

ODU AMC[®]



A PERFECT ALLIANCE.

ODU Advanced Military Connector



ODU AMC® – Advanced Military Connector



Applications

- Defence and security
- PTT and PRR systems
- Ruggedized computers and hand-helds
- Nightvision
- Power supply
- Dismounted soldier
- Unmanned systems
- Land vehicles
- Software defined radios.

Features

- Low weight
- Compact design
- Easy to handle
- Watertight
- Easy-Clean
- Robust
- Tested in accordance to MIL
- Blind mateable.

All shown connectors are according to IEC 61984:2008 (VDE 0627:2009); connectors without breaking capacity (COC).

ODU AMC is UL-listed under file E110586.

All dimensions are in mm.

Some figures are for illustrative purposes only. Subject to change without notice. Errors and omissions excepted. We reserve the right to change our products and their technical specifications at any time in the interest of technical improvement. This publication supersedes all prior publications.

This publication is also available as a PDF file that can be downloaded from www.odu-connectors.com

Issue: 2018-06

Data transmission protocols

These ODU specific connectors can transmit common data transmission protocols such as CAT5, CAT6_A and USB® 2.0, but they are not CAT- and USB®-standard connectors.

Table of Contents

Chapter		From page	
1	Product description ODU AMC	5	
2	ODU AMC Standard version with Push-Pull or Break-Away function	11	
3	ODU AMC Standard version Details for the part number key	19	
4	ODU AMC Easy-Clean	35	
5	ODU AMC Easy-Clean Details for the part number key	43	
6	Accessories	53	
7	Technical information	57	

Product Description

ODU AMC®



Product Description

Product Description

Product Description



ODU AMC® – a Connection You Can Count On

ODU is involved in soldier modernisation programs – worldwide.

In this field connectors must meet a number of rigorous conditions including ease-of-use and reliability under the most extreme conditions. ODU connectors meet and often exceed these by providing a reliable connection under the harshest of conditions. If you are looking for an innovative, robust, secure and reliable connector solution in the military/defence area – ODU is your partner!

To meet all requirements of the future ODU developed the military connector **ODU AMC – Advanced Military Connector**.



Group voice and data radio
– Excellent shielding
– High-speed up to 10 GBit



Right-angled connector



Navigation module
– Easy-Clean version



Personal computer
– Small
– Light
– Colour coding possible



Soldier control unit
– Cable to cable connection



Vehicle adaption



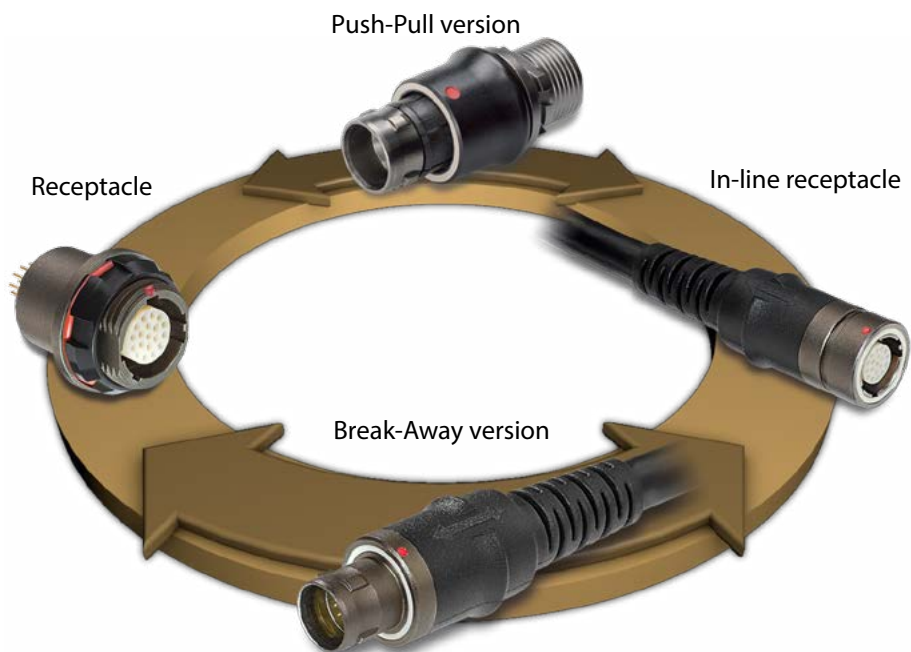
Features ODU AMC® Series



- Push-Pull locking or Break-Away function
- Lightweight, small and easy handling
- Operating temperatures range from -51°C to $+125^{\circ}\text{C}$
- Optimized mechanical and colour keying
- Lifetime of $\geq 5,000$ mating cycles
- Easy handling and blind mateable
- Multiple contact configurations:
signals, low/high voltage transmission, coax/triax
- Easy-Clean version available (see page [35](#))
- System solution inclusive cable assembly and overmolding: everything from one source
- Excellent shielding features (360°)
- Version for hot-plugging available
- Watertight protection class IP 68 and IP 69 K
- Excellent data transmission up to 10 GBit

ODU AMC® – Your Flexible Solution

ODU AMC offers flexibility for all system engineers. Push-Pull and Break-Away versions are interoperable with the same receptacle and in-line receptacle. Cables could be changed later on without touching the receptacle (housing). The soldier has an option.



System Solution

ODU provides all necessary cable assemblies and overmoulding tools.

Standard solutions



Application specific solutions





Product Description

ODU AMC® – Standard Version either Push-Pull or Break-Away Function

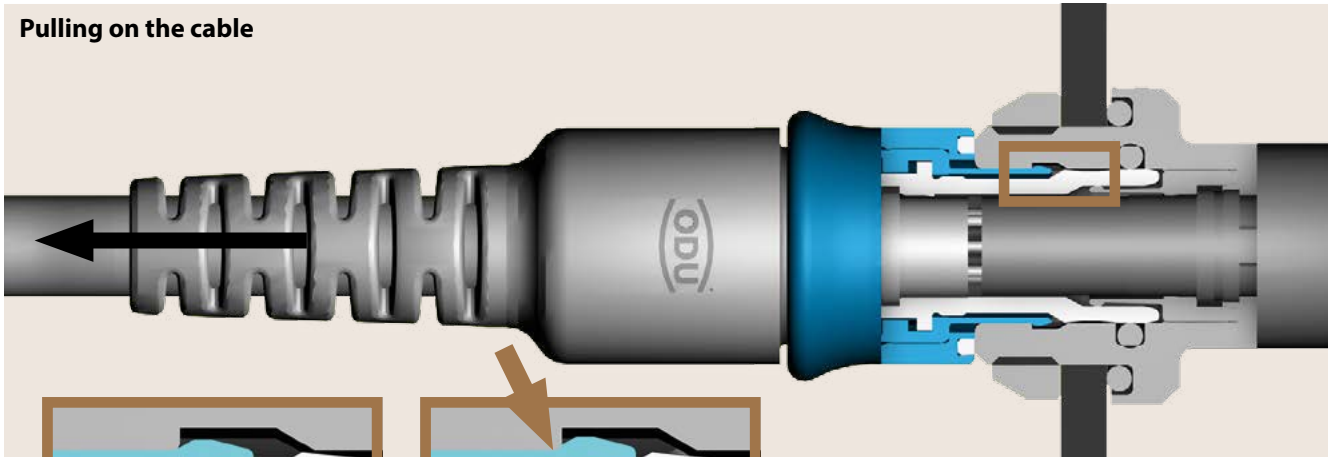


Standard Version



Push-Pull Locking Principle

Pulling on the cable



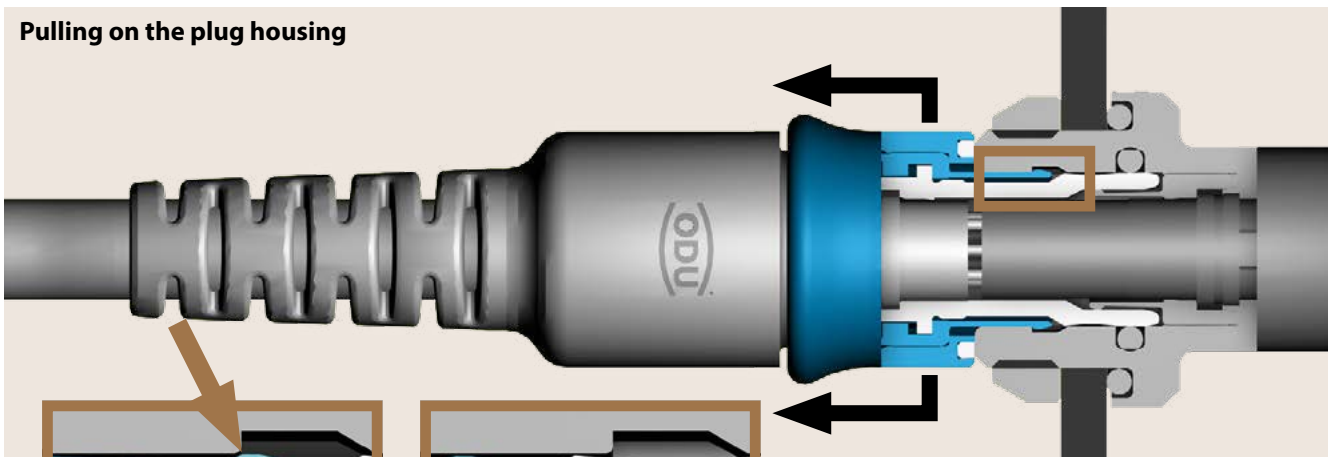
Normal position.



Position if someone pulls on the cable.

Pulling on the cable the locking fingers grip tighter into the groove inside the receptacle. A separation is virtually impossible.

Pulling on the plug housing



Position if someone pulls on the outer housing.



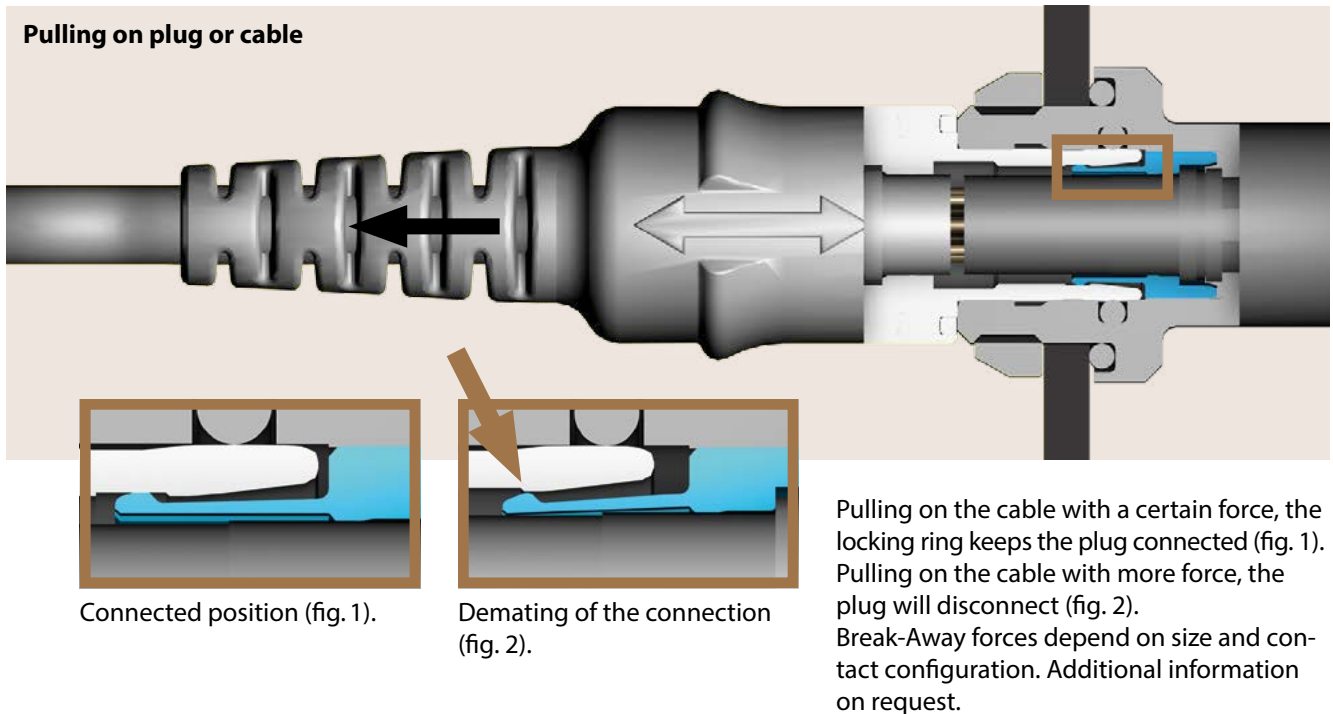
Demating of the connection.

Pulling on the plug housing disengages the locking fingers from the receptacle groove and the connector separates easily.

The advantages of Push-Pull connectors

- Quick and easy mating and demating
- Quick and easy separating
- Easy blind mating in difficult-to-reach places
- Less panel space required
- Definite and secure locking condition

Break-Away Function



The advantages of Break-Away function

- Disconnect in a hurry
- Quick and easy mating and demating

Push-Pull Plug

Size

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	1		Y		R	-							0	-	0	0	0	0

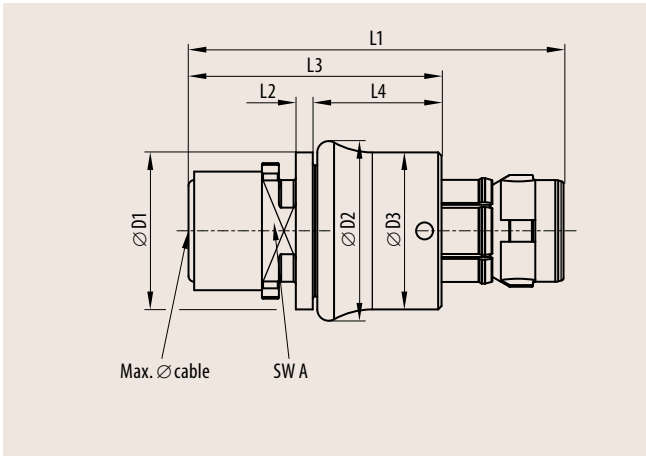
	Size	Size	Dimensions in mm								
			L1	L2	L3	L4	D1	D2	D3	SW A	Max. Ø cable ¹⁾
	0	0	31.4	1.5	21.4	10.4	11.9	14.0	12.0	7	5.5
	1	1	33.2	1.5	22.4	11.4	13.9	15.9	13.9	8	6.5
	A	1.5	32.7	1.5	22.7	11.7	14.5	16.5	14.5	10	8.0
	2	2	35.2	1.5	23.2	12.2	17.6	19.6	17.6	12	10.0
	3	3	38.3	1.5	23.2	12.2	21.9	23.9	22.0	14	11.5
	E	4.5 ²⁾	52.6	2.2	34.1	18.1	29.8	33.0	30.0	21	17.5

¹⁾ Based on cable with one braided shield.

