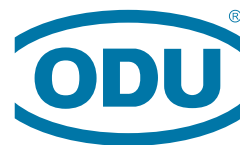

THE STECKVERBINDER



A PERFECT ALLIANCE.

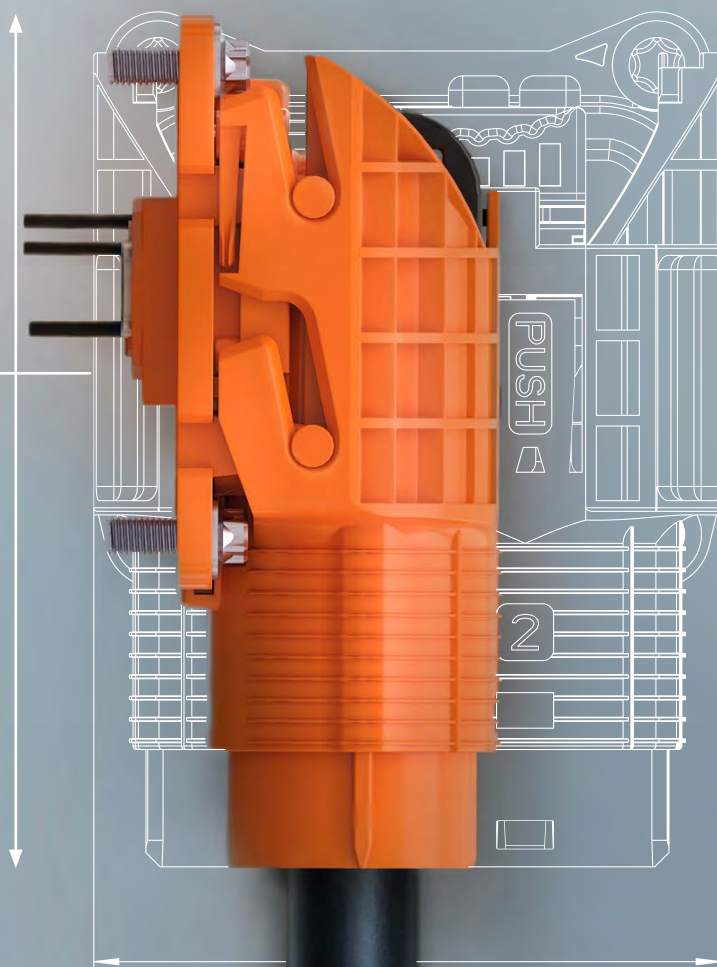
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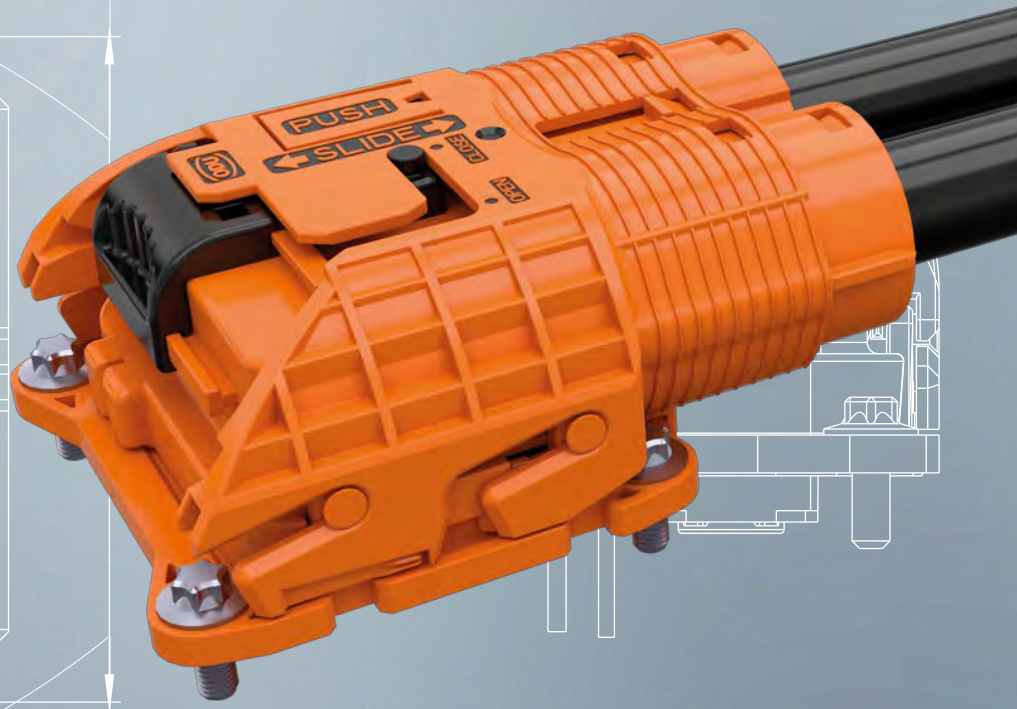
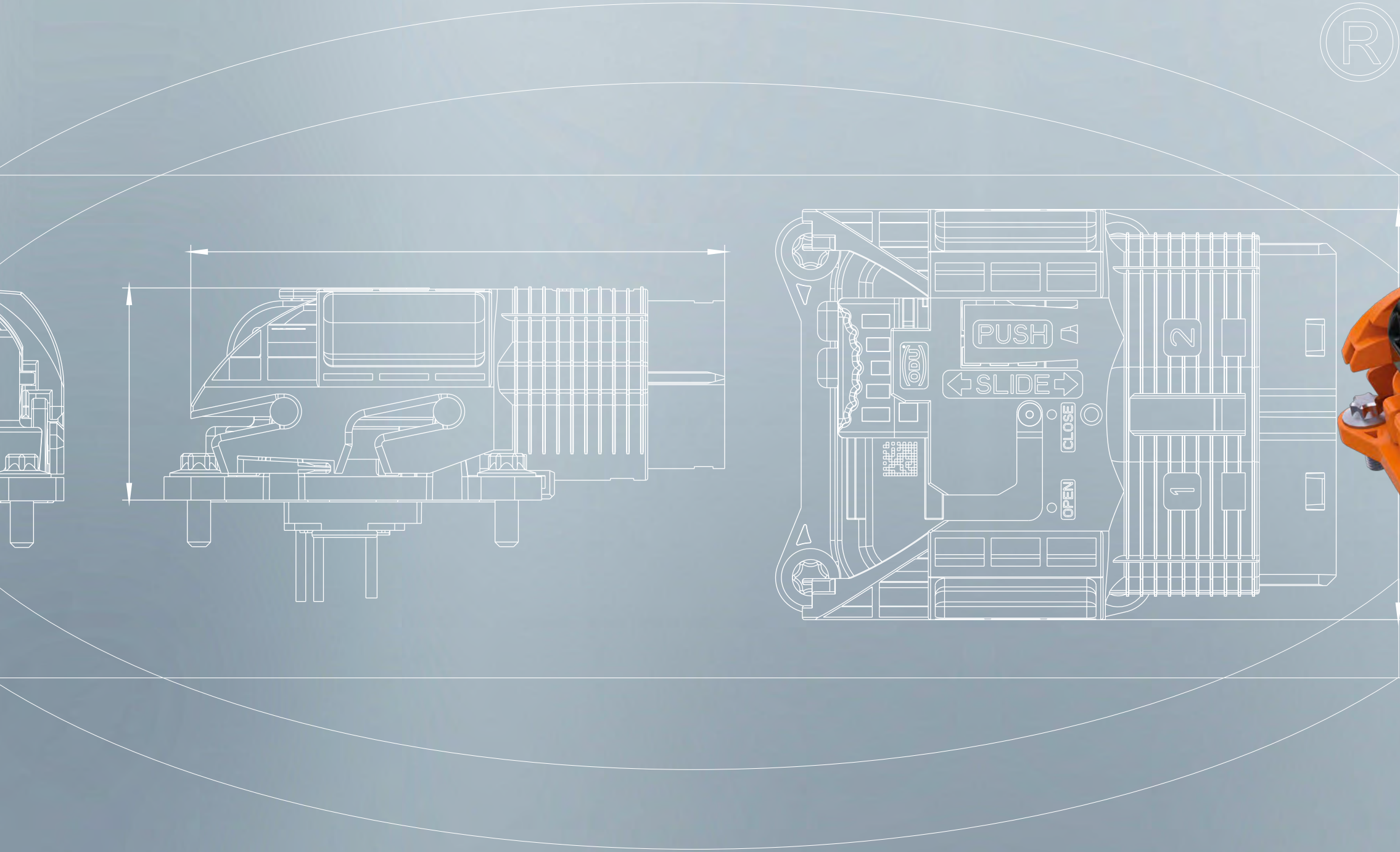
FOR PARTNERS & FRIENDS

” Space

is the gold of the future.



