

C4ISR / tactical communications connectors and cables

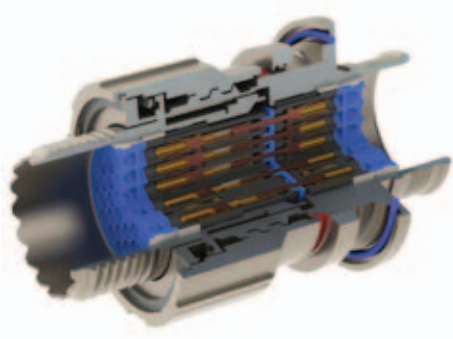


Powering Business Worldwide

C4ISR / tactical communications solutions overview

4 C4ISR and Mission-Systems Capabilities

- Extensive Harsh Environment Program Heritage
- Quick Turn Custom Solutions



7 Hot Shoe Connectors

- Cable and Panel-Mount Solutions
- Accordion or Pogo-Pin Contacts



8 Ten-Pin Mini Data Connectors

- Supports Data Rates up to 10 Gigabits / Second
- Under ½ Inch (13mm) Diameter Shells



10 Micro-Military Connectors

- Significantly Smaller Sizes and Lower Weights than MIL-DTL-38999 Connectors



18 MIL-DTL-55116 Connectors

- QPL, NSA, Filtered, and Specialized Solutions
- 5 to 27 Contacts



26 MIL-DTL-55181 Connectors

- QPL and Specialized Plugs and Receptacles
- Power Splitting Solutions and Cables



Latest generation and legacy form factors

40 GPS Panel-Mount Connectors

- Program Heritage Includes SINCGARS
- Meets MIL-STD-810 Water Immersion



42 MIL-DTL-26482 Connectors

- 2 to 13 Contacts
- Extensive Vehicle Intercom Heritage



44 Battery Connectors

- BB-590/U Battery Compatible Panel Mount
- Miniaturized In-Line Solutions



46 Power Tray Connectors

- Program Heritage Includes SINCGARS
- EMI/RFI and ESD Protected Solutions



48 MIL-DTL-10544 Connectors

- 10 Contact Solutions
- Receptacles and Straight or Right-Angle Plugs



50 MIL-DTL-12520 Connectors

- Round and Cathedral Form Factors
- 4 to 30-Contact Solutions



C4ISR and mission systems solutions

Heritage proven products and custom capabilities position Eaton as a primary source for C4ISR and mission systems interconnect for all physical domains: air, space, sea, and terrestrial.

Eaton has the product breadth and demonstrated field-proven performance needed to support a broad range of C4ISR and mission-system applications.

QPL and specialized standard products and modified/custom solution capabilities include:

- Form factors ranging from latest generation miniaturized to legacy.
- High-current power, high-speed data, and filtered signal solutions.
- Operation in extreme EMI/RFI, temperatures, shock/vibration, radiation, corrosive media, and vacuum/pressures.
- Custom connectors, cable assemblies, wiring harnesses, and non-explosive actuators.



MIL-DTL-38999 Series III and IV solutions support applications ranging from battlefield-weapons control to airborne-weapons release.



Mission-system-connectivity heritage includes shoulder fired guided missiles and shipboard vertical launch missiles.



Naval interconnect heritage includes sonar arrays, minesweepers, propulsion control, ROVs, and weapons control.



From subsea to space; Eaton's program heritage includes custom connector/cable assemblies for submarine weapons control (left) and MIL-DTL-38999 NATC, space-rated (right) applications.

C4ISR and mission systems program heritage

Multiple generations of C4ISR and mission systems platforms have relied on Eaton connectors, cables, and non-explosive actuators.

The table below is a partial listing of the programs that comprise over 40 years of harsh-environment-application successes extending from the depths of the Marianas Trench to the reaches of deep space.

Eaton's heritage includes enabling ordnance-guidance-fin releases and propulsion-stage separations.



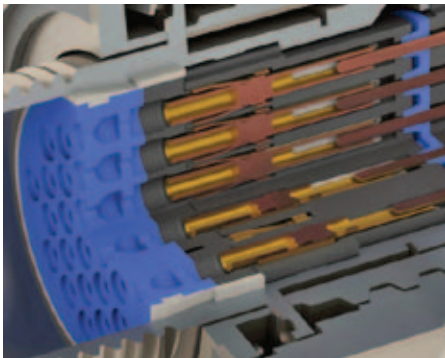
Application Type	Programs
C4ISR Tacom Radio Systems	• Bowman and Clansman Radio Systems • Joint Tactical Radio Systems (JTRS): • Ground Mobile Radios (GMR) • Consolidated Single Channel Handheld Radios (CSCHR) • Handheld, Manpack, and Small Form Fit (HMS) • Single Channel Ground and Airborne Radio System (SINCGARS) • VIC5 Integrated Vehicle Intercom System
Terrestrial C4ISR and Mission Systems	• Abrams and Bradley Tanks • Javelin and TOW Guided-Missile Systems • MRAP, and Stryker Combat Vehicles • Multiple Generations of the Howitzer • Patriot Missile System
Naval C4ISR and Mission Systems	• MK105 Magnetic Influence Minesweeping System • Harpoon Missile System • MK41 Vertical Launch System • Sea Lance, Standard, and Tomahawk Missile Systems • Trident Ballistic Missiles • Virginia-Class Submarine, Launch-Tube Control
Airborne C4ISR and Mission Systems	• F-18 Wing-Pylon Connector • Global Hawk Unmanned Aerial Vehicle (UAV) • Joint Direct Attack Munition Guidance Kits • Predator A, Predator B Reaper, and Predator C Avengers UAVs • Small Diameter Bomb (SDB) Flight Termination System • Snakeye Bomb and SDB Fin Releases
Space rated C4ISR and Mission Systems	• Exoatmospheric Kill Vehicles • GPS Satellite Constellation • Minuteman III Re-Entry Vehicles • MILSTAR Satellite Communications Network • Peacekeeper ICBM • Titan Rocket Stage Separation

Heritage proven custom capabilities

Eaton combines advanced engineering tools with an extensive array of manufacturing resources to quickly deliver custom solutions.



Harsh environment, custom capabilities include connectors for cryogenic fuel and coolant monitoring.



3D modeling software is integrated with CAM resources to concurrently manufacture parts for prototype solutions including inserts, which can be machined or molded as needed to meet schedule requirements. An extensive array of in-house environmental test equipment, including thermal-vacuum chambers, also accelerates prototype development.

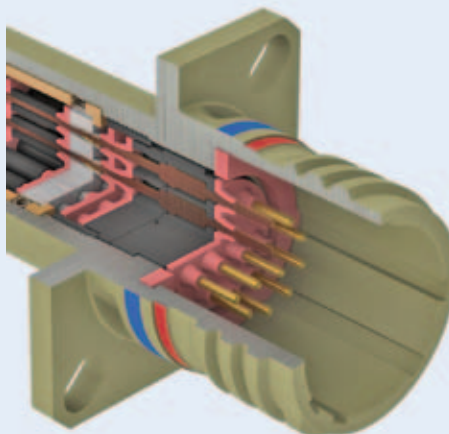
Mission critical engineering resources

Technology portfolio

An extensive portfolio of field-proven products and technologies satisfies a significant number of customer requirements with only minor modifications.

Modeling and simulation

Our design teams utilize SolidWorks to simulate a complete array of harsh-environment mechanical and thermal stresses.



Extensive experience

Eaton has an in-depth understanding of the materials, mechanisms, and electronic design required for harsh environment, mission-critical applications.

Defined toll-gate process

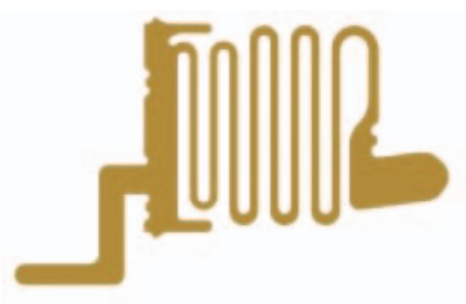
New product development is controlled through a defined toll-gate process to ensure consistent, predictable, and successful results.

Hotshoe connectors

Eaton utilizes standardized designs and production processes to facilitate quick-turn development of custom hotshoe-connector solutions. Design options include:

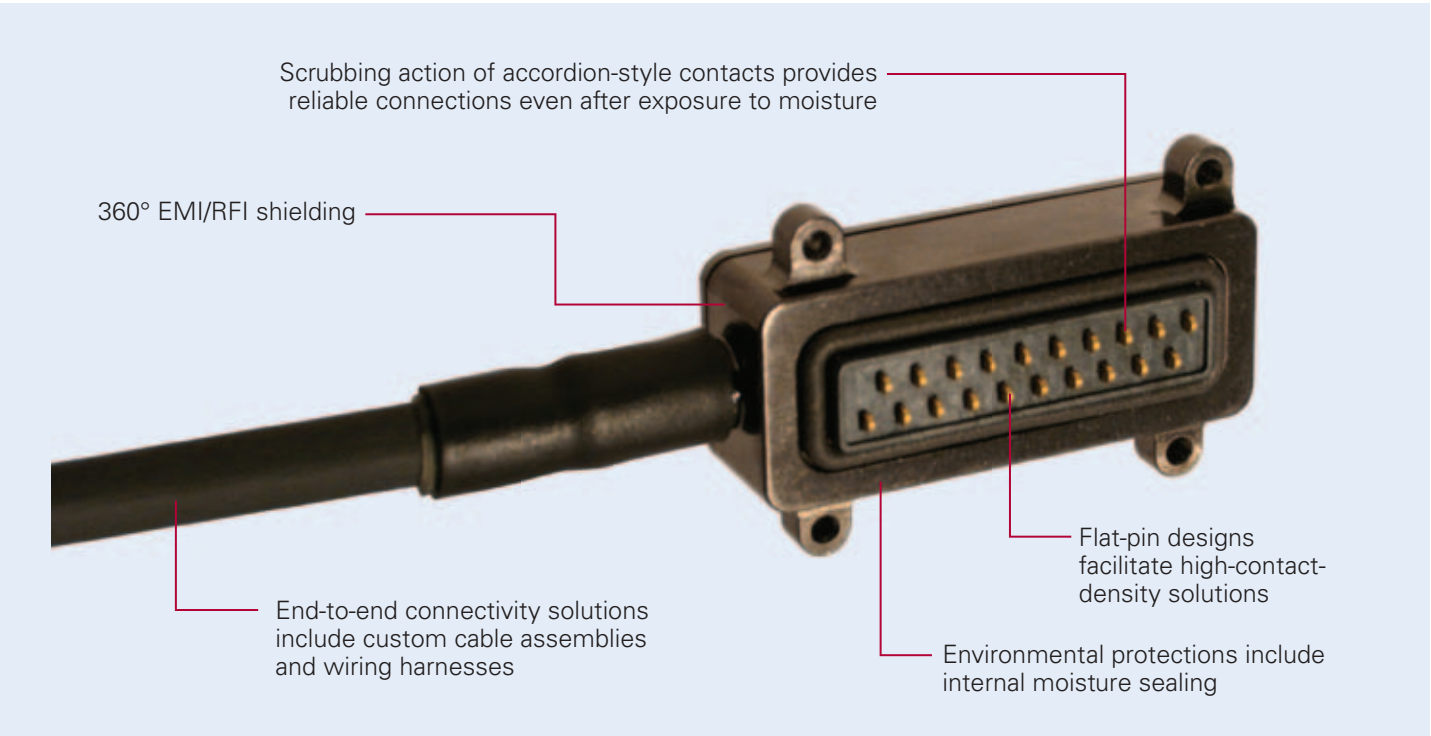
- Accordion or pogo pin style contacts.
- Single or redundant contacts for each position with pointed, 2D cupped, or radiused-tip geometries.
- Tail configurations include through hole, SMT, vertical mating, and right-angle mating.
- Custom connector/cable assemblies.

Please contact Eaton to discuss hotshoe connectors tailored to your specific application requirements.



Accordion-Spring Contacts Compared To Traditional Designs

Electrical	Larger Contact Surface Areas Reduce Impedance
	Improved Contact Resistance Stability
Mechanical	Single-Piece Design Eliminates the Possibility of Contaminant Build Up Between Contact Parts
	Mechanical Properties are Maintained over an Exponentially Higher Number of Engagement Cycles



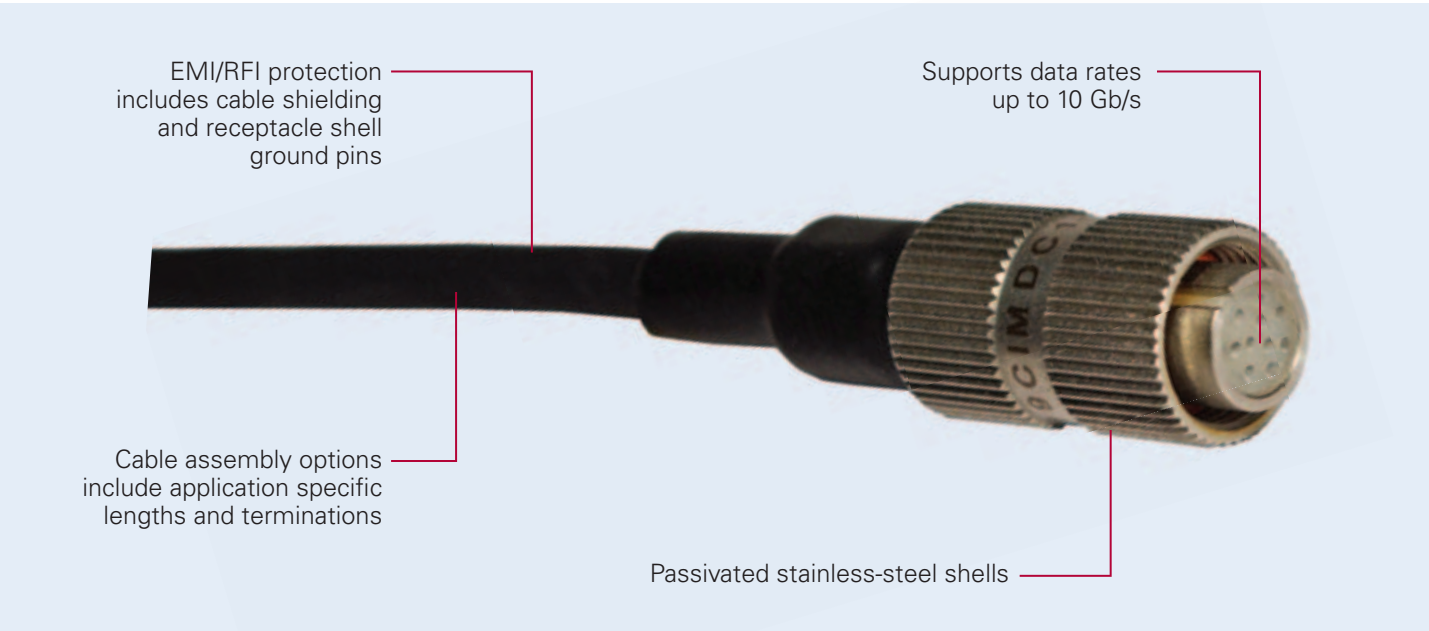
Miniaturized ten-pin connectors

Eaton’s miniaturized 10-pin connectors deliver high-speed data capabilities in form factors that are approximately one-half-inch in diameter. Additional features of these ultra-compact solutions include:

- Supports data rates up to 10 gigabits per second.
- EMI/RFI protection includes shielded cables and receptacle case-grounding pins.
- 1.4 amps per contact current rating.
- Rugged designs survive 2000 engagement cycles.



