

EQ1 SERIES

FEATURES

- Same pin-layout as conventional relay (MR301 Series)
- 70% less relay volume than conventional relay (MR301 Series)
- 80% less relay space than conventional relay (MR301 Series)
- 90% less relay height than conventional relay (MR301 Sereis)
- 60% less relay weight than conventional relay (MR301 Sereis)
- Contact switching current of 30A max.
- Flux tight housing
- Delivered in stick-tube for automatic insertion machine
- Washable type available

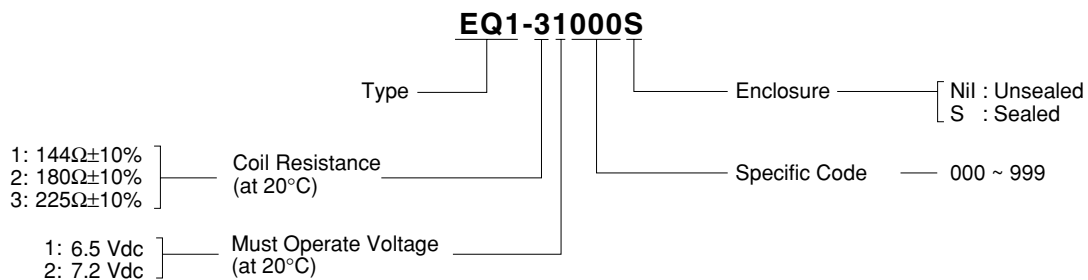


PART NUMBERS AND COIL RATINGS

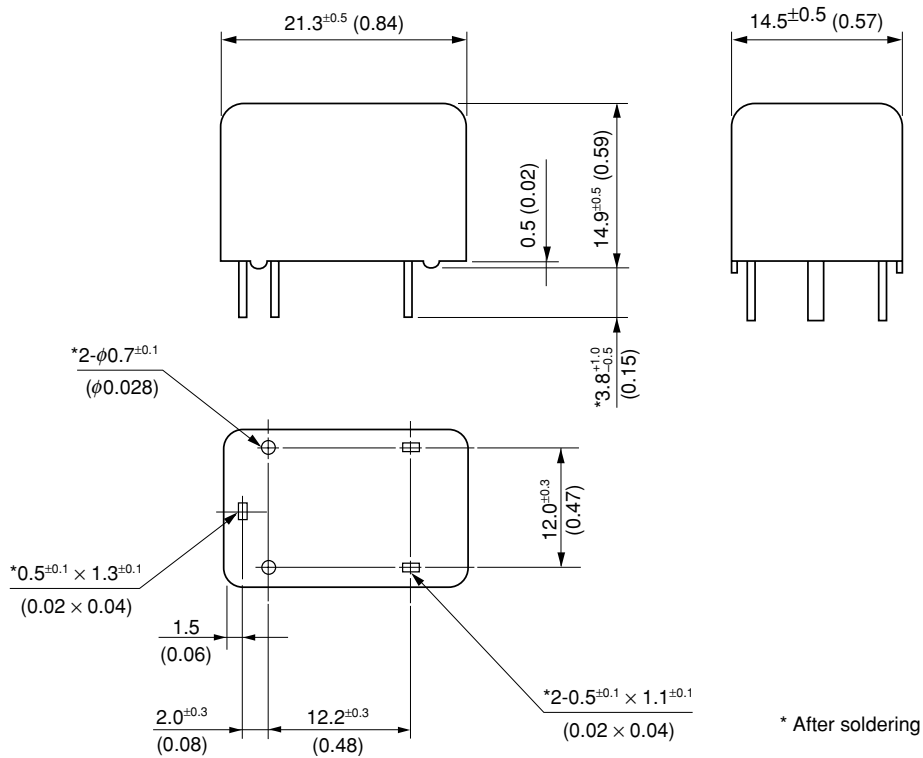
At 20°C (68°F)

Part Number	Nominal Voltage (Vdc)	Coil Resistance ($\Omega \pm 10\%$)	Nominal Current (mA)	Must Operate Voltage (Vdc)	Must Release Voltage (Vdc)	Nominal Operate Power (W)
EQ1-31000S	12	225	53.3	6.5	0.9	0.64
EQ1-11040S	12	144	83.3	6.5	0.6	1.00
EQ1-22111S	12	180	66.7	7.2	0.7	0.80
EQ1-11111S	12	144	83.3	6.5	0.6	1.00