20g





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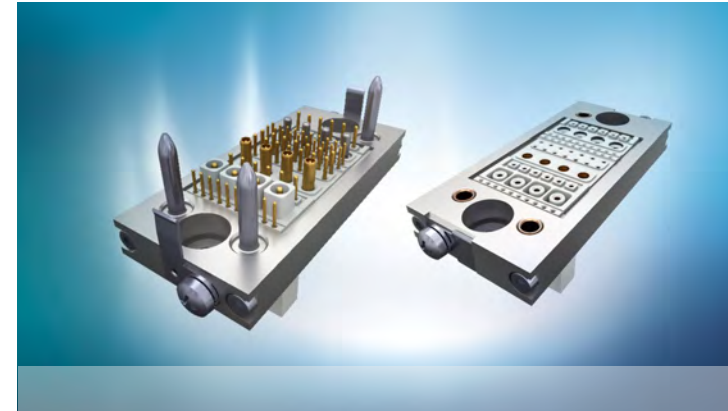
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ODU MEXICO MANUFACTURING IN TIJUANA

Editorial

Dear ODU customers, suppliers, friends and partners,

You're holding in your hands the first Steckverbinder of 2019. One of its main topics is ODU in America. We now operate three locations in North America and make over 25 percent of our revenue directly there, primarily in the US. Beyond that, we're also running a few projects in the US which directly supply the Asian market. We can both say how very proud we are of our ODU team. It boasts both highly motivated executives and customer consultants with outstanding technical skills.

The US is also the origin of an eMobility frontrunner. When it comes to exciting projects, ODU typically provides solutions for engine or charging technologies. Which is why we've decided to make even greater investments in the automotive field: A growing team of experts, more product development and increased global production capacities characterize ODU automotive. And in all of this, we always strive for top quality. Whether our customers are seeking an electrical contact or a complete connector – they get to choose. It's our hope that you've had a good start to 2019. We're more than pleased with the way this year has begun, and we thank you all for making it possible.

A new ERP system will soon be getting started at our Mühldorf headquarters. This is an exciting project which required us to meet certain standards (whether we liked it or not). As specialized as we are in creating customer-specific tailored product solutions, we also know that well-structured internal operations also contribute to guaranteeing top quality and process reliability. ■



FROM LEFT: MANAGING DIRECTORS DR.-ING. KURT WOELFL AND DENIS GIBA

Enjoy your read, Dr.-Ing. Kurt Woelfl and Denis Giba

ODU MÜHLDORF 2019 EXPANSION

We're currently in the process of expanding our pallet warehouse and surface technology area. Extending the logistics area is in the planning, along with an expansion of the turning shop and bulk electroplating shop.



Dr.-Ing. Kurt Woelfl:
If we see a positive development
over the next few months, we'll
continue to invest.

FROM LEFT: MANAGING DIRECTORS
DR.-ING. KURT WOELFL AND DENIS GIBA



Surface technology

Starting in May, the new building at the factory entrance will house our surface inspection area including pad printing. These areas will be moved over from the current electroplating building.

In addition, there will be a new blasting facility for matt surfaces with integrated automatic feeding and parts pick up. The resulting available space in the electroplating building will be used for a new strip electroplating facility, thereby considerably increasing ODU's capacities in this field.

The new facility comprises 113 process steps, plus belt feed and winding, across a length of 83 meters.

"We'll now be able to start silver plating on our own, which is our next step towards becoming more independent," says Volker van der Pütten, Head of Surface Coating. "We'll considerably reduce delivery times and go on to work with the fastest and best available technology."

The new strip electroplating facility will also enable us to carry out tests for promising new surface coatings, such as wolfram nickel or indium.

"We'll be able to offer our customers an even wider choice of surface technology." ODU will be able to meet every customer requirement when it comes to non-precious metal layers.

Training



Our training department will also be moving to a modern brand-new training center with technical and business-related meeting rooms and a surface area of over 500 m².

"We're now continuing what we stopped doing last year: expanding our training capacities," explains an excited Anna Edmaier, Head of Apprenticeships. Last September, 41 new trainees began their training program and an additional 54 new trainees are set to be taken on this year. ■





The ODU North American Team located in Tijuana, San Diego and Camarillo works closely together to serve the North American market. The team now has about 250 employees.

ODU North American Logistics was founded in February 2016 in San Diego, CA - USA followed by ODU Mexico Manufacturing in September 2016 in Tijuana, Baja California, in Mexico. ODU-USA has been active on the North American market since 1985 and is located in Camarillo, CA.

Today more than 150 employees work in Tijuana. ODU Mexico Manufacturing has a comprehensive process portfolio that includes a main warehouse with a dedicated automotive warehouse, a receiving, incoming inspection area, cable cutting, cable preparation and assembly, stripping/crimping, soldering, potting, curing, overmolding, electrical testing, packing and shipping.

STECKVERBINDER: Doru, the ODU production facility in Mexico is focused on manufacturing locally specific connectors and cable assemblies for the North American market. These products enable ODU to serve the medical, military and security, eMobility and industrial electronic markets.

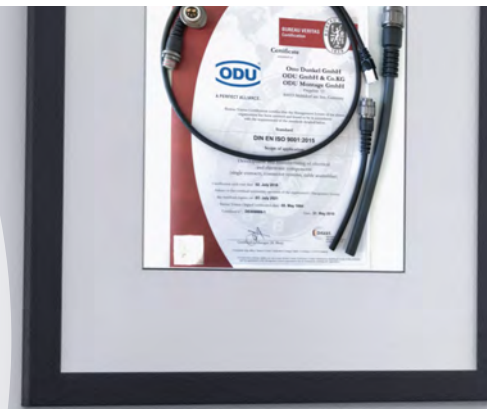
The production in Mexico started in 2016. Which were the important milestones in the past two years?

Doru Epure: ODU North American Logistics was founded in February 2016 in San Diego, US followed by ODU Mexico Manufacturing in September 2016 in Tijuana, Baja California, in Mexico. We started operations in San Diego in November 2016 and were able to deliver the first customer shipment out of Mexico in December 2016. A cohesive integrated management team was created by mid-2017. In December 2017 we got the ISO 9001:2015 certification for ODU Mexico Manufacturing having the prestigious TÜV-SÜD North America as our certification company. The same certification was obtained in December 2018 by ODU North American Logistics in San Diego. We currently have 175 employees at ODU North American Logistics in San Diego and ODU Mexico Manufacturing.

STECKVERBINDER: What will be the next steps? What are you focusing on?

Doru Epure: The next steps will include the strengthening of the middle and upper management team and the implementation of the approved ODU apprenticeship program.

STECKVERBINDER: The products made in Mexico quickly reach our customers via the ODU North American Logistics Center in San Diego, our logistics hub on the north side of the US - Mexico border.



DORU EPURE, PRESIDENT AND CEO OF ODU MEXICO MANUFACTURING IN TIJUANA AND ODU NORTH AMERICAN LOGISTICS, SAN DIEGO
 PICTURE LEFT: ODU NORTH AMERICAN LOGISTIC TEAM, SAN DIEGO · MAP OF TIJUANA, MEXICO

ODU has been active in the North American market for over 30 years and has acquired a strong market position. When it comes to ODU's future development, how important is it to have production in Mexico and logistics in San Diego?

Doru Epure: The business model is now set for a different kind of dynamics – with German technology being offered via local manufacturing. As we develop the operations at ODU North American Logistics in San Diego and ODU Mexico Manufacturing, we are consolidating our position on the market through competitive pricing and lead times. Having a local high quality manufacturing site is the best argument for bringing new customers to our portfolio and strengthening our position with the existing customers.

STECKVERBINDER: Thomas Mittermeier, you are the President and Chief Executive Officer of ODU-USA in Camarillo. What is ODU's USP in North America?

