

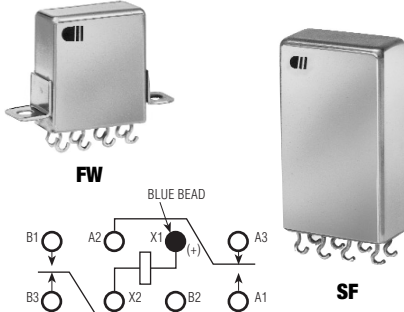
# FW · FW5A · SF · SF5A

FULL SIZE HIGH PERFORMANCE RELAYS

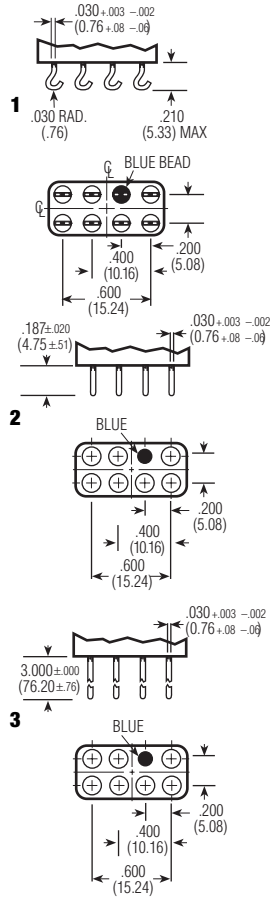
## FW · FW5A · SF · SF5A

**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

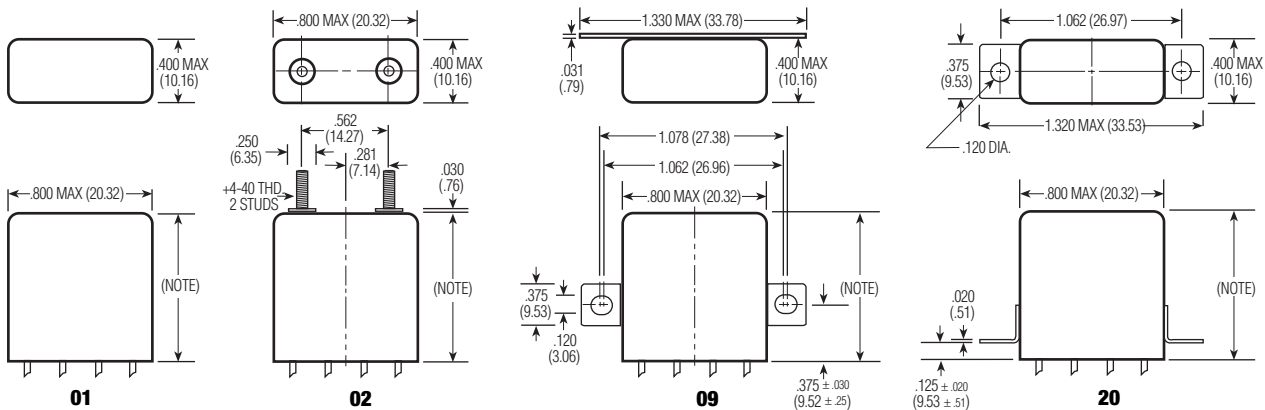
## SF5 /SF6 COIL DATA

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

