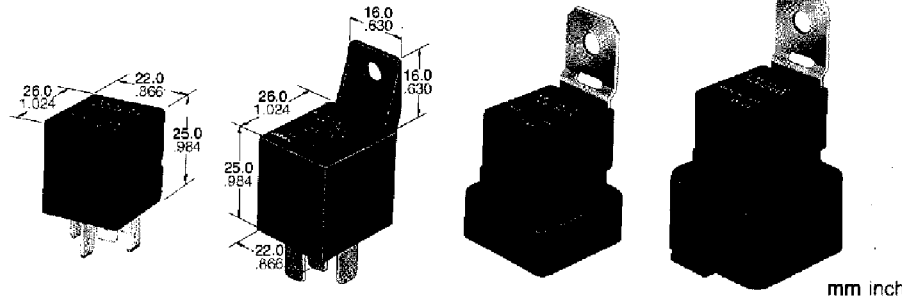


CB

NAIS

**HIGH POWER
AUTOMOTIVE RELAY**

CB-RELAYS



- 40 A rating at 85°C 185°F
- ISO type terminals
- High shock resistance for drop test requirements (2 meters 6.6 feet)
- Low temperature rise—all current carrying material is copper.
- Quick connect and pc board type
- Various enclosure options

SPECIFICATIONS

Contacts

Type	12 V coil voltage	24 V coil voltage
Arrangement	1 Form A, 1 Form C	
Initial voltage drop	N.O.: Max. 0.5 V (at 40 A 12 V DC) N.C.: Max. 0.45 V (at 30 A 12 V DC)	N.O.: Max. 0.3 V (at 20 A 24 V DC) N.C.: Max. 0.15 V (at 10 A 24 V DC)
Contact material	Silver alloy	
Rating (resistive load)		
Nominal switching capacity	N.O.: 40 A 14 V DC N.C.: 30 A 14 V DC	N.O.: 20 A 28 V DC N.C.: 10 A 28 V DC
Max. switching power	N.O.: 560 W N.C.: 420 W	N.O.: 560 W N.C.: 280 W
Max. switching voltage	16 V DC	
Max. switching current	See Contact Rating table	
Expected life (min. ope.)		
Mechanical (at 120 cpm)	10 ⁶	
Electrical (at rated load operating frequency 2 sec. ON, 2 sec. OFF)	10 ⁵ (Sealed type: 5x10 ⁴)	

Coil

Nominal operating power	12 V	24 V
	1.4 W	1.8 W

Contact Rating

	12 V coil voltage			24 V coil voltage		
	Form A	Form C		Form A	Form C	
Max. carry current	40 A	40 A	30 A	20 A	20 A	10 A
Max. make current	100 A	100 A	60 A	50 A	50 A	20 A
Max. break current	40 A	40 A	30 A	20 A	20 A	10 A

Characteristics

Type	12 V coil voltage	24 V coil voltage
Max. operating speed (at rated load)	15 cpm	
Operate time*1 (at nominal voltage)	Max. 15 msec.	
Release time*1 (at nominal voltage)	Max. 15 msec. (Type with diode inside: Max. 25 msec.)	
Initial breakdown voltage		
Between open contacts	AC 500 V for 1 min.	
Between contacts and coil	AC 500 V for 1 min.	
Initial insulation resistance	Min. 20 MΩ at 500 V DC	
Temperature rise (at nominal voltage)	Max. 75°C (at 20°C)	
Ambient temperature*2	-40°C to +85°C -40°F to +185°F (Not freezing and condensing at low temperature)	
Storage temperature	-40°C to +85°C -40°F to +185°F	
Shock resistance	Functional	Min. 200 m/s ² (20 G)
	Destructive	Min. 1,000 m/s ² (100 G)
Vibration resistance	Functional	44.1 m/s ² (4.5 G) 10 to 500 Hz/0.5 hr in X, Y, Z directions for 4 hrs
	Destructive	44.1 m/s ² (4.5 G) 10 to 2000 Hz/0.5 hr in X, Y, Z directions for 4 hours
Drop test	Capable of meeting specification after 6.6 feet (2 m) drop onto concrete	
Unit weight	Quick connect/PC board type:	
	Approx. 33 g 1.16 oz (Shrouded type: Approx. 43 g 1.52 oz) (Waterproof type: Approx. 47 g 1.66 oz)	

*1 Excluding contact bounce time

*2 -40°C to +125°C, -40°F to +257°F type also available as option. Please consult us for details.

ORDERING INFORMATION



Contact arrangement	Protective construction	Classification of types	Mounting classification	Coil voltage (DC)
1a: 1 Form A 1: 1 Form C	Nil: Sealed type F: Flux-resistant type	Nil: Standard type D: with diode inside R: with resistor inside	Nil: Quick connect type P: PC board type M: Bracket type SM: Shrouded type with bracket WM: Weatherproof type with bracket	12, 24 V

COIL DATA

Nominal voltage, V DC	Pick-up voltage, V DC (max.)	Drop-out voltage, V DC (min.)	Nominal current, mA (±10%)	Coil resistance, Ω (±10%)	Nominal operating power, W	Maximum allowable voltage, V DC (at 85°C)
12	7	1.2	117	103	1.4	16
24	14	2.4	75	320	1.8	32

Note: Bulk package: 50 pcs.; Case: 200 pcs.