

A PERFECT ALLIANCE.



## ODU TURNTAC<sup>®</sup>

The all-around solution for a wide variety of applications.

RUGGEDNESS



# A PERFECT ALLIANCE.



## ODU GROUP OVERVIEW

- More than 70 years of connector experience
- €146 million in turnover
- Over 1,650 employees worldwide
- 9 sales subsidiaries: China, Denmark, France, Germany, Italy, Japan, Sweden, the UK and the US
- All technologies under one roof: Design and development, machine tool and special machine construction, injection, stamping, turning, surface technology, assembly and cable assembly

As of February 2016

## CERTIFIED QUALITY

- DIN EN ISO 9001
- DIN ISO TS 16949
- DIN EN ISO 14001
- ISO 13485
- Wide range of UL, CSA, VG and DVA licenses
- UL-certified cable assembly

For a complete list of our certifications, please visit our website.

## CUSTOMER-SPECIFIC SOLUTIONS

Contacts, connectors and integrated cable assembly 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 needs.

- Precise implementation of application-specific requirements regarding design, functionality, cost and exclusivity
- Custom connector solutions derived from standard products
- One-to-one local expertise and fair, friendly consulting
- Quick prototyping and production turnaround



## CREATING CONNECTIONS, BUILDING ALLIANCES, COLLABORATING INTO THE FUTURE



**Dr.-Ing. Kurt Woelfl**  
Managing Director  
Research & Development  
Design  
Production  
Finance & IT  
Americas region

**Dr. Joachim Belz**  
Managing Director  
Marketing & Sales  
Product and Market Portfolio  
Human Resources  
Supply Chain Management  
Asia region

### TECHNOLOGY THAT UNITES – CONNECTIONS THAT INSPIRE

For the past 70 years, this commitment has enabled us to innovate and provide solutions that respond to continuously changing market needs. We provide high-quality electrical connectors that create added value for our customers and any market player seeking a reliable connector solution to enable the transmission of power, signals, media and data transmission.

A PERFECT ALLIANCE is our guiding principle. It represents the synergy between our high-quality connector solutions and the strong partnerships we build with our staff and business partners across the globe – partnerships based on trust, reliability and mutual respect.

ODU is one of the world's leading suppliers of connector systems today, employing over 1,650 people worldwide and generating approximately €146 million in sales. To ensure the very highest quality standards in our cutting-edge products, we continuously invest in their development and production – and ultimately, in our very unique expertise. Over the past few years, our development of customer- and application-specific connectors has led to the sustained growth of our standard product range so that today, we cover a broad range of application areas. A balance between project-specific business, including customized developments, and standard connector design will continue to shape our business into

the future. This holds true for emerging and future markets, such as medical, military and security, and energy, as well as for the special requirements of measurement and testing, eMobility and industrial electronics.

A PERFECT ALLIANCE – The future of ODU will continue to find solid ground for growth: in our focus on providing reliable connector solutions for a variety of challenging applications and in our commitment to continuously expanding our technology portfolio. It's what we do and who we are – around the globe. This brochure is an invitation for you to become even better acquainted with ODU, an internationally active technology company devoted to creating high-quality customized connector solutions.

We are actively shaping the future of our company with creativity, imagination and innovation in order to serve our valued customers around the world.

ODU – A PERFECT ALLIANCE.

**Dr. Joachim Belz and Dr.-Ing. Kurt Woelfl**  
Managing Directors

# CONTACT TECHNOLOGIES FOR A WIDE VARIETY OF REQUIREMENTS

ODU's varied product portfolio offers highly specialized contact types. Every contact system's functions and features are precisely geared toward each individual application and are available in a wide range of diameters and termination types.

