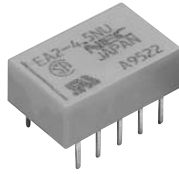


# EA2 Series



The EA2 series has reduced package size and power consumption compared to other NEC TOKIN conventional relays. Furthermore, it complies with 1500 V surge-voltage requirement of FCC Part 68 by the unique structure and the efficient magnetic circuit.

## FEATURES

- Low power consumption
- Compact and light weight
- 2 form c contact arrangement
- Low magnetic interference
- Breakdown voltage : 1000 VAC (surge voltage 1500 V), FCC Part 68 compliant
- Tube packaging
- UL recognized (E73266), CSA certified (LR46266)

## SPECIFICATIONS

|                                 |                           |                                                                                                                                                                |
|---------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Contact Form                    |                           | 2 Form c                                                                                                                                                       |
| Contact Material                |                           | Silver alloy with gold alloy overlay                                                                                                                           |
| Contact Ratings                 | Maximum Switching Power   | 30 W, 62.5 VA                                                                                                                                                  |
|                                 | Maximum Switching Voltage | 220 VDC, 250 VAC                                                                                                                                               |
|                                 | Maximum Switching Current | 1 A                                                                                                                                                            |
|                                 | Maximum Carrying Current  | 2 A                                                                                                                                                            |
| Minimum Contact Ratings         |                           | 10 mVDC, 10 $\mu$ A*1                                                                                                                                          |
| Initial Contact Resistance      |                           | 75 m $\Omega$ max.(Initial)                                                                                                                                    |
| Nominal Operating Power         | Non-latch type            | 140 mW (3 to 12 V), 200 mW (24 V)                                                                                                                              |
|                                 | Single coil latch type    | 100 mW (3 to 12 V), 150 mW (24 V)                                                                                                                              |
|                                 | Double coil latch type    | 140 mW (3 to 12 V), 200 mW (24 V)                                                                                                                              |
| Operate Time (Excluding bounce) |                           | Approx. 2 ms                                                                                                                                                   |
| Release Time (Excluding bounce) |                           | Approx. 1 ms without diode                                                                                                                                     |
| Insulation Resistance           |                           | 1000 M $\Omega$ at 500 VDC                                                                                                                                     |
| Withstand Voltage               | Between open contacts     | 1000 VAC (for one minute)                                                                                                                                      |
|                                 | Between adjacent contacts | 1500 V surge (10 $\times$ 160 $\mu$ s*2)                                                                                                                       |
|                                 | Between coil to contacts  | 1000 VAC (for one minute)<br>1500 V surge (10 $\times$ 160 $\mu$ s*2)                                                                                          |
| Shock Resistance                |                           | 735 m/s <sup>2</sup> (misoperating)<br>980 m/s <sup>2</sup> (destructive failure)                                                                              |
| Vibration Resistance            |                           | 10 to 55 Hz, double amplitude 3 mm (misoperating)<br>10 to 55 Hz, double amplitude 5 mm (destructive failure)                                                  |
| Ambient Temperature             |                           | -40 to + 85°C                                                                                                                                                  |
| Coil Temperature Rise           |                           | 18 degrees at nominal coil voltage (140 mW)                                                                                                                    |
| Running Specifications          | Non-load                  | 1 $\times$ 10 <sup>8</sup> *3 operations(Non-latch type) 1 $\times$ 10 <sup>7</sup> operations(latch type)                                                     |
|                                 | Load                      | 50 VDC, 0.1 A (resistive) 1 $\times$ 10 <sup>6</sup> operations at 85°C, 5 Hz<br>10 VDC, 10 mA (resistive) 1 $\times$ 10 <sup>6</sup> operations at 85°C, 2 Hz |
| Weight                          |                           | Approx. 1.5 g                                                                                                                                                  |

\*1 This value is a reference value in the resistance load.

Minimum capacity changes depending on switching frequency and environment temperature and the load.

