The Simplex MFM Fibre Optic range has been specifically designed to operate in Harsh Environments. The rugged, anti-vibration, corrosion resistant design ensures high environmental and optical performance in a variety of applications in the air, on land, and above / below sea.

The MFM series connector is designed for both singlemode and multimode applications and offers a range of variants to suit different types of ruggedised cabling.

The connector is widely deployed and field proven in naval systems, military communications, submarine applications, IED disposal robots, renewable energy devices, radar systems and many other environments.

Tech Optics has unrivalled experience in the MFM range and can provide components, assemblies, termination tooling and training.

Features and Benefits

- Anti-vibration coupling mechanism
- Silicon 'O' ring environmental sealing
- Keyway polarisation
- Butt joint ceramic ferrules for optimum optical performance
- 7 different key-way options: A, B, C, D, E, N and U.
- Key U is Universal and mates with any other key style.
- Jam nut or flange mount receptacles.
- Insertion loss typically 0.25dB using 62.5/125µm fibre
- Standard 2.5mm ferrule
- Sealed to IP68
- 9/125µm, 50/125µm, 62.5/125µm, 100/140µm, 200/280µm fibre sizes supported
- Available as pre-terminated assemblies

Environmental Performance Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Measurement Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion Loss (typical)</td>
<td>0.25dB with 62.5/125µm fibre (cable and termination dependent)</td>
</tr>
<tr>
<td>Repeatability</td>
<td>0.1dB</td>
</tr>
<tr>
<td>Durability</td>
<td>&gt;500 matings</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>-65°C to +155°C</td>
</tr>
<tr>
<td>Temperature Endurance</td>
<td>1,000 hours @ 150°C as per EN2591 Test C1 Method B</td>
</tr>
<tr>
<td>Gunfire Vibration</td>
<td>As per EN2591 Test D3 Method A</td>
</tr>
<tr>
<td>Shock</td>
<td>As per EN2591 Test D2 Method A</td>
</tr>
<tr>
<td>Salt Mist</td>
<td>500 hours as per EN2591 Test C7</td>
</tr>
<tr>
<td>Sand and Dust</td>
<td>As per EN2591 Test C8</td>
</tr>
<tr>
<td>Humidity</td>
<td>95% RH for 6 hours as per EN2591 C21</td>
</tr>
</tbody>
</table>

Materials

<table>
<thead>
<tr>
<th>Specification</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell</td>
<td>ARCAP</td>
</tr>
<tr>
<td>Ferrule</td>
<td>Zirconia (PC)</td>
</tr>
<tr>
<td>Alignment Sleeve</td>
<td>Zirconia</td>
</tr>
<tr>
<td>O ring seals</td>
<td>Silicone</td>
</tr>
<tr>
<td>Boot</td>
<td>Silicone</td>
</tr>
</tbody>
</table>

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**MFM Simplex Fibre Optic Connector**

**Amphenol Ruggedised Single Channel Fibre Optic Connector**

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**Connector Part Numbering Scheme**

**MFM XX E X – XXX**

**Connector Style**
- **00** Square Flange Receptacle
- **01** Free Receptacle
- **06** Plug
- **07** Jamnut Receptacle
- **20** Two hole fixing

**Keyway Orientation**
- **N** Normal
- **A, B, C, D, E** Universal

**Cable Variant**
- **001** Multimode 50/125µm or 62.5/125µm, tight buffered, 2.75mm Ø cable
- **002** Multimode 50/125µm or 62.5/125µm, tight buffered 6.2mm Ø cable
- **003** Multimode 50/125µm or 62.5/125µm, loose tube, 2.75mm Ø cable
- **004** Multimode 200/280µm Eurofighter cable JN1008, 2.5mm Ø cable
- **005** Multimode 100/140µm, tight buffered, 1.6mm Ø cable
- **006** Singlemode 9/125µm, tight buffered, 2.75mm Ø cable
- **007** Singlemode 9/125µm, tight buffered, 6.2mm Ø cable
- **008** Multimode 50/125µm or 62.5/125µm, tight buffered, 2.75mm Ø cable, santaprene boot
- **017** Multimode 50/125µm or 62.5/125µm, tight buffered 5.4mm Ø cable, 007 crimp sleeve and heatshrink
- **039** Multimode 50/125µm or 62.5/125µm, tight buffered, 1.6mm Ø cable
- **054** Multimode 50/125µm or 62.5/125µm, tight buffered, 1.8mm Ø cable
- **XXX** Many other cable configurations are available – contact Tech Optics to discuss your application

**Example Part Code**

MFM-06EN-001 MFM plug, keyed N, for multimode fibre (e.g. 50/125µm or 62.5/125µm) cable 2.75mm diameter

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Protective Caps

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Connector Type</th>
<th>Attachment</th>
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</thead>
<tbody>
<tr>
<td>960-164-1000</td>
<td>Receptacle</td>
<td>Small 3.7mm eyelet</td>
</tr>
<tr>
<td>960-164-1007</td>
<td>Receptacle</td>
<td>Large 14.8mm eyelet</td>
</tr>
<tr>
<td>960-194-1000</td>
<td>Plug</td>
<td>Large 11.5mm eyelet</td>
</tr>
</tbody>
</table>

Recommended Torque Settings

<table>
<thead>
<tr>
<th>Connector</th>
<th>Component</th>
<th>Torque to</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFM Plug</td>
<td>Rear Nut</td>
<td>15 lbf.in</td>
</tr>
<tr>
<td>MFM Receptacle</td>
<td>Ferrule Assembly</td>
<td>15 lbf.in</td>
</tr>
<tr>
<td>MFM Jamnut</td>
<td>Panel Nut</td>
<td>33 lbf.in</td>
</tr>
</tbody>
</table>

Termination Tool Kits
Tech Optics supplies a variety of termination kits for the MFM connector connector range. Kits can be configured to suit customer requirements for various cable / fibre types, connector types plus test and inspection requirements.

Tech Optics can also provide partial kits and/or individual tools to complement customers existing equipment.

Termination Consumables
Tech Optics stocks a full range of fibre optic termination consumeables including:-
- Polishing Films
- Polishing Pads
- Epoxy
- Cleaning Materials

Test & Inspection Systems
Once terminated it is critical to be able to inspect and test fibre optic assemblies. Multiple options are available depending on customer requirements such as location (lab / field), volume and system performance requirements.

Tech Optics supply inspection probes, microscopes, insertion loss and return loss equipment for testing MFM connector assemblies.

Training
Bespoke MFM training courses are available at Tech Optics dedicated training facility in Tonbridge or customers sites ensuring staff are confident and qualified in the termination, installation, test, inspection and maintenance of the MFM connector range.

For further information and to discuss your application please contact:-
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Specifications subject to change without notice.

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