	1.331 (33.8)	1.625 (41.3)	1.625 (41.3)	4.500 (114.3)	.875 (22.2)	1.000 (25.4)
083	22	1.313-18 UNEF	1.449 (36.8)	1.250 (31.8)	1.062 (27.0)	1.500 (38.1)	.250 (6.4)	.375 (9.5)
084	22	1.313-18 UNEF	1.449 (36.8)	1.250 (31.8)	1.062 (27.0)	2.500 (63.5)	.250 (6.4)	.375 (9.5)
085	22	1.313-18 UNEF	1.449 (36.8)	1.250 (31.8)	1.062 (27.0)	3.500 (88.9)	.250 (6.4)	.375 (9.5)
086	22	1.313-18 UNEF	1.449 (36.8)	1.250 (31.8)	1.062 (27.0)	4.500 (114.3)	.250 (6.4)	.375 (9.5)
087	22	1.313-18 UNEF	1.449 (36.8)	1.250 (31.8)	1.156 (29.4)	1.500 (38.1)	.375 (9.5)	.500 (12.7)
088	22	1.313-18 UNEF	1.449 (36.8)	1.250 (31.8)	1.156 (29.4)	2.500 (63.5)	.375 (9.5)	.500 (12.7)
089	22	1.313-18 UNEF	1.449 (36.8)	1.250 (31.8)	1.156 (29.4)	3.500 (88.9)	.375 (9.5)	.500 (12.7)
090	22	1.313-18 UNEF	1.449 (36.8)	1.250 (31.8)	1.156 (29.4)	4.500 (114.3)	.375 (9.5)	.500 (12.7)
091	22	1.313-18 UNEF	1.449 (36.8)	1.312 (33.3)	1.250 (31.8)	1.500 (38.1)	.500 (12.7)	.625 (15.9)
092	22	1.313-18 UNEF	1.449 (36.8)	1.312 (33.3)	1.250 (31.8)	2.500 (63.5)	.500 (12.7)	.625 (15.9)
093	22	1.313-18 UNEF	1.449 (36.8)	1.312 (33.3)	1.250 (31.8)	3.500 (88.9)	.500 (12.7)	.625 (15.9)
094	22	1.313-18 UNEF	1.449 (36.8)	1.312 (33.3)	1.250 (31.8)	4.500 (114.3)	.500 (12.7)	.625 (15.9)
095	22	1.313-18 UNEF	1.449 (36.8)	1.375 (34.9)	1.375 (34.9)	1.500 (38.1)	.625 (15.9)	.750 (19.1)
096	22	1.313-18 UNEF	1.449 (36.8)	1.375 (34.9)	1.375 (34.9)	2.500 (63.5)	.625 (15.9)	.750 (19.1)
097	22	1.313-18 UNEF	1.449 (36.8)	1.375 (34.9)	1.375 (34.9)	3.500 (88.9)	.625 (15.9)	.750 (19.1)
098	22	1.313-18 UNEF	1.449 (36.8)	1.375 (34.9)	1.375 (34.9)	4.500 (114.3)	.625 (15.9)	.750 (19.1)
099	22	1.313-18 UNEF	1.449 (36.8)	1.500 (38.1)	1.500 (38.1)	1.500 (38.1)	.750 (19.1)	.875 (22.2)
100	22	1.313-18 UNEF	1.449 (36.8)	1.500 (38.1)	1.500 (38.1)	2.500 (63.5)	.750 (19.1)	.875 (22.2)
101	22	1.313-18 UNEF	1.449 (36.8)	1.500 (38.1)	1.500 (38.1)	3.500 (88.9)	.750 (19.1)	.875 (22.2)
102	22	1.313-18 UNEF	1.449 (36.8)	1.500 (38.1)	1.500 (38.1)	4.500 (114.3)	.750 (19.1)	.875 (22.2)
103	22	1.313-18 UNEF	1.449 (36.8)	1.625 (41.3)	1.625 (41.3)	1.500 (38.1)	.875 (22.2)	1.000 (25.4)
104	22	1.313-18 UNEF	1.449 (36.8)	1.625 (41.3)	1.625 (41.3)	2.500 (63.5)	.875 (22.2)	1.000 (25.4)
105	22	1.313-18 UNEF	1.449 (36.8)	1.625 (41.3)	1.625 (41.3)	3.500 (88.9)	.875 (22.2)	1.000 (25.4)

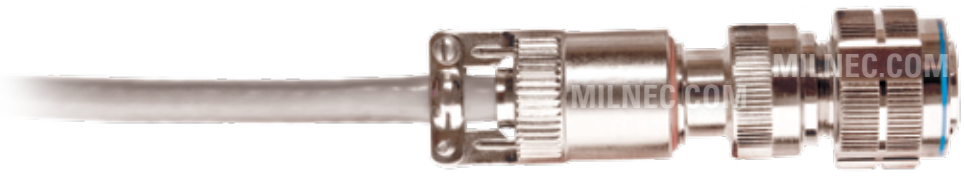
Dimensions are in inches (mm).

(Continued on next page)

Backshell Dimensions (Continued from previous page)

Dash No.	Shell Size	V Thread Class 2B	D	T	B	L	CC Cable Clearance	
							Min	Max
106	22	1.313-18 UNEF	1.449 (36.8)	1.625 (41.3)	1.625 (41.3)	4.500 (114.3)	.875 (22.2)	1.000 (25.4)
107	22	1.313-18 UNEF	1.449 (36.8)	1.625 (41.3)	1.750 (44.5)	1.500 (38.1)	1.000 (25.4)	1.125 (28.6)
108	22	1.313-18 UNEF	1.449 (36.8)	1.625 (41.3)	1.750 (44.5)	2.500 (63.5)	1.000 (25.4)	1.125 (28.6)
109	22	1.313-18 UNEF	1.449 (36.8)	1.625 (41.3)	1.750 (44.5)	3.500 (88.9)	1.000 (25.4)	1.125 (28.6)
110	22	1.313-18 UNEF	1.449 (36.8)	1.625 (41.3)	1.750 (44.5)	4.500 (114.3)	1.000 (25.4)	1.125 (28.6)
111	24	1.438-18 UNEF	1.579 (40.1)	1.250 (31.8)	1.156 (29.4)	1.500 (38.1)	.375 (9.5)	.500 (12.7)
112	24	1.438-18 UNEF	1.579 (40.1)	1.250 (31.8)	1.156 (29.4)	2.500 (63.5)	.375 (9.5)	.500 (12.7)
113	24	1.438-18 UNEF	1.579 (40.1)	1.250 (31.8)	1.156 (29.4)	3.500 (88.9)	.375 (9.5)	.500 (12.7)
114	24	1.438-18 UNEF	1.579 (40.1)	1.250 (31.8)	1.156 (29.4)	4.500 (114.3)	.375 (9.5)	.500 (12.7)
115	24	1.438-18 UNEF	1.579 (40.1)	1.312 (33.3)	1.250 (31.8)	1.500 (38.1)	.500 (12.7)	.625 (15.9)
116	24	1.438-18 UNEF	1.579 (40.1)	1.312 (33.3)	1.250 (31.8)	2.500 (63.5)	.500 (12.7)	.625 (15.9)
117	24	1.438-18 UNEF	1.579 (40.1)	1.312 (33.3)	1.250 (31.8)	3.500 (88.9)	.500 (12.7)	.625 (15.9)
118	24	1.438-18 UNEF	1.579 (40.1)	1.312 (33.3)	1.250 (31.8)	4.500 (114.3)	.500 (12.7)	.625 (15.9)
119	24	1.438-18 UNEF	1.579 (40.1)	1.375 (34.9)	1.375 (34.9)	1.500 (38.1)	.625 (15.9)	.750 (19.1)
120	24	1.438-18 UNEF	1.579 (40.1)	1.375 (34.9)	1.375 (34.9)	2.500 (63.5)	.625 (15.9)	.750 (19.1)
121	24	1.438-18 UNEF	1.579 (40.1)	1.375 (34.9)	1.375 (34.9)	3.500 (88.9)	.625 (15.9)	.750 (19.1)
122	24	1.438-18 UNEF	1.579 (40.1)	1.375 (34.9)	1.375 (34.9)	4.500 (114.3)	.625 (15.9)	.750 (19.1)
123	24	1.438-18 UNEF	1.579 (40.1)	1.500 (38.1)	1.500 (38.1)	1.500 (38.1)	.750 (19.1)	.875 (22.2)
124	24	1.438-18 UNEF	1.579 (40.1)	1.500 (38.1)	1.500 (38.1)	2.500 (63.5)	.750 (19.1)	.875 (22.2)
125	24	1.438-18 UNEF	1.579 (40.1)	1.500 (38.1)	1.500 (38.1)	3.500 (88.9)	.750 (19.1)	.875 (22.2)
126	24	1.438-18 UNEF	1.579 (40.1)	1.500 (38.1)	1.500 (38.1)	4.500 (114.3)	.750 (19.1)	.875 (22.2)
127	24	1.438-18 UNEF	1.579 (40.1)	1.625 (41.3)	1.625 (41.3)	1.500 (38.1)	.875 (22.2)	1.000 (25.4)
128	24	1.438-18 UNEF	1.579 (40.1)	1.625 (41.3)	1.625 (41.3)	2.500 (63.5)	.875 (22.2)	1.000 (25.4)
129	24	1.438-18 UNEF	1.579 (40.1)	1.625 (41.3)	1.625 (41.3)	3.500 (88.9)	.875 (22.2)	1.000 (25.4)
130	24	1.438-18 UNEF	1.579 (40.1)	1.625 (41.3)	1.625 (41.3)	4.500 (114.3)	.875 (22.2)	1.000 (25.4)
131	24	1.438-18 UNEF	1.579 (40.1)	1.625 (41.3)	1.750 (44.5)	1.500 (38.1)	1.000 (25.4)	1.125 (28.6)
132	24	1.438-18 UNEF	1.579 (40.1)	1.625 (41.3)	1.750 (44.5)	2.500 (63.5)	1.000 (25.4)	1.125 (28.6)
133	24	1.438-18 UNEF	1.579 (40.1)	1.625 (41.3)	1.750 (44.5)	3.500 (88.9)	1.000 (25.4)	1.125 (28.6)
134	24	1.438-18 UNEF	1.579 (40.1)	1.625 (41.3)	1.750 (44.5)	4.500 (114.3)	1.000 (25.4)	1.125 (28.6)
135	24	1.438-18 UNEF	1.579 (40.1)	1.625 (41.3)	1.875 (47.6)	1.500 (38.1)	1.125 (28.6)	1.250 (31.8)
136	24	1.438-18 UNEF	1.579 (40.1)	1.625 (41.3)	1.875 (47.6)	2.500 (63.5)	1.125 (28.6)	1.250 (31.8)
137	24	1.438-18 UNEF	1.579 (40.1)	1.625 (41.3)	1.875 (47.6)	3.500 (88.9)	1.125 (28.6)	1.250 (31.8)
138	24	1.438-18 UNEF	1.579 (40.1)	1.625 (41.3)	1.875 (47.6)	4.500 (114.3)	1.125 (28.6)	1.250 (31.8)

Dimensions are in inches (mm).



