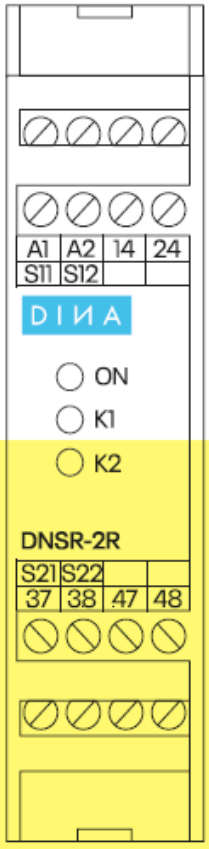
SAFEONE
DNSR-2R Time relay

Original operating instructions



Safety switching device for enabling and time delayed enabling of control circuits

dina.de
ANR 51596

This manual is valid for:

Description	ID-No.
DNSR-2R	33SR10
DNSR-2R	33SR11
DNSR-2R	33SR12
DNSR-2R	33SR13
DNSR-2R	33SR14

Version: 24.09.2026

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Table of content

1 Structure of the document

1.1. Conventions

Information of particular important is emphasized in this documentation through the use of symbols, typography or formulations.

1.1.1. Emphasizing information

The following symbols indicate important information:

	Degree of hazard (e.g. WARNING): Triangular symbols indicate the degree of hazard in warnings.
	Type of hazard (e.g. electrical shock – dangerous voltage): Triangular symbols indicate the type of hazard in warnings.
	Information: Additional clarification.
	Tip: Additional information to help optimize the workflow.

1.1.2. Emphasizing paragraphs using typography

The following typography is used to emphasize paragraphs with special functions:

►	Indicates an instruction.
◄	Indicates an expected reaction.
▼	Indicates an unexpected reaction.
■	Indicates an item in a list.

1.1.3. Emphasizing words using typography

The following typography is used to emphasize words with special functions:

(1)	Represents a numbered item in a figure.
→	Indicates a cross-reference to another page, figure or document.

1.1.4. Your opinion is important to us!

We do all we can to provide complete, accurate documentation for the product. If you have any suggestions for improvement or advice for us, please share your thoughts with us. Send us your comments by e-mail to the following address.

E-mail: info@dina.de

2 Safety

2.1. Warnings

2.1.1. Function of warnings

Warnings warn users about hazards when handling the product. The hazards are classified, specified, described and supplemented with information about how to avoid them.

If there is a warning before a list of instructions, the hazard is present throughout the entire activity.

If there is a warning immediately before an instruction, the hazard is present during the next step.

2.1.2. Design of warnings

All warnings are indicated by a signal word and a warning symbol. The different combinations of the signal word and warning symbol indicate the degree of danger.

	**DANGER** For an immediate hazard that will result in severe injuries or death.
	**WARNING** For an immediate hazard that could result in severe injuries or death.
	**CAUTION** For a potentially hazardous situation that could result in injuries.
	**CAUTION** For a potentially harmful situation in which the product or an item near it could be damaged.
	**CAUTION** For a hazard that could cause environmental damage.

2.1.3. Hazard symbols

	**Note** The warning symbol may be present alongside another hazard symbol that represents the type of hazard, in order to attract the reader's attention.

Hazard symbols are indicated by a triangular symbol in the context of warnings. The following hazard symbols are used in this documentation:

	Electric shock – dangerous voltage!

2.2. Qualification of personnel

DINA Elektronik GmbH distinguishes between specialist staff with different qualifications when it comes to carrying out work on the product. The minimum required qualifications are specified for each task and are defined as follows:

2.2.1. Electrician

Specialist who installs, maintains and repairs the electrical system in the product. A specialist is a person whose specialist training means that they have the knowledge and experience, including knowledge of relevant regulations, necessary to assess the work assigned to them and the potential hazards.

Note
When evaluating a person's specialist training, multiple years of work in the relevant field may also be taken into account.
→ **DIN VDE 1000-10** Requirements for persons working in a field of electrical engineering.

2.2.2. Electrical designers

Specialists who design the electrical system and the product. A specialist is a person whose specialist training means that they have the knowledge and experience, including knowledge of relevant regulations, necessary to assess the work assigned to them and the potential hazards.

Note
When evaluating a person's specialist training, multiple years of work in the relevant field may also be taken into account.
→ **DIN VDE 1000-10** Requirements for persons working in a field of electrical engineering.

2.3. Intended use and improper use

The product has exclusively been developed for use for the purpose described here. The specifications set out in these operating instructions must be strictly complied with.

