

DIAMOND

Fiber Optic Components

CABLE ASSEMBLIES AND ADAPTERS

Diamond has developed an advanced COTS **MIL-38999** connector that demonstrates exceptional performance in demanding optical applications. For the first time, rugged 38999 connectors are available for use with small-core single mode fiber, polarization-maintaining (PM) fiber, and other specialty fiber types.

Built around the innovative **DM4 (Multipurpose Termini)**, the connector incorporates four (4) termini with Diamond's two-component ferrules, assembled with the company's Active Core Alignment (ACA) process for unparalleled core concentricity. Also available are electrical contacts for hybrid E/O applications.

Furthermore, Diamond splice-on termini for repairs can be field terminated with the Diamond ZEUS D50 HE fusion splicer.

FEATURES AND BENEFITS

- ▶ Up to 4 channels on size 13 shells (according to MIL std., 38999 serie III) and to 12 channels on size 25 shells
- ▶ Based on standard 2.5mm PC and APC version Alberinos with integrated spring to prevent termini separation
- ▶ Compatible with tight cable construction, semi loose cable/fibre construction
- ▶ Compatible with several fibre types such as MM, SM, PM, Small core fibers
- ▶ Steady and repeatable low IL and High return loss
- ▶ High and steady ER when terminated with PM fibre
- ▶ IP 67 rated enclosures (Connector and bulkhead)
- ▶ Hybrid, E/O termini. Electrical pins 20 AWG
- ▶ Easy ferrule front-face access for cleaning & inspection
- ▶ Easy termini insertion end removal for field termination and repair

CHARACTERISTICS OF DM4

- ▶ Precise and repeatable pre-alignment, thanks to the well dimensioned hollow guide pins
- ▶ Interacting, space saving pre-alignment hollow guide pins
- ▶ Resilient alignment sleeve protected in the hollow pre-alignment guide pins
- ▶ Alignment sleeves individually removable for easy cleaning
- ▶ Full protection of the optical elements from all external influences such as rotational, bending and/or lateral stress
- ▶ Ability for mechanical keying

MIL-38999 DM4 Family

(Harsh environment)



MIL-38999 DM4 size 13 connector and bulkhead on simplex cables



MIL-38999 DM4 size 25 connector



MIL-38999 DM4 size 25 bulkhead



DM4 (Multipurpose Termini)



DM Termini (Optical - electrical termini)



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Specifications subject to change
without notice

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OPTICAL PERFORMANCES (obtained with the diamond proposed cables)

MEASUREMENT/TEST	MULTIMODE	SINGLE MODE PC/APC	STANDARDS
Insertion loss (std. version)	typ. 0.20 dB max. 0.50 dB	typ. 0.15 dB max. 0.45 dB	IEC 61300-3-4 ($\lambda = 1310 / 1550$ nm)
Insertion loss (fusion version)	typ. 0.20 dB max. 0.50 dB	typ. 0.25 dB max. 0.45 dB	IEC 61300-3-4 ($\lambda = 1310 / 1550$ nm)
Insertion loss (PM version)	-	typ. 0.25 dB max. 0.45 dB	IEC 61300-3-4 ($\lambda = 1310 / 1550$ nm)
Return loss	min. 40 dB	min. 75 dB (APC) min. 50 (PC)	IEC 61300-3-6 ($\lambda = 1550$ nm)
Extinction Ratio	-	typ. 23 dB min. 20 dB	Diamond validated cross polarizers method ($\lambda = 1550$ nm)

