



CEELOK FAS-X CONNECTORS

THE HIGH SPEED SOLUTION FOR 10 GB/S DATA DELIVERY
USING RUGGED, MIL-SPEC COMPONENTS

CEELOK FAS-X CONNECTORS

The high-performance, rugged solution for high-speed

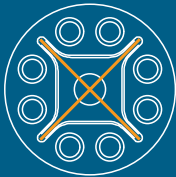


HIGH-SPEED CONNECTIVITY

- Supports 10G Ethernet and other high-speed protocols
- Size 11 shells support one 10G Ethernet channel
- Size 25 shells support four 10GbE channels

DESIGN OPTIMIZED FOR SIGNAL INTEGRITY

- Patented shielding arrangement shields each pair through the connector to provide improved impedance matching and to eliminate crosstalk



CONVENIENT

- Uses standard crimp AS39029 contacts
- Allows fast field termination and repair, requiring only standard contact insertion/removal and crimping tools
- Available with aluminum or composite shells with a variety of finishes

FLEXIBLE

- Range of inserts for Size 25 shell to accommodate other connectivity needs

APPLICATIONS

- Supports major protocols:
 - Gigabit Ethernet and 10G Ethernet networks
 - IEEE 1394b I/O
 - Fibre Channel networks
 - Modular D38999

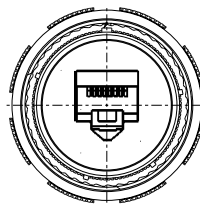
CONFIGURATIONS

- Single-Channel D38999 Style, Size 11
- Quad-Channel D38999 Style, Size 25
- Single-Channel Lanyard MIL-DTL-81703 Style
- Single-Channel Commercial D38999 Style

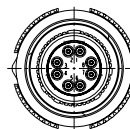
High-Performance Alternative to RJ45s

CeeLok FAS-X connectors with industry proven AS39029 contacts were designed for rugged environments and provide reliable, consistent high-speed performance.

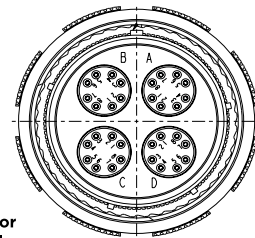
RJ45 in D38999 connectors are much larger than the CeeLok FAS-X connector (shell size 19 versus shell size 11). Additionally, the insulation displacement crimp technology may be unsuitable for use in certain harsh environments for which the M39029 crimp contacts used in the CeeLok FAS-X connector were intentionally designed.



RJ45
One Ethernet Channel
Size 19 Shell
1.51" Dia.



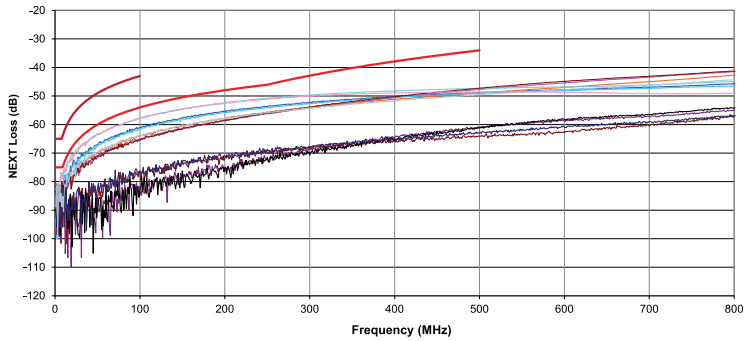
CeeLok FAS-X Connector
One Ethernet Channel
Size 11 Shell
0.98" Dia.



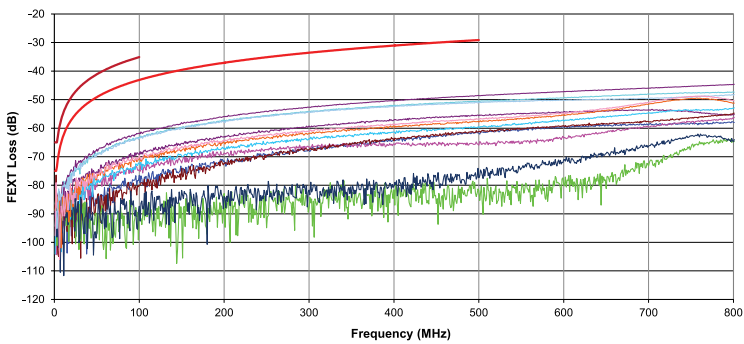
CeeLok FAS-X Connector
Four Ethernet Channels
(Equivalent to four RJ45s)
Size 25 Shell
1.88" Dia.

Superior Signal Integrity at Gigabit Rates

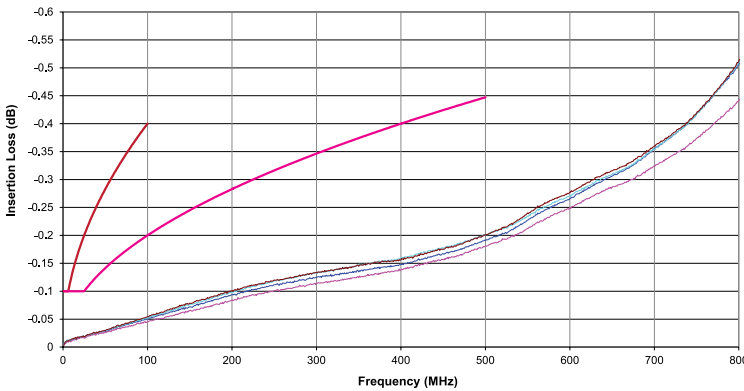
Near-End Crosstalk



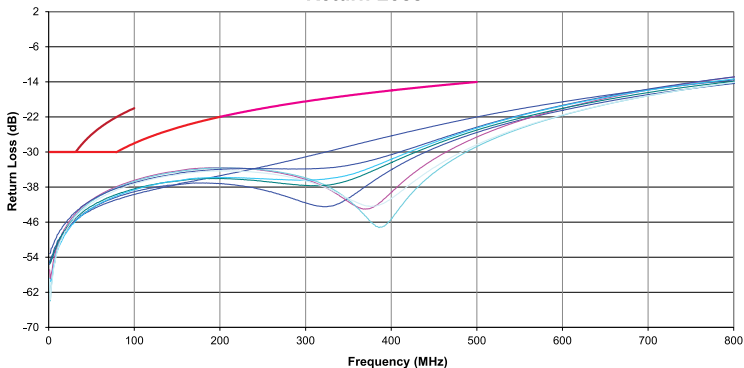
Far-End Crosstalk



Insertion Loss



Return Loss



Superior Impedance Matching

CeeLok FAS-X connectors are designed to maintain a highly matched 100-ohm impedance, with superior signal integrity.