Thomas Mittermeier: The North American society has an extremely high service orientation. Our customers, and especially our engineers working on new solutions, attach a great deal of importance to quickly coming up with solutions for their challenges – preferably online and with high availability, and particularly for the first small orders required for prototyping. We're able to meet these requirements thanks to our North American online presence: Our offering is tailored to our customers' needs. We have with a wide range of options for

getting in touch with us or for ordering directly, for instance via our web shop for circular connectors. Our service is rounded off by the option of contacting an engineer or our customer service team directly. We're also quite proud of our sales team, which has outstanding technical skills. In addition to our field service, the team also includes our technical and commercial contact persons at our branch in Camarillo, California. It's not surprising that we got top ratings in these areas in last year's Bishop customer satisfaction survey.

STECKVERBINDER: Your arrival to the US in 2014 also brought a successful change within the sales and marketing strategy. What were the main milestones for ODU in the past four years with you at the helm?

Thomas Mittermeier: For me, our biggest success was creating a complete team unit that is fully customer-oriented. The commitment and dedication I witness here each and every day is unsurpassed. Everyone approaches their work with the benefit of the customer in mind. And that's true across the board for team members and functions. We also have a strong sales force providing consulting to customers on location and have established an integrated product management that's closely networked with our headquarters. This ensures that the products we offer are ideally oriented towards market requirements. Our targeted marketing campaigns further support this approach.



THOMAS MITTERMEIER, PRESIDENT AND CHIEF EXECUTIVE OFFICER OF ODU-USA IN CAMARILLO, CALIFORNIA

Thanks to our highly qualified team of technical sales and product engineers, we're now able to develop customized solutions on location. Moreover, we've established an excellent network of distribution partners over recent years. This has enabled us to achieve even better market coverage.

STECKVERBINDER: What are your plans for ODU-USA over the next two years?

Thomas Mittermeier: All our efforts from the past years were rewarded in 2018, our most successful ODU North America year by far. Even so, we know this won't be a sure-fire success – and our competition never sleeps either.

We'll continue to work towards continuously improving the customer experience and ensuring we have a clear plan for that. For example, we're planning on increasing the local availability of standard products. Another item at the top of our to-do list is the creation of a portfolio for cable assemblies with an extremely fast availability. This will help us grow even more quickly.

What's more, we have a few new additions to our product portfolio in the pipeline, and we're developing them locally – but I can't give away too much about that yet. Our stated goal is to get our current and future customers to think of ODU first whenever they need a new development. And where that's concerned, we're well underway. ■



ODU-USA TEAM, CAMARILLO

ODU NORTH AMERICA

Customer oriented mindset

Customer centricity is about more than just offering great customer service. It means offering a great experience from the very start – from the awareness stage through to the purchasing process and all the way through the post-purchase process. It's a strategy that's based on putting the customer first, at the very of the business.

ODU North America is organized to operate in a very fast and competitive market. The status quo, combined with our growth and revenue goals, trigger a strong customer-centric mindset throughout all departments, whether they work directly with the customer or not.

Our customer-centric strategy starts with customer-focused leadership. It continues with a focus on listening to and understanding our customers, designing the customer experience, choosing the metrics that matter, and providing feedback that will drive our continuous improvement.



PRODUCT MANAGEMENT, PRODUCTION AND SALES FROM ODU GERMANY AND ODU-USA TOGETHER WITH CEO'S FROM GERMANY AND NORTH AMERICA



THE NAB TRADE SHOW IN LAS VEGAS, NEVADA – ONE OF THE YEAR'S MOST IMPORTANT AUDIO AND BROADCASTING SHOWS. THE ODU TEAM SHOWCASED OUR CONNECTOR SOLUTIONS FOR AUDIO, BROADCASTING AND LIGHTING APPLICATIONS.

Our commitment to customer centricity means we focus on building relationships designed to maximize the customer's product and service experience.

This means all individual touchpoints, from one-to-one direct communications to our digital interfaces, must demonstrate the same customer-centric mentality.

For example, we partnered with several distributors like Digikey, Mouser and Avnet to maximize that interface to the market and to ODU customers.

Our customer-centric mindset also includes a set of strategic steps as an organization: We listen to the customer's needs to ensure that we fully understand every detail of their requirements. We then go that extra mile to identify the best solution for them. This approach ensures our ability to build long-term customer relationships.

We created the ODU 5 Star Experience from the inside out. Every customer pain point is met with an experience that fulfills all customer requirements by bringing substantial and relevant value.

And as Philip Kotler, American economist, would say: „The sales department isn't the whole company, but the whole company better be the sales department." That's who we are: ODU NORTH AMERICA is here to serve our market with excellence! ■

ODU SPECIALIST WELDING IN MEXICO



TOOLING DEPARTMENT TEAM, ODU MEXICO



ODU 5 STAR CUSTOMER EXPERIENCE

The 5 stars stand for the 5 main value-added services ODU customers can expect:



ODU NORTH AMERICA

The ODU 5 Star Customer Experience Campaign was launched in November 2018 as a long-term marketing initiative targeting the North American market.

Its goal is to promote the exceptional portfolio of products, technologies and services that ODU offers to the North American market. The concept of the ODU 5 Star Experience campaign aligns perfectly with the way ODU North America understands and responds to customer requirements.

The ODU 5 Star Campaign was accompanied by three ODU team events: the ODU 5 Star Internal Launch in Tijuana, San Diego and Camarillo. ■

What is the ODU 5 Star team attitude that makes the ODU 5 Star Customer Experience possible?

- ODU provides valuable high-quality connectivity solutions that have a positive impact on people's lives.
- ODU ensures high technical expertise.
- ODU builds long-term customer relationships.
- ODU explores all the connectivity challenges of their customers and promotes their entire product portfolio.
- ODU is the leader in all the target markets it serves.

“ The customer experience is the heartbeat of every business. The ODU 5 Star Customer Experience Campaign embraces the great legacy of the ODU product portfolio and presents it to the market in synergy with our exceptional team of professionals and our value-added services.

DANA STOICA, HEAD OF MARKETING ODU-USA





ODU-USA IN CAMARILLO · HALLOWEEN CONTEST AND HALLOWEEN PARADE



INTERNAL LAUNCH OF THE ODU 5 STAR EXPERIENCE,
 ABOVE: ODU-USA
 BELOW: ODU NORTH AMERICAN LOGISTICS (NAL) IN SAN DIEGO



ABOVE: TEAM EVENT ODU MEXICO
 BELOW: INTERNAL LAUNCH OF THE ODU 5 STAR EXPERIENCE,
 ODU MEXICO IN TIJUANA

” For an ongoing successful collaboration, we count on communication and team spirit.

The ODU North America team offers a continuous series of internal team-building events at the local level. ■

ODU NORTH AMERICAN LOGISTICS (NAL) IN SAN DIEGO, SOCCER TEAM AND BACK-TO- SCHOOL PROGRAM



ODU-USA IN CAMARILLO, "BRING YOUR KIDS TO THE OFFICE" DAY



FURTHER EVENTS:
 ODU NORTH AMERICAN LOGISTICS (NAL) IN SAN DIEGO, SUMMER EVENT
 ODU-USA IN CAMARILLO, CORPORATE GAMES · ODU 4TH OF JULY PICNIC

STRONG PARTNERS

ODU-USA forms strategic partnership with RED Digital Cinema.

At the beginning of the year, ODU announced its strategic partnership with RED Digital Cinema, a leading manufacturer of professional digital cameras.

“ODU is pleased to announce our strategic partnership and great collaboration with RED Digital Cinema, said Thomas Mittermeier, CEO at ODU-USA. “With its unique industrial design and specific product requirement, RED saw this as a welcome opportunity to utilize the wide range of custom capabilities ODU has to offer.”

RED DSMC2 cameras are available in a variety of sensor options including high-end frame and data rates. RED’s cameras require a customizable connector solution that can seamlessly integrate both – visually and functionally – with its multitude of camera add-ons. “Our camera products are used on some of the biggest productions in the world, so we only utilize the highest-grade components that ensure reliability and performance,” said Jarred Land, President of RED Digital Cinema. “ODU connectors check all the boxes and give our mutual customers another industry alternative.”



