Zelio Logic smart relays
Compact and modular smart relays

109446

SR2 B121BD

Presentation

Zelio Logic smart relays are designed for use in small automated systems. They are used in both industrial and commercial applications.

■ **For industry:**
□ automation of small finishing, production, assembly or packaging machines.
□ decentralised automation of ancillary equipment of large and medium-sized machines in the textile, plastics and materials processing sectors,
□ automated systems for agricultural machinery (irrigation, pumping, greenhouses, ...).

■ **For the commercial/building sectors:**
□ automation of barriers, roller shutters, access control,
□ automation of lighting installations,
□ automation of compressors and air conditioning systems.

Their compact size and ease of setting-up make them a competitive alternative to solutions based on cabled logic or specific cards.
Simple programming, ensured by the universal nature of LADDER and function block diagram FBD *(1)* languages, meets all automation requirements and also the needs of the electrician.
Compact smart relays are suitable for simple automated systems, up to 20 I/O.
If required, modular smart relays can be fitted with I/O extensions and a module for communication on the Modbus network, for greater performance and flexibility, from 10 to 40 I/O.

Programming

Programming can be carried out:
■ independently, using the buttons on the smart relay (ladder language),
■ on a PC, using "Zelio Soft" software.

When using a PC, programming can be carried out either in LADDER language, or in function block diagram language (FBD).

LCD display backlighting *(2)*

Backlighting of the display is programmable using “Zelio Soft” software and by direct action on the smart relay's 6 programming buttons.

Memory

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

Autonomy and backup

Autonomous operating time of the clock, ensured by a lithium battery, is 10 years.
Data backup (preset values and current values) is provided by an EEPROM Flash memory (10 years).

I/O extensions

Zelio Logic smart relays can, if necessary, take the following I/O extensions:
■ 6, 10 or 14 I/O, supplied with ⎓ 24 V via the smart relay,
■ 6, 10 or 14 I/O, supplied with ∿ 24 V via the smart relay,
■ 6, 10 or 14 I/O, supplied with ∿ 100... 240 V via the smart relay.

Communication module ▲

A module for communication on the Modbus network will be available for Zelio Logic modular smart relays. It is supplied with ⎓ 24 V via the smart relay.

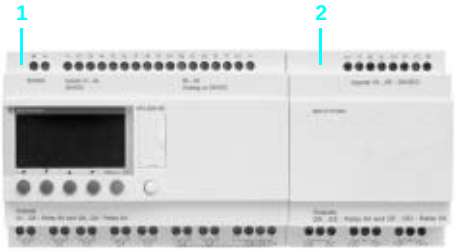
Communication interface ▲▲

The "communication" products in the Zelio Logic range include:
■ a communication interface connected between a smart relay and a modem,
■ analogue or GSM modems,
■ “Zelio Soft Com” software.

They are designed for monitoring or remote control of machines or installations which operate without personnel.
The communication interface, supplied with ⎓ 12/24 V, allows messages, telephone numbers and call conditions to be stored.

(1) FBD: Functional Block Diagram.
(2) LCD: Liquid Crystal Display

109458



1 Modular smart relay (10 or 26 I/O)
2 I/O extension module (6,10 or 14 I/O)

▲ Available 1st quarter 2004.
▲▲ Available 1st half 2004.

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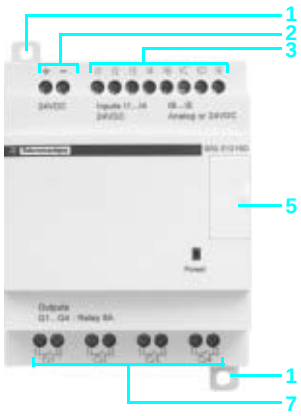
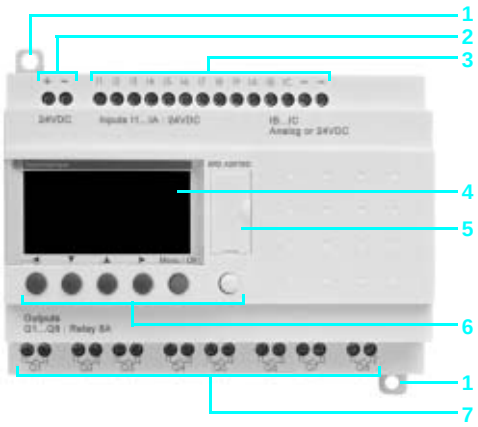
Compact smart relays

Without display - 10, 12 and 20 I/O



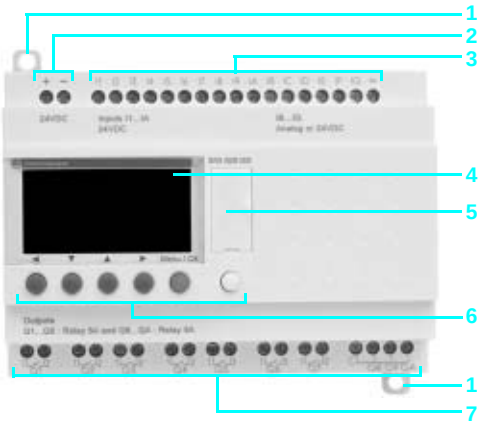
With display - 10, 12 and 20 I/O



Compact smart relays have the following on the front panel:
1 Two retractable fixing lugs
2 Two power supply terminals
3 Terminals for connection of the inputs
4 Backlit LCD display with 4 lines of 18 characters
5 Slot for a memory cartridge and connection to a PC
6 6 buttons for programming and parameter entry
7 Terminals for connection of the outputs