\*2 rise time : 10  $\mu$ s, decay time to half crest : 160  $\mu$ s

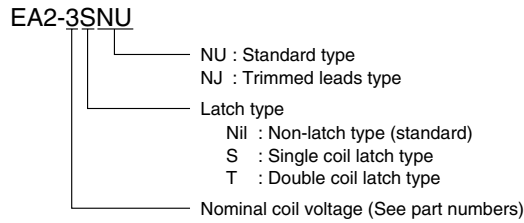
\*3 This shows a number of operation where it can be running by which a fatal defect is not caused, and a number of operation by which a steady characteristic is maintained is 1 $\times$ 10<sup>7</sup> operations.



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- Please request for a specification sheet for detailed product data prior to the purchase.
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# EA2 Series

## ■ PART NUMBER SYSTEM



## ■ SAFETY STANDARD AND RATING

|                                              |                                                       |
|----------------------------------------------|-------------------------------------------------------|
| UL Recognized<br>(UL508)*<br>File No. E73266 | CSA Certified<br>(CSA C22.2 No14)<br>File No. LR46266 |
| 30 VDC, 1A (Resistive)                       |                                                       |
| 110 VDC, 0.3A (Resistive)                    |                                                       |
| 125 VAC, 0.5A (Resistive)                    |                                                       |

\* Spacing : UL114, UL478

## ■ COIL SPECIFICATIONS

### • Non-latch Type

at 20°C

| Nominal Coil Voltage (VDC) | Coil Resistance (Ω)±10% | Must Operate Voltage* (VDC) | Must Release Voltage* (VDC) | Nominal Operating Power (mW) |
|----------------------------|-------------------------|-----------------------------|-----------------------------|------------------------------|
| 3                          | 64.3                    | 2.25                        | 0.3                         | 140                          |
| 4.5                        | 145                     | 3.38                        | 0.45                        | 140                          |
| 5                          | 178                     | 3.75                        | 0.5                         | 140                          |
| 12                         | 1028                    | 9.0                         | 1.2                         | 140                          |
| 24                         | 2880                    | 18.0                        | 2.4                         | 200                          |

### • Single Coil Latch Type

at 20°C

| Nominal Coil Voltage (VDC) | Coil Resistance (Ω)±10% | Set Voltage* (VDC) | Reset Voltage* (VDC) | Nominal Operating Power (mW) |
|----------------------------|-------------------------|--------------------|----------------------|------------------------------|
| 3                          | 90                      | 2.25               | 2.25                 | 100                          |
| 4.5                        | 202.5                   | 3.38               | 3.38                 | 100                          |
| 5                          | 250                     | 3.75               | 3.75                 | 100                          |
| 12                         | 1440                    | 9.0                | 9.0                  | 100                          |
| 24                         | 3840                    | 18.0               | 18.0                 | 150                          |

### • Double Coil Latch Type (Can not be driven by reverse polarity for reverse operation)

at 20°C

| Nominal Coil Voltage (VDC) | Coil Resistance (Ω)±10% |      | Set Voltage** (VDC) | Reset Voltage** (VDC) | Nominal Operating Power (mW) |
|----------------------------|-------------------------|------|---------------------|-----------------------|------------------------------|
| 3                          | S                       | 64.3 | 2.25                | -                     | 140                          |
|                            | R                       | 64.3 | -                   | 2.25                  |                              |
| 4.5                        | S                       | 145  | 3.38                | -                     | 140                          |
|                            | R                       | 145  | -                   | 3.38                  |                              |
| 5                          | S                       | 178  | 3.75                | -                     | 140                          |
|                            | R                       | 178  | -                   | 3.75                  |                              |
| 12                         | S                       | 1028 | 9.0                 | -                     | 140                          |
|                            | R                       | 1028 | -                   | 9.0                   |                              |
| 24                         | S                       | 2880 | 18.0                | -                     | 200                          |
|                            | R                       | 2880 | -                   | 18.0                  |                              |

\* Test by pulse voltage

\*\* S : Set coil (pin No.1...(+) , pin No.5...(-) ) R : Reset coil (pin No.10...(+) , pin No.6...(-) )

The latch type relays should be initialized at appointed position before using, and should be energized to specific polarity by above polarity to avoid wrong operation. Any special coil requirement, please contact NEC TOKIN for availability.



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