Rochelle McMichael
Western Regional Sales Manager,
ODU-USA

Bryan Minkel
Project Manager Circular Connectors,
ODU-USA

ODU HQ Support Team:
Thomas Neuburger
Manager Application Team
Circular Connectors

Veronika Lohr
Application Center,
Team Circular Connectors

Josef Blüml
ODU Design Engineer

Georg Pfister
ODU Design Engineer

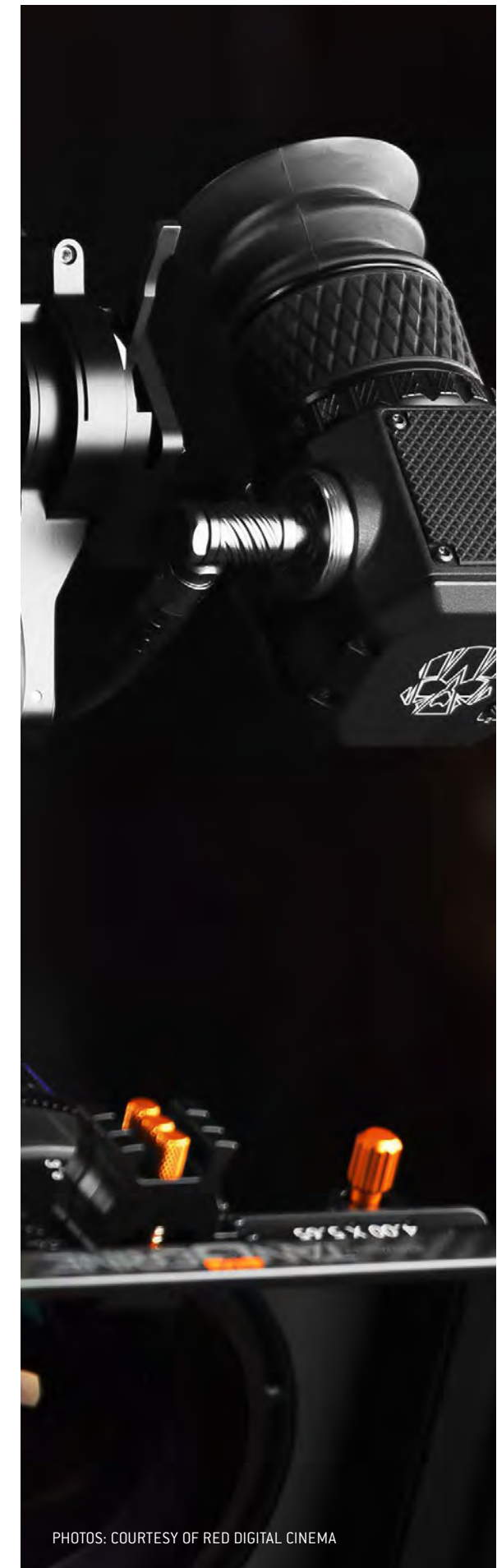


The ODU MINI-SNAP® connector, a circular Push-Pull connector in a metal housing, was produced in eight variations to meet RED’s requirements.

Rochelle McMichael, Western Regional Sales Manager, ODU-USA: “Collaborating with RED is fun and inspiring. We made sure that RED got exactly what they envisioned, starting from sketches to 3D-printed models, a really good looking connector. It was a lot of hard work on both teams and I am very lucky to work alongside some talented, patient and passionate people.” ■



ODU MINI-SNAP® connector, a circular Push-Pull connector in a metal housing, is fully customizable and available in various locking types.



PHOTOS: COURTESY OF RED DIGITAL CINEMA

IN THE 5-LOOP ROLLER COASTER

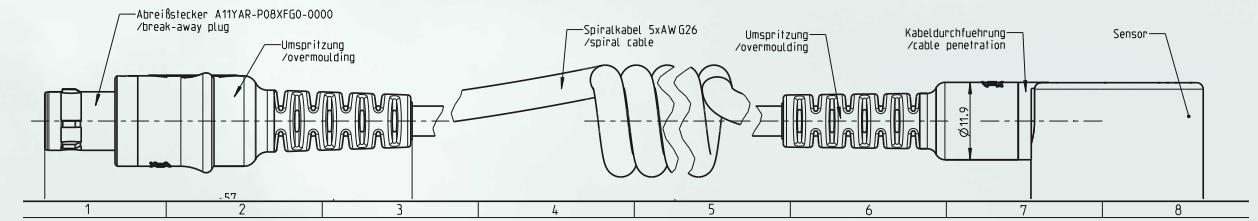
PRÜFTECHNIK and ODU stand for safety.

” Munich’s Oktoberfest, with its over 200-year tradition, is the epitome of safety – today more than ever. Even though the Oktoberfest beer is more famous than the funfair’s roller coasters, the real highlight are its roller coasters: the world-famous 5-Loop and the Olympia Loop.

For absolute safety to be guaranteed at every moment, the power units, brakes and all other technology must be 100-percent functional at all times – no matter if it’s warm or cold, dry or wet from the rain.

This is the perfect field of action for the testing technology company PRÜFTECHNIK. High-precision vibration measurements for industrial maintenance and quality assurance guarantee safety and, what’s more, smooth operation. For ODU, too, precision is paramount when it comes to test and measurement technology.

Reliable testing and sound results require high-quality measurement equipment and procedures as well as high-performance connectors. These enable precise transmission of measurement data at any time. The specifications for the interfaces between sensors and the measurement system are extremely demanding. Which is the very reason why notable manufacturers such as PRÜFTECHNIK choose to collaborate with ODU. As a specialist for sophisticated contact technology, ODU has successfully supplied interfaces for test and measurement technology for many years now.



Armin Wohlhaupter, ODU Sales Engineer:

“Our collaboration with PRÜFTECHNIK goes back a long way. We partnered up over 10 years ago and supply them with a large number of connectors from the ODU MINI-SNAP® and ODU MEDI-SNAP® series – along with the ODU AMC® with its robust design for more recent devices.”

Every dimension of the Olympia Loop roller coaster is extreme. It has a relatively small sized power unit, a high number of cardan shafts and, of course, an immense construction height. All of this requires that test and measurement technicians resort to unconventional means and explains, for example, why the overall facility can only be measured through thermographic hot-spot analysis. To control this facility efficiently via mobile condition monitoring, PRÜFTECHNIK’s new high-speed data collector, VIBSCANNER® 2, is being used.

All the cars are transported to the turning point at a height of 54 meters. From here they whoosh down directly into the first loop at up to 100 km/h. Any oversight in maintenance or safety of the facility can be life threatening. PRÜFTECHNIK helps to ensure optimal performance throughout the complete operation time.

With the new VIBSCANNER® 2, every measurement takes just a fraction of the previously required time. To put this in figures:

Required measurement time up until 2016:
around 4–5 hours
Required measurement time since 2017:
around 1.5 hours

(since the VIBSCANNERS® 2 came into use) What an immense time gain! Worldwide over 600 employees work in 18 different PRÜFTECHNIK subsidiaries. Around half of them work in research and development. PRÜFTECHNIK develops hardware and software solutions which enable users to monitor the condition of machines and rotating system sections so that any repairs, particularly planned maintenance work, can be carried out on time. ODU connectors are the premier choice when it comes to high quality. And that’s crucial for our applications in this rough industrial environment.”

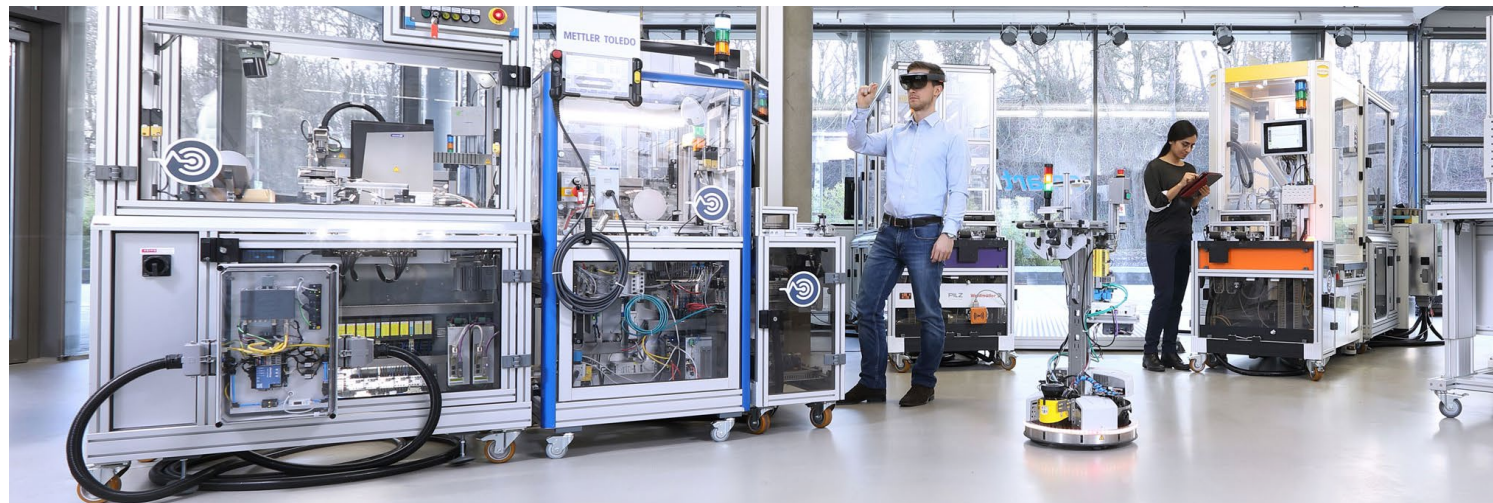
Heinz Pollner, PRÜFTECHNIK Design Engineering:

“A new cable was needed for the VIBSCANNER® 2 project. To harmonize this cable with existing connectors I sought the advice from ODU consultants at both the Customer Center and Application Center from the start – with great success. ODU connectors are our first choice due to their top quality. That’s very important for our applications, which are used in rough industrial environments.” ■



ARMIN WOHLHAUPTER,
ODU SALES ENGINEER
PRÜFTECHNIK VIBSCANNER® 2
ODU AMC® CONNECTOR





Smart industry, smart home, smart service

There's a clear trend towards digitization and maximum automation in almost all areas of life – a great challenge to both the industrial world and medium-sized companies.

In the world of today and tomorrow, which increasingly builds on modular organizational principles, processes are becoming more efficient, more flexible and faster thanks to intelligent networking. The demand for maximum networking and greater customization also increases the demands on contact technology. In a production line fitted with robots, for instance, systems are set up to carry out a wide range of various operations, including handling, welding, assembly, painting and the like.



ADLATUS S 700 DOCKING STATION · ODU-MAC® SILVER-LINE

ODU partner ADLATUS

AUTOMATICALLY CLEAN – THIS IS HOW WE DO FUTURE

Digitization is driving change in the service sector of facility management, too. This necessitates new products and solutions from companies.

ADLATUS Robotics GmbH is supporting this change through innovative autonomous service robots for professional use. "Adlatus" is a Latin word meaning "assistant." Which is also the idea behind ADLATUS Robotics GmbH: to provide companies with an assistant that can autonomously take care of specific tasks. "Our service robots are there to support people in physically demanding or monotonous tasks and successfully provide services almost like a colleague." When it comes to safety, the use of autonomous service robots reduces the risk. The operation of the service robots is simple, intuitive and easy to do for anyone after short instructions have been given. A fully automated logging system facilitates transparent documentation. ODU is just as transparent and service-oriented when it comes to developing the right connector systems for the innovative products.

Carsten Hofer, ODU Sales Engineer:

"ADLATUS offers a fully thought-out complete solution – and that's exactly what ODU offers, too. Which is why the collaboration with ADLATUS has been so smooth and constructive. It began in early 2017 when ADLATUS was looking for a docking system for charging and refueling connectors. Thanks to our modular ODU-MAC® Silver-Line we were able to meet this challenge efficiently. Now the robot has a robust, pre-cabled hybrid docking connector."

Matthias Strobel, ADLATUS Managing Director:

"We appreciate ODU as a dependable and competent partner. ODU fully caters to any special requirements and specifications and delivers connector systems of the highest quality. And that's what makes ODU our first choice." ■



ADLATUS CR 700 CLEANING ROBOT



"The ADLATUS can change floors all on its own by communicating with the elevator."

CARSTEN HOFER, ODU SALES ENGINEER

ODU Partner UKAEA RACE

Question:

”What do you need to help develop large-scale robots?”

Answer:

”A very big test-rig!”



TARM DURING FINAL COMMISSIONING – IMAGE COURTESY UKAEA RACE



ARTICULATED BOOM WITH ODU-MAC® CONNECTORS AT EACH OF THE THREE ARTICULATED JOINTS – IMAGE COURTESY OF UKAEA RACE

ODU-MAC® connectors were specified during the recent 12-month refurbishment of an extremely large robotics Test rig for the UK's Atomic Energy Authority (UKAEA).

The Telescopic Articulated Remote Mast (TARM) is a remote-handling system, originally designed to perform ex-vessel maintenance on the Joint European Torus (JET) project.

JET is the central research facility of the EUROfusion Programme, and is the largest and most successful fusion experiment in the world, having been in operation since 1983.

The refurbishment (funded in part by EUROfusion) was carried out by a core team of 34 engineers at the UKAEA's RACE (Remote Applications in Challenging Environments) robotics test facility located at Culham Science Centre near Oxford. Since 2017, the RACE facility has also hosted the ITER Remote Handling Test Facility (IRTF) to perform testing of critical remote handling operations necessary for component maintenance.

”According to TARM Project Manager Steve Gilligan: “This has been a strategically important project for RACE and for EUROfusion.

TARM consists of a high vertical telescopic mast (yellow), with a long articulated horizontal boom in four sections at its base (grey). The refurbishment has involved stripping out 1.5 tons of cabling and replacing it with modern controls and fiber optics, to allow a variety of standard and snake-arm robots to be operated on the end of the boom.

TARM will allow investigation into the manipulation of very heavy objects at full reach, utilizing feedback from sensors on each of its joints, coupled with position data from cameras and IR sensors placed around mock-up sections of the reactor, such as its access ports.

The mast-boom assembly and the control unit are fitted with a combination of ODU-MAC® Silver-Line and White-Line connectors. At the end of the boom is a MASCOT 6 manipulator, which is controlled by its own drive module, through the ODU-MAC® Blue-Line connectors.



The newly-refurbished TARM will now help to further develop and demonstrate the control of large-scale remote maintenance equipment inside the fusion reactors of the future.

These provide seriously challenging environments for robotics: high radiation levels, elevated temperatures, limited access, large equipment and some very complex inspection and maintenance procedures that must be implemented quickly and reliably, without failure.

TARM has a specific focus on tests for the European ITER and DEMO prototype fusion powerplants, particularly the “breeder blanket” – a key reactor component.

Breeder blankets are huge, heavy modules actively cooled by water. They cover the vacuum vessel’s inner walls to protect the steel structure and the superconducting toroidal field-magnets from the heat and high-energy neutrons produced by the fusion reactions.

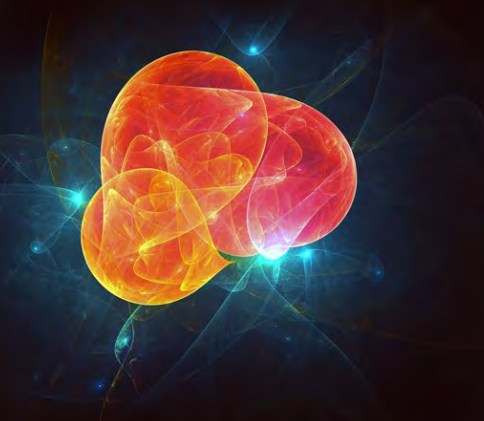
As the neutrons are slowed in the blanket, their kinetic energy is transformed into heat energy which is then collected by the water coolant and used for electrical power production.