More High-Frequency Headroom

The design and close impedance matching of the CeeLok FAS-X connector gives you more performance margin to tolerate noisy environments that are sensitive to harmful interference.

Zero Bit Error Rate (BER) under Rugged Testing

The CeeLok FAS-X connector was tested by TE for bit errors for a Gigabit Ethernet signal (1.0625 Gb/s) while simultaneously being subjected to random vibration and temperature cycling between -65°C and +200°C. No bit errors were detected.

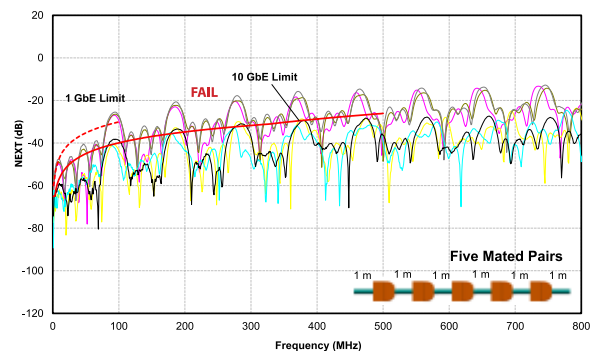
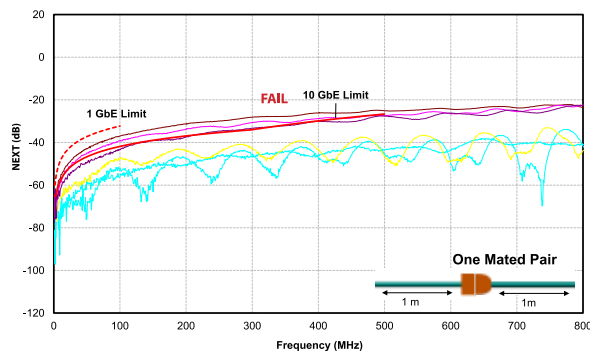
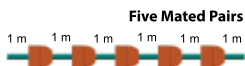
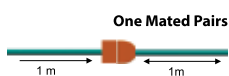
For more information, request Test Reports 10065 and 20101203.

Signal Integrity Performance Above and Beyond 38999 Connectors

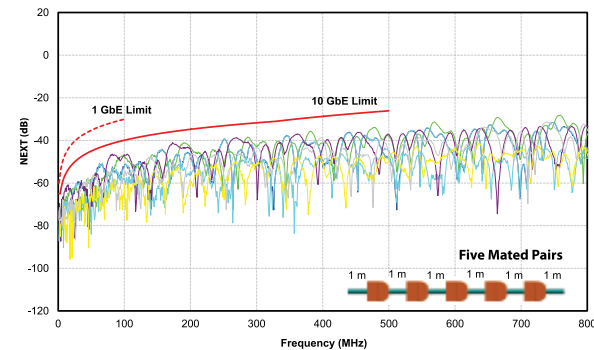
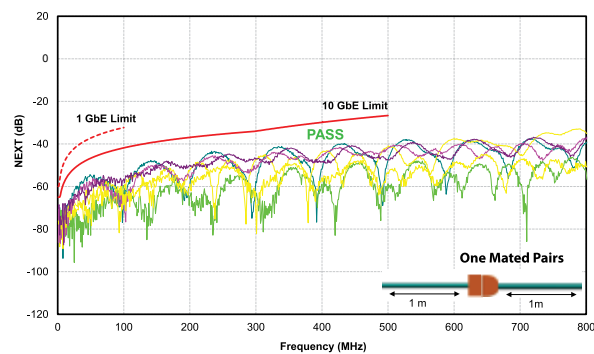
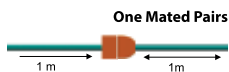
Optimized for high speed signaling, CeeLok FAS-X connectors help to offer performance beyond what is obtainable with popular pinouts used in standard D38999 connectors.