General Specifications		
Materials and Finishes	Receptacle and Plug Shells	Passivated Stainless Steel
	Panel Nuts	Passivated Stainless Steel
	Contacts	Phosphor Bronze/Gold over Nickel
	Inserts	Nylon Type 6/6 (Zytel 101)
	Cable Shield Ferrule	Brass/Nickel
	Cable Overmold Material	Black Santoprene
Electrical	Dielectric Strength	500 VRMS
	Insulation Resistance	1000 Megaohms Minimum at 500VDC
	Current Rating per Contact	1.4 Amps
	Cable Construction	10 Conductor, 28AWG Shielded Cable
Mechanical	Environmental Sealing	15 PSI
	Water Immersion	One Meter
	Mate/Unmate Durability	2000 Cycles



Miniaturized ten-pin data connectors

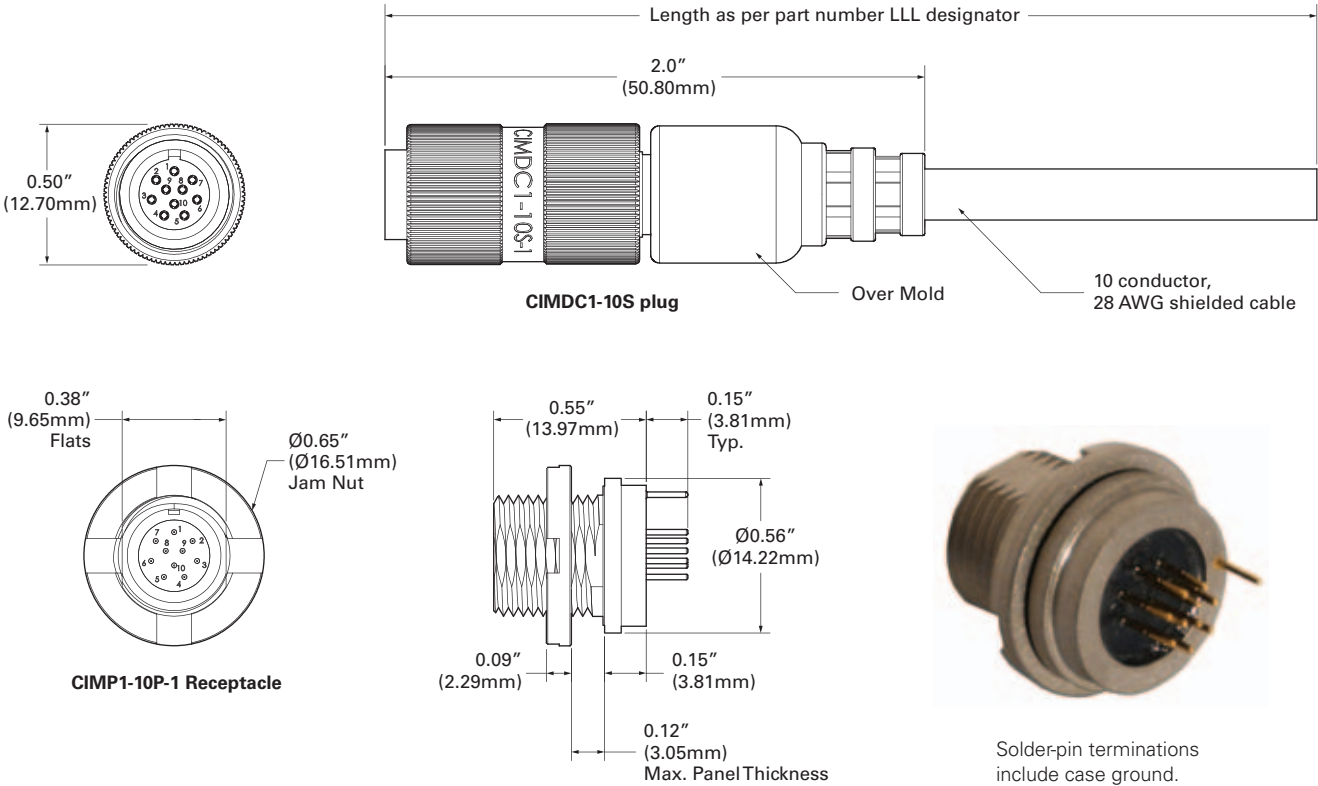
Plug/cable assembly ordering information
Mates with receptacle part number CIMP1-10P-1

CIMDC1 - 10S - LLL

Prefix for Miniaturized Data-Cable Assembly

10 = Number of Contacts, S = Sockets

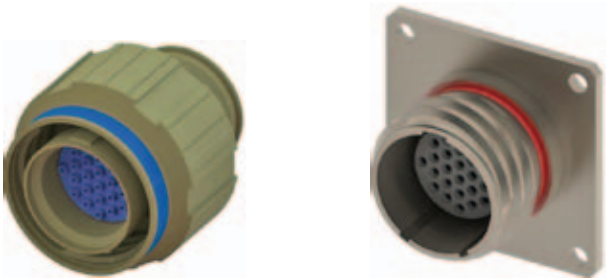
Plug/Cable Assembly Length in Centimeters as per Drawing Below



Micro-military circular connectors

Eaton’s micro-military circular connectors incorporate latest-generation designs that deliver uncompromised performance in harsh environment applications ranging from C4ISR to space flight. Additional features include:

- Significantly smaller sizes, lower weights, and higher contact densities than MIL-DTL-38999 connectors.
- Coupling mechanisms that stay engaged in high shock and vibration environments and redundant insert retention.
- A comprehensive range of solutions; dual start: shell sizes 6 – 10 and triple start: shell sizes 8 – 12.
- Mating compatibility with micro-miniature connectors from other manufacturers.



Micro-Military Circular Connectors Overview

Solutions	M1 Series (Dual Start)	M5 Series (Triple Start)
Coupling Threads	ACME Threads	ACME Threads
Coupling Mechanisms	All Products Feature Ruggedized, Anti-Decoupling Ratchet Mechanisms	
Mating	1.5 Turns to Full Mate	1 Turn to Full Mate
Shell Sizes	6,7,9, & 10	8,9,11, & 12
Contact Configurations	#23 AWG: 7 – 26 Contacts per Connector, #16 AWG: 1 – 4 Contacts per Connector Contacts Meet MIL-C-39029 and Utilize Crimped Terminations	
Custom Capabilities	Application-Specific Inserts, Materials, Platings, Cable Assemblies, and Space-Rated Solutions	

Latest generation designs deliver uncompromised performance in mission-critical applications

Extremely robust, insert-retention design includes epoxy bonds and redundant mechanical retainers

Anti-decoupling ratcheting mechanisms maintain engagement in high shock and vibration environments

360° grounding fingers (M5 plugs) provide 85 dB EMI protection from 100MHz to 1000MHz

Finish options include cadmium/olive drab rated to survive 500 hours of salt spray and RoHS compliant, electroless nickel

Application specific performance modifications include compliance to NASA low volatile condensable materials per ASTM E595

High-contact-density designs provide significant weight and size savings compared to MIL-DTL-38999 connectors.

Micro-military circular connectors

General Specifications

Materials and Finishes	Shell and Coupling Ring	6061 Aluminum
	Contacts	Copper Alloy, Gold Plated
	Inserts	LPS (Liquid Crystal Polymer) 30% Glass Filled
	Grommet and Seal	Fluorosilicone
	Contact Retaining Springs	Beryllium Copper
Electrical	Dielectric Withstand Voltage (DWV)	23 AWG Contact Inserts: 500 VAC 16 AWG Contact Inserts: 1800 VAC
	Insulation Resistance (IR)	5000 Megaohms Minimum
	Contact Current Ratings	#23 Contacts – 5 Amps, #16 Contacts – 13 Amps
	EMI/RFI Shielding	M1 Series: 55 dB Minimum from 100MHz to 1000MHz M5 Series: 85 dB Minimum from 100MHz to 1000MHz
Mechanical and Environmental	Contact Retention	#23 Contacts: 15 pounds, #16 Contacts: 25 pounds
	Shock and Vibration	300 g's Shock, 37 g's Random Vibration
	Insert Retention	Epoxy Bonds and Redundant Mechanical Retainers
	Water Immersion	MIL-STD-810, Method 512, One Meter Immersion for One Hour
	Mate/Unmate Durability	M1 Series: 2000 Cycles, M5 Series: 500 Cycles

Finish Classes



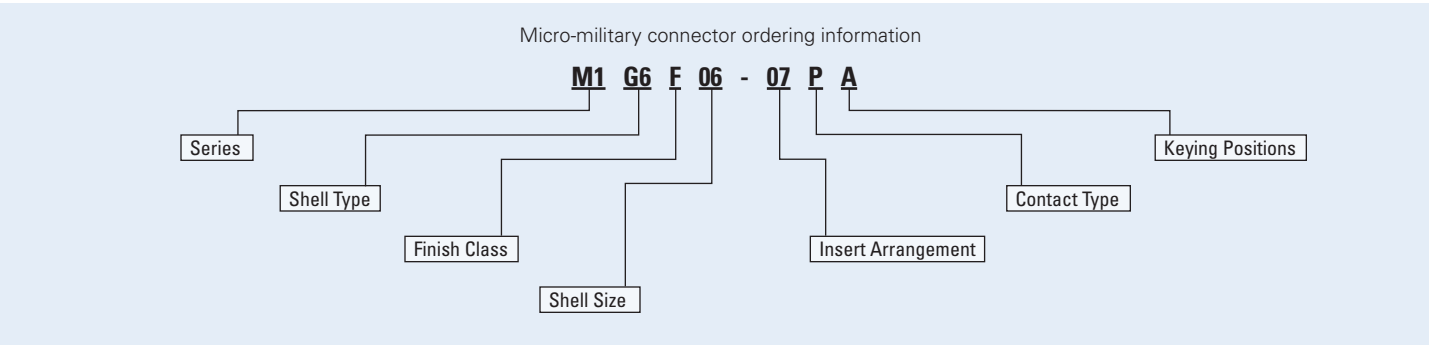
Class F



Class W

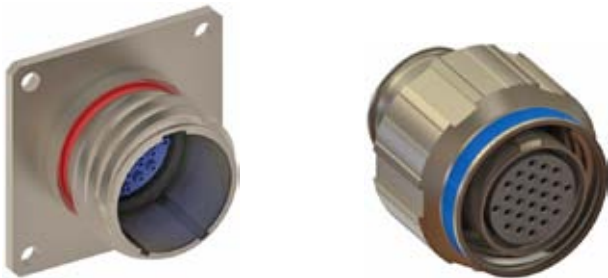
Plating Type	Electroless Nickel	Cadmium/Olive Drab
Compliances	ASTM B733 & RoHS	QQ-P-416
Operating Temperatures	-65°C to 200°C (-85°F to 392°F)	-65°C to 175°C (-85°F to 347°F)
Corrosion Resistance	Withstands 48 Hours Salt Spray	Withstands 500 Hours Salt Spray
Shell-to-Shell Conductivity	1.0 Millivolt Maximum Drop	2.5 Millivolts Maximum Drop

Micro-military circular connectors

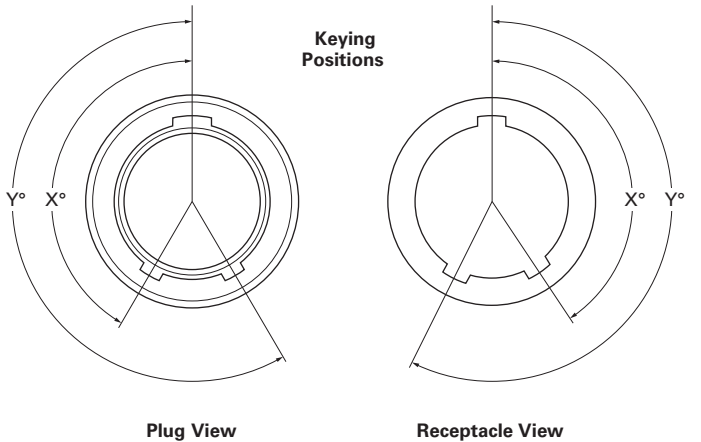


Type/Designation	Description	
Series	M1	Double Start ACME Threads
	M5	Triple Start ACME Threads
Shell Type	06	M1 In-Line Plug, Accessory Thread (no EMI)
	16	M1 In-Line Plug, Banding Platform (no EMI)
	G6	M5 In-Line Plug, Accessory Thread (EMI)
	H6	M5 In-Line Plug, Banding Platform (EMI)
	00	Square-Flange Receptacle, Accessory Thread
	10	Square-Flange Receptacle, Banding Platform
	03	In-Line Receptacle, Accessory Thread
	13	In-Line Receptacle, Banding Platform
Finish Classes	07	Jam-Nut Receptacle, Accessory Thread
	17	Jam-Nut Receptacle, Banding Platform
	F	Electroless Nickel per ASTM B733
	W	CAD/OD per QQ P-416

Type/Designation		Description		
Contact Type	P	Pin		
	S	Socket		
	A	Pin Compatible Insert Shipped without Contacts		
	B	Socket Compatible Insert Shipped without Contacts		
Keying Positions		X°	Y°	Notes
	A	150°	210°	Normal
	B	75°	210°	
	C	95°	230°	
	D	140°	275°	
	E	75°	275°	M1 Series Only
	F	95°	210°	

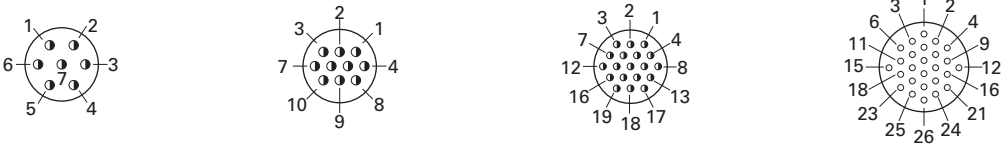


Contact Eaton to discuss application specific finish classes, including space-rated solutions.



Micro-military circular connectors

23AWG Contact
Insert Arrangements

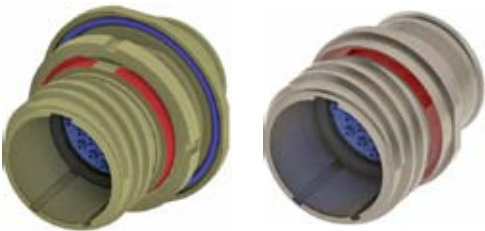


M1 Series Shell - Insert #	06-07	07-10	09-19	10-26
M5 Series Shell - Insert #	08-07	09-10	11-19	12-26
Number of Contacts	7	10	19	26
Current Rating per Contact	5 Amps	5 Amps	5 Amps	5 Amps

16AWG Contact
Insert Arrangements



M1 Series Shell - Insert #	06-01	09-04
M5 Series Shell - Insert #	08-01	11-04
Number of Contacts	1	4
Current Rating per Contact	13 Amps	13 Amps



Contact Eaton to discuss quick turn, application specific contacts and insert arrangements.



End-to-End Connectivity Solutions Include Custom Cable Assemblies

Cable assembly and wiring harness design and manufacturing capabilities include: overmolded; RF coaxial; flat ribbon; fiber optic; and voice, data, and hybrid communications.

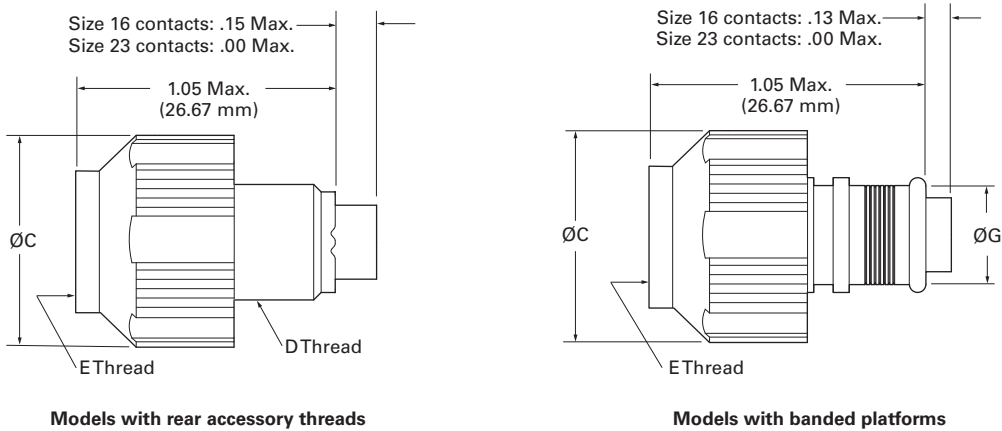
Our engineers are experts at providing protection against harsh-environmental conditions including:

- Extreme high and low temperatures
- Shock and vibration
- Radiation
- Corrosive contaminants
- EMI and RFI
- Vacuum and pressures to 20,000 PSI

In addition to turnkey design and manufacturing for new projects, quick-turn capabilities include shielded; build-to-print services for production-ready designs.

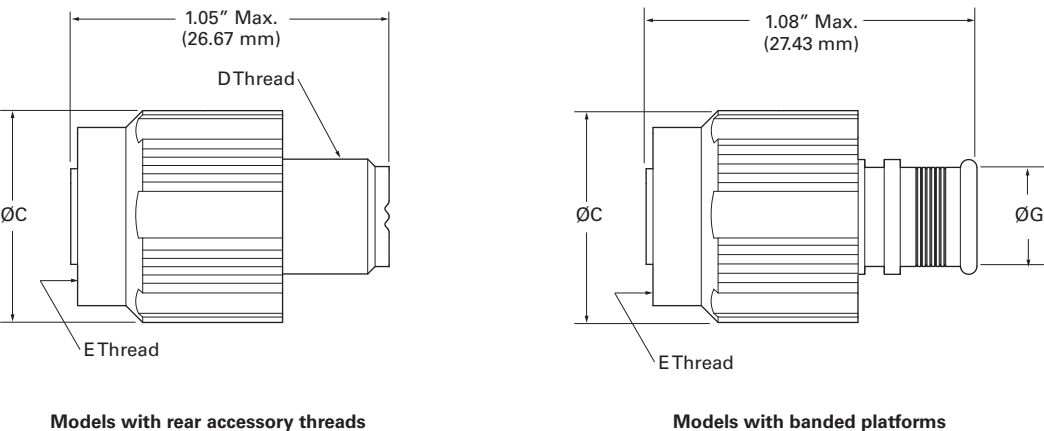
In-line plug mechanical drawings

M1 Series



Shell size	Ø C	DThread	EThread	ØG
6	0.690	.3750-32 UNEF-2A	.3750-.05P-.1L-2B	0.320
7	0.775	.4375-28 UNEF-2A	.4375-.05P-.1L-2B	0.380
9	0.910	.5625-24 UNEF-2A	.5625-.05P-.1L-2B	0.498
10	0.995	.6250-24 UNEF-2A	.6250-.05P-.1L-2B	0.584

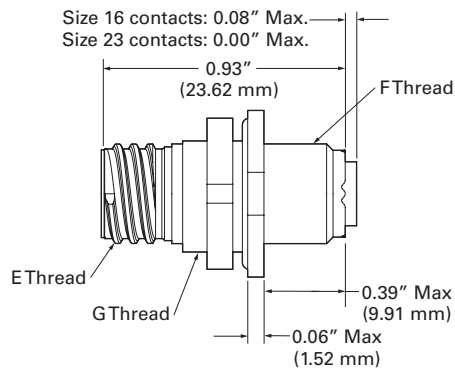
M5 Series



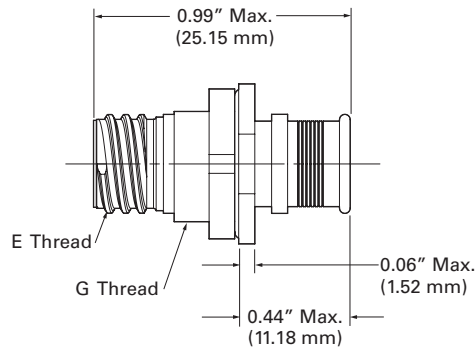
Shell size	Ø C	DThread	EThread	ØG
8	0.691	.3750-32 UNEF-2A	.5000-.1P-.3L-2B	0.320
9	0.787	.4375-28 UNEF-2A	.5625-.1P-.3L-2B	0.379
11	0.916	.5625-24 UNEF-2A	.6875-.1P-.3L-2B	0.497
12	0.995	.6250-24 UNEF-2A	.7500-.1P-.3L-2B	0.585

