

# RSB1A120BDPV

Interface plug-in relay, Harmony  
electromechanical relays, pre-assembled, 12A,  
1CO, with LED, 24V DC



## Main

|                                              |                                         |
|----------------------------------------------|-----------------------------------------|
| Range of Product                             | Harmony Electromechanical Relays        |
| Series name                                  | Interface relay                         |
| Product or Component Type                    | Pre-assembled plug-in relay with socket |
| Device short name                            | RSB                                     |
| Contacts type and composition                | 1 C/O                                   |
| Contact operation                            | Standard                                |
| [Uc] control circuit voltage                 | 24 V DC                                 |
| [Ithe] conventional enclosed thermal current | 12 A -40...104 °F (-40...40 °C)         |
| Status LED                                   | 1 LED                                   |
| Control type                                 | Without                                 |

## Complementary

|                                        |                                                                               |
|----------------------------------------|-------------------------------------------------------------------------------|
| Average coil resistance                | 1440 Ohm DC 20 °C +/- 10 %                                                    |
| [Ue] rated operational voltage         | 19.2...26.4 V DC                                                              |
| [Ui] rated insulation voltage          | 400 V IEC 60947                                                               |
| [Uimp] rated impulse withstand voltage | 3.6 kV IEC 61000-4-5                                                          |
| Contacts material                      | Silver alloy (AgNi)                                                           |
| [Ie] rated operational current         | 12 A AC-1/DC-1) NO IEC<br>6 A AC-1/DC-1) NC IEC                               |
| Minimum switching current              | 10 mA                                                                         |
| Maximum switching voltage              | 300 V DC IEC                                                                  |
| Minimum switching voltage              | 12 V                                                                          |
| Maximum switching capacity             | 3000 VA AC<br>336 W DC                                                        |
| Resistive rated load                   | 12 A 250 V AC<br>12 A 28 V DC                                                 |
| Minimum switching capacity             | 120 mW 10 mA, 12 V                                                            |
| Operating rate                         | <= 600 cycles/hour under load<br><= 18000 cycles/hour no-load                 |
| Mechanical durability                  | 30000000 cycles                                                               |
| Electrical durability                  | 100000 Cycles, 12 A at 250 V, AC-1 NO<br>100000 cycles, 6 A at 250 V, AC-1 NC |
| Operating time                         | 20 ms operating<br>20 ms reset                                                |
| Average coil consumption               | 0.45 W DC                                                                     |
| Drop-out voltage threshold             | >= 0.1 Uc DC                                                                  |
| Safety reliability data                | B10d = 100000                                                                 |
| Protection category                    | RT I                                                                          |
| Test levels                            | Level A group mounting                                                        |
| Operating position                     | Any position                                                                  |
| Torque Value                           | 7.08 Lbf.in (0.8 N.m)<br>7.0 lbf.in (0.79 N.m)                                |

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|                               |                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connections - terminals       | Connector, 1 x 0.25...1 x 2.5 mm <sup>2</sup> AWG 22...AWG 14) flexible with cable end<br>Connector, 2 x 0.25...2 x 1 mm <sup>2</sup> AWG 22...AWG 17) flexible with cable end<br>Connector, 1 x 0.5...1 x 2.5 mm <sup>2</sup> AWG 20...AWG 14) solid without cable end<br>Connector, 2 x 0.5...2 x 1.5 mm <sup>2</sup> AWG 20...AWG 16) solid without cable end |
| Net Weight                    | 0.11 lb(US) (0.050 kg)                                                                                                                                                                                                                                                                                                                                           |
| Sale per indivisible quantity | 30                                                                                                                                                                                                                                                                                                                                                               |
| Device presentation           | Complete product                                                                                                                                                                                                                                                                                                                                                 |

