A PERFECT ALLIANCE.

ODU-MAC® White-Line

ZERO

The dynamic hybrid connector
A PERFECT ALLIANCE.

Creating connections, building alliances, collaborating into the future: Whether two technical components come together to form a unit or people come together to strive for great results – the key is to aspire to achieve superb results. This goal drives our work. **Perfect connections that inspire and deliver on the promises.**
WORLDWIDE CUSTOMER PROXIMITY

ODU GROUP OVERVIEW

- More than 75 years of experience in connector technology
- A turnover of €200 million
- Over 2,300 employees worldwide
- Sales subsidiaries in China, Denmark, France, Germany, Italy, Japan, Korea, Sweden, UK and the US as well as 5 production and logistics sites
- All technologies under one roof: Design and development, machine tool and special machine construction, injection, stamping, turning, surface technology, assembly and cable assembly

As of February 2019

CERTIFICATES & APPROVALS

- ISO 9001
- IATF 16949
- ISO 13485
- ISO 14001
- ISO 50001
- Wide range of UL, CSA, VG and VDE approvals
- UL Wiring Harnesses certified

For a complete list of our certifications and approvals, please visit our website.
THE ODU-MAC® ZERO – SMALL SIZE, LARGE VARIETY

When it comes to performance, the ODU-MAC® ZERO is nearly on par with its “big brother”. Need a space-saving hybrid connector which can combine several different media? The ZERO from the ODU-MAC® product series is your ideal choice. Its symmetric housing geometry enables a generous range – up to 9 units – of signals, power, data-rate and coax modules. In place of an aluminum frame, the plastic housing parts have integrated rails, making the use of magnetic components no longer necessary.

This light, compact multitasker is the result of significant developmental work, with its stylish design making it an innovative eye-catcher.

ODU-MAC® ZERO – THE MINI DYNAMIC PLASTIC HOUSING

- Suitable for a wide range of ODU-MAC® modules
- Can be fitted with 9 units
- Up to 60,000 mating cycles
- 3 different cable outlets: straight, 45°, 90°
- Compact, dynamic housing design
- Simple, safe housing locking (Break-Away function/emergency release)
- Especially easy to clean
- IP54
THE MODULAR MULTITASKER

This is how a solid, effective, and attractive overall connection is created – one whose functionality simply can’t be surpassed. Confusion due to an excessive number of connections? This challenge belongs to the past – because the customized ODU-MAC® ZERO is today’s solution.

PRODUCT FEATURES OVERVIEW

- Housing made of 2 plastic half-shells which also form the frame
- Easy cleaning thanks to fewer dirt-collecting edges and additional screw cover
- Ergonomic housing design with lateral grip recess
- Integrated guiding pins/bushes
- Low mating/demating forces with approx. 7 N without contacts
- Bio-compatibility upon request
- Coding: by guiding pins (Ø 4 mm, length 16 mm), housing geometry, coding modules and color-coded cable bend relief varieties
- Black or gray housing upon request

![Image of modular multitasker features]

- Housing element: plastic half-shell including rails for modular inserts
- Guiding pins
- Screw cover
- Torx screws TX10
- Strain relief/shield connection
- Grip recesses for optimal grip (easy-clean)
MODULARITY AND ERGONOMIC DESIGN FOR THE SMALLEST OF SPACES

CONNECTOR HOUSING FOR ASSEMBLY CABLE EXIT 0°

CONNECTOR HOUSING FOR ASSEMBLY CABLE EXIT 90°

CONNECTOR HOUSING FOR ASSEMBLY CABLE EXIT 45°

FULLY COMPATIBLE

RECEPTACLE
For integration in the device

Cable-to-cable hood available upon request.
CONNECTOR HOUSING FOR ASSEMBLY

Connector housing for mounting on the cable with different cable entries. ODU-MAC® rail for installing the insulator is already integrated in the housing.

SNAP-IN LOCKING [BREAK-AWAY FUNCTION]

<table>
<thead>
<tr>
<th>Part number</th>
<th>Cable exit</th>
<th>Size</th>
<th>Units[^1]</th>
</tr>
</thead>
<tbody>
<tr>
<td>656.560.004.001.000</td>
<td>90°</td>
<td>ZERO</td>
<td>9 units</td>
</tr>
<tr>
<td>656.560.006.001.000</td>
<td>0°</td>
<td>ZERO</td>
<td>9 units</td>
</tr>
<tr>
<td>656.560.002.001.000</td>
<td>45°</td>
<td>ZERO</td>
<td>9 units</td>
</tr>
</tbody>
</table>

**TECHNICAL DATA**

- **Color of housing**: White
- **Black/Gray on request**
- **Locking cycles**: 60,000
- **Material**: PC Lexan (PEI on request)
- **Protection class**: IP54
- **Operating temperature**: −40 °C to +125 °C
- **Cable-Ø**: 8 to 14.5 mm

The cable bend relief must be ordered separately.