Modular smart relays

10 and 26 I/O



Modular smart relays have the following on the front panel:
1 Two retractable fixing lugs
2 Two power supply terminals
3 Terminals for connection of the inputs
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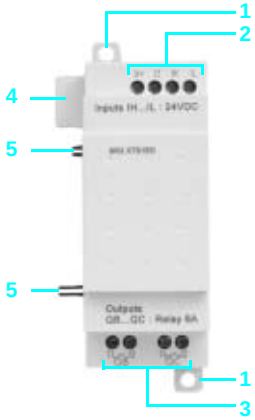
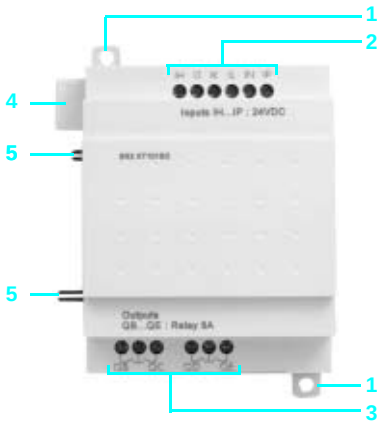
5 Slot for a memory cartridge and connection to a PC
6 6 buttons for programming and parameter entry
7 Terminals for connection of the outputs

I/O extension modules

6 I/O



10 and 14 I/O



I/O extension modules have the following on the front panel:
1 Two retractable fixing lugs
2 Terminals for connection of the inputs
3 Terminals for connection of the outputs
4 A connector for connection to the smart relay (powered by the smart relay)
5 Locating pegs

Zelio Logic smart relays

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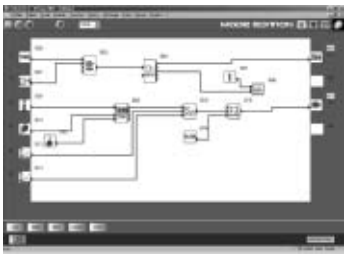
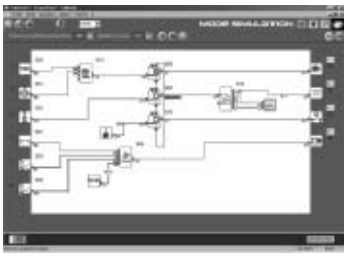
“Zelio Soft for PC” programming software

Programming in LADDER language



Programming in FBD language



"Simulation" mode

"Monitoring" mode

“Zelio Soft for PC” (version 2.0)

“Zelio Soft” software allows:
- programming in LADDER language or in function block diagram language (FBD),
- simulation, monitoring and supervision,
- uploading and downloading of programs,
- output of personalised files,
- automatic compiling of programs,
- on-line help.

Coherence test and application languages

“Zelio Soft” software monitors applications by means of its coherence test function. An indicator turns red at the slightest input error. The problem can be located by simply clicking the mouse.
"Zelio Soft" software allows switching, at any time, to any of the 6 application languages (English, French, German, Spanish, Italian, Portuguese), and editing of the application file in the selected language.

Inputting messages for display on Zelio Logic

"Zelio Soft" software allows Text function blocks to be configured, which can then be displayed on all smart relays which have a display.

Program testing

2 test modes are provided: simulation and monitoring.

“Zelio Soft” **simulation** mode allows all the programs to be tested, without the smart relay, i.e.:
- enable discrete inputs,
- display the status of outputs,
- vary the voltage of the analogue inputs,
- enable the programming buttons,
- simulate the application in real time or in accelerated time,
- dynamically display (in red) the various active elements of the program.

“Zelio Soft” **monitoring** mode makes it possible to test the program executed by the smart relay, i.e.:
- display the program "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.

In simulation or monitoring mode, the monitoring window allows the status of the smart relay I/O to be displayed within your application environment (diagram or image).

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“Zelio Soft” programming software

LADDER language

Definition

Text function block

Timer

Up/down counter

Fast counter

Analogue comparator

Clock

Control relay

Counter comparator

LCD backlighting

Summer/Winter time switching

Output coil

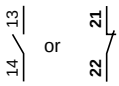
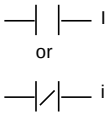
LADDER language allows a LADDER program to be written with elementary functions, elementary function blocks and derived function blocks, as well as with contacts, coils and variables.
The contacts, coils and variables can be annotated. Text can be placed freely within the graphic.

■ **Control scheme input modes**
“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.
With LADDER programming language, two alternative types of symbol can be used :
- LADDER symbols,
- electrical symbols.

"Free input" mode also allows the creation of mnemonics and notes associated with with each line of the program.
Instant switching from one input mode to the other is possible at any time, by clicking the mouse.
Up to 120 control scheme lines can be programmed, with 5 contacts and 1 coil per program line.

■ **Functions:**
- 16 time delay function blocks; parameters of 11 different types can be set for each of these (1/10th second to 9999 hours),
- 16 up/down counter function blocks from 0 to 32767,
- 1 fast counter (1 kHz),
- 16 text function blocks,
- 16 analogue comparator function blocks,
- 8 clock function blocks, each with 4 channels,
- 28 control relays,
- 8 counter comparators,
- automatic Summer/Winter time switching,
- variety of coil functions, latching (Set/Reset), impulse relay, contactor
- LCD screen with programmable backlighting.

Functions

Function	Electrical scheme	LADDER language	Notes
Contact			I corresponds to the real state of the contact connected to the input of the smart relay. i corresponds to the inverse state of the contact connected to the input of the smart relay.
Standard coil			The coil is energised when the contacts to which it is connected are closed.
Latch coil (Set)			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)			The coil is de-energised when the contacts to which it is connected are closed. It remains inactive when the contacts re-open.

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“Zelio Soft” programming software

Function block diagram language (FBD) *(1)*

Definition

FBD language allows graphical programming based on the use of predefined function blocks.
This language provides the use of 23 pre-programmed functions for counting, time delay, timing, definition of switching threshold (temperature regulation for example), generation of impulses, time programming, multiplexing, display, etc.

