

EZ-MATE CONNECTORS



The Complete Family of Multi-Channel Fiber Optic Connectors for Harsh Environment Deployable Systems



Overview

The OCC EZ-MATE family of hermaphroditic-style fiber optic connectors provides the most comprehensive solution to fiber inter-connect in harsh, deployable or mobilized communications systems. The EZ-MATE family of fiber optic deployable inter-connect provides end users with the same proven technology used in advanced military communication systems, but with simplified (EZ-MATE) mating interfaces capable of “blind mate” and/or applications that require thousands of mating cycles.

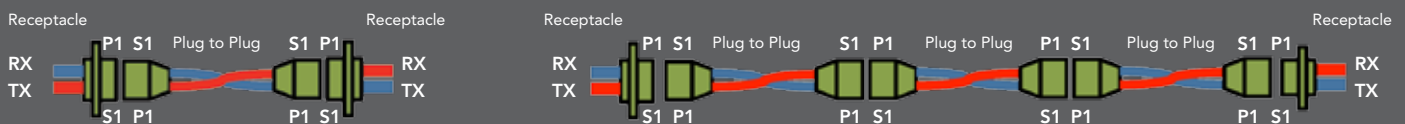
In addition to the EZ-MATE user-friendly interface, the connector system is designed to resist extreme harsh mechanical and environmental conditions including high vibration, mechanical and thermal shock, and fluid immersion and will continue to operate under extreme tension loading (with use of OCC tactical cable). Integrators can select from four different families (channel counts), which allows end users maximum flexibility when selecting the correct channel count for the application. Each of the four families features a diverse set of receptacle configurations designed to solve almost any panel or enclosure application.

Applications

- Ship-to-Shore Communications Umbilical Connect
- Mobile Emergency Telecommunications Stations
- Mobile Tactical Shelters
- United States Army, Navy, and Marine Corps Military Tactical Deployments
- Mobile or Remote Broadcast
- Oil and Gas Industries (Brass and Stainless Steel material options)

Why Hermaphroditic Connectors?

Hermaphroditic connectors are designed for quick deployment and gender-independent connectivity, allowing the end user to unreel fiber cable without regard for male or female ends. The hermaphroditic design enables the transmission path to maintain polarity even with multiple cable segments daisy-chained together to extend the distance of the deployable system.



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Features and Benefits




FEATURES			BENEFITS
Field convertible hermaphroditic plug design			A plug-to-plug assembly on a reel can be instantly provisioned for male (daisy-chain) or female connectivity.
Field convertible hermaphroditic plug dust cap design			The hermaphroditic plug dust cap can be instantly provisioned to allow mating with other dust caps in a plug to plug configuration. this keeps dust caps clean.
Retentive ceramic split sleeves	 <p data-bbox="487 997 747 1039">2.5mm split sleeve retained in 4 CH and 12 CH Insert Cap</p>	 <p data-bbox="812 997 1088 1039">2.0mm split sleeve retained in 6 CH and 24 CH Insert Cap</p>	Ceramic split sleeves are retained by insert the cap, preventing sleeves from becoming misplaced during maintenance routines.
Enhanced Kevlar™ retention system			Supports tactical cable retention without degradation of optical signal.
Sealed termini design	 <p data-bbox="487 1459 747 1497">TC1640CA used in 4 CH and 12 CH</p>	 <p data-bbox="812 1459 1088 1497">TC1440CA used in 6 CH and 24 CH</p>	4 CH, 6 CH, 12 CH, and 24 CH systems utilize sealing, environmental resistance to meet IP-68 requirements.
Easy termination capability			EZ-MATE integrated "push-pull" system allows operators to terminate EZ-MATE plugs and receptacles in an efficient, simple format.

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Standard Configurations, Options and Modifications Available



	
<p>CCCA10B11CA EZ-MATE 2-4 CH hermaphroditic fiber optic plug & dust cap, cable dia. 0.190-0.239"</p>	<p>CCCB22B11C EZ-MATE 2-4 CH jam-nut fiber optic receptacle & female dust cap</p>
	
<p>CCCA10C11CB EZ-MATE 4-6 CH hermaphroditic fiber optic plug & dust cap, black anodized, cable dia. 0.240-0.279"</p>	<p>CCCB22C11C EZ-MATE 4-6 CH jam-nut fiber optic receptacle & dust cap, black anodized, cable dia. 0.240-0.279"</p>
	
