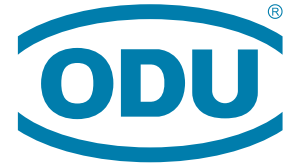


CATHETER & ENDOSCOPE-READY CONNECTIVITY

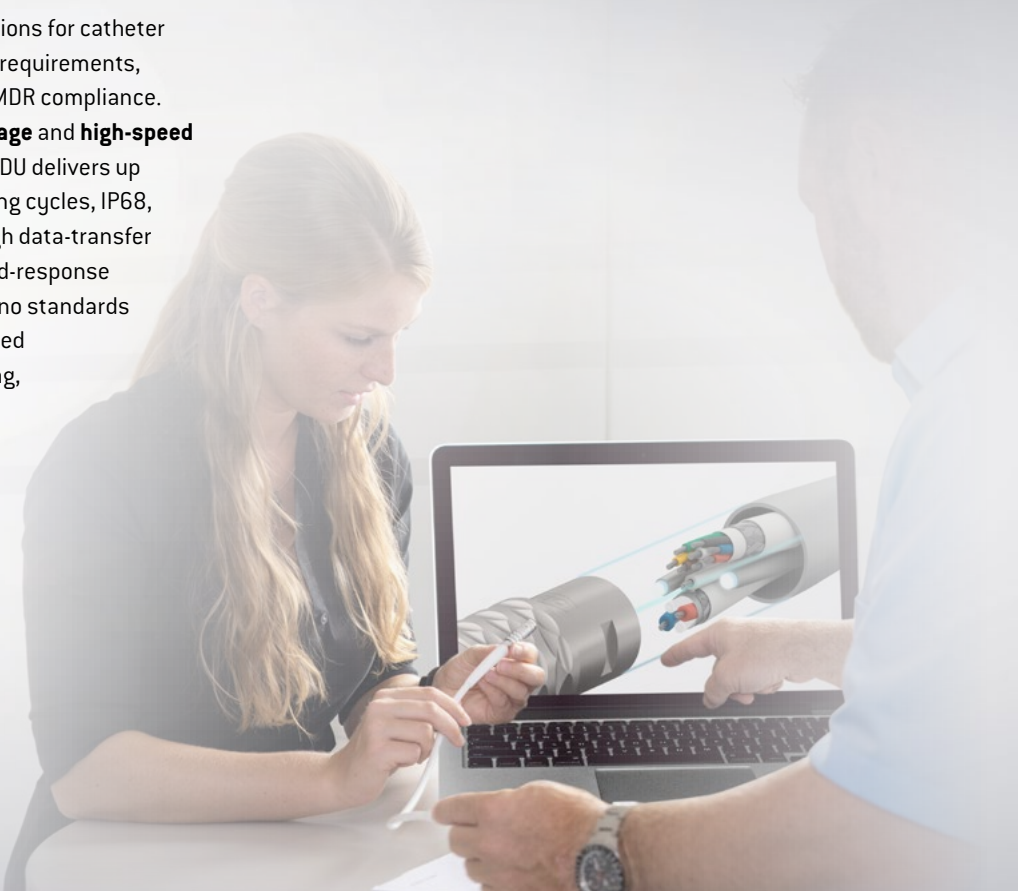
High-voltage, high-speed, shielded, touchproof



When developing catheter and endoscope systems, speed, customization, and compliance are essential. As a global supplier, ODU goes beyond connectors by offering rapid, tailored solutions designed to meet your specific challenges – from concept to production – helping you accelerate time-to-market without compromising quality or regulatory requirements.

ODU offers high-performance, customizable connector solutions for catheter and endoscope applications that meet stringent regulatory requirements, including IEC 60601-1 & 1-2, FDA approval, ISO-13485 and MDR compliance. With expertise in developing shielded, touchproof, **high-voltage** and **high-speed** connectors like the [ODU MEDI-SNAP®](#) and [ODU MINI-SNAP®](#), ODU delivers up to 3.5 kV, short impulse voltage up to 8 kV, up to 5,000 mating cycles, IP68, optimal signal integrity enabling large data volumes and high data-transfer rates – ideal for demanding medical environments. Our rapid-response engineering supports fully customized development where no standards or off-the-shelf solutions exist. Complemented by value-added services such as **cable assembly**, **fiber optic** and UDI marking, ODU ensures reliable signal, **high-voltage** and **high-speed transmission** while helping catheter and endoscope manufacturers overcome critical challenges in time-to-market, compliance, and system integration.

The contact arrangement of an ODU data transmission connector differs from a standard data transmission connector due to the robust ODU specific design. However, the ODU design meets the electrical specifications that are derived from the respective standard data transmission protocol.



ODU CONNECTOR SOLUTIONS

For over 80 years, ODU has been developing innovative connectivity technology – today we are a trusted partner for leading catheter and endoscope manufacturers worldwide.

