

Bestact

MULTIPOLE RELAYS

I/O Helper

- Medium-Capacity Type RB-2D2□20U
- Large-Capacity Type RB-2D□20U
- Plug-in (3-poles)**
- Medium-Capacity Type RB3P-G□□DU
- Large-Capacity Type RB-3P□U
- Stationary Type RB-5AB (5-poles)**

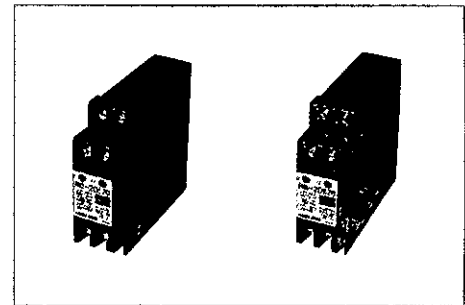
I/O HELPER

- Medium-Capacity Type RB-2D2□20U
- Large-Capacity Type RB-2D□20U

**Cover a Wide Range of Applications from Low Level to Power Loads
Ideal as Additional Relays for PC and Microcomputer Equipment**

FEATURES

1. Can energize with small-capacity transistor output since flywheel diode is integrated. LED is provided and power consumption is as low as 0.7 W per circuit.
2. Enables direct control of a wide range of loads, thus it is possible to fully compensate for insufficient output capacity of a general purpose PC relay.
3. Incorporate hermetically sealed contacts to prevent aging, making them ideal for infrequent use applications. They permit high frequency switching which is impossible with conventional contact relays.
4. Can reduce manufacturing time due to fast operational speed of 5ms or less.
5. Recognized in accordance with USA and Canadian standards File No. E154773. For Class I, Division 2 Groups A, B, C, D Hazardous Locations.



PRODUCT TYPES AND LOAD CONTROL (: Applicable scope)

• **Medium-Capacity Type**

Type	AC Power Control	DC Power Control	AC Relay Control	DC Relay Control	Electronic Circuit Control
RB-2D2420U	240 VAC 110 VA, over 300,000 operations	115 VDC 30 W, over 200,000 operations	24 to 240 VAC, over 10,000,000 operations	24 to 230 VDC, over 5,000,000 operations	24V 1mA to 5V 1mA
RB-2D2520U					24V 1mA or greater*

• **Large-Capacity Type**

Type	AC Power Control	DC Power Control	AC Relay Control	DC Relay Control	Electronic Circuit Control
RB-2D420U	240 VAC 240 VA, over 500,000 operations	115 VDC 50 W, 230 VDC 40 W, over 300,000 operations	24 to 240 VAC, over 10,000,000 operations	24 to 230 VDC, over 5,000,000 operations	24V 1mA to 1V 1mA
RB-2D520U					24V 1mA or greater*

*In circuit with photocoupler, 5V 10mA can be used.

TYPICAL APPLICATIONS

- Addition relays for programmable controllers
- For dry contact input of servo amplifiers, measuring instruments, etc.
- I/O interfaces of microcomputer logic
- Output relays of photoelectric switches, proximity switches, etc.

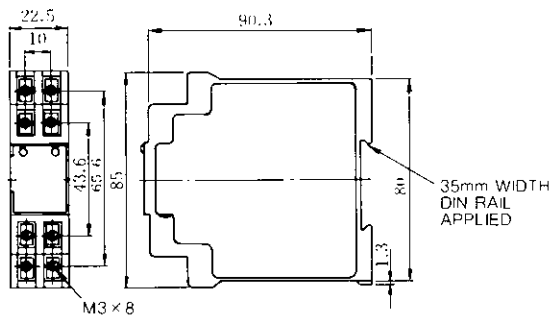
COIL SPECIFICATIONS (With polarity)

Coil Voltage	12, 24, 48 VDC
Coil Power Consumption	0.7 W × 2circuits (Large-capacity type) 0.6 W × 2circuits (Medium-capacity type)
Operating Time	5ms or less
Releasing Time	5ms or less
Ambient Temperature	-10 to +60 °C

