A PERFECT ALLIANCE.

# ODU-MAC® Blue-Line

A new performance class.
Up to 2,500 V, 12 bar, 10 Gbit/s, > 10,000 mating cycles and 12.0 GHz

MANUAL MATING
AUTOMATIC DOCKING

## SHORT OVERVIEW

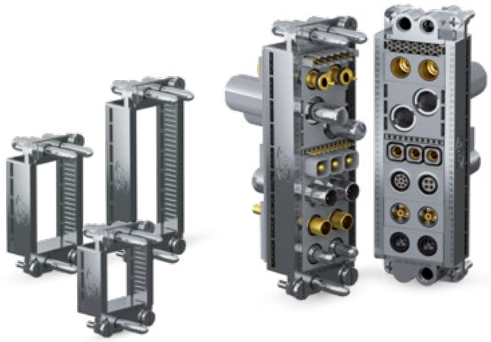
ODU-MAC® BLUE-LINE

ODU-MAC® SILVER-LINE | ODU DOCK SILVER-LINE  ODU-MAC® WHITE-LINE

# YOUR CUSTOMIZED CONNECTION

Configure your ODU-MAC® Blue-Line online: **www.odu-mac.com**

The ODU-MAC® Blue-Line is a convenient, hybrid manual-connector solution comprising a stable frame, various modules and a housing. Its modular design enables it to combine many individual connectors in one ODU-MAC® Blue-Line. The proven ODU spindle locking in the new standard plastic housing provides the ODU-MAC® Blue-Line with a truly unique selling point on the market.



## MANUAL MATING

Configuration can be customized and includes Cable Assembly, offering many options which leave nothing to be desired.

### 4 TYPES OF LOCKING

First, select your locking type by choosing between **spindle, lever or Push-Pull locking.**

### DIFFERENT CONNECTOR HOUSINGS

According to the locking principle you choose, you then select the plastic or metal housing best suited to your requirements: **cable hood, cable hood XXL, cable hood wide, RAPID housing or PUSH-LOCK housing**.

### RECEPTACLE SELECTION

Depending on your requirements for the receptacle and connector housing, you then choose between **bulk-head mounted housing, surface mounted housing, cable-to-cable hood or PUSH-LOCK receptacles**.

## AUTOMATIC DOCKING

There are 4 different frame sizes to choose from for automatic docking.

