MediSpec Hybrid Circular MT Connectors provide high-performance, mixed optical and electrical signaling to streamline the number of connectors required in medical systems

The Hybrid Circular MT Cable and Receptacle System combines optical and electrical solutions in one connector. This multifunctional connector provides options for three configurable ports by leveraging the existing circular MT optical connector and receptacle design.

For optical connections, any of the three connector ports can utilize the MT ferrule. For multimode versions, both 50/125 and 62.5/125μm fiber are available.

Mating electrical receptacles feature copper MT ferrules. The copper MT connector utilizes copper MT ferrules with the pins. For additional information visit: www.molex.com/link/medispechybridcircular.html.

Features and Benefits

| Custom-configured connector for dual optical and electrical | Hybrid connector and receptacle contains three configurable ports for combining optical and electrical interfaces enables use with the proven optical MT ferrule and 2-4-8 copper electrical contacts |
| Fiber counts range from 1 to 24 fibers per ferrule | Provides options for different transmission link distances using OS2, OM3, and OM4, multimode and singlenode fibers. |
| Expanded beam MT ferrule option | Reduces optical loss due to contamination, protects fibers from debris, scratching, pitting and makes the fiber easier to clean; long-term connection reliability; tested to over 5000 cycles |
| Copper contacts designed to meet MIL-DTL-83513/MIL-DTL32129 standards | Ethernet transmissions up to 1 Gbps. Additional power and ground options available. Proven robustness for over 500 insertions |
| Copper contacts range from 2 to 8 positions | Copper MT ferrules with 22, 24 and 30 AWG wire in a pin-and-socket format; 22 and 24 AWG contacts deliver up to 3.0A; 30 AWG contacts deliver up to 1.0A; 22, 24 and 30 AWG assemblies will meet Insulation Resistance (IR) at 5000 Megohms; 22/24 and 30 AWG assemblies will meet Dielectric Withstanding Voltage (DWV) at 600V and 250V, respectively. |
| Metal and medical-grade plastic housing | Metal housing provides a robust connector to withstand harsh environments and offers EMI shielding. Plastic housing is light-weight and ideal for sensitive applications. Cross compatibility between metal and plastic housing |
| Custom cable constructions | Allows for use with different cable and conduit types to meet optical and electrical cable requirements for medical applications |
| Circular-to-custom breakout configurations available | Optical MT and LC cables plus electrical MicroFit 3.0, MicroClasp and various RJ-45 jacks available for board-level connectivity provides a complete and reliable end-to-end solution |

Applications

Medical
- Robotic Surgery
- Minimally Invasive Surgery
- Diagnostic Imaging
- Telecommunication

Telecom

Industrial

Aerospace

Diagnostic - IVUS Ultrasound

Robotic Surgery
### Specifications

#### REFERENCE INFORMATION
- **Packaging:** Bag
- **UL File No.:** Plastic Connector is rated UL-94V0
- **Mates With:** Circular Hybrid Receptacles – either plastic or metal
- **Designed In:** Millimeters
- **RoHS:** Yes
- **Halogen Free:** Yes

#### MECHANICAL
- **MT Ferrule Insertion Loss:** 0.75 dB
- **MT Ferrule Return Loss:** -20 dB
- **Copper Contacts:**
  - 2 Contacts: 22 AWG, 600V, 3.0A
  - 4 Contacts: 24 AWG, 600V, 3.0A
  - 8 Contacts: 30AWG, 600V, 1.0A

#### DURABILITY
- **Copper Connectors:** 500 mate/demates
- **Expanded Beam MT Connectors:** up to 5000 mating cycles

#### PHYSICAL
- **Housing:**
  - Metal Circular – Nickel plated aluminum
  - Plastic Circular – Engineering Grade Polymer
- **Ferrule:**
  - Optical: PPS plastic (optional lens)
  - Copper: PEI plastic
- **Operating Temperature:**
  - Connector: -40 to +60 °C
  - Cable: will vary with application and cable type

### Ordering Information

<table>
<thead>
<tr>
<th>Ordering Information</th>
<th>Description</th>
<th>Fiber Type (µm)</th>
<th>Mode</th>
<th>Connectivity</th>
<th>Material</th>
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</thead>
<tbody>
<tr>
<td>Custom – Contact Molex</td>
<td>Circular connector Assembly, 12F, 24F or hybrid - Series 106291</td>
<td>50/125, 62.5/125 9/125</td>
<td>Multimode Single mode</td>
<td>Optical Hybrid</td>
<td>Metal Plastic</td>
</tr>
<tr>
<td>Custom – Contact Molex</td>
<td>Circular Receptacle/Adapter, 12F, 24F or hybrid - Series 106291</td>
<td>50/125, 62.5/125 9/125</td>
<td>Multimode Single mode</td>
<td>Optical Hybrid</td>
<td>Metal Plastic</td>
</tr>
</tbody>
</table>

www.molex.com/link/medispecHybridCircular.html

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Order No. 987650-6771 Rev. 2

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