



**RUGGEDIZED HIGH-SPEED
INTERCONNECT SOLUTION**



ENGINEERED FOR MISSION-CRITICAL PERFORMANCE

In today's fast-paced, mission-critical environments, downtime is not an option. MACHFORCE connectors are designed to maximize your system's uptime with robust, reliable performance and unparalleled ease of installations and repairs in the field.

FASTER TERMINATIONS.

FIELD REPAIRABLE.

REDUCED MAINTENANCE TIME.

MAXIMIZE UPTIME.

INNOVATIVE DESIGN FOR OPTIMAL PERFORMANCE

STREAMLINE TERMINATIONS FOR GREATER EFFICIENCY & LOWER COSTS

- **INNOVATIVE HIGH SPEED MODULE (HSM) DESIGN:** The High Speed Module (HSM) in MACHFORCE connectors enhances signal integrity and maximizes data density with its linear configuration, while providing easy access to every terminated pin for optimal performance and reliability.
- **FASTER TERMINATIONS:** The HSM design streamlines the termination process, reducing the need for specialized labor and accelerating assembly.
- **FIELD REPAIRABILITY:** With simplified troubleshooting and on-the-spot repairs using standard tools, the HSM ensures minimal downtime and maintains mission-critical uptime.

EXCEPTIONAL PERFORMANCE WITH SUPERIOR SIGNAL INTEGRITY

- **OPTIMIZED SIGNAL INTEGRITY:** MACHFORCE High-Speed Modules (HSM) enhance performance with their innovative design, minimizing crosstalk and delivering impeccable signal integrity. They support CAT6A (10Gb) signals up to 80 meters (270 feet) with five disconnects.
- **SIMPLIFIED INTEGRATION:** Designed with the end user in mind, MACHFORCE connectors facilitate easier terminations and support longer cable runs with multiple breaks, making your designs both efficient and reliable.

ENHANCED PORT DENSITY TO MAXIMIZE YOUR SYSTEM'S POTENTIAL

- **INCREASE PORT DENSITY:** With up to 10 ports of 10G Ethernet, MACHFORCE reduces the need for multiple connectors, saving valuable space and weight in your designs.
- **COMPACT FOOTPRINT:** The advanced high-density configuration provides a more compact interconnect solution, ideal for optimizing space in complex projects.

DESIGN FLEXIBILITY WITH PORTFOLIO OPTIONS

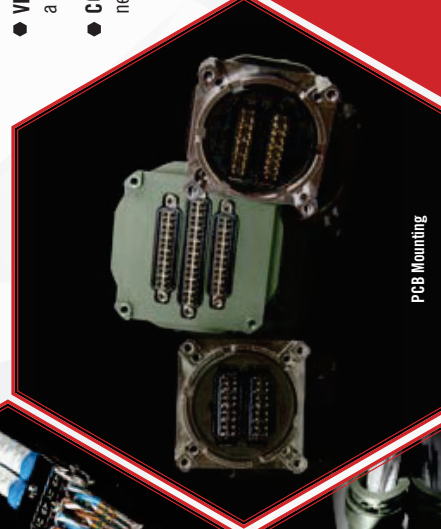
- **VERSATILE CONFIGURATIONS:** MACHFORCE connectors provide versatility to fit any application. Choose from a full portfolio of sizes and configurations, including Flange, Plug, JamNut, and PCB mounting options.
- **COMPLETE BACKSHELLS OPTIONS:** Our selection of backsells supports various sealing and configuration needs, ensuring optimal performance for your specific requirements.