DSR3 - 015 N

1 2 3

1 **BASIC PART NUMBER**
- **DSR3** 45° EMI/RFI environmental backshell

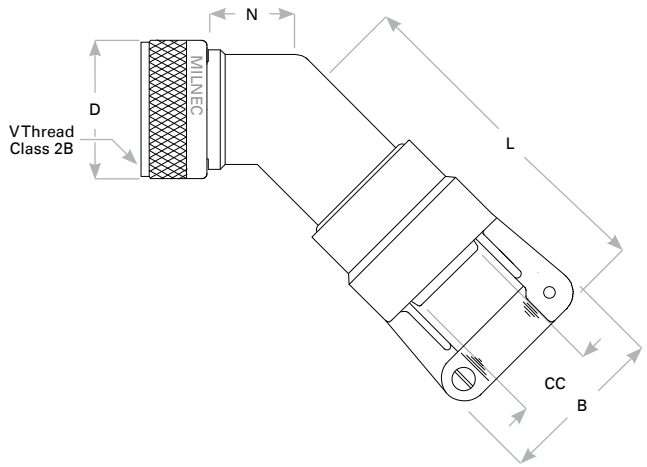
2 **DASH NO.**
- See Backshell Dimensions table below

3 **MATERIAL & FINISH**
- **N** Aluminum, electroless nickel
- **W** Aluminum, olive drab cadmium

Note: See part builder (p. R-14) for additional kit options.

DSR3 Compatibility

Compatible Brands	Connectors
MIL-DTL-38999 Series II	MS27472, MS27473, MS27474, MS27484, MS27497
Aero / Conesys	AE272, AE273, AE274, AE284, AE297
Amphenol	JT00, JTPQ00, JT01, JT06, JTG06, JT07
ITT Cannon	KJ0, KJ3, KJ6, KJG6, KJ7
Souriau	8T1, 8L3, 8T6, 8T7



Backshell Dimensions

Dash No.	Shell Size	V Thread Class 2B	N	D	B	L	CC Cable Clearance	
							Min	Max
001	**8**	.438-28 UNEF	.398 (10.1)	.750 (19.1)	.800 (20.3)	3.088 (78.4)	.062 (1.6)	.125 (3.2)
002	**8**	.438-28 UNEF	.398 (10.1)	.750 (19.1)	1.000 (25.4)	3.088 (78.4)	.125 (3.2)	.250 (6.4)
003	**10**	.562-24 UNEF	.458 (11.6)	.850 (21.6)	.800 (20.3)	3.148 (80.0)	.062 (1.6)	.125 (3.2)
004	**10**	.562-24 UNEF	.458 (11.6)	.850 (21.6)	1.000 (25.4)	3.148 (80.0)	.125 (3.2)	.250 (6.4)
005	**10**	.562-24 UNEF	.458 (11.6)	.850 (21.6)	1.100 (27.9)	3.148 (80.0)	.250 (6.4)	.375 (9.5)
006	**12**	.688-24 UNEF	.518 (13.2)	1.000 (25.4)	1.000 (25.4)	3.208 (81.5)	.125 (3.2)	.250 (6.4)
007	**12**	.688-24 UNEF	.518 (13.2)	1.000 (25.4)	1.100 (27.9)	3.208 (81.5)	.250 (6.4)	.375 (9.5)
008	**12**	.688-24 UNEF	.518 (13.2)	1.000 (25.4)	1.200 (30.5)	3.208 (81.5)	.375 (9.5)	.500 (12.7)
009	**14**	.813-20 UNEF	.588 (14.9)	1.150 (29.2)	1.000 (25.4)	3.298 (83.8)	.125 (3.2)	.250 (6.4)
010	**14**	.813-20 UNEF	.588 (14.9)	1.150 (29.2)	1.100 (27.9)	3.298 (83.8)	.250 (6.4)	.375 (9.5)

Dimensions are in inches (mm).

(Continued on next page)

Backshell Dimensions (Continued from previous page)

Dash No.	Shell Size	V Thread Class 2B	N	D	B	L	CC Cable Clearance	
							Min	Max
011	14	.813-20 UNEF	.588 (14.9)	1.150 (29.2)	1.200 (30.5)	3.298 (83.8)	.375 (9.5)	.500 (12.7)
012	14	.813-20 UNEF	.588 (14.9)	1.150 (29.2)	1.250 (31.8)	3.298 (83.8)	.500 (12.7)	.625 (15.9)
013	16	.938-20 UNEF	.678 (17.2)	1.250 (31.8)	1.000 (25.4)	3.408 (86.6)	.125 (3.2)	.250 (6.4)
014	16	.938-20 UNEF	.678 (17.2)	1.250 (31.8)	1.100 (27.9)	3.408 (86.6)	.250 (6.4)	.375 (9.5)
015	16	.938-20 UNEF	.678 (17.2)	1.250 (31.8)	1.200 (30.5)	3.408 (86.6)	.375 (9.5)	.500 (12.7)
016	16	.938-20 UNEF	.678 (17.2)	1.250 (31.8)	1.250 (31.8)	3.408 (86.6)	.500 (12.7)	.625 (15.9)
017	16	.938-20 UNEF	.678 (17.2)	1.250 (31.8)	1.400 (35.6)	3.408 (86.6)	.625 (15.9)	.750 (19.1)
018	18	1.063-18 UNEF	.868 (22.0)	1.400 (35.6)	1.100 (27.9)	3.598 (91.4)	.250 (6.4)	.375 (9.5)
019	18	1.063-18 UNEF	.868 (22.0)	1.400 (35.6)	1.200 (30.5)	3.598 (91.4)	.375 (9.5)	.500 (12.7)
020	18	1.063-18 UNEF	.868 (22.0)	1.400 (35.6)	1.250 (31.8)	3.598 (91.4)	.500 (12.7)	.625 (15.9)
021	18	1.063-18 UNEF	.868 (22.0)	1.400 (35.6)	1.400 (35.6)	3.598 (91.4)	.625 (15.9)	.750 (19.1)
022	18	1.063-18 UNEF	.868 (22.0)	1.400 (35.6)	1.500 (38.1)	3.598 (91.4)	.750 (19.1)	.875 (22.2)
023	20	1.188-18 UNEF	.868 (22.0)	1.550 (39.4)	1.100 (27.9)	3.598 (91.4)	.250 (6.4)	.375 (9.5)
024	20	1.188-18 UNEF	.868 (22.0)	1.550 (39.4)	1.200 (30.5)	3.598 (91.4)	.375 (9.5)	.500 (12.7)
025	20	1.188-18 UNEF	.868 (22.0)	1.550 (39.4)	1.250 (31.8)	3.598 (91.4)	.500 (12.7)	.625 (15.9)
026	20	1.188-18 UNEF	.868 (22.0)	1.550 (39.4)	1.400 (35.6)	3.598 (91.4)	.625 (15.9)	.750 (19.1)
027	20	1.188-18 UNEF	.868 (22.0)	1.550 (39.4)	1.500 (38.1)	3.598 (91.4)	.750 (19.1)	.875 (22.2)
028	20	1.188-18 UNEF	.868 (22.0)	1.550 (39.4)	1.650 (41.9)	3.598 (91.4)	.875 (22.2)	1.000 (25.4)
029	22	1.313-18 UNEF	.958 (24.3)	1.650 (41.9)	1.100 (27.9)	3.748 (95.2)	.250 (6.4)	.375 (9.5)
030	22	1.313-18 UNEF	.958 (24.3)	1.650 (41.9)	1.200 (30.5)	3.748 (95.2)	.375 (9.5)	.500 (12.7)
031	22	1.313-18 UNEF	.958 (24.3)	1.650 (41.9)	1.250 (31.8)	3.748 (95.2)	.500 (12.7)	.625 (15.9)
032	22	1.313-18 UNEF	.958 (24.3)	1.650 (41.9)	1.400 (35.6)	3.748 (95.2)	.625 (15.9)	.750 (19.1)
033	22	1.313-18 UNEF	.958 (24.3)	1.650 (41.9)	1.500 (38.1)	3.748 (95.2)	.750 (19.1)	.875 (22.2)
034	22	1.313-18 UNEF	.958 (24.3)	1.650 (41.9)	1.650 (41.9)	3.748 (95.2)	.875 (22.2)	1.000 (25.4)
035	22	1.313-18 UNEF	.958 (24.3)	1.650 (41.9)	1.750 (44.5)	3.748 (95.2)	1.000 (25.4)	1.125 (28.6)
036	24	1.438-18 UNEF	.958 (24.3)	1.850 (47.0)	1.200 (30.5)	3.748 (95.2)	.375 (9.5)	.500 (12.7)
037	24	1.438-18 UNEF	.958 (24.3)	1.850 (47.0)	1.250 (31.8)	3.748 (95.2)	.500 (12.7)	.625 (15.9)
038	24	1.438-18 UNEF	.958 (24.3)	1.850 (47.0)	1.400 (35.6)	3.748 (95.2)	.625 (15.9)	.750 (19.1)
039	24	1.438-18 UNEF	.958 (24.3)	1.850 (47.0)	1.500 (38.1)	3.748 (95.2)	.750 (19.1)	.875 (22.2)
040	24	1.438-18 UNEF	.958 (24.3)	1.850 (47.0)	1.650 (41.9)	3.748 (95.2)	.875 (22.2)	1.000 (25.4)
041	24	1.438-18 UNEF	.958 (24.3)	1.850 (47.0)	1.750 (44.5)	3.748 (95.2)	1.000 (25.4)	1.125 (28.6)
042	24	1.438-18 UNEF	.958 (24.3)	1.850 (47.0)	1.900 (48.3)	3.748 (95.2)	1.125 (28.6)	1.250 (31.8)

Dimensions are in inches (mm).

