# "Zelio Logic" smart relay

## Presentation

- The "Zelio Logic" smart relay is designed for use in small automated systems.
- It is suitable for use in both industrial sectors and commercial premises.
- Its compactness and ease of setting-up provide a competitive alternative to basic cable logic or specific card solutions.
- The ease of programming, ensured by the universality of the contact language, meets all automation requirements and also the needs of the electrician.
- The versions without display or buttons provide not only a competitively priced solution, but also the confidentiality of applications
- Programming can be carried out :
  - independently, using the buttons on the smart relay,
  - on a PC, using "Zelio Soft" software,
  - on a Pocket PC, using "Zelio Soft Pocket PC" software.
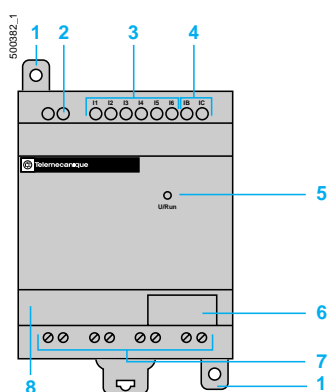
## Description

**SR1 A, SR1 B**
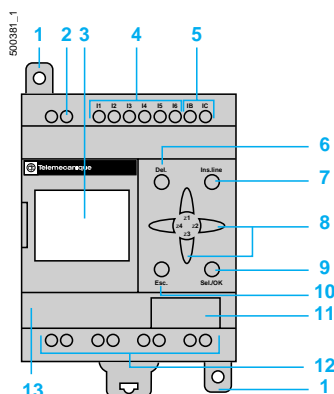


1  Retractable fixing lugs
2  Screw terminal supply connections
3  4 line, 12 character, LCD display
4  Screw terminal input connections
5  Screw terminal 0 – 10 V analogue input connections, suitable for discrete ⎓ 24 V (only applicable to SR1 B)
6  Cancellation button
7  Line insertion button
8  Navigation buttons or Z button after configuration
9  Selection and validation button
10 Escape button (Esc.)
11 Slot for memory back-up and for transfer from one product to another (optional) or for smart relay/PC connecting cable
12 Screw terminal relay output connections
13 Location for re-usable label

**"Zelio Logic" main screen**



1  Input status indication
2  Smart relay RUN or STOP mode indication
3  Indication of a parameter (date and time by default for smart relays with clock)
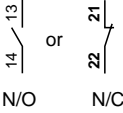4  Output status indication

**SR1 D, SR1 E**



1  Retractable fixing lugs
2  Screw terminal supply connections
3  Screw terminal input connections
4  Screw terminal 0 – 10 V analogue input connections, suitable for discrete ⎓ 24 V (only applicable to SR1 E)
5  U/RUN : operating LED
   Steady : power on, Stop mode,
   Flashing : Run mode
   Fast flashing : relay fault
6  Slot for memory back-up and for transfer from one product to another (optional) or for smart relay/PC connecting cable
7  Screw terminal relay output connections
8  Location for re-usable label

**Back-up memory**

- Allows a programme to be copied into another smart relay (examples : for building identical equipment, remote transmission of updates).
- The memory also allows a back-up copy of the programme to be saved prior to exchanging the product.
- When used with a smart relay without display or buttons, the copy of the programme contained in the cartridge is automatically transferred into the smart relay at power-up.

| Characteristics : pages 14100/8 to 14100/11 | References : pages 14100/12 and 14100/ | 13 Dimensions : | page 14100/14 Schemes : | pages 14100/14 and 14100/15 |

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# "Zelio Logic" smart relay

## Contact language

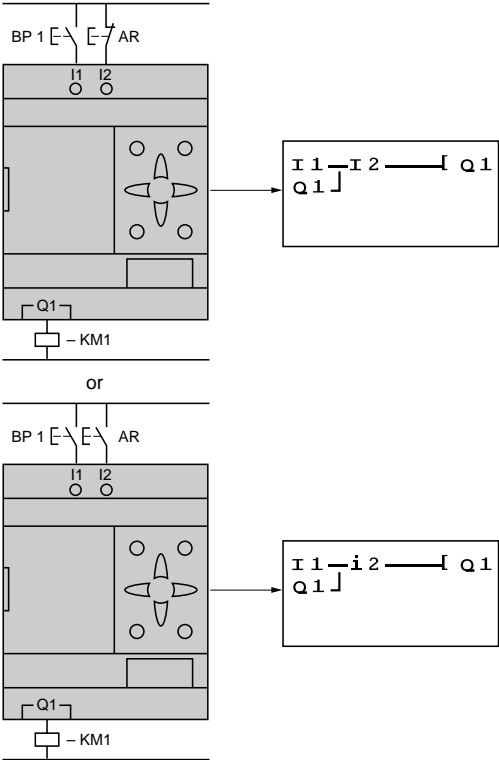| Function | Electrical scheme | Ladder language | Zelio smart relay symbol | Notes |
|---|---|---|---|---|
| Contact | 13 \| 14 (N/O) or 21 \| 22 (N/C) | —\| \|— or —\|/\|— | Ix or ix | I corresponds to the real state of the contact connected to the input of the smart relay. i (or I) corresponds to the inverse state of the contact connected to the input of the smart relay. |
| Standard coil | A1 / A2 | —( )— | Qx | The coil is energised when the contacts to which it is connected are closed. |
| Latch coil (Set) | A1 / A2 | —(S)— | SQ | The coil is energised when the contacts to which it is connected are closed. It remains tripped when the contacts re-open. |
| Unlatch coil (Reset) | A1 / A2 | —(R)— | RQ | The coil is de-energised when the contacts to which it is connected are closed. It remains inactive when the contacts re-open. |

## Example

Cabled logic

2 alternatives with Zelio smart relay

BP 1 — KM1 (13 / 14)

AR (23 / 24)

– KM1 (1) A1 / A2

(1) KM1 = Q1

BP 1 — AR
I1  I2

I 1 — I 2 —[ Q1
Q 1 ⌐

Q1
– KM1

or

BP 1 — AR
I1  I2

I 1 — i 2 —[ Q1
Q 1 ⌐

Q1
– KM1

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# "Zelio Logic" smart relay
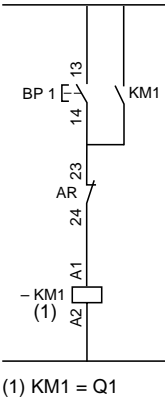
## Functions

**The Zelio Logic smart relay comprises**
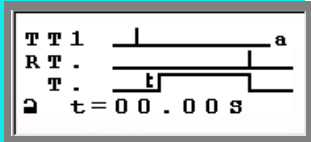- 8 or 10 **Time delay function** blocks, each with 8 choices of parametering,
- 8 or 10 **Counter function** blocks**,**
- 4 **Clock function** blocks, each comprising 4 channels.
- 8 **Analogue function** blocks, each with 7 choices of comparator parametering,
- 4 or 6 text function blocks (see Zelio Soft software page).