Pre-programmed functions

Zelio Logic smart relays provide a high processing capacity, up to 200 function blocks, including 23 pre-programmed functions:

TIMER AC
Timer. Function A/C
ON-delay and OFF delay

TIMER BH
Timer. Function BH.
(Adjustable pulsed signal)

TIMER BW
Timer - Function BW
(pulse on rising/falling edge)

TIMER Li
Pulse generator
ON-delay, OFF delay

BISTABLE
Impulse relay function

SET- RESET
Bistable latching - Priority assigned either to SET or RESET function

BOOLEAN
Allows logic equations to be created between connected inputs

CAM
Cam programmer

PRESET COUNT
Up/down counter

UP DOWN COUNT
Up/down counter with external preset

PRESET H-METER
Hour counter
(hour, minute preset)

TIME PROG
Time programmer,
weekly and annual

GAIN
Allows conversion of an analogue value by change of scale and offset.

TRIGGER
Defines an activation zone with hysteresis.

MUX
Multiplexing functions on 2 analogue values

COMP IN ZONE
Zone comparison
(Min. ⩽ Value ⩽ Max.)

ADD/SUB
Add and/or subtract function

MUL/DIV
Multiply and/or divide function

DISPLAY
Display of digital and analogue data, date, time, messages for Human-Machine interface.

COMPARE
Comparison of 2 analogue values using the operands =, >, <, ⩽, ⩾.

STATUS
Access to smart relay status

ARCHIVE
Storage of 2 values simultaneously

SPEED COUNT
Fast counting up to 1 kHz

SFC functions *(2)* (GRAFCET)

RESET-INIT
Reinitialisable step

INIT STEP
Initial step

STEP
SFC step

DIV-OR 2
Divergence to OR

CONV-OR 2
Convergence to OR

DIV-AND 2
Divergence to AND

CONV-AND 2
Convergence to AND

Logic functions

AND
AND function

OR
OR function

NAND
NOT AND function

NOR
NOT OR function

XOR
Exclusive OR function

NOT
NOT function

(1) Functional Block Diagram.
(2) Sequential Function Chart.

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Environment characteristics

Product certifications			UL, CSA, GL, C-TICK
Conformity with the low voltage directive	Conforming to 73/23/EEC		EN 61131-2
Conformity with the EMC directive	Conforming to 89/336/EEC		EN 61131-2 (Zone B) EN 61000-6-2, EN 61000-6-3 and EN 61000-6-4
Degree of protection	Conforming to IEC 60529		IP 20
Overvoltage category	Conforming to IEC 60664-1		3
Degree of pollution	Conforming to IEC/EN 61131-2		2
Ambient air temperature around the device	Operation	**°C**	-20... +55 (+40 in enclosure), conforming to IEC 60068-2-1 and IEC 60068-2-2
	Storage	**°C**	-40... +70
Maximum relative humidity			95 % without condensation or dripping water
Maximum operating altitude	Operation	**m**	2000
	Transport	**m**	3048
Mechanical resistance	Immunity to vibrations		IEC 60068-2-6, test Fc
	Immunity to mechanical shock		IEC 60068-2-27, test Ea
Resistance to electrostatic discharge	Immunity to electrostatic discharge		IEC 61000-4-2, level 3
Resistance to HF interference (Immunity)	Immunity to electromagnetic radiated fields		IEC 61000-4-3, level 3
	Immunity to fast transients in bursts		IEC 61000-4-4, level 3
	Immunity to shock waves		IEC 61000-4-5
	Radio frequency in common mode		IEC 61000-4-6, level 3
	Voltage dips and breaks (⏦)		IEC 61000-4-11
	Immunity to damped oscillation wave		IEC 61000-4-12
Conducted and radiated emissions	Conforming to EN 55022/11 (Group 1)		Class B
Connection to screw terminals (Tightened using Ø 3.5 screwdriver)	Flexible cable with cable end	**mm^2**	1 conductor: 0.25...2.5, cable: AWG 24... AWG14 2 conductors: 0.25...0.75, cable: AWG 24... AWG18
	Semi-solid cable	**mm^2**	1 conductor: 0.2...2.5, cable: AWG 25... AWG14
	Solid cable	**mm^2**	1 conductor: 0.2...2.5, cable: AWG 25... AWG14 2 conductors: 0.2...1.5, cable: AWG 24... AWG16
	Tightening torque	**N.m**	0.5

⎓ 12 V supply characteristics

Smart relay type			**SR2 B121JD**	**SR2 B201JD**
Primary	Nominal voltage	**V**	12	12
Voltage limits	Including ripple	**V**	10.4…14.4	10.4…14.4
Nominal input current		**mA**	120	200
Maximum nominal input current with extensions		**mA**	144	250
Power dissipated		**WA**	1.5	2.5
Micro-breaks	Permissible duration	**ms**	⩽ 1 (repeated 20 times)	
Protection			Against polarity inversion	

⎓ 24 V supply characteristics

Smart relay type			**SR2 ●1●1BD**	**SR2 ●1●2BD**	**SR2 ●2●1BD**	**SR2 ●2●2BD**	**SR3 B101BD**	**SR3 B102BD**	**SR3 B261BD**	**SR3 B262BD**
Primary	Nominal voltage	**V**	24	24	24	24	24	24	24	24
Voltage limits	Including ripple	**V**	19.2…30	19.2…30	19.2…30	19.2…30	19.2…30	19.2…30	19.2…30	19.2…30
Nominal input current		**mA**	100	100	100	100	100	50	190	70
Maximum nominal input current with extensions		**mA**	–	–	–	–	100	160	300	180
Power dissipated		**WA**	3	3	6	3	3	4	6	5
Maximum power dissipated with extensions		**W**	–	–	–	–	8	8	10	10
Micro-breaks	Permissible duration	**ms**	⩽ 1 (repeated 20 times)							
Protection			Against polarity inversion							

