

HFW · HFW4A · HFW5A · HMB · HMS

HALF SIZE HIGH PERFORMANCE RELAYS

HFW·HFW4A·HFW5A

**STANDARD HALF SIZE
HIGH-PERFORMANCE RELAY**

QUALIFIED TO MIL-R-39016/6



TERMINAL VIEW

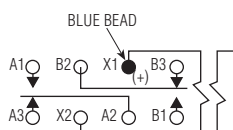
FEATURES

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

HMB

**BIFILAR HALF SIZE
HIGH-PERFORMANCE RELAY**

QUALIFIED TO MIL-R-39016/22



TERMINAL VIEW

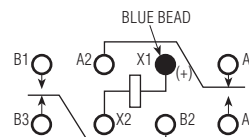
FEATURES

- Hermetically sealed
- Up to 2 amps switching
- High shock & vibration ratings
- Optional terminals & mounting styles
- Excellent RF switching

HMS

**SENSITIVE HALF SIZE
HIGH-PERFORMANCE RELAY**

QUALIFIED TO MIL-R-39016/44



TERMINAL VIEW

FEATURES

- Hermetically sealed
- Up to 2 amps switching
- High shock & vibration ratings
- Optional terminals & mounting styles
- Excellent RF switching

ELECTRICAL CHARACTERISTICS

CONTACT ARRANGEMENT

2 Form C (DPDT)

CONTACT MATERIAL

Stationary:
Hardened silver alloy

Moveable:

Gold plated hardened silver alloy

CONTACT RESISTANCE

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

After Life: 100 milliohms max.
(measured @ 2 A @ 28 Vdc)

MECHANICAL LIFE EXPECTANCY

50 million operations

COIL VOLTAGE

5 to 48 Vdc

COIL POWER

1.4 watts max. @ 25°C

DUTY CYCLE

Continuous

PICK-UP VOLTAGE

Approximately 50% of
nominal coil voltage

PICK-UP SENSITIVITY@25°C

145 to 260 mW (HFW)
325 mW (HMB)
100 to 125 mW (HMS)

CONTACT RATINGS

	CONTACT LOAD	TYPE	OPERATIONS MIN.
HFW,HMB,HMS	2 A @ 28 Vdc	Resistive	100,000
	HFW4A 4 A @ 28 Vdc	Resistive	100,000
HFW5A	5 A @ 28 Vdc	Resistive	100,000
	0.75 A @ 28 Vdc	Inductive (200mH)	100,000
	0.1 A @ 115 Vac, 60 Hz & 400 Hz	Resistive	100,000
	0.3 A @ 115 Vac, 60 Hz & 400 Hz	Resistive	100,000
	0.1 A @ 28 Vdc	Intermediate	50,000
	0.160 A @ 28 Vdc	Lamp	100,000
	30 µA @ 50 mVdc	Low Level	1,000,000

RF PERFORMANCE

FREQUENCY (MHz)	RF LOSSES (dB)	VSWR	ISOLATION (dB)
100	0.1	1.17:1	40
500	0.3	1.19:1	28
1000	0.4	1.19:1	23



HFW · HFW4A · HFW5A · HMB · HMS

OPERATING CHARACTERISTICS

TIMING

Operate Time: 4.0 ms max. (HFW)
 5.0 ms max. (HMB)
 6.0 ms max. (HMS)
 Release Time: 4.0 ms max. (HFW)
 5.0 ms max. (HMB/HMS)

CONTACT BOUNCE

2.0 ms max.

DIELECTRIC WITHSTANDING VOLTAGE

Between Open Contacts:
 500 Vrms 60 Hz

Between Adjacent Contacts:
 1000 Vrms 60 Hz

Between Contacts & Coil:
 1000 Vrms 60 Hz

INSULATION RESISTANCE

10,000 megohms min. @ 500 Vdc

ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE RANGE

-65°C to +125°C

WEIGHT

0.46 oz. (13 gms max.)