Jam-nut receptacle mechanical drawings

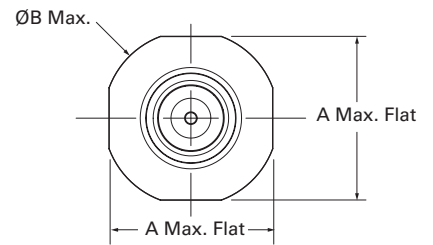
M1 Series



Models with rear accessory threads

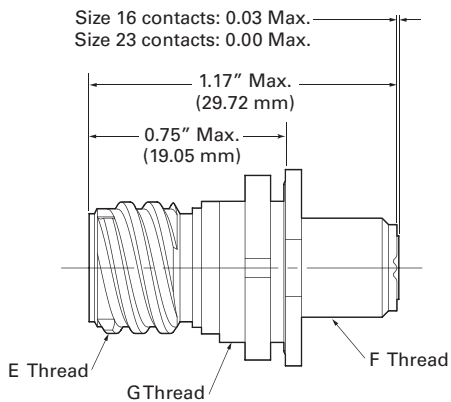


Models with banded platforms

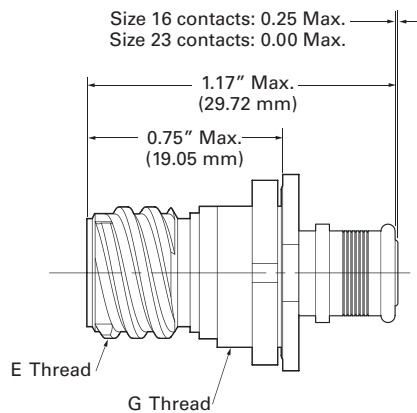


Shell size	A	B	E Thread	F Thread	G Thread
6	0.620	0.660	.3750-.05P-.1L-2B	.3750-32 UNEF-2A	.4375-28 UNEF-2A
7	0.748	0.780	.4375-.05P-.1L-2B	.4375-28 UNEF-2A	.5625-28 UN-2A
9	0.815	0.855	.5625-.05P-.1L-2B	.5625-24 UNEF-2A	.6250-28 UN-2A
10	0.880	0.915	.6250-.05P-.1L-2B	.6250-24 UNEF-2A	.6875-28 UN-2A

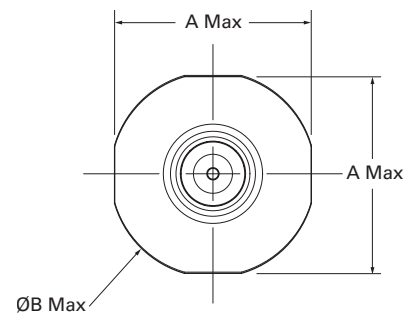
M5 Series



Models with rear accessory threads



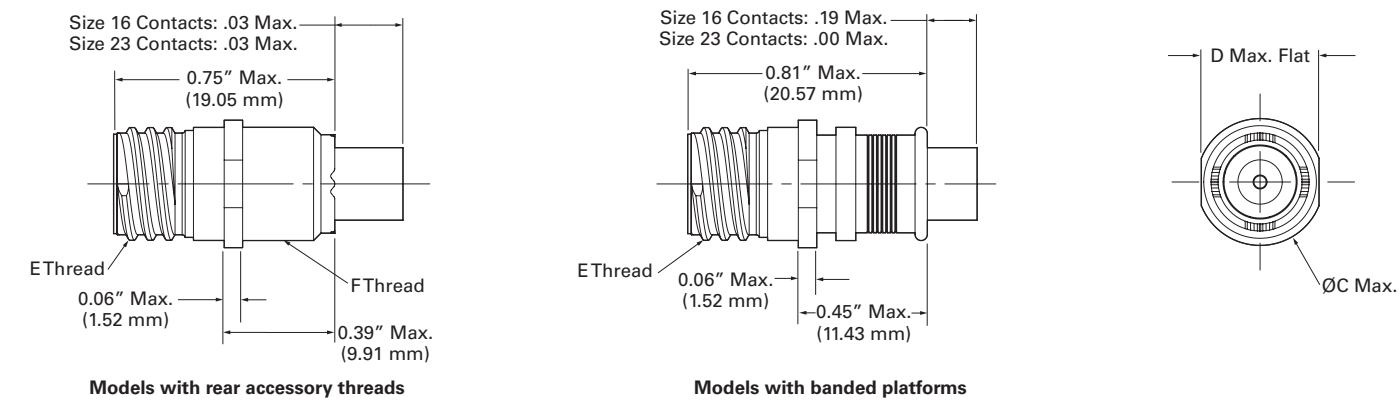
Models with banded platforms



Shell size	A	B	E Thread	F Thread	G Thread
8	0.755	0.785	.5000-.1P-.3L-2A	.3750-32 UNEF-2A	.5625-28 UN-2A
9	0.875	0.905	.5625-.1P-.3L-2A	.4375-28 UNEF-2A	.6875-28 UN-2A
11	0.950	0.980	.6875-.1P-.3L-2A	.5625-24 UNEF-2A	.7500-28 UN-2A
12	1.060	1.085	.7500-.1P-.3L-2A	.6250-24 UNEF-2A	.8125-28 UN-2A

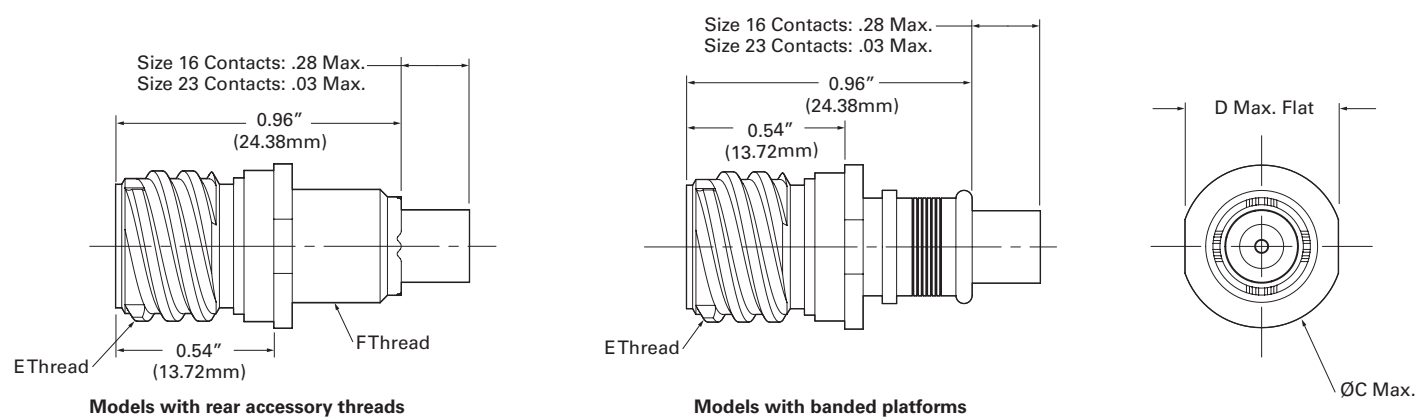
In-line receptacle mechanical drawings

M1 Series



Shell size	C	D	EThread	FThread
6	0.430	0.410	.3750-.05P-.1L-2A	.3750-32 UNEF-2A
7	0.505	0.470	.4375-.05P-.1L-2A	.4375-28 UNEF-2A
9	0.630	0.600	.5625-.05P-.1L-2A	.5625-24 UNEF-2A
10	0.690	0.660	.6250-.05P-.1L-2A	.6250-24 UNEF-2A

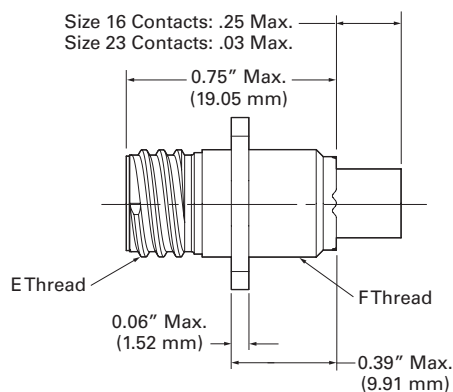
M5 Series



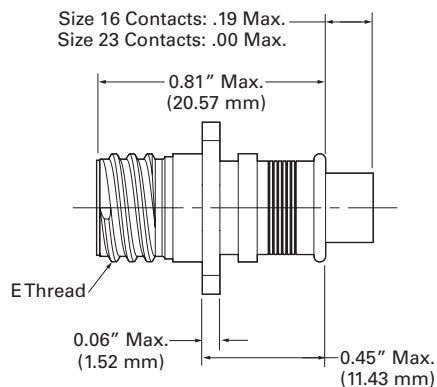
Shell size	C	D	EThread	FThread
8	0.560	0.530	.5000-.1P-.3L-2A	.3750-32 UNEF-2A
9	0.635	0.595	.5625-.1P-.3L-2A	.4375-28 UNEF-2A
11	0.760	0.720	.6875-.1P-.3L-2A	.5625-24 UNEF-2A
12	0.823	0.783	.7500-.1P-.3L-2A	.6250-24 UNEF-2A

Square-flange receptacle mechanical drawings

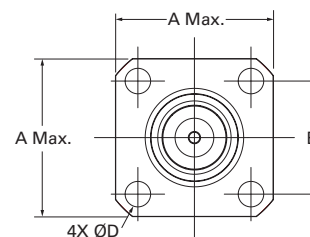
M1 Series



Models with rear accessory threads

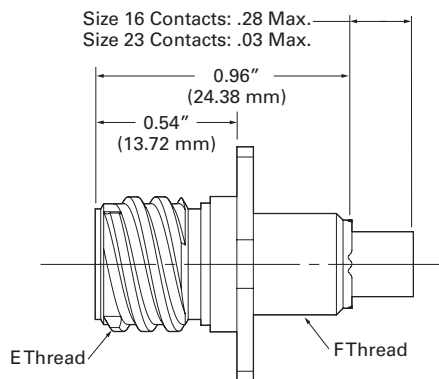


Models with banded platforms

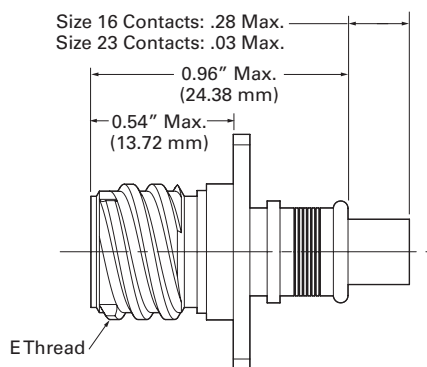


Shell size	A	B	D	EThread	FThread
6	0.615	0.423	0.093	.3750-.05P-.1L-2A	.3750-32 UNEF-2A
7	0.675	0.483	0.093	.4375-.05P-.1L-2A	.4375-28 UNEF-2A
9	0.875	0.607	0.128	.5625-.05P-.1L-2A	.5625-24 UNEF-2A
10	0.915	0.670	0.128	.6250-.05P-.1L-2A	.6250-24 UNEF-2A

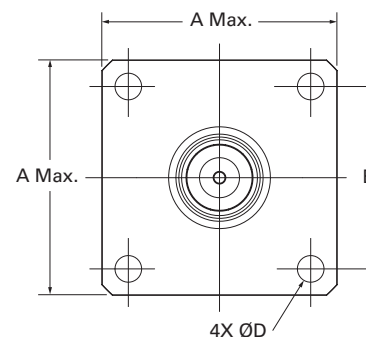
M5 Series



Models with rear accessory threads



Models with banded platforms



Shell size	A	B	D	EThread	FThread
8	0.875	0.660	0.094	.5000-.1P-.3L-2A	.3750-32 UNEF-2A
9	0.938	0.723	0.094	.5625-.1P-.3L-2A	.4375-28 UNEF-2A
11	1.064	0.838	0.094	.6875-.1P-.3L-2A	.5625-24 UNEF-2A
12	1.124	0.909	0.094	.7500-.1P-.3L-2A	.6250-24 UNEF-2A

MIL-DTL-55116 solutions

Eaton's MIL-DTL-55116 connectors and cable assemblies incorporate rugged designs that have been field proven in an extensive range of applications that include the SINCGARS and JTRS radio systems.

A comprehensive array of QPL and specialized designs includes in-line and panel-mount connectors, EMI/RFI filtered receptacles (left image), feedthroughs, and extended length, bulkhead connectors (right image).

Quick turn, custom solutions include cable assemblies, wiring harnesses, and high-pin-count connectors that utilize MIL-DTL-55116-style shells.



MIL-DTL-55116-style solutions are available with up to 27 contacts



Solutions overview and general specifications

20 QPL, NSA and specialized plugs

- M55116/1 to /8
- NSA ON241774-1 and -2
- Lightweight and right angle
- Thread and flange panel mount



22 QPL, NSA, and filtered receptacles

- M55116/11 to /14
- M55116/9 and /10
- NSA ON241775-1 to -5
- Application-optimized filtered solutions



23 Specialized receptacles

- Extended bodies for bulkhead mounting
- Double-ended feedthroughs



24 High-density solutions

- 19 and 27 contact connectors
- In-line, panel mount, and filtered configurations



Materials and Finishes

Shells And Panel Nuts	Passivated Stainless Steel, Aluminum Shells Available as Noted on Detail Pages
Backshell (Extended Receptacle)	Nickel-Plated Brass
Contact Material	Copper Alloy
Contact Plating	Gold Over Nickel
Insert	Diallyl Phthalate per MIL-M-14F, Type MDG

Electrical

Dielectric Strength	500 VRMS
Insulation Resistance	1000 Megaohms Minimum
Contact Resistance (mated)	0.05 Ohms Maximum

Mechanical

Air Pressure	2.5 PSI
Water Immersion	48 Hours at Six Feet
Mate/Unmate Durability	3000 Cycles

MIL-DTL-55116 QPL, NSA, and specialized plugs

Eaton’s MIL-DTL-55116 solutions include an extensive array of heritage proven, standard plugs and custom capabilities:

- Cable-mount solutions in QPL, NSA, lightweight, and right-angle configurations.
- Panel-mount plugs with rear threads or mounting flanges.
- Application-specific backshells that support environmental sealing and EMI/RFI shielding.
- Custom cable assemblies and wiring harnesses.



In-Line Type	Model Numbers	# Contacts	Terminations	Specifications And National Stock Numbers (NSNs)
U-229 Wire Strain Reliefs	M55116/1-X	5	Crimped	NSN 5935-01-373-6341 = M55116/1-3
	M55116/2-X	6	Crimped	NSN 5935-01-465-3101 = M55116/2-3
	M55116/3-X	5	Solder Cups	NSN 5935-01-439-9280 = M55116/3-2 NSN 5935-01-482-9006 = M55116/3-4
	M55116/4-X	6	Solder Cups	NSN 5935-01-499-4241 = M55116/4-2 NSN 5935-01-412-4102 = M55116/4-3 NSN 5935-01-383-4173 = M55116/4-4 NSN 5935-01-383-4851 = M55116/4-5
U-182 Molded Strain Reliefs	M55116/5-X	5	Crimped	NSN 5935-00-462-3075 = M55116/5-1
	M55116/6-X	6	Crimped	n/a
	M55116/7-X	5	Solder Cups	n/a
	M55116/8-X	6	Solder Cups	n/a
NSA	ON241774-1	6	Solder Cups	DoD Specification ON241774-1
	ON241774-2	6	Crimped	DoD Specification ON241774-2



"X" Cable Designation	Maximum Cable Outside Diameter
0	No Strain Relief
1	0.165"
2	0.228"
3	0.250"
4	0.290"
5	0.320"

CI529RA-1 and CI629RA-1 in-line plugs support right-angle cable mounting.

MIL-DTL-55116 QPL, NSA, and specialized plugs

Lightweight
Plugs are
Approximately
50% Lighter
than QPL
Solutions*

In-Line Plug Configurations	Lightweight Plug Part Number	Cable Sizes	Shell Material	*Weight (Ounces)
Five Contacts Overmolded Strain Reliefs	GC217-1-4	1/4"	Stainless Steel	1.20
	GC217-3-16	3/16"	Stainless Steel	1.20
	GC217A-1-4	1/4"	Aluminum	0.81
	GC217A-3-16	3/16"	Aluminum	0.81
Six Contacts Overmolded Strain Reliefs	GC617-1 -4	1/4"	Stainless Steel	1.19
	GC617-3-16	3/16"	Stainless Steel	1.19
	GC617A-1-4	1/4"	Aluminum	0.80
	GC617A-3-16	3/16"	Aluminum	0.80

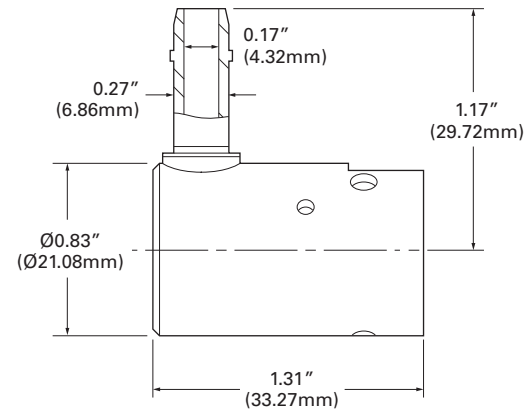
* Approximate weight of QPL solutions is two ounces.

