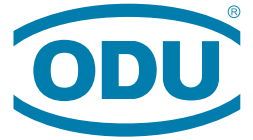


A PERFECT ALLIANCE.



ODU MODULAR CONNECTOR SOLUTIONS

Modular versatility

ODU-MAC® **White-Line**

ODU-MAC® **Blue-Line**

ODU-MAC® PUSH-LOCK **Blue-Line**

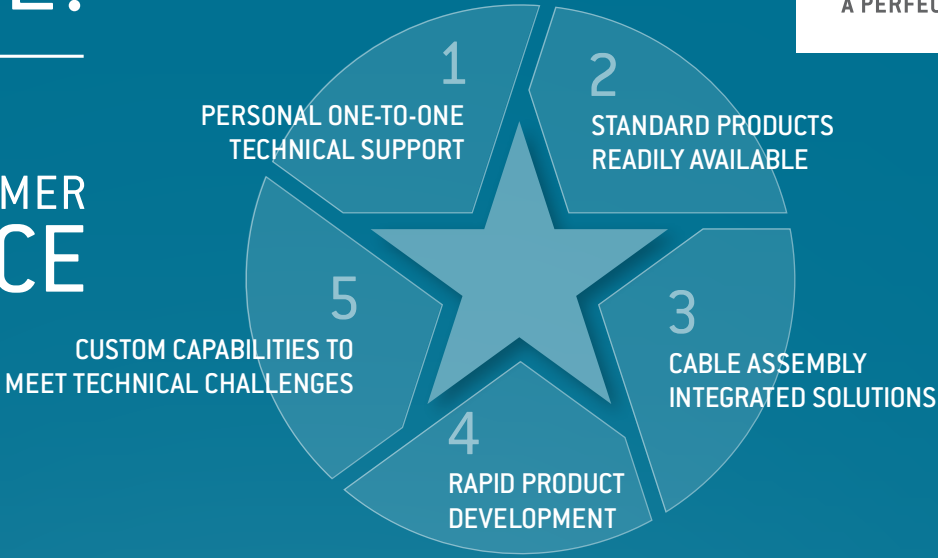
ODU-MAC® **Silver-Line**

ODU DOCK **Silver-Line**



A PERFECT ALLIANCE.

ODU 5 STAR CUSTOMER EXPERIENCE



ODU GROUP OVERVIEW

- More than 80 years of experience in connector technology
- Over 2,300 employees worldwide
- Sales offices in China, Denmark, France, Germany, Hong Kong, Italy, Japan, Korea, Romania, Sweden, UK and the US as well as 5 production and logistics sites
- All technologies under one roof: Design and development, machine tool and special machine construction, injection, stamping, turning, surface technology, assembly and cable assembly

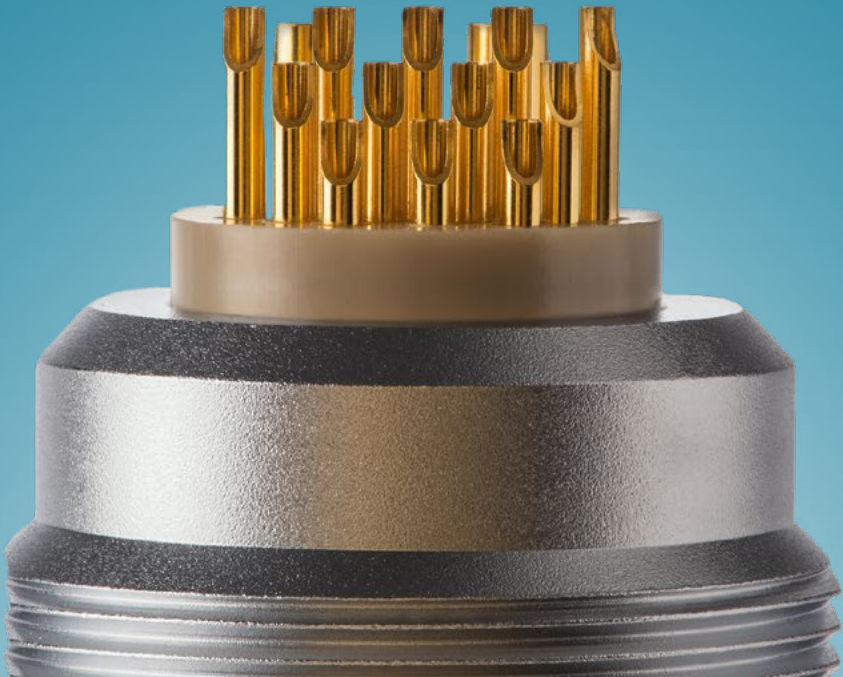
We operate in the following markets: medical, military and security, test and measurement, industrial, and automotive

As of February 2020

CERTIFIED QUALITY

- ISO 9001
- IATF 16949
- ISO 13485
- ISO 14001
- ISO 50001
- Wide range of UL, CSA, VG and VDE licenses
- UL certified cable assembly

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



ODU MODULAR CONNECTOR OVERVIEW



	ODU-MAC® Silver-Line Page 4	ODU DOCK Silver-Line Page 5	ODU-MAC® White-Line Page 6	ODU-MAC® Blue-Line Page 14	ODU-MAC® PUSH-LOCK Blue-Line Page 15
Mating cycles	> 100,000	> 100,000	> 100,000	> 10,000	5,000
Mating principle	Automatic docking	Automatic docking	Manual mating	Manual mating, automatic docking	Manual mating
Automatic docking	7 Frame varieties, Quick-change head option	3 Sizes, Quick-change head option		1 Frame variety, 4 sizes	
Locking			Spindle/lever locking Snap-In [ZERO]	Spindle/lever locking	Push-pull locking
Housing		3 housing varieties available in plastic and metal	Available in plastic and metal	Available in plastic and metal	Plastic sleeve / Metal frame
Strain relief	•	•	•	•	•
Highest packing density on the market	•	•	•	•*	•
Non-magnetic version	•		•		

VARIETY OF MODULES

Signal	Up to 27 A/1.5 mm²	Up to 27 A/1.5 mm²	Up to 27 A/1.5 mm²	Up to 33 A/2.5 mm²	Up to 33 A/2.5 mm²
Power	Up to 119 A/16 mm²	Up to 119 A/16 mm²	Up to 119 A/16 mm²	Up to 58 A/6 mm²	Up to 58 A/4 mm²
High current	Up to 225 A/50 mm²	Up to 225 A/50 mm²	Up to 225 A/50 mm²	Up to 225 A/50 mm²	Up to 58 A/4 mm²
High voltage	Up to 6.3 kV/1.5 mm²	Up to 2.5 kV/1.5 mm²	Up to 6.3 kV/1.5 mm²	Up to 2.5 kV/6 mm²	Up to 2.5 kV/4 mm²
Coax	Up to 9.0 GHz	Up to 9.0 GHz	Up to 9.0 GHz	Up to 12 GHz	Up to 12 GHz
Compressed air	Up to 20 bar	Up to 20 bar	Up to 20 bar	Up to 12 bar	Up to 12 bar
Fluid	Up to 25 bar	Up to 25 bar	Up to 25 bar	Up to 10 bar	Up to 10 bar
Fiber optic POF/GOF	•	•	•	• [on request]	• [on request]
Transfer rates /high-speed	CAT 6A / USB ^{®1} / HDMI ^{®1}	CAT 6A / USB ^{®1} / HDMI ^{®1}	CAT 6A / USB ^{®1} / HDMI ^{®1}	CAT 6A / USB ^{®1}	CAT 6A / USB ^{®1}
Optional pin protection	Module can be freely positioned		Module can be freely positioned	Integrated with 20-pin signal module	Integrated with 20-pin signal module
Termination technology	Crimp / solder / print	Crimp (solder on request)	Crimp / solder / print	Crimp / solder / print	Crimp / solder / print

