

# VITA 87

High Density Circular MT Connectors

# AmphenolFSI



## Amphenol FSI's VITA 87 is designed and manufactured to meet the SOSA™ and VITA 87 Technical Standards

The VITA 87 circular MT Connector product line offers a high-density MT based fiber optic interconnect solution in the proven and ubiquitous MIL-DTL-38999 Series III form factor. The VITA 87 is offered in the 3 shell sizes: 11, 13, and 15 supporting, 1, 2, and 4 MT ferrules respectively. This connector series supports up to 48 fibers per MT ferrule MT, providing a rugged, waterproof, and low-loss connection for up to 192 fibers. These new connectors are available with flat polish, angled polished or lensed MTs. In addition, Amphenol has an extensive selection of backshell and accessories to support a wide variety of fiber optic cables specific to your application.

These products conform to VITA and SOSA™ standards providing users with multiple sourcing options. The new VITA 87 product line offers even more choices to the design community in addition to Amphenol's already market-leading harsh environment fiber optic interconnect products.

### Features & Benefits:

- Intermates with legacy suppliers products
- A high-reliability, high-density, ruggedized, harsh-environment MT connector in MIL-DTL-38999 connector packaging
- 3 levels of alignment provide for precision fiber-to-fiber interface and repeatability:
  - Shell-to-shell with keying to allow for alternate positions and a universal key
  - Insert to insert registration
  - MT contact guide pins
- Supports physical contact MT (PC-MT) and expanded beam MT (EB-MT)
  - Physical contact MT (PC-MT) ferrules available in 12, 16, 24, 32 & 48 for singlemode and multimode applications. PC & APC polish supported.
  - Expanded beam MT (EB-MT) ferrules with AR-coated lenses available in 12, 16, & 32 fiber configurations for multimode applications.
- Rear ferrule insertion and removal with common tools.
- Houses up to 192 fibers within a compact size 15 shell with 4 MTs
- Connectors are compatible with standard MIL-DTL-D39888 Series III accessories

### Applications:

- Military Radars
- Airborne EW
- Avionics
- Commercial Airframe
- UAV
- SATCOM Systems
- Ground Vehicles
- Mobile Command Shelters

**Amphenol Fiber Systems International, Inc.**

859 State Highway 121, Suite #2000 Allen, TX 75013 | (214) 547-2400 | [sales@fibersystems.com](mailto:sales@fibersystems.com) | [www.fibersystems.com](http://www.fibersystems.com)

Amphenol Fiber Systems International (AFSI), a division of Amphenol Military & Aerospace Operations (AMAO), is the largest manufacturer of harsh environment fiber optic cable assemblies & connectors in the world. Visit AMAO at [amphenolmao.com](http://amphenolmao.com)

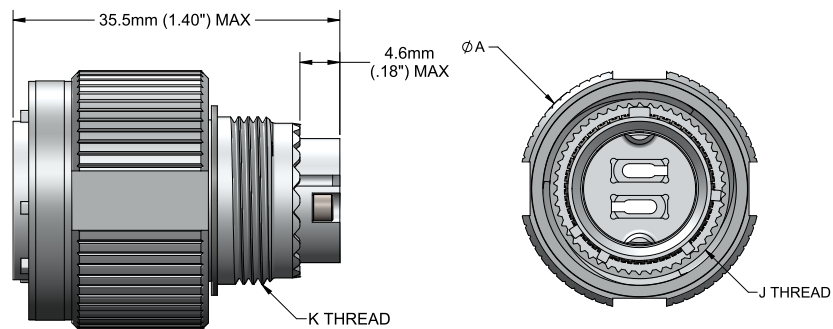
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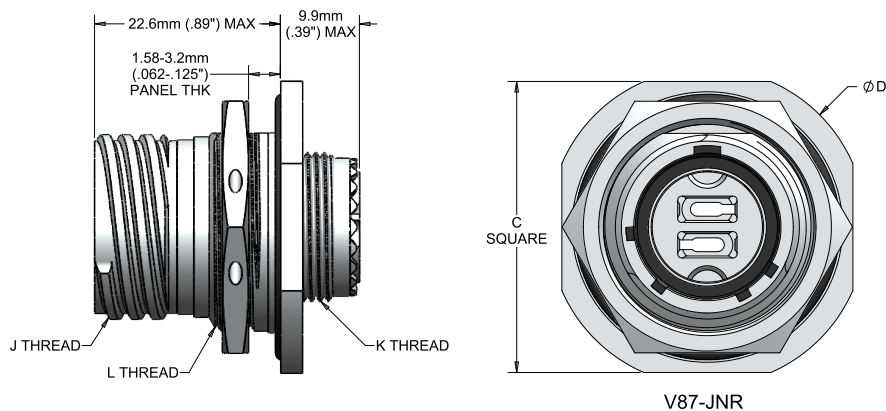
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## VITA 87 Product Drawings:

### Plug:



### Jam Nut Receptacle:



### Wall Mount Receptacle:

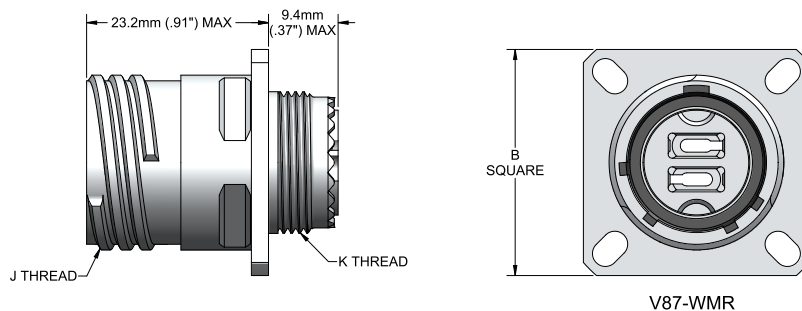


TABLE I

SHELL SIZE	DIM A MAX	DIM B MAX	DIM C MAX	DIM D MAX	DIM E MIN	DIM F MIN	DIM G +0.25/-0	DIM H +0/-0.25	J THREAD	K THREAD	L THREAD
11	25.0mm (.984")	26.47mm (1.042")	32.03mm (1.261")	35.23mm (1.387")	20.22mm (.796")	20.62mm (.812")	20.96mm (.825")	19.59mm (.771")	.750-.1P-.3L-TS	M15 X 1-6g 0.100R	M20 X 1-6g
13	29.4mm (1.157")	28.86mm (1.136")	35.21mm (1.386")	38.41mm (1.512")	23.42mm (.922")	23.01mm (.906")	25.65mm (1.010")	24.26mm (.955")	.875-.1P-.3L-TS	M18 X 1-6g 0.100R	M25 X 1-6g
15	32.5mm (1.280")	28.86mm (1.230")	38.38mm (1.511")	41.58mm (1.637")	26.59mm (1.047")	24.61mm (.969")	28.83mm (1.135")	27.56mm (1.085")	1.000-.1P-.3L-TS	M22 X 1-6g 0.100R	M28 X 1-6g

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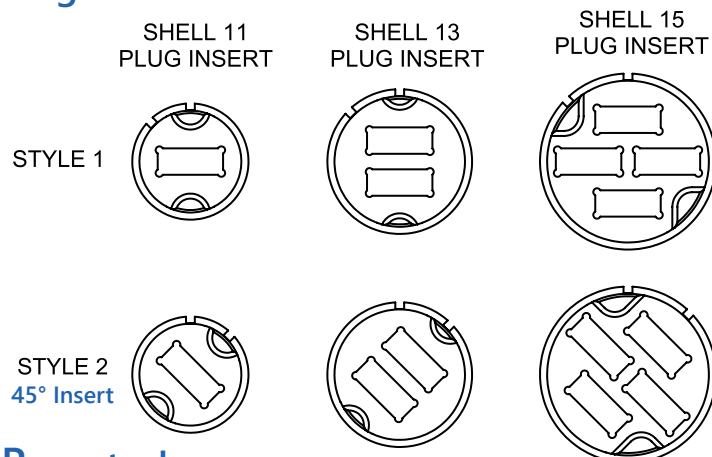
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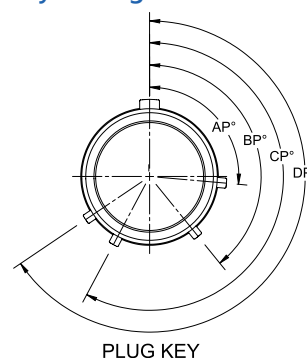
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## VITA 87 Connector Layouts:

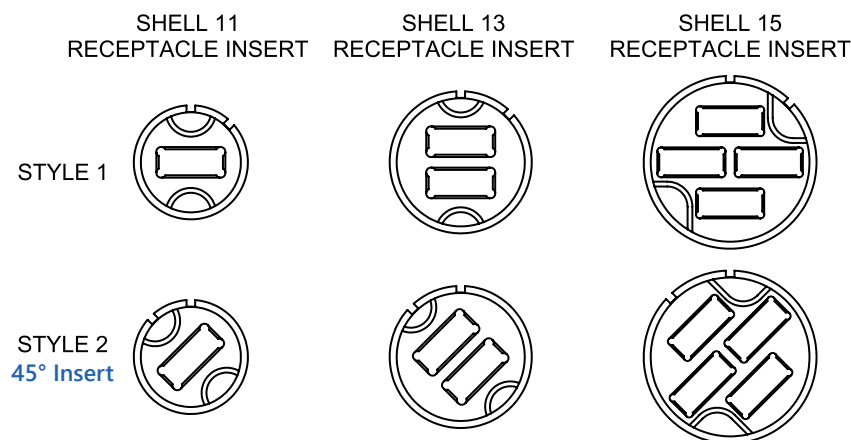
### Plug:



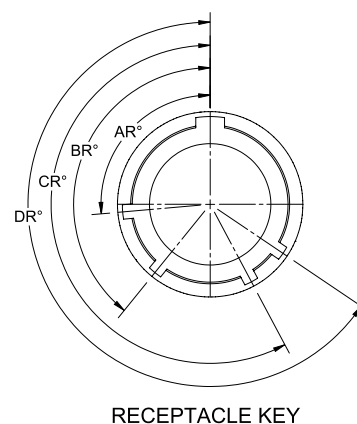
### Plug Key Arrangements:



### Receptacle:



### Receptacle Key Arrangements:



## Performance:

Parameter	Typical	Test Method
Optical Insertion Loss (PC/APC-MT)	< .35dB	TIA/EIA-455-171
Optical Insertion Loss (EB-MT)	< .75dB	TIA/EIA-455-171
Optical Return Loss (PC-MT)	> 25dB	TIA/EIA-455-107
Optical Return Loss (APC-MT)	> 60dB	TIA/EIA-455-107
Optical Return Loss (EB-MT)	> 23dB	TIA/EIA-455-107
Vibration - Random (EB-MT)	49.10 Grms	MIL-STD-1678-3
Vibration - Random (PC-MT)	11.95 Grms	TIA/EIA-455-11
Mechanical Shock (EB-MT)	100G	TIA/EIA-455-14
Mechanical Shock (PC-MT)	50G	TIA/EIA-455-14
Mating Durability (EB-MT)	500 Cycles	TIA/EIA-455-21
Mating Durability (PC-MT)	250 Cycles	TIA/EIA-455-21
Operating Temperature	-46°C to 85°C	TIA/EIA-455-3
Storage Temperature	-60°C to 100°C	

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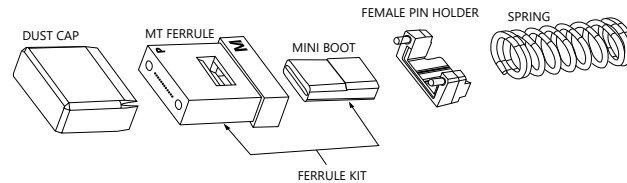
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## VITA 87 MT Ferrule Configurations:

Female Kit for AV87 (To be configured with Plug)

AFSI PN#	Interface Type	Fiber Type	Fiber Count	MT Elite Ferrule Kit Description
AV87FK-F-M08FPC	PC	Multi-mode, 50um	8	MT Ferrule with boot, 8F, 4+4 Multimode Elite®
AV87FK-F-M12FPC	PC	Multi-mode, 50um	12	MT Ferrule with boot, 12F, Multimode, MT Elite®, Dimple
AV87FK-F-M16FAPC	APC	Multi-mode, 50um	16	MT-16 Ferrule with boot, 1x16F, Multimode, MT Elite®
AV87FK-F-M24FPC	PC	Multi-mode, 50um	24	MT Ferrule with boot, 24F, Multimode, MT Elite®, Dimple
AV87FK-F-M32FAPC	APC	Multi-mode, 50um	32	MT-16 Ferrule with boot, 2x16F, Multimode, MT Elite®
AV87FK-F-M48FPC	PC	Multi-mode, 50um	48	MT Ferrule, 48F, 4x 12, Multimode
AV87FK-F-S08FAPC	APC	Single-mode, 8-9um	8	MT Ferrule with boot, 8F, Single-mode, MT Elite®, Pre-Angled
AV87FK-F-S12FAPC	APC	Single-mode, 8-9um	12	MT Ferrule with boot, 12F, Single-mode, MT Elite®, Pre-Angled, Dimple
AV87FK-F-S16FAPC	APC	Single-mode, 8-9um	16	MT-16 Ferrule with boot, 1x16F, Single-mode, MT Elite®, Pre-Angled
AV87FK-F-S32FAPC	APC	Single-mode, 8-9um	32	MT-16 Ferrule with boot, 32F 2x16F, Single-mode, MT Elite®
AV87FK-F-S24FPC	PC	Single-mode, 8-9um	24	MT Ferrule with boot, 24F, Single-mode, MT Elite®, Pre-Angled, Dimple, 20N
AV87FK-F-LMM12F	Lens	Multi-mode, 50um	12	Ferrule, PRIZM® LT 12F MM
AV87FK-F-LMM12P	Lens	Multi-mode, 50um	12	Ferrule, Lensed 12F, with 850AR coating with metal alignment pins
AV87FK-F-LMM16F	Lens	Multi-mode, 50um	16	Ferrule, PRIZM® MT 1x16 MM with 850AR coating
AV87FK-F-LMM32F	Lens	Multi-mode, 50um	32	Ferrule, PRIZM® MT 2x16 MM with 850AR coating

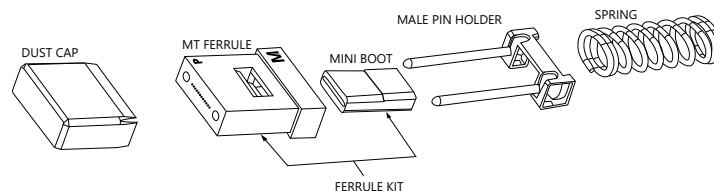
AV87FK-F-XXXXXX



Male Kit for AV87 (To be configured with Receptacle)