<p>CCCA10F11CB EZ-MATE 8-12 CH hermaphroditic fiber optic plug & dust cap, black anodized, cable dia. 0.240-0.279"</p>	<p>CCCB22F11C EZ-MATE 8-12 CH jam-nut fiber optic receptacle & female dust cap, black anodized</p>
	
<p>CCCA10M11CD EZ-MATE 18-24 CH hermaphroditic fiber optic plug & dust cap, black anodized, cable dia. 0.316-0.346"</p>	<p>CCCB22M11C EZ-MATE 18-24 CH jam-nut fiber optic receptacle & female dust cap, black anodized</p>

PERFORMANCE SPECIFICATIONS

PERFORMANCE	SPECIFICATION	PARAMETER
Insertion loss (multimode)	EIA/TIA-455-171	0.50dB – typical, 0.75dB – maximum
Insertion loss (single-mode)	EIA/TIA-455-171	0.40dB – typical, 0.75dB – maximum
Back reflection (single-mode UPC polish)	EIA/TIA-455-107	-50dB – typical, -40dB – maximum
Operating temperature	TIA/EIA-455-5	-54° C to + 71° C
Storage temperature	TIA/EIA-455-5	-57° C to + 85° C
Mating durability	TIA-455-21	1000 cycles
Impact	TIA/EIA-455-2	Method B, omit wall pipe
Twist	TIA-455-36	±90° rotation, one cycle/5 sec., 1000 cycles
Cable sealing flex	EIA/TIA-455-1	Procedure I
Cable retention	TIA-455-6	400 lbs. min.
Crush resistance	TIA-455-26	450 lbs.
Temperature life	TIA/EIA-455-4	250 Hr, 85 ± 2°C
Thermal shock	TIA-455-71	Condition B-0 except 10 cycles, @ 85° C and -62° C
Physical shock	EIA/TIA-455-14A	Condition C, 5 shocks/axis
Vibration	EIA/TIA-455-11B	Condition III & VI Condition C for 1.5hr, Except III
Humidity	EIA/TIA-455-5C	Method B
Salt spray ¹	EIA/TIA-455-16	Condition C
Fluid immersion	EIA/TIA-455-12	All fluids subject to 24 hours
Water submersion	EIA/TIA-455-98	Method A, Procedure 1, 1m for 24 hours. Bulkhead mounted in watertight cube
Flammability	EIA-364-8	
Mud test	M83526, paragraph 4.8	5 min. immersion, 10 cycles
Electromagnetic effects	IEEE-299	20kHz, 150kHz, 14MHz, 400MHz, 600MHz, 1GHz, 2GHz, 8GHz, 10GHz, VERT. & HORZ., <-60dB

NOTES

¹ Applies to ZINi plating only

MATERIALS

PART NUMBER	CONFIGURATION
Ferrule	2.5mm diameter ceramic ferrule
Exterior parts	Aluminum-anodized
	Stainless Steel 303, 316 & Naval Brass options
Interior parts	Aluminum-anodized/chemfilm
Hardware	Stainless steel, passivated
Seals	Nitrile
Boot	Selastoc
Alignment sleeves	Ceramic split sleeve



EZ-MATE 2-4 CH CONNECTOR FAMILY

PART NUMBER	CONFIGURATION	PRODUCT DESCRIPTION
CCCA10Bk1CA	Plug, with dust cap	EZ-MATE 2-4 CH hermaphroditic fiber optic plug & dust cap, cable dia. 0.190-0.239"
CCCA10Bk1CB	Plug, with dust cap	EZ-MATE 2-4 CH hermaphroditic fiber optic plug & dust cap, cable dia. 0.240-0.279"
CCCB22Bk1C	Recpt., jam-nut	EZ-MATE 2-4 CH jam-nut fiber optic receptacle & female dust cap
CCCD22Bk1C	Recpt., flange mount	EZ-MATE 2-4 CH flange mnt. receptacle fiber optic receptacle & female dust cap
CCCC22Bk1C	Recpt., jam-nut, external	EZ-MATE 2-4 CH external jam-nut receptacle fiber optic receptacle & female dust cap
CCCE22Bk1CA	Strain relief receptacle	EZ-MATE 2-4 CH jam-nut strain relief receptacle (SRR) & female dust cap, cable dia. 0.190-0.239"
CCCE22Bk1CB	Strain relief receptacle	EZ-MATE 2-4 CH jam-nut strain relief receptacle (SRR) & female dust cap, cable dia. 0.240-0.279"
CCCG22Bk1CA	Strain relief receptacle	EZ-MATE 2-4 CH flange mnt. strain relief receptacle (SRR) & female dust cap, cable dia. 0.190-0.239"
CCCG22Bk1CB	Strain relief receptacle	EZ-MATE 2-4 CH flange mnt. strain relief receptacle (SRR) & female dust cap, cable dia. 0.240-0.279"
CCCF22Bk1CA	Strain relief receptacle	EZ-MATE 2-4 CH external jam-nut strain relief receptacle (SRR) & female dust cap, cable dia. 0.190-0.239"
CCCF22Bk1CB	Strain relief receptacle	EZ-MATE 2-4 CH external jam-nut strain relief receptacle (SRR) & female dust cap, cable dia. 0.240-0.279"