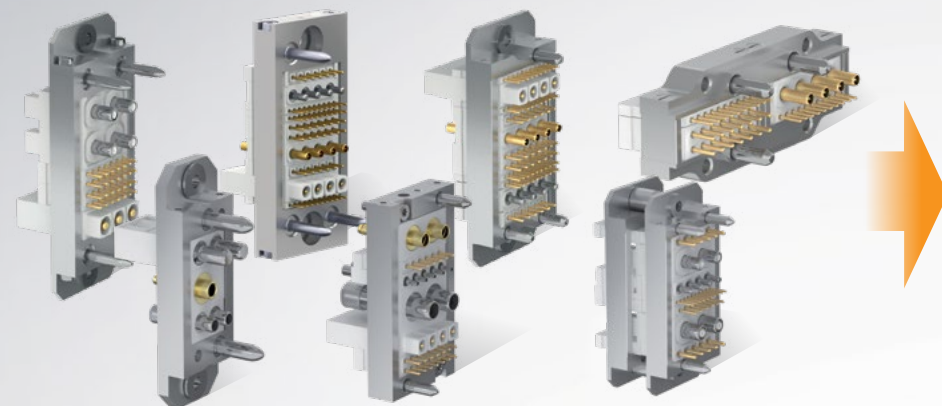
¹These ODU specific connectors can transmit common data transmission protocols such as HDMI[®] and USB[®], but they are not HDMI[®]- and USB[®]-standard connectors.

*Exceeds market standards

ODU-MAC® Silver-Line

AUTOMATIC DOCKING

Choose from a wide variety of frames and fit them according to your specific requirements



+ 7 DOCKING FRAMES

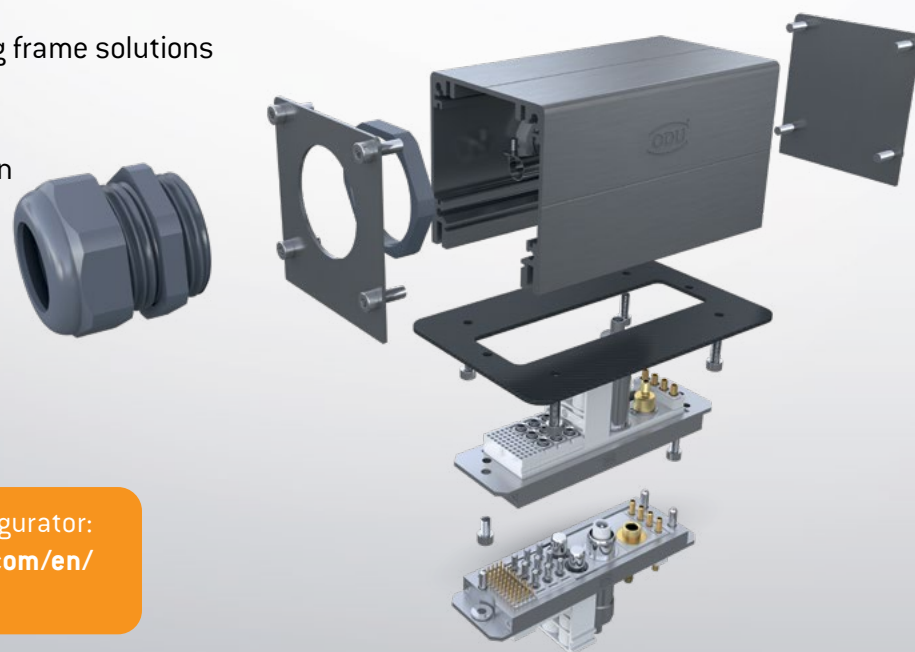
7 different frame types for automatic docking base.

- ODU-MAC® S
- ODU-MAC® S+
- ODU-MAC® L (Large)
- ODU-MAC® M+ (Mini)
- ODU-MAC® T (Transverse)
- ODU-MAC® P+ (Power)
- ODU-MAC® QCH (Quick change head)

STRAIN RELIEF HOUSING ODU-MAC® Silver-Line

The ODU-MAC® strain relief housing has been specifically designed to meet the requirements of the ODU-MAC® interfaces. It's an ideal add-on solution for the docking frames, offering full protection for the termination area.

- + An accessory for all ODU docking frame solutions
- + IP50 or higher
- + Robust and space-saving design
- + Individual lengths and cable entry placement for high flexibility
- + PCB board fixing – optional



Online generator / configurator:
www.odu-mac.com/en/



ASK OUR ENGINEERS
Email us at: sales@odu-usa.com

ODU DOCK Silver-Line

3 Available docking plate thicknesses:
10 mm, 14 mm, 20 mm

2 Contact surfaces

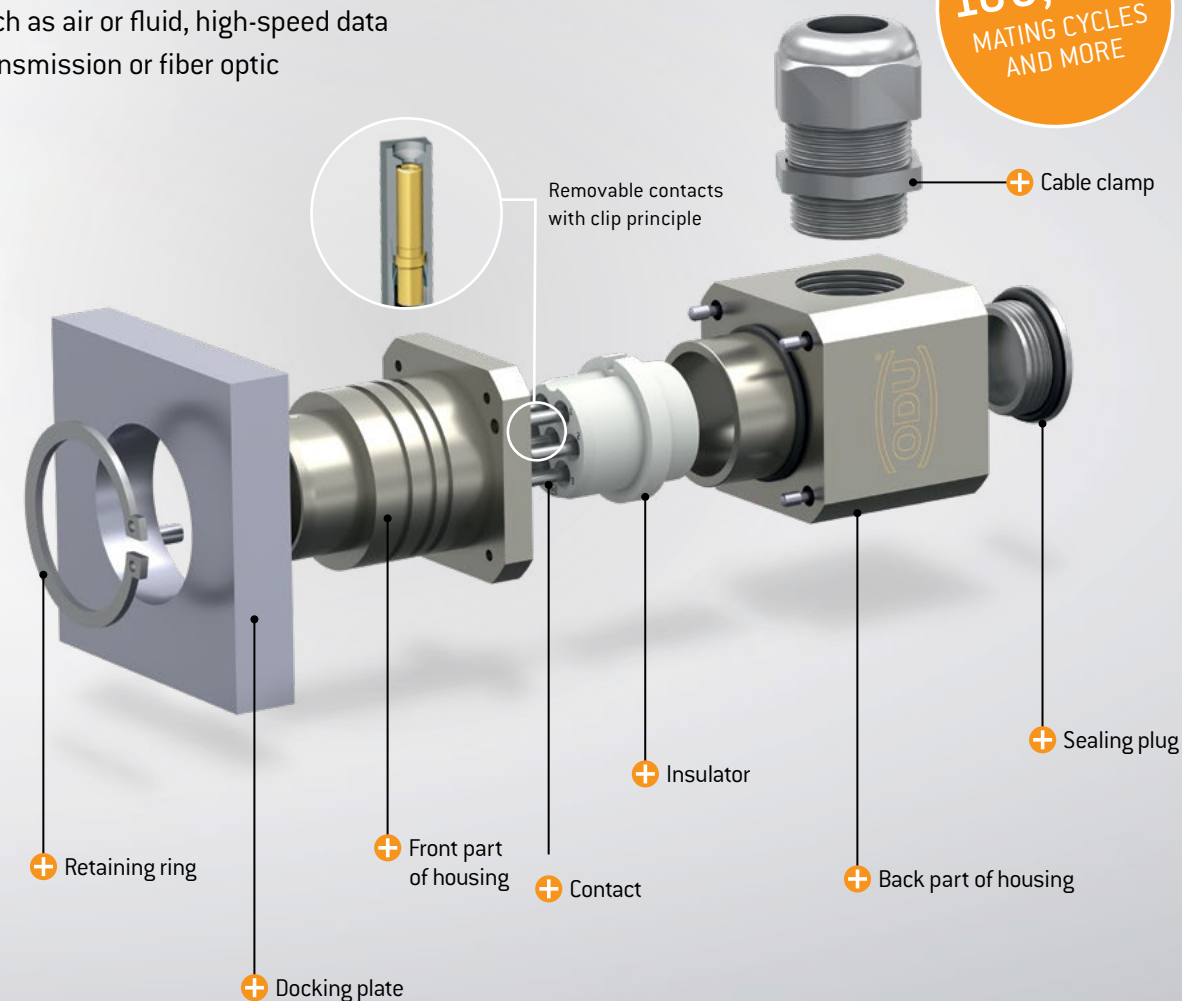
32 Modules to choose from:
Signal, power, high current, high voltage, RF-signal (coax), media such as air or fluid, high-speed data transmission or fiber optic