☐ RATINGS AND SPECIFICATIONS

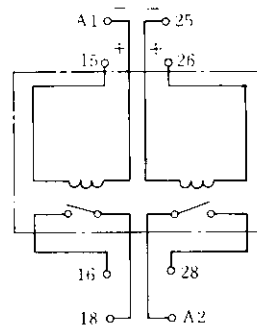
Type		Medium-Capacity Type		Large-Capacity Type			
		RB-2D2420U	RB-2D2520U	RB-2D420U	RB-2D520U		
Contact Ratings	Incorporated Bestact Type	R24U	R25U	R14U	R15U		
	Rated Continuous Current	3A		5A			
	Maximum Making Current	240 VAC 15 A (PF: 0.7)		240 VAC 30 A (PF: 0.7)			
	Maximum Breaking Current	240 VAC 15 A (PF: 0.4)		240 VAC 30 A (PF: 0.4)			
		115 VDC 0.5 A (L/R = 40 ms)		115 VDC 0.6 A, 230 VDC 0.4 A (L/R = 100 ms)			
	Operational Power Ratings (Inductive Load)	240 VAC 5 A ON 0.5 A OFF		240 VAC 10 A ON 1 A OFF			
115 VDC 0.3 A (L/R = 40 ms)		115 VDC 0.5 A, 230 VDC 0.2 A (L/R = 100 ms)					
Minimum Operational Power Ratings		5 V 1 mA	24 V 1 mA	1 V 1 mA	24V 1mA		
Characteristics	Operating Time		5ms or less		5ms or less		
	Releasing Time		5ms or less		5ms or less		
	Vibration Resistance Erroneous Operation		98.0m/s ² {10G} or greater (20 to 1000Hz)		98.0m/s ² {10G} or greater (20 to 1000Hz)		
	Shock Resistance	Erroneous Operation	147.0m/s ² {15G}		147.0m/s ² {15G}		
		Breakdown	980.0m/s ² {100G}		980.0m/s ² {100G}		
	Mechanical Life		50,000,000 operations	100,000,000 operations	50,000,000 operations	100,000,000 operations	
	Electrical Life (Inductive Load)	240 VAC 110 VA		240 VAC 240 VA (10 A making, 1 A breaking)			
		300,000 operations	1,000,000 operations	500,000 operations	800,000 operations		
		115 VDC 30 W (L/R = 40 ms)		115 VDC 50 W 300,000 operations (L/R = 100 ms)			
		200,000 operations	300,000 operations				
			24 VDC 40 mA 10,000,000 operations	24 VDC 40 mA 15,000,000 operations	24 VDC 40 mA 15,000,000 operations	24 VDC 40 mA 30,000,000 operations	
Withstand Voltage		1500VAC for 1 minute (across contacts: 500VAC for 1 minute)		2000VAC for 1 minute (across contacts: 800VAC for 1 minute)			
Ambient Temperature	Operating Temperature	- 10 to + 60°C		- 10 to + 60°C			
	Storage	- 25 to + 80°C		- 25 to + 80°C			
Approx. Weight		110 g		150 g			

DIMENSIONS in mm



(Same dimensions for both medium- and large-capacity types)

CONNECTIONS



- Bestact coils have a polarity. Connect terminal number 15 and 26 to ⊕
- For DC load, connect terminals 16 and 28 to ⊕

MULTIPOLE RELAYS

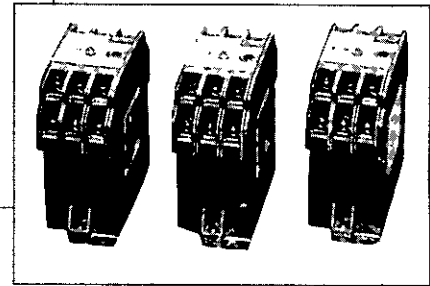
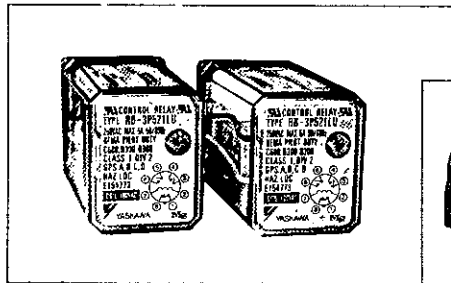
Plug-in Type RB-3PU (3-poles)
Stationary Type RB-5AB (5-poles)

Best Suited as Control Relays where High Reliability is Required

For Steel Plant Equipment, Electric Utilities, Transit Vehicles and Low Level Signals under Severe Operating Conditions.

