

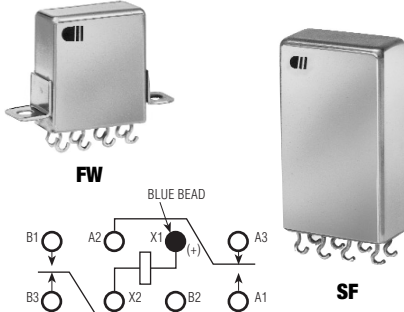
# FW · FW5A · SF · SF5A

FULL SIZE HIGH PERFORMANCE RELAYS

## FW · FW5A · SF · SF5A

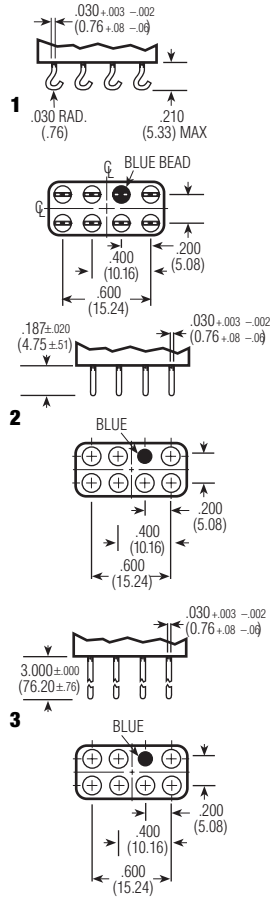
**TWO POLE FULL SIZE  
CRYSTAL CAN RELAY**

**FW QUALIFIED TO MIL-R-5757/10**



**FEATURES**

- Hermetically sealed
- Up to 5 amps switching
- High shock & vibration ratings
- Optional terminals & mounting options
- Excellent RF switching



**TERMINALS**

**ELECTRICAL CHARACTERISTICS**

**CONTACT ARRANGEMENT**

2 Form C

**CONTACT MATERIAL**

Stationary:  
Bifurcated hardened silver alloy

Moveable:

Gold plated hardened silver alloy

**CONTACT RESISTANCE**

Before Life: 50 milliohms max.  
(measured @ 10 mA @ 6 Vdc)

After Life: 100 Milliohms max.  
(measured @ 2 mA @ 28 Vdc)

**MECHANICAL LIFE EXPECTANCY**

50 million operations

**COIL VOLTAGE**

1.8 Vdc to 110 Vdc

**COIL POWER**

1.5 watts max. @ 25° C

**DUTY CYCLE**

Continuous

**PICK-UP VOLTAGE**

Approximately 50% of  
nominal coil voltage

**PICK-UP SENSITIVITY**

250 mW (FW)  
40 mW (SF)  
80 mW (SF 5A)

**RF PERFORMANCE (FW ONLY)**

FREQUENCY (MHz)	RFLOSSES (dB)	VSWR	ISOLATION (dB)
100	0.1	1.17:1	40
250	0.2	1.18:1	33
500	0.3	1.19:1	28
750	0.4	1.19:1	25
1,000	0.4	1.19:1	23

**OPERATING CHARACTERISTICS**

**TIMING**

Operate Time:  
15 ms max. (SF)  
5 ms (FW)  
6 ms max. (MIL-R-5757/10)

Release Time:  
10 ms max. (SF)  
5 ms max. (FW)  
6 ms max. (MIL-R-5757/10)

Contact Bounce:  
2 ms max.

**DIELECTRIC WITHSTANDING VOLTAGE**

Between Open Contacts:  
500 Vrms, 60 Hz

Between Adjacent Contacts:  
1,000 Vrms, 60 Hz

Between Contacts and Coil:  
1,000 Vrms, 60 Hz

**INSULATION RESISTANCE**

10,000 Megohms @ 500 Vdc

**ENVIRONMENTAL CHARACTERISTICS**

**TEMPERATURE RANGE**

-65° to +125°C

**WEIGHT**

0.6 oz. max. (FW)  
0.7 oz. max. (SF 6)  
1.1 oz. max. (SF/SF 5A)

**STANDARD VIBRATION RESISTANCE**

20 G's, 10 to 2000 Hz (FW)  
15 G's, 10 to 2000 Hz (SF)  
QPL: 20 G's, 10 to 2000 Hz

**SHOCK RESISTANCE**

100 G's, 6 ± 1 ms

**QPL APPROVAL**

MIL-R-5757/10 (FW only)

**QPL EQUIVALENT**

MIL-R-5757/13 (SFonly)

**CONTACT RATINGS**

CONTACT LOAD	TYPE	OPERATIONS MIN.
5 A @ 28 Vdc (FW5A/SF5A)	Resistive	100,000
3 A @ 28 Vdc (FW)	Resistive	100,000
2 A @ 28 Vdc (SF)	Resistive	100,000
1 A @ 115 Vac, 60 Hz & 400 Hz (FW)	Resistive	100,000
0.3 A @ 115 Vac, 60 Hz & 400 Hz (SF)	Resistive	100,000
1 A @ 28 Vdc	Inductive (200 mH)	100,000
0.1 A @ 28 Vdc	Lamp	100,000
10 uA @ 50 mVdc	Low Level	1,000,000
75 WATTS @ 50 MHz (FW)	RF	10,000,000