### Time delay function block

TT● : time delay control input
RT● : time delay reset to zero
T● : time delay output
a : Zelio symbol/type of time delay
s : time base
t 00.00 : time delay value
🔒 : locking of time delay value
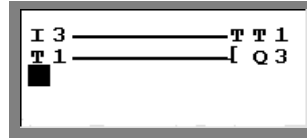
When inputting data to the **time delay function** block TT1, a window automatically opens for the inputting of the various parameters.

Depending on the smart relay reference, the time elapsed can be saved in the event of a power failure (remanence)

### Counter function block
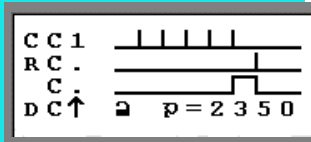
CC● : counting input
RC● : counter reset to zero
C● : counter output
DC● : up/down counter selection
p : preset value
🔒 : locking of preset counter value
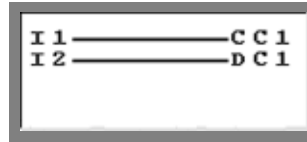
In the first programming line, each pulse at input I1 increments or decrements the counter C1.
Input I2 determines the counting direction, either up or down.

Depending on the smart relay reference, the number of pulses already counted can be saved in the event of a power failure (remanence)

### Clock function block
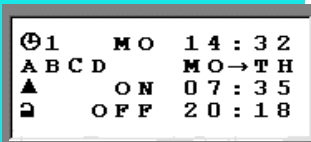
⊕1 : clock block output
ABCD : time zones
MO 14 : 32 : current date and time
MO →TH : first day/last day
ON : start time
OFF: off time
🔒 : locking of time zones
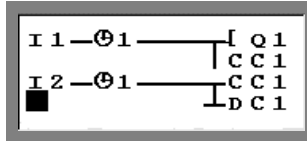
The insertion of the clock block will enable output Q1 to change state in accordance with the preset time zones.

**Programming example with 2 time zones**
Channel A time zone
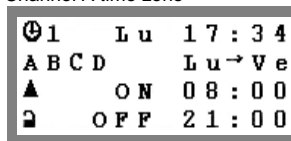
From Monday to Friday, the active time zone will be from 8 : 00 (ON) until 21 : 00 (OFF).

Channel B time zone
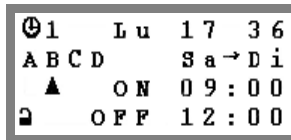
For Saturday and Sunday, the active time zone will be from 9 : 00 (ON) until 12 : 00 (OFF).

### Analogue function block
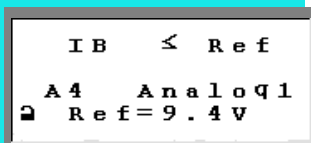
A4 : analogue block output
Ref : reference voltage
IB ≤ Ref : type of operation available

🔒 : locking of analogue block reference value
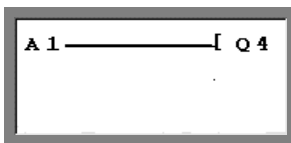
The analogue function block controls output Q 4 according to the result of the comparison.
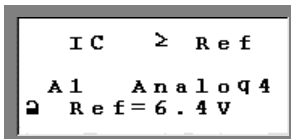
In this example, output Q 4 changes state when the value of the analogue input IC is greater than the 6.4 V reference voltage.

## Modes

### Parameter entry mode

```
  T1=05:00M
> C1=0051
  A1=6.4V
  🕐1
```

This mode allows centralising of all the parameters relating to unlocked function blocks that are used in the programme.
Any of these parameters can be modified.

In this example, the user can modify :
- the preset time delay value T1,
- the preset counter value C1,
- the reference voltage of analogue block A1,
- the parameters of clock block n°1 (date, time zones).

### Display mode

```
  PROGRAM.    ▲
  PARAMET.
> VISU.
  RUN/STOP    ▼
```

This mode enables display of the current values of the various function blocks used in the programme. It is also possible to select one of these values for display on the screen instead of the date and time.

In this example, the user has the option of displaying the current values of :
- the time delay T1,
- the analogue input IC,
- the counter C1.

```
  JE  10:44  ◆
  T1=00:00M
  C1=0000
> Ic=0.0V
```

```
123456789ABc
    STOP
    Ic=0.0V
12345678
```

The value IC has been selected to be permanently displayed on the main screen instead of the date and time.

### Diagnostic mode

This mode is accessible after the Zelio smart relay is set to RUN.

**Main screen**

```
123456789ABc
I  RUN
  JE   11:01
12345678
```

**Programming screen**

Changing to programming mode allows all the active and inactive elements of the programme to be displayed.
All active elements appear in reversed video.

```
I 3          T T 1
T 1        [ Q3
I 1—🕐1     [ Q1
            | C C 1
```

| Characteristics : pages 14100/8 to 14100/11 | References : pages 14100/12 and 14100/ | 13 Dimensions : | page 14100/14 Schemes : | pages 14100/14 and 14100/15 |

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## "Zelio Soft" software for PC (V1.5)

"Zelio Soft" software enables :
- inputting of control schemes,
- detection of any programming errors by means of its coherence test function,
- inputting of messages for display on the "Zelio Logic" smart relay,
- testing of programmes, with or without the smart relay connected to the PC.
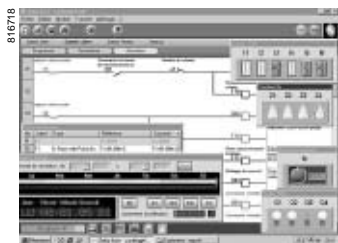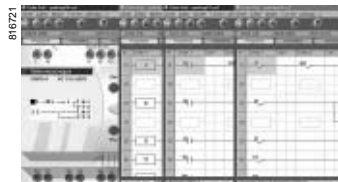
### Input modes for control schemes

Zelio input" mode enables users who have directly programmed the Zelio smart relay to find the same user interface, even when using the software for the first time.
"Free input" mode, which is more intuitive, is very user-friendly and incorporates many additional features.
Using Zelio Soft in "free mode" enables users to select their preferred symbol language from the following 3 alternatives :
- Zelio symbols,
- Ladder symbols,
- electrical symbols.
"Free input" mode also enables the creation of mnemonics and notes associated with each line of the programme.
Instant switching from one input mode to the other is simply achieved, at any time, by clicking the mouse.

