

SR3B101BD

modular smart relay Zelio Logic - 10 I O - 24 V DC - clock - display



Main

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

Complementary

| | |
|--------------------------------|--|
| Local display | With |
| Number of control scheme lines | <= 200 with FBD programming 120 with ladder programming |
| Cycle time | 6...90 ms |
| Backup time | 10 years at 25 °C |
| Clock drift | 6 s/month at 25 °C 12 min/year at 0...55 °C |
| Checks | Program memory on each power up |
| [Us] rated supply voltage | 24 V |
| Supply voltage limits | 19.2...30 V |
| Supply current | 100 mA (with extensions) 100 mA (without extension) |
| Power dissipation in W | 3 W without extension 8 W with extensions |
| Reverse polarity protection | With |
| Discrete input number | 6 conforming to EN/IEC 61131-2 type 1 |
| Discrete input type | Resistive |
| Discrete input voltage | 24 V DC |
| Discrete input current | 4 mA |
| Counting frequency | 1 kHz for discrete input |
| Voltage state 1 guaranteed | >= 15 V for I1...IA and IH...IR discrete input circuit >= 15 V for IB...IG used as discrete input circuit |
| Voltage state 0 guaranteed | <= 5 V <= 5 V for I1...IA and IH...IR discrete input circuit <= 5 V for IB...IG used as discrete input circuit |
| Current state 1 guaranteed | >= 1.2 mA for IB...IG used as discrete input circuit >= 2.2 mA for I1...IA and IH...IR discrete input circuit |
| Current state 0 guaranteed | < 0.5 mA for IB...IG used as discrete input circuit < 0.75 mA for I1...IA and IH...IR discrete input circuit |
| Input compatibility | 3-wire proximity sensors PNP (discrete input) |
| Analogue input number | 4 |
| Analogue input type | Common mode |
| Analogue input range | 0...10 V 0...24 V |
| Maximum permissible voltage | 30 V (analogue input circuit) |
| Analogue input resolution | 8 bits |
| LSB value | 39 mV (analogue input circuit) |
| Conversion time | Smart relay cycle time for analogue input circuit |
| Conversion error | +/- 5 % at 25 °C for analogue input circuit +/- 6.2 % at 55 °C for analogue input circuit |

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

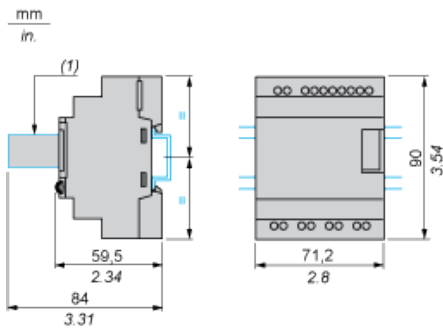
| | |
|--|---|
| Repeat accuracy | +/- 2 % at 55 °C for analogue input circuit |
| Operating distance | 10 m between stations, with screened cable (sensor not isolated) for analogue input circuit |
| Input impedance | 12 kOhm (IB...IG used as analogue input circuit) 12 kOhm (IB...IG used as discrete input circuit) 7.4 kOhm (I1...IA and IH...IR discrete input circuit) |
| Number of outputs | 4 relay output(s) |
| Output voltage limits | 24...250 V AC (relay output) 5...30 V DC (relay output) |
| Contacts type and composition | NO for relay output |
| Output thermal current | 8 A for all 4 outputs (relay output) |
| Electrical durability | 500000 cycles AC-12 at 230 V, 1.5 A for relay output conforming to EN/IEC 60947-5-1 500000 cycles AC-15 at 230 V, 0.9 A for relay output conforming to EN/IEC 60947-5-1 500000 cycles DC-12 at 24 V, 1.5 A for relay output conforming to EN/IEC 60947-5-1 500000 cycles DC-13 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 10 Hz (no load) for relay output |
| Mechanical durability | 10000000 cycles (relay output) |
| [Uimp] rated impulse withstand voltage | 4 kV conforming to EN/IEC 60947-1 and EN/IEC 60664-1 |
| Clock | With |
| Response time | 10 ms (from state 0 to state 1) for relay output 5 ms (from state 1 to state 0) for relay output |
| Connections - terminals | Screw terminals, clamping capacity: 1 x 0.2...1 x 2.5 mm ² AWG 25...AWG 14 semi-solid Screw terminals, clamping capacity: 1 x 0.2...1 x 2.5 mm ² AWG 25...AWG 14 solid Screw terminals, clamping capacity: 1 x 0.25...1 x 2.5 mm ² AWG 24...AWG 14 flexible with cable end Screw terminals, clamping capacity: 2 x 0.2...2 x 1.5 mm ² AWG 24...AWG 16 solid Screw terminals, clamping capacity: 2 x 0.25...2 x 0.75 mm ² AWG 24...AWG 18 flexible with cable end |
| Tightening torque | 0.5 N.m |
| Overvoltage category | III conforming to EN/IEC 60664-1 |
| Product weight | 0.25 kg |

