

# Amphenol® RF "FAKRA" SMB Connectors

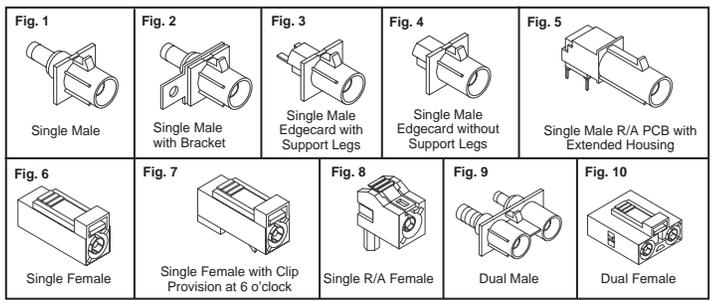
With recent advancements in communications technology and increased consumer demand for a diverse array of on-board telematics services, RF communications systems have become indispensable components of the modern automobile. To keep RF interconnection costs low and ensure high levels of electrical and mechanical performance 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 can be designed with multiple colored codes for easy identification, FAKRA connectors are designed to perform up to 4 GHz and meet the particular mechanical and environmental requirements of the automobile industry.

**FEATURES:** Electrical: Impedance: 50Ω. Frequency Range: DC-4GHz. Performance Spec: SAE/USCAR-17. Insulation Resistance: 1000MΩ min. Center Contact Resistance: center contact <20 mΩ. Outer contact <10 mΩ. Dielectric Withstanding Voltage (sea level): >1000VRMS.

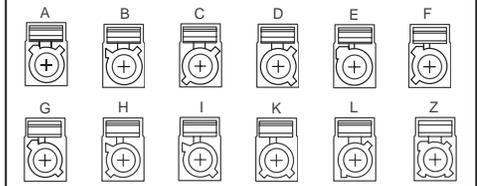
**Mechanical:** Durability (matings): 100 min. Plastic Housing Engagement Force: ≤ 20 N. Plastic Housing Disengagement Force: ≥ 25 N. Coding: 13 mechanical and colored codings. Operating Temperature Range: -40°C - 115°C.

**Materials:** Plastic Housing: PBT with 15% Glass Fiber. Secondary Locking Clip: PBT with 15% Glass Fiber. Center Contact (Female): Beryllium Copper (male). Brass. Body: Brass. Barrel: Brass. Retainer Ring: Beryllium Copper. Ferrule: Copper. Insulator: TFE. Center Contact Plating: Gold. Body, Barrel and Ferrule Plating: Nickel.



## FAKRA Keying Codes

### Female Housings



### Mechanical and Color Coding

Coding	Rib Combination	Color	Similar RAL No.
A	A - B1	Deep Black	9005
B	A - B2	Signal White	9003
C	A - C	Signal Blue	5005
D	A - D	Bordeaux Violet	4004
E	B1 - B2	Leaf Green	6002
F	B1 - C	Brown	8011
G	B1 - D	Blue Grey	7031
H	B2 - C	Heather Violet	4003
I	B2 - D	Beige	1001
J	C - D	Curry Yellow	1027
K	A - E	Dahlia Yellow	1033
L		Water Blue	5021
Z		Neutral Coding	

