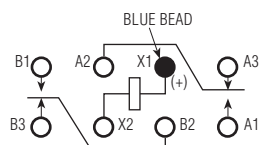


Double Pole, Electrically Held, 2 Amps and Less

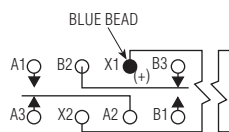
HFW, HMB, HMS

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



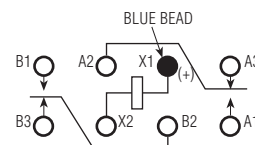
Terminal View

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

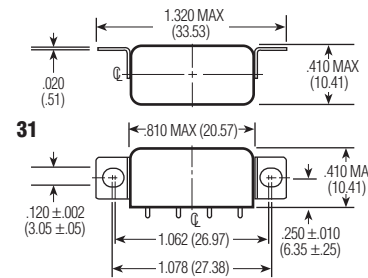
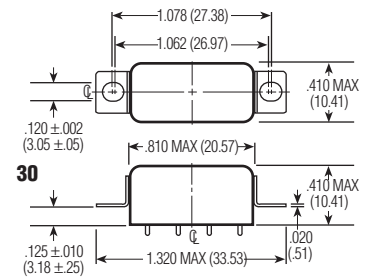
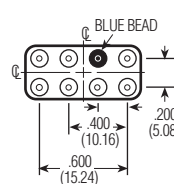
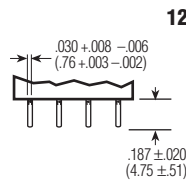
Timing —
 Operate Time —
 4.0 ms max. (HFW)
 5.0 ms max. (HMB)
 6.0 ms max. (HMS)
 Release Time —
 4.0 ms max. (HFW)
 5.0 ms max. (HMB/HMS)
Contact Bounce — 2.0 ms max.
Dielectric Withstanding Voltage —
 Between Open Contacts —
 500 Vrms 60 Hz
 Between Adjacent Contacts —
 1000 Vrms 60 Hz
 Between Contacts & 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 | Terminals | Mountings | Coils | Features |
|------|-----------|-----------|-------|--------------|
| HFW | 12 | 30 | K | 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.