Rev. 2219

90° EMI/RFI Env. Backshell

DS Series • MIL-DTL-38999 Series II Style Connectors

Photo for example only

DSR4 - 015 N

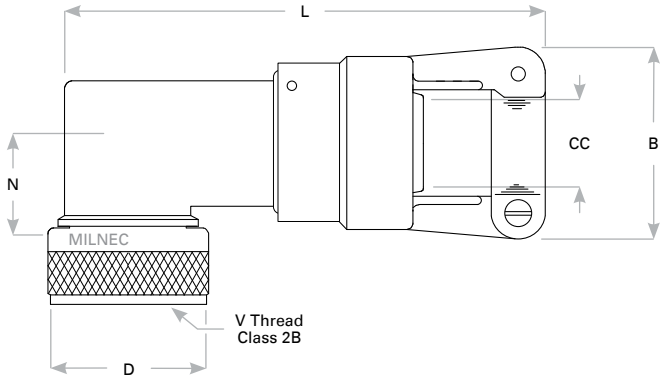
1 2 3

1. **BASIC PART NUMBER**
   - **DSR4** 90° EMI/RFI environmental backshell
2. **DASH NO.**
   - See Backshell Dimensions table below
3. **MATERIAL & FINISH**
   - **N** Aluminum, electroless nickel
   - **W** Aluminum, olive drab cadmium

Note: See part builder (p. R-14) for additional kit options.

DSR4 Compatibility

Compatible Brands	Connectors
MIL-DTL-38999 Series II	MS27472, MS27473, MS27474, MS27484, MS27497
Aero / Conesys	AE272, AE273, AE274, AE284, AE297
Amphenol	JT00, JTPQ00, JT01, JT06, JTG06, JT07
ITT Cannon	KJ0, KJ3, KJ6, KJG6, KJ7
Souriau	8T1, 8L3, 8T6, 8T7



Backshell Dimensions

Dash No.	Shell Size	V Thread Class 2B	N	D	B	L	CC Cable Clearance	
							Min	Max
001	8	.438-28 UNEF	.532 (13.5)	.750 (19.1)	.800 (20.3)	3.267 (83.0)	.062 (1.6)	.125 (3.2)
002	8	.438-28 UNEF	.532 (13.5)	.750 (19.1)	1.000 (25.4)	3.267 (83.0)	.125 (3.2)	.250 (6.4)
003	10	.562-24 UNEF	.627 (15.9)	.850 (21.6)	.800 (20.3)	3.387 (86.0)	.062 (1.6)	.125 (3.2)
004	10	.562-24 UNEF	.627 (15.9)	.850 (21.6)	1.000 (25.4)	3.387 (86.0)	.125 (3.2)	.250 (6.4)
005	10	.562-24 UNEF	.627 (15.9)	.850 (21.6)	1.100 (27.9)	3.407 (86.5)	.250 (6.4)	.375 (9.5)
006	12	.688-24 UNEF	.642 (16.3)	1.000 (25.4)	1.000 (25.4)	3.407 (86.5)	.125 (3.2)	.250 (6.4)
007	12	.688-24 UNEF	.642 (16.3)	1.000 (25.4)	1.100 (27.9)	3.407 (86.5)	.250 (6.4)	.375 (9.5)
008	12	.688-24 UNEF	.642 (16.3)	1.000 (25.4)	1.200 (30.5)	3.407 (86.5)	.375 (9.5)	.500 (12.7)
009	14	.813-20 UNEF	.719 (18.3)	1.150 (29.2)	1.000 (25.4)	3.477 (88.3)	.125 (3.2)	.250 (6.4)
010	14	.813-20 UNEF	.719 (18.3)	1.150 (29.2)	1.100 (27.9)	3.477 (88.3)	.250 (6.4)	.375 (9.5)

Dimensions are in inches (mm).

(Continued on next page)

Rev. 2219

Backshell Dimensions (Continued from previous page)

Dash No.	Shell Size	V Thread Class 2B	N	D	B	L	CC Cable Clearance	
							Min	Max
011	14	.813-20 UNEF	.719 (18.3)	1.150 (29.2)	1.200 (30.5)	3.477 (88.3)	.375 (9.5)	.500 (12.7)
012	14	.813-20 UNEF	.719 (18.3)	1.150 (29.2)	1.250 (31.8)	3.477 (88.3)	.500 (12.7)	.625 (15.9)
013	16	.938-20 UNEF	.774 (19.7)	1.250 (31.8)	1.000 (25.4)	3.567 (90.6)	.125 (3.2)	.250 (6.4)
014	16	.938-20 UNEF	.774 (19.7)	1.250 (31.8)	1.100 (27.9)	3.567 (90.6)	.250 (6.4)	.375 (9.5)
015	16	.938-20 UNEF	.774 (19.7)	1.250 (31.8)	1.200 (30.5)	3.567 (90.6)	.375 (9.5)	.500 (12.7)
016	16	.938-20 UNEF	.774 (19.7)	1.250 (31.8)	1.250 (31.8)	3.567 (90.6)	.500 (12.7)	.625 (15.9)
017	16	.938-20 UNEF	.774 (19.7)	1.250 (31.8)	1.400 (35.6)	3.567 (90.6)	.625 (15.9)	.750 (19.1)
018	18	1.063-18 UNEF	.854 (21.7)	1.400 (35.6)	1.100 (27.9)	3.737 (94.9)	.250 (6.4)	.375 (9.5)
019	18	1.063-18 UNEF	.854 (21.7)	1.400 (35.6)	1.200 (30.5)	3.737 (94.9)	.375 (9.5)	.500 (12.7)
020	18	1.063-18 UNEF	.854 (21.7)	1.400 (35.6)	1.250 (31.8)	3.737 (94.9)	.500 (12.7)	.625 (15.9)
021	18	1.063-18 UNEF	.854 (21.7)	1.400 (35.6)	1.400 (35.6)	3.737 (94.9)	.625 (15.9)	.750 (19.1)
022	18	1.063-18 UNEF	.854 (21.7)	1.400 (35.6)	1.500 (38.1)	3.737 (94.9)	.750 (19.1)	.875 (22.2)
023	20	1.188-18 UNEF	.899 (22.8)	1.550 (39.4)	1.100 (27.9)	3.737 (94.9)	.250 (6.4)	.375 (9.5)
024	20	1.188-18 UNEF	.899 (22.8)	1.550 (39.4)	1.200 (30.5)	3.737 (94.9)	.375 (9.5)	.500 (12.7)
025	20	1.188-18 UNEF	.899 (22.8)	1.550 (39.4)	1.250 (31.8)	3.737 (94.9)	.500 (12.7)	.625 (15.9)
026	20	1.188-18 UNEF	.899 (22.8)	1.550 (39.4)	1.400 (35.6)	3.737 (94.9)	.625 (15.9)	.750 (19.1)
027	20	1.188-18 UNEF	.899 (22.8)	1.550 (39.4)	1.500 (38.1)	3.737 (94.9)	.750 (19.1)	.875 (22.2)
028	20	1.188-18 UNEF	.899 (22.8)	1.550 (39.4)	1.650 (41.9)	3.737 (94.9)	.875 (22.2)	1.000 (25.4)
029	22	1.313-18 UNEF	1.009 (25.6)	1.650 (41.9)	1.100 (27.9)	3.847 (97.7)	.250 (6.4)	.375 (9.5)
030	22	1.313-18 UNEF	1.009 (25.6)	1.650 (41.9)	1.200 (30.5)	3.847 (97.7)	.375 (9.5)	.500 (12.7)
031	22	1.313-18 UNEF	1.009 (25.6)	1.650 (41.9)	1.250 (31.8)	3.847 (97.7)	.500 (12.7)	.625 (15.9)
032	22	1.313-18 UNEF	1.009 (25.6)	1.650 (41.9)	1.400 (35.6)	3.847 (97.7)	.625 (15.9)	.750 (19.1)
033	22	1.313-18 UNEF	1.009 (25.6)	1.650 (41.9)	1.500 (38.1)	3.847 (97.7)	.750 (19.1)	.875 (22.2)
034	22	1.313-18 UNEF	1.009 (25.6)	1.650 (41.9)	1.650 (41.9)	3.847 (97.7)	.875 (22.2)	1.000 (25.4)
035	22	1.313-18 UNEF	1.009 (25.6)	1.650 (41.9)	1.750 (44.5)	3.847 (97.7)	1.000 (25.4)	1.125 (28.6)
036	24	1.438-18 UNEF	1.024 (26.0)	1.850 (47.0)	1.200 (30.5)	3.847 (97.7)	.375 (9.5)	.500 (12.7)
037	24	1.438-18 UNEF	1.024 (26.0)	1.850 (47.0)	1.250 (31.8)	3.847 (97.7)	.500 (12.7)	.625 (15.9)
038	24	1.438-18 UNEF	1.024 (26.0)	1.850 (47.0)	1.400 (35.6)	3.847 (97.7)	.625 (15.9)	.750 (19.1)
039	24	1.438-18 UNEF	1.024 (26.0)	1.850 (47.0)	1.500 (38.1)	3.847 (97.7)	.750 (19.1)	.875 (22.2)
040	24	1.438-18 UNEF	1.024 (26.0)	1.850 (47.0)	1.650 (41.9)	3.847 (97.7)	.875 (22.2)	1.000 (25.4)
041	24	1.438-18 UNEF	1.024 (26.0)	1.850 (47.0)	1.750 (44.5)	3.847 (97.7)	1.000 (25.4)	1.125 (28.6)
042	24	1.438-18 UNEF	1.024 (26.0)	1.850 (47.0)	1.900 (48.3)	3.847 (97.7)	1.125 (28.6)	1.250 (31.8)

Dimensions are in inches (mm).

