

ODU AMC® SERIES T

Mouser Product Training Module



ODU AMC® SERIES T

Purpose:

Introduce the ODU AMC® series T connector

Objectives:

- Review features and benefits
- Materials and specifications
- Locking system
- Available housings
- Shell sizes
- Insulation, contacts and configurations
- Keying and color code options
- Sealing plugs
- MIL-STD compatibility
- Assembly process
- Marketing and applications
- Summary

Content:
18 pages



ODU AMC® SERIES T FEATURES AND BENEFITS

- Suitable to 38999 MIL standard backshell
- Suitable to MIL standard crimp contacts
- High vibration resistance
- Waterproof acc. MIL-STD 810 20 m / 120 min mated condition (IP6K9K)
- Mechanical & colored keying
- Double sealed mechanical & locking area
- Full mate indicator
- Easier assembly compared to the competition
- Smaller than competitive 38999 connector
- High temperature range: -65 °C up to +175 °C
- Reverse gender available



The ODU AMC® Series T is a flexible and robust circular connector with 3 locking options on one receptacle, ideal for a wide range of military applications where high vibration resistance is a must. Suitable to 38999 MIL standard backshell and MIL standard crimp contacts. The ODU AMC Series T is waterproof up to IP6K9K, has a high temperature range of -65 degrees Celsius up to 175 degrees Celsius, available with reverse gender options and various mechanical and colored keying possibilities.

MATERIALS

- High quality materials
- Lightweight materials
- High durability
- Resistant to extreme temperatures for use from the Arctic to the desert
- Chosen for use in harsh environments



	Material	Surface	Standard	Flammability
Housing / Nut	Aluminum AlMgSiSn1Bi	Anthracite Tin-Nickel over nickel		
EMI-locking ring	CuBe2	Gold over nickel		
Crimp sleeve	CuTeP	Nickel		
Grounding ring	CuZn39Pb3	Tin over Nickel		
Insulator	PEEK			UL94 (V0)
Pin contact ODU specific	CuZn38Pb2	1.27 µm Gold over Nickel	MIL-G-45204D	
Pin contact MIL Standard	CuZn35Pb2	1.27 µm Gold over Nickel	ASTM B488, Type II, C	
Socket Contact body	CuZn35Pb2	Gold over Nickel	ASTM B488, Type II	
Socket Contact clip	CuBe2	1.27 µm Gold over Nickel	ASTM B488, Type II, C	
Wave spring	Stainless steel			
Ratchet ring	PEEK			UL94 (V0)
Grommet	FVMQ (floursilikon)			
Potting	potting compound			UL94 (V0)
O-rings	FVMQ (floursilikon)			
Shrink boots	Polyester-elastomer			acc. to VG95343
Overmoulding material	TPU			

The ODU AMC® Series T is made of high quality and lightweight materials and is RoHS compliant. This connector has a high durability and resistance to extreme temperatures which makes it ideal for military applications and harsh environments.

SPECIFICATIONS

Type	Performance
Protection class ¹⁾	IP6K9K
Immersion capability	1m
Saltspray	96h salt mist
Operating Temperature	-65°C up to +175°C
Mating cycles	500
Shell-to-shell conductivity	Voltage drop 2,5 mV
Random vibration ²⁾	37,8g's
Sine Vibration ²⁾	Voltage drop 2,5 mV
Mechanical shock ²⁾	300g

Test methods
according to:



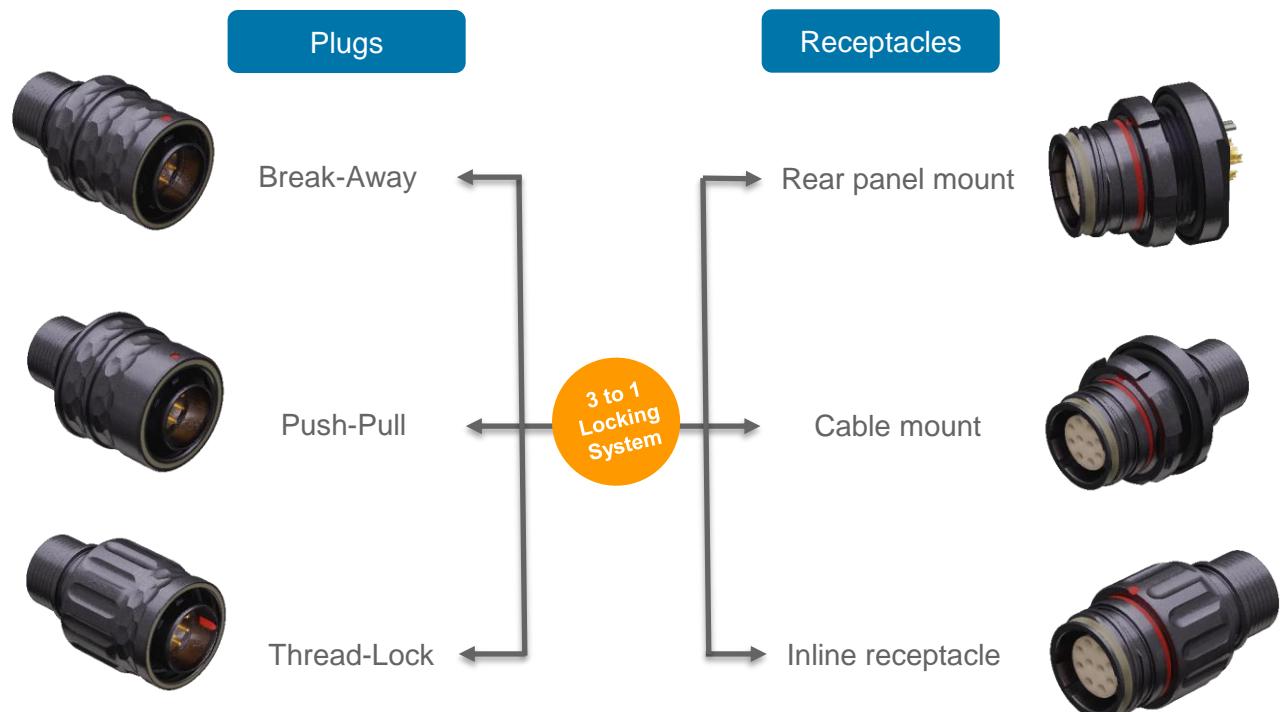
IP Rating acc. to:

- ISO 20653:2013 / MIL-STD-810G: 2008 512.5
- MIL-STD-202-110 ISO 20653:2013

The ODU AMC® Series T went through test methods according to MIL-DTL 38999M standards. It has a watertight protection of IP6K9K with 1 meter immersion capability. Operating temperatures from -65 ° Celcius up to 175 ° Celcius and up to 500 mating cycles.

3 TO 1 LOCKING SYSTEM

- More flexibility
- 3 plugs with 3 individual locking mechanisms mate into the same receptacle
- All connector types lock on the receptacles
- Fewer barriers to connect other applications with different locking types
- Reverse gender order option



The 3 to 1 locking systems means that all plugs are mateable with all the receptacles. There are 3 options for the plugs: Break-Away, Push-Pull and Thread-Lock and 3 options for the receptacles: Rear panel mount, cable mound and inline receptacles. This means more flexibility and fewer barriers to connect other applications with different locking types. There is also the option of reverse gender ordering.

ODU AMC® SERIES T PLUG HOUSINGS

ODU integrated shielding Platform

C1 Thread-Lock



S1 Push-Pull



A1 Break-Away



Backshell

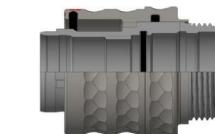
CB Thread-Lock



SB Push-Pull



AB Break-Away



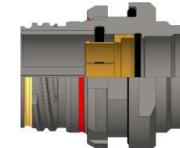
Cable Termination



Backshell-Dependent

The ODU AMC® Series T is available in a variety of styles. Housing is made of aluminium with SnNi tin-nickel plating. Offered with Thread-Lock, Push-Pull or Break-Away locking. Cable assembly integrated solutions and backshells also available.

ODU AMC® SERIES T RECEPTACLE HOUSINGS

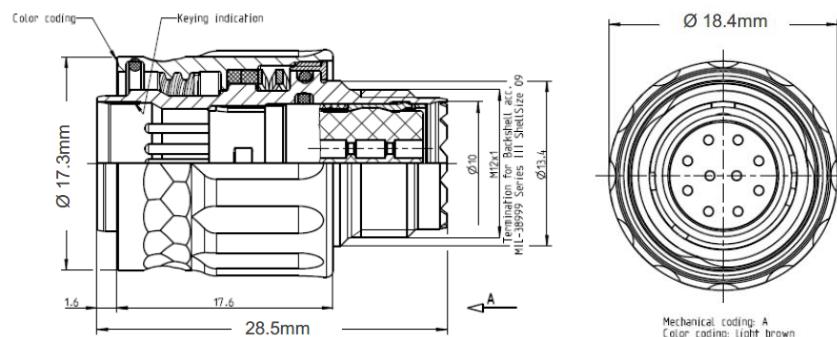
Panel mounted	ODU integrated shielding Platform	Cable Termination
GK – rear panel mount receptacle 	G6 – cable mount receptacle (rear panel mount) 	K1 – in-line receptacle 
GB – cable mount receptacle „backshell“ 	KB – inline receptacle „backshell“ 	

The ODU AMC® Series T is available in a variety of styles and termination options, including solder, PCB, in-line, rear panel mount and cable termination.

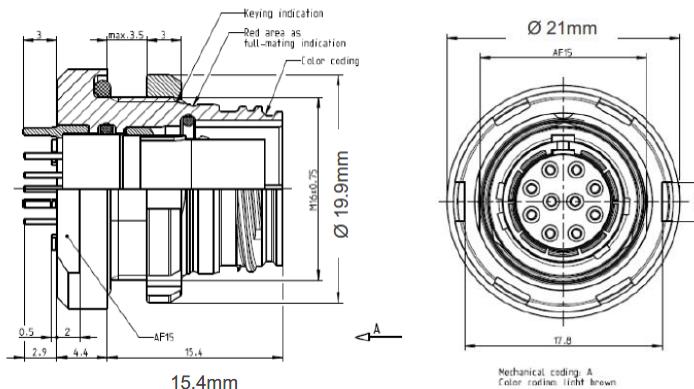
SHELL SIZE OPTIONS

Shell Size 9

PLUG



PANEL RECEPTACLE

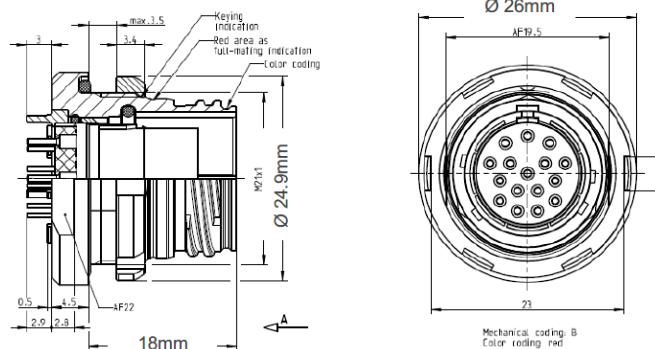
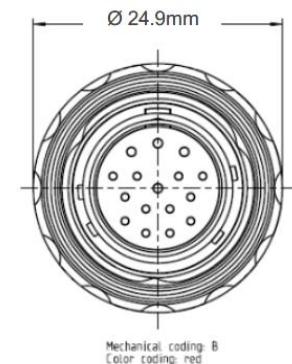
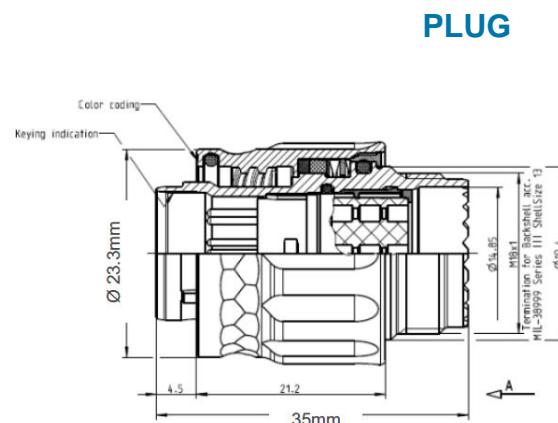


	Outer Ø plug (mm)	max. cable diameter plug (mm)
Break-Away	18.5	7.6
Push-Pull	21	7.6
Threaded	18.4	7.6

Offered in shell size 9 contact configurations come in 8-10 pin configurations and keyed by pin and groove.

SHELL SIZE OPTIONS

Shell Size 12

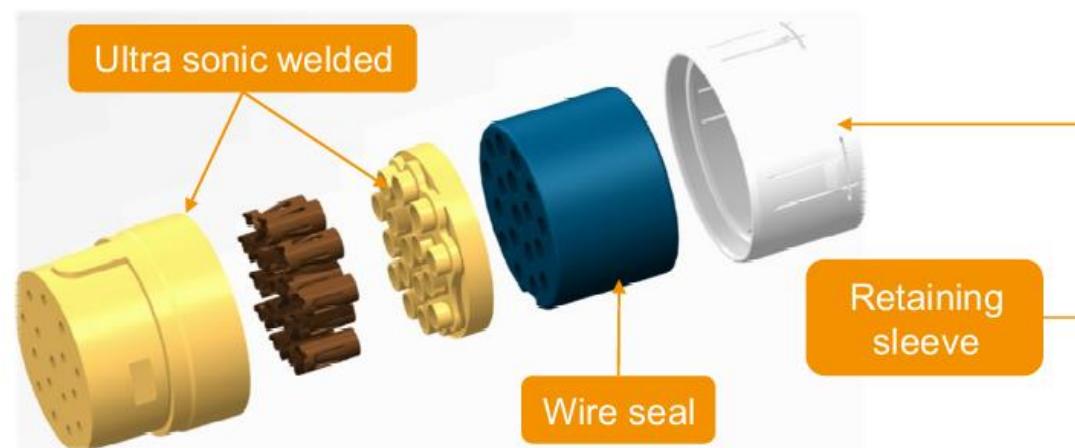


	Outer Ø plug (mm)	max. cable diameter plug (mm)
Break-Away	24.2	14.6
Push-Pull	26	14.6
Threaded	24.9	14.6

Also offered in shell size 12 contact configurations come in 5-18 pin configurations and keyed by pin and groove.

INSULATION

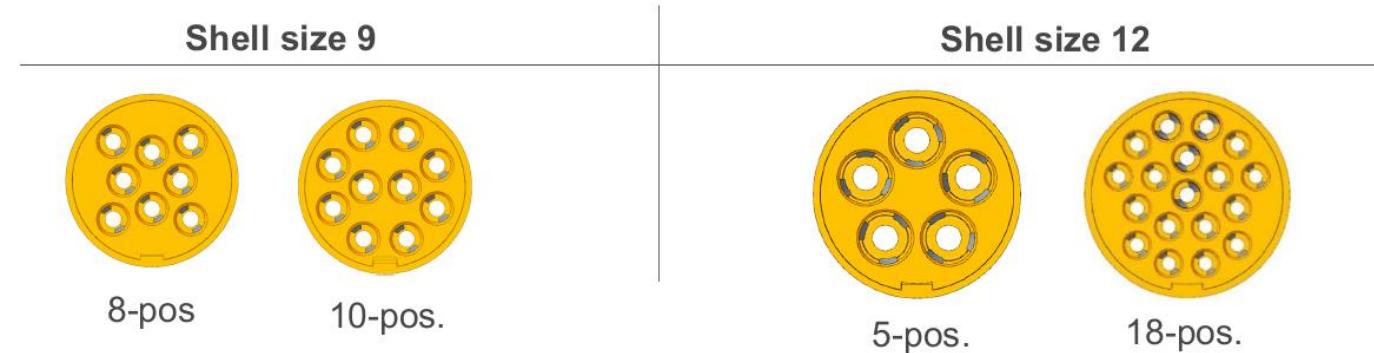
- High performance PEEK
- Bronze contact clips (for crimp contacts)
- Wire seal (FVMQ)
- Retaining sleeve (Brass / nickel coated)



Part of a connector that separates conductive parts with different potential, usually identical to the contact carrier, are the insulators. Protective insulations are made with high-performance PEEK, bronzed contact clips for crimp contacts, a wire seal and a brass/nickel coated retaining sleeve.

CONTACT CONFIGURATIONS

- Crimp contacts – Installation / removal by tool
- Print contacts – same insulator, contacts pressed in
- Solder contacts – no clip used, contacts pressed in



The ODU AMC® Series T is available with three different contact configurations: crimp, which is installed and removed using a tool, print, which uses the same insulator and the contacts are pressed in and solder, where no clip is used and the contacts are pressed in.

M39029 MIL-CONTACTS

Why ODU contacts?

- Smaller termination diameter possible
- Higher contact density available
- Different termination types possible (crimp / PCB / solder)

High degree of flexibility in combination with ODU contacts and customized insulators.

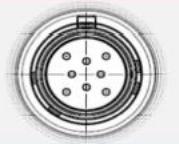
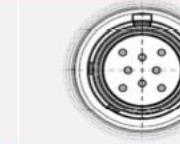
Size	Contact Ø [mm]	Type	ODU-Nr.	Military Part Number	BIN Color Band		
					1st	2nd	3rd
#16	1,6	Socket	923.000.005.000.299	M39029/57-358	Orange	Green	Gray
		Pin	923.000.005.000.427	M39029/58-364	Orange	Blue	Yellow
#20	1,02	Socket	923.000.005.000.300	M39029/57-357	Orange	Green	Violet
		Pin	923.000.005.000.428	M39029/58-363	Orange	Blue	Orange
#20MD	0,9	Socket	923.000.005.000.301	ODU specific	-	-	-
		Pin	185.967.000.306.000	ODU specific	-	-	-
#22D	0,76	Socket	923.000.005.000.292	M39029/57-354	Orange	Green	Yellow
		Pin	923.000.005.000.429	M39029/58-360	Orange	Blue	Black
#22MD	0,7	Socket	923.000.005.000.302	ODU specific	-	-	-
		Pin	185.A20.000.306.000	ODU specific	-	-	-
#26	0,5	Socket	923.000.005.000.303	ODU specific	-	-	-
		Pin	185.A21.000.306.000	ODU specific	-	-	-

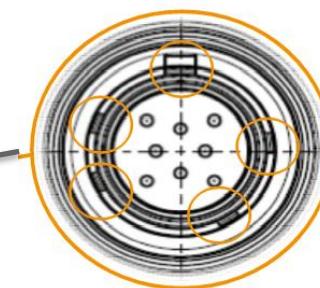
ODU uses M39029 MIL standard contacts. Why ODU Contacts? We make a smaller termination diameter if needed, offer higher contact density and different termination types (crimp, PCB or solder). Which leads to a high degree of flexibility in combination with ODU contacts and customized insulators.

KEYING AND COLOR CODE OPTIONS

- Easy handling even with gloves (PPE)
- Color coding – intuitive interfacing
- The mechanical coding is radially arranged at different positions. This prevents mismatching with other devices.
- Blind mating capable



A	B	C	D
			
Light brown	Red	Blue	Green



ODU offers four different keying options and four color coding options, light brown, red, blue and green. The mechanical coding is radially arranged at different positions so you never mismatch with other devices and make blind mating capable.

CABLE EXIT SOLUTIONS

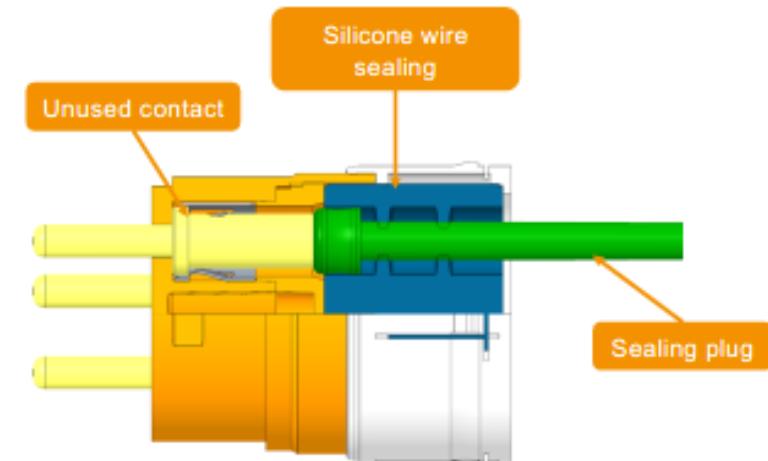
- ODU offers various backshell styles – straight and 90°
- All backshells are MIL-DTL-38999 compliant
- Straight molded versions available



ODU offers various backshell styles, straight and 90 degree versions. All backshell are MIL-DTL-38999 compliant.

SEALING PLUGS

- Customized to the application
- In-house manufacturing technology
- Sealing for unused contact cavities



Sealing plugs are available and customized to the specific application. We use in-house manufacturing technology to design these plugs. The sealing plugs are used for unused contact cavities so nothing gets into the connector and compromises its performance.

MIL-STD COMPATIBILITY

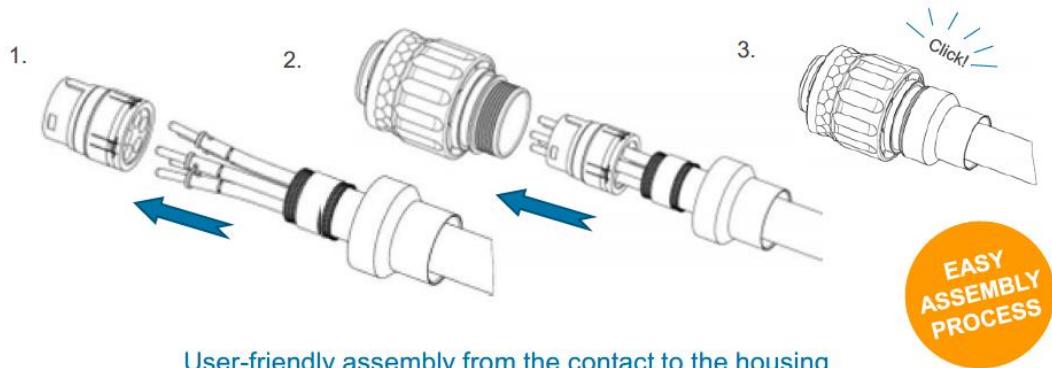
- Compatible with MIL-STD crimp contacts
- Compatible with 38999 MIL-STD back shells
- Compatible with MIL-STD Sealing-Plugs
- MIL-STD Tools
- Field repairable solution

*Easy field repair in case of a damage,
the end user can restore quickly functionality*



ASSEMBLY PROCESS

- Easy Identification of MIL STD crimp contacts
- Contact assembly without housing possible
- Better and more precise contact assembly
- Reduced risk of contact damage



The assembly process consists of easily identified MIL standard crimp contacts. We can assembly the contacts without housing, which leads to better and more precise contact assembly and reduces risk of contact damage. This results in a user-friendly and easy assembly process.

MARKETS AND APPLICATIONS



The ODU AMC® Series T is ideal for military and security applications and offers a high level of flexibility and easy handling. The individual contacts can be replaced or repaired on site with standard MIL style AS39029 crimp contacts. In addition, this connector offers protection against water, dirt and dust, which makes it ideal for rugged application such as heavy construction machinery and agricultural vehicles.

SUMMARY

ODU AMC® Series T offers:

- Suitable to 38999 MIL standard backshell
- Suitable to MIL standard crimp contacts
- High vibration resistance
- Waterproof acc. MIL-STD 810 20 m / 120 min mated condition (IP6K9K)
- Mechanical & colored keying
- Double sealed mechanical & locking area
- Easier assembly compared to the competition
- Smaller than competitive 38999 connector



In summary, the ODU AMC® Series T is suitable to the 38999 MIL standard backshell and MIL standard crimp contacts. It has a high vibration resistance, is waterproof up to IP6K9K (20 meters and 120 minutes) in mated condition, has multiple mechanical and color keying options and can be double sealed in the mechanical locking area. The ODU AMC ® Series T is easier to assemble compared to competitive connectors and smaller than the 38999 connector.