²⁾ Size 4,5 = E; delivered with Band-It Band



- Technical data see [page 58](#)
- Contact configuration see [page 22 – 33](#)
- Cable assembly information see ODU instruction 010.645.001.000.002 (available at www.odu-connectors.com/downloads/assembly-instructions/).



Break-Away Plug

Size

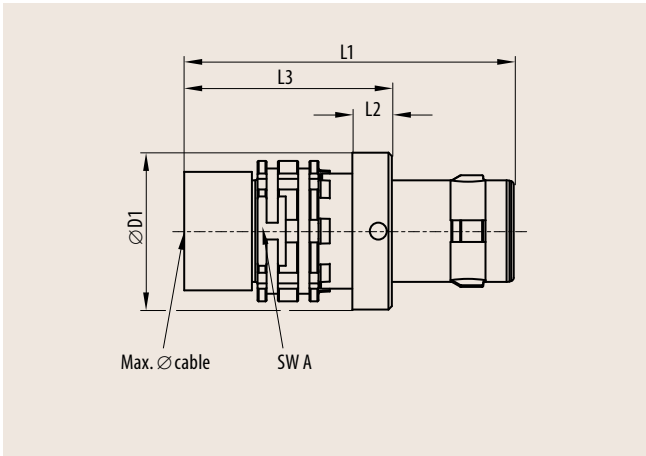
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
A	1		Y		R	-							0	-	0	0	0	0

Size	Dimensions in mm						
	Size	L1	L2	L3	D1	SW A	Max. Ø cable ¹⁾
0	0	25.0	3.0	15.0	11.9	9	5.5
1	1	29.2	3.5	18.4	13.9	11	6.5
A	1.5	28.5	3.5	18.5	15.9	12	8.0
2	2	31.0	4.0	19.0	17.6	14	10.0
3	3	37.5	4.0	22.4	21.9	18	11.5

¹⁾ Based on cable with one braided shield.



- Technical data see [page 58](#)
- Contact configuration see [page 22 – 31](#)
- Cable assembly information see ODU instruction 010.645.001.000.004 (available at www.odu-connectors.com/downloads/assembly-instructions/).



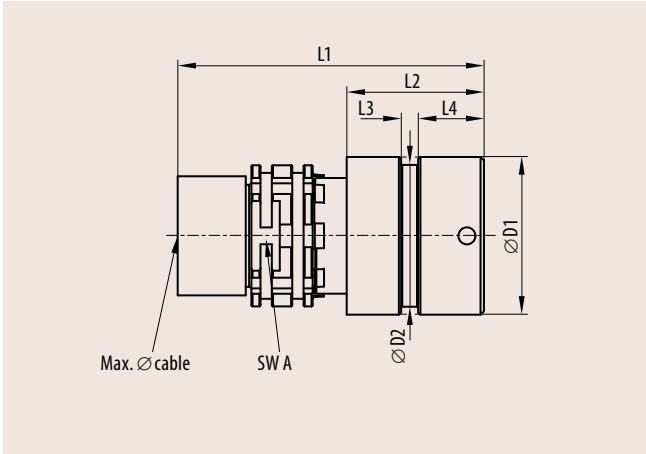
In-Line Receptacle

Size

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
K	1		Y		R	-							0	-	0	0	0	0

	Size	Size	Dimensions in mm							
			L1	L2	L3	L4	D1	D2	SW A	Max. Ø cable ¹⁾
	0	0	25.0	13.0	1.5	5.8	11.9	10.5	9	5.5
	1	1	27.0	12.1	1.5	5.8	13.9	12.5	11	6.5
	A	1.5	27.0	12.0	1.5	5.8	15.9	14.5	12	8.0
	2	2	30.0	15.0	1.5	5.8	17.6	16.2	14	10.0
	3	3	38.0	19.5	1.5	5.8	21.9	20.8	18	11.5

¹⁾ Based on cable with one braided shield.



- Technical data see [page 58](#)
- Contact configuration see [page 22 – 31](#)
- Cable assembly information see ODU instruction 010.645.001.000.003 (available at www.odu-connectors.com/downloads/assembly-instructions/).

Receptacle

Connector Type

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			Y		R	-							0	-	0	0	0	L
Connector type																		
Type																		
G	K	For installation from rear of panel – low profile inside the device																

Size

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			Y		R	–							0	–	0	0	0	L

Size

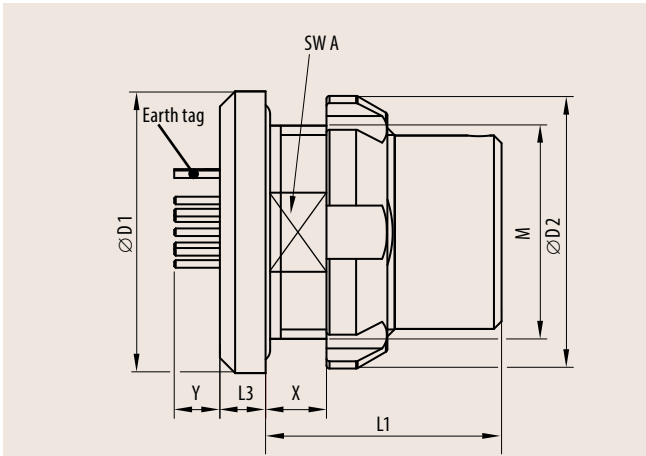
Size		L1	L3	Y	X max.	D1	D2	SW A	M	SW	Ø
0	0	13.0	2.5	page 23	5	15.5	15.0	10	11×0.75	10.1	11.1
1	1	15.5	3.0	page 25	4	18.5	17.9	13	14×1	13.1	14.1
1.5	A	14.2	3.0	page 27	4	18.9	17.9	13	14×1	13.1	14.1
2	2	17.5	3.0	page 29	4	20.8	21.9	15	16×1	15.1	16.1

Panel cut out





- Technical data see [page 58](#)
- Contact configuration and PCB layout [see page 22 – 29](#)
- IP 68, also in unmated condition.



Nutdriver for slotted nut		
Size	Number	Torque in Nm
0	700.098.001.000.000	1.0
1	701.098.002.000.000	3.0
1.5 (A)	701.098.002.000.000	3.0
2	702.098.001.000.000	4.0

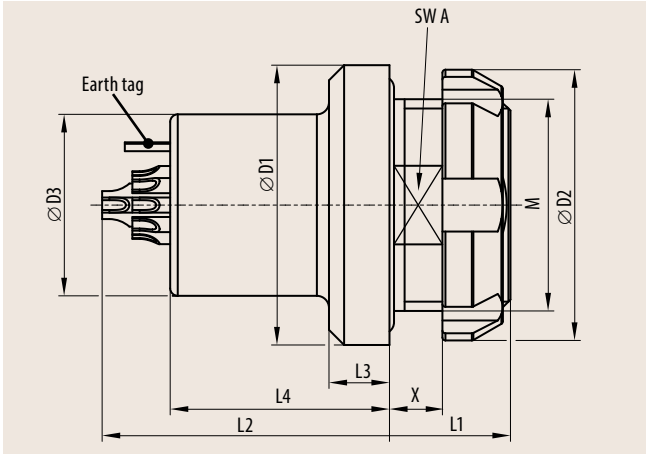
Receptacle

Connector Type

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			Y		R	-							0	-	0	0	0	L
Connector type																		
Type																		
G 8		For installation from rear of panel – low profile outside the device																

Size

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			Y		R	-							0	-	0	0	0	L
Size																		
		Dimensions in mm																
		L1	L2 max.	L3	L4	X max.	D1	D2	D3	SW A	M	SW	Ø	Panel cut out				
0	0	6.5	15.5	3.0	11.5	3.0	15.5	15.0	10.0	10	11×0.75	10.1	11.1					
1	1	8.0	19.0	4.0	14.5	3.5	18.5	17.9	12.0	13	14×1	13.1	14.1					
1.5	A	7.0	17.7	2.5	12.5	3.0	18.9	17.9	14.0	13	14×1	13.1	14.1					
2	2	8.0	21.5	4.0	15.0	3.0	20.8	21.9	14.5	15	16×1	15.1	16.1					
3	3	11.0	22.5	4.0	15.5	5.5	26.0	25.0	18.0	18	20×1	18.1	20.1					
4.5	E	13.0	19.0	5.0	13.0	6.5	39.0	37.5	27.0	27	30×1.5	27.1	30.1					



- Technical data see [page 58](#)
- Contact configuration and PCB layout [see page 22 – 33](#)
- IP 68, also in unmated condition.

Nutdriver for slotted nut		
Size	part number	Torque in Nm
0	700.098.001.000.000	1.0
1	701.098.002.000.000	3.0
1.5 (A)	701.098.002.000.000	3.0
2	702.098.001.000.000	4.0
3	703.098.001.000.000	5.5
4.5 (E)	745.645.098.001.000	10.0

ODU AMC® Standard Version Details for the Part Number Key



Standard Version



Keying
Housing Material
Contact Inserts



Keying Possibilities

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
			Y	R	-								0	-	0	0	0			
																				
					Plug front view					Colour keying										
Standard					A											Light brown				
					B											Red				
					C											Blue				
				D											Green					

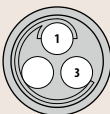
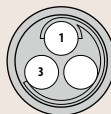
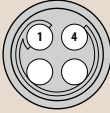
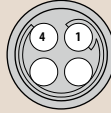
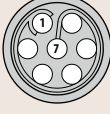
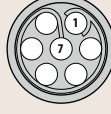
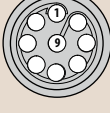
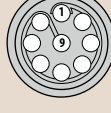
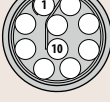
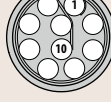
Housing Material

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
				Y	R	-	P							0	-	0	0	0	
	Housing material																		
	R				Aluminium EN-6023 Ruthenium over electroless Ni														

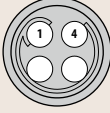
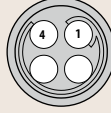
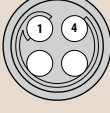
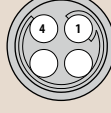
Standard Version

Contact Configurations

Size 0

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
		0	Y			R	-						0	-	0	0	0				
Size		Insulator				Number of contacts ³⁾				Contact diameter mm		Nominal current load per contact ²⁾ A		Test voltage acc. SAE 13441 Contact to contact kV		Rated voltage ¹⁾ kV		Termination Solder Print		View on the termination side Male contact side Female contact side	
0						P	0	3		0.9		10		1.200		0.400	●	●			
0						P	0	4		0.7		7		0.900		0.300	●	●			
0						P	0	7		0.5		5		0.900		0.300	●	●			
0						P	0	9		0.5		5		0.600		0.200	●	●			
0						P	1	0		0.5		5		0.600		0.200	●	●			

High-speed inserts:

Single-problem data:																				
	0	CAT 5 ^{4) 6)} up to 100 Mbit		P	0	4		0.7		7		0.900		0.300		●	●			
	0	USB 2.0 ^{5) 6)}		P	U	4		0.7		7		0.900		0.300		●	●			

¹⁾ Maximal operating voltage at sea level up to 2,000 m acc. to SAE 13441. More information see [page 67](#).

²⁾ Max. current for solder termination / derating factor see [page 66](#).

³⁾ Other contact configurations on request.

⁴⁾ Acc. IEC 11801 :2010. Additional information on request.

⁵⁾ Acc. USB® spec. rev. 2.0:2000. Additional information on request.

⁶⁾ For data transmission protocols, please refer to [page 2](#).

PCB Layout for Print Contacts
Size 0

Contact type

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		0	Y		R	-							0	-	0	0	0	

Termination	Contact type ¹⁾	Contact type ¹⁾	Available connector type		
Solder	Socket	W	G8	GK	K1
	Pin	X	S1	A1	
Print	Socket	U	G8	GK	

¹⁾ Other termination or reverse gender on request.

Contact diameter / Termination cross section

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		0	Y		R	-							0	-	0	0	0	

Solder contacts²⁾

	Contact diameter	mm		Contact diameter	Term. cross section	Termination cross section		Termination diameter
						AWG	mm ²	
	0.5		C	D		26	0.15	
	0.7		F	G		22	0.38	
	0.9		J	G		22	0.38	

Print contacts

	0.5		C	0				0.5
	0.7		F	0				0.5
	0.9		J	0				0.7

²⁾ Other cross sections on request.

		Fig. 1 G8	Fig. 2 GK
3 pos.		3.5	3.5
Standard and high-speed 4 pos.		3.5	3.5
7 pos.		3.5	3.3
9 pos.		3.5	3.1
10 pos.		3.5	3.1

Fig. 1: Length earth tag and pin G8

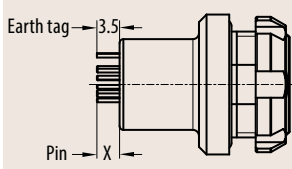
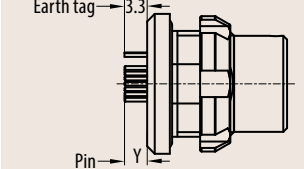
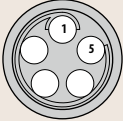
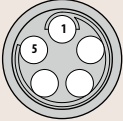
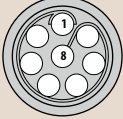
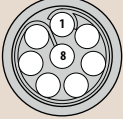
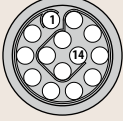
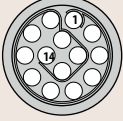
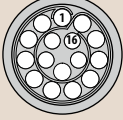
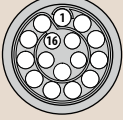


Fig. 2: Length earth tag and pin GK

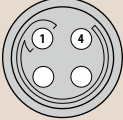
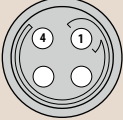
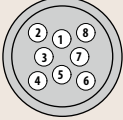
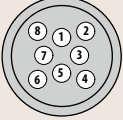


Contact Configurations Size 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	Y		R	-							0	-	0	0	0	

Size	Insulator	Number of contacts ³⁾	Contact diameter in mm	Nominal current load per contact ²⁾ A	Test voltage acc. SAE 13441 Contact to contact kV	Rated voltage ¹⁾ kV	Termination		View on the termination side	
							Solder	Print	Male contact side	Female contact side
1	P	0 5	0.9	10	1.350	0.450	●	●		
1	P	0 8	0.7	7	1.000	0.333	●	●		
1	P	1 4	0.5	5	0.900	0.300	●	●		
1	P	1 6	0.5	5	0.900	0.300	●	●		

High-speed inserts:

1	CATS ^(4) 5) up to 100 Mbit	P	0 4	0.9	10	1.500	0.500	●	●		
1	CATS ^(4) 5) up to 1 Gbit	P	D 8	0.5	5	1.000	0.333	●	●		

¹ Maximal operating voltage at sea level up to 2,000 m acc. to SAE 13441. More information see [page 67](#).