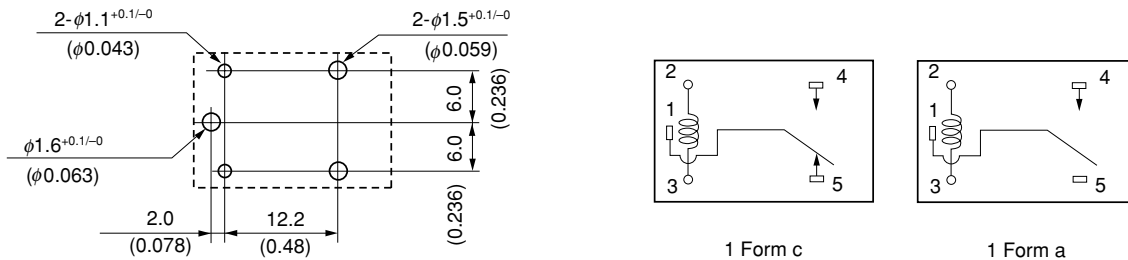
PART NUMBER SYSTEM



DIMENSIONS mm (inch)



PCB PAD LAYOUT and SCHEMATICS (bottom view) mm (inch)



SPECIFICATIONS

At 20°C (68°F)

Items	Specification			
	EQ1-31000S	EQ1-11040S	EQ1-11111S	EQ1-22111S
Contact Form	1 form c		1 form a	
Contact Material	Silver oxide complex alloy			
Contact Resistance	5 mΩ typical (measured at 1 A) initial			
Contact Switching Voltage	16 Vdc max. 5 Vdc min.			
Contact Switching Current	30 A max. (at 16 Vdc)			
Contact Carrying Current (2 minutes max.)	40 A (12 Vdc at 25°C)	35 A (12 Vdc at 25°C)	30 A (12 Vdc at 85°C)	
Operate Time	3 ms typical (at nominal voltage) initial			
Release Time	4 ms typical (at nominal voltage. with diode) initial			
Nominal Operate Power	640 mW	1000 mW		800 mW
Insulation Resistance	100 MΩ at 500 Vdc			
Breakdown Voltage	500 Vac min. for 1 minute			
Shock Resistance	98 m/s ² min. [misoperating]			
Vibration Resistance	10 to 300 Hz, 43 m/s ² min. [misoperating]			
Ambient Temperature	-40°C to +85°C (-40°F to +185°F)		-40°C to +125°C (-40°F to +257°F)	
Coil Temperature	70°C/W (contact carrying current 0 A)			
Life Expectancy	Mechanical	1 × 10 ⁶ operations		
	Electrical	1 × 10 ⁵ operations (at 14 Vdc, motor load 20 A/3 A)		1 × 10 ⁵ operations (at 14 Vdc. Lamp load 120 W)
Weight	Approx. 9 g			

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While NEC/TOKIN Corporation has been making continuous effort to enhance the reliability of its electronic components, the possibility of defects cannot be eliminated entirely. To minimize risks of damage or injury to persons or property arising from a defect in an NEC/TOKIN electronic component, customers must incorporate sufficient safety measures in its design, such as redundancy, fire-containment, and anti-failure features. NEC/TOKIN devices are classified into the following three quality grades:

"Standard," "Special," and "Specific". The Specific quality grade applies only to devices developed based on a customer designated "quality assurance program" for a specific application. The recommended applications of a device depend on its quality grade, as indicated below. Customers must check the quality grade of each device before using it in a particular application.

Standard: Computers, office equipment, communications equipment, test and measurement equipment, audio and visual equipment, home electronic appliances, machine tools, personal electronic equipment and industrial robots

Special: Transportation equipment (automobiles, trains, ships, etc.), traffic control systems, anti-disaster systems, anti-crime systems, safety equipment and medical equipment (not specifically designed for life support)

Specific: Aircrafts, aerospace equipment, submersible repeaters, nuclear reactor control systems, life support systems or medical equipment for life support, etc.

The quality grade of NEC/TOKIN devices is "Standard" unless otherwise specified in NEC/TOKIN's Data Sheets or Data Books. If customers intend to use NEC/TOKIN devices for applications other than those specified for Standard quality grade, they should contact an NEC/TOKIN sales representative in advance.

(Note)

- (1) "NEC/TOKIN" as used in this statement means NEC/TOKIN Corporation and also includes its majority-owned subsidiaries.
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