AFSI PN#	Interface Type	Fiber Type	Fiber Count	MT Elite Ferrule Kit Description
AV87FK-M-M08FPC	PC	Multi-mode, 50um	8	MT Ferrule with boot, 8F, 4+4 Multimode Elite®
AV87FK-M-M12FPC	PC	Multi-mode, 50um	12	MT Ferrule with boot, 12F, Multimode, MT Elite®, Dimple
AV87FK-M-M16FAPC	APC	Multi-mode, 50um	16	MT-16 Ferrule with boot, 1x16F, Multimode, MT Elite®
AV87FK-M-M24FPC	PC	Multi-mode, 50um	24	MT Ferrule with boot, 24F, Multimode, MT Elite®, Dimple
AV87FK-M-M32FAPC	APC	Multi-mode, 50um	32	MT-16 Ferrule with boot, 2x16F, Multimode, MT Elite®
AV87FK-M-M48FPC	PC	Multi-mode, 50um	48	MT Ferrule, 48F, 4x 12, Multimode
AV87FK-M-S08FAPC	APC	Single-mode, 8-9um	8	MT Ferrule with boot, 8F, Single-mode, MT Elite®, Pre-Angled
AV87FK-M-S12FAPC	APC	Single-mode, 8-9um	12	MT Ferrule with boot, 12F, Single-mode, MT Elite®, Pre-Angled, Dimple
AV87FK-M-S16FAPC	APC	Single-mode, 8-9um	16	MT-16 Ferrule with boot, 1x16F, Single-mode, MT Elite®, Pre-Angled
AV87FK-M-S32FAPC	APC	Single-mode, 8-9um	32	MT-16 Ferrule with boot, 32F 2x16F, Single-mode, MT Elite®
AV87FK-M-S24FPC	PC	Single-mode, 8-9um	24	MT Ferrule with boot, 24F, Single-mode, MT Elite®, Pre-Angled, Dimple, 20N
AV87FK-M-LMM12F	Lens	Multi-mode, 50um	12	Ferrule, PRIZM® LT 12F MM
AV87FK-F-LMM12P	Lens	Multi-mode, 50um	12	Ferrule, Lensed 12F, with 850AR coating with metal alignment pins
AV87FK-M-LMM16F	Lens	Multi-mode, 50um	16	Ferrule, PRIZM® MT 1x16 MM with 850AR coating
AV87FK-M-LMM32F	Lens	Multi-mode, 50um	32	Ferrule, PRIZM® MT 2x16 MM with 850AR coating

AV87FK-M-XXXXXX



Contact us for MT Ferrule Cable Assemblies

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## Part Numbering Schemes

1.	2.	3.	4.	5.	6.	7.
Base Part Num.	Shell Size	Shell Type	Insert Layout	Insert Material	Sell Material and Finish	Key
AV87 -	15	P	4	A	W	N

2. Shell Size	3. Shell Type	4. MT Layout	5. Insert Material
11	P Plug	1 1 Blade	A 6061-T6 Aluminum, Grey Anodized
13	R Wall Mount Receptacle	2 2 Blade	C Composite
15	J Jamnut	4 4 Blade	

6. Shell Material & Shell Finish	7. Key Option
F 6061-T6 Aluminum, Ni	N & F Key Style 1 (N) Key Style 2 (F)
T 6061-T6 Aluminum, Ni PTFE	A & G Key Style 1 (A) Key Style 2 (G)
C 6061-T6 Aluminum, Black Anodized	B & H Key Style 1 (B) Key Style 2 (H)
Z 6061-T6 Aluminum, Black Zn Ni	C & J Key Style 1 (C) Key Style 2 (J)
W 6061-T6 Aluminum, CAD OD	D & K Key Style 1 (D) Key Style 2 (K)
V 6061-T6 Aluminum, Sn Zn	E & L Key Style 1 (E) Key Style 2 (L)
K Stainless Steel Passivated	U Insert 1 & 2 Universal
B Marine Bronze	
M Composite, Ni	
J Composite, CAD OD	

Ex: AV87 - 15P4AWN

## About AFSI:

Amphenol Fiber Systems International (AFSI) designs, manufactures, markets and supports the broadest portfolio of reliable and innovative fiber optic interconnect solutions to withstand the harsh environments of military, aerospace, heavy industrial, broadcast and medical applications. Since inception in 1993, AFSI continues to advance its position as a global leader in harsh environment fiber optic interconnect.

AFSI has delivered millions of fiber optic solutions in more than 30 countries. Whenever there is a need for superior, cost-effective fiber optic systems to withstand the harshest of operating environments, you can rely on AFSI for engineering know-how, top-quality products and expert technical support.

Visit [www.fibersystems.com](http://www.fibersystems.com) for more information.

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