² Max. current for solder termination / derating factor see [page 66](#).

³ Other contact configurations on request.

⁴ Acc. IEC 11801:2010. Additional information on request.

⁵ For data transmission protocols, please refer to [page 2](#).

PCB Layout for Print Contacts
Size 1

Contact type

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	1	Y		R	-								0	-	0	0	0	

Termination	Contact type ¹⁾	Contact type ¹⁾	Available connector type		
Solder	Socket	W	G8	GK	K1
	Pin	X	S1	A1	
Print	Socket	U	G8	GK	

¹⁾ Other termination or reverse gender on request.

Contact diameter / Termination cross section

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	1	Y		R	-								0	-	0	0	0	

Solder contacts²⁾

	Contact diameter		Contact diameter	Term. cross section	Termination cross section		Termination diameter
					AWG	mm ²	
	mm		C	D	26	0.15	
	0.5		F	G	22	0.38	
	0.7		J	G	22	0.38	
	0.9						

Print contacts

	0.5	C	0			0.5
	0.7	F	0			0.5
	0.9	J	0			0.7

²⁾ Other cross sections on request.

Fig. 1: Length earth tag and pin G8

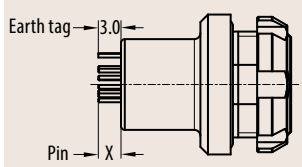


Fig. 2: Length earth tag and pin GK

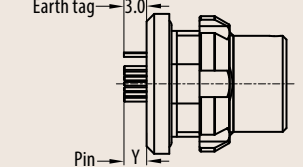
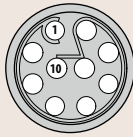
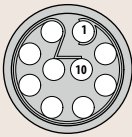
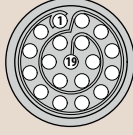
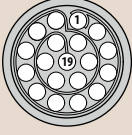
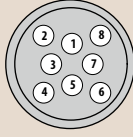
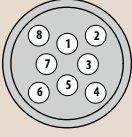


		Fig. 1 G8	Fig. 2 GK
		Pin X (mm)	Pin Y (mm)
5 pos.		3.5	3.0
8 pos.		3.5	3.0
14 pos.		3.0	3.0
16 pos.		3.0	3.0
High-speed 4 pos.		3.5	3.0
High-speed 8 pos.		3.5	3.0

Standard Version

Contact Configurations

Size 1.5

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
		A	Y		R	-							0	-	0	0	0				
		Size				Insulator	Number of contacts ³⁾			Contact diameter		Nominal current load per contact ²⁾		Test voltage acc. SAE 13441		Rated voltage ¹⁾		Termination		View on the termination side	
										mm	A	Contact to contact kV		kV	Solder	Print	Male contact side	Female contact side			
		A				P	1	0		0.7	7			1.200		0.400	●	●			
		A				P	1	9		0.5	5			1.000		0.333	●	●			
High-speed insert																					
		A	CATS ^{4) 5)} up to 1 Gbit			P	D	8		0.7	7			1.200		0.400	●	●			

¹⁾ Maximal operating voltage at sea level up to 2,000 m acc. to SAE 13441. More information see [page 67](#).

²⁾ Max. current for solder termination / derating factor see [page 66](#).

³⁾ Other contact configurations on request.

⁴⁾ Acc. IEC 11801 :2010. Additional information on request.

⁵⁾ For data transmission protocols, please refer to [page 2](#).

PCB Layout for Print Contacts
Size 1.5

Contact type

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		A	Y		R	-							0	-	0	0	0	

Termination	Contact type ¹⁾	Contact type ¹⁾	Available connector type		
Solder	Socket	W	G8	GK	K1
	Pin	X	S1	A1	
Print	Socket	U	G8	GK	

¹⁾ Other termination or reverse gender on request.

Contact diameter / Termination cross section

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		A	Y		R	-							0	-	0	0	0	

Solder contacts²⁾

Contact diameter	mm	Contact diameter	Term. cross section	Termination cross section		Termination diameter
				AWG	mm ²	
0.5		C	D	26	0.15	
0.7		F	G	22	0.38	

Print contacts

	0.5	C	0			0.5
	0.7	F	0			0.5

²⁾ Other cross sections on request.

		Fig. 1 G8	Fig. 2 GK
10 pos.		3.2	3.0
19 pos.		3.2	3.0
High-speed 8 pos.		3.2	3.0

Fig. 1: Length earth tag and pin G8

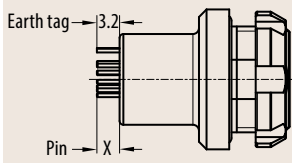
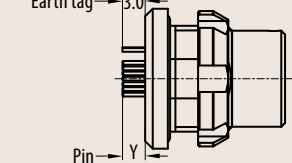
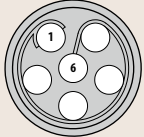
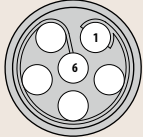
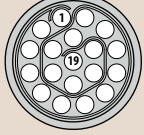
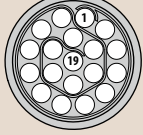
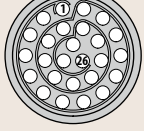
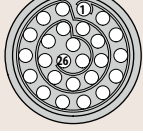
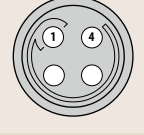
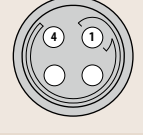
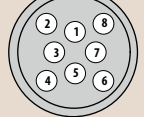
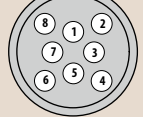


Fig. 2: Length earth tag and pin GK



Contact Configurations Size 2

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	2	Y			R	—							0	—	0	0	0	
↑							↑		↑	↑								
Size		Insulator					Number of contacts ³⁾		Contact diameter mm	Nominal current load per contact ²⁾ A	Test voltage acc. SAE 13441 Contact to contact kV	Rated voltage ¹⁾ kV	Termination Solder Print		View on the termination side Male contact side Female contact side			
2		P 0 6					1.3	14	1.500	0.500	●	●						
2		P 1 9					0.7	7	1.000	0.333	●	●						
2		P 2 6					0.5	5	0.900	0.300	●	●						
High-speed inserts:																		
2		CAT 6 _A ^{4) 5)} up to 100 Mbit					P 0 4	1.3	14	2.400	0.800	●	●					
2		CAT 6 _A ^{4) 5)} up to 10 Gbit					P D 8	0.9	10	1.500	0.500	●	●					

¹⁾ Maximal operating voltage at sea level up to 2,000 m acc. to SAE 13441. More information see [page 67](#).

²⁾ Max. current for solder termination / derating factor see [page 66](#).

³⁾ Other contact configurations on request.

⁴⁾ Acc. IEC 11801:2010. Additional information on request.

⁵⁾ For data transmission protocols, please refer to [page 2](#).

PCB Layout for Print Contacts
Size 2

Contact type

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	2	Y		R	-								0	-	0	0	0	

Termination	Contact type ¹⁾	Contact type ¹⁾	Available connector type		
Solder	Socket	W	G8	GK	K1
	Pin	X	S1	A1	
Print	Socket	U	G8	GK	

¹⁾ Other termination or reverse gender on request.

Contact diameter / Termination cross section

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	2	Y		R	-								0	-	0	0	0	

Solder contacts²⁾

	Contact diameter		Contact diameter	Term. cross section	Termination cross section		Termination diameter
					AWG	mm ²	
	mm		C	D	26	0.15	
	0.5		F	G	22	0.38	
	0.7		J	G	22	0.38	
	0.9		P	H	20	0.50	
	1.3						

Print contacts

	0.5		C	0			0.5
	0.7		F	0			0.5
	0.9		J	0			0.7
	1.3		P	0			0.7

²⁾ Other cross sections on request.

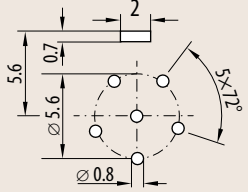
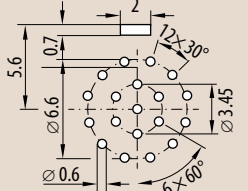
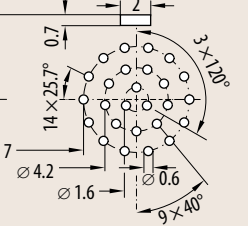
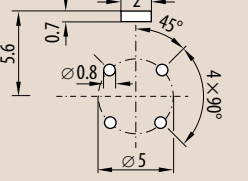
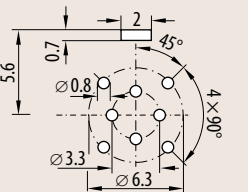
		Fig. 1 G8	Fig. 2 GK
		Pin X (mm)	Pin Y (mm)
6 pos.		4.5	3.0
19 pos.		5.5	3.0
26 pos.		5.5	3.0
High-speed 4 pos.		4.5	3.0
High-speed 8 pos.		5.0	3.5

Fig. 1: Length earth tag and pin G8

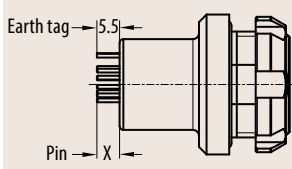
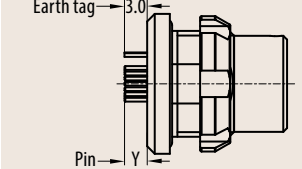
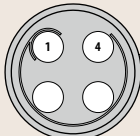
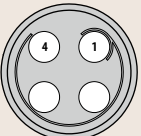
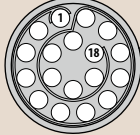
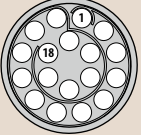
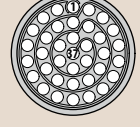
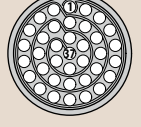


Fig. 2: Length earth tag and pin GK



Contact Configurations
Size 3

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
		3	Y		R	–							0	–	0	0	0				
		Size				Insulator	Number of contacts ³⁾			Contact diameter		Nominal current load per contact ²⁾		Test voltage acc. SAE 13441		Rated voltage ¹⁾		Termination		View on the termination side	
										mm	A	Contact to contact kV		kV		Solder	Print	Male contact side	Female contact side		
							P 0 4			2.0	22	1.650		0.550		●	●				
							P 1 8			0.9	10	1.350		0.450		●	●				
							P 2 6			0.7	7	1.000		0.333		●	●				
							P 3 7			0.5	5	0.900		0.300		●	●				

¹ Maximal operating voltage at sea level up to 2,000 m acc. to SAE 13441. More information see [page 67](#).

² Max. current for solder termination / derating factor see [page 66](#).

³ Other contact configurations on request.

PCB Layout for Print Contacts
Size 3

Contact type

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		3	Y		R	-	P						0	-	0	0	0	

Termination	Contact type ¹⁾	Contact type ¹⁾	Available connector type	
Solder	Socket	W	G8	K1
	Pin	X	S1	A1
Print	Socket	U	G8	

¹ Other termination or reverse gender on request.

Contact diameter / Termination cross section

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		3	Y		R	-							0	-	0	0	0	

Solder contacts²⁾

	Contact diameter		Contact diameter	Term. cross section	Termination cross section		Termination diameter
					AWG	mm ²	
	mm		C	D	26	0.15	
	0.5		F	G	22	0.38	
	0.7		J	G	22	0.38	
	0.9		T	S	12	2.5	
	2.0						

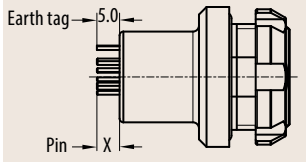
Print contacts

	0.5		C	0			0.5
	0.7		F	0			0.5
	0.9		J	0			0.7
	2.0		T	0			0.7

² Other cross sections on request.

		Fig. 1 G8	Pin X (mm)
4 pos.			5.0
18 pos.			4.5
26 pos.			4.5
37 pos.			4.5

Fig. 1: Length earth tag and pin G8



Contact Configurations
Size 4.5

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				
		E	Y			R	-						0	-	0	0	0					
		Size				Insulator	Number of contacts ³⁾		Contact diameter		Nominal current load per contact ²⁾		Test voltage acc. SAE 13441		Rated voltage ¹⁾		Termination		View on the termination side			
									mm		A		Contact to contact kV		kV		Solder	Print	Male contact side	Female contact side		
		E				P	5	5	0.7		7		1.000		0.333		●		●			

¹ Maximal operating voltage at sea level up to 2,000 m acc. to SAE 13441. More information see [page 67](#).

² Max. current for solder termination / derating factor see [page 66](#).

³ Other contact configurations on request.

PCB Layout for Print Contacts
Size 4.5

Contact type

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		E	Y			R	-	P					0	-	0	0	0	

Termination	Contact type ¹⁾	Contact type ¹⁾	Available connector type	
Solder	Socket	W	G8	
	Pin	X	S1	
Print	Socket	U	G8	

¹⁾ Other termination or reverse gender on request.

Contact diameter / Termination cross section

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		E	Y			R	-						0	-	0	0	0	

Solder contacts²⁾

Contact diameter	Contact diameter	Contact diameter	Contact diameter	Termination cross section	Termination cross section	Termination diameter
	mm			AWG	mm ²	mm
	0.7			F	G	
				22	0.38	

Print contacts

	0.7		F	0			0.5
--	-----	--	---	---	--	--	-----

²⁾ Other cross sections on request.

