

# Telemecanique

New Zelio programmable relays –  
simplicity, flexibility  
and control



Merlin Gerin

Modicon

Square D

Telemecanique

## Why choose programmable relays?

*Ordinary relay control systems lack flexibility, but for many applications, programmable controllers are overkill.*



Ordinary hard-wired relay control systems are difficult and costly to modify when requirements change. They're bulky, and they're limited in their capabilities – working with analogue signals for example is impossible, without using costly additional equipment.

Programmable controllers (PLCs) overcome these problems, but in a wide range of straightforward applications, they offer too many features, all of

which add to complexity and cost, even though they're not needed. Most PLCs also need separate programming equipment, and many use complicated programming languages.

For straightforward applications, programmable relays offer a better solution. Like a PLC, they can be easily programmed to provide powerful control functions, and can then be re-programmed if the application requirements change. Like traditional relays, they're inexpensive and very easy to use.

*Programmable relays offer the best of both worlds – they're as flexible as PLCs, yet as easy to use as ordinary relays.*

## Why choose Zelio programmable relays?



Zelio programmable relays have been designed and produced by Telemecanique, Europe's most respected brand in control technology, to offer the maximum benefits for OEMs, system builders and end users.

Here are just a few of the decisive benefits of the Zelio range:

- simple programming system, using familiar ladder diagram methods, can be learned in less than ten minutes
- large integral display for text messages, and the display of variable values
- built-in programming facilities mean that there's no extra programming equipment to buy
- tiny size saves costly panel space
- advanced features including analogue inputs and a real-time clock – cut costs and complexity in many applications
- large program capacity provides maximum versatility
- competitive prices make Zelio a real alternative to ordinary relays and, in OEM applications, to dedicated control boards.

*Zelio delivers simplicity, power and value-for-money, backed by the experience and expertise of Telemecanique, the leader in control.*

# What makes Zelio so easy to use?

*Zelio has been designed from the outset to be easy to use, and these key features amply demonstrate the success of its designers in achieving this objective.*



## No programmer needed

- Zelio can be programmed directly on the unit without the need for additional programming equipment.
- Most keys have only one function, simplifying the programming process.
- The ladder-diagram programs closely resemble ordinary schematic diagrams, making them convenient for both designers and maintenance staff.

## Programming that's intuitive

- The programming system is so straightforward that it's hardly ever necessary to refer to the documentation.
- Clear, simple diagrams show the operation of special functions, such as timers.
- Automatic search for contacts associated with a coil saves programming time.

## Installation without accessories

- Zelio clips straight onto DIN rail or, using built-in retractable brackets, it can be baseplate-mounted.
- Compact construction means reduced panel space requirements, and easier integration with machine-mounted equipment.

## Convenient customisation

- Custom messages can be displayed on the integral screen, the screen can also show current values for time delays, counters, or analogue inputs.
- Identification labels are easily fitted.

## What does Zelio have that's so special?

*As you would expect, Zelio provides all of the functions needed to mimic control systems based on ordinary relays, but it also has much more to offer.*



### Function blocks

- Eight timers, each of which offers eight different modes of operation. Timebases from 0.1 seconds to 100 hours can be selected.
- Eight four-digit up/down counters.
- Four real-time clocks, each with four programmable on/off periods, and a day of the week option.
- Fifteen internal (auxiliary) relays.
- Special coil functions, including retentive memory.
- Message display facility, for two lines of text, plus up to two variable values (additional hardware and software is needed to set up the messages – page 8).

### Parameter mode

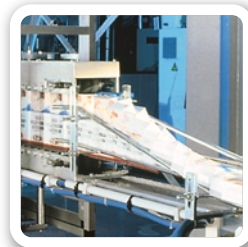
- This mode allows settings for timers, counters, etc., to be displayed and modified.
- Parameter mode can be selected without interrupting the operation of the relay.
- Zelio can also be programmed to show four user-selected values on the screen during normal operation.

### Diagnostic functions

- Zelio's powerful diagnostic aids are available while the relay continues to operate.
- In normal operation, the screen shows clearly the status of all inputs and outputs.
- When the program is displayed, the screen shows the status of all contacts and coils.

### Convenient features

- Ability to operate in five other languages, in addition to English.
- Inputs fully compatible with three-wire sensors.
- User-adjustable filtering delay on inputs.
- Programme capacity 60 lines minimum.
- Front-panel keys can be configured to provide custom functions.
- Option to save a back-up copy of the program on a PC or EEPROM cartridge.