High Speed Module Entering
Size 17 Jam Nut



High Speed Modules in
4 Port, 3 Port and 2 Port Offerings



PCB Mounting



Size 17

SIMPLIFIED INSTALLATION & MAINTENANCE

STREAMLINE ASSEMBLY WITH MACHFORCE

- **SPEED OF TERMINATION:** MACHFORCE connectors feature the High Speed Module (HSM), which prioritizes rapid and efficient installations for faster project completion.
- **USER-FRIENDLY DESIGN:** Designed for ease of use, the HSM allows for quick terminations with standard tools, reducing the need for specialized labor and simplifying the assembly process.
- **DETAILED TERMINATION INSTRUCTIONS:** Follow our clear, step-by-step instructions to ensure reliable and successful terminations every time.
- **CERTIFIED ASSEMBLY SERVICES:** Streamline your project by leveraging our assembly services. Whether you're looking to save time or optimize resources, we provide expert assembly to ensure a seamless and efficient implementation process.

OPTIMIZE MAINTENANCE WITH MACHFORCE CONNECTORS

- **IN-FIELD REPAIRABILITY:** The linear design of the HSM provides direct access to each pin, enabling swift diagnostics and repairs on-site, ensuring minimal downtime and uninterrupted, mission-critical operation.
- **STANDARD TOOLING:** MACHFORCE connectors can be terminated and repaired using standard tools, saving time and eliminating the hassle of procuring specialty equipment.
- **QUICK REPAIRS:** Repair a single faulty pin or re-terminate a port within minutes without affecting other pins. MACHFORCE connectors use industry-standard 22D pins and sockets, ensuring you can complete repairs on-the-spot without complicated procedures.
- **DEMONSTRATION VIDEOS:** Access our demo videos for guidance on performing field repairs, including single pin fixes and full port re-terminations.



SUPPORT EVERY STEP OF THE WAY

EXPERT GUIDANCE

With PIC Wire & Cable, you're not just getting another product—you're gaining a partner dedicated to your success. From customizable solutions to tailored assistance, we're dedicated to ensuring your success with MACHFORCE connectors. Our team ensures you have everything you need to navigate every stage of your project smoothly and effectively.



DEDICATED TEAM:

With PIC, you have a trusted advisor by your side, offering technical guidance and expertise throughout the interconnect design process.



RESPONSIVE SUPPLIER SUPPORT:

We're here to assist with any questions or issues, providing a seamless experience throughout your project.



COMPREHENSIVE RESOURCES:

Access detailed termination instructions, technical articles, and additional training upon request to fully leverage the capabilities of MACHFORCE connectors.



ASSEMBLY SOLUTIONS:

Streamline your project by leveraging our assembly services. Whether you're looking to save time or optimize resources, we provide expert assembly to ensure a seamless and efficient implementation process.



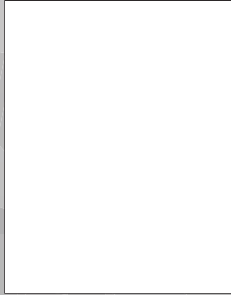
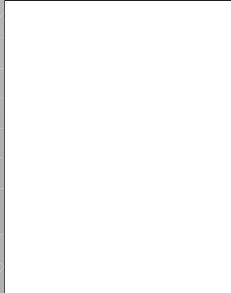
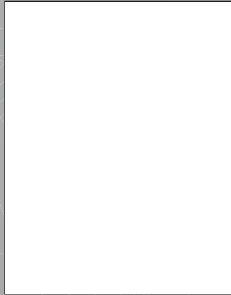
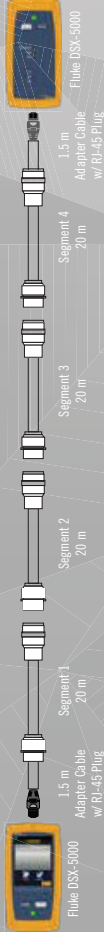
CUSTOMIZABLE SOLUTIONS:

Whether you need individual connectors or complete assemblies, MACHFORCE offers a part number builder and a range of components to suit your specific requirements.