Shorting Cap Backshell

DS Series • MIL-DTL-38999 Series II Style Connectors

Optional Body Strap
with Bolt Attachment

DSSC - 14 - 3 N 1

1 2 3 4 5

1. **BASIC PART NUMBER**
   - **DSSC** Shorting cap backshell
2. **SHELL SIZE**
   - See Backshell Dimensions table below
3. **BACKSHELL LENGTH**
   - Length in whole inches (1 inch = 25.4 mm)
4. **MATERIAL & FINISH**
   - **N** Aluminum, electroless nickel
   - **W** Aluminum, olive drab cadmium
5. **ATTACHMENT STYLE**
   - **1** No strap attachment
   - **2** Body strap with bolt attachment

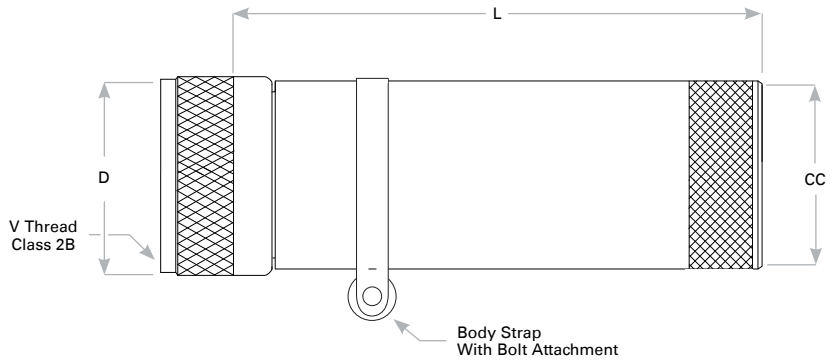
DSSC Compatibility

Compatible Brands	Connectors
MIL-DTL-38999 Series II	MS27472, MS27473, MS27474, MS27484, MS27497
Aero / Conesys	AE272, AE273, AE274, AE284, AE297
Amphenol	JT00, JTPQ00, JT01, JT06, JTG06, JT07
ITT Cannon	KJ0, KJ3, KJ6, KJG6, KJ7
Souriau	8T1, 8L3, 8T6, 8T7

Backshell Dimensions

Shell Size	D	V Thread Class 2B	CC Internal Dia	L
8	.600 (15.2)	.438-28 UNEF	.250 (6.4)	Ordered in whole inch increments Min = 1 inch (25.4 mm) Max = 12 inches (304.8 mm)
10	.717 (18.2)	.562-24 UNEF	.375 (9.5)	
12	.834 (21.2)	.688-24 UNEF	.500 (12.7)	
14	.990 (25.2)	.813-20 UNEF	.625 (15.9)	
16	1.107 (28.1)	.938-20 UNEF	.750 (19.1)	
18	1.224 (31.1)	1.063-18 UNEF	.812 (20.6)	
20	1.341 (34.1)	1.188-18 UNEF	.938 (23.8)	
22	1.453 (36.9)	1.313-18 UNEF	1.062 (27.0)	
24	1.567 (39.8)	1.438-18 UNEF	1.188 (30.2)	

Dimensions are in inches (mm).



CUSTOM TAILORED CONNECTORS

- Complete Mil-Spec Compatibility
- Wide Variety of Materials & Finishes
- More Backshells
- Specialized Contacts
- Additional Inserts
- More Shell Options

DS

Military Strength—COTS Flexibility

Milnec builds connectors that meet and exceed established military specifications, while also providing additional options and features unavailable under the mil-spec. These commercial off the shelf (COTS) upgrades provide the strength and reliability of military specifications with the flexibility demanded by modern designs.

MILNEC® INTERCONNECT SYSTEMS

Straight Shrink Boot

DS Series • MIL-DTL-38999 Series II Style Connectors

DSK2 - 4 - 100

1 2 3

1 **BASIC PART NUMBER**
DSK2 Straight shrink boot

2 **BOOT SIZE**
See Boot Dimensions table below

3 **MATERIAL**
100 Halogen-free, semi-flexible elastomer pre-coated with hot-melt adhesive. Material has excellent fire-safety characteristics and is especially suited where people are confined in enclosed spaces (mass transit, aviation, vehicles, offshore, etc).

- Temp: -22° to +302°F (-30° to +150°C)
- Low-smoke index as defined by NES 711
- Low-toxicity index as defined by NES 713
- High-temp index as defined by NES 715

* Please consult an authorized distributor for other high-temperature materials and adhesive options.

Environmental protection, low-profile design

A shrink boot provides complete IP67 environmental protection and strain relief. Must be used with a boot adapter.

Boot Size Recommendations

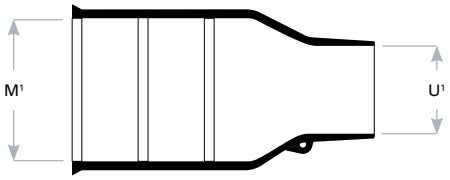
Boot Size	Cable Range		Shell Size																	
	Min	Max	8		10		12		14		16		18		20		22		24	
2	.220 (5.6)	.550 (14.0)	✓	✶	✓	✶	✓	✶												
3	.230 (5.9)	.590 (15.0)							✓	✶	✓	✶								
4	.280 (7.1)	.710 (18.0)											✶		✶					
5	.330 (8.4)	.830 (21.0)											✓		✓		✶		✶	
6	.390 (9.9)	.980 (25.0)															✓		✓	
7	.620 (15.7)	1.540 (39.0)																		
8	.660 (16.8)	1.650 (42.0)																		

Dimensions are in inches (mm). ✓ Recommended boot size for (DSAB) Boot Adapter, p. R-50. ✶ Recommended boot size for (DSD2, DSD3, DSD4) EMI/RFI Banding Boot Adapter, p. R-51.

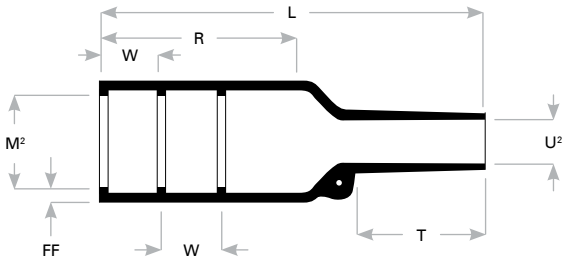
Boot Dimensions

Boot Size	M¹	U¹	M²	U²	L‡	R‡	T*	W‡	FF*
2	.940 (24.0)	.550 (14.0)	.410 (10.4)	.220 (5.6)	1.500 (38.0)	.830 (21.0)	.330 (8.5)	.470 (12.0)	.060 (1.6)
3	1.180 (30.0)	.590 (15.0)	.560 (14.2)	.230 (5.9)	2.170 (55.0)	1.260 (32.0)	.450 (11.5)	.470 (12.0)	.070 (1.8)
4	1.220 (31.0)	.710 (18.0)	.710 (18.0)	.280 (7.1)	2.640 (67.0)	1.380 (35.0)	.670 (17.0)	.790 (20.0)	.070 (1.8)
5	1.420 (36.0)	.830 (21.0)	.880 (22.4)	.330 (8.4)	3.150 (80.0)	1.650 (42.0)	.760 (19.5)	.790 (20.0)	.080 (2.0)
6	1.690 (43.0)	.980 (25.0)	1.110 (28.2)	.390 (9.9)	3.900 (99.0)	2.400 (61.0)	.820 (21.0)	.790 (20.0)	.090 (2.2)
7	2.050 (52.0)	1.540 (39.0)	1.380 (35.1)	.620 (15.7)	5.120 (130.0)	2.830 (72.0)	1.530 (39.0)	.790 (20.0)	.130 (3.2)
8	2.600 (66.0)	1.650 (42.0)	1.750 (44.5)	.660 (16.8)	6.690 (170.0)	3.540 (90.0)	2.020 (51.5)	.790 (20.0)	.150 (3.8)

Dimensions are in inches (mm). ‡ Dimensions ±10% before and after heat activation. ✶ Dimensions ±10% before heat activation, ±20% after heat activation.



Before Heat Activation



After Heat Activation

Rev. 2219

DSK4 - 4 - 100

1 2 3

1 BASIC PART NUMBER

DSK4 90° shrink boot

2 BOOT SIZE

See Boot Dimensions table below

3 MATERIAL

100 Halogen-free, semi-flexible elastomer with hot-melt adhesive tape. Material has excellent fire-safety characteristics and is especially suited where people are confined in enclosed spaces (mass transit, aviation, vehicles, offshore, etc).

- Temp: -22° to +302°F (-30° to +150°C)
- Low-smoke index as defined by NES 711
- Low-toxicity index as defined by NES 713
- High-temp index as defined by NES 715

* Please consult an authorized distributor for other high-temperature materials and adhesive options.

Angled boot for simple cable management

A 90° shrink boot offers simple cable management, strain relief, and environmental protection. For proper installation, it must be used with a boot adapter.

Boot Size Recommendations

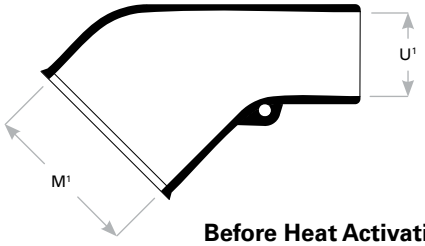
Boot Size	Cable Range		Shell Size									
	Min	Max	8	10	12	14	16	18	20	22	24
2	.220 (5.6)	.550 (14.0)	✓ ✶	✓ ✶	✓ ✶						
3	.230 (5.9)	.590 (15.0)				✓ ✶	✓ ✶				
4	.280 (7.1)	.710 (18.0)						✶	✶		
5	.330 (8.4)	.830 (21.0)						✓	✓	✶	✶
6	.390 (9.9)	.980 (25.0)								✓	✓
7	.620 (15.7)	1.540 (39.0)									
8	.660 (16.8)	1.650 (42.0)									

Dimensions are in inches (mm). ✓ Recommended boot size for (DSAB) Boot Adapter, p. R-50. ✶ Recommended boot size for (DSD2, DSD3, DSD4) EMI/RFI Banding Boot Adapter, p. R-51.

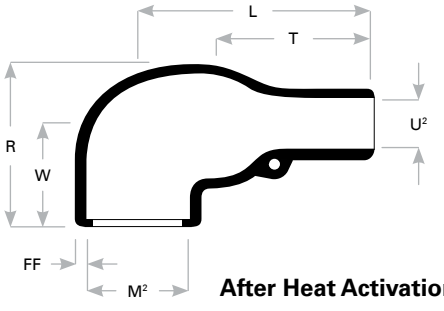
Boot Dimensions

Boot Size	M¹	U¹	M²	U²	L‡	R‡	T*	W‡	FF*
2	.940 (24.0)	.550 (14.0)	.410 (10.4)	.220 (5.6)	.980 (25.0)	.980 (25.0)	.630 (16.0)	.750 (19.0)	.050 (1.3)
3	1.180 (30.0)	.590 (15.0)	.560 (14.2)	.230 (5.9)	1.260 (32.0)	1.060 (27.0)	.790 (20.0)	.790 (20.0)	.060 (1.5)
4	1.220 (31.0)	.710 (18.0)	.710 (18.0)	.280 (7.1)	1.540 (39.0)	1.220 (31.0)	.790 (20.0)	.830 (21.0)	.070 (1.8)
5	1.420 (36.0)	.830 (21.0)	.880 (22.4)	.330 (8.4)	1.810 (46.0)	1.500 (38.0)	.980 (25.0)	1.020 (26.0)	.070 (1.8)
6	1.690 (43.0)	.980 (25.0)	1.110 (28.2)	.390 (9.9)	2.171 (55.0)	1.770 (45.0)	1.180 (30.0)	1.180 (30.0)	.080 (2.0)
7	2.050 (52.0)	1.540 (39.0)	1.380 (35.1)	.620 (15.7)	3.150 (80.0)	2.130 (54.0)	1.770 (45.0)	1.380 (35.0)	.130 (3.3)
8	2.600 (66.0)	1.650 (42.0)	1.750 (44.5)	.660 (16.8)	4.250 (108.0)	2.680 (68.0)	2.760 (70.0)	1.650 (42.0)	.150 (3.8)

Dimensions are in inches (mm). ‡ Dimensions ±10% before and after heat activation. ✶ Dimensions ±10% before heat activation, ±20% after heat activation.