## Environment

|                                       |                                                                                      |
|---------------------------------------|--------------------------------------------------------------------------------------|
| Dielectric strength                   | 1000 V AC between contacts<br>5000 V AC between coil and contact                     |
| Standards                             | IEC 61810-1<br>CSA C22.2 No 14<br>UL 508<br>IEC 61984                                |
| Product Certifications                | CE[RETURN]UL[RETURN]CSA[RETURN]EAC                                                   |
| Ambient Air Temperature for Storage   | -40...185 °F (-40...85 °C)                                                           |
| Vibration resistance                  | +/- 1 mm 10...55 Hz)IEC 60068-2-6                                                    |
| IP degree of protection               | IP20 conforming to IEC 60529                                                         |
| Shock resistance                      | 10 gn 11 ms) not operating IEC 60068-2-27<br>5 gn 11 ms) in operation IEC 60068-2-27 |
| Ambient air temperature for operation | -40...185 °F (-40...85 °C) DC)                                                       |

## Ordering and shipping details

|                   |                             |
|-------------------|-----------------------------|
| Category          | 21127-ZELIO ICE CUBE RELAYS |
| Discount Schedule | CP2                         |
| GTIN              | 3606489562687               |
| Returnability     | No                          |

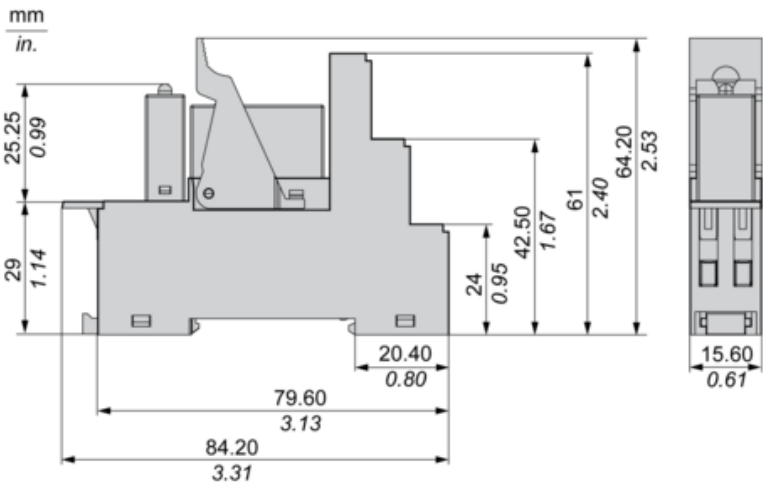
## Packing Units

|                              |                        |
|------------------------------|------------------------|
| Unit Type of Package 1       | PCE                    |
| Number of Units in Package 1 | 1                      |
| Package 1 Height             | 0.63 in (1.6 cm)       |
| Package 1 Width              | 2.56 in (6.5 cm)       |
| Package 1 Length             | 3.35 in (8.5 cm)       |
| Package 1 Weight             | 1.69 oz (48 g)         |
| Unit Type of Package 2       | BB1                    |
| Number of Units in Package 2 | 30                     |
| Package 2 Height             | 7.09 in (18 cm)        |
| Package 2 Width              | 3.54 in (9 cm)         |
| Package 2 Length             | 10.63 in (27 cm)       |
| Package 2 Weight             | 3.92 lb(US) (1.78 kg)  |
| Unit Type of Package 3       | S03                    |
| Number of Units in Package 3 | 180                    |
| Package 3 Height             | 11.81 in (30 cm)       |
| Package 3 Width              | 11.81 in (30 cm)       |
| Package 3 Length             | 15.75 in (40 cm)       |
| Package 3 Weight             | 25.35 lb(US) (11.5 kg) |

