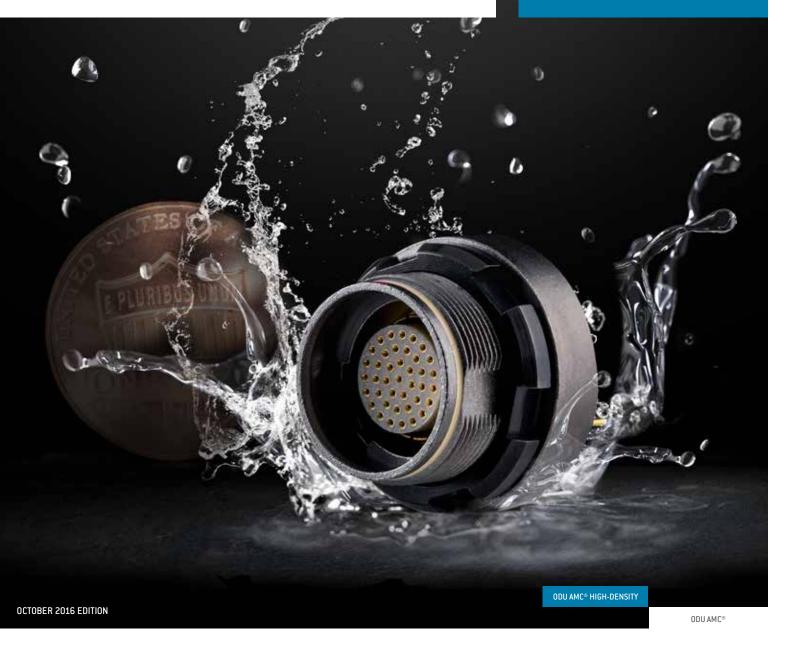


ODU AMC® HIGH-DENSITY

Innovation in a Compact Package

MINIATURE CONNECTORS



COMPANY OVERVIEW:

- More than 70 years of connector experience
- Over 1,650 employees worldwide
- 9 sales subsidiaries: USA, Germany, China, Denmark,
 France, Italy, Sweden, UK and Japan
- Technologies: Design and development, machine tool and special machine construction, injection, stamping, turning, surface technology, assembly and cable assembly
- We operate in the following markets: military and security, medical, test & measurement, industrial, energy, and automotive

ADVANCED CUSTOMER BENEFITS:

- Competitive lead time
- Rapid prototyping & product development
- Local one-to-one engineering support
- Cable assembly integrated solutions
- Custom connector capabilities
- German engineered for over 70 years
- Factory direct

Status: October 2016

CERTIFICATIONS

- DIN EN ISO 9001
- DIN ISO TS 16949
- DIN EN ISO 14001
- ISO 13485
- Vast range of UL, CSA, SCA, VG, MIL and VDE approvals
- UL-certified cable assembly



CREATING CONNECTIONS, BUILDING ALLIANCES, RELYING ON EACH OTHER



TECHNOLOGY THAT UNITES; CONNECTIONS THAT INSPIRE

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

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

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

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

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

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

ODU – A PERFECT ALLIANCE.

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



From medical technology to consumer electronics to automotive technology: the trend towards miniaturization continues. High-Density connectors provide the highest possible number of contacts in the most compact space. They offer new possibilities and solutions while simultaneously challenging the manufacturer. At all time the connectors' reliability and electrical and mechanical robustness must remain intact despite its compact size.

ODU AMC® product portfolio was created to improve the capabilities of the next generation military systems. ODU AMC® and ODU AMC® High-Density are advanced miniature connector solution for military applications that require significant weight and space reduction such as: helmet mounted-cameras, group voice and data radios, headsets, GPS antennas and navigation modules, battery packs, computer/PAN, wrist —worn displays or rifle mounted systems and vehicle adaptations.

The ODU AMC® High-Density connector series offer high performance data transmission, high reliability and easy handling. The product portfolio includes a USB 3.0, USB 2.0, Ethernet and an HDMI option.