ELECTRICAL TESTS

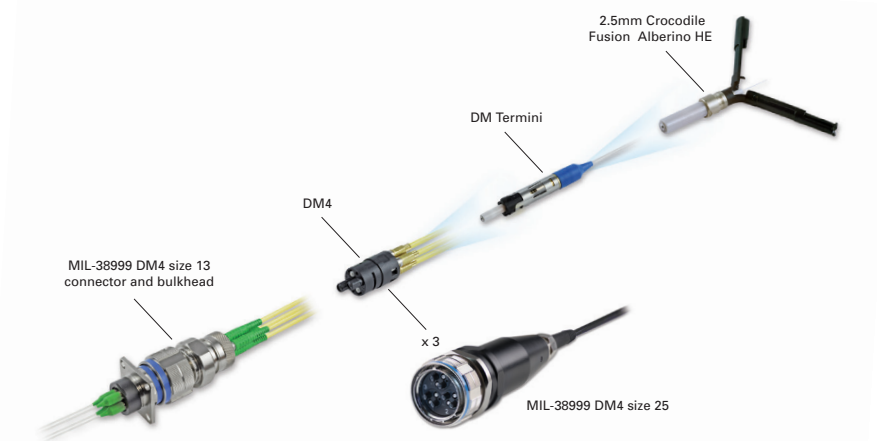
Insulation resistant test	Resistance >200 M Ω	IEC 60512-3-1: 2002 (500V / 60 s)
Voltage Proof test	PASS	IEC 60512-4-1: 2003 (2500V / 60 s / 50 Hz)

MECHANICAL AND ENVIRONMENTAL CONDITIONS

Change of temperature	-55 / + 85 °C	IEC 61300-2-22 ($\lambda = 1310 / 1550$ nm)
Low temperature	-55 °C (96h)	MIL-STD-810G ($\lambda = 1310 / 1550$ nm)
High temperature	+85 °C (96h)	MIL-STD-810G ($\lambda = 1310 / 1550$ nm)
Humidity	95% r.h. / 10 cycles	MIL-STD-810G ($\lambda = 1310 / 1550$ nm)
Temperature shock	-55 / + 85 °C	MIL-STD-810G ($\lambda = 1310 / 1550$ nm)
Low pressure / altitude	110 mbar / 15240 m	MIL-STD-810G ($\lambda = 1310 / 1550$ nm)
Vibration	10/2000 Hz (3h)	MIL-STD-202G ($\lambda = 1310 / 1550$ nm)
Mating durability	500 cycles	IEC 61300-2-2 ($\lambda = 1310 / 1550$ nm)
Cable torsion	+/-180° / 25 cycles	IEC 61300-2-5 ($\lambda = 1310 / 1550$ nm)
Flexing of strain relief	+/-90° / 25 cycles	IEC 61300-2-44 ($\lambda = 1310 / 1550$ nm)
Static side load	2N/90° (5min.)	IEC 61300-2-42 ($\lambda = 1310 / 1550$ nm)
Cable retention on connector side	70N on simplex cable / 800N on multi-fiber cable	IEC 61300-2-4 ($\lambda = 1310 / 1550$ nm)
Cable retention on bulkhead side	70N on simplex cable	IEC 61300-2-4 ($\lambda = 1310 / 1550$ nm)
Fibre retention	5N	IEC 61300-2-4 ($\lambda = 1310 / 1550$ nm)
Shock	1.2m / 26 drops	MIL-STD-810G ($\lambda = 1310 / 1550$ nm)
IP67 protection degree	1m / 30min.	IEC 60529
Salt Spray Exposure for shells*	500 hours	Tested by Amphenol

*For stainless steel or cadmium over nickel plating shells. Cable glands, cable strain relief, cables and internal components are excluded.