Type	Part Number	Contacts
In-line, 90° Cable Entry	CI529RA-1	5
	CI629RA-1	6

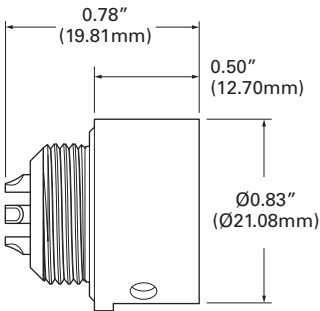
The products listed above utilize stainless-steel shells, rigid contacts, and solder cup terminations.

Type	Part Number	Contacts	Mounting
Panel Mount	GC429	5	Rear Thread
	GC529	6	Rear Thread
	GC629	5	Square Flange
	GC729	6	Square Flange

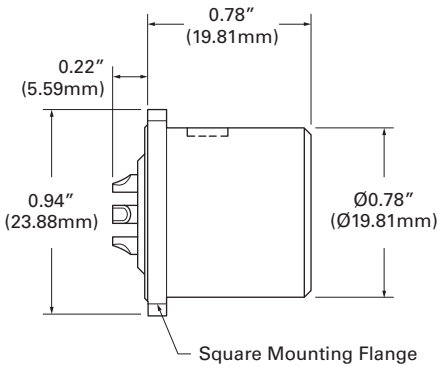
The products listed above utilize stainless-steel shells, rigid contacts, and solder cup terminations.



CI529RA-1 and CI629RA-1



GC429 and GC529



GC629 and GC729

MIL-DTL-55116 QPL, NSA, and filtered receptacles

Eaton’s MIL-DTL-55116 solutions include an extensive array of heritage proven standard receptacles and custom capabilities:

- Cable-mount M55116/11 to /14
- Panel-mount M55116/9 and /10
- NSA connectors, ON241775-1 to -5
- Application optimized filtered solutions
- Custom backshells, cable assemblies, and wiring harnesses.



QPL In-Line Receptacles*

Type	Model Numbers	# Contacts	Terminations	NSNs Cross Referenced By Model Numbers
U-228 Wire Strain Reliefs	M55116/11-X	5	Crimped	n/a
	M55116/13-X	5	Solder Cups	5935-00-929-7082 = M55116/13-3
	M55116/12-X	6	Crimped	5935-01-552-4361 = M55116/12-3
	M55116/14-X	6	Solder Cups	5935-01-512-5620 = M55116/14-3 5935-01-383-6960 = M55116/14-4

*"X" values designate strain-relief options to accommodate the cable sizes listed in the table below. The part numbers listed above are configured with spring-loaded contacts and stainless-steel shells.

Panel Mount Receptacles

Type	Model Numbers	# Contacts	Terminations	Specifications and National Stock Numbers (NSNs)
U-183	M55116/9-0	5	Solder Cups	NSN 5935-01-304-6787
	M55116/10-0	6	Solder Cups	NSN 5935-01-356-8083
NSA	ON241775-1	6	Solder Cups	DoD Specification ON241775-1
	ON241775-2	6	Solder Pins	DoD Specification ON241775-2
	ON241775-3	6	Solder Cups	DoD Specification ON241775-3
	ON241775-4	6	Solder Pins	DoD Specification ON241775-4
	ON241775-5	6	Solder Cups	DoD Specification ON241775-5

"X" Cable Designation	Maximum Cable Outside Diameter
0	No Strain Relief
1	0.165"
2	0.228"
3	0.250"
4	0.290"
5	0.320"

The part numbers listed above are configured with spring-loaded contacts and stainless-steel shells. U-183 receptacles utilize the T-1104-03 spanner wrench.



Filtered Solutions

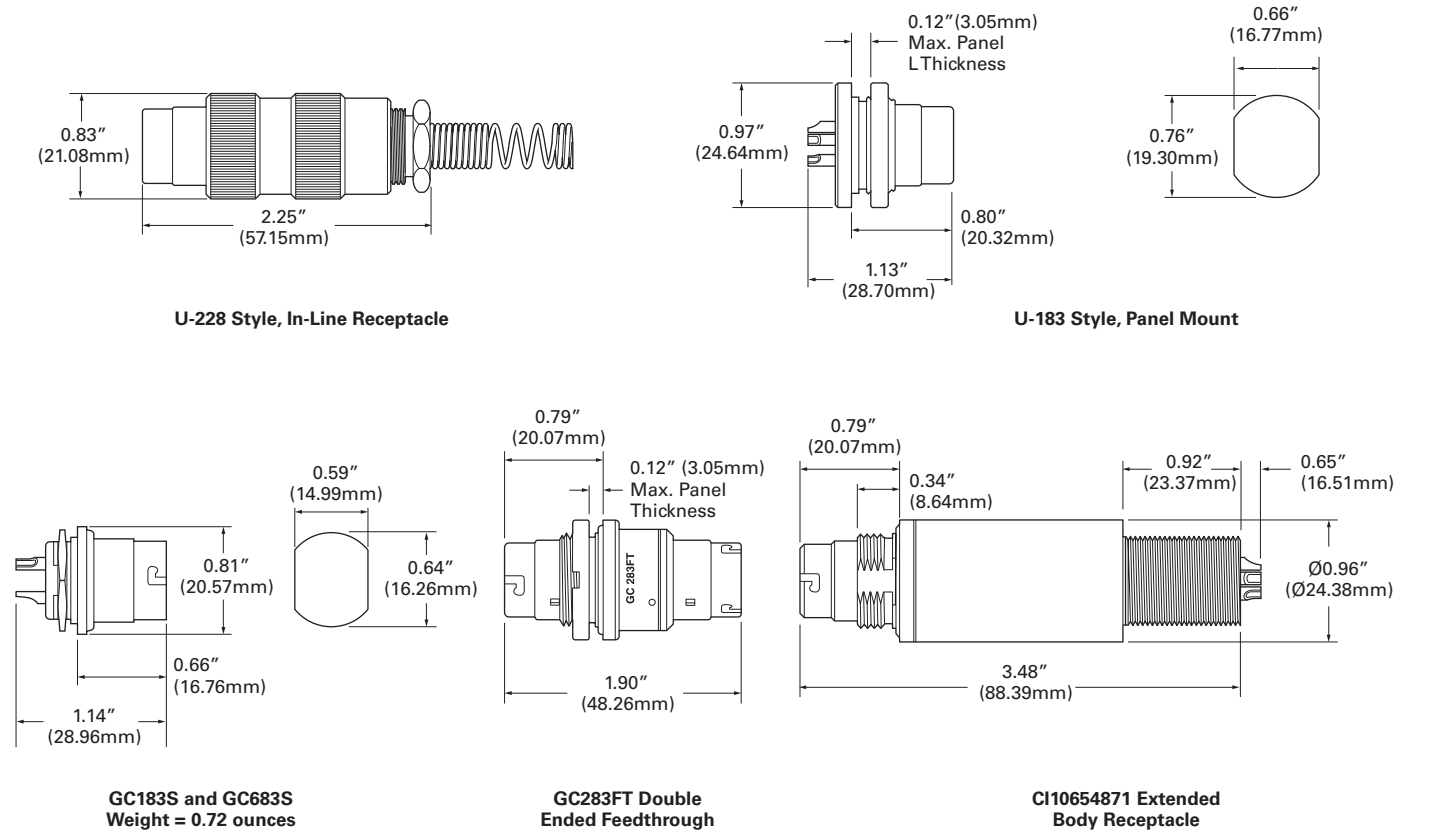
MIL-DTL-55116-style filtered receptacles can be optimized for any frequency, voltage, TVS, and impedance requirements.

MIL-DTL-55116 specialized receptacles



Mounting	Type*	Model Numbers	# Contacts	Contact Type	Terminations
Panel	Lightweight Rear Mount	GC183S	5	Spring Loaded	Solder Cups
		GC683S	6	Spring Loaded	Solder Cups
Panel	Double-Ended Feedthrough	GC283FT	6	Spring Loaded	Solder Cups
Bulkhead	Extended Body**	CI10654871	6	Spring Loaded	Solder Cups

* The products listed above feature stainless-steel shells.
** Extended-body-receptacle backshells are constructed from nickel-plated brass.



MIL-DTL-55116 high-density solutions

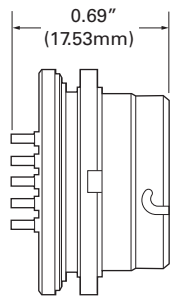
These high-contact-density solutions support mixed audio, signal, and data applications that require more contacts than provided by MIL-DTL-55116 QPL connectors.

- Gold-over-nickel contacts are rated for 0.23 amps and 3000 mate and demate cycles.
- 500Vrms dielectric withstand voltage.
- Passivated, stainless-steel shells.
- Solutions include EMI/RFI filtered receptacles.
- Custom capabilities include cable assemblies and wiring harnesses.

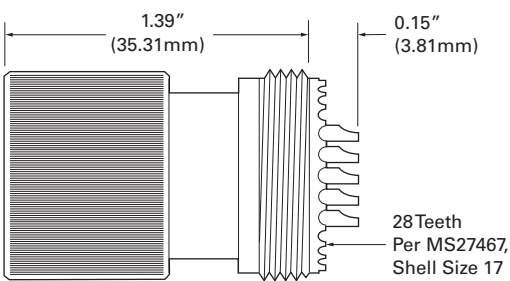


# Contacts	Model Numbers	Type	Mounting	Termination	Configuration
19	CIA3245089-3	Plug	Cable	Solder Cups	Compatible with Size 17 Backshells
19	GCA3245088-3	Receptacle	Panel	Solder Pins	Front Mount
27	Contact Eaton	Plug	Cable	Solder Cups	Compatible with Size 17 Backshells
27	Contact Eaton	Receptacle	Panel	Solder Pins	EMI/RFI "T" Filter

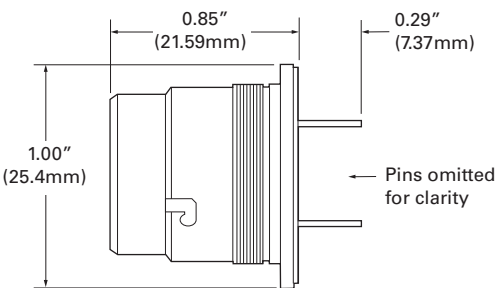
MIL-DTL-55116 high-density solutions



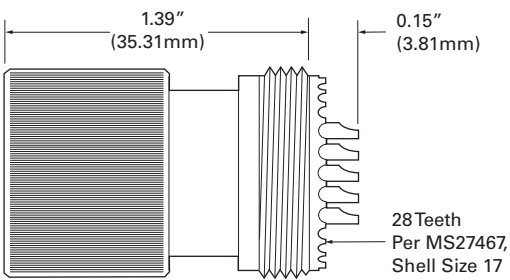
19-Contract GCA3245088-3



19-Contact CIA3245089-3



27-Contact Receptacle



27-Contact Plug

MIL-DTL-55181 solutions

Eaton offers a comprehensive range of MIL-DTL-55181 QPL and specialized solutions. This extensive range of field-proven products can be leveraged to quickly develop application specific solutions including custom cable assemblies.

Innovations include a stacking connector that enables power splitting in the field without the use of Y cables. The stacking connector incorporates plug contacts that are mated to the battery pictured to the right. Internal contacts split power between the attached cable and receptacle contacts that are mated to the QPL connector stacked on top of it.

Heritage-proven designs are rated for 500 mate and demate cycles.



Voltage drops for mated four-contact connectors less than 20mV at 35 amps; 9 and 18 contact models less than 25mV at 7.5 amps.

Gold over nickel contact platings.

Heat treated, alloy-steel nosepiece.

QPL and RoHS compliant finish options.

End-to-end solutions include custom-cable assemblies.

MIL-DTL-55181 solutions overview

MIL-DTL-55181 general specifications – page 28

29 Panel-Mount Receptacles

- QPL and Filtered Connectors
- Transient Voltage Suppression Solutions



31 Cable-Mount Plugs

- QPL and RoHS Compliant
- Adaptor Series Simplifies Shielding Terminations



33 Straight-Backshell Connectors

- Plugs and Receptacles
- Cable and Panel Mount



34 Stacking Connectors

- Cable-Mounted Connectors Provide Front-Mounted Plug Contacts and Rear-Mounted Receptacle Contacts



35 Dual-Header Receptacles

- Cable-Mounted Connectors Provide Two Sets of Receptacle Contacts



36 Dual Cable Entry Plugs

- Provides Plug Contacts and Connections for Two Cables



37 Multiple Power Access Units

- Provides Plug Contacts, a Cable Connection, and Receptacle Contacts



38 Accessories and Installation Instructions

- Dust Covers and Spanner Wrenches
- Torque Specifications



MIL-DTL-55181 general specifications

Materials And Finishes

Shells

Plugs	Aluminum Alloy Body, Steel Alloy Nosepieces, Cadmium Plate with Olive Drab Chromate
Receptacles	Brass, Cadmium Plate with Olive Drab Chromate
Spanner Nut	Brass, Olive Drab Chromate
Draw Screws	Stainless Steel

Contacts

Socket	Copper Alloy with Beryllium-Copper Spring, Gold Over Nickel Plating
Pin	Yellow Brass, Gold Over Nickel Plating
Insulator	Glass-Filled Diallyl Phthalate, Type GDF-30 F or SDG F

Electrical

Dielectric Strength - 4 Contacts	200 Volts RMS
Dielectric Strength - 9 And 18 Contacts	1500 Volts RMS
Insulation Resistance	1000 Megohms Minimum at 500 Volts DC
Voltage Drop - 4 Contacts	20 mV at 35 Amps
Voltage Drop - 9 And 18 Contacts	25 mV at 7.5 Amps

Mechanical

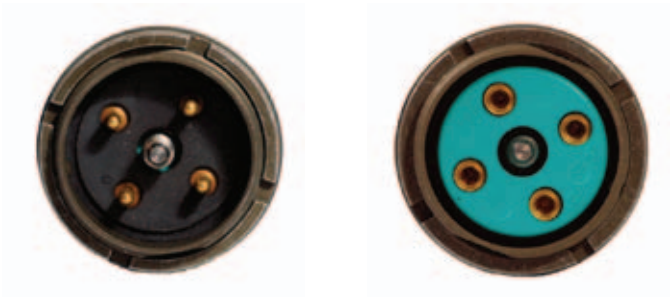
Air Pressure	2.5 PSI
Water Immersion	6 Feet for 48 Hours
Durability	500 Cycles with a Coupling Torque of 25 Inch Pounds
Contact Retention	10 Pounds
Insert Strength	400 Pounds

*MIL-DTL-55181
end-to-end
connectivity
solutions include
quick turn,
custom cable
assemblies.*



MIL-DTL-55181 panel-mount receptacles

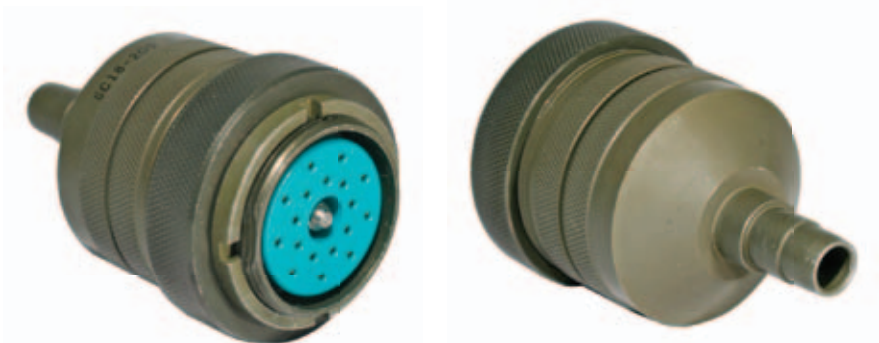
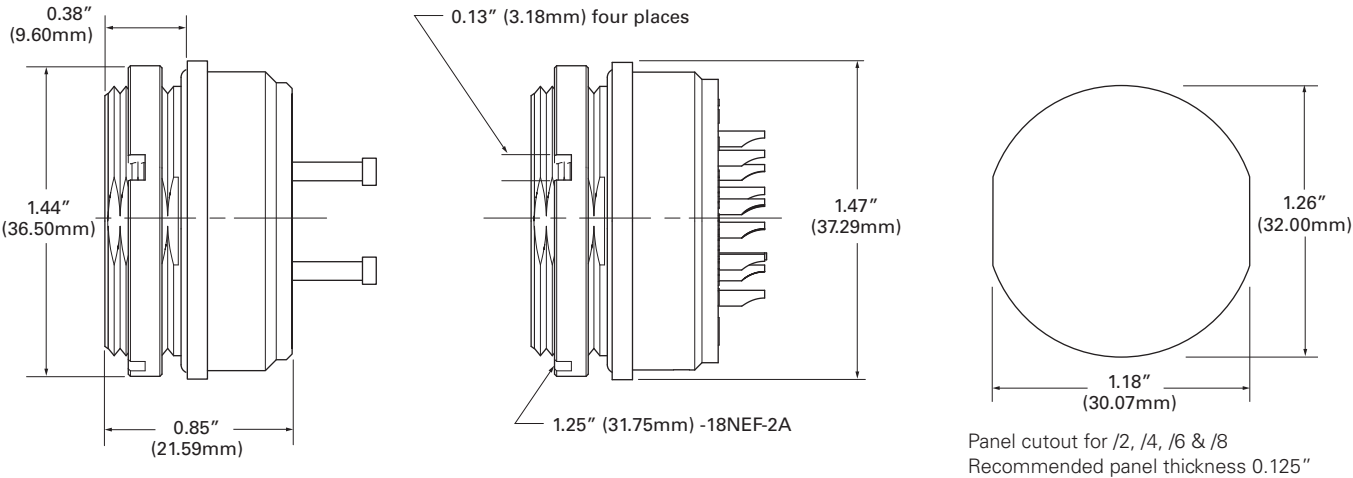
- QPL-certified 4, 9, and 18-contact configurations.
- Gold over nickel contacts.
- Rated for 500 mate/demate cycles.
- Please refer to the accessories section for dust cap and backshell information.
- Custom capabilities include factory installed wiring harnesses and cable assemblies.