Environment

| | |
|---------------------------------------|---|
| immunity to microbreaks | <= 1 ms |
| product certifications | CSA C-Tick GL GOST UL |
| standards | EN/IEC 60068-2-27 Ea EN/IEC 60068-2-6 Fc EN/IEC 61000-4-11 EN/IEC 61000-4-12 EN/IEC 61000-4-2 level 3 EN/IEC 61000-4-3 EN/IEC 61000-4-4 level 3 EN/IEC 61000-4-5 EN/IEC 61000-4-6 level 3 |
| IP degree of protection | IP20 (terminal block) conforming to IEC 60529 IP40 (front panel) conforming to IEC 60529 |
| environmental characteristic | EMC directive conforming to EN/IEC 61000-6-2 EMC directive conforming to EN/IEC 61000-6-3 EMC directive conforming to EN/IEC 61000-6-4 EMC directive conforming to EN/IEC 61131-2 zone B 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 -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 |

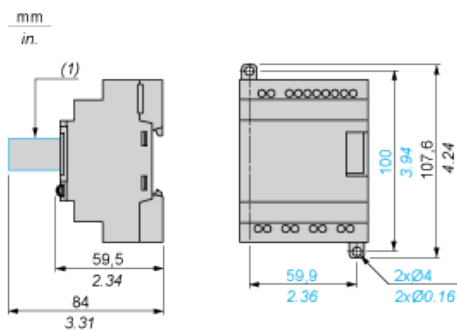
Compact and Modular Smart Relays

Mounting on 35 mm/1.38 in. DIN Rail



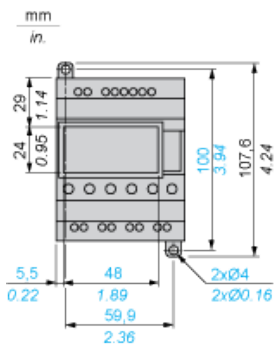
(1) With SR2USB01 or SR2BTC01

Screw Fixing (Retractable Lugs)



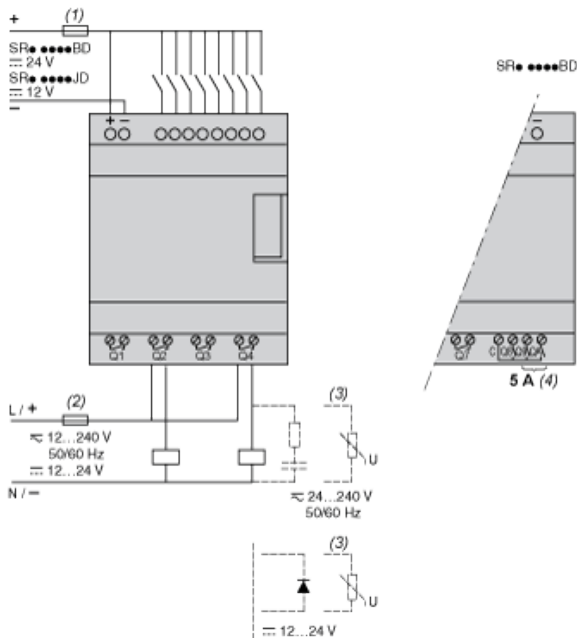
(1) With SR2USB01 or SR2BTC01

Position of Display



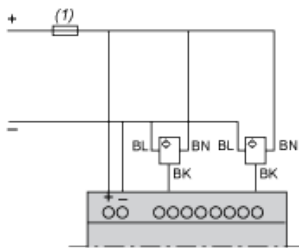
Compact and Modular Smart Relays

Connection of Smart Relays on DC Supply



- (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).

