

DIAMOND

Fiber Optic Components

CABLE ASSEMBLIES AND ADAPTERS

Diamond has developed the new rugged, reliable, push-pull actuating HE-2000® harsh environment connector with superior optical and mechanical performance for demanding applications.

Built around the innovative DM4 (Multipurpose Termini), the HE-2000® connector incorporates four (4) termini using Diamond's two-component ferrules, assembled with the company's Active Core Alignment (ACA) process for unparalleled fiber core concentricity. Also available are electrical contacts for hybrid E/O applications.

The optical and electrical termini are protected from dust and water with the unique automatic protection shutter IP 65 (no ingress of dust and protected against jets of water) on the plug connector and a manual shutter IP 67 (no ingress dust and watertight the effects of immersion in water for 30 min.) or a automatic shutter IP 54 (limited ingress of dust permitted and protected against water splashes from all directions) on the bulkhead receptacle.

The HE-2000® connector is available for MM, SM (PC/APC), XB Lensed Ferrule (SM) and small-core single mode fiber, polarization-maintaining (PM) fiber, and other specialty fiber types.

Furthermore, Diamond splice-on termini can be field terminated with the Diamond ZEUS D50 HE fusion splicer, allowing for in-service repairs and special installations.

FEATURES AND BENEFITS

- ▶ Automatic protection shutter on the plug connector (manual or automatic on the bulkhead receptacle)
- ▶ Harsh-environment resistant plastic shell, nylon with 25% fiber-glass reinforcement and a Zinc (Zn Al4 Cu1) black chomed frame for the Bulkhead and mating adapter
- ▶ IP class connected: IP67
- ▶ Easy ferrule front-face access for cleaning & inspection
- ▶ Push-pull mechanism for easy mating and handling
- ▶ Electrical pins 20 AWG
- ▶ Easy termini insertion and removal for field termination and repair
- ▶ Mating durability: 500 cycles

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



DIAMOND SA | Via dei Patrizi 5 | CH-6616 Losone - Switzerland
Tel. +41 58 307 45 45 | e-mail info@diamond-fo.com

www.diamond-fo.com

HE-2000®



HE-2000® plug connector on multi-fiber cable



HE-2000® Bulkhead with manual shutter IP 67



HE-2000® Bulkhead with automatic shutter IP 54



Protection cap for HE-2000® connectors IP 67



DM4 (Multipurpose Termini)



DM Termini (Optical and electrical termini)



HE-2000® mating adapter

Specifications subject to change
without notice

BDD 1951414 10_23

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)

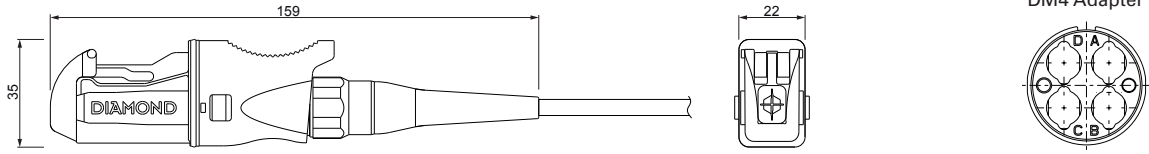
MECHANICAL AND ENVIRONMENTAL CONDITIONS

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	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)
Tensile strength of coupling mechanism	200 N	IEC 61300-2-6 ($\lambda=1310 / 1550$ nm)

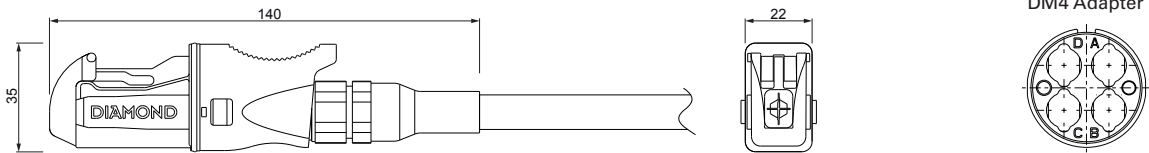
ORDER INFORMATION

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

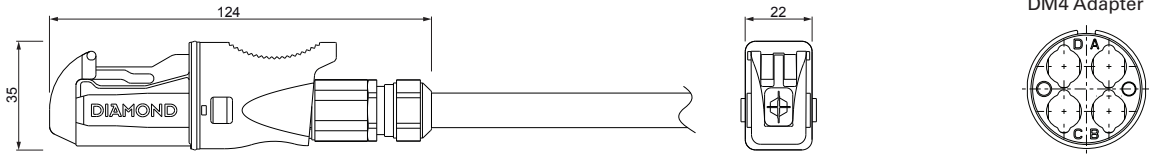
Type C/1 Connector with mini-break cable (ø 5.0 mm or ø 5.5 mm)



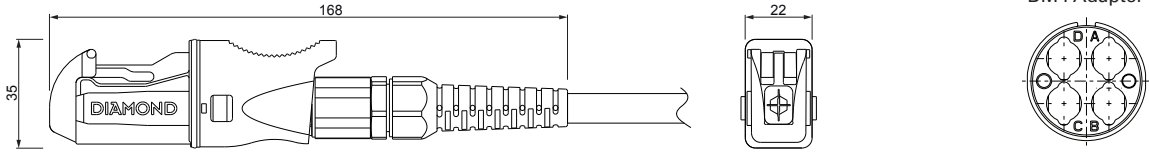
Type C/2 Connector with protection tube for fiber 900µm max.



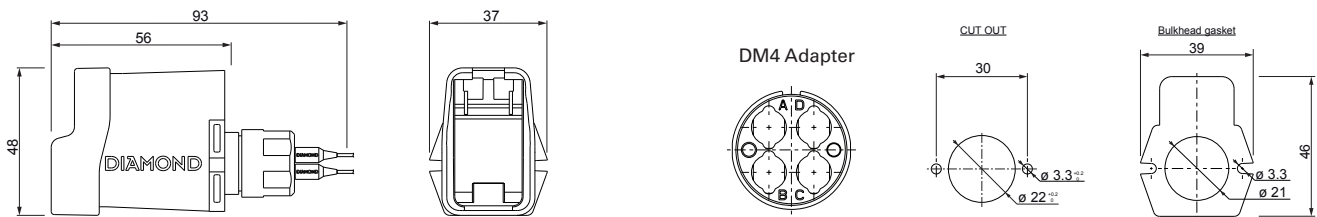
Type C/3 Connector with fan-out cable (ø 8200µm)



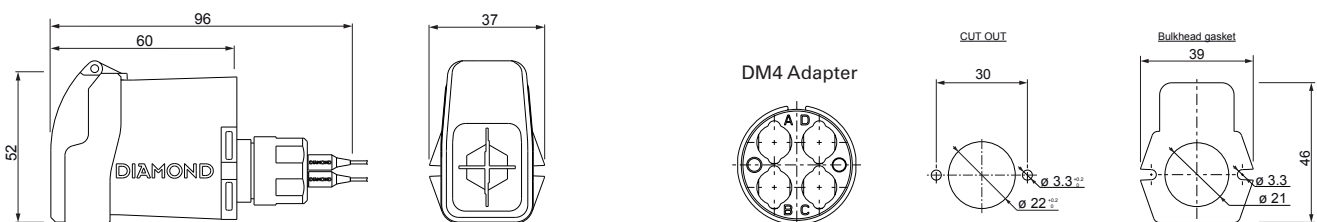
Type C/4 Connector with break-out cable (ø 6500µm - 7700µm)



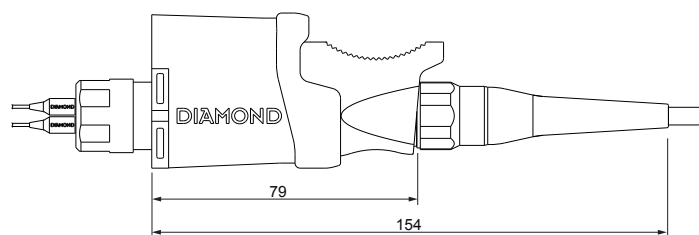
Type B/1 Bulkhead IP 67 for simplex cable (ø 1.6 - 3.0 mm) or fiber 900µm max.



Type B/2 Bulkhead IP 54 for simplex cable (ø 1.6 - 3.0 mm) or fiber 900µm max.



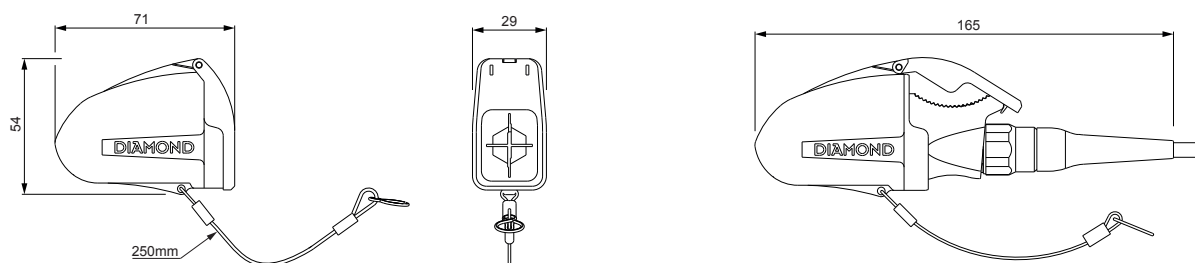
HE-2000® bulkhead and connector



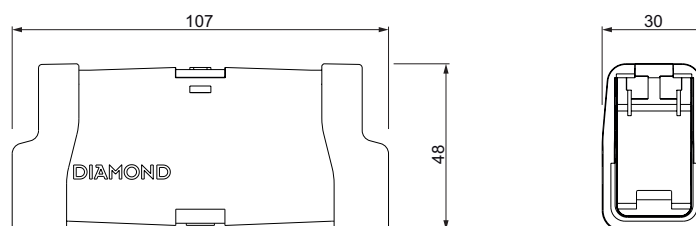
Diamond homologated OCC cables:

- ▶ OCC SM Cable: ITU-T G.652.A DIAMOND P/N 1027987
- ▶ OCC MM Cable: ISO/IEC 11801 OM2 50/125 DIAMOND P/N 1037942
- ▶ OCC MM Cable: ISO/IEC 11801 OM1 62.5/125 DIAMOND P/N 1036565

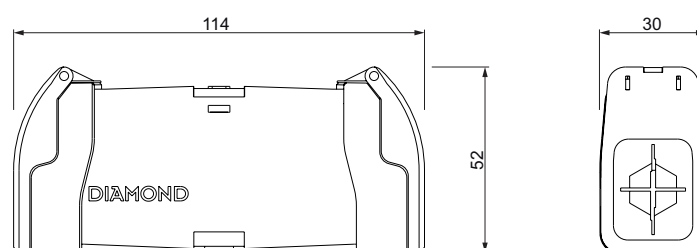
IP67 protection cap for HE-2000® connectors



HE-2000® mating adapter IP67*



HE-2000® mating adapter IP54*



* On request