Government Designation	Alternate Designation	# Contacts	Contact Type	Contact Size	Amps/Contact	Termination	NSN
M55181/2-01	MW20M(M)A00	4	Pin	12	35	Turret	5935-01-378-9152
M55181/4-01	MW20F(M)A00	4	Socket	12	35	Turret	5935-01-199-7156
M55181/6-01	MW20F(M)B00	9	Socket	20	7.5	Solder Cup	5935-00-853-5942
M55181/8-01	MW20F(M)D00	18	Socket	20	7.5	Solder C up	5935-00-133-0394

Please refer to the MIL-DTL-55181 general specifications table for additional information.

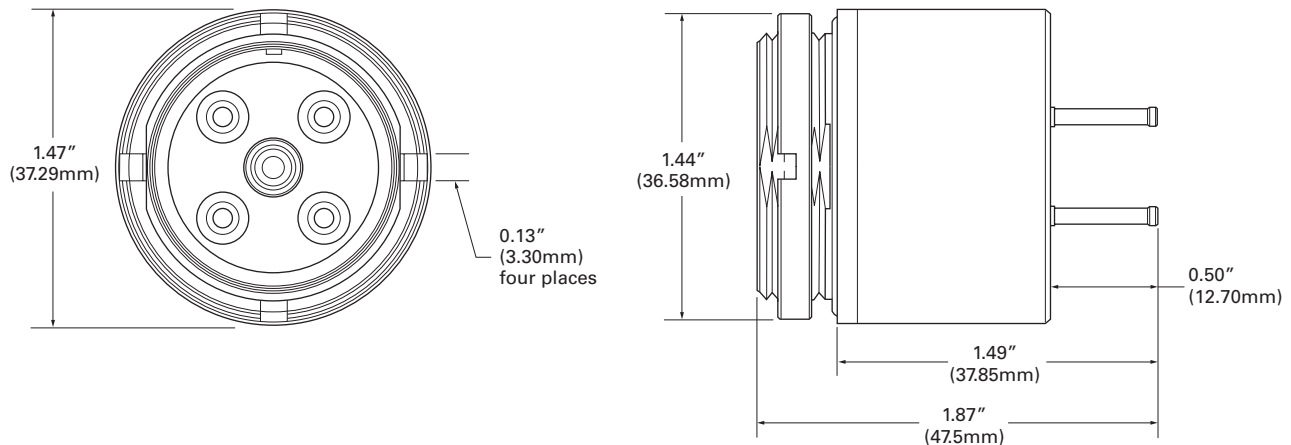
Solder turret and solder cup configurations share the same dimensions



Backshells facilitate cable attachments and shielding. Please contact Eaton for additional information.

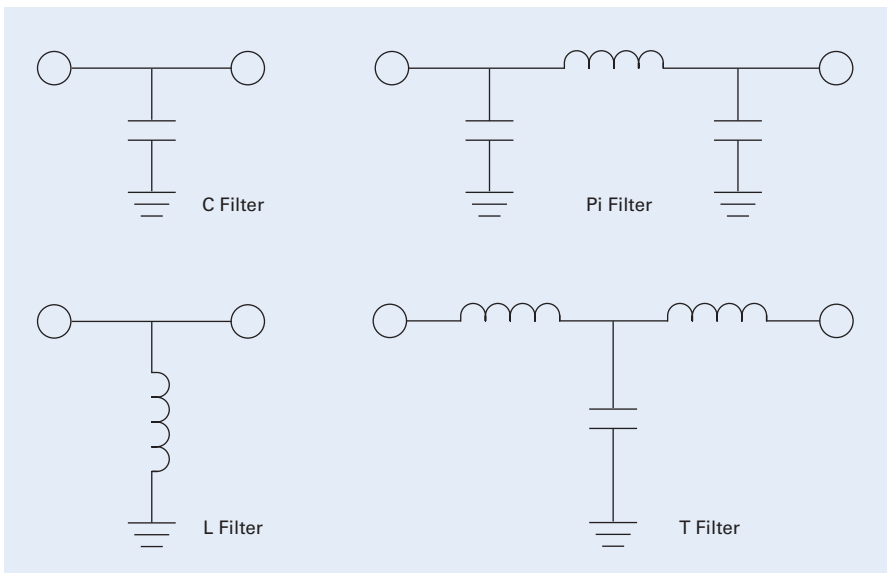
MIL-DTL-55181 filtered receptacles

- Application optimized filter solutions are available to support a broad range of requirements.
- 8, 9, and 18 pin panel-mount configurations.
- Please refer to the accessories section for dust cap information.
- Custom capabilities include factory installed wiring harnesses and cable assemblies.
- Contact Eaton to discuss filter solutions optimized for your exact voltage, frequency, and impedance requirements.



Rugged, high-density filter designs can be optimized for any frequency, voltage, and impedance requirements.

Additional design options include transient voltage suppression.



MIL-DTL-55181 QPL plugs

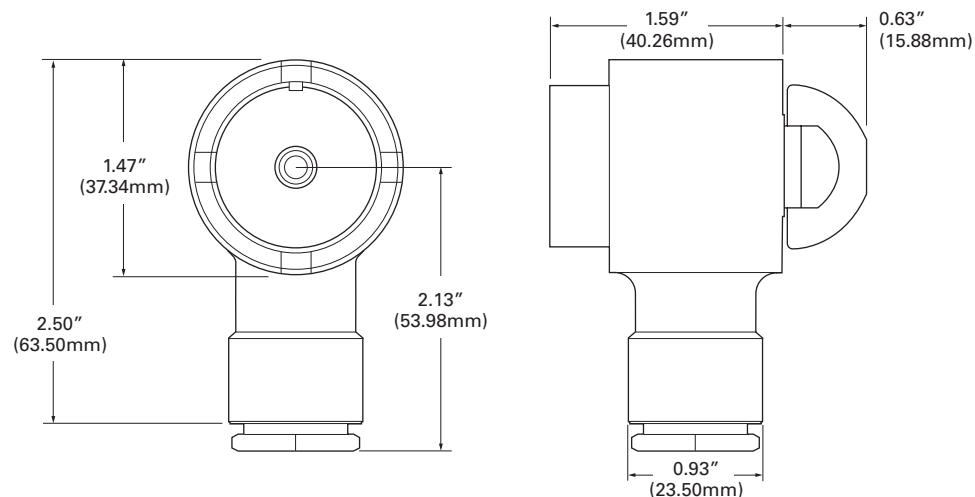
- Finish options include zinc nickel, cadmium plating, and electroless nickel with black-trivalent chromate.
- Gold over nickel contacts.
- Heat treated, alloy-steel nosepiece.
- Rated for 500 mate and demate cycles.
- Custom capabilities include wiring harnesses and cable assemblies.



Government Designation	Alternate Designation	Description	Cable Ø (Inches)	NSN
M55181/1-01	MW10F(M)A11	# Sockets : 4 Socket Size: 12 Amps/Socket: 35 Termination: Turret	0.292 – 0.343	5935-00-603-6952
M55181/1-02	MW10F(M)A13		0.323 – 0.406	5935-01-204-7312
M55181/1-03	MW10F(M)A17		0.448 – 0.531	5935-00-921-3399
M55181/1-04	MW10F(M)A19		0.511 – 0.593	5935-01-249-7559
M55181/1-05	MW10F(M)A15		0.386 – 0.468	5935-01-329-4190
M55181/3-01	MW10M(M)A11	# Pins : 4 Pin size: 12 Amps/Pin: 35 Termination: Turret	0.292 – 0.343	5935-01-208-2345
M55181/3-02	MW10M(M)A13		0.323 – 0.406	5935-01-124-9341
M55181/3-03	MW10M(M)A17		0.448 – 0.531	5935-01-167-6095
M55181/3-04	MW10M(M)A19		0.511 – 0.593	n/a
M55181/3-05	MW10M(M)A15		0.386 – 0.468	n/a
M55181/5-01	MW10M(M)B11	# Pins : 9 Pin Size: 20 Amps/Pin: 7.5 Termination: Solder Cup	0.292 – 0.343	5935-01-184-1460
M55181/5-02	MW10M(M)B13		0.323 – 0.406	5935-01-149-1162
M55181/5-03	MW10M(M)B17		0.448 – 0.531	5935-01-081-6484
M55181/5-04	MW10M(M)B19		0.511 – 0.593	n/a
M55181/5-05	MW10M(M)B15		0.386 – 0.468	n/a
M55181/7-01	MW10M(M)D11	# Pins : 18 Pin Size: 20 Amps/Pin: 7.5 Termination: Solder Cup	0.292 – 0.343	5935-01-111-9956
M55181/7-02	MW10M(M)D13		0.323 – 0.406	5935-01-116-3608
M55181/7-03	MW10M(M)D17		0.448 – 0.531	5935-00-815-2325
M55181/7-04	MW10M(M)D19		0.511 – 0.593	5935-01-300-3701
M55181/7-05	MW10M(M)D15		0.386 – 0.468	5935-01-329-8690

Please refer to the MIL-DTL-55181 general specifications table for additional information.

Cadmium plating requires no finish designation. Add a "Z" suffix for zinc nickel or a "F" suffix for electroless nickel with black trivalent chromate, i.e., M55181/1-03Z.

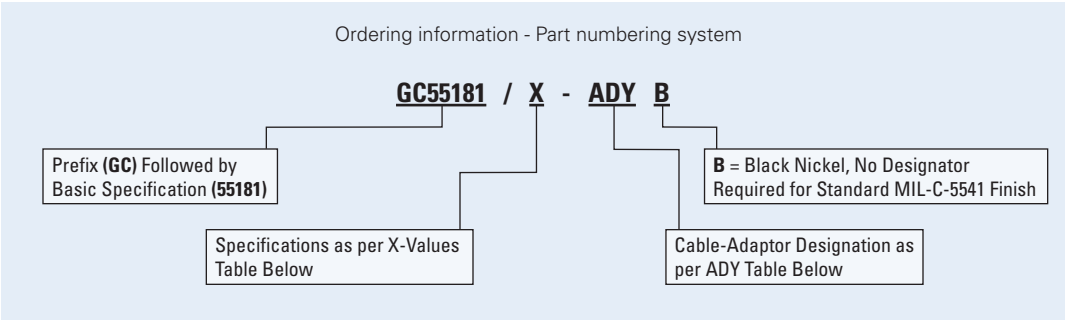


MIL-DTL-55181 adaptor-series plugs

- Adaptor-series plugs utilize cable-mounting adaptors that simplify cable-shielding terminations.
- Plug bodies incorporate similar design features as QPL plugs.
- Aluminum-alloy body finish options include chemical film per MIL-C-5541 and RoHS compliant black nickel.
- Alloy steel nosepieces and stainless-steel draw screws.
- Configurations include plug bodies with pre-mounted cable adaptors, or plug bodies and adaptors can be ordered separately.
- Application-specific finishes and custom cable assemblies and wiring harnesses are also available.

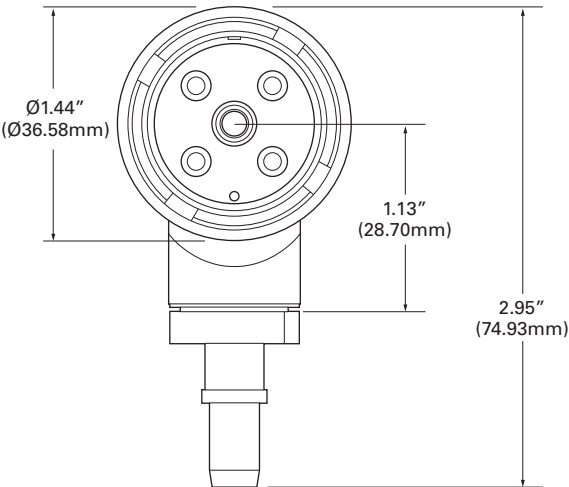


Adaptor series plugs simplify cable-shielding terminations



X Value	# Contacts	Type	Amps	Termination
1	4	Socket	35	Turret
3	4	Pin	35	Turret
5	9	Pin	7.5	Solder Cup
7	18	Pin	7.5	Solder Cup

ADY Value	Inside Diameter	Outside Diameter	Spare cable adaptor part numbers (no plug bodies)
AD0	Body only, no adaptor	n/a	
AD1	0.203"	0.303"	33-18FG
AD2	0.297"	0.397"	33-19FG
AD3	0.390"	0.490"	33-20FG



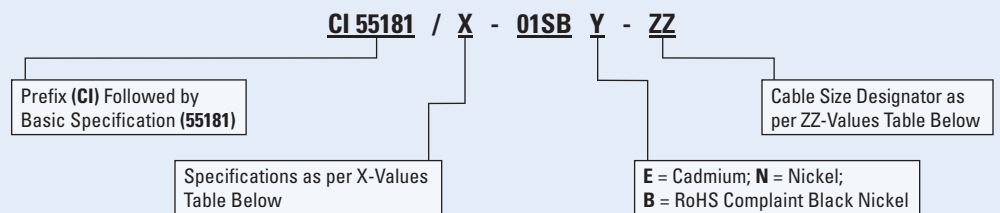
Straight backshell MIL-DTL-55181 connectors

- Suitable for in-line and panel-mount applications.
- Shielded ferrules facilitate cable-shield terminations.
- Finish options include cadmium chromate, electroless-nickel, and RoHS compliant electroless nickel with black-trivalent chromate.
- Custom capabilities include wiring harnesses and cable assemblies.



*Suitable for
cable and
panel-mount
applications*

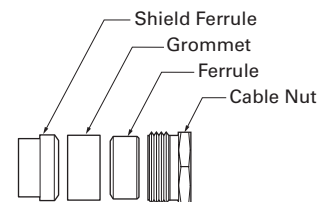
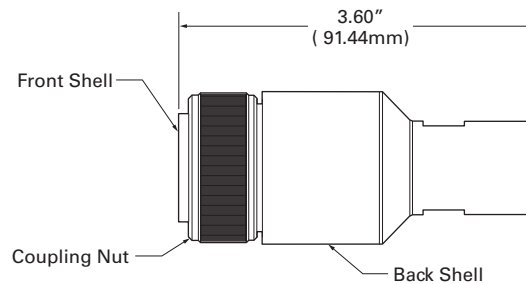
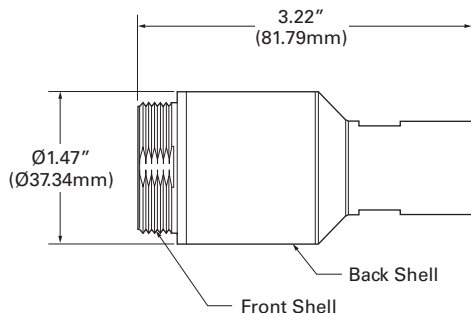
Ordering information - Part numbering system



X Value	# Contacts	Type	Contact Type	Amps	Contact Size	Termination
1	4	Plug	Socket	35	12	Turret
2	4	Receptacle	Pin	35	12	Turret
3	4	Plug	Pin	35	12	Turret
4	4	Receptacle	Socket	35	12	Turret
5	9	Plug	Pin	7.5	20	Solder Cup
6	9	Receptacle	Socket	7.5	20	Solder Cup
7	18	Plug	Pin	7.5	20	Solder Cup
8	18	Receptacle	Socket	7.5	20	Solder Cup

ZZ Value	Cable Diameter (Inches)
01	.292 to .343
02	.323 to .405
03	.448 to .531
04	.511 to .593
05	.386 to .468

Please refer to the MIL-DTL-55181 general specifications table for additional information.



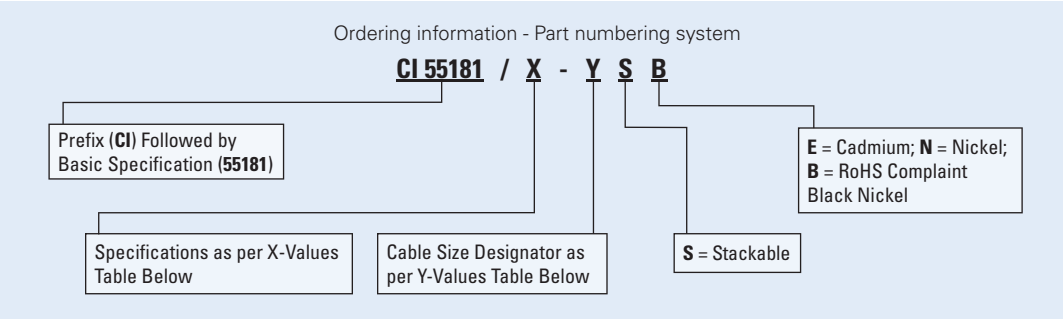
MIL-DTL-55181 stacking connectors

Cable mounted stacking connectors provide plug contacts and receptacle contacts. When the stacking connector's front-mounted plug contacts are mated to a power receptacle, an additional plug/cable can be mated to the stacking connector's rear-mounted receptacle contacts to split power without Y cables.

- As depicted below; when mated to a battery, power is distributed to the cable attached to the stacking connector and the "piggybacked" QPL plug/cable.
- The stacking connector will function in the same manner as a QPL plug when a "piggybacked" plug/cable is not connected.
- Stacking connectors can be ordered with factory-installed cables or customers can connect cables using the same processes to attach QPL plugs.