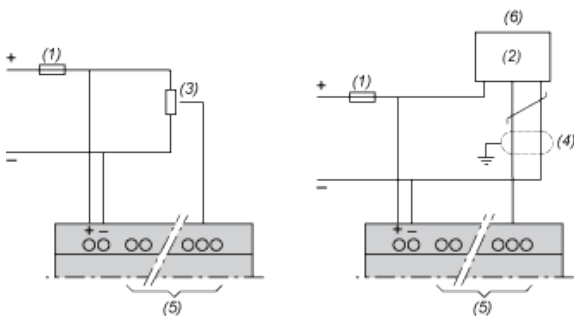
Discrete Input Used for 3-Wire Sensors



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

Connection of Smart Relays on DC Supply

Analog Inputs



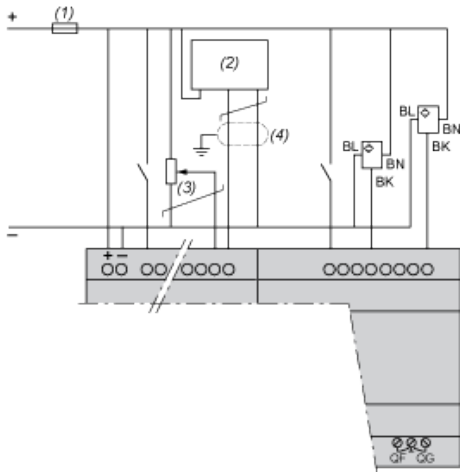
- (1) 1 A quick-blow fuse or circuit-breaker.
- (2) Ca: Analog sensor / Ta: Analog transmitter.
- (3) Recommended values: 2.2 kΩ / 0.5 W (10 kΩ max.)
- (4) Screened cables, maximum length 10 m / 32.80 feet.
- (5) Analog inputs according to Zelio Logic smart relay type (see table below)
- (6) 0-10 Vdc ANALOG

| Smart Relays | Analog Inputs |
|--------------|---------------|
| SR2•12••D | IB...IE |
| SR2A201BD | IB and IC |
| SR2D201BD | IB and IC |

| | |
|-----------|---------|
| SR2B20••D | IB...IG |
| SR2E201BD | IB...IG |
| SR3B10•BD | IB...IE |
| SR3B26••D | IB...IG |

Connection of Smart Relays on DC Supply, with Discrete I/O Extension Modules

SR3B•••JD + SR3XT•••JD, SR3B•••BD + SR3XT•••BD



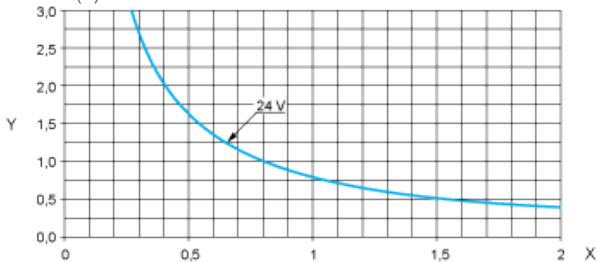
- (1) 1 A quick-blow fuse or circuit-breaker.
 - (2) Ca: Analog sensor / Ta: Analog transmitter.
 - (3) Recommended values: 2.2 k Ω / 0.5 W (10 k Ω max.)
 - (4) Screened cables, maximum length 10 m / 32.80 feet.
- QF and QG : 5 A for SR3XT141••

Compact and Modular Smart Relays

Electrical Durability of Relay Outputs

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

DC-12 (1)

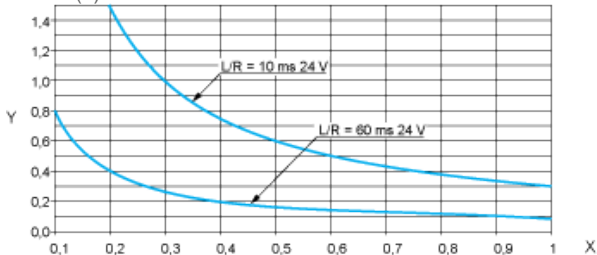


X: Current (A)

Y: Millions of operating cycles

- (1) DC-12: control of resistive loads and of solid state loads isolated by opto-coupler, $L/R \leq 1$ ms.

DC-13 (1)



X: Current (A)

Y: Millions of operating cycles

- (1) DC-13: switching electromagnets, $L/R \leq 2 \times (U_e \times I_e)$ in ms, U_e : rated operational voltage, I_e : rated operational current (with a protection diode on the load, DC-12 curves must be used with a coefficient of 0.9 applied to the number in millions of operating

cycles).