DIAMOND Zeus D50 HE FUSION SPLICER FOR FIELD INSALLATION AND REPAIR



FEATURES AND BENEFITS OF THE ZEUS D50 HE KIT

- ▶ Complete set of all tools required for full termination process starting from cable preparation to connector assembly (Including cleaver and automatic stripper with heated jaws for tough secondary coating - 900 μ m)
- ▶ Suitable for use with 3mm-8mm OD multi-channel military and outdoor cables
- ▶ Special cable clamps on bearing slides for secure, easy, and proper cable handling
- ▶ Removable work plate – compatible with stand
- ▶ Hard protective case for harsh environments, IP65 rated
- ▶ Total weight: 15 kg

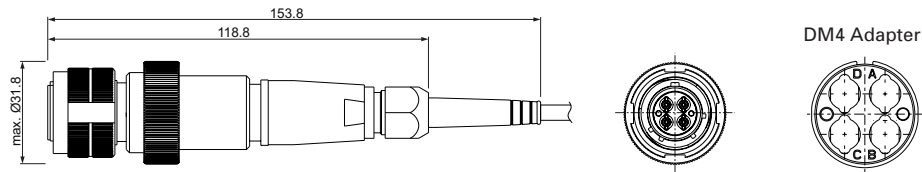


ORDER INFORMATION

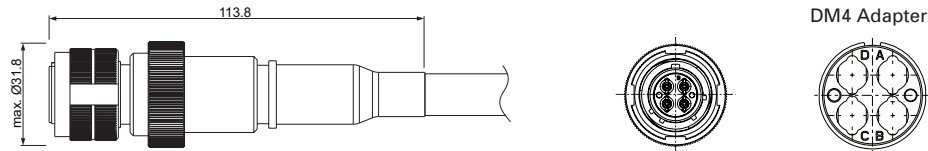
Please contact your nearest local Diamond representative or fill in the contact form available on the www.diamond-fo.com website.

AVAILABLE CONNECTORS AND BULKHEAD CONFIGURATIONS MIL-38999 DM4 size 13

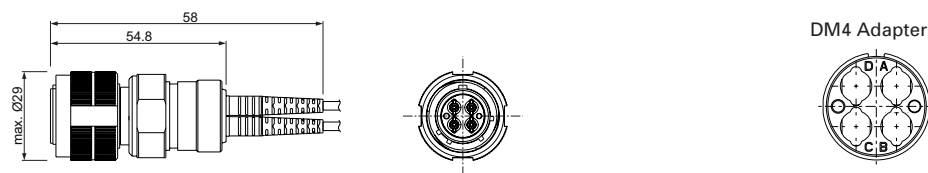
Type C13/1 Connector with mini-break cable (5mm or 5.5mm)



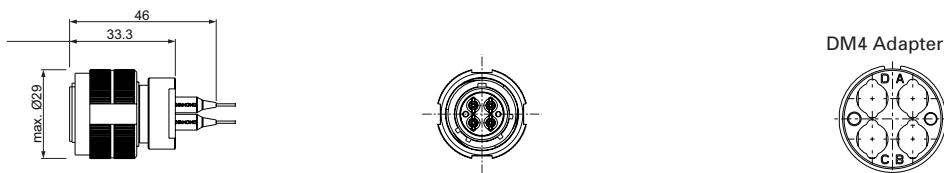
Type C13/2 Connector with protection tube for fiber 900um max.



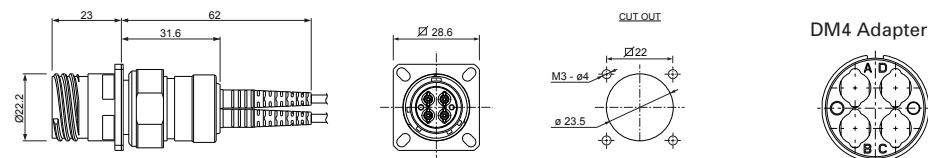
Type C13/3 Connector for simplex cable version (1.6 - 2mm, 2.5 - 3mm) with IP protection



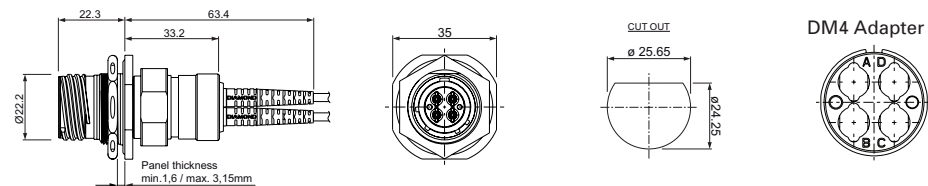
Type C13/4 Connector for simplex cable (1.6-3mm) or fiber 900um max. without IP protection