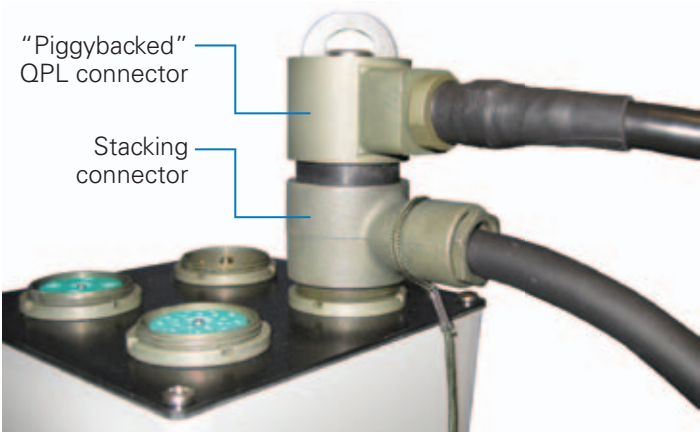
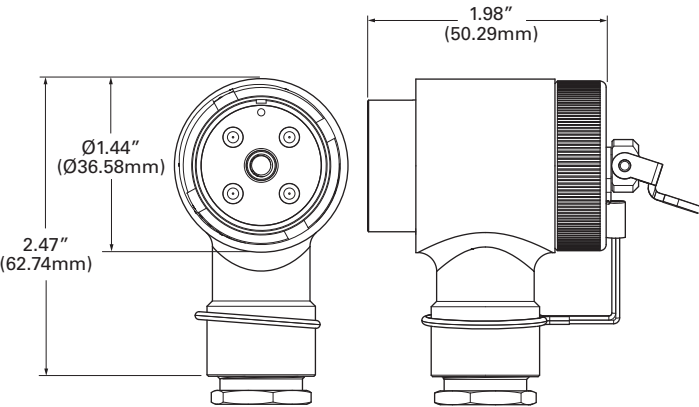
Stacking connectors share power without the use of Y cables



X Value	# Contact	Contact Type*	Amps	Contact Size	Termination
1	4	Socket	35	12	Turret
3	4	Pin	35	12	Turret
7	18	Pin	7.5	20	Solder Cups

Please refer to the MIL-DTL-55181 general specifications table for additional information.
*Contacts on front of connector that mate to power source.

Y Value	Cable Diameter (Inches)
01	.292 to .343
02	.323 to .406
03	.448 to .531
04	.511 to .593
05	.386 to .468



MIL-DTL-55181 dual-header receptacles

- Dual-header connectors provide two sets of receptacle contacts that share power from a single cable.
- Lower cost alternative to traditional Y cables.
- Sealed aluminum housings with cadmium/olive-drab chromate or RoHS-compliant platings.
- Custom capabilities include factory installed wiring harnesses and cable assemblies.
- Rugged design is rated for 500 mate and demate cycles.

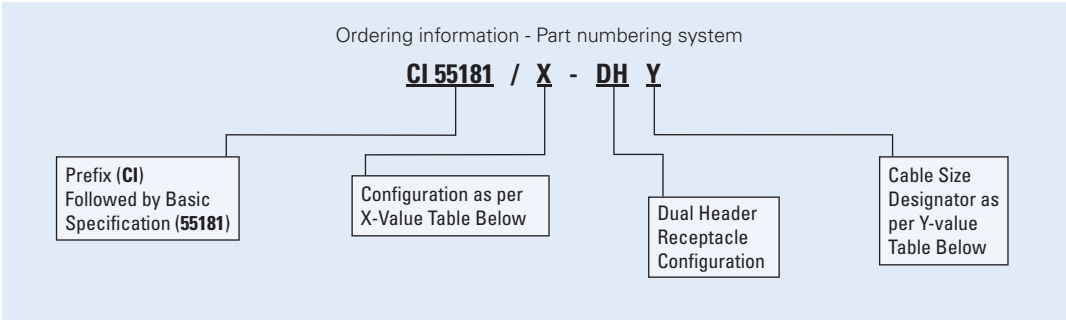


Front



Rear

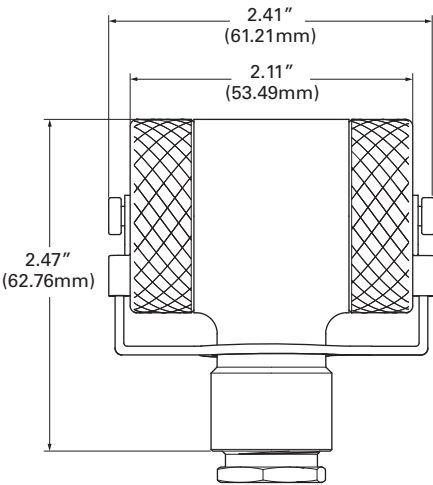
Dual header receptacles facilitate powering two devices from a single cable.



X Value	# Contacts	Type	Contact Size	Amps	Termination
2	4	Pin	12	35	Turret
4	4	Socket	12	35	Turret
6	9	Socket	20	7.5	Solder Cup
8	18	Socket	20	7.5	Solder Cup

Please refer to the MIL-DTL-55181 general specifications table for additional information. Contact Eaton for ordering information for RoHS compliant configurations.

Y Value	Cable Diameter (Inches)
01	.292 to .343
02	.323 to .406
03	.448 to .531
04	.511 to .593
05	.386 to .468

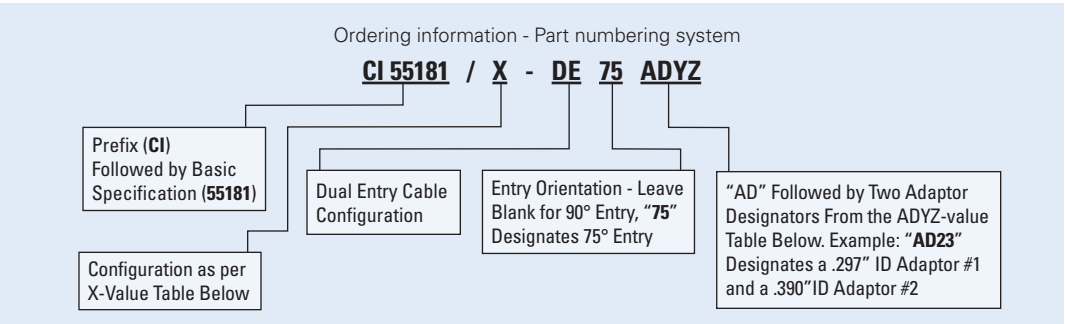


Dual cable entry MIL-DTL-55181 plugs

- Dual-entry connectors incorporate a single-plug body that distributes power to two cables.
- Available with 75° and 90° cable-entry configurations.
- Sealed aluminum housings with cadmium/olive-drab chromate or RoHS-compliant platings.
- Custom capabilities include wiring harnesses and cable assemblies.



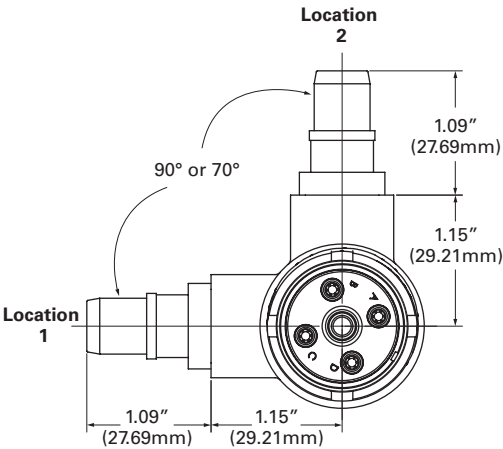
Dual-entry plugs facilitate lower cost solutions than traditional Y cables.



X Value	# Contacts	Contact Type	Contact Size	Amps	Termination
1	4	Socket	12	35	Turret
3	4	Pin	12	35	Turret
5	9	Pin	20	7.5	Solder Cup
7	18	Pin	20	7.5	Solder Cup

Please refer to the MIL-DTL-55181 general specifications table for additional information.
Contact Eaton for ordering information for RoHS compliant configurations.

ADYZ Value	Adaptor ID	Adaptor OD
1	.203	.303
2	.297	.397
3	.390	.490



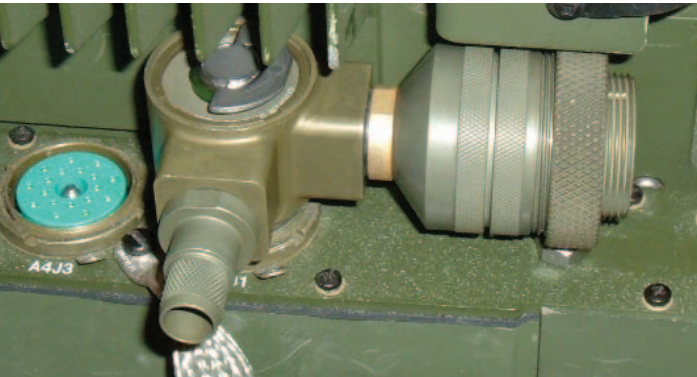
MIL-DTL-55181 multiple power access units

Multiple Power Access Units (MPAUs) provide two power outputs from a single input. The MPAU body incorporates a cable adaptor and a receptacle to facilitate power splitting from a plug that connects to the power source. Additional features and specifications include:

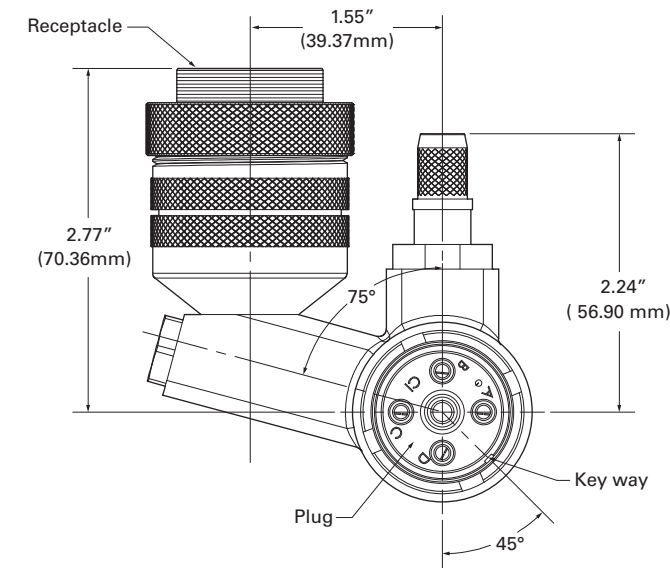
- Meets MIL-DTL-55181 electrical, mechanical, and environmental requirements.
- Ideal solutions for height-constrained applications.
- Quickly replaces QPL plugs by using standard MIL-DTL-55181 plug-to-cable attachment processes.
- Extensive range of solutions includes standard products and application-specific configurations.



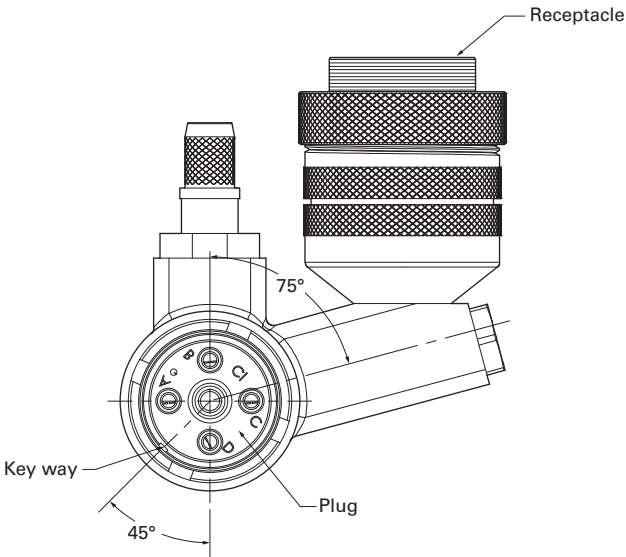
Part Number	# Contacts	Plug Contacts	Receptacle Contacts	Cable Adaptor Inside/Outside Ø	Connector Orientations With Plug Mated In Downward Position
MPAUP/1-2A-2B0175	4	Sockets	Pins	0.297"/0.397"	Receptacle Left / Cable Right
MPAUP/3-4A-2BL175	4	Sockets	Pins	0.297"/0.397"	Receptacle Right / Cable Left



- Multiple power access units can be configured to support a broad range of requirements including:
- 4, 9 or 18 contacts.
 - RoHS-compliant finishes.
 - Alternate configurations including a 90° offset from the cable adaptor to the receptacle as depicted to the left.
 - Adapters to accommodate any a wide range of cable diameters.
 - End-to-end connectivity solutions include cable assemblies and wiring harnesses.



MPAUP/1-2A-2B0175 – The receptacle is oriented to the left with the plug facing forward.



MPAUP/3-4A-2BL175 – The receptacle is oriented to the right with the plug facing forward.

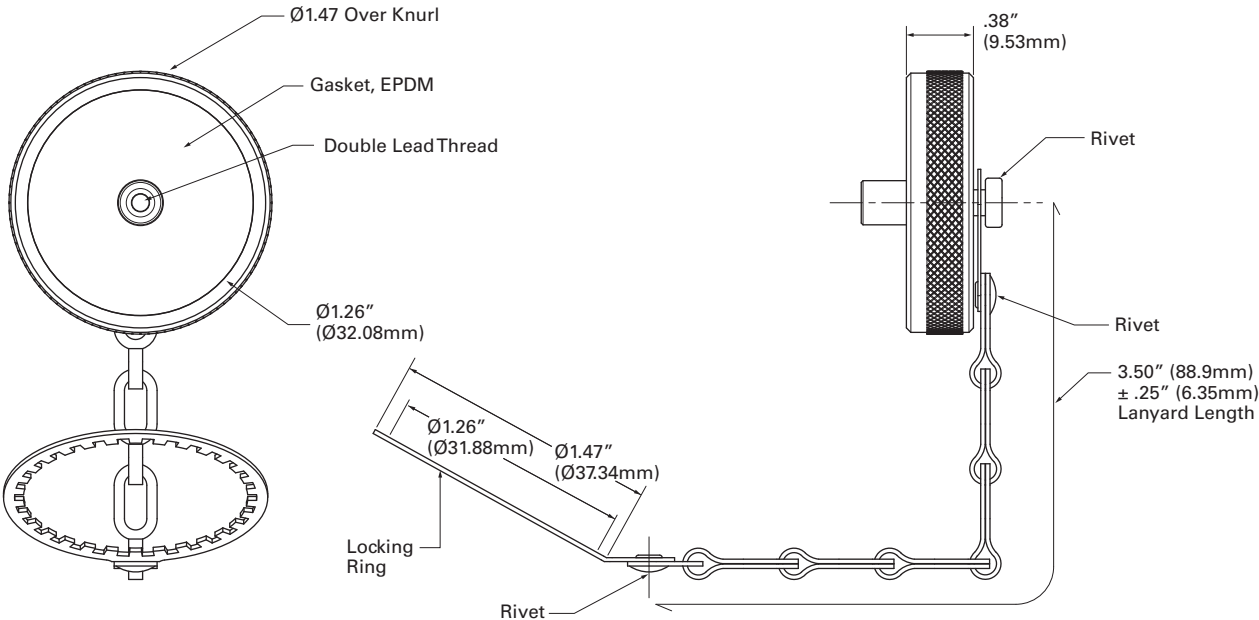
MIL-DTL-55181 dust caps

- Meets all requirements of MIL-DTL-55181.
- Compatible with MW Series standard and filtered receptacles and SB Series straight-backshell connectors.
- Custom dust caps available for nuclear, biological, and chemical applications.
- RoHS-compliant platings are available; please contact Eaton for ordering information.
- Long lasting EPDM gasket material.



Part Number	Lanyard Style	Length	End Configuration	Materials	Finishes	Gasket Material
GC821	Brass Chain	3.50	1.255 ID Ring	Aluminum Alloy	Cadmium Plated	Silicone Rubber
GC821-1	Nylon Cord	3.50	1.243 ID Ring	Half Hard Brass	Cadmium Plated	Silicone Rubber
GC821-3	Nylon Cord	6.00	0.280 Dia Loop	Aluminum Alloy	Cadmium Plated	Silicone Rubber
GC821-4	Brass Chain	3.50	1.255 ID Ring	Aluminum Alloy	Cadmium Plated	EPDM

Contact Eaton for ordering information for RoHS compliant configurations.

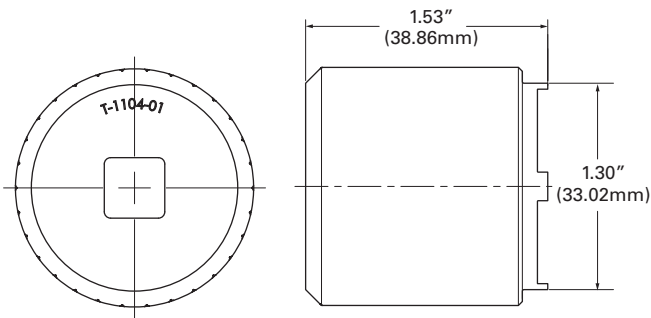


MIL-DTL-55181 tools and assembly instructions

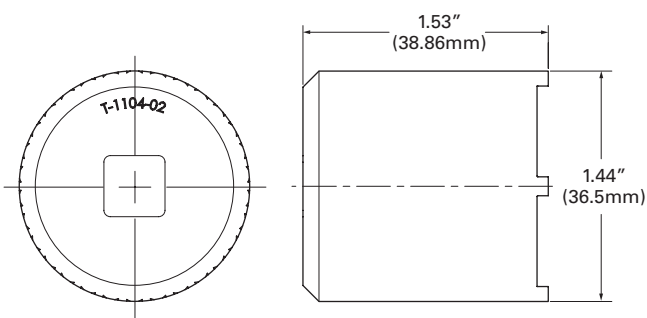
- Spanner wrenches are specifically designed to provide positive engagements with the MIL-DTL-55181 specified, slotted nuts depicted to the right.
- T-1104-01 and T-1104-02 spanner wrenches are compatible with 3/8" drive torque wrenches.
- QPL, filtered, and straight backshell connectors can be assembled in accordance with MIL-DTL-55181 assembly instructions.
- Please contact Eaton for stacking, dual entry, and dual-header connector assembly instructions.