The team at UKAEA RACE confirmed that they had chosen ODU-MAC® because of the following factors:

- + Good technical and sales support
- + Flexible modular principle of the rectangular connectors
- + Highest possible packing density with ODU-MAC® Silver- and White-Line
- + CAT 5 and optical fiber solutions
- + Wide range of both docking and manual mating options



THE ODU TEAM AT THE RACE FACILITY, FROM THE LEFT: GARETH HAWKES, RACE ELECTRICAL ENGINEER · STEPHEN WHEELER, RACE HEAD OF OPERATIONS · NICK HARPER, ODU-UK LTD MD · JASON LAVER, ODU-UK LTD SALES ENGINEER



ITER (International Thermonuclear Experimental Reactor)

ITER is an international nuclear fusion R&D project, being built to achieve “burning plasma” – one of the required steps on the way to commercial fusion power.

It is an experimental “tokamak” reactor, next to the Cadarache facility in Provence, France.

Tokamak reactors use a powerful magnetic field to confine hot plasma to the shape of a torus.

Construction of the ITER Tokamak complex began in 2013, with commissioning expected in 2025, and full deuterium–tritium fusion to begin in 2035.

DEMO (DEMOstration Power Station) will be the next phase, building upon ITER as the interim step towards a fully-commercial power station, sometimes referred to as PROTO.

ITER, which means “the way” in Latin, is one of the most ambitious energy projects in the world. At Cadarache, 35 nations are working together to build the world’s largest tokamak to prove the feasibility of fusion as a large-scale, carbon-free energy source based on the same principle that powers our sun and stars. The work to be carried out at ITER is crucial to advancing fusion science and preparing the way for the fusion power plants of tomorrow.

The ITER Organization is an intergovernmental organization established in 2006.

The parties to the agreement are the People’s Republic of China, the European Atomic Energy Community (Euratom), the Republic of India, Japan, the Republic of Korea, the Russian Federation and the United States of America.

Bernhard Säcki, ODU’s Global Head of Product Management, Rectangular Connectors comments:

” Naturally, the team at ODU is delighted that we’ve been able to play our part in supporting this unique project at TARM and we look forward to further opportunities with UKAEA RACE. ■



Silver-Line



ODU-MAC®

Automatic docking

ODU-MAC® docking frames are designed for automatic docking.

The right frame can be selected from a wide frame portfolio and individually adjusted for length.

The docking frame is then fitted with the required modules to meet specifications.

- + Tolerance compensation: axial backlash of 0.4 mm; radial backlash of +/-1.2 mm
- + Float mounted on both sides
- + Minimum of 100,000 mating cycles
- + Optional PE-grounding kit for max. 6² mm cable connection

ODU-MAC® S+ (SPEZIAL)

The new standard for docking requirements with optional PE transmission.

The docking frame portfolio is being extended with the ODU-MAC® S+ so that we can continue to provide the right solution for any requirement in the future, too.

The ODU-MAC® S+ enables better tolerance compensation than the standard frames from our previous portfolio.

In addition, it's float-mounted on both sides so it easily achieves a minimum of 100,000 mating cycles. The new docking frame is available in lengths ranging from 3 to 60 units. It's particularly well suited for test and measurement technology, for instance in the area of end-of-line testing systems during production processes. ■

White-Line



ODU-MAC® ZERO

The dynamic mini plastic housing.

The housing portfolio is expanded by a cable part (cable-to-cable connection).

The ODU-MAC® ZERO is a space-saving hybrid connector that combines a wide range of different media. Thanks to its dynamic housing geometry, it enables a generous combination of signals, power, data rates and HF signals (coax) of up to nine units.

The housing of the ODU-MAC® ZERO stands out thanks to its compact and dynamic design. In addition, the plastic housing parts are made for integrated rails, making magnetic components completely unnecessary.

A snap-in locking and emergency release function are included in the standard variety of this cable-to-cable connection. The benefits are clear: easy mating, automatic locking and immediate separation if required. Once again, ODU offers an outstanding solution to meet the demands of the medical market. ■

- + Selection of many different ODU-MAC® modules
- + Can be fitted with 9 modules
- + Up to 60,000 mating cycles
- + Cable outlet: straight
- + All touchable parts nickel-free
- + Simple and secure housing locking (break-away function/emergency release)
- + Particularly easy to clean
- + Non-magnetic standard version



AT LEFT: ODU-MAC® RAPID HALF-SHELL PRINCIPLE WITH PROVEN SPINDLE LOCKING SYSTEM FOR HiRain's HIL APPLICATION

Twice as fast thanks to the half-shell principle

ODU-MAC® RAPID

Fast and reliable connector systems for HiRain Automotive Electrical Test devices.



AT LEFT: ODU CHINA GENERAL MANAGER **GEORG HEISSEN** AND HiRain AE HARDWARE GENERAL MANAGER **MR. PANG**

Founded in 1998, HiRain TECHNOLOGIES is a leading high-tech company, focusing on the production of electronic products for the automotive industry.

HiRain'S products are used in over 1,000 automotive companies worldwide, covering all major markets such as Asia-Pacific, Europe and America. With over 20 years of experience, HiRain combines the world's most advanced processes to ensure the development of professional and flexible solutions.

This is why HiRain chose the ODU-MAC® RAPID modular hybrid connector with customized insulators for its Hardware in the Loop (HIL) test devices.

HIL provides a virtual vehicle testing platform to simulate an environment where the performance of the vehicles' control units and electrical systems can be tested and evaluated. ODU-MAC® RAPID connectors ensure the highest testing reliability and efficiency through their compact and rugged modular design – making them the ideal choice for HiRain's HIL applications.

And thanks to the half-shell principle, 50% time savings are achieved during assembly and servicing, as well as during any subsequent adjustments. The ODU-MAC® modular hybrid connector can transmit signals, power, high current, high voltage, coax, and media such as air and fluids, as well as data or light waves, all in a single interface.



Hirain's HIL APPLICATION

ODU-MAC® RAPID features a two-piece plastic housing available in size 4 and with ODU's proven spindle locking system, for both the ODU-MAC® White- and Blue-Line. The spindle locking is designed for at least 30,000 locking cycles, and this number can be easily increased by simply replacing the spindle screw. The novel housing design ensures easy assembly for its users.

"The innovative ODU-MAC® RAPID connector with customized isolators fully meets our requirements. The turnkey solution that was offered to us for our HIL test devices proves that ODU is a world leader when it comes to providing solutions for connection systems. The collaboration throughout the project phase and technical clarification was very professional and harmonious. Particularly our requirements for a quick test cable replacement and top precision during operation – these have been fully met," said HiRain AE Hardware General Manager, Mr. Pang. "With the rapidly developing field of automotive electronic technology and the ever-increasing requirements of electronic control units (ECU), on-board diagnosis (OBD) and network communication, our customers' expectations and the solutions we have to provide are becoming more and more complex. All of this means that an easily maintainable connection system of the highest quality is of utmost importance to us. ODU connector solutions indeed created A PERFECT ALLIANCE with HiRain." ■



ODU STRENGTHENS THE AUTOMOTIVE AREA

**New business unit taps into important future markets
as a focused driver of innovation.**

The area of eMobility is one of the fastest-developing growth markets and drivers of innovation for the future.

Connectivity and customized solutions, autonomous driving as well as “shared mobility” are the major trends in the field.

When it comes to new challenges and the search for solutions for complex tasks, the automotive industry and technology companies are growing ever closer as partners. Last fall, ODU established a clear focus in this area with its new Automotive Business Unit.

STECKVERBINDER talked to Rudolf Dechantsreiter, head of the new Automotive Business Unit, and Richard Espertshuber, responsible for Global Business Development Automotive. They underlined the opportunities ODU is seeing in this field and which new products are already attracting a great deal of attention.

The new developments are all in line with ODU's Strategy 2025. ODU aims to use this strategy to offer its customers expert knowledge for applications in those specific areas through a stronger focus on clearly defined target markets. Another objective is to achieve more comprehensive vertical integration. This is how ODU plans on becoming an even more strongly integrated partner in the value chain. And when it comes to precision, speed and precisely tailored solutions, ODU seeks to stand out through top performance and thereby create trust.



FROM LEFT: RICHARD ESPERTSHUBER AND RUDOLF DECHANTSREITER

ODU already demonstrated its pioneering spirit in the automotive area as long as 10 years ago when it introduced the first high-voltage battery connector system for a Mercedes 2400 Blue Hybrid.

As the head of the new Automotive Business Unit, Rudolf Dechantsreiter will be making sure that the right structures are established for a further step into the future. He's been active in the automotive business for almost 30 years, knows the most important players and is well-versed in the areas of materials management, sales and marketing as well as the complex area of suppliers and logistics processing.