Before Heat Activation



After Heat Activation

Rev. 2219

Boot Adapter

DS Series • MIL-DTL-38999 Series II Style Connectors

DSAB - 14 B - K2

1 2 3 4

1. **BASIC PART NUMBER**
   - **DSAB** Boot adapter
2. **SHELL SIZE**
   - See Adapter Dimensions table below
3. **MATERIAL & FINISH**
   - **B** Aluminum, hardcoat anodize
   - **N** Aluminum, electroless nickel
   - **W** Aluminum, olive drab cadmium
4. **OPTIONAL BOOT KIT** (OMIT FOR NONE)
   - **K2** Includes recommended straight shrink boot in standard material 100, p. R-48
   - **K4** Includes recommended 90° shrink boot in standard material 100, p. R-49

DSAB Compatibility

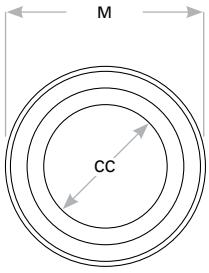
Compatible Brands	Connectors
MIL-DTL-38999 Series II	MS27472, MS27473, MS27474, MS27484, MS27497
Aero / Conesys	AE272, AE273, AE274, AE284, AE297
Amphenol	JT00, JTPQ00, JT01, JT06, JTG06, JT07
ITT Cannon	KJ0, KJ3, KJ6, KJG6, KJ7
Souriau	8T1, 8L3, 8T6, 8T7

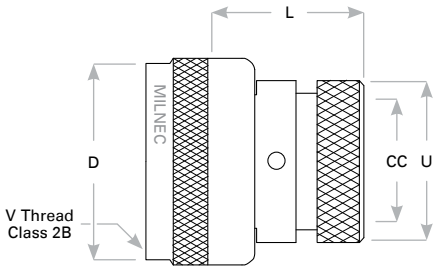
Note: See part builder (p. R-14) for additional kit options.

Adapter Dimensions

Shell Size	CC Cable Clearance	L	D	U	V Thread Class 2B
8	.250 (6.4)	.710 (18.0)	.600 (15.2)	.533 (13.5)	.438-28 UNEF
10	.375 (9.5)	.710 (18.0)	.717 (18.2)	.605 (15.4)	.562-24 UNEF
12	.500 (12.7)	.710 (18.0)	.834 (21.2)	.774 (19.7)	.688-24 UNEF
14	.625 (15.9)	.710 (18.0)	.990 (25.2)	.838 (21.3)	.813-20 UNEF
16	.750 (19.1)	.710 (18.0)	1.107 (28.1)	.963 (24.5)	.938-20 UNEF
18	.812 (20.6)	.710 (18.0)	1.224 (31.1)	1.042 (26.5)	1.063-18 UNEF
20	.938 (23.8)	.710 (18.0)	1.341 (34.1)	1.217 (30.9)	1.188-18 UNEF
22	1.062 (27.0)	.710 (18.0)	1.453 (36.9)	1.355 (34.4)	1.313-18 UNEF
24	1.188 (30.2)	.710 (18.0)	1.567 (39.8)	1.443 (36.7)	1.438-18 UNEF

Dimensions are in inches (mm).





Rev. 2219

DSD2 - 14 N - K2

1 2 3 4

1 BASIC PART NUMBER

DSD2	Straight EMI/RFI banding boot adapter
DSD3	45° EMI/RFI banding boot adapter
DSD4	90° EMI/RFI banding boot adapter

(Includes shield termination band TB250, p. R-59)

2 SHELL SIZE

See Adapter Dimensions table below

3 MATERIAL & FINISH

N	Aluminum, electroless nickel
W	Aluminum, olive drab cadmium

4 OPTIONAL BOOT KIT (OMIT FOR NONE)

K2	Includes recommended straight shrink boot in standard material 100, p. R-48

Note: Designed for use with straight shrink boot (DSK2, p. R-48). See part builder (p. R-14) for additional kit options.

Photo for example only

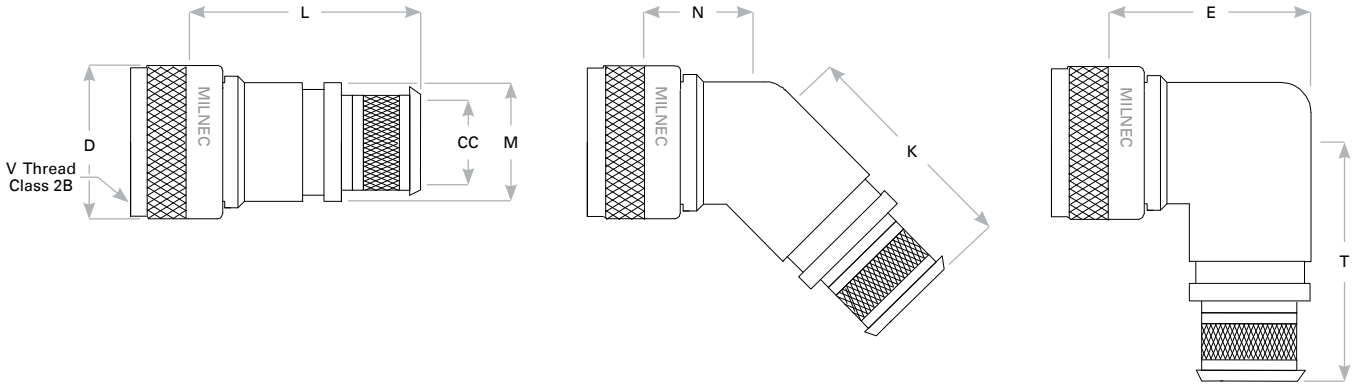
DSD2 Compatibility

Compatible Brands	Connectors
MIL-DTL-38999 Series II	MS27472, MS27473, MS27474, MS27484, MS27497
Aero / Conesys	AE272, AE273, AE274, AE284, AE297
Amphenol	JT00, JTPQ00, JT01, JT06, JTG06, JT07
ITT Cannon	KJ0, KJ3, KJ6, KJG6, KJ7
Souriau	8T1, 8L3, 8T6, 8T7

Adapter Dimensions

Shell Size	CC Cable Clearance	M	D	L	N	K	E	T	V Thread Class 2B
8	.250 (6.4)	.437 (11.1)	.858 (21.8)	1.350 (34.3)	1.012 (25.7)	1.161 (29.5)	1.375 (34.9)	1.417 (36.0)	.438-28 UNEF
10	.312 (7.9)	.500 (12.7)	.998 (25.4)	1.350 (34.3)	1.031 (26.2)	1.189 (30.2)	1.437 (36.5)	1.480 (37.6)	.562-24 UNEF
12	.438 (11.1)	.624 (15.8)	1.161 (29.5)	1.350 (34.3)	1.059 (26.9)	1.209 (30.7)	1.562 (39.7)	1.553 (39.4)	.688-24 UNEF
14	.562 (14.3)	.750 (19.1)	1.280 (32.5)	1.350 (34.3)	1.079 (27.4)	1.240 (31.5)	1.687 (42.8)	1.614 (41.0)	.813-20 UNEF
16	.625 (15.9)	.812 (20.6)	1.409 (35.8)	1.350 (34.3)	1.110 (28.2)	1.260 (32.0)	1.750 (44.5)	1.678 (42.6)	.938-20 UNEF
18	.750 (19.1)	.937 (23.8)	1.520 (38.6)	1.350 (34.3)	1.118 (28.4)	1.272 (32.3)	1.875 (47.6)	1.733 (44.0)	1.063-18 UNEF
20	.812 (20.6)	1.000 (25.4)	1.642 (41.7)	1.350 (34.3)	1.150 (29.2)	1.299 (33.0)	1.938 (49.2)	1.796 (45.6)	1.188-18 UNEF
22	.938 (23.8)	1.124 (28.5)	1.772 (45.0)	1.350 (34.3)	1.169 (29.7)	1.331 (33.8)	2.062 (52.4)	1.859 (47.2)	1.313-18 UNEF
24	1.000 (25.4)	1.187 (30.1)	1.890 (48.0)	1.350 (34.3)	1.201 (30.5)	1.350 (34.3)	2.125 (54.0)	1.919 (48.7)	1.438-18 UNEF

Dimensions are in inches (mm).



Rev. 2219

DSCP - 14 N E

1 2 3 4

1 **BASIC PART NUMBER**
- **DSCP** Plug cover w/ sash chain
- **DSCR** Receptacle cover w/ sash chain

2 **SHELL SIZE**
- See Protective Cover Dimensions table below

3 **MATERIAL & FINISH**
- **N** Aluminum, electroless nickel
- **W** Aluminum, olive drab cadmium

4 **ATTACHMENT TYPE**
- **E** Eyelet attachment on sash chain
- **J** Jam nut ring attachment on sash chain (For use with DS07 & DS13 jam nut receptacles)
- **N** No attachment

DSCP & DSCR Compatibility

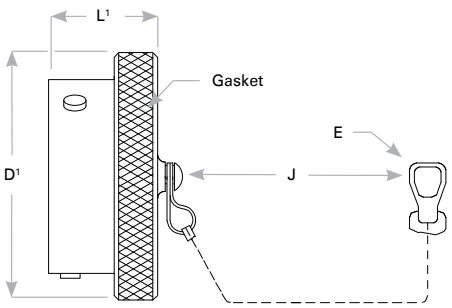
Compatible Brands	Plugs	Receptacles
MIL-DTL-38999 Series II	MS27473, MS27484	MS27472, MS27474, MS27497, MS27499, MS27508, MS27513
Aero / Conesys	AE273, AE284	AE272, AE274, AE297, AE299, AE208, AE213
Amphenol	JT06, JTG06	JT00, JTPQ00, JT01, JT02, JTP02, JT07
ITT Cannon	KJ6, KJG6	KJ0, KJ2, KJ3, KJ5, KJ7
Souriau	8T6	8T1, 8T2, 8T3, 8T7

Note: See part builder (p. R-14) for additional kit options.

