# Product data sheet

Specifications

## Compact smart relay, Zelio Logic, 12 I/O, 24 V AC, clock, display

SR2B121B

### Main

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|---|---|
| **Range of product** | Zelio Logic |
| **Product or component type** | Compact smart relay |

### Complementary

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|---|---|
| **Local display** | With |
| **Number or control scheme lines** | 0…240 with ladder programming<br>0…500 with FBD programming |
| **Cycle time** | 6…90 ms |
| **Backup time** | 10 years at 25 °C |
| **Clock drift** | 12 min/year at 0…55 °C<br>6 s/month at 25 °C |
| **Checks** | Program memory on each power up |
| **[Us] rated supply voltage** | 24 V AC |
| **Supply voltage limits** | 20.4…28.8 V |
| **Supply frequency** | 50/60 Hz |
| **Maximum supply current** | 145 mA (without extension) |
| **Power consumption in VA** | 4 VA without extension |
| **Isolation voltage** | 1780 V |
| **Protection type** | Against inversion of terminals (control instructions not executed) |
| **Discrete input number** | 8 |
| **Discrete input voltage** | 24 V AC |
| **Discrete input current** | 4.4 mA |
| **Discrete input frequency** | 57...63 Hz<br>47...53 Hz |
| **Voltage state 1 guaranteed** | >= 14 V for discrete input |
| **Voltage state 0 guaranteed** | <= 5 V for discrete input |
| **Current state 1 guaranteed** | >= 2 mA (discrete input) |
| **Current state 0 guaranteed** | <= 0.5 mA (discrete input) |
| **Analogue input number** | 0 |
| **Input impedance** | 4.6 kOhm for discrete input |
| **Number of outputs** | 4 relay |

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|---|---|
| **Output voltage limits** | 5...30 V DC (relay output)<br>24...250 V AC |
| **Contacts type and composition** | NO for relay output |
| **Output thermal current** | 8 A for all 4 outputs for relay output |
| **Electrical durability** | AC-12: 500000 cycles at 230 V, 1.5 A for relay output conforming to EN/IEC 60947-5-1<br>AC-15: 500000 cycles at 230 V, 0.9 A for relay output conforming to EN/IEC 60947-5-1<br>DC-12: 500000 cycles at 24 V, 1.5 A for relay output conforming to EN/IEC 60947-5-1<br>DC-13: 500000 cycles at 24 V, 0.6 A for relay output conforming to EN/IEC 60947-5-1 |
| **Switching capacity in mA** | >= 10 mA at 12 V (relay output) |
| **Operating rate in Hz** | 0.1 Hz (at Ie) for relay output<br>10 Hz (no load) for relay output |
| **Mechanical durability** | 10000000 cycles for relay output |
| **[Uimp] rated impulse withstand voltage** | 4 kV conforming to EN/IEC 60947-1 and EN/IEC 60664-1 |
| **Clock** | With |
| **Response time** | 50 ms with ladder programming (from state 0 to state 1) for discrete input<br>50 ms with ladder programming (from state 1 to state 0) for discrete input<br>50...255 ms with FBD programming (from state 0 to state 1) for discrete input<br>50...255 ms with FBD programming (from state 1 to state 0) for discrete input<br>10 ms (from state 0 to state 1) for relay output<br>5 ms (from state 1 to state 0) for relay output |
| **Connections - terminals** | Screw terminals, 1 x 0.2...1 x 2.5 mm² (AWG 25...AWG 14) semi-solid<br>Screw terminals, 1 x 0.2...1 x 2.5 mm² (AWG 25...AWG 14) solid<br>Screw terminals, 1 x 0.25...1 x 2.5 mm² (AWG 24...AWG 14) flexible with cable end<br>Screw terminals, 2 x 0.2...2 x 1.5 mm² (AWG 24...AWG 16) solid<br>Screw terminals, 2 x 0.25...2 x 0.75 mm² (AWG 24...AWG 18) flexible with cable end |
| **Tightening torque** | 0.5 N.m |
| **Overvoltage category** | III conforming to EN/IEC 60664-1 |
| **Net weight** | 0.25 kg |