[^1]: The frame is already permanently integrated and consists of nine units.  ^[2]: IEC 60529:2013 (VDE 0470-1:2014).
For integration into the device.

**SNAP-IN LOCKING (BREAK-AWAY FUNCTION)**

**CODING AND PACKAGING DIMENSIONS**
Slender, light design with easy, safe handling:

- Maximum mating security through mechanical coding (D-shape)
- Compact, space-saving design with two mounting options

**SNAP-IN LOCKING**
Easy mating, automatic locking, quick demating option when necessary:

- Quick, reliable housing locking thanks to snap fits and sealing strip (frictional locking principle)
- Low mating/demating forces (approx. 7 N for the housing) guarantee quick connection demating (Break-Away function/emergency release)

**AFFIXING MODULES TO DEVICE PARTS**
All module varieties can be quickly, easily and securely integrated:

- Insert module and press the 2 half-shells together
- Affix the device part with screws

**MOUNTING FROM BELOW**

```
M4 × 10 mm
```

Mounting with standoffs (not included) is preferable.

**MOUNTING FROM ABOVE**

```
M4 [4 ×]
```

Cable-to-cable hood available upon request.
SILICONE BEND RELIEFS

• For cable diameters of 8–14.5 mm (ODU MINI-SNAP® size 4)
• Ideal for color coding
• White, Gray and Black are standard stock – other colors available upon request

<table>
<thead>
<tr>
<th>Part number</th>
<th>Dim. L</th>
<th>Cable jacket (Ø outside)</th>
</tr>
</thead>
<tbody>
<tr>
<td>704.023...965.080</td>
<td>60</td>
<td>8</td>
</tr>
<tr>
<td>704.023...965.100</td>
<td>60</td>
<td>10</td>
</tr>
<tr>
<td>704.023...965.120</td>
<td>60</td>
<td>12</td>
</tr>
<tr>
<td>704.023...965.140</td>
<td>60</td>
<td>14</td>
</tr>
</tbody>
</table>

Color code | Color | RAL no.¹ (similar) |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>202</td>
<td>Red</td>
<td>3020</td>
</tr>
<tr>
<td>203</td>
<td>White²</td>
<td>9010</td>
</tr>
<tr>
<td>204</td>
<td>Yellow</td>
<td>1016</td>
</tr>
<tr>
<td>205</td>
<td>Green</td>
<td>6029</td>
</tr>
<tr>
<td>206</td>
<td>Blue</td>
<td>5002</td>
</tr>
<tr>
<td>207</td>
<td>Gray²</td>
<td>7005</td>
</tr>
<tr>
<td>208</td>
<td>Black²</td>
<td>9005</td>
</tr>
</tbody>
</table>

¹ Due to variations in raw materials, colors may differ slightly from RAL numbers. ² Standard colors with short delivery period.
OVERVIEW OF ALL MODULES

SIGNAL

14 contacts / Contact-∅: 1.02 mm
- Operating voltage¹ 320 V
- Rated impulse voltage³ 2,500 V
- Max. continuous current¹ 13.5 A at 0.5 mm²
- Mating cycles min. 100,000

10 contacts / Contact-∅: 0.76 mm
- Operating voltage¹ 250 V
- Rated impulse voltage³ 1,500 V
- Max. continuous current¹ 11 A at 0.38 mm²
- Mating cycles min. 100,000

10 contacts / Contact-∅: 0.7 mm
- Operating voltage¹ 32 V
- Rated impulse voltage³ 1,500 V
- Max. continuous current¹ 6 A at 0.38 mm²
- Mating cycles min. 5,000

6 contacts / Contact-∅: 1.02 mm
- Operating voltage¹ 400 V
- Rated impulse voltage³ 3,000 V
- Max. continuous current¹ 13.5 A at 0.5 mm²
- Mating cycles min. 100,000

5 contacts / Contact-∅: 1.5 mm
- Operating voltage¹ 500 V
- Rated impulse voltage³ 2,500 V
- Max. continuous current¹ 27 A at 1.5 mm²
- Mating cycles min. 100,000

SIGNAL AND POWER

NON-MAGNETIC VERSION FOR SIGNAL AND POWER AVAILABLE UPON REQUEST

POWER

4 contacts / Contact-∅: 2.41 mm
- Operating voltage¹ 500 V
- Rated impulse voltage³ 3,000 V
- Max. continuous current¹ 41 A at AWG 12
- Mating cycles min. 100,000