- DNSR-2R is a switching device for enabling and time delayed enabling of control circuits.
- The safety module is intended for use on machines and plants to prevent hazards from arising.

Any other form of use is regarded as improper use.
If the product is

- not used as intended,
- improperly maintained or
- incorrectly operated,

the manufacturer will not assume any liability for any damage that results. In this case, the risk shall be borne exclusively by the user.

3 Documentation

Operating instructions contain instructions on how to use a product safely, correctly and cost-effectively. Follow the instructions in these operating instructions in order to prevent hazards, avoid repair costs and standstill, and improve the reliability and service life of the product. You must read the operating instructions and ensure that you understand them.

- ► Before working with the product, read the operating instructions that come with the product and the following documentation
  - Hardware SAFEONE DNSR-2R Time Relay
- ► Make sure that you always work with the current documentation. You can find these on the Internet at www.dina.de/downloads.
- ► Always ensure that the operating instructions are available where the product is in use.

3.1. Safety regulations

The safety regulations listed below must always be complied with. In the event that these safety regulations are not complied with or the device is used improperly, **DINA Elektronik GmbH** accepts no liability for any resulting injury or damage.

- The product must only be installed and commissioned by a skilled electrician or a trained, instructed person, who is familiar with these operating instructions and the applicable specifications regarding occupational health and safety and accident prevention.

WARNING
Danger to persons and materials! In the event that specifications are not complied with, this can result in death, severe injuries or significant material damage.
- ► Observe VDE, EN and local regulations, in particular with regard to protective measures.

- If the emergency stop is used, either the integrated restart prevention function must be used or the machine must be prevented from restarting automatically using a superordinate control system.
- When installing the device, the required distances as per DIN EN 50274, VDE 0660514 must be taken into account.

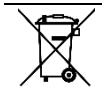
► During transport, storage and operation, comply with the conditions set out in EN 60068-2-1, 2-2.

► Assemble the device in a control cabinet with at least IP54 degree of protection. Otherwise, dust and moisture can impair the functions. The device must be installed in a control cabinet.
► Ensure that the output contacts have sufficient protective circuitry for capacitive and inductive loads.
► Follow the specifications in the general technical data.

WARNING
Electric shock – dangerous voltage! During operation, switching devices conduct dangerous voltages.

► Never remove protective covers from electrical switching devices during operation.

► Replace the device the first time a fault occurs.



► Dispose of the device in accordance with nationally applicable environmental regulations.

3.1.1. Retrofitting and conversion

Unauthorized conversion voids any warranty. This can cause hazards that can lead to severe or even fatal injury.

3.1.2. Basic safety regulations

The safety regulations listed below must always be complied with. In the event that these safety regulations are not complied with or the device is used improperly, **DINA Elektronik GmbH** accepts no liability for any resulting injury or damage.

- The product described here has been developed to perform safety-related functions as part of an entire system.
- The entire system is made up of sensors, analysis units, reporting units and safe switch-off concepts.
- It is the manufacturer's responsibility to ensure that a system or machine is functioning correctly as a whole.
- The manufacturer of the system is obligated to check and document the efficacy of the implemented safety concept within the entire system. This documentation must be produced again every time the safety concept or safety parameters are modified.
- The manufacturer's specifications for the system or machine with regard to maintenance intervals must be complied with.
- **DINA Elektronik GmbH** is not able to make any guarantees regarding the properties of an overall system not designed by the company.
- DINA Elektronik GmbH accepts no liability for any recommendations given or implied in the following description.
- No new guarantee, warranty or liability claims that go beyond **DINA Elektronik GmbH's** general delivery conditions can be derived from the following description.
- To prevent EMC disturbances, the physical environmental and operating conditions where the product is installed must correspond to the EMC section of DIN EN 60204¬1.

If contact outputs are used, the safety function must be requested at least once per month for Performance Level (e) and once per year for Performance Level (d).

3.2. Working on live parts

WARNING
Electric shock – dangerous voltage! Touching live components can cause severe or even fatal injury, depending on circumstances, as a result of an electric shock.

► Never assume that a circuit is dead.
► Always check circuits as a safety precaution! Components being worked on may only be live if this is absolutely necessary and stipulated.
► Accident prevention regulations (e.g. VBG4 and VDE 105) must be observed during all work.
► Only use suitable, intact tools and measuring equipment.

4 EC-Declaration of Conformity

Original EG-Konformitätserklärung
(gemäß der Richtlinie 2006/42/EG, Anhang II, 1A)
Original EC-Declaration of Conformