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
**OPTICAL PERFORMANCES (obtained with the diamond proposed cables)**

<table>
<thead>
<tr>
<th>MEASUREMENT/TEST</th>
<th>MULTIMODE</th>
<th>SINGLE MODE PC/APC</th>
<th>STANDARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion loss (std. version)</td>
<td>typ. 0.20 dB max. 0.50 dB</td>
<td>typ. 0.15 dB max. 0.45 dB</td>
<td>IEC 61300-2-4 (λ = 1310 / 1550 nm)</td>
</tr>
<tr>
<td>Insertion loss (fusion version)</td>
<td>typ. 0.20 dB max. 0.50 dB</td>
<td>typ. 0.25 dB max. 0.45 dB</td>
<td>IEC 61300-2-4 (λ = 1310 / 1550 nm)</td>
</tr>
<tr>
<td>Insertion loss (PM version)</td>
<td>-</td>
<td>typ. 0.25 dB max. 0.45 dB</td>
<td>IEC 61300-2-4 (λ = 1310 / 1550 nm)</td>
</tr>
<tr>
<td>Return loss</td>
<td>min. 40 dB</td>
<td>min. 75 dB (APC) min. 50 (PC)</td>
<td>IEC 61300-3-6 (λ = 1550 nm)</td>
</tr>
<tr>
<td>Extinction Ratio</td>
<td>-</td>
<td>typ. 23 dB min. 20 dB</td>
<td>Diamond validated cross polarizers method (λ = 1550 nm)</td>
</tr>
</tbody>
</table>

**MECHANICAL AND ENVIRONMENTAL CONDITIONS**

- Change of temperature: -55 / + 85 °C
- Low temperature: -55 °C (96h)
- High temperature: +85 °C (96h)
- Humidity: 95% r.h. / 10 cycles
- Temperature shock: -55 / + 85 °C
- Low pressure / altitude: 110 mbar / 15240 m
- Vibration: 10/2000 Hz (3h)
- Mating durability: 500 cycles
- Cable torsion: +/-180° / 25 cycles
- Flexing of strain relief: +/-90° / 25 cycles
- Static side load: 2N/90° (5min.)
- Cable retention on connector side: 70N on simplex cable / 800N on multi-fiber cable
- Cable retention on bulkhead side: 70N on simplex cable
- Fibre retention: 5N
- Shock: 1.2m / 26 drops
- IP67 protection degree: 1m / 30min.
- Salt Spray Exposure for shells*: 500 hours

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

**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 μm)
- 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](http://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 B25/1S**  Bulkhead for simplex cable (1.6 - 3mm) or fiber 900um max. without IP protection