**+** Stands out with over **100,000 mating cycles** and an excellent level of contact security

- Springwire technology
- Low mating and demating forces
- Very high vibration stability
- Low contact resistance
- High current-carrying capability

## ODU SPRINGTAC®



**+** Guarantees **extremely high current-carrying capacity and temperature resistance**

- Lamella technology
- > 10,000 mating cycles
- High vibration resistance
- Low contact resistance
- Automated lamella assembly
- High contact security

## ODU LAMTAC®



## ODU TURNTAC®



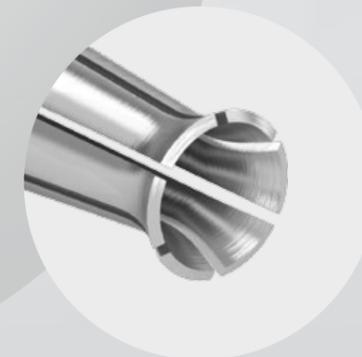
**+** **Rugged contact system**, suitable even for applications in adverse conditions

- Turned, slotted contacts
- > 10,000 mating cycles
- Low, stable mating and demating forces
- Available in even the smallest of dimensions
- Mating ensured at up to a 5° misalignment angle

**+** Efficient contact system allowing for **automated processing**

- Stamped contacts
- > 10,000 mating cycles
- Standard contacts for use in charger plugs (IP67)
- Cost-efficient alternative for large quantities

## ODU STAMPTAC®

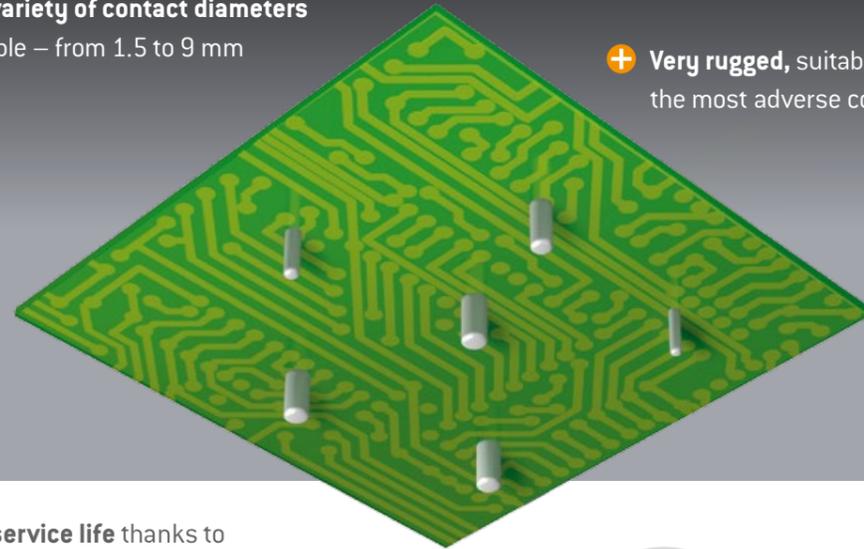


# ODU TURNTAC® – PERFECT SOLUTIONS FOR SPECIFIC APPLICATION REQUIREMENTS

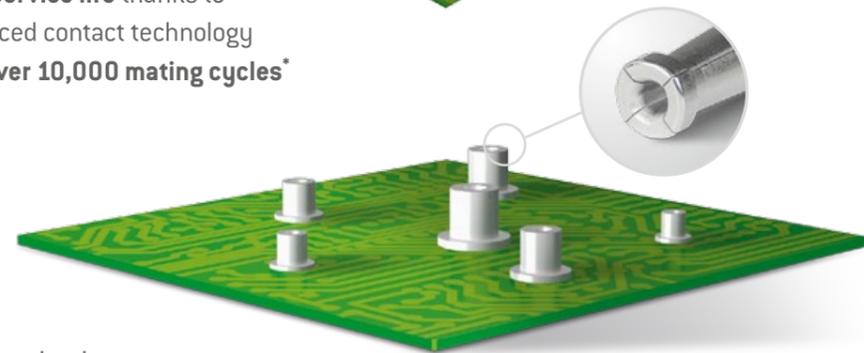
YOUR PARTNER FOR HIGH PERFORMANCE ELECTRONICS

+ **Wide variety of contact diameters**  
available – from 1.5 to 9 mm

+ **Very rugged**, suitable for even the most adverse conditions



+ **Long service life** thanks to advanced contact technology with **over 10,000 mating cycles\***



+ Various termination types: **solder, threaded or crimp termination**

+ Concepts for **automated subsequent processing**



+ Mating ensured at up to a **5° misalignment angle**



**ODU TURNTAC®**

Turned and slotted contact with four contact areas



INDUSTRIAL



ENERGY



## HIGH PERFORMANCE FOR A VARIETY OF DIFFERENT APPLICATION AREAS

The ODU TURNTAC offers dependable solutions for multiple different applications.