Differential NEXT

D38999 Size 11 Connector MOD Def Standard 23-04 Pinout

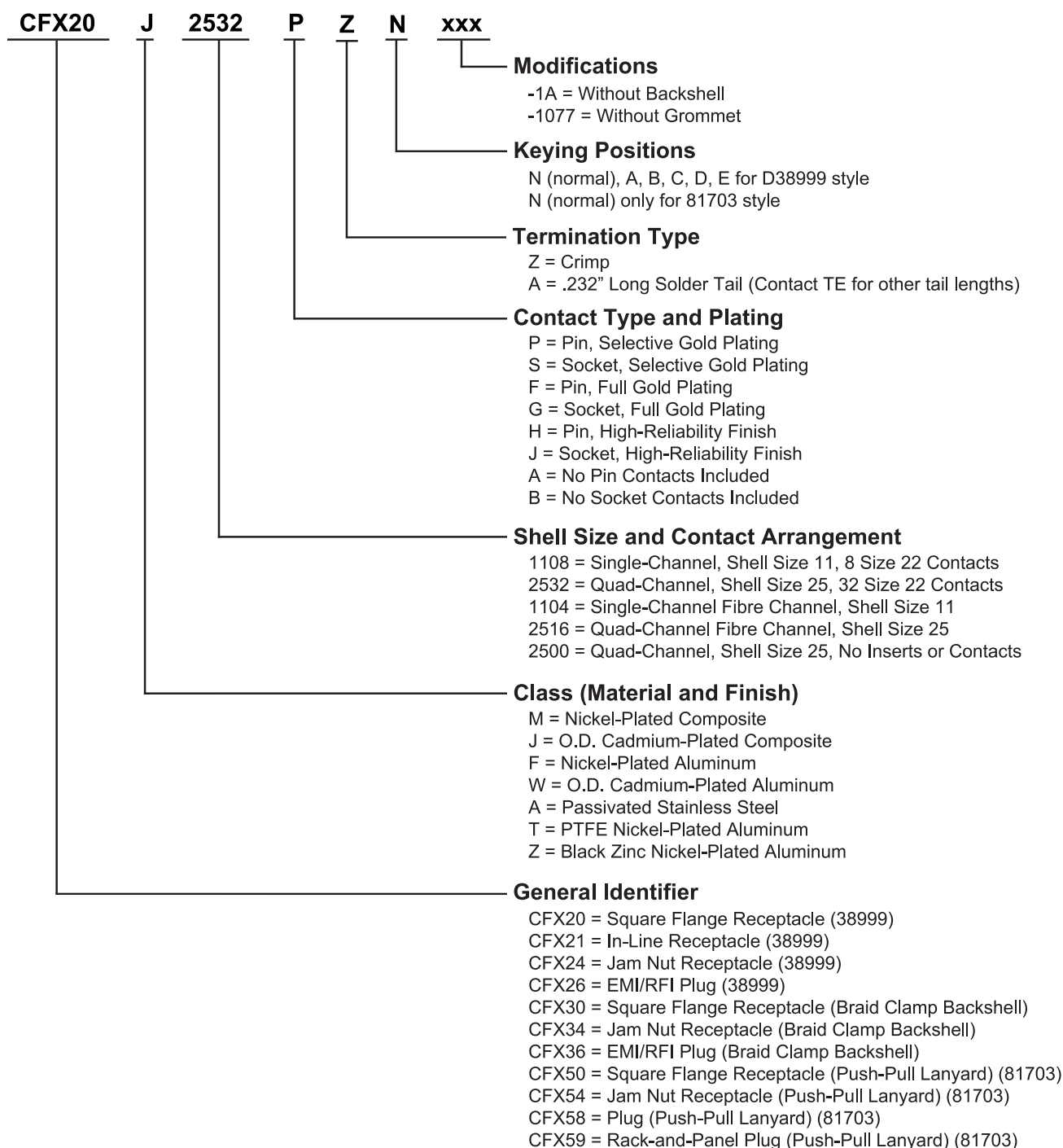


CeeLok FAS-X Connector



MIL CONNECTORS

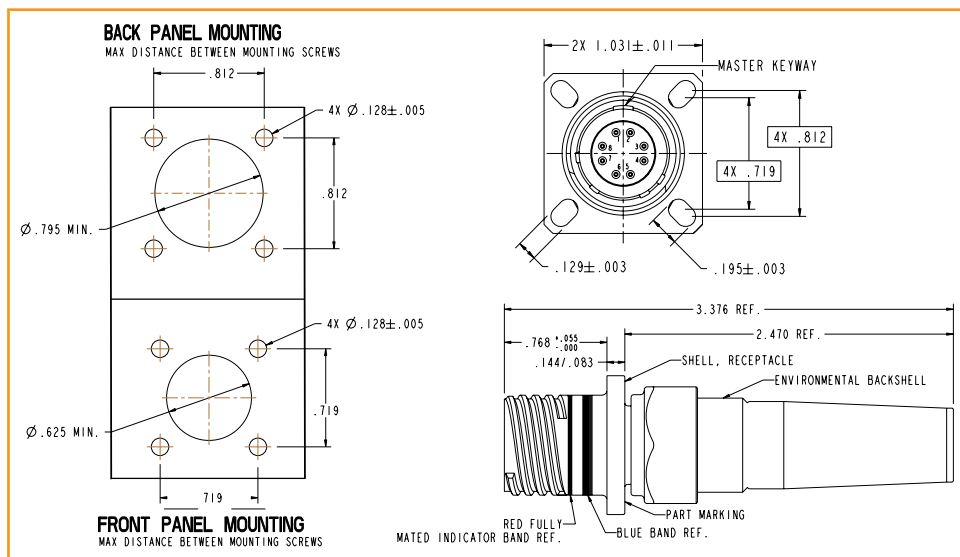
Connector Configuration Guide



SINGLE-CHANNEL D38999 CIRCULAR, SHELL SIZE 11

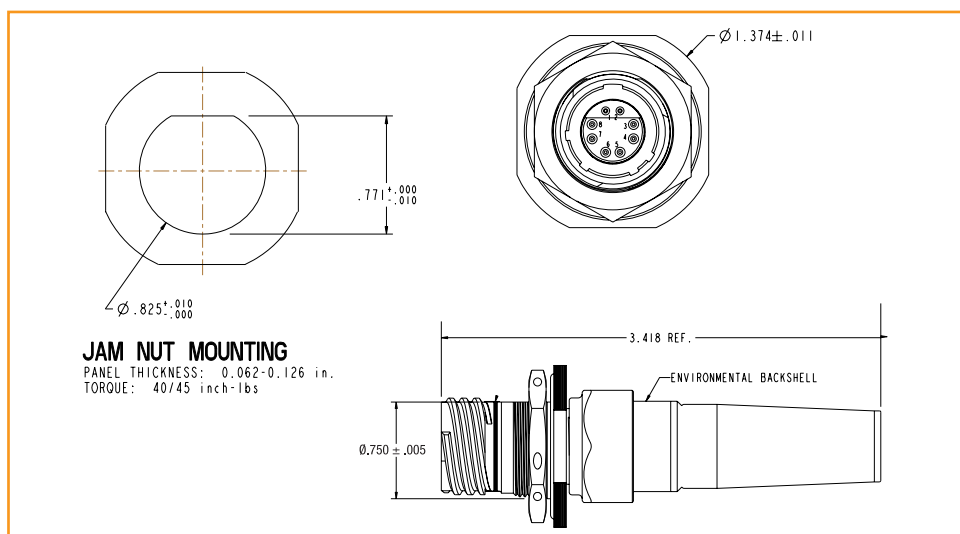