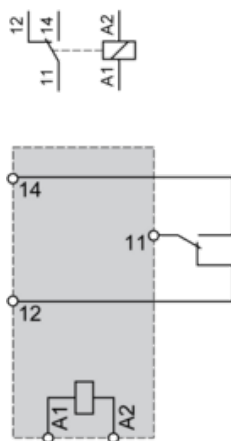
## Offer Sustainability

|                               |                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| California proposition 65     | WARNING: This product can expose you to chemicals including: Nickel compounds, which is known to the State of California to cause cancer, and Di-isodecyl phthalate (DIDP), which is known to the State of California to cause birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> |
| EU RoHS Directive             | Pro-active compliance (Product out of EU RoHS legal scope) <a href="#">EU RoHS Declaration</a>                                                                                                                                                                                                                                                                         |
| Toxic heavy metal free        | Yes                                                                                                                                                                                                                                                                                                                                                                    |
| Mercury free                  | Yes                                                                                                                                                                                                                                                                                                                                                                    |
| China RoHS Regulation         | <a href="#">China RoHS Declaration</a>                                                                                                                                                                                                                                                                                                                                 |
| RoHS exemption information    | <a href="#">Yes</a>                                                                                                                                                                                                                                                                                                                                                    |
| Environmental Disclosure      | <a href="#">Product Environmental Profile</a>                                                                                                                                                                                                                                                                                                                          |
| Circularity Profile           | No need of specific recycling operations                                                                                                                                                                                                                                                                                                                               |
| WEEE                          | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.                                                                                                                                                                                                                                           |
| <h2>Contractual warranty</h2> |                                                                                                                                                                                                                                                                                                                                                                        |
| Warranty                      | 18 Months                                                                                                                                                                                                                                                                                                                                                              |

Dimensions



## Wiring Diagram

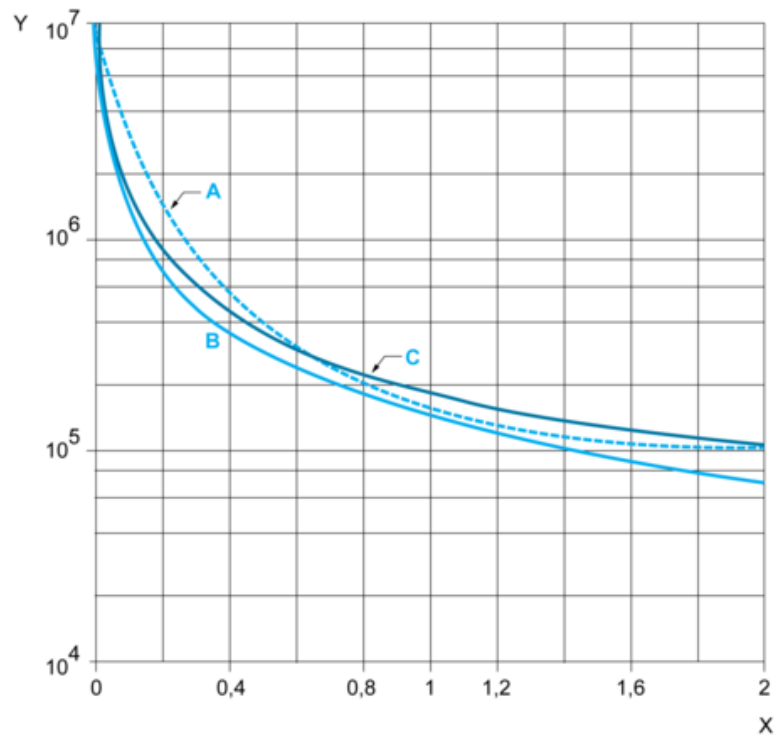


NOTE: For DC input, A1 have to be +, otherwise it would short circuit from protection module

## Electrical Durability of Contacts

Durability (Inductive Load) = Durability (Resistive Load) x Reduction Coefficient.

