

# ODU ELECTRICAL CONTACTS

Contact technologies for the most demanding requirements

ODU SPRINGTAC®

ODU LAMTAC®

ODU TURNTAC®



# ODU ELECTRICAL CONTACTS

## FEATURES

- Versatile contact technologies
- Outstanding reliability and durability with up to 1 million mating cycles
- Current-carrying capacity of up to 2,400 amperes and more
- Robust and universal contact systems
- Stamping technology for customer-specific high volume solutions
- High vibration and shock resistance
- Low, stable contact resistances

## APPLICATIONS

- Medical technology
- Test and measurement
- Military and security
- Industrial
- Automotive



The electrical contacts, connectors and cable assemblies listed in this catalog are generally designed as contacts, connectors without breaking capacity unless otherwise stated. The rated voltage specification given on the respective data sheet must be respected. Suitable precautionary measures must be taken to ensure that people do not come into contact with live conductors during installation and operation. All entries in this catalog were thoroughly reviewed before printing. ODU reserves the right to make changes based on the current status of knowledge without prior notice and without being obliged to provide replacement deliveries or refinements of older designs.

This publication is also available as a PDF file that can be downloaded from [www.odu-connectors.com](http://www.odu-connectors.com)

Issue: 2025-02

All dimensions are in mm.

Some figures are for illustrative purposes only.

This publication supersedes all prior publications.

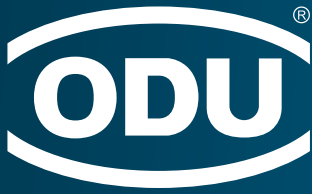
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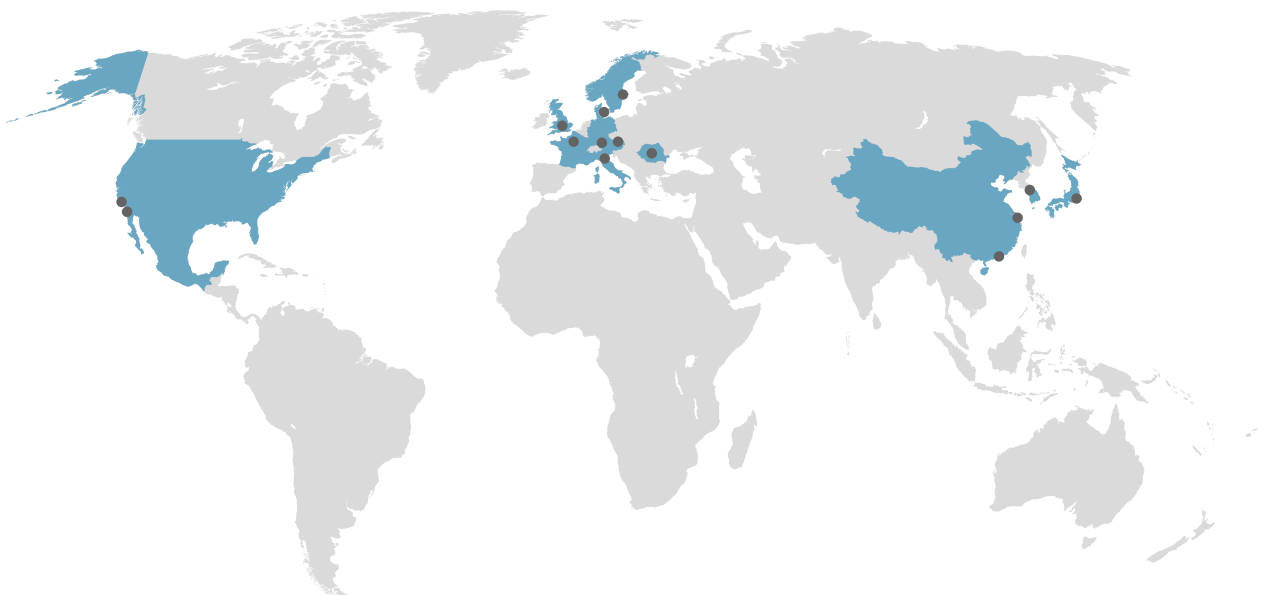


## ODU group overview

- 80 years of experience in connector technology
- 2,700 employees worldwide
- Sales subsidiaries in Germany, Austria, China, Denmark, France, Hong Kong, 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 tooling and special machine construction, injection, stamping, turning, surface technology, assembly and cable assembly

As of May 2024

## Worldwide customer proximity





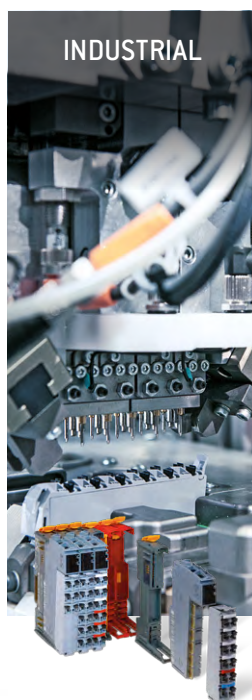


## Certificates & approvals

- 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.

## ODU serves the markets



# PRODUCT PORTFOLIO

## Circular Connectors

- Circular connector series in robust metal or plastic housing
- Different locking systems available: Push-Pull and Screw-Lock options or Break-Away for quick release
- Contacts for soldering, crimping and PCB termination
- 2 up to 55 contacts and protection classes IP50 to IP69
- Autoclavable for medical applications
- Hybrid inserts for combined transmission



## Cable Assembly

- One point of contact for the complete solution
- State-of-the-art manufacturing facilities for small, medium and high volumes at production sites worldwide
- Overmolding in silicone, hot-melt and high-pressure procedures
- Customer-specific labeling and cable printing
- Wide range of standard cables and accessories available
- Rapid prototyping and fast customer samples

## Electrical Contacts

- Versatile contact technologies with high reliability and durability
- Current-carrying capacity of up to 2,400 A
- Rugged and universal contact systems
- Stamping technology for customer-specific high volume solutions
- Very high vibration and low, stable contact resistance







## Modular Connectors

- Application-specific hybrid interface
- Manual mating and automatic docking
- Flexible modular design and highest packing density
- High variety of locking options
- Mating cycles scalable as required from 10,000 to over 100,000 (1 million)
- Transmission of signals, power, high-current, high-voltage, HF-signals (coax), media, high-speed data or fiber optics



## Mass Interconnect Solutions

- For testing printed circuit boards (PCBs) and electronically assembled units
- Innovative engagement option: electromechanical version with remote control available
- 8 tensioning points stop the frame distortion
- Maximum flexibility with ODU-MAC® modules and signal blocks
- Adapter frame (ITA) with tolerance compensation
- Easy maintenance access for a simple and fast modification

# FINDING BEST SOLUTIONS

SUPPORT FROM START TO FINISH

contact [sales@odu.de](mailto:sales@odu.de)



**DigiKey**

**M** **MOUSER**  
ELECTRONICS

 **Newark**  
AN AVNET COMPANY

## More than a connection

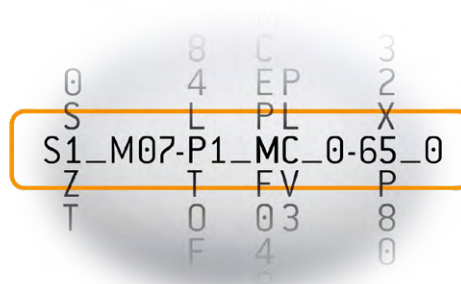
Contacts, connectors and cable assembly system solutions meeting the most demanding technical market requirements – ODU's connector solutions and value-added services are characterized by their exclusive focus on meeting the customer's requirements.

- Precise implementation of application-specific requirements regarding design, functionality, cost and exclusivity
- Modified connector solutions derived from standard products
- One-to-one local expertise and fair, friendly consulting
- Short product development and production paths

## ODU Part Number Search

Use our intelligent part number search to get information about our product portfolio.

In the detailed presentation of our products you will find information on suitable assembly tools and accessories.







ODU ELECTRICAL CONTACTS





## PRODUCT INFORMATION

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# CONTACT TECHNOLOGIES FOR A WIDE VARIETY OF SPECIFICATIONS

ODU's extensive product portfolio offers highly specialized contact types. The functionality and properties of each contact system have been precisely geared to each specific application. They are available in a wide range of dimensions and termination types.

## ODU LAMTAC®

Maximum current-carrying capacity and temperature resistance

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## ODU STAMPTAC®

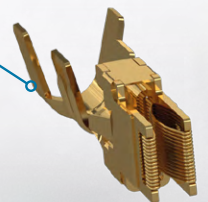
Stamping technology for customer-specific high volume solutions

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## ODU SPRINGTAC® FLATSOCKET

Optimal contacting for reliable results

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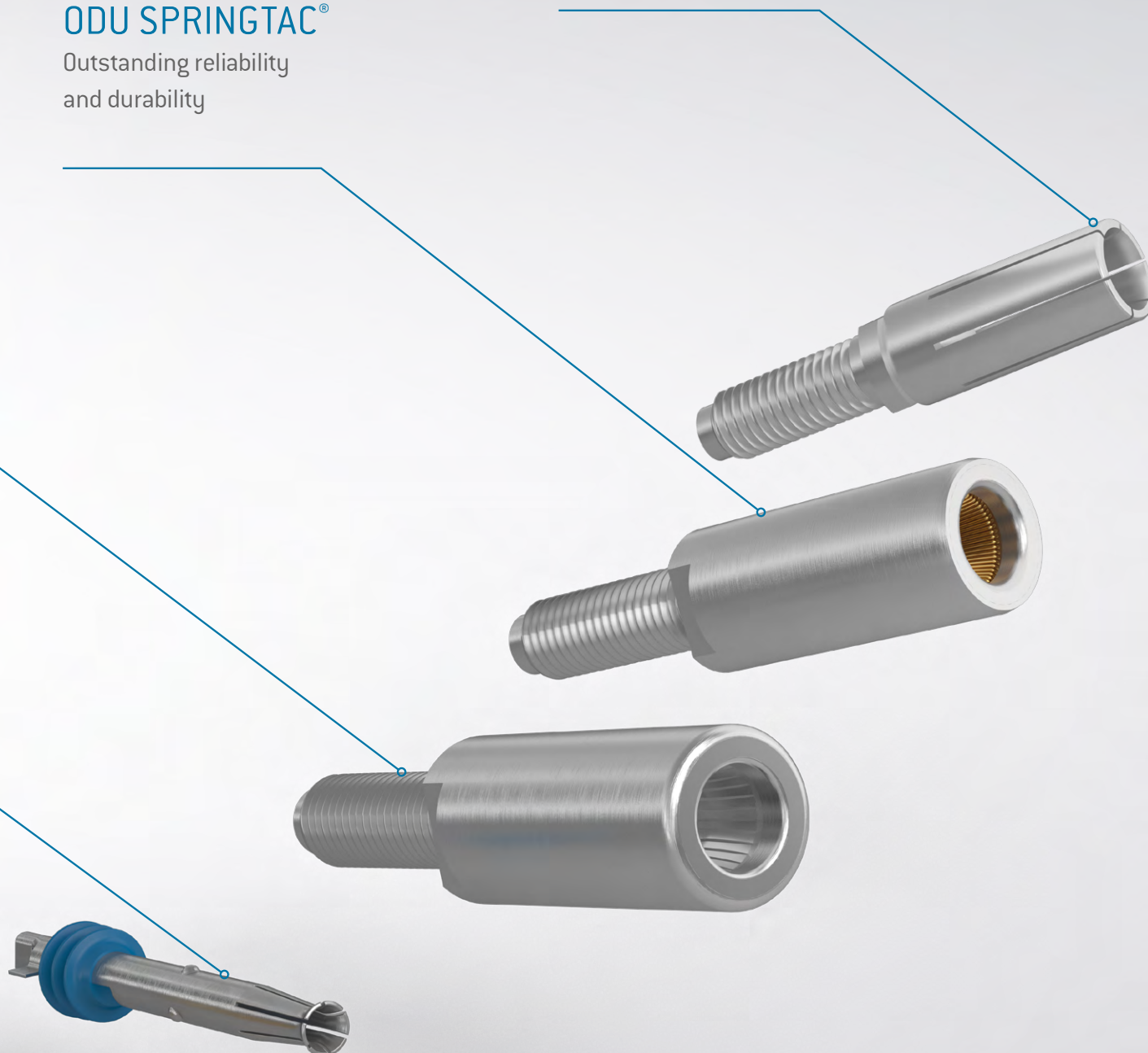


## ODU TURNTAC®

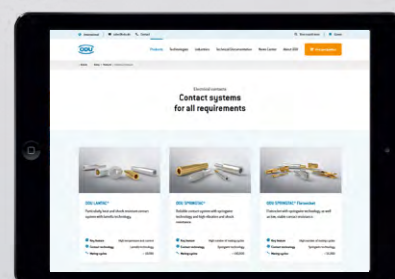
Rugged and universal  
contact system

## ODU SPRINGTAC®

Outstanding reliability  
and durability



Find out more at  
[odu-connectors.com/products/electrical-contacts/](http://odu-connectors.com/products/electrical-contacts/)



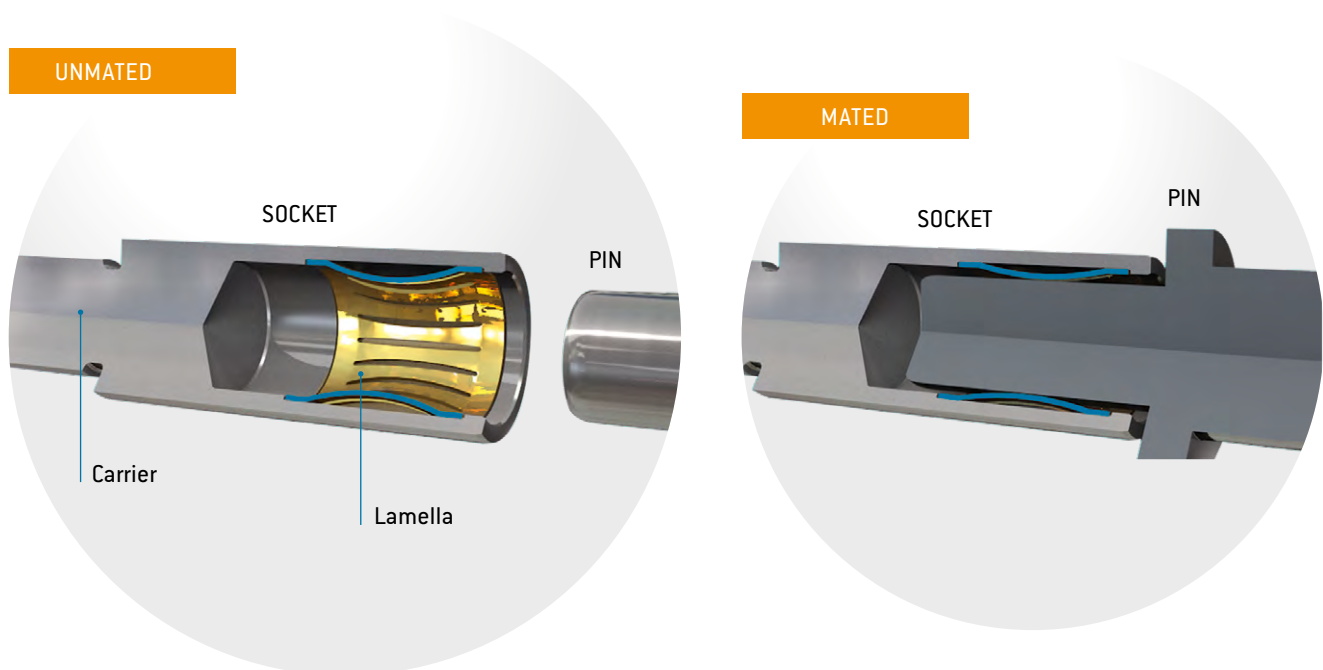
# BEST CONNECTIONS – THE CONTACT PRINCIPLE

Electrical Contacts from ODU meet the highest quality standards and ensure secure and reliable connections. Behind this achievement are 80 years of experience in the electrical connector technology. In addition to the springwire and the lamella technology ODU also offers turned, slotted contact systems and stamping technology for a wide variety of specifications.

## ODU LAMTAC®

Contacts with lamella technology

ODU LAMTAC® is a high-performance contact system with lamella technology. It has a high current-carrying capacity and can be used at temperatures of up to +150 °C (and higher temperatures on request). It consists of a turned carrier containing one or several stamped lamella belts. The lamella's individual louvres make for a multitude of contact points, thereby guaranteeing a high level of contact safety and ease of connecting.



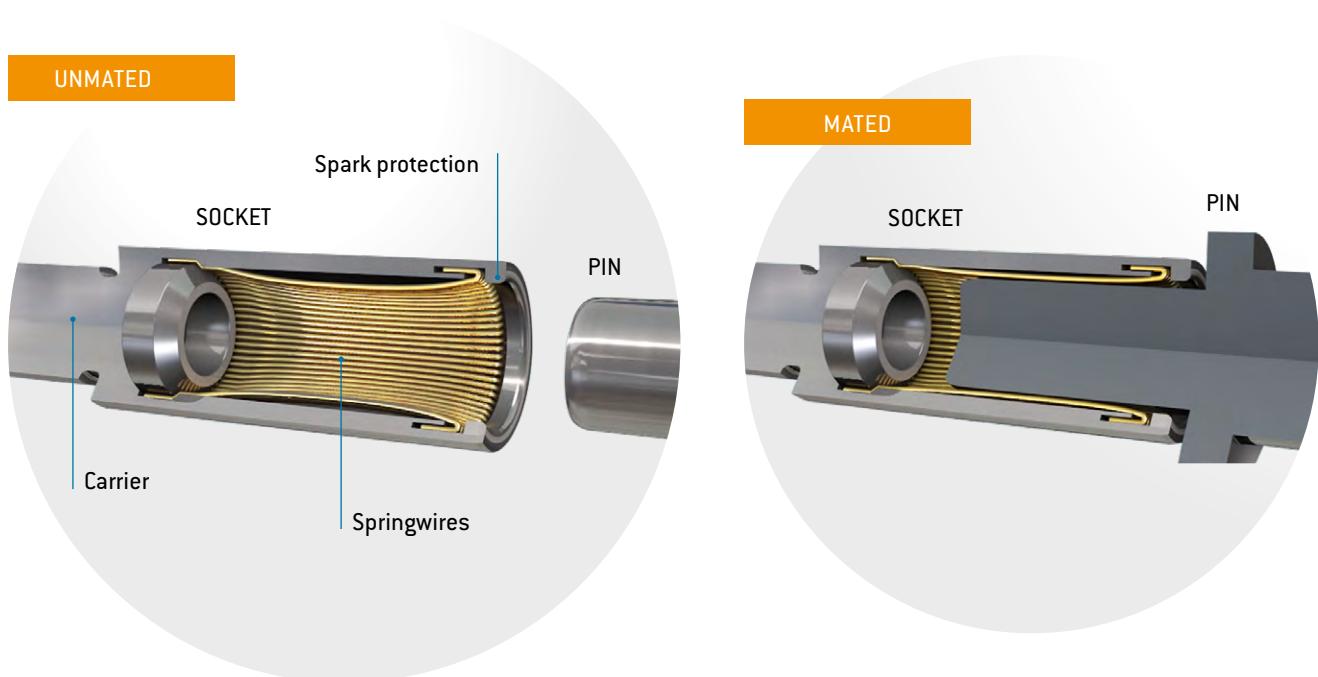
### BENEFITS

- Current-carrying capacity of up to 2,400 amperes (on request)
- > 10,000 mating cycles
- High vibration and shock resistance
- Low contact resistance
- Automated lamella assembly
- High contact security

## ODU SPRINGTAC®

Contacts with springwire technology

ODU SPRINGTAC® is the most effective contact system on the market. It offers maximum reliability and an exceptionally long durability. Due to the many independent wire springs, constant transmission is ensured at all times. Even the smallest contact, at 0.76 mm in diameter, contains 15 individual springs. In other words, 15 contact surfaces are present in this tiny contact area.



### BENEFITS

- Outstanding reliability and durability with up to 1 million mating cycles (on request)
- Very high contact security
- Low mating and demating forces
- High vibration and shock resistance
- Low contact resistance
- High current-carrying capacity



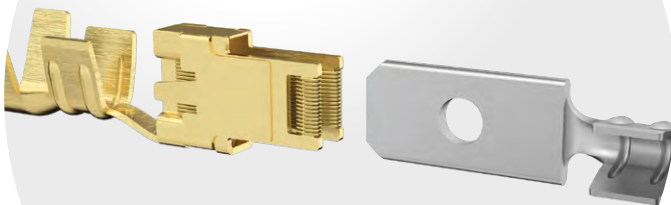
## ODU SPRINGTAC® Flatsocket

Flatsockets with springwire technology

For many components and assemblies, simple low-cost flat contacts or square pins are used. These kinds of connectors have not been created with a focus on a high number of mating cycles, as they are only demated for servicing. But for the quality control during the serial production high mating cycles are needed.

The ODU SPRINGTAC® Flatsocket with springwire technology is the perfect, long-lived counterpart for testing purposes. Its low, stable resistance values make it suitable for sensitive measuring tasks as well as for the testing of high current-carrying capacity.

UNMATED



MATED



### BENEFITS

- Ideal for test adapters
- Optimal contacting for reliable results
- > 50,000 mating cycles
- Versions for 2-wire and 4-wire measurement
- Functional ODU quick-change head (QCH) principle

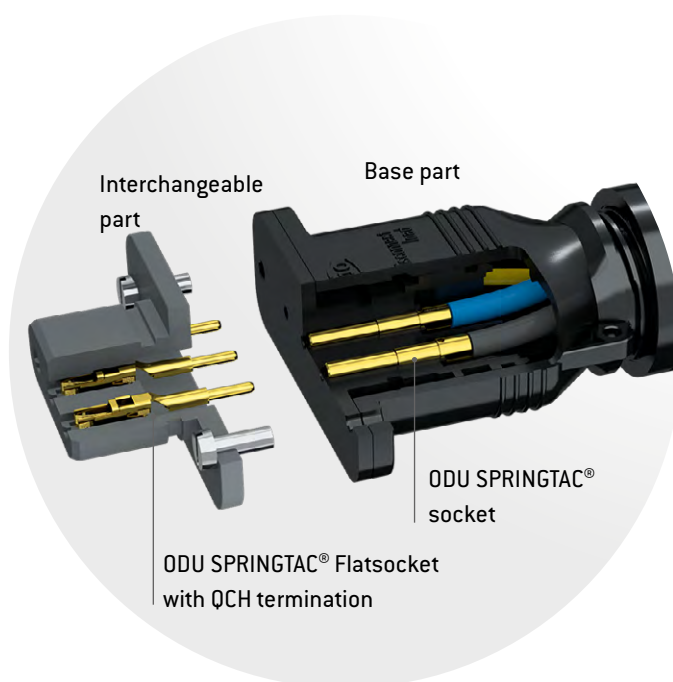
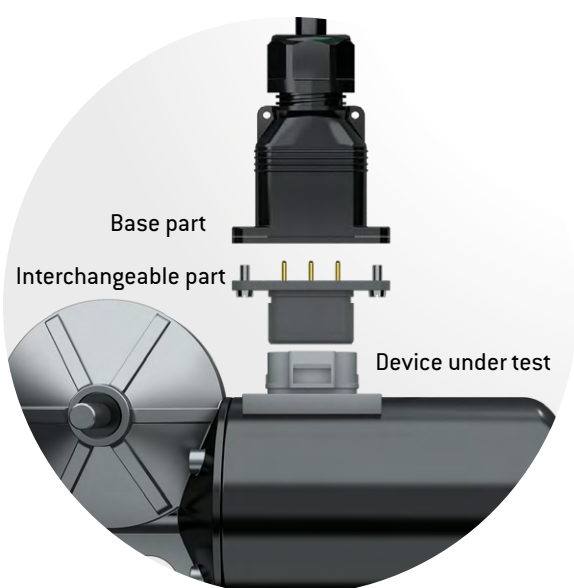


## THE ODU QUICK-CHANGE HEAD QCH (CONNECTOR SAVER) PRINCIPLE

With the ODU quick-change head QCH (connector saver) principle, the socket has a contact pin termination instead of a conventional cable termination. The contact pin can be mated with an ODU SPRINGTAC® or ODU LAMTAC® socket installed in an assembled connector (base part). Sockets with a QCH termination are integrated in an insulator (interchangeable part) which can be front-mounted to the connector.