His fields of specialization include electrical systems and data transmission solutions. "ODU has demonstrated top expertise and quality in connector systems and the development of innovative connector technology for over 75 years now," says Rudolf Dechantsreiter.

"That's exactly the same kind of expertise we need for designing eMobility concepts for the electrical systems of the vehicles of tomorrow."

With our focus on trends in the areas of urbanization, environmental protection and tailored customer solutions, we're concentrating on future developments in high voltage applications.

"Novel materials and assembly concepts for increasingly complex modules – these must be developed even more quickly while at the same time being space-saving and lightweight, and ensuring 100-percent functionality and reliability," Dechantsreiter underlines.

This is a challenge to which ODU is intent on rising through its customer proximity, flexibility, well-developed global quality management system and its sophisticated sales and logistics structure in Europe, the US and China.

The head of the new Automotive Business Unit is also going one step further when it comes to future developments: "In addition to our focus on technical tasks, we'll also carry out an organizational re-orientation." The data networking activities already underway are going to be further expanded and aligned with existing IT systems.

"Due to digitization, speed will play an increasingly important role in innovation processes."



The goal will be to work on a specific topic around the clock if necessary," says Dechantsreiter. Over recent years, Richard Espertshuber has witnessed just how creative the global ODU expert teams are when it comes to focused idea development.

A workshop on eMobility led to three innovative products. The response from the customers was promising. The talks gave ODU a clearer idea of what further improvements were still needed. The automotive experts are networked across three continents.

"With the ODU POWER MATE® 400, we've developed a new high-voltage connector that connects the electronics of the e-vehicles with the storage battery," explains Espertshuber.

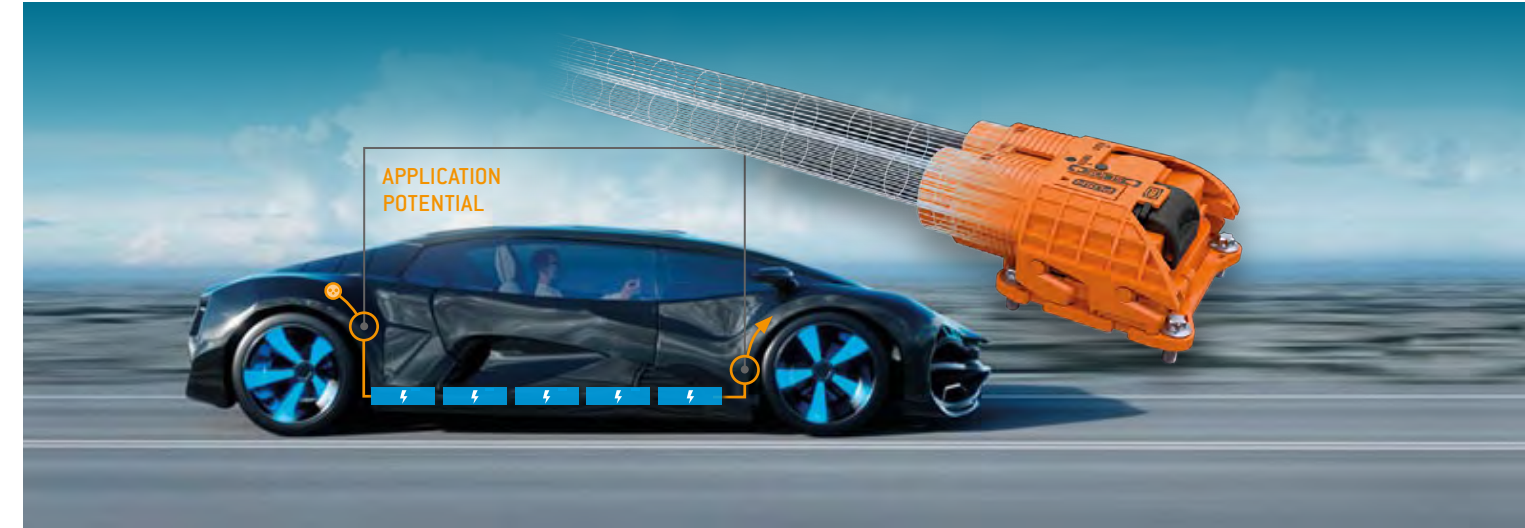
Its space-saving design and compact locking system make it an intelligent solution for high-voltage connector systems. It goes without saying that the plastics in this connector all meet fire protection class V0.

No less future-forward is the new ODU DOCKING MATE® with its self-finding innovative contact technology.

The new connector is attracting growing interest in such application areas as high automation levels and quick battery changes in industrial production, driverless transportation systems in warehousing, or future autonomous passenger transportation systems with separately changeable drive axles.

"Both connectors are examples of how, from creative brainstorming formats, we're developing innovative products for the markets of tomorrow that already have great appeal today," explains Espertshuber.

This also clearly demonstrates that, as a think tank and impulse generator for innovation, the automotive area at the ODU headquarters in Mühlendorf provides positive impulses for other departments. ■



The contact pro for automation

ODU DOCKING MATE®

Self-finding contact system for future markets.

Just like eMobility in vehicle construction, automated production processes will continue to revolutionize industrial production in the near future.

ODU is supporting its customers in capturing the growth markets of tomorrow through innovative contact technology and extremely high-performing connector systems. When it comes to development work, ODU never loses sight of the overall system architecture rather than detailed partial solutions.

The added value of the high-performance connectors from Mühldorf is outlined by Richard Espertshuber, Head of Global Business Development Automotive at ODU, by example of the newly developed ODU DOCKING MATE®. The connector with the tolerance compensation properties is used wherever systems or devices with self-finding contacting are deployed.

This could be, for example, autonomous transportation systems in warehousing and logistics and automated assembly processes in vehicle manufacturing. It could also be used in electrically powered passenger transportation systems equipped with separately changeable drive axles or replaceable battery systems. "When it comes to contact systems, ODU supports its customers all the way to the very end with top precision."

"Due to the complexity and stringent safety requirements of automated processes, an even higher level of functionality, reliability and robustness – along with space efficiency of the component parts being used – will play an increasing role in the future," says Espertshuber. This is why ODU is working with automated assembly processes in production rather than error-prone manual assembly. This is a clear plus when it comes to process quality and security.

Another interesting feature is this: The basic function of the various components is scalable. The test phase with further optimizations of the ODU DOCKING MATE® has been completed and initial talks are already under way regarding applications in customer projects. ■

ODU DOCKING MATE®

- ⊕ Self-finding docking of HV-battery & drivetrain modules
- ⊕ Tolerance compensation up to +/-5 mm
- ⊕ Highest ampacity levels up to > 400 A, scalable

The high-voltage specialist for the smallest of spaces.

ODU POWER MATE® 400

Combines high power density with a compact design.

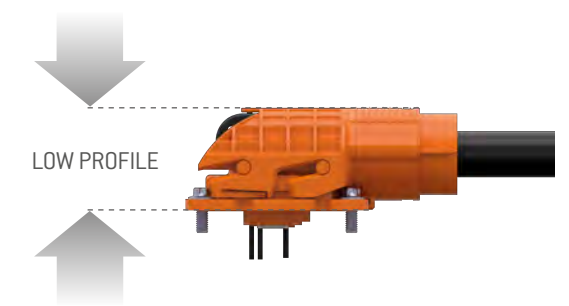
Hybrid power units, eMobility and connectivity are the megatrends for the vehicle design of tomorrow.

This creates high demands on contact and connector technology. Whether it's about connectors built into cars or special contacts in charging plugs, top driving power or ultra-fast charging: As a partner for complex solutions, ODU brings to the task over 75 years of expertise in innovative contact technology, a high level of vertical integration and special testing knowhow.

ODU has designed its POWER MATE® 400 to meet these new challenges perfectly: It's ideally suited for use on HV storage batteries, especially when fast charging is key. And particularly when high performance storage systems, a long reach and short charging times are required, high electrification currents – and thus high temperatures – come into play. The ODU POWER MATE® 400 ensures first-class charging technology and a outstanding safety levels for high-performance currents of up to 400 amperes, voltage of 1,000 volts and temperatures ranging between -40° C and +140° C.