SUPERIOR PERFORMANCE

SHIELDED 10G ETHERNET CABLE SOLUTIONS

MACHFORCE connectors have been tested and qualified with PICMates 10G Ethernet cables. The E6A6824 and E6A6826 CAT6a cables minimize crosstalk between twisted pairs. These cables feature silver-plated copper braided shielding and foil shielding that reduce electromagnetic waves emitted from the pairs. When the MACHFORCE connector is paired with E6A6824 and E6A6826 cables, the resulting electrical performance allows for industry-leading cable lengths and multiple connection breaks.



*E6A6824 electrical performance over 80M with 6.4dB of headroom

COMPLIANCE TESTING

The MACHFORCE family of connectors are rigorously tested for maximum durability and efficiency when you need it most. Designed for engineering professionals who demand the best, these high-speed connectors will give you security for your toughest projects. MACHFORCE connectors are tested and qualified for use with PICMATES® cables E6A6826 and E6A6824.

TEST PROCEDURE	TEST STANDARD	RESULT
Random Vibration (37.8gms – 3 axes)	MIL-DTL-38999 Rev M: 4.5.23.1	PASS
Mechanical Shock (300g – 3 shocks per each of 6 axes)	MIL-DTL-38999 Rev M: 4.5.24.1	PASS
Salt Spray	MIL-DTL-38999 Rev N: 4.5.13.1/2	500 hours (dynamic)
Ingress Protection*	IEC 60529; IP67	PASS
Dust (Fine Sand)	MIL-DTL-38999 Rev M: 4.5.41	PASS
Lightning Strike	MIL-DTL-38999 Rev M: 4.5.47	PASS
Humidity	MIL-DTL-D38999 Rev M: 4.5.26 & 3.30	PASS
Ethernet Performance at Temperature (-65°C to 200°C)	EIA-568-C CAT6A	PASS
Shell-to-Shell Conductivity	MIL-DTL-38999 Rev M: 4.5.25	PASS
Temperature Cycling (-65°C to 200°C)	MIL-DTL-38999 Rev M: 4.5.4	PASS
Insulation Resistance at Ambient	MIL-DTL-38999 Rev M: 4.5.10.1	> 5000 megohms
Durability	MIL-DTL-38999 Rev N: 4.5.8.1	500 Cycles

*Testing completed only for E6A6824



PART NUMBER BUILDER

Explore our online part builder: scan the QR code to begin. Choose your project options and request a quote effortlessly.

CONNECTOR

SAMPLE PART NUMBER: MF 3825 F S W N EC

PRODUCT MF Family: MACHFORCE

SHELL TYPE 3825 D38999 – Size 25 3817 D38999 – Size 17

SHELL STYLE F Flange Mount Receptacle* P Straight Plug J Jam Nut Receptacle

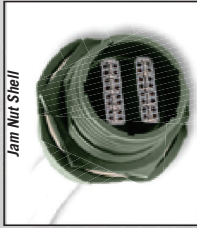
CONTACT S Sockets (F or J Shell Style) P Pin (Plug Only)

PLATING W Olive Drab Cadmium

KEY POSITION DETAIL N A B K° L° M° N° C D K° L° M° N° 244

CABLE TYPE EC 24 AWG Ethernet (E6A6824) PC1 PCB Mount (F or J Style) ED 26 AWG Ethernet (E6A6826)

*1/2" Nut Plates Available For Size 25



BACKSHELL

SAMPLE PART NUMBER: MF 3825 SP S W BC

PRODUCT MF Family: MACHFORCE

SHELL TYPE 3825 D38999 – Size 25 3817 D38999 – Size 17

STYLE SP Standard Profile Sealed LP Low Profile Insealed

PLATING W Olive Drab Cadmium

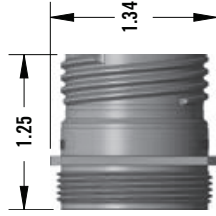
ANGLE S Straight R Right Angle (SP Style, 3817 Shell Type Only)

CABLE TYPE BC 24 AWG Ethernet (E6A6824) BD 26 AWG Ethernet (E6A6826)

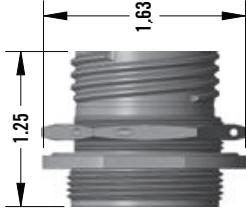


Need a solution tailored to your specific application? Reach out today to explore customized configurations.