This way, you can quickly and easily exchange the test adapter without any further assembly.

The use of a wide variety of exchange components provides you with a maximum amount of flexibility for your production.



### PROGRESS IN TESTING TECHNOLOGY

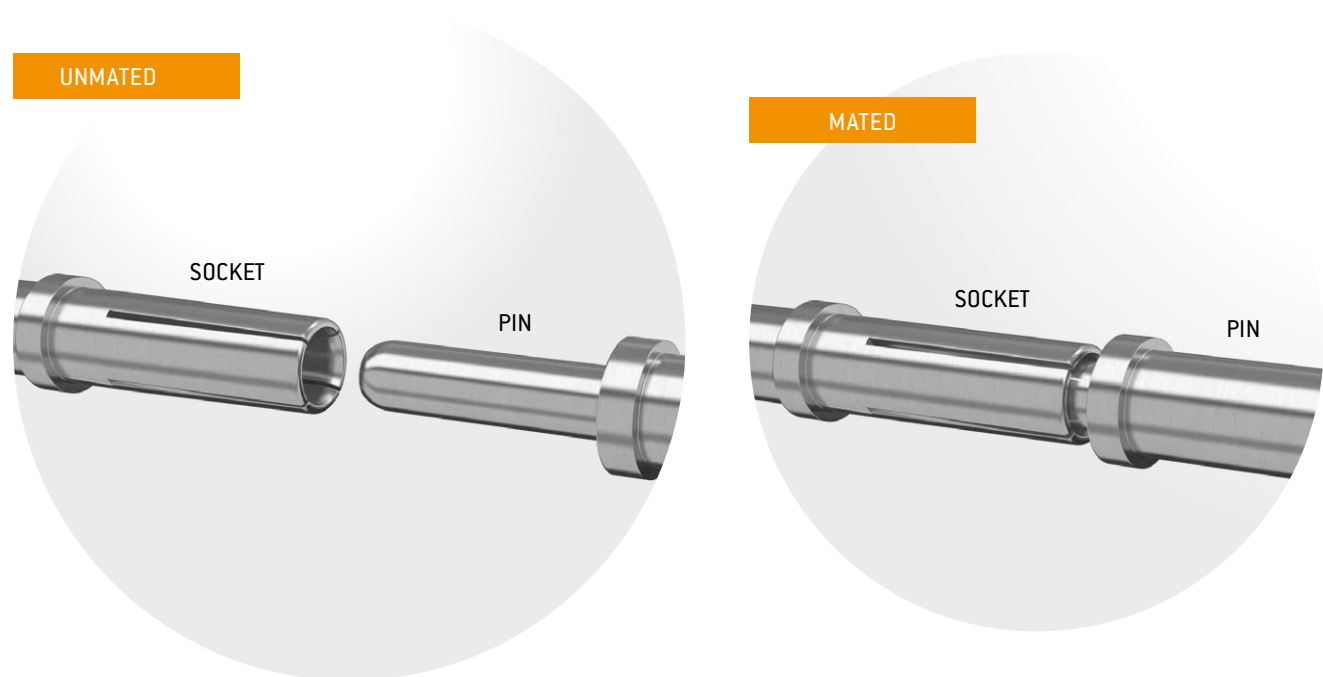
Stamped flat contacts (pins) are widely used in automotive electronics and equipment engineering. In standard series connectors, the counterpart consists of stamped sockets crimped to the cables and locked into the insulator. These stamped socket contacts typically allow for only a few mating cycles and are practically unsuitable for testing. This is also because of their often strong mating and demating forces.

ODU SPRINGTAC® Flatsockets have been specifically developed for measuring and testing technology. They allow for over 50,000 mating cycles and reliably transmit even very high test currents. Combined with the ODU quick-change head QCH (connector saver) principle, many million mating cycles can be achieved.

## ODU TURNTAC®

Contacts in slotted version

The universal ODU TURNTAC® contact system combines the very best contact properties and high quality with economical prices. It has stood the test of even the toughest application areas. The contact principle can even be used in dimensions as tiny as 0.3 mm in diameter. The slotted contact offers two to six contact areas, depending on the version.



### BENEFITS

- Turned, slotted contacts
- Rugged and universal contact system
- > 10,000 mating cycles
- Low and stable mating and demating forces
- Tiniest dimensions possible, down to 0.3 mm contact diameter (on request)
- Mating possible at an angle of up to 5°

# BEST CONNECTIONS – OUR RANGE OF SERVICES

## EVERYTHING FROM ONE SOURCE

The perfect connector system offers a perfect interplay of the contact, termination technology and cable assembly. Additional components and services are available as custom solutions. We offer the following service for complete solutions:

- + Cable assembly
- + Overmolding solutions
- + Additional components and complete units

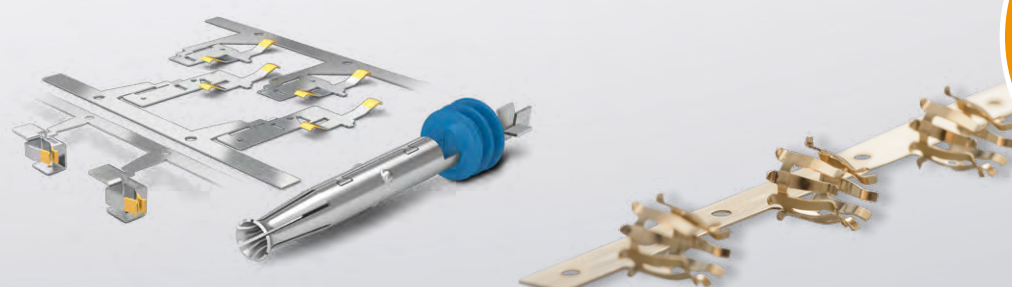


## ALWAYS THE IDEAL TERMINATION TECHNOLOGY

In addition to various connection technologies (from page 54) and assembly solutions (from page 22) ODU offers further variations for all contact technologies, such as a solder termination for printed circuit boards (PCB).

## CUSTOMIZED STAMPING SOLUTIONS

As a cost-effective alternative for high quantities, ODU STAMPTAC® technology combines optimal contact design with stamping technology. An ideal design for automated processing in large production series, both complex geometries and overall system solutions can be implemented.



WANT TO  
KNOW MORE?

[electrical-contacts@odu.de](mailto:electrical-contacts@odu.de)

# OVERVIEW ODU ELECTRICAL CONTACTS

ODU Electrical contacts create perfect connections. From simple applications to complex specifications and even in the toughest environmental conditions – our contacts offer ideal solutions. Including the highest level of contact safety and reliability.

Our portfolio includes universal contact varieties with a practical crimp terminal as well as a solder/screw terminal. Our sockets with an external thread allow you to integrate our time-tested contact technology even in the tightest of installation spaces. Our sockets are ideally complemented with our ODU contact pins for a maximum service life and perfect contacts.

ODU SPRINGTAC® SOCKETS AND PINS

P. 26





ODU SPRINGTAC® socket  
Solder / screw termination



ODU SPRINGTAC® socket  
Crimp termination



ODU SPRINGTAC® socket  
Outer thread



ODU contact pin  
Solder / screw termination



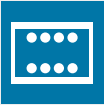
ODU contact pin  
Crimp termination

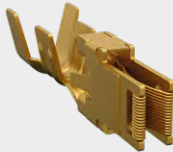


Externally flexed contact pin  
Solder / screw termination


ODU SPRINGTAC® FLATSOCKETS

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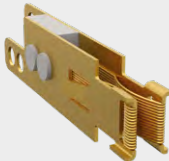




ODU SPRINGTAC® Flatsocket  
Crimp termination



ODU SPRINGTAC® Flatsocket  
QCH quick-change head



ODU SPRINGTAC® Flatsocket  
Solder termination

## ODU LAMTAC® SOCKETS AND PINS

P. 40



ODU LAMTAC® socket  
Solder / screw termination



ODU LAMTAC® socket  
Crimp termination



ODU LAMTAC® socket  
Outer thread



ODU LAMTAC® socket  
Outer thread



ODU contact pin  
Solder / screw termination



ODU contact pin  
Crimp termination

## ODU TURNTAC® SOCKETS AND PINS

P. 48



ODU TURNTAC® socket  
Solder / screw termination



ODU TURNTAC® socket  
Crimp termination



ODU contact pin  
Solder / screw termination



ODU contact pin  
Crimp termination



# APPLICATION-SPECIFIC SOLUTIONS

When standard solutions reach their limits, it's time to bring in the specialists who can think outside the box to find creative solutions. ODU has experts like this – and they'll put all their focus on your specific needs. We do more than simply carry out a feasibility test for each development contract. We also closely collaborate with our customers throughout the design process. This way, we can guarantee impressive customized results. Our custom solutions are often based on modifications of standard solutions.

## CUSTOMIZED CONNECTORS

The angled ODU pin contact contacts an ODU TURNTAC® socket, which connects the modules of battery storage systems. The ODU product, which we manufacture including cable assembly, guarantees easy installation, proven current-carrying capacity and touch protection – and also ensures perfect connections.

### Advantages

- Complete solution from one source
- Over 10,000 mating cycles
- With break-away function



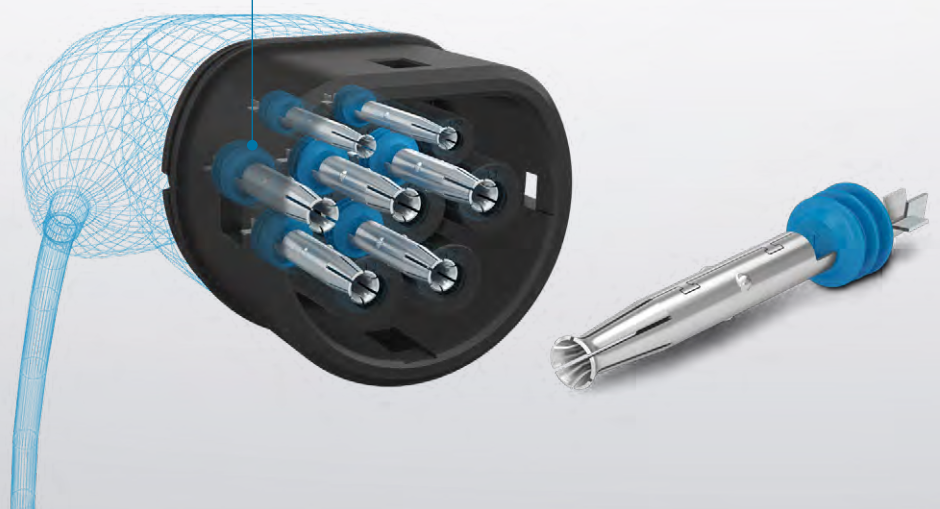
## THE CONTACT MAKES THE DIFFERENCE

The universal properties of the ODU TURNTAC® typically make it the number one choice for connectors in automation or other industrial applications. Even the smallest of dimensions allow for high contact density. The sophisticated contact technology combined with our surface engineering enable reliable contacting even in the most challenging operating conditions.



## CHARGING CONNECTORS

The ODU STAMPTAC® is equipped with additional attractive features beyond those of the ODU TURNTAC®. These features make it particularly suited for use in chargers. Thanks to the punched-rolled manufacturing method, this contact is ideal for automated processing which is crucial for large quantities. The integrated overmolded three-lip seal guarantees that sealing class IP67 is met and provides additional efficiency benefits at the same time.





### 1 MILLION MATING CYCLES

Our ODU SPRINGTAC® offers top performance for welding current transmission in a tool-changing system. An intelligent crimp termination system ensures maximum flexibility in the tiniest of installation spaces – as well as one million mating cycles.



### HIGHEST CURRENT-CARRYING CAPACITY AND VIBRATION RESISTANCE

For an electric surfboard, a connection is needed that is very powerful and also vibration and shock resistant. An ODU LAMTAC® contact is the perfect solution here. A permanently secure connection is created thanks to its high current-carrying capacity as well as the lamella louvres, which create a large number of contact points. The customized solution based on ODU LAMTAC® contact technology serves as an interface between the speed controller, the motor and the battery.

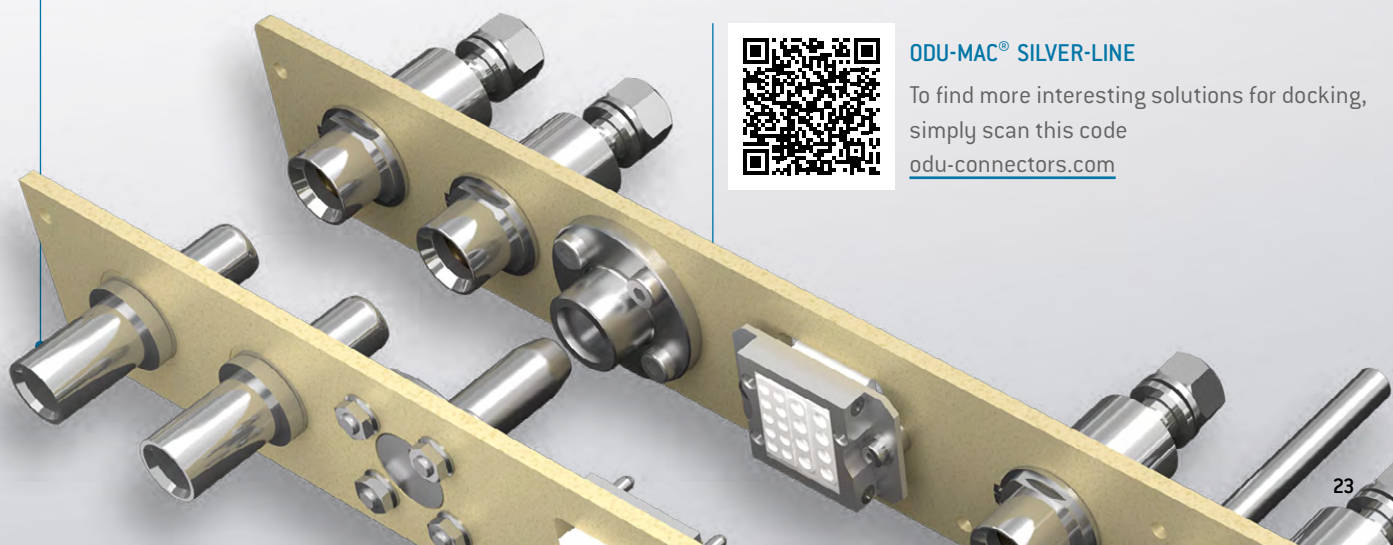


### ODU LAMTAC® ON THE TEST BENCH

The reliable transmission of high performance under climate changing conditions demand high requirements to the contact system and connection technology. ODU LAMTAC® combines this in this docking solution in an extraordinary way.

#### Advantages

- System solution from one source
- Low coupling forces
- Temperature stable connection



#### ODU-MAC® SILVER-LINE

To find more interesting solutions for docking, simply scan this code  
[odu-connectors.com](http://odu-connectors.com)



ODU ELECTRICAL CONTACTS





## ODU SPRINGTAC®

|  |                           |
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| ODU SPRINGTAC® externally flexed contact pin with solder / screw termination ..... | <a href="#"><u>31</u></a> |

# ODU SPRINGTAC® SOCKET



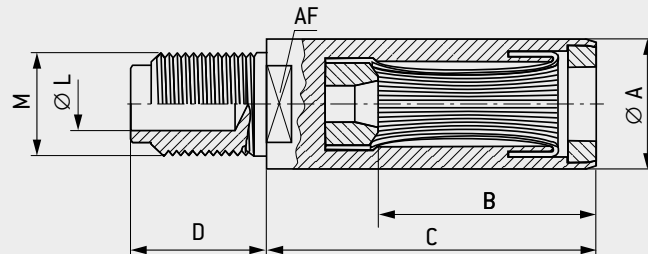
Contact with springwire technology

## SOLDER/SCREW TERMINATION



Ag

Au



| Part number         | Surface | Dimensions |     |    |      |    |      |           |                  |                            | Mechanical data <sup>1</sup> |                | Electrical data <sup>1</sup> |                    |               |                  |
|---------------------|---------|------------|-----|----|------|----|------|-----------|------------------|----------------------------|------------------------------|----------------|------------------------------|--------------------|---------------|------------------|
|                     |         | For pin    | Ø A | B  | C    | AF | D    | M         | Ø L <sup>1</sup> | Cross section <sup>1</sup> | Mating force                 | Demating force | Nominal current              | Max. cont. current | Surge current | Total resistance |
|                     |         | mm         | mm  | mm | mm   | mm | mm   | Thread    | mm               | mm <sup>2</sup>            | N                            | N              | A                            | A                  | kA            | µΩ               |
| 170.106.100.201.000 | Ag      | 1.5        | 4   | 12 | 15.5 | 3  | 12.5 | M2.6      | 1.25             | 1.5                        | 5                            | 3              | 27                           | 43                 | 1.5           | 450              |
| 170.106.700.207.000 | Au      |            |     |    |      |    |      |           |                  |                            |                              |                |                              |                    |               |                  |
| 170.107.100.201.000 | Ag      | 2          | 4   | 12 | 15.5 | 3  | 12.5 | M3        | 1.8              | 2.5                        | 6                            | 4              | 35                           | 54                 | 2.5           | 400              |
| 170.107.700.207.000 | Au      |            |     |    |      |    |      |           |                  |                            |                              |                |                              |                    |               |                  |
| 170.109.100.201.000 | Ag      | 2.5        | 6   | 12 | 15.5 | 5  | 12.5 | M3        | 1.8              | 2.5                        | 8                            | 5              | 38                           | 59                 | 3             | 300              |
| 170.109.700.207.000 | Au      |            |     |    |      |    |      |           |                  |                            |                              |                |                              |                    |               |                  |
| 170.110.100.201.000 | Ag      | 3          | 7   | 15 | 22.5 | 5  | 15   | M4        | 2.3              | 4                          | 10                           | 7              | 49                           | 76                 | 4             | 250              |
| 170.110.700.207.000 | Au      |            |     |    |      |    |      |           |                  |                            |                              |                |                              |                    |               |                  |
| 170.111.100.201.000 | Ag      | 4          | 8   | 15 | 22.5 | 6  | 19   | M5        | 3                | 6                          | 15                           | 10             | 65                           | 105                | 7             | 190              |
| 170.111.700.207.000 | Au      |            |     |    |      |    |      |           |                  |                            |                              |                |                              |                    |               |                  |
| 170.112.100.201.000 | Ag      | 5          | 9   | 15 | 22.5 | 7  | 19   | M5        | 3                | 10                         | 18                           | 12             | 85                           | 135                | 10            | 160              |
| 170.113.100.201.000 | Ag      | 6          | 11  | 24 | 33.5 | 8  | 22   | M6        | 3.6              | 16                         | 20                           | 13             | 110                          | 170                | 13            | 130              |
| 170.115.100.201.000 | Ag      | 8          | 14  | 24 | 33.5 | 11 | 26   | M8        | 4.8              | 25                         | 25                           | 15             | 145                          | 225                | 18            | 90               |
| 170.117.100.201.000 | Ag      | 10         | 16  | 24 | 33.5 | 12 | 30   | M10       | 6.2              | 35                         | 30                           | 20             | 185                          | 295                | 25            | 80               |
| 170.119.100.201.000 | Ag      | 12         | 18  | 36 | 47   | 14 | 34   | M12 × 1.5 | 7.6              | 50                         | 35                           | 25             | 230                          | 360                | 34            | 70               |
| 170.121.100.201.000 | Ag      | 16         | 23  | 36 | 47   | 19 | 42   | M16 × 1.5 | 11.5             | 95                         | 45                           | 35             | 340                          | 535                | 50            | 60               |
| 170.123.100.201.000 | Ag      | 20         | 27  | 48 | 66   | 22 | 50   | M20 × 2   | 14.5             | 150                        | 55                           | 45             | 440                          | 695                | 70            | 50               |
| 170.125.100.201.000 | Ag      | 24         | 32  | 48 | 66   | 27 | 58   | M24 × 2   | 17.8             | 240                        | 70                           | 55             | 585                          | 940                | 90            | 45               |
| 170.127.100.201.000 | Ag      | 28         | 36  | 48 | 66   | 32 | 62   | M32 × 2   | 25               | 400                        | 90                           | 65             | 785                          | 1285               | 110           | 40               |
| 170.128.100.201.000 | Ag      | 30         | 38  | 48 | 66   | 32 | 62   | M32 × 2   | 25               | 500                        | 100                          | 70             | 830                          | 1330               | 120           | 35               |

Other variants, dimensions and finishes available on request.

<sup>1</sup> See "Technical Information" starting on page 63

## SPECIFICATIONS

- Suitable for contact pins (page 29 and 30)
- For tightening torque see page 59
- Suitable for screwing to power busbars, backplanes and contact blocks
- Cables with lugs can be easily connected.
- Cables can be soldered into the solder hole.