## Which Zelio for my application?

*Zelio programmable relays are available in eight different models, ensuring that there is a version which provides the right combination of functions, at the right price, for virtually every application.*

### AC models

Zelio models for AC operation can be used with any 50Hz or 60Hz supply between 100V and 240V. This versatility means it's no longer necessary to stock and use different models for different markets. All AC models have AC inputs and high-current relay outputs rated at 8A. Available versions are:

#### SR1A101FU

6 digital inputs, 4 relay outputs

#### SR1B101FU

6 digital inputs, 4 relay outputs, real-time clock

#### SR1A201FU

12 digital inputs, 8 relay outputs

#### SR1B201FU

12 digital inputs, 8 relay outputs, real-time clock

### DC models

Zelio models for DC operation are designed for use with nominal 24V supplies. They have 24V DC digital inputs and high-current relay outputs rated at 8A. Certain DC models also include 0 - 10V analogue inputs which, if the analogue function is not required, can alternatively be used as additional 24V digital inputs. Available models are:

#### SR1A101BD

6 digital inputs, 4 relay outputs

#### SR1B121BD

6 digital inputs, 2 analogue inputs, 4 relay outputs, real-time clock

#### SR1A201BD

12 digital inputs, 8 relay outputs

#### SR1B201BD

10 digital inputs, 2 analogue inputs, 8 relay outputs, real-time clock



With this information, it's easy to choose the most economical Zelio for your application. When making your choice, don't forget to allow for inputs and outputs which you may need for future expansion, but remember that four of the front panel keys on the Zelio itself can be programmed to have custom functions. In some applications, this may reduce the number of inputs needed. Finally, note that analogue inputs are only available on DC models.

## Where should I use Zelio?

*The applications for Zelio are virtually limitless.*

Small size, low cost and ease-of-use make it an attractive replacement for conventional relays in straightforward control systems of every type, while Zelio's advanced features, such as real time clocks and analogue inputs, make it an attractive replacement for custom-built control boards in many OEM applications.



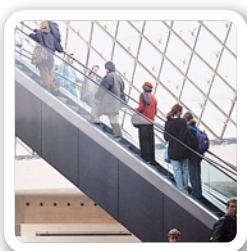
### Item counting

By setting the input time delay to a low value, fast counting can be achieved using the convenient internal counter functions.



### Automatic shutters

Small size makes mounting easy, and the customisable front-panel keys allow function selection without the need for separate pushbuttons.



### Escalators

The range of timer functions simplifies control and fault detection, while the message option allows the display of clear diagnostic information.



### Controlling pumps and compressors

Models with analogue inputs make it easy to monitor pressures and flow rates.

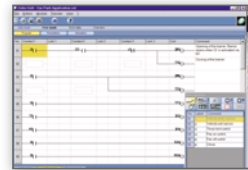


### Building access and lighting control

Sixty lines of program capacity, and four real-time clocks allow exceptionally versatile control, even in complicated applications.

# *How can I make Zelio more versatile and easy to use?*

*Zelio can be connected to your PC allowing you to simulate programmes before installation.*



Zelio programmable relays are designed to be complete in themselves, and to offer full functionality without the need for external equipment. Many users may, however, enjoy the additional flexibility and convenience offered by Zelio-Soft, a dedicated software package which allows Zelio programs to be developed, tested, printed and archived using almost any PC.

Note that Zelio-Soft is essential for setting up custom messages for display on the Zelio screen. Once the messages are set up, however, the Zelio does not need a PC connection to display them.

Zelio-Soft's facilities are extensive, but among the most important are:



## **Choice of program entry/display modes**

Zelio mode allows the program to be entered and displayed in the same way that it would be on the Zelio itself.

Free programming mode gives greater flexibility, and allows the program to be entered as Zelio symbols, conventional ladder diagram symbols or European-style electrical symbols.

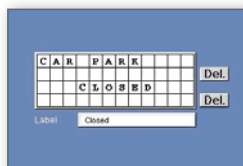
Free programming mode also allows comments and mnemonics to be added to each line of the program.

Only a mouse click is needed to switch instantly between programming modes and symbol types.

## **Automatic checking for consistency**

Zelio-Soft automatically checks programs for consistency, ensuring, for example, that a coil has been defined for every contact programmed.