2 Housing versions: Plastic or aluminum nickel-plated

15 Versions with different numbers of poles for signal, power, and hybrid transmission



100,000
MATING CYCLES
AND MORE



ASK OUR ENGINEERS
Email us at: sales@odu-usa.com

ODU-MAC® **White-Line** THE MODULAR SYSTEM AT A GLANCE

100,000
Mating cycles and more



Online generator / configurator:
www.odu-mac.com/en/



OUTSTANDING – FOR EVERY NEED

Take a closer look at the following pages to discover for yourself the wide variety of transmission methods we offer, such as USB® 2.0¹, USB® 3.2 Gen 1x1¹, CAT 6_A, HDMI®¹ and FireWire®¹.

¹ These ODU specific connectors can transmit common data transmission protocols such as USB® 2.0, USB® 3.2 Gen 1 x 1, HDMI® and FireWire®, but they are not USB®, HDMI® and FireWire®-standard connectors.

ODU-MAC® **White-Line** ZERO

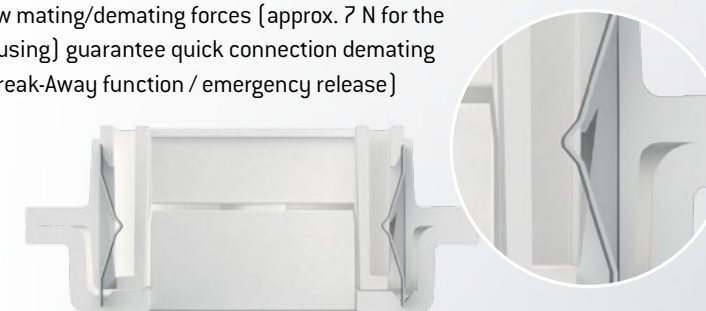


- Suitable for a wide range of ODU-MAC® modules
- Can be fitted with 9 units
- Up to 60,000 mating cycles
- 3 different cable outlets: straight, 45°, 90°
- Compact, lightweight & dynamic housing design
- Simple, safe housing locking (Break-Away function/ emergency release)
- Bulkhead mounted and cable to cable receptacle housing available
- Non-magnetic versions
- Easy to clean
- IP54

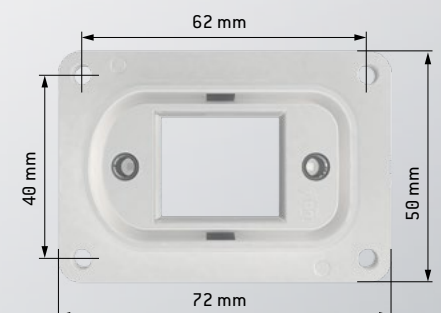


SNAP-IN LOCKING

- Reliable and easy, due to snap fits and sealing strip (frictional locking principle)
- Low mating/demating forces (approx. 7 N for the housing) guarantee quick connection demating (Break-Away function / emergency release)



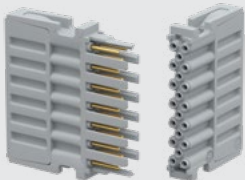
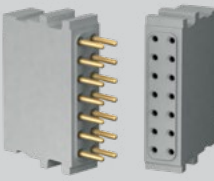
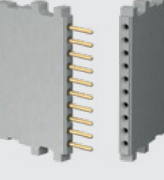
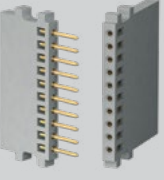
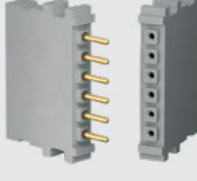
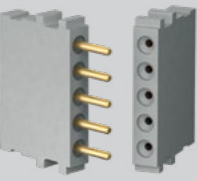
KEYING AND PACKAGING DIMENSIONS





Modules marked with this symbol can be used in the ODU DOCK Silver-Line; note the space requirements.

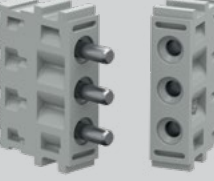
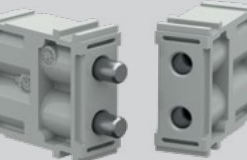
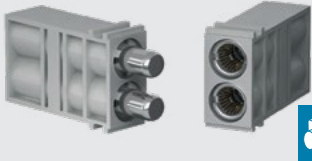
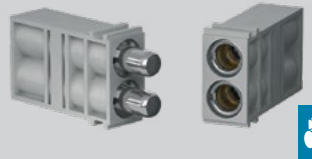
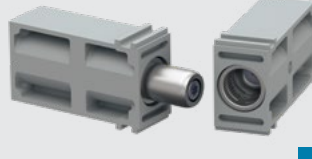
Modules marked with this symbol can be used in the ODU-MAC® ZERO

	Modules	Description	Units /width	Features
Signal	 	20 contacts for turned contacts Contact-Ø: 0.76 mm	 5.08 mm	Operating voltage ¹ 250 V Rated impulse voltage ¹ 1,500 V Max. continuous current ² 11 A for .38 mm² Degree of pollution ¹ 2 Mating cycles minimum 100,000 
	  	14 contacts for turned contacts Contact-Ø: 1.02 mm	 7.62 mm	Operating voltage ¹ 320 V Rated impulse voltage ¹ 2,500 V Max. continuous current ² 13.5 A for 0.5 mm² Degree of pollution ¹ 2 Mating cycles minimum 100,000
	  	10 contacts for turned contacts Contact-Ø: 0.76 mm	 2.54 mm	Operating voltage ¹ 250 V Rated impulse voltage ¹ 1,500 V Max. continuous current ² 11 A for 0.38 mm² Degree of pollution ¹ 2 Mating cycles minimum 100,000 
	  	10 contacts for stamped contacts Contact-Ø: 0.7 mm	 2.54 mm	Operating voltage ¹ 32 V Rated impulse voltage ¹ 1,500 V Max. continuous current ² 6 A for 0.38 mm² Degree of pollution ¹ 2 Mating cycles minimum 5,000 
	  	6 contacts for turned contacts Contact-Ø: 1.02 mm	 5.08 mm	Operating voltage ¹ 400 V Rated impulse voltage ¹ 3,000 V Max. continuous current ² 13.5 A for 0.5 mm² Degree of pollution ¹ 2 Mating cycles minimum 100,000
	  	5 contacts for turned contacts Contact-Ø: 1.5 mm	 5.08 mm	Operating voltage ¹ 500 V Rated impulse voltage ¹ 2,500 V Max. continuous current ² 27 A for 1.5 mm² Degree of pollution ¹ 2 Mating cycles minimum 100,000



Modules marked with this symbol can be used in the ODU DOCK Silver-Line; note the space requirements.