Resistive AC Load



(y) Durability (Number of operating cycles)

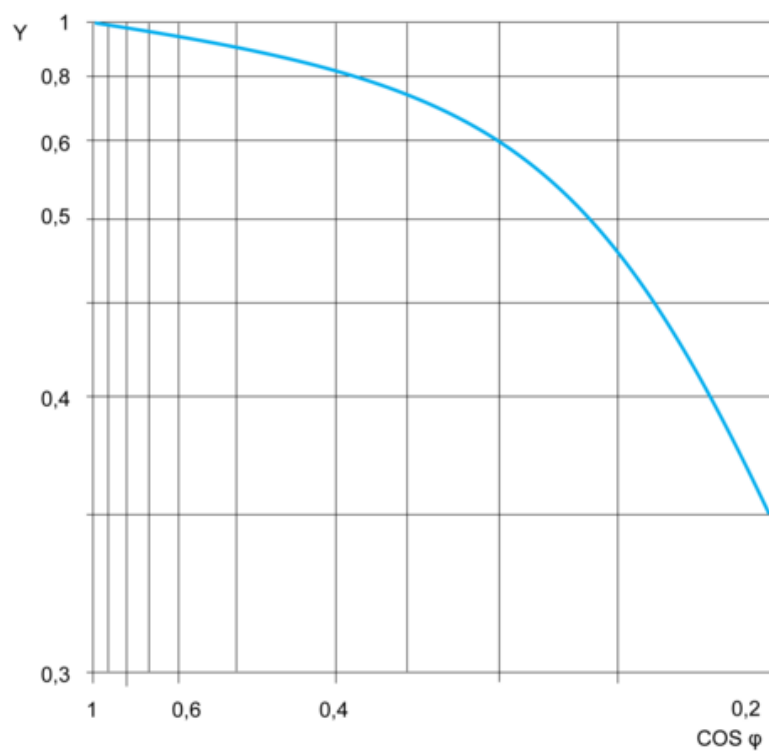
(x) Switching capacity (kVA)

A : RSB2A080●●

B : RSB1A160●●

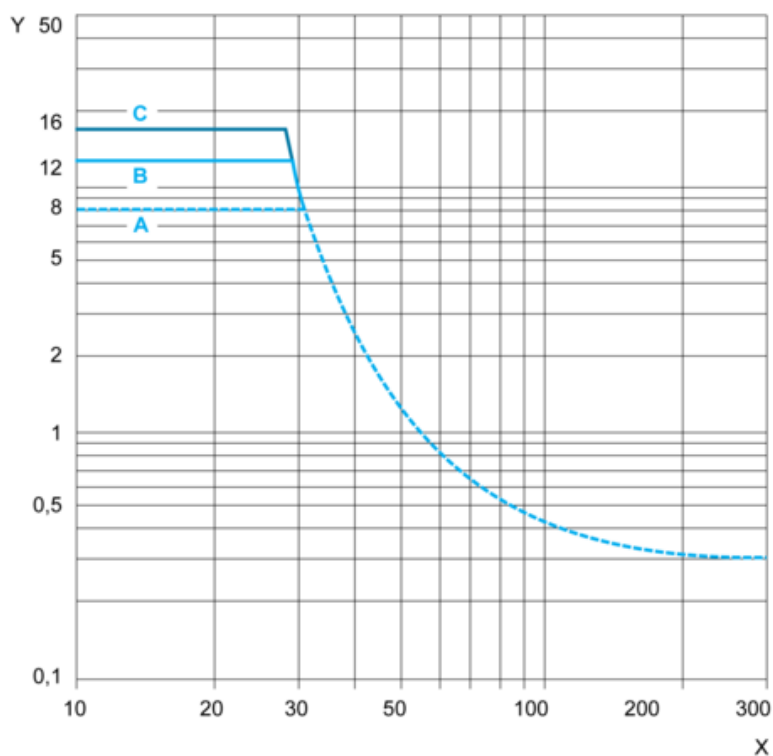
C : RSB1A120●●

### Reduction Coefficient for Inductive AC Load (Depending on Power Factor $\cos \phi$ )



(y) Reduction coefficient (A)

### Maximum Switching Capacity on Resistive DC Load



(y) Current DC

(x) Voltage DC

A : RSB2A080●●

B : RSB1A160●●

C : RSB1A120●●

NOTE: These are typical curves, actual durability depends on load, environment, duty cycle, etc.