Thanks to the use of innovative plastics, it also meets the highest fire protection class, V0. Further benefits of the ODU POWER MATE® 400 are its compact design, space-saving locking mechanism, security, dependability and precise fit.

ODU benefited from its many years of experience in self-designed test procedures for quality assurance as well as from being able to work with its own test labs and in-depth engineering expertise. ■



ODU POWER MATE® 400

- ⊕ Compact design
- ⊕ Innovative locking mechanism
- ⊕ High current carrying capacity
- ⊕ 2-pole HV connector system

SIBIU



” ODU BLUE ON SIBIU GREEN

The new production building went into operation last September as planned. The move to the brand new ODU Romania production facility in Sibiu was quick and smooth.

The new building offers a great deal more production space (+30% in Phase 1), short paths and clear structures – making for more flexibility and space for further expansion.

“One of the challenges was to create our first greenfield design for this first production site outside of Germany,” explains Adrian Costin, Managing Director of ODU Romania in Sibiu. “It worked out 100% and the production site there is fully integrated into the international production network of the ODU Group.”

The previous ODU location in Sibiu had been established in 2006 under the name ODU Romania Manufacturing S.R.L. The new location lies close to both Sibiu’s international airport and city center, too. Over 550 ODU employees are employed in Sibiu.

The new and modern production unit at the new Sibiu industrial estate covers some 48,000 m² of space.

The production equipment meets the latest standards, too, thereby ensuring top quality.



NEW PRODUCTION

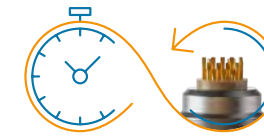
Modern communal areas, a cafeteria and 120 parking spaces round off the new work environment.

“For ODU, a good workplace also means an environment in which people can grow and where the word ‘team’ plays an important role. The values we’re seeking are an open organizational culture and personal development,” says Costin. ODU is an employer that acknowledges and honors professional achievements in a company, offers security and supports individual needs in line with the principles for which it stands. ■

Dependability, fairness, responsibility and quality are basic values for collaboration within the company.



ODU MANAGEMENT TEAM IN SIBIU, LEFT TO RIGHT: **ADRIAN URSU**, HEAD OF TECHNICAL DEPARTMENT SIBIU · **FLORIAN MIHELE**, HEAD OF SUPPLY CHAIN MANAGEMENT SIBIU · **CRISTIAN OPREA POPA**, HEAD OF QUALITY SIBIU · **ADRIAN COSTIN**, GENERAL MANAGER SIBIU · **MARIA COROIAN**, HEAD OF FINANCE SIBIU · **ADRIAN POPA-OPREA**, HEAD OF ADMINISTRATION HR SIBIU · **CODRUTA CINEZEANU**, HEAD OF PRODUCTION SIBIU · **ALEXANDRU BISCA**, HEAD OF IT SIBIU



A new face on the ODU Group's supervisory.

Long-standing supervisory board member Dr. Wolfgang Jacobi left the board at the end of 2018. His place was taken on January 1, 2019 by Dr. Stefan Gilch.

Dr. Jacobi headed up ODU as Managing Director between 1985 and 2006. When the bulk business of PCB connectors broke away, cheap competition from Asia appeared and the markets grew increasingly global, he initiated major strategic change for ODU, with an orientation towards tailored products and products for global markets.

Under his direction, three milestones in innovative connector solutions were set: the ODU-MAC®, ODU MINI-SNAP® and ODU MEDI-SNAP®. Moreover, the establishment of new production and sales locations in the US, China and Romania were trailblazing and forward-thinking developments for ODU during this time.

Along with a significant expansion of the ODU workforce and high investments, ODU was able to increase its revenue to over 50 million euros by 2006. Today ODU employs 2,300 people throughout the world and generates a revenue of 200 million euros. ■



DR. WOLFGANG JACOBI

On January 1, 2019, ODU Korea was founded – the company's latest subsidiary.

Kai Schneider is ODU Korea's Managing Director and works together with trading partners.

The ODU Korea location in Seoul was officially opened during a festive celebration by the management team, and in line with Korean tradition, with rice cake and its first visitors from SamTra. ■

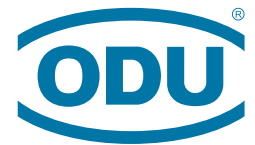
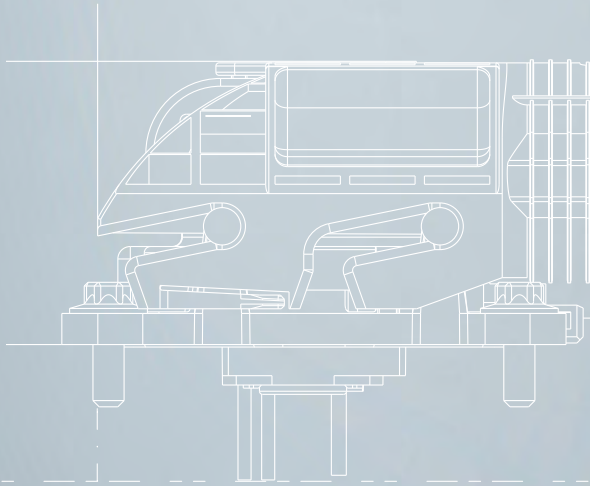


KAI SCHNEIDER, MANAGING DIRECTOR OF ODU KOREA



TRAIDFAIR	LOCATION	DATE
electric & hybrid europe 2019	Stuttgart, Germany	07.05. – 09.05. 2019
EOT 2019	Herning, Denmark	07.05. – 09.05. 2019
EDS 2019	Las Vegas, USA	07.05. – 10.05. 2019
TEC Fair	Evertiq Linköping, Sweden	08.05. 2019
ISMRRM 2019	Montreal, Canada	11.05. – 16.05. 2019
MILEX – 2019	Minsk, Russia	15.05. – 18.05. 2019
SOVIC 2019	Tampa, USA	20.05. – 23.05. 2019
National Instruments Week 2019	Austin, USA	20.05. – 23.05. 2019
Automotive Testing Expo 2019	Stuttgart, Germany	21.05. – 23.05. 2019
Automotive Engineering Exposition 2019	Yokohama, Japan	22.05. – 24.05. 2019
SPS ipc drives 2019	Parma, Italy	28.05. – 30.05. 2019
CNTE 2019	Beijing, China	18.06. – 20.06. 2019
AHTE 2019	Shanghai, China	03.07.– 06.07.2019
Navy Saloon "IMDS 2019"	Saint Petersburg, Russia	10.07. – 14.07.2019
China Military and Civilian Integration Expo 2019	Beijing, China	24.07. – 26.07.2019
MSPO – International Defence Industry Exhibition	Kielce, Poland	03.09. – 06.09. 2019
DSEI UK 2019	London, UK	10.09. – 13.09. 2019
Battery Show 2019	Novi, USA	10.09. – 12.09. 2019
EVSC – Expo 2019	Guangzhou, China	11.09. – 14.09. 2019
Auto Testing Expo 2019	Shanghai, China	24.09. – 26.09. 2019
Measurement World 2019	Paris, France	24.09. – 26.09. 2019
Medical Technology Ireland	Ballybrit, Ireland	25.09. – 26.09. 2019
TEC Fair Evertiq – Lund	Lund, Sweden	26.09. 2019
hi Tech & Industry Scandinavia 2019	Herning, Denmark	01.10. – 03.10. 2019
AUSA 2019	Washington, DC, USA	14.10. – 16.10. 2019
eMove 360° Europe 2019	München, Germany	15.10. – 17.10. 2019
Seoul ADEX 2019	Seoul, Korea	15.10. – 20.10.2019
EDS 2019	Coventry, UK	16.10. – 17.10. 2019
Automotive Testing Expo 2019	Novi, USA	22.10. – 24.10. 2019
High Tech Summit 2019	Lyngby, Denmark	30.10. – 31.10. 2019
TEKNOLOGIA 19	Helsinki, Sweden	05.11. – 07.11. 2019
productronica 2019	München, Germany	12.11. – 15.11. 2019
DSEI Japan 2019	Chiba, Japan	18.11. – 20.11. 2019
Milipol Paris 2019	Paris, France	19.11. – 21.11. 2019

A PERFECT ALLIANCE.



A PERFECT ALLIANCE.

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