# ODU SPRINGTAC® SOCKET

Contact with springwire technology

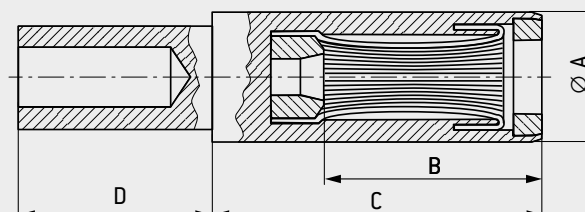


## CRIMP TERMINATION



Ag

Au



| Part number         | Surface | Dimensions    |           |         |         |         |  | Mechanical data <sup>1</sup> |                        | Electrical data <sup>1</sup> |                                    |                        |                           |
|---------------------|---------|---------------|-----------|---------|---------|---------|--|------------------------------|------------------------|------------------------------|------------------------------------|------------------------|---------------------------|
|                     |         | For pin<br>mm | Ø A<br>mm | B<br>mm | C<br>mm | D<br>mm | Cross<br>section <sup>1</sup><br>mm <sup>2</sup> | Mating<br>force<br>N         | Demating<br>force<br>N | Nominal<br>current<br>A      | Max.<br>continuous<br>current<br>A | Surge<br>current<br>kA | Total<br>resistance<br>μΩ |
| 170.361.700.207.000 | Au      | 0.76          | 1.58      | 7       | 9.8     | 5       | 0.38   | 1.5                          | 1                      | 9                            | 13.5                               | 0.7                    | 3,000                     |
| 170.362.700.207.000 | Au      | 1.02          | 1.98      | 7       | 9.8     | 5       | 0.5  | 2                            | 1.5                    | 12                           | 18                                 | 1                      | 2,000                     |
| 171.606.100.201.000 | Ag      | 1.5           | 4         | 12      | 15.5    | 6.5     | 1.5  | 5                            | 3                      | 27                           | 43                                 | 1.5                    | 800                       |
| 171.606.700.207.000 | Au      |               |           |         |         |         |  |                              |                        |                              |                                    |                        |                           |
| 171.607.100.201.000 | Ag      | 2             | 4         | 12      | 15.5    | 6.5     | 2.5  | 6                            | 4                      | 35                           | 54                                 | 2.5                    | 700                       |
| 171.607.700.207.000 | Au      |               |           |         |         |         |  |                              |                        |                              |                                    |                        |                           |
| 171.609.100.201.000 | Ag      | 2.5           | 6         | 12      | 15.5    | 6.5     | 2.5  | 8                            | 5                      | 38                           | 59                                 | 3                      | 500                       |
| 171.609.700.207.000 | Au      |               |           |         |         |         |  |                              |                        |                              |                                    |                        |                           |
| 170.610.100.201.000 | Ag      | 3             | 5.5       | 15      | 22.5    | 6.5     | 2.5  | 10                           | 7                      | 40                           | 63                                 | 4                      | 220                       |
| 170.610.700.207.000 | Au      |               |           |         |         |         |  |                              |                        |                              |                                    |                        |                           |
| 171.610.100.201.000 | Ag      | 3             | 7         | 15      | 22.5    | 6.5     | 4  | 10                           | 7                      | 49                           | 76                                 | 4                      | 220                       |
| 171.610.700.207.000 | Au      |               |           |         |         |         |  |                              |                        |                              |                                    |                        |                           |
| 170.611.100.201.000 | Ag      | 4             | 8         | 15      | 22.5    | 12.5    | 4  | 15                           | 10                     | 50                           | 85                                 | 4                      | 210                       |
| 170.611.700.207.000 | Au      |               |           |         |         |         |  |                              |                        |                              |                                    |                        |                           |
| 171.611.100.201.000 | Ag      | 4             | 8         | 15      | 22.5    | 12.5    | 6  | 15                           | 10                     | 65                           | 105                                | 7                      | 210                       |
| 171.611.700.207.000 | Au      |               |           |         |         |         |  |                              |                        |                              |                                    |                        |                           |
| 171.612.100.201.000 | Ag      | 5             | 9         | 15      | 22.5    | 17.5    | 10   | 18                           | 12                     | 85                           | 135                                | 10                     | 150                       |
| 171.613.100.201.000 | Ag      | 6             | 11        | 24      | 33.5    | 22.5    | 16   | 20                           | 13                     | 110                          | 170                                | 13                     | 130                       |
| 171.615.100.201.000 | Ag      | 8             | 14        | 24      | 33.5    | 22.5    | 25   | 25                           | 15                     | 145                          | 225                                | 18                     | 110                       |
| 171.617.100.201.000 | Ag      | 10            | 16        | 24      | 33.5    | 22.5    | 35   | 30                           | 20                     | 185                          | 295                                | 25                     | 80                        |
| 171.619.100.201.000 | Ag      | 12            | 18        | 36      | 47      | 28      | 50   | 35                           | 25                     | 230                          | 360                                | 34                     | 70                        |
| 171.621.100.201.000 | Ag      | 16            | 23        | 36      | 47      | 28      | 95   | 45                           | 35                     | 340                          | 535                                | 50                     | 50                        |

Other variants, dimensions and finishes available on request.

<sup>1</sup> See "Technical Information" starting on page [63](#)

## SPECIFICATIONS

- Suitable for contact pins (page [29](#) and [30](#))
- Easy and quick termination by crimping (crimp information starting on page [54](#))
- Suitable for connecting harmonized cables
- Part number crimping tool see table on page [56](#)

# ODU SPRINGTAC® SOCKET

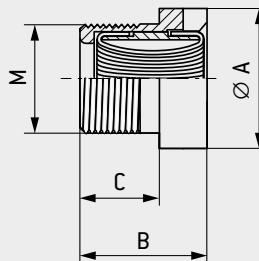


Contact with springwire technology

## OUTER THREAD



Ag



| Part number         | Dimensions    |           |         |         |             | Mechanical data <sup>1</sup> |                     |                         | Electrical data <sup>1</sup> |                              |                     |                        |
|---------------------|---------------|-----------|---------|---------|-------------|------------------------------|---------------------|-------------------------|------------------------------|------------------------------|---------------------|------------------------|
|                     | For pin<br>mm | Ø A<br>mm | B<br>mm | C<br>mm | M<br>Thread | Mating force<br>N            | Demating force<br>N | Tightening torque<br>Nm | Nominal current<br>A         | Max. continuous current<br>A | Surge current<br>kA | Total resistance<br>μΩ |
| 174.011.000.201.000 | 4             | 9         | 8       | 5       | M7 × 0.5    | 6.5                          | 5                   | 1.2                     | 45                           | 80                           | 7                   | 320                    |

Other variants, dimensions and finishes available on request.

<sup>1</sup> See "Technical Information" starting on page [63](#)

## SPECIFICATIONS

- Suitable for contact pins (page [29](#) and [30](#))
- Suitable for screwing to power busbars, backplanes and contact blocks
- Can be connected at both ends



# ODU CONTACT PIN

For all ODU SPRINGTAC® sockets

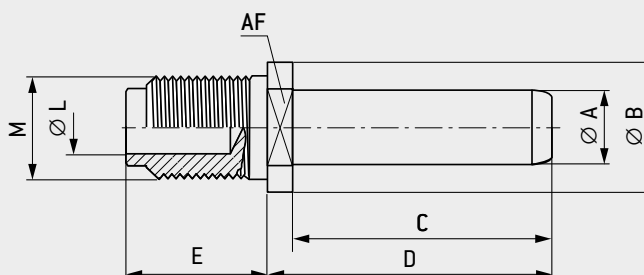


## SOLDER/SCREW TERMINATION



Ag

Au



| Part number         | Surface | Dimensions |       |     |    |      |    |      |           |      |
|---------------------|---------|------------|-------|-----|----|------|----|------|-----------|------|
|                     |         | Ø A        | x¹    | Ø B | C  | D    | AF | E    | M         | Ø L¹ |
| 181.106.000.301.000 | Ag      | 1.5        | -0.03 | 4   | 10 | 11.5 | 3  | 10   | M2.6      | 1.25 |
| 181.106.000.307.000 | Au      |            |       |     |    |      |    |      |           |      |
| 181.107.000.301.000 | Ag      | 2          | -0.03 | 5   | 10 | 11.5 | 4  | 12.5 | M3        | 1.8  |
| 181.107.000.307.000 | Au      |            |       |     |    |      |    |      |           |      |
| 181.109.000.301.000 | Ag      | 2.5        | -0.03 | 5   | 10 | 11.5 | 4  | 12.5 | M3        | 1.8  |
| 181.109.000.307.000 | Au      |            |       |     |    |      |    |      |           |      |
| 181.110.000.301.000 | Ag      | 3          | -0.03 | 6   | 14 | 15.5 | 5  | 15   | M4        | 2.3  |
| 181.110.000.307.000 | Au      |            |       |     |    |      |    |      |           |      |
| 181.111.000.301.000 | Ag      | 4          | -0.03 | 7   | 14 | 16   | 6  | 19   | M5        | 3    |
| 181.111.000.307.000 | Au      |            |       |     |    |      |    |      |           |      |
| 181.112.000.301.000 | Ag      | 5          | -0.03 | 7   | 14 | 16   | 6  | 19   | M5        | 3    |
| 181.113.000.301.000 | Ag      | 6          | -0.03 | 8   | 23 | 26   | 7  | 22   | M6        | 3.6  |
| 181.213.000.301.000 | Ag      | 6          | -0.03 | 11  | 23 | 26   | 8  | 22   | M8        | 4.8  |
| 181.115.000.301.000 | Ag      | 8          | -0.03 | 11  | 23 | 26   | 9  | 26   | M8        | 4.8  |
| 181.215.000.301.000 | Ag      | 8          | -0.03 | 14  | 23 | 26   | 11 | 26   | M10       | 6.2  |
| 181.117.000.301.000 | Ag      | 10         | -0.04 | 16  | 23 | 26   | 12 | 30   | M10       | 6.2  |
| 181.217.000.301.000 | Ag      | 10         | -0.04 | 16  | 23 | 26   | 12 | 30   | M12 × 1.5 | 7.6  |
| 181.119.000.301.000 | Ag      | 12         | -0.04 | 16  | 34 | 38   | 14 | 34   | M12 × 1.5 | 7.6  |
| 181.121.000.301.000 | Ag      | 16         | -0.04 | 20  | 34 | 38   | 17 | 42   | M16 × 1.5 | 11.5 |
| 181.123.000.301.000 | Ag      | 20         | -0.04 | 25  | 46 | 51   | 22 | 50   | M20 × 2   | 14.5 |
| 181.125.000.301.000 | Ag      | 24         | -0.04 | 30  | 46 | 51   | 27 | 58   | M24 × 2   | 17.8 |
| 181.127.000.301.000 | Ag      | 28         | -0.04 | 36  | 46 | 52   | 32 | 62   | M32 × 2   | 25   |
| 181.128.000.301.000 | Ag      | 30         | -0.04 | 38  | 46 | 52   | 32 | 62   | M32 × 2   | 25   |

## SPECIFICATIONS

- For all round ODU SPRINGTAC® sockets
- For tightening torque see page 59
- Suitable for screwing to power busbars, backplanes and contact blocks
- Cables with lugs can be easily connected.
- Cables can be soldered into the solder hole.

Other variants, dimensions and finishes available on request.

¹ Tolerance diameter A

# ODU CONTACT PIN



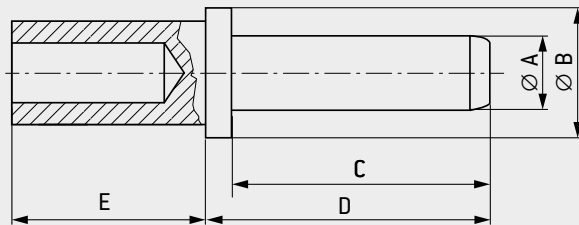
For all ODU SPRINGTAC® sockets

## CRIMP TERMINATION



Ag

Au



| Part number         | Surface | Dimensions |                |      |     |      |      |                 |
|---------------------|---------|------------|----------------|------|-----|------|------|-----------------|
|                     |         | Ø A        | x <sup>1</sup> | Ø B  | C   | D    | E    | Cross section   |
|                     |         | mm         | mm             | mm   | mm  | mm   | mm   | mm <sup>2</sup> |
| 180.361.000.307.000 | Au      | 0.765      | -0.015         | 1.57 | 7.2 | 17.2 | 4.9  | 0.38            |
| 180.362.000.307.000 | Au      | 1.02       | -0.03          | 2.1  | 7.2 | 17.2 | 4.9  | 0.5             |
| 181.606.000.301.000 | Ag      | 1.5        | -0.03          | 4    | 10  | 11.5 | 6.5  | 1.5             |
| 181.606.000.307.000 | Au      |            |                |      |     |      |      |                 |
| 181.607.000.301.000 | Ag      | 2          | -0.03          | 4    | 10  | 11.5 | 6.5  | 2.5             |
| 181.607.000.307.000 | Au      |            |                |      |     |      |      |                 |
| 181.609.000.301.000 | Ag      | 2.5        | -0.03          | 6    | 10  | 11.5 | 6.5  | 2.5             |
| 181.609.000.307.000 | Au      |            |                |      |     |      |      |                 |
| 181.610.000.301.000 | Ag      | 3          | -0.03          | 7    | 14  | 16   | 6.5  | 4               |
| 181.610.000.307.000 | Au      |            |                |      |     |      |      |                 |
| 181.611.000.301.000 | Ag      | 4          | -0.03          | 8    | 14  | 16   | 12.5 | 6               |
| 181.611.000.307.000 | Au      |            |                |      |     |      |      |                 |
| 181.612.000.301.000 | Ag      | 5          | -0.03          | 9    | 14  | 16   | 17.5 | 10              |
| 181.613.000.301.000 | Ag      | 6          | -0.03          | 11   | 23  | 26   | 22.5 | 16              |
| 181.713.000.301.000 | Ag      | 6          | -0.03          | 11   | 23  | 26   | 22.5 | 25              |
| 181.615.000.301.000 | Ag      | 8          | -0.03          | 14   | 23  | 26   | 22.5 | 25              |
| 181.715.000.301.000 | Ag      | 8          | -0.03          | 14   | 23  | 26   | 22.5 | 35              |
| 181.617.000.301.000 | Ag      | 10         | -0.04          | 16   | 23  | 26   | 22.5 | 35              |
| 181.717.000.301.000 | Ag      | 10         | -0.04          | 16   | 23  | 26   | 22.5 | 50              |
| 181.619.000.301.000 | Ag      | 12         | -0.04          | 18   | 34  | 38   | 28   | 50              |
| 181.621.000.301.000 | Ag      | 16         | -0.04          | 23   | 34  | 38   | 28   | 95              |

Other variants, dimensions and finishes available on request.

<sup>1</sup> Tolerance diameter A

## SPECIFICATIONS

- For all round ODU SPRINGTAC® sockets
- Easy and quick termination by crimping (crimp information starting on page [54](#))
- Suitable for connecting harmonized cables
- Part number crimping tool see table on page [56](#)

# EXTERNALLY FLEXED CONTACT PIN

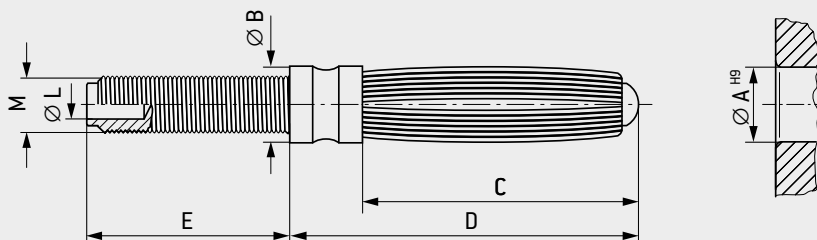
Contact with springwire technology



## SOLDER/SCREW TERMINATION



Ag



| Part number         | Dimensions |           |           |         |         |         |             |                        | Mechanical data <sup>1</sup> |                     | Electrical data <sup>1</sup> |                              |                        |
|---------------------|------------|-----------|-----------|---------|---------|---------|-------------|------------------------|------------------------------|---------------------|------------------------------|------------------------------|------------------------|
|                     | For pin    | Ø A<br>mm | Ø B<br>mm | C<br>mm | D<br>mm | E<br>mm | M<br>Thread | Ø L <sup>1</sup><br>mm | Mating force<br>N            | Demating force<br>N | Nominal current<br>A         | Max. continuous current<br>A | Total resistance<br>μΩ |
| 150.001.100.201.000 | 1.5        | 1.5       | 3         | 6       | 11.2    | 8       | M2.3        | 1.25                   | 2                            | 2                   | 10                           | 15                           | 950                    |
| 150.002.100.201.000 | 2          | 2         | 3         | 9       | 14.1    | 9       | M2.3        | 1.25                   | 4                            | 3                   | 15                           | 18                           | 700                    |
| 150.005.100.201.000 | 3          | 3         | 3.5       | 13      | 18.5    | 11.5    | M2.6        | 1.4                    | 6                            | 5                   | 25                           | 35                           | 400                    |
| 150.006.100.201.000 | 4          | 4         | 5         | 20.5    | 26      | 13      | M3          | 1.8                    | 10                           | 8                   | 36                           | 50                           | 250                    |
| 150.007.100.201.000 | 5          | 5         | 6         | 20.5    | 26      | 15      | M4          | 2.4                    | 15                           | 12                  | 45                           | 65                           | 225                    |
| 150.008.100.201.000 | 6          | 6         | 7         | 22      | 29.1    | 17      | M5          | 3.2                    | 19                           | 14                  | 55                           | 80                           | 200                    |
| 150.009.100.201.000 | 7          | 7         | 8         | 22      | 29      | 17      | M6          | 4                      | 21                           | 16                  | 65                           | 100                          | 160                    |
| 150.010.100.201.000 | 8          | 8         | 9         | 33      | 41.5    | 19      | M6          | 4                      | 24                           | 18                  | 78                           | 130                          | 150                    |
| 150.011.100.201.000 | 9          | 9         | 10.5      | 33      | 41.5    | 20.5    | M8          | 5.2                    | 28                           | 22                  | 90                           | 150                          | 140                    |
| 150.012.100.201.000 | 10         | 10        | 11.5      | 33      | 41.5    | 22      | M8          | 5.2                    | 32                           | 25                  | 104                          | 175                          | 130                    |
| 150.013.100.201.000 | 12         | 12        | 14        | 33      | 41.5    | 25      | M10         | 6.5                    | 38                           | 30                  | 135                          | 215                          | 120                    |
| 150.015.100.201.000 | 16         | 16        | 18        | 45      | 59      | 32      | M14 × 1.5   | 9.5                    | 50                           | 40                  | 175                          | 270                          | 110                    |

Other variants, dimensions and finishes available on request.

<sup>1</sup> See "Technical Information" starting on page [63](#)

## SPECIFICATIONS

- For tightening torque see page [59](#)
- Cables with lugs can be easily connected.
- Cables can be soldered into the solder hole.



## ODU ELECTRICAL CONTACTS

## ODU SPRINGTAC® FLATSOCKETS

|   |                           |
|---|---------------------------|
| ODU SPRINGTAC® Flatsocket<br>for 2-wire measurement, with crimp termination .....                       | <a href="#"><u>34</u></a> |
| ODU SPRINGTAC® Flatsocket<br>for 2-wire measurement, QCH (quick-change head) .....                      | <a href="#"><u>35</u></a> |
| ODU SPRINGTAC® Flatsocket<br>for 4-wire measurement (Kelvin measurement), with solder termination ..... | <a href="#"><u>36</u></a> |



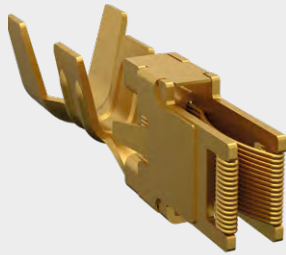
# ODU SPRINGTAC® FLATSOCKET

For 2-wire measurement

Flatsocket with springwire technology



## CRIMP TERMINATION



Ag

Au

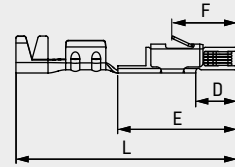
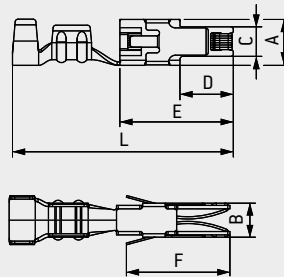


Illustration applies to part number  
190.222 ... 000

| Part number         | Surface | For pin     | Cross section <sup>1</sup><br>mm <sup>2</sup> | Dimensions |      |      |     |     |      |      | Mechanical data <sup>1</sup> |                     | Electrical data <sup>1</sup> |                              |                        |
|---------------------|---------|-------------|---|------------|------|------|-----|-----|------|------|------------------------------|---------------------|------------------------------|------------------------------|------------------------|
|                     |         |             |   | A          | B    | C    | D   | E   | F    | L    | Mating force<br>N            | Demating force<br>N | Nominal current<br>A         | Max. continuous current<br>A | Total resistance<br>mΩ |
| 190.222.700.201.000 | Ag      | 0.64 × 0.64 | 0.25 – 0.5                                    | 1.8        | 1.85 | 1.4  | 2   | 5.6 | 4    | 13.7 | 1.5 ± 1                      | 1 ± 0.6             | 7                            | 9                            | 7.5                    |
| 190.222.700.207.000 | Au      |             |   |            |      |      |     |     |      |      |                              |                     |                              |                              |                        |
| 190.218.100.201.000 | Ag      | 1.6 × 0.6   | 0.5 – 1                                       | 2.6        | 2.2  | 1.35 | 4.3 | 10  | 8.3  | 19.5 | 2 ± 1.5                      | 1.5 ± 1             | 13                           | 18                           | 4                      |
| 190.218.700.207.000 | Au      | 1.6 × 0.8   |   |            |      |      |     |     |      |      |                              |                     |                              |                              |                        |
| 190.214.100.201.000 | Ag      | 2.8 × 0.8   | 1 – 1.5                                       | 4          | 3    | 2.6  | 4.7 | 10  | 9.2  | 19.5 | 4 ± 2                        | 3 ± 2               | 16                           | 22                           | 3.5                    |
| 190.214.700.207.000 | Au      |             |   |            |      |      |     |     |      |      |                              |                     |                              |                              |                        |
| 190.215.100.201.000 | Ag      | 4.8 × 0.8   | 1.5 – 2.5                                     | 6.8        | 3    | 4.8  | 6   | 11  | 10.5 | 20.5 | 6 ± 2                        | 5 ± 2               | 22                           | 30                           | 0.9                    |
| 190.215.700.207.000 | Au      | 6.3 × 0.8   |   |            |      |      |     |     |      |      |                              |                     |                              |                              |                        |
| 190.216.100.201.000 | Ag      | 4.8 × 0.8   | 4   | 6.8        | 3    | 4.8  | 6   | 11  | 10.5 | 24.5 | 6 ± 2                        | 5 ± 2               | 27                           | 36                           | 0.9                    |
| 190.216.700.207.000 | Au      | 6.3 × 0.8   |   |            |      |      |     |     |      |      |                              |                     |                              |                              |                        |

Other variants, dimensions and finishes available on request.

<sup>1</sup> See "Technical Information" starting on page [63](#)

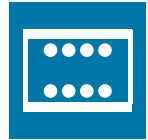
## SPECIFICATIONS

- High current-carrying capacity
- Ideal for test adapters
- > 50,000 mating cycles
- Part number crimping tool see table on page [56](#)
- Chamber dimensions see page [70](#)

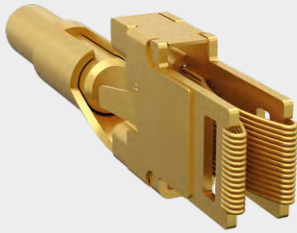
# ODU SPRINGTAC® FLATSOCKET

For 2-wire measurement

Flatsocket with springwire technology



## ODU QCH (QUICK-CHANGE HEAD)



Ag

Au

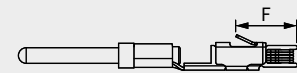
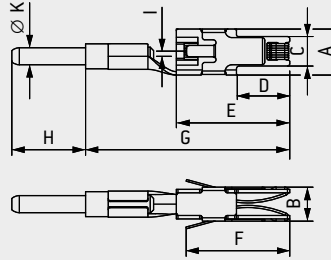


Illustration applies to part number  
190.242 ... .. 000

| Part number         | Surface | For pin     | Dimensions |      |      |     |     |      |      |     |          |      | Mechanical data <sup>1</sup> |                | Electrical data <sup>1</sup> |                         |                  |
|---------------------|---------|-------------|------------|------|------|-----|-----|------|------|-----|----------|------|------------------------------|----------------|------------------------------|-------------------------|------------------|
|                     |         |             | A          | B    | C    | D   | E   | F    | G    | H   | I        | Ø K  | Mating force                 | Demating force | Nominal current              | Max. continuous current | Total resistance |
|                     |         |             | mm         | mm   | mm   | mm  | mm  | mm   | mm   | mm  | mm       | mm   | N                            | N              | A                            | A                       | mΩ               |
| 190.242.700.201.000 | Ag      | 0.64 × 0.64 | 1.8        | 1.85 | 1.4  | 2   | 5.6 | 4    | 11.5 | 6.5 | 0 ± 0.15 | 1.02 | 1.5 ± 1                      | 1 ± 0.6        | 7                            | 9                       | 7.5              |
| 190.242.700.207.000 | Au      |             |            |      |      |     |     |      |      |     |          |      |                              |                |                              |                         |                  |
| 190.238.100.201.000 | Ag      | 1.6 × 0.6   | 2.6        | 2.2  | 1.35 | 4.3 | 10  | 8.3  | 18   | 6.5 | 0 ± 0.3  | 1.02 | 2 ± 1.5                      | 1.5 ± 1        | 11                           | 16                      | 4                |
| 190.238.700.207.000 | Au      | 1.6 × 0.8   |            |      |      |     |     |      |      |     |          |      |                              |                |                              |                         |                  |
| 190.234.100.201.000 | Ag      | 2.8 × 0.8   | 4          | 3    | 2.6  | 4.7 | 10  | 9.2  | 18   | 6.5 | 1 ± 0.5  | 1.5  | 4 ± 2                        | 3 ± 2          | 16                           | 22                      | 3.5              |
| 190.234.700.207.000 | Au      |             |            |      |      |     |     |      |      |     |          |      |                              |                |                              |                         |                  |
| 190.235.100.201.000 | Ag      | 4.8 × 0.8   | 6.8        | 3    | 4.8  | 6   | 11  | 10.5 | 20.5 | 6.5 | 1 ± 0.5  | 3    | 6 ± 2                        | 5 ± 2          | 27                           | 36                      | 0.9              |
| 190.235.700.207.000 | Au      | 6.3 × 0.8   |            |      |      |     |     |      |      |     |          |      |                              |                |                              |                         |                  |

Other variants, dimensions and finishes available on request.