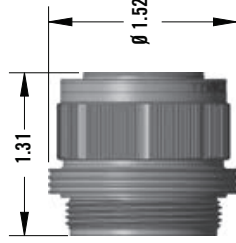
SIZE 17 DIMENSIONS



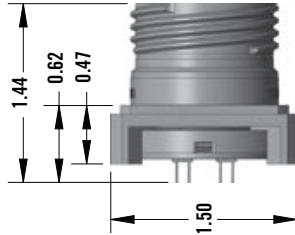
Flange



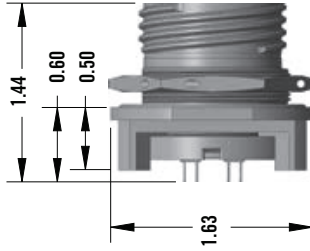
Jam Nut



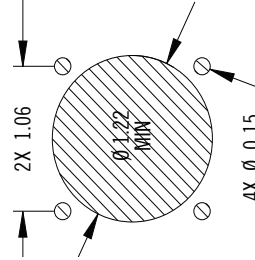
Plug



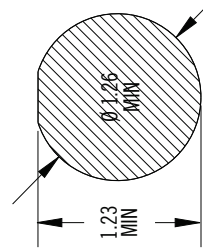
Flange with PCB Mount



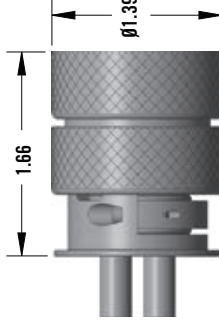
Jam Nut with PCB Mount



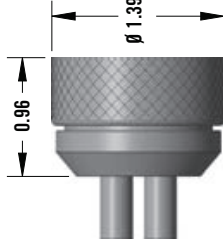
Flange Mounting Cut-Out



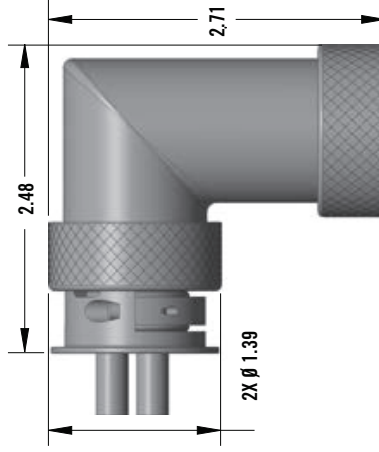
Jam Nut Mounting Cut-Out



Standard Profile Sealed Backshell



Low Profile Unsealed Backshell



90° Standard Profile Sealed Backshell

All dimensions are in inches unless otherwise specified.

SIZE 17 PR/

- Type: D38999 Series 11 Style
- Styles: Flange, Jam Nut, & Plug
- Max Clearance Panel Thickness:
Flange: 0.228" (5.79mm)
Jam Nut: 0.126" (3.20mm),
Jam Nut: 0.126" (3.20mm),

PLATING

- Olive Drab Cadmium

OPERATING TEMPERATURE

- -65°C to 175°C

MATERIALS

- Body Components: Aluminum
- ADR Ring: Stainless Steel

WEIGHT

- Flange: 0.10lbs (45.4g)
- Jam Nut: 0.11lbs (49.9g)
- Plug: 0.16lbs (72.6g)
- PCB: 0.17lbs (77.1g)
- Standard Backshell: 0.09lbs (40.8g)
- Low Profile Backshell: 0.04lbs (18.1g)
- 90° Backshell: 0.11lbs (49.9g)

