

Series TNC 50 Ω - coaxial miniature connectors

Description

HUBER+SUHNER TNC connectors are threaded RF connectors applicable from DC up to 11 GHz. The threaded coupling mechanism improves control over the interface dimensions and allows them to be used under a higher environmental load than BNC, especially under a high vibration load.

Compatibility

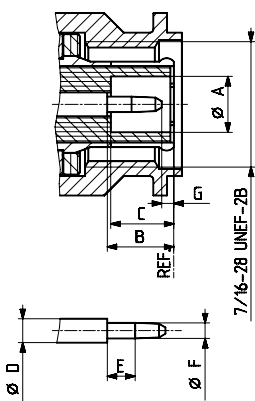
50 Ω TNC connectors and 75 Ω TNC connectors are intermateable without restrictions.

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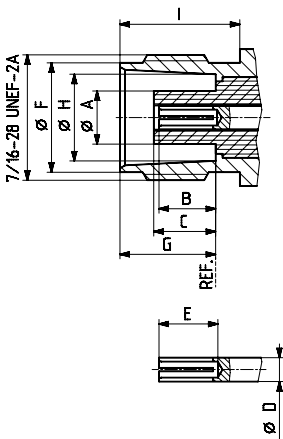
Interface dimensions (mm/inches)

Plug (male)



| | Plug | | Jack | |
|---|------------|------------|-------------|------------|
| | min. | max. | min. | max. |
| A | 4.83/0.190 | - | - | 4.72/0.186 |
| B | 5.33/0.210 | 5.84/0.230 | 4.72/0.186 | 5.23/0.206 |
| C | 5.28/0.208 | 5.79/0.228 | 4.78/0.188 | 5.28/0.208 |
| D | 2.06/0.081 | 2.21/0.087 | 2.06/0.081 | 2.21/0.087 |
| E | 1.98/0.078 | - | 4.95/0.195 | - |
| F | 1.32/0.052 | 1.37/0.054 | 9.60/0.378 | 9.70/0.382 |
| G | 0.08/0.003 | - | 8.31/0.327 | 8.51/0.335 |
| H | - | - | 8.10/0.319 | 8.15/0.321 |
| I | - | - | 10.52/0.414 | - |

Jack (female)



Interface dimensions conformable to the standards:

| | |
|----------------|-------------------------------|
| International: | IEC 60169-17 |
| Europe: | CECC 22 200 |
| USA: | MIL-PRF-39012 |
| | TNC-Interface MIL-STD-348/313 |

Series TNC 50 Ω - technical data

| Electrical data | Requirements |
|--|--|
| Impedance | 50 Ω |
| Frequency range | DC to 11 GHz |
| Dielectric withstanding voltage (at sea level) | 1.5 kV rms, 50 Hz (depending on cable) |
| Working voltage (at sea level) <ul style="list-style-type: none"> • Unmated | 500 V rms, 50 Hz (depending on cable) |
| Insulation resistance | $\geq 5 \cdot 10^3$ MΩ |
| Contact resistance <ul style="list-style-type: none"> • Centre contact • Outer contact | <ul style="list-style-type: none"> ≤ 1.5 mΩ ≤ 1 mΩ |
| RF leakage (between 2 and 3 GHz) | ≥ 60 dB |

| Mechanical data | Requirements |
|---|--------------------------------|
| Coupling nut torque <ul style="list-style-type: none"> • Recommended | 46 to 69 Ncm/4.1 to 6.1 in lbs |
| Coupling nut retention force | ≥ 450 N/101.2 lbs |
| Contact captivation | ≥ 27 N/6.1 lbs |
| Cable retention force ¹⁾ | see pages 32 - 37 |
| Durability (matings) | ≥ 500 |

| Environmental data | Requirements |
|---------------------|---|
| Temperature range | -65 to +165 °C/-85 to +329 °F |
| Climatic category | IEC → 55/155/21 |
| Thermal shock | MIL-STD-202, method 107, condition B |
| Moisture resistance | MIL-STD-202, method 106 |
| Corrosion | saltspray test acc. to MIL-STD-202, method 101, condition B |
| Vibration | MIL-STD-202, method 204, condition B |
| Shock | MIL-STD-202, method 213, condition G |

| Material data | | |
|-----------------|--|----------------------------|
| Connector parts | Material | Plating |
| Bodies | brass | SUCOPLATE® |
| Pin contacts | brass | gold/SUCOPRO® gold plating |
| Socket contacts | copper beryllium alloy copper alloy | gold/SUCOPRO® gold plating |
| Crimp ferrules | copper/brass | SUCOPLATE® |
| Insulators | PTFE or PFA | |
| Gaskets | silicone rubber | |

Some connectors may have a specification that differs from the above mentioned data.

The products are designed and guaranteed to pass the above mentioned test procedures. Any additional or different requirement arising from specific applications or environmental conditions which is not covered by these test procedures is subject to request.

¹⁾ Value considers maximum load of the cables without irreversible variations of specifications.

Series TNC 50 Ω - cable connectors

Straight cable plugs (male)

For semi-rigid cables

- Cable entry soldered
- Centre contact soldered

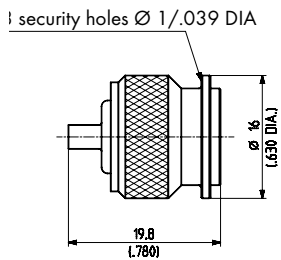


Fig. 1

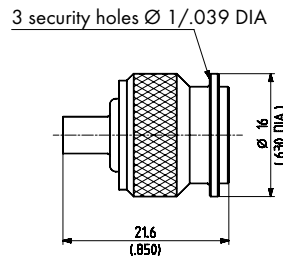


Fig. 2

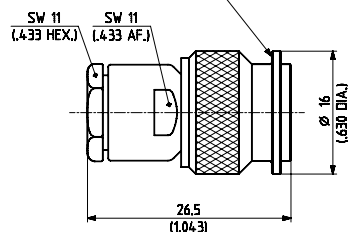
| HUBER+SUHNER type | Item no. | Cable group (example) | Packaging | Assembly instruction | Fig. | Notes |
|-------------------------------------|----------|-----------------------|-----------|----------------------|------|--|
| 11_TNC-50-2-20/103_NE ¹⁾ | 22642519 | Y3, Y11, Y16 (EZ_86) | single | 9100 | 1 | |
| 11_TNC-50-3-29/103_NE ¹⁾ | 22641997 | Y5, Y12 (EZ_141) | | 9106 | 2 | outer contact silver outer contact gold |
| 11_TNC-50-3-29/113_NE ¹⁾ | 22544841 | | | | | |

For flexible cables

- Cable entry clamp
- Centre contact soldered



3 security holes Ø 1/.039 DIA.



| HUBER+SUHNER type | Item no. | Cable group (example) | Packaging | Assembly instruction |
|------------------------------------|----------|-------------------------|-----------|----------------------|
| 11_TNC-50-2-1/133_NE | 22640783 | U2 (RG_316_/U) | single | 3005 |
| 11_TNC-50-3-5/133_NE | 22640798 | U7, U9, U11 (RG_58_C/U) | | 3005 |
| 11_TNC-50-3-6/133_NE ¹⁾ | 22543475 | U7, U9, U11 (RG_58_C/U) | | 3004 |

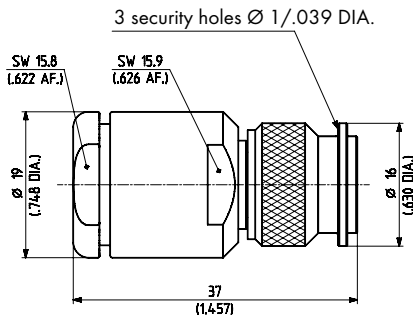
¹⁾ Centre contact NOT captivated

Series TNC 50 Ω - cable connectors

Straight cable plugs (male)

For flexible cables

- Cable entry clamp
- Centre contact soldered



| HUBER+SUHNER type | Item no. | Cable group (example) | Packaging | Assembly instruction |
|----------------------|----------|----------------------------------|-----------|----------------------|
| 11_TNC-50-7-2/133_NE | 22640466 | U29 (RG_213/U) U32 (RG_214/U) | single | 3008 |

For flexible cables

- HUBER+SUHNER full crimp
- Taper sleeves see page 526



3 security holes Ø 1/.039 DIA.

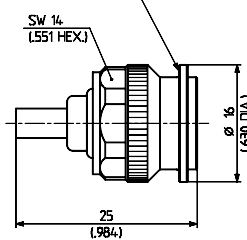


Fig. 1

3 security holes Ø 1/.039 DIA.

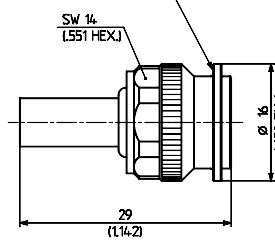


Fig. 2

3 security holes Ø 1/.039 DIA.

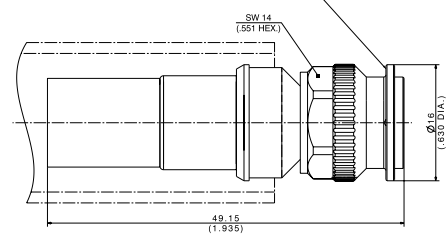


Fig. 3

| HUBER+SUHNER type | Item no. | Cable group (example) | Packaging | Assembly instruction | Crimp insert | Fig. |
|------------------------|----------|-----------------------|---------------|----------------------|--------------|------|
| 11_TNC-50-2-112/133_NE | 23001710 | U2 (RG_316_/U) | single | 27215 | 1 A | 1 |
| 11_TNC-50-2-113/133_NE | 23001711 | U4 (K_02252_D) | single | | | |
| 11_TNC-50-3-115/133_NE | 23001712 | U9, U39 (RG_223/U) | single | 3015 | 2 B | 2 |
| 11_TNC-50-3-115/133_NH | 23001713 | | bulk 100 pcs. | | | |
| 11_TNC-50-3-116/133_NE | 23001714 | U7 (RG_58_C/U) | single | | | |
| 11_TNC-50-3-116/133_NH | 23001715 | | bulk 100 pcs. | | | |
| 11_TNC-50-3-117/133_NE | 23010015 | U11, U41 (RG_400/U) | single | | | |
| 11_TNC-50-7-18/133_NE | 84077868 | U30 (SPUMA_400) | single | 0000184567 | 4 D | 3 |

Series TNC 50 Ω - cable connectors

Straight cable plugs (male)

For flexible cables

- Cable entry crimp
- Centre contact plugged

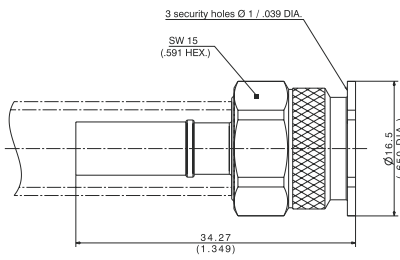


Fig. 1

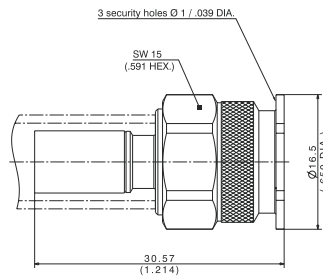


Fig. 2

| HUBER+SUHNER type | Item no. | Cable group (example) | Packaging | Assembly instruction | Crimp insert | Fig. |
|------------------------|----------|-----------------------|-----------|----------------------|--------------|------|
| 11_TNC-50-3-120/133_NE | 84010745 | X27 (SPUMA_195) | single | 0000417754 | B | 1 |
| 11_TNC-50-4-77/133_NE | 85010169 | X28 (SPUMA_240) | | 0000416857 | C | 2 |

Series TNC 50 Ω - cable connectors

Right angle cable plugs (male)

For flexible cables

- Cable entry clamp
- Centre contact soldered

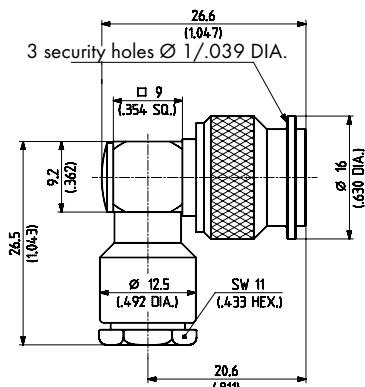


Fig. 1

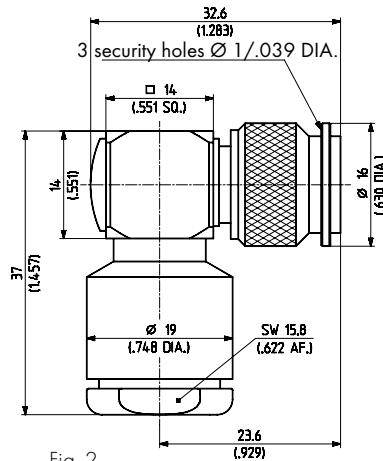


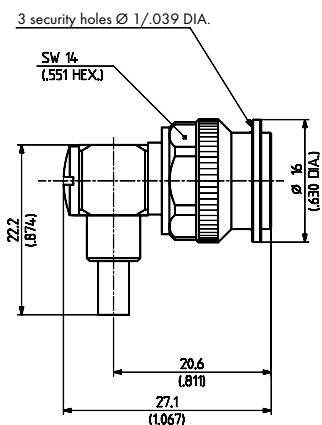
Fig. 2



| HUBER+SUHNER type | Item no. | Cable group (example) | Packaging | Assembly instruction | Fig. |
|-----------------------|----------|----------------------------------|-----------|----------------------|------|
| 16_TNC-50-3-28/133_NE | 84012481 | U7, U9, U11 (RG 58_C/U) | single | 3024 | 1 |
| 16_TNC-50-7-4/133_NE | 22651587 | U29 (RG_213/U) U32 (RG 214/U) | single | 3003 | 2 |

For flexible cables

- Cable entry crimp
- Centre contact soldered
- Taper sleeves see page 526



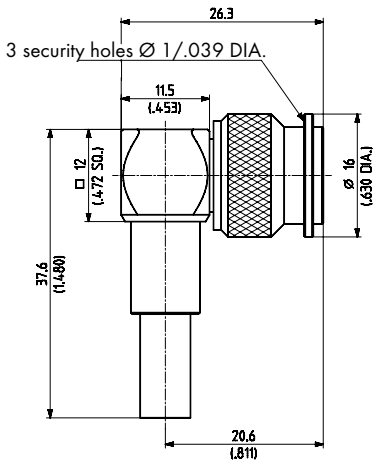
| HUBER+SUHNER type | Item no. | Cable group (example) | Packaging | Assembly instruction | Crimp insert |
|------------------------|----------|-----------------------|-----------|----------------------|--------------|
| 16_TNC-50-2-119/133_NE | 23010087 | U2 (RG_316_/U) | single | 27216 | A |
| 16_TNC-50-2-7/133_NE | 23001716 | U4 (K_02252_D) | | | |

Series TNC 50 Ω - cable connectors

Right angle cable plugs (male)

For flexible cables

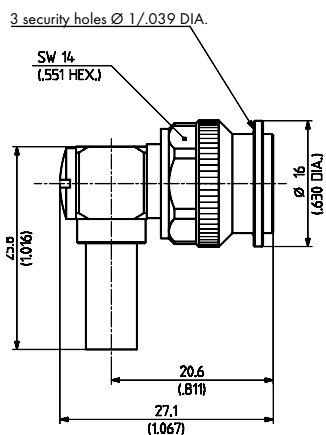
- HUBER+SUHNER full crimp
- Taper sleeves see page 526



| HUBER+SUHNER type | Item no. | Cable group (example) | Packaging | Assembly instruction | Crimp insert |
|-----------------------|----------|-----------------------|-----------|----------------------|--------------|
| 16_TNC-50-3-13/133_NE | 22640492 | U7 (RG_58_C/U) | single | 0000335265 | 2 B |
| 16_TNC-50-3-18/133_NE | 22543606 | U9, U39 (RG_223/U) | | | |

For flexible cables

- Cable entry crimp
- Centre contact soldered
- Taper sleeves see page 526



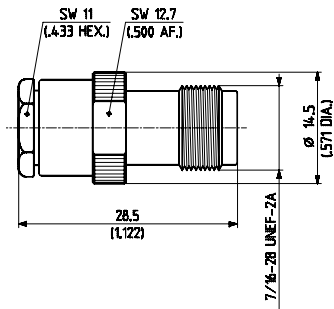
| HUBER+SUHNER type | Item no. | Cable group (example) | Packaging | Assembly instruction | Crimp insert |
|------------------------|----------|-----------------------|-----------|----------------------|--------------|
| 16_TNC-50-3-111/133_NE | 23001717 | U9 (RG_223/U) | single | 27218 | B |
| 16_TNC-50-3-112/133_NE | 23010115 | U7 (RG_58 C/U) | single | | |

Series TNC 50 Ω - cable connectors

Straight cable jacks (female)

For flexible cables

- Cable entry clamp
- Centre contact soldered



| HUBER+SUHNER type | Item no. | Cable group (example) | Packaging | Assembly instruction |
|----------------------|----------|-----------------------|-----------|----------------------|
| 21_TNC-50-2-2/133_NE | 22640515 | U2 (RG_316_/U) | single | 3005 |
| 21_TNC-50-3-4/133_NE | 22640523 | U7, U9 (RG_58_C/U) | | |

For flexible cables

- HUBER+SUHNER full crimp
- Taper sleeves see page 526

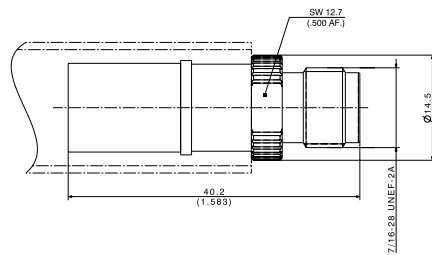
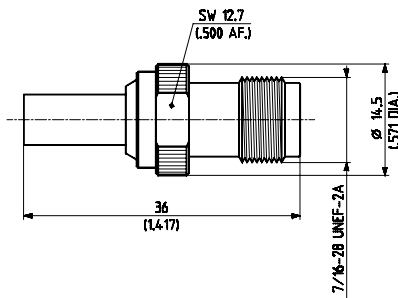


Fig. 1

Fig. 2

| HUBER+SUHNER type | Item no. | Cable group (example) | Packaging | Assembly instruction | Crimp insert | Fig. |
|-----------------------|----------|-----------------------|-----------|----------------------|--------------|------|
| 21_TNC-50-3-31/133_NE | 84016544 | U7 (RG_58_C/U) | single | 0000231215 | 2 B | 1 |
| 21_TNC-50-3-32/133_NE | 84016601 | U9, U39 (RG_223/U) | | 0000231453 | | |
| 21_TNC-50-7-1/133_NE | 84128527 | U30 (SPUMA_400) | single | 0000345941 | 4 D | 2 |

Series TNC 50 Ω - cable connectors

Straight bulkhead cable jacks (female)

For semi-rigid cables

- Cable entry soldered
- With panel seal
- Insulating washers see page 528

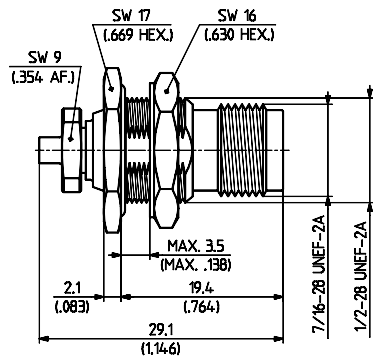


Fig. 1

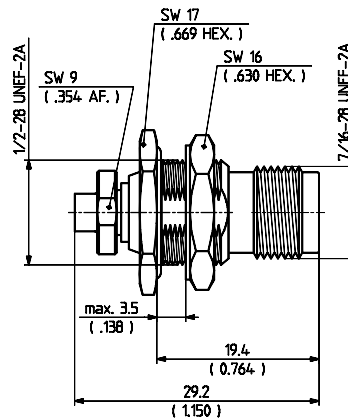


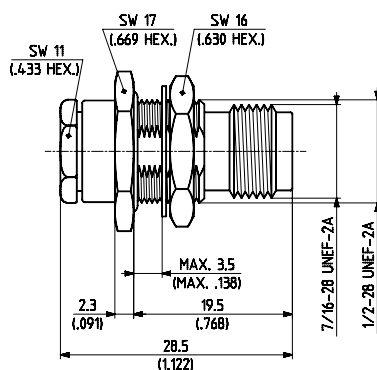
Fig. 2



| HUBER+SUHNER type | Item no. | Cable group (example) | Packaging | Assembly instruction | Mounting hole | Fig. |
|-------------------------------------|----------|-----------------------|---------------|----------------------|---------------|------|
| 24_TNC-50-2-31/133_NE ¹⁾ | 23001721 | Y3, Y11 (EZ_86) | single | 27269 | ML 4 | 1 |
| 24_TNC-50-3-30/133_NH ¹⁾ | 23001723 | Y5, Y12 (EZ_141) | bulk 100 pcs. | 27220 | | 2 |

For flexible cables

- Cable entry clamp
- Centre contact soldered
- With panel seal
- Insulating washers see page 528



| HUBER+SUHNER type | Item no. | Cable group (example) | Packaging | Assembly instruction | Mounting hole |
|----------------------|----------|-----------------------|-----------|----------------------|---------------|
| 24_TNC-50-2-1/133_NE | 22543398 | U2 (RG_316_/U) | single | 3005 | ML 4 |

¹⁾ Centre contact NOT captivated.

Series TNC 50 Ω - cable connectors

Straight bulkhead cable jacks (female)

For flexible cables

- HUBER+SUHNER full crimp
- With panel seal
- Taper sleeves see page 526
- Insulating washers see page 528

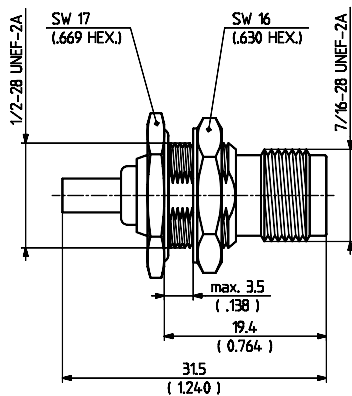


Fig. 1

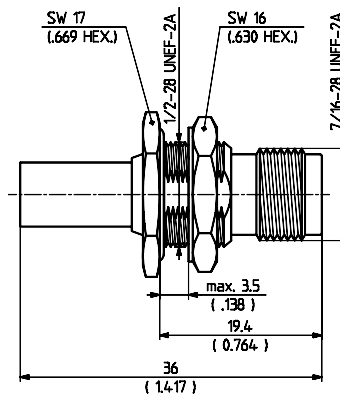


Fig. 2

| HUBER+SUHNER type | Item no. | Cable group (example) | Packaging | Assembly instruction | Mounting hole | Crimp insert | Fig. |
|-----------------------|----------|-----------------------|---------------|----------------------|---------------|--------------|------|
| 24_TNC-50-2-27/133_NE | 23001719 | U2 (RG_316_/U) | single | 9068 | ML4 | 1 A | 1 |
| 24_TNC-50-2-29/133_NH | 23001720 | U4 (K_02252_D) | bulk 100 pcs. | | | | |
| 24_TNC-50-3-21/133_NE | 23001722 | U9 (RG_223/U) | single | 27221 | ML4 | 2 B | 2 |
| 24_TNC-50-3-23/133_NE | 23010150 | U7 (RG_58_C/U) | single | | | | |

For flexible cables

- Cable entry crimp
- Center contact plugged
- With panel seal
- Taper sleeves see page 526
- Insulating washers see page 528

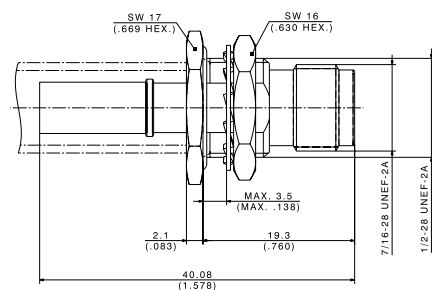


Fig. 1

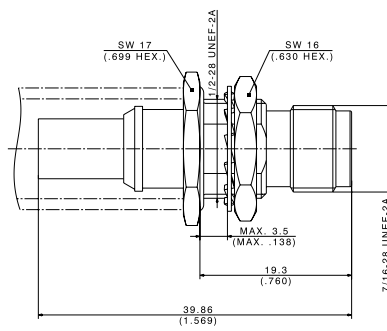


Fig. 2

| HUBER+SUHNER type | Item no. | Cable group (example) | Packaging | Assembly instruction | Mounting hole | Crimp insert | Fig. |
|-----------------------|----------|-----------------------|-----------|----------------------|---------------|--------------|------|
| 24_TNC-50-3-54/133_NE | 84010762 | X27 (SPUMA_195) | single | 0000417644 | ML4 | B | 1 |
| 24_TNC-50-4-77/133_NE | 85010236 | X28 (SPUMA_240) | | 0000416856 | ML4 | C | 2 |

Cable groups see page 32

Assembly tools see page 509

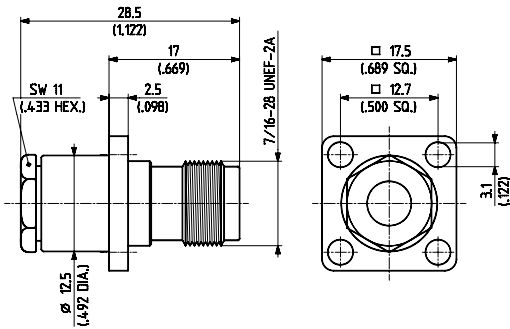
Mounting holes/PCB layouts see page 533

Series TNC 50 Ω - cable connectors

Straight panel cable jacks (female)

For flexible cables

- Cable entry clamp
- Center contact soldered



| HUBER+SUHNER type | Item no. | Cable group (example) | Packaging | Assembly instruction | Mounting hole |
|----------------------|----------|-----------------------|-----------|----------------------|---------------|
| 25_TNC-50-2-1/133_NE | 22640578 | U2 (RG_316_/U) | single | 3005 | ML 8 |
| 25_TNC-50-3-9/133_NE | 22643707 | U7, U9 (RG_58_C/U) | | | |

For flexible cables

- HUBER+SUHNER full crimp
- Taper sleeves see page 526

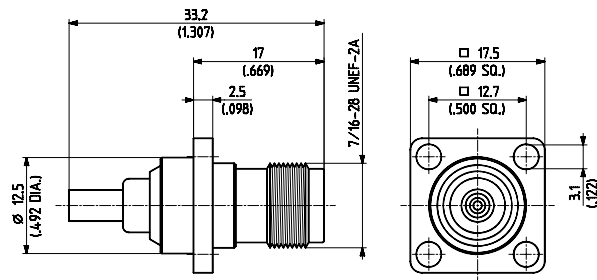


Fig. 1

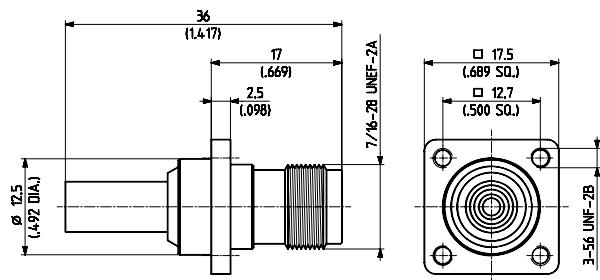


Fig. 2

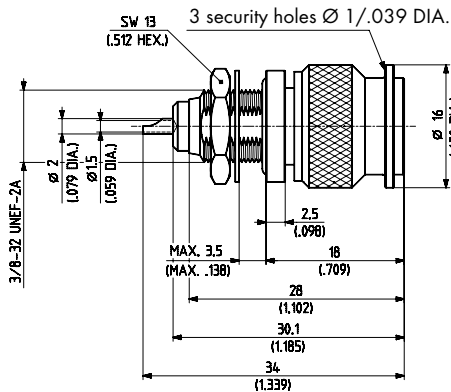
| HUBER+SUHNER type | Item no. | Cable group (example) | Packaging | Mounting hole | Crimp insert | Fig. |
|-----------------------|----------|-----------------------|-----------|---------------|--------------|-----------------|
| 25_TNC-50-2-19/133_NE | 84016723 | U2 (RG_316_/U) | single | ML 8 | 1 A | 1 |
| 25_TNC-50-3-19/133_NE | 84016722 | U7 (RG_58_C/U) | | | 2 B | 2 ¹⁾ |

¹⁾ Mounting also possible with screws ISO M 2.5

Series TNC 50 Ω - receptacles with solder end

Receptacles, plugs (male)

- Bulkhead mounted
- With panel seal
- Insulating washers see page 528
- Solder tags see page 529



| HUBER+SUHNER type | Item no. | Packaging | Mounting hole |
|----------------------|----------|-----------|---------------|
| 12_TNC-50-0-1/133_NE | 22640467 | single | ML 2 |

Receptacles, jacks (female)

- Bulkhead mounted
- Insulating washers see page 528
- Solder tags see page 529

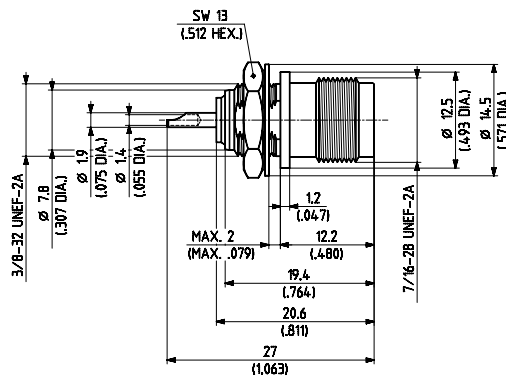
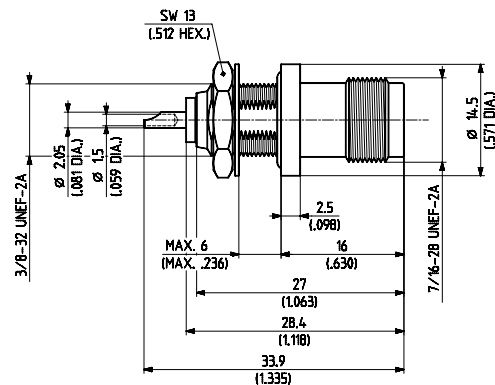


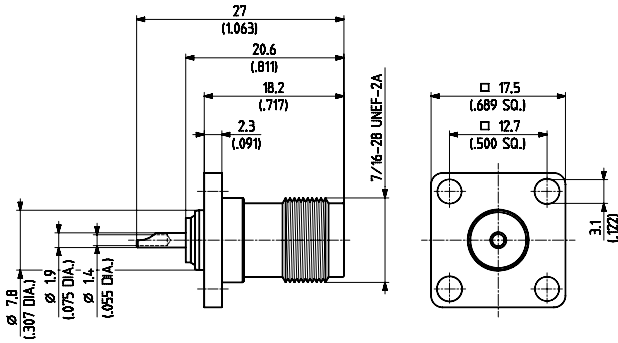
Fig. 1

Fig. 2

| HUBER+SUHNER type | Item no. | Packaging | Mounting hole | Fig. | Notes |
|----------------------|----------|-----------|---------------|------|-----------------|
| 22_TNC-50-0-1/133_NE | 22640537 | single | ML 1 | 1 | with panel seal |
| 22_TNC-50-0-2/133_NE | 22640539 | | ML 2 | 2 | |

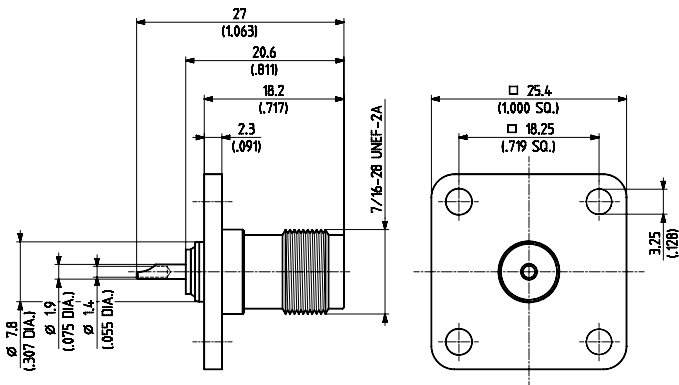
Series TNC 50 Ω - receptacles with solder end

- Panel mounted



| HUBER+SUHNER type | Item no. | Packaging | Mounting hole |
|----------------------|----------|---------------|---------------|
| 23_TNC-50-0-2/133_NE | 22640549 | single | ML 6 |
| 23_TNC-50-0-2/133_NH | 22644322 | bulk 100 pcs. | |

- Panel mounted



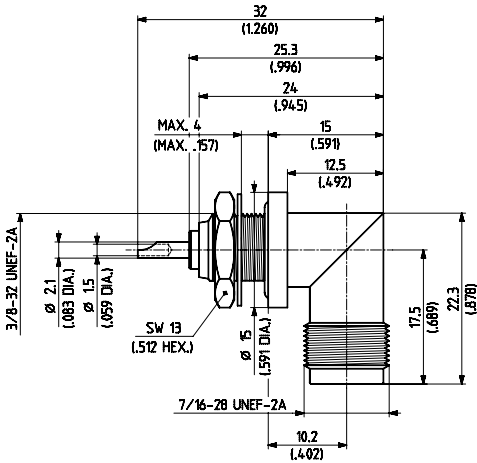
| HUBER+SUHNER type | Item no. | Packaging | Mounting hole | Notes |
|----------------------|----------|-----------|---------------|---|
| 23_TNC-50-0-6/133_NE | 22640551 | single | ML 5 | suitable for Sucobox applications, see page 530 |

TNC 50 Ω

Series TNC 50 Ω - receptacles with solder end

Right angle receptacle, jack (female)

- Bulkhead mounted
- With panel seal
- Insulating washers see page 528
- Solder tags see page 529

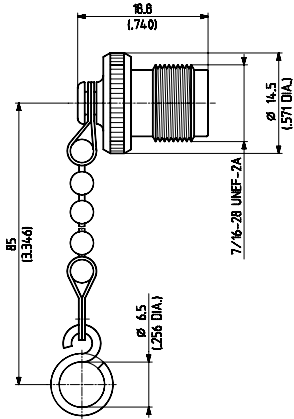


| HUBER+SUHNER type | Item no. | Packaging | Mounting hole |
|----------------------|----------|-----------|---------------|
| 27_TNC-50-0-1/133 NE | 22543405 | single | ML 2 |

TNC 50 Ω

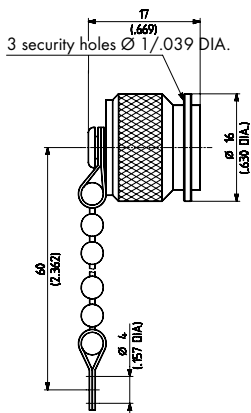
Series TNC 50 Ω – protective caps and shorts

Protective cap for plugs



| HUBER+SUHNER type | Item no. | Packaging | Notes |
|---------------------|----------|-----------|------------|
| 61_TNC-0-0-1/-33_-E | 22640661 | single | with chain |

Protective cap for jacks



| HUBER+SUHNER type | Item no. | Packaging | Notes |
|---------------------|----------|-----------|------------|
| 62_TNC-0-0-1/-33_-E | 22640665 | single | with chain |

TNC 50 Ω