⏦ 24 V supply characteristics

Smart relay type			**SR2●1●1B**	**SR2●2●1B**	**SR3 B101B**	**SR3 B261B**
Primary	Nominal voltage	**V**	24	24	24	24
Voltage limits	Including ripple	**V**	20.4…28.8	20.4…28.8	20.4…28.8	20.4…28.8
Nominal frequency		**Hz**	50-60	50-60	50-60	50-60
Nominal input current		**mA**	145	233	140	280
Power dissipated		**VA**	4	6	4	7.5
Micro-breaks	Permissible duration	**ms**	⩽ 10 (repeated 20 times)			
rms insulation voltage		**V**	1780 (50-60 Hz)			

∿ 100...240 V supply characteristics

Smart relay type				SR2 ●101FU	SR2 ●121FU	SR2 ●201FU	SR3 B101FU	SR3 B261FU
Primary	Nominal voltage		**V**	100…240	100…240	100…240	100…240	100…240
Voltage limits	Including ripple		**V**	85…264	85…264	85…264	85…264	85…264
Nominal input current			**mA**	80/30	80/30	100/50	80/30	100/50
Maximum nominal input current with extensions			**mA**	–	–	–	80/40	80/60
Power dissipated			**VA**	7	7	11	7	12
Maximum power dissipated with extensions			**VA**	–	–	–	12	17
Micro-breaks	Permissible duration		**ms**	10	10	10	10	10
rms insulation voltage			**V**	1780	1780	1780	1780	1780

Processing characteristics

Smart relay type			SR2/SR3
Number of control scheme lines	With LADDER programming		120
Number of function blocks	With FBD programming		Up to 200
Cycle time		**ms**	10
Response time		**ms**	20
Back-up time (in the event of power failure)	Day/time		10 years (lithium battery) at 25 °C
	Program and settings		10 years (EEPROM memory)
Program memory checking			At each power-up
Clock drift			12 min/year (0 to 55 °C) 6 sec/month (at 25 °C and calibration)
Timer block accuracy			1 % ± 2 of the cycle time

Discrete ⎓ 24 V input characteristics

Smart relay type				SR2/SR3
Connection				Screw terminal block
Nominal value of inputs	Voltage		**V**	24
	Current		**mA**	4
Input switching limit values	At state 1	Voltage	**V**	≥ 15
		Current	**mA**	≥ 2.20
	At state 0	Voltage	**V**	≤ 5
		Current	**mA**	< 0.75
Input impedance at state 1			**KΩ**	7.4
Configurable response time	State 0 to 1		**ms**	0.2
	State 1 to 0		**ms**	0.3
Conformity to IEC 61131-2				Type 1
Sensor compatibility	3-wire			Yes PNP
	2-wire			No
Input type				Resistive
Isolation	Between supply and inputs			None
	Between inputs			None
Maximum counting frequency			**kHz**	1
Protection	Against inversion of terminals			Control instructions not executed

Discrete ∿ 100...240 V input characteristics

Smart relay type				SR2/SR3
Connection				Screw terminal block
Nominal value of inputs	Voltage		**V**	100... 240
	Current		**mA**	0.6
	Frequency		**Hz**	47... 63
Input switching limit values	At state 1	Voltage	**V**	≥ 79
		Current	**mA**	> 0.1750
	At state 0	Voltage	**V**	≤ 40
		Current	**mA**	< 0.05
Input impedance at state 1			**KΩ**	350
Configurable response time	State 0 to 1 (50/60 Hz)		**ms**	50
	State 1 to 0 (50/60 Hz)		**ms**	50
Isolation	Between supply and inputs			None
	Between inputs			None
Protection	Against inversion of terminals			Control instructions not executed

Integral analogue input characteristics

Smart relay type				SR2/SR3
Analogue inputs	Input range		**V**	0...10 or 0...24
	Input impedance		**KΩ**	12
	Maximum non destructive voltage		**V**	30
	Value of LSB			39 mV, 4 mA
	Input type			Common mode
Conversion	Resolution			8 bit
	Conversion time			Smart relay cycle time
	Precision	at 25 °C		± 5 %
		at 55 °C		± 6.2 %
	Repeat accuracy	at 55 °C		± 2 %
Isolation	Between analogue channel and supply			None
Cabling distance			**m**	10 maximum, with screened cable (sensor not isolated)
Protection	Against inversion of terminals			Control instructions not executed

Relay output characteristics

Smart relay type				SR2●●●/ SR3 B101●●	SR3 B261●●, SR3 XT141●●
Operating limit values			**V**	⎓ 5...150. ∿ 24...250	⎓ 5...150. ∿ 24...250
Contact type				N/O	N/O
Thermal current			**A**	8	8 outputs: 8 A 2 outputs: 5 A
Electrical durability for 500 000 operating cycles	Utilisation category	DC-12	**V**	24	24
			A	1.5	1.5
		DC-13	**V**	24 (L/R = 10 ms)	24 (L/R = 10 ms)
			A	0.6	0.6
		AC-12	**V**	230	230
			A	1.5	1.5
		AC-15	**V**	230	230
			A	0.9	0.9
Minimum switching capacity	At minimum voltage of 12 V		**mA**	10	10
Low power switching reliability of contact				12 V - 10 mA	12 V - 10 mA
Maximum operating rate	No-load		**Hz**	10	10
	At Ie (operational current)		**Hz**	0.1	0.1
Mechanical life	In millions of operating cycles			10	10
Rated impulse withstand voltage	Conforming to IEC 60947-1 and 60664-1		**kV**	4	4
Response time	Trip		**ms**	10	10
	Reset		**ms**	5	5
Built-in protection	Short-circuit			None	
	Against overvoltage and overload			None	

Transistor output characteristics

Smart relay type			SR2/SR3
Operating limit values		**V**	19.2...30
Load	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		Yes
	Against overvoltage *(1)*		Yes
	Against inversions of power supply		Yes

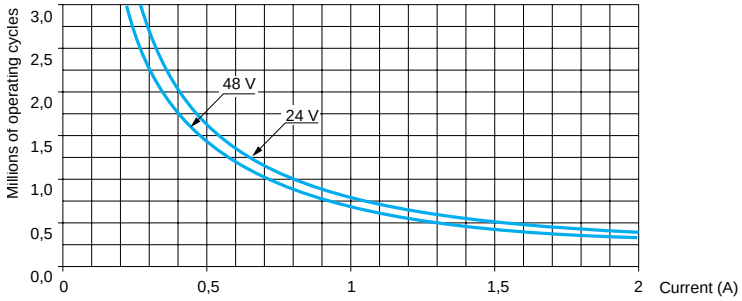
(1) If there is no volt-free contact between the relay output and the load.