## Environment

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|---|---|
| **Immunity to microbreaks** | 10 ms repeated 20 times |
| **Product certifications** | C-Tick<br>CSA<br>GL<br>UL<br>GOST |
| **Standards** | EN/IEC 61000-4-3<br>EN/IEC 61000-4-4 level 3<br>EN/IEC 61000-4-11<br>EN/IEC 60068-2-27 Ea<br>EN/IEC 61000-4-5<br>EN/IEC 61000-4-6 level 3<br>EN/IEC 61000-4-2 level 3<br>EN/IEC 60068-2-6 Fc<br>EN/IEC 61000-4-12 |
| **IP degree of protection** | IP20 (terminal block) conforming to IEC 60529<br>IP40 (front panel) conforming to IEC 60529 |
| **Environmental characteristic** | EMC directive conforming to EN/IEC 61000-6-2<br>EMC directive conforming to EN/IEC 61000-6-3<br>EMC directive conforming to EN/IEC 61000-6-4<br>EMC directive conforming to EN/IEC 61131-2 zone B<br>Low voltage directive conforming to EN/IEC 61131-2 |
| **Disturbance radiated/ conducted** | Class B conforming to EN 55022-11 group 1 |
| **Pollution degree** | 2 conforming to EN/IEC 61131-2 |
| **Ambient air temperature for operation** | -20…40 °C in non-ventilated enclosure conforming to IEC 60068-2-1 and IEC 60068-2-2<br>-20…55 °C conforming to IEC 60068-2-1 and IEC 60068-2-2 |
| **Ambient air temperature for storage** | -40…70 °C |
| **Operating altitude** | 2000 m |
| **Maximum altitude transport** | 3048 m |

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| **Relative humidity** | 95 % without condensation or dripping water |

## Packing Units

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| **Unit Type of Package 1** | PCE |
| **Number of Units in Package 1** | 1 |
| **Package 1 Weight** | 243.0 g |
| **Package 1 Height** | 6.8 cm |
| **Package 1 width** | 9.0 cm |
| **Package 1 Length** | 10.0 cm |
| **Unit Type of Package 2** | S03 |
| **Number of Units in Package 2** | 30 |
| **Package 2 Weight** | 7.778 kg |
| **Package 2 Height** | 30.0 cm |
| **Package 2 width** | 30.0 cm |
| **Package 2 Length** | 40.0 cm |

## Offer Sustainability

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|---|---|
| **Sustainable offer status** | Green Premium product |
| **REACh Regulation** | REACh Declaration |
| **EU RoHS Directive** | Pro-active compliance (Product out of EU RoHS legal scope)<br>EU RoHS Declaration |
| **Mercury free** | Yes |
| **RoHS exemption information** | Yes |
| **China RoHS Regulation** | China RoHS declaration |
| **Environmental Disclosure** | Product Environmental Profile |
| **Circularity Profile** | End of Life Information |
| **WEEE** | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |
| **PVC free** | Yes |
| **California proposition 65** | WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov |

## Contractual warranty

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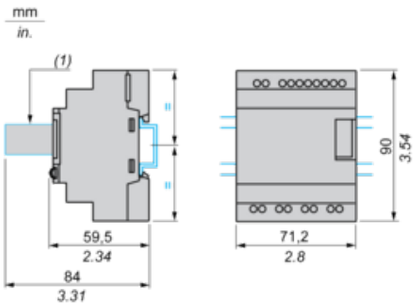
|---|---|
| **Warranty** | 18 months |