Square Flange Receptacle

CFX20*1108***



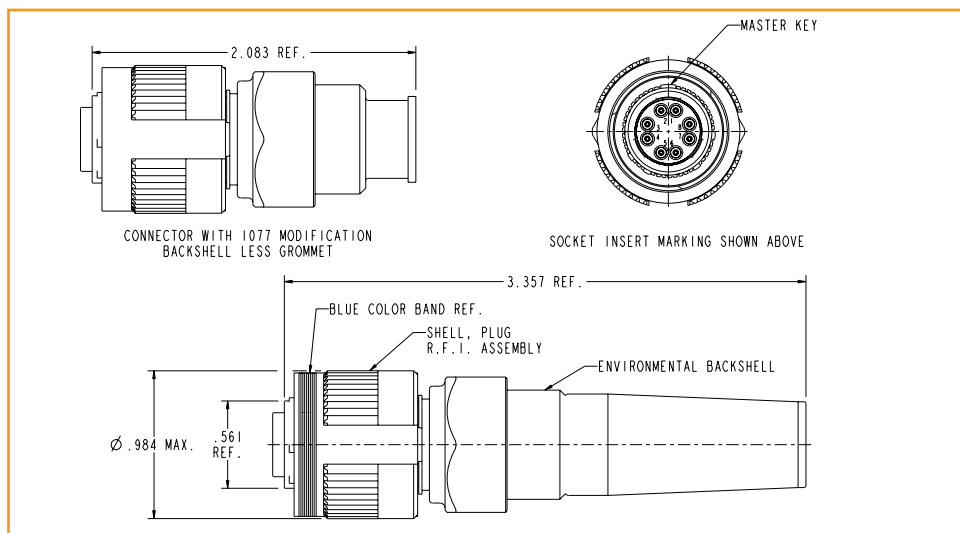
Jam Nut Receptacle

CFX24*1108***



Plug

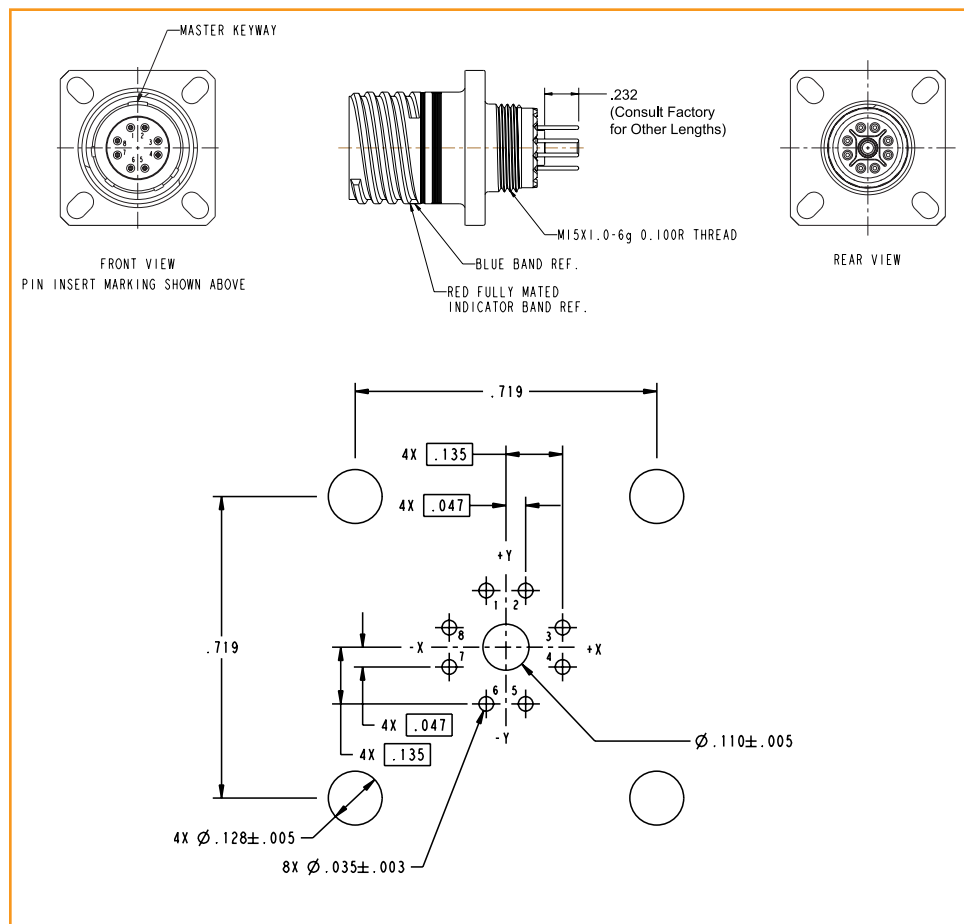
CFX26*1108***



SINGLE-CHANNEL D38999 CIRCULAR, SHELL SIZE 11, PCB MOUNT

Square Flange Receptacle

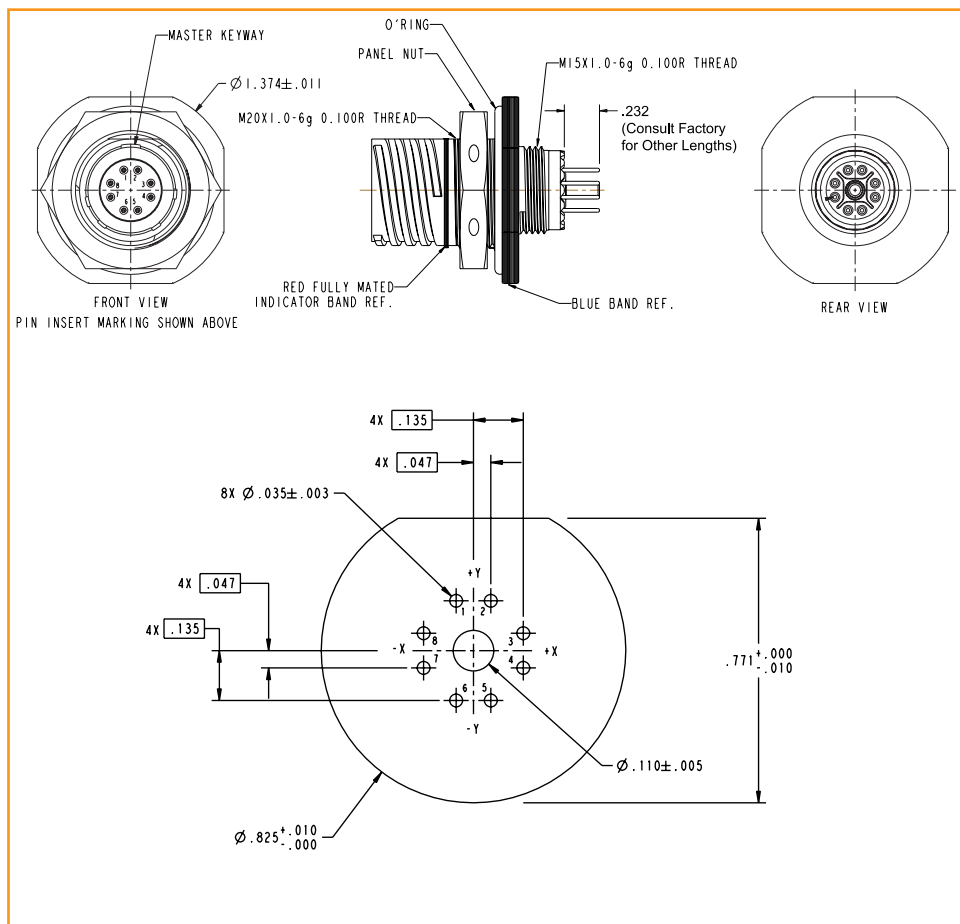
CFX20*1108***