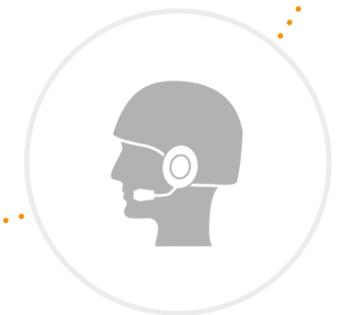
MEDICAL



MEASURING AND TESTING



EMOBILITY



MILITARY AND SECURITY

# CONTACT EXPERTISE FOR THE MOBILITY OF THE FUTURE

Innovation based on dependable contact technology.

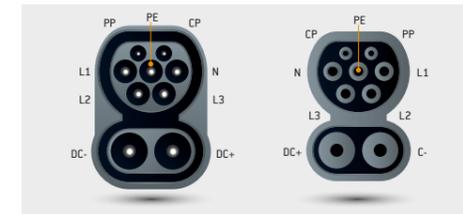
eMobility is a growth market demanding innovative, highly functional solutions – with high standards and varied specifications regarding contact technology, too. Even today, ODU offers a wide variety of the highest-quality contacts for use in and around the serial production of both electric and plug-in hybrid electric vehicles. The contacts stand out due to their high number of mating cycles, excellent current-carrying capacity as well as contact ruggedness and vibration and media resistance. By consistently continuing to develop our product portfolio, we keep our focus on market-specific requirements, efficiency and quick availability.



For further information on our automotive projects, go to:  
[www.odu-connectors.com](http://www.odu-connectors.com)

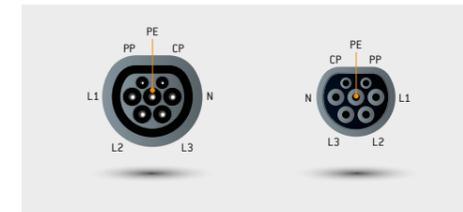


## IEC 62196 (VDE 0623-5)



### DC – DIRECT CURRENT

Norm	Nominal voltage	Nominal current	Nominal voltage	Nominal current	Number of contacts
IEC 62196-3 (VDE 0623-5-3)	750 V	250 A	30 V	2 A	2 (contact Ø: 3 mm) 5 (contact Ø: 6 mm)



### AC – ALTERNATING CURRENT

Norm	Nominal voltage	Nominal current single-phase/ three-phase	Nominal voltage	Nominal current	Number of contacts
IEC 62196-2 (VDE 0623-5-2)	250 V/ 480 V	16 A/32 A [2.5/6 mm <sup>2</sup> ] 63 A [16 mm <sup>2</sup> ]	30 V	2 A	2 (contact Ø: 3 mm) 5 (contact Ø: 6 mm)

## SAE J1772



### DC – DIRECT CURRENT

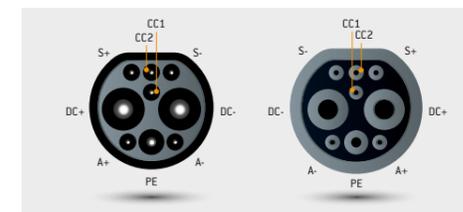
Norm	Nominal voltage	Nominal current	Nominal voltage	Nominal current	Number of contacts
SAE J1772	200 V/ 500 V	80 A/ 200 A	30 V	2 A	2 (contact Ø: 1.5 mm) 1 (contact Ø: 2.8 mm) 2 (contact Ø: 3.6 mm)