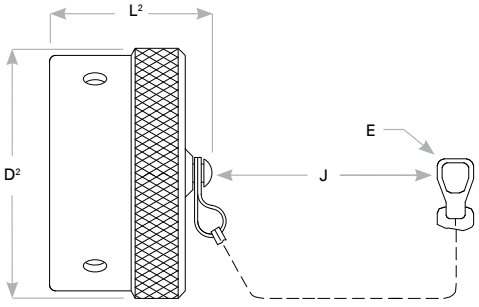
Protective Cover Dimensions

Shell Size	L¹	D¹	E	J Chain Length	L²	D²	H
8	.570 (14.5)	.720 (18.3)	.167 (4.2)	3.000 (76.2)	.781 (19.8)	.630 (16.0)	.890 (22.6)
10	.570 (14.5)	.850 (21.6)	.167 (4.2)	3.000 (76.2)	.781 (19.8)	.761 (19.3)	1.010 (25.7)
12	.570 (14.5)	1.000 (25.4)	.167 (4.2)	3.500 (88.9)	.781 (19.8)	.936 (23.8)	1.140 (29.0)
14	.570 (14.5)	1.130 (28.7)	.167 (4.2)	3.500 (88.9)	.781 (19.8)	1.074 (27.3)	1.260 (32.2)
16	.570 (14.5)	1.250 (31.8)	.167 (4.2)	3.500 (88.9)	.781 (19.8)	1.172 (29.8)	1.390 (35.3)
18	.570 (14.5)	1.380 (35.1)	.167 (4.2)	3.500 (88.9)	.781 (19.8)	1.304 (33.1)	1.510 (38.4)
20	.570 (14.5)	1.500 (38.1)	.167 (4.2)	4.000 (101.6)	.781 (19.8)	1.435 (36.4)	1.640 (41.7)
22	.570 (14.5)	1.630 (41.4)	.167 (4.2)	4.000 (101.6)	.781 (19.8)	1.560 (39.6)	1.760 (44.7)
24	.570 (14.5)	1.750 (44.5)	.167 (4.2)	4.000 (101.6)	.781 (19.8)	1.688 (42.9)	1.890 (48.0)

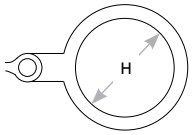
Dimensions are in inches (mm).



Plug Cover



Receptacle Cover



Optional Ring Attachment

Rev. 2219

DSCD - 14 W - 03

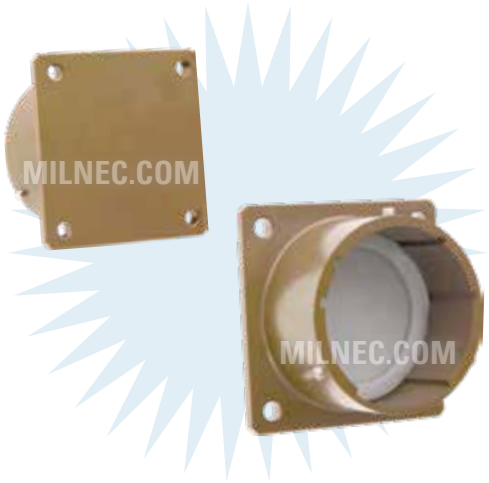
1 2 3 4

1 **BASIC PART NUMBER**
- **DSCD** Stowage receptacle

2 **SHELL SIZE**
- See Stowage Receptacle Dimensions table below

3 **MATERIAL & FINISH**
- **N** Aluminum, electroless nickel
- **W** Aluminum, olive drab cadmium

4 **OPTIONAL ACCESSORY KIT** (OMIT FOR NONE)
- **02** Protective cover + mounting gasket
- **03** 02 kit + mounting bracket + sealing screws



Note: See part builder (p. R-14) for additional kit options.

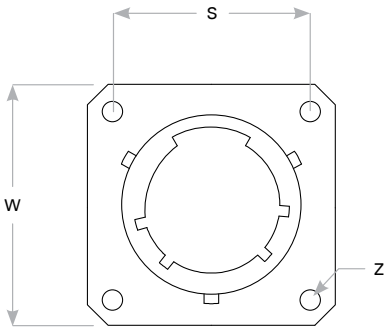
DSCD Compatibility

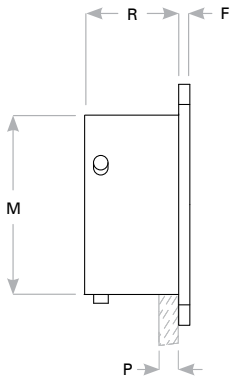
Compatible Brands	Plugs
MIL-DTL-38999 Series II	MS27473, MS27484
Aero / Conesys	AE273, AE284
Amphenol	JT06, JTG06
ITT Cannon	KJ6, KJG6
Souriau	8T6

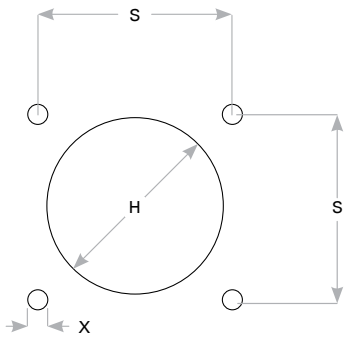
Stowage Receptacle Dimensions

Shell Size	W Max	Z Dia	R	F Max	M Max	S	X Dia	H Dia Front Mount
8	.828 (21.0)	.120 (3.0)	.451 (11.5)	.069 (1.8)	.474 (12.0)	.594 (15.1)	.130 (3.3)	.516 (13.1)
10	.954 (24.2)	.120 (3.0)	.451 (11.5)	.069 (1.8)	.591 (15.0)	.719 (18.3)	.130 (3.3)	.625 (15.9)
12	1.047 (26.6)	.120 (3.0)	.451 (11.5)	.069 (1.8)	.751 (19.1)	.812 (20.6)	.130 (3.3)	.750 (19.1)
14	1.141 (29.0)	.120 (3.0)	.451 (11.5)	.069 (1.8)	.876 (22.3)	.906 (23.0)	.130 (3.3)	.906 (23.0)
16	1.234 (31.3)	.120 (3.0)	.451 (11.5)	.069 (1.8)	1.001 (25.4)	.969 (24.6)	.130 (3.3)	1.016 (25.8)
18	1.328 (33.7)	.120 (3.0)	.451 (11.5)	.069 (1.8)	1.126 (28.6)	1.062 (27.0)	.130 (3.3)	1.141 (29.0)
20	1.453 (36.9)	.120 (3.0)	.451 (11.5)	.069 (1.8)	1.251 (31.8)	1.156 (29.4)	.130 (3.3)	1.266 (32.2)
22	1.578 (40.1)	.120 (3.0)	.451 (11.5)	.069 (1.8)	1.376 (35.0)	1.250 (31.8)	.130 (3.3)	1.375 (34.9)
24	1.703 (43.3)	.120 (3.0)	.451 (11.5)	.069 (1.8)	1.501 (38.1)	1.375 (34.9)	.130 (3.3)	1.484 (37.7)

Dimensions are in inches (mm).







Panel Cutout

Rev. 2219

Mounting Gasket

DS Series • MIL-DTL-38999 Series II Style Connectors

RFI Gasket's Conductive Weave

DSGE - 14

1 2

1 BASIC PART NUMBER

DSGE Neoprene environmental (weather resistant)
Temp. range -40˚F to +230˚F (-40˚C to +110˚C)

DSGS Conductive EMI-RFI neoprene, Ni-Cu alloy mesh
Temp. range -40˚F to +230˚F (-40˚C to +110˚C)

DSGL Fluorosilicone (jet fuel & oil resistant)
Temp. range -70˚F to +392˚F (-56˚C to +200˚C)
Per MIL-DTL-25988, Class 1, Grade 6

DSGD Conductive EMI-RFI fluorosilicone, Al-Ag filled
Temp. range -70˚F to +392˚F (-56˚C to +200˚C)
Shielding effectiveness at 90 dB @ 10 GHz
Per MIL-DTL-83528, Type D

2 SHELL SIZE

See Gasket Dimensions table below

Note: See part builder (p. R-14) for additional kit options.

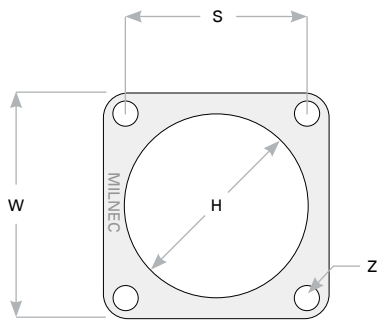
DSGE Compatibility

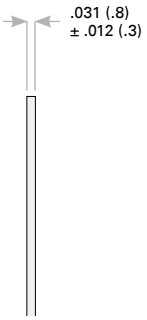
Compatible Brands	Receptacles
MIL-DTL-38999 Series II	MS27472, MS27497, MS27499, MS27508, MS27513
Aero / Conesys	AE208, AE213, AE272, AE297, AE299
Amphenol	JT00, JTPQ00, JT02, JTP02
ITT Cannon	KJ0, KJ2, KJ3, KJ5
Souriau	8T2, 8T3

Gasket Dimensions

Shell Size	W	S	Z	H
8	.875 (22.2)	.594 (15.1)	.125 (3.2)	.500 (12.7)
10	.937 (23.8)	.719 (18.3)	.125 (3.2)	.687 (17.4)
12	1.031 (26.2)	.812 (20.6)	.125 (3.2)	.772 (19.6)
14	1.125 (28.6)	.906 (23.0)	.125 (3.2)	.937 (23.8)
16	1.250 (31.8)	.969 (24.6)	.125 (3.2)	1.063 (27.0)
18	1.343 (34.1)	1.062 (27.0)	.125 (3.2)	1.187 (30.1)
20	1.467 (37.3)	1.156 (29.4)	.125 (3.2)	1.312 (33.3)
22	1.562 (39.7)	1.250 (31.8)	.125 (3.2)	1.437 (36.5)
24	1.703 (43.3)	1.375 (34.9)	.152 (3.9)	1.562 (39.7)

Dimensions are in inches (mm).