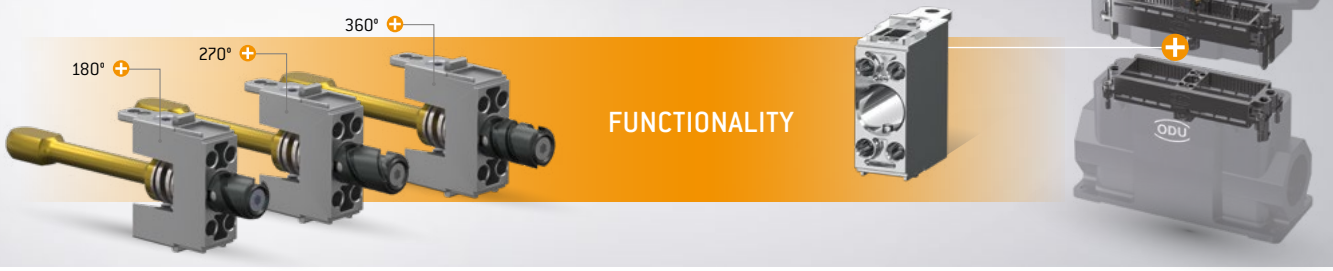
### 4 DOCKING FRAMES

| Size | Units |
|---|---|
| 1 | 12 |
| 2 | 18 |
| 3 | 26 |
| 4 | 37 |

**Tolerance compensation radial:** von +/– 0.6 mm
**Tolerance compensation axial:** min. 0.1 mm

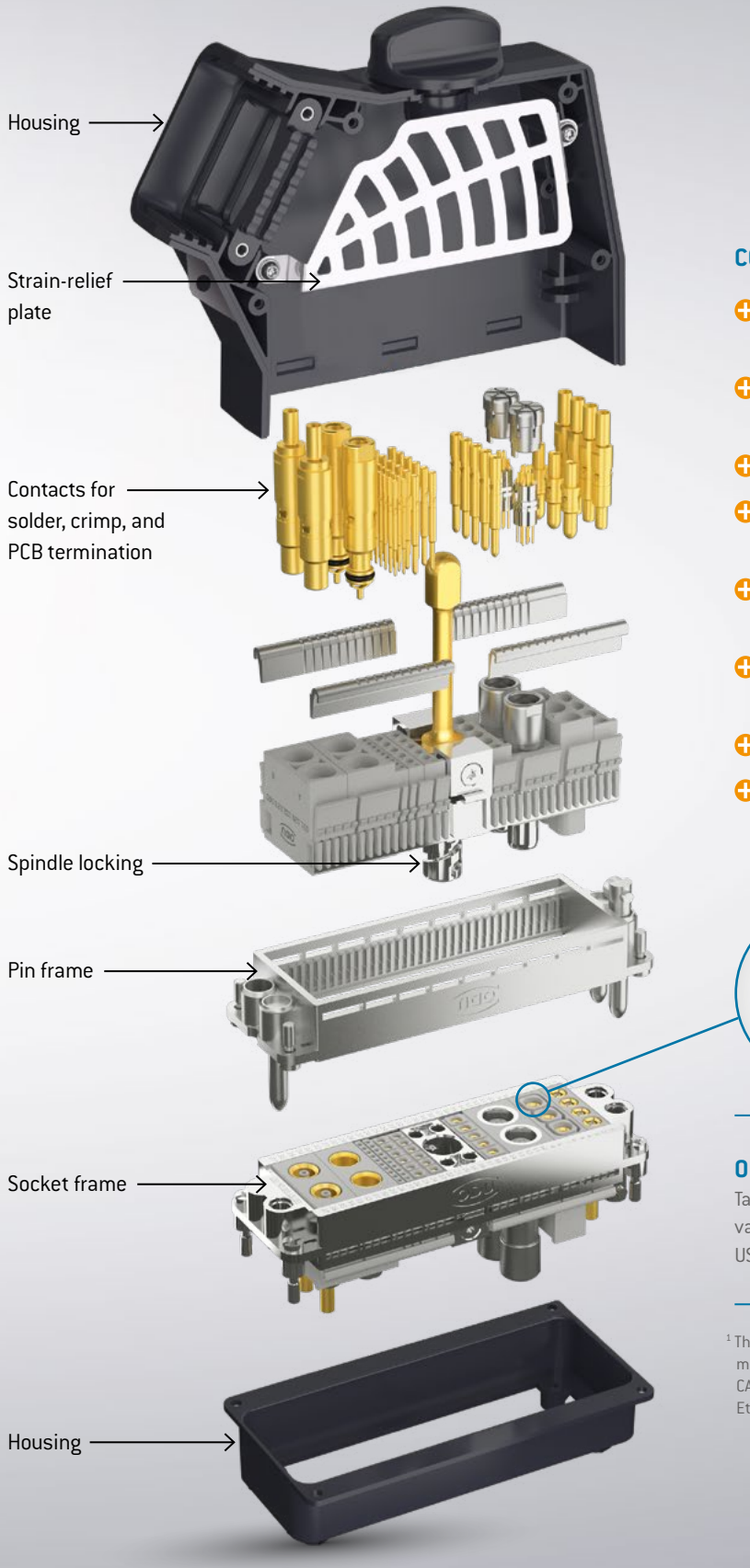
## SPINDLE LOCKING

Quick-action locking system with **10,000 locking cycles**. If required, the simple front replacement set (spindle exchange set) enables a simple adjustment of the spindle geometry. Module for installation in ODU-MAC® Blue-Line frames for housings.



# THE PRINCIPLE OF MODULAR DESIGN

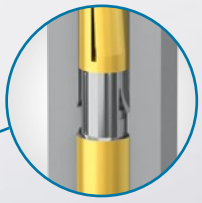
This overview provide you an insight into the modularity of ODU-MAC®. For more detailed information, please visit our website or consult our ODU-MAC® Blue-Line catalog.