BUILT FOR CATHETERS:

- **High-voltage capability:** high-voltage solutions for up to 3,500 V AC and short impulse voltage up to 8 kV
- **Shielded / touchproof** interconnects engineered for medical environments
- **Durability:** up to IP68 rated and 5,000 mating cycles to ensure long-lasting performance
- **Compliance:** designed to meet IEC 60601-1, FDA, and MDR standards, guaranteeing safety and reliability
- **Customizable connectors:** rapid-response engineering support and fast prototyping
- **Cable assembly integrated solutions:** including fiber optic, silicone and UDI marking

BUILT FOR ENDOSCOPES:

- **Maximum patient safety** with shielded, push-pull, and touch-proof connectors for endoscopes, camera heads, CCUs, and video scopes.
- **Reliable signal & data** for 4K medical video, HDMI®, USB®, and fiber optic in disposable and reusable endoscopes.
- **Durable and long-lasting** connectors for **single-use** and **multi-use** devices with high mating cycles.
- **Regulatory compliance:** IEC 60601-1 (Patient protection, creepage & clearance), IEC 60601-1-2 (EMC shielding), ISO-13485, UL and / or CE, FDA, and MDR standards for faster approvals.
- **Rapid prototyping** and customizable connectors, including autoclavable and shielded designs.
- **Complete solutions** with **cable assemblies**, **fiber optic** integration, silicone insulation, and UDI marking.

ODU CIRCULAR CONNECTOR SOLUTIONS

ODU MINI-SNAP®

- IEC 60601-1 (2 MOPP / 2 MOPP) compliant and EMI shielded configurations
- Sterilizable
- Push-pull locking or break-away function
- Pin and groove or half shell coding
- 2 – 40 contacts with 3 termination types: solder, crimp and PCB
- Transmission to various requirements, signal, power, **high-voltage**, and **fiber optic**



ODU MEDI-SNAP®

- Lightweight, push-pull or break-away solution with up to 7 different colors
- Disposable break-away solutions
- Transmission to various media: signal, power, **high-voltage**, and **fiber optic**
- Fully sterilizable plastic housing
- Available with 360° shielding
- ESD protected



ODU DISPOSABLE CONNECTORS

The ODU MEDI-SNAP® Disposable products offer a reliable and economical limited use solution for large-volume projects that can be used for at least 25 mating cycles.

Tailored to your application

- Large selection of different numbers of pin count
- Various sizes
- Large selection of cables on request
- Various colors on request

ODU offers solutions for the following applications

- Endoscopy
- Patient monitoring
- Respirator
- Dermatology

And many more

Further advantages at a glance

Intermateable with the ODU MEDI-SNAP® series – mating connectors are:

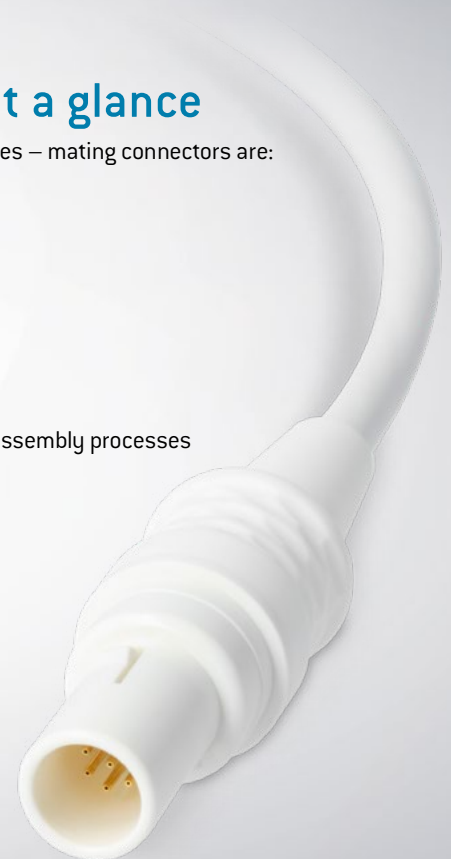
- Sterilizable, autoclavable
- Durable – up to 5.000 mating cycles