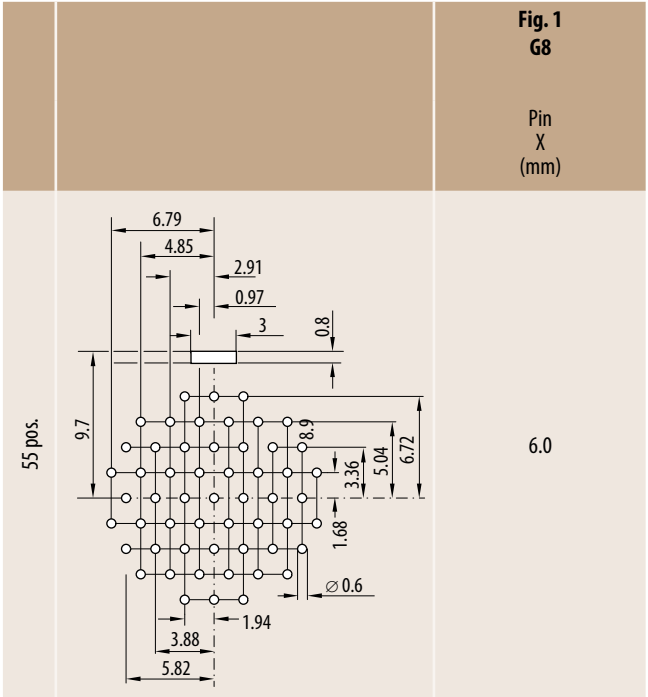
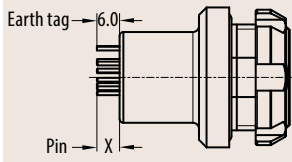


Fig. 1: Length earth tag and pin G8





ODU AMC® Easy-Clean



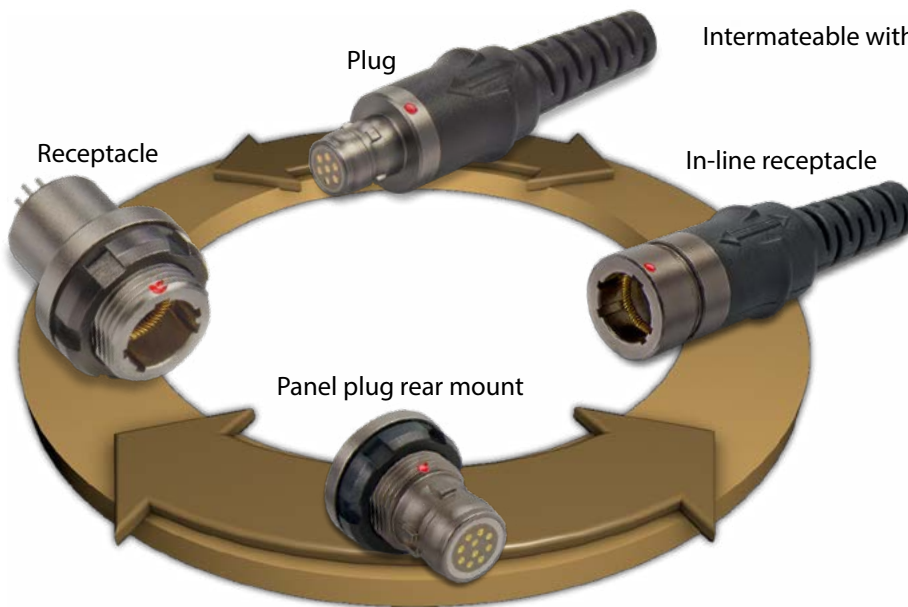
ODU AMC® – Easy-Clean Version



Easy-Clean version – fast and easy cleaning of the connection in the field.

Size 0 7 positions
Size 1 10/16 positions
Size 1.5 19 positions

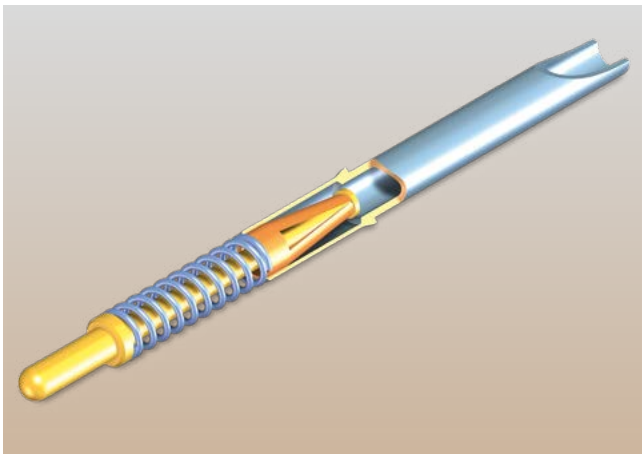
All solder and print termination.



Intermateable with receptacle and in-line receptacle.



Cable to cable connection available.



The contacts within the Easy-Clean version are patented spring loaded contacts made by a leading swiss manufacturer.

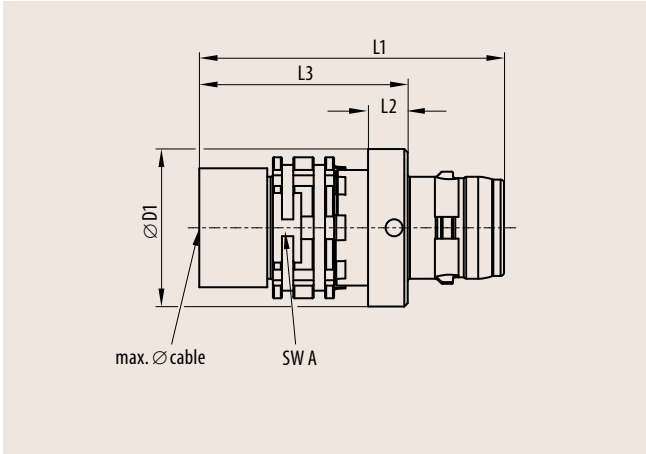
Break-Away Plug

Size

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
A	1		Y		R	-							0	-	R	0	0	0

		Dimensions in mm					
Size	Size	L1	L2	L3	D1	SW A	Max. Ø cable ¹⁾
0	0	23.5	3.0	15.0	11.9	9	5.5
1	1	26.9	3.5	18.4	13.9	11	6.5
1.5	A	27.5	3.5	18.5	15.9	12	8.0

¹⁾ Based on cable with one braided shield.



- Technical data see [page 60](#)
- Contact configuration see [page 46 – 51](#)
- Cable assembly information see ODU instruction 010.645.001.000.004 (available at www.odu-connectors.com/downloads/assembly-instructions/).

In-Line Receptacle

Size

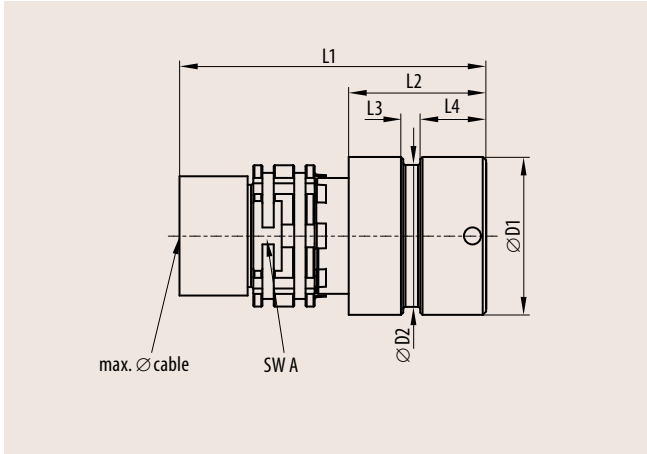
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
K	1		Y		R	-							0	-	R	0	0	0

		Dimensions in mm							
Size	Size	L1	L2	L3	L4	D1	D2	SW A	Max. $\varnothing$ cable ¹⁾
0	0	25.0	13.0	1.5	5.8	11.9	10.5	9	5.5
1	1	27.0	12.1	1.5	5.8	13.9	12.5	11	6.5
1.5	A	27.0	12.0	1.5	5.8	15.9	14.5	12	8.0

¹⁾ Based on cable with one braided shield.



- Technical data see [page 60](#)
- Contact configuration see [page 46 – 51](#)
- Cable assembly information see ODU instruction 010.645.001.000.003 (available at www.odu-connectors.com/downloads/assembly-instructions/).



Receptacle

Connector type / style

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

Y

R

-

0

-

R

0

0

L

Connector type

Style

G

K

For installation from rear of panel – low profile inside the device

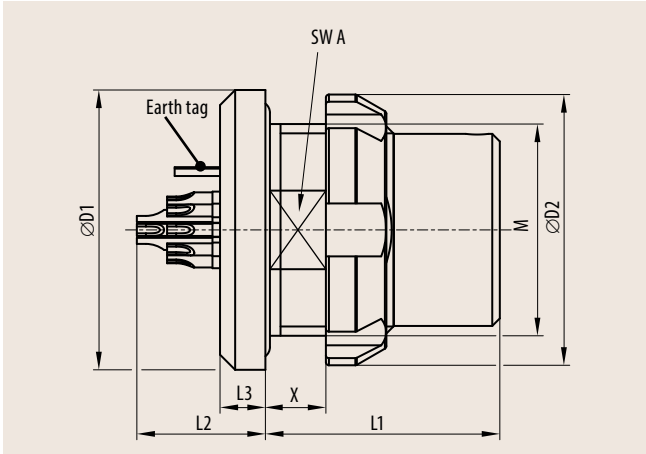
Size

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			Y		R	–							0	–	R	0	0	L

Size	Size	Dimensions in mm								Panel cut out	
		L1	L2 max.	L3	X max.	D1	D2	SW A	M	SW	Ø
0	0	15.5	7.3	2.5	7.0	15.5	15.0	10	11×0.75	10.1	11.1
1	1	15.5	7.4	3.0	4.0	18.5	17.9	13	14×1	13.1	14.1
1.5	A	16.5	8.2	3.0	5.5	18.9	17.9	13	14×0.75	13.1	14.1



- Technical data see [page 60](#)
- Contact configuration and PCB layout see [page 46 – 51](#)
- IP 68, also in unmated condition.



Nutdriver for slotted nut		
Size	part number	Torque in Nm
0	700.098.001.000.000	1.0
1	701.098.002.000.000	3.0
1.5 (A)	701.098.002.000.000	3.0

Receptacle

Connector type / style

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

Y

R

-

0

-

R

0

0

L

Connector type

Style

G

8

For installation from rear of panel – low profile outside the device

Size

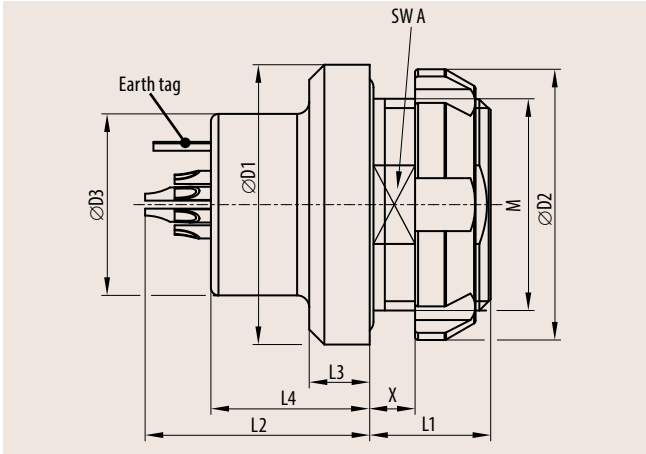
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			Y		R	-							0	-	R	0	0	L

Size	Size	Dimensions in mm										Panel cut out	
		L1	L2 max.	L3	L4	X max.	D1	D2	D3	SW A	M	SW	Ø
0	0	6.5	16.3	3.0	11.5	3.0	15.5	15.0	10.0	10	11×0.75	10.1	11.1
1	1	8.0	14.9	4.0	10.5	3.5	18.5	17.9	12.0	13	14×1	13.1	14.1
1.5	A	7.0	17.7	2.5	12.5	3.0	18.9	17.9	14.0	13	14×0.75	13.1	14.1





- Technical data see [page 60](#)
- Contact configuration and PCB layout see [page 46 – 51](#)
- IP 68, also in unmated condition.



Nutdriver for slotted nut		
Size	part number	Torque in Nm
0	700.098.001.000.000	1.0
1	701.098.002.000.000	3.0
1.5 (A)	701.098.002.000.000	3.0

Panel Plug Rear Mount

Connector type / style

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			Y		R	-							0	-	R	0	0	L
Connector type		Style																
G		W		Panel plug rear mount														

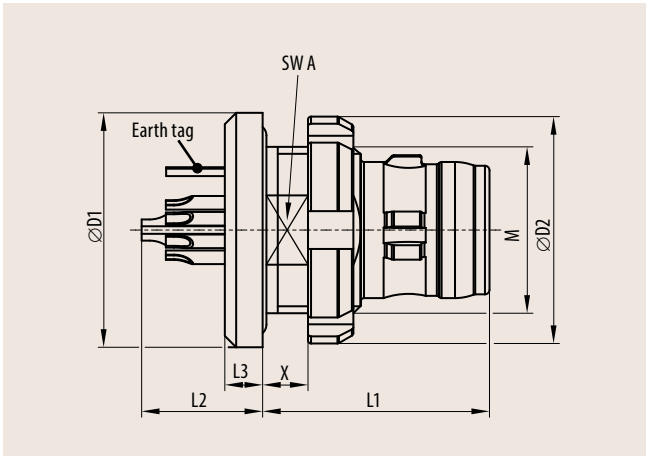
Size

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			Y		R	—							0	—	R	0	0	L

Size	Size	Dimensions in mm								Panel cut out	
		L1	L2	L3	X max.	D1	D2	SW A	M	SW	Ø
0	0	15.0	6.4	2.5	3.0	13.2	12.8	9.2	10×0.5	9.3	10.1
1	1	15.0	8.0	2.5	3.5	15.5	15.0	10.0	11×0.75	10.1	11.1
1.5	A	16.5	9.7	4.0	3.5	17.5	17.9	13.0	14×0.75	13.1	14.1



- Technical data see [page 60](#)
- Contact configuration and PCB layout see [page 46 – 51](#)
- IP 68, also in unmated condition.



