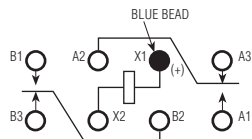


Double Pole, Electrically Held, 5 Amps and Less (Continued)

FW, FW5A, SF, SF5A

Two Pole Full Size
Crystal-Can Relay

FW Qualified to
MIL-R-5757/10



Terminal View

Product Facts

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

Electrical Characteristics

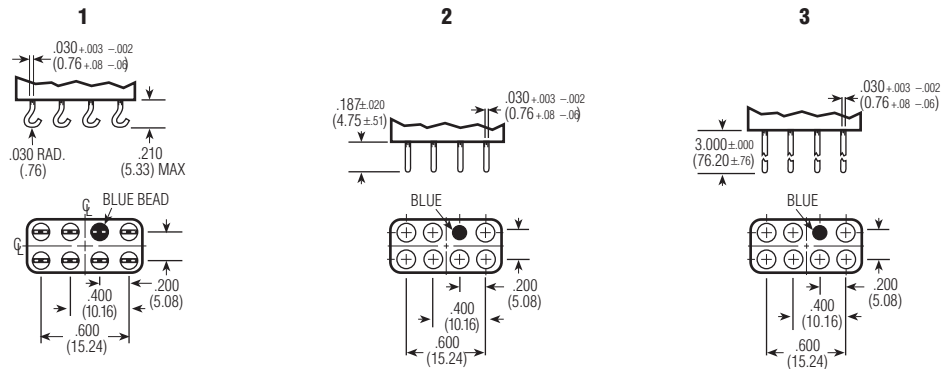
Contact Arrangement — 2 Form C
Contact Material — Stationary — Bifurcated hardened silver alloy
 Moveable — Gold plated hardened alloy
Contact Resistance — Before Life — 50 milliohms max. (measured @ 10 mA @ 6 Vdc)
 After Life — 100 milliohms max. (measured @ 2 mA @ 28 Vdc)
Mechanical Life Expectancy — 50 million operations
Coil Voltage — 6.3 to 110 Vdc (FW, FW5A)
 1.8 to 40 Vdc (SF)
 2.8 to 40 Vdc (SF5A)
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, FW5A)
 40 mW (SF)
 80 mW (SF5A)

Operating Characteristics

Operate Time — 15 ms max. (SF)
 5 ms (FW, FW5A)
 6 ms max. (MIL-R-5757/10)
Release Time — 10 ms max. (SF)
 5 ms max. (FW, FW5A)
 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 min @ 500 Vdc

Environmental Characteristics

Temperature Range — -65°C to +125°C
Weight — 0.6 oz. max. (FW, FW5A)
 0.7 oz. max. (SF 6)
 1.1 oz. max. (SF/SF 5A)
Vibration Resistance — Standard — 20 G's, 10 to 2000 Hz (FW, FW5A)
 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 (SF only)



Terminals

RF Performance

Frequency (MHz)	RF Losses (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

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 µA @ 50 mVdc	Low Level	1,000,000
75 WATTS @ 50 MHz (FW)	RF	10,000,000

Double Pole, Electrically Held, 5 Amps and Less (Continued)

FW, FW5A 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	Drop-out Voltage Vdc (Min.) @ 25°C	Drop-out 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	1.00	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

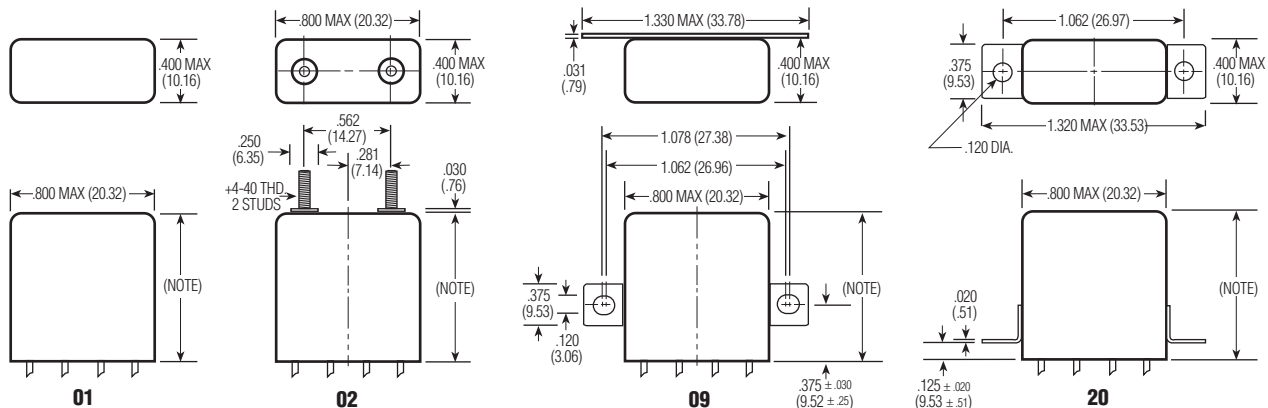
SF5/SF6 Coil Data

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

* The part number example shown on this page is for catalog items. For a list of specific QPL part numbers, please see the index in Section 15.

TE Connectivity:

SF5177S01 FW1109G06 FW1130S01 FW1193G01 FW1201G04 FW5A1201G03 FW5A1201S04 FW5A1201S37
FW1101G00 FW5A1195G01 FW5A1201S27 FW5A1201S28 FW5A1205S04 FW5A11129S01 FW5A1111S01
FW1102G11 FW5A11129S02 FW1101S08 FW1162S03 FW1199S01 FW1201G10 FW1201S27 FW1201S31
FW1205G00 FW2181G02 FW5A1101S15 FW5A1102S06 SF5A5137S02 SF5A5201J02 SF5126W04 SF5219Y02
SF5301Y02 SF6201W00 SF5119D01 FW1205S04 FW5A1296S01 FW1002S09 FW5A1193S01 FW5A1367S01
SF5201F01 FW5A1201G01 FW1201G00 SF50111S01 SF5126J01 FW1206G01 SF5A53145S01 SF5A53145S02
FW1201D00