EBAD NEA
Ensign-Bickford Aerospace & Defense

NEA® Model ZSF and IFD Zero Separation Force Connector

Mission Success
Ensign-Bickford Aerospace & Defense Company (EBAD) is dedicated to supporting our customers in the aerospace and defense industry through on-time delivery of innovative products that exceed expectations and assure mission success.

Model ZSF and IFD Product Data Sheet

EBAD's Zero Separation Force (ZSF) and In-Flight Disconnects (IFD) connectors are reliable in-flight electrical disconnects for satellite and spacecraft separation, missile staging, and umbilical separation. Connector pairs are designed to provide precision zero, positive or negative separation force, eliminating the need for lanyard pull actuation.

Applications

Typical applications include:
- Satellite, spacecraft and payloads
- Stage separation
- Umbilical disconnects
- Panel disconnect assemblies

Principle of Operation

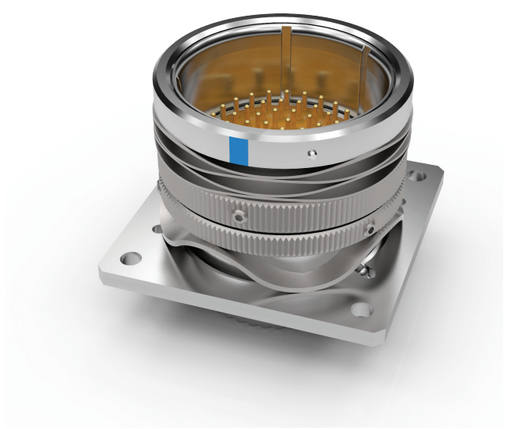
The NEA® ZSF and IFD electrical interconnects incorporate standard MIL-DTL-38999 inserts and MIL-C-39029 pin and socket contacts.

Each mated connector pair is factory calibrated to compensate for connector pin engagement and other retention forces, assuring precise and smooth separation. ZSF and IFD connectors feature a floating shell, eliminating jamming during mating and separation. Blind engagement of the plug and receptacle pairs is possible, since the connectors allow for linear and angular misalignment. Connectors can be mounted from the rear of the panel or bracket, allowing for ease of installation. All of the in-flight disconnects are backshell ready, and if required, can be provided with the overall system.

EBAD has the capability to pair our connectors with our non-explosive Hold Down & Release Mechanisms (HDRM) and other hardware such as brackets, alignment pins, springs, and harnessing to provide low-shock, high reliability stage and umbilical disconnect assemblies.

Key Features

- Zero, positive, or negative separation force
- Mounts from rear of panel or bracket
- Tolerates wide range of linear and angular misalignment permitting blind engagement
- Standard MIL-DTL-38999 inserts
- Full range of keying configurations
- Service Class H
- Utilizes MIL-C-39029 pin and socket contacts
- AS85049 compatible backshell
- Backshell hardware available
- Complete harness and disconnect assemblies available
- ZSF100 series mates with our Model DF200 and 201 dead face connectors



NEA® Model ZSF and IFD Zero Separation Force Connector

Model ZSF and IFD Configurations

Connector Model	Style	Shell Size[1]	Insert Arrangement[1]	Mates With
ZSF100P	Plug	17	8	DF200SS[2]
		25	7,19, 24, 61, 62	DF201SS[2] & ZF202S
ZSF100	Plug	21	11, 16, 35, 41	ZSF200
IFD100	Plug	19	35	IFD200
		25	4, 20	IFD200
ZSF200	Receptacle	21	11, 16, 35, 41	ZSF100
ZSF202S	Receptacle	25	62	ZSF100P
IFD200	Receptacle	19	35	IFD100
		25	4, 20	IFD100

Notes:
[1]Existing shell sizes and insert arrangements shown. Other MIL-DTL-38999 shell size and insert arrangements available.
[2]See data sheet for NEA® Model DF200 and 201 dead face connectors

Model ZSF and IFD Technical Specifications

Parameter	Capability
Separation Force	0 N (0 lbf) (or adjustable to customer spec)
Engagement Force	90 N (20 lbf)
Linear Misalignment	0.76mm (0.03 in) min
Maximum Angular Misalignment	20° cone
Qualification Temperature Range[1]	-55°C to +200°C
Mass[2]	117 g (0.29 lb)

Notes:
[1]The values presented for qualification temperature range are not a measure of the limits of the device.
[2]Representative of ZSF100 and ZSF200 mated pair, 21-35 insert arrangement with electrical contacts. Contact EBAD for other configurations

Model ZSF and IFD Mechanical Interface

The NEA® Zero Separation Force connector and In-Flight Disconnect mechanical interfaces are compliant with MIL-DTL-38999.

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