### Male Housings

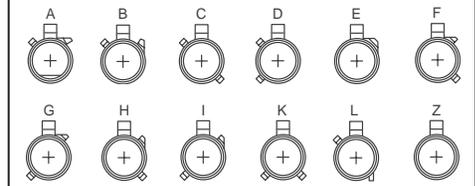


Fig.	Cable Group RG/U	Digi-Key Part No.	1	25	100	Amphenol Part No.
<i>FAKRA Coding "A" (Deep Black)</i>						
1	RG-174, 188, 316	ARF1253-ND	1.80	1.51	.97	FA1-NASP-C01-1
	RG-58, 141	ARF1255-ND	1.86	1.56	1.01	94 FA1-NASP-C04-1
2	5RG-174, 188, 316	ARF1252-ND	1.92	1.60	1.04	96 FA1-NASP-C01-0
	RG-58, 141	ARF1254-ND	1.99	1.67	1.08	1.00 FA1-NASP-C04-0
3	—	ARF1256-ND	1.81	1.51	.98	91 FA1-NASP-PCB-0
4	—	ARF1257-ND	1.85	1.54	1.00	93 FA1-NASP-PCB-1
5	—	ARF1274-ND	1.50	1.26	.81	76 FA1-NARP-PCB-9
6	Cables with .057 OD	ARF1250-ND	2.26	1.89	1.22	1.14 FA1-NASJ-C09-0
	RG-178, .071 OD Cables	ARF1251-ND	2.26	1.89	1.22	1.14 FA1-NASJ-C10-0
	RG-174, 188, 316	ARF1266-ND	1.98	1.65	1.07	99 FA1-NASJ-C01-0
	RG-58, 141	ARF1268-ND	2.03	1.70	1.10	1.02 FA1-NASJ-C04-0
7	RG-174, 188, 316	ARF1267-ND	2.03	1.70	1.10	1.02 FA1-NASJ-C01-0
	RG-58, 141	ARF1269-ND	2.09	1.75	1.13	1.05 FA1-NASJ-C04-6
8	RG-174, 188, 316	ARF1272-ND	2.26	1.89	1.22	1.14 FA1-NARJ-C01-0
	RG-58, 141	ARF1273-ND	2.37	1.98	1.28	1.19 FA1-NARJ-C04-0
<i>FAKRA Coding "B" (Signal White)</i>						
1	RG-174, 188, 316	ARF1278-ND	1.80	1.51	.97	91 FA1-NBSP-C01-1
	RG-58, 141	ARF1280-ND	1.86	1.56	1.01	94 FA1-NBSP-C04-1
2	RG-174, 188, 316	ARF1277-ND	1.92	1.60	1.04	96 FA1-NBSP-C01-0
3	—	ARF1281-ND	1.81	1.51	.98	91 FA1-NBSP-PCB-0
4	—	ARF1282-ND	1.85	1.54	1.00	93 FA1-NBSP-PCB-1
5	—	ARF1286-ND	2.16	1.81	1.17	1.09 FA1-NBRP-PCB-9
6	RG-174, 188, 316	ARF1287-ND	1.98	1.65	1.07	99 FA1-NBSJ-C01-0
	RG-58, 141	ARF1289-ND	2.03	1.70	1.10	1.02 FA1-NBSJ-C04-0
	RG-178, .071 OD Cables	ARF1292-ND	2.26	1.89	1.22	1.14 FA1-NBSJ-C10-0
7	RG-174, 188, 316	ARF1288-ND	2.03	1.70	1.10	1.02 FA1-NBSJ-C01-6
	RG-58, 141	ARF1290-ND	2.09	1.75	1.13	1.05 FA1-NBSJ-C04-6
8	RG-174, 188, 316	ARF1275-ND	2.26	1.89	1.22	1.14 FA1-NBRJ-C01-0
	RG-58, 141	ARF1276-ND	2.37	1.98	1.28	1.19 FA1-NBRJ-C04-0
9	RG-58/RG-174 Combo Design	ARF1297-ND	3.78	3.16	2.04	1.90 FA2-NBSP-C09-9