3 contacts / Contact-∅: 3 mm
- Operating voltage¹ 500 V
- Rated impulse voltage³ 3,000 V
- Max. continuous current¹ 58 A at 6 mm²
- Mating cycles min. 100,000

3 contacts / Contact-∅: 3 mm
- Operating voltage¹ 2,500 V
- Rated impulse voltage³ 10,000 V
- Max. continuous current¹ 58 A at 6 mm²
- Mating cycles min. 100,000

COAX

4 contacts / 50 Ω
- Frequency range 0 to 1.3 GHz
- Mating cycles min. 60,000

2 contacts / 50 Ω
- Frequency range 0 to 9.0 GHz
- Mating cycles min. 100,000

2 contacts / 50 Ω
- Frequency range 0 to 2.4 GHz
- Mating cycles min. 100,000

**COAX**

- **2 contacts / 50 Ω**
  - Frequency range: 0 to 2.8 GHz
  - Mating cycles: min. 100,000

- **2 contacts / 75 Ω**
  - Frequency range: 0 to 3.0 GHz
  - Mating cycles: min. 100,000

**HIGH-SPEED CONNECTOR** / Shielded implementation / suitable for all common bus systems

- **2 to 10 contacts / size 0**
  - Mating cycles: min. 10,000
  - Selected inserts are suitable and certified for data rates of up to 5 Gbit/s [USB® 3.2 Gen 1x1].

- **2 to 14 contacts / size 1**
  - Mating cycles with springwire: min. 10,000, min. 60,000
  - Selected inserts are suitable and certified for data rates of up to 1 Gbit/s.

**ADDITIONAL MODULES**

- Blank modules
- Spacer modules
- Coding modules
- Pin protection modules

**SPECIAL MODULES**

- Lens connector for POF
  - Lens with HFBR ferrule
  - Cable type: POF 980/1,000
  - Insertion loss < 4 dB with polished fiber

- 8-channel module (coax option)
  - Up to 510 MHz
  - 100,000 mating cycles
  - Easy to assemble

---

1These ODU specific connectors can transmit common data transmission protocols such as USB® 2.0, USB® 3.2 Gen 1x1, FireWire®, and Ethernet, but they are not USB®, FireWire®, and Ethernet-standard connectors.
HEADQUARTERS
ODU GmbH & Co. KG
Pregelstraße 11, 84453 Mühldorf a. Inn, Germany
Phone: +49 8631 6 156-0, Fax: +49 8631 6156-49, E-mail: sales@odu.de

SALES LOCATIONS
ODU (Shanghai)
International Trading Co., Ltd.
Phone: +86 21 58347828-0
E-mail: sales@odu.com.cn
www.odu.com.cn

ODU Denmark ApS
Phone: +45 2233 5335
E-mail: sales@odu-denmark.dk
www.odu-denmark.dk

ODU France SARL
Phone: +33 1 3935-4690
E-mail: sales@odu.fr
www.odu.fr

ODU Italia S.R.L.
Phone: +39 331 8708847
E-mail: sales@odu-italia.it
www.odu-italia.it

ODU Japan K.K.
Phone: +81 3 6441 3210
E-mail: sales@odu.co.jp
www.odu.co.jp

ODU Korea Inc.
Phone: +82 2 6964 7181
E-mail: sales@odu-korea.kr
www.odu-korea.kr

ODU Romania Manufacturing S.R.L.
Phone: +40 269 704638
E-mail: sales@odu-romania.ro
www.odu-romania.ro

ODU Scandinavia AB
Phone: +46 176 18262
E-mail: sales@odu.se
www.odu.se

ODU UK Ltd.
Phone: +44 330 002 0640
E-mail: sales@odu-uk.co.uk
www.odu-uk.co.uk

ODU USA, Inc.
Phone: +1 805 484-0540
E-mail: sales@odu-usa.com
www.odu-usa.com

Further information and specialized representatives can be found at:
www.odu-connectors.com/contact

PRODUCTION AND LOGISTICS SITES
Germany Otto Dunkel GmbH

China ODU (Shanghai) Connectors Manufacturing Co.Ltd

Mexico ODU Mexico Manufacturing S.R.L. de C.V.

Romania ODU Romania Manufacturing S.R.L.

USA ODU North American Logistics

All dimensions are in mm. Some figures are for illustrative purposes only. Subject to change without notice. Errors and omissions excepted. We reserve the right to change our products and their technical specifications at any time in the interest of technical improvement. This publication supersedes all prior publications. This publication is also available as a PDF file that can be downloaded from www.odu-connectors.com