### Coherence test and application languages

Zelio Soft monitors applications via its coherence test function and turns red at the slightest input error. The problem can be located by simply clicking the mouse.
Zelio Soft allows switching between the 7 application languages (english, french, german, spanish, italian, portuguese and dutch) at any time, and editing of the application file in the selected language. It allows selection of the representation mode (Zelio, Ladder or electrical) for editing the file.

### Inputting messages for display on Zelio Logic

Zelio Soft allows 4 or 6 Text function blocks to be configured, corresponding to 4 or 6 screens of 4 lines x 12 characters, which can be displayed on all smart relays which have a display. These screens are activated in the same simple way as a coil in the control scheme. It is then possible to display messages as text only or to associate them with 1 or 2 variables, the latter being current values and/or setting values of function blocks used in the programme.

### Programme testing

2 test modes are provided : simulation and supervision.

Zelio Soft **simulation** mode makes it possible to test all the programmes, without the smart relay, i.e. :
- activate discrete inputs and their contact modes (N/O or N/C, fleeting or continuous),
- display the output states,
- vary the voltage of the analogue inputs Ib and Ic,
- activate the buttons,
- simulate the application programme in real time or accelerated time,
- dynamically display, in red, the various active elements of the programme.

Zelio Soft **supervision** mode makes it possible to test the programme executed by the smart relay, i.e.:
- display the programme "on line",
- force inputs, outputs, control relays and current values of the function blocks,
- adjust the time,
- change from STOP mode to RUN mode and vice versa.

| Characteristics :<br>pages 14100/8 to 14100/11 | References :<br>pages 14100/12 and 14100/ | 13<br>Dimensions : | page 14100/14<br>Schemes : | pages 14100/14 and<br>14100/15 |
| --- | --- | --- | --- | --- |

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## Zelio Soft software for Pocket PC
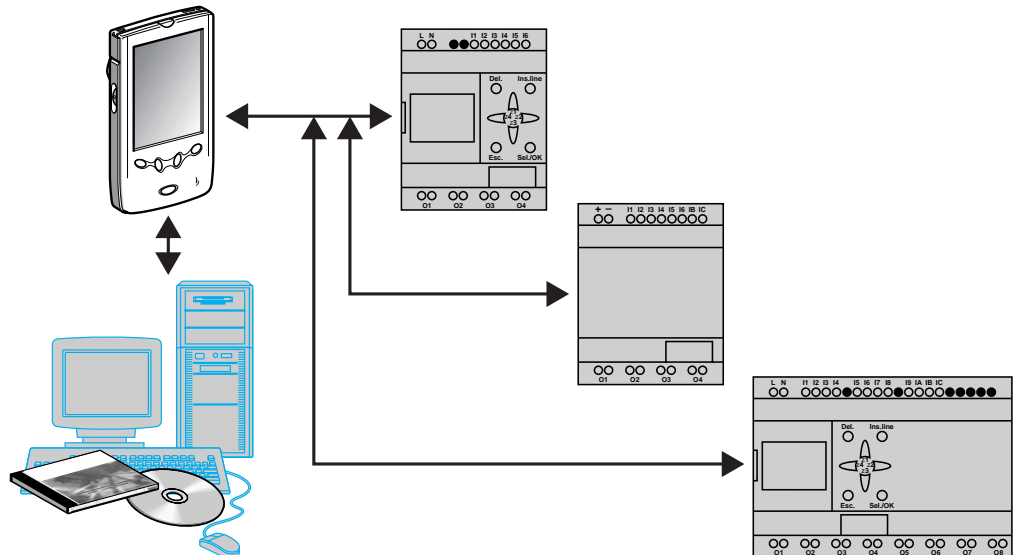




**Inputting of a control scheme**



**Programme test with smart relay connected - supervision mode**



**Configuration of a time delay function block**

The Pocket PC allows :
- full entry of control schemes, including the messages to be displayed on the smart relay screen (text blocks),
- transfer of programmes created with Zelio Soft on a PC to the Pocket PC and vice versa,
- transfer of programmes created on a PC or on a Pocket PC to any smart module in the range and vice versa, as well as debugging of programmes while connected or not connected to the smart relay.

The Pocket PC therefore avoids having to move the PC or smart relays for transfer and debugging of applications.
It is particularly useful for setting up smart relays which do not have a display or buttons.

Recommended Pocket PCs (1) :
- Hewlett Packard "Jornada 525 or 545", available under Telemecanique reference VW3-A8103●●,
- Hewlett Packard "Jornada 545 and 548", to be ordered directly from an HP dealer,
- Compaq "Ipaq" 3630, to be ordered directly from a Compaq dealer,
- Casio Casiopeia EM 505, to be ordered directly from a Casio dealer.

### Zelio Soft for Pocket PC

Includes virtually all the functions of Zelio Soft software for PC :
- inputting of control schemes in free input mode in a choice of 3 languages - Zelio, Ladder or electrical symbols - with associated comments,
- programme coherence test,
- inputting of text function blocks (text only or text + variables),
- supervision of programmes (2) with :
  - "on line" display of the programme and current values of function blocks,
  - forcing of inputs, outputs, control relays and function block values,
  - adjustment of parameters, date and time,
  - switching from Stop to Run mode.

The software can be quickly installed in the Pocket PC, via a PC, using a special installation CD (ref : SR1 SFT02).
Exchange of files between the Pocket PC and PC is achieved by means of the Active Sync software (version V3.1 or greater) supplied with the Pocket PC.
After having installed the software, the Pocket PC can be used quite independentl, as the only programming and adjustment tool for Zelio Logic smart relays.

(1) Likely to change as Pocket PC manufacturers develop their ranges. Please consult your usual supplier.
(2) Only with module versions greater than or equal to V1.7.

# "Zelio Logic" smart relay

## Environmental characteristics

| Approvals | | | UL, CSA, C-TICK, GL |
|---|---|---|---|
| **Degree of protection** | | | IP 20 |
| **Temperature** | Operation | °C | - 20...+ 55 conforming to IEC 68-2-1 and 68-2-2 |
| | Readability of display | °C | 0...+ 55 conforming to IEC 68-2-1 and 68-2-2 |
| | Storage | °C | - 25...+ 70 (conforming to IEC 1131-2) |
| **Maximum relative humidity** | | % | 95 without condensation or dripping water |
| **Altitude** | | m | 0…2000 |
| **Mechanical resistance** | Immunity to vibrations | | Conforming to standard IEC 68-2-6, test Fc |
| | Immunity to mechanical shock | | Conforming to standard IEC 68-2-27, test Ea |
| **Resistance to electrostatic discharge** | Immunity to electrostatic discharge | | Conforming to standard IEC 61000-4-2, level 3 (1) |
| **Resistance to HF interference** | Immunity to electromagnetic radiated fields | | Conforming to standard IEC 61000-4-3, level 3 (1) |
| | Immunity to rapid pulsed transients | | Conforming to standard IEC 61000-4-4, level 3 (1) |
| | Immunity to surges | | Conforming to standard IEC 61000-4-5 |
| | Immunity to damped oscillatory waves | | Conforming to standard IEC 61000-4-12 |
| **Connection to screw terminals** (Tightened using Ø 3.5 screwdriver) | Flexible cable with cable end | mm² | 1 conductor : 0.14…1.5, cable : AWG26…AWG16<br>2 conductors : 0.14…0.75, cable : AWG26…AWG18 |
| | Semi-rigid cable | mm² | 1 conductor : 0.14…2.5, cable : AWG26…AWG14 |
| | Rigid cable | mm² | 1 conductor : 0.14…2.5, cable : AWG26…AWG14<br>2 conductors : 0.14…1.5, cable : AWG26…AWG16 |
| | Tightening torque | N.m | 0.6 |