□ FEATURES

1. Excellent performance provided when used for DC solenoid valves and solenoid loads. Without protective circuit components, 1,000,000 operations at 50W load can be ensured.
2. Maximum reliability can be assured in non-frequent operation.
3. Direct DC control from 1V 1mA on up to 230VAC.
4. The hermetically sealed contact design prevents the contacts from deteriorating even in a corrosive environment.
5. Mechanical failure should not occur since no moving parts such as an armature are included.
6. Applicable at different voltage levels.
7. AC actuated types available on order.
8. Type RB-3P(Only) Recognized in accordance with USA and Canadian standards File No. E154773. For Class 1, Division 2 Groups A,B,C,D Hazardous Locations.



□ TYPICAL APPLICATIONS

- Auxiliary sequence
- Emergency interlock
- For DC solenoid load controlling (Especially 100VDC or greater)
- For adverse atmosphere
- For vehicles
- For signals
- For elevators



□ RATINGS AND SPECIFICATIONS

Type	Contact Arrangement		Plug-in Type		Stationary Type
	Incorporated	R14U	2NO1NC	3NO	5NO, 3NO2NC, 2NO3NC
	Bestact Type	R15U	RB-3P421LU	RB-3P430LU	RB-5AB
Operational Power Ratings*1 (Inductive Load)			240 VAC 1 A, 230 VDC 0.2 A, 115 VDC 0.5 A		240 VAC 1 A, 230 VDC 0.2 A, 115 VDC 0.5 A
Minimum Operational Power Ratings			1 V 1 mA (for R14), 24 V 1 mA (for R15)		1 V 1 mA
Characteristics	Operating Time*2		40 ms or less (with overlap)*3		40 ms or less (with overlap)*3
	Releasing Time *2		40 ms or less (with overlap)*3		40 ms or less (with overlap)*3
	Vibration Resistance		44 1m/s ² {4.5G} or greater (0 to 55Hz)*4		49.0m/s ² {5G}
	Shock Resistance	Erroneous Operation	147.0m/s ² {15G}**4		147.0m/s ² {15G}
		Breakdown	490.0m/s ² {50G} or greater		490.0m/s ² {50G} or greater
	Withstand Voltage		2000 VAC for 1 minute (across contacts: 800 VAC)		2500 VAC for 1 minute (across contacts: 800 VAC)
	Ambient Temperature	Operating Temperature	- 10 to +60°C		- 10 to +60°C
Storage		- 25 to +70°C		- 25 to +70°C	
Approx. Weight		120g		430g	

Note *1 For details of contact ratings, life, characteristics, etc., refer to the Ratings, Specifications, and Electrical Life on pages 7,9 and 10

*2 Operating and releasing time are the values at rated voltage (20°C)

*3 Each of NO and NC contact operates independently. Therefore, the operating time of NO contact and NC contact may overlap

*4 Values of vibration/shock resistance are obtained when Bestact is equipped with relay retaining band. (Plug-in type).

□ COIL SPECIFICATIONS

• Plug-in Type RB-3P (Ambient temperature 20 °C)

Rated Voltage(E) V	Coil Resistance Ω	Rated Power Consumption	Maximum Continuous Allowable Voltage	Operating Characteristics	
				Minimum Operating Voltage	Release Voltage
100 (AC)	—	Approx 2 VA	130%E	NO contact 68%E or less NC contact 82%E or less	15 % E or greater
200 (AC)		Approx 2.8 VA			
24 (DC)	225 ± 10%	Approx. 1.9 W	130%E	NO contact 72%E or less NC contact 82%E or less	10 % E or greater
48 (DC)	1080 ± 10%				
100 (DC)	5120 ± 10%				
200 (DC)	—				

Note : All products of this type available on order

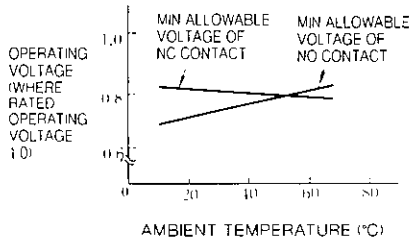
• Stationary Type RB-5AB (Ambient temperature 20 °C)

Rated Voltage(E) V	Coil Resistance Ω	Rated Power Consumption	Maximum Continuous Allowable Voltage	Operating Characteristics	
				Minimum Operating Voltage	Release Voltage
100 AC	—	2.2 to 2.7 VA	130%E	NO contact 75%E or less NC contact 78%E or less	8%E or greater
200					
24 DC	228 ± 10%	2.2 W	130%E	NO contact 76%E or less NC contact 78%E or less	8%E or greater
48	1100 ± 10%				
100	3920 ± 10%				
200	16000 ± 10%				

