



*Optron Hybrid Fiber Optic/Electric Connectors*

### About Optron Connectors

Amphenol Fiber Systems International (AFSI) offers the Optron line of circular, hybrid (fiber optic/electrical) connectors using proven M28876 technology. The high-precision engineered polymer insert provides optical performance superior to that of other hybrid connectors particularly in high channel count configurations.

Using widely available M29504/14 & /15 fiber optic termini, the Optron connector supports between 4 and 31 fiber optic and/or electrical contacts in any combination. For power applications, AFSI can provide inserts to support copper contacts up to size 10 AWG.

Optron connectors are available in a wide variety of materials including aluminum or stainless steel. Available finishes include black anodize, cadmium and electroless nickel. For applications requiring environmental sealing, AFSI offers a suite of backshells in straight, 45 and 90 degrees.



### Features & Benefits

- Multiple shell and insert sizes allows the flexibility to support up to 31 fiber optic and/or electrical contacts
- Based on the M28876 connector series, these connectors provide the user with proven superior optical performance and proven field reliability
- The Optron connector series is available in a wide variety of materials and finishes to support high temperature, high humidity and corrosive environments
- A complete suite of backshells is available to provide environmental sealing

### Applications

- Military & Aerospace
- Mining
- Oil & Gas
- Industrial

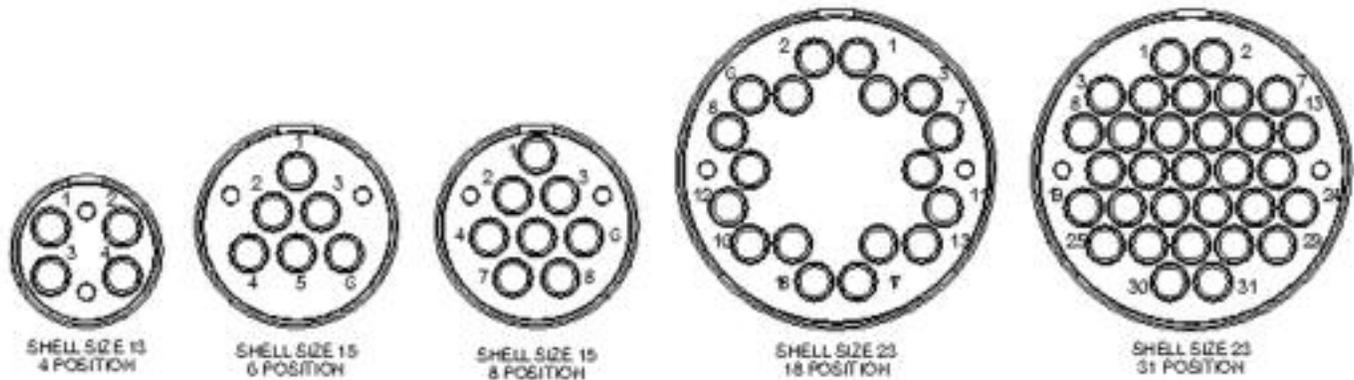
### About Amphenol Fiber Systems International

Amphenol Fiber Systems International (AFSI) designs, manufactures, markets and supports reliable and innovative fiber optic interconnect solutions that withstand the harsh environments of military, oil & gas, mining and broadcast applications. After more than a decade in business, AFSI continues to uphold its position as a global leader in fiber optic interconnect components and systems such as termini, M28876, MIL-ST, TFOCA and the TFOCA-II® connector, which AFSI developed and patented.

AFSI has delivered millions of fiber optic connectors worldwide. Whenever there is a need for superior, cost-effective fiber optic systems and products that will stand up to demanding 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.