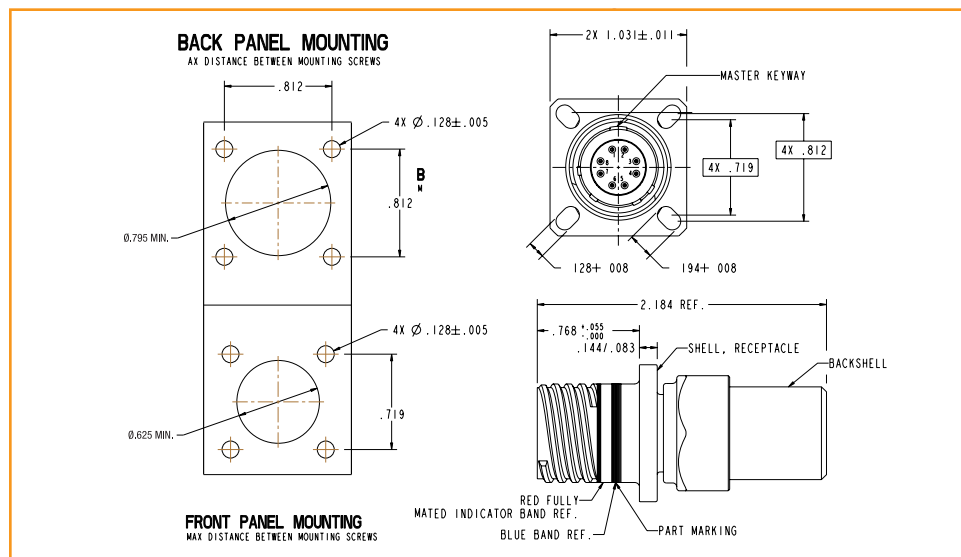
SINGLE-CHANNEL D38999 CIRCULAR, SHELL SIZE 11, PCB MOUNT

Jam Nut Receptacle

CFX24*1108***

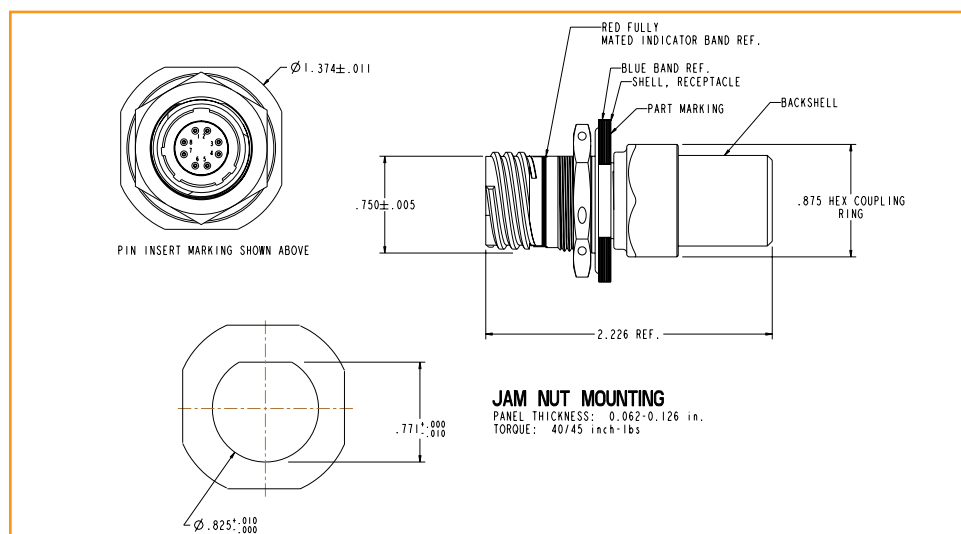


COMMERCIAL SINGLE-CHANNEL CIRCULAR, SHELL SIZE 11



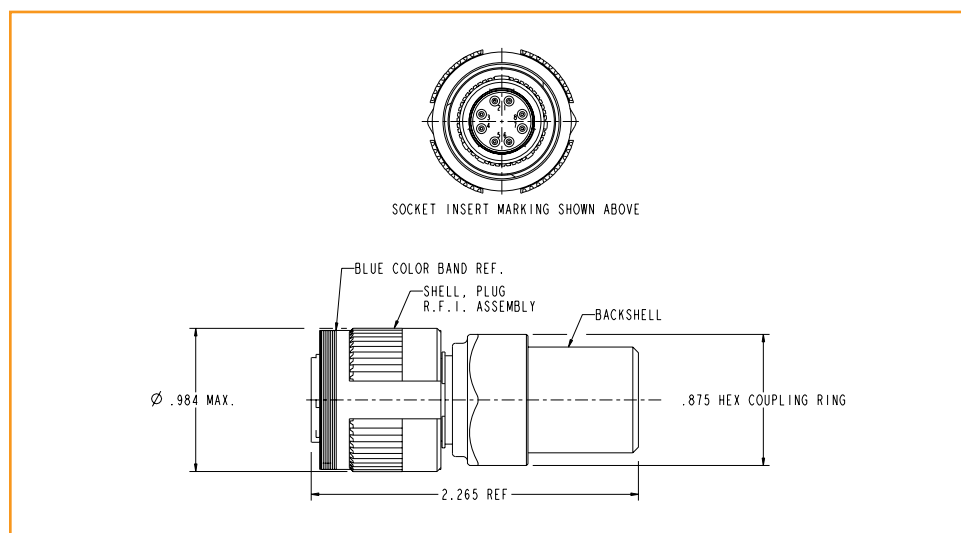
Square Flange Receptacle with Braid Clamp Backshell

