

# General Purpose

## Power Relays

## SZR-LY Series

### COIL RATINGS (DPDT)

|    | Rated Voltage (V) | Rated Current (mA) |         | Coil resistance (Ω) | Coil Inductance (H) |             | Pick-up Voltage (V) | Dropout Voltage (V) | Maximum Voltage (V) | Power Consumption (W)                |
|----|-------------------|--------------------|---------|---------------------|---------------------|-------------|---------------------|---------------------|---------------------|--------------------------------------|
|    |                   | 50 Hz              | 60 Hz   |                     | Armature OFF        | Armature ON |                     |                     |                     |                                      |
| AC | 6                 | 214.1              | 183     | 12.2                | 0.04                | 0.08        | Max.<br>80 %        | Min.<br>30%         | 110%                | Approx.<br>1.0 W to 1.2 W<br>(60 Hz) |
|    | 12                | 106.5              | 91      | 46                  | 0.17                | 0.33        |                     |                     |                     |                                      |
|    | 24                | 53.8               | 46      | 180                 | 0.69                | 1.3         |                     |                     |                     |                                      |
|    | 50                | 25.7               | 22      | 788                 | 3.22                | 5.66        |                     |                     |                     |                                      |
|    | 100/110           | 11.7/12.9          | 10/11   | 3,750               | 14.54               | 24.6        |                     |                     |                     | Approx.<br>0.9 W to 1.1 W<br>(60 Hz) |
|    | 110/120           | 9.9/10.8           | 8.4/9.2 | 4,430               | 19.2                | 32.1        |                     |                     |                     |                                      |
|    | 200/220           | 6.2/6.8            | 5.3/5.8 | 12,950              | 54.75               | 94.07       |                     |                     |                     |                                      |
|    | 220/240           | 4.8/5.3            | 4.2/4.6 | 18,790              | 83.5                | 136.4       |                     |                     |                     |                                      |
| DC | 6                 | 150                |         | 40                  | 0.17                | 0.33        | Max.<br>80%         | Min.<br>10%         | 110%                | Approx.<br>0.9 W                     |
|    | 12                | 75                 |         | 160                 | 0.73                | 1.37        |                     |                     |                     |                                      |
|    | 24                | 36.9               |         | 650                 | 3.2                 | 5.72        |                     |                     |                     |                                      |
|    | 48                | 18.5               |         | 2,600               | 10.6                | 21.0        |                     |                     |                     |                                      |
|    | 100/110           | 9.1/10             |         | 11,000              | 45.6                | 86.2        |                     |                     |                     |                                      |

### COIL RATINGS (4PDT)

|    | Rated Voltage (V) | Rated Current (mA) |          | Coil resistance (Ω) | Coil Inductance (H) |             | Pick-up Voltage (V) | Dropout Voltage (V) | Maximum Voltage (V) | Power Consumption (W)                 |
|----|-------------------|--------------------|----------|---------------------|---------------------|-------------|---------------------|---------------------|---------------------|---------------------------------------|
|    |                   | 50 Hz              | 60 Hz    |                     | Armature OFF        | Armature ON |                     |                     |                     |                                       |
| AC | 6                 | 386                | 330      | 5                   | 0.02                | 0.04        | Max.<br>80 %        | Min.<br>30%         | 110%                | Approx.<br>1.95 W to 2.5 W<br>(60 Hz) |
|    | 12                | 199                | 170      | 20                  | 0.1                 | 0.17        |                     |                     |                     |                                       |
|    | 24                | 93.6               | 80       | 78                  | 0.38                | 0.67        |                     |                     |                     |                                       |
|    | 50                | 46.8               | 40       | 350                 | 1.74                | 2.88        |                     |                     |                     |                                       |
|    | 100/110           | 22.5/25.5          | 19/21.8  | 1,800               | 10.5                | 17.3        |                     |                     |                     |                                       |
|    | 200/220           | 11.5/13.1          | 9.8/11.2 | 6,700               | 33.1                | 57.9        |                     |                     |                     |                                       |
| DC | 6                 | 240                |          | 25                  | 0.09                | 0.21        | Max.<br>80%         | Min.<br>10%         | 110%                | Approx.<br>1.5 W                      |
|    | 12                | 120                |          | 100                 | 0.39                | 0.84        |                     |                     |                     |                                       |
|    | 24                | 69                 |          | 350                 | 1.41                | 2.91        |                     |                     |                     |                                       |
|    | 48                | 30                 |          | 1,600               | 6.39                | 13.6        |                     |                     |                     |                                       |
|    | 100/110           | 15/15.9            |          | 6,900               | 32                  | 63.7        |                     |                     |                     |                                       |

Note 1: The rated current and coil resistance are measured at a coil temperature of 23 °C [73.4 °F] with tolerances of +15%, -20% for AC rated current and ± 15% for DC coil resistance.

Note 2: The rated current of N1 and X1 types is 4 mA higher than the value in the table above.

# General Purpose

## Power Relays

## SZR-LY Series

### SPECIFICATIONS

|                              |                        |                                                                                                                                                                         |
|------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Contact material             |                        | Silver Cadmium Oxide                                                                                                                                                    |
| Contact resistance           |                        | Max. 50 MOhm                                                                                                                                                            |
| Operate time                 |                        | Max. 25 ms                                                                                                                                                              |
| Release time                 |                        | Max. 25 ms                                                                                                                                                              |
| Operating frequency          | Mechanical             | 18,000 operations per hour                                                                                                                                              |
|                              | Electrical             | 1,800 operations per hour                                                                                                                                               |
| Insulation resistance        |                        | Min. 100 Mw at 500 Vdc                                                                                                                                                  |
| Dielectric withstand voltage |                        | 1,800 Vac 50 Hz/60 Hz for one minute between non-continuous current carrying terminals and between coil thermals and contact terminals                                  |
|                              |                        | 1,000 Vac 50/60 Hz for 1 minute between contacts of same polarity                                                                                                       |
| Vibration resistance         | Mechanical durability  | 10 Hz to 55 Hz at double amplitude of 1.0 mm                                                                                                                            |
|                              | Malfunction durability | 10 Hz to 55 Hz at double amplitude of 1.0 mm                                                                                                                            |
| Shock resistance             | Mechanical durability  | 1,000 m/s <sup>2</sup> (approx. 100 g)                                                                                                                                  |
|                              | Malfunction durability | 200 m/s <sup>2</sup> (approx. 20 g)                                                                                                                                     |
| Service life                 | Mechanical             | AC: Min. 50 million operations (at operating frequency of 18,000 operations/hour)<br>DC: Min. 100 million operations (at operating frequency of 18,000 operations/hour) |
|                              | Electrical             | DPDT: Min. 500,000 operations (at operating frequency of 1,800 operations/hour)<br>4PDT: Min. 200,000 operations (at operating frequency of 1,800 operations/hour)      |
| Weight                       |                        | DPDT: Approximately 35 g    4PDT: Approximately 65 g                                                                                                                    |

Note 1: The data shown above are of initial value

### CHARACTERISTIC DATA