Note All products of this type available on order

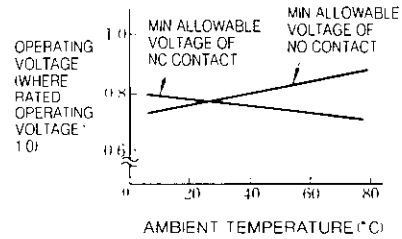
□ AMBIENT TEMPERATURE AND OPERATING VOLTAGE (DC Coil)

• Plug-in Type RB-3P



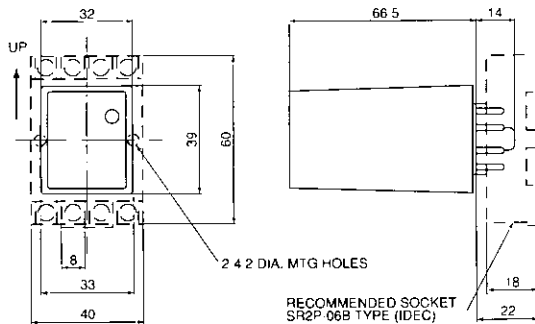
Note:
Minimum allowable voltage under no load

• Stationary Type RB-5AB

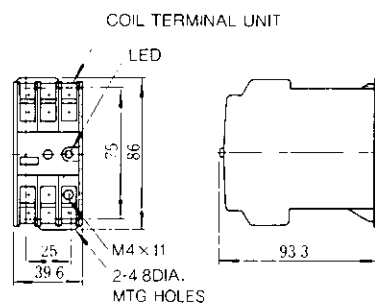


□ DIMENSIONS in mm

• Plug-in Type RB-3PU

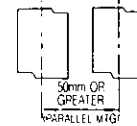


• Stationary Type RB-5AB

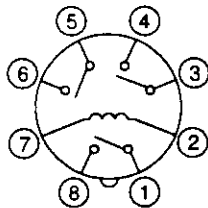


Note

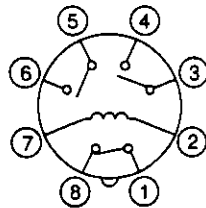
- Avoid changing the contact arrangement, otherwise, the operating characteristics may change
- The unit is color-coded as follows
Grey NO contact unit, coil terminal units and idle unit
Yellow: NC contact unit
- Where mounting the relays in parallel, provide a mounting interval of at least 50mm



Type RB-3P430LU
Type RB-3P530LU



Type RB-3P421LU
Type RB-3P521LU



Symbols and Terminal Codes

- Note: 1 Where Type RB 3P and RB 5AB are used in DC circuit, connect the even numbered terminals to ⊕ and odd-numbered terminals to ⊖
2 When mounting relays in parallel, provide a mounting interval of 42mm or greater

MULTIPOLE RELAYS

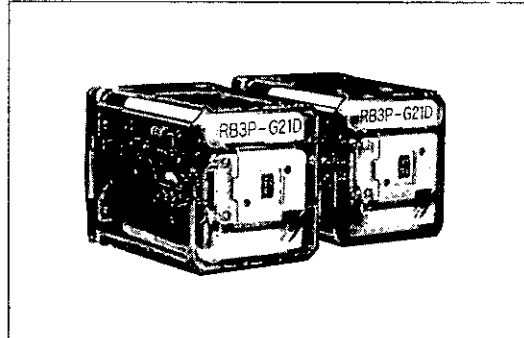
Plug-in Type RB3P-GU (3-poles)

Best Suited as Control Relays where High Reliability is Required

For Steel Plant Equipment, Electric Utilities, Transit Vehicles and Low Level Signals under Severe Operating Conditions.

□ FEATURES

1. Excellent performance provided when used for DC solenoid valves and solenoid loads. Without protective circuit components, 500,000 operations at 50W load can be ensured.
2. Maximum reliability can be assured in non-frequent operation.
3. Direct DC control from 24V 1mA on up to 230VAC.
4. The hermetically sealed contact design prevents the contacts from deteriorating even in a corrosive environment.
5. Mechanical failure should not occur since no moving parts such as an armature are included.
6. Applicable at different voltage levels.
7. AC actuated types available on order.
8. Recognized in accordance with USA and Canadian standards File No. E154773. For Class I, Division 2 Groups A, B, C, D Hazardous Locations.