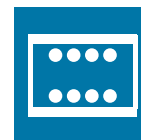
<sup>1</sup> See "Technical Information" starting on page [63](#)

## SPECIFICATIONS

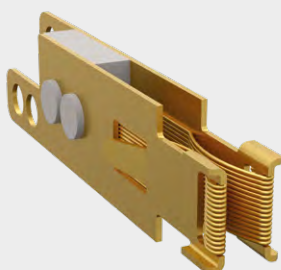
- With circular termination pin, suitable for all ODU sockets
- Ideal for test adapters and replacement inserts
- > 50,000 mating cycles
- Chamber dimensions see page [70](#)

# ODU SPRINGTAC® FLATSOCKET

For 4-wire measurement (Kelvin measurement)  
Flatsocket with springwire technology

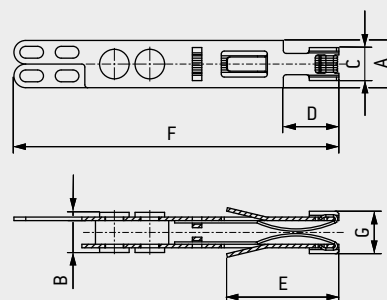


## SOLDER TERMINATION



Ag

Au



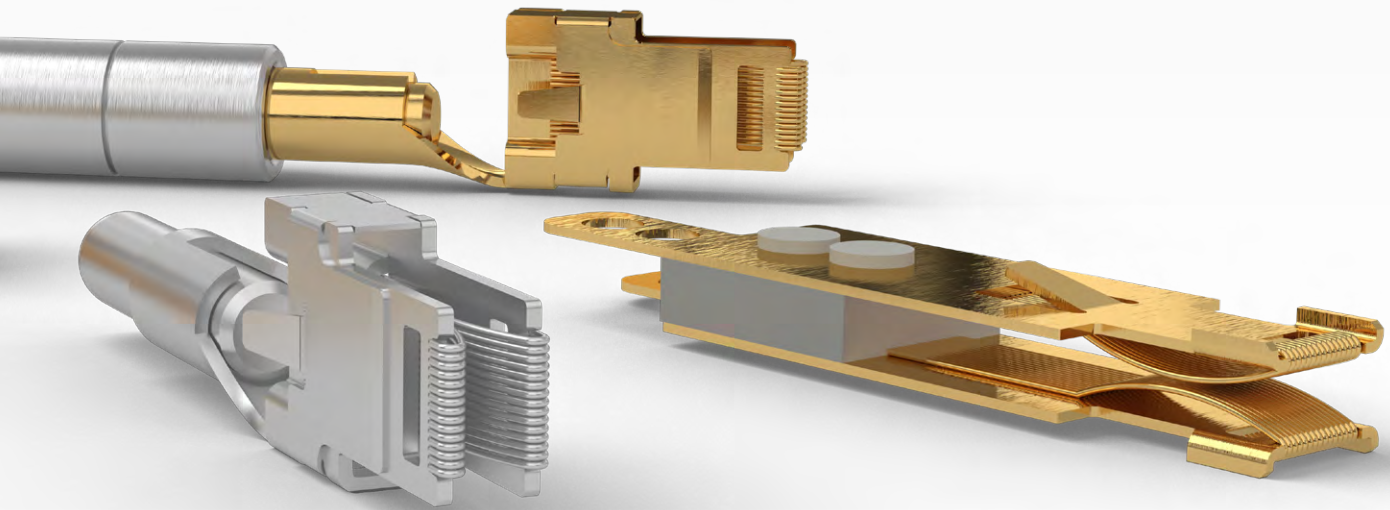
| Part number         | Surface | Size | For pin   | Cross section <sup>1</sup> | Dimensions |     |     |     |     |      |     | Mechanical data <sup>1</sup> |                | Electrical data <sup>1</sup> |                         |                  |
|---------------------|---------|------|-----------|----------------------------|------------|-----|-----|-----|-----|------|-----|------------------------------|----------------|------------------------------|-------------------------|------------------|
|                     |         |      |           |                            | A          | B   | C   | D   | E   | F    | G   | Mating force                 | Demating force | Nominal current              | Max. continuous current | Total resistance |
| 190.224.100.201.000 | Ag      | 1    | 2.8 × 0.8 | 1.5                        | 4          | 3.4 | 2.6 | 4.7 | 9.5 | 27.5 | 3.6 | 4 ± 2                        | 3 ± 2          | 7                            | 12                      | 3.5              |
| 190.224.700.207.000 | Au      |      |           |                            |            |     |     |     |     |      |     |                              |                |                              |                         |                  |

Other variants, dimensions and finishes available on request.

<sup>1</sup> See "Technical Information" starting on page [63](#)

## SPECIFICATIONS

- For precise measurement of low electrical resistance.
- Mutually insulated termination for current and voltage path
- Ideal for test adapters
- > 50,000 mating cycles
- Chamber dimensions see page [70](#)





ODU ELECTRICAL CONTACTS

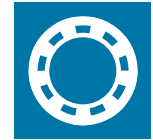




## ODU LAMTAC®

|  |                           |
|--|---------------------------|
| ODU LAMTAC® socket with solder / screw termination ..... | <a href="#"><u>40</u></a> |
| ODU LAMTAC® socket with crimp termination .....          | <a href="#"><u>41</u></a> |
| ODU LAMTAC® socket with outer thread .....               | <a href="#"><u>42</u></a> |
| ODU contact pin with solder / screw termination .....    | <a href="#"><u>44</u></a> |
| ODU contact pin with crimp termination .....             | <a href="#"><u>45</u></a> |

## ODU LAMTAC® SOCKET



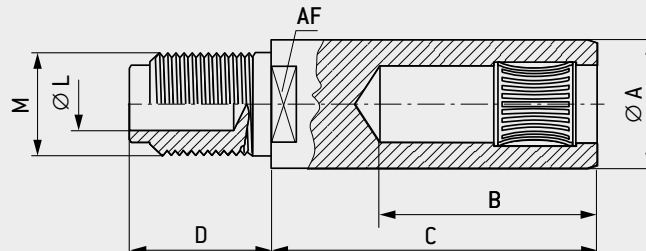
Contact with lamella technology

## SOLDER/SCREW TERMINATION



Ag

Au



| Part number         | Surface | Dimensions |     |      |      |     |      |           |                  |                            | Mechanical data <sup>1</sup> |                | Electrical data <sup>1</sup> |                         |               |                  |
|---------------------|---------|------------|-----|------|------|-----|------|-----------|------------------|----------------------------|------------------------------|----------------|------------------------------|-------------------------|---------------|------------------|
|                     |         | For pin    | Ø A | B    | C    | AF  | D    | M         | Ø L <sup>1</sup> | Cross section <sup>1</sup> | Mating force                 | Demating force | Nominal current              | Max. continuous current | Surge current | Total resistance |
|                     |         | mm         | mm  | mm   | mm   | mm  | mm   | Thread    | mm               | mm <sup>2</sup>            | N                            | N              | A                            | A                       | kA            | µΩ               |
| 178.105.700.207.000 | Au      | 1          | 3   | 10.5 | 13.5 | 2.5 | 10   | M2.3      | 1.25             | 1.5                        | 3                            | 2              | 14                           | 24                      | 1             | 1,500            |
| 178.106.100.201.000 | Ag      | 1.5        | 4   | 10.5 | 15.5 | 3   | 12.5 | M2.6      | 1.25             | 1.5                        | 4                            | 3              | 28                           | 49                      | 2             | 500              |
| 178.106.700.207.000 | Au      |            |     |      |      |     |      |           |                  |                            |                              |                |                              |                         |               |                  |
| 178.107.100.201.000 | Ag      | 2          | 4   | 10.5 | 15.5 | 3   | 12.5 | M3        | 1.8              | 2.5                        | 6                            | 5              | 36                           | 62                      | 2.5           | 350              |
| 178.107.700.207.000 | Au      |            |     |      |      |     |      |           |                  |                            |                              |                |                              |                         |               |                  |
| 178.110.100.201.000 | Ag      | 3          | 7   | 15   | 22.5 | 5   | 15   | M4        | 2.3              | 4                          | 8                            | 8              | 50                           | 88                      | 5             | 280              |
| 178.110.700.207.000 | Au      |            |     |      |      |     |      |           |                  |                            |                              |                |                              |                         |               |                  |
| 178.111.100.201.000 | Ag      | 4          | 8   | 15   | 22.5 | 6   | 19   | M5        | 3                | 6                          | 10                           | 10             | 65                           | 115                     | 8             | 180              |
| 178.111.700.207.000 | Au      |            |     |      |      |     |      |           |                  |                            |                              |                |                              |                         |               |                  |
| 178.112.100.201.000 | Ag      | 5          | 9   | 18.5 | 22.5 | 7   | 19   | M5        | 3                | 10                         | 15                           | 13             | 90                           | 155                     | 12            | 150              |
| 178.113.100.201.000 | Ag      | 6          | 11  | 24   | 33.5 | 8   | 22   | M6        | 3.6              | 16                         | 20                           | 15             | 115                          | 205                     | 19            | 100              |
| 178.213.100.201.000 | Ag      | 6          | 11  | 24   | 33.5 | 8   | 26   | M8        | 4.8              | 25                         | 20                           | 15             | 145                          | 260                     | 19            | 100              |
| 178.115.100.201.000 | Ag      | 8          | 14  | 24   | 33.5 | 11  | 26   | M8        | 4.8              | 25                         | 25                           | 20             | 150                          | 275                     | 26            | 90               |
| 178.215.100.201.000 | Ag      | 8          | 14  | 24   | 33.5 | 11  | 30   | M10       | 6.2              | 35                         | 25                           | 20             | 185                          | 330                     | 26            | 90               |
| 178.117.100.201.000 | Ag      | 10         | 16  | 24   | 33.5 | 12  | 30   | M10       | 6.2              | 35                         | 30                           | 25             | 190                          | 340                     | 27            | 70               |
| 178.217.100.201.000 | Ag      | 10         | 16  | 24   | 33.5 | 12  | 34   | M12 × 1.5 | 7.6              | 50                         | 30                           | 25             | 230                          | 410                     | 27            | 70               |
| 178.119.100.201.000 | Ag      | 12         | 18  | 36   | 47   | 14  | 34   | M12 × 1.5 | 7.6              | 50                         | 30                           | 25             | 235                          | 420                     | 35            | 60               |
| 178.121.100.201.000 | Ag      | 16         | 23  | 36   | 47   | 19  | 42   | M16 × 1.5 | 11.5             | 95                         | 35                           | 30             | 370                          | 650                     | 48            | 50               |
| 178.123.100.201.000 | Ag      | 20         | 27  | 48   | 66   | 22  | 50   | M20 × 2   | 14.5             | 150                        | 40                           | 35             | 490                          | 870                     | 56            | 40               |
| 178.125.100.201.000 | Ag      | 24         | 32  | 48   | 66   | 27  | 58   | M24 × 2   | 17.8             | 240                        | 45                           | 40             | 670                          | 1,235                   | 62            | 35               |
| 178.127.100.201.000 | Ag      | 28         | 36  | 48   | 66   | 32  | 62   | M32 × 2   | 25               | 400                        | 50                           | 45             | 885                          | 1,610                   | 68            | 30               |
| 178.128.100.201.000 | Ag      | 30         | 38  | 48   | 66   | 32  | 62   | M32 × 2   | 25               | 500                        | 55                           | 50             | 990                          | 1,790                   | 70            | 25               |

Other variants, dimensions and finishes available on request.

<sup>1</sup> See "Technical Information" starting on page 63

## SPECIFICATIONS

- Suitable for contact pins (page 44 and 45)
- For tightening torque see page 59
- Suitable for screwing to power busbars, backplanes and contact blocks
- Cables with lugs can be easily connected.
- Cables can be soldered into the solder hole.

# ODU LAMTAC® SOCKET

Contact with lamella technology

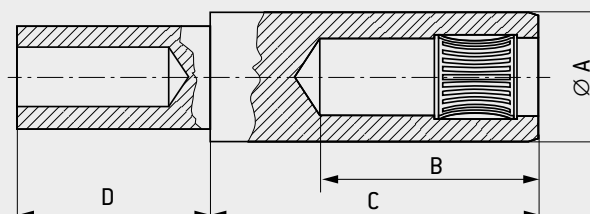


## CRIMP TERMINATION



Ag

Au



| Part number         | Surface | Dimensions    |           |         |         |         |   | Mechanical data <sup>1</sup> |                     | Electrical data <sup>1</sup> |                              |                     |                        |
|---------------------|---------|---------------|-----------|---------|---------|---------|---|------------------------------|---------------------|------------------------------|------------------------------|---------------------|------------------------|
|                     |         | For pin<br>mm | Ø A<br>mm | B<br>mm | C<br>mm | D<br>mm | Cross section <sup>1</sup><br>mm <sup>2</sup> | Mating force<br>N            | Demating force<br>N | Nominal current<br>A         | Max. continuous current<br>A | Surge current<br>kA | Total resistance<br>μΩ |
| 178.605.700.207.000 | Au      | 1             | 3         | 10.5    | 13.5    | 5       | 0.5   | 3                            | 2                   | 14                           | 24                           | 1                   | 1.500                  |
| 178.606.100.201.000 | Ag      | 1.5           | 4         | 10.5    | 15.5    | 6.5     | 1.5   | 3                            | 2                   | 28                           | 49                           | 2                   | 500                    |
| 178.606.700.207.000 | Au      |               |           |         |         |         |   |                              |                     |                              |                              |                     |                        |
| 178.607.100.201.000 | Ag      | 2             | 4         | 10.5    | 15.5    | 6.5     | 2.5   | 6                            | 5                   | 36                           | 62                           | 2.5                 | 350                    |
| 178.607.700.207.000 | Au      |               |           |         |         |         |   |                              |                     |                              |                              |                     |                        |
| 178.610.100.201.000 | Ag      | 3             | 7         | 15      | 22.5    | 6.5     | 4   | 8                            | 8                   | 50                           | 88                           | 5                   | 280                    |
| 178.610.700.207.000 | Au      |               |           |         |         |         |   |                              |                     |                              |                              |                     |                        |
| 178.611.100.201.000 | Ag      | 4             | 8         | 15      | 22.5    | 12.5    | 6   | 10                           | 10                  | 65                           | 115                          | 8                   | 180                    |
| 178.611.700.207.000 | Au      |               |           |         |         |         |   |                              |                     |                              |                              |                     |                        |
| 178.612.100.201.000 | Ag      | 5             | 9         | 18.5    | 22.5    | 17.5    | 10  | 15                           | 13                  | 90                           | 155                          | 12                  | 150                    |
| 178.613.100.201.000 | Ag      | 6             | 11        | 24      | 33.5    | 22.5    | 16  | 20                           | 15                  | 115                          | 205                          | 19                  | 100                    |
| 178.713.100.201.000 | Ag      | 6             | 11        | 24      | 33.5    | 22.5    | 25  | 20                           | 15                  | 145                          | 260                          | 19                  | 100                    |
| 178.615.100.201.000 | Ag      | 8             | 14        | 24      | 33.5    | 22.5    | 25  | 25                           | 20                  | 150                          | 275                          | 26                  | 90                     |
| 178.715.100.201.000 | Ag      | 8             | 14        | 24      | 33.5    | 22.5    | 35  | 25                           | 20                  | 185                          | 330                          | 26                  | 90                     |
| 178.617.100.201.000 | Ag      | 10            | 16        | 24      | 33.5    | 22.5    | 35  | 30                           | 25                  | 190                          | 340                          | 27                  | 70                     |
| 178.717.100.201.000 | Ag      | 10            | 16        | 24      | 33.5    | 22.5    | 50  | 30                           | 25                  | 230                          | 410                          | 27                  | 70                     |
| 178.619.100.201.000 | Ag      | 12            | 18        | 36      | 47      | 28      | 50  | 30                           | 25                  | 235                          | 420                          | 35                  | 60                     |
| 178.621.100.201.000 | Ag      | 16            | 23        | 36      | 47      | 28      | 95  | 35                           | 30                  | 370                          | 650                          | 48                  | 50                     |

Other variants, dimensions and finishes available on request.

<sup>1</sup> See "Technical Information" starting on page 63

## SPECIFICATIONS

- Suitable for contact pins (page 44 and 45)
- Easy and quick termination by crimping (crimp information see page 54)
- Suitable for connecting harmonized cables
- Part number crimping tool see table on page 56

# ODU LAMTAC® SOCKET



Contact with lamella technology

## OUTSIDE THREAD



Ag

Au

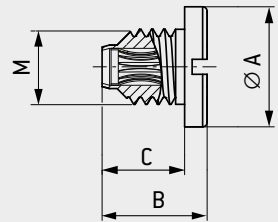
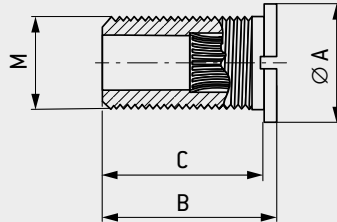


Illustration applies to part number  
178.34 ... .. 000

| Part number         | Surface | Dimensions    |           |         |         |             | Mechanical data <sup>1</sup> |                     |                         | Electrical data <sup>1</sup> |                              |                     |                        |
|---------------------|---------|---------------|-----------|---------|---------|-------------|------------------------------|---------------------|-------------------------|------------------------------|------------------------------|---------------------|------------------------|
|                     |         | For pin<br>mm | Ø A<br>mm | B<br>mm | C<br>mm | M<br>Thread | Mating force<br>N            | Demating force<br>N | Tightening torque<br>Nm | Nominal current<br>A         | Max. continuous current<br>A | Surge current<br>kA | Total resistance<br>μΩ |
| 178.345.700.207.000 | Au      | 1             | 6         | 7       | 5.5     | M3          | 3                            | 2                   | 0.5                     | 14                           | 24                           | 1                   | 1,500                  |
| 178.346.100.201.000 | Ag      | 1.5           | 7         | 7       | 5.5     | M4          | 4                            | 3                   | 0.5                     | 28                           | 49                           | 2                   | 600                    |
| 178.346.700.207.000 | Au      |               |           |         |         |             |                              |                     |                         |                              |                              |                     |                        |
| 178.347.100.201.000 | Ag      | 2             | 8         | 7       | 5.5     | M5          | 6                            | 5                   | 0.5                     | 36                           | 62                           | 2.5                 | 300                    |
| 178.347.700.207.000 | Au      |               |           |         |         |             |                              |                     |                         |                              |                              |                     |                        |
| 178.350.100.201.000 | Ag      | 3             | 10        | 12      | 10      | M7 × 0.5    | 8                            | 8                   | 1.2                     | 50                           | 88                           | 5                   | 190                    |
| 178.350.700.207.000 | Au      |               |           |         |         |             |                              |                     |                         |                              |                              |                     |                        |
| 178.351.100.201.000 | Ag      | 4             | 11        | 13      | 10      | M8 × 1      | 10                           | 10                  | 1.2                     | 65                           | 115                          | 8                   | 150                    |
| 178.351.700.207.000 | Au      |               |           |         |         |             |                              |                     |                         |                              |                              |                     |                        |
| 178.352.100.201.000 | Ag      | 5             | 13        | 13      | 10      | M10         | 15                           | 13                  | 3                       | 90                           | 155                          | 12                  | 120                    |
| 178.355.100.201.000 | Ag      | 6             | 16        | 19      | 16      | M12 × 1.5   | 20                           | 15                  | 6                       | 145                          | 260                          | 19                  | 100                    |
| 178.356.100.201.000 | Ag      | 8             | 18        | 19      | 16      | M14 × 1.5   | 25                           | 20                  | 6                       | 185                          | 330                          | 26                  | 70                     |
| 178.358.100.201.000 | Ag      | 10            | 22        | 19      | 16      | M18 × 1.5   | 30                           | 25                  | 10                      | 230                          | 410                          | 27                  | 50                     |

Other variants, dimensions and finishes available on request.

<sup>1</sup> See "Technical Information" starting on page [63](#)

## SPECIFICATIONS

- Suitable for contact pins (page [44](#) and [45](#))
- Suitable for screwing to power busbars, backplanes and contact blocks

# ODU LAMTAC® SOCKET

Contact with lamella technology



## OUTSIDE THREAD



Ag

Au

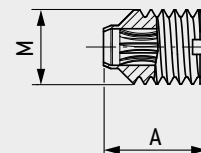
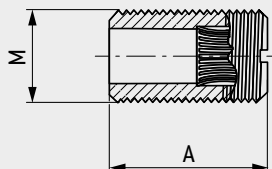


Illustration applies to part number  
178.30 ... .. 000

| Part number         | Surface | Dimensions |    |           | Mechanical data <sup>1</sup> |                |                   | Electrical data <sup>1</sup> |                         |               |                  |
|---------------------|---------|------------|----|-----------|------------------------------|----------------|-------------------|------------------------------|-------------------------|---------------|------------------|
|                     |         | For pin    | A  | M         | Mating force                 | Demating force | Tightening torque | Nominal current              | Max. continuous current | Surge current | Total resistance |
|                     |         | mm         | mm | Thread    | N                            | N              | Nm                | A                            | A                       | kA            | μΩ               |
| 178.305.700.207.000 | Au      | 1          | 7  | M3        | 3                            | 2              | 0.5               | 14                           | 24                      | 1             | 1.500            |
| 178.306.100.201.000 | Ag      | 1.5        | 7  | M4        | 4                            | 3              | 0.5               | 28                           | 49                      | 2             | 600              |
| 178.306.700.207.000 | Au      |            |    |           |                              |                |                   |                              |                         |               |                  |
| 178.307.100.201.000 | Ag      | 2          | 7  | M5        | 6                            | 5              | 0.5               | 36                           | 62                      | 2.5           | 300              |
| 178.307.700.207.000 | Au      |            |    |           |                              |                |                   |                              |                         |               |                  |
| 178.310.100.201.000 | Ag      | 3          | 12 | M7 × 0.5  | 8                            | 8              | 1.2               | 50                           | 88                      | 5             | 190              |
| 178.310.700.207.000 | Au      |            |    |           |                              |                |                   |                              |                         |               |                  |
| 178.311.100.201.000 | Ag      | 4          | 13 | M8 × 1    | 10                           | 10             | 1.2               | 65                           | 115                     | 8             | 150              |
| 178.311.700.207.000 | Au      |            |    |           |                              |                |                   |                              |                         |               |                  |
| 178.312.100.201.000 | Ag      | 5          | 13 | M10       | 15                           | 13             | 3                 | 90                           | 155                     | 12            | 120              |
| 178.314.100.201.000 | Ag      | 6          | 19 | M12 × 1.5 | 20                           | 15             | 6                 | 145                          | 260                     | 19            | 100              |
| 178.315.100.201.000 | Ag      | 8          | 19 | M14 × 1.5 | 25                           | 20             | 6                 | 185                          | 330                     | 26            | 70               |
| 178.318.100.201.000 | Ag      | 10         | 19 | M18 × 1.5 | 30                           | 25             | 10                | 230                          | 410                     | 27            | 50               |

Other variants, dimensions and finishes available on request.