If an error is found, it's highlighted in red, and a simple mouse click provides further information.



### Program testing and simulation

Zelio-Soft's program testing and simulation facilities offer big savings in commissioning time and cost.

The complete program can be tested by simulating the state of digital and analogue inputs.

The status of program elements is displayed dynamically during testing and simulation.

Program simulation can be carried out in real-time, or can be accelerated to save time with programs which, for example, incorporate long time delays or functions based on the real time clocks.

### Programming support for six languages

Zelio-Soft provides programming facilities in English, French, German, Spanish, Italian, and Portuguese.

Switching between languages can be done at any time while entering or working on the program.

### Message entry function blocks

With Zelio-Soft, users can set up four text function blocks, each corresponding to a four-line screen with 12 characters per line.

The text blocks are activated within the Zelio program just as if they were a coil.

Text blocks can optionally include the values of up to two variables.

Up to two lines of text plus two variables can be displayed at any one time.

*Save time and money by programming off-site*



## *How do I try out Zelio?*

*All that's needed to try out Zelio is the product itself, and a suitable source of power. However, to make it easy for users to evaluate the full potential of the range, Telemecanique is offering two convenient starter kits.*

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**SR1PACKBD** is for use with 24V DC supplies. It includes a Zelio with 6 digital inputs, 2 analogue inputs, 4 relay outputs and a real-time clock. It also includes a CD containing the Zelio-Soft software, and a connecting cable to link the Zelio to a PC.

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**SR1PACKFU** is for use with 100/240V AC supplies. It includes a Zelio with 6 digital inputs, 4 relay outputs, and a real-time clock. It also includes a CD containing the Zelio-Soft software, and a connecting cable to link the Zelio to a PC.

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*Zelio programmable relays from Telemecanique – more control, less hassle!*

## Schneider Electric's local support

Schneider Electric is committed to supporting its customers at every stage of a project. Our 180 sales engineers, the largest dedicated sales force in the UK electrical industry, operate from 4 customer support centres.

Our sales engineers are skilled at assessing individual requirements and combined with the expert support of our product specialists, will develop the most effective and economical answer taking relevant regulations and standards fully into account.

To access the expertise of the Schneider Electric group, please call 0870 608 8 608. Each Customer Support Centre includes facilities for demonstrations and training, and presentation rooms fully equipped with audio visual and video, providing excellent meeting facilities.

## Schneider – expertise in electrical distribution, automation and control

Schneider Electric is the leading UK and world expert in the development and manufacture of products for the distribution and industrial applications of electricity. In the UK, Schneider Electric operates from 18 industrial and commercial sites, providing employment for 2,500 people, and achieves an annual turnover in excess of £270 million.

With its brands, Merlin Gerin, Modicon, Square D and Telemecanique, Schneider Electric offers a full range of products and services for Panel Builders, OEMs, Contractors, Specifiers and the electrical supply industry for commercial and industrial applications.

**Merlin Gerin** is one of the leading experts in electrical distribution technology. Its comprehensive array of extra-high, medium and low voltage products and systems is designed to manage and protect electrical installations, ensure safety and supply power reliability and continuity for commercial and industrial buildings.

**Modicon** is a leading manufacturer and worldwide marketer of high technology programmable controllers (PLCs) and motion control systems used in industrial automation. Its international catalogue of products and services include PLCs, numerical controllers, specialised programming and software, fieldbus communication networks and interface terminals.

**Square D** is a total quality organisation and its business is to put electricity to work productively and effectively, protecting people, buildings and equipment. Its low voltage electrical distribution equipment, systems and services are used world wide in commercial applications.

**Telemecanique** is a UK market leader and world expert in industrial control and automation. It provides complete solutions, with its range of components, programmable logic controllers, variable speed drives and communications software. In addition, it offers power distribution through prefabricated busbar trunking.

**Merlin Gerin**

**Modicon**

**Square D**

**Telemecanique**

# Local support *nationwide*

**0870 608 8 608**

**Fax 0870 608 8 606**

## Regional product showrooms

### Midlands

University of Warwick  
Science Park  
Sir William Lyons Road  
Coventry CV4 7EZ

### North East

123 Jack Lane  
Hunslet  
Leeds LS10 1BS

## Local customer support centres

### Scotland

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Academy Business Park  
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