

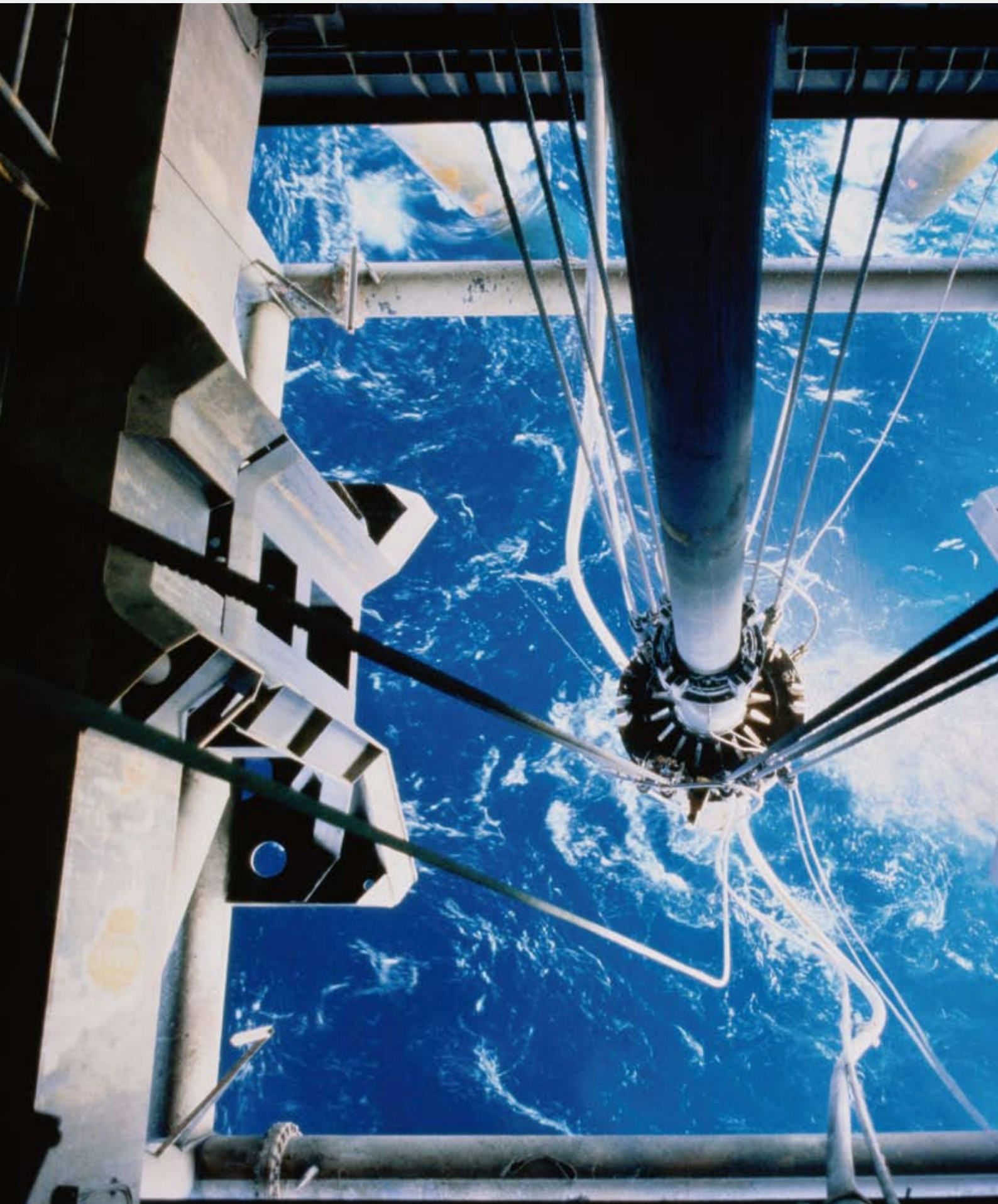
EACON

Field mountable Microwave Cable

Edition 2010



Easy connected





Your partner for system solutions

The HUBER+SUHNER Group is a leading global supplier of components and systems for electrical and optical connectivity.

Our customers in Communications, Industrial and Transportation markets appreciate that we are specialists with detailed knowledge of practical applications. We offer technical expertise in radio frequency technology, fiber optics and low-frequency under one roof, thus providing a unique basis for continual innovation focused on the needs of our customers all over the world.

EACON - the field mountable Microwave Cable Assembly

To suit to the needs of our customers, HUBER+SUHNER has developed this innovative solution. EACON stands for a simple, flexible and fast way to assemble microwave cable and connectors in the field without compromises to the best performance. The new field mountable microwave cable and connectors are light and waterproofed, built for frequencies up to 18 GHz - ready for use in the defence market as well as generally in the industrial market.



EACON – Customer Need

Features

- Waterproof IP 68
- Low loss
- Usable up to 18 GHz
- Extremely reliable
- Assembling tool kit available
- SMA, N, TNC connectorr

Benefits

- Easy assembling – only two connector parts
- Field mountable
- Taking on site decision regarding length and configurations
- Narrowest cable feedthrough dimensions (assembling after installation)
- More added value for customers

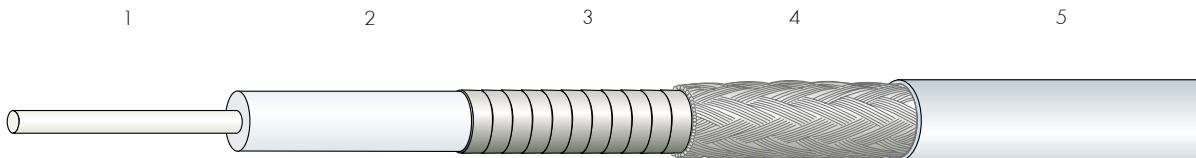
Applications

The EACON family has been developed for the easy field assembling in the defence and industrial market.



EACON 4C

the field mountable Microwave Cable



Construction

| | Material | Diameter |
|--------------------|--------------------------------------|----------------------|
| 1 Centre conductor | silver-plated copper wire, solid | 1.40 mm (0.055 inch) |
| 2 Dielectric | extruded low density PTFE | 4.10 mm (0.161 inch) |
| 3 Inner shield | silver-plated copper tape | 4.35 mm (0.171 inch) |
| 4 Outer shield | silver-plated copper braid | 4.85 mm (0.191 inch) |
| 5 Jacket | Fluorinated Ethylene Propylene (FEP) | 5.50 mm (0.216 inch) |

Electrical characteristics

| | |
|--|--------------------------------|
| Impedance | $50 \pm 1 \Omega$ |
| Operating frequency | 18.0 GHz |
| Capacitance | 87 pF/m (26.5 pF/ft) |
| Velocity of propagation | 77% |
| Signal delay | 4.3 ns/m (1.31 ns/ft) |
| Insertion loss stability vs. temperature | $\leq 0.0021 / ^\circ\text{C}$ |
| Insertion loss stability vs. bending | $\leq 0.20 \text{ dB}$ |
| Screening effectiveness up to 18 GHz | $> 90 \text{ dB}$ |
| Attenuation | see graph 1 (see page 9) |
| Power handling | see graph 2 (see page 9) |

Mechanical characteristics

| | |
|------------------------------|----------------|
| Weight | < 72 g/m |
| Min. bending radius (static) | 16 mm |
| Crush resistance | 800 N / 100 mm |

Environmental characteristics

| | |
|-----------------------------|---|
| Operating temperature range | -65 ° to +200 °C |
| Smoke index | naval engineering Standard 711 and ASTM-B 622-92 (140°F for 24 hours, conditioned @ 73°F and 50% relative humidity) |
| Solar radiation | MIL-STD-810, Method 505, Procedure II |
| Flammability | MIL-C-87104, Paragraph 4.6.4.8 |
| Chemical resistance | British Standard 3G100, Part 2, Section 3, Class A |
| Halogen free product | no |
| Fungus | MIL-STD-810, Method 508.3 |
| RoHS (2002/95/EC) | compliant |

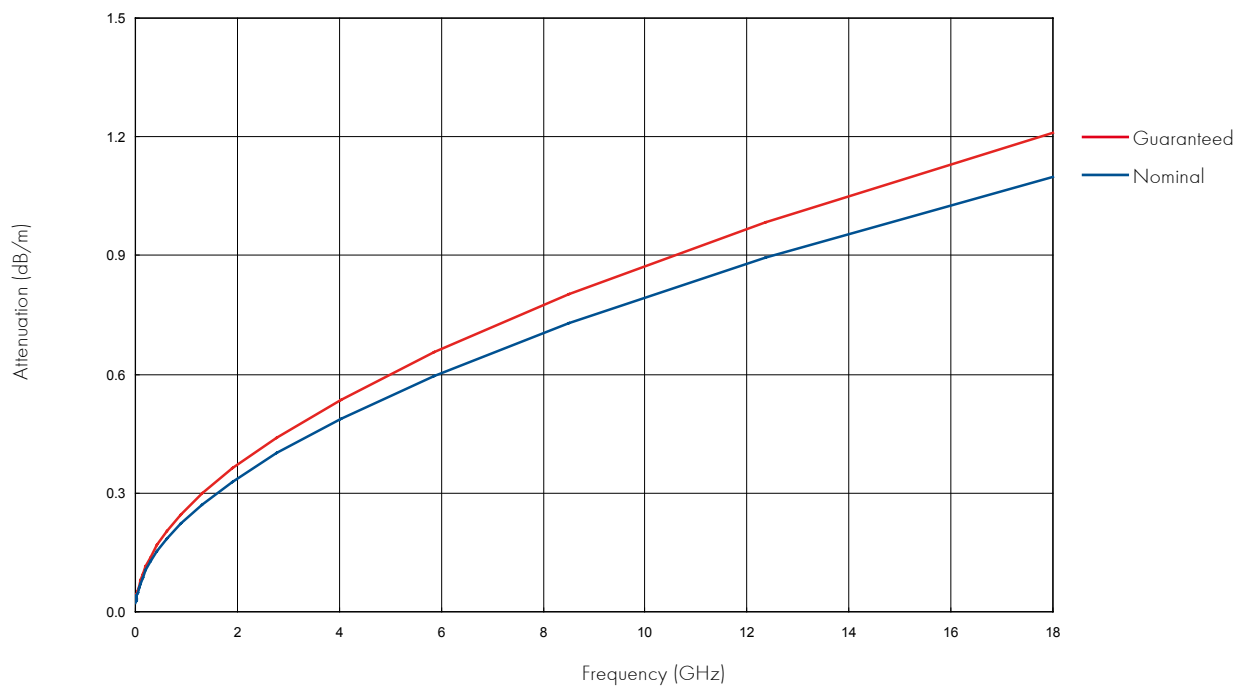
EACON_4C cable, item no. 84048293

Available as bulk cable; on request also assembled.

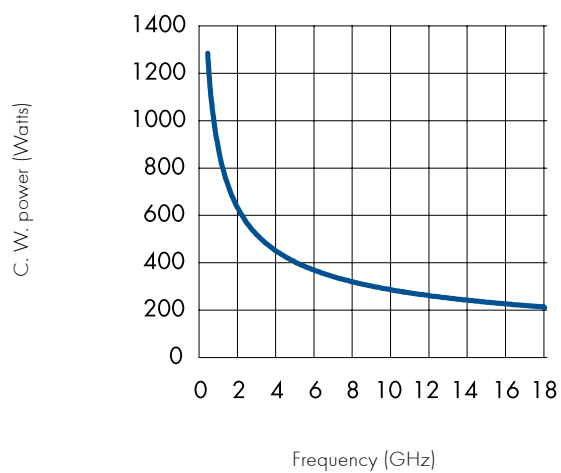


EACON 4C technical Data

Graph 1: Cable attenuation (25 °C ambient temperature)



Graph 2: Max. power handling (40 °C ambient temperature and sea level)



EACON 4C suitable SMA Cable Connectors

| Electrical Data | |
|--------------------------|-----------------|
| Impedance | 50 Ω |
| Max. operating frequency | 18.0 / 11.0 GHz |

| Mechanical Data | |
|-----------------------|-------------------|
| Centre contact | plugged |
| Outer contact | clamped |
| Cable retention force | min. 180 N/1 min. |

| Environmental Data | |
|-----------------------|------------------|
| Operating temperature | -65°C to + 165°C |
| IP rating | IP 68 |
| 2002/95/EC (RoHS) | compliant |

| Material Data | Material | Surface Plating |
|----------------|------------------------|-----------------------------------|
| Centre contact | copper beryllium alloy | gold plating (nickel underplated) |
| Outer contact | stainless steel | passivated |
| Insulator | PTFE | |
| Gasket | MVQ (silicone rubber) | |
| Fastening nut | stainless steel | passivated |

| Series, pattern | HUBER +SUHNER connector type | Item no. | VSWR DC - 6.0 GHz | 6 - 11 GHz | 11 - 18 GHz | Drawing |
|------------------------|------------------------------|----------|-------------------|------------|-------------|---------|
| Straight cable plug | 11_SMA-50-4-101/199_NE | 84070289 | 1.12 | 1.15 | 1.15 | Fig. 1 |
| Right angle cable plug | 16_SMA-50-4-165/199_NE | 84070290 | 1.12 | 1.45 | - | Fig. 2 |

Fig. 1

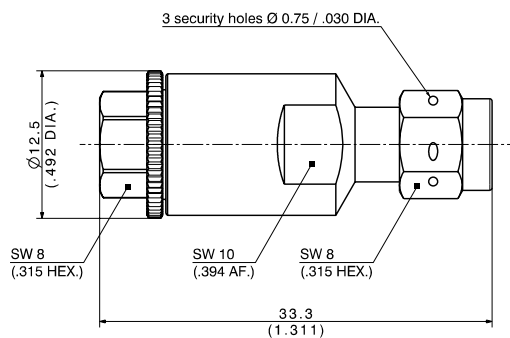
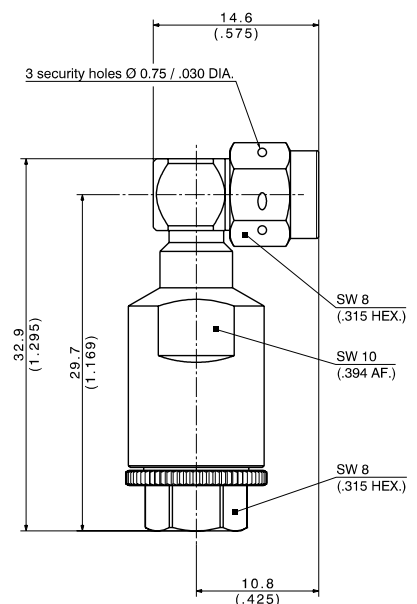


Fig. 2



EACON 4C suitable TNC Cable Connectors

| Electrical Data | |
|-----------------|-------------|
| Impedance | 50 Ω |
| Frequency range | 11.0 GHz |

| Mechanical Data | |
|-----------------------|-------------------|
| Centre contact | plugged |
| Outer contact | clamped |
| Cable retention force | min. 180 N/1 min. |

| Environmental Data | |
|-----------------------|------------------|
| Operating temperature | -65°C to + 165°C |
| IP rating | IP 68 |
| 2002/95/EC (RoHS) | compliant |

| Material Data | Material | Surface Plating |
|----------------|------------------------|-----------------------------------|
| Centre contact | copper beryllium alloy | gold plating (nickel underplated) |
| Outer contact | brass | nickel plating |
| Insulator | PTFE | |
| Gasket | MVQ (silicone rubber) | |
| Fastening nut | stainless steel | passivated |

| Series, pattern | HUBER +SUHNER connector type | Item no. | VSWR DC - 6.0 GHz | 6 - 11 GHz | Drawing |
|---|------------------------------|----------|-------------------|------------|---------|
| Straight cable plug | 11_TNC-50-4-23/12_NE | 84070283 | 1.12 | 1.30 | Fig. 1 |
| Right angle cable plug | 16_TNC-50-4-101/12_NE | 84070284 | 1.20 | 1.30 | Fig. 2 |
| Straight panel cable jack, flange mount | 25_TNC-50-4-18/122_NE | 84070285 | 1.12 | 1.20 | Fig. 3 |

Fig. 1

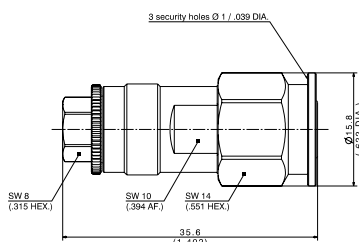


Fig. 2

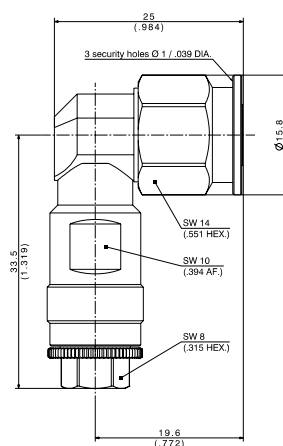
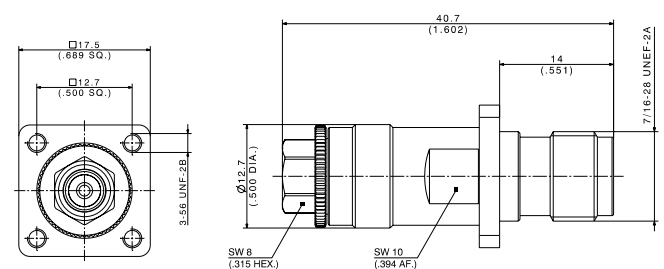


Fig. 3



EACON 4C suitable N Cable Connectors

| Electrical Data | |
|-----------------|-----------------|
| Impedance | 50 Ω |
| Frequency range | 18.0 / 15.0 GHz |

| Mechanical Data | |
|-----------------------|-------------------|
| Centre contact | plugged |
| Outer contact | clamped |
| Cable retention force | min. 180 N/1 min. |

| Environmental Data | |
|-----------------------|------------------|
| Operating temperature | -65°C to + 165°C |
| IP rating | IP 68 |
| 2002/95/EC (RoHS) | compliant |

| Material Data | Material | Surface Plating |
|----------------|------------------------|-----------------------------------|
| Centre contact | copper beryllium alloy | gold plating (nickel underplated) |
| Outer contact | brass | nickel plating |
| Insulator | PTFE | |
| Gasket | MVQ (silicone rubber) | |
| Fastening nut | stainless steel | passivated |

| Series, pattern | HUBER +SUHNER connector type | Item no. | VSWR DC - 6.0 GHz | 6 - 11 GHz | 11 - 18 GHz | Drawing |
|---|------------------------------|----------|-------------------|------------|-------------------|---------|
| Straight cable plug | 11_N-50-4-19/12_NE | 84070286 | 1.12 | 1.35 | 1.40 | Fig. 1 |
| Right angle cable plug | 16_N-50-4-13/12_NE | 84070287 | 1.12 | 1.15 | 1.25 up to 15 GHz | Fig. 2 |
| Straight panel cable jack, flange mount | 25_N-50-4-8/122_NE | 84070288 | 1.12 | 1.17 | 1.17 | Fig. 3 |

Fig. 1

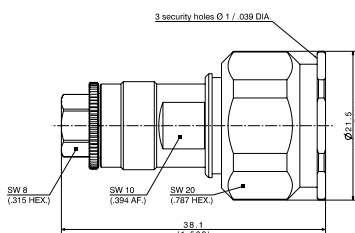


Fig. 2

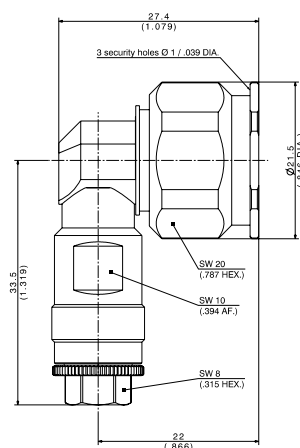
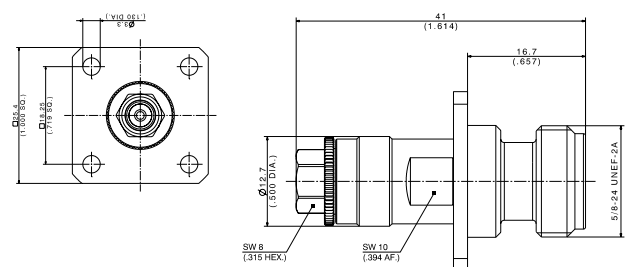


Fig. 3







EACON 4C assembling Tool Kit

Assembling tool kit for all connectors, used with EACON 4C cable (with additional space for other auxiliary tools and spare parts).

| HUBER + SUHNER type | Item no. | Content | Size |
|---------------------|----------|--|---|
| 74_Z-0-0-606 | 84074447 | all tools, needed to assemble the EACON 4C cable | 395 x 315 x 100mm/ 15.5 x 12.4 x 3.9 in. |



| Pos. | HUBER + SUHNER type | Item no. | Description | Comment |
|------|---------------------|----------|---|--|
| 1 | 74_Z-0-0-12 | 22642718 | metal saw | - |
| 2 | 74_Z-0-0-13 | 22644241 | replacement of saw blade | please order separately (not incl. in the toolbox) |
| 3 | 74_Z-0-0-475 | 84079191 | torque wrench 8 mm (4 Nm) | please check the torque from time to time |
| 4 | 74_Z-0-0-474 | 84078907 | trim tool | - |
| 5 | 74_Z-0-0-563 | 84079618 | blades cartridge (replaces EACON 4C stripping tool) | please order separately (not incl. in the toolbox) |
| 6 | 74Z_0-0-473 | 84079184 | "stripping tool" tool CST EACON 4C | - |

Our core competencies

- Worldwide field of activity
- Own research, development and production
- Design-in and engineering of RF interconnect solutions
- Development of customized solutions
- Customized qualifications
- Prototypes and series production
- Own mechanical, electrical and environmental testing capabilities
- EMC optimized solutions



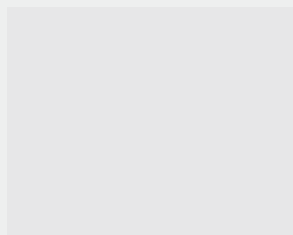
HUBER+SUHNER is certified according to
ISO 9001, ISO 14001, ISO/TS 16949 and IRIS.

WAIVER

It is exclusively in written agreements that we provide our customers with warrants and representations as to the technical specifications and/or the fitness for any particular purpose. The facts and figures contained herein are carefully compiled to the best of our knowledge, but they are intended for general informational purposes only.



Mixed Sources
Product group from well-managed
forests and other controlled sources
www.fsc.org IMO-COC-028052
© 1996 Forest Stewardship Council



HUBER+SUHNER AG
Business Unit RF Industrial
Degersheimerstrasse 14
9100 Herisau/Switzerland
Phone +41 71 353 4111
Fax +41 71 353 4444
info@hubersuhner.com

84110150/08.2010

hubersuhner.com

