#### **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

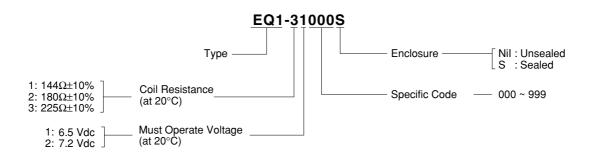


## PART NUMBERS AND COIL RATINGS

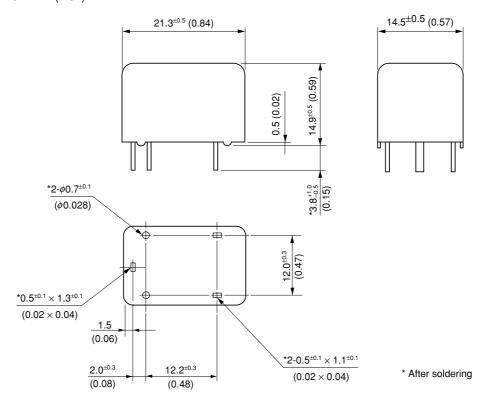
At 20°C (68°F)

| Part Number | Nominal | Coil       | Nominal | Must Operate | Must Release | Nominal       |
|-------------|---------|------------|---------|--------------|--------------|---------------|
|             | Voltage | Resistance | Current | Voltage      | Voltage      | Operate Power |
|             | (Vdc)   | (Ω±10%)    | (mA)    | (Vdc)        | (Vdc)        | (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          |

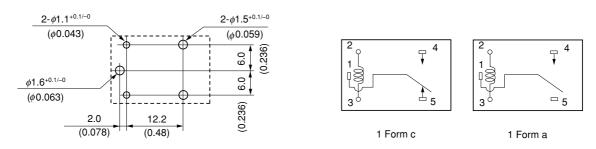
## PART NUMBER SYSTEM



## **DIMENSIONS** mm (inch)



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



## SPECIFICATIONS At 20°C (68°F)

| SPECIFICATIONS            |            |   |                                    |                                   | At 20°C (68°I |  |  |
|---------------------------|------------|---|------------------------------------|-----------------------------------|---------------|--|--|
| 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  |            | 40 A (12 Vdc at 25°C)                                 | 35 A (12 Vdc at 25°C)              |                                   |               |  |  |
| (2 minutes max.)          |            | 35 A (12 Vdc at 85°C)                                 | Vdc at 85°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 <sup>2</sup> min. [misoperating]               |                                    |                                   |               |  |  |
| Vibration Resistance      |            | 10 to 300 Hz, 43 m/s <sup>2</sup> min. [misoperating] |                                    |                                   |               |  |  |
| Ambient Temperature       |            | -40°C to +85°C (-4                                    | 0°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 | $1 \times 10^6$ operations                            |                                    |                                   |               |  |  |
|                           | Electrical | $1 \times 10^5$ operations                            |                                    | $1 \times 10^5$ operations        |               |  |  |
|                           |            | (at 14 Vdc, motor lo                                  | ad 20 A/3 A)                       | (at 14 Vdc. Lamp lo               | oad 120 W)    |  |  |
| Weight                    |            | Approx. 9 g   |                                    |                                   |               |  |  |

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equipment (not specifically designed for life support)

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