**10.000**
Mating cycles and more

## CONVINCING – THE ODU-MAC® BLUE-LINE

- **High-quality, manual connector solution** with a variety of housing variants
- **Various locking options** (spindle, lever and Push-Pull locking)
- **Highest packing density**
- **Easy handling:** the simplest clip assembly and removal of the module without tools
- Simplest removal of the **crimp-clip contact** (when already assembled)
- Separate PCB termination module for an **effective contact**
- **Numerous data transmission modules**
- **Including Cable Assembly**



Removable contacts with clip principle

## OUTSTANDING – FOR EVERY NEED

Take a closer look at the following pages to discover the variety of transmission methods we offer, such as USB® 2.0[1], USB® 3.2 Gen 1x1[1], FireWire®[1], CAT $6_A$[1] and Ethernet[1].

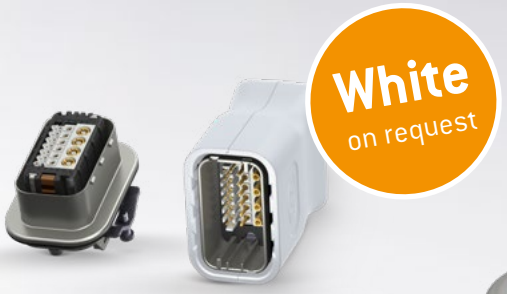
[1] These ODU specific connectors can transmit common data transmission protocols such as USB® 2.0, USB® 3.2 Gen 1x1, FireWire®, CAT $6_A$ and Ethernet, but they are not USB®-, FireWire®-, CAT- and Ethernet-standard connectors.

Simply scan the QR code to download the catalog.

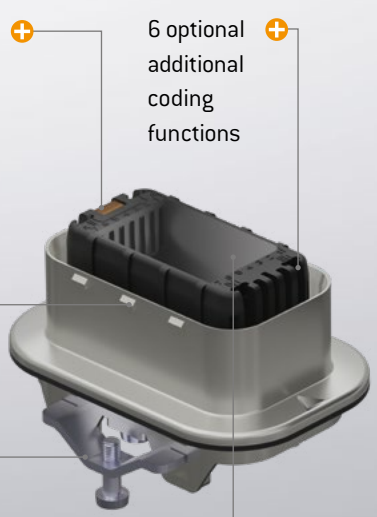
# ODU-MAC® PUSH-LOCK Blue-Line

## Maximum packing density in the smallest installation space

The compact, sealed ODU-MAC® PUSH-LOCK housing with Push-Pull locking is based on the ODU-MAC® Blue-Line. 7 units can be custom-fitted with hybrid connector configurations offering International Protection class IP67. The ergonomic one-handed operation, modular design, and user friendliness of the PUSH-LOCK housing are what set it apart. A total of 6 optional coding functions and the tried-and-tested push-pull locking principle ensure mating is reliable and secure. This modular rectangular connector benefits from the decades of experience obtained through ODU push-pull circular connectors.




- M25 cable outlet including Cable Assembly
- Protective cover connector
- Ergonomic one-handed operation
- Push-Pull locking
- > 5.000 mating cycles
- International Protection class IP67 (mated)



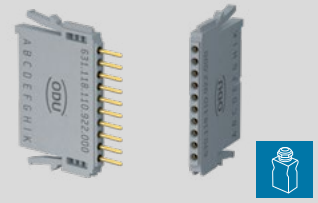
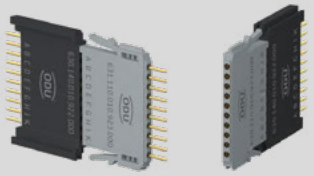
- PE termination
- 6 optional additional coding functions
- **Hybrid connector:** signal, power, HF signals (coax), compressed air, fluid coupling, data transmission
- Hidden mounting solution
- Can be fitted with 7 units

- Protective cover receptacles

Modules marked with this symbol can be used in the PUSH-LOCK

# MODULE OVERVIEW

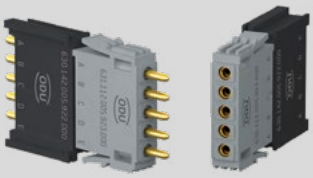
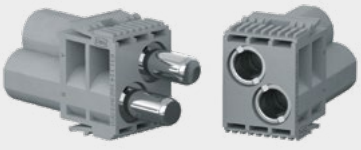
Modules marked with this symbol can be used in the PUSH-LOCK; note the space requirements.

