Amphenol® RF

Global RF Solutions

FAKRA

FEATURES & BENEFITS

- Interface is keyed and color coded to ensure mating with correct systems
- Based on standard SMB connectors for commonality
- Latching mechanism provides positive retention
- Available in single, dual and three-way configurations

APPLICATIONS

Telematics, including:

- GPS
- Satellite Radio (SDARS)
- Cellular
- Bluetooth
- Remote Vehicle Diagnostics

FAKRA Connectors

FAKRA SMB Connectors

With recent advancements in communications technology and increased consumer demand for a diverse array of on-board telematic services, RF communications systems have become indispensable components of the modern automobile.

To keep RF interconnection costs low and ensure high levels of electrical and mechanical performance for telematic applications, the German and American automotive industries have standardized a high-performing, cost-effective RF connector based on the FAKRA and USCAR standards.

Utilizing a standard metal SMB connector embedded within a plastic housing that features multiple colored codes for easy identification, FAKRA connectors are designed to perform up to 4GHz and meet the particular mechanical and environmental requirements of the automobile industry.

Amphenol offers both its original FAKRA connectors, which incorporate machined components, as well as its FAKRA II connector series which utilizes die cast as well as stamped and formed components.

Specifications

Electrical			
Impedance	50 Ω		
Frequency Range	DC – 4 GHz		
Performance Spec	SAE-USCAR-17, 18		
VSWR		**DC-2 GHz**	**2GHz-4 GHz**
	Spec requirement	1.40 max	1.50 max
	Straight SMB (cable group 1)	1.15 max	1.25 max
	Right angle SMB (cable group 1)	1.20 max	1.35 max
	Straight SMB (cable group 4)	1.10 max	1.15 max
Insertion Loss	Spec requirement	<.3 dB max from DC-3GHz	
	Up to 1GHz: <.1 dB		
	Up to 2 GHz: <.2 dB		
	Up to 4 GHz: <.3 dB		
Insulation Resistance	1000 MΩ minimum		
Center Contact Resistance	Center contact: <20 mΩ		
	Outer contact: <10 mΩ		
Dielectric Withstanding Voltage	> 1,000 VRMS at sea level		
Mechanical			
Mating Durability	100 mating cycles minimum		
Plastic Housing Engagement Force	Engagement: 20 N maximum		
	Disengagement: 25 N minimum		
Cable Retention Force	Cable group 1: 110 N minimum		
	Cable group 4: 180 N minimum		
Coding	12 mechanical and color codings		
Material			
Plastic Housing	Glass filled nylon or PBT, glass filled		
Secondary Locking Clip	PBT glass filled		
Center Contact	Male: Brass		
	Female: Beryllium Copper or Phosphor Bronze		
Body	Brass or Zinc		
Retainer Ring	Beryllium Copper		
Ferrule	Copper		
Insulator	TFE or TPX		
Plating			
Center Contact	Gold		
Body	Cable types: Nickel		
	Solder types: Nickel, Gold, Tin		
Barrel	Nickel		
Ferrule	Nickel		

Rev. C

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