<i>FAKRA Coding "C" (Signal Blue)</i>						
1	RG-174, 188, 316	ARF1316-ND	1.80	1.51	.97	91 FA1-NCSP-C01-1
	RG-58, 141	ARF1317-ND	1.86	1.56	1.01	94 FA1-NCSP-C04-1
2	RG-174, 188, 316	ARF1300-ND	1.92	1.60	1.04	96 FA1-NCSP-C01-0
	RG-58, 141	ARF1301-ND	1.99	1.67	1.08	1.00 FA1-NCSP-C04-0
3	—	ARF1302-ND	1.81	1.51	.98	91 FA1-NCSP-PCB-0
4	—	ARF1303-ND	1.85	1.54	1.00	93 FA1-NCSP-PCB-1
5	—	ARF1309-ND	1.50	1.26	.81	76 FA1-NCRP-PCB-9
6	RG-174, 188, 316	ARF1310-ND	1.98	1.65	1.07	99 FA1-NCJS-C01-0
	RG-58, 141	ARF1312-ND	2.03	1.70	1.10	1.02 FA1-NCJS-C04-0
	RG-178, .071 OD Cables	ARF1315-ND	2.26	1.89	1.22	1.14 FA1-NCJS-C10-0
7	RG-174, 188, 316	ARF1311-ND	2.03	1.70	1.10	1.02 FA1-NCJS-C01-6
	RG-58, 141	ARF1313-ND	2.09	1.75	1.13	1.05 FA1-NCJS-C04-6
8	RG-174, 188, 316	ARF1307-ND	2.26	1.89	1.22	1.14 FA1-NCRJ-C01-0
	RG-58, 141	ARF1308-ND	2.37	1.98	1.28	1.19 FA1-NCRJ-C04-0
9	RG-174, 188, 316	ARF1323-ND	3.71	3.09	2.00	1.86 FA2-NCSP-C01-9
10	RG-174, 188, 316	ARF1318-ND	4.27	3.57	2.31	2.14 FA2-NCJS-C01-0
<i>FAKRA Coding "D" (Bordeaux Violet)</i>						
1	RG-174, 188, 316	ARF1343-ND	1.80	1.51	.97	91 FA1-NDSP-C01-1
	RG-58, 141	ARF1344-ND	1.86	1.56	1.01	94 FA1-NDSP-C04-1
2	RG-174, 188, 316	ARF1331-ND	1.92	1.60	1.04	96 FA1-NDSP-C01-0
3	—	ARF1332-ND	1.81	1.51	.98	91 FA1-NDSP-PCB-0
5	—	ARF1328-ND	1.50	1.26	.81	76 FA1-NDRP-PCB-9
6	RG-178, .071 OD Cables	ARF1330-ND	2.26	1.89	1.22	1.14 FA1-NDJS-C10-0
	RG-174, 188, 316	ARF1339-ND	1.98	1.65	1.07	99 FA1-NDJS-C01-0
	RG-58, 141	ARF1341-ND	2.03	1.70	1.10	1.02 FA1-NDJS-C04-0
7	RG-174, 188, 316	ARF1340-ND	2.03	1.70	1.10	1.02 FA1-NDJS-C01-6
	RG-58, 141	ARF1342-ND	2.09	1.75	1.13	1.05 FA1-NDJS-C04-6
8	RG-174, 188, 316	ARF1337-ND	2.26	1.89	1.22	1.14 FA1-NDRJ-C01-0
	RG-58, 141	ARF1338-ND	2.37	1.98	1.28	1.19 FA1-NDRJ-C04-0
<i>FAKRA Coding "E" (Leaf Green)</i>						
1	RG-174, 188, 316	ARF1356-ND	1.77	1.48	.96	89 FA1-NESP-C01-1
	RG-58, 141	ARF1358-ND	1.86	1.56	1.01	94 FA1-NESP-C04-1