Electrical durability of relay outputs

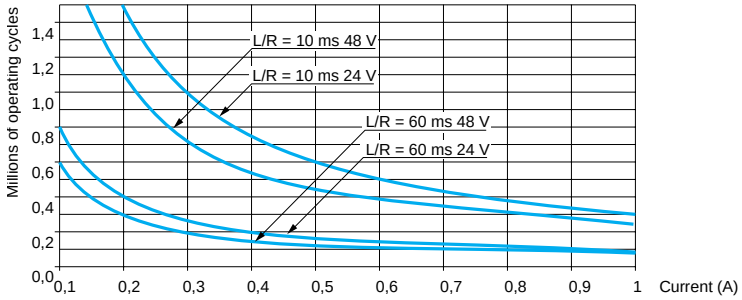
(in millions of operating cycles, conforming to IEC 60947-5-1)

d.c. loads

DC-12 *(1)*



DC-13 *(2)*



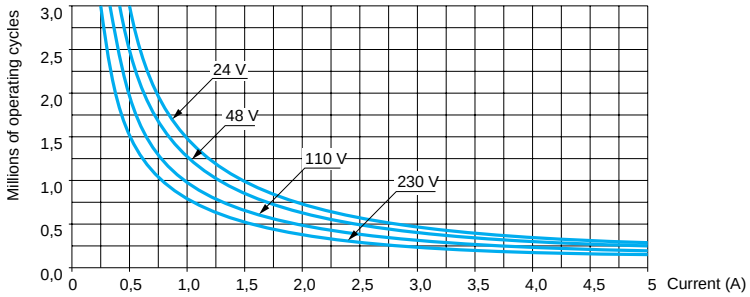
(1) DC-12: switching resistive loads and photo-coupler isolated solid state loads, L/R ≤ 1ms.
(2) DC-13: switching electromagnets, L/R ≤ 2 x (Ue x Ie) in ms, Ue: Rated operational voltage, Ie: rated operational current (with protection diode on load, use the DC-12 curves and apply a coefficient of 0.9 to the millions of operating cycles value)

Electrical durability of relay outputs (continued)

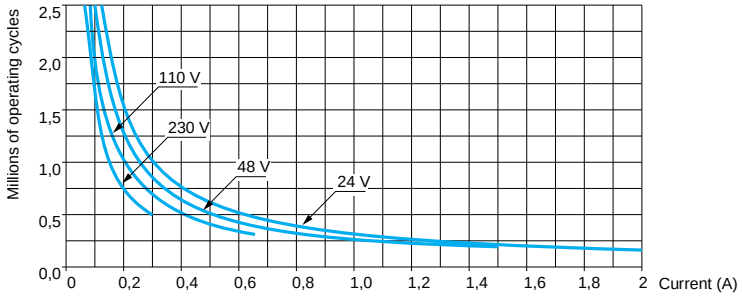
(in millions of operating cycles, conforming to IEC 60947-5-1)

a.c. loads

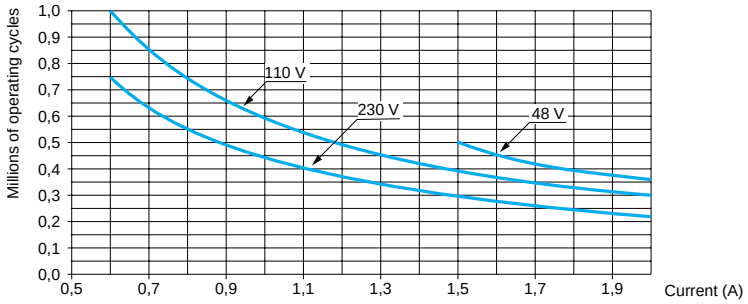
AC-12 *(1)*



AC-14 *(2)*



AC-15 *(3)*



(1) AC-12: switching resistive loads and photo-coupler isolated solid state loads, cos ≥ 0.9.
(2) AC-14: switching small electromagnetic loads whose power drawn with the electromagnet closed is ≤ 72 VA, making: cos = 0.3, breaking: cos = 0.3.
(3) 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 relays
Compact smart relays


109440

SR2 A201BD


109442

SR2 E121BD

510345

SR2 PACK●●●

Compact smart relays with display

Number of I/O	Discrete inputs	Of which 0-10 V analogue inputs	Relay outputs	Transistor outputs	Clock	Reference	Weight kg
Supply ⎓ 12 V							
12	8	4	4	0	Yes	**SR2 B121JD**	0.250
20	12	6	8	0	Yes	**SR2 B201JD**	0.250
Supply ⎓ 24 V							
10	6	0	4	0	No	**SR2 A101BD** *(1)*	0.250
12	8	4	4	0	Yes	**SR2 B121BD**	0.250
	8	4	0	4	Yes	**SR2 B122BD**	0.220
20	12	2	8	0	No	**SR2 A201BD** *(1)*	0.380
	12	6	8	0	Yes	**SR2 B201BD**	0.380
	12	6	0	8	Yes	**SR2 B202BD**	0.280
Supply ∿ 24 V							
12	8	0	4	0	Yes	**SR2 B121B**	0.250
20	12	0	8	0	Yes	**SR2 B201B**	0.380
Supply ∿ 100...240 V							
10	6	0	4	0	No	**SR2 A101FU** *(1)*	0.250
12	8	0	4	0	Yes	**SR2 B121FU**	0.250
20	12	0	8	0	No	**SR2 A201FU** *(1)*	0.380
	12	0	8	0	Yes	**SR2 B201FU**	0.380

