



# GENERAL INFORMATION SELECTOR CHART

Series	Series Types	Enclosure	Contacts		Nominal Coil Voltage or Current	Operating Power at P.I. (mW)	Applicable Specification Approvals							
			Arrangement	Rating			MILITARY		CECC					
							Mil-PRF-39016/	Mil-PRF-28776/	16101-	16207-				
MA	MA	TO-5	DPDT	1A / 28 Vdc	5...30,0 Vdc	130	9							
	MA-D				5...26,5 Vdc		15							
	MA-DD						20							
	MA-T							1						
MA2		TO-5	DPDT	1A / 28 Vdc	5...30,0 Vdc	130			003					
MCA		TO-5	DPDT	2A / 28 Vdc	5...26,5 Vdc	150								
MS	MS	TO-5	DPDT	1A / 28 Vdc	5...48,0 Vdc	60	11							
	MS-D						16							
	MS-DD						21							
	MS-T							3						
MS2		TO-5	DPDT	1A / 28 Vdc	5...48,0 Vdc	60			004					
1MA	1MA	TO-5	SPDT	1A / 28 Vdc	5...26,5 Vdc	100	7							
	1MA-D						23							
	1MA-DD						24							
	1MA-T							5						
1MA1		TO-5	SPDT	1A / 28 Vdc	5...26,5 Vdc	100			005					
1MS	1MS	TO-5	SPDT	1A / 28 Vdc	5...40,0 Vdc	50	10							
	1MS-D						25							
	1MS-DD						40							
	1MS-T						50		4					
1MS1		TO-5	SPDT	1A / 28 Vdc	5...40,0 Vdc	50			006					
	MGA	CUBIC .100GRID	DPDT	1A / 28 Vdc	5...26,5 Vdc	130	17							
	MGA-D						18							
MGA-DD	150													
MGAE	MGAE	CUBIC .100GRID	DPDT	1A / 28 Vdc	5...28,0 Vdc	130				801				
	MGAE-D													
	MGAE-DD						150							
MGA2	MGA2/D2	CUBIC	DPDT	1A / 28 Vdc	5...28,0 Vdc	140			007					
MGS	MGS	CUBIC .100GRID	DPDT	1A / 28 Vdc	5...48,0 Vdc	60	41							
	MGS-D						42							
	MGS-DD						43							
MGSE	MGSE	CUBIC .100GRID	DPDT	1A / 28 Vdc	5...48,0 Vdc	60				802				
	MGSE-D													
	MGSE-DD													
MGS2	MGS2/D2	CUBIC	DPDT	1A / 28 Vdc	5...48,0 Vdc	60			008					
12K		1/2 CC	DPDT	2A / 28 Vdc	5...26,5 Vdc	250	6							
2K		1/2 CC	DPDT	2A / 28 Vdc	5...48,0 Vdc	250								
2K6600		1/2 CC	DPDT	2A / 28 Vdc	5...48,0 Vdc	250				007.014.021				
							MILITARY Compliance							
							Mil-R-39016/	Mil-R-5757/						
2K7940		1/2 CC	DPDT	2A / 28 Vdc	6...26,5 Vdc	250	22							
KA	2KA	1/2 CC	DPDT	2A / 28 Vdc	5...48,0 Vdc	100								
HA	2HA	1/2 CC	DPDT	5A / 28 Vdc	5...48,0 Vdc	300								
B	2B	CC	DPDT	2A / 28 Vdc	6...76,0 Vdc	250								
	2BR				26,5...115 Vac		370							
2B6660		CC	DPDT	3A / 28 Vdc	6...76,0 Vdc	250			008					
2B7506		CC	DPDT	2A / 28 Vdc	6...26,5 Vdc	250			10					
	BS						CC	DPDT	2A / 28 Vdc	6...26,5 Vdc	100			
	2BSA											CC	SPDT	2A / 28 Vdc
1BSK	CC	DPDT	2A / 28 Vdc	3,2...70,6mA	40									
2BSK						CC	DPDT	2A / 28 Vdc	4,0...89,2mA	40				
BN	1BN	CC	SPDT	5A / 28 Vdc	6...76,0 Vdc						280			
	2BN					CC	DPDT	2A / 28 Vdc	4,0...90,0mA	40				
2BC7201		CC	DPDT	2A / 28 Vdc	4,0...90,0mA						40		13	
BCN	1BCN	CC	SPDT	5A / 28 Vdc	6...40,0 Vdc	80								
	2BCN						CC	DPDT	2A / 28 Vdc	6...115 Vdc	400			
4B		CC	4PDT	2A / 28 Vdc	6...115 Vdc	400								
T	2T	CC	DPDT	10A / 28 Vdc	6...115 Vdc	500								
	2TR				115 Vac									
TN	2TN	CC	DPDT	15A / 28 Vdc	6...115 Vdc	500								
	2TNR				115 Vac									
2T7188		CC	DPDT	10A / 28 Vdc	6...120 Vdc	500			23					
RFK	RFK	1/2 CC	SPDT	2A / 28 Vdc	6...26,5 Vdc	250								
	2REFK						CC	DPDT	2A / 28 Vdc	6...76,5 Vdc	250			
RFB	RFB	CC	SPDT	2A / 28 Vdc	6...76,5 Vdc	250								
	2RFB						CC	DPDT	2A / 28 Vdc	4,0...89,2 mA	40			
RFBC	RFBC	CC	SPDT	2A / 28 Vdc	4,0...89,2 mA	40								
	2RFBC						CC	DPDT	1A / 28 Vdc	5,0...30,0 Vdc	260			
4MA		CC	4PDT	1A / 28 Vdc	5,0...30,0 Vdc	260								
4MS		CC	4PDT	1A / 28 Vdc	5,0...48,0 Vdc	120								



# CRYSTAL CAN RADIO FREQUENCY RELAY 75 Watt

Series  
RFB

## Product Description

This series of coaxial terminated hermetically sealed relays have been designed to provide reliable switching functions in the most demanding radio frequency applications. The use of 2B relays in the basic construction, has been coupled with a unique and improved termination network to insure faultless performance under severe environmental conditions.

The design concepts employed in each of these series has been time tested through thousands of hours testing and millions of field operations to provide the highest degree of reliability.

The following construction features ensure the highest reliability in extreme environments:

- All welded relay construction
- Cleaning and sealing techniques ensures maximum internal cleanliness
- Low level to 2 amp. auxiliary switching
- 1 or 2 form C RF contacts, special metal alloy with gold plating
- Frame, armature designs and force / mass ratio provides exceptional immunity to shock and vibration.
- Coax interconnections
- 200 watt RF carry capability
- 75 watt RF switching capability
- Terminated with 6 inches length RG 196A/ u Teflon cable

## Series Types

- RFB Basic Relay 1 form C, SPDT
- 2RFB Basic Relay 2 form C, DPDT

## Environmental and Physical Specifications

Temperature (Ambient)	-65°C to +85°C
Shock	100 g's, 6 msec.
Vibration (sinusoidal)	20 g's, 10 to 2000 Hz
Acceleration	30 g's
Sealing	All welded, Hermetic



## Electrical Characteristics (over the Temperature range, unless otherwise noted)

Coil Data	See Typical Characteristics chart		
Contact Rating	Type load	Contact Load	Cycles min.
	Resistive	2 Amp / 28 Vdc (aux) 75 Watts RF Switching , 200 Watts carry (cold switching)	100.000 100.000
Contact Resistance	0,05 ohm max. initial aux. contact		
Operate Time	6,0 msec. max. at 25 °C		
Release Time	3,0 msec. max. at 25 °C		
Dielectric Strength	500 Vrms min., 60 Hz, all mutually insulated, at sea level		
Insulation Resistance	1000 megohms min. all points at 500 Vdc		
Sensitivity	250 milliwatts at pick-up, at 25 °C		

## Radio frequency Characteristics

Frequency range	0 to 500 MHz (derated characteristics to 1000 MHz)	
	Typical at 100 MHz	Typical at 500 MHz
Voltage Standing Wave Ratio (VSWR)	< 1.1 : 1	< 1.2 : 1
Insertion Loss	0.16 dB	0.5 dB
Crosstalk	50 dB	40 dB
Power Switching	75 Watts	50 Watts
Power Handling	200 Watts max.	
Characteristic Impedance	50 or 75 ohms (other impedances available on special order)	



# CRYSTAL CAN RADIO FREQUENCY RELAY 75 Watt

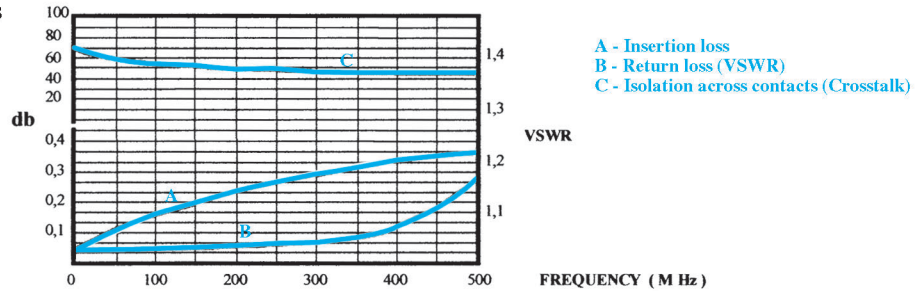
Series  
RFB

Figure 1 - Radio Frequency curves

Notes:

Typical characteristics are based on factory knowledge. Tests to ensure compliance, are not performed

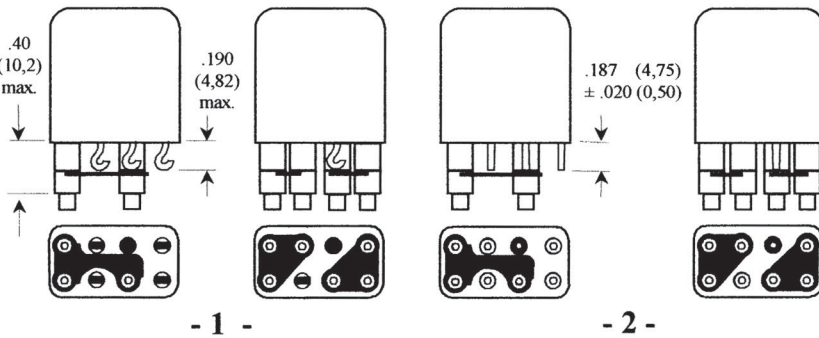
Values shown are in a 50 ohm impedance coaxial system



## Typical Characteristics (over the Temperature range, unless otherwise noted)

Voltage Code	Coil Voltage Vdc Nominal	Coil Voltage Vdc Max.	Coil Resistance ohms ± 10% at 25 °C	Pick-up Vdc Max. at 25 °C	Drop-out Vdc Min. at 25 °C
106	6,0	7,2	40	3,1	0,5
112	12,0	14,2	160	6,3	0,7
126	26,5	32,0	675	13,0	1,5
148	48,0	58,0	2500	25,0	2,5
176	76,0	90,0	5000	35,0	3,0

## Terminal Styles

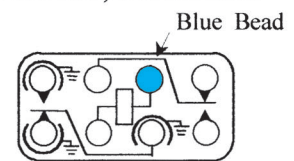


Note :

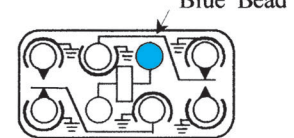
- Dimensions are shown in inches (millimetres)
- Terminal spacing is .200 (5,08). Aux. Terminal diameter is .030 (0,76) all headers

## Schematic Diagrams

### 1 Pole RF, 1 Pole aux



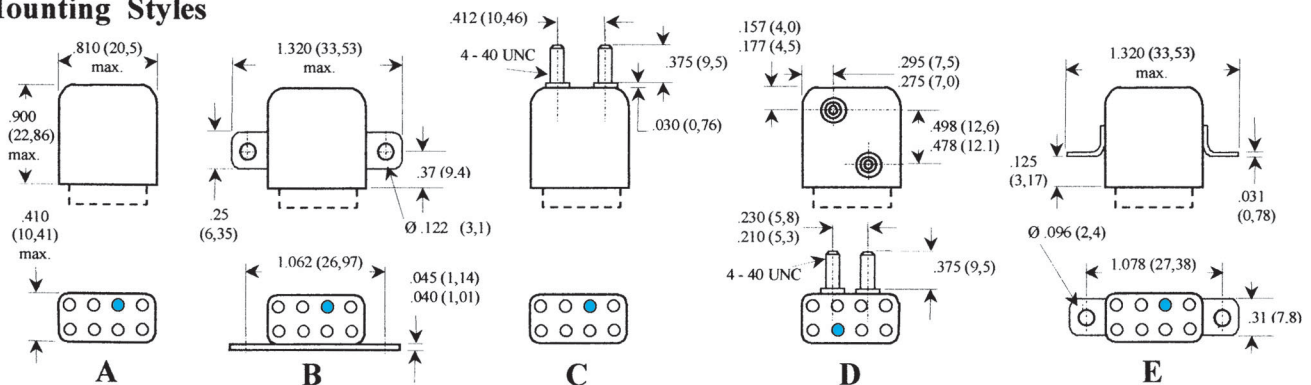
### 2RF Poles



Note:

- Schematics are viewed from terminals

## Mounting Styles



Note : Dimensions are shown in inches (millimetres)

Note :

Contact factory for other cable types and lengths

## How to Order (Part Numbering System)

Series Type **RFB** Terminal Style **-2** Voltage Code **A** Mounting Style **-126**