# FW • FW5A • SF • SF5A

FULL SIZE HIGH PERFORMANCE RELAYS

## FW COIL DATA

NOM. COIL VOLTAGE (Vdc)	COIL RESISTANCE IN OHMS ±10% @ 25°C	PICKUP VOLTAGE Vdc (MAX.) @ 25°C	PICKUP VOLTAGE Vdc (MAX.) @ 125°C	DROPOUT VOLTAGE Vdc (MIN.) @ 25°C	DROPOUT VOLTAGE Vdc (MIN.) @ -65°C	NOM. COIL POWER (W) @ 25°C	MAX. COIL VOLTAGE	COIL DESIG.
6.3	35	3.2	4.4	0.35	0.23	1.13	7.9	A
12.6	200	6.8	9.4	0.74	0.49	.79	15.8	D
17.6	340	8.9	12.3	0.97	0.64	.91	22.0	E
26.5	675	13.5	18.7	1.47	0.96	1.04	33.1	G
32.0	975	15.5	21.5	1.69	1.1	1.05	40.0	H
48.0	2,450	25.0	34.7	2.73	1.8	.94	60.0	L
56.0	3,150	30.0	41.6	3.27	2.1	1.90	70.0	M
75.0	5,000	38.0	52.7	4.14	2.7	1.13	93.8	N
110.0	9,100	51.0	70.7	5.56	3.6	1.33	137.5	R

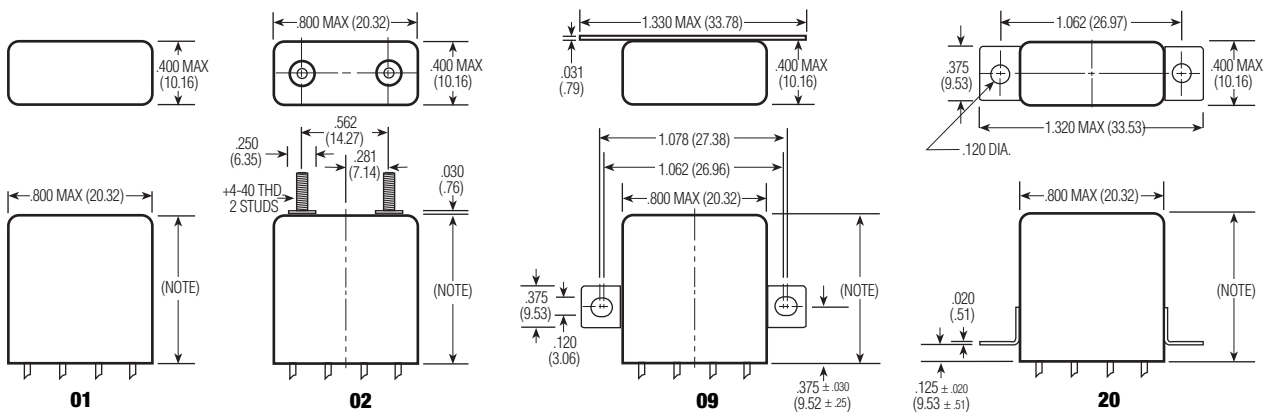
## SF5 /SF6 COIL DATA

NOM. COIL VOLTAGE (Vdc)	NOM. CURRENT (mA)	COIL RESISTANCE IN OHMS ±10% @ 25°C	PICKUP CURRENT (mA) @ 25°C	NOM. COIL POWER (mW) @ 25°C	COIL DESIG.
1.8	90.0	20	45.0	162	A
9.0	18.0	500	9.0	162	E
12.6	12.6	1,000	6.5	159	F
16.5	11.0	1,500	5.2	182	G
18.0	9.0	2,000	4.5	162	H
20.0	8.0	2,500	4.0	160	J
26.5	5.3	5,000	2.8	140	W
36.0	4.5	8,000	2.3	162	L
40.0	4.0	10,000	2.0	160	Y

## SF5A COIL DATA

NOM. COIL VOLTAGE (Vdc)	NOM. CURRENT (mA)	COIL RESISTANCE IN OHMS ±10% @ 25°C	PICKUP CURRENT (mA) @ 25°C	NOM. COIL POWER (mW) @ 25°C	COIL DESIG.
2.8	140.0	20	65.0	392	A
4.0	80.0	50	41.6	320	B
12.0	24.0	500	12.5	288	E
18.0	18.0	1,000	9.3	324	F
26.5	10.6	2,500	5.6	281	J
40.0	8.0	5,000	4.0	320	W

NOTE:  
FW/FW5A = .875 (22.23) MAX  
SF6 = .900 (22.86) MAX  
SF5/SF5A5 = 1.281 (32.54) MAX



MOUNTING STYLES

SPECIFYING A PART NUMBER EXAMPLE:

TYPE	SERIES	TERMINALS	MOUNTINGS	COILS	FEATURES
FW	1	1	20	G	00
SF	5	1	20	W	00
SF5A	5	1	20	W	00
SF	6	1	20	W	00