Modules marked with this symbol can be used in the ODU-MAC® ZERO

	Modules	Description	Units /width	Features
Power	  	4 contacts for turned contacts Contact-Ø: 2.41 mm	 7.62 mm	Operating voltage ¹ 500 V Rated impulse voltage ¹ 3,000 V Max. continuous current ² 41 A for AWG 12 Degree of pollution ¹ 2 Mating cycles minimum 100,000
	  	3 contacts for turned contacts Contact-Ø: 3 mm	 7.62 mm	Operating voltage ¹ 500 V Rated impulse voltage ¹ 3,000 V Max. continuous current ² 58 A for 6 mm² Degree of pollution ¹ 2 Mating cycles minimum 100,000
	  	3 contacts for turned contacts Contact-Ø: 3 mm	 10.16 mm	Operating voltage ¹ 2,500 V Rated impulse voltage ¹ 10,000 V Max. continuous current ² 58 A for 6 mm² Degree of pollution ¹ 2 Mating cycles minimum 100,000 
	 	2 contacts for turned contacts Contact-Ø: 5 mm	 12.7 mm	Operating voltage ¹ 1,000 V Rated impulse voltage ¹ 4,000 V Max. continuous current ² 119 A for 16 mm² Degree of pollution ¹ 2 Mating cycles minimum 100,000
High current	 	2 contacts for turned contacts with ODU SPRINGTAC ³ Contact-Ø: 8 mm	 15.24 mm	Operating voltage ¹ 500 V Rated impulse voltage ¹ 3,000 V Max. continuous current ² 142 A for 25 mm² Degree of pollution ¹ 2 Mating cycles minimum 100,000
	 	2 contacts for turned contacts with ODU LAMTAC ⁴ Contact-Ø: 8 mm	 15.24 mm	Operating voltage ¹ 500 V Rated impulse voltage ¹ 3,000 V Max. continuous current ² 154 A for 25 mm² Degree of pollution ¹ 2 Mating cycles minimum 10,000
	 	1 contact for turned contacts with ODU LAMTAC ⁴ Contact-Ø: 10 mm or 12 mm	 17.78 mm for both versions	Model 10 mm 12 mm Operating voltage ¹ 500 V 400 V Rated impulse voltage ¹ 4,000 V 3,000 V Max. continuous current ² 179 A 225 A for 35 mm² for 50 mm² Degree of pollution ¹ 2 2 Mating cycles min. 10,000 min. 10,000 

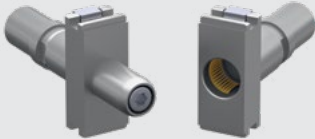
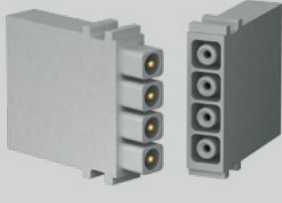
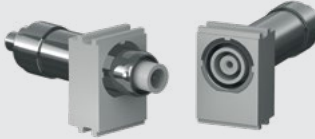
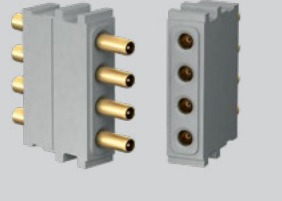
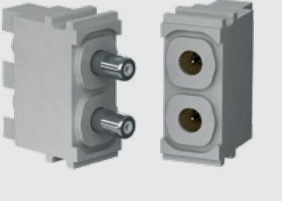
¹ Acc. to IEC 60664-1:2007 [VDE 0110-1:2008] for degree of pollution 2.
² Definition max. continuous current see ODU-MAC® Silver-Line | ODU DOCK Silver-Line catalog page 197, download at www.odu-usa.com/downloads

¹ Acc. to IEC 60664-1:2007 [VDE 0110-1:2008] for degree of pollution 2. ² Definition max. continuous current see ODU-MAC® Silver-Line | ODU DOCK Silver-Line catalog page 197, download at www.odu-usa.com/downloads ³ Contact with springwire technology ⁴ Contact with lamella technology



Modules marked with this symbol can be used in the ODU DOCK Silver-Line; note the space requirements.

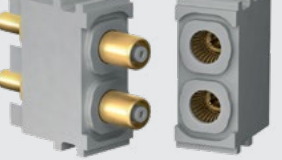
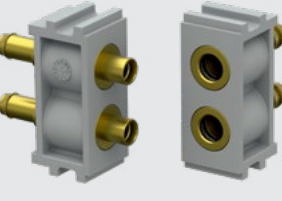
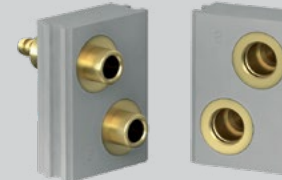
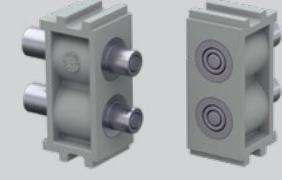
Modules marked with this symbol can be used in the ODU-MAC® ZERO

	Modules	Description	Units /width	Features	
PE		1 contact for turned contacts with ODU LAMTAC® ³ Contact-Ø: 10 mm	5 Units 12.7 mm	Mating cycles Conductor cross-section	minimum 10,000 10 / 16 / 25 mm²
		4 contacts for turned contacts Contact-Ø: 1.5 mm	3 Units 7.62 mm	Operating voltage ¹ Rated impulse voltage ¹ Max. continuous current ² Degree of pollution ¹ Mating cycles	2,500 V 10,000 V 27 A for 1.5 mm² 2 minimum 100,000
High voltage		1 contact Contact-Ø: 2 mm	8 Units 20.32 mm	Operating voltage ¹ Rated impulse voltage ¹ Degree of pollution ¹ Mating cycles	6,300 V 20,000 V 2 minimum 10,000
		4 contacts for 50 Ω RF-signal (coax) contacts	3 Units 7.62 mm	Frequency range Mating cycles	0 to 1.3 GHz minimum 60,000
RF-signal [coax]		2 contacts for 50 Ω RF-signal (coax) contacts SMA termination	5 Units 12.7 mm	Frequency range Mating cycles	0 to 9.0 GHz minimum 100,000
		2 contacts for 50 Ω RF-signal (coax) contacts	5 Units 12.7 mm	Frequency range Mating cycles	0 to 2.4 GHz minimum 100,000
		2 contacts for 50 Ω RF-signal (coax) contacts	5 Units 12.7 mm	Frequency range Mating cycles	0 to 2.4 GHz minimum 100,000



Modules marked with this symbol can be used in the ODU DOCK Silver-Line; note the space requirements.

Modules marked with this symbol can be used in the ODU-MAC® ZERO

	Modules	Description	Units /width	Features	
RF-signal [coax]		2 contacts for 50 Ω RF-signal (coax) contacts	5 Units 12.7 mm	Frequency range Mating cycles	0 to 2.8 GHz minimum 100,000
		2 contacts for 75 Ω RF-signal (coax) contacts	5 Units 12.7 mm	Frequency range Mating cycles	0 to 3.0 GHz minimum 100,000
Compressed air and fluid modules		2 contacts for compressed air valves	5 Units 12.7 mm	Tube diameter Mating cycles	M5 or max. 4 mm minimum 100,000
		2 contacts for compressed air valves	16 Units 40.64 mm	Tube diameter Inner diameter tube Mating cycles	max. 6 mm max. 6 mm minimum 100,000
		1 contact for compressed air valve	8 Units 20.32 mm	Tube diameter Inner diameter tube Mating cycles	max. 6 mm max. 6 mm minimum 100,000
		2 contacts for fluid coupling plug	5 Units 12.7 mm	Tube diameter Mating cycles	M5 internal thread minimum 100,000

¹Acc. to IEC 60664-1:2007 (VDE 0110-1:2008) for degree of pollution 2. ²Definition max. continuous current see ODU-MAC® Silver-Line | ODU DOCK Silver-Line catalog page 197, download at www.odu-usa.com/downloads ³Contact with lamella technology

ODU-MAC®

White-Line

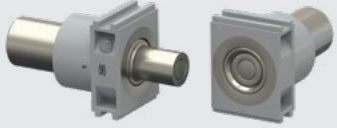
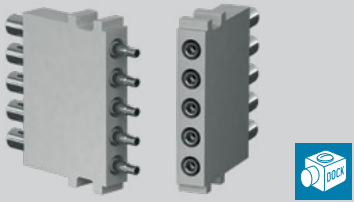
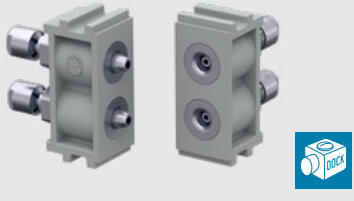
ODU-MAC®

Silver-Line

MODULES

 Modules marked with this symbol can be used in the ODU DOCK Silver-Line; note the space requirements.