Rev. 2219

DSMB - 14 - A

1 2 3

1 BASIC PART NUMBER

DSMB Mounting bracket, aluminum alloy with SST locking nuts

2 SHELL SIZE

See Bracket Dimensions table below

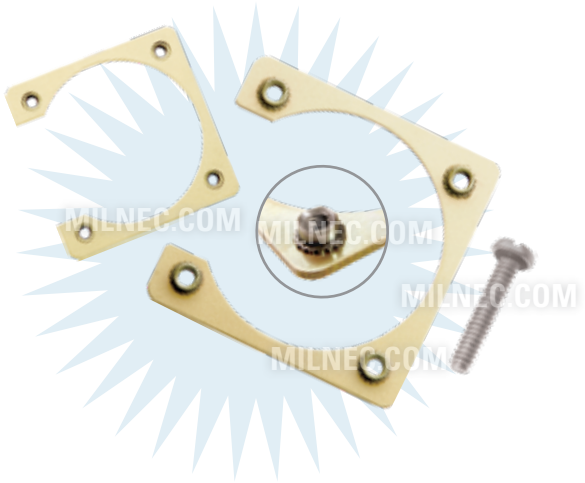
3 OPTIONAL FASTENER KIT (OMIT FOR NONE)

A Self-sealing SST fillister head screws (4x)

B A kit + environmental gasket

D A kit + fluorosilicone EMI/RFI gasket

Note: See part builder (p. R-14) for additional kit options.



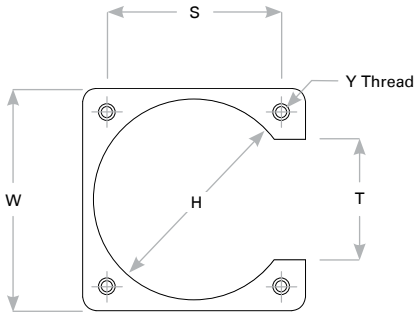
DSMB Compatibility

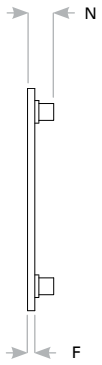
Compatible Brands	Receptacles
MIL-DTL-38999 Series II	MS27472, MS27497, MS27499, MS27508, MS27513
Aero / Conesys	AE208, AE213, AE272, AE297, AE299
Amphenol	JT00, JTPQ00, JT02, JTP02
ITT Cannon	KJ0, KJ2, KJ3, KJ5
Souriau	8T2, 8T3

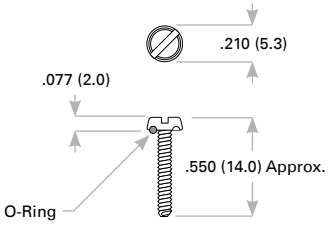
Bracket Dimensions

Shell Size	W	S	T	H	N	F	Screw Size	Y Thread
8	.880 (22.4)	.594 (15.1)	.308 (7.8)	.570 (14.5)	.136 (3.5)	.040 (1.0)	#4	4-40 UNJC-3B
10	1.019 (25.9)	.719 (18.3)	.433 (11.0)	.720 (18.3)	.136 (3.5)	.040 (1.0)	#4	4-40 UNJC-3B
12	1.104 (28.0)	.812 (20.6)	.530 (13.5)	.855 (21.7)	.136 (3.5)	.040 (1.0)	#4	4-40 UNJC-3B
14	1.198 (30.4)	.906 (23.0)	.624 (15.8)	.984 (25.0)	.136 (3.5)	.040 (1.0)	#4	4-40 UNJC-3B
16	1.280 (32.5)	.969 (24.6)	.687 (17.4)	1.094 (27.8)	.136 (3.5)	.040 (1.0)	#4	4-40 UNJC-3B
18	1.406 (35.7)	1.062 (27.0)	.780 (19.8)	1.220 (31.0)	.136 (3.5)	.040 (1.0)	#4	4-40 UNJC-3B
20	1.535 (39.0)	1.156 (29.4)	.874 (22.2)	1.345 (34.2)	.136 (3.5)	.040 (1.0)	#4	4-40 UNJC-3B
22	1.665 (42.3)	1.250 (31.8)	.968 (24.6)	1.478 (37.5)	.136 (3.5)	.040 (1.0)	#4	4-40 UNJC-3B
24	1.738 (44.1)	1.375 (34.9)	.907 (23.0)	1.483 (37.7)	.153 (3.9)	.040 (1.0)	#6	6-32 UNJC-3B

Dimensions are in inches (mm).







Rev. 2219

Precision Hand Crimpers

A crimp tool provides reliable crimp termination of contacts for mission-critical applications. A hand crimper is suitable for contacts from size #12 to #22D. For production environments, pneumatic crimpers are also available.

Our tools feature an 8-impression crimp, which ensures maximum tensile strength between wire and contact. Their cycle controlled ratchets are consistent and accurate and do not permit half crimps, ensuring complete and precise crimping every time.

The tool frames have a built-in 8-step selector knob for easy adjustment of crimp depth to accommodate the size of wire being used. Data plates on positioners provide setting information specific to the size of wires and contacts being used.

There are a variety of crimp tools and positioners available to fit the various sized contacts within each connector series. We have paired our most popular models with their required positioner(s) to ensure complete compatibility.

Hand Crimper & Positioner Kits

Part Number	Kit Includes the Following Items	Contacts Sizes	Milnec Series Compatibility	Mil-Spec Series Compatibility
TK101-KIT	TK101A crimp tool with TP104 turret positioner	#20, #16, #12	DL Series, DS, Series, TX Series	MIL-DTL-38999 Series I, II, III
TK101B-KIT	TK101A crimp tool with TP102 turret positioner	#20, #16, #12	BM Series, EV Series, TM Series, HR Series	MIL-DTL-26482 Series I, II MIL-DTL-83723 Series III MIL-DTL-5015 Crimp*
TK201-KIT	TK201 crimp tool with the following positioners: TP209 (for pins), TP207 (for sockets)	#22, #22M, #22D	DL Series, TX Series	MIL-DTL-38999 Series I MIL-DTL-38999 Series III
TK201B-KIT	TK201 crimp tool with the following positioners: TP209 (for pins), TP206 (for sockets)	#22, #22M, #22D	DS Series	MIL-DTL-38999 Series II

* Contacts size #8 and larger require pneumatic crimper. When this is not an option, wires may be soldered directly into contact wire well. For mission critical applications, crimping is preferred termination method.

Rev. 2219

H900 Soldering Station Kit

Our soldering station kit provides a complete solution for professionally terminating solder contacts to stranded or solid core wire.

Features & Benefits

- Temperature range 392° to 896°F (200° to 480°C)
- Adjustable temperature control dial with lock/set screw
- Idle temperature stability of ±1.8°F (1.0°C)
- Ceramic heating element and sensor ensure rapid heat-up temperature (30 seconds) and fast thermal recovery
- Celsius or Fahrenheit temperature setting
- Slender iron handles are insulated and ergonomically designed for ease and comfort
- ESD-safe design suitable for controlled environments
- 5 interchangeable tips suitable for connector solder contacts ranging from #0 to #22D

Note: The above lists standard options readily available in stock. Please consult an authorized distributor for full range of solder stations, re-work stations, specialty tips, and accessories.

Soldering Station Kit

Part Number	Kit Includes The Following Items
H900	120V / 60W soldering station, iron holder, cleaning sponge, 5 interchangeable tips, rosin-core lead solder, instructions

Replacement Tips

Part Number	For Contact Size	Description	Image
H900-6D	#16, #20, #22D	Chisel (1.6mm Tip)	
H900-B	#16, #20	Conical (0.5mm Tip)	
H900-2C	#16	45° Beveled (2mm Tip)	
H900-4C	#8, #12	45° Beveled (4mm Tip)	
H900-S3	#0, #4	Chisel (5.2mm Tip)	

TH1910E Professional Heat Gun

Our professional heat gun kit provides a complete solution for installing shrink boots. Interchangeable nozzles help to concentrate heat flow or to direct hot air evenly around a target while protecting sensitive equipment nearby.

Features & Benefits

- Temperature range 120° to 1,100°F (49° to 593°C)
- 3 interchangeable nozzle attachments
- Adjustable temperature control dial
- 3 stage switch to control airflow from 3.6 to 17.6 ft³/min
- Ergonomic design for ease and comfort

Note: The above lists standard options readily available in stock. Please consult an authorized distributor for full range of heat guns and specialized nozzle accessories.

Heat Gun Kit

Part Number	Kit Includes The Following Items
TH1910E	120V / 1,500W variable temperature heat gun, ring holder, and 3 interchangeable nozzles

Consult with authorized distributor for 220V, 230V, & 240V models suitable for your region.

Nozzle Attachments

Part Number	Description
TH101	10mm reduction nozzle
TH102	39mm reflector nozzle
TH103	13mm reflector nozzle

TB058 Banding Tool

The TB058 banding tool is the only tool needed to professionally install shielding termination bands to all Milnec EMI/RFI banding adapters. This simple hand tool positions, tightens, and trims the shield termination band with just a few easy steps for a foolproof, high-precision installation.

Features & Benefits

- One tool for all adapter sizes
- Ergonomic & lightweight: 1.18 lbs (0.5 kg)
- Tension range: 100 to 180 lbs (45.3 to 81.6 kg)

Banding Tool

Part Number	Kit Includes The Following Items
TB058	Banding tool for TB250 shield termination bands

Note: Please consult an authorized distributor for full range of pneumatic banding tools for high-volume production environments.

TB250 Shield Termination Band

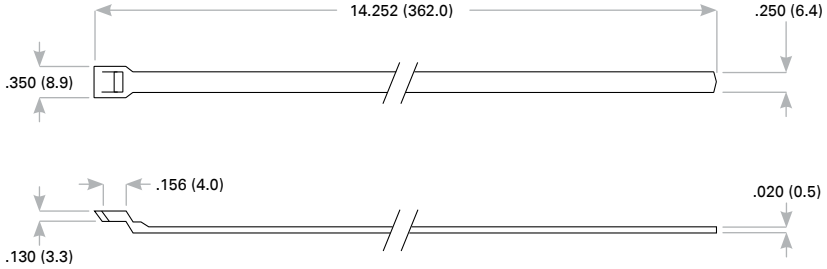
The TB250 band will professionally attach shielding to Milnec EMI/RFI banding boot adapters of all sizes. The TB250 band can be quickly and reliably installed with the specially designed TB058 banding tool. Bands come pre-coiled for faster installation.