### Standard Insert Arrangements - Pin Face (Socket Face is Mirrored)



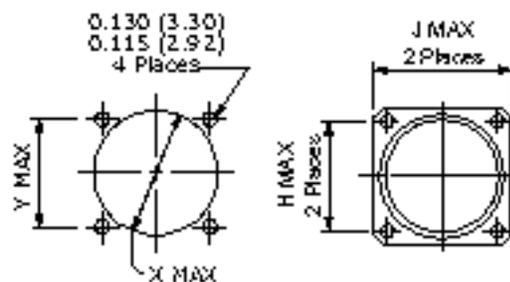
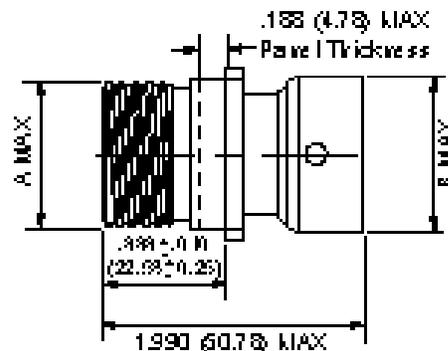
Consult factory for custom insert patterns.

### Specifications

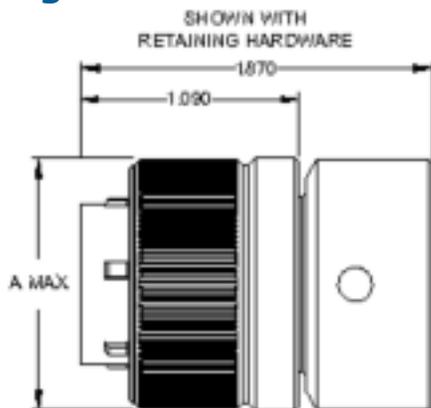
Specification	Measurement/Detail
Insertion Loss (Multimode)	0.35 dB typ (62.5/125), 0.75 dB max
Insertion Loss (Single mode)	0.35 dB typ (9/125), 0.75 dB max
Back Reflection	- 45 dB typical (Single mode)
Operating Temperature	-28°C to +65°C
Storage Temperature	-40°C to +70°C
Cross Talk	Per EIA/TIA 455-42 $\geq$ 60 dB channel separation
Mating Durability	500 cycles per EIA/TIA-455-21
Vibration	EIA/TIA-455-11, TC II & VII, 30 min/axis, 5-500 Hz sinusoidal, 5 - 2000 Hz random, 10 g
Mechanical Shock	MIL-STD-901, Grade A, Class I
Thermal Shock	-40°C to +70°C, EIA/TIA-455-71, test schedule C, 5 cycles
Thermal Cycling	-28°C to +65°C, 5 cycles per EIA/TIA-455-3
Corrosion Resistance	500 hour salt spray per EIA/TIA-455-16, Test Condition I
Ozone Exposure	150 ppm for 2 hours per EIA/TIA-455-189
Humidity	240 hours @ 98% RH per EIA/TIA-455-5, Method B
Fluid Immersion	EIA/TIA-455-12
Crush Resistance	7 tests @ 1250 Newtons per EIA/TIA-455-26
Maintenance Aging	Terminus insertion and removal, 10 times
Terminus Retention Force	22 lbs for 5 seconds
Insert Retention Axial	100 psi torque for 1 minute
Cable Pull Out Force	162 lbs for 10 minutes per EIA/TIA-455-6
Cable Sealing Flexing	200 cycles at 180° flex per EIA/TIA-455-1
Impact	64 drops @ 7 feet rotated each time per EIA/TIA-455-2, Method B
Flammability	0.75 inch flame for 10 seconds mated, 1.5' flame for 60 seconds unmated per EIA/TIA-364-81
Service Rating	600 VRMS
Dielectric Strength	1,800 VRMS @ sea level
Insulation Resistance	5,000 Mohm minimum @ 500 VDC

### Wall Flange Mount Receptacle & Panel Cutout

Shell Size	A Max	B Max	H Max	J Max	X ± .005 (0.13)	Y ± .005 (0.13)
13	0.875 (22.23)	1.085 (27.56)	0.843 (21.41)	1.158 (29.41) 1.116 (28.35)	0.937 (23.80)	0.843 (21.41)
15	1.062 (26.97)	1.255 (31.88)	0.968 (24.59)	1.278 (32.46) 1.236 (31.39)	1.124 (28.55)	0.968 (24.59)
23	1.500 (38.10)	1.695 (43.05)	1.281 (32.54)	1.738 (44.14) 1.698 (43.13)	1.562 (39.68)	1.281 (32.54)