Nutdriver for slotted nut		
Size	part number	Torque in Nm
0	700.098.005.000.000	0.8
1	700.098.001.000.000	1.0
1.5 (A)	701.098.002.000.000	3.0

ODU AMC® Easy-Clean Details for the Part Number Key



Keying
Housing Material
Contact Inserts



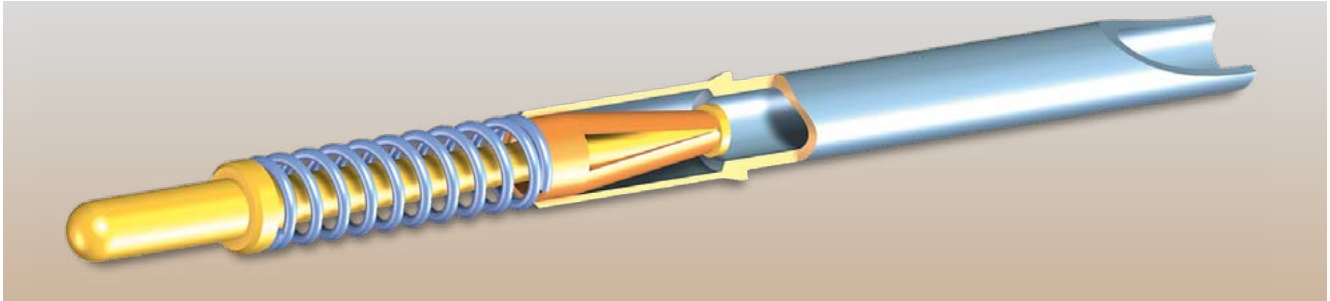
Keying Possibilities

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			Y		R	-								0	-	R	0	0
				 Keying	Plug front view				Colour keying									
Standard					A									Light brown				
					B									Red				
					C									Blue				
					D									Green				

Housing Material

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
				Y		R	-	P						0	-	R	0	0
				Housing material														
					R	Aluminium EN-6023 Ruthenium over electroless Ni												

Spring Loaded Contacts



Environmental

Operating temperature range:
– stainless steel – 51° C to +125° C

Materials

Piston	Gold plated machined brass
Barrel	Tin plated machined brass
Spring	Stainless steel
Clip	Gold plated BeCu C17200

Mechanical

Min. diameter	0.8 mm
Min. initial height	9 mm
Travel / height ratio	max. 0.15
Max. travel (stroke)	1.5 mm
Min. initial spring force	0.2 N
Mechanical life ¹⁾	40,000 cycles

Electrical

Contact resistance ²⁾	max. 20 mOhm
Max. operating current ³⁾	2 A cont. / 4 A peak

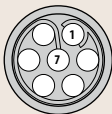
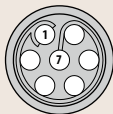
¹⁾ Tested at nominal stroke with perpendicular pad connector area.

²⁾ Static measurement in halfway position of piston travel.

³⁾ Above max. current values are for single contacts in free air and for 10° C temperature rise. Values are indicative and may be affected by contact force, static or dynamic applications, shocks or vibrations.

Contact Configurations

Size 0

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
		0	Y			R	-						0	-	R	0	0				
		Size				Insulator	Number of contacts ³⁾			Contact diameter		Nominal current load per contact ²⁾		Test voltage acc. SAE 13441		Rated voltage ¹⁾		Termination		View on the termination side	
										mm	A			Contact to contact kV		kV	Solder	Print	Pogo-pin contact side	Flat contact side	
		0				P	0	7			0.6	2		0.600		0.200		●	●		

¹ Maximal operating voltage at sea level up to 2,000 m acc. to SAE 13441. More information see [page 67](#).

² Derating factor see [page 67](#).

³ Other contact configurations on request.

PCB Layout for Print Contacts
Size 0

Contact type

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		0	Y		R	-	P						0	-	R	0	0	

Termination	Contact type	Contact type	Available connector type		
Solder	Flat contact	W	A1	GW	
	Spring load contact	X	G8	GK	K1
Print	Flat contact	U	GW		
	Spring load contact	V	G8	GK	

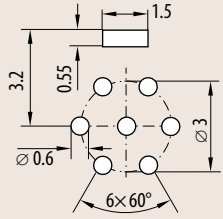
		Fig. 1 G8	Fig. 2 GK	Fig. 3 GW
		Pin X (mm)	Pin X (mm)	Pin X (mm)
7 pos.		4.3	4.3	3.0

Fig. 1: Length earth tag and pin G8

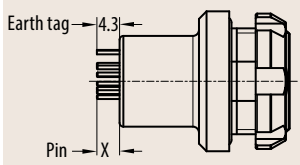
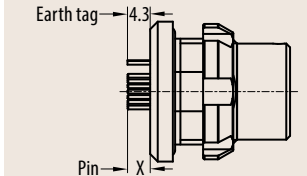


Fig. 2: Length earth tag and pin GK



Contact diameter / termination cross section

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		0	Y		R	-	P						0	-	R	0	0	

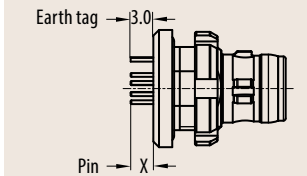
Solder contacts

	Contact diameter		Contact diameter	Term. cross section	Termination cross section		Termination diameter
	mm				AWG	mm ²	mm
	0.6		D	D	26	0.15	

Print contacts

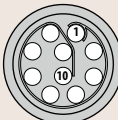
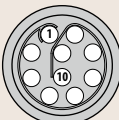
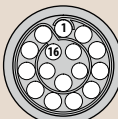
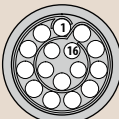
	0.6		D	0				0.5
--	-----	--	---	---	--	--	--	-----

Fig. 3: Length earth tag and pin GW



Contact Configurations

Size 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	Y		R	-							0	-	R	0	0	
		↑					↑	↑	↑									
	Size						Insulator	Number of contacts ³⁾										
										Contact diameter mm	Nominal current load per contact ²⁾ A	Test voltage acc. SAE 13441 Contact to contact kV	Rated voltage ¹⁾ kV	Termination Solder Print		View on the termination side Pogo-pin contact side Flat contact side		
	1						P	1	0	0.6	2	0.600	0.200	●	●			
	1						P	1	6	0.6	2	0.600	0.200	●	●			

¹ Maximal operating voltage at sea level up to 2,000 m acc. to SAE 13441. More information see [page 67](#).

² Derating factor see [page 66](#).

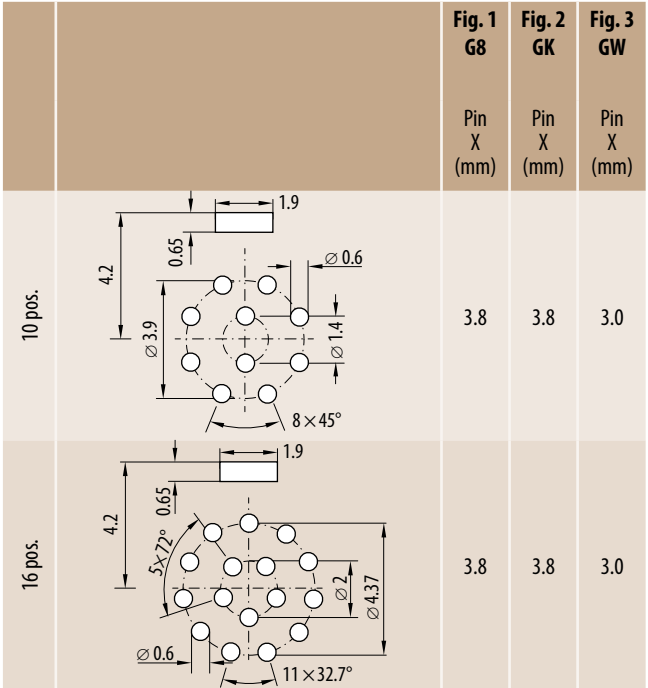
³ Other contact configurations on request.

PCB Layout for Print Contacts Size 1

Contact type

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	Y		R	-	P						0	-	R	0	0	

Termination	Contact type	Contact type	Available connector type		
Solder	Flat contact	W	A1	GW	
	Spring load contact	X	G8	GK	K1
Print	Flat contact	U	GW		
	Spring load contact	V	G8	GK	



Contact diameter / termination cross section

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	Y		R	-	P						0	-	R	0	0	

Solder contacts

	Contact diameter		Contact diameter		Term. cross section		Termination diameter	
	mm		mm		AWG	mm²	mm	mm
	0.6		D	D	26	0.15		

Print contacts

	0.6		D	0				0.5
--	-----	--	---	---	--	--	--	-----

Fig. 1: Length earth tag and pin G8

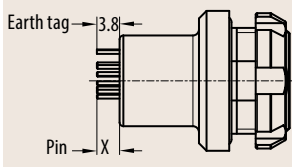


Fig. 2: Length earth tag and pin GK

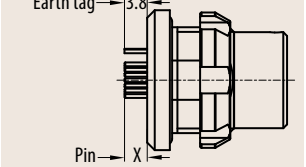
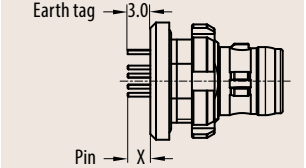
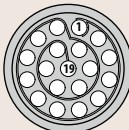
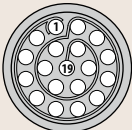


Fig. 3: Length earth tag and pin GW



Contact Configurations

Size 1.5

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		A	Y			R	-						0	-	R	0	0	
		Size				Insulator	Number of contacts ³⁾			Contact diameter		Nominal current load per contact ²⁾	Test voltage acc. SAE 13441	Rated voltage ¹⁾	Termination		View on the termination side	
										mm	A	Contact to contact kV	kV	Solder	Print	Pogo-pin contact side	Flat contact side	
		A				P	1	9	0.6		2	0.600	0.200	●	●			

¹⁾ Maximal operating voltage at sea level up to 2,000 m acc. to SAE 13441. More information see [page 67](#).

²⁾ Derating factor see [page 66](#).

³⁾ Other contact configurations on request.

PCB Layout for Print Contacts Size 1.5

Contact type

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		A	Y		R	-	P						O	-	R	O	O	

Termination

Solder

Print

Contact type

Flat contact

Spring load contact

Flat contact

Spring load contact

Contact type

W

X

U

V

Available connector type

A1

G8

GW

G8

GW

GK

		Fig. 1 G8	Fig. 2 GK	Fig. 3 GW
		Pin X (mm)	Pin X (mm)	Pin X (mm)
19 pos.		3.5	3.5	1.5

Fig. 1: Length earth tag and pin G8

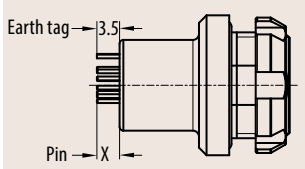


Fig. 2: Length earth tag and pin GK

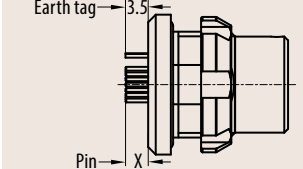
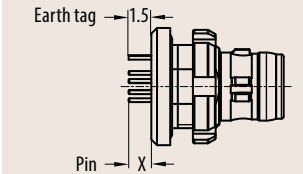


Fig. 3: Length earth tag and pin GW



Contact diameter / termination cross section

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		A	Y		R	-	P						O	-	R	O	O	

Solder contacts

Contact diameter

mm

0.6

Contact diameter

mm

D

Term. cross section

mm²

D

Termination cross section

mm²

26

Termination diameter

mm

0.15

Print contacts

0.6

D

O

0.5

Accessories

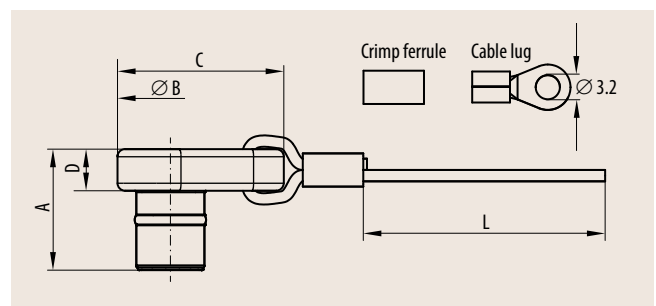
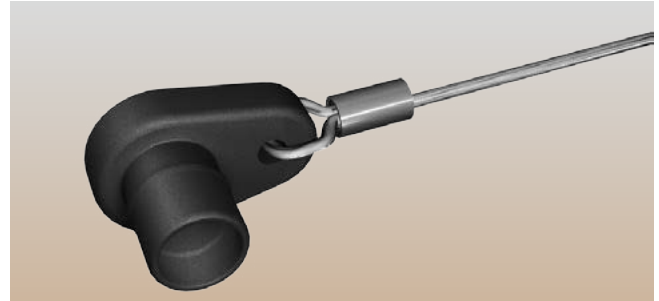


Protective Caps for Standard and Easy-Clean Version

For receptacles G8

Size	Part number	Dimensions in mm				
		A	B	C	D	L
0	700.645.097.002.945	15.5	12.0	20.0	5.5	200
1	701.645.097.002.945	16.0	14.0	22.0	5.5	200
1.5	715.645.097.002.945	15.3	15.0	23.0	5.5	200
2	702.645.097.002.945	17.5	17.0	25.0	5.5	200
3	703.645.097.002.945	20.5	20.0	28.0	5.5	200
4.5	745.645.097.002.945	24.0	30.0	40.0	5.5	200

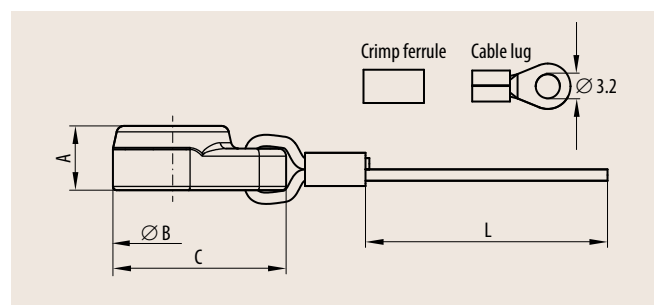
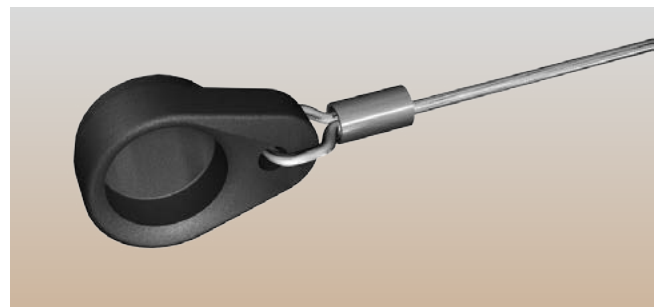
Crimp ferrule and lug are included.



