

## Double Pole, Electrically Held, 2 Amps and Less

**HFW, HMB, HMS**

**HFW**  
**Standard Half Size**  
**High Performance Relay**  
**Qualified to**  
**MIL-R-39016/6**



Terminal View

**HMB**  
**Bifilar Half Size**  
**High Performance Relay**  
**Qualified to**  
**MIL-R-39016/22**



Terminal View

**HMS**  
**Sensitive Half Size**  
**High Performance Relay**  
**Qualified to**  
**MIL-R-39016/44**



Terminal View

**Product Facts**

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

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**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 (HFW)  
 6 to 26.5 Vdc (HMB)  
 5 to 36 Vdc (HMS)

**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.
2 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

## Double Pole, Electrically Held, 2 Amps and Less (Continued)

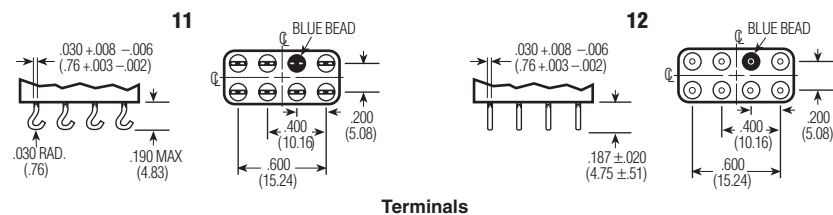
**HFW, HMB, HMS (Continued)**

**Operating Characteristics**

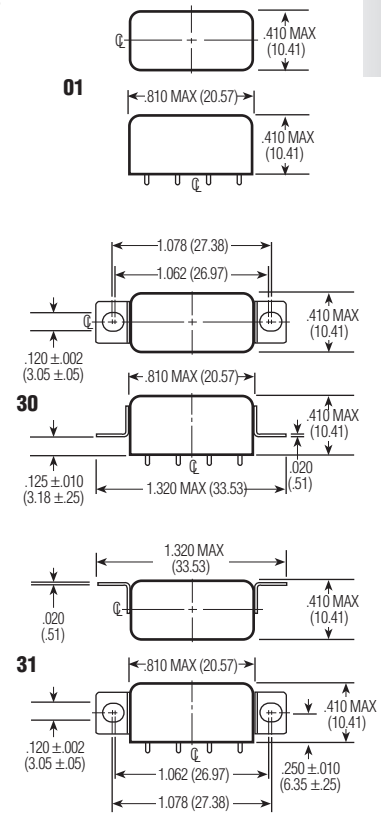
**Timing** —  
 Operate Time —  
 4.0 ms max. (HFW)  
 5.0 ms max. (HMB)  
 6.0 ms max. (HMS)  
 Release Time —  
 4.0 ms max. (HFW)  
 5.0 ms max. (HMB/HMS)  
**Contact Bounce** — 2.0 ms max.  
**Dielectric Withstanding Voltage** —  
 Between Open Contacts —  
 500 Vrms 60 Hz  
 Between Adjacent Contacts —  
 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	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
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 HFW relays only)	12-15	320	6.8	9.42	0.68	0.44	570	21.0	B
	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)

\* 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.

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