□ TYPICAL APPLICATIONS

- Auxiliary sequence
- Emergency interlock
- For DC solenoid load controlling
- For adverse atmosphere
- For vehicles
- For signals
- For elevators



□ RATING AND SPECIFICATIONS

Type		RB3P-G21DU	RB3P-G30DU	
Contact Arrangement		2NO1NC	3NO	
Incorporated Bestact Type		R25U		
Operational Power Ratings (Inductive Load)	AC	240V 0.5A		
	DC	115V 0.3A		
Minimum Operational Power Ratings		24V 1mA		
Characteristics	Operating Time	40ms or less (with overlap)		
	Releasing Time	40ms or less (with overlap)		
	Vibration Resistance		44.1m/s ² (4.5G) or greater (0 to 55Hz)	
	Shock Resistance	Erroneous Operation	147.0m/s ² (15G) or greater	
		Breakdown	490.0m/s ² (50G) or greater	
	Withstand Voltage		1500VAC for 1 minute (across contacts : 500VAC)	
	Ambient Temperature	Operating Temperature	-10 to +60°C	
Storage		-25 to +70°C		
Approx. Weight		110g		

- Note : 1. For details of contact ratings, life, characteristics, etc., refer to the Ratings, Specifications, and Electrical Life on pages 7.9 and 10
2. Operating and releasing time are the values at rated voltage (20°C)
3. Each of NO and NC contact operates independently. Therefore, the operating time of NO contact and NC contact may overlap.
4. Values of vibration/shock resistance are obtained when Bestact is equipped with relay retaining band. (Plug-in type)

COIL SPECIFICATIONS

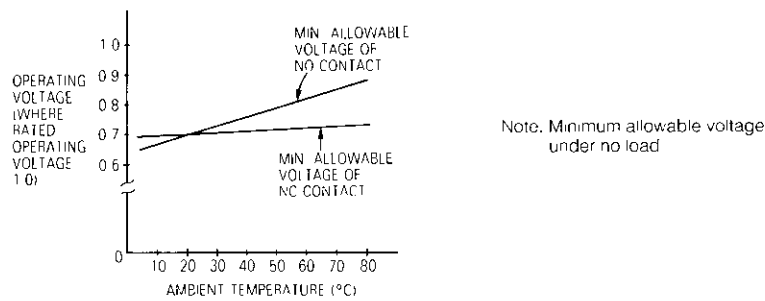
- Plug-in Type RB3P-GU (Ambient temperature 20°C)

Rated Voltage(E) V	Coil Resistance Ω	Rated Power Consumption	Maximum Continuous Allowable Voltage	Operating Characteristics	
				Maximum Operating Voltage	Release Voltage
110V (AC)	—	Approx. 2 VA	120%E	70%E or less	10%E or greater
220V (AC)	—	Approx 2.8 VA			
24V (DC)	225 \pm 10%E	Approx 1.9 VA	120%E	70%E or less	10%E or greater
48V (DC)	1080 \pm 10%E	Approx 1.9 VA			
100V (DC)	5120 \pm 10%E	Approx. 3 VA			

Note · All products of this type available on order

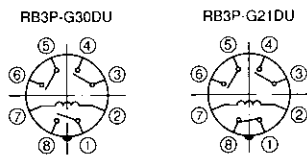
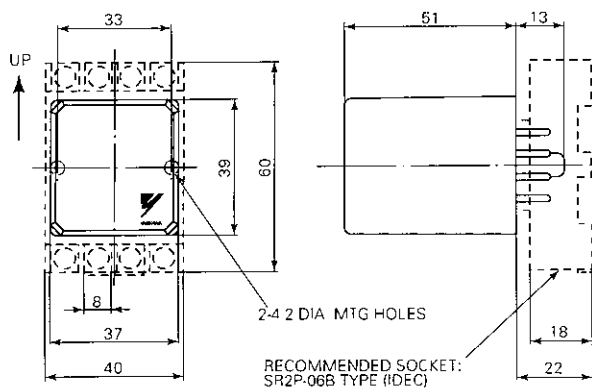
AMBIENT TEMPERATURE AND OPERATING VOLTAGE (DC Coil)

- Plug-in Type RB3P-GU



DIMENSIONS in mm

- Plug-in Type RB3P-GU



Symbols and Terminal Codes (Top View)

Notes: 1 Where Type RB3P-GU is used in DC circuit connect the even-numbered terminals to \oplus and odd-numbered terminals to \ominus .

2 When mounting relays in parallel, provide a mounting interval of 50mm or greater.