# ODU AMC® SERIES T

Connectors with backshell termination acc. MIL-DTL-38999 SERIES III



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**connectors with ODU integrated shield-termination platform**

# Assembly instructions


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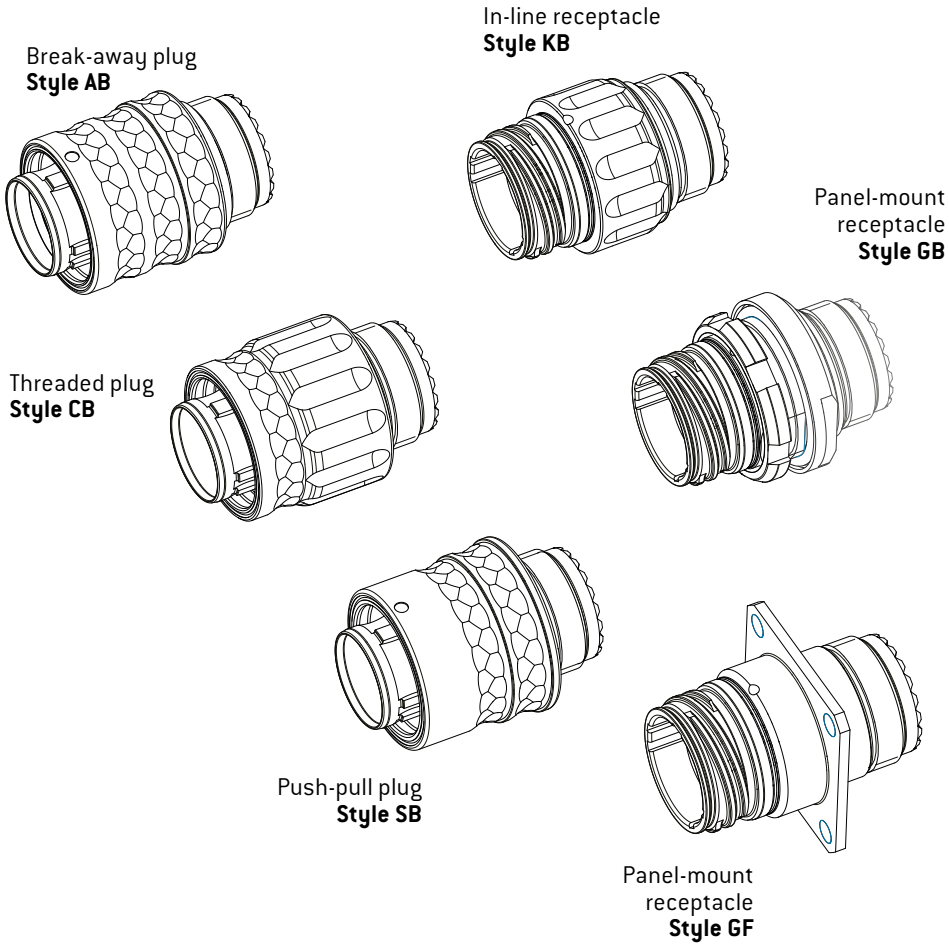
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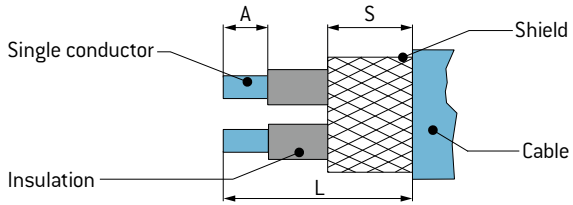




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# General notes

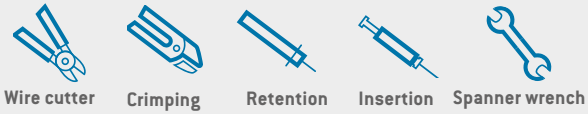
## Recommended stripping length

The following table provides recommended guidelines for cable preparation.
Mentioned backshells can be ordered from ODU. For more information see D00016302.




A = Stripping length single conductor
L = Stripping length cable jacket
S = Stripping length braided shield

## Tools / Accessories




**For assembly of crimp contacts, please follow the crimp-instruction!**

| Shell size | Insert arrangement | Contact | Backshell acc. M85049 / 88-_N03[1] | | | Backshell acc. M85049 / 90-_N03[1] | | | Backshell acc. M85049 / 18_N__[1,2] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | A | S | L | A | S | L | A | S |
| 9 | 8 way | #22D | 49 | 4.1 | 15 | 80 | 4.1 | 15 | 54 | 4.1 | 12 |
| 9 | 10 way | #22D | 49 | 4.1 | 15 | 80 | 4.1 | 15 | 54 | 4.1 | 12 |
| 12 | 5 way | #16 | 55 | 6.0 | 15 | 86 | 6.0 | 15 | 60 | 6.0 | 12 |
| 12 | 18 way | #20MD | 55 | 5.5 | 15 | 86 | 5.5 | 15 | 60 | 5.5 | 12 |
| | | #22D | 55 | 4.1 | 15 | 86 | 4.1 | 15 | 60 | 4.1 | 12 |

All dimensions in mm

| 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 |

Exceptions are noted on special instructions.
Recommended stripping length on cable preparation of data transmission protocols can be found in the applicable documents (see page 08).

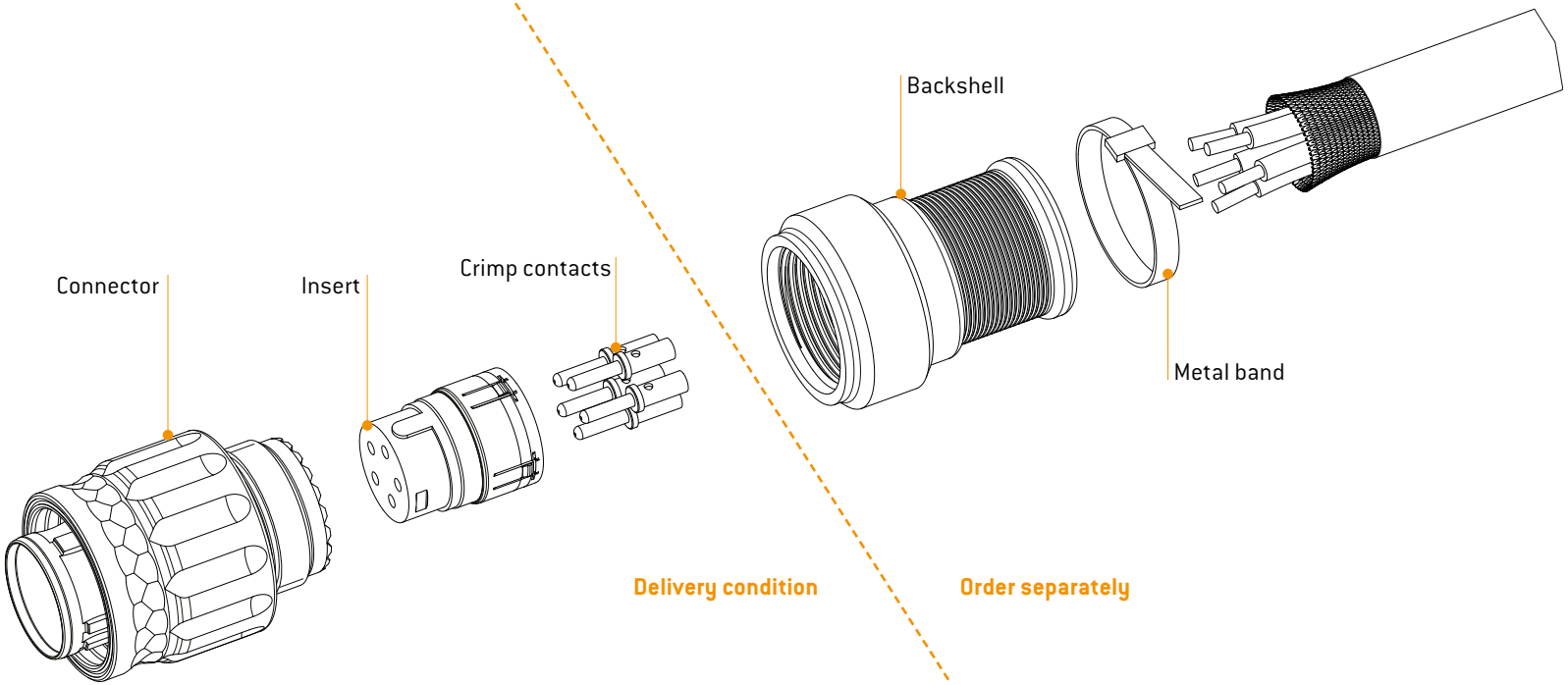
Note for data-rate-connectors:
Before crimping, twist the strands back slightly in the original direction. If a shield is available for the separately pairs of wires (e.g. STP-Cables), warp it around the pairs as far as possible.

[1] Replace the first underline with the needed shell size. For a connector shell size 9 replace it with 9, for a connector shell size 12 replace it with 13.
[2] Replace the second underline with the needed clamp size. This depends on the used cable.

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# Overview ODU AMC® Series T

## Connectors with backshell termination acc. MIL-DTL-38999 SERIES III



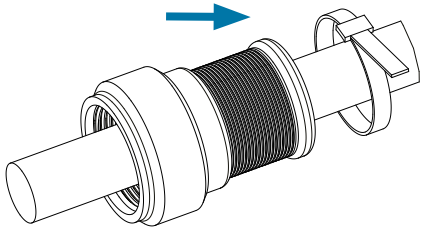

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# Assembly ODU AMC® Series T

## Connectors with backshell termination acc. MIL-DTL-38999 SERIES III

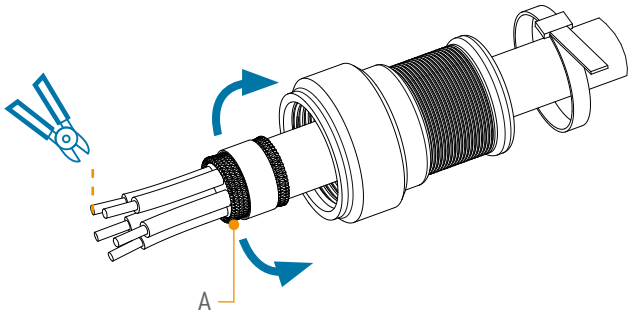
## Step 1

- Slide backshell and metal band over the cable. If the metal band is needed or not depends on the used backshell.



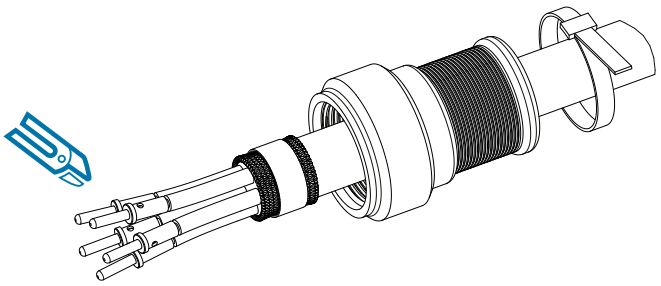
## Step 2

- Strip cable and conductors. Fold back the shield (A) and use fastening tape (e.g. Würth: 09920019) to fasten it temporarily to the cable jacket.
  For more information on cable preparation of standard assemblies such as stripping lengths (see page 03) and following.
  Further information on cable preparation of data transmission protocols can be found in the applicable documents (see page 08).




## Step 3

- Crimp the contacts to the wires. For recommended tools and instructions please see crimp contact specification D00016300.

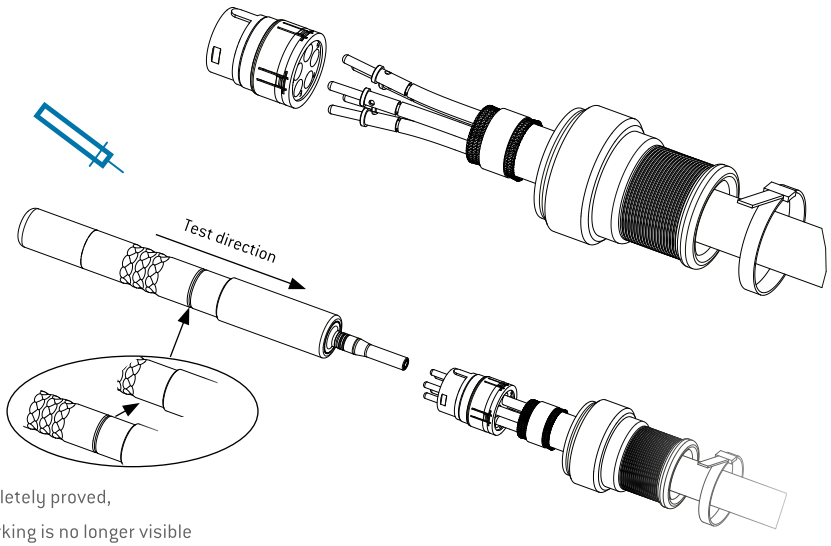


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# Step 4

- Press the terminated contacts into the contact cavities according to the application-specific pinout instructions. The contacts are properly inserted when an audible "click" is heard.
  Use the insertion tools if required. Information on these tools can also be found in crimp contact information D00016300.
  The wiring charts for data transmission protocols are shown in the relevant applicable documents (see page 08).

  The contact retention tool can be used to check if the contacts are fully engaged.
  For this, the corresponding adapter (see page 10) must be pressed against the contact from the front until the black marking on the tool is no longer visible.



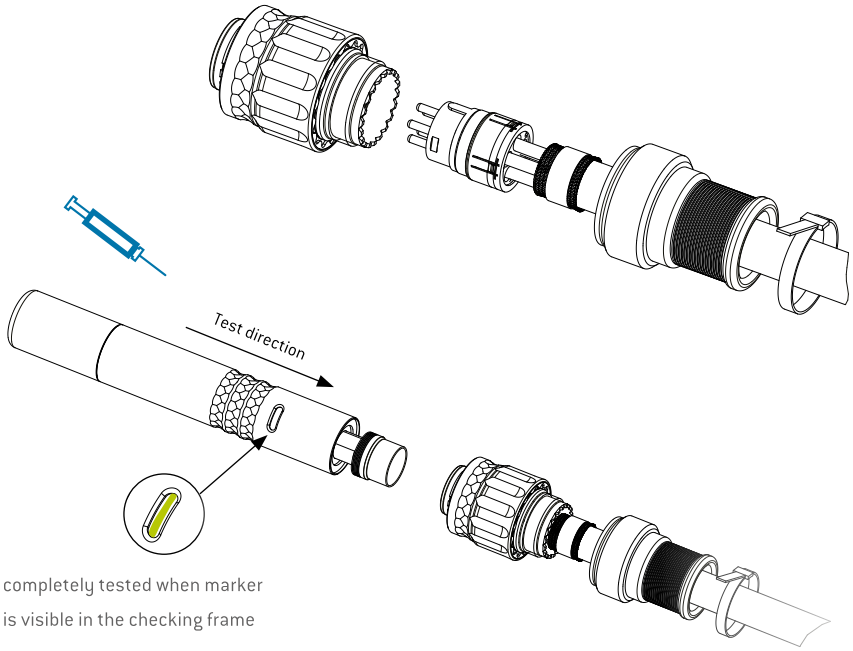

completely proved,
if marking is no longer visible

# Step 5

- Align the exterior key of the insert with the interior keyway of the connector. Press the insert assembly into the connector housing. If inserted correctly, there should be an audible "click."

  The insert retention tool can be used to check if the insert is fully engaged.
  For this, the corresponding adapter (see page 10) must be pressed against the insert from the front until the green marking can be seen in the viewing area.

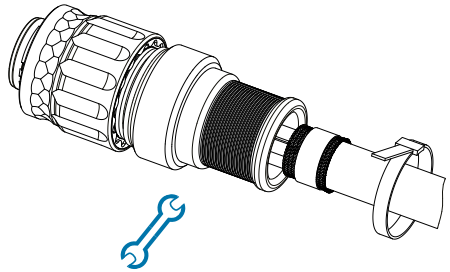
.




completely tested when marker
is visible in the checking frame

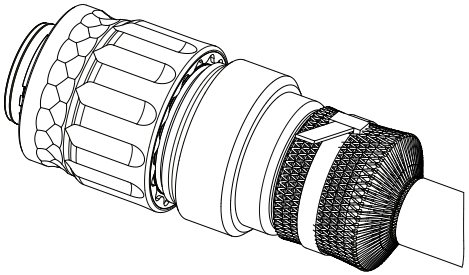
## Step 6

- Depending on the used backshell, the further assembly process might be different.
  Take care of a related work instruction, if there is one.
  Screw the backshell tight on the connector.



## Step 7

- Remove the fastening tape and lay the shield braid on to the backshell. Fasten the shield braid to the crimp area by using a metal band. More information at (see page 08).



## Step 8

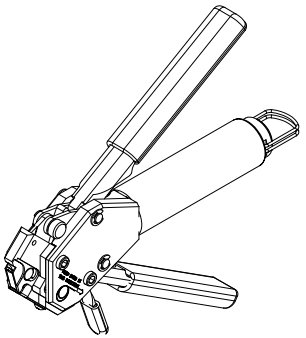
- Bend relief: Depending on the used backshell, an aditional bend relief is needed. This can be implemented by using shrink boot. More information at (see page 08).

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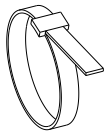
# Shield termination

## Metal bands

| Crimp tool | | |
|---|---|---|
| Shell size | Material number | ODU number |
| all | 50035716 | 080.000.058.000.000 |



| Tie-dex micro bands | | |
|---|---|---|
| Shell size | Material number | ODU number |
| all | 50156242 | 921.000.004.000.248 |



# Cable interface

| Straight heat shrink boot option | | | | |
|---|---|---|---|---|
| Shell size | Material number | ODU number | Hellermann | TE Connectivity |
| all | 50157036 | 921.000.010.008.084 | **401-52880** | 202D121-3-60 |

| Right angle heat shrink boot option | | | |
|---|---|---|---|
| Shell size | Material number | ODU number | Hellermann |
| all | 50157039 | 921.000.010.008.087 | 411-52480 |

ODU stock parts are the **bold numbers**.

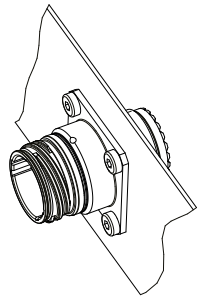
For a better adhesion of the heatshrink boots on housing and cable, ODU recommend to work with an epoxyd-adhesion e.g. Hellermann V9500, TE Connectivity S1125.
(Take care of Hellermann / TE Connectivity work instruction)

# Square flange solution

## Tightening torque

| Tightening torque for standard thread in Nm | | | | | | |
|---|---|---|---|---|---|---|
| Thread Size | Strength class | | | | | |
| | 4.6 | 5.6 | 6.8 | 8.8 | 10.9 | 12.9 |
| M3 | 0.48 | 0.60 | 0.96 | 1.28 | 1.80 | 2.16 |

The use of a torque wrench is recommended.



# Retention tools

## Insert retention tool

| Tie-dex micro bands | | |
|---|---|---|
| Shell size | Material number | ODU number |
| 09 /12 | 50304551 | 7TH.098.003.E00.000 |
| 14 | 50521283 | 7TH.098.003.H00.000 |

| Adapter | | | | | | | |
|---|---|---|---|---|---|---|---|
| Shell size | Material number | ODU number | Connector type | Contact type | Color 1 | Color 2 | Color 3 |
| 09 | 50508311 | 7TH.098.003.E00.000 | Plug | Socket | Black | Green | Red |
| | | | Plug | Pin | Black | Green | Yellow |
| | | | Receptacle | Socket | Black | Blue | Red |
| | | | Receptacle | Pin | Black | Blue | Yellow |
| 12 | 50508323 | 7TH.098.003.H00.000 | Plug | Socket | Red | Green | Red |
| | | | Plug | Pin | Red | Green | Yellow |
| | | | Receptacle | Socket | Red | Blue | Red |
| | | | Receptacle | Pin | Red | Blue | Yellow |
| 14 | 50522310 | 7TM.098.003.K00.000 | Plug | Socket | Yellow | Green | Red |
| | | | Plug | Pin | Yellow | Green | Yellow |
| | | | Receptacle | Socket | Yellow | Blue | Red |
| | | | Receptacle | Pin | Yellow | Blue | Yellow |

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## Contact retention tool

| Contact Retention Tool | | |
|---|---|---|
| Contact size | Material number | ODU number |
| #12 | 50512863 | 7TH.098.004.000.001 |
| #16 | | |
| #20 | 50503460 | 7TH.098.004.000.000 |
| #20MD | | |
| #22D | | |
| #22MD | | |
| #26 | | |
| #28 | | |

| Adapter | | | | | | |
|---|---|---|---|---|---|---|
| Contact size | Material number | ODU number | Type | Color 1 | Color 2 | Color 3 |
| #16 | 50515705 | 7TH.098.004.K02.000 | Pin | Yellow | Red | Green |
| | | | Socket | Black | Red | Green |
| #20 / #20MD | 50515702 | 7TH.098.004.K07.000 | Pin | Yellow | Yellow | Yellow |
| | | | Socket | Black | Yellow | Yellow |
| #22D / #22MD | 50515703 | 7TH.098.004.K09.000 | Pin | Yellow | Blue | Black |
| | | | Socket | Black | Blue | Black |
| #26 | 50515706 | 7TH.098.004.K11.000 | Pin | Yellow | Green | Blue |
| | | | Socket | Black | Green | Blue |

# Applicable documents

In order to ensure the best possible data transmission, assembly steps 2 and 3 are explained in more detail and the wiring charts are given in separate documents.

| Shell size | Number of contacts | Data transmission protocols | Applicable document |
|---|---|---|---|
| SS09 | 08 | Ethernet | D00028949 |
| SS12 | 22 | DisplayPort 2.0 | D00028948 |

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