Providing significantly reduced weight up to 70% and fully integrated cable assembly solutions, and in shell diameters as small as 10mm up to 18.5mm (40 contacts), the 0DU AMC® High-Density includes numerous high density signal configurations and tailored versions for power (up to 15A) and data transfer (USB 3.0 with 5A power) in a very compact package.

The shells are keyed and color-coded to ensure reliable and simple handling. Other product features include watertight protection class IP 68 (up to 20 meters), 5000 mating cycles durability, a Break-Away function for maximum safety, rugged & non-reflective surfaces, salt spray resistance, high-speed data transfer capability and an operating temperature range of -51° C (-60° F) to +125° C (+257° F).

ODU provides the full suite of complementary products and services including innovative options for cable assembly, rapid prototyping and product development, local engineering support, as well as overmolding and turn-key system solutions.



THE EVOLUTION OF MINIATURIZATION

2000

ODU MINI-SNAP® Series K Size 0/7 contacts/IP 68





2010

ODU AMC® Series Size 0/7 contacts/IP 68 45% smaller than ODU MINI-SNAP series K





2014



ODU AMC® High-Density Size 00/7 contacts/IP 68 35% smaller than ODU AMC series





ODU AMC® HIGH-DENSITY AT A GLANCE

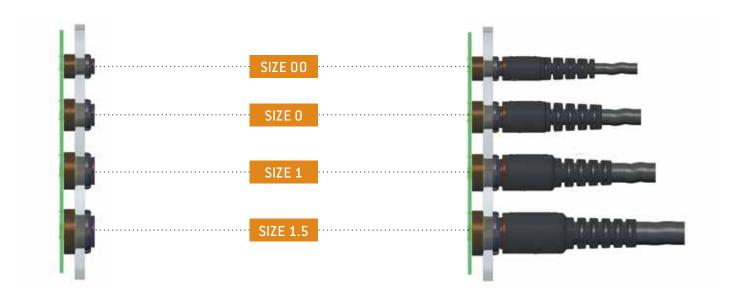


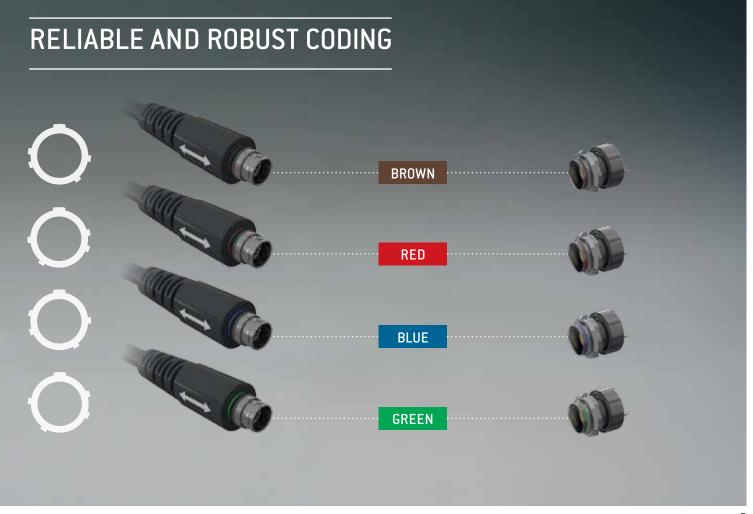


ONE PC-BOARD FOR ALL SIZES

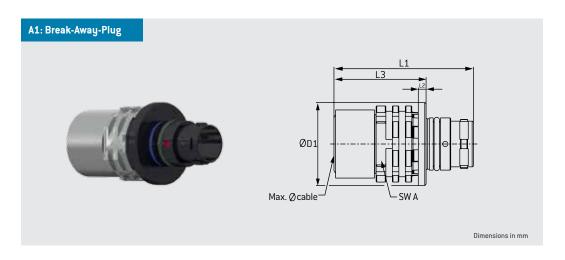
All standard sizes can be processed at the same connection level.

