

2. Specifications

Characteristics	Item	Specifications				
		10A type	60A type	80A type	300A type	
Rating	Arrangement	1 Form A	1 Form A	1 Form A	1 Form A	
	Nominal switching capacity (resistive load)	10A 400V DC	60A 400V DC	80A 400V DC	300A 400V DC	
	Short term current	15A (2min), 30A (30s)	120A (15min) (harness wire: 15mm ²)		400A (10min) (harness wire: 100mm ²)	
	Max. cut-off current	—	600A 300V DC (5 cycles) ^{*1}	800A 300V DC (1 cycle) ^{*1}	2,500A 300V DC (3 cycles) ^{*2}	
	Overload opening/closing rating	30A 400V DC (Min. 50 cycles) ^{*1}	180A 400V DC (Min. 100 cycles) ^{*1}	120A 400V DC (Min. 50 cycles) ^{*1}	600A 400V DC (Min. 300 cycles)	
	Reverse cut-off current	-10A 200V DC (Min. 2.5×10 ⁴ cycles) ^{*1}	-60A 200V DC (Min. 1,000 cycles) ^{*1}	-120A 200V DC (Min. 50 cycles) ^{*1}	-300A 200V DC (Min. 100 cycles)	
	Min. switching capacity	1A 6V DC	—	—	—	
	Contact voltage drop	Max. 0.5V	Max. 0.1V	Max. 0.067V (By voltage drop 6V DC 20A)	Max. 0.06V	
Electrical characteristics	Insulation resistance (Initial)		Min. 100MΩ (at 500V DC) Measurement at same location as "Initial breakdown voltage" section.			
	Breakdown voltage (Initial)	Between open contacts	2,500 Vrms for 1min. (Detection current: 10mA.)			
		Between contact and coil	2,500 Vrms for 1min. (Detection current: 10mA.)			
	Operate time (at 20°C 68°F)	Max. 50ms (Nominal voltage applied to the coil, excluding contact bounce time.)			Max. 30ms (Nominal voltage applied to the coil, excluding contact bounce time.)	
Release time (at 20°C 68°F)	Max. 30ms (After the nominal operation voltage stops)			Max. 10ms (After the nominal operation voltage stops)		
Mechanical characteristics	Shock resistance	Functional	Min. 196 m/s ² (Half-wave pulse of sine wave: 11 ms; detection time: 10μs.)			
		Destructive	Min. 490 m/s ² (Half-wave pulse of sine wave: 6 ms.)			
	Vibration resistance	Functional	10 to 200Hz, acceleration 43m/s ² constant (Detection time: 10μs.)			
		Destructive	10 to 200Hz, acceleration 43m/s ² constant (3 directions, each 4 hours)			
Expected life	Mechanical	Min. 10 ⁵	Min. 2×10 ⁵			
	Electrical	7.5×10 ⁴ 10A 400V DC ^{*2} L/R ≦ 1ms	3×10 ³ 60A 400V DC ^{*2} L/R ≦ 1ms	10 ³ 80A 400V DC ^{*2} L/R ≦ 1ms	10 ³ 300A 400V DC L/R ≦ 1ms	
Conditions	Conditions for operation, transport and storage ^{*3}		Ambient temperature: -40°C to +80°C -40°F to +176°F (Storage: Max. 85°C 185°F), Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)			
Unit weight			Approx. 80 g 2.820oz	Approx. 340 g 12.00oz	Approx. 400 g 14.11oz	Approx. 750 g 26.46oz

Notes

*1 Conditions: Varistor used for coil surge absorption. Note: If a diode is used the life will be lower.

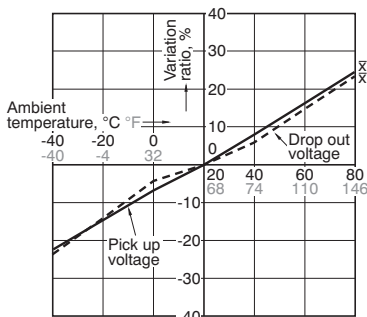
*2 Condition: Switches rated number of 10 cycles each time there is a 2,500A cutoff.

*3 The upper operation ambient temperature limit is the maximum temperature that can satisfy the coil temperature rise value. Refer to "6. Usage, Storage and Transport Conditions" in AMBIENT ENVIRONMENT section in Relay Technical Information.

REFERENCE DATA

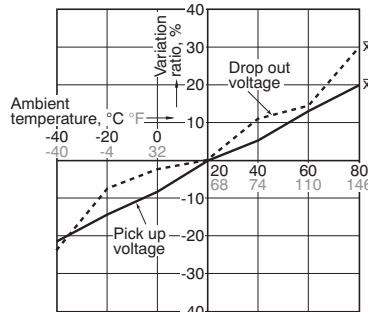
1.-(1) Ambient temperature characteristics (10A type)

Tested sample: 10A type EP relay, 3pcs



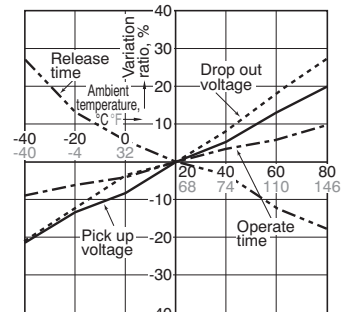
1.-(2) Ambient temperature characteristics (60A type)