<sup>1</sup> See "Technical Information" starting on page 63

## SPECIFICATIONS

- Suitable for contact pins (page (page 44 and 45)
- Suitable for screwing to power busbars, backplanes and contact blocks



# ODU CONTACT PIN

For all ODU LAMTAC® sockets

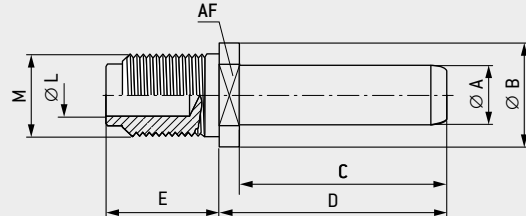


## SOLDER/SCREW TERMINATION



Ag

Au



| Part number         | Surface | Dimensions |          |           |         |         |          |         |             |           |
|---------------------|---------|------------|----------|-----------|---------|---------|----------|---------|-------------|-----------|
|                     |         | Ø A<br>mm  | x¹<br>mm | Ø B<br>mm | C<br>mm | D<br>mm | AF<br>mm | E<br>mm | M<br>Thread | Ø L<br>mm |
| 181.106.000.301.000 | Ag      | 1.5        | -0.03    | 4         | 10      | 11.5    | 3        | 10      | M2.6        | 1.25      |
| 181.106.000.307.000 | Au      |            |          |           |         |         |          |         |             |           |
| 181.107.000.301.000 | Ag      | 2          | -0.03    | 5         | 10      | 11.5    | 4        | 12.5    | M3          | 1.8       |
| 181.107.000.307.000 | Au      |            |          |           |         |         |          |         |             |           |
| 181.110.000.301.000 | Ag      | 3          | -0.03    | 6         | 14      | 15.5    | 5        | 15      | M4          | 2.3       |
| 181.110.000.307.000 | Au      |            |          |           |         |         |          |         |             |           |
| 181.111.000.301.000 | Ag      | 4          | -0.03    | 7         | 14      | 16      | 6        | 19      | M5          | 3         |
| 181.111.000.307.000 | Au      |            |          |           |         |         |          |         |             |           |
| 181.212.000.301.000 | Ag      | 5          | -0.03    | 7         | 17.5    | 19.5    | 6        | 19      | M5          | 3         |
| 181.113.000.301.000 | Ag      | 6          | -0.03    | 8         | 23      | 26      | 7        | 22      | M6          | 3.6       |
| 181.213.000.301.000 | Ag      | 6          | -0.03    | 11        | 23      | 26      | 8        | 22      | M8          | 4.8       |
| 181.115.000.301.000 | Ag      | 8          | -0.03    | 11        | 23      | 26      | 9        | 26      | M8          | 4.8       |
| 181.215.000.301.000 | Ag      | 8          | -0.03    | 14        | 23      | 26      | 11       | 26      | M10         | 6.2       |
| 181.117.000.301.000 | Ag      | 10         | -0.04    | 16        | 23      | 26      | 12       | 30      | M10         | 6.2       |
| 181.217.000.301.000 | Ag      | 10         | -0.04    | 16        | 23      | 26      | 12       | 30      | M12 × 1.5   | 7.6       |
| 181.119.000.301.000 | Ag      | 12         | -0.04    | 16        | 34      | 38      | 14       | 34      | M12 × 1.5   | 7.6       |
| 181.121.000.301.000 | Ag      | 16         | -0.04    | 20        | 34      | 38      | 17       | 42      | M16 × 1.5   | 11.5      |
| 181.123.000.301.000 | Ag      | 20         | -0.04    | 25        | 46      | 51      | 22       | 50      | M20 × 2     | 14.5      |
| 181.125.000.301.000 | Ag      | 24         | -0.04    | 30        | 46      | 51      | 27       | 58      | M24 × 2     | 17.8      |
| 181.127.000.301.000 | Ag      | 28         | -0.04    | 36        | 46      | 52      | 32       | 62      | M32 × 2     | 25        |
| 181.128.000.301.000 | Ag      | 30         | -0.04    | 38        | 46      | 52      | 32       | 62      | M32 × 2     | 25        |

## SPECIFICATIONS

- Suitable for all round ODU LAMTAC® sockets
- For tightening torque see page 59
- Suitable for screwing to power busbars, backplanes and contact blocks
- Cables with lugs can be easily connected.
- Cables can be soldered into the solder hole.

Other variants, dimensions and finishes available on request.

¹ Tolerance diameter A.

# ODU CONTACT PIN

For all ODU LAMTAC® sockets

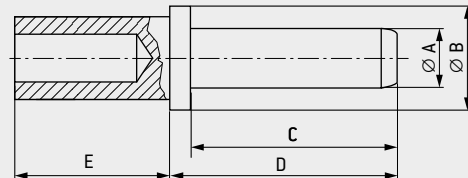


## CRIMP TERMINATION



Ag

Au



| Part number         | Surface | Dimensions |                      |           |         |         |         |   |
|---------------------|---------|------------|----------------------|-----------|---------|---------|---------|---|
|                     |         | Ø A<br>mm  | x <sup>1</sup><br>mm | Ø B<br>mm | C<br>mm | D<br>mm | E<br>mm | Cross-section <sup>2</sup><br>mm <sup>2</sup> |
| 181.606.000.301.000 | Ag      | 1.5        | -0.03                | 4         | 10      | 11.5    | 6.5     | 1.5   |
| 181.606.000.307.000 | Au      |            |                      |           |         |         |         |   |
| 181.607.000.301.000 | Ag      | 2          | -0.03                | 4         | 10      | 11.5    | 6.5     | 2.5   |
| 181.607.000.307.000 | Au      |            |                      |           |         |         |         |   |
| 181.610.000.301.000 | Ag      | 3          | -0.03                | 7         | 14      | 16      | 6.5     | 4   |
| 181.610.000.307.000 | Au      |            |                      |           |         |         |         |   |
| 181.611.000.301.000 | Ag      | 4          | -0.03                | 8         | 14      | 16      | 12.5    | 6   |
| 181.611.000.307.000 | Au      |            |                      |           |         |         |         |   |
| 181.712.000.301.000 | Ag      | 5          | -0.03                | 9         | 17.5    | 19.5    | 17.5    | 10  |
| 181.613.000.301.000 | Ag      | 6          | -0.03                | 11        | 23      | 26      | 22.5    | 16  |
| 181.713.000.301.000 | Ag      | 6          | -0.03                | 11        | 23      | 26      | 22.5    | 25  |
| 181.615.000.301.000 | Ag      | 8          | -0.03                | 14        | 23      | 26      | 22.5    | 25  |
| 181.715.000.301.000 | Ag      | 8          | -0.03                | 14        | 23      | 26      | 22.5    | 35  |
| 181.617.000.301.000 | Ag      | 10         | -0.04                | 16        | 23      | 26      | 22.5    | 35  |
| 181.717.000.301.000 | Ag      | 10         | -0.04                | 16        | 23      | 26      | 22.5    | 50  |
| 181.619.000.301.000 | Ag      | 12         | -0.04                | 18        | 34      | 38      | 28      | 50  |
| 181.621.000.301.000 | Ag      | 16         | -0.04                | 23        | 34      | 38      | 28      | 95  |

## SPECIFICATIONS

- Suitable for all round ODU LAMTAC® sockets
- Easy and quick termination by crimping (crimp information see page 54)
- Suitable for connecting harmonized cables
- Part number crimping tool see table on page 56

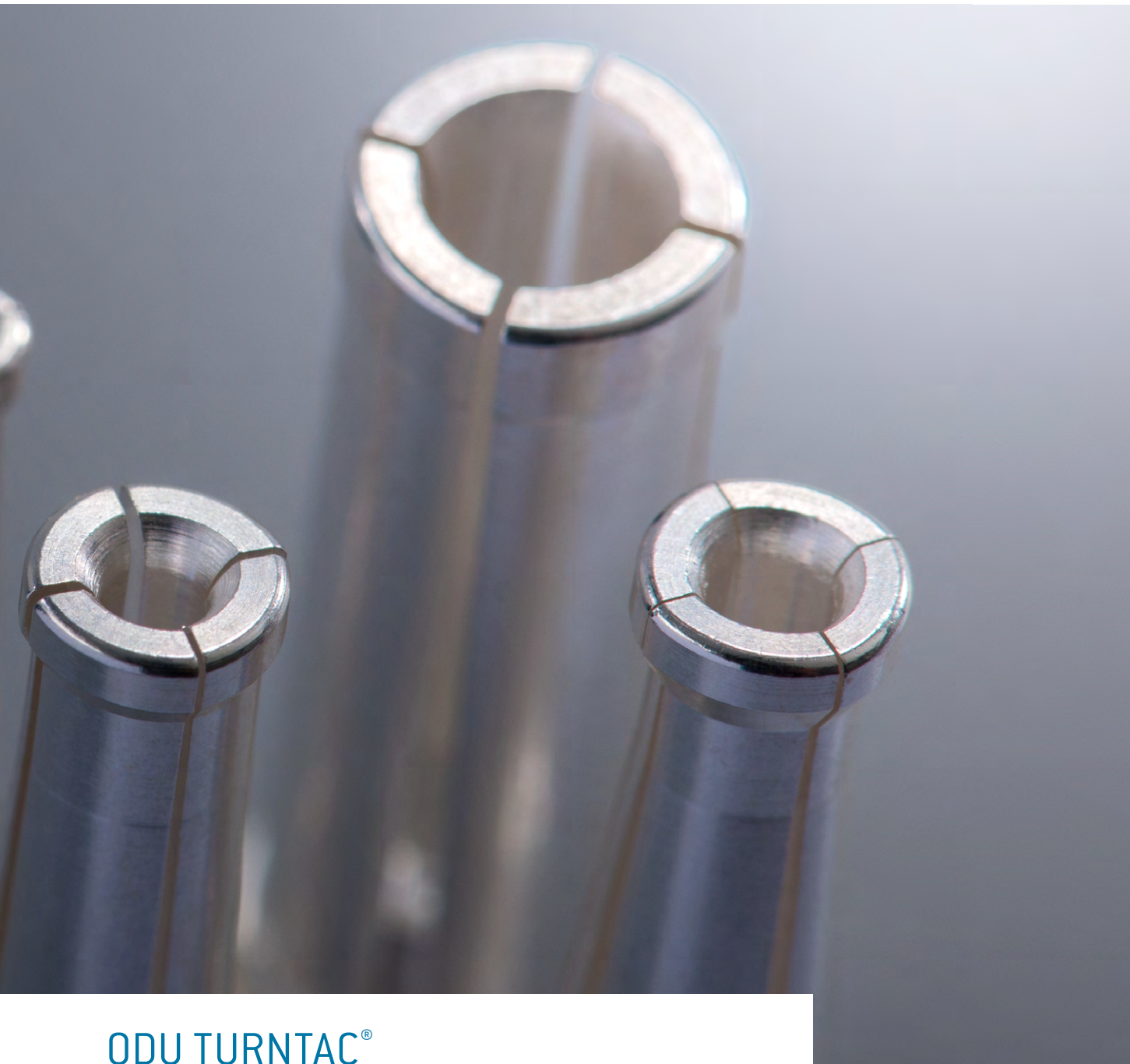
Other variants, dimensions and finishes available on request.

<sup>1</sup> Tolerance diameter A

<sup>2</sup> See "Technical Information" starting on page 63



## ODU ELECTRICAL CONTACTS



## ODU TURNTAC®

|   |                           |
|---|---------------------------|
| ODU TURNTAC® socket with solder / screw termination ..... | <a href="#"><u>48</u></a> |
| ODU TURNTAC® socket with crimp termination .....          | <a href="#"><u>49</u></a> |
| ODU contact pin with solder / screw termination .....     | <a href="#"><u>50</u></a> |
| ODU contact pin with crimp termination .....              | <a href="#"><u>51</u></a> |



## ODU TURNTAC® SOCKET



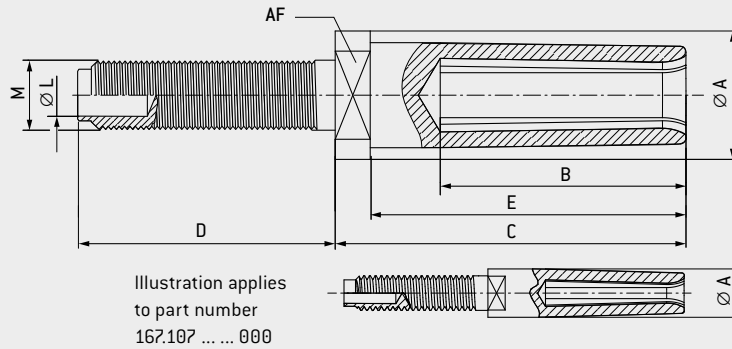
Contacts in slotted version

## SOLDER/SCREW TERMINATION



Ag

Au



| Part number         | Surface | Dimensions |     |      |      |      |    |      |      |                  |                            | Mechanical data <sup>1</sup> |                | Electrical data <sup>1</sup> |                         |                  |
|---------------------|---------|------------|-----|------|------|------|----|------|------|------------------|----------------------------|------------------------------|----------------|------------------------------|-------------------------|------------------|
|                     |         | For pin    | Ø A | B    | C    | E    | AF | D    | M    | Ø L <sup>1</sup> | Cross-section <sup>1</sup> | Mating force                 | Demating force | Nominal current              | Max. continuous current | Total resistance |
| 167.106.000.301.000 | Ag      | 1.5        | 4   | 12.5 | 17.5 | 16   | 3  | 10   | M2.6 | 1.25             | 1.5                        | 3                            | 1.5            | 25                           | 39                      | 550              |
| 167.106.000.307.000 | Au      |            |     |      |      |      |    |      |      |                  |                            |                              |                |                              |                         |                  |
| 167.107.000.301.000 | Ag      | 2          | 4.2 | 12   | 17   | —    | 3  | 12.5 | M3   | 1.8              | 2.5                        | 4                            | 2              | 34                           | 53                      | 400              |
| 167.107.000.307.000 | Au      |            |     |      |      |      |    |      |      |                  |                            |                              |                |                              |                         |                  |
| 167.110.000.301.000 | Ag      | 3          | 7   | 15   | 19.5 | 17.5 | 5  | 15   | M4   | 2.3              | 4                          | 5                            | 2.5            | 50                           | 75                      | 260              |
| 167.110.000.307.000 | Au      |            |     |      |      |      |    |      |      |                  |                            |                              |                |                              |                         |                  |
| 167.111.000.301.000 | Ag      | 4          | 8   | 15   | 21   | 19   | 6  | 19   | M5   | 3                | 6                          | 6                            | 3              | 55                           | 90                      | 190              |
| 167.111.000.307.000 | Au      |            |     |      |      |      |    |      |      |                  |                            |                              |                |                              |                         |                  |
| 167.112.000.301.000 | Ag      | 5          | 9   | 17.5 | 25   | 23   | 7  | 19   | M5   | 3                | 10                         | 7                            | 3.5            | 75                           | 120                     | 150              |
| 167.113.000.301.000 | Ag      | 6          | 11  | 21   | 30   | 27   | 8  | 22   | M6   | 3.6              | 16                         | 8                            | 4              | 100                          | 150                     | 130              |
| 167.115.000.301.000 | Ag      | 8          | 14  | 25   | 35   | 32   | 11 | 26   | M8   | 4.8              | 25                         | 10                           | 5              | 125                          | 190                     | 100              |
| 167.117.000.301.000 | Ag      | 10         | 16  | 25   | 35   | 32   | 12 | 30   | M10  | 6.2              | 35                         | 12                           | 6              | 165                          | 250                     | 70               |

Other variants, dimensions and finishes available on request.

<sup>1</sup> See "Technical Information" starting on page 63

## SPECIFICATIONS

- Suitable for contact pins (page 50 and 51)
- For tightening torque see page 59
- Suitable for screwing to power busbars, backplanes and contact blocks
- Cables with lugs can be easily connected.
- Cables can be soldered into the solder hole.
- Chamber dimensions see page 49

# ODU TURNTAC® SOCKET

Contacts in slotted version



## CRIMP TERMINATION



Ag

Au

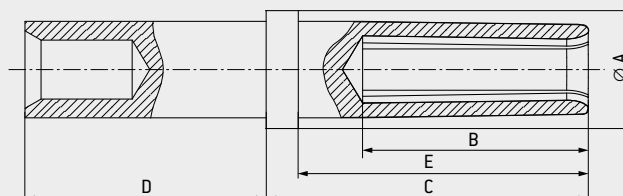
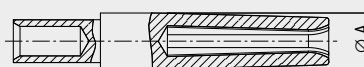


Illustration applies  
to part number  
167.607 ... .. 000



| Part number         | Surface | Dimensions    |           |         |         |         |         |   | Mechanical data <sup>1</sup> |                     | Electrical data <sup>1</sup> |                              |                        |
|---------------------|---------|---------------|-----------|---------|---------|---------|---------|---|------------------------------|---------------------|------------------------------|------------------------------|------------------------|
|                     |         | For pin<br>mm | Ø A<br>mm | B<br>mm | C<br>mm | D<br>mm | E<br>mm | Cross-section <sup>1</sup><br>mm <sup>2</sup> | Mating force<br>N            | Demating force<br>N | Nominal current<br>A         | Max. continuous current<br>A | Total resistance<br>µΩ |
| 167.606.000.301.000 | Ag      | 1.5           | 4         | 12.5    | 17.5    | 6.5     | 16      | 1.5   | 3                            | 1.5                 | 25                           | 39                           | 550                    |
| 167.606.000.307.000 | Au      |               |           |         |         |         |         |   |                              |                     |                              |                              |                        |
| 167.607.000.301.000 | Ag      | 2             | 4.2       | 12      | 17      | 6.5     | —       | 2.5   | 4                            | 2                   | 34                           | 53                           | 400                    |
| 167.607.000.307.000 | Au      |               |           |         |         |         |         |   |                              |                     |                              |                              |                        |
| 167.610.000.301.000 | Ag      | 3             | 7         | 15      | 19.5    | 6.5     | 17.5    | 4   | 5                            | 2.5                 | 50                           | 75                           | 260                    |
| 167.610.000.307.000 | Au      |               |           |         |         |         |         |   |                              |                     |                              |                              |                        |
| 167.611.000.301.000 | Ag      | 4             | 8         | 15      | 21      | 12.5    | 19      | 6   | 6                            | 3                   | 55                           | 90                           | 190                    |
| 167.611.000.307.000 | Au      |               |           |         |         |         |         |   |                              |                     |                              |                              |                        |
| 167.612.000.301.000 | Ag      | 5             | 9         | 17.5    | 25      | 17.5    | 22      | 10  | 7                            | 3.5                 | 75                           | 120                          | 150                    |

Other variants, dimensions and finishes available on request.

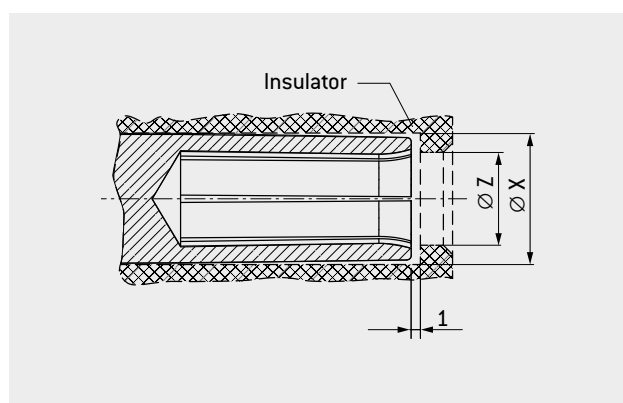
<sup>1</sup> See "Technical Information" starting on page 63

## SPECIFICATIONS

- Suitable for contact pins (page 50 and 51)
- Easy and quick termination by crimping (crimp information starting on page 54)
- Suitable for connecting harmonized cables
- Part number crimping tool see table on page 57

| Chamber dimensions |            |            |
|--------------------|------------|------------|
| For pin<br>mm      | Ø X<br>mm  | Ø Z<br>mm  |
| 1.5                | 3.9 ± 0.03 | 1.8 + 0.1  |
| 2                  | 4.3 ± 0.03 | 2.3 + 0.1  |
| 3                  | 6 ± 0.05   | 3.3 + 0.1  |
| 4                  | 6.7 ± 0.1  | 4.3 + 0.1  |
| 5                  | 8 ± 0.1    | 5.3 + 0.1  |
| 6                  | 9.3 ± 0.1  | 6.3 + 0.1  |
| 8                  | 12.3 ± 0.1 | 8.3 + 0.1  |
| 10                 | 14.3 ± 0.1 | 10.3 + 0.1 |

## Chamber dimensions for solder/screw termination and crimp termination



# ODU CONTACT PIN



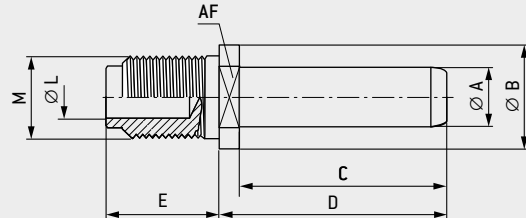
For all ODU TURNTAC® sockets.

## SOLDER/SCREW TERMINATION



Ag

Au



| Part number         | Surface | Dimensions |       |     |      |      |    |      |           |      |
|---------------------|---------|------------|-------|-----|------|------|----|------|-----------|------|
|                     |         | Ø A        | x¹    | Ø B | C    | D    | AF | E    | M         | Ø L  |
|                     |         | mm         | mm    | mm  | mm   | mm   | mm | mm   | Thread    | mm   |
| 181.106.000.301.000 | Ag      | 1.5        | -0.03 | 4   | 10   | 11.5 | 3  | 10   | M2.6      | 1.25 |
| 181.106.000.307.000 | Au      |            |       |     |      |      |    |      |           |      |
| 181.107.000.301.000 | Ag      | 2          | -0.03 | 5   | 10   | 11.5 | 4  | 12.5 | M3        | 1.8  |
| 181.107.000.307.000 | Au      |            |       |     |      |      |    |      |           |      |
| 181.110.000.301.000 | Ag      | 3          | -0.03 | 6   | 14   | 15.5 | 5  | 15   | M4        | 2.3  |
| 181.110.000.307.000 | Au      |            |       |     |      |      |    |      |           |      |
| 181.111.000.301.000 | Ag      | 4          | -0.03 | 7   | 14   | 16   | 6  | 19   | M5        | 3    |
| 181.111.000.307.000 | Au      |            |       |     |      |      |    |      |           |      |
| 181.212.000.301.000 | Ag      | 5          | -0.03 | 7   | 17.5 | 19.5 | 6  | 19   | M5        | 3    |
| 181.113.000.301.000 | Ag      | 6          | -0.03 | 8   | 23   | 26   | 7  | 22   | M6        | 3.6  |
| 181.213.000.301.000 | Ag      | 6          | -0.03 | 11  | 23   | 26   | 8  | 22   | M8        | 4.8  |
| 181.115.000.301.000 | Ag      | 8          | -0.03 | 11  | 23   | 26   | 9  | 26   | M8        | 4.8  |
| 181.215.000.301.000 | Ag      | 8          | -0.03 | 14  | 23   | 26   | 11 | 26   | M10       | 6.2  |
| 181.117.000.301.000 | Ag      | 10         | -0.04 | 16  | 23   | 26   | 12 | 30   | M10       | 6.2  |
| 181.217.000.301.000 | Ag      | 10         | -0.04 | 16  | 23   | 26   | 12 | 30   | M12 × 1.5 | 7.6  |

Other variants, dimensions and finishes available on request.