This allows us to place signals, data and power in various connector sizes on one PCB height – as a basic requirement for a compact system design.









Size	L1	L2	L3	D1	SW A	Max. 0 cable
00	20.0	1.2	12.8	9.8	8.0	5.0
0	21.5	1.2	14.2	12.8	10.0	7.0
1	25.2	1.2	18.0	14.8	12.0	8.5
1.5	29.2	1.2	22.0	16.8	14.0	10.5

Shell size	Part number	Layout	Number of contacts	Max. current ²	Max. wire size	Suitable for
				Single contact load	Soldercup	
	A1CW*M-P02XCE0-0000		02	3 A	2 x AWG 24 (Power)	Power
00	A1CW*M-P04XBC0-0000		04	1 A	4 x AWG 28	Signal
UU	A4CW*M DIJAVDNO 0000		0.4	1 A	2 x AWG 28 (Signal Lines)	
	A1CW*M-PU4XBM0-0000		04	3 A	2 x AWG 24 (Power)	USB 2.0
	A1CW*M-P07XBC0-0000		07	1 A	7 x AWG 28	Signal
				1 A	3 x AWG 28 (Signal Lines)	•
	A10W*M-P09XMM0-0000		09	5 A	6 x AWG 22 (Power)	USB 2.0 + Power
0	A10W*M-P12XMM0-0000	000	12	1 A	10 x AWG 28 (Signal Lines)	SS
Ü	ATOW M-F 12XMMU-0000		12	5 A	2 x AWG 22 (Power)	USB 3.0 + Power
	A10W*M-PI6XBCO-0000		16	1 A	16 x AWG 28	Signal
1	A11W*M-P27XBCO-0000	60000000000000000000000000000000000000	27	1 A	27 x AWG 28	Signal
1.5	A1AW*M-P40XBC0-0000		40	1 A	40 x AWG 28	Signal

Notes

Substitute "*" for desired keying/color-coding option: A, B, C or D (see key to right) Consult factory for availability.

All connectors meet or exceed 750V AC test / 250V AC operational voltage when tested according to SAE 13441. Maximum operating voltage at sea level up to 2000m acc. to SAE 13441.

For various application the safety requirement regarding the operating voltage is even more severe. This must be evaluated during the time of equipment engineering

Consult factory for additional information and options.







Size	L1	L2	L3	L4	D1	D2	SW A	Max. 0 cable
00	18.7	2.5	8.0	0.8	9.8	9.0	8.0	5.0
0	19.5	2.5	0.8	0.8	12.8	12.0	10.0	7.0
1	23.5	2.5	0.8	0.8	14.8	14.0	12.0	8.5
1.5	27.5	2.5	0.8	0.8	16.8	16.0	14.0	10.5

Shell size	Part number	Layout	Number of contacts	Max. current ²	Max. wire size	Suitable for
				Single contact load	Soldercup	
	K1CW*M-P02WCE0-0000		02	3 A	2 x AWG 24 (Power)	Power
00	K1CW*M-P04WBC0-0000		04	1 A	4 x AWG 28	Signal
UU	VACWEM PHAMPMO 0000		0.4	1 A	2 x AWG 28 (Signal Lines)	
	K1CW*M-PU4WBMO·0000		04	3 A	2 x AWG 24 (Power)	USB 2.0
	K1CW*M-P07WBC0-0000		07	1 A	7 x AWG 28	Signal
		00		1 A	3 x AWG 28 (Signal Lines)	•
	K10W*M-P09WMM0-0000		09	5 A	6 x AWG 22 (Power)	USB 2.0 + Power
0	K10W*M-P12WM M0-0000		12	1 A	10 x AWG 28 (Signal Lines)	SS
Ü	KTOM M-LTSMM MO-0000		12	5 A	2 x AWG 22 (Power)	USB 3.0 + Power
	K10W*M-P16WBC0-0000		16	1 A	16 x AWG 28	Signal
1	K11W*M-P27WBC0-0000		27	1 A	27 x AWG 28	Signal
1.5	K1AW*M-P40WBC0-0000		40	1 A	40 x AWG 28	Signal