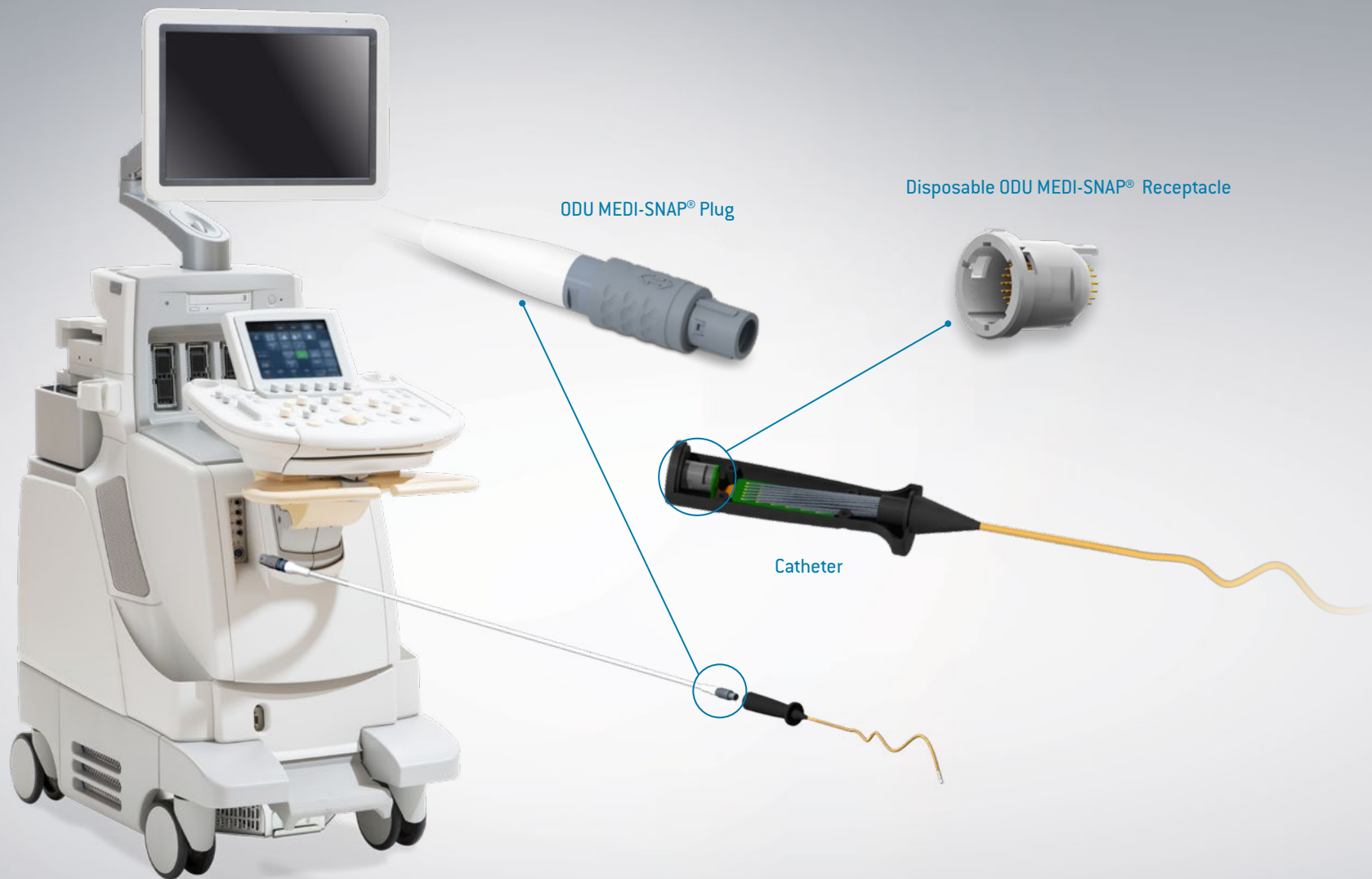
IEC 60601-1 compliant:

- Up to 2 MOPP / 2 M00P
- Up to 15 kV ESD test voltage

Total cost of ownership in focus:

- Optimized manufacturing technologies / assembly processes
- Complete assembled system solutions



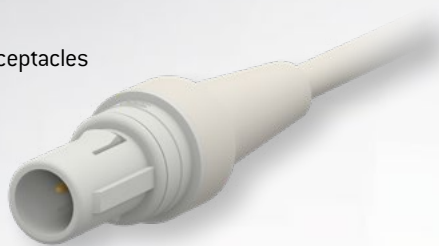


EXAMPLES FOR DISPOSABLE SOLUTIONS

ODU MEDI-SNAP®

Break-away cable assembly
size 1 and 2

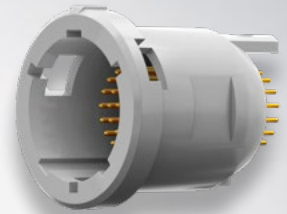
- Intermateable with reusable receptacles



ODU MEDI-SNAP®

Snap-in receptacle size 2

- Style GB
- Up to 34 contacts (high density)
- 2 M00P / 1 M0PP



ODU MEDI-SNAP®

Snap-in receptacle size 1

- Style G2
- Up to 14 contacts
- Match also with metal plugs



ODU MINI-MED®

Plug cable assembly and panel mount receptacle

- Up to 6 contacts
- Smallest footprint



ODU HIGH-VOLTAGE CONNECTORS

High-voltage solutions for up to 3.5 kV and short impulse voltage up to 8 kV. Touch protection in accordance with IEC 60601-1 (up to 2 MOPP / 2 MOPP)