Compact smart relays without display

Number of I/O	Discrete inputs	Of which 0-10 V analogue inputs	Relay outputs	Transistor outputs	Clock	Reference	Weight kg
Supply ⎓ 24 V							
10	6	0	4	0	No	**SR2 D101BD** *(1)*	0.220
12	8	4	4	0	Yes	**SR2 E121BD**	0.220
20	12	2	8	0	No	**SR2 D201BD** *(1)*	0.350
	12	6	8	0	Yes	**SR2 E201BD**	0.350
Supply ∿ 24 V							
12	8	0	4	0	Yes	**SR2 E121B**	0.220
20	12	0	8	0	Yes	**SR2 E201B**	0.350
Supply ∿ 100...240 V							
10	6	0	4	0	No	**SR2 D101FU** *(1)*	0.220
12	8	0	4	0	Yes	**SR2 E121FU**	0.220
20	12	0	8	0	No	**SR2 D201FU** *(1)*	0.350
	12	0	8	0	Yes	**SR2 E201FU**	0.350

Compact "discovery" packs

Number of I/O	Pack contents	Reference	Weight kg
Supply ⎓ 24 V			
12	An **SR2 B121BD** compact smart relay with display, a connecting cable and “Zelio Soft” programming software supplied on CD-Rom.	**SR2 PACKBD**	0.700
20	An **SR2 B201BD**, compact smart relay with display, a connecting cable and “Zelio Soft” programming software supplied on CD-Rom.	**SR2 PACK2BD**	0.850
Supply ∿ 100...240 V			
12	An **SR2 B121FU**, compact smart relay with display, a connecting cable and “Zelio Soft” programming software supplied on CD-Rom.	**SR2 PACKFU**	0.700
20	An **SR2 B201FU**, compact smart relay with display, a connecting cable and “Zelio Soft” programming software supplied on CD-Rom.	**SR2 PACK2FU**	0.850

(1) Programming on smart relay in LADDER language only.

Zelio Logic smart relays
Modular smart relays

SR3 B101BD

SR3 XT61BD

SR3 XT141BD

Modular smart relays with display

Number of I/O	Discrete inputs	Of which 0-10 V analogue inputs	Relay outputs	Transistor outputs	Clock	Reference	Weight kg
Supply ⎓ 24 V							
10	6	4	4	0	Yes	**SR3 B101BD**	0.250
	6	4	0	4	Yes	**SR3 B102BD**	0.220
26	16	6	10 *(1)*	0	Yes	**SR3 B261BD**	0.400
	16	6	0	10	Yes	**SR3 B262BD**	0.300
Supply ∿ 24 V							
10	6	0	4	0	Yes	**SR3 B101B**	0.250
26	16	0	10 *(1)*	0	Yes	**SR3 B261B**	0.400
Supply ∿ 100-240 V							
10	6	0	4	0	Yes	**SR3 B101FU**	0.250
26	16	0	10 *(1)*	0	Yes	**SR3 B261FU**	0.400

I/O extension modules *(2)*

Number of I/O	Discrete inputs	Relay outputs	Reference	Weight kg
Supply ⎓ 24 V (for smart relays SR3 B●●●BD)				
6	4	2	**SR3 XT61BD**	0.125
10	6	4	**SR3 XT101BD**	0.200
14	8	6	**SR3 XT141BD**	0.220
Supply ∿ 24 V (for smart relays SR3 B●●●B)				
6	4	2	**SR3 XT61B**	0.125
10	6	4	**SR3 XT101B**	0.200
14	8	6	**SR3 XT141B**	0.220
Supply ∿ 100-240 V (for smart relays SR3 B●●●FU)				
6	4	2	**SR3 XT61FU**	0.125
10	6	4	**SR3 XT101FU**	0.200
14	8	6	**SR3 XT141FU**	0.220

Communication module *(2)*

For use on	Supply voltage	Reference	Weight kg
Modbus network	⎓ 24 V	**SR3 MBU01BD** ▲	0.300

Modular "discovery" packs

Number of I/O	Pack contents	Reference	Weight kg
Supply ⎓ 24 V			
10	An **SR3 B101BD**, modular smart relay, a connecting cable and “Zelio Soft” programming software supplied on CD-Rom.	**SR3 PACKBD**	0.700
26	An **SR3 B261BD** modular smart relay, a connecting cable and “Zelio Soft” programming software supplied on CD-Rom.	**SR3 PACK2BD**	0.850
Supply ∿ 100...240 V			
10	An **SR3 B101FU** modular smart relay, a connecting cable and “Zelio Soft” programming software supplied on CD-Rom.	**SR3 PACKFU**	0.700
26	An **SR3 B261FU** modular smart relay with display, a connecting cable and “Zelio Soft” programming software supplied on CD-Rom.	**SR3 PACK2FU**	0.850

(1) Including 8 outputs at maximum current of 8 A and 2 outputs at maximum current of 5 A.
(2) Power supply to the I/O extension and communication modules is via the modular smart relays

Note: *The smart relay and its associated extensions must have an identical voltage.*

▲ Available: 1st quarter of 2004.