VIBRATION RESISTANCE

HFW/HMB/HMS:
 Standard: 20 G's, 10 to 2,000 Hz

HFW/HMB:
 QPL: 30 G's, 10 to 3,000 Hz

HMS:
 QPL: 20 G's, 10 to 2,500 Hz

SHOCK RESISTANCE

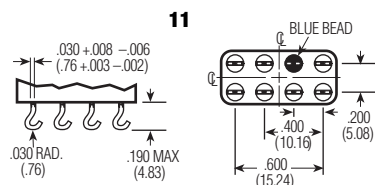
100 G's, 6 ± 1 ms
 50 G's, 11 ± 1 ms (HMS)

QPL APPROVAL

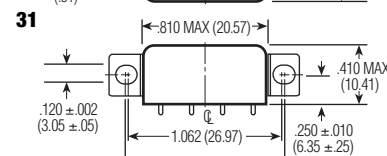
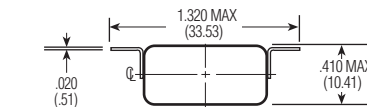
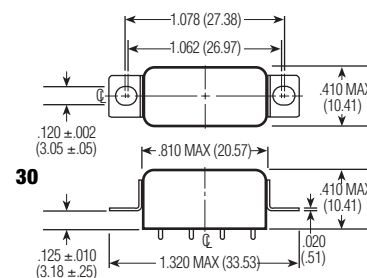
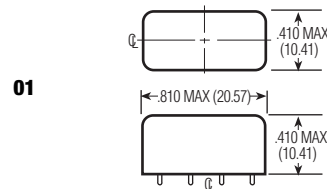
MIL-R-39016/6 (HFW)

MIL-R-39016/22 (HMB)

MIL-R-39016/44 (HMS)



TERMINALS



MOUNTING STYLES

STANDARD COIL DATA

	NOM. COIL VOLTAGE (Vdc)	COIL RESISTANCE IN OHMS ±10% @ 25°C	PICKUP VOLTAGE Vdc (MAX.) @ 25°C	PICKUP VOLTAGE Vdc (MIN.) @ 125°C	DROP-OUT VOLTAGE Vdc (MIN.) @ 25°C	DROP-OUT VOLTAGE Vdc (MIN.) @ -65°C	NOM. COIL POWER (mW) @ 25°C	MAX. COIL VOLTAGE	COIL DESIG.
HFW/HFW4A/HFW5A	5.0	27	2.7	3.8	0.29	0.21	926	6.0	L
	6.0	40	3.2	4.5	0.35	0.25	900	7.5	F
	12.0	160	6.4	9.0	0.7	0.5	900	15.0	G
	26.5	700	13.5	18.0	1.5	1.0	1003	32.0	K
HMB	6.0	40	3.6	4.8	0.35	0.25	900	7.5	F
	12.0	160	7.2	9.6	0.7	0.5	900	15.0	G
	26.5	700	15.0	20.0	1.5	1.0	1003	32.0	K
HMS	5.0	47	2.2	3.2	0.21	0.12	532	7.0	S001
	6.0	75	2.75	4.0	0.27	0.17	480	9.0	S002
	12.0	310	5.6	8.0	0.55	0.35	465	20.0	S003
	26.5	1,030	11.4	16.5	1.1	0.7	682	35.0	S004
	30.0	1,620	14.3	21.0	1.4	0.9	556	44.0	S005
	36.0	2,640	18.0	26.0	1.8	1.1	491	56.0	S006
OTHER	6-8	60	3.5	4.85	0.35	0.22	817	9.0	A
	(avail. for 12-15	320	6.8	9.42	0.68	0.44	570	21.0	B
HFW/HFW4A relays only)	18.0	520	9.5	13.16	0.95	0.62	623	27.0	J
	26.5-32	1,250	14.0	19.4	1.5	0.98	684	42.0	D
	40.0	2,700	21.3	29.5	2.1	1.37	593	61.0	H
	48.0	3,500	25.5	35.3	2.5	1.63	658	70.0	E

SPECIFYING A PART NUMBER EXAMPLE:

TYPE HFW TERMINALS 12 MOUNTINGS 30 COILS K FEATURES 00 (n/a HMS)