

SSB-Electronic GmbH

Coaxial cable, connectors and adaptors for radio communications



...creative solutions in radio frequency design.

www.ssb-electronic.com



Your partner in innovation!

SSB-Electronic located in Iserlohn, Germany was established in 1976 as an engineering firm for communications technology. For over three decades, the company has been recognized as an innovative partner and service provider in the design, development and fabrication of custom solutions within the radio technology and communications engineering arena.

Our international customers include the communications industry, research institutes, government agencies, security services as well as world-wide relief organizations. Our engineering and laboratory capabilities allow in-house custom RF design and optimization up to 13 GHz.

The know-how in the high frequency range has been used to make possible technology leaps in the production of low-loss coaxial cables based upon SSB-Electronic developed techniques. In 1989, we introduced innovative low-loss coaxial cables as well as complimentary RF connectors. With the recent introduction of the Heatex brand, SSB-Electronic has established a new product line of flame-retardant coaxial cables.

Our Ecoflex-Heatex cable combines the attributes of low attenuation with the requirements of current fire protection regulations. This type of cable is primarily specified in large-scale construction projects, public buildings and for use in hazardous environments.

The Heatex Portfolio is further complemented by a broad range of special connectors featuring a highly corrosive resistant finish.

After three decades of dedicated service to our customers SSB-Electronic proudly continues to offer innovative products and leading edge solutions.



Coaxial Cables and Connectors



Over the past several years, there has been an increased demand for low loss coaxial cables due to the intensive utilization of frequency spectrum well up into the microwave range. The coaxial cables offered in this catalogue fulfil these requirements without exception and offer a very advantageous price/performance ratio.

Aircom Plus with its unique air cell dielectric has become a real classic microwave cable since its introduction in 1989. It can be used for applications up into the microwave bands and offers a very low attenuation in relation to its 10.3 mm OD.

Aircell 5 is a universal, microwave suitable coaxial cable with an upper range of 10 GHz. It is well suited for use in Wireless LAN Applications in the 2,4 or 5,6 GHz frequency spectrum. With a diameter of 5 mm it is comparable to RG 58.

Despite its small diameter of 7.3 mm, Aircell 7 has a relatively low attenuation and due to its stranded center conductor is an extremely flexible cable having a minimum bending radius of only 25 mm. For this reason, this cable is especially suited for difficult assembly situations and for covering small or medium distances.

The modern cables in the Ecoflex-series become the first choice, if high flexibility and easy assembly is a consideration. An IP 68-compliant solder-less N-connector is available which offers an effective and professional assembly within minutes. The Ecoflex-cables have proved to be the European standard within the field of communications engineering and Wireless-LAN applications in the 2,4 GHz and 5,6 GHz spectrum.

To preserve the low loss characteristics and reliability of our cables, we strongly recommend the genuine Aircell, Aircom and Ecoflex series of coaxial connectors.

Our new line of Heatex low loss coaxial cables are qualified for use in public buildings and hazardous areas. Due to the unique Heatex properties, these cables are halogen-free, flame retardant and offer low smoke production. A complimentary line of Heatex connectors has been developed that feature a corrosive resistant finish.

Additional information regarding connectors, Adaptors and cable accessory can be found at the end of this catalogue.

Please visit our innovative Cable-Express service at www.ssb-electronic.com. This unique online application allows you to easily configure your cable assemblies with suitable connectors in seconds.

www.ssb-electronic.com
and
www.ssb.de





Aircell®5

Aircell®5 - thin and low loss coaxial cable for radio communications

Aircell 5 is a small, 5 mm (o.d.), flexible coaxial cable usable from DC to 10 GHz. It's relative low loss characteristics plus the ability to use standard RG 58 Connectors makes this cable the number one choice not only for Wireless LAN but also for general RF communications. The low attenuation of Aircell 5 is achieved through advanced manufacturing techniques and the use of a PELLC dielectric with a foaming rate of more than 70%. This unique dielectric also offers water resistance and long term stability. Aircell 5 features a solid center conductor extruded from low oxygen copper (OFC). Further advantages of this cable include the use of double shielding which is constructed of overlapping 100% tight copperfoil plus an additional woven copperbraid with 72% coverage. A screening efficiency of > 85 dB@1GHz is realized. The copperfoil has an applied PE-coating which prevents foil crakking due to short radius bends. The black PE sheath of Aircell 5 is UV-stabilized.

One of the major advantages of Aircell 5 is its ability to use commonly available coaxial Connectors. Since Aircell 5 features the same dimensions as RG 58 type cables, standard Connectors may be used. In some cases, due to connector manufacturing tolerances, a slight filing of the cables center conductor maybe required. Aircell 5 is the right choice, when a thin, microwave rated cable is required. It is available from stock in the following standard drum sizes: 25 m, 50 m, 100 m, 200 m and 500 m.

Aircell®5 characteristics

Diameter	5,0 mm
Impedance	50 Ω
Attenuation @ 1 GHz/100 m	31,09 dB
fmax	10 GHz

Aircell®5

Technical data

Centre conductor	solid copper wire, OFC
Centre conductor Ø	1 x 1,08 mm
Dielectric	PE, low-loss compound
Dielectric Ø	2,95 mm
Outer conductor 1	copperfoil, PE-coated
Shielding factor	100 %
Outer conductor 2	copper braid
Shielding factor	72 %
Sheath	black PVC, UV-resistant
Outer diameter Ø	5,0 mm
Weight	36 g/m
Min. bending radius one single bending	25 mm
..... 15 repeated bendings.....	50 mm
Temperature range storage	-70 to +85°C
..... installation	-40 to +60°C
..... operation	-55 to +85°C
Pulling strength	12 daN

Electrical specifications

Impedance	50 Ω
Capacity	82 pF/m
Velocity factor	0,82
Screening efficiency @ 1 GHz	> 85 dB
DC-resistance: Centre conductor	20,5 Ω/km
..... Outer conductor	13,6 Ω/km
RF Peak Voltage	400 V
Cut-off Frequenz	33 GHz

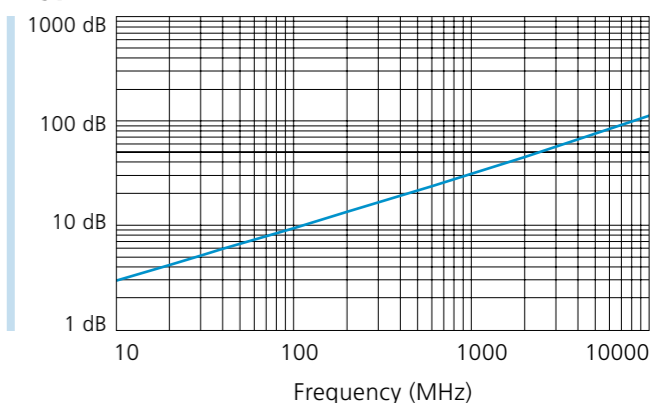
Typ. attenuation (dB/100 m @ 20°C)

5 MHz	2,07	1000 MHz	31,09
10 MHz	2,93	1296 MHz	35,71
50 MHz	6,61	1500 MHz	38,63
100 MHz	9,40	1800 MHz	42,63
144 MHz	11,33	2000 MHz	45,14
200 MHz	13,41	2400 MHz	49,87
300 MHz	16,53	3000 MHz	56,39
432 MHz	19,99	4000 MHz	66,19
500 MHz	21,57	5000 MHz	75,05
800 MHz	27,62	10000 MHz	112,00

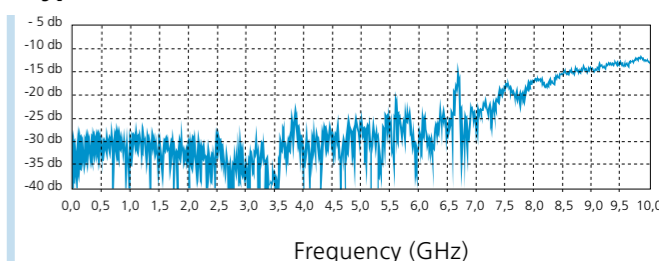
Max. power handling (W @ 40°C, VSWR 1.0)

10 MHz	1730	3000 MHz	90
100 MHz	540	4000 MHz	80
500 MHz	230	5000 MHz	70
1000 MHz	160	6000 MHz	60
2000 MHz	110	10000 MHz	50

Typ. Attenuation (dB/100 m) @ 20°C



Typ. Return loss



Due to production tolerances the RTL may have different characteristics.

	Aircell 5	RG 58/U	Ecoflex 10
Capacity	82 pF/m	102 pF/m	78 pF/m
Velocity factor	0,82	0,66	0,85
Attenuation [dB/100 m]			
10 MHz	2,93	5,0	1,2
100 MHz	9,40	17,0	4,0
500 MHz	21,57	39,0	9,6
1000 MHz	31,09	54,6	14,2
2400 MHz	49,87	98,0	23,6
5700 MHz	79,98	185,0	40,16





Aircell®7

Aircell®7 - ultraflexible, low loss coaxial cable for radio communications

Aircell 7 is a ultraflexible coaxial cable designed for frequencies up to 6 GHz. At a diameter of just 7,3 mm (0.287" OD) and a minimum bending radius of just 25 mm, it offers relatively low loss. The low attenuation of Aircell 7 is achieved through advanced manufacturing techniques and the use of a PE-LLC dielectric with a foaming rate of more than 70%.

The extreme flexibility of Aircell 7 is further enhanced through the use of a multi-stranded oxygen-free center conductor. Further advantages of this cable include the use of double shielding which is constructed of overlapping copperfoil plus an additional tightly woven copperbraid. The copperfoil has an applied PE-coating which prevents foil cracking due to short radius bends and the black PVC-sheath of Aircell 7 is UV-stabilized. A screening efficiency of > 85 dB @ 1GHz is realized. Aircell 7 is the right choice, when a super flexible, microwave rated cable is required. Aircell 7 is available from stock in the following standard drum sizes: 25 m, 50 m, 100 m, 200 m and 500 m.

Aircell®7 characteristics

Diameter	7,3 mm
Impedance	50 Ω
Attenuation @ 1 GHz/100 m	21,52 dB
fmax	6 GHz

Aircell®7

Technical data

Centre conductor ...	stran. copper, oxy. free, 19 x 0,37 mm
Centre conductor Ø	1,85 mm
Dielectric	PE, low-loss compound
Dielectric Ø	5,0 mm
Outer conductor 1	copperfoil, PE-coated
Shielding factor	100 %
Outer conductor 2	copper braid
Shielding factor	70 %
Sheath	black PVC, UV-resistant
Outer diameter Ø	7,3 mm
Weight.....	72 g/m
Min. bending radius one single bending	25 mm
..... 15 repeated bendings.....	50 mm
Temperature range	-30 bis +80°C
Pulling strength	2 daN

Electrical specifications

Impedance	50 Ω
Capacity	75 pF/m
Velocity factor	0,83
fmax	6 GHz
Screening efficiency @ 1 GHz	83 dB
DC-resistance	
Centre conductor	8,6 Ω/km
Outer conductor	8,5 Ω/km
RF peak voltage	0,7kV

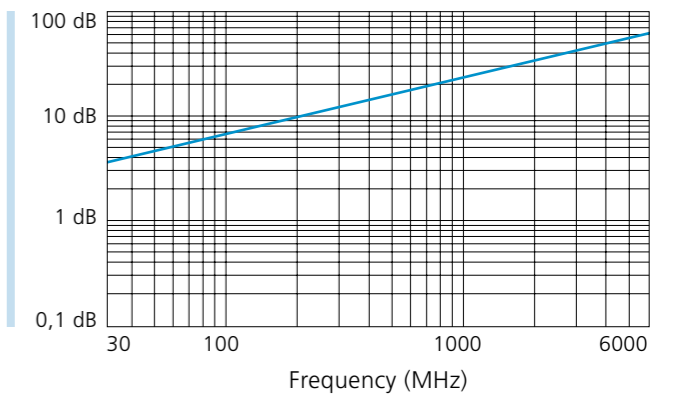
Typ. attenuation (dB/100 m @ 20°C)

5 MHz	1,6	1000 MHz	21,52
10 MHz	2,2	1296 MHz	24,84
50 MHz	4,52	1500 MHz	27,08
100 MHz	6,28	1800 MHz	30,0
144 MHz	7,6	2000 MHz	31,88
200 MHz	9,04	2400 MHz	35,6
300 MHz	11,2	3000 MHz	40,88
432 MHz	13,6	4000 MHz	49,12
500 MHz	14,72	5000 MHz	57,04
800 MHz	19,0	6000 MHz	64,9

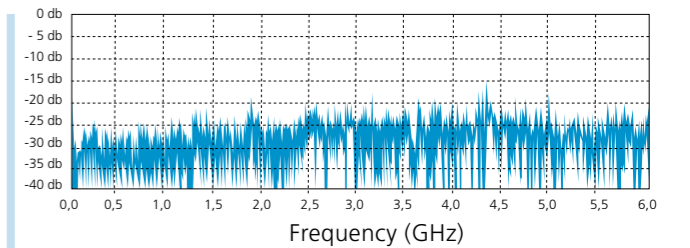
Max. power handling (W @ 40°C)

10 MHz	2040	1000 MHz	180
100 MHz	620	2000 MHz	120
500 MHz	260	3000 MHz	90

Typ. Attenuation (dB/100 m) @ 20°C



Typ. Return loss



Due to production tolerances the RTL may have different characteristics.



Grounding Clamp for Aircell®7, Part.-No. 6811



Aircom®Plus



Aircom®Plus - Low loss and a semi-air spaced dielectric

Aircom Plus is a semi air spaced coaxial cable with excellent electric and mechanical properties. Its low-loss characteristics makes it very suitable for applications up into the microwave range. Aircom Plus features a unique PE-honeycomb expander which retains the correct impedance even when sharply bent. The expander provides a tight seal around the solid center conductor which is made from oxygen free copper, thus ensuring it is protected against moisture and corrosion. Another feature of Aircom Plus is its double shielding which is constructed of overlapping copperfoil plus an additional tightly woven copperbraid resulting in a screening efficiency > 85 dB @ 1 GHz. The copperfoil has an applied PE-coating which prevents foil cracking due to short radius bends and the black PVC sheath of Aircom Plus is UV-stabilized. Aircom Plus is available from stock in the following standard drum sizes: 25 m, 50 m, 100 m, 200 m and 500 m.

Aircom®Plus characteristics

Diameter	10,3 mm
Impedance	50 Ω
Attenuation @ 1 GHz/100m	13,4 dB
fmax	10 GHz



Grounding Clamp for Aircom®Plus, Part.-No. 6810



Aircom®Plus

Technical data

Centre conductor	solid copper wire, OFC
Centre conductor Ø	2,7 mm
Dielectric	semi airspaced PE
Dielectric Ø	7,2 mm
Outer conductor 1	copperfoil, PE-coated
Shielding factor	100 %
Outer conductor 2	copper braid
Shielding factor	75 %
Sheath	black PVC, UV-resistant
Outer diameter Ø	10,3 mm

Weight	150 g/m
Min. Bending radius	55 mm
Temperature range	- 40 bis + 80°C
Pulling strength	5 daN

Electrical specifications

Impedance	50 Ω
Capacity	81 pF/m
Velocity factor	0,83
fmax	10 GHz
Screening efficiency @ 1 GHz	> 85 dB
DC-resistance: Centre conductor	3,1 Ω/km
Outer conductor	6,4 Ω/km
RF peak voltage	1kV

Aircom Plus RG 213/U RG 58/U

Capacity	81 pF/m	101 pF/m	102 pF/m
Velocity factor	0,83	0,66	0,66
Attenuation dB/100 m			
10 MHz	1,2	2,0	5,2
100 MHz	3,8	7,0	17,0
500 MHz	9,0	17,0	39,0
1000 MHz	13,4	22,5	54,6
3000 MHz	25,9	58,5	118

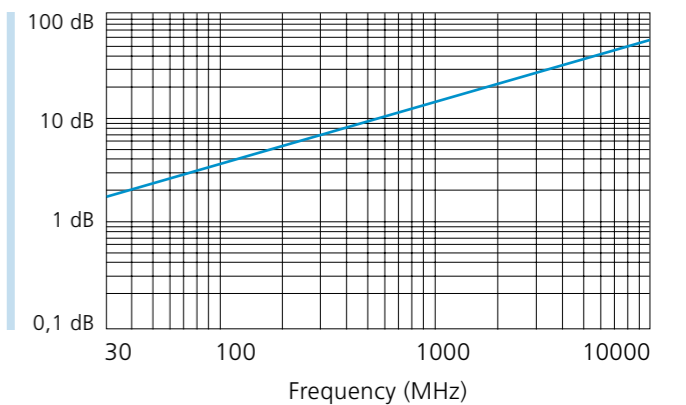
Typ. attenuation (dB/100 m @ 20°C)

5 MHz	0,9	1000 MHz	13,4
10 MHz	1,2	1296 MHz	15,6
50 MHz	2,6	1500 MHz	17,0
100 MHz	3,8	1800 MHz	18,9
144 MHz	4,6	2000 MHz	20,1
200 MHz	5,5	2400 MHz	22,5
300 MHz	6,8	3000 MHz	25,9
432 MHz	8,4	4000 MHz	31,1
500 MHz	9,0	5000 MHz	35,9
800 MHz	11,8	6000 MHz	40,6
		10000 MHz	58,3

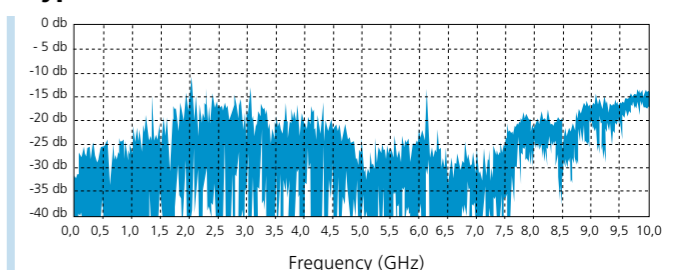
Max. power handling (W @ 40°C)

10 MHz	3980	2000 MHz	180
100 MHz	1210	3000 MHz	150
500 MHz	510	4000 MHz	110
1000 MHz	340		

Typ. Attenuation (dB/100 m) @ 20°C



Typ. Return loss



Due to production tolerances the RTL may have different characteristics.

Ecoflex® 10



Ecoflex®10 - ultraflexible and low loss coaxial cable

Ecoflex 10 is a flexible, low-loss coaxial cable specifically designed for use up to 6 GHz. Advanced manufacturing techniques combined with the use of a low-loss PE-LLC Dielectric yields a foaming rate of more than 70%. This results in very low attenuation. Ecoflex 10 sets a new standard among flexible coaxial cables. The flexibility of Ecoflex 10 is further enhanced through the use of a stranded, oxygen-free copper center conductor. Use of proprietary techniques, continuous center conductor calibration and compression as well as the application of a pre-coating results in low losses and good impedance matching. Further advantages of the cable include the use of double shielding which is constructed of overlapping copperfoil plus an additional tight woven copper braid.

A screening efficiency of > 90 dB @ 1 GHz is realized. The copperfoil has an applied PE-coating which prevents foil cracking due to short radius bends. The black PVC sheath of Ecoflex 10 is UV-stabilized. In addition to a full complement of standard connectors, an easy to use solder free N-connector has been specially developed for Ecoflex 10. Connector installation only takes a few minutes and requires no special tools. Ecoflex 10 is the right choice when a low loss, highly flexible microwave rated cable is required.

Ecoflex 10 is available from stock in the following standard drum sizes: 25 m, 50 m, 100 m, 200 m, 400 m and 500 m.



Grounding Clamp for Ecoflex®10, Part.-No. 6810

Ecoflex®10 characteristics

Diameter	10,2 mm
Impedance	50 Ω
Attenuation @ 1 GHz/100m	14,2 dB
fmax	6 GHz

Ecoflex®10

Technical data

Centre conductor ...	stran. copper, oxygen free, 7 x 1,0 mm
Centre conductor Ø	2,85 mm
Dielectric	PE, low-loss Compound
Dielectric Ø	7,25 mm
Outer conductor 1	copperfoil, PE-coated
Shielding factor	100 %
Outer conductor 2	copper braid
Shielding factor	72 %
Sheath	black PVC, UV-resistant
Outer diameter Ø	10,2 mm
Weight	131 g/m
Min. bending radius .. one single bending	40 mm
15 repeated bendings	80 mm
Temperature range ... storage	-70 to +85°C
installation	-40 to +60°C
operation	-55 to +85°C
Pulling strength	5 daN

Electrical specifications

Impedance	50 Ω
Capacity	78 pF/m
Velocity factor	0,85
fmax	6 GHz
Screening efficiency @ 1 GHz	> 90 dB
DC-resistance: Centre conductor	3,3 Ω/km
Outer conductor	8,4 Ω/km
RF peak voltage	1kV

Ecoflex 10 RG 213/U RG 58/U

Capacity	78 pF/m	101 pF/m	102 pF/m
Velocity factor	0,85	0,66	0,66
Attenuation (dB/100 m)			
10 MHz	1,2	2,0	5,0
100 MHz	4,0	7,0	17,0
500 MHz	9,6	17,0	39,0
1000 MHz	14,2	22,5	54,6
3000 MHz	27,0	58,5	118

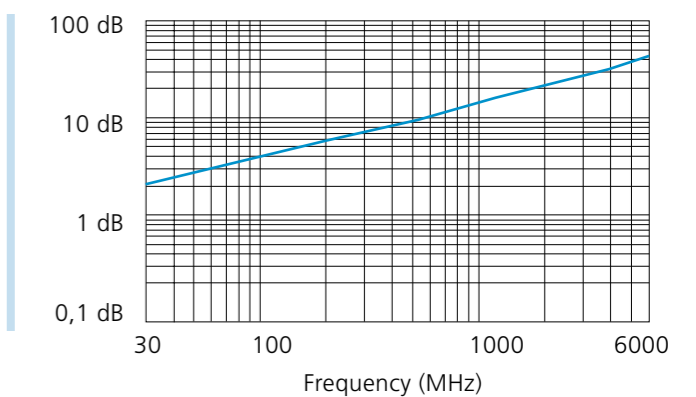
Typ. attenuation (dB/100 m @ 20°C)

5 MHz	0,8	1000 MHz	14,2
10 MHz	1,2	1296 MHz	16,5
50 MHz	2,8	1500 MHz	17,9
100 MHz	4,0	1800 MHz	19,9
144 MHz	4,9	2000 MHz	21,2
200 MHz	5,8	2400 MHz	23,6
300 MHz	7,3	3000 MHz	27,0
432 MHz	8,9	4000 MHz	32,2
500 MHz	9,6	5000 MHz	37,0
800 MHz	12,5	6000 MHz	41,5

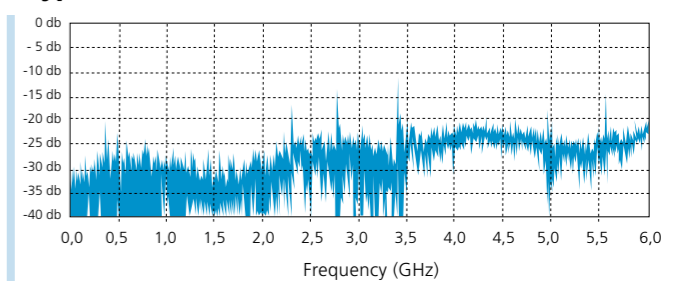
Max. power handling (W @ 40°C)

10 MHz	3960	3000 MHz	180
100 MHz	1210	4000 MHz	150
500 MHz	510	5000 MHz	130
1000 MHz	350	6000 MHz	120
2000 MHz	230		

Typ. Attenuation (dB/100 m) @ 20°C



Typ. Return loss



Due to production tolerances the RTL may have different characteristics.





Ecoflex® 15

Ecoflex®15 - low loss coaxial cable for radio communication

Ecoflex 15 is a flexible low-loss coaxial cable for use in the frequency range of DC - 6 GHz. Its unique construction combines the low loss properties found in non-flexible solid center conductor hardline cables with the high flexibility of cables manufactured with stranded center conductors. Advanced manufacturing techniques combined with the use of a PE-LLC Dielectric yields a foaming rate of more than 70%, resulting in very low attenuation. The use of continuous center conductor calibration and compression as well as the application of a precoating guarantees low losses and stable impedance matching. An EMI screening immunity of > 90 dB @ 1 GHz is achieved through the use of double shielding which consists of overlapping copper foil and an additional tight woven copperbraid. The copperfoil has an applied PE coating which prevents foil cracking due to short radius bends. The black PVC sheath of Ecoflex 15 is UV-stabilized. It is the 1st choice when a low loss, highly flexible microwave rated cable is required. Ecoflex 15 is available from stock in the following standard drum sizes: 25 m, 50 m, 100 m, 200 m and 500 m.

Ecoflex®15 characteristics

Diameter	14,6 mm
Impedance	50 Ω
Attenuation @ 1 GHz/100 m	9,8 dB
fmax	6 GHz



Grounding Clamp for Ecoflex® 15, Part.-No. 6915



Ecoflex®15

Technical data

Centre conductor ... stran. copper, oxygen free, 7 x 1,55 mm	
Centre conductor Ø	4,5 mm
Dielectric	PE, low-loss Compound
Dielectric Ø	11,3 mm
Outer conductor 1	copperfoil, PE-coated
Shielding factor	100 %
Outer conductor 2	copper braid
Shielding factor	72 %
Sheath	black PVC, UV-resistant
Outer diameter Ø	14,6 mm
Weight	258 g/m
Min. bending radius .. one single bending	70 mm
15 repeated bendings	140 mm
Temperature range ... storage	-70 to +85°C
installation	-40 to +60°C
operation	-55 to +85°C
Pulling strength	12 daN

Electrical specifications

Impedance	50 Ω
Capacity	77 pF/m
Velocity factor	0,86
fmax	6 GHz
Screening efficiency @ 1 GHz	> 90 dB
DC-resistance: Centre conductor	1,56 Ω/km
Outer conductor	5,15 Ω/km
RF peak voltage	1,55 kV

Ecoflex 15 RG 213/U RG 58/U

Capacity	77 pF/m	101 pF/m	102 pF/m
Velocity factor	0,86	0,66	0,66
Attenuation (dB/100 m)			
10 MHz	0,86	2,0	5,0
100 MHz	2,81	7,0	17,0
500 MHz	6,7	17,0	39,0
1000 MHz	9,8	22,5	54,6
3000 MHz	18,7	58,5	118

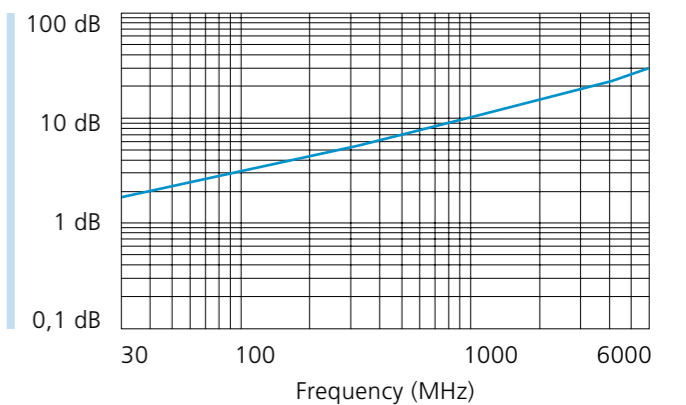
Typ. attenuation (dB/100 m @ 20°C)

5 MHz	0,6	1000 MHz	9,8
10 MHz	0,86	1296 MHz	11,4
50 MHz	1,96	1500 MHz	12,4
100 MHz	2,81	1800 MHz	13,8
144 MHz	3,4	2000 MHz	14,7
200 MHz	4,05	2400 MHz	16,3
300 MHz	5,0	3000 MHz	18,7
432 MHz	6,1	4000 MHz	22,3
500 MHz	6,7	5000 MHz	25,7
800 MHz	8,6	6000 MHz	28,8

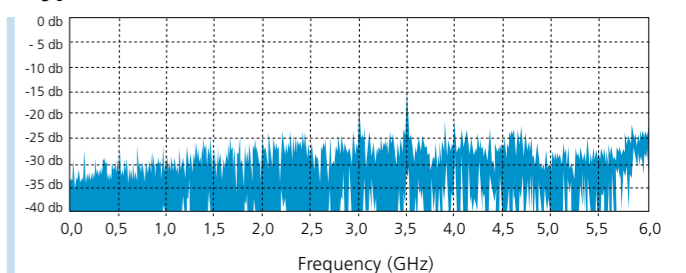
Max. power handling (W @ 40°C)

10 MHz	6450	2000 MHz	380
100 MHz	1970	3000 MHz	300
500 MHz	830	4000 MHz	250
1000 MHz	560	6000 MHz	190

Typ. Attenuation (dB/100 m) @ 20°C



Typ. Return loss



Due to production tolerances the RTL may have different characteristics.

Ecoflex®10 Heatex®

Ecoflex®15 Heatex®



Ecoflex®Heatex® flame retardant, halogenfree coaxial cable designed for use in public buildings and hazardous environments

Ecoflex-Heatex cables were developed due to the increased demand for low-loss coaxial cables that comply with all relevant emission and flame retardancy standards. These cables were designed specifically for their low flammability and flame propagation properties. The Heatex halogen-free Jacketing produces very little smoke when ignited and contains no reactive elements like Fluorine, Chlorine, or Bromine.

PVC cables conforming to appropriate standards and when installed and used according to existing safety codes are safe and will never be the start of a fire. However, an already existing fire could spread through the entire length of an individual cable or cable bundle within a matter of minutes with potentially devastating results. Ecoflex-Heatex cables offer the solution to all of these issues: low fire propagation, low smoke and no corrosive gases make Ecoflex-Heatex the clear choice!

The Ecoflex-Heatex cables feature UV-Stabilization and are suitable for both indoor and outdoor use.

Ecoflex®10 Heatex® characteristics

Diameter	10,2 mm
Impedance	50 Ω
Attenuation @ 1 GHz/100m	14,2 dB
fmax	6 GHz

Ecoflex®15 Heatex® characteristics

Diameter	14,6 mm
Impedance	50 Ω
Attenuation @ 1 GHz/100m	9,8 dB
fmax	6 GHz

Test Procedures and Respective Regulations

Fire Behavior of Individual Cables

EN 50265-2-1 IEC 60332-1

A piece of cable is mounted in a metal chamber with an open front. A propane gas burner is then set up in a manner that its flame cone hits the cable sample at a 45° angle. Test duration depends on the cable diameter. Samples will pass the test if they do not catch fire, generated flames must extinguish by themselves.



Smoke Density

IEC 61034 -1+2EN 50268 -1+2

The test chamber is a 27 m³ cube. The measurement system consists of a light source (100 Watt halogen lamp) and a silicon photo-electric-cell as the receiver. A tray filled with 1 liter of alcohol serves as the ignition source. A fan is used to ensure even smoke distribution with a metal screen protecting the tray from any flame turbulence. The alcohol is ignited and the light intensity of the photocell will be recorded. Samples will pass the test if light intensity does not drop below 60 percent.

Corrosiveness of Combustible Gases

HD 602-1 EN 50267-2-3 IEC 60754-2

This test allows the determination about the corrosiveness of different insulation, sheathing and jacketing compounds. Already small amounts of halogens and thus corrosive components can be detected by measuring the pH-value and electrical conductivity. A sample of the test material is burned at a temperature of 935°C. An air current directs any released gases into a gas-washing bottle filled with distilled water, where two electrodes measure both pH value and conductivity. Samples will pass the test if the measured pH value does not undercut 4.3 and conductivity does not exceed 10 µS/mm.



Property	PVC	Heatex®
Flammability		
Halogen-free	no	yes
Flame propagation (single cable)	high	low
Flame propagation (cable bundle)	high	low
Release of corrosive gases	yes	no
Smoke density	high	low
Dioxin in fire residue	yes	very low
Mechanical properties		
Durability	good	good
Low temperature resistance	good	good
Flexibility	very good	good
Regulations		
Cable fire behavior		
Complies EN 50265-2-1	no	yes
IEC 60332-1	no	yes
Smoke density		
Complies IEC 61034-1+2	no	yes
EN 50268-1+2	no	yes
Corrosiveness of combustilbe gases		
Complies HD 602 – S1	no	yes
EN 50267-2-3	no	yes
IEC 607542-2	no	yes

Comparison of flammability properties of PVC and Ecoflex®Heatex®-cables

	Flame retardancy	Formation of smoke	Corrosive gases
Heatex® cable	Ecoflex-Heatex cables are flame-retardant and only slightly flame propagating.	Ecoflex-Heatex cables are low-smoke propagating. Escape routes remain visible.	Ecoflex-Heatex cables produce no corrosive gases at all.
PVC-cable	PVC cables are normally self-extinguishing. Gases released by PVC will ignite at certain temperatures and can thus spread the fire.	PVC contains various Polymers that will create dense smoke reducing visibility almost down to zero. A single kilogram of PVC is enough to fill a room of up to 500 m³ completely with black smoke.	PVC cables generate large amounts of corrosive and toxic gases (HCl) when ignited. A single kilogram of PVC can release more than 300 l of hydrogen chloride, which mixed with water will produce hydrochloric acid.

Ecoflex® 10 Heatex®

Technical data

Centre conductor ... stran. copper, oxygen free, 7 x 1,0 mm
Centre conductor Ø 2,85 mm
Dielectric PE, low-loss Compound
Dielectric Ø 7,25 mm
Outer conductor 1 copperfoil, PE-coated
Shielding factor 100 %
Outer conductor 2 copper braid
Shielding factor 72 %
Sheath black Heatex, UV-resistant
Outer diameter Ø 10,2 mm
Weight 131 g/m
Min. bending radius .. one single bending 40 mm
15 repeated bendings 80 mm
Temperature range ... storage -70 to +85°C
installation -25 to +60°C
operation -40 to +85°C
Pulling strength 5 daN

Typ. attenuation (dB/100 m @ 20°C)

5 MHz 0,8	1000 MHz 14,2
10 MHz 1,2	1296 MHz 16,5
50 MHz 2,8	1500 MHz 17,9
100 MHz 4,0	1800 MHz 19,9
144 MHz 4,9	2000 MHz 21,2
200 MHz 5,8	2400 MHz 23,6
300 MHz 7,3	3000 MHz 27,0
432 MHz 8,9	4000 MHz 32,2
500 MHz 9,6	5000 MHz 37,0
800 MHz 12,5	6000 MHz 41,5

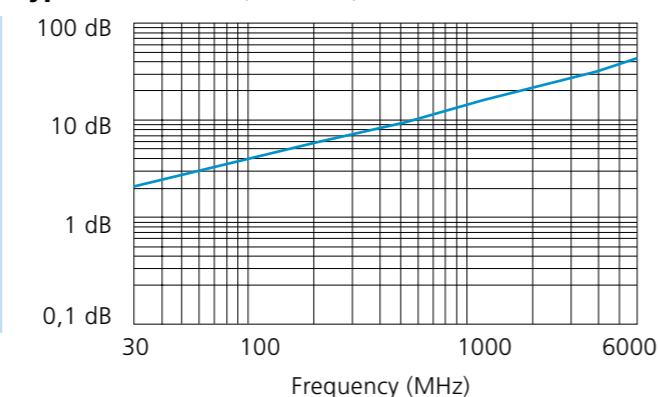
Max. power handling (W @ 40°C)

10 MHz 3960	3000 MHz 180
100 MHz 1210	4000 MHz 150
500 MHz 510	5000 MHz 130
1000 MHz 350	6000 MHz 120
2000 MHz 230	

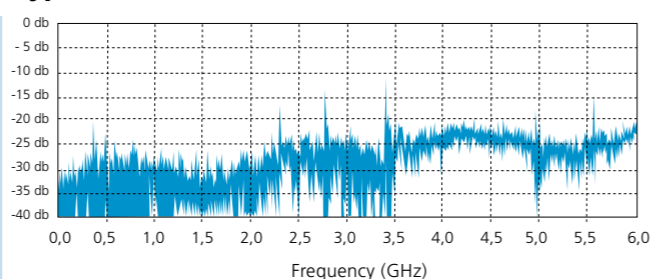
Electrical specifications

Impedance 50 Ω
Capacity 78 pF/m
Velocity factor 0,85
fmax 6 GHz
Screening efficiency @ 1 GHz > 90 dB
DC-resistance: Centre conductor 3,3 Ω/km
Outer conductor 8,4 Ω/km
RF peak voltage 1kV

Typ. Attenuation (dB/100 m) @ 20°C



Typ. Return loss



Due to production tolerances the RTL may have different characteristics.

	Ecoflex 10	RG 213/U	RG 58/U
Capacity	78 pF/m	101 pF/m	102 pF/m
Velocity factor	0,85	0,66	0,66
Attenuation (dB/100 m)			
10 MHz	1,2	2,0	5,0
100 MHz	4,0	7,0	17,0
500 MHz	9,6	17,0	39,0
1000 MHz	14,2	22,5	54,6
3000 MHz	27,0	58,5	118

Ecoflex® 15 Heatex®

Technical data

Centre conductor ... stran. copper, oxygen free, 7 x 1,55 mm
Centre conductor Ø 4,5 mm
Dielectric PE, low-loss Compound
Dielectric Ø 11,3 mm
Outer conductor 1 copperfoil, PE-coated
Shielding factor 100 %
Outer conductor 2 copper braid
Shielding factor 72 %
Sheath black Heatex, UV-resistant
Outer diameter Ø 14,6 mm
Weight 258 g/m
Min. bending radius .. one single bending 70 mm
15 repeated bendings 140 mm
Temperature range ... storage -70 to +85°C
installation -25 to +60°C
operation -40 to +85°C
Pulling strength 12 daN

Typ. attenuation (dB/100 m @ 20°C)

5 MHz 0,6	1000 MHz 9,8
10 MHz 0,86	1296 MHz 11,4
50 MHz 1,96	1500 MHz 12,4
100 MHz 2,81	1800 MHz 13,8
144 MHz 3,4	2000 MHz 14,7
200 MHz 4,05	2400 MHz 16,3
300 MHz 5,0	3000 MHz 18,7
432 MHz 6,1	4000 MHz 22,3
500 MHz 6,7	5000 MHz 25,7
800 MHz 8,6	6000 MHz 28,8

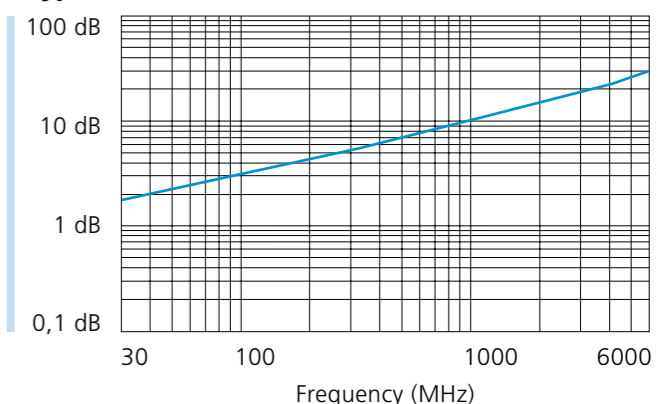
Max. power handling (W @ 40°C)

10 MHz 6450	2000 MHz 380
100 MHz 1970	3000 MHz 300
500 MHz 830	4000 MHz 250
1000 MHz 560	6000 MHz 190

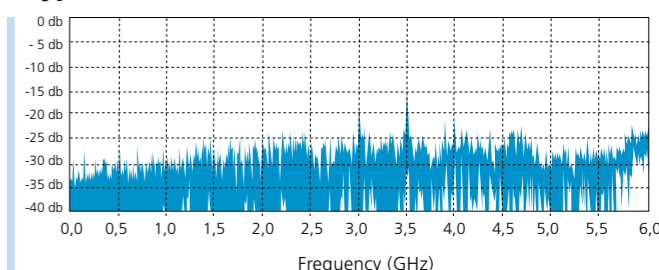
Electrical specifications

Impedance 50 Ω
Capacity 77 pF/m
Velocity factor 0,86
fmax 6 GHz
Screening efficiency @ 1 GHz > 90 dB
DC-resistance: Centre conductor 1,56 Ω/km
Outer conductor 5,15 Ω/km
RF peak voltage 1,55 kV

Typ. Attenuation (dB/100 m) @ 20°C



Typ. Return loss



Due to production tolerances the RTL may have different characteristics.

	Ecoflex 15	RG 213/U	RG 58/U
Capacity	77 pF/m	101 pF/m	102 pF/m
Velocity factor	0,86	0,66	0,66
Attenuation (dB/100 m)			
10 MHz	0,86	2,0	5,0
100 MHz	2,81	7,0	17,0
500 MHz	6,7	17,0	39,0
1000 MHz	9,8	22,5	54,6
3000 MHz	18,7	58,5	118

Coaxial connectors and adaptors

Excellent coaxial cables require precision connectors!

The RF-Performance of a quality low loss coaxial cable is quickly lost through the use of an improper connector. Good impedance matching, low insertion loss, water tightness as well as ease of assembly are essential features of a quality connector.



Connector development at SSB-Electronic

In our own design department, qualification tests are performed on all our connectors. Connectors are tested in their determined frequency range up to 13 GHz. Our procedures include tests for mechanical precision as well as water resistance.

The RF-Performance of each connector type is recorded and each production batch is sampled to guarantee the continuous quality of our connectors.

Test protocol

Specification: IP 67 IP 68

Test device:


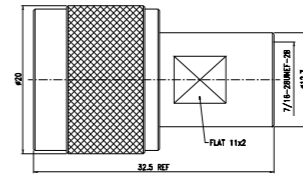

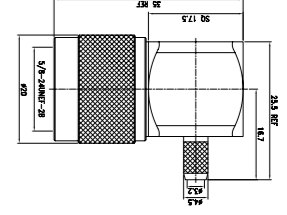

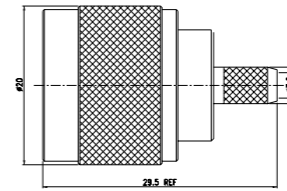

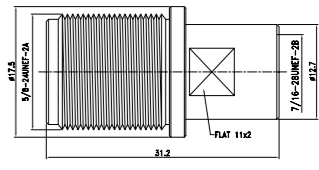

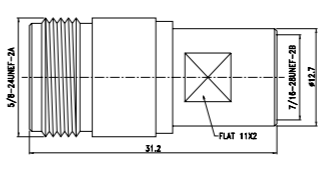

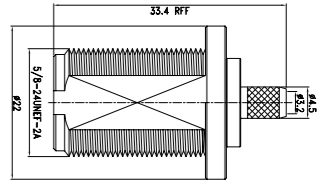

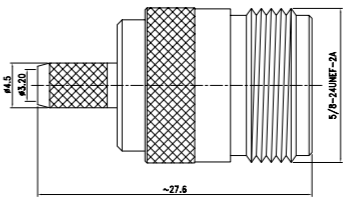

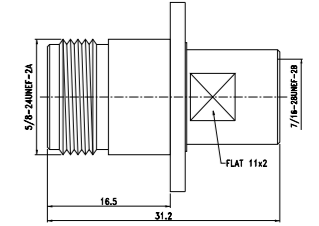

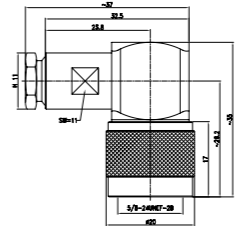

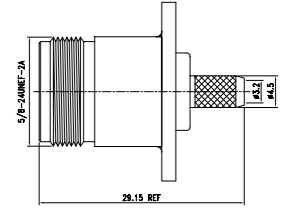
A connector pair with mounted cable sample is connected to an air pressure system and immersed in a water basin (figure). The defined pressure is made during a defined time. During the test the connectors shall be inspected for escape of air bubbles:

Cable type: Ecoflex 10
 Connector: N(m) - New Generation
 Duration: .1...h
 Air pressure (P): 0,1 bar for IP 67 2...bar
 Air bubble? No Yes
 Status: Conform Fail



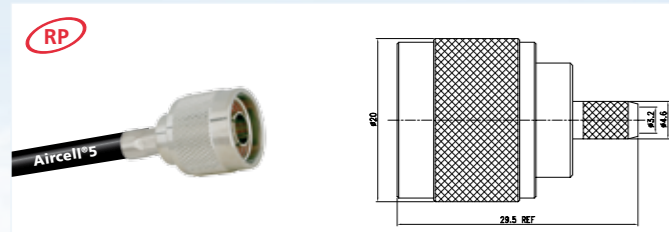
Coaxial connectors for Aircell®5

N-Standard

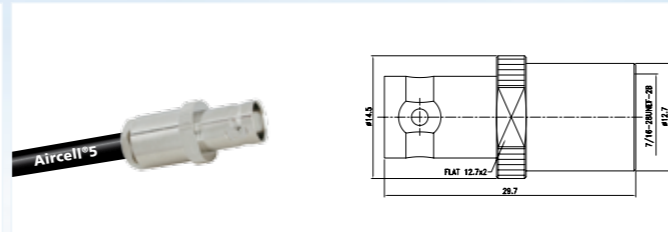
  <p>N-Connector, male, Clamp, Part.-No. 7700 solder/clamp type</p>	  <p>N-Right Angle Connector, Crimp, Part.-No. 7705 full crimp type</p>
  <p>N-Connector, male, Crimp, Part.-No. 7701 full crimp type</p>	  <p>N-Bulkhead Jack, Clamp, Part.-No. 7706 solder/clamp type</p>
  <p>N-Connector, female, Clamp, Part.-No. 7702 solder/clamp type</p>	  <p>N-Bulkhead Jack, Crimp, Part.-No. 7707 full crimp type</p>
  <p>N-Connector, female, Crimp, Part.-No. 7703 full crimp type</p>	  <p>N-Panel Jack, Clamp, Part.-No. 7708 solder/clamp type</p>
  <p>N-Right Angle Connector, Clamp, Part.-No. 7704 solder/clamp type</p>	  <p>N-Panel Jack, Crimp, Part.-No. 7709 full crimp type</p>

Coaxial connectors for Aircell®5

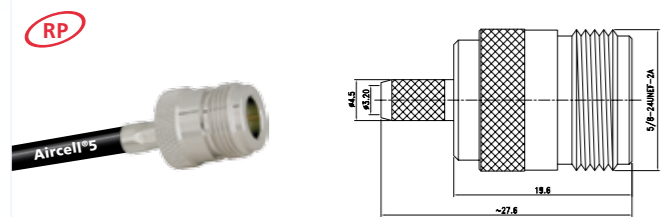
N-Standard



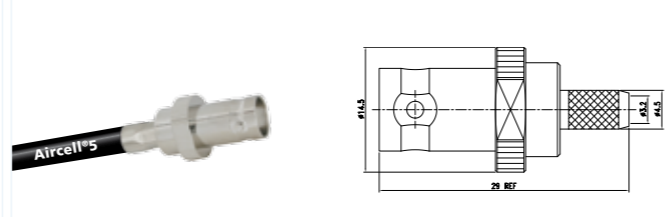
N-Connector, male, Crimp, Reverse Polarity, Part.-No. 7710
full crimp type



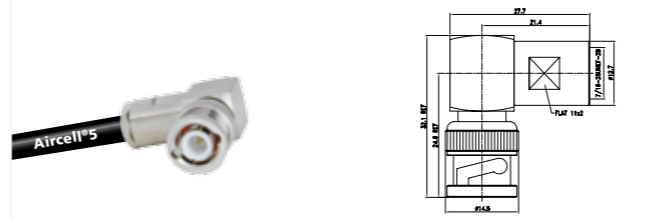
BNC-Connector, female, Clamp, Part.-No. 7722
solder/clamp type



N-Connector, female, Crimp, Reverse Polarity, Part.-No. 7711
full crimp type

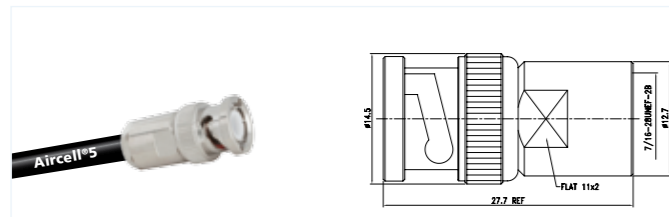


BNC-Connector, female, Crimp, Part.-No. 7723
full crimp type

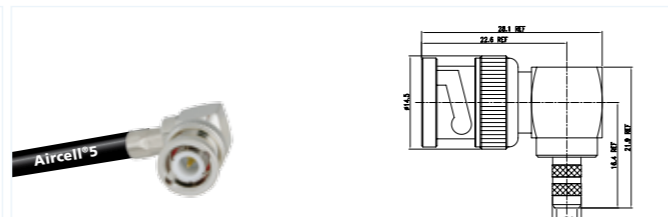


BNC-Right Angle Connector, Clamp, Part.-No. 7724
solder/clamp type

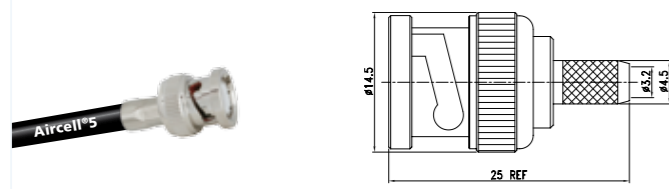
BNC-Standard



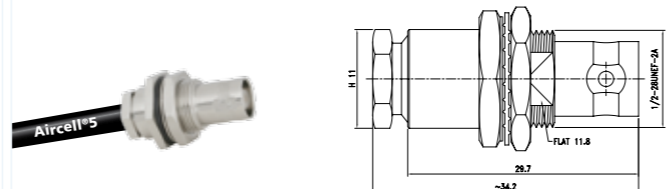
BNC-Connector, male, Clamp, Part.-No. 7720
solder/clamp type



BNC-Right Angle Connector, Crimp, Part.-No. 7725
crimp type, contact pin/solder



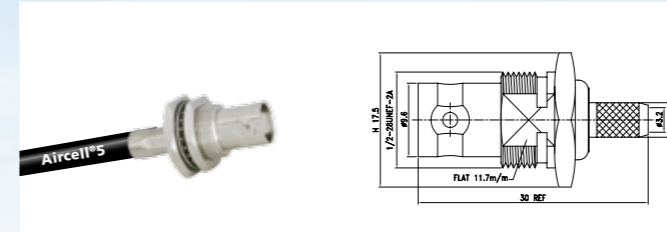
BNC-Connector, male, crimp, Part.-No. 7721
full crimp type



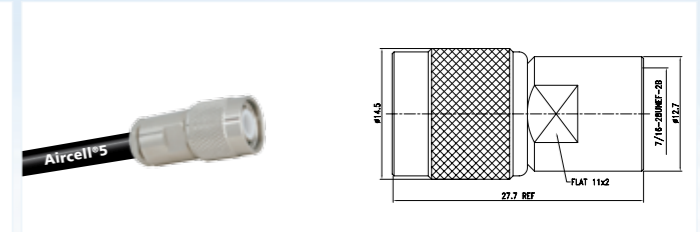
BNC-Bulkhead Jack, Clamp, Part.-No. 7726
solder/clamp type

Coaxial connectors for Aircell®5

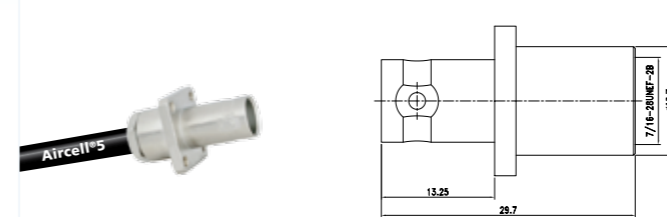
TNC-Standard



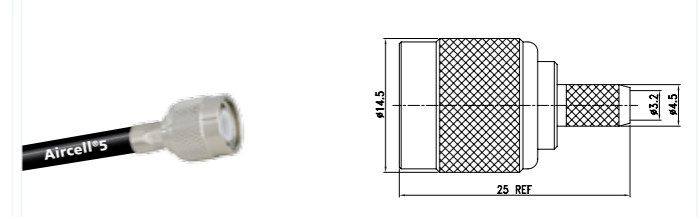
BNC-Bulkhead Jack, Crimp, Part.-No. 7727
full crimp type



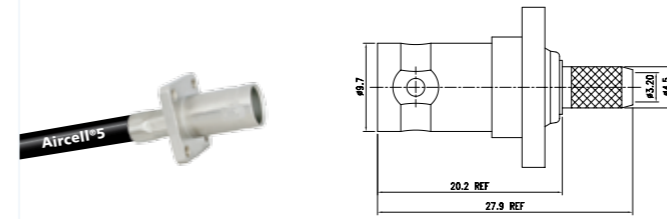
TNC-Connector, male, Clamp, Part.-No. 7740
solder/clamp type



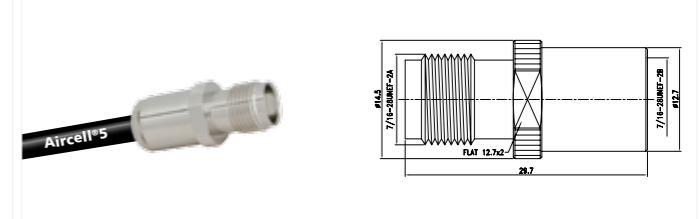
BNC-Panel Jack, Clamp, Part.-No. 7728
solder/clamp type



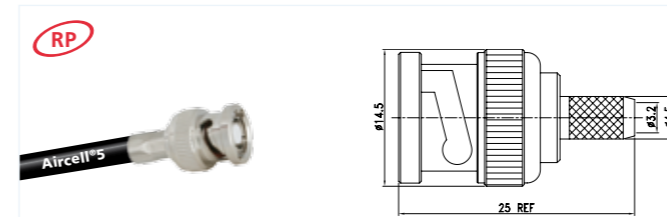
TNC-Connector, male, Crimp, Part.-No. 7741
full crimp type



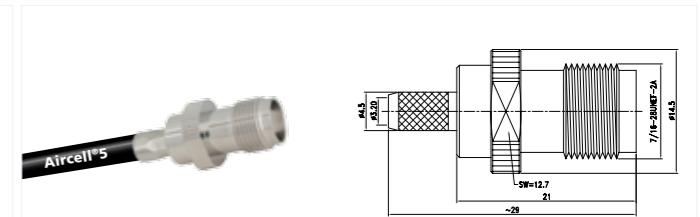
BNC-Panel Jack, Crimp, Part.-No. 7729
full crimp type



TNC-Connector, female, Clamp, Part.-No. 7742
solder/clamp type



BNC-Connector, male, Crimp, Reverse Polarity, Part.-No. 7730
full crimp type


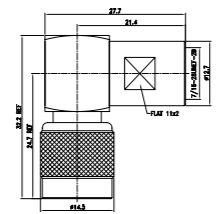

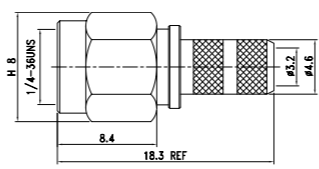

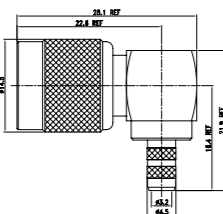

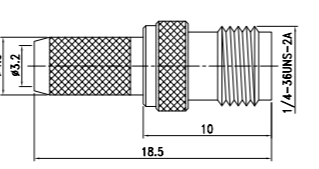

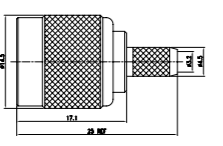

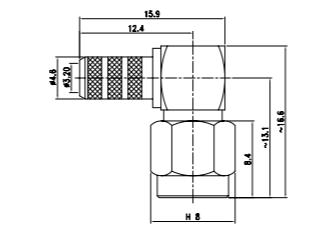

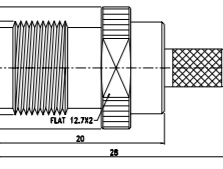

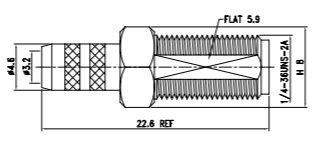


TNC-Connector, female, Crimp, Part.-No. 7743
full crimp type




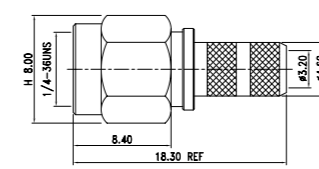

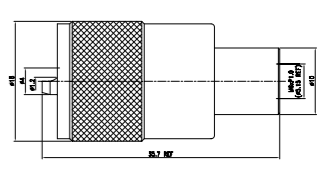

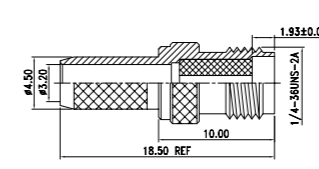

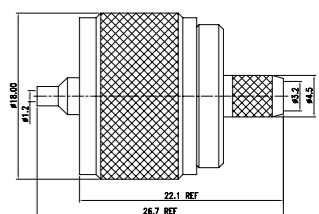
Coaxial connectors for Aircell®5

SMA-Standard

			
<p>TNC-Right Angle Connec., Clamp, Part.-No. 7744 solder/clamp type</p>		<p>SMA-Connector, male, Crimp, Part.-No. 7750 full crimp type</p>	
			
<p>TNC-Right Angle Connec., Crimp, Part.-No. 7745 full crimp type</p>		<p>SMA-Connector, female, Crimp, Part.-No. 7751 full crimp type possible variations</p>	
			
<p>TNC-Connector, male, Crimp, Reverse Polarity, Part.-No. 7746 full crimp type</p>		<p>SMA-Right Angle Connector, Crimp, Part.-No. 7752 crimp type, contact pin/solder</p>	
			
<p>TNC-Connector, female, Crimp, Reverse Polarity, Part.-No. 7747 full crimp type</p>		<p>SMA-Bulkhead Connector, Crimp, Part.-No. 7753 full crimp type possible variations</p>	

Coaxial connectors for Aircell®5

UHF-Standard

			
<p>SMA-Connector, male, Crimp, Reverse Polarity, Part.-No. 7755 full crimp type</p>		<p>UHF-Connector, male, PTFE, Part.-No. 7760 solder type</p>	
			
<p>SMA-Connec., female, Crimp, Reverse Polarity, Part.-No. 7756 full crimp type</p>		<p>UHF-Connector, male, Crimp, PTFE, Part.-No. 7762 full crimp type</p>	


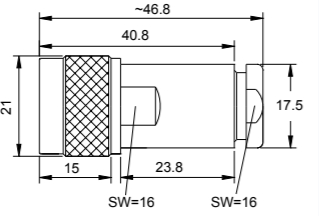

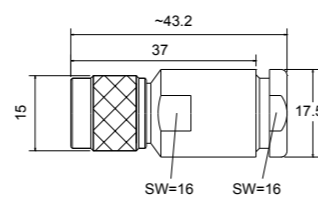

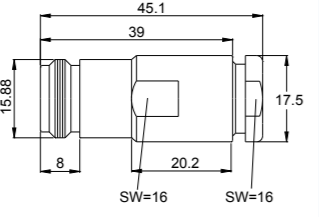

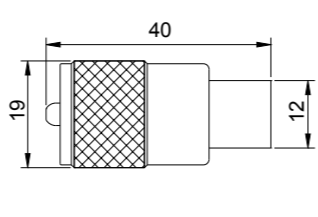

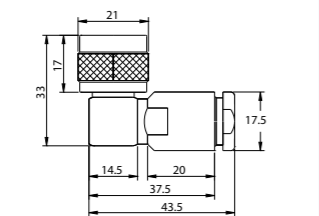

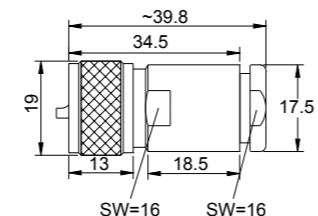

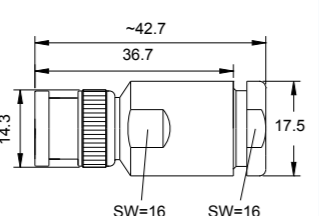

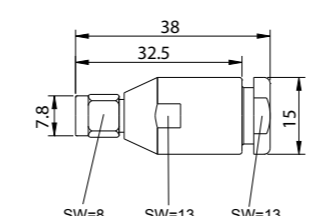

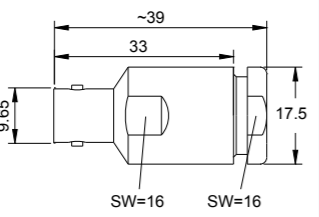




Crimptool for Aircell®5 Connectors



Crimptool for Aircell® 5 Connectors, Part.-No. 7770


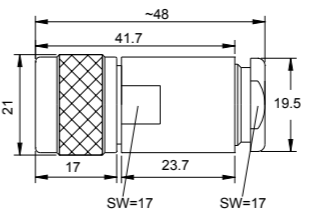

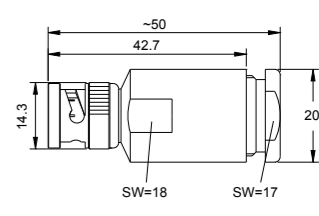

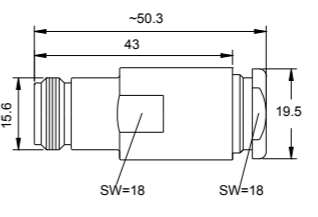

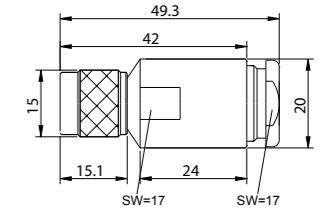

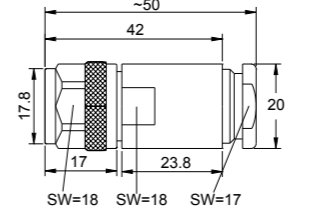

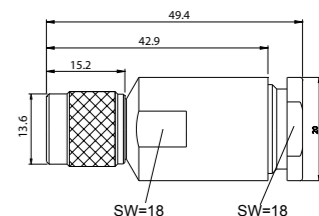

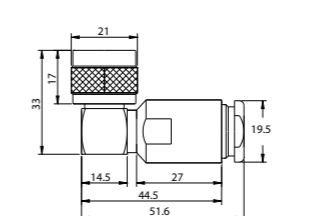

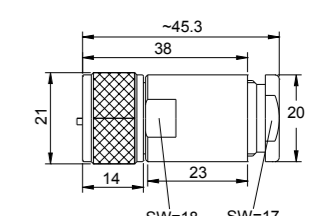

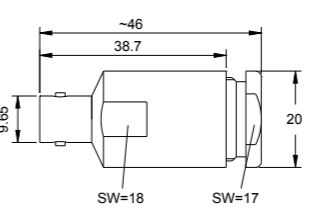

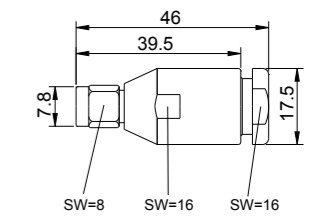


Coaxial connectors for Aircell[®]7

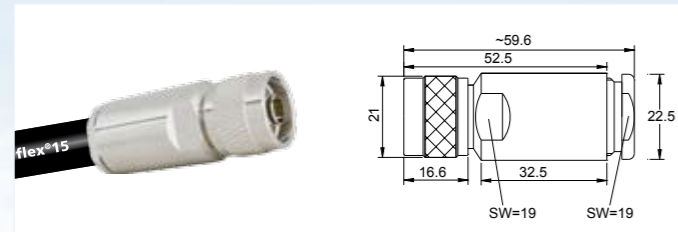
 	 
<p>N-Connector, male, Part.-No. 7392 solder/clamp type</p>	<p>TNC-Connector, male, Part.-No. 7396 solder/clamp type</p>
 	 
<p>N-Connector, female, Part.-No. 7393 solder/clamp type</p>	<p>UHF-standard Connector, male, Part.-No. 7390 clamp/solder type</p>
 	 
<p>N-Right Angle Connector, Part.-No. 7399 solder/clamp type</p>	<p>UHF-Connector, prof. male, Part.-No. 7394 solder/clamp type</p>
 	 
<p>BNC-Connector, male, Part.-No. 7391 solder/clamp type</p>	<p>SMA-Connector, Part.-No. 7385 solder/clamp type</p>
 	 
<p>BNC-Connector, female, Part.-No. 7389 solder/clamp type</p>	 



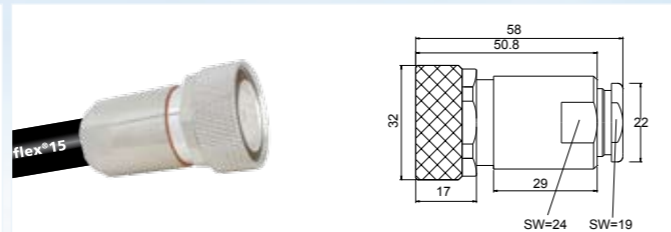
Coaxial connectors for Ecoflex[®]10 & Aircom[®]Plus

 	 
<p>N-Connector, male, Part.-No. 7367 solder/clamp type</p>	<p>BNC-Connector, male, Part.-No. 7379 solder/clamp type</p>
 	 
<p>N-Connector, female, Part.-No. 7364 solder/clamp type</p>	<p>TNC-Connector, male, Part.-No. 7382 solder/clamp type</p>
 	 
<p>N-Connector, solderless for Ecoflex 10, Part.-No. 7383 clamp type/solderless pin</p>	<p>TNC-Connector, male, Reverse Polarity, Part.-No. 7384 solder/clamp type</p>
 	 
<p>N-Right Angle Connector, Part.-No. 7360 solder/clamp type</p>	<p>UHF-Connector, male, Part.-No. 7378 solder/clamp type</p>
 	 
<p>BNC-Connector, female, Part.-No. 7386 solder/clamp type</p>	<p>SMA-Connector, Part.-No. 7362 solder/clamp type</p>

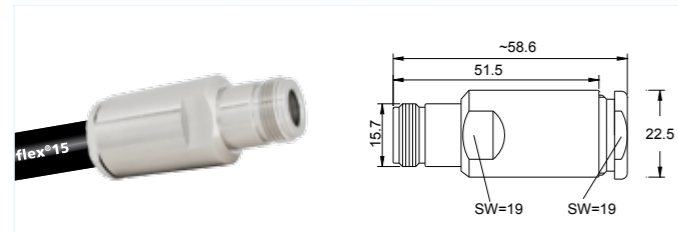
Coaxial connectors for Ecoflex®15



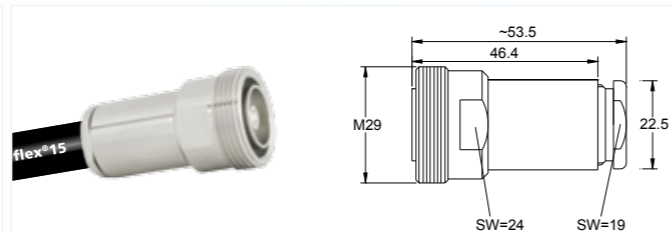
N-Connector, male, Part.-No. 7395
clamp type/solderless pin



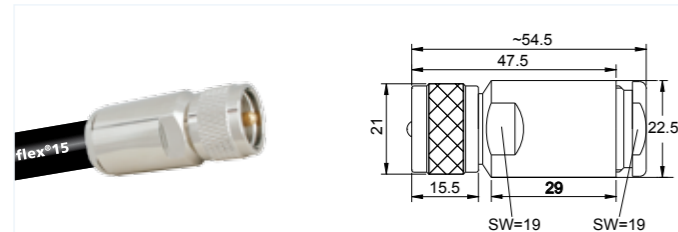
7-16DIN-Connector, male, Part.-No. 7398
clamp type/solderless pin



N-Connector, female, Part.-No. 7397
clamp type/solderless pin

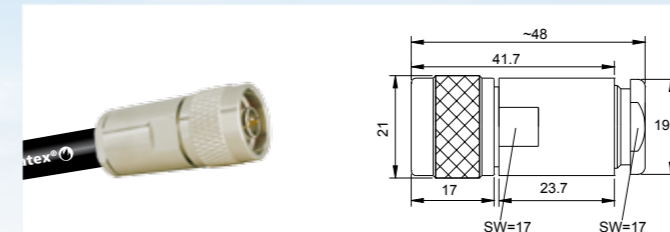


7-16DIN-Connector, female, Part.-No. 7349
clamp type/solderless pin

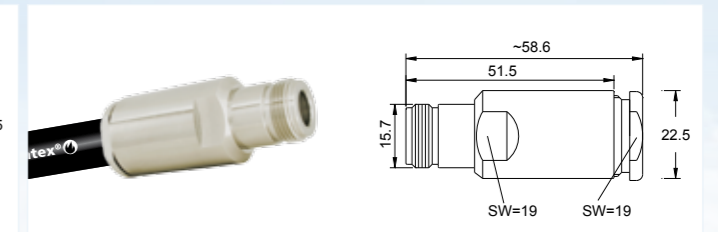


UHF-Connector, prof., Part.-No. 7350
clamp type/solderless pin

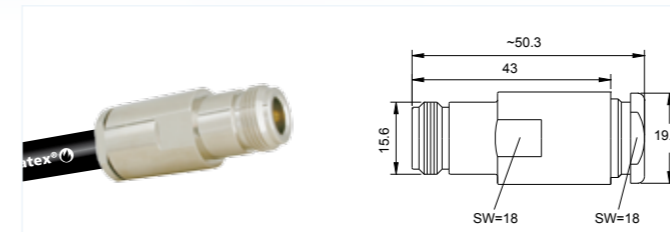
Coaxial connectors for Ecoflex®Heatex 🔥



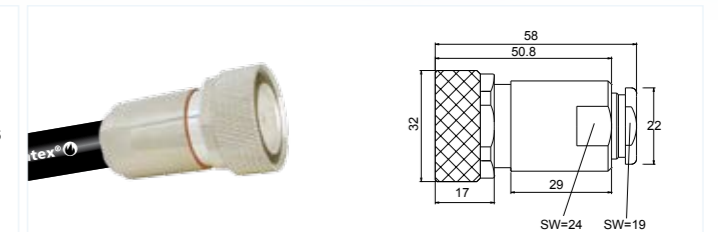
N-Connector, male, Heatex 🔥, for Ecoflex 10 Heatex,
Part.-No. 7368, solder/clamp type



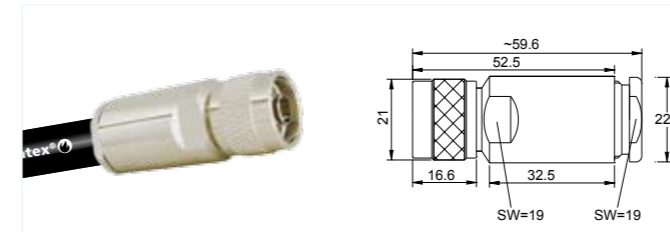
N-Connector, female, Heatex 🔥, for Ecoflex 15 Heatex,
Part.-No. 7352, clamp type/solderless pin



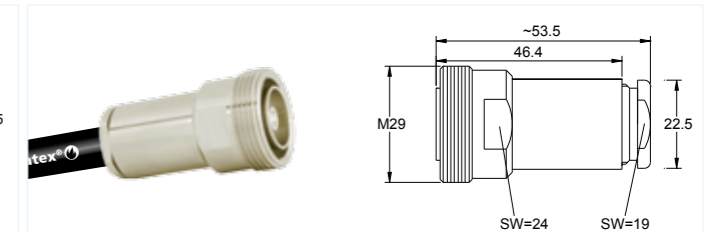
N-Connector, female, Heatex 🔥, for Ecoflex 10 Heatex,
Part.-No. 7361, solder/clamp type



7-16DIN-Connector, male, Heatex 🔥, for Ecoflex 15 Heatex,
Part.-No. 7353, clamp type/solderless pin



N-Connector, male, Heatex 🔥, for Ecoflex 15 Heatex,
Part.-No. 7351, clamp type/solderless pin


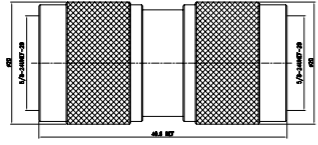

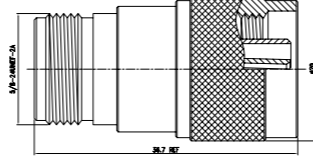

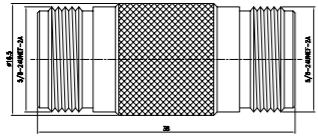

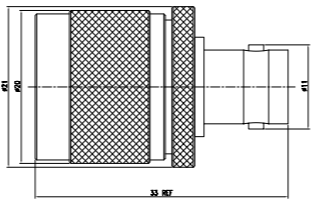

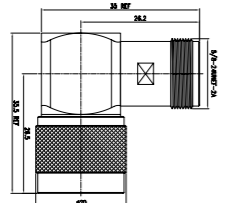

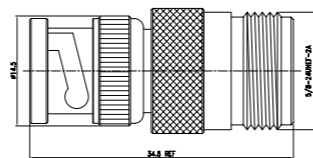

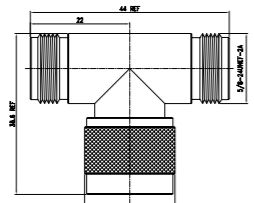

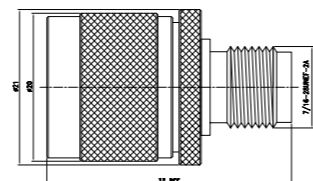

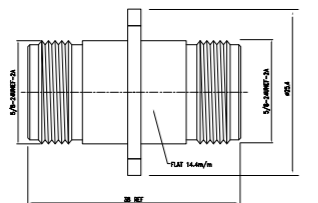

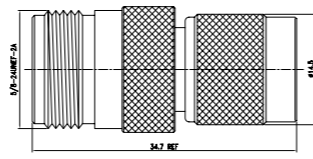


7-16DIN-Connector, female, Heatex 🔥, for Ecoflex 15 Heatex,
Part.-No. 7354, clamp type/solderless pin


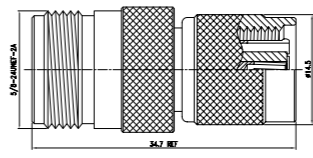

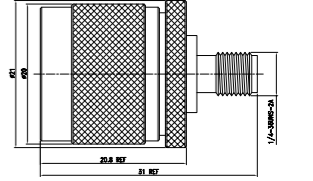

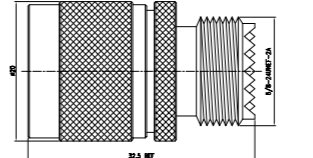

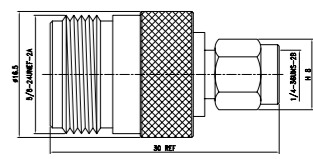

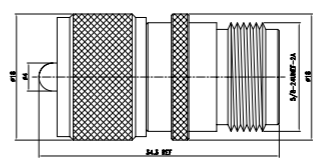

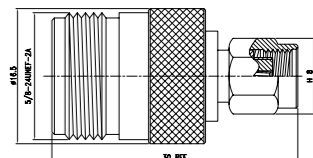

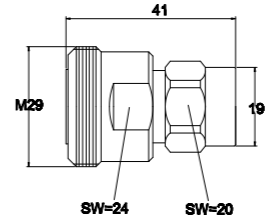

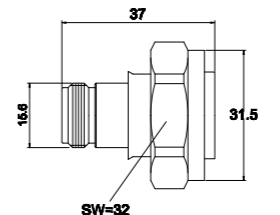
🔥 Heatex® Connectors feature a highly corrosive resistant non-magnetic finish with the conductivity characteristics of silver.



Adaptors N-Standard

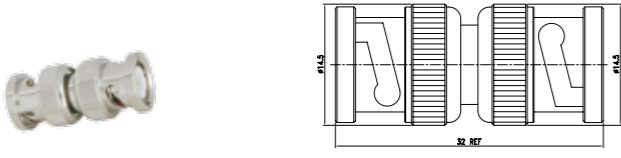
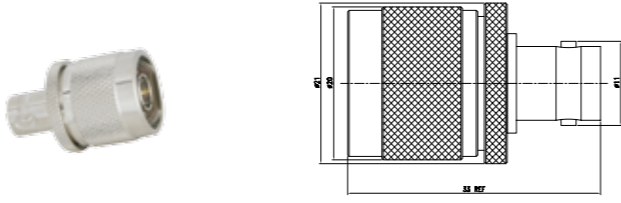
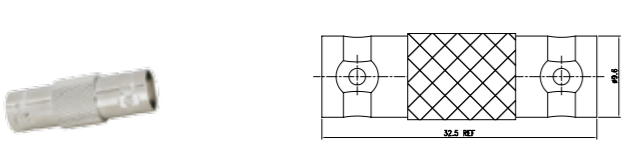
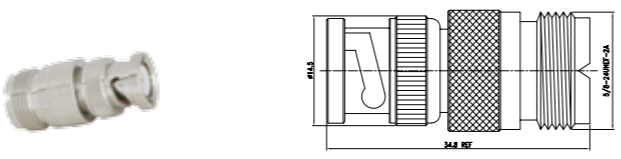
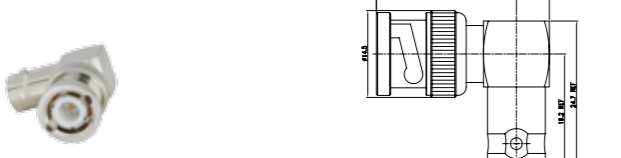
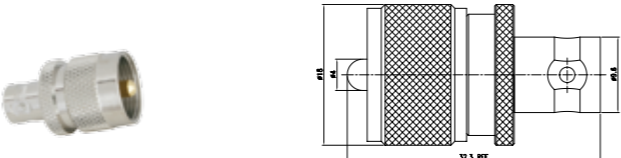
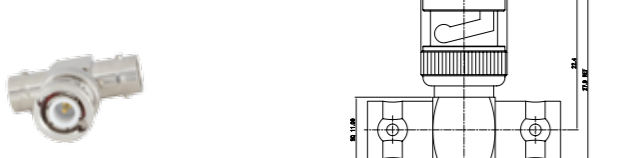
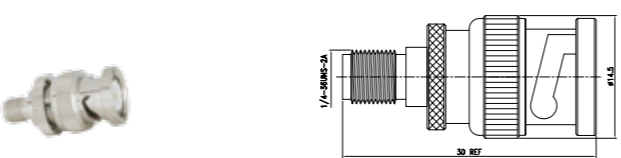
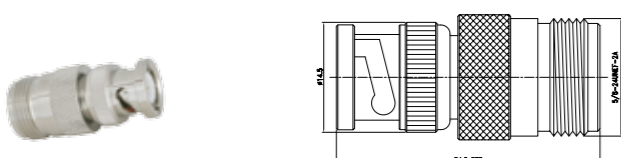
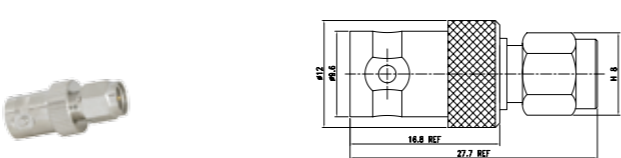
 	 
<p>N-male - male, Part.-No. 8723</p>	<p>N-male (RP) - N-female, Part.-No. 8711 Reverse Polarity</p>
 	 
<p>N-female - female, Part.-No. 8722</p>	<p>N-male - BNC-female, Part.-No. 8700</p>
 	 
<p>N-Right Angle Adaptor 90°, Part.-No. 8720</p>	<p>N-female - BNC-male, Part.-No. 8701</p>
 	 
<p>N - T-Adaptor, Part.-No. 8721</p>	<p>N-male - TNC-female, Part.-No. 8706</p>
 	 
<p>N-flange female - female, Part.-No. 8724</p>	<p>N-female - TNC-male, Part.-No. 8707</p>

Adaptors N-Standard

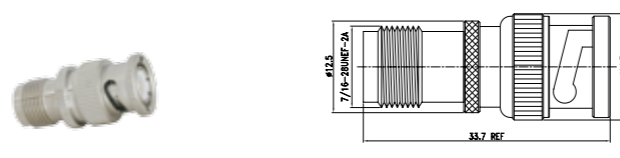
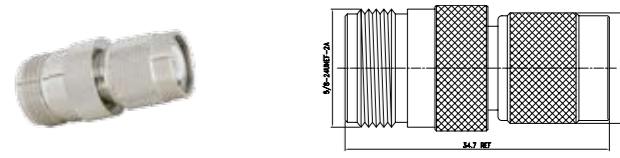
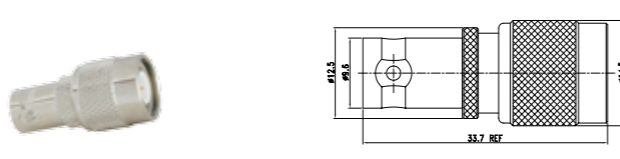
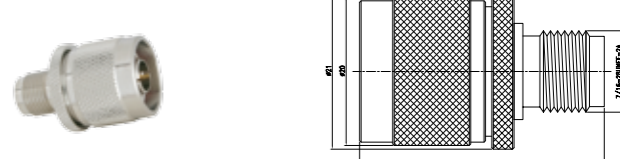
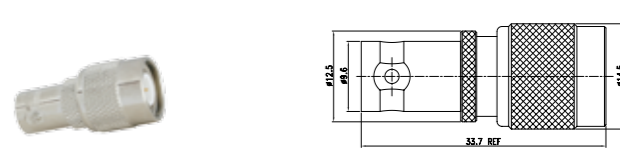
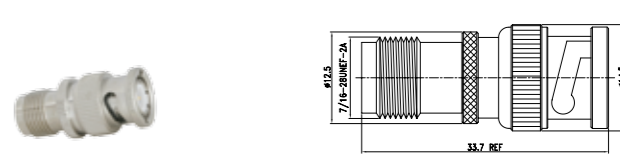
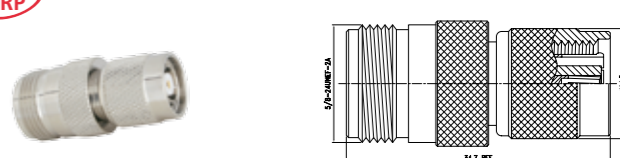
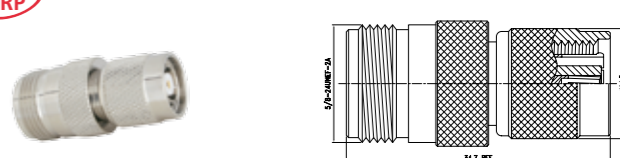
 	 
<p>N-female - TNC-male (RP), Part.-No. 8710 Reverse Polarity</p>	<p>N-male - SMA-female, Part.-No. 8704</p>
 	 
<p>N-male - UHF-female, Part.-No. 8702</p>	<p>N-female - SMA-male, Part.-No. 8705</p>
 	 
<p>N-female - UHF-male, Part.-No. 8703</p>	<p>N-female - SMA-male (RP), Part.-No. 8762 Reverse Polarity</p>
 	
<p>N-male - 7-16DIN female, Part.-No. 8708</p>	
 	
<p>N-female - 7-16DIN male, Part.-No. 8709</p>	



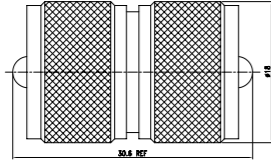
Adaptors BNC-Standard

 <p>BNC-male - male, Part.-No. 8739</p>	 <p>BNC-female - N-male, Part.-No. 8700</p>
 <p>BNC-female - female, Part.-No. 8738</p>	 <p>BNC-male - UHF-female, Part.-No. 8730</p>
 <p>BNC-Right Angle Adaptor 90°, Part.-No. 8736</p>	 <p>BNC-female - UHF-male, Part.-No. 8731</p>
 <p>BNC - T-Adaptor, Part.-No. 8737</p>	 <p>BNC-male - SMA-female, Part.-No. 8732</p>
 <p>BNC-male - N-female, Part.-No. 8701</p>	 <p>BNC-female - SMA-male, Part.-No. 8733</p>

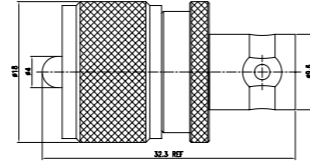
TNC-Standard

 <p>BNC-male - TNC-female, Part.-No. 8734</p>	 <p>TNC-male - N-female, Part.-No. 8707</p>
 <p>BNC-female - TNC-male, Part.-No. 8735</p>	 <p>TNC-female - N-male, Part.-No. 8706</p>
 <p>TNC-male - BNC-female, Part.-No. 8735</p>	 <p>TNC-female - BNC-male, Part.-No. 8734</p>
 <p>TNC-male (RP) - N-female, Part.-No. 8710 Reverse Polarity</p>	 <p>TNC-male (RP) - N-female, Part.-No. 8710 Reverse Polarity</p>

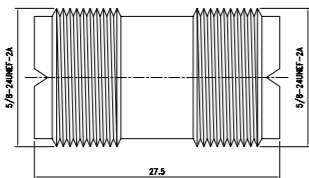
Adaptors UHF-Standard



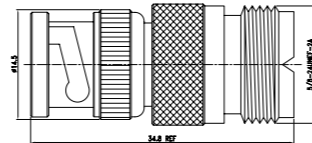
UHF-male - male, Part.-No. 8782



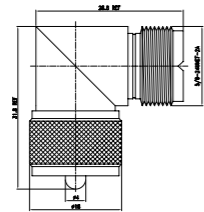
UHF-male - BNC-female, Part.-No. 8731



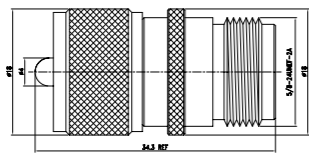
UHF-female - female, Part.-No. 8781



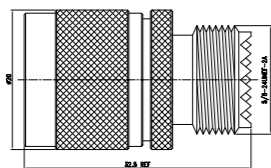
UHF-female - BNC-male, Part.-No. 8730



UHF-male - Right Angle Adap. 90°, Part.-No. 8780



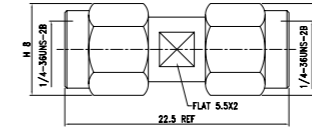
UHF-male - N-female, Part.-No. 8703



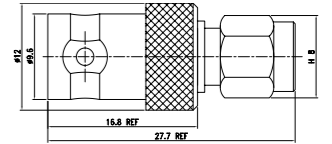
UHF-female - N-male, Part.-No. 8702



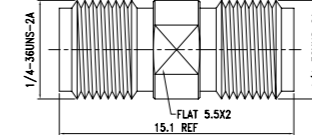
Adaptors SMA-Standard



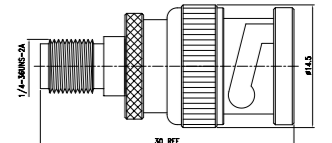
SMA-male - male, Part.-No. 8761



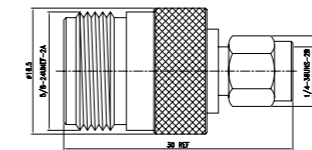
SMA-male - BNC-female, Part.-No. 8733



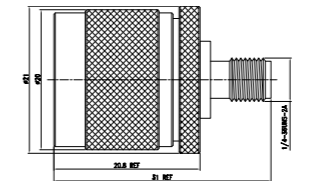
SMA female - female, Part.-No. 8760



SMA-female - BNC-male, Part.-No. 8732

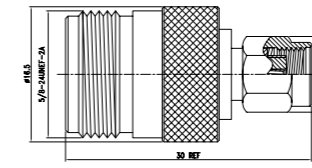


SMA-male - N-female, Part.-No. 8705



SMA-female - N-male, Part.-No. 8704

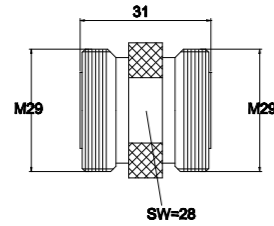
RP



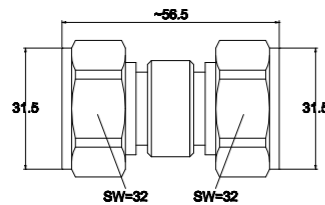
SMA-male (RP) - N-female, Part.-No. 8762
Reverse Polarity



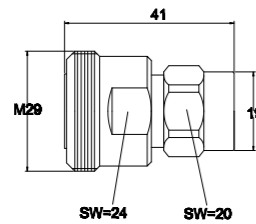
Adaptors 7-16DIN-Standard



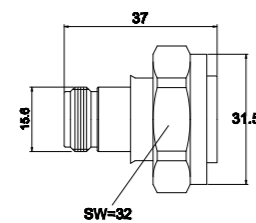
7-16DIN female - female, Part.-No. 8770



7-16DIN male - male, Part.-No. 8771



7-16DIN female - N-male, Part.-No. 8708



7-16DIN male - N-female, Part.-No. 8709

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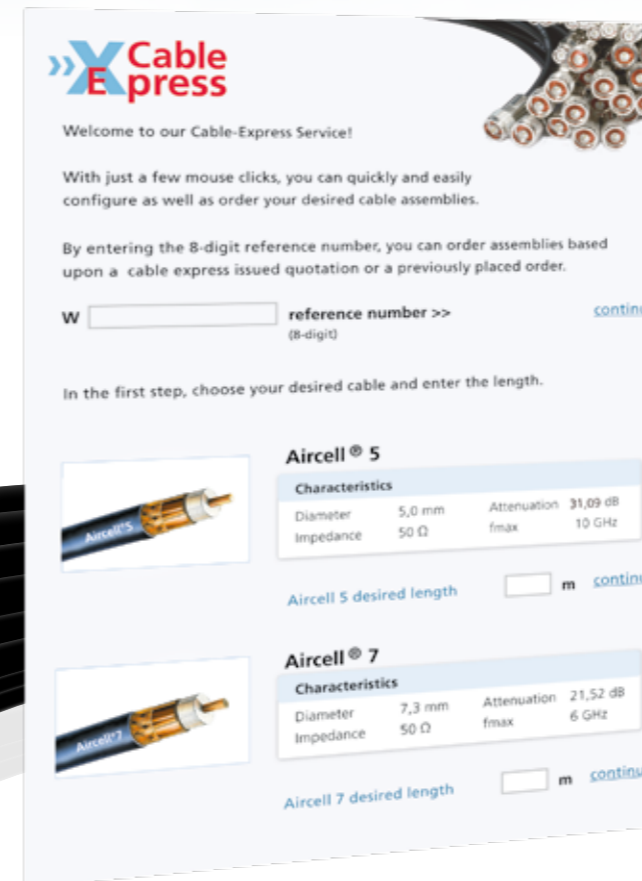
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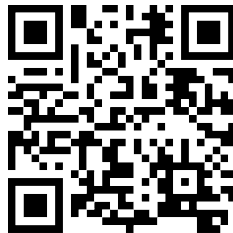
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