Notes

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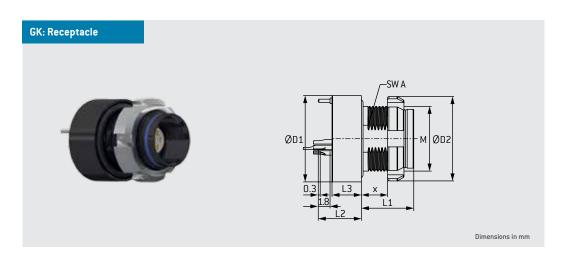
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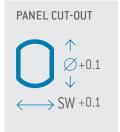
For various application the safety requirement regarding the operating voltage is even more severe. This must be evaluated during the time of equipment engineering

 ${\it Consult factory for additional information and options.}$









									Panel (cut-out
Size	L1	L2¹	L3	X max.	D1	D2	SW A	М	SW	0
00	8.0	6.6	4.5	4.0	10.0	10.0	6.5	7 x 0.5	6.6	7.1
0	8.0	6.6	4.5	4.0	13.2	13.0	9.0	10 x 0.5	9.1	10.1
1	8.0	6.6	4.5	4.0	15.3	15.0	11.5	12 x 0.5	11.6	12.1
1.5	8.0	6.6	4.5	4.0	18.5	18.0	13.0	14 x 0.5	13.1	14.1

Shell size	Part number	Layout	Number of contacts	Max. current ²	Max. wire size	Suitable for
				Single contact load	Soldercup	
	GKCW*M-P02WCE0-000L		02	3 A	2 x AWG 24 (Power)	Power
00	GKCW*M-P04WBC0-000L		04	1 A	4 x AWG 28	Signal
00	CYCWAN DIAMBNO OOO		0.4	1 A	2 x AWG 28 (Signal Lines)	•
	GKCW*M-PU4WBM0-000L		04	3 A	2 x AWG 24 (Power)	USB 2.0
	GKCW*M-P07WBC0-000L		07	1 A	7 x AWG 28	Signal
				1 A	3 x AWG 28 (Signal Lines)	•
	GKOW*M-P09WMM0-000L		09	5 A	6 x AWG 22 (Power)	USB 2.0 + Power
0	GK0W*M-P12WMM0-000L	000	12	1 A	10 x AWG 28 (Signal Lines)	SS
Ü	GROW M-L TSMMMO-OOOF		12	5 A	2 x AWG 22 (Power)	USB 3.0 + Power
	GKOW*M-P16WBCO-000L		16	1 A	16 x AWG 28	Signal
1	GK1W*M-P27WBCO-000L	000000	27	1 A	27 x AWG 28	Signal
1.5	GKAW*M-P40WBC0-000L		40	1 A	40 x AWG 28	Signal

Notes

Substitute "*" for desired keying/color-coding option: A, B, C or D (see key to right) Consult factory for availability.

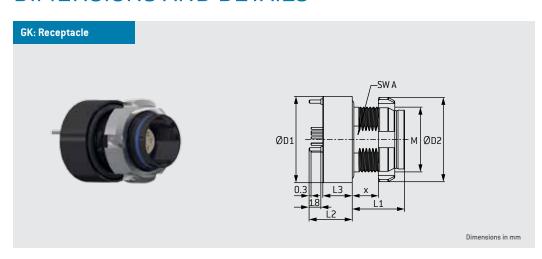
All connectors meet or exceed 750V AC test / 250V AC operational voltage when tested according to SAE 13441. Maximum operating voltage at sea level up to 2000m acc. to SAE 13441.

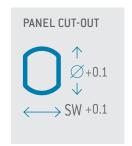
For various application the safety requirement regarding the operating voltage is even more severe. This must be evaluated during the time of equipment engineering

Consult factory for additional information and options.