 Modules marked with this symbol can be used in the ODU-MAC® ZERO

	Modules	Description	Units /width	Features	
Compressed air and fluid modules		1 contact for fluid coupling plug	9Units 22.86 mm	Inner diameter tube Mating cycles + 25 bar	G1/4 minimum 100,000
Fiber optic		5 contacts for fiber optic contacts for plastic fiber (POF)	2Units 5.08 mm	Insertion loss typical Mating cycles	1.5 dB for 670 nm minimum 40,000
		2 contacts for fiber optic contacts for plastic fiber (POF)	5Units 12.7 mm	Mating cycles Insertion loss typical	minimum 100,000 1.5 dB for 670 nm
		3 contacts for fiber optic contacts for fiber glass (GOF)	4Units 10.16 mm	Mating cycles Insertion loss typical	minimum 100,000 1 dB for 670 nm
Shielded implementation / high-speed connector		2 to 10 contacts for inserts size 0	5Units 12.7 mm	Mating cycles Suitable for all common bus systems USB® 1.1 ¹ , USB® 2.0 ¹ , USB® 3.2 Gen 1x1 ¹ , FireWire® ¹ , Ethernet, CAT 5	minimum 10,000
		2 to 14 contacts for inserts size 1	6Units 15.24 mm	Suitable for all common bus systems + Mating cycles with ODU TURNTAC® min. 10,000 + Mating cycles with ODU SPRINGTAC® min. 60,000	USB® 2.0 ¹ , Ethernet, CAT 5

¹ These ODU specific connectors can transmit common data transmission protocols such as USB® 1.1, USB® 2.0, USB® 3.2 Gen 1x1, HDMI® and FireWire®, but they are not USB®, HDMI®- and FireWire®-standard connectors.

ODU-MAC®

White-Line

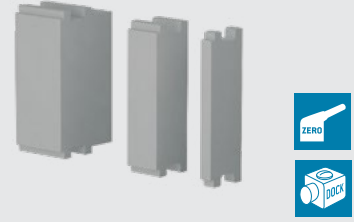
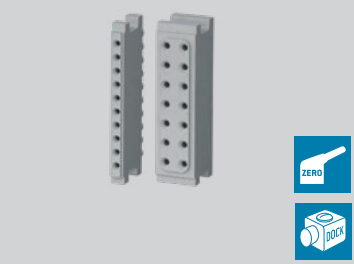
ODU-MAC®

Silver-Line

MODULES

 Modules marked with this symbol can be used in the ODU DOCK Silver-Line; note the space requirements.

 Modules marked with this symbol can be used in the ODU-MAC® ZERO

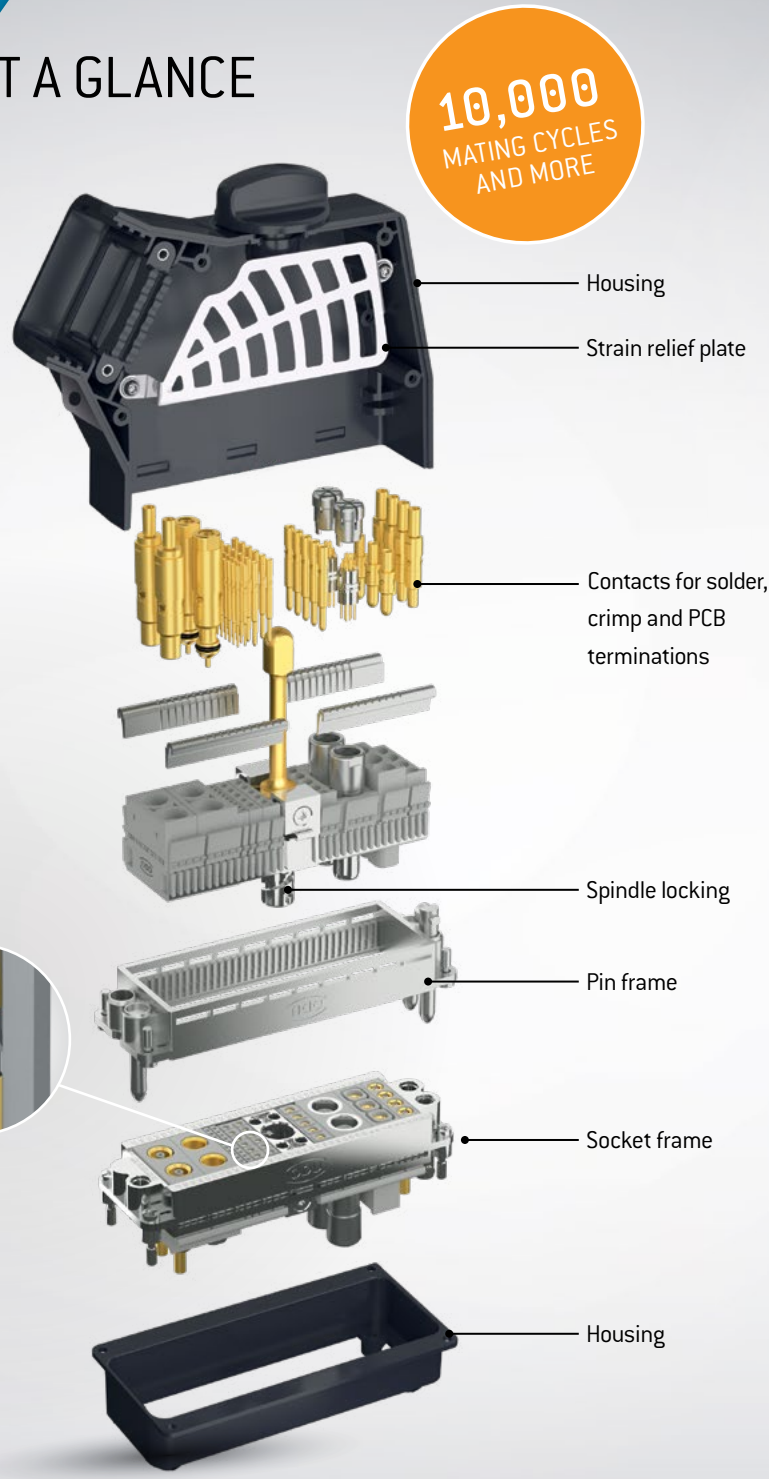
	Modules	Description	Units /width	Features	
Shielded implementation / high-speed connector		4 to 16 contacts for inserts size 2	7Units 17.78 mm	Suitable for all common bus systems USB® 3.2 Gen 1x2 ¹ , HDMI® ¹ , Ethernet, CAT 5, CAT 6 _A + Mating cycles with ODU TURNTAC® min. 10,000 + Mating cycles with ODU SPRINGTAC® min. 60,000	
		10 to 30 contacts for inserts size 3	8Units 20.32 mm	Mating cycles Suitable for all common bus systems Ethernet ¹	minimum 10,000
Blank modules/spacer modules / keying modules / pin protection modules		Blank modules	1Unit 3Units 2.54 mm 7.62 mm 5Units 12.7 mm	Used to fill incomplete frames.	
		Spacer module	1Unit 2Units 2.54 mm 5.08 mm 3Units 5Units 7.62 mm 12.7 mm	Not equipped with retaining clips. The populated pin modules on mating connectors can still be inserted into these spacers without interference. For information on the individual spacer modules please look at the corresponding modules in the ODU-MAC® Silver-Line ODU DOCK Silver-Line catalog.	
		Keying modules	1Unit 2.54 mm	Arranged between the modules to create keyed guiding system.	
		Pin protection modules	1Unit 2.54 mm	Used to protect the pins in conjunction with small pin diameters.	

