CIRCULAR CONNECTORS

Maximum performance and reliability to fit the smallest available space – a solution made to measure!

HIGH-QUALITY SOLUTIONS
MADE OF METAL & PLASTIC

SHORT OVERVIEW
CIRCULAR CONNECTORS – MORE THAN JUST ONE SOLUTION

Circular connectors are among the most popular interface solutions for establishing and releasing connections intuitively. They provide maximum efficiency and reliability during both installation and operation. ODU offers a number of versatile solutions in the shape of the ODU MINI-SNAP®, ODU MINI-SNAP® PC, ODU MEDI-SNAP®, ODU MINI-MED®, ODU AMC®, and ODU Threaded Connector series, which are customized for your particular application and suitable for a whole host of ambient conditions.

No matter whether you want to transmit power, signals, data, or even fluids – our circular connectors, which come in robust metal or plastic housings with either an efficient quick-locking function (Push-Pull/Break-Away) or extremely vibration-resistant screw locking, will impress you with their outstanding quality and functionality.

Our broad portfolio of circular connector products provides our customers effective solutions, both standardized and customized, which are tailored to their particular needs.
**CONNECTORS FOR MILITARY AND SECURITY APPLICATIONS**

**SMALLER — LIGHTER — FASTER**

The ODU AMC® and ODU Threaded Connector series have been designed especially for use under extreme ambient conditions. These incredibly robust series of metal circular connectors leave absolutely nothing to be desired in terms of toughness and transmission reliability. They are in their element under even the most extreme field conditions: rugged, watertight, and easy to clean.

A low weight, low-reflection surfaces, excellent EMC properties, and a compact construction make these connectors the ideal elements for military and security technology applications.

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**BENEFITS**

- Easy installation thanks to Push-Pull, Break-Away or screw-locking technology
- Light, small, and easy to handle
- Highly resistant to shocks and vibrations
- Customized contact configuration
- Reliable data transmission
- Outstanding shielding performance
- System solution: cable assembly and overmolding

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<table>
<thead>
<tr>
<th></th>
<th>ODU AMC® Break-Away</th>
<th>ODU AMC® Push-Pull</th>
<th>ODU AMC® Easy-Clean</th>
<th>ODU AMC® High-Density</th>
<th>ODU Threaded Connector</th>
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<tbody>
<tr>
<td><strong>Mating cycles</strong></td>
<td>Up to 5,000</td>
<td>Up to 5,000</td>
<td>Up to 5,000</td>
<td>Up to 5,000</td>
<td>Up to 2,000</td>
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<tr>
<td><strong>Locking principle</strong></td>
<td>Break-Away</td>
<td>Push-Pull</td>
<td>Break-Away</td>
<td>Break-Away</td>
<td>Screw locking</td>
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<tr>
<td><strong>Coding options [mechanical]</strong></td>
<td>Pin/groove</td>
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<td>Pin/groove</td>
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<tr>
<td><strong>Coding options [optical]</strong></td>
<td>Dot marking, color coding</td>
<td>Dot marking, color coding</td>
<td>Dot marking, color coding</td>
<td>Dot marking, color coding</td>
<td>Color coding</td>
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<tr>
<td><strong>Max. number of contacts</strong></td>
<td>37</td>
<td>55</td>
<td>19</td>
<td>40</td>
<td>26</td>
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<tr>
<td><strong>Transmission options</strong></td>
<td>Signal, data, power</td>
<td>Signal, data, power</td>
<td>Signal</td>
<td>Signal, data</td>
<td>Signal, data, power</td>
</tr>
<tr>
<td><strong>Available termination technologies</strong></td>
<td>Solder, PCB</td>
<td>Solder, PCB</td>
<td>Solder, PCB</td>
<td>Solder, PCB</td>
<td>Solder, PCB</td>
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<tr>
<td><strong>Max. IP protection in unmated condition</strong></td>
<td>IP68</td>
<td>IP68</td>
<td>IP68</td>
<td>IP68</td>
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<tr>
<td><strong>Max. IP protection in mated condition</strong></td>
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ODU MINI-SNAP® is the all-rounder among ODU’s circular connectors. The connector series in this portfolio are characterized by their robust metal housings with various different surfaces, their proven Push-Pull locking technology, and the fact they offer a wide variety of available transmission options.

ODU MINI-SNAP® products also stand out thanks to a multitude of termination options, which give users the flexibility they need to complete installation in minimal time. This makes ODU MINI-SNAP® products the go-to choice for many applications in the medical, test and measurement, industrial, military and security markets.