### AC – ALTERNATING CURRENT

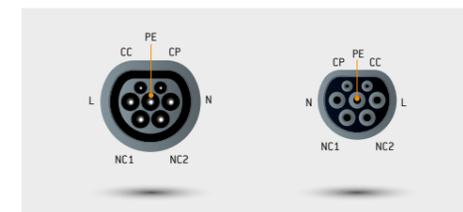
Norm	Nominal voltage	Nominal current single-phase/ three-phase	Nominal voltage	Nominal current	Number of contacts
SAE J1772	120 V/ 240 V	13 – 16 A/ 32 A	30 V	2 A	2 (contact Ø: 1.5 mm) 1 (contact Ø: 2.8 mm) 2 (contact Ø: 3.6 mm)

## GB/T 20234



### DC – DIRECT CURRENT

Norm	Nominal voltage	Nominal current	Nominal voltage	Nominal current	Number of contacts
GB/T 20234-3	750 V/1,000 V	125 A/ 250 A	30 V	2 A	6 (contact Ø: 3 mm) 1 (contact Ø: 6 mm) 2 (contact Ø: 12 mm)



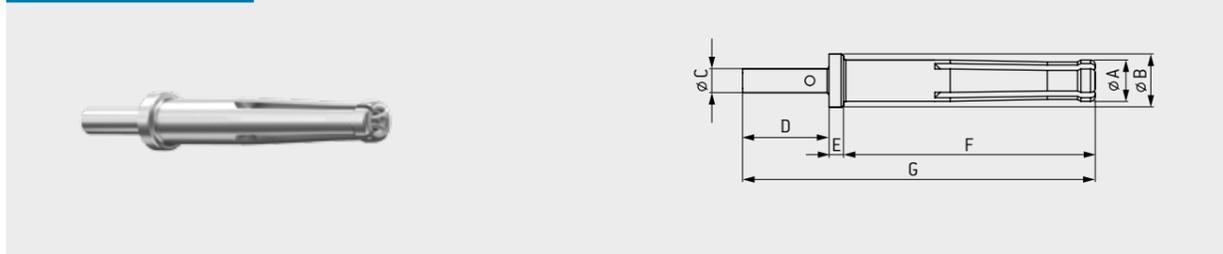
### AC – ALTERNATING CURRENT

Norm	Nominal voltage	Nominal current single-phase/ three-phase	Nominal voltage	Nominal current	Number of contacts
GB/T 20234-2	250 V/ 440 V	16 A/32 A [2.5/6 mm <sup>2</sup> ] 63 A [16 mm <sup>2</sup> ]	30 V	2 A	2 (contact Ø: 3 mm) 5 (contact Ø: 6 mm)