Mounting	Connectors	Spanner Wrench Part Number	Driver Compatibility	Recommended Spanner Wrench Torque	Recommended Cable Nut Torque
Panel	QPL Receptacles	T-1104-02	3/8"	21 - 33 Foot Pounds	N/A
Panel	Filtered Receptacles	T-1104-02	3/8"	21 - 33 Foot Pounds	N/A
Cable	QPL Plugs	T-1104-01	3/8"	90 - 95 Inch Pounds	34 - 40 Inch Pounds
Cable	SB Series Receptacles	T-1104-02	3/8"	21 - 33 Foot Pounds	34 - 40 Inch Pounds
Cable	Stacking Connectors	T-1104-01	3/8"	90 - 95 Inch Pounds	34 - 40 Inch Pounds
Cable	Dual Entry Plugs	T-1104-01	3/8"	90 - 95 Inch Pounds	34 - 40 Inch Pounds
Cable	Dual Header Receptacles	T-1104-01	3/8"	90 - 95 Inch Pounds	34 - 40 Inch Pounds



MW10 connectors utilize the T -1104-01 spanner wrench.



MW20 connectors utilize the T -1104-02 spanner wrench.

GPS panel connectors and cable assemblies

Eaton’s GPS panel and mating connectors conform to CECOM standards and have been field proven in SINCGARS applications.

- Configurations available with and without coax contacts.
- Aluminum-alloy shells and gold-over nickel contacts.
- Meets MIL-STD-810 military water immersion requirements.
- End-to-end connectivity solutions include custom connectors, cable assemblies, and wiring harnesses.
- Please use the drawings on the next page to identify contact patterns and corresponding part numbers.



GCA3256628-1 cable assembly
GCA3167930-3 panel connector only

General Specifications*

Materials And Finishes	Shell Material	Aluminum Alloy 6061-T6
	Shell Finish	Chemical Film Coating per MIL-C-5541, Class 3
	Contacts	Gold over Nickel
	Inserts	PBT per MIL-M-24519, Nylon Type 66, or DAP
Electrical	Dielectric Withstand Voltage	125 Vrms
	Insulation Resistance	5000 Megaohms Minimum
	Contact Resistance	10 Milliohms Maximum
	Coax Contact Resistance	275 Milliohms Maximum
Mechanical	Operating Temperature Range	-55°C to 85°C
	Environmental Sealing	15 PSI Unmated
	Water Immersion	MIL-STD-810, Method 512, Procedure I

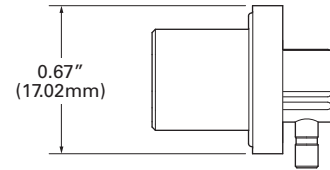
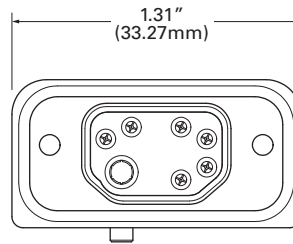
*General specifications may be superseded by CECOM and other requirements as applicable.



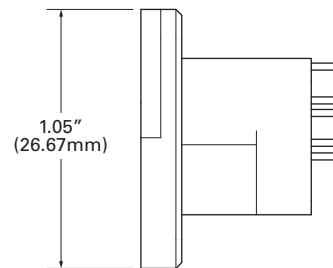
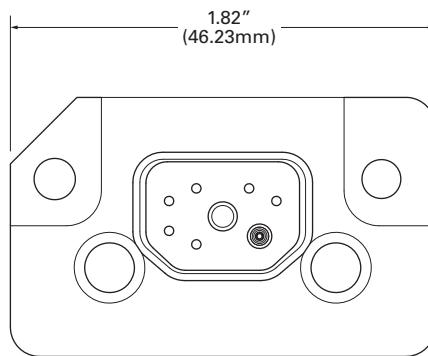
GCA3266198-5 and GCA3266293-5 connectors incorporate coax contacts.

GPS panel connectors and cable assemblies

Solutions with coax contacts

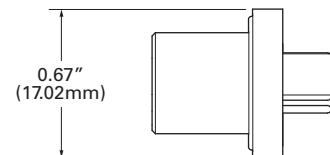
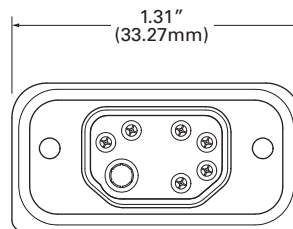


GCA3266293-5, socket contacts

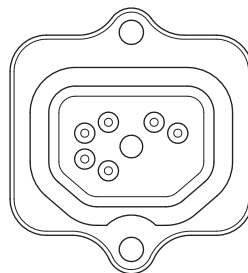


GCA3266198-5, pin contacts

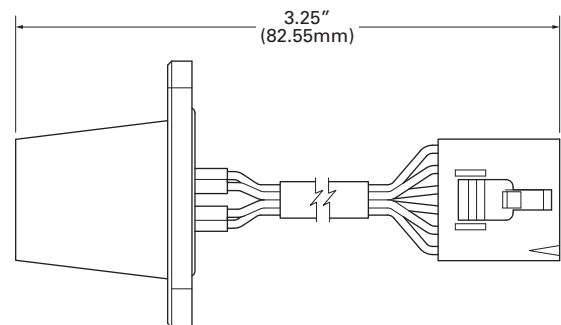
Solutions without coax contacts



GCA3266293-6, socket contacts



GCA3167930-3, pin contacts



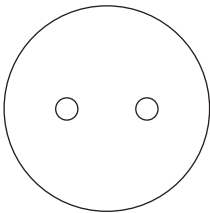
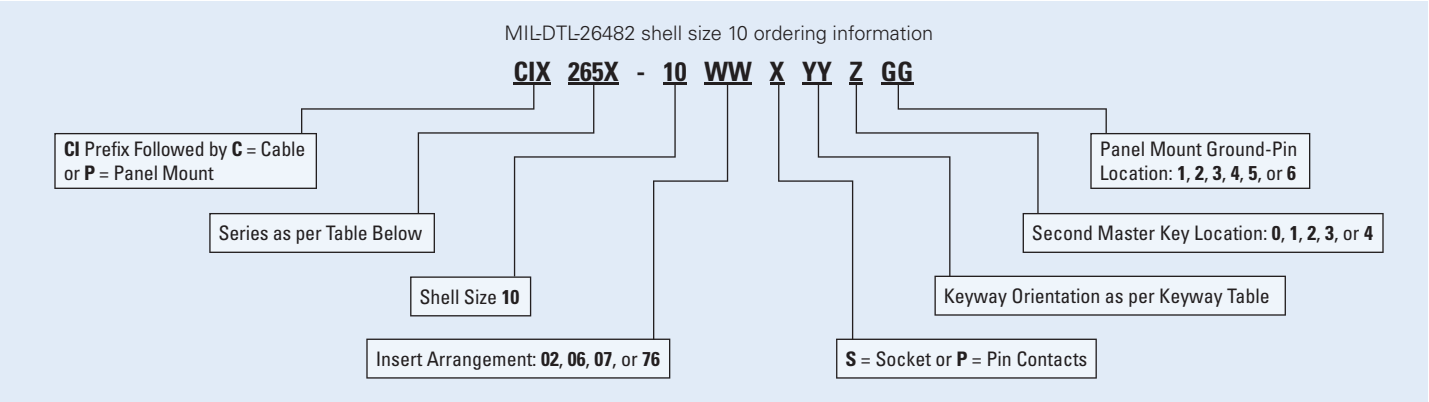
GCA3256628-1 cable assembly includes GCA3167930-3 connector

MIL-DTL-26482 shell size 10

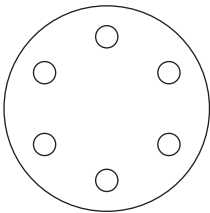
Shell size 10 connectors are available with insert patterns that meet the requirements of a broad range of military specifications and programs including:

- DEF STAN Patterns 105, 602, and 603
- BS 9522 N0001 and BS 9522 F0017
- PAN 6432-1 and PAN 6432-4
- Bowman and Clansman radio systems
- VIC 3 and VIC 5 vehicular intercom systems

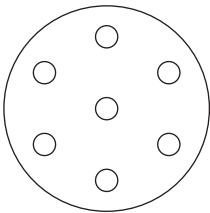
Custom capabilities include application-specific shells and inserts, EMI/RFI filtering, and cable assemblies.



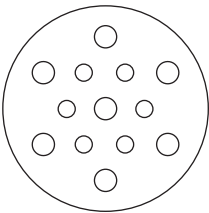
02 insert
2 contacts 16AWG



06 insert
6 contacts 20AWG



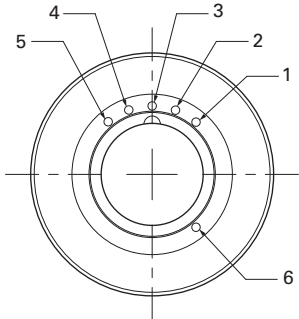
07 insert
7 contacts 20AWG



76 insert
7 contacts 20AWG
6 contacts 22AWG

Series Designations			
Configuration	Series	Cable/Backshell Attachment	Coupling Nut
Panel Mount Receptacle*	2655	n/a	n/a
	2655	Overmold Compatible	n/a
	2656	Threaded, no Teeth	Short
Cable Mount Plug	2657	Threaded with Teeth	Short
	2658	Threaded, no Teeth	Long
	2659	Threaded with Teeth	Long

* Receptacles utilize the round, slotted-nut configuration depicted at the top of this page.



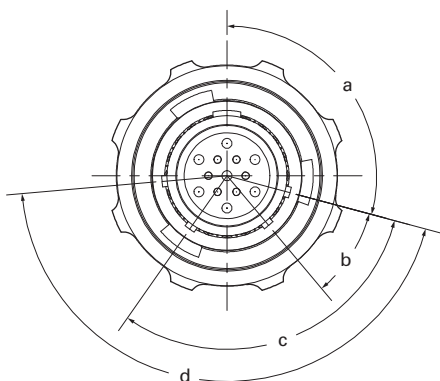
Ground pin locations
for panel-mount receptacles

MIL-DTL-26482 shell size 10

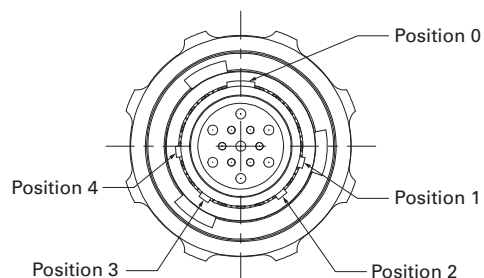
Orientations Table

Designation	a	b	c	d
N0	105	35	110	160
A0	95	35	110	160
B0	85	35	110	160
C0	125	35	110	160
D0	115	35	110	160
E0	115	30	130	160
F0	85	50	125	170
B2	85	41	110	160
E2	115	36	130	160
E3	115	30	124	160
F1	85	50	125	170

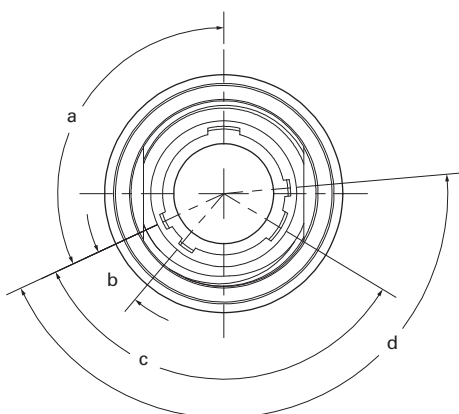
Contact Eaton to discuss additional MIL-DTL-26482 shell sizes and custom configurations



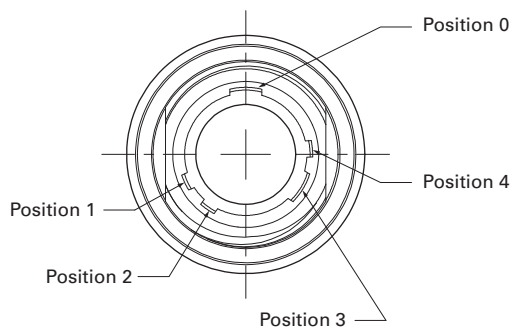
Cable mount keyway orientations



Cable mount second master keyway orientations



Panel mount keyway orientations



Panel mount second master keyway orientations

Battery connectors – panel mount and in-line

Eaton’s ruggedized battery connectors include six pin panel mount and miniaturized in-line solutions.

- Panel-mount connectors provide mating compatibility to BB-590/U batteries; standard options include ferrite topology EMI/RFI protection.
- In-line connectors are designed for rugged environment, space constrained applications such as military handsets.
- Custom solutions include application-specific materials, pin configurations, mounting flanges, and wiring harnesses.



Panel Mount Battery Connector Specifications

Materials And Finishes	Shell Material	Aluminum Alloy 6061-T6
	Shell Finish	Chemical Film Coating per MIL-C-5541, Class 1A
	Contact Material/Plating	Brass Alloy 360, ½ H per QQ-B-626/Gold over Nickel
	Inserts	DAP Resin per MIL-M-14, TYP MDG, Color Blue
Electrical	Current Rating	10 Amps
	Insulation Resistance	500 VDC
	Contact Resistance (Mated)	5 mv Maximum at Ambient Temperature
Mechanical	Shell Size	12
	Environmental Sealing	15 PSI Unmated
	Mating Compatibility	BB-590/U Battery per MIL-B-494436/1
Ordering Information	Contact Eaton for Part Numbers and Ordering Information	

Miniaturized in-line battery connectors and cable assemblies

Heritage proven design features

The diagram shows a close-up of a miniaturized in-line battery connector. It has a black cable with a white dielectric housing. Three callout lines point to specific features: one to the gold-plated contacts, one to the redundant contacts, and one to the shell width.

Gold-plated contacts

Redundant contacts

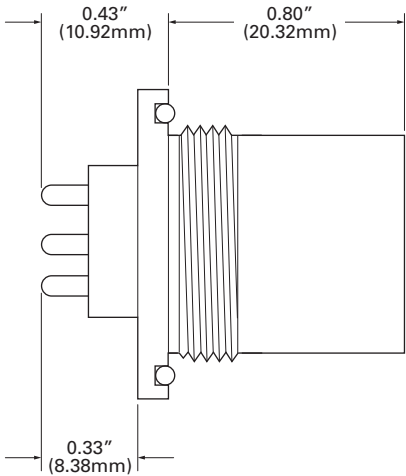
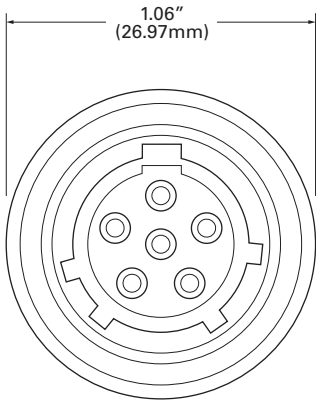
0.190" (4.83mm) wide shell can support a wide range of handset-application requirements

Eaton offers a library of heritage-proven designs, and modified/custom solution capabilities, to support in-line battery connector and cable assembly requirements for military-handset applications.

