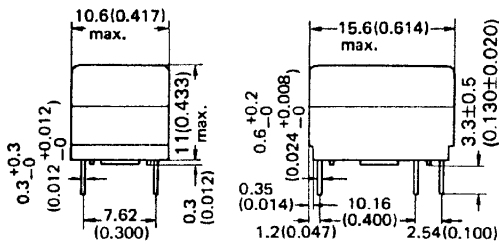


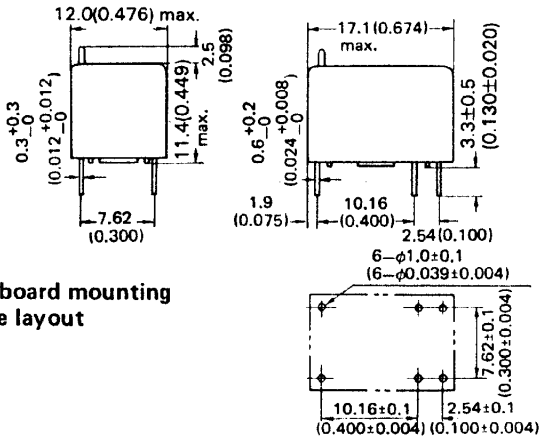
Dimensions

Unit: mm (in.)

Standard and automatic soldering types



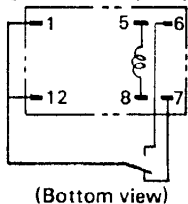
Automatic soldering + immersion-cleanable type (N type)



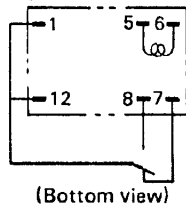
PC board mounting hole layout

Schematics

- Standard (Type A)
- High sensitivity (Type C)



- Standard (Type B)
- High sensitivity (Type E)



Features

- **2A maximum carrying current**
Capable of 2A maximum continuous carrying current in the contact.
- **Superior sensitive gold-overlay contacts**
P type: Gold-overlay silver-palladium contacts
- **Bifurcated contacts also available**
The series FBR212 has highly reliable bifurcated contacts.
- **International terminal pitch of one inch grid terminal layout**
- **High sensitive, low power dissipation types also available**
Standard types: 0.45W (A or B types)
High sensitivity types: 0.2W (C or E types)
- **Meets FCC68-302**
- **Applied for UL, CSA standards**

Specifications

Item	Specification
Contact arrangement	1 form C (SPDT)
Contact material	Gold-overlay silver-palladium (-P)
Contact resistance	100 mΩ max. (measured at 6V DC, 0.1A) initial value
Insulation resistance	100 MΩ min. (at 500V DC) initial value
Dielectric withstand voltage	500V AC for 1 minute (standard) 1,000V AC for 1 minute (high withstand voltage)
Vibration	10 Hz to 55 Hz (1.5 mm dual amplitude)
Shock	No contact opening: Standard model - 10G (11 ms) High sensitivity model - 6G (11 ms) No damage: 100G (11 ms)
Operate time	Approx. 5 ms (at rated voltage, not including bounce time)
Release time	Approx. 5 ms (after rated operation) not including bounce time)
Service life	Mechanical
	Electrical
Ambient temperature	Standard type: -25°C to +55°C High sensitivity type: -25°C to +75°C (at rated ops.)
Weight	Approx. 4g

Contact Capacities

Item	DC load	AC load	Remarks
Contact rating	28V - 1A	120V - 0.5A	With resistive load
Maximum switching voltage*1	150V	220V	
Maximum switching current	2A	1.25A	
Maximum carrying current	2A		
Maximum switching power	28W	60VA	
Minimum applicable load (Reference)	Single-contact type 1V - 1mA (-P) Bifurcated-contact type 0.1V - 100μA (-P)		

*1. If the switching voltage exceeds the rated contact voltage, reduce the current. Since current values vary according to the type of load.
*2. Values when switching a resistive load at normal room temperature and humidity and in a clean atmosphere. The minimum applicable load varies with the switching frequency and operating environment.

Coil Ratings

• Standard type (Type A or B)

Voltage designation	Rated coil voltage	Coil resistance ($\pm 10\%$)	Rated current (at rated voltage)	Pickup voltage	Dropout voltage	Maximum allowable voltage	Coil power consumption	Coil temperature rise
D001	1.5V DC	5 Ω	Approx. 300mA	70% max. of rated coil voltage	10% min. of rated coil voltage	150% of rated coil voltage	Approx. 450mW (at rated coil voltage)	Approx. 45°C (at rated coil voltage)
D003	3 V DC	20 Ω	Approx. 150mA					
D005	5 V DC	56 Ω	Approx. 89mA					
D006	6 V DC	80 Ω	Approx. 75mA					
D009	9 V DC	180 Ω	Approx. 50mA					
D012	12 V DC	320 Ω	Approx. 38mA					
D024	24 V DC	1,280 Ω	Approx. 19mA					

Note: All values in the table are measured at 20°C.