## Supply characteristics ⎓

| Smart relay type | SR1 | | B121JD | A101BD<br>B121BD | A201BD<br>B201BD | B122BD |
|---|---|---|---|---|---|---|
| **Primary** | Nominal voltage | V | ⎓ 12 | ⎓ 24 | | |
| **Voltage limits** | Including ripple | V | 10.4…14.4 | 19.2…30 | | |
| **Nominal input current** | | mA | 105 | 83 | 130 | 45 |
| **Heat dissipation** | | W | 1.3 | 1.6 | 2.9 | 1.1 |
| **Micro-breaks** | Acceptable duration | | ≤ 1 ms, repeated 20 times | | | |
| **Protection** | | | Against polarity inversion | | | |

## Supply characteristics ∿

| Smart relay type | SR1 | | B101B | B201B | A101FU<br>B101FU | A201FU<br>B201FU |
|---|---|---|---|---|---|---|
| **Primary** | Nominal voltage | V | ∿ 24 | | ∿ 100...240 | |
| **Voltage limits** | Including ripple | V | ∿ 20.4…26.4 | | ∿ 85...264 | |
| **Nominal frequency** | | Hz | 50-60 (47…63) | | | |
| **Nominal input current** | | mA | 80 | 130 | ∿ 100 V ≤ 50<br>∿ 240 V ≤ 27 | ∿ 100 V ≤ 80<br>∿ 240 V ≤ 40 |
| **Heat dissipation** | | W | 3 | 5 | 3 | 5.3 |
| **Micro-breaks** | Acceptable duration | | ≤ 10 ms, repeated 20 times | | | |
| **Isolation voltage** | Primary/earth | V | 2000 (50-60 Hz) | | | |

## Processing characteristics

| Smart relay type | SR1 | | A1●●●●, B1●●●● | A2●●●●, B2●●●● |
|---|---|---|---|---|
| **Number of control scheme lines** | | | 60 | 80 |
| **Maximum cycle time** | | ms | 6 | 8 |
| **Response time** (2) | | ms | 12 to 24 (**SR1 B121JD** and ●1●●BD)<br>20 to 40 (**SR1 ●101FU** and ●101B) | 14 to 26 (**SR1 ●201BD**)<br>22 to 42 (**SR1 ●201FU** and ●201B) |
| **Back-up time** in case of power failure | Day/time | h | ≥ 150 at 40 °C only applicable to **SR1 B** and **SR1 E** (4) | |
| | Programme and adjustments | | For life, internal EEPROM | |
| | Current values and states (3) | | For life, internal EEPROM on smart relays SR1B/SR1E only (4) | |
| **Programme memory checking** | | | At each power-up | |
| **Clock drift** | | s | ≤ 6 per month | |
| **Time delay block accuracy** | | | ± 12 ms ± 0.5 % of the time displayed | |

(1) Minimum level under test conditions defined by the standards.
(2) Time between change of state of an input and change of state of an output directly linked by the programme in the same cycle
(3) The values and states to be saved must be configured in the remanence menu.
(4) As from product version V1.7.

## Discrete 24 V input characteristics

| Smart relay type | | | SR1 ●●●BD | SR1 ●●●●JD | SR1 ●●●BD | SR1 ●●●JD |
|---|---|---|---|---|---|---|
| | Input | | I1 to IA | | IB and IC | |
| Connection | | | Screw terminals | | Screw terminals | |
| Nominal value of inputs | Voltage | V | 24 | 12 | 24 | 12 |
| | Current | mA | 3 | 3 | 0.62 | 0.21 |
| Input switching limit values | State 1 Voltage | V | ≥ 15 | ≥ 6.5 | ≥ 9.9 | ≥ 9.9 |
| | Current | mA | > 1.8 | > 1.6 | 0.16 | 0.16 |
| | State 0 Voltage | V | < 5 | < 6.2 | < 5 | < 5 |
| | Current | mA | < 0.5 | < 1.5 | 0.08 | 0.08 |
| Input impedance at state 1 | | kΩ | 8 | 4 | 38 | 57 |
| Configurable response time | State 0 to 1 | ms | 0.3 (fast)…3 (slow) | | 3 (not configurable) | |
| | State 1 to 0 | ms | 0.5 (fast)…5 (slow) | | 5 (not configurable) | |
| Conformity to IEC 1131-2 | | | Yes, type 1 | | No | |
| Sensor compatibility | 3-wire | | Yes PNP | | Yes | |
| | 2-wire | | No | | No | |
| Type of input | | | Resistive | | | |
| Isolation | Between supply and inputs | | None | | | |
| | Between inputs | | None | | | |
| Maximum counting frequency | | Hz | 60 | | | |

## AC input characteristics

| Smart relay type | | | | SR1 ●●01FU | SR1 ●●01B |
|---|---|---|---|---|---|
| Connection | | | | Screw terminals | Screw terminals |
| Nominal value of inputs | Voltage | | V | ∿ 100…240 | ∿ 24 |
| | Current | | mA | 0.65 (U = 115 V) 1.3 (U = 240 V) | 3 (U = 24 V) |
| | Frequency | | Hz | 47…63 | 47…63 |
| Input switching limit values | At state 1 | Voltage V | | ≥ 79 | ≥ 12 |
| | | Current mA | | ≥ 0.4 (U = 240 V) | ≥ 1.5 |
| | At state 0 | Voltage V | | < 40 | < 5 |
| | | Current mA | | < 0.3 | < 0.6 |
| Response time | State 0 to 1 | 50/60 Hz | ms | 45…50 (U = 110 V), 85…90 (U = 240 V) | 18…22 |
| | State 1 to 0 | 50/60 Hz | ms | 45…50 (U = 110 V), 18…22 (U = 240 V) | 23…25 |
| Isolation | Between supply and inputs | | | None | None |
| | Between inputs | | | None | None |
| Maximum counting frequency | | | Hz | 10 | 10 |