Fig.	Cable Group RG/U	Digi-Key Part No.	1	25	100	Amphenol Part No.
2	RG-174, 188, 316	ARF1355-ND	1.92	1.60	1.04	96 FA1-NESP-C01-0
	RG-58, 141	ARF1357-ND	1.99	1.67	1.08	1.00 FA1-NESP-C04-0
5	—	ARF1371-ND	1.50	1.26	.81	76 FA1-NERP-PCB-9
6	RG-174, 188, 316	ARF1372-ND	1.98	1.65	1.07	99 FA1-NESJ-C01-0
	RG-58, 141	ARF1374-ND	2.03	1.70	1.10	1.02 FA1-NESJ-C04-0
	Cables with .057 OD	ARF1375-ND	2.26	1.89	1.22	1.14 FA1-NESJ-C09-0
	RG-178, .071 OD Cables	ARF1377-ND	2.26	1.89	1.22	1.14 FA1-NESJ-C10-0
7	RG-174, 188, 316	ARF1373-ND	2.03	1.70	1.10	1.02 FA1-NESJ-C01-6
	RG-58, 141	ARF1375-ND	2.09	1.75	1.13	1.05 FA1-NESJ-C04-6
9	RG-174, 188, 316	ARF1368-ND	3.71	3.09	2.00	1.86 FA2-NESP-C01-9
10	RG-174, 188, 316	ARF1361-ND	4.27	3.57	2.31	2.14 FA2-NESJ-C01-0
<i>FAKRA Coding "F" (Brown)</i>						
2	RG-174, 188, 316	ARF1383-ND	1.92	1.60	1.04	96 FA1-NFSP-C01-0
5	—	ARF1380-ND	2.16	1.81	1.17	1.09 FA1-NFRP-PCB-9
6	RG-174, 188, 316	ARF1399-ND	1.98	1.65	1.07	99 FA1-NFJS-C01-0
9	RG-174, 188, 316	ARF1396-ND	3.71	3.09	2.00	1.86 FA2-NFSP-C01-9
10	RG-174, 188, 316	ARF1389-ND	4.27	3.57	2.31	2.14 FA2-NFJS-C01-0
<i>FAKRA Coding "G" (Blue Grey)</i>						
1	RG-174, 188, 316	ARF1408-ND	1.77	1.48	.96	89 FA1-NGSP-C01-1
5	—	ARF1405-ND	1.50	1.26	.81	76 FA1-NGRP-PCB-9
6	RG-174, 188, 316	ARF1413-ND	1.98	1.65	1.07	99 FA1-NFRP-PCB-9
	RG-58, 141	ARF1415-ND	2.03	1.70	1.10	1.02 FA1-NGSJ-C04-0
8	RG-174, 188, 316	ARF1403-ND	2.26	1.89	1.23	1.14 FA1-NGRJ-C01-0
<i>FAKRA Coding "H" (Heather Violet)</i>						
5	—	ARF1420-ND	2.16	1.81	1.17	1.09 FA1-NHRP-PCB-9
	Cables with .057 OD	ARF1421-ND	2.26	1.89	1.22	1.14 FA1-NHJS-C09-0
6	RG-174, 188, 316	ARF1428-ND	1.98	1.65	1.07	99 FA1-NHJS-C01-0
<i>FAKRA Coding "I" (Beige)</i>						
3	—	ARF1442-ND	1.81	1.51	.98	91 FA1-NISP-PCB-0
5	—	ARF1435-ND	1.50	1.26	.81	76 FA1-NIRP-PCB-9
	Cables with .057 OD	ARF1436-ND	2.26	1.89	1.22	1.14 FA1-NISJ-C09-0
6	RG-178, .071 OD Cables	ARF1437-ND	2.26	1.89	1.22	1.14 FA1-NISJ-C10-0
	RG-174, 188, 316	ARF1444-ND	1.98	1.65	1.07	99 FA1-NISJ-C01-0
7	RG-174, 188, 316	ARF1445-ND	2.03	1.70	1.10	1.02 FA1-NISJ-C01-6
	RG-58, 141	ARF1447-ND	2.09	1.75	1.13	1.05 FA1-NISJ-C04-6
<i>FAKRA Coding "K" (Curry Yellow)</i>						
1	RG-174, 188, 316	ARF1481-ND	1.80	1.51	.97	91 FA1-NKSP-C01-1
	RG-58, 141	ARF1483-ND	1.86	1.56	1.01	94 FA1-NKSP-C04-1
2	RG-174, 188, 316	ARF1480-ND	1.92	1.60	1.04	96 FA1-NKSP-C01-0
	RG-58, 141	ARF1482-ND	1.99	1.67	1.08	1.00 FA1-NKSP-C04-0
3	—	ARF1484-ND	1.81	1.51	.98	91 FA1-NKSP-PCB-0
5	—	ARF1486-ND	1.88	1.57	1.02	95 FA1-NKRP-PCB-9
	RG-174, 188, 316	ARF1487-ND	1.98	1.65	1.07	99 FA1-NKJS-C01-0
	RG-58, 141	ARF1489-ND	2.03	1.70	1.10	1.02 FA1-NKJS-C04-0
6	Cables with .057 OD	ARF1491-ND	2.26	1.89	1.22	1.14 FA1-NKJS-C09-0
	RG-178, .071 OD Cables	ARF1492-ND	2.26	1.89	1.22	1.14 FA1-NKJS-C10-0
7	RG-174, 188, 316	ARF1488-ND	2.03	1.70	1.10	1.02 FA1-NKJS-C01-6
	RG-58, 141	ARF1490-ND	2.09	1.75	1.13	1.05 FA1-NKJS-C04-6
8	RG-174, 188, 316	ARF1478-ND	2.26	1.89	1.22	1.14 FA1-NKRJ-C01-0
<i>FAKRA Coding "L" (Dahlia Yellow)</i>						
8	RG-174, 188, 316	ARF1493-ND	2.26	1.89	1.22	1.14 FA1-NLRJ-C01-0
	RG-58, 141	ARF1494-ND	2.37	1.98	1.28	1.19 FA1-NLRJ-C04-0
<i>FAKRA Coding "Z" (Water Blue)</i>						
1	RG-174, 188, 316	ARF1533-ND	1.80	1.51	.97	91 FA1-NZSP-C01-1
	RG-58, 141	ARF1535-ND	1.86	1.56	1.01	94 FA1-NZSP-C04-1
2	RG-174, 188, 316	ARF1532-ND	1.92	1.60	1.04	96 FA1-NZSP-C01-0
3	—	ARF1536-ND	1.81	1.51	.98	91 FA1-NZSP-PCB-0
4	—	ARF1537-ND	1.85	1.54	1.00	93 FA1-NZSP-PCB-1
5	—	ARF1525-ND	1.50	1.26	.81	76 FA1-NZRP-PCB-9
	RG-174, 188, 316	ARF1526-ND	1.98	1.65	1.07	99 FA1-NZSJ-C01-0
6	RG-58, 141	ARF1528-ND	2.03	1.70	1.10	1.02 FA1-NZSJ-C04-0
	RG-178, .071 OD Cables	ARF1531-ND	2.26	1.89	1.22	1.14 FA1-NZSJ-C10-0
7	RG-174, 188, 316	ARF1527-ND	2.03	1.70	1.10	1.02 FA1-NZSJ-C01-6
8	RG-174, 188, 316	ARF1523-ND	2.26	1.89	1.22	1.14 FA1-NZRJ-C01-0
	RG-58, 141	ARF1524-ND	2.37	1.98	1.28	1.19 FA1-NZRJ-C04-0

**All prices are in British Pound Sterling and include duties.**