Tested sample: 60A type EP relay, 3pcs



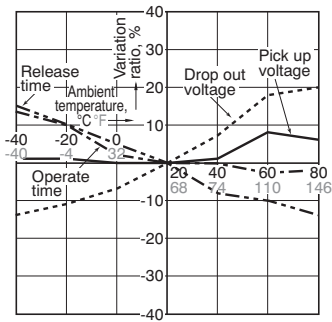
1.-(3) Ambient temperature characteristics (80A type)

Tested sample: 80A type EP relay, 3pcs

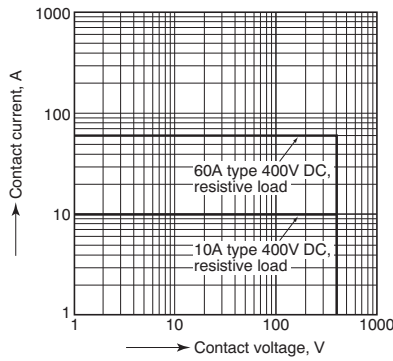


1.-(4) Ambient temperature characteristics (300A type)

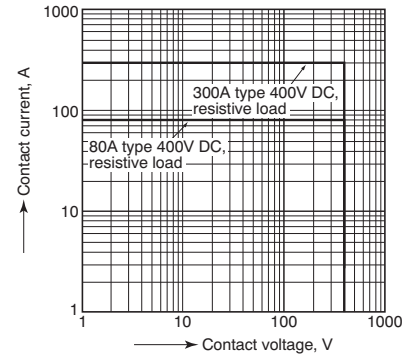
Tested sample: 300A type EP relay, 3pcs



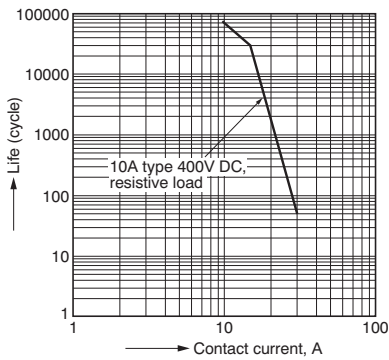
2.-(1) Max. value for switching capacity (10A and 60A types)



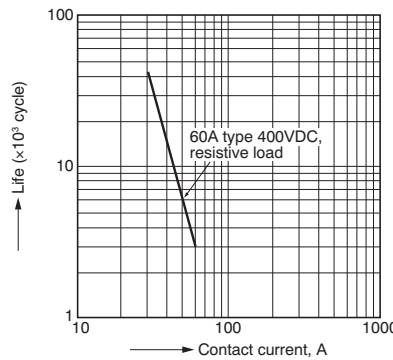
2.-(2) Max. value for switching capacity (80A and 300A types)



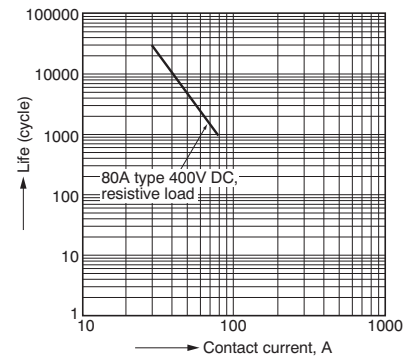
3.-(1) Switching life curve (10A type)



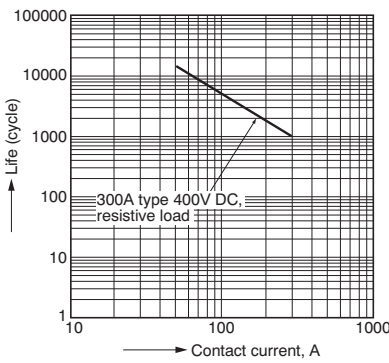
3.-(2) Switching life curve (60A type)



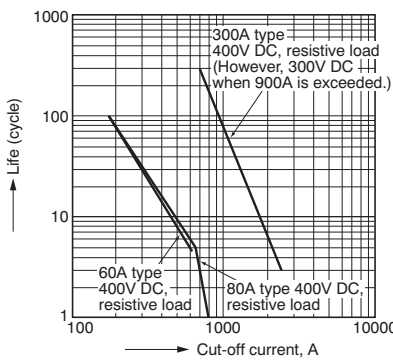
3.-(3) Switching life curve (80A type)



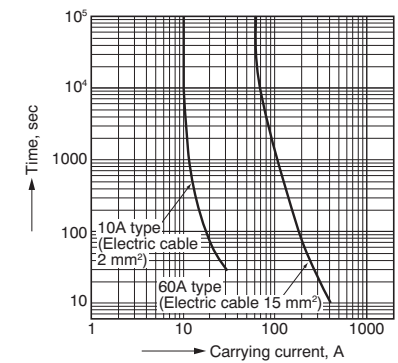
3.-(4) Switching life curve (300A type)



4. Cut-off curve (forward direction)



5.-(1) Carrying performance curve (80°C) (10A and 60A types)



5.-(2) Carrying performance curve (80°C) (80A and 300A types)