## Integral analogue input characteristics

| Smart relay type | | | | SR1 B●●●BD | SR1 B121JD |
|---|---|---|---|---|---|
| Analogue inputs | Number of channels | | | 2 | |
| | Voltage range of input | | V | 0…10 | |
| | Input impedance | | kΩ | 62.5 to 10 V | |
| | Maximum non destructive voltage | | V | ± 30 | ± 15 |
| Conversion | Resolution | | | 8 bits | |
| | Conversion time | | | Relay cycle time | |
| | Precision | at 25 °C | | ± 1.6 % of the full range | |
| | | at 60 °C | | ± 2.9 % of the full range | |
| | Repeat accuracy | at 55 °C | | < 0.1 % of the full range | |
| Isolation | Between analogue channel & supply | | V | None | |
| Cabling distance | | | m | 10 max with screened cable (sensor not isolated) | |

## Relay output characteristics (screw terminal connections) (1

| Smart relay type | | | | SR1 B121JD, SR1 ●1●1BD, SR1 ●101FU, SR1 ●101B | SR1 ●201BD, SR1 ●201FU, SR1 ●201B |
|---|---|---|---|---|---|
| **Number of outputs** | Without common potential | | | 4 | 8 |
| **Operating limit values** | | | V | ⎓ 5…150, ∼ 24…250 | |
| **Contact type** | | | | N/O | |
| **Thermal current** | | | A | 8 | |
| **Electrical durability for 500 000 operating cycles** | Utilisation category | DC-12 | V | 24 | |
| | | | A | 1.5 | |
| | | DC-13 | V | 24 V L/R = 10 ms | |
| | | | A | 0.6 | |
| | | AC-12 | V | 230 | |
| | | | A | 1.5 | |
| | | AC-15 | V | 230 | |
| | | | A | 0.9 | |
| **Minimum switching capacity** | At 5 V minimum voltage | | mA | 10 | |
| **Lower power switching reliability of contact** | | | | 17 V - 5 mA<br>Failure rate for 100 million operating cycles : 1 | |
| **Maximum operating rate** | No-load | | Hz | 10 | |
| | At Ie | | Hz | 0.5 | |
| **Mechanical life** | In millions of operating cycles | | | 10 | |
| **Rated impulse withstand voltage** | Conforming to IEC 947-1 | | kV | 2.5 | |
| **Response time** | Trip | | ms | 10 | |
| | Reset | | ms | 5 | |
| **Built-in protection** | Against short-circuit | | | None. The use of a protection device (fuse or circuit-breaker) is recommended for each channel or group of channels | |
| | Against overvoltage and overload | | | None. Connect, in parallel to the terminals of each preactuator, an RC circuit, MOV (ZNO) suppressor or an appropriately sized diode for the voltage | |

## Transistor output characteristics (screw terminal connections)

| Smart relay type | | | SR1 B122BD |
|---|---|---|---|
| **Number of outputs** | With positive polarity common potential | | 4 (PNP) |
| **Operating limit values** | | V | 19.2…30 |
| **Loads** | Nominal voltage | V | ⎓ 24 |
| | Nominal current | A | 0.5 |
| | Maximum current | A | 0.625 at 30 V |
| **Drop out voltage** | At state 1 | V | ≤ 2 for I = 0.5 A |
| **Response time** | Trip | ms | ≤ 1 |
| | Reset | ms | ≤ 1 |
| **Built-in protection** | | | Against overload and short-circuits<br>Against overvoltage (2)<br>Against inversions of power supply |

(1) Characteristics at 55 °C for 60 % loading of inputs/outputs or at 45 °C for 100 % loading of inputs/outputs.
(2) If there is no volt-free contact between the relay output and the load.
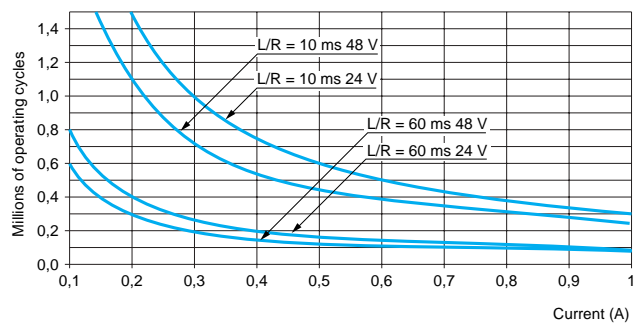
## Electrical durability of relay outputs (in millions of operating cycles) (conforming to IEC 947-5-1)
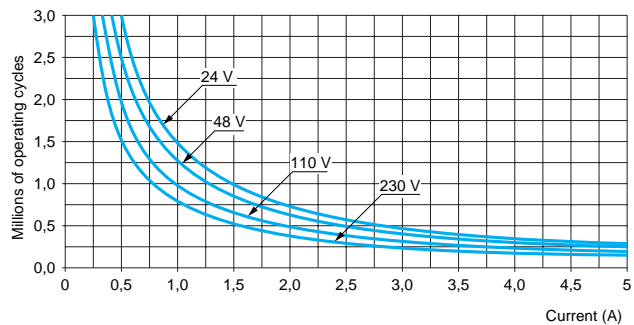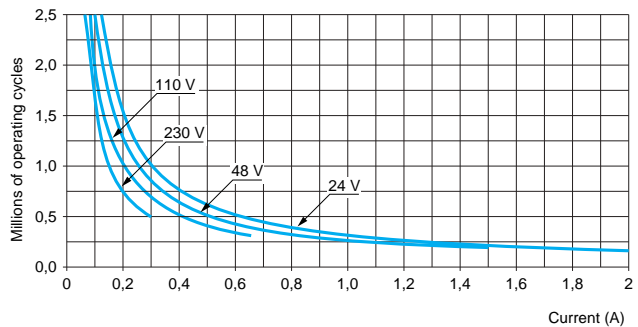
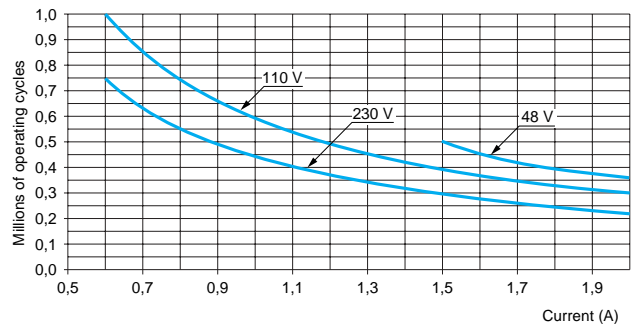**d.c. loads**