EZ-MATE 4-6 CH CONNECTOR FAMILY

PART NUMBER	CONFIGURATION	PRODUCT DESCRIPTION
CCCA10Ck1CB	Plug, with dust cap	EZ-MATE 4-6 CH hermaphroditic fiber optic plug & dust cap, cable dia. 0.240-0.279"
CCCA10Ck1CD	Plug, with dust cap	EZ-MATE 4-6 CH hermaphroditic fiber optic plug & dust cap, cable dia. 0.316-0.346"
CCCB22Ck1C	Recpt., jam-nut	EZ-MATE 4-6 CH jam-nut fiber optic receptacle & female dust cap
CCCD22Ck1C	Recpt., flange mount	EZ-MATE 4-6 CH flange mnt. receptacle fiber optic receptacle & female dust cap
CCCC22Ck1C	Recpt., jam-nut, external	EZ-MATE 4-6 CH external jam-nut receptacle fiber optic receptacle & female dust cap
CCCE22Ck1CB	Strain relief receptacle	EZ-MATE 4-6 CH jam-nut strain relief receptacle (SRR) & female dust cap, cable dia. 0.240-0.279"
CCCE22Ck1CD	Strain relief receptacle	EZ-MATE 4-6 CH jam-nut strain relief receptacle (SRR) & female dust cap, cable dia. 0.316-0.342"
CCCG22Ck1CB	Strain relief receptacle	EZ-MATE 4-6 CH flange mnt. strain relief receptacle (SRR) & female dust cap, cable dia. 0.190-0.239"
CCCG22Ck1CD	Strain relief receptacle	EZ-MATE 4-6 CH flange mnt. strain relief receptacle (SRR) & female dust cap, cable dia. 0.240-0.279"
CCCF22Ck1CB	Strain relief receptacle	EZ-MATE 4-6 CH external jam-nut strain relief receptacle (SRR) & female dust cap, cable dia. 0.240-0.279"
CCCF22Ck1CD	Strain relief receptacle	EZ-MATE 4-6 CH external jam-nut strain relief receptacle (SRR) & female dust cap, cable dia. 0.316-0.342"

EZ-MATE 8–12 CH CONNECTOR FAMILY

PART NUMBER	CONFIGURATION	PRODUCT DESCRIPTION
CCCA10Fk1CB	Plug, with dust cap	EZ-MATE 8–12 CH hermaphroditic fiber optic plug & dust cap, cable dia. 0.240–0.279"
CCCA10Fk1CF	Plug, with dust cap	EZ-MATE 8–12 CH hermaphroditic fiber optic plug & dust cap, cable dia. 0.380–0.423"
CCCB22Fk1C	Recpt., jam-nut	EZ-MATE 8–12 CH jam-nut fiber optic receptacle & female dust cap
CCCD22Fk1C	Recpt., flange mount	EZ-MATE 8–12 CH flange mount receptacle fiber optic receptacle & female dust cap
CCCC22Fk1C	Recpt., jam-nut, external	EZ-MATE 8–12 CH external jam-nut receptacle fiber optic receptacle & female dust cap
CCCE22Fk1CB	Strain relief receptacle	EZ-MATE 8–12 CH jam-nut strain relief receptacle (SRR) & female dust cap, cable dia. 0.240–0.279"
CCCE22Fk1CF	Strain relief receptacle	EZ-MATE 8–12 CH jam-nut strain relief receptacle (SRR) & female dust cap, cable dia. 0.380–0.423"
CCCG22Fk1CB	Strain relief receptacle	EZ-MATE 8–12 CH flange mount strain relief receptacle (SRR) & female dust cap, cable dia. 0.240–0.279"
CCCG22Fk1CF	Strain relief receptacle	EZ-MATE 8–12 CH flange mount strain relief receptacle (SRR) & female dust cap, cable dia. 0.380–0.423"
CCCF22Fk1CB	Strain relief receptacle	EZ-MATE 8–12 CH external jam-nut strain relief receptacle (SRR) & female dust cap, cable dia. 0.240–0.279"
CCCF22Fk1CF	Strain relief receptacle	EZ-MATE 8–12 CH external jam-nut strain relief receptacle (SRR) & female dust cap, cable dia. 0.380–0.423"