| | Modules | Description | Units/width | Features |
|---|---|---|---|---|
| Signal |  | 20 contacts<br><br>Contact-Ø:<br>0.7 mm | 2 Units<br>4.8 mm | Operating voltage[1] 250 V<br>Rated surge voltage[1] 2,000 V<br>Max. continuous current[2] 11 A for 0.38 mm²<br>Pollution degree[1] 2<br>Mating cycles min. 10,000<br>⊕ Maximum packing density and pin protection |
| |  | 10 contacts<br><br>Contact-Ø:<br>0.7 mm | 1 Unit<br>2.4 mm | Operating voltage[1] 320 V<br>Rated surge voltage[1] 2,500 V<br>Max. continuous current[2] 11 A for 0.38 mm²<br>Pollution degree[1] 2<br>Mating cycles min. 10,000<br>⊕ Maximum packing density |
| |  | 6 contacts<br><br>Contact-Ø:<br>1.3 mm | 2 Units<br>4.8 mm | Operating voltage[1] 400 V<br>Rated surge voltage[1] 2,500 V<br>Max. continuous current[2] 19.5 A for 1 mm²<br>Pollution degree[1] 2<br>Mating cycles min. 10,000 |
| |  | 5 contacts<br><br>Contact-Ø:<br>2 mm | 3 Units<br>7.2 mm | Operating voltage[1] 630 V<br>Rated surge voltage[1] 3,000 V<br>Max. continuous current[2] 33 A for 2.5 mm²<br>Pollution degree[1] 2<br>Mating cycles min. 10,000 |
| PCB termination modules |  | 20 contacts<br><br>Contact-Ø:<br>0.7 mm | 2 Units<br>4.8 mm | Operating voltage[1] 250 V<br>Rated surge voltage[1] 2,500 V<br>Max. continuous current[2] 7 A<br>Pollution degree[1] 2<br>Mating cycles min. 10,000<br>⊕ Maximum packing density and pin protection |
| |  | 10 contacts<br><br>Contact-Ø:<br>0.7 mm | 1 Unit<br>2.4 mm | Operating voltage[1] 320 V<br>Rated surge voltage[1] 2,500 V<br>Max. continuous current[2] 7 A<br>Pollution degree[1] 2<br>Mating cycles min. 10,000<br>⊕ Maximum packing density |

[1] According to IEC 60664-1:2007 (VDE 0110-1:2008) for pollution degree 2
[2] For a definition of max. continuous current, see ODU-MAC® Blue-Line catalog page 172 at **www.odu-connectors.com/downloads/catalogues/**

# MODULE OVERVIEW

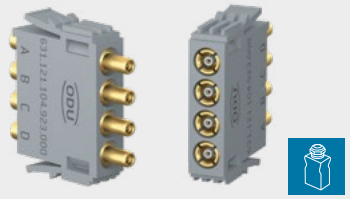
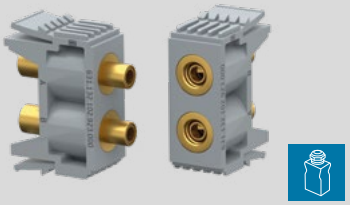
Modules marked with this symbol can be used in the PUSH-LOCK; note the space requirements.