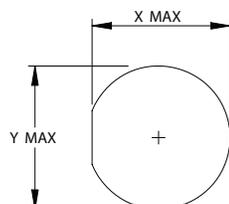
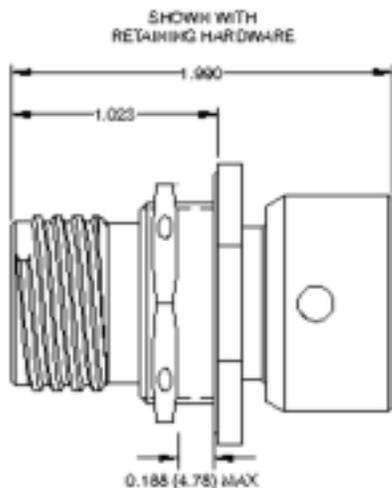


### Plug



Shell Sizes	A Max
13	1.141 (28.98)
15	1.263 (32.08)
23	1.705 (43.31)

### Jam Nut Receptacle & Panel Cutout



RECOMMENDED  
MTG CUTOUT  
SEE TABLE II  
SCALE: NONE

Shell Size	X ± .005 (0.13)	Y ± .005 (0.13)
13	0.973 (24.71)	1.010 (25.65)
15	1.160 (29.46)	1.198 (30.43)
23	1.593 (40.46)	1.630 (41.40)

Note: Dimensions are for reference only. Dimensions are in inches (and millimeters).

**Table I - Shell Size Designation**

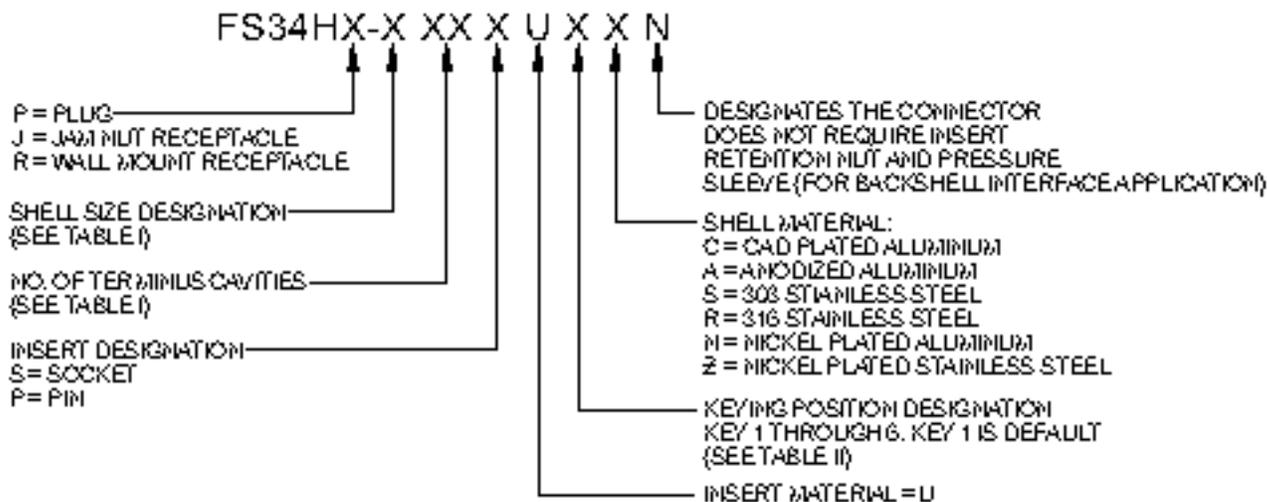
Shell Size	Shell Size Designator	Number of Cavities
13	B	04
15	C	06/08
23	F	18
23	F	31

**Table II - Shell Sizes with Key & Keyway Arrangements**

Shell Sizes	Key & Keyway Arrangements
13, 15, 23	U*
	1
	2
	3
	4
	5

\*U indicates universal keying arrangement.

## Optron Receptacle Connectors Ordering Nomenclature



## How to Order

For more information on how to order or to obtain a price quote on our AFSI Optron products, call toll free (US only) at 800.472.4225, international calls please use 1.214.547.2400 or e-mail [sales@fibersystems.com](mailto:sales@fibersystems.com).