# Product data sheet SR2B121B

Dimensions Drawings

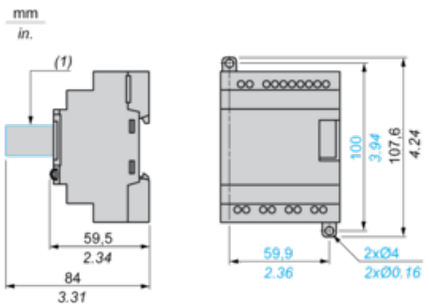
## Compact and Modular Smart Relays

### Mounting on 35 mm/1.38 in. DIN Rail



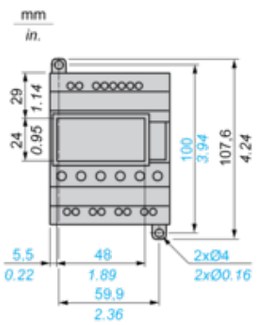

**(1)** With SR2USB01 or SR2BTC01

### Screw Fixing (Retractable Lugs)



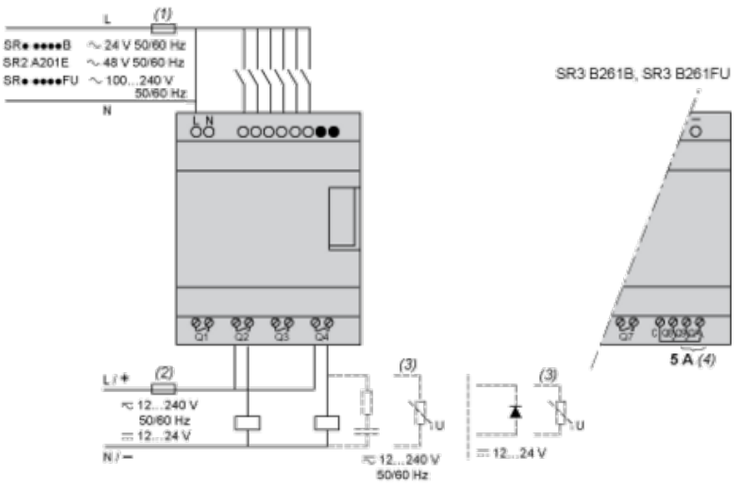

**(1)** With SR2USB01 or SR2BTC01

### Position of Display



## Connection of Smart Relays on AC Supply

### SR••••1B, SR••••1FU




**(1)** 1 A quick-blow fuse or circuit-breaker.

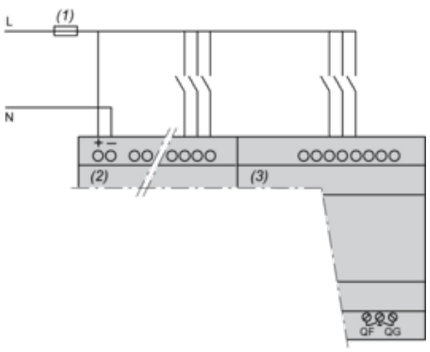
**(2)** Fuse or circuit-breaker.

**(3)** Inductive load.

**(4)** Q9 and QA: 5 A (max. current in terminal C: 10 A).

### With Discrete I/O Extension Module

SR3B•••B + SR3XT•••B, SR3B•••FU + SR3XT•••FU




**(1)** 1 A quick-blow fuse or circuit-breaker.

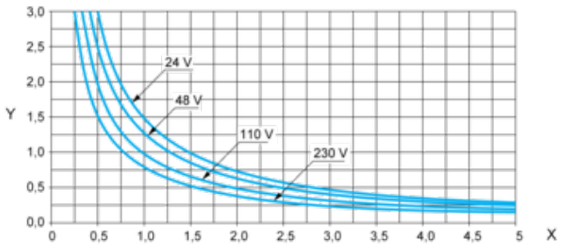
**NOTE:** QF and QG: 5 A for SR3XT141••

## Compact and Modular Smart Relays

### Electrical Durability of Relay Outputs

(in millions of operating cycles, conforming to IEC/EN 60947-5-1)

AC-12 (1)

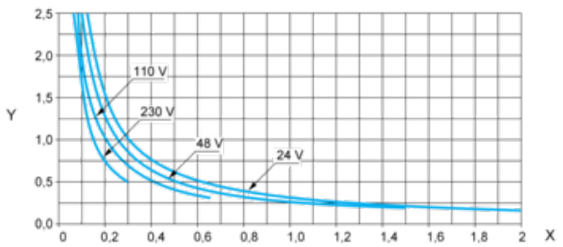



**X:** Current (A)

**Y:** Millions of operating cycles

**(1)** AC-12: switching resistive loads and opto-coupler isolated solid-state loads, cos ≥ 0.9.

AC-14 (1)

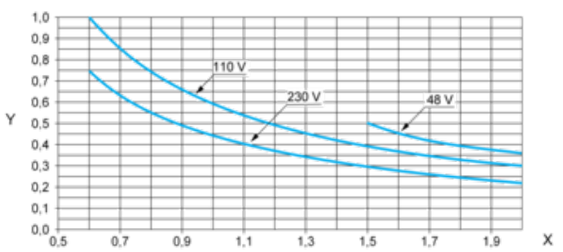



**X:** Current (A)

**Y:** Millions of operating cycles

**(1)** AC-14: switching small electromagnetic loads ≤ 72 VA, make: cos = 0.3, break: cos = 0.3.

AC-15 (1)




**X:** Current (A)

**Y:** Millions of operating cycles

**(1)** AC-15: switching electromagnetic loads ≥ 72 VA, make: cos = 0.7, break: cos = 0.4.