# ODU TURNTAC®

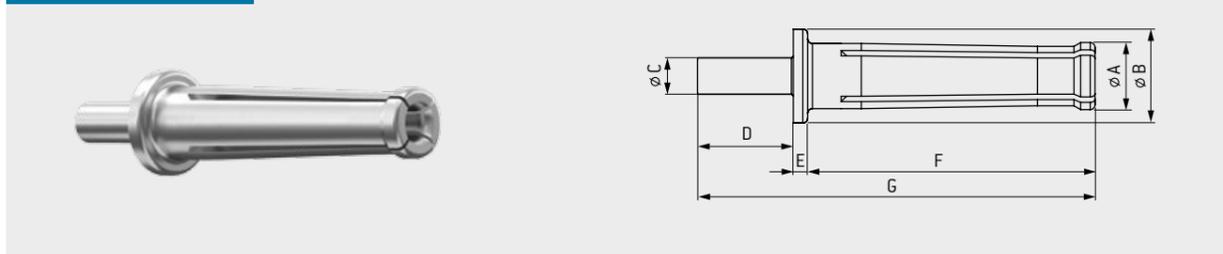
## DIMENSIONS AND CONTACT DETAILS

### CONTACT DIAMETER 1.5



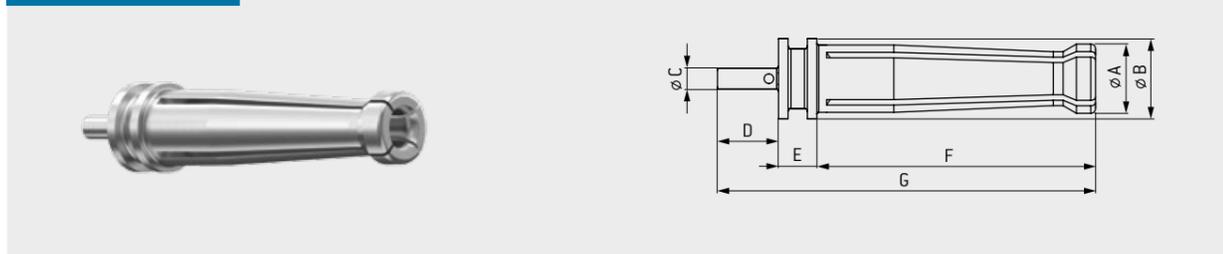
Norm	Part number	Contact Ø mm	Dimensions in mm							Termination cross-section	
			Ø A	Ø B	Ø C	D	E	F	G	AWG	mm²
SAE	177.444.000.301.000	1.5	4.1	5.5	2.5	9	1.5	26.2	36.7	18	1

### CONTACT DIAMETER 2.8



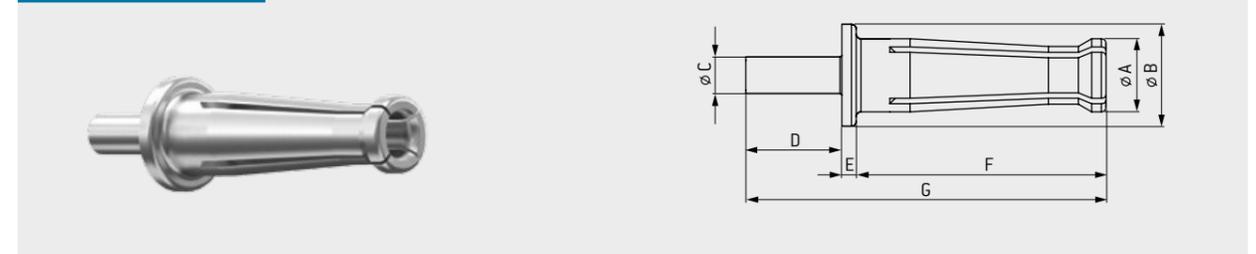
Norm	Part number	Contact Ø mm	Dimensions in mm							Termination cross-section	
			Ø A	Ø B	Ø C	D	E	F	G	AWG	mm²
SAE	177.443.000.301.000	2.8	6.6	9.8	3.8	10	1.5	30	41.5	14	2.5

### CONTACT DIAMETER 3



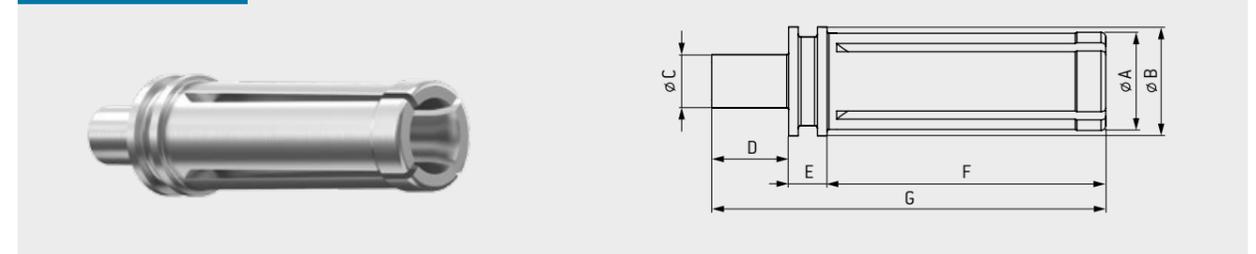
Norm	Part number	Contact Ø mm	Dimensions in mm							Termination cross-section	
			Ø A	Ø B	Ø C	D	E	F	G	AWG	mm²
IEC	177.441.000.301.000	3	6.8	8.3	2.2	6.35	4	29	39.35	20	0.5