									Panel (cut-out
Size	L1	L2¹	L3	X max.	D1	D2	SW A	М	SW	0
00	8.0	6.6	4.5	4.0	10.0	10.0	6.5	7x0.5	6.6	7.1
0	8.0	6.6	4.5	4.0	13.2	13.0	9.0	10 x 0.5	9.1	10.1
1	8.0	6.6	4.5	4.0	15.3	15.0	11.5	12 x 0.5	11.6	12.1
1.5	8.0	6.6	4.5	4.0	18.5	18.0	13.0	14 x 0.5	13.1	14.1

Shell size	Part number	Layout	Number of contacts	Max. current ²	Suitable for
				Single contact load	
	GKCW*M-P02UC00-000L		02	3 A	Power
00	GKCW*M-P04UB00-000L		04	1 A	Signal
00	CKCM*M DO MIDOO OOO!		04	1 A	•
	GKCW*M-P04UB00-000L		04	3 A	USB 2.0
	GKCW*M-P07UB00-000L		07	1 A	Signal
			00	1 A	•
	GK0W*M-P09UM00-000L		09	5 A	USB 2.0 + Power
0	GKOW*M-P12UM00-000L		12	1 A	USB 3.0
0	GROW M-P12UMUU-UUUL		12	5 A	USB 3.0 + Power
	GKOW*M-P16UB00-000L		16	1 A	Signal
1	GK1W*M-P27UB00-000L	66666 66666	27	1 A	Signal
1.5	GKAW*M-P40UB00-000L		40	1 A	Signal

Notes:

Substitute "*" for desired keying/color-coding option: A, B, C or D (see key to right) Consult factory for availability.

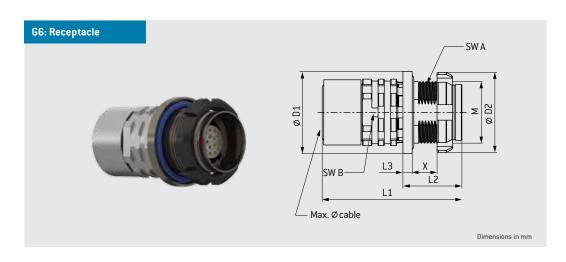
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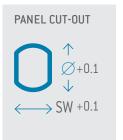
For various application the safety requirement regarding the operating voltage is even more severe. This must be evaluated during the time of equipment engineering

Consult factory for additional information and options.









										MAX Ø	Panel o	cut-out
Size	L1	L2¹	L3	X max.	D1	D2	SW A	SW B	М	CABLE	SW	0
00	21	1.5	8	4	9.9	10	6.5	8	7 x 0.5	5	6.6	7.1
0	22.5	1.5	8	4	13.2	12.9	9	10	10 x 0.5	7	9.1	10.1
1	26.5	1.5	8	4	15.3	14.9	11.5	12	12 x 0.5	8.5	11.6	12.1
1.5	30.5	1.5	8	4	18.5	17.9	13	14	14 x 0.5	10.5	13.1	14.1

Shell size	Part number	Layout	Number of contacts	Max. current ²	Max. wire size	Suitable for
				Single contact load	Soldercup	
	G6CW*M-P02WCE0-0000		02	3 A	2 x AWG 24 (Power)	Power
00	G6CW*M-P04WBC0-0000		04	1 A	4 x AWG 28	Signal
00	CCCW#M DIJAWDWO 0000		0.4	1 A	2 x AWG 28 (Signal Lines)	•
	G6CW*M-PU4WBM0-0000		04	3A	2 x AWG 24 (Power)	USB 2.0
	G6CW*M-P07WBC0-0000		07	1 A	7 x AWG 28	Signal
				1 A	3 x AWG 28 (Signal Lines)	•
	G60W*M-P09WMM0-0000		09	5A	6 x AWG 22 (Power)	USB 2.0 + Power
0	G60W*M-P12WMM0-0000	000	12	1 A	10 x AWG 28 (Signal Lines)	SS
Ü	000W M-F 12WMM0-0000		12	5 A	2 x AWG 22 (Power)	USB 3.0 + Power
	G60W*M-P16WBC0-0000		16	1 A	16×AWG 28	Signal
1	G61W*M-P27WBC0-0000		27	1 A	27 x AWG 28	Signal
1.5	G6AW*M-P40WBC0-0000		40	1 A	40 x AWG 28	Signal