DC-12 (1)
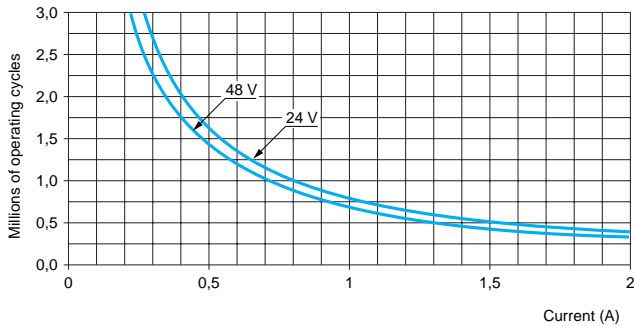


DC-13 (2)



**a.c. loads**

AC-12 (3)



AC-14 (4)



AC-15 (5)



(1) DC-12 : switching resistive loads and photo-coupler isolated solid state loads, L/R ≤ 1ms.
(2) DC-13 : switching electromagnets, L/R ≤ 2 x (Ue x Ie) in ms, Ue : rated operational voltage, Ie : rated operational current (with protection diode on load, use the DC-12 curves and apply a coefficient of 0.9 to the millions of operating cycles value).
(3) AC-12 : switching resistive loads and photo-coupler isolated solid state loads cos ≥ 0.9.
(4) AC-14 : switching small electromagnetic loads whose power drawn with the electromagnet closed is ≤ 72 VA, making : cos = 0.3, breaking : cos = 0.3.
(5) AC-15 : switching electromagnetic loads whose power drawn with the electromagnet closed is > 72 VA, making : cos = 0.7, breaking : cos = 0.4.

# "Zelio Logic" smart relay



**SR1 B121BD**



**SR1 A201BD**



**SR1 E121BD**

## Smart relays

| Number of I/O | Discrete inputs | Outputs | Clock | Remanence function (1) | Reference | Weight kg |
|---|---|---|---|---|---|---|
| **Supply ⎓ 12 V** | | | | | | |
| **12** | 8 I ⎓ 12 V (2) | 4 O relay | Yes | Yes (3) | **SR1 B121JD** | 0.290 |
| **Supply ⎓ 24 V** | | | | | | |
| **10** | 6 I ⎓ 24 V | 4 O relay | No | No (4) | **SR1 A101BD** | 0.290 |
| **12** | 8 I ⎓ 24 V (2) | 4O relay | Yes | Yes (3) | **SR1 B121BD** | 0.290 |
| | | 4 S transistor | Yes | Yes (3) | **SR1 B122BD** | 0.290 |
| **20** | 12 I ⎓ 24 V | 8 O relay | No | No (4) | **SR1 A201BD** | 0.350 |
| | 12 I ⎓ 24 V (2) | 8 S relay | Yes | Yes (3) | **SR1 B201BD** | 0.350 |
| **Supply ∿ 24 V** | | | | | | |
| **10** | 6 I ∿ 24 V | 4 O relay | Yes | Yes (3) | **SR1 B101B** | 0.290 |
| **20** | 12 I ∿ 24 V | 8 O relay | Yes | Yes (3) | **SR1 B201B** | 0.350 |
| **Supply ∿ 100/240 V** | | | | | | |
| **10** | 6 I ∿ 100/240 V | 4 O relay | No | No (4) | **SR1 A101FU** | 0.290 |
| | | | Yes | Yes (3) | **SR1 B101FU** | 0.290 |
| **20** | 12 I ∿ 100/240 V | 8 O relay | No | No (4) | **SR1 A201FU** | 0.350 |
| | | | Yes | Yes (3) | **SR1 B201FU** | 0.350 |

## Smart relays without display and without buttons

| Number of I/O | Discrete inputs | Outputs | Clock | Remanence function (1) | Reference | Weight kg |
|---|---|---|---|---|---|---|
| **Supply ⎓ 24 V** | | | | | | |
| **10** | 6 I ⎓ 24 V | 4 O relay | No | No (4) | **SR1 D101BD** | 0.270 |
| **12** | 8 I ⎓ 24 V (1) | 4 O relay | Yes | Yes (3) | **SR1 E121BD** | 0.270 |
| **Supply ∿ 100/240 V** | | | | | | |
| **10** | 6 I ∿ 100/240 V | 4 O relay | No | No (4) | **SR1 D101FU** | 0.270 |
| | | | Yes | Yes (3) | **SR1 E101FU** | 0.270 |

## Discovery packs

| Number of I/O | Contents | Reference | Weight kg |
|---|---|---|---|
| **Supply ⎓ 24 V** | | | |
| **12** | An **SR1 B121BD** smart relay, "Zelio Soft" software and a connecting cable | **SR1 PACKBD** | 0.800 |
| **20** | An **SR1 B201BD**, smart relay, "Zelio Soft" software and a connecting cable | **SR1 PACK2BD** | 0.850 |
| **Supply ∿ 100/240 V** | | | |
| **10** | An **SR1 B101FU**, smart relay, "Zelio Soft" software and a connecting cable | **SR1 PACKFU** | 0.800 |
| **20** | An **SR1 B201FU**, smart relay, "Zelio Soft" software and a connecting cable | **SR1 PACK2FU** | 0.850 |



**SR1 PACKBD**

(1) Counting or elapsed time values saved in the event of a power failure.
(2) Including 2 configurable analogue inputs.
(3) Functions available with product version ≥ V 1.7 :
    10 time delay blocks, of which 2 with remanence function
    10 counter blocks, of which 5 with remanence function
    6 text blocks
    Supervision mode with Zelio Soft V1.5.
(4) 8 time delay blocks
    8 counter blocks
    4 text blocks

Telemecanique

Schneider Electric

530034

**ABL 7RM2401**

## Power supply (1)

| Input voltage | Nominal output voltage | Nominal output current | Reference | Weight kg |
|---|---|---|---|---|
| 100…240 V 47…63 Hz | ⎓ 12 V | 1.9 A | **ABL 7RM1202** | 0.180 |
| | ⎓ 24 V | 1.4 A | **ABL 7RM2401** | 0.182 |

## Separate components

| Description | Reference | Weight kg |
|---|---|---|
| **EEPROM back-up memory** | **SR1 MEM01** | 0.001 |

## Zelio Soft software for PC

| Description | Reference | Weight kg |
|---|---|---|
| **Smart relay-PC connecting cable** length 1.8 m | **SR1 CBL01** | 0.350 |
| **Kit comprising** "Zelio Soft" programming software and a cable | **SR1 KIT01** | 0.500 |
| **Zelio Soft multi-language programming software for PC** (2) | **SR1 SFT01** | 0.150 |

| | SR1 | A●●●● | B●01B | B●●1BD | B●01FU | B122BD | B121JD | D●●●● | E●●●● |
|---|---|---|---|---|---|---|---|---|---|
| Zelio Soft | Version 1.2 | Yes | No | Yes (3) | Yes (3) | No | No | No | No |
| | Version 1.3 | Yes | No | Yes (5) | Yes (5) | Yes (5) | No | No | No |
| | Version 1.4 | Yes | No | Yes (5) | Yes (5) | Yes (5) | No | Yes | Yes (5) |
| | ≥ Version 1.5 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