¹ Tolerance diameter A

## SPECIFICATIONS

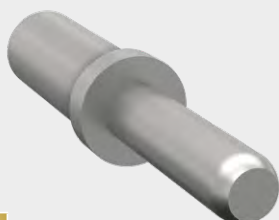
- Suitable for all round ODU TURNTAC® sockets
- For tightening torque see page 59
- Suitable for screwing to power busbars, backplanes and contact blocks
- Cables with lugs can be easily connected.
- Cables can be soldered into the solder hole.

# ODU CONTACT PIN

For all ODU TURNTAC® sockets

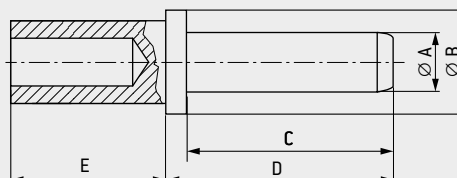


## CRIMP TERMINATION



Ag

Au



| Part number         | Surface | Dimensions |                |     |      |      |      |                            |
|---------------------|---------|------------|----------------|-----|------|------|------|----------------------------|
|                     |         | Ø A        | x <sup>1</sup> | Ø B | C    | D    | E    | Cross-section <sup>2</sup> |
| 181.606.000.301.000 | Ag      | 1.5        | -0.03          | 4   | 10   | 11.5 | 6.5  | 1.5                        |
| 181.606.000.307.000 | Au      |            |                |     |      |      |      |                            |
| 181.607.000.301.000 | Ag      | 2          | -0.03          | 4   | 10   | 11.5 | 6.5  | 2.5                        |
| 181.607.000.307.000 | Au      |            |                |     |      |      |      |                            |
| 181.610.000.301.000 | Ag      | 3          | -0.03          | 7   | 14   | 16   | 6.5  | 4                          |
| 181.610.000.307.000 | Au      |            |                |     |      |      |      |                            |
| 181.611.000.301.000 | Ag      | 4          | -0.03          | 8   | 14   | 16   | 12.5 | 6                          |
| 181.611.000.307.000 | Au      |            |                |     |      |      |      |                            |
| 181.712.000.301.000 | Ag      | 5          | -0.03          | 9   | 17.5 | 19.5 | 17.5 | 10                         |

Other variants, dimensions and finishes available on request.

<sup>1</sup> Tolerance diameter A

<sup>2</sup> See "Technical Information" starting on page [63](#)

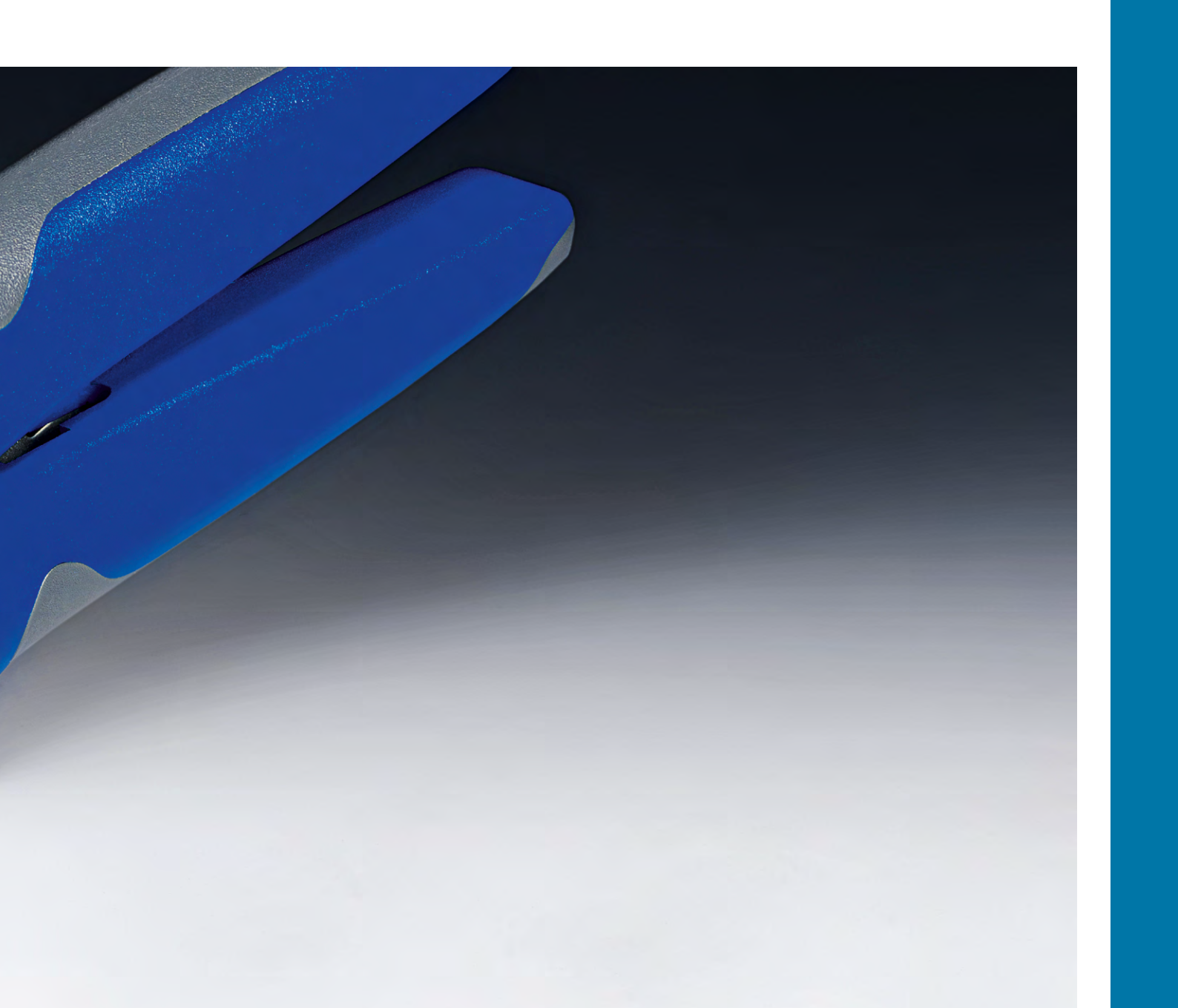
## SPECIFICATIONS

- Suitable for all round ODU TURNTAC® sockets
- Easy and quick termination by crimping (crimp information see page [54](#))
- Suitable for connecting harmonized cables
- Part number crimping tool see table on page [56](#)



ODU ELECTRICAL CONTACTS





# TOOLS AND ACCESSORIES

|                                |                    |
|--------------------------------|--------------------|
| Termination technologies ..... | <a href="#">54</a> |
| Crimping tools .....           | <a href="#">56</a> |
| Conversions / AWG .....        | <a href="#">60</a> |
| Service Kit .....              | <a href="#">61</a> |

# TERMINATION TECHNOLOGIES



ODU offers three different contact termination technologies for the electrical contacts:

- Crimp
- Solder
- Screw

## CRIMP TERMINATION

The contact processing for the production of connecting cables via crimping creates a secure, durable, and corrosion-free contact. For most people, crimping is easy and quick to carry out.

Through crimping, the conductor and contact materials in the compressed areas become so dense as to create a connection which is nearly gas-proof, and with a tensile strength befitting the conductor material.

Crimping can be carried out on the tiniest of cross-sections as well as on larger cross-sections. For small diameters, eight-point crimp tools are used; hexagonal crimp tools are used for larger dimensions. The corner measurement of the crimping is never larger than the original diameter. The cable insulation is not damaged in the process and can be directly attached to the connector end.

For error-free crimping, the bore diameter must be perfectly fitted to the cable. Such error-free crimping is only guaranteed if using ODU-recommended crimping tools. In order to correctly advise you, we need to know your cable type and profile, preferably by means of a sample and corresponding data sheet.

### HEXAGONAL CRIMPING



### 8-POINT CRIMPING

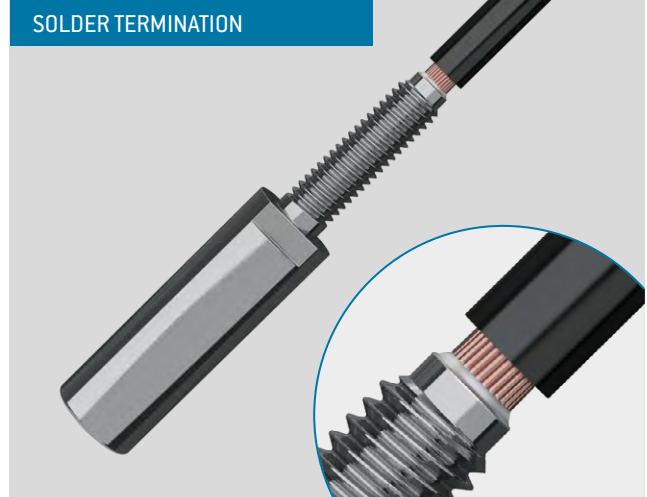




### SOLDER TERMINATION

Termination technology in which a molten additional metal [solder] with a lower melting point than the base materials to be connected is used to attach two metallic materials to one another. In contrast to crimping, the wire to be soldered can also be considerably smaller than the intended solder hole. Warning: avoid unacceptable temperature increases in sockets.

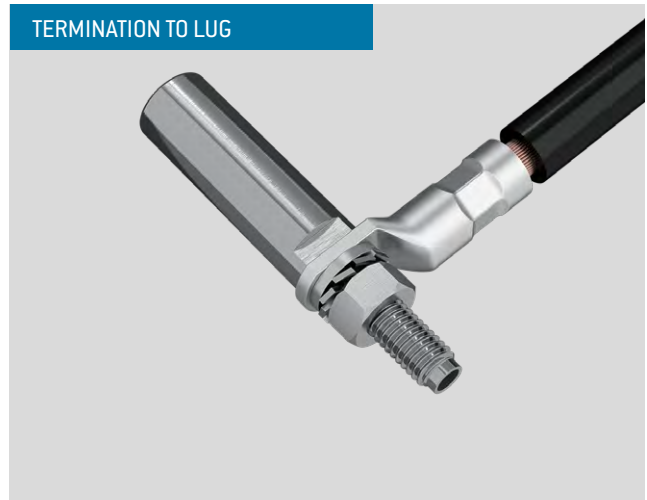
#### SOLDER TERMINATION



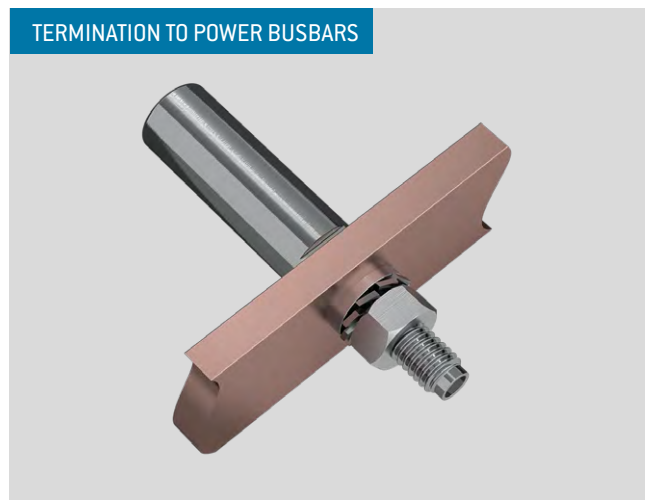
### SCREW TERMINATION

This connection is established through lugs with lamellar disks and nuts. Disks and nuts are not included in standard deliveries.

#### TERMINATION TO LUG



#### TERMINATION TO POWER BUSBARS



# CRIMPING TOOLS

For all round ODU contacts

For further crimp information, please refer to the table on page [57](#).



## 8-POINT CRIMPING TOOL FOR CROSS-SECTIONS FROM 0.38 TO 0.5 mm<sup>2</sup>



**PART NUMBER: 080.000.051.000.000**

Hand crimping tool with user-friendly digital display and ergonomic design.

## HEXAGONAL CRIMPING TOOL FOR CROSS-SECTIONS FROM 1.5 TO 6 mm<sup>2</sup>



**PART NUMBER: 080.000.062.000.000**

Reliable hand crimping tool with optimized power transmission and an ergonomic design for easy handling.

## HEXAGONAL CRIMPING TOOL FOR CROSS-SECTIONS FROM 10 TO 95 mm<sup>2</sup>



**PART NUMBER: 080.000.064.000.000**

High pressing force for weaker hands due to precision mechanics. The folding head facilitates work with bulky connector forms and changing crimp inserts.

**FOR CRIMPING JAWS, GO TO PAGE [57](#).**

Crimping jaws must be ordered separately.

The corresponding crimp instructions can be found at [www.odu-connectors.com/downloads/assembly-instructions](http://www.odu-connectors.com/downloads/assembly-instructions)

# CRIMPING INFORMATION



Suitable for all round ODU contacts

| Termination cross-section | Stripping length | 8-pt-crimping tool  | Hexagonal crimping tool | Mechanical hexagonal crimping tool <sup>1</sup> |
|---------------------------|------------------|---------------------|-------------------------|---|
| mm <sup>2</sup>           | mm               | 080.000.051.000.000 | 080.000.062.000.000     | 080.000.064.000.000                             |
| 0.38                      | 4.5              | > 0.65 < 0.7        |                         |   |
| 0.5                       | 4.5              | > 0.9 < 0.95        |                         |   |
| 1.50                      | 7                |                     | Profile no. 1           |   |
| 2.5                       | 7                |                     | Profile no. 2           |   |
| 4                         | 7                |                     | Profile no. 3           |   |
| 6                         | 7                |                     | Profile no. 3           |   |
| 10                        | 10               |                     |                         | 080.000.064.110.000                             |
| 16                        | 10               |                     |                         | 080.000.064.116.000                             |
| 25                        | 18               |                     |                         | 080.000.064.125.000                             |
| 35                        | 18               |                     |                         | 080.000.064.135.000                             |
| 50                        | 18               |                     |                         | 080.000.064.150.000                             |
| 70                        | 24               |                     |                         | 080.000.064.170.000                             |
| 95                        | 30               |                     |                         | 080.000.064.195.000                             |

<sup>1</sup> Crimp inserts must be ordered separately.



# CRIMPING TOOLS



For ODU SPRINGTAC® Flatsockets

## B-PROFILE CRIMPING TOOL FOR CONDUCTOR CROSS-SECTIONS FROM 0.25–1.5 mm<sup>2</sup>



PART NUMBER: 080.000.066.000.000

Manual crimping tool with blocking system for reliable crimping

## B-PROFILE CRIMPING TOOL FOR CONDUCTOR CROSS-SECTIONS FROM 1.5–4 mm<sup>2</sup>



PART NUMBER: 080.000.067.000.000

Manual crimping tool with blocking system for reliable crimping

The corresponding crimp instructions can be found at [www.odu-connectors.com/downloads/assembly-instructions](http://www.odu-connectors.com/downloads/assembly-instructions)

# CRIMPING TOOLS



Tools for ODU SPRINGTAC® Flatsockets

| Size                     | Termination cross-section | Crimping tool       |                     |
|--------------------------|---------------------------|---------------------|---------------------|
| mm                       | mm <sup>2</sup>           | 080.000.066.000.000 | 080.000.067.000.000 |
| 0.64 × 0.64              | 0.25 / 0.35 / 0.5         | Profile no. 1       |                     |
| 1.6 × 0.6 / 0.8          | 0.5 / 0.75                | Profile no. 2       |                     |
| 1.6 × 0.6 / 0.8          | 1                         | Profile no. 3       |                     |
| 2.8 × 0.8                | 1                         | Profile no. 4       |                     |
| 2.8 × 0.8                | 1.5                       | Profile no. 5       |                     |
| 4.8 × 0.8 /<br>6.3 × 0.8 | 1.5                       |                     | Profile no. 1       |
|                          | 2.5                       |                     | Profile no. 3       |
|                          | 4                         |                     | Profile no. 2       |

## Tightening torque for screw termination

| Connection thread | Tightening torque (maximum)<br>Nm |
|-------------------|-----------------------------------|
| M2.3              | 0.1                               |
| M2.6              | 0.2                               |
| M3                | 0.5                               |
| M4                | 1.2                               |
| M5                | 2                                 |
| M6                | 3                                 |
| M8                | 6                                 |
| M10               | 10                                |
| M12 × 1.5         | 16                                |
| M14 × 1.5         | 22                                |
| M16 × 1.5         | 30                                |
| M20 × 2           | 50                                |
| M24 × 2           | 80                                |
| M32 × 2           | 200                               |

Maximum tightening torque with solid screw termination and standard material (brass).

Applies to all contacts with solder / screw termination, unless other values are indicated on the respective pages.

# CONVERSIONS / AWG (AMERICAN WIRE GAUGE)



| Circular wire |          |        |                                  |                 |                         |
|---------------|----------|--------|----------------------------------|-----------------|-------------------------|
| AWG           | Diameter |        | Cross-section<br>mm <sup>2</sup> | Weight<br>kg/km | Max. resistance<br>Ω/km |
|               | Inch     | mm     |                                  |                 |                         |
| 4/0 [259/21]  | 0.6010   | 15.300 | 107.0                            | 997.00          | 0.17                    |
| 3/0 [259/22]  | 0.5360   | 13.600 | 85.0                             | 793.00          | 0.22                    |
| 2/0 [259/23]  | 0.4770   | 12.100 | 67.4                             | 628.00          | 0.27                    |
| 1/0 [259/24]  | 0.4240   | 10.800 | 53.5                             | 497.00          | 0.34                    |
| 1 [259/25]    | 0.3780   | 9.600  | 42.2                             | 395.00          | 0.43                    |
| 2 [259/26]    | 0.3350   | 8.500  | 33.6                             | 312.00          | 0.55                    |
| 4 [133/25]    | 0.2660   | 6.800  | 21.1                             | 195.00          | 0.87                    |
| 6 [133/27]    | 0.2100   | 5.300  | 13.3                             | 122.00          | 1.38                    |
| 8 [133/29]    | 0.1670   | 4.200  | 8.37                             | 76.80           | 2.18                    |
| 10 [1]        | 0.1019   | 2.590  | 5.26                             | 46.77           | 3.45                    |
| 10 [37/26]    | 0.1150   | 2.921  | 4.74                             | 42.10           | 4.13                    |
| 12 [1]        | 0.0808   | 2.050  | 3.31                             | 29.41           | 5.45                    |
| 12 [19/25]    | 0.0930   | 2.362  | 3.08                             | 27.36           | 5.94                    |
| 12 [37/28]    | 0.0910   | 2.311  | 2.97                             | 26.45           | 6.36                    |
| 14 [1]        | 0.0641   | 1.630  | 2.08                             | 18.51           | 8.79                    |
| 14 [19/27]    | 0.0730   | 1.854  | 1.94                             | 17.23           | 9.94                    |
| 16 [1]        | 0.0508   | 1.290  | 1.31                             | 11.625          | 13.94                   |
| 16 [19/29]    | 0.0590   | 1.499  | 1.23                             | 10.928          | 15.70                   |
| 18 [1]        | 0.0403   | 1.020  | 0.823                            | 7.316           | 22.18                   |
| 20 [1]        | 0.0320   | 0.813  | 0.519                            | 4.613           | 35.10                   |
| 20 [7/28]     | 0.0390   | 0.991  | 0.563                            | 5.003           | 34.10                   |
| 20 [19/32]    | 0.0420   | 1.067  | 0.616                            | 5.473           | 32.00                   |
| 22 [1]        | 0.0253   | 0.643  | 0.324                            | 2.883           | 57.70                   |
| 22 [19/34]    | 0.0330   | 0.838  | 0.382                            | 3.395           | 51.80                   |
| 24 [1]        | 0.0201   | 0.511  | 0.205                            | 1.820           | 91.20                   |
| 24 [7/32]     | 0.0250   | 0.635  | 0.227                            | 2.016           | 86.00                   |
| 24 [19/36]    | 0.0270   | 0.686  | 0.241                            | 2.145           | 83.30                   |
| 26 [1]        | 0.0159   | 0.404  | 0.128                            | 1.139           | 147.00                  |
| 26 [7/34]     | 0.0200   | 0.508  | 0.141                            | 1.251           | 140.00                  |
| 26 [19/38]    | 0.0220   | 0.559  | 0.154                            | 1.370           | 131.00                  |
| 28 [1]        | 0.0126   | 0.320  | 0.0804                           | 0.715           | 231.00                  |
| 28 [7/36]     | 0.0160   | 0.406  | 0.0889                           | 0.790           | 224.00                  |
| 28 [19/40]    | 0.0170   | 0.432  | 0.0925                           | 0.823           | 207.00                  |
| 30 [1]        | 0.0100   | 0.254  | 0.0507                           | 0.450           | 374.00                  |
| 30 [7/38]     | 0.0130   | 0.330  | 0.0568                           | 0.505           | 354.00                  |
| 32 [1]        | 0.0080   | 0.203  | 0.0324                           | 0.288           | 561.00                  |
| 32 [7/40]     | 0.0110   | 0.279  | 0.0341                           | 0.303           | 597.10                  |
| 34 [1]        | 0.0063   | 0.160  | 0.0201                           | 0.179           | 951.00                  |
| 34 [7/42]     | 0.0070   | 0.180  | 0.0222                           | 0.197           | 1,491.00                |
| 36 [1]        | 0.0050   | 0.127  | 0.0127                           | 0.1126          | 1,519.00                |
| 36 [7/44]     | 0.0060   | 0.150  | 0.0142                           | 0.1263          | 1,322.00                |

The American Wire Gauge (AWG) is based on the principle that the cross-section of the wire changes by 26 % from one gauge number to the next. The AWG numbers decrease as the wire diameter increases, while the AWG numbers increase as the wire diameter decreases. This only applies to solid wire.

However, stranded wire is predominately used in practice. This has the advantage of a longer service life under bending and vibration as well as greater flexibility in comparison with solid wire.

Stranded wires are made of multiple, smaller-gauge wires [higher AWG number]. The stranded wire is assigned the AWG numbers of a solid wire with the next closest cross-section to that of the stranded wire. In this case, the cross-section of the stranded wire refers to the sum of the copper cross-sections of the individual wires.

Accordingly, strands with the same AWG number but different numbers of wires differ in cross-section. For instance, an AWG 20 strand of 7 AWG 28 wires has a cross-section of 0.563 mm<sup>2</sup>, while an AWG 20 strand of 19 AWG 32 wires has a cross-section of 0.616 mm<sup>2</sup>.