Notes

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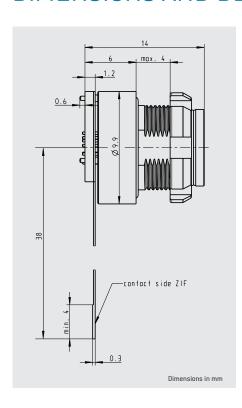
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Consult factory for additional information and options.







Part number	AMC High Density Connector (Included)	Number of contacts	Connector Shell Size	Connector Keying
C00.71C.100.040.001	GKCWAM-P04UB00-000L	04	00	Α
C00.71C.100.070.001	GKCWAM-P07UB00-000L	07	00	Α
C00.701.100.160.001	GK0WAM-P16UB00-000L	16	0	Α
C00.716.100.400.001	GKAWAM-P40UB00-000L	40	1.5	A
C00.711.100.270.001	GK1WAM-P27UB00-000L	27	1	Α

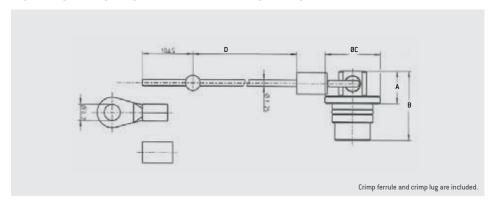
Notes:

Additional lengths, configurations and keyings available on request. Contact ODU for more information.

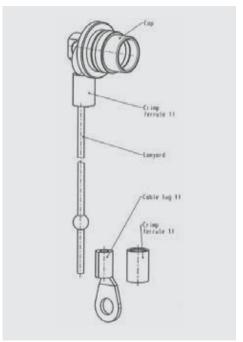
Flex is designed to work with suitable ZIF connector (not supplied). Contact ODU for more information.

PROTECTIVE CAPS

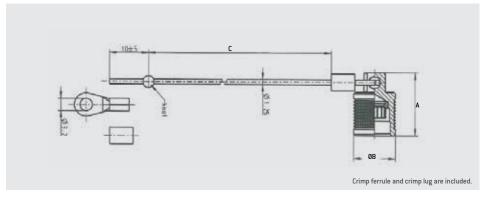
FOR RECEPTACLE GK AND IN-LINE RECEPTACLE



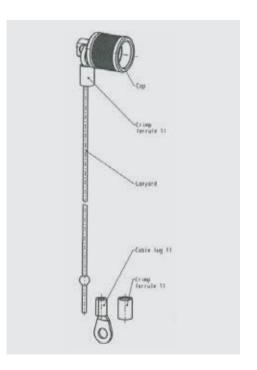
		Dimensions in mm					
Size	Part Number	Α	В	С	D		
00	713.650.097.002.359	6.5	13.8	8.5	200		
0	700.650.097.002.359	6.5	13.8	10.9	200		
1	701.650.097.002.359	6.5	13.8	13.5	200		
1.5	715.650.097.002.359	6.5	13.8	14.9	200		



FOR BREAK-AWAY PLUG



		Dimensions in mm		
Size	Part Number	A	В	С
00	713.650.097.001.359	16.2	8.6	200
0	700.650.097.001.359	16.2	10.7	200
1	701.650.097.001.359	16.2	13.5	200
1.5	715.650.097.001.359	16.2	14.8	200