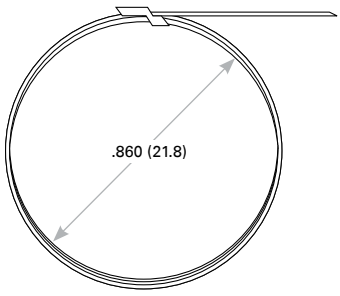
Features & Benefits

- Double-wrapped bands will accommodate diameters up to approximately 0.88 inches (22.4 mm)
- 300 series stainless steel single-piece construction

Shield Termiantion Band

Part Number	Kit Includes The Following Items
TB250	Single stainless steel shield termination band



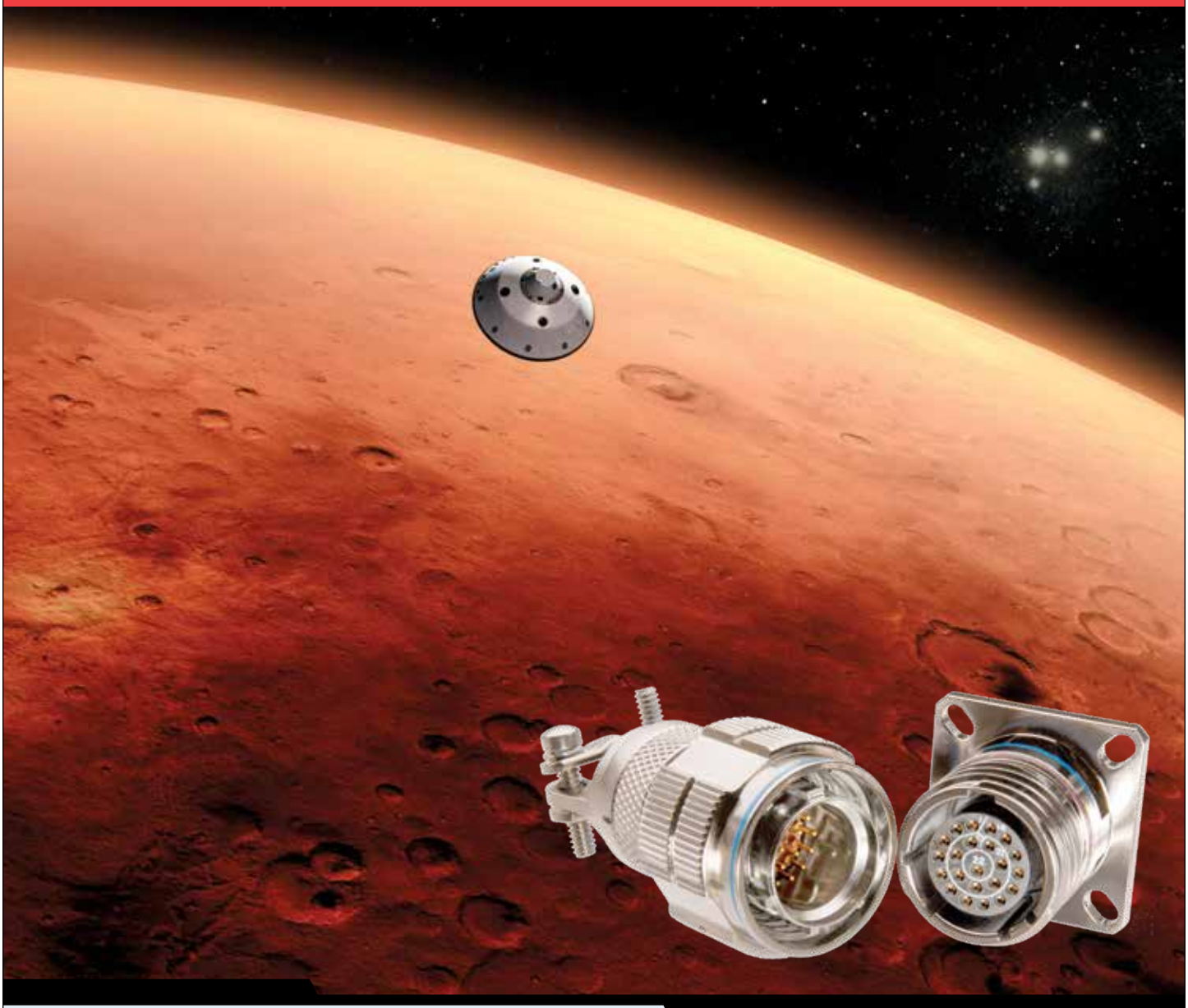


Pre-coiled Band

Dimensions are in inches (mm).

Rev. 2219

SPACE-GRADE CONNECTORS FOR THE FINAL FRONTIER



Don't Lose Touch With Mission Control

Rely on Milnec space-grade connectors for all your high-altitude and space applications. Our space-grade connectors meet all NASA specifications for outgassing and feature triple-start and impact resistant stub threads with self-locking ratchet coupling to ensure secure mating, even in high-vibration environments.

MILNEC® INTERCONNECT SYSTEMS

Project: _____ **Date:** _____

Application: _____ **Engineer:** _____

Warranty

If any of the products in this catalog are electrical components, components thereof, or electrical connectors accessories, then the following warranty terms set forth in this subparagraph (a) shall be applicable to such process. Milnec Interconnect Systems, LLC ("Milnec") and Milnec Interconnect Systems Authorized Distributors ("Authorized Distributors") warrants each new product sold by Milnec or an Authorized Distributor to be free from defects in material and workmanship under normal use and service. The obligation and liability of Milnec and its Authorized Distributors under this warranty is limited to the repair or replacement at its factory, at the option of Milnec or the Authorized Distributor, of any such product which proves defective within ninety (90) days after delivery to the first end user, and is found to be defective in material and workmanship under Milnec's inspection. Neither Milnec nor its Authorized Distributors shall be obligated or liable under this warranty for apparent defects which examination discloses are due to tampering, misuse, neglect, improper storage, normal wear and all cases where the products are disassembled by other than authorized Milnec or Authorized Distributor representatives. In addition, neither Milnec nor its Authorized Distributors shall be obligated or liable under this warranty unless the date of delivery to the first end user shall be within six (6) months from the date of delivery to the original purchaser, if different from the first end user, and further provided that written notice of any defect shall be given to Milnec or its Authorized Distributors within thirty (30) days from the date such defect is first discovered.

Product Safety Information

Products of warranty consideration shall be returned with all transportation charges prepaid to Milnec Interconnect Systems or Authorized Distributor in shipping containers that are adequate to prevent loss or damage in shipment. Products repaired or replaced under this warranty are warranted for the unexpired portion of the original warranty. Other than the liability set forth in any expressed warranty applicable to the products sold to the purchaser, seller shall not be liable for consequential, incidental or other type of damages and expressly excludes and disclaims such damages resulting from or caused by the use, operation, failure, malfunction or defects of any products sold to the purchaser, it being understood that the products sold to the purchaser are not consumer products. Milnec and its Authorized Distributors disclaim any liability whether under this warranty or otherwise for any failure of its product which is caused by, in whole or in part, the use in, or with that product of component parts not manufactured or sub-contracted by Milnec. The terms of the applicable warranty or warranties, as the cause may be, as set forth above, are the sole and exclusive warranty terms that shall have any force and effect in this catalog, and such terms and in lieu of all other warranties, expressed or implied including the implied warranties of merchantability and fitness for a particular purpose which are herewith expressly excluded.

Limited Warranty

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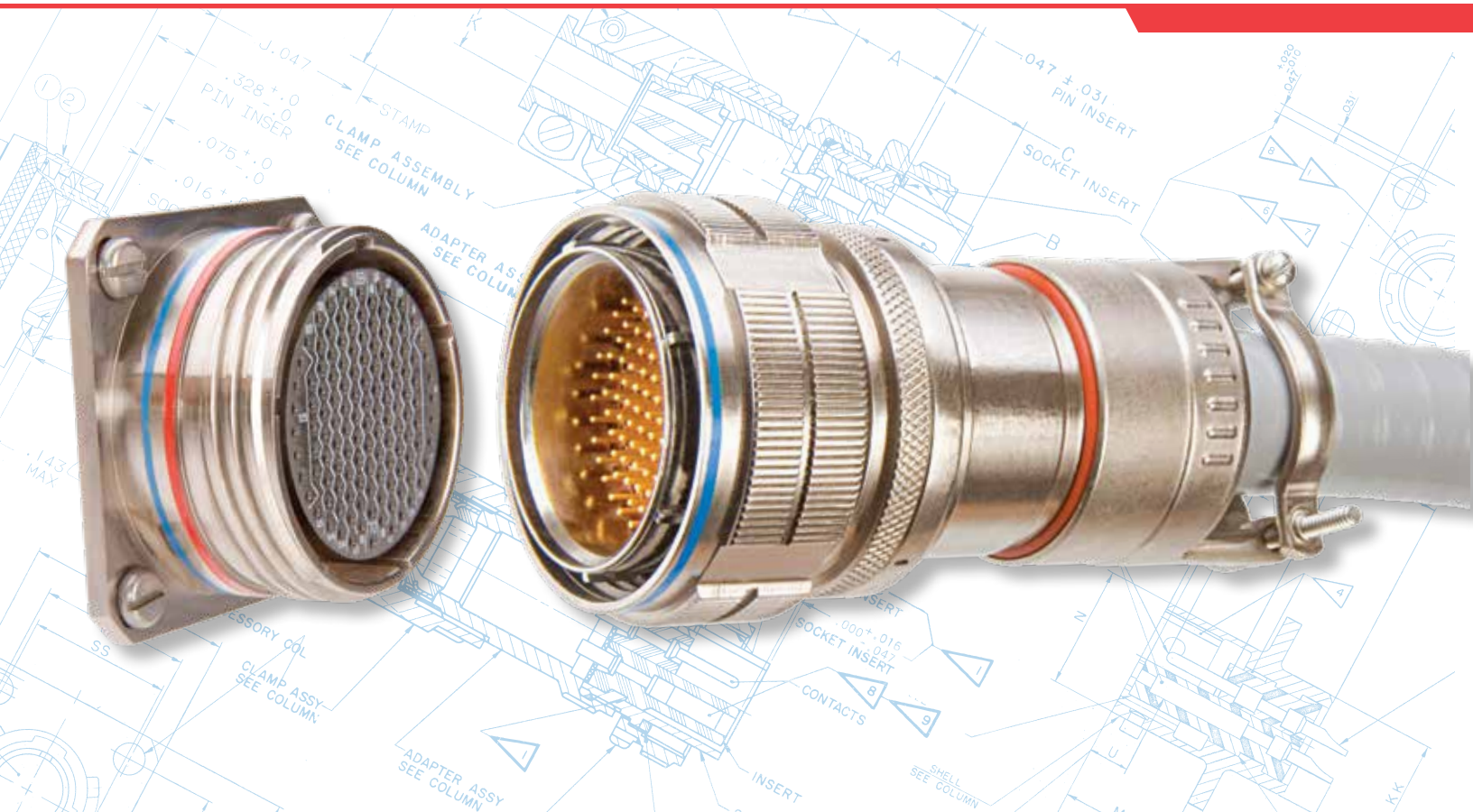
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