CFX30*1108***



Jam Nut Receptacle with Braid Clamp Backshell

CFX34*1108***



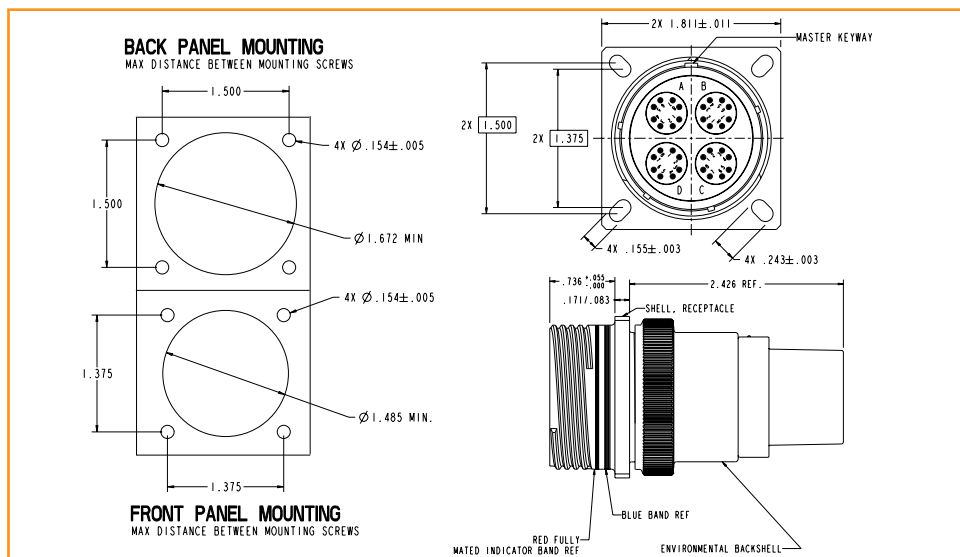
EMI/RFI Plug with Braid Clamp Backshell

CFX36*1108***

QUAD-CHANNEL D38999 CONNECTORS, SHELL SIZE 25

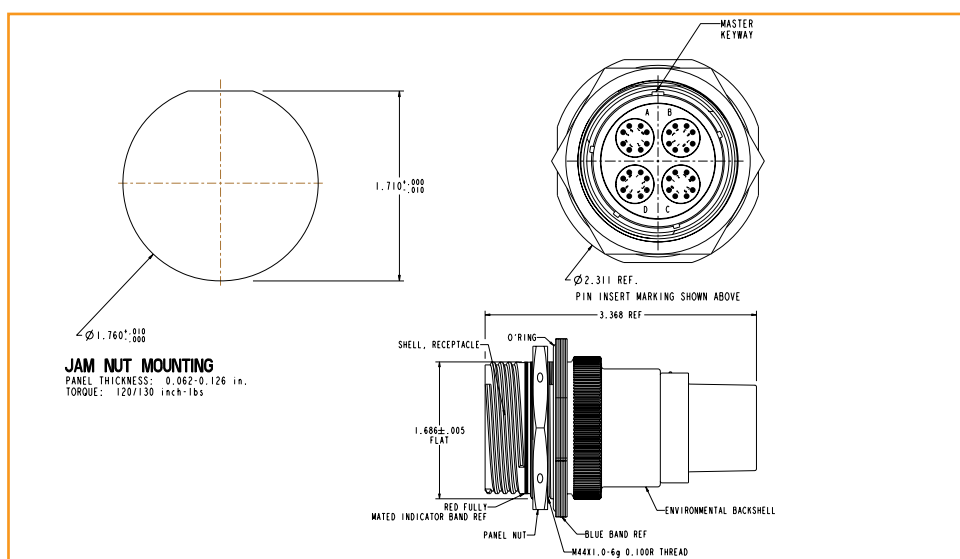
Square Flange Receptacle

CFX20*2532***



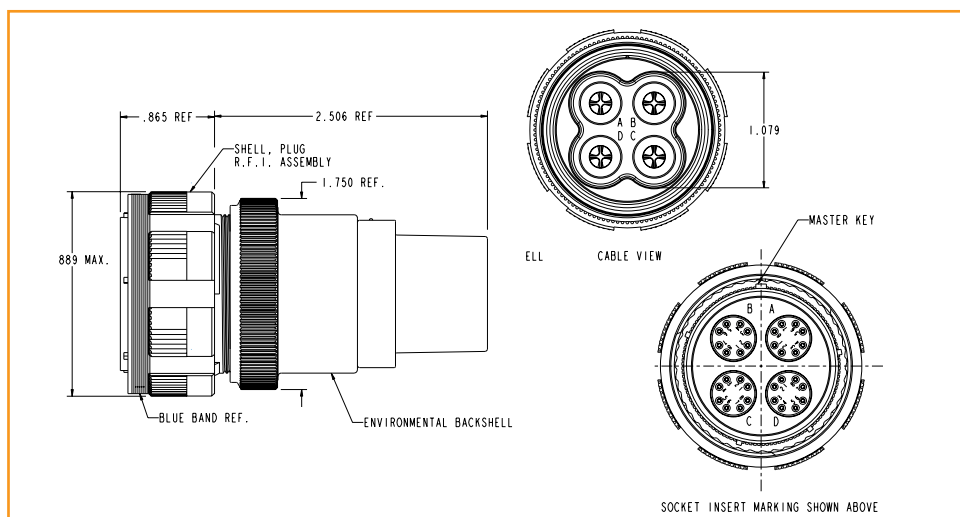
Jam Nut Receptacle

CFX24*2532***



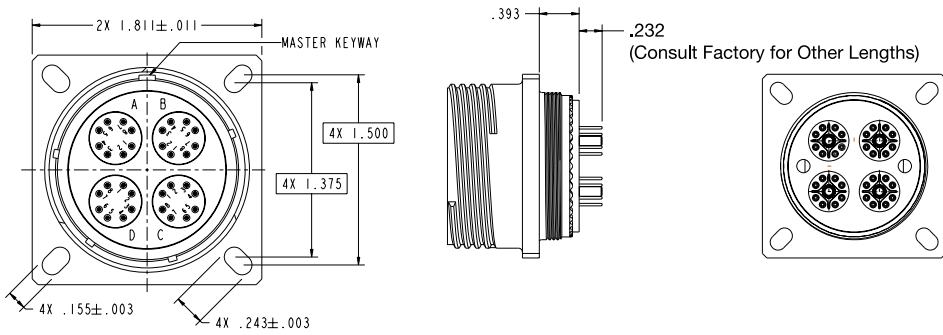
Plug

CFX26*2532***

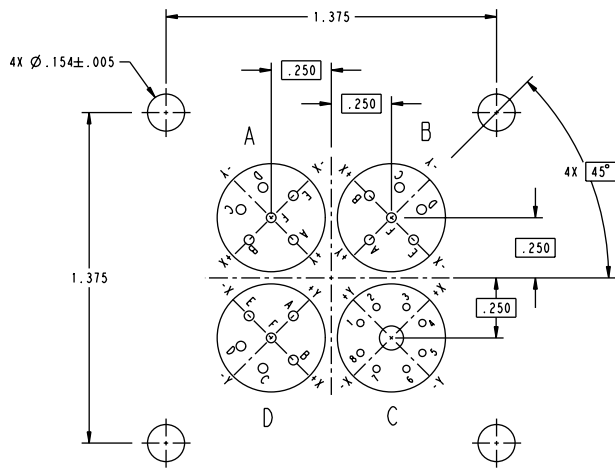