### BENEFITS
- Outstanding functional reliability due to robust metal housing
- Able to withstand even the most challenging environmental conditions, such as ambient temperatures of –40 °C to +120 °C
- Ease of connections – thanks to Push-Pull quick-locking technology, connections are established and released in < 1 second.
- Minimal space requirements thanks to interfaces with diameters of just 6.4 mm
### PLASTIC CIRCULAR CONNECTORS – LIGHTWEIGHT, WITH INTUITIVE HANDLING

**EFFICIENT – CONVENIENT – CUSTOM-FIT**

ODU’s plastic connectors have already proven in a multitude of application areas. Especially for mobile devices or applications with strict space constraints, it is essential to have products that are lightweight and make the most efficient use of space. For this reason, plastic in particular is becoming an increasingly important material for connectors.

Either as a molded system solution ensuring plug and play functionality or an attachable connector enabling flexible assembly – the ODU plastic connector portfolio offers the right connection for a variety of applications.

### BENEFITS

- 75% lighter than metal connectors
- Good grip due to special surface structure
- Highly economical solution
- High chemical and thermal resistance
- Minimal requirements in terms of installation and maintenance
- Space-saving product design
- Totally hygienic due to a capability of complete sterilisation

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<thead>
<tr>
<th></th>
<th>ODU MEDI-SNAP®</th>
<th>ODU MINI- SNAP® PC</th>
<th>ODU MINI-MED®</th>
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<tbody>
<tr>
<td><strong>Mating cycles</strong></td>
<td>&gt; 2,000</td>
<td>2,000/5,000</td>
<td>&gt; 5,000</td>
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<tr>
<td><strong>Locking principle</strong></td>
<td>Push-Pull</td>
<td>Break-Away</td>
<td>Push-Pull</td>
</tr>
<tr>
<td><strong>Coding options [mechanical]</strong></td>
<td>Pin/groove</td>
<td>Pin/groove</td>
<td>Half-shell</td>
</tr>
<tr>
<td><strong>Coding options [optical]</strong></td>
<td>Arrow marking, color coding</td>
<td>Arrow marking</td>
<td>Arrow marking</td>
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<tr>
<td><strong>Max. number of contacts</strong></td>
<td>26</td>
<td>26</td>
<td>27</td>
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<tr>
<td><strong>Transmission options</strong></td>
<td>Signal, power, fluids [liquids and gases]</td>
<td>Signal, power</td>
<td>Signal</td>
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<tr>
<td><strong>Available termination technologies</strong></td>
<td>Solder, crimp, PCB</td>
<td>Solder</td>
<td>Solder, crimp, PCB</td>
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<td>IP68</td>
<td>IP50</td>
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<tr>
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<td>IP64</td>
<td>IP67</td>
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</table>
ODU offers you high-quality connectors and comprehensive service for the complete assembly. From connectors to watertight potting, we provide the complete system as an one-stop-shop solution.

**BIT BY BIT TO THE PERFECT CONNECTION**

**PUSH-PULL LOCKING**

The proven Push-Pull locking ensures establishing connections easily in less than a second. It is *self-securing* – this means that an accidental release by pulling on the cable can be precluded. During the mating process, the connector’s locking claws will lock into place in the corresponding grooves in the receptacle and form a dependable connection between the connector and the receptacle.

Consequently, when the connection is properly established, an unintentional demating of the connection by pulling on the cable cannot take place. The connection can only be released deliberately, by just pulling back the connector’s outer sleeve.

**BREAK-AWAY FUNCTION**

The efficient Break-Away function allows for an easy establishment of connections within fractions of a second just like the Push-Pull locking. But furthermore it also features an *emergency release* which enables demating the connection when needed by pulling on the cable.

During mating, the connector’s locking claws will lock into place in the corresponding grooves in the receptacle and form a dependable connection between the connector and the receptacle. The sloping shape of the locking claws ensures the “breaking away” of the connection when the connector or cable is pulled with a defined force.

**SCREW LOCKING**

The extremely robust screw locking technology guarantees maximum connection reliability even under the most challenging ambient conditions, such as when used outdoors or in military and security applications.

Thanks to a *quick-locking function*, *3-start thread*, and *latching mechanism*, the connection is reliably protected against even the strongest vibrations in the mated condition.
Mechanical

- Pin/groove
- Half-shell
- Insulator

Optical

- Color coding
- Arrow marking
- Dot marking

CABLE ASSEMBLY

The properties of the cables used to make connections and how those cables terminate at connectors have a decisive impact on the performance of connection systems. Therefore, an ideal connection system is achieved when the contact, termination technology, and cable assembly are all in perfect harmony.

**This can be done in the following ways:**
- System solutions molded using the high-pressure or hot-melt method for plug and play application
- Customized assembly solutions with individual labeling and application-specific component modifications if required – for maximum flexibility

APPLICATION-SPECIFIC SOLUTIONS

As diverse as our customers are also the requirements of the standards that are relevant for their particular applications. ODU circular connectors are already able to fulfil the following standards:

- **DIN EN 13060** (Autoclavability)
- **IEC 60601-1** (Touch proof for medical devices)
- **IEC 60512** (Hermetic sealing)
- **UL 1977** (Certified safety)
- **IEC 60664-1** (Dielectric strength)
- **VARIOUS MILITARY STANDARDS**