¹ These ODU specific connectors can transmit common data transmission protocols such as USB® and HDMI®, but they are not USB®- or HDMI®-standard connectors.

ODU-MAC® Blue-Line

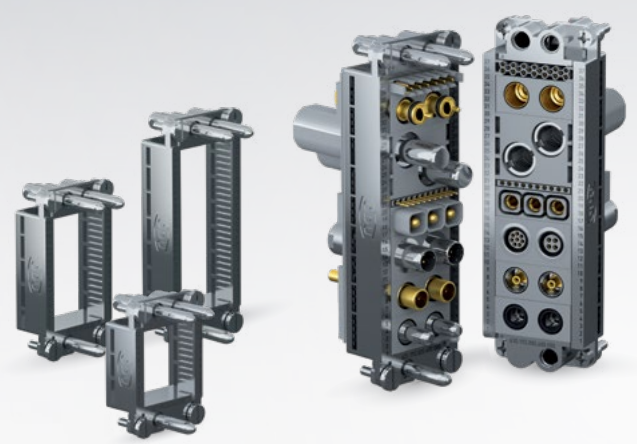
THE MODULAR SYSTEM AT A GLANCE

- 2 Possible applications:
manual mating or automatic docking
- 39 Cable hood versions
- 4 Types of locking: spindle, lever, transverse or push-pull locking
- 32 Modules to choose from: signal, power, high current, coax, compressed-air, fluid, data transmission, fiber optic and PCB termination
- 3 Different spindle geometries
- 14 Versions of bulkhead and surface mounted housings and couplings in various sizes



AUTOMATIC DOCKING

Depending on your requirements, there are 4 different frame lengths to choose from for automatic docking.



+ 4 DOCKING FRAMES

Size	Units
1	12
2	18
3	26
4	37

Tolerance compensation radial: +/- 0.6 mm
Tolerance compensation axial: min. 0.1 mm

ODU-MAC® PUSH-LOCK

ADVANCED PUSH-LOCK CONNECTORS

- + Easy one handed operation
- + Up to 7 units of signal contacts, and power, coax, air, fluid, data rates
- + > 5,000 mating cycles
- + Push-Pull design for secure connections and space savings
- + IP67



Online generator / configurator:
www.odu-mac.com/en/



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Email us at: sales@odu-usa.com

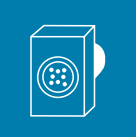
REQUEST A QUOTE
Email us at: sales@odu-usa.com



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

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

¹ According to IEC 60664-1:2007 (VDE 0110-1:2008) for pollution degree 2



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

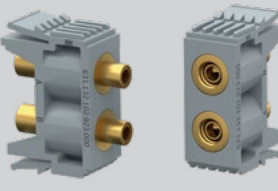
	Modules	Description	Units/width	Features
PCB termination modules		6 contacts Contact-Ø: 1.3 mm	2 Units 4.8 mm	Operating voltage ¹ 400 V Rated surge voltage ¹ 2,500 V Max. continuous current ² 13 A Pollution degree ¹ 2 Mating cycles min. 10,000
		5 contacts Contact-Ø: 2 mm	3 Units 7.2 mm	Operating voltage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

¹ According to IEC 60664-1:2007 (VDE 0110-1:2008) for pollution degree 2

³ Contact with lamella technology

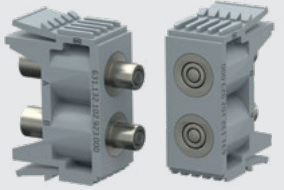
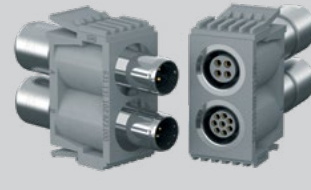
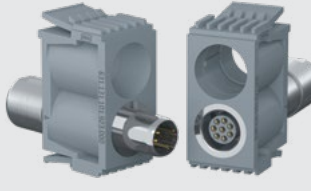
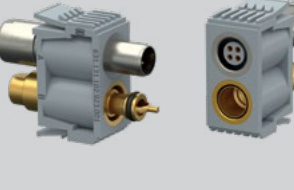


Modules marked with this symbol can be used in the ODU-MAC® PUSH-LOCK; note the space requirements.

	Modules	Description	Units/width	Features
Coax		4 contacts for 50 Ω coax contacts	3 Units 7.2 mm	Frequency range 0–2.8 GHz Mating cycles min. 10,000 + High contact density
		2 contacts for 50 Ω coax contacts	5 Units 12 mm	Frequency range 0–4 GHz Mating cycles min. 10,000
		2 contacts for 50 Ω coax contacts SMA termination	5 Units 12 mm	Frequency range 0–12 GHz Mating cycles min. 10,000 + 12.0 GHz
		2 contacts for 75 Ω coax contacts	5 Units 12 mm	Frequency range 0–2.7 GHz Mating cycles min. 10,000
Compressed air and fluid coupling		2 contacts	5 Units 12 mm	Tube-Ø inner-Ø: max. 4 mm outer-Ø Push-in: max. 6 mm Mating cycles min. 10,000 + 12 bar
		2 contacts	5 Units 12 mm	Tube-Ø M5 to max. 4 mm Mating cycles min. 10,000 + 10 bar



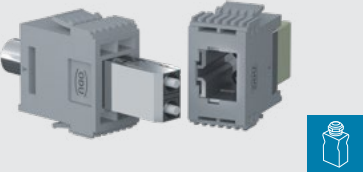
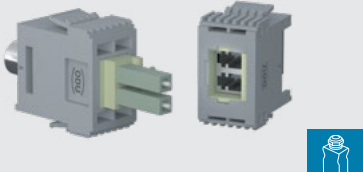
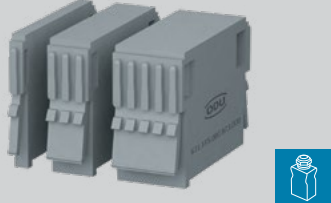
Modules marked with this symbol can be used in the ODU-MAC® PUSH-LOCK; note the space requirements.

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

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

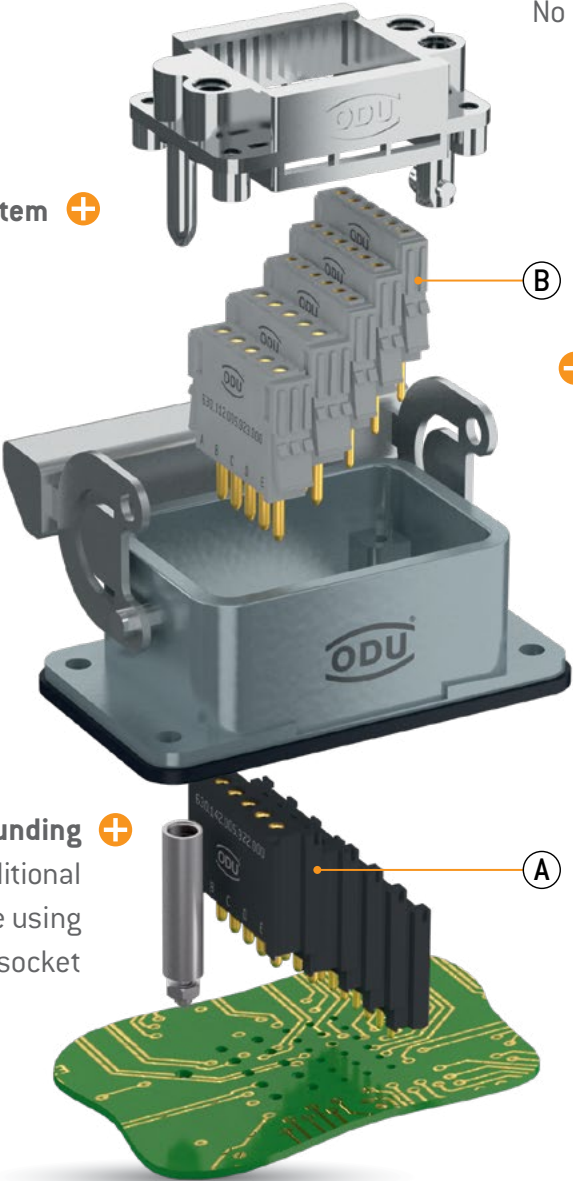


Modules marked with this symbol can be used in the ODU-MAC® PUSH-LOCK; note the space requirements.