Zelio Logic smart relays
Compact and modular smart relays
Separate components

510352

SR2 SFT01

109369

SR2 MEM01

510353

SR2 COM01

510354

ABL7 RM1202

"Zelio Soft" software for PC

Description	Reference	Weight kg
"Zelio Soft" for PC multi-language programming software supplied on CD-Rom *(1)*, compatible with Windows 95, 98, NT, 2000, XP and ME.	**SR2 SFT01**	0.200
Connecting cable between smart relay and PC (length: 3 m)	**SR2 CBL01**	0.150

Back-up memory

Description	Reference	Weight kg
EEPROM back-up memory	**SR2 MEM01**	0.010

Communication interface *(2)*

Description	Supply	Reference	Weight kg
Communication interface	⎓ 12/24 V	**SR2 COM01** ▲	0.140

Converters for Optimum Pt100 probes *(3)*

Supply voltage ⎓ 24 V (20 %, not isolated)

Type	Temperature range °C	Temperature range °F	Output signal	Reference	Weight kg
Pt100 2-wire, 3-wire and 4-wire	- 40...40	- 40...104	0...10 V or 4...20 mA	**RMP T13BD**	0.116
	- 100...100	- 148...212	0...10 V or 4...20 mA	**RMP T23BD**	0.116
	0... 100	32... 212	0...10 V or 4...20 mA	**RMP T33BD**	0.116
	0... 250	32... 482	0...10 V or 4...20 mA	**RMP T53BD**	0.116
	0... 500	32...932	0...10 V or 4...20 mA	**RMP T73BD**	0.116

Power supplies *(3)*

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

Documentation

Description	Language	Reference	Weight kg
User's manual for direct programming on the smart relay	English	**SR2 MAN01EN**	0.100
	French	**SR2 MAN01FR**	0.100
	German	**SR2 MAN01DE**	0.100
	Spanish	**SR2 MAN01ES**	0.100
	Italian	**SR2 MAN01IT**	0.100
	Portuguese	**SR2 MAN01P0**	0.100

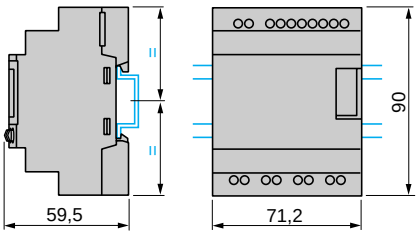
(1) CD-Rom containing "Zelio Soft" software, an application library, a self-training manual, installation instructions and a user's manual.
(2) See pages 14011/2 to 14011/7
(3) See pages 14060/2 to 14060/5

▲ Available: 1st half of 2004.

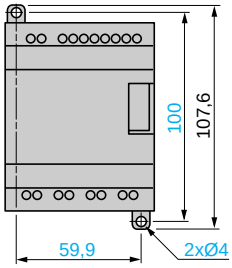
Compact and modular smart relays

SR2 A101BD, SR2 D101FU, SR3 B101BD and SR3 B101FU (10 I/O)
SR2 B121JD, SR2 B12●BD, SR2 B121B, SR2 A101FU, SR2 B121FU, SR2 D101BD, SR2 E121BD, SR2 E121B, SR2 E121FU (12 I/O)

Mounting on 35 mm ⊓ rail

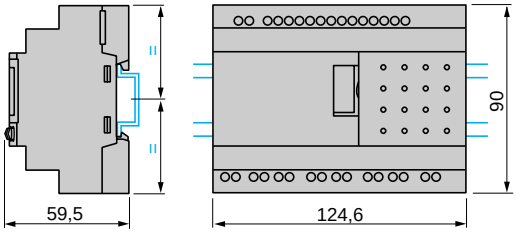


Screw fixing (retractable lugs)

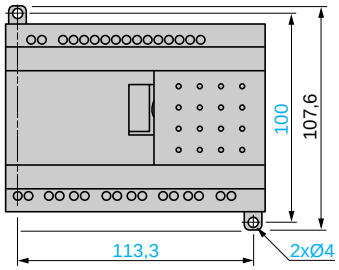


SR2 B201JD, SR2 A201BD, SR2 B20●BD, SR2 B201B, SR2 A201FU, SR2 B201FU, SR2 D201BD, SR2 E201BD, SR2 E201B, SR2 D201FU and SR2 E201FU (20 I/O)
SR3 B26●BD and SR3 B261FU (26 I/O)

Mounting on 35 mm ⊓ rail



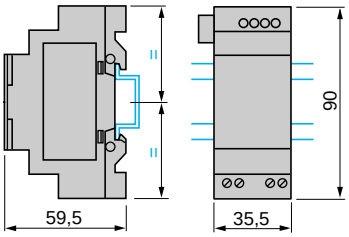
Screw fixing (retractable lugs)



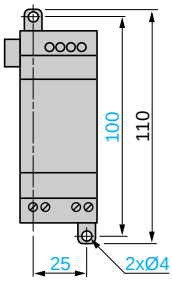
I/O extension modules

SR3 XT61●● (6 I/O)

Mounting on 35 mm ⊓ rail

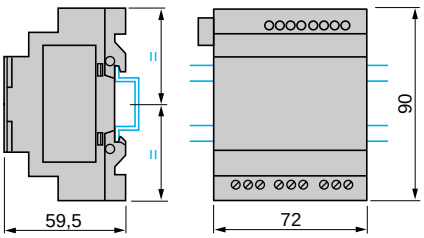


Screw fixing (retractable lugs)

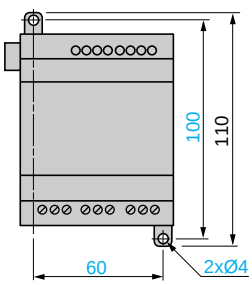


SR3 XT101●● and SR3 XT141●● (10 and 14 I/O)

Mounting on 35 mm ⊓ rail



Screw fixing (retractable lugs)