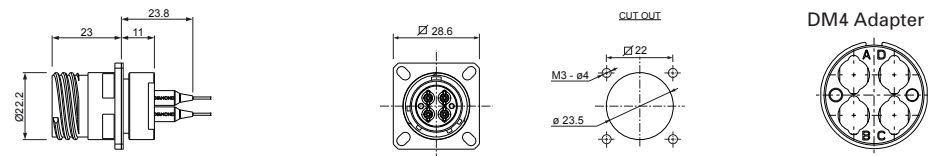
Type B13/1S Bulkhead for simplex cable (1.6 - 2mm, 2.5 - 3mm) with IP protection



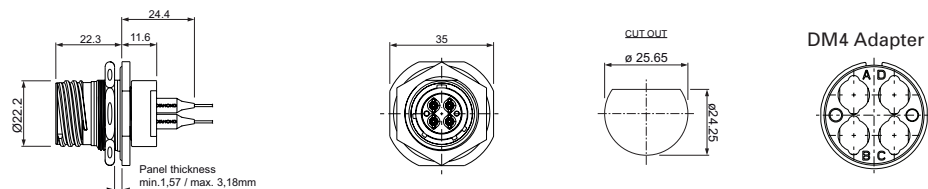
Type B13/1R Bulkhead for simplex cable (1.6 - 2mm, 2.5 - 3mm) with IP protection



Type B13/2S Bulkhead for simplex cable (1.6 - 3mm) or fiber 900um max. without IP protection



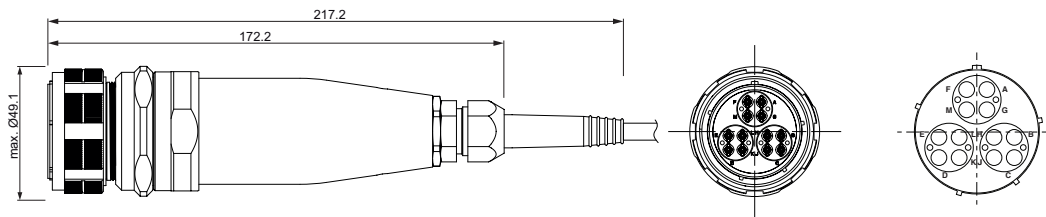
Type B13/2R Bulkhead for simplex cable (1.6 - 3mm) or fiber 900um max. without IP protection



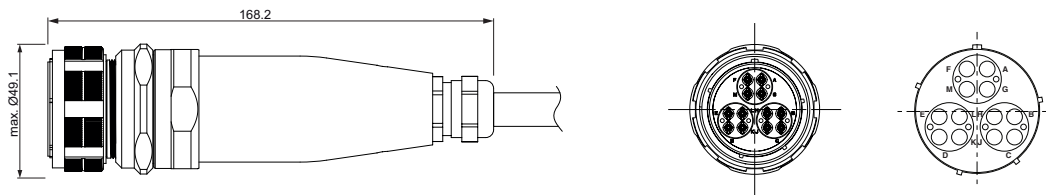
NOTE Connectors are delivered with plastic protection cap. Metal cap is available as option.

AVAILABLE CONNECTORS AND BULKHEAD CONFIGURATIONS MIL-38999 DM4 size 25

Type C25/1 Connector with mini-break cable (6mm - 8.8mm)



Type C25/2 Connector with protection tube for fiber 900um max.



Type C25/3 Connector for simplex cable version (1.6 - 3mm) or fiber 900um max. without IP protection



Type B25/IS Bulkhead for simplex cable (1.6 - 3mm) or fiber 900um max. without IP protection