	Modules	Description	Units/width	Features
Fiber optic (on request)		2 contacts for SC insert	 16.8 mm	Single mode (SM) Multi mode (MM) Mating cycles min. 5,000
		2 contacts for LC insert	 16.8 mm	
Blank modules		Blank modules	 2.4 mm  7.2 mm  12 mm	Used to fill incomplete frames.

THE PCB TERMINATION MODULES
EXTENDED LIFE CYCLE, COST-EFFECTIVE
& EASY HANDLING

Quick-change system +



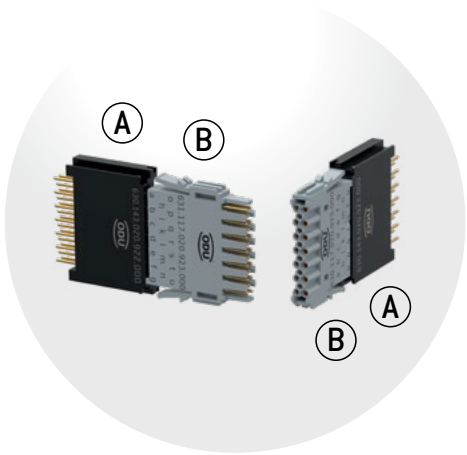
Cost-effective solution +
No cables due to the PCB termination

Extended life cycle +
PCB termination modules are manufactured from temperature-resistant PA (soldering temperature 260 °C, 30 seconds)

Additional grounding +
Upon request, additional grounding is possible using grounding pin and socket

THE ADVANTAGES OF THE PCB TERMINATION ASSEMBLY

The PCB termination modules ① are firmly mounted to the board and are connected via an interface to the module ② that is plugged into the frame. If a module needs to be replaced, then only the module ② installed in the frame must be replaced. Module ① that is mounted on the PCB is not affected by this. An effective installation or quick-change function, as the case may be, is thereby achieved.



ODU-MAC® **White-Line** | ODU-MAC® **Blue-Line**

HOUSING OPTIONS

1ST STEP: LOCKING

Select the type of lock in this first step. You have the choice between lever, spindle, and push-pull locking.

Spindle locking Metal/plastic housing	Lever locking Metal housing	Transverse locking Plastic housing	Push-pull locking	Snap-in locking
White-Line / Blue-Line	White-Line / Blue-Line	White-Line / Blue-Line	Blue-Line	White-Line
Up to IP65	Up to IP65	Up to IP65	IP67	IP54

2ND STEP: CONNECTOR HOUSING SELECTION

Depending upon the locking system, choose the housing suited to your requirements. The following housings are available:

Spindle locking	Lever locking	Transverse locking	Push-pull locking	Snap-in locking
Cable hood Metal/plastic housing	Cable hood Metal housing	Cable hood Plastic housing	Cabel hood	Cable hood Plastic housing
Cable hood XXL Metal housing	Cable hood XXL Metal housing			
	Cable hood wide Metal housing			

3RD STEP: RECEPTACLE SELECTION

Depending upon the requirements for the receptacle and the selected connector housing, a wide variety of styles is available.

Cable hood	Cable hood XXL	Push-pull	Snap-in
Bulkhead housing Metal/plastic housing	Bulkhead housing Metal housing	Receptacle	Receptacle
Surface-mounted housing Metal/plastic housing	Surface-mounted housing Metal housing		
Cable-to-cable hood Metal housing			

The cable hood wide is only compatible with the cable hood wide version of bulkhead and surface-mounted housings.

1ST STEP: LOCKING



2ND STEP: CONNECTOR HOUSING SELECTION



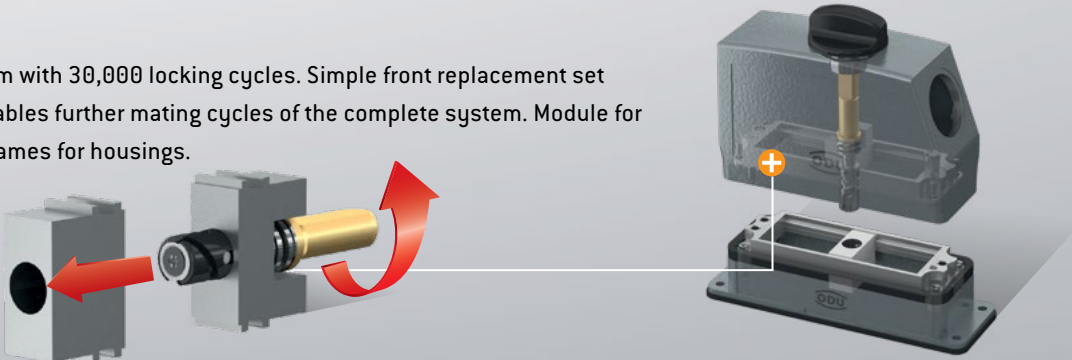
3RD STEP: RECEPTACLE SELECTION



SPINDLE LOCKING

Quick-action locking system with 30,000 locking cycles. Simple front replacement set (spindle exchange set) enables further mating cycles of the complete system. Module for installation in ODU-MAC® frames for housings.

FUNCTIONALITY



Find more information and housing types on our website:
www.odu-usa.com



ASK OUR ENGINEERS
Email us at: sales@odu-usa.com

SPINDLE LOCKING

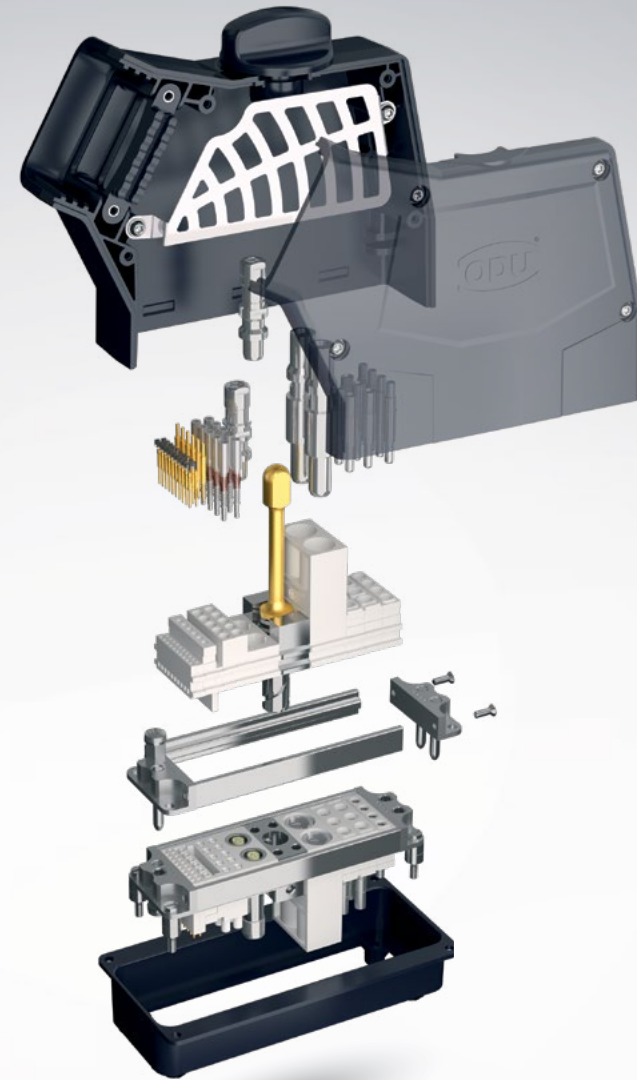
ODU-MAC® **White-Line**

ODU-MAC® **Blue-Line**

- + Ergonomic quick lock system
- + Space-saving design for tight installation space
- + Robust plastic and metal housings
- + High mating cycles (>30,000)
- + Protection class IP50 / 65

THE 2-SHELL HOUSING

- Easy assembly due to its "half-shell principle"
- Optional grid metal sheets allow bundling and strain relief of single strands
- Flexible adaptable cable entry
- Protection class IP4X



Available housing colors:



Further housing types available on request.