Square Flange Receptacle

CFX20*2532***

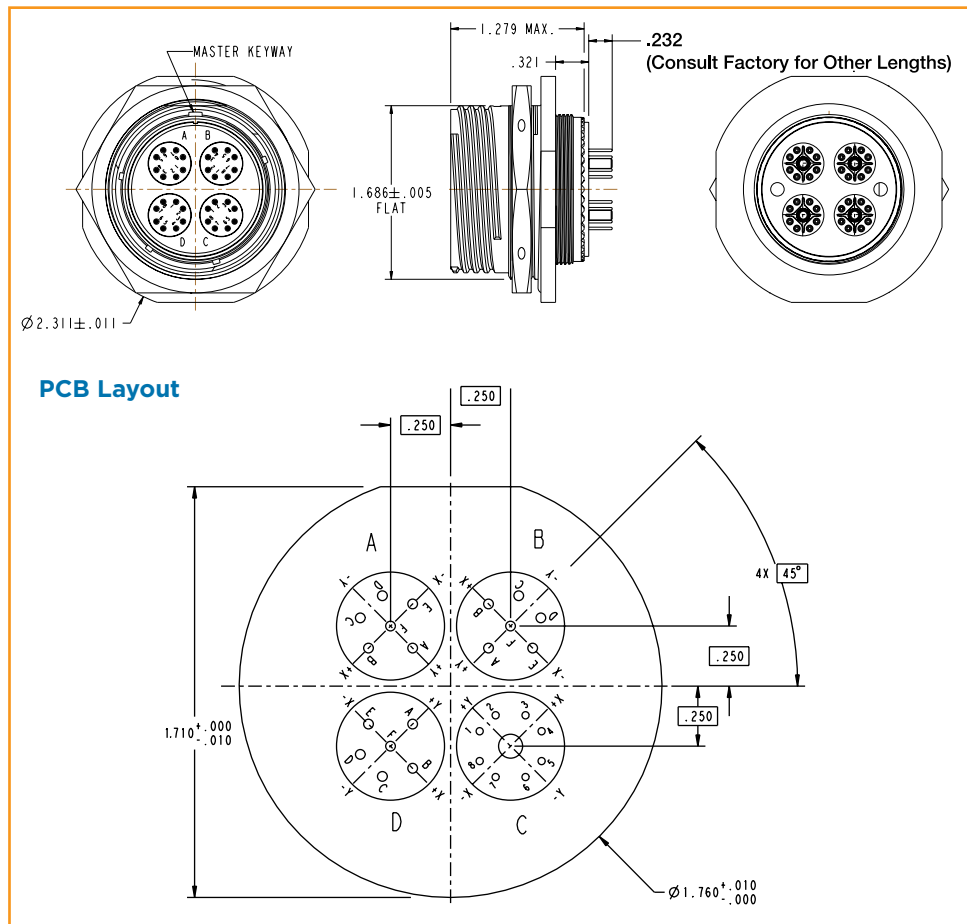


PCB Layout



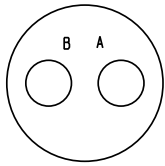
Jam Nut Receptacle

CFX24*2532***



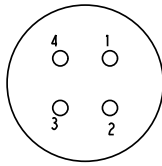
CEELOK FAS-X CONNECTOR MODULES

Ceelok FAS-X connectors are also available with a variety of modules to accommodate various counts of Size 22, 20, and 16 contacts in a Size 25 shell. Such capabilities allow convenient mixture of signal and power through the connectors.