ODU MEDI-SNAP® size	Pin count high voltage	Pin count low voltage	Max. continuous peak voltage HV to HV [kV] ¹	Max. transient peak voltage HV to HV [kV] ²	Max. continuous peak voltage HV to LV [kV] ¹	Max. transient peak voltage HV to LV [kV] ²
2	8	4	7.9	9.9	7.9	9.9
2	10	2	8.9	11.2	5.4	6.9
2	2	15	8	10	5.2	6.5
3.5	2	4	15	20	9.4	12
3.5	6	4	7.9	9.9	7.9	9.9
3.5	10	0	7.9	9.9	7.9	9.9
3.5	16	4	9.8	12.6	6	7.9

¹ Voltage CL — Acc. to DIN EN IEC 60664-1 Table F.2 (transient peak over-voltages) (condition A in homogeneous field, pollution degree 2)

² Voltage CL — Acc. to DIN EN IEC 60664-1 Table F.8 (continuous peak voltages) (condition A in homogeneous field)

EXAMPLES FOR HIGH-VOLTAGE SOLUTIONS



- Fitted with 2 HV contacts (3.5 kV AC) and 4 LV or signal contacts
- The HV contacts can transmit up to 5 kV peak



- Transmission of 10 kV peak HV-HV and 7 kV peak HV-LV



- Fitted with 16 HV contacts and 4 LV contacts
- Transmission of 9 kV peak HV-HV and 5 kV peak HV-LV



- Operating voltage of 450 V AC/DC, short pulses up to 630 V peak

Silicone cable assembly integrated solutions

- New surface with unique haptics – no stick-slip effect
- Up to 500 autoclave cycles
- Bend protection due to special shape of overmolding
- LSR and HTV processes available
- Maximum alternating bending strength
- Halogen- and latex-free



Buy online at our distributors



High-speed cable assembly integrated solutions

- Large data volumes and high data-transfer rates
- Optimal signal integrity
- ODU connectors and cables are optimally matched and tested
- Standard data technology and development of customized solutions
- Pre-assembled cables
- USB®, HDMI®, Dataport, Ethernet options available
- [ODU MINI-SNAP®](#) Series L & K
- [ODU-MAC® Blue-Line](#)
- [ODU MEDI-SNAP®](#)

ODU MODULAR CONNECTOR SOLUTIONS

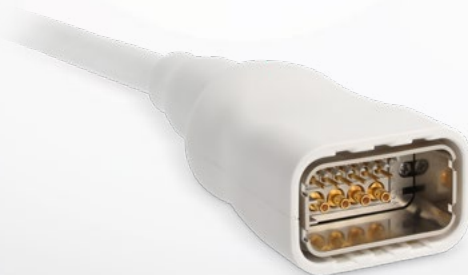
ODU-MAC[®] ZERO

- Ergonomic one-handed operation
- 4 different cable outlets: straight, right angle, 45° or in-line
- Quick separation with snap-in locking
- Break-away function / emergency release
- Bio-compatibility upon request
- Suitable for a wide range of ODU-MAC[®] modules including coax
- Up to 60,000 mating cycles
- Up to 70 contacts



ODU-MAC[®] PUSH-LOCK

- Ergonomic one-handed operation
- Space-saving due to high packing density
- Easy to clean design
- Protection class IP67
- Customized laser marking with logo or code according to the UDI



Value-added services



Rapid prototyping and one-to-one engineering support



Custom connector capabilities



Cable assembly solutions including fiber optic and silicone



UDI marking to simplify regulatory traceability and documentation

All our connectors are subjected to rigorous internal and external testing – including cleaning, EMI, biocompatibility, bend cycle endurance, RoHS / REACH compliance, and guaranteed Cr(VI)-free finishes.

Expertise in medical applications

Certifications

- ISO 13485:2016: Medical devices – Quality management systems – requirements for regulatory purposes
- IEC 60601-1: Medical electrical equipment
- IEC 60664-1:2007: Coordinated insulation for equipment within low-voltage systems
- ISO 9001:2015-09: Quality management systems
- ISO 10993-5: Cytotoxicity test in accordance with ISO 10993-5
- ISO 14644-1:2015

Custom connector capabilities

- The ODU product development and design teams work with you to create connector systems that respond to all your requirements. We create new, optimized connections for your application – by combining your vision and our knowledge.
- Integrated EEPROMs
- Short lead times
- FEM simulations
- Customized geometries, surfaces and inserts
- Fast in-house prototyping
- Local engineering support
- Complete solution including **cable assembly**

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.

ODU CATHETER & ENDOSCOPE-READY CONNECTIVITY / B / 0126 / US

This publication is also available as a PDF file that can be downloaded from www.odu-connectors.com