| | Modules | Description | Units/width | Features |
|---|---|---|---|---|
| PCB termination modules |  | 6 contacts<br>Contact-∅:<br>1.3 mm | 2 Units<br>4.8 mm | Operating voltage[1] 400 V<br>Rated surge voltage[1] 2,500 V<br>Max. continuous current[2] 13 A<br>Pollution degree[1] 2<br>Mating cycles min. 10,000 |
| |  | 5 contacts<br>Contact-∅:<br>2 mm | 3 Units<br>7.2 mm | Operating voltage[1] 630 V<br>Rated surge voltage[1] 2,500 V<br>Max. continuous current[2] 25 A<br>Pollution degree[1] 2<br>Mating cycles min. 10,000 |
| Power |  | 3 contacts<br>Contact-∅:<br>3.5 mm | 4 Units<br>9.6 mm | Operating voltage[1] 2,500 V<br>Rated surge voltage[1] 10,000 V<br>Max. continuous current[2] 58 A for 6 mm²<br>Pollution degree[1] 2<br>Mating cycles min. 10,000<br>High voltage |
| High current |  | 2 contacts for turned contacts with ODU LAMTAC®[3]<br>Contact-∅:<br>5 mm | 5 Units<br>12 mm | Operating voltage[1] 400 V<br>Rated surge voltage[1] 4,000 V<br>Max. continuous current[2] 108 A for 16 mm²<br>Pollution degree[1] 2<br>Mating cycles min. 10,000 |
| |  | 2 contacts for turned contacts with ODU LAMTAC®[3]<br>Contact-∅:<br>8 mm | 9 Units<br>21.6 mm | Operating voltage[1] 400 V<br>Rated surge voltage[1] 3,000 V<br>Max. continuous current[2] 150 A for 25 mm²<br>Pollution degree[1] 2<br>Mating cycles min. 10,000<br>Maximum current |
| |  | 1 contact for turned contacts with ODU LAMTAC®[3]<br>Contact-∅:<br>12 mm | 8 Units<br>19.2 mm | Operating voltage[1] 2,500 V<br>Rated surge voltage[1] 10,000 V<br>Max. continuous current[2] 225 A for 50 mm²<br>Pollution degree[1] 2<br>Mating cycles min. 10,000 |

[1] According to IEC 60664-1:2007 (VDE 0110-1:2008) for pollution degree 2
[2] For a definition of max. continuous current, see ODU-MAC® Blue-Line catalog page 172 at **www.odu-connectors.com/downloads/catalogues/**
[3] Contact with lamella technology

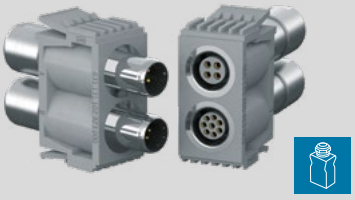
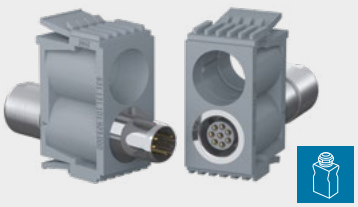
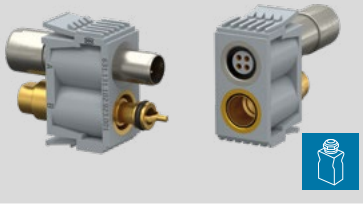
# MODULE OVERVIEW

Modules marked with this symbol can be used in the PUSH-LOCK; note the space requirements.

| | Modules | Description | Units/width | Features |
|---|---|---|---|---|
| Coax |  | 4 contacts for 50 Ω coax contacts | 3 Units<br>7.2 mm | Frequency range 0–2.8 GHz<br>Mating cycles min. 10,000<br>High packing density |
| |  | 2 contacts for 50 Ω coax contacts | 5 Units<br>12 mm | Frequency range 0–4 GHz<br>Mating cycles min. 10,000 |
| |  | 2 contacts for 50 Ω coax contacts SMA termination | 5 Units<br>12 mm | Frequency range 0–12 GHz<br>Mating cycles min. 10,000<br>12 GHz |
| |  | 2 contacts for 75 Ω coax contacts | 5 Units<br>12 mm | Frequency range 0–2.7 GHz<br>Mating cycles min. 10,000 |
| Compressed air and fluid coupling |  | 2 contacts | 5 Units<br>12 mm | Tube-∅ inner-∅: max. 4 mm<br>outer-∅ Push-in: max. 6 mm<br>Mating cycles min. 10,000<br>12 bar |
| |  | 2 contacts | 5 Units<br>12 mm | Tube-∅ M5 to max. 4 mm<br>Mating cycles min. 10,000<br>10 bar |

# MODULE OVERVIEW

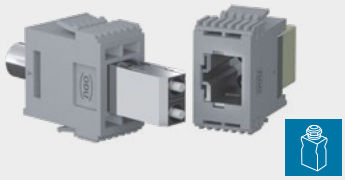
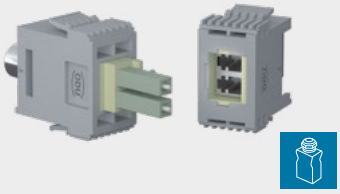
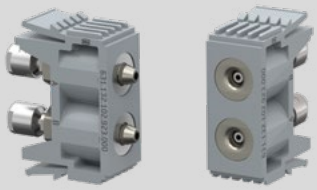
Modules marked with this symbol can be used in the PUSH-LOCK; note the space requirements.

| | Modules | Description | Units/width | Features |
|---|---|---|---|---|
| Compressed air and fluid coupling |  | 2 contacts | 5 Units<br>12 mm | Tube-∅ M5 inside thread<br>Mating cycles min. 10,000<br>+ 10 bar |
| Shielded feedthrough/ high-speed connector |  | 2 contacts | 6 Units<br>14.4 mm | Mating cycles min. 10,000<br>Suitable for all common bus systems<br>CAT 5[1], USB® 2.0[1], USB® 3.2 Gen 1x1[1],<br>FireWire®[1], Ethernet[1] |
| |  | 1 contact | 6 Units<br>14.4 mm | Mating cycles min. 10,000<br>Suitable for all common bus systems<br>CAT 5[1], USB® 2.0[1], USB® 3.2 Gen 1x1[1],<br>FireWire®[1], Ethernet[1] |
| |  | 1 contact<br>RJ45 insert | 7 Units<br>16.8 mm | Mating cycles min. 5,000<br>10 Gigabit Ethernet[1] according to<br>IEEE 802.3 an-2006<br>CAT 5[1], CAT $6_A$[1] according to<br>ANSI/TIA IEIA-568-32-10 |
| Combination module |  | 2 contacts<br>High-speed & coax | 6 Units<br>14.4 mm | Mating cycles min. 10,000<br>Coax 50 Ω/4 GHz or 75 Ω/2.2 GHz<br>Selected inserts are suitable and qualified for data rates up to 5 Gbit/s. Suitable for CAT 5[1], USB® 2.0[1], USB® 3.2 Gen 1x1[1], FireWire®[1], Ethernet[1] |
| |  | 2 contacts<br>High-speed &<br>compressed air | 6 Units<br>14.4 mm | Mating cycles min. 10,000<br>Compressed air 12 bar<br>Selected inserts are suitable and qualified for data rates up to 5 Gbit/s. Suitable for CAT 5[1], USB® 2.0[1], USB® 3.2 Gen 1x1[1], FireWire®[1], Ethernet[1] |

[1] These ODU specific connectors can transmit common data transmission protocols such as USB® 2.0, USB® 3.2 Gen 1x1, FireWire®, CAT 5, CAT $6_A$ and Ethernet, but they are not USB®-, Firewire®-, CAT- and Ethernet-standard connectors.

# MODULE OVERVIEW

Modules marked with this symbol can be used in the PUSH-LOCK; note the space requirements.

| | Modules | Description | Units/width | Features |
|---|---|---|---|---|
| Fiber optic (on request) |  | 2 contacts for SC insert | 7 Units<br>16.8 mm | Single mode (SM)<br>Multi mode (MM)<br>Mating cycles min. 5,000 |
| |  | 2 contacts for LC insert | 7 Units<br>16.8 mm | |
| |  | 2 contacts for fiber-optic contact for plastic fiber (POF) | 5 Units<br>12 mm | Mating cycles min. 10,000<br>Insertion loss typical 1.5 dB for 670 nm |
| Blank modules |  | Blank modules | 1<br>2.4 mm<br>3<br>7.2 mm<br>5<br>12 mm | Used to fill incomplete frames. |

## PROVEN ODU-MAC® VARIETY OF MODULES

- Tool-free clip assembly and disassembly of the modules in the frame
- Easy disassembly of crimp clip contacts, also pre-assembled
- Complete solution including Cable Assembly

# PCB TERMINATION MODULES

Easy-to-use termination technology for signal modules via PCB contacting

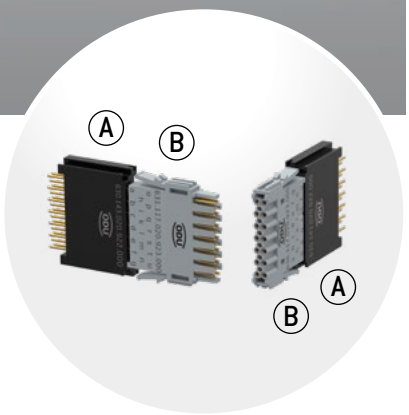
## LONG SERVICE LIFE – ECONOMICAL – EASY TO USE

**Economical solution**
No cables due to the direct PCB termination

**Convenient exchange**
Quick-change system possible for parts subject to wear

**Long service life**
PCB termination modules are manufactured from temperature-resistant PA (solder temperature 260 °C, 30 seconds)

**Additional grounding**
Thanks to grounding pin and socket, available on request


### THE BENEFITS OF THE PCB TERMINATION ASSEMBLY

The PCB termination modules Ⓐ[1] are permanently mounted on the board and are connected via an interface to the module Ⓑ that is plugged into the frame. If a module needs to be replaced, then only the module Ⓑ installed in the frame must be replaced. Module Ⓐ that is mounted on the PCB is not affected by this. An effective installation or quick-change function, as the case may be, is thereby achieved.

[1] After clipping a new contact in three times, the module must be renewed.

# THE ODU-MAC® BLUE-LINE – FOR THE MOST VARIED APPLICATIONS

## MAIN APPLICATION AREAS FOR THE ODU-MAC® BLUE-LINE

- Test and measurement
- Medical
- Industrial
- Special machine construction

We offer complete solutions **including Cable Assembly**

### ODU-MAC® BLUE-LINE FOR X-RAY MACHINES

The modular ODU-MAC® connector acts as an interface between a mobile X-ray machine and a monitor cart. It transmits high current, data, and signals.

### ODU-MAC® BLUE-LINE FOR AUTOMOTIVE TESTING

The ODU-MAC® Blue-Line in a housing with spindle locking provides a reliable interface between the test device and the measured-data receiver.

### ODU-MAC® BLUE-LINE FOR MEASURING AND TESTING TECHNOLOGY

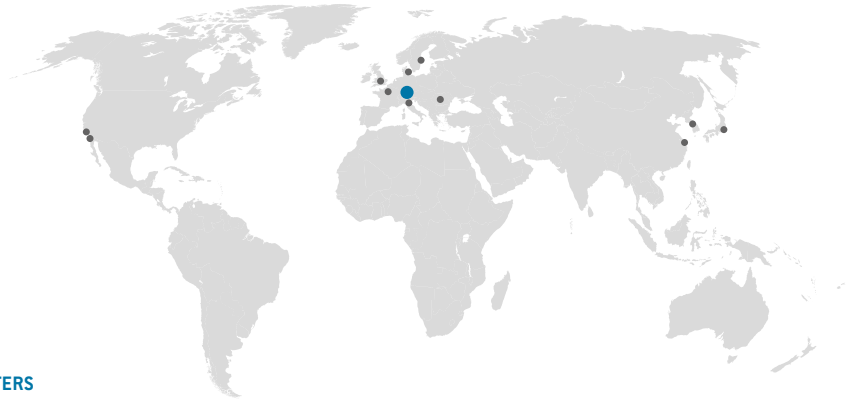
ODU-MAC® Blue-Line customized power and signal transmission solution for a HIL testing system.

Simply scan the QR code to download the catalog.

A PERFECT ALLIANCE.



# ODU GROUP WORLDWIDE



## HEADQUARTERS

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Phone: +49 8631 6156-0, Fax: +49 8631 6156-49, E-mail: sales@odu.de

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**ODU Korea Inc.**
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**ODU Romania Manufacturing S.R.L.**
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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 |

Simply scan the QR code
to download the entire publication.

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**

ODU-MAC® BLUE-LINE SHORT OVERVIEW / OV / 1119 / EN