## Zelio Soft software for Pocket PC

| Description | Reference | Weight kg |
|---|---|---|
| **Connecting cable between SUB-D-9 connector on the Pocket PC and the smart relay** | **SR1 CBL02** | 0.350 |
| **Programming software for Pocket PC** (also contains Zelio Soft multi-language software for PC) | **SR1 SFT02** | 0.150 |
| **"Jornada 525" Pocket PC** | **VW3 A8103●●** (4) | 0.300 |

## Other versions

| Description | Supply | Reference | Weight kg |
|---|---|---|---|
| **Zelio logic smart relay with integrated AS-i interface** | ⎓ 24 V | **ASI SR1470R ▲** (6) | 0.320 |
| | | **ASI SR1470T ▲** (6) | 0.320 |
| **Communication interface** | ⎓ 12/24 V | **SR1 COM01 ▲** (7) | 0.140 |

## Documentation

| Description | Language | Reference | Weight kg |
|---|---|---|---|
| **User's guide** for direct programming on the smart relay | English | **SR1 MAN01EN** | 0.100 |
| | French | **SR1 MAN01FR** | 0.100 |
| | German | **SR1 MAN01DE** | 0.100 |
| | Spanish | **SR1 MAN01ES** | 0.100 |
| | Italian | **SR1 MAN01IT** | 0.100 |

(1) See page 14061/5.
(2) FR/EN/DE/ES/IT/PO/NL. Contains on-line User's Guide that can be displayed on a PC.
(3) Only for earlier version smart relays V1.1 and V1.2.
(4) To order an operating system in the required language, replace the ●● in the reference with **FR** for French, **EN** for English, **DE** for German, **SP** for Spanish, **IT** for Italian, **PO** for Portuguese, **NL** for Dutch.
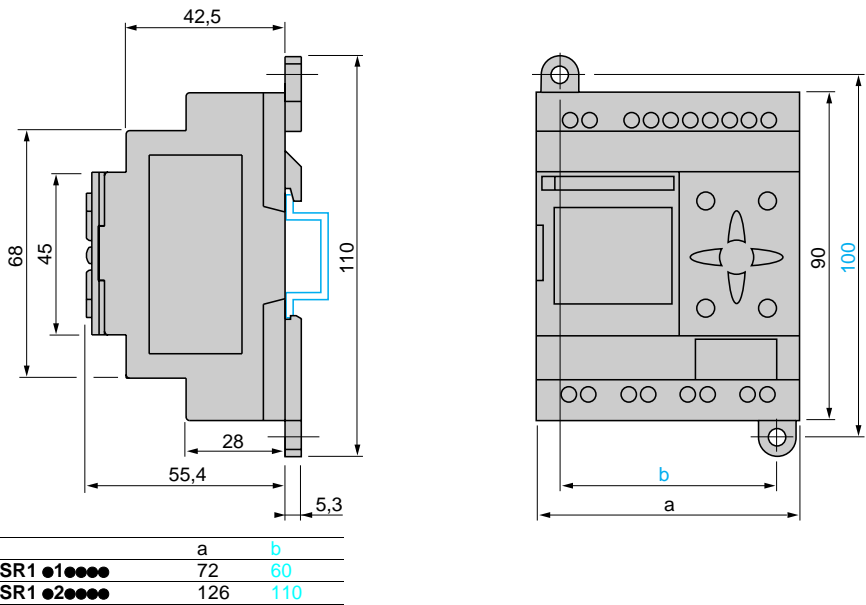(5) Only for smart relay versions V1.1, V1.2, V1.5 and V1.6.
(6) See pages 21089/2 to 21089/11.
(7) See pages 14101/2 to 14101/9.

▲ Available 1st quarter 2003.

# "Zelio Logic" smart relay

## Dimensions

**Smart relays SR1 ●●●●●**



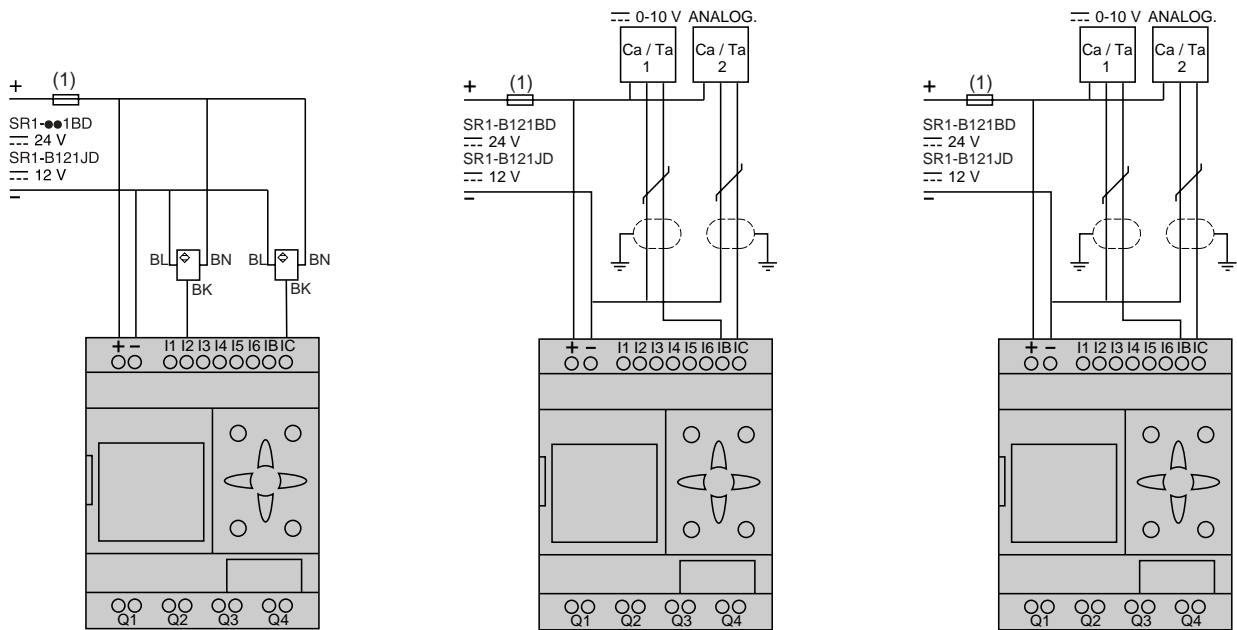| | a | b |
|---|---|---|
| **SR1 ●1●●●●** | 72 | 60 |
| **SR1 ●2●●●●** | 126 | 110 |