For receptacles GK

Size	Part number	Dimensions in mm			
		A	B	C	L
0	700.645.097.003.945	8.0	14.0	21.0	200
1	701.645.097.003.945	8.5	16.0	23.0	200
1.5	701.645.097.003.945	8.5	16.0	23.0	200
2	715.645.097.003.945	11.5	19.5	25.8	200
3	702.645.097.003.945	12.0	20.6	29.3	200

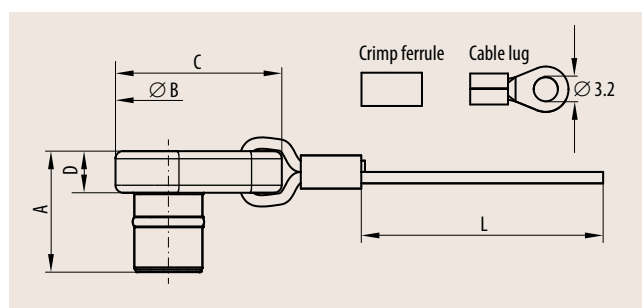
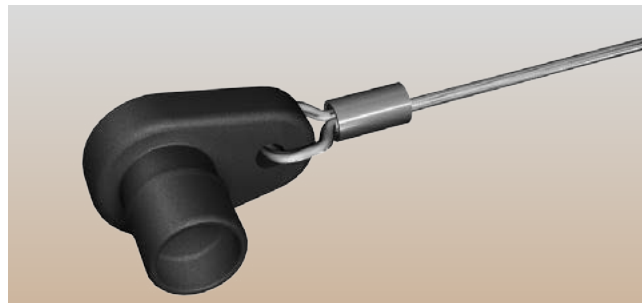
Crimp ferrule and lug are included.



For in-line receptacles

Size	Part number	Dimensions in mm				
		A	B	C	D	L
0	700.645.097.002.945	15.5	12.0	20.0	5.5	200
1	701.645.097.002.945	16.0	14.0	22.0	5.5	200
3	703.645.097.002.945	20.5	20.0	28.0	5.5	200

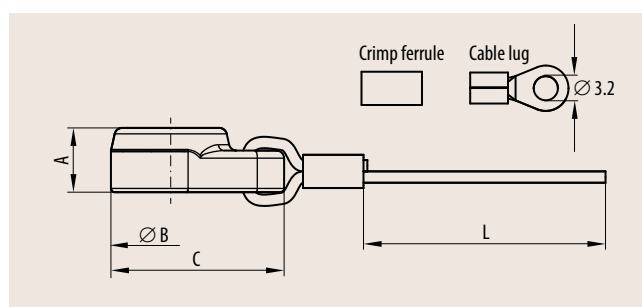
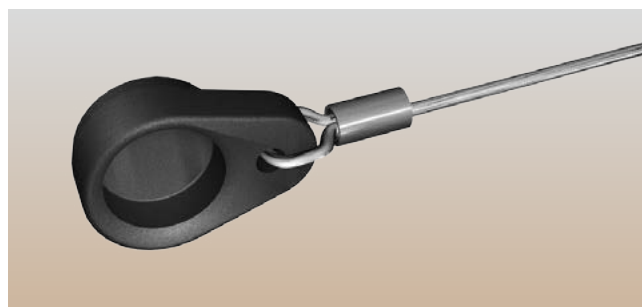
Crimp ferrule and lug are included.



For in-line receptacles

Size	Part number	Dimensions in mm			
		A	B	C	L
1.5	715.645.097.003.945	11.5	19.5	25.8	200
2	702.645.097.003.945	12.0	20.6	29.3	200

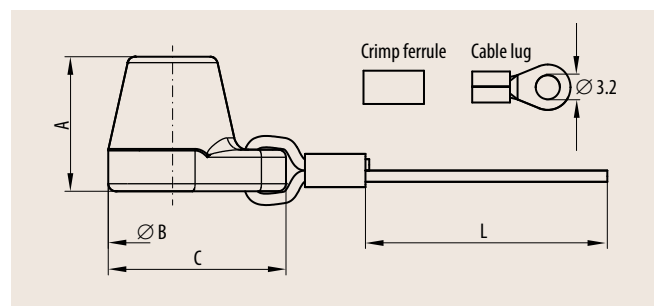
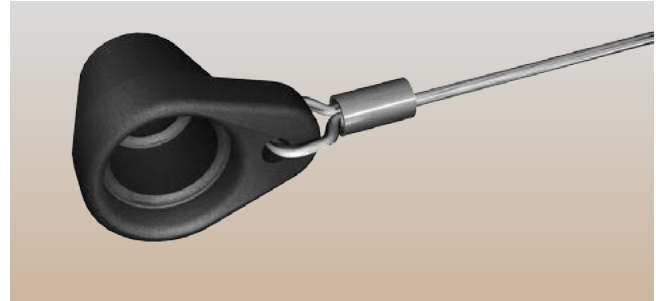
Crimp ferrule and lug are included.



For plugs – Push-Pull plug and Break-Away plug S1 and A1

Size	Part number	Dimensions in mm			
		A	B	C	L
0	700.645.097.001.945	16.5	15.0	21.5	200
1	701.645.097.001.945	17.8	17.0	23.5	200
1.5	715.645.097.001.945	17.0	18.0	24.0	200
2	702.645.097.001.945	19.5	21.0	28.0	200
3	703.645.097.001.945	22.6	25.0	32.5	200
4.5	745.645.097.001.945	27.5	33.5	42.0	200

Crimp ferrule and lug are included.



Environmental and electrical characteristics

Type	Performance	Standard
Tightness	IP 67	IEC 60529
Operating temperature	−51°C to +125°C	IEC 60512-6-11 i+j
Shielding effectiveness	> 55 dB	VG 95214-11

Material

Part	Material	Flammability
Cap	Conductive silicone	UL94 (V1)
Lanyard	Aramid	UL94 (V0)
Crimp ferrule, lug	Brass, copper	
Shrinktube	FPO (RNF-100)	ASTM D 876 (30 sec)

Assembly information including tools see ODU instruction 010.645.001.000.005 (available at www.odu-connectors.com/downloads/assembly-instructions/).

Technical Information



Technical Data ODU AMC® – Standard

Environmental and testing

Type	Performance	Standard
Tightness	IP 68 / 1 m IP 69 K	IEC 60529 / MIL-STD-810F 512.4/5 DIN 40050-9
Sand and dust	Blowing sand and dust, settling dust	MIL-STD-810F 510.4/5 Procedure I / II DIN 40050-9 / IP6kx
Operating temperature	–51°C up to +125°C ¹⁾	IEC 60512-6-11 i+j
Thermal shock	–65°C up to +150°C	EIA 364-32-E IEC 60068-2-14
Humidity cyclic	85 % up to 95 %, 28 up to 71°C	MIL-STD-1344A Method 1002.2 Type III IEC 60068-2-38
Low pressure (rapid decompression)	59.1 kPa to 18.8 kPa	AECTP 300, 312 Procedure III (STANAG 4370)
Low pressure	57.2 kPa –55°C	MIL-STD-810F 500.4/5 IEC 60068-2-40
Icing	Rime ice 6 mm	MIL-STD-810F 521.2/3
Corrosion resistance	96 h salt mist, 5 % salt solution, 35°C	EIA-364-26B STANAG 4370, AECTP 300-309 MIL-STD-810F 509.4/5
Mould growth	European fungus	IEC 60068-2-10
Solar radiation		60068-2-5
Chemical endurance	Several substances ²⁾	ISO 16750-5

¹⁾ Including temperature rise due to contact load

²⁾ Substances listed at ODU datasheet 009.410.021.000.000

Fig. 1
Measurement
points

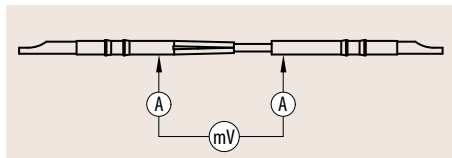
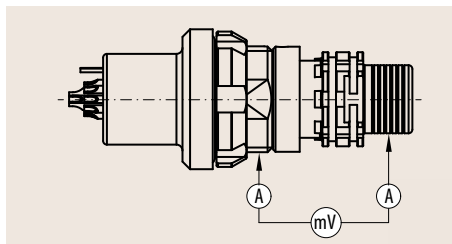


Fig. 2
Measurement
points



Mechanical data

Type	Performance	Standard
Mechanical endurance	5,000 mating cycles	IEC 60512-5-9-a EIA-364-09
Vibration		MIL-STD 1344 Method 2005 EIA-364-28
Shock	100 g amplitude, half sine pulse of 3 ms, no discontinuity > 1 us	MIL-STD 1344 Method 2004 EIA-364-27

Electrical data

Type	Performance	Standard
Contact resistance (fig. 1) over 5,000 mating cycles	Contact diameter / resistance Ø 0.5 mm < 5 mOhm Ø 0.7 mm < 4 mOhm Ø 0.9 mm < 4 mOhm Ø 1.3 mm < 3 mOhm Ø 2.0 mm < 3 mOhm	IEC 60512-2-1
Shell resistance (fig. 2)	< 5 mOhm	IEC 60512-2-1
Insulation resistance	> 100 MOhm	IEC 60512-3-1
Shielding effectiveness ²⁾	> 65 dB	VG 95214-11

³⁾ A11Y, GK1Y connector pair



Material and surface treatments

	Material	Standard		Surface	Standard	Flammability
		EU	US			
Housing (conductive parts)	Aluminium AlMgSiSn1Bi	EN-AW 6023		Ruthenium over electroless nickel		
Housing / nut (non conductive parts)	Aluminium AlMgSiSn1Bi	EN-AW 6023		Black anodized		
Backshell (Push-Pull plug)	Aluminium AlMgSiSn1Bi	EN-AW 6023		Ruthenium over electroless nickel		
Backshell (Break-Away plug and in-line receptacle)	Aluminium AlMgSiSn1Bi	EN-AW 6023		Electroless nickel	SAE-AMS2404	
EMI-locking ring	CuBe2	CW102C (2.1248)		Electrodeposited nickel		
Crimp sleeve	CuZn38Pb1.5	CW608N (2.0371)	C35300	Electrodeposited nickel		
Colour ring	PSU					UL94 (V0)
Insulator	PEEK					UL94 (V0)
Pin contact	Copper alloy	CW614N (2.0401)	C38500	1.25 µm gold over electrodeposited nickel	MIL-G-45204D	
Socket contact	Copper alloy	CW614N (2.0401)	C38500	1.25 µm gold over electrodeposited nickel	MIL-G-45204D	
O-rings	FVMQ (floursilikon)					
Potting	potting compound					UL94 (V0)
Overmolding material	TPU					UL94 (HB)
Shrink boots	Polyester-elastomeer					acc to. VG95343

Technical Data ODU AMC® – Easy-Clean

Environmental and testing

Type	Performance	Standard
Tightness	IP 68 / 1 m IP 69 K	IEC 60529 / MIL-STD-810F 512.4/5 DIN 40050-9
Sand and dust	Blowing sand and dust, settling dust	MIL-STD-810F 510.4/5 Procedure I / II DIN 40050-9 / IP 6kx
Operating temperature	–51° C up to +125° C	IEC 60512-6-11 i+j
Thermal shock	–65° C up to +150° C	EIA 364-32-E IEC 60068-2-14
Humidity cyclic	85% up to 95 % 28 up to 71° C	MIL-STD-1344A Method 1002.2 Type III IEC 60068-2-38
Low pressure (rapid decompression)	59.1 kPa to 18.8 kPa	AECTP 300, 312 Procedure III (STANAG 4370)
Low pressure	57.2 kPa –55° C	MIL-STD-810F 500.4/5 IEC 60068-2-40
Icing	Rime ice 6 mm	MIL-STD-810F 521.2/3
Corrosion resistance	96 h salt mist, 5 % salt solution, 35° C	EIA-364-26B, STANAG 4370, AECTP 300-309, MIL-STD-810F 509.4/5
Mould growth	European fungus	IEC 60068-2-10
Solar radiation		60068-2-5
Chemical endurance	Several substances ¹⁾	ISO 16750-5

¹⁾ Substances listed at ODU datasheet 009.410.021.000.000

Fig. 1
Measurement
points

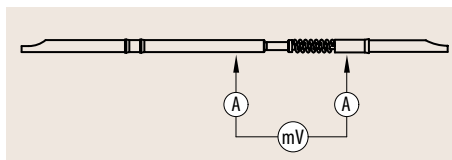
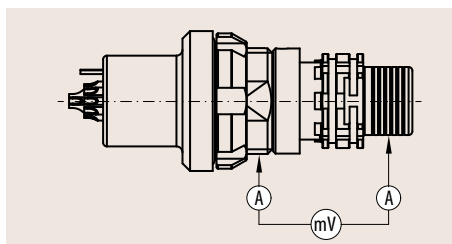


Fig. 2
Measurement
points



Mechanical data

Type	Performance	Standard
Mechanical endurance	5,000 mating cycles ²⁾	IEC 60512-5-9-a EIA-364-09
Vibration		MIL-STD 1344 Method 2005 EIA-364-28
Shock	100 g amplitude, half sine pulse of 3 ms, no discontinuity > 1 us	MIL-STD 1344 Method 2004 EIA-364-27

Electrical data

Type	Performance	Standard
Contact resistance (fig. 1) over 5,000 mating cycles ²⁾	Contact diameter / resistance Ø 0.6 mm pogo pin < 20 mOhm	IEC 60512-2-1
Shell resistance (fig. 2)	< 10 mOhm	IEC 60512-2-1
Insulation resistance	> 100 MOhm	IEC 60512-3-1

²⁾ 5,000 mating cycles, dependent on the specific application.



Material and surface treatments

	Material	Standard		Surface	Standard	Flammability
		EU	US			
Housing (conductive parts)	Aluminium AlMgSiSn1Bi	EN-AW 6023		Ruthenium over electroless nickel		
Nut	Aluminium AlMgSiSn1Bi	EN-AW 6023		Black anodized		
Backshell	Aluminium AlMgSiSn1Bi	EN-AW 6023		Electroless nickel	SAE-AMS2404	
EMI-locking ring	Stainless steel	CW102C (2.1248)		Electrodeposited gold		
Crimp sleeve	CuZn38Pb1.5	CW608N (2.0371)	C35300	Electrodeposited nickel		
Colour ring	PSU					UL94 (V0)
Insulator	PEEK / PBT / PCT					UL94 (V0)
Pin contact (pogo-pin)	Copper alloy, CuBe, steel,			1.25 µm gold over electrodeposited nickel (on piston)	MIL-G-45204D	
Socket contact	Copper alloy	CW614N (2.0401)	C38500	1.25 µm gold over electrodeposited nickel	MIL-G-45204D	
O-rings	FVMQ (floursilikon)					
Potting	potting compound					UL94 (V0)
Overmolding material	TPU					UL94 (HB)
Shrink boots	Polyester-elastomeer					Acc. to VG95343

Insulation Groups / Nominal Voltage / Test Voltage

Insulation groups in acc. with DIN VDE 0110 T1/2.79

Groups of connectors based on ambient and operating conditions.

Example: A connector used in a shop environment falls into group B. (Laboratory environment would fall into Group A).