### CONTACT DIAMETER 3.6



Norm	Part number	Contact Ø mm	Dimensions in mm							Termination cross-section	
			Ø A	Ø B	Ø C	D	E	F	G	AWG	mm²
SAE	177.442.000.301.000	3.6	7.4	10.6	3.8	10	1.5	26	37.5	12	4

### CONTACT DIAMETER 6



Norm	Part number	Contact Ø mm	Dimensions in mm							Termination cross-section	
			Ø A	Ø B	Ø C	D	E	F	G	AWG	mm²
IEC	177.440.000.301.000	6	10.2	11.3	5.5	8	4	29	41	10	6

## TECHNICAL DETAILS

Norm	Contact Ø mm	Mating force <sup>1</sup> N	Demating force <sup>1</sup> N	Contact resistance mΩ	Current-carrying capacity <sup>2</sup> Max. contact temperature 100 °C	Current-carrying capacity <sup>2</sup> Max. contact temperature 120 °C	Termination cross-section AWG
					A	A	
SAE	1.5	2.5	1.5	0.8	20	24	18
SAE	2.8	4.5	2.5	0.3	34	40	14
IEC	3	4.5	2.5	0.3	17	20	20
SAE	3.6	6.5	3.5	0.3	42	50	12
IEC	6	7	5.5	0.2	58	70	10

<sup>1</sup> All standard contacts are supplied lubricated ex works.

<sup>2</sup> Ambient temperature 50 °C; derating curve 80%.



A PERFECT ALLIANCE.

## ODU GROUP WORLDWIDE

### HEADQUARTERS

#### ODU GmbH & Co. KG

Pregelstraße 11  
84453 Mühldorf a. Inn  
Germany  
Phone: +49 8631 6156 - 0  
Fax: +49 8631 6156 - 49  
E-mail: [zentral@odu.de](mailto:zentral@odu.de)



### SALES SUBSIDIARIES

#### ODU Denmark ApS

Phone: +45 2233 5335  
E-mail: [odu.denmark@odu.de](mailto:odu.denmark@odu.de)  
[www.odu-denmark.dk](http://www.odu-denmark.dk)

#### ODU France SARL

Phone: +33 1 3935 - 4690  
E-mail: [odu@odu.fr](mailto:odu@odu.fr)  
[www.odu.fr](http://www.odu.fr)

#### ODU Italia S.R.L.

Phone: +39 331 8708847  
E-mail: [sales@odu-italia.it](mailto:sales@odu-italia.it)  
[www.odu-italia.it](http://www.odu-italia.it)

#### ODU Japan K.K.

Phone: +81 3 6441 3210  
E-mail: [sales@odu.co.jp](mailto:sales@odu.co.jp)  
[www.odu.co.jp](http://www.odu.co.jp)

#### ODU Scandinavia AB

Phone: +46 176 18261  
E-mail: [sales@odu.se](mailto:sales@odu.se)  
[www.odu.se](http://www.odu.se)

#### ODU (Shanghai) International Trading Co., Ltd.

Phone: +86 21 58347828 - 0  
E-mail: [oduchina@odu.com.cn](mailto:oduchina@odu.com.cn)  
[www.odu.com.cn](http://www.odu.com.cn)

#### ODU-UK Ltd.

Phone: +44 1509 266433  
E-mail: [sales@odu-uk.co.uk](mailto:sales@odu-uk.co.uk)  
[www.odu-uk.co.uk](http://www.odu-uk.co.uk)

#### ODU-USA Inc.

Phone: +1 805 4840540  
E-mail: [sales@odu-usa.com](mailto:sales@odu-usa.com)  
[www.odu-usa.com](http://www.odu-usa.com)

Further information and specialized  
representatives can be found at:  
[www.odu.de/sales](http://www.odu.de/sales)



Simply scan the QR code  
to download the entire brochure.

GRASWALD · HEILIGTAC | Passau

We reserve the right to modify product and technical data.

TURNTAC / B / 0616 / E

ODU TURNTAC®