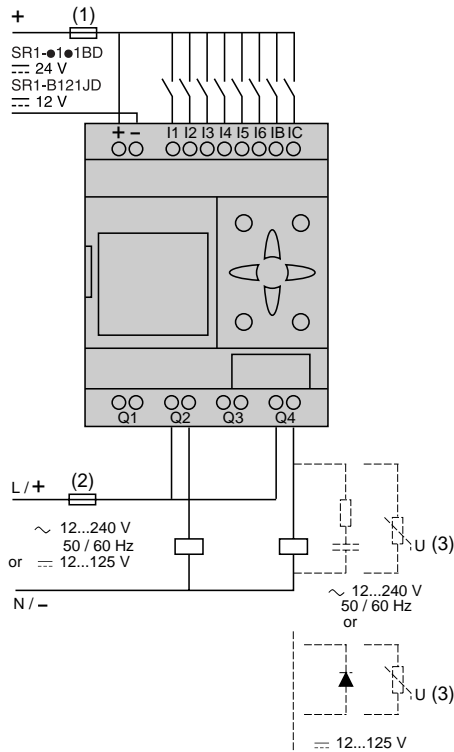## Schemes

**3-wire sensors**
**on SR1 ●●1BD, SR1 B121JD**

**Analogue inputs**
**on SR1 B121BD, SR1 B121JD**

**on SR1 B201BD**



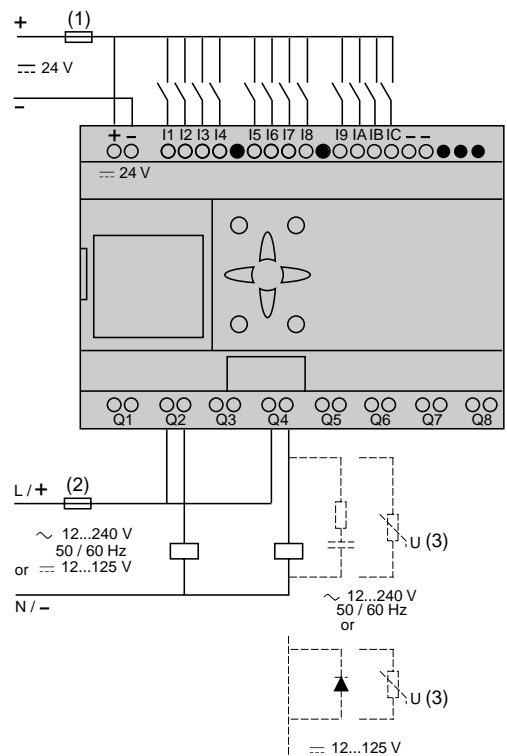(1) 1 A quick-blow fuse or circuit-breaker.

# "Zelio Logic" smart relay

**SR1 ●1●1BD, B121JD**
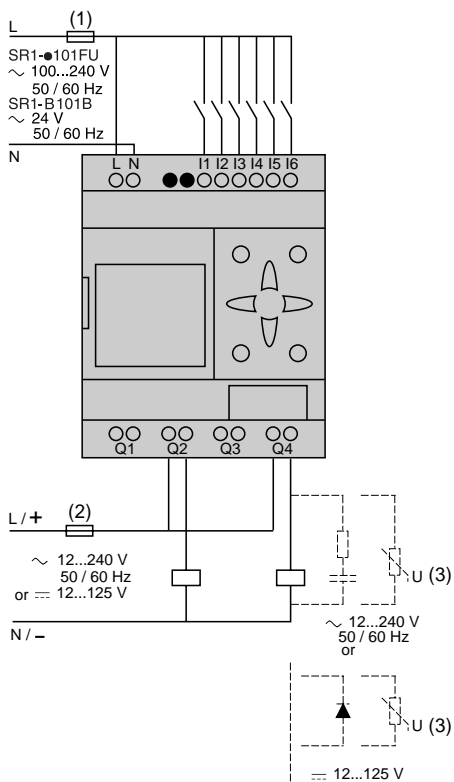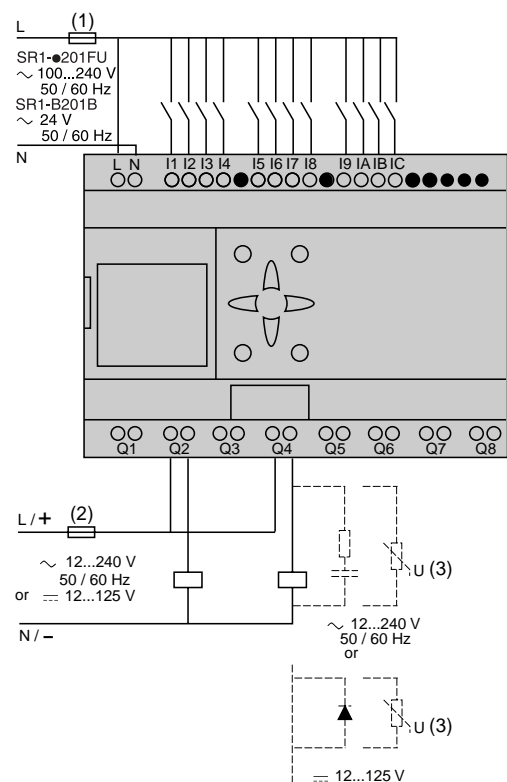


**SR1 B122BD**
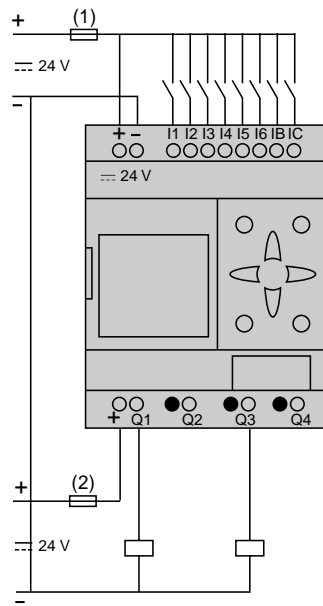


**SR1 ●201BD**



**SR1 ●101FU**
**SR1 ●101B**



**SR1 ●201FU**
**SR1 ●201B**



(1) 1A quick-blow fuse or circuit-breaker.
(2) 16A fuse or circuit-breaker (B16).
(3) Inductive load.

| Presentation : pages 14100/2 to 14100/7 | Characteristics : pages 14100/8 to 14100/ | 11 References : | pages 14100/12 and 14100/13 | Dimensions : pages 14100/14 |
|---|---|---|---|---|