Insulation group A0:

For low power equipment in climate-controlled and dry rooms with only minimal heat rise when subjected to short circuit conditions.

Insulation group A:

For equipment operated in climate-controlled and dry rooms.

Insulation group B:

For equipment operated in living quarters, offices, and other commercial environments. Also for clean machine shops, laboratories, test stands, and medical environments.

Insulation group C:

Equipment primarily operated in industrial, commercial, and agricultural establishments. Non climate-controlled warehouses, workshops, boiler rooms and manufacturing floors.

Insulation group D:

Equipment operated on vehicles subjected to dirt, brake dust, and splash water or snow. Unprotected by housing.

Determination of nominal voltage from test voltage in accordance with VDE 0627

The following explains how to derive the nominal voltage from the test voltage (for practical purposes nominal voltage, rated voltage and reference voltage are the same.) The **operating voltage** must be less than the **nominal voltage**.

Example:

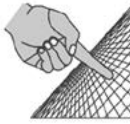
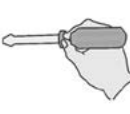
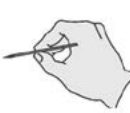
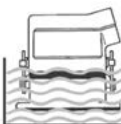
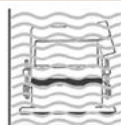
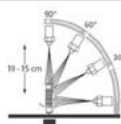
The selected connector has a test voltage of 1,000 VAC and will be operated in a clean mechanical shop environment (insulation group B). According to the table 3 below, the connector has a nominal voltage of 150 VDC (the example shows both printed in bold).

Notice: According to MIL-STD-1344, Method 3001 higher test voltages are acceptable (see next page).

Table 3 from DIN VDE 0627

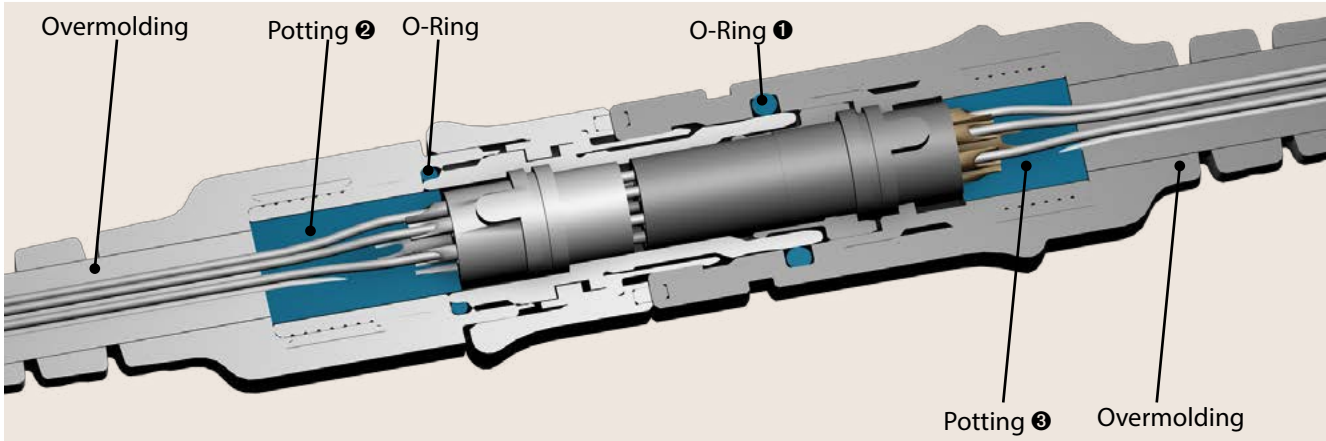
Reference voltage / nominal voltage		Test voltage in Volt (AC 50 Hz)				
in Volt (DC)	in Volt (AC)	Insulation group				
		A0	A	B	C	D
15	12	375	500	750	875	1,250
36	30	500	500	750	1,000	1,500
75	60	500	625	875	1,000	1,500
150	125	625	750	1,000	1,250	1,750
300	250	750	875	1,250	1,750	2,250
450	380	875	1,000	1,750	2,250	3,000
600	500	1,000	1,250	2,000	2,750	3,500
800	660	1,250	1,750	2,500	3,500	4,000
900	750	1,500	1,750	2,750	3,500	4,500
1,200	1,000	1,750	2,250	3,500	4,500	5,500

International Protection (IP) Classes in Accordance with DIN EN 60 529 (or IEC 529 /VDE 0470 T1, respectively)

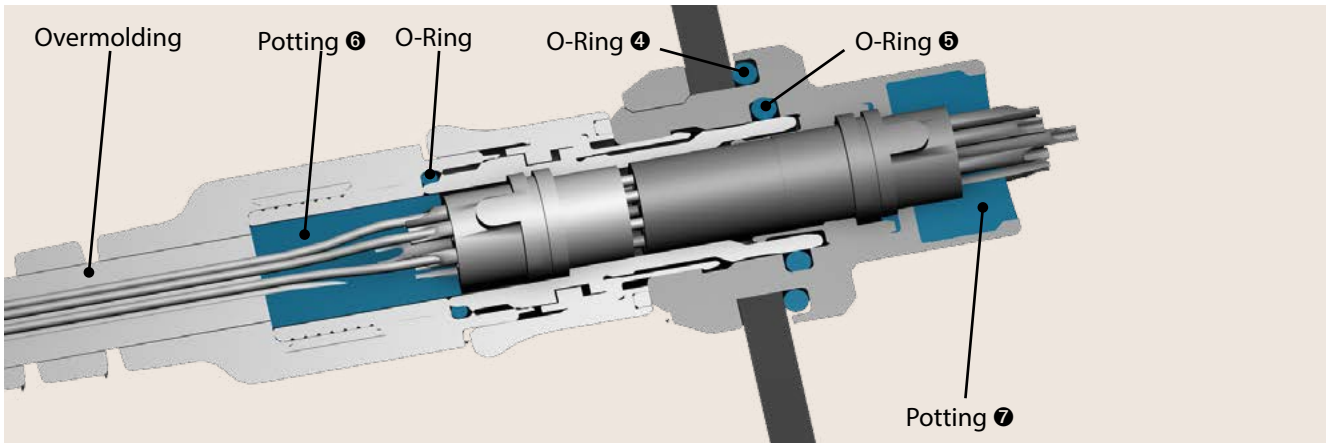
Code letters (International Protection)		First code number (Protection against solid foreign bodies)		Second code number (Protection against water)		
IP		6		5		
Code number	Extent of protection		Code number	Extent of protection		
0	No protection		No protection against contact, no protection against solid foreign bodies	0	No protection against water	No protection against water
1	Protection against large foreign bodies		Protection against large-surface contact with the back of the hand, protection against foreign bodies $\varnothing \geq 50 \text{ mm}$	1	Protection against dripping water	 Protection against vertically falling water drops
2	Protection against medium-sized foreign bodies		Protection against contact with the fingers, protection against foreign bodies. $\varnothing \geq 12 \text{ mm}$	2	Protection against dripping water when tilted	 Protection against falling water drops when tilted (any angle up to 15° from the vertical)
3	Protection against small foreign bodies		Protection against contact with tools, wires, or the like with $\varnothing \geq 2.5 \text{ mm}$, protection against foreign bodies $\varnothing \geq 2.5 \text{ mm}$	3	Protected against spraying water	 Protection against water spraying at any angle up to 60° from the vertical
4	Protection against granular foreign bodies		The same as 3, except $\varnothing \geq 1 \text{ mm}$	4	Protection against splashing water	 Protection against splashing water from all directions
5	Protection against dust deposits		Protection against contact, protection against harmful dust deposit in the interior	5	Protection against water jet	 Protection against water jet (nozzle) from any angle
6	Protection against dust ingress		Protection against foreign bodies $\varnothing \geq 1 \text{ mm}$, protection against dust ingress	6	Protection against powerful water jet	 Protection against powerful water jet from any angle
				7	Protection against immersion	 Protection against water ingress during temporary immersion
				8	Protection against continuous immersion	 Protection against pressurized water during continuous immersion
				9	Protection against high pressure	 Protection against water from high-pressure/ steam jet cleaners.

Watertightness of the Series AMC®

Plug and in-line receptacle connection (case 1)



Plug and receptacle connection (case 2)



In mated condition the contacts are protected (in cases 1 and 2).
In unmated condition the contacts can be protected using a protective cover (see [page 54 – 55](#)). The cover must be removed before mating the plug with the receptacle.

Protection against water through following seals

Termination area	Mated		Unmated	
		Position		Position
Cable – Cable (Case 1)	Yes	1 2 3	No	
Device – Cable (Case 2)	Yes	4 5 6 7	Yes	4 7

Conversions AWG – Cross Section (AWG = American Wire Gauge)

The AWG system describes the cross section of a wire using a gauge number for every 26% increase in conductor cross section. With larger wire diameters, the AWG gauge numbers decrease; as the wire sizes increase, the AWG gauge numbers decrease. **This is only valid for solid conductors.**

Most wires are made with **stranded conductors**. Compared to solid conductors stranded wires offer higher durability, higher flexibility and better performance under bending and vibration.

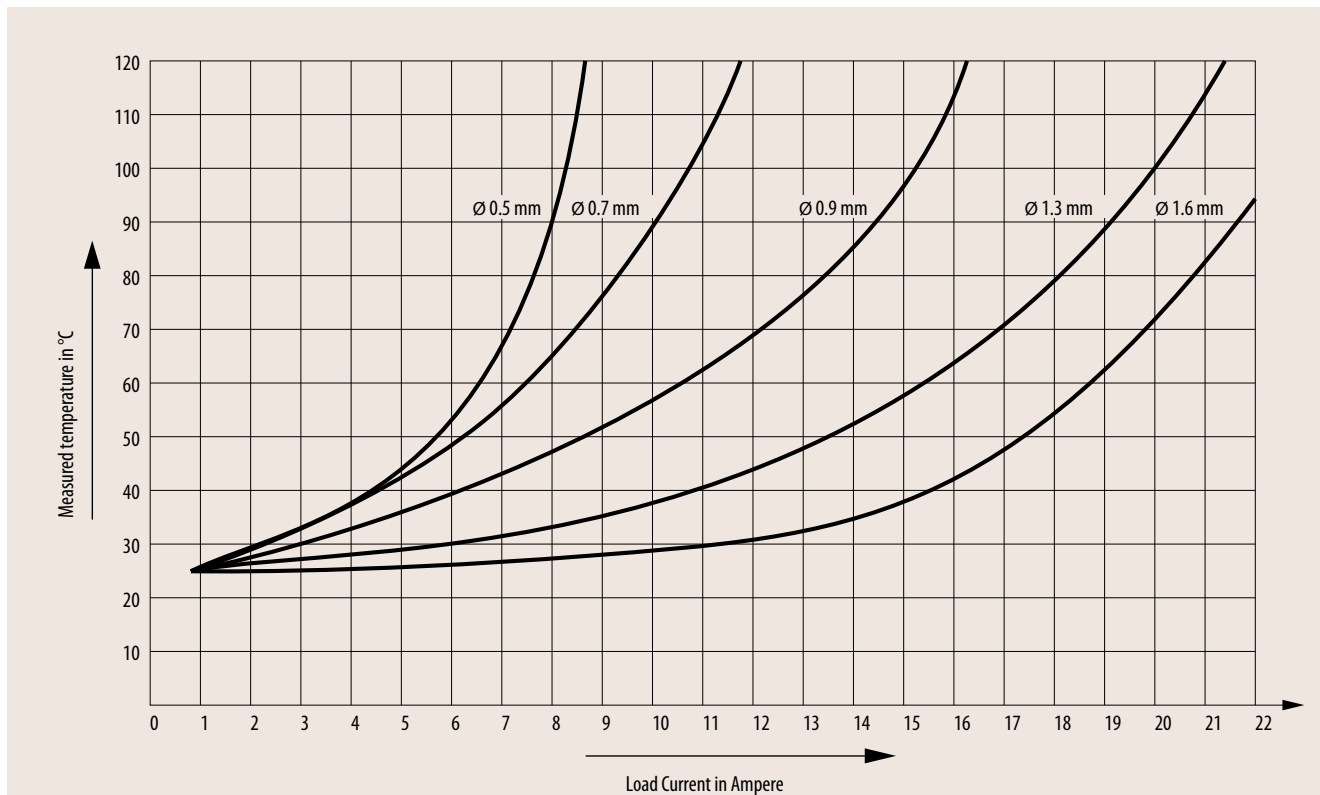
Stranded wires are made from wires with smaller gauge sizes (higher AWG gauge number). The AWG gauge number of the stranded wire is equal to that of a solid conductor of the same size wire. The cross section of the stranded conductor is the sum of cross sections of the single conductors. For example, a AWG-20 stranded wire of 7 AWG-28 conductors has a cross section of 0.563 mm²; an AWG-20 stranded wire with 19 AWG-32 conductors has a cross section of 0.616 mm².

Conversion table AWG/mm²

AWG	Circular wire		Cross section mm ²	Weight kg/km	Max. resistance Ω/km
	Diameter Inch	Diameter mm			
10 (1)	0.1020	2.5900	5.2700	47.000	3.45
10 (37/26)	1.1090	2.7500	4.5300	43.600	4.13
12 (1)	0.0808	2.0500	3.3100	29.500	5.45
12 (19/25)	0.0895	2.2500	3.0800	28.600	6.14
12 (37/28)	0.0858	2.1800	2.9700	26.300	6.36
14 (1)	0.0641	1.6300	2.0800	18.500	8.79
14 (19/27)	0.0670	1.7000	1.9400	18.000	9.94
14 (37/30)	0.0673	1.7100	1.8700	17.400	10.50
16 (1)	0.0508	1.2900	1.3100	11.600	13.94
16 (19/29)	0.0551	1.4000	1.2300	11.000	15.70
18 (1)	0.0403	1.0200	0.8200	7.320	22.18
18 (19/30)	0.0480	1.2200	0.9600	8.840	20.40
20 (1)	0.0320	0.8130	0.5200	4.610	35.10
20 (7/28)	0.0366	0.9300	0.5600	5.150	34.10
20 (19/32)	0.0384	0.9800	0.6200	5.450	32.00
22 (1)	0.0252	0.6400	0.3240	2.890	57.70
22 (7/30)	0.0288	0.7310	0.3540	3.240	54.80
22 (19/34)	0.0307	0.7800	0.3820	3.410	51.80
24 (1)	0.0197	0.5000	0.1960	1.830	91.20
24 (7/32)	0.0230	0.5850	0.2270	2.080	86.00
24 (19/36)	0.0252	0.6400	0.2400	2.160	83.30
26 (1)	0.1570	0.4000	0.1220	1.140	147.00
26 (7/34)	0.0189	0.4800	0.1400	1.290	140.00
26 (19/38)	0.0192	0.4870	0.1500	1.400	131.00
28 (1)	0.0126	0.3200	0.0800	0.716	231.00
28 (7/36)	0.0150	0.3810	0.0890	0.813	224.00
28 (19/40)	0.0151	0.3850	0.0950	0.931	207.00
30 (1)	0.0098	0.2500	0.0506	0.451	374.00
30 (7/38)	0.0115	0.2930	0.0550	0.519	354.00
30 (19/42)	0.0123	0.3120	0.0720	0.622	310.00
32 (1)	0.0080	0.2030	0.0320	0.289	561.00
32 (7/40)	0.0094	0.2400	0.0350	0.340	597.10
32 (19/44)	0.0100	0.2540	0.0440	0.356	492.00
34 (1)	0.0063	0.1600	0.0201	0.179	951.00
34 (7/42)	0.0083	0.2110	0.0266	0.113	1,491.00
36 (1)	0.0050	0.1270	0.0127	0.072	1,519.00
36 (7/44)	0.0064	0.1630	0.0161	0.130	1,322.00
38 (1)	0.0040	0.1000	0.0078	0.072	2,402.00
40 (1)	0.0031	0.0800	0.0050	0.043	3,878.60
42 (1)	0.0028	0.0700	0.0038	0.028	5,964.00
44 (1)	0.0021	0.0540	0.0023	0.018	8,660.00

Current Load – Contacts

Nominal single contact current load for pin / slotted socket (nominal diameter 0.5 mm – 1.6 mm)



Upper maximum temperature for contacts: +125°C.