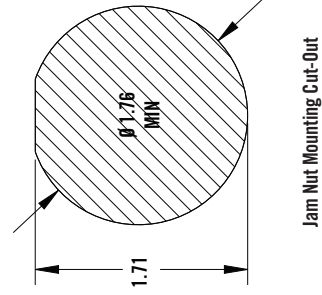
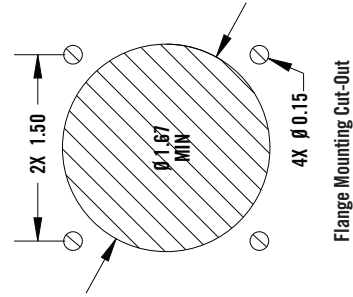
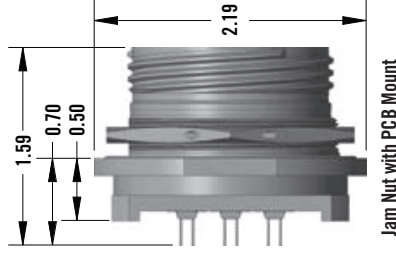
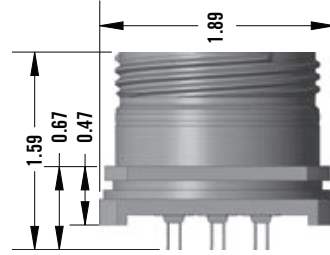
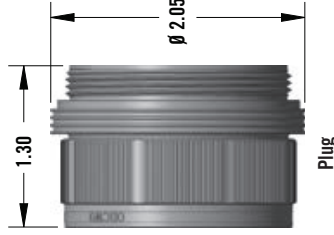
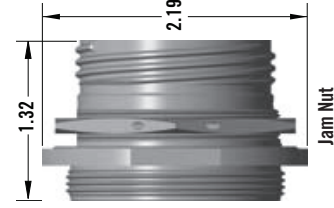
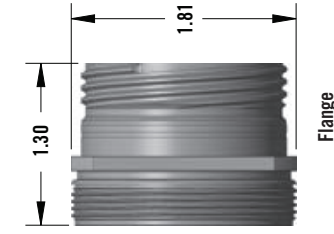
CONTACTS

- M39029/58-360 & M39029/57-364

COUPLING TORQUE

- Max. Engagement & Disengagement:
24 in-lb (2.7 Nm)
- Min. Disengagement: 3 in-lb (0.34 Nm)

SIZE 25 DIMENSIONS



SIZE 25 PROPERTIES

SHELL

- Type: D38999 Series III
- Styles: Plug, Flange & Jam Nut
- Max. Clearance Panel Thickness:
Flange: 0.197" (5.00mm)
Jam Nut- PCB Mount: 0.126" (3.20mm)

PLATING

- Olive Drab Cadmium

OPERATING TEMPERATURE

- 65°C to 175°C

MATERIALS

- Body Components: Aluminum
- ADR Ring: Stainless Steel

WEIGHT

- Flange: 0.17lbs (77.1g)
- Jam Nut: 0.15 lbs (67.1g)
- Plug: 0.27lbs (122.5g)
- Standard Backshell: 0.12lbs (54.4g)
- Low Profile Backshell: 0.08lbs (36.2g)
- PCB: 0.21lbs (95.3 g)

CONTACTS

- M39029/58-360 & M39029/57-354

COUPLING TORQUE

- Max. Engagement & Disengagement:
40 in-lb (4.5 Nm)
- Min. Disengagement: 5 in-lbs (0.56 Nm)

All dimensions are in inches unless otherwise specified.

LET PIC WIRE & CABLE FIND SOLUTIONS FOR YOUR TOUGHEST CONNECTIVITY CHALLENGES



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For more than 50 years, PIC Wire & Cable has been a leading provider of high-quality and reliable network cables, data transfer cables, and communication cables. With deep aerospace and defense application knowledge, our technical specialists provide support throughout the entire system design and can assist with customization and rapid prototyping services. Make PIC your go-to for aerospace cabling solutions and you'll see why we've been trusted with some of the toughest jobs in the industry.