

ODU AMC[®] SERIES T

CRIMP CONTACTS SPECIFICATION

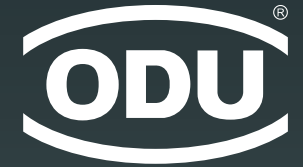


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GENERAL INFORMATION

AS39029 crimp contacts are standard contacts for a wide variety of military circular connector applications. For platforms such as the ODU AMC® Series T, the AS39029 crimp contacts provide reliable power and signal transmission under heavy mechanical stress even in harsh environmental conditions.

The contacts are defined by the max. termination cross section:

Contact size #16 → AWG 16–20

Contact size #20 → AWG 20–24

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Advantages:

- + Long proven and reliable components
- + Interchangeable for repair and modification
- + Field assembly possible
- + Easy identification of contact size

CONTACT DESCRIPTION

BIN (Basic Identification Number):



MIL contacts have a BIN (Basic Identification Number) code consisting of three color bands around the crimp barrel. There are 10 colors, which designate a number.

0 BLACK	1 BROWN	2 RED	3 ORANGE	4 YELLOW
5 GREEN	6 BLUE	7 VIOLET	8 GRAY	9 WHITE

CRIMP CONTACT IDENTIFICATION

Standard contacts are available in different sizes and they are very popular to use in the military and aerospace industries. In addition to the standard MIL spec. contacts, ODU also provides ODU specific contacts.

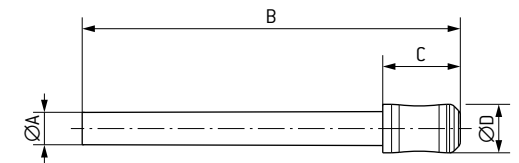
MIL SPECIFICATION CRIMP CONTACTS

Size	AWG	Type	ODU Number	MIL-STD no.	BIN color		
#16	16–20	Socket	923.000.005.000.299	M39029/57-358	Orange	Green	Gray
		Pin	923.000.005.000.427	M39029/58-364	Orange	Blue	Yellow
#20	20–24	Socket	923.000.005.000.300	M39029/57-357	Orange	Green	Violet
		Pin	923.000.005.000.428	M39029/58-363	Orange	Blue	Orange
#22D	22–26	Socket	923.000.005.000.292	M39029/57-354	Orange	Green	Yellow
		Pin	923.000.005.000.429	M39029/58-360	Orange	Blue	Black

SEALING PLUGS

Size	ODU Number	MIL no.	Color	ØA	B	C	ØD
#16	021.315.951.937.000	MS27488-16-2	Green	1.8	21.7	2.3	3.2
#20	021.315.901.937.000	MS27488-20-2	Red	1.25	21.7	2.3	2.24
#20MD	021.315.949.937.000	–	Orange	1.1	21.7	2.5	1.6
#22D	021.315.942.937.000	MS27488-22-2	Black	1.0	11.7	2.4	1.5
#22MD	021.315.948.937.000	–	Green	0.82	11.7	4.1	1.3
#26	021.315.941.937.000	–	Red	0.7	11.7	4.2	1.1

All dimensions in mm



ODU SPECIFIC CRIMP CONTACTS

For smaller termination cross section and higher contact density without BIN Color code.

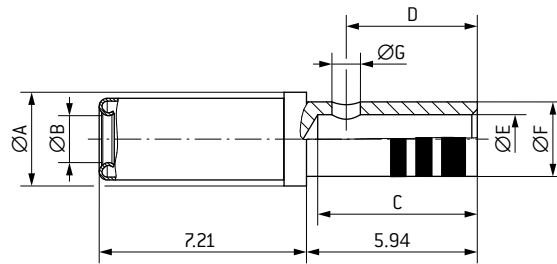
Size	AWG	Type	ODU Number
#20MD	20–24	Socket	923.000.005.000.301
		Pin	185.967.000.306.000
#22MD	22–26	Socket	923.000.005.000.302
		Pin	185.A20.000.306.000
#26	26–30	Socket	923.000.005.000.303
		Pin	185.A21.000.306.000

CONTACT DIMENSIONS

MIL STANDARD SOCKETS

Contact size	ØA	ØB	C	D	ØE	ØF	ØG	Stripping dim.
#16	3.26	1.63	5.55	4.56	1.7	2.59	0.99	6
#20	2.34	1.06	5.55	4.82	1.19	1.75	0.74	6
#22D	1.54	0.79	3.8	3.18	0.88	1.19	0.51	4.1

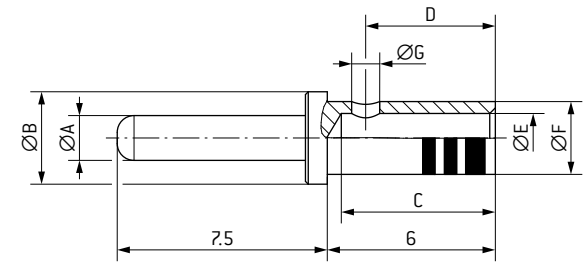
All dimensions in mm



MIL STANDARD PINS

Contact size	ØA	ØB	C	D	ØE	ØF	ØG	Stripping dim.
#16	1.6	3.3	5.31	4.5	1.75	2.6	1	6
#20	1.02	2.36	5.31	4.73	1.2	1.75	0.75	6
#22D	0.76	1.55	3.58	3.2	0.9	1.2	0.5	4.1

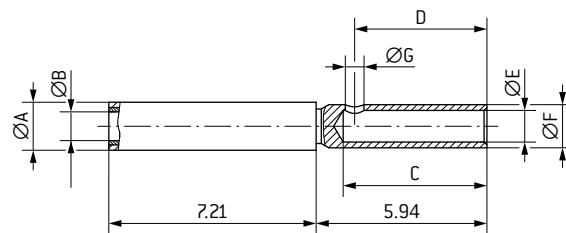
All dimensions in mm



ODU SPECIFIC SOCKETS

Contact size	ØA	ØB	C	D	ØE	ØF	ØG	Stripping dim.
#20MD	1.67	0.9	5	4.4	1.1	1.5	0.65	5.5
#22MD	1.37	0.7	3.8	—	0.9	1.2	—	4.1
#26	1.17	0.5	3.2	—	0.67	1.0	—	3.7

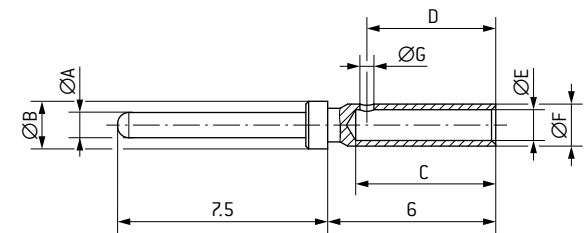
All dimensions in mm



ODU SPECIFIC PINS

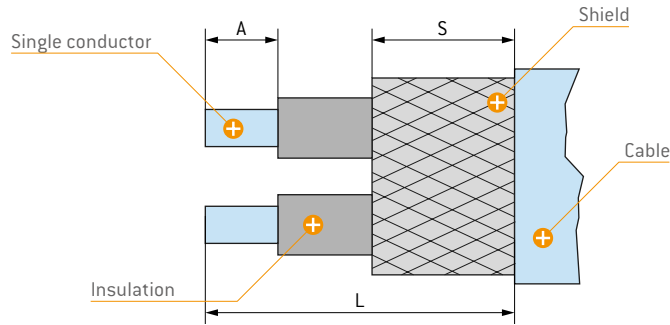
Contact size	ØA	ØB	C	D	ØE	ØF	ØG	Stripping dim.
#20MD	0.9	1.7	5	4.6	1.1	1.5	0.5	5.5
#22MD	0.7	1.4	3.6	3.2	0.9	1.2	0.5	4.1
#26	0.5	1.2	3.2	2.9	0.67	1.0	0.4	3.7

All dimensions in mm



RECOMMENDED STRIPPING LENGTH

The following table provides recommended guidelines for cable preparation.



Shell size	Insert arrangement	Contact	Straight cable assembly			Right angle cable assembly		
			L	A	S	L	A	S
9	8 way	#22D	22	4.1	12	32	4.1	30
9	10 way	#22D	22	4.1	12	32	4.1	30
12	5 way	#16	28	6	12	37	6	35
12	18 way	#20MD	28	5.5	12	37	5.5	35
		#22D	28	4.1	12	37	4.1	35

Stripping lengths cable jacket (L)	
Length in mm	Tolerance in mm
< 20	± 1
> 20 – 50	± 2
> 50 – 100	± 3

Stripping length braided shield (S)	
Length in mm	Tolerance in mm
< 10	± 1
> 10 – 20	± 2

Stripping lengths single conductor (A)	
Length in mm	Tolerance in mm
< 5	± 0.5
> 5 – 10	± 1
> 10 – 20	± 2

CRIMP TOOLS

The 8-point crimping tool is used to crimp turned contacts on to a conductor. The special features of the hand-crimping tool are: a user-friendly display, ergonomic design and an optimum force transmission for comfortable working.

Size	ODU Number	MIL no.
#16	080.000.073.000.000	M22520/1-01
#20		
#20MD	080.000.072.000.000	M22520/7-01
#22D		
#22MD		
#26		

POSITIONER

Positioners are used for exact positioning of the crimp contact during the crimping process. This makes the crimping process safe and the crimping result reproducible.

Size	Contact type	ODU Number	MIL no.
#16	Socket / Pin	080.000.073.101.000	M22520/1-04
#20	Socket / Pin	080.000.073.101.000	M22520/1-04
#20MD	Socket / Pin	080.000.072.102.000	M22520/7-06
#22D	Socket	080.000.072.102.000	M22520/7-06
	Pin	080.000.072.101.000	M22520/7-07
#22MD	Socket / Pin	080.000.072.106.000	–
#26	Socket	080.000.072.104.000	–
	Pin	080.000.072.103.000	–

SAFETY NOTICE

Crimping tools generate a very high pressing force. Incorrect handling may result in considerable risk of crushing! Working under voltage is not permitted! For questions, please contact the manufacturer!



INSERTION & REMOVAL TOOLS

ODU provides insertion & removal tools for all listed contacts.

Please note! The use of the correct insertion tool ensures the correct seating of the contact in the connector. Using the correct removal tool ensures that the contact can be removed without causing damage.

MIL STANDARD INSERTION & REMOVAL PLASTIC TOOLS

Size	ODU Number	Military	Color code insertion side	Color code removal side
#16	085.613.100.020.000	M81969/14-03	Blue	White
#20	085.613.100.040.000	M81969/14-10	Red	Orange
#22D	085.613.100.060.000	M81969/14-01	Green	White



MIL STANDARD INSERTION & REMOVAL METAL TWEEZERS

Positioners are used for exact positioning of the crimp contact during the crimping process. This makes the crimping process safe and the crimping result reproducible.

Size	Type	ODU Number	Military
#16	insertion	085.613.100.070.000	M81969/8-07
	removal	085.613.100.070.001	M81969/8-08
#20	insertion	085.613.100.050.000	M81969/8-05
	removal	085.613.100.050.001	M81969/8-06
#22D	insertion	085.613.100.030.000	M81969/8-01
	removal	085.613.100.030.001	M81969/8-02



ODU SPECIFIC INSERTION & REMOVAL TOOLS

Size	ODU Number
#20MD	085.613.100.090.000
#22MD	085.613.100.100.000
#26	085.613.100.110.000

CONTACT CRIMPING

- Prepare your cable according to the contact type. The stripping lengths for each contact can be taken from the tables on [page 6](#).
- Choose your crimping tools and positionier according to the table on [page 7](#).
- The setting dimensions are given in the table printed on the crimping tool.

- Loosen the clamping screw of the crimp setting adjustment wheel and switch on the display with the "ON/OFF" button.



- Set the crimp dimension to the desired level with the crimp setting adjustment wheel and then fix the clamping screw.



- Positioner for 080.000.072.000.000: Insert the positioner into the crimping tool. To do this, turn the tool around so that the rear side is facing you. Insert the positioner with bayonet pin into the adapter ring and turn 90°. The positioner locks into place.



- Positioner for 080.000.073.000.000: Please take the correct setting of the positioner from the table label. A positioning cylinder is assigned to each contact size. For correct setting, press in the positioning cylinder on the positioner.



- Positioner for 080.000.073.000.000: Place the positioner on the protruding screw, on the rear side of the crimping tool. Secure it by using an allen key whilst holding the screw on the front side with a second allen key.



- Insert the contact with the prepared wire into the crimping point. Note that the crimping is done in the middle of the crimping area.

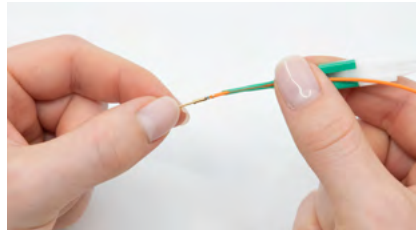


- Press the crimping tool handle completely. After opening, remove the contact and check the results.

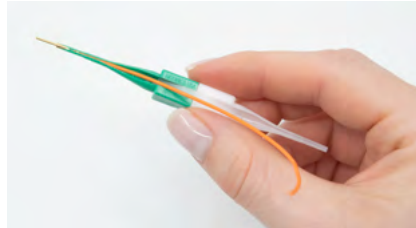


CONTACT ASSEMBLY

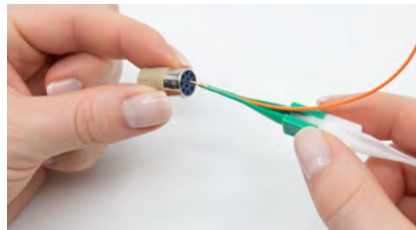
- Please note that a clean workplace prevents the entry of dirt and foreign materials during the assembly process.
- Prepare all the necessary components and tools.
- Place the wired contact with the wire first in the groove of the insertion tool.



- Then seat the contact with the crimp barrel on the tip of the tool.



- When inserting the contacts, start with the central cavities.



- Insert the contacts until you feel them click into place in the retaining clip. If required, check that the contact is firmly seated by gently pulling on it. Remove the tool by sliding it back on the wire.

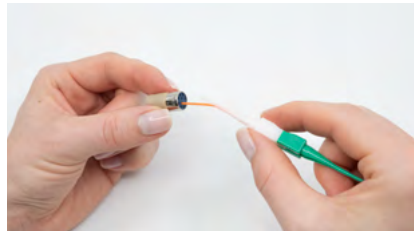


- Repeat this step regarding to the contact numbers on the termination side of the insert.

CONTACT REMOVAL

- When removing the contacts, start with the outer contacts.

- Lay the wire of the contact along the slot of the tool, squeeze the wire firmly into the tool between the thumb and forefinger about 1.5 cm from the tip and quickly pull the tool away from the connector.



- The wire should now have snapped into the groove. Slide the tool down along the wire into the rear cavity to the contact until a positive resistance is felt. At this time, the contact clip mechanism is unlocked.



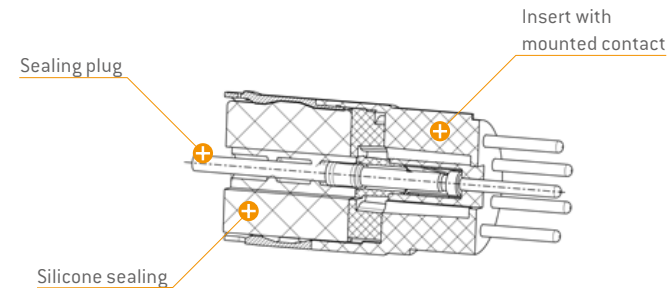
- Press the wire of the contact against the groove of the tool and pull the tool with the wired contact out of the connector. Insert the contacts until you feel them click into place in the retaining clip. If required, check that the contact is firmly seated by gently pulling on it. Remove the tool by sliding it back on the wire.



SEALING PLUG



Sealing plugs are used to seal unwired contact cavities. After installing unwired contacts into unused cavities, insert knob end of sealing plug into grommet until it bottoms against the unwired contact per illustration. Install sealing plugs with standard contact insertion / extraction tools.



SEALING PLUG INSTALLATION

- Seal unused cavities where a wiring is not required with a contact and sealing plug combination.
- For that insert first the unwired contact similar to the chapter contact assembly in the connector see [page 10](#).
- Insert the Sealing plug by hand until it stops at the connection area of the contact.
- Repeat steps 1–3 for each additional unused cavity.

MATERIAL & SPECIFICATION

Performance specifications		Standard
Vibration	37.8 g RMS	EIA-364-28, condition V letter J
Shock	300 g	EIA-364-27, condition D
Durability	500 mating cycles	SAE-AS39029, 4.7.10
Operating temperature	-65 °C up to +200 °C	EIA-364-32, condition A
Contact resistance	SAE-AS39029, Table 5	EIA-364-06 at +25 °C
Humidity	240 h, 100 mA	EIA-364-31, method II
Salt spray	48 h	EIA-364-26, condition B

APPLICABLE DOCUMENTS

- D00016301 → [Specification](#)
- D00016302 → [Accessories](#)
- D00016303 → [Assembly Instruction – Series T – ODU integrated shielding platform](#)
- D00016304 → [Assembly Instruction – Series T – MIL-STD Backshell Termination](#)
- All data sheets available at www.odu-connectors.com

Materials and finishes					
Contact part	Material	Standard		Surface	Standard
		EU	US		
Pin contact ODU specific	CuZn38Pb2	CW608 (2.0371)	C35300	1.27 µm Gold over Nickel	MIL-G-45204D
Pin contact MIL standard	CuZn35Pb2	CW601 (2.0331)	C34500	1.27 µm Gold over Nickel	ASTM B488, Type II, C
Socket contact body	CuZn35Pb2	CW601 (2.0331)	C34500	Gold over Nickel	ASTM B488, Type II
Socket contact clip	BeCu	CW101 (2.1247)	C17200	1.27 µm Gold over Nickel	ASTM B488, Type II, C
Sealing plug	PPSU	–	–	–	–

All dimensions are in mm.
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