Test contact was terminated to largest possible conductor.

Connectors or cables with more than one contact or conductor generate a higher heat than a single contact. Therefore, a **derating factor** must be applied.

For connectors the derating factor is applied according to DIN IEC 60512-3 / VDE 0276-1000. The derating factor is used starting with 5 loaded wires.

Derating factor

Number of loaded wires	Derating factor
5	0.75
7	0.65
10	0.55
14	0.50
19	0.45
24	0.40

Operating Voltage acc. to SAE AS 13441-Method 3001.1

The values acc. to SAE AS 13441-method 3001.1 comply with MIL-Std. 1344 – method 3001. The chart values results are acc. to IEC 60512-2.

The inserts have been tested in mated condition and the test voltage was applied to the pin insert.

75 % of the measured break-down voltage is the basic for the further calculation. $\frac{1}{3}$ of this value is the corresponding operating voltage.

All tests were performed at standard environment conditions (room temperature) and can be applied up to an altitude of 2,000 m. For any deviations one has to consider the reduction factor acc. to the relevant standards.

Test voltage: $\text{Break-down voltage} \times 0.75$
Operating voltage: $\text{Break-down voltage} \times 0.75 \times 0.33$

Caution

Electrical appliances: for various applications the safety requirements regarding the operating voltage is even more severe!

The relevant datas in such cases for the operating voltage are the creepage and clearance distances. For any advise how to chose the proper connector please consult us and indicate the safty standard which your product has to meet.

Suitable safety precautions must be taken in order to ensure that personnel do not come into contact with live conductors during installation and operation. All entries were reviewed with maximum care before this catalogue was printed.

ODU reserves the right to make changes in accordance with the current state of the art without advance notice, and without being obligated to provide replacement deliveries or to continue production of older designs.

Overview – All Push-Pull Connector Series from ODU

	Push-Pull series	Coding	Sizes	No. of mechanical coding	Diameter plug (mm)	Max. cable Ø (mm)	Max. no. of contacts	Solder	Crimp	Print	IP Protection Class A ¹⁾	IP Protection Class B ²⁾
ODU MINI-SNAP L		Pin and groove	00	4	6.5	3.5	04				IP 50	up to IP 68
			0	6	9.5	5.6	10					
			1	7	12.0	7.7	16	●	●	●		
			2	8	15.0	9.9	26					
			3	7	18.0	11.9	30					
			4	1	25.0	16.0	40					
ODU MINI-SNAP K		Pin and groove	0		11.0	5.0	10				IP 68	up to IP 68
			1	4	13.0	7.0	16					
			2		16.0	9.0	26	●	●	●		
			3	1	19.0	10.5	30					
			4	1	25.0	14.0	40					
ODU MINI-SNAP B		Pin and groove	0	6	9.4	5.0	10				IP 68	up to IP 68
			1	8	12.0	7.0	16	●	●	●		
			2	8	15.0	9.0	26					
			3	10	18.0	10.5	30					
ODU MINI-SNAP S		Insulator	0		9.4	5.0	04				up to IP 68	up to IP 68
			1	1	12.0	7.0	05	●	●			
			2		15.0	9.0	10					
ODU MINI-SNAP F		Half shell	0	2	9.4	5.0	09				up to IP 68	up to IP 68
			1	2	12.0	7.5	12					
			1.5	2	13.0	7.5	19	●	●	●		
			2	2	15.0	9.5	19					
ODU AMC		Pin and groove	3	3	18.0	11.5	27				up to IP 69K	IP 68
			0		14.0	5.5	10					
			1		15.9	6.5	16					
			1.5	4	16.5	8.0	19	●		●		
			2		19.6	10.0	26					
			3		23.9	11.5	37					
ODU MINI-SNAP PC		Half shell	4		33.0	17.5	55				up to IP 67	IP 50
			1		12.5	6.0	14					
			2	3	15.7	9.0	19	●	●	●		
ODU MEDI-SNAP		Pin and groove	3		18.7	10.5	27				up to IP 64	IP 50
			1	6	13.7	6.5	14	●	●	●		
			2	1	18.5	9.2	19					

¹ IP Protection Class in mated condition.

² IP Protection Class in unmated condition to the end device.

Quality Management





MEDICAL



INDUSTRIAL



MEASURING AND TESTING



MILITARY AND SECURITY



ENERGY



EMOBILITY

Your Partner in Many Application Areas

ODU stands for quality, flexibility and reliability. This is why customers working in many application areas rely on ODU products in markets such as the following:

- Medical
- Industrial
- Measuring and testing
- Military and security
- Energy
- eMobility.

The Complete ODU Product Range

Single contacts (round or flat)			
High current connectors			
Circular connectors with Push-Pull locking			
Modular rectangular connectors			
PCB connectors			
Robust connectors			
Disposable Systems			
Application specific solutions			
AMC – Advanced Military Connector			
Cable assembly			

Everything from one Source

Each connection needs its individual cable. Make no compromises when it comes to the quality of the complete connection system. ODU gives you the complete system solution from one source, with no intermediary suppliers.

Cable assembly is a very complex subject. It requires equal measures of expertise in the areas of connectors, cables and assembly. ODU meets all these requirements in full.

Our competent assembly team tests the complete system according your specifications. Our assembly service promises you the same quality found in our connectors – without compromises.

ODU offers you all from one source

- 100 % final inspections
- Production in clean room acc. to EN ISO14644-1 possible
- Automatic processes (cutting, stripping, attaching)

- Extrusion possible with a hot-melt and high pressure/temperature process
- Ultrasound welding
- EMC-compatible assembly
- Application specific labeling
- Widest range of potting possibilities for sealed systems
- Extruded cable crossovers.

Advantages for the customer

- Modern manufacturing facilities in Mühldorf (Germany), Shanghai (China) and Sibiu (Romania)
- Reliability thanks to our company-wide quality strategy
- Products with durability and functional reliability
- Production according to UL (file: E333666) possible
- Inspections, such as crimp force monitoring, during production.

Assembly instruction you will find on our website:
www.odu-connectors.com/downloads/assembly-instructions/

Standard solutions



Application specific solutions



Application Specific Connectors



Innovative, dynamic markets call for innovative connectors.

As an expert for special applications and requirements, we develop forward-looking, appropriate connectors attuned to your needs!

In spite of the global trend toward standardized connectors, there are always applications that call for an application specific solution. We accept this challenge and

develop innovative products for our customers based on our many years of extensive know-how, our creativity and, not least, our high level of vertical integration. Technology access and technology mastery, combined with intensive cooperation with the user, form the basis for achieving success together.

Design-to-cost is joined by design-for-application for the customer's benefit.

Telefax Inquiry ODU AMC®

Fax-No.: +49 8631 6156-49

ODU
GmbH & Co. KG
Pregelstr. 11
84453 Mühldorf a. Inn
GERMANY

Company:
Name:
Department:
Street:
City:
Phone: Date

ODU AMC® Summary of Technical Requirements

1) Connector application			
2) Environment			
3) Connector type	☐ Plug	☐ Receptacle	☐ In-line receptacle
4) Special version			
5) Style			
6) Size	☐ 0	☐ 1	☐ 1.5 (A) ☐ 2 ☐ 3 ☐ 4.5 (E)
7) Series	☐ Y Standard	☐ Y Easy-Clean	
8) Coding			
9) Number of positions			
10) Termination	☐ Solder	☐ PCB	
11) Cross section of wire	 mm ²	 AWG	
Cable diameter	 mm		
12) Operating temperature	 °C max	 °C min	
13) Electrical specs:			
Operating voltage	 V AC	 V DC	
Operating current	 A (constant)	 A (short-term)	 sec.
14) Chemical resistance against			
15) Other requirements			
→ Required quantity			
→ Production quantity			

The Part Number Key

No.	Description	Coding	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
									-								-				
1	Type	S = Push-Pull plug G = Receptacle K = In-line receptacle A = Break-Away plug																			
2	Style	1, 8, K, W																			
3	Size	0, 1, A, 2, 3, E																			
4	Series	Y = ODU AMC																			
5	Keying (colour and mechanical)	A – D																			
6	Material / surface of housing	R = Ruthenium																			
8	Material insulator																				
9	Contact configuration (2 positions)																				
10																					
11	Contact type / surface																				
12	Contact diameter																				
13	Termination cross section																				
14		0																			
16	Locking principle	0 = Standard Version, see page 11 R = Easy-Clean Version, see page 35																			
17	Cover / nut	0 = Standard																			
18		0																			
19	Receptacle earth tag – GK and G8	L																			

Example plug

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	1	1	Y	A	R	-	P	0	8	X	F	G	0	-	0	0	0	0

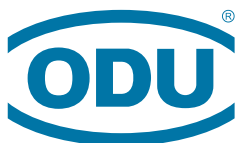
- 1 = Plug
- 2 = Style 1
- 3 = Size 1
- 4 = Series Y = ODU AMC
- 5 = Coding A = light brown
- 6 = Ruthenium over Aluminium
- 8 = Peek insulator
- 9, 10 = 8 positions
- 11 = Solder pin
- 12 = Contact diameter 0.7 mm
- 13 = Cross section AWG 22/0.38 mm²
- 14 = free (0)
- 16 = Locking Push-Pull
- 17 = free (0)
- 18 = free (0)
- 19 = free (0)

Example receptacle

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
G	8	1	Y	A	R	-	P	0	8	W	F	G	0	-	0	0	0	L

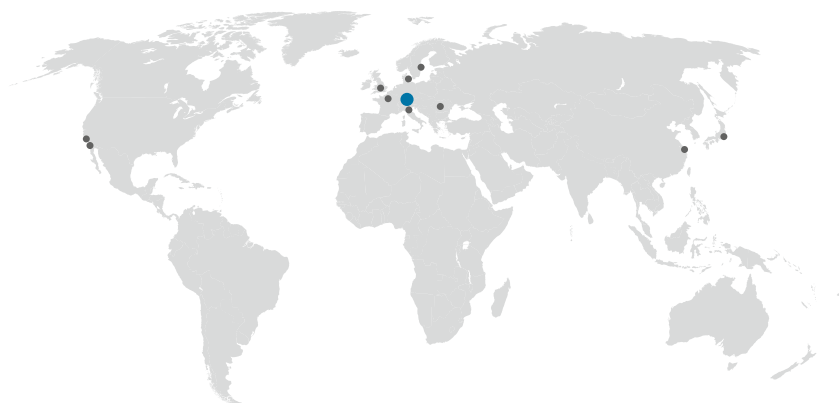
- 1 = Receptacle
- 2 = Style 8
- 3 = Size 1
- 4 = Series Y = ODU AMC
- 5 = Coding A = light brown
- 6 = Ruthenium over Aluminium
- 8 = Peek insulator
- 9, 10 = 8 positions
- 11 = Solder pin
- 12 = Contact diameter 0.7 mm
- 13 = Cross section AWG 22/0.38 mm²
- 14 = free (0)
- 16 = Locking Push-Pull / Break-Away
- 17 = free (0)
- 18 = free (0)
- 19 = Earth tag

Please open



A PERFECT ALLIANCE.

ODU GROUP WORLDWIDE



HEADQUARTERS

ODU GmbH & Co. KG

Pregelstraße 11, 84453 Mühldorf a. Inn, Germany

Phone: +49 8631 6156-0, Fax: +49 8631 6156-49, E-mail: zentral@odu.de

SALES SUBSIDIARIES

ODU Denmark ApS

Phone: +45 2233 5335

E-mail: sales@odu-denmark.dk

www.odu-denmark.dk

ODU France SARL

Phone: +33 1 3935-4690

E-mail: odu@odu.fr

www.odu.fr

ODU Italia S.R.L.

Phone: +39 331 8708847

E-mail: sales@odu-italia.it

www.odu-italia.it

ODU Japan K.K.

Phone: +81 3 6441 3210

E-mail: sales@odu.co.jp

www.odu.co.jp

ODU Scandinavia AB

Phone: +46 176 18262

E-mail: sales@odu.se

www.odu.se

ODU (Shanghai)

International Trading Co., Ltd.

Phone: +86 21 58347828-0

E-mail: oduchina@odu.com.cn

www.odu.com.cn

ODU-UK Ltd.

Phone: +44 330 002 0640

E-mail: sales@odu-uk.co.uk

www.odu-uk.co.uk

ODU-USA, Inc.

Phone: +1 805 484-0540

E-mail: sales@odu-usa.com

www.odu-usa.com

Further information and specialized
representatives can be found at:

www.odu-connectors.com/contact

PRODUCTION AND LOGISTICS SITES

Germany Otto Dunkel GmbH

China ODU (Shanghai) Connectors Manufacturing Co.Ltd

Mexico ODU Mexico Manufacturing S.R.L. de C.V.

Romania ODU Romania Manufacturing S.R.L.

USA ODU-USA, Inc.

ODU North American Logistics



Simply scan the QR code
to download the entire brochure.

KOMMA Werbeagentur | D-84453 Mühldorf a. Inn

ODUAMC/ B / 0618 / E