• High sensitivity type (Type C or E)

Voltage designation	Rated coil voltage	Coil resistance ($\pm 10\%$)	Rated current (at rated voltage)	Pickup voltage	Dropout voltage	Maximum allowable voltage	Rated power consumption	Coil temperature rise
D001	1.5V DC	12 Ω	Approx. 125mA	70% max. of rated coil voltage	10% min. of rated coil voltage	225% of rated coil voltage	Approx. 200mW (at rated coil voltage)	Approx. 25°C (at rated coil voltage)
D003	3 V DC	45 Ω	Approx. 67mA					
D005	5 V DC	120 Ω	Approx. 42mA					
D006	6 V DC	180 Ω	Approx. 33mA					
D009	9 V DC	400 Ω	Approx. 23mA					
D012	12 V DC	700 Ω	Approx. 17mA					
D024	24 V DC	2,800 Ω	Approx. 9mA					

Note: All values in the table are measured at 20°C.

Part Numbers

[Example] FBR211 S A D 012 - P (2)
 (A) (B) (C) (D) (E) (F) (G)

A) Series name

FBR211: FBR210 series (Single contact)
FBR212: FBR210 series (Bifurcated contact)

B) Construction

S: Automatic soldering
N: Automatic soldering + immersion-cleanable N type

C) Schematics and Coil Power Consumption

A: Standard type A } Coil power dissipation
B: Standard type B } 0.45W
C: High sensitivity type C } Coil power dissipation
E: High sensitivity type E } 0.2W

(D) Coil drive

D: DC drive type

(E) Rated coil voltage: Voltages are shown as three digits.
 (Example) 12V: 012, 6V: 006
 1.5V: 001

See Coil Ratings table for details.

(F) **-P:** Gold-overlay silver-palladium contacts

(G) No designation: Standard

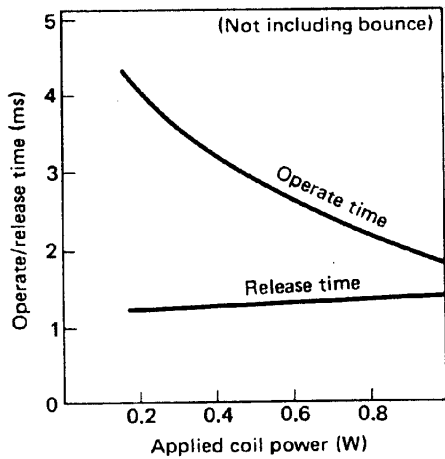
2: High withstand voltage

Note: The designation is stamped on the top of the relay case as follows.

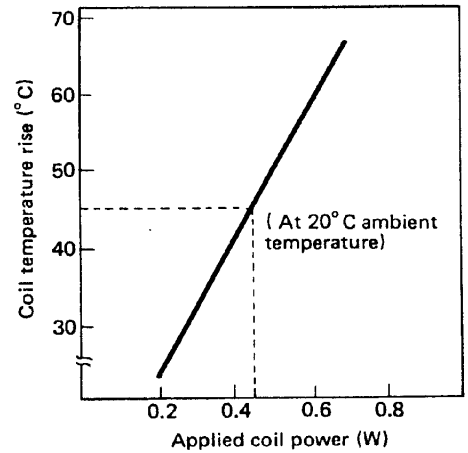
(Example) Designation ordered: **FBR211 AD012-P**
 Stamp: **211 AD012-P**

Reference Data

• Operate/release time data

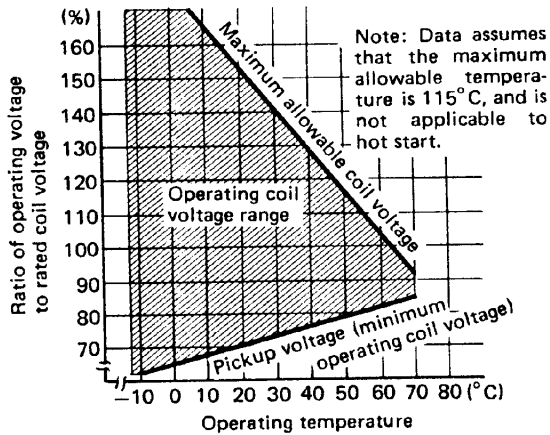


• Coil temperature rise data



• Operating temperature and operating coil voltage range

Standard type A or B (0.45W coil power dissipation)



• Operating temperature and operating coil voltage range

High sensitive type C or E (0.2W coil power dissipation)