EZ-MATE 18–24 CH CONNECTOR FAMILY

PART NUMBER	CONFIGURATION	PRODUCT DESCRIPTION
CCCA10Mk1CD	Plug, with dust cap	EZ-MATE 18–24 CH hermaphroditic fiber optic plug & dust cap, cable dia. 0.316–0.342"
CCCA10Mk1CH	Plug, with dust cap	EZ-MATE 18–24 CH hermaphroditic fiber optic plug & dust cap, cable dia. 0.466–0.515"
CCCB22Mk1C	Recpt., jam-nut	EZ-MATE 18–24 CH jam-nut fiber optic receptacle & female dust cap
CCCD22Mk1C	Recpt., flange mount	EZ-MATE 18–24 CH flange mount receptacle fiber optic receptacle & female dust cap
CCCC22Mk1C	Recpt., jam-nut, external	EZ-MATE 18–24 CH external jam-nut receptacle fiber optic receptacle & female dust cap
CCCE22Mk1CD	Strain relief receptacle	EZ-MATE 18–24 CH jam-nut strain relief receptacle (SRR) & female dust cap, cable dia. 0.316–0.342"
CCCE22Mk1CH	Strain relief receptacle	EZ-MATE 18–24 CH jam-nut strain relief receptacle (SRR) & female dust cap, cable dia. 0.466–0.515"
CCCG22Mk1CD	Strain relief receptacle	EZ-MATE 18–24 CH flange mount strain relief receptacle (SRR) & female dust cap, cable dia. 0.316–0.342"
CCCG22Mk1CH	Strain relief receptacle	EZ-MATE 18–24 CH flange mount strain relief receptacle (SRR) & female dust cap, cable dia. 0.466–0.515"
CCCF22Mk1CD	Strain relief receptacle	EZ-MATE 18–24 CH external jam-nut strain relief receptacle (SRR) & female dust cap, cable dia. 0.316–0.342"
CCCF22Mk1CH	Strain relief receptacle	EZ-MATE 18–24 CH external jam-nut strain relief receptacle (SRR) & female dust cap, cable dia. 0.466–0.515"



TERMINI FOR 4 CH AND 12 CH EZ-MATE

PART NUMBER	CONFIGURATION	PRODUCT DESCRIPTION
TC1640DA	Termini	2.5mm, Environmental resisting, fiber optic termini, 126µm I.D.
TC1739AA	Termini	Dummy termini
PC83522/16-20-S	Crimp sleeve	Crimp sleeve, used with 3.00mm loose tube jacket
PA35395-99-017	Crimp sleeve	Crimp sleeve, used with 2.00mm loose tube jacket

TERMINI FOR 6 CH AND 24 CH EZ-MATE

PART NUMBER	CONFIGURATION	PRODUCT DESCRIPTION
TC1440CA	Termini	COTS M29504/14 pin 2.00mm ceramic ferrule, 126µm I.D.
TC0339AA	Termini	Dummy termini
PA35395-99-017	Crimp sleeve	Crimp sleeve, used with 2.00mm loose tube jacket

Provisioning Guidelines and Plating Options

Provisioning Guidelines

- 1) Select the number of Dummy Termini necessary to fill a connector. Example, when planning for an 8 CH application, select 4 dummy termini to complete a 12 CH size connector.
- 2) Crimp sleeves are recommended for use on receptacle configurations without Strain Relief. Crimp sleeves are generally used with 2.0mm Simplex loose tube cable for receptacle pigtails. 4 CH and 12 CH EZ-MATE receptacles also allow for the use of 3.00mm loose fiber optic cable.

Plating Options

All EZ-MATE configurations are supplied with Black Anodized as standard plating. For the additional plating options, the "k" in the 8th digit position of the part number (ex: **CCCG22Mk1CD**) is selected for the plating of choice.

- "1" Black Anodized, Mil-A-8625 TYPE 2 CLASS 2
- "3" Zinc Nickel Plating, SAE AMS 2417G
- "4" 303 Stainless Steel, Passivation per QQ-P-35/ASTMA967
- "5" 316 Stainless Steel, Passivation per QQ-P-35/ASTMA967
- "6" Naval Brass, C 46400 H02 Half Hard ASTMB 21/B21M



All EZ-MATE connectors can be utilized in any pre-terminated turnkey assemblies.