Source: ASTM

# SERVICE KIT FOR ALL ELECTRICAL CONTACTS



Contact lubrication improves the mechanical properties of contact systems. Cleaning the contact surfaces prior to lubrication is also recommended in order to remove pollution. With appropriate care, wear due to high mating frequency can be significantly minimized and the mating and demating forces reduced. The cleaning and lubricating interval must be individually adapted to circumstances and should only be carried out with products recommended by the contact manufacturer.

ODU has put together a Service Kit for this purpose, so that lubrication can be carried out directly on site. A cleaning brush and a special cleaning cloth, as well as precise instructions, help to ensure optimal care of the contacts. In the absence of other specifications, the Service Kit can be used for all ODU contacts and connections.

**PART NUMBER: 170.000.000.000.100**

To reorder individual tubes of the lubricant:

**ORDER NUMBER: 50270079**

For technical properties of the Service Kit, please refer to our website: [www.odu-connectors.com/downloads](http://www.odu-connectors.com/downloads)

## CLEANING INFORMATION

Service manual 003.170.000.000.000

## FURTHER INFORMATION

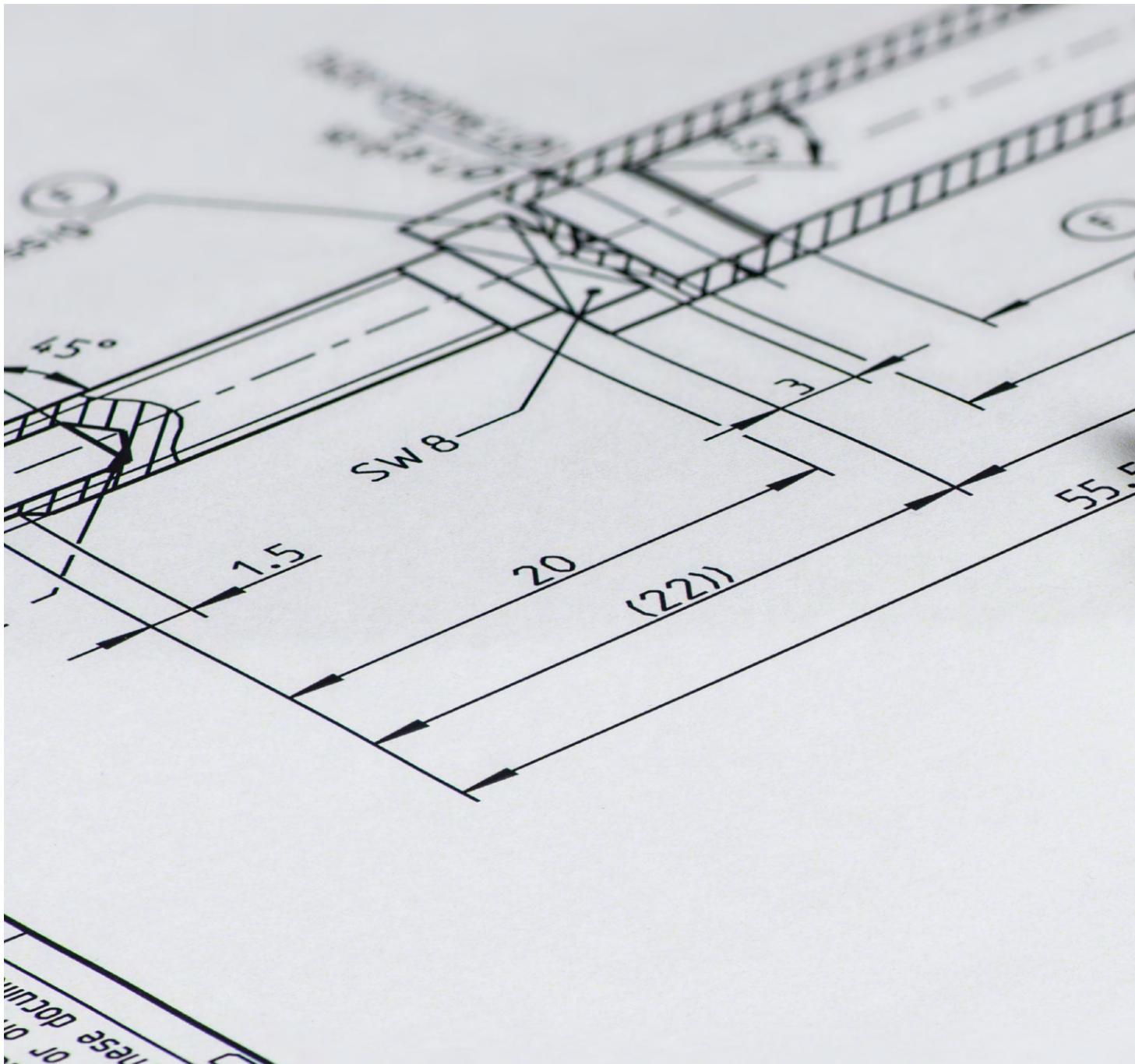
Never submerge the connector in liquid. The connector may only be put back into operation again when it has been assured that it is completely dry.

Ensure that contact pins are not bent or otherwise damaged. The connector must no longer be used if damage or other signs of wear are detected. Clean with maximum 2.5 bar compressed air to avoid contact damage. A slight blackening of the contact points may occur over the course of the service life and represents no impairment of the electrical properties.

### Recommended cleaning agent

Soap: liquid soaps on sodium bicarbonate or potassium base

Alcohol: ethanol 70 %, isopropyl alcohol 70 %



ODU ELECTRICAL CONTACTS





## TECHNICAL INFORMATION

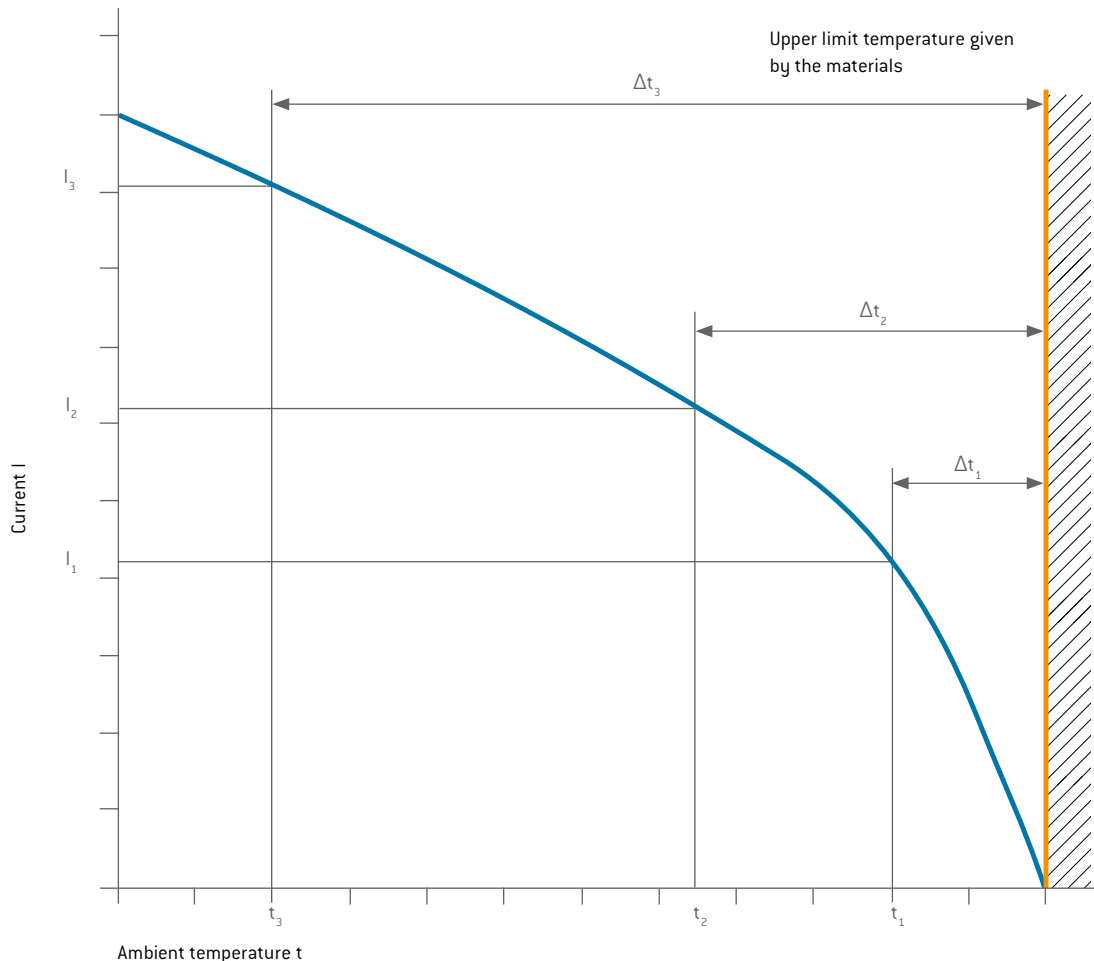
|   |                    |
|---|--------------------|
| Current-carrying capacity .....                         | <a href="#">64</a> |
| Installation instructions .....                         | <a href="#">68</a> |
| Chamber dimensions for ODU SPRINGTAC® Flatsockets ..... | <a href="#">70</a> |
| Technical terms .....                                   | <a href="#">73</a> |

# BASIC PRINCIPLES OF CURRENT-CARRYING CAPACITY



Derating measurement procedure IEC 60512-5-2:2002 [DIN EN 60512-5-2:2003-01].

## STRUCTURE OF THE BASE CURRENT-CARRYING CAPACITY CURVE



The current-carrying capacity of a connector is determined by measurement. It is determined by taking into account the self-heating due to current heat and the ambient temperature, and is limited by the thermal properties of the contact materials used; the upper limit temperatures of these materials should not be exceeded.

The relationship between current, the resulting temperature increase, conditioned by the dissipation loss at the contact resistance, and the ambient temperature is represented in a curve.

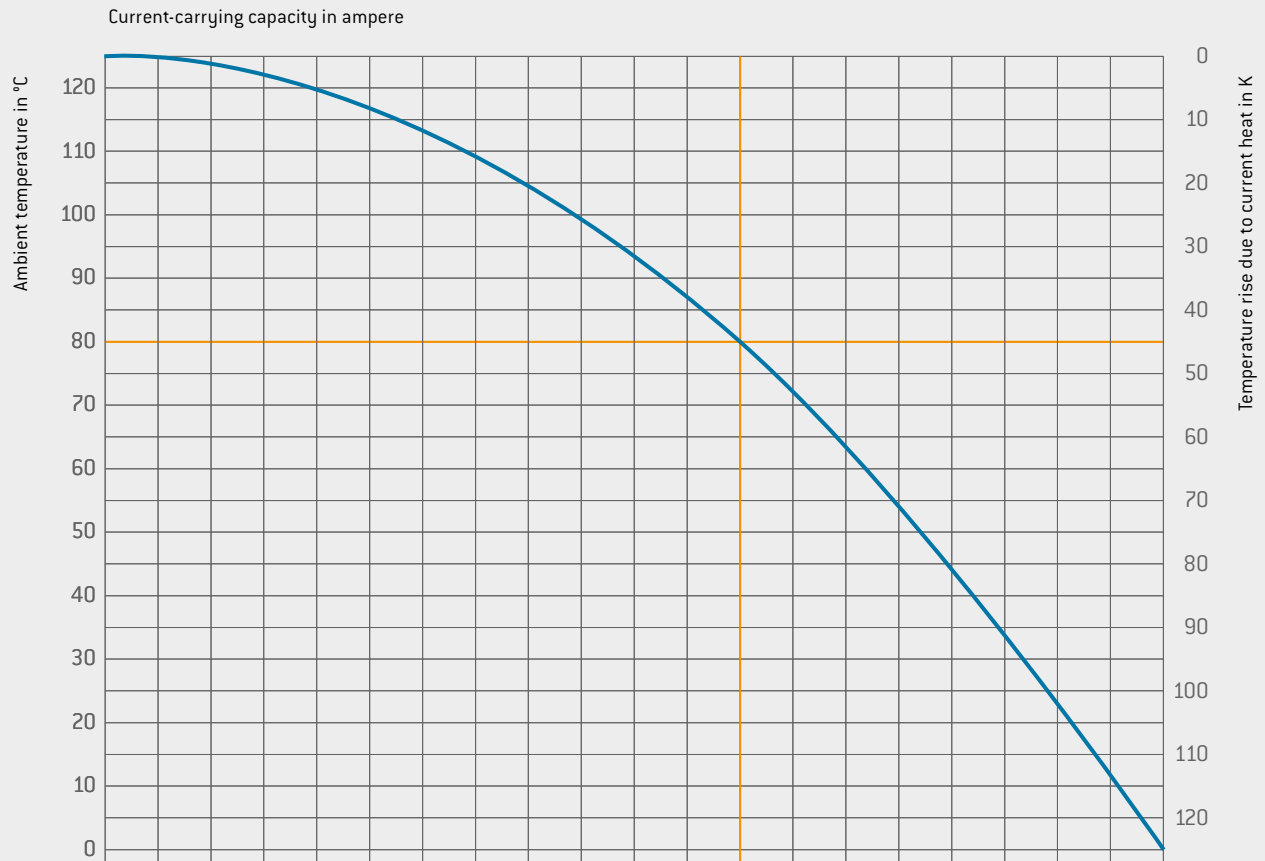
The curve is drawn in a linear coordinate system with the current " $I$ " as the ordinate and the temperature " $t$ " as the abscissa. The upper limit temperature forms the limit of the diagram.

In three measurements, the temperature rise due to Joule heat ( $\Delta t$ ) is determined at different currents in at least three connectors and the points determined in this process are connected into a parabolic basis curve.

The corrected current-carrying capacity curve (**derating curve**) can be derived from the basis curve. The safety factor  $[0.8 \times I_n]$  also makes allowance for factors such as manufacturing tolerances and uncertainties in temperature measurement or the measuring arrangement.

# CURRENT-CARRYING CAPACITY DIAGRAM

## ODU SPRINGTAC®



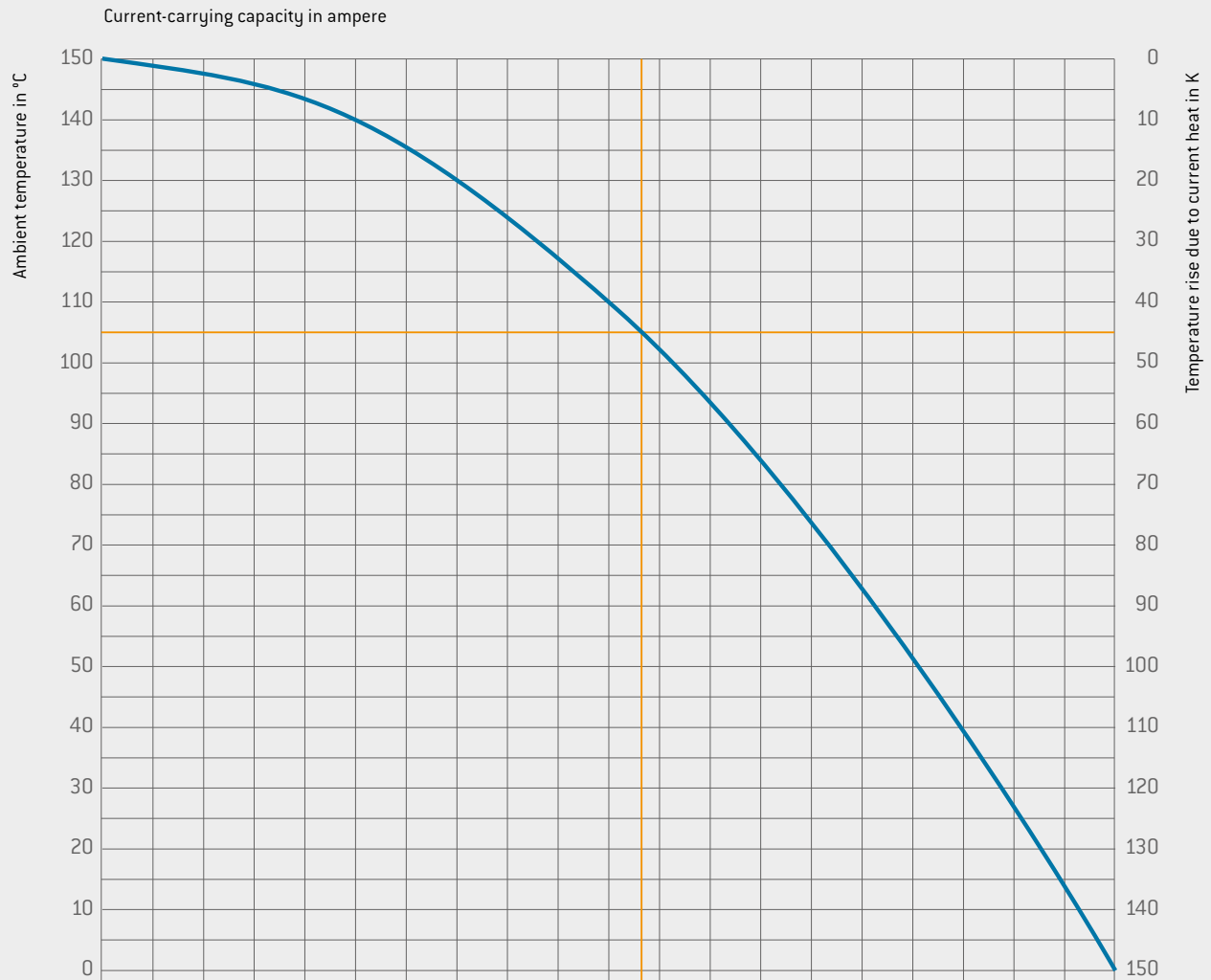
| Contact-Ø<br>mm | Nominal<br>current |     |     |     |     |     |            |     |       |              |       |  |  | Max.<br>continuous current |
|-----------------|--------------------|-----|-----|-----|-----|-----|------------|-----|-------|--------------|-------|--|--|----------------------------|
| Ø 0.76          | 0                  | 1.5 | 3   | 4.5 | 6   | 7.5 | <b>9</b>   | 10  | 11.5  | <b>13.5</b>  | 14.5  |  |  |                            |
| Ø 1.02          | 0                  | 2   | 4   | 6   | 8   | 10  | <b>12</b>  | 14  | 16    | <b>18</b>    | 20    |  |  |                            |
| Ø 1.5           | 0                  | 5   | 9   | 13  | 18  | 23  | <b>27</b>  | 33  | 38    | <b>43</b>    | 47    |  |  |                            |
| Ø 2             | 0                  | 6   | 12  | 17  | 23  | 29  | <b>35</b>  | 42  | 48    | <b>54</b>    | 60    |  |  |                            |
| Ø 2.5           | 0                  | 7   | 13  | 19  | 25  | 32  | <b>38</b>  | 45  | 52    | <b>59</b>    | 65    |  |  |                            |
| Ø 3             | 0                  | 9   | 17  | 25  | 33  | 41  | <b>49</b>  | 58  | 67    | <b>76</b>    | 83    |  |  |                            |
| Ø 4             | 0                  | 10  | 20  | 35  | 45  | 55  | <b>65</b>  | 80  | 90    | <b>105</b>   | 115   |  |  |                            |
| Ø 5             | 0                  | 15  | 30  | 45  | 55  | 70  | <b>85</b>  | 105 | 120   | <b>135</b>   | 150   |  |  |                            |
| Ø 6             | 0                  | 20  | 35  | 55  | 70  | 90  | <b>110</b> | 130 | 150   | <b>170</b>   | 190   |  |  |                            |
| Ø 8             | 0                  | 25  | 50  | 70  | 95  | 120 | <b>145</b> | 175 | 200   | <b>225</b>   | 250   |  |  |                            |
| Ø 10            | 0                  | 30  | 60  | 90  | 120 | 155 | <b>185</b> | 220 | 255   | <b>295</b>   | 325   |  |  |                            |
| Ø 12            | 0                  | 35  | 70  | 110 | 150 | 190 | <b>230</b> | 270 | 315   | <b>360</b>   | 400   |  |  |                            |
| Ø 16            | 0                  | 55  | 110 | 165 | 225 | 285 | <b>340</b> | 405 | 465   | <b>535</b>   | 590   |  |  |                            |
| Ø 20            | 0                  | 70  | 140 | 210 | 290 | 365 | <b>440</b> | 520 | 600   | <b>695</b>   | 765   |  |  |                            |
| Ø 24            | 0                  | 90  | 180 | 275 | 380 | 480 | <b>585</b> | 700 | 810   | <b>940</b>   | 1,035 |  |  |                            |
| Ø 28            | 0                  | 115 | 235 | 365 | 505 | 650 | <b>785</b> | 950 | 1,105 | <b>1,285</b> | 1,420 |  |  |                            |
| Ø 30            | 0                  | 125 | 255 | 390 | 540 | 685 | <b>830</b> | 990 | 1,150 | <b>1,330</b> | 1,465 |  |  |                            |

Measurement in accordance with IEC 60512-5-2:2002 (DIN EN 60512-5-2:2003-01) (base curve is shown).

Upper limit temperature +125 °C. Connection with the largest specified nominal cross-section.