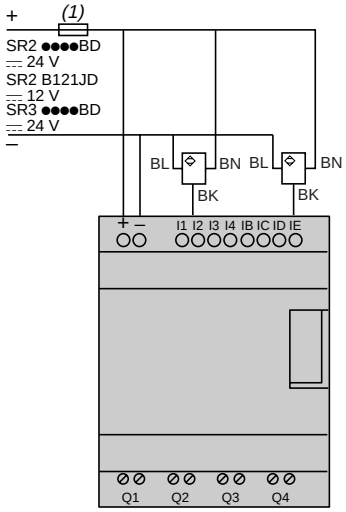


Zelio Logic smart relays
Compact and modular smart relays

Input connections

3-wire sensors

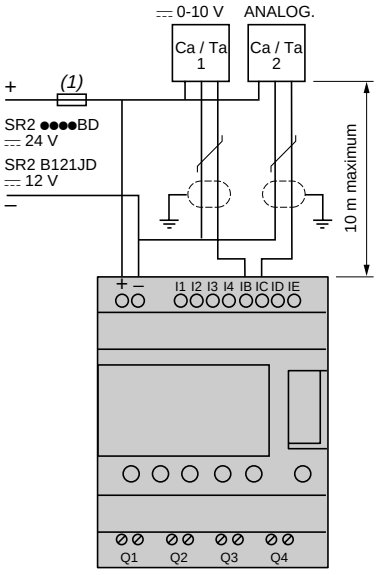
SR2 ●●●●BD, SR2 B121JD and SR3 ●●●●BD



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

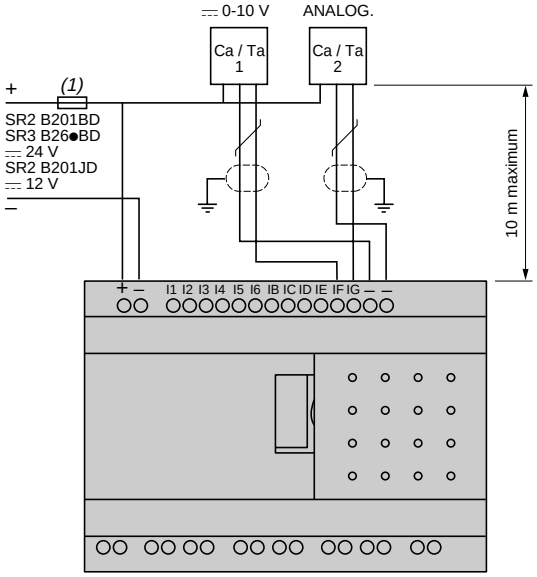
Analogue inputs

SR2 B12●BD, SR2 B121JD and SR3 B10●BD



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

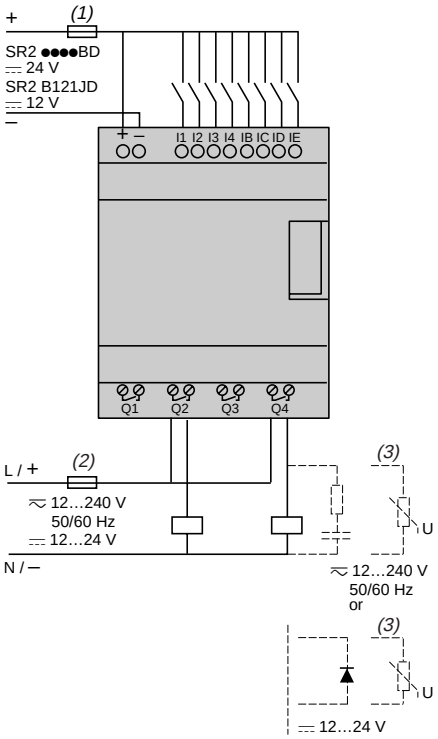
SR2 B201BD, SR3 B26●BD and SR2 B201JD



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

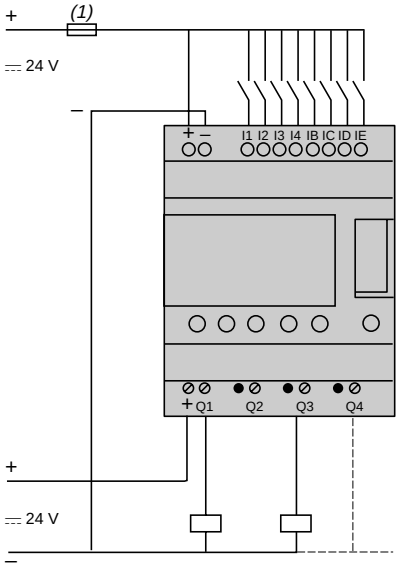
Connection of smart relays on ⎓ supply

SR2 ●●●●BD, SR2 B121JD, SR2 ●201BD and SR3 B10●●●



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

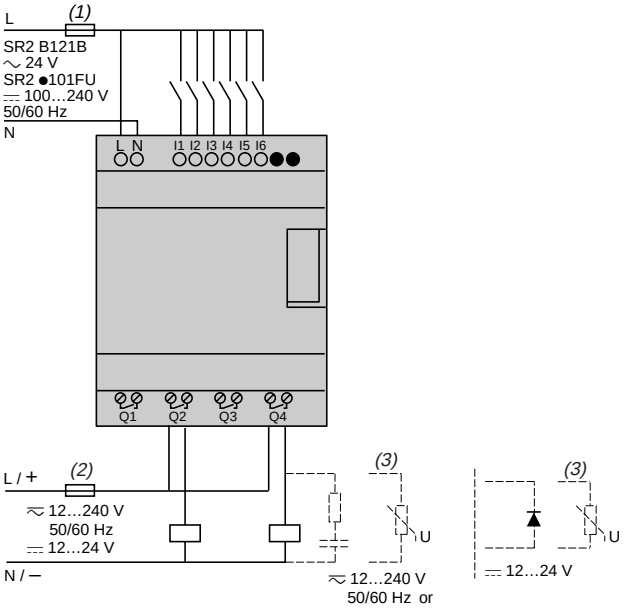
SR2 B122BD and SR2 B202BD, SR3 B102BD and SR3 B262BD



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

Connection of smart relays on ∿ supply

SR2 B●●●B, SR2 A1●1FU, SR2 ●201FU, SR3 B●●B and SR3 B●●●FU



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