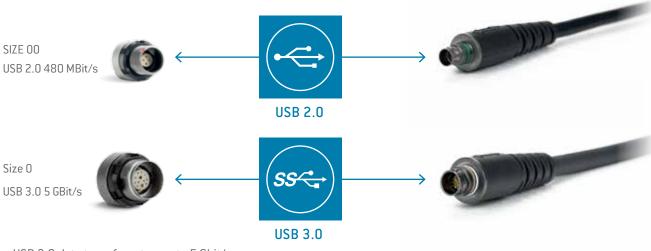
MATERIALS

Part	Material	
Сар	Brass / ruthenium coated nickel	
Lanyard	Aramid / black	
Crimp ferrule, cable lug	Brass, copper / zinc-nickel, black	
Shrinktube	FP0 (RNF -100) / black	

ENVIRONMENTAL AND ELECTRICAL CHARACTERISTICS

Туре	Performance
Tightness	IP68 (20 m)

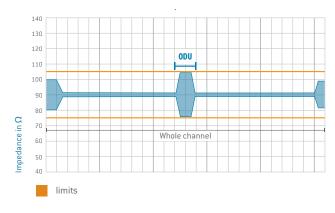
HIGH SPEED DATA TRANSMISSION AT A GLANCE



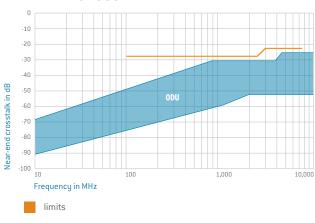
- USB 3.0 data transfer rates up to 5 Gbit/s
- USB 2.0 data transfer rates up to 480 Mbit/s
- Ethernet CAT5 data transfer rates up to 1 Gbit/s
- HDMI 2.0 data transfer rates up to 8.16 Gbit/s

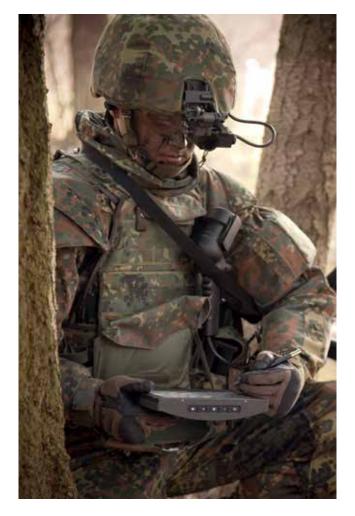
CHARACTERISTIC IMPEDANCE

ODU AMC® High-Density connector with 3 m cable in total and 2x USB 3.0 Type A connector



NEAR-END CROSSTALK





SPECIAL APPLICATIONS NEED SPECIAL SYSTEM SOLUTIONS

Every connector also needs its cable. In addition to high quality connectors, ODU offers a comprehensive assembly service from one supplier which translates into innovative options for assembly and extrusion for the cable bend relief, as well as connections to flex and PCB solutions on the device side.



ADVANCED CONNECTOR SOLUTION APPLICABILITY

ODU ADVANCED PRODUCT PORTFOLIO:







ODU AMC® Push-Pull



ODU AMC® High-Density



ODU AMC® Easy-Clean



PERSONAL COMPUTER

Small and light



VEHICLE ADAPTION

Robust and reliable



GROUP VOICE AND DATA RADIO

• Excellent shielding and data transmission up to 10 GBit





NAVIGATION MODULE

• Easy-Clean version





ODU MINI-SNAP®



ODU MINI-SNAP® Series F



0111





ODU MINI-SNAP® Series K

ODU MINI-SNAP® Series B Super-Shorty

ADVANCED CUSTOMER BENEFITS

- Close cooperation with our customers to find the optimal solution
- ODU handles the complete processing, from procuring the cable and assembly up to individual potting or overmolding
- 100% inspection
- Connectors can be assembled by the customer –
 ODU expertise available for assistance





A PERFECT ALLIANCE.

ODU GROUP

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Further information can be found at:

www.odu-usa.com





Learn more about ODU.

OCTOBER 2016 EDITION



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