General Description	Hermaphroditic connector design utilizing mirrored power/ground wires on mated pairs to maintain red/black color coding throughout the host system
Custom Capabilities	Application-specific materials, platings, contact and wire sizes, and custom cables and wiring harnesses
Ordering Information	Contact Eaton to discuss your application requirements

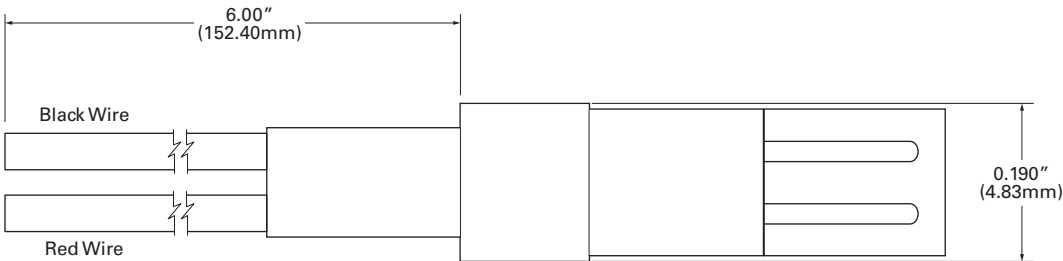
Battery connectors – mechanical drawings

Panel-mount connectors

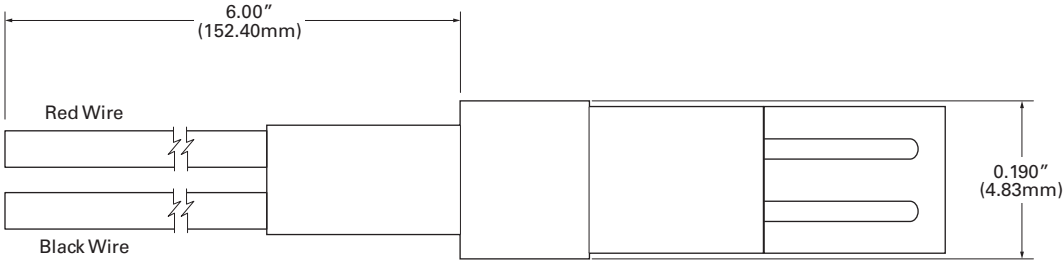


Panel-Mount Battery Connector

In-line connectors



A1-374-0000

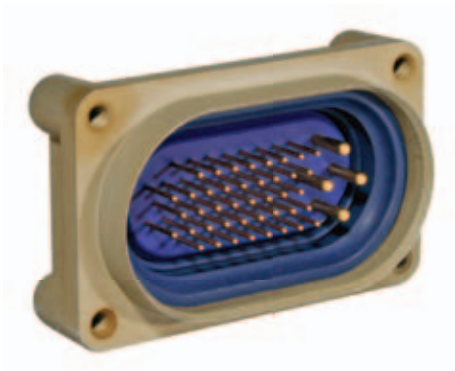


A1-375-0000

Power tray connectors

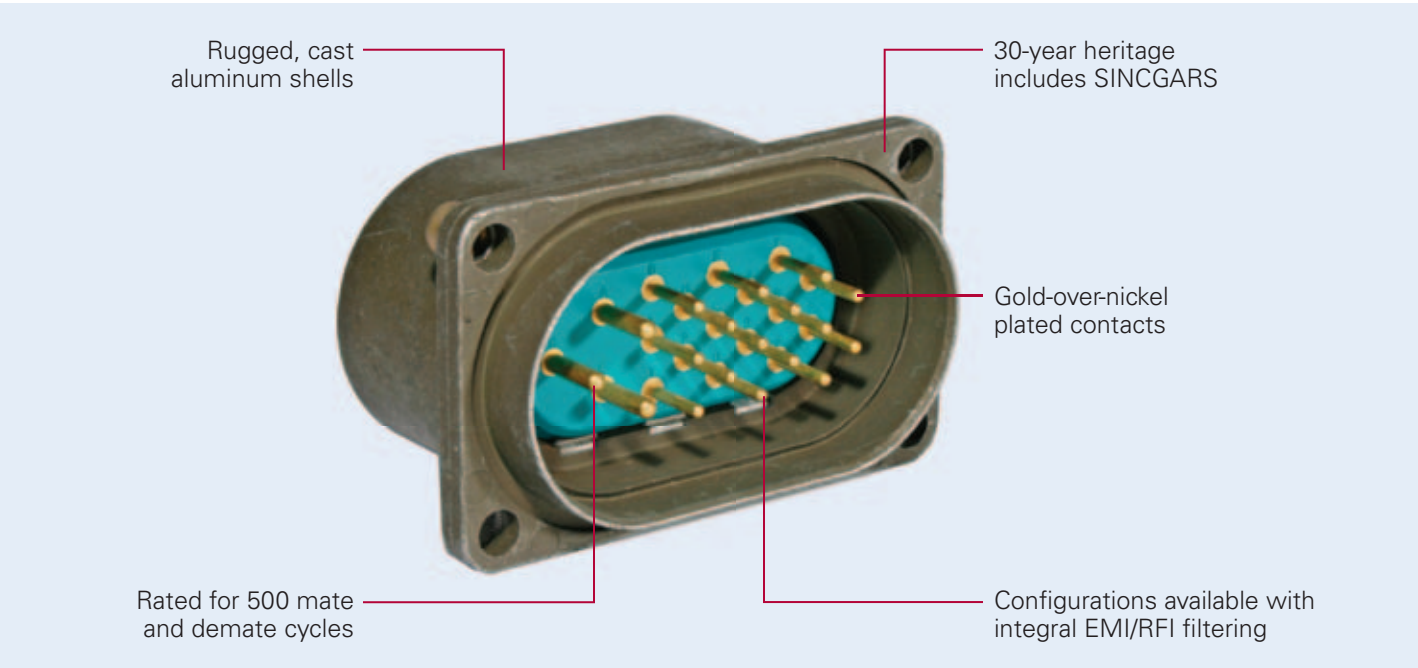
Eaton’s power tray connectors are designed to withstand the high shock and vibration encountered in ground mobile, tactical radio applications. Additional features include:

- Thirty-year track record includes qualifications for multiple tactical-communications programs including SINCGARS.
- Solutions are available to support power, data, and hybrid interconnect requirements.
- End-to-end connectivity solutions include custom cable assemblies and wiring harnesses.



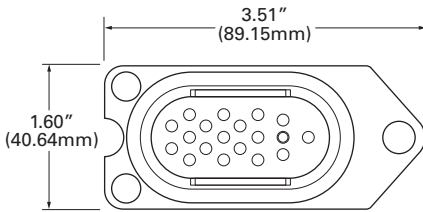
General Specifications*		
Materials And Finishes	Shell Material	Cast Aluminum, Cadmium Chromate Olive Drab Plating
	Contacts	Copper Alloy with Gold-Over-Nickel Plating
	Inserts	Neoprene
	Gaskets	Neoprene or Rubber Per MIL-R-3065
	Rear Insulators	Diallyl Phthalate
Electrical	Dielectric Withstand Voltage	1000 Vrms Minimum
	Insulation Resistance	5000 Megaohms Minimum
	#16 Contact Current Rating	10 Amps
	#12 Contact Current Rating	15 Amps
Mechanical	Operating Temperature Range	-55°C To 100°C
	Environmental Sealing	15 PSI Unmated
	Water Immersion	MIL-STD-810, Method 512, Procedure I
	Mate/Unmate Durability	500 Cycles

*General specifications may be superseded by CECOM and other requirements as applicable.

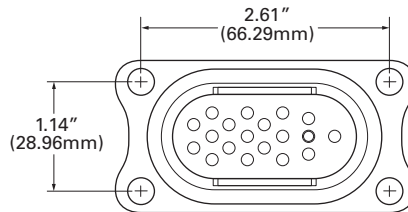


Power tray connectors

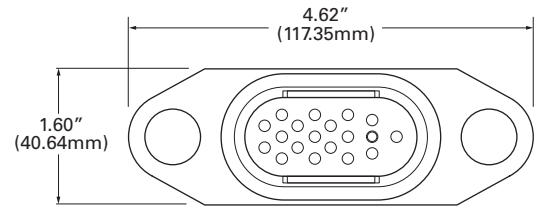
Contact Sizes	Contact Type	CECOM Part Number	Eaton Part Number	Configuration
3 #12 15 #16	Sockets	A3012771-1 & -2	A3012771-2	Three Non-Threaded Mounting Holes
		A3012771-3	U-344/VRCG4	Four Non-Threaded Mounting Holes
		n/a	U-344/VRC	Two Non-Threaded Mounting Holes
	Pins	A3012772-1	A3012772-1	Non-Threaded Mounting Holes
		A3012772-2	A3012772-2	Grounded Shell, Threaded Mounting Through Holes
		A3012772-3	CI A3012772-3	Grounded Shell, Blind Threaded Mounting Holes
		n/a	U-345/VRC	1500 pF Filtering, Blind Threaded Mounting Holes
		n/a	U-345/VRCG7	ESD Protection, 1500 pF Filtering
4 #12 42 #20	Sockets	n/a	CI344-4-42	Three Non-Threaded Mounting Holes
	Pins	n/a	CI345-4-42	Grounded Shell, Blind Threaded Mounting Holes



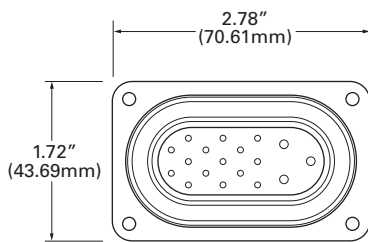
A3012771-2



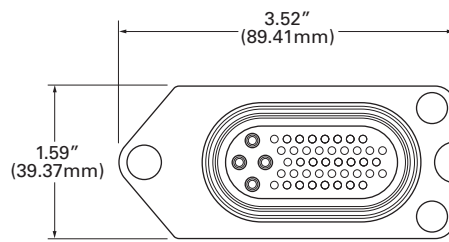
U344/VRCG4



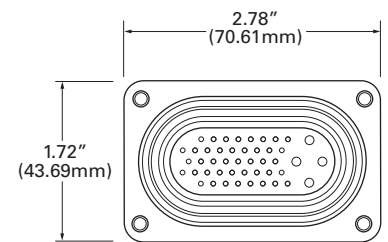
U344/VRC



18 Pin Configurations



CI344-4-42



CI345-4-42

MIL-DTL-10544 plugs and receptacles

Eaton offers a comprehensive range of MIL-DTL-10544 plugs and receptacles in panel mount and cable mount configurations. Additional features of these field proven, 10-contact solutions include:

- Passivated stainless steel shells.
- Copper contacts are gold plated and rated for 3000 mate and demate cycles.
- Cable-mount products available in in-line and right-angle configurations.
- Custom capabilities include factory installed wiring harnesses and cable assemblies.



MIL-DTL-10544 General Specifications

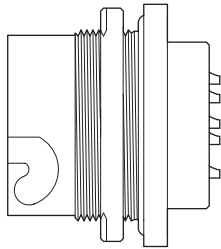
Materials And Finishes	Receptacle And Plug Shells	Passivated Stainless Steel
	Plug Rear Housing	Black-Oxidized Aluminum
	Panel Nuts	Passivated Stainless Steel
	Contact Material	Copper Alloy
	Contact Plating	Gold
	Insert	Diallyl Phthalate Per MIL-M-14F, Type MDG
Electrical	Dielectric Strength	500 VRMS
	Insulation Resistance	1000 Megaohms Minimum
	Contact Resistance (Mated)	0.015 Ohms Maximum
Mechanical	Environmental Sealing	2.5 PSI
	Water Immersion	48 Hours At Six Feet
	Mate/Unmate Durability	3000 Cycles

Mounting	Part Numbers	Type	Configuration	Contacts	Terminations
Panel	GC790 and U-79/U*	Receptacle	Front mount	Spring	Solder Terminals
	U-126-U**	Plug	Front Mount	Rigid	Solder Terminals
Cable	U-78/U	Receptacle	In-Line	Spring	Solder Terminals
	U-77/U	Plug	In-Line	Rigid	Solder Terminals
	U-127/U	Plug	Right Angle	Rigid	Solder Terminals
	U-161/U	Plug	In-Line	Rigid	Taper Pins

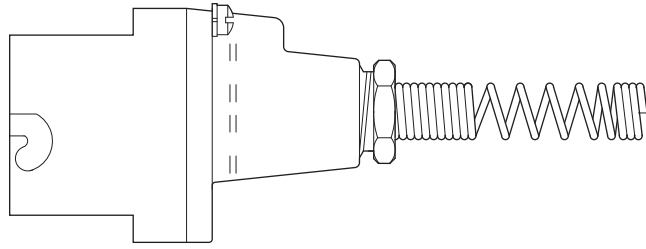
* Utilizes the T-1104-04 spanner wrench.

** Utilizes the T-1104-02 spanner wrench.

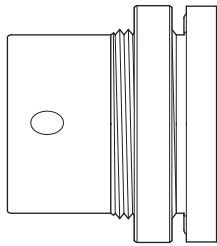
Ruggedized 10-contact audio solutions



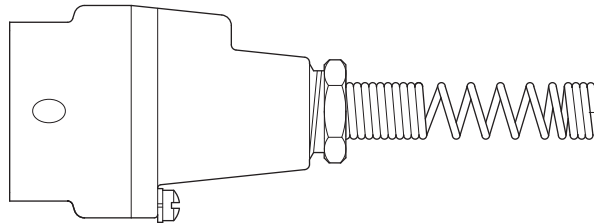
**GC790 and U-79/U
front-mount receptacle**



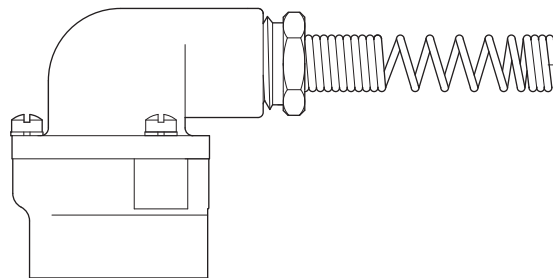
U-78/U in-line receptacle



U-126-U front-mount plug



U-77/U and U-161/U in-line plugs



U-127/U right-angle plug

MIL-DTL-12520 receptacles and plugs

- Comprehensive range of MIL-DTL-12520 plugs and receptacles in round and cathedral form factors.
- Corrosion resistant, aluminum-alloy receptacles.
- Rugged plug designs feature solid brass bodies and steel nosepieces.
- Gold over nickel plated contacts.
- Custom solution capabilities include wiring harnesses and cable assemblies.



Electrical

Dielectric Strength	4, 9 & 14 Contacts	2800 Vrms
	19 Contacts	2000 Vrms
	30 Contacts	1500 Vrms
	Insulation Resistance	1000 Megohms Minimum at 500 VDC
Voltage Drop	4 Contacts	20 MV at 35 Amps
	9, 14 & 19 Contacts	21 MV at 20 Amps
	30 Contacts	25 MV at 7.5 Amps

Mechanical

Air Pressure	2.5 PSI
Water Immersion	6 Feet for 48 Hours
Durability	500 Cycles with a Coupling Torque of 25 Inch Pounds.
Contact Retention	15 Pounds
Insert Strength	400 Pounds

Panel Mount Solutions

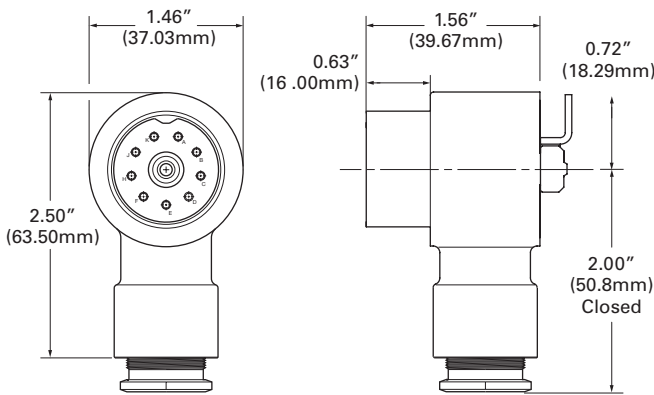
Configuration	Contact Type	Number of Contacts	Contact Size	Part Number
Small Receptacle	Socket	4	12	UW2020FA00
		9	12	UW2020FB00
	Pin	4	12	UW2020MA00
		9	12	UW2020MB00
		14	16	UW2026FC00
Large Receptacle	Socket	19	16	UW2026FD00
		30	20	UW2026FE00
	Pin	14	16	UW2026MC00
		19	16	UW2026MD00
		30	20	UW2026ME00

MIL-DTL-12520 UW series

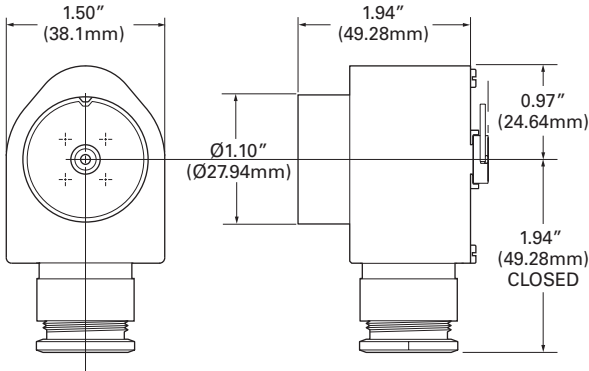
Cable Mount Solutions

Configuration	Contact Type	Number of Contacts	Contact Size	Part Number
Round Plug	Socket	4	12	UW1220FAXX
		9	12	UW1220FBXX
	Pin	4	12	UW1220MAXX
		9	12	UW1220MBXX
Small Cathedral Plug	Socket	4	12	UW1320FAXX
		9	12	UW1320FBXX
	Pin	4	12	UW1320MAXX
		9	12	UW1320MBXX
Large Cathedral Plug	Socket	14	16	UW1326FCXX
		19	16	UW1326FDXX
		30	20	UW1326FEXX
	Pin	14	16	UW1326MCXX
		19	16	UW1326MDXX
		30	20	UW1326MEXX

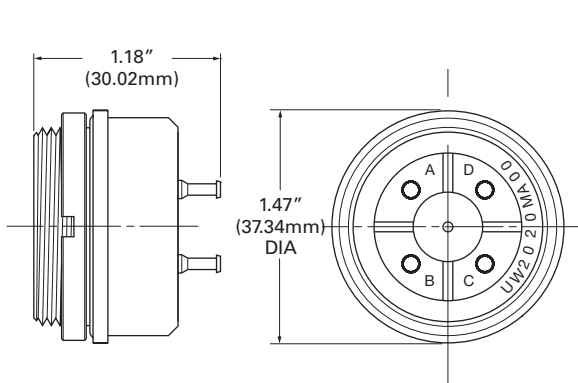
XX Value	Cable Diameter (Inches)
11	0.292 to 0.343
13	0.323 to 0.406
15	0.386 to 0.486
17	0.448 to 0.531
19	0.511 to 0.593
21	0.573 to 0.656
23	0.636 to 0.718
25	0.698 to 0.781
27	0.761 to 0.843



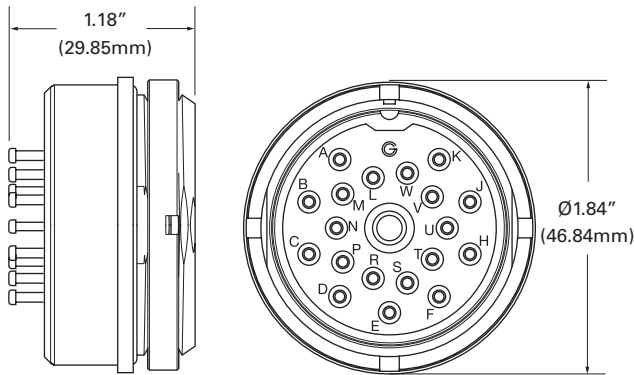
UW 1220 plug



UW 1320 plug



UW2020MA00 receptacle



UW2026FD00 receptacle

For additional tacom solutions information,
please visit www.cooperinterconnect.com
or call 805.484.0543

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