CABLE HOOD
with side cable entry



XXL-HOUSING
with side cable entry



BULKHEAD MOUNTED HOUSING



SURFACE MOUNTED HOUSING



CABLE HOOD
with side cable entry



BULKHEAD MOUNTED HOUSING



SURFACE MOUNTED HOUSING

LEVER LOCKING

ODU-MAC® **White-Line**

ODU-MAC® **Blue-Line**

TRANSVERSE LOCKING:

- + Space-saving locking, stackable sideways
- + Two-handed safety operation
- + Up to 5,000 mating cycles
- + Efficient locking option in light and robust plastic model
- + Protection class IP65

LEVER LOCKING:

- + Up to 5,000 mating cycles
- + Highest variant diversity
- + Protection class IP65



HIGH RELIABILITY TO:

COLD

HEAT

VIBRATION

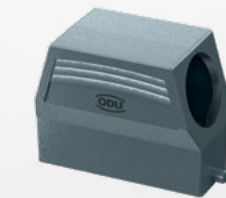
CERTIFIED IP PROTECTION



CABLE HOOD
with side cable entry



CABLE HOOD
with top cable entry



XXL-HOUSING
with side cable entry



XXL-HOUSING
with top cable entry



BULKHEAD MOUNTED HOUSING



SURFACE MOUNTED HOUSING



CABLE TO CABLE HOOD



CABLE HOOD
with side cable entry



BULKHEAD MOUNTED HOUSING



SURFACE MOUNTED HOUSING

Find more information and housing types on our website:
www.odu-usa.com



ODU CABLE ASSEMBLY SERVICES

WORLDWIDE PRESENCE SERVING LOCAL MARKETS



ODU NORTH AMERICA CABLE ASSEMBLY FACILITY

VALUE ADDED SERVICES

The ODU North America facility specializes in rapid prototyping and projects ranging from medium to large sized volumes.

ADVANCED CUSTOMER BENEFITS

- One-to-one technical support
- Global & regional footprint
- Rapid product development
- Vertically integrated connector manufacturer

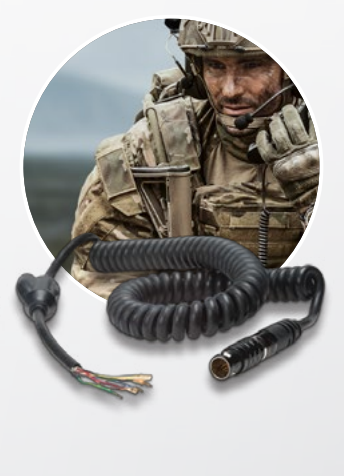
ISO 9001 | IATF 16949 | ISO 13485 | ISO 14001 | ISO 50001 | UL Certified Cable Assembly | ITAR Authorized Operation

ODU COMPLETE CABLE ASSEMBLY SOLUTIONS ACROSS MULTIPLE MARKETS:

MEDICAL



MILITARY AND SECURITY



TEST AND MEASUREMENT



AUTOMOTIVE



ODU CUSTOM CONNECTOR CAPABILITIES

EXTREME DESIGNS – PUSHING THE LIMITS

See below some of our technical capabilities that have been used for specific custom applications. We continuously work with our customers to meet the most extreme technical challenges.

CONTACT OUR ENGINEERING TEAM
Email us at: myapplications@odu-usa.com



Requirement	Extremes ODU has achieved
High current	2,400 A
High voltage	56 kV (DC) 36 kV (AC)
Water protection	IP67 / IP68 / IP69K / IP6K9K
Vacuum tightness	1 × 10 ⁻⁹ mbar l/s
Salt spray	700 hours
EMC / EMI protection	> 75 dB (0 – 5 MHz) / > 65 dB (5 MHz – 500 MHz)
High speed data rate	USB [®] 3.2 Gen 1x2 – 10 GBit/s ¹ / HDMI [®] 2.0 – 14.4 Gbit/s ¹ / 10 Gbit Ethernet – 10 Gbit/s
Operating temperature	Up to 300 °C
Pressure	650 bar (9427 psi) operating receptacle / 500 bar (7251 psi) operating mated condition / 1,000 bar (14503 psi) burst
Vibration	LV214 Severity Level 4 (20 g, 10 – 2000 Hz, 22 h) Four-time multisinus per three-dimensional axis (16 g, 20 – 2000 Hz, 65 h per axis)
Mating cycles	> 1 Million
Hydraulic connection	25 bar (362 psi) operating
Pneumatic connection	20 bar (290 psi) operating
Fiber optic	< 1 dB typical @ 100,000 mating cycles single mode/multimode
Magnetic permeability	Magnetic permeability μ_r < 1.0005
Environmental	Salt spray / fog, chemical resistance, UV, Arizona dust, radiation, sterilization
Shock	1,000 g
Contact density	1 contact/mm ²
Smallest contact diameter	0.3 mm
Smallest circular connector diameter	5 mm
On driving test	Electric vehicle adapter
Self finding solutions	+/- 5 mm float (shield and tight)

¹These ODU specific connectors can transmit common data transmission protocols such as USB[®] 3.2 Gen 1x2 and HDMI[®] 2.0, but they are not USB[®]- and HDMI[®]-standard connectors.

ODU PRODUCT AVAILABILITY

CIRCULAR



MODULAR



ELECTRICAL CONTACTS



CUSTOM SOLUTIONS



CABLE ASSEMBLY



ODU DIRECT SALES

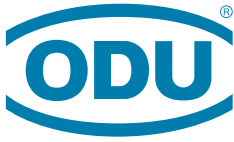
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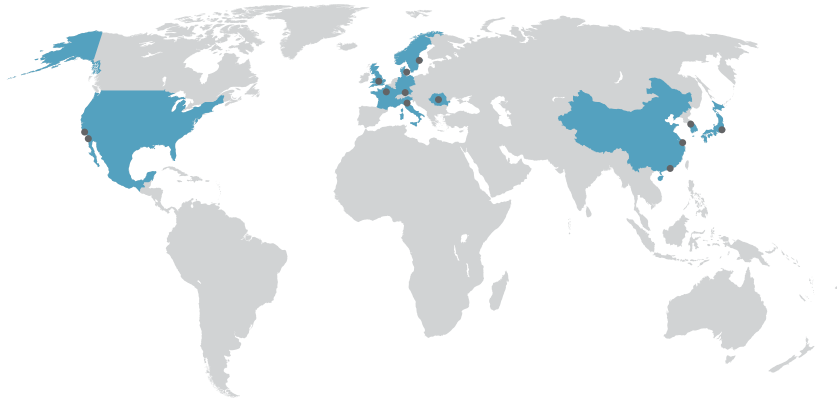
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A PERFECT ALLIANCE.

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Mexico	ODU Mexico Manufacturing S.R.L. de C.V.
Romania	ODU Romania Manufacturing S.R.L.
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Further information and specialized
representatives can be found at:
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