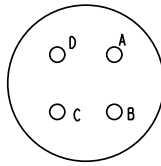
1102

2 Size 16 Contacts



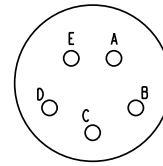
11H4

4 Size 22 Contacts



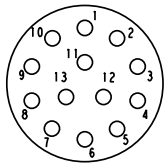
1104

4 Size 20 Contacts



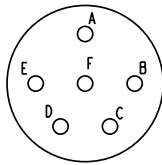
1105

5 Size 20 Contacts



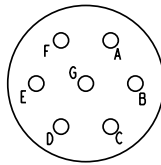
1135

13 Size 22 Contacts



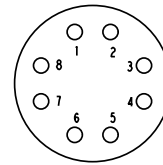
1198

6 Size 20 Contacts



1199

7 Size 20 Contacts



11H8

8 Size 22 Contacts

MFX

1105

P

Z

Termination Type

Z = Crimp Contacts

A – Y = Extended PCB Tail Contacts (Consult Factory)

Contact Plating

P = Pin, Localized Gold Finish

S = Socket, Localized Gold Finish

F = Pin, Full Gold Finish

G = Socket, Full Gold Finish

H = Pin, High-Reliability Finish

J = Socket, High-Reliability Finish

A = Less Pin

B = Less Socket

Shell Size (11)/Contact Arrangement

1102 = 2 Size 16 Contacts

11H4 = 4 Size 22 Contacts (High-Speed Insert Optimized for 150-Ohm Quad Cable)

1104 = 4 Size 20 Contacts

1105 = 5 Size 20 Contacts

11H8 = 8 Size 22 Contacts (High-Speed Insert Optimized for 4-Pair 100-Ohm Differential Cables)

1135 = 13 Size 22 Contacts

1198 = 6 Size 20 Contacts

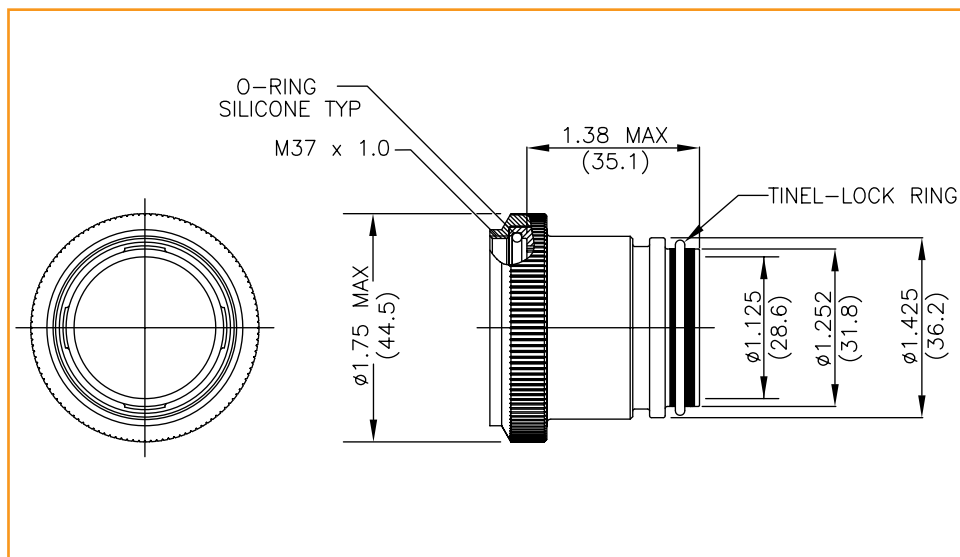
1199 = 7 Size 20 Contacts

Product Line

MFX = CeeLok FAS-X Connector Modules

Adapters

Tinel-Lock backshell adapters are available to provide reliable braided shield termination using Tinel-Lock Rings and accommodate a lipped heat-shrink boot.



Part No.

TXS201 A X 00-24 BI

TXS201 A X 00-24 AI

Aluminum alloy body with nickel PTFE plating

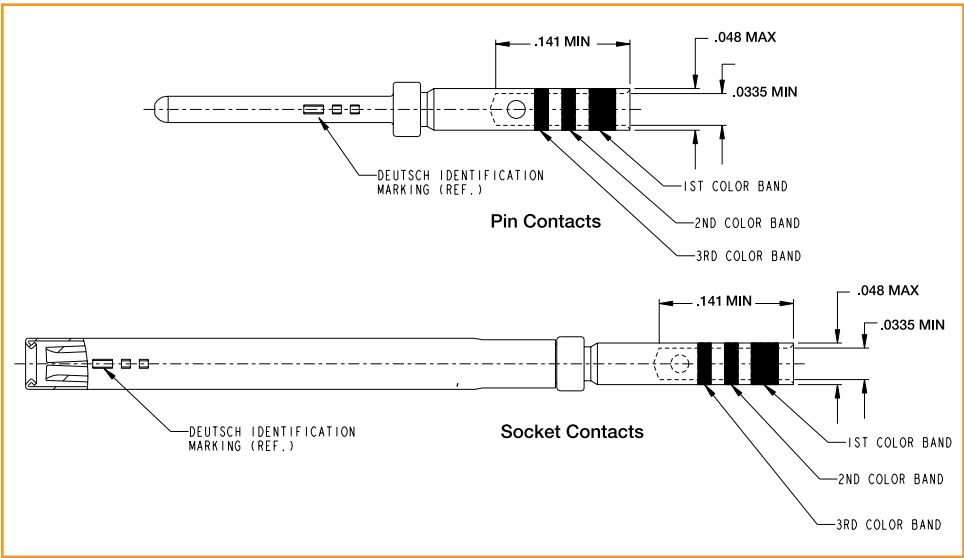
BI = Tinel-Lock Ring for dual-layer 36 AWG or single layer 30 AWG braid shields

AI = Tinel-Lock ring for single layer 26 AWG braid shields

Consult your TE representative for other plating and shield termination options

Size 22D Contacts

28 – 22 AWG wire
.160 to .190 recommended
strip length



Type	Military Part No.	TE DEUTSCH Part No.*	Color Bands			Crimp Tool	
			1st	2nd	3rd	Basic Tool	Positioner
Pin	AS39029/107-620	12331-22	Blue	Red	Black	M22520/2-01	M22520/2-09
	AS39029/58-360	38941-22, 38941-22L	Blue	Brown	Yellow	M22520/7-01	M22520/7-07
Socket	AS39029/106-614	12333-22	Orange	Blue	Black	M22520/2-01	M22520/2-07
	AS39029/56-348	38943-22, 38943-22L	Orange	Yellow	Gray	M22520/7-01	M22520/7-05

*12331-22 and 12333-22 are high-durability contacts rated for 1500 mating cycles.
38941-22x and 38943-22x are standard durability contacts rated for 500 mating cycles.
The L suffix indicates localized plating; otherwise plating is standard.

For More Information

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France	+33 1 34 20 86 86
Germany	+49 6251 133 1999
Hungary	+36 809 874 04
Italy	+39 011 401 2632
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Consult TE for the latest dimensions and design specifications.