# CURRENT-CARRYING CAPACITY DIAGRAM

## ODU LAMTAC®



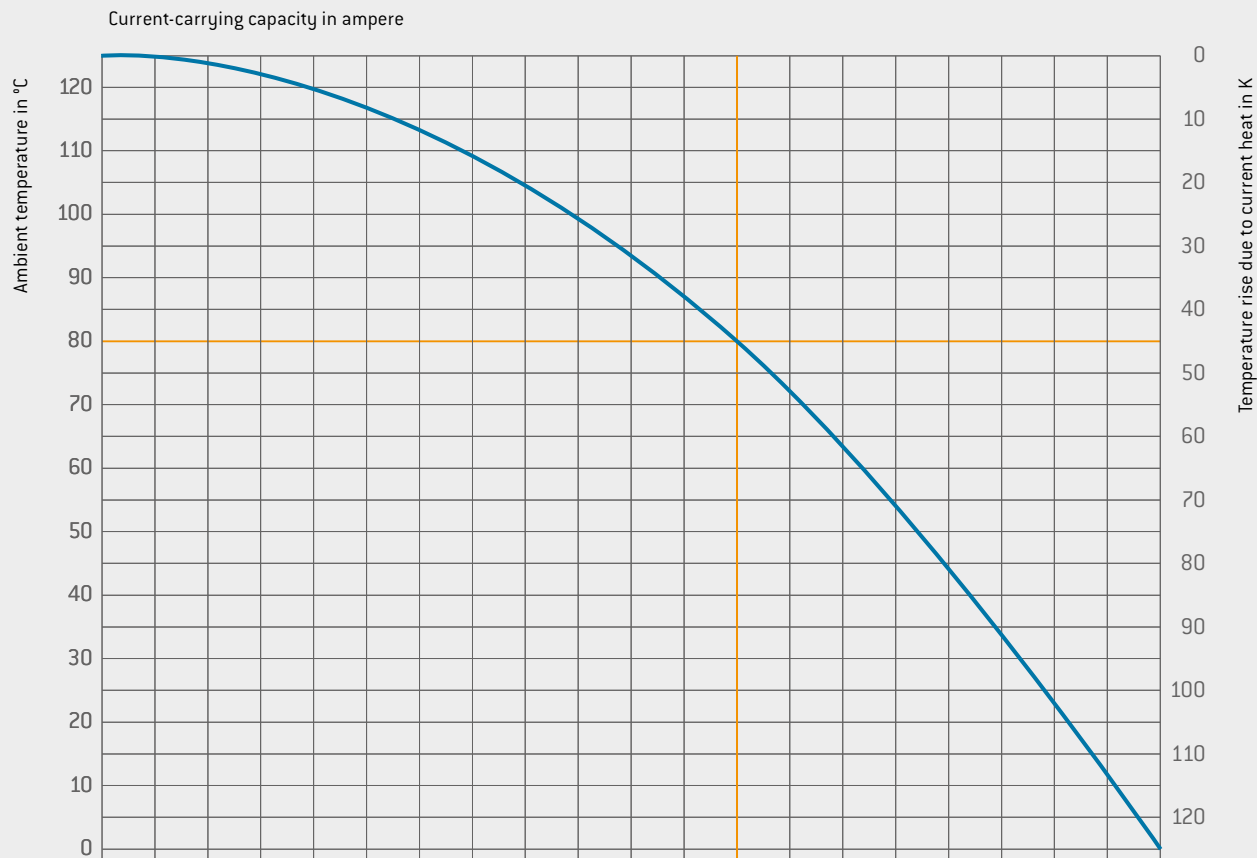
| Contact-Ø<br>mm | Nominal current |  |     |  |     |  |     |  |     |  |     |  |       |  | Max.<br>continuous current |       |
|-----------------|-----------------|--|-----|--|-----|--|-----|--|-----|--|-----|--|-------|--|----------------------------|-------|
| Ø 1             | 0               |  | 4   |  | 6   |  | 8   |  | 11  |  | 14  |  | 18    |  | 24                         | 26    |
| Ø 1.5           | 0               |  | 7   |  | 11  |  | 16  |  | 22  |  | 28  |  | 37    |  | 49                         | 52    |
| Ø 2             | 0               |  | 9   |  | 14  |  | 21  |  | 28  |  | 36  |  | 47    |  | 62                         | 67    |
| Ø 3             | 0               |  | 12  |  | 19  |  | 28  |  | 38  |  | 50  |  | 66    |  | 88                         | 95    |
| Ø 4             | 0               |  | 15  |  | 25  |  | 35  |  | 50  |  | 65  |  | 85    |  | 115                        | 125   |
| Ø 5             | 0               |  | 25  |  | 35  |  | 55  |  | 70  |  | 90  |  | 120   |  | 155                        | 170   |
| Ø 6             | 0               |  | 35  |  | 55  |  | 80  |  | 110 |  | 145 |  | 195   |  | 260                        | 280   |
| Ø 8             | 0               |  | 40  |  | 70  |  | 105 |  | 140 |  | 185 |  | 245   |  | 330                        | 355   |
| Ø 10            | 0               |  | 50  |  | 85  |  | 130 |  | 170 |  | 230 |  | 310   |  | 410                        | 445   |
| Ø 12            | 0               |  | 50  |  | 85  |  | 130 |  | 175 |  | 235 |  | 315   |  | 420                        | 455   |
| Ø 16            | 0               |  | 90  |  | 145 |  | 210 |  | 280 |  | 370 |  | 490   |  | 650                        | 700   |
| Ø 20            | 0               |  | 115 |  | 185 |  | 275 |  | 370 |  | 490 |  | 650   |  | 870                        | 935   |
| Ø 24            | 0               |  | 140 |  | 240 |  | 365 |  | 495 |  | 670 |  | 910   |  | 1,235                      | 1,340 |
| Ø 28            | 0               |  | 190 |  | 320 |  | 485 |  | 655 |  | 885 |  | 1,195 |  | 1,610                      | 1,745 |
| Ø 30            | 0               |  | 220 |  | 365 |  | 545 |  | 735 |  | 990 |  | 1,330 |  | 1,790                      | 1,940 |

Measurement in accordance with IEC 60512-5-2:2002 (DIN EN 60512-5-2:2003-01) (base curve is shown).

Upper limit temperature +150 °C. Connection with the largest specified nominal cross-section.

# CURRENT-CARRYING CAPACITY DIAGRAM

## ODU TURNTAC®



| Contact-Ø<br>mm |   |  |    |  |    |  |    |  |     |  | Nominal<br>current |  |     |  | Max.<br>continuous current |  |     |  |     |
|-----------------|---|--|----|--|----|--|----|--|-----|--|--------------------|--|-----|--|----------------------------|--|-----|--|-----|
| Ø 1.5           | 0 |  | 4  |  | 8  |  | 13 |  | 17  |  | 25                 |  | 30  |  | 34                         |  | 39  |  | 43  |
| Ø 2             | 0 |  | 6  |  | 11 |  | 17 |  | 23  |  | 34                 |  | 41  |  | 47                         |  | 53  |  | 58  |
| Ø 3             | 0 |  | 8  |  | 17 |  | 25 |  | 33  |  | 50                 |  | 58  |  | 67                         |  | 75  |  | 84  |
| Ø 4             | 0 |  | 10 |  | 19 |  | 29 |  | 39  |  | 55                 |  | 68  |  | 78                         |  | 90  |  | 97  |
| Ø 5             | 0 |  | 13 |  | 26 |  | 39 |  | 52  |  | 75                 |  | 91  |  | 104                        |  | 120 |  | 130 |
| Ø 6             | 0 |  | 16 |  | 33 |  | 50 |  | 65  |  | 100                |  | 115 |  | 132                        |  | 150 |  | 164 |
| Ø 8             | 0 |  | 21 |  | 42 |  | 63 |  | 84  |  | 105                |  | 125 |  | 148                        |  | 168 |  | 210 |
| Ø 10            | 0 |  | 28 |  | 56 |  | 84 |  | 112 |  | 140                |  | 165 |  | 195                        |  | 250 |  | 275 |

Measurement in accordance with IEC 60512-5-2:2002 (DIN EN 60512-5-2:2003-01) (base curve is shown).

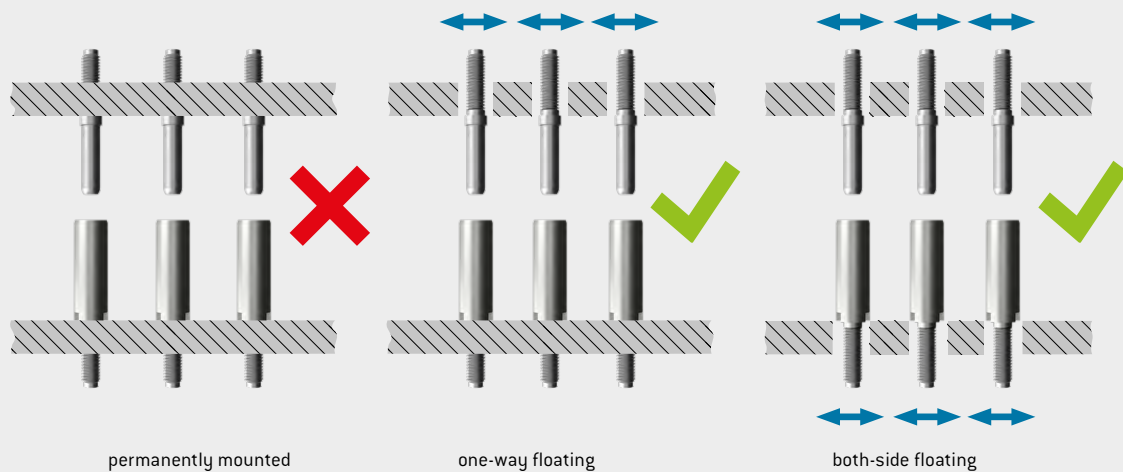
Upper limit temperature +125 °C. Connection with the largest specified nominal cross-section.



# INSTALLATION INSTRUCTION

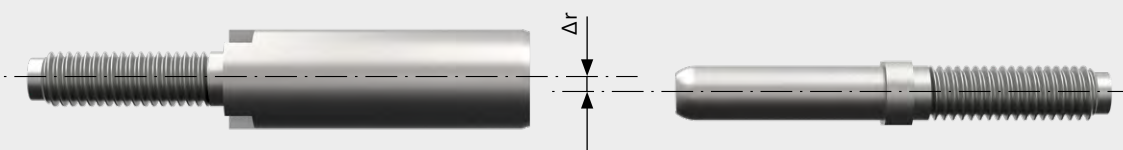


## INSTALLATION CLEARANCE



ODU contact systems can be used both as single contacts and in multi-position connectors. One side (pin or socket side) or both sides should always have a “floating” mounting in order to compensate for any manufacturing and assembly tolerances in the individual system components.

## MAXIMUM PERMISSIBLE OFFSET (RADIAL PLAY)

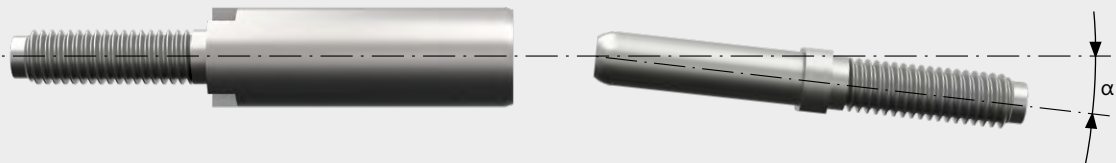


| Nominal contact diameter<br>mm | max. $\Delta r$<br>mm |
|--------------------------------|-----------------------|
| $\leq \varnothing 2$           | 0.02                  |
| $\leq \varnothing 4$           | 0.05                  |
| $\leq \varnothing 14$          | 0.1                   |
| $\leq \varnothing 30$          | 0.2                   |

Our ODU contact series are able to compensate for the radial displacements of the insertion axis. The figure shows a representation with radial axis displacement. The contact springs or louvres are still making contact with the mating surfaces and consequently continue to ensure full contact safety.



## DEVIATION ANGLE INSERTION AXIS



| Contact system | max. $\alpha$ |
|----------------|---------------|
| ODU SPRINGTAC® | $\pm 1^\circ$ |
| ODU LAMTAC®    | $\pm 1^\circ$ |
| ODU TURNTAC®   | $\pm 5^\circ$ |

The deviation angle of the insertion axis of the pin and socket should be as small as possible. It is especially important to consider this when implementing a “floating” assembly position.

## GENERAL INFORMATION

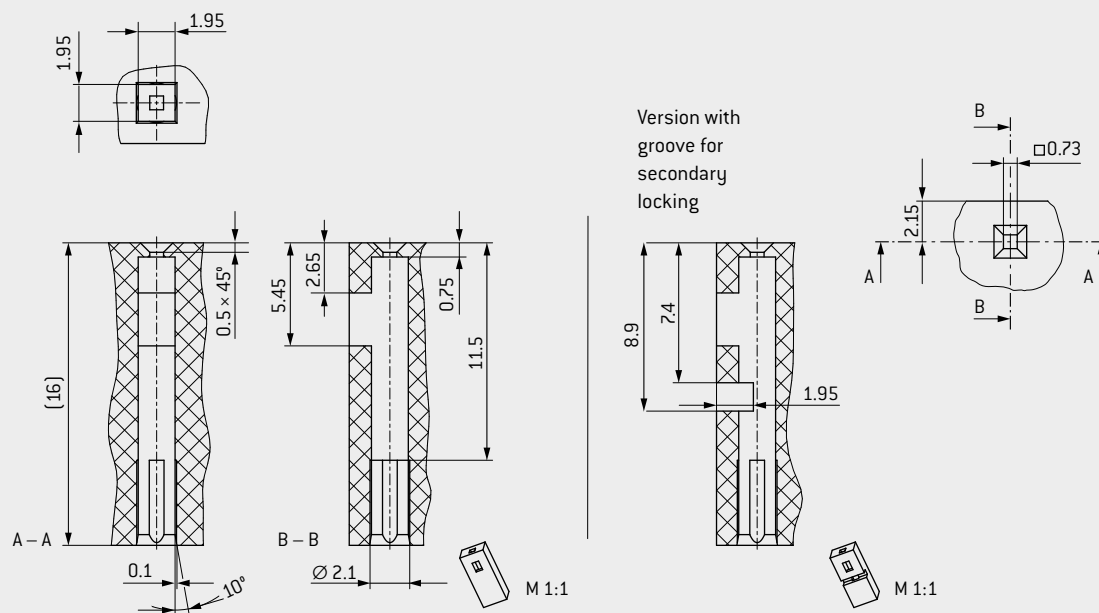
- ODU contact systems are not suitable for guiding a plug-in system. Components should be separately provided in order to implement a preliminary guidance piece. Preliminary guidance pieces are always recommended.
- For the technical design of the coupling forces for complete connectors, as well as any drives, locking cylinders and the like, we recommend applying a safety factor of at least 3 to the force values specified in the catalog.
- Non-compliance with the installation instructions may lead to malfunction or damage.

OUR TEAM WILL BE HAPPY TO ANSWER  
ANY QUERIES YOU MAY HAVE:  
[electrical-contacts@odu.de](mailto:electrical-contacts@odu.de)

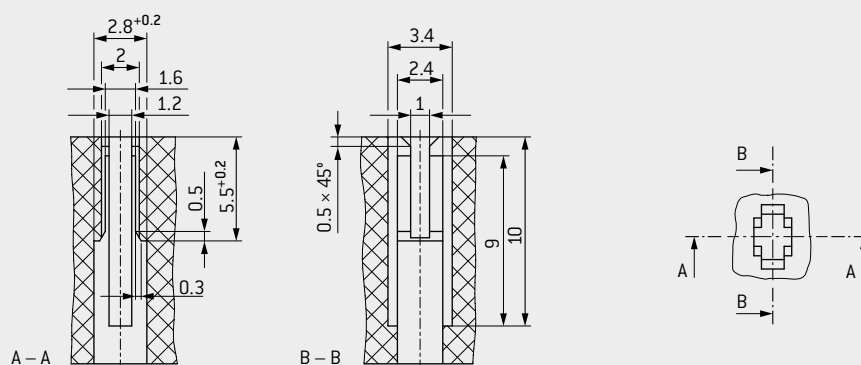
# ODU SPRINGTAC® FLATSOCKETS



## CHAMBER DIMENSIONS FOR 0.64 × 0.64 mm



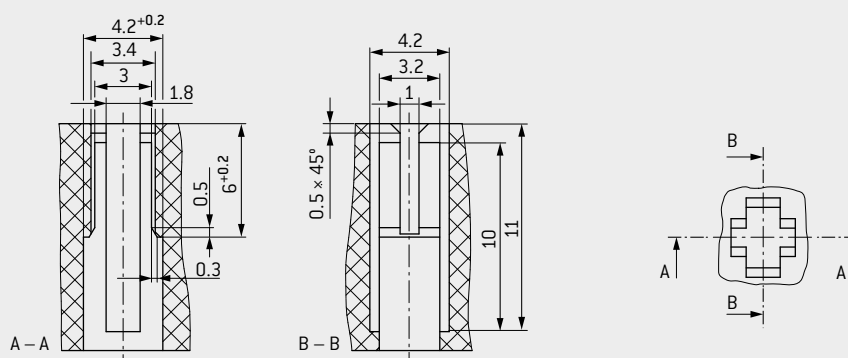
## CHAMBER DIMENSIONS FOR 1.6 × 0.6 / 0.8 mm



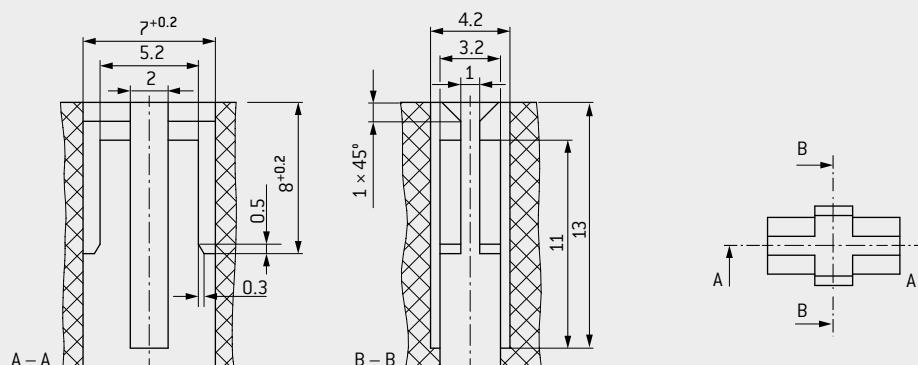
# ODU SPRINGTAC® FLATSOCKETS



## CHAMBER DIMENSIONS FOR 2.8 × 0.8 mm<sup>1</sup>



## CHAMBER DIMENSIONS FOR 6.3 × 0.8 (4.8 × 0.8) mm<sup>1</sup>



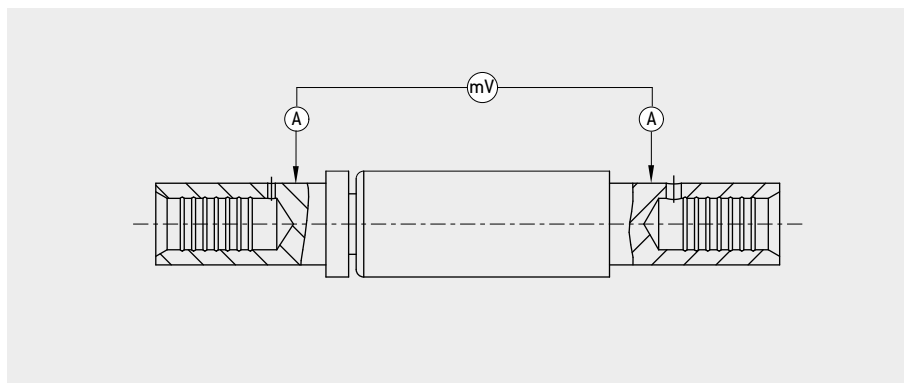
Dimensions without tolerances in accordance with ISO 2768-1:1989-11 and ISO 2768-2:1989-11 [DIN ISO 2768-1:1991-06 and DIN ISO 2768-2:1991-04], fine.

<sup>1</sup> Slightly increased mating and demating forces apply for the articles 190.224 ... 000 and 190.225 ... 000.

# TECHNICAL DATA



## MEASUREMENT POINTS TO DETERMINE THE TOTAL RESISTANCE





# TECHNICAL TERMS



## AMBIENT TEMPERATURE

Temperature of the air or other medium in which a connector or a corresponding cable assembly is intended to be used.

## AWG

American Wire Gauge (see page [60](#))

## BASE CURVE

See page [64](#) ff.

## CONNECTOR WITH BREAKING CAPACITY (CBC)

Connector that may be mated or unmated during intended use, live or under load (according to IEC 61984:2008 [VDE 0627:2009-11]).

## CONNECTOR WITHOUT BREAKING CAPACITY (COC)

Connector which is not deemed to be engaged or disengaged in normal use when live under load (according to IEC 61984:2008 [VDE 0627:2009-11]).

## CONNECTORS

An element which enables electrical conductors to be connected and is intended to create and/or separate connections with a suitable counterpart (according to IEC 61984:2008 [VDE 0627:2009-11]). If not otherwise specified, these are connectors without breaking capacity (COC).

## CONTACT RESISTANCE

The contact resistance is the resistance at the contact zone of an electrical contact pair. The contact resistance is significantly lower than the total resistance (refer to total resistance). The specifications are average values.

## CORES

Electrical conductor, solid wire or multi-wire strand, with insulation as well as any conductive layers. Cables or leads may have one or more cores.

## CRIMP BARREL

A terminal sleeve which can accommodate one or more conductors and be crimped by a crimping tool.

## CRIMP CONNECTION (CRIMP TERMINATION)

The permanent, non-detachable and solder-free mounting of a contact to a conductor via deforming or shaping under pressure to make a good electrical and mechanical connection. Executed with crimping tool, press or automatic crimping machine (see page [54](#)).

## CRIMPING AREA

The specified area of the crimp barrel in which the crimp termination is executed by means of deforming or shaping the barrel under pressure around the conductor.

## DERATING CURVE

See page [64](#) ff.

## DERATING MEASUREMENT METHOD IN ACCORDANCE WITH IEC 60512-5-2:2002 (DIN EN 60512-5-2:2003-01)

See page [64](#) ff.

## INSERTION AND WITHDRAWAL FORCE

The force required to fully insert or withdraw pluggable elements without the influence of a coupling or locking device.

## LUBRICATION

All standard contacts are lubricated at the factory. We recommend using the [ODU Electrical Contacts Service kit](#).

## MATERIALS (STANDARD DESIGN)

Pins and carriers of the sockets are manufactured from a CuZn alloy and are silver or gold-plated. The lamellas consist of a CuBe alloy and are also silver or gold-plated. The springwire contact wires consist of a CuSn alloy and are also silver or gold-plated.

## MATING CYCLES

A mating cycle consists of one insertion and withdrawal action of both connector parts with each other. The given values are only valid under the following conditions: clean environment, adequate radial alignment, flawless counter contact pins.

## MAX. CONTINUOUS CURRENT

The metrologically determined amperage at room temperature (approx. 20° C) which increases the contact temperature to the limit temperature. The values specified in the catalog apply to either individual contacts or completely assembled inserts / modules, as indicated. See page [64](#) ff. for the derating curve, if a different ambient temperature is valid.

## NOMINAL CURRENT

see Rated Current

# TECHNICAL TERMS



## OPERATING TEMPERATURE

Permissible temperature range between the uppermost and lowermost limits. This includes contact heating through current-carrying capacity: For ODU LAMTAC® applies  $-40\text{ °C}$  to  $+150\text{ °C}$ , for ODU SPRINGTAC®, ODU SPRINGTAC® Flatsocket and ODU TURNTAC®  $-40\text{ °C}$  to  $+125\text{ °C}$ .

## PCB TERMINATION

A conductive connection between the PCB and an element in through-hole assembly, THT (through-hole technology).

## RATED CURRENT (NOMINAL CURRENT)

See page [64](#) ff.

## SLIDING FORCE

Please refer to Insertion and Withdrawal force.

The higher value of the insertion force is caused by the “attachment peak”. Subsequently, only the pure sliding force has an effect. In the case of lamella contacts, the data refers to contacts in the lubricated state (status at delivery) and after approx. 30 mating cycles. The forces are/may be higher in new condition (lubricated). In the case of springwire contacts, the data refers to contacts in new condition. The data represents average values with a potential fluctuation of  $\pm 50\%$ .

## SOLDER CONNECTION (SOLDER TERMINATION)

Termination technology in which a molten additional metal (solder) with a lower melting point than the base materials to be connected is used to attach two metallic materials to one another.

## STRANDED WIRE

The stranded wire is an electrical conductor consisting of thin individual wires and is therefore easy to bend.

## SURGE CURRENT LOAD

One-time impulse current with a 10 ms load duration.

## TERMINATION CROSS-SECTION

The specified cross-sections  $< 240\text{ mm}^2$  correspond to a “fine-wire” conductor structure in accordance with IEC 60228:2004 (VDE 0295:2005-09; Class 5) the upper and lower limit margins specified within this standard require a separate test. For larger cross-sections, the specifications refer to copper busbars.

## TERMINATION TECHNOLOGIES

Methods for connecting the leads to the electro-mechanical element, such as solder-free connections pursuant to IEC 60352 (DIN EN 60352): crimp, screw connection etc. or soldering connection (see page [54](#)).

## TOTAL RESISTANCE

Total resistance value measured from terminal to terminal (e.g. without crimp resistance). The specifications are average values (see page [72](#)).

## WIRE

Solid conductor



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#### GENERAL NOTE

The connectors and cable assemblies listed in this catalog are generally designed as connectors without breaking capacity unless otherwise stated. The rated voltage specification given on the respective data sheet must be respected. Suitable precautionary measures must be taken to ensure that people do not come into contact with live conductors during installation and operation. All entries in this catalog were thoroughly reviewed before printing. ODU reserves the right to make changes based on the current status of knowledge without prior notice and without being obliged to provide replacement deliveries or refinements of older designs.

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