



# TECHNICAL DATA SHEET

## 50 ohm Connectors for RF Cables

Kabelwerk

**EUPEN** AG

Rev.: 08/2020-09-25

cable

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### Connector 1/2" Hiflex for EC4-50-HF (5092)

#### FEATURES

- **Low reflection coefficient (up to 3 GHz)**
- **Low PIM level**
- **High contact force through inner contacts made in a high-strength copper alloy**
- **Watertight (IP67/IP68)**
- **Corrosion resistant**
- **Quick trimming tool for cable preparation**
- **One piece "screw on and tighten it"**



NF50B12X



716MB12X

The connectors are designed according the standard interfaces as N, 4.3-10 or DIN 7-16. Contact components are silver or trimetal plated to minimize insertion loss and passive intermodulation products; mechanical parts are nickel plated for heavy-duty handling and best corrosion resistance. Watertightness is achieved simultaneously on the outer conductor and on the jacket by using a special silicone gasket. This watertight solution allows the use of ours connectors in the toughest environmental conditions. For a cost effective, easy and reliable installation, special trimming tools are recommended.

#### SPECIFICATIONS

Connector type	N-male	N-female	4.3-10 male	7-16 male	7-16 female
Electrical specifications					
• Nominal impedance [Ω]	50				
• Reflection coefficient @ 3 GHz	≥ 34 dB				
• Insulation resistance [GΩ]	≥ 5			≥ 10	
• Test voltage (at sea level) [kV rms, 50Hz]	2.5			4*	
• Working voltage (at sea level) [kV rms,50Hz]	1			2.7	
• Max. peak power [kW]	10		15**	40	
• Screening effectiveness up to 1 GHz [dB]	> 128				
• Contact resistance (outer contact) [mΩ]	≤ 1				
• Contact resistance (inner contact) [mΩ]	≤ 1				
• PIM ratio (2 x 20 W carrier) [dBc]	≤ -155 (Typical -163)				
Mechanical specifications					
• Torque of coupling mechanism [Nm]	8		5 to 8	30	
• Tensile strength of coupling mechanism [N]	400		500	1000	
• Cable retention [N]	> 400		> 500	> 700	
• Mechanical endurance (Nr of couplings)	≥ 500				
• Outer diameter [mm]	22	22	24	35	29
• Length [mm]	61	59	56	50	51
• Weight [g]	100	100	105	120	115
Environmental specifications					
• Temperature range	-40 °C to +85 °C (-40 °F to +185 °F)				
• Degree of protection	IP67/IP68 (mated connectors)				
• Climatic & moisture resistance test	acc. ANSI/SCTE 72 2002 R2007 (-40 °C / +60 °C @ 75% r.h.) for 2 weeks				
• Corrosion resistance test	acc. IEC 60068-2-11-Test Ka				
• Vibration test	acc. IEC 60068-2-6 (10 to 500 Hz @ 10 G)				
Materials					
• Externals parts	Brass with passivated silver or trimetal or nickel plating				
• Outer contact	Brass with passivated silver or trimetal plating				
• Inner contact	Passivated silver plated high-strength copper alloy and brass				
• Dielectric	TPX / PTFE				
• Gaskets	High quality silicone				
Cable dimensions [mm]					
• Inner conductor outer diameter	3.5 to 3.6				
• Outer conductor outer diameter	12 to 12.4				
• Jacket outer diameter	13 to 13.8				
Order codes					
• Connector type	NM50B12X	NF50B12X	43MB12X	716MB12X	716FB12X
• Special trimming tool	SPTC50B12X – Silver color				

\* The 7-16 interface itself withstands a proof voltage of 4 kV rms, but the cable size limits the voltage at the end of the cable to a lower value (refer to the datasheet of the cable, where the peak voltage is given with a safety margin).

\*\* ambient temperature  $90^{\circ}\text{C}$  max.



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## Connector 1/2" Hiflex for EC4-50-HF (5092)



716MBL12X



43MBL12X

### SPECIFICATIONS

Connector type	N-male right angle	4.3-10 male right angle	7-16 male right angle
Electrical specifications			
• Nominal impedance [Ω]		50	
• Reflection coefficient @ 3 GHz		≥ 30 dB	
• Insulation resistance [GΩ]	≥ 5	≥ 5	≥ 10
• Test voltage (at sea level) [kV rms, 50Hz]	2.5	2.5	4*
• Working voltage (at sea level) [kV rms,50Hz]	1	1	2.7
• Max. peak power [kW]	10	15**	40
• Screening effectiveness up to 1 GHz [dB]		> 128	
• Contact resistance (outer contact) [mΩ]		≤ 1	
• Contact resistance (inner contact) [mΩ]		≤ 1	
• PIM ratio (2 x 20 W carrier) [dBc]		≤ -155 (Typical -163)	
Mechanical specifications			
• Torque of coupling mechanism [Nm]	8	5 to 8	30
• Tensile strength of coupling mechanism [N]	400	500	1000
• Cable retention [N]	> 400	> 500	> 700
• Mechanical endurance (Nr of couplings)		≥ 500	
• Outer diameter [mm]	23	23	23
• Length [mm]	51 x 41	68 x 41	55 x 39.5
• Weight [g]	138	200	160
Environmental specifications			
• Temperature range	-40 °C to +85 °C (-40 °F to +185 °F)		
• Degree of protection	IP67/IP68 (mated connectors)		
• Climatic & moisture resistance test	acc. ANSI/SCTE 72 2002 R2007 (-40 °C / +60 °C @ 75% r.h.) for 2 weeks		
• Corrosion resistance test	acc. IEC 60068-2-11-Test Ka		
• Vibration test	acc. IEC 60068-2-6 (10 to 500 Hz @ 10 G)		
Materials			
• Externals parts	Brass with passivated silver or trimetal or nickel plating		
• Outer contact	Brass with passivated silver or trimetal plating		
• Inner contact	Passivated silver plated high-strength copper alloy and brass		
• Dielectric	TPX / PTFE		
• Gaskets	High quality silicone		
Cable dimensions [mm]			
• Inner conductor outer diameter	3.5 to 3.6		
• Outer conductor outer diameter	12 to 12.4		
• Jacket outer diameter	13 to 13.8		
Order codes			
• Connector type	NM50BL12X	43MBL12X	716MBL12X
• Special trimming tool		SPTC50BL12X-Black color	

\* The 7-16 interface itself withstands a proof voltage of 4 kV rms, but the cable size limits the voltage at the end of the cable to a lower value (refer to the datasheet of the cable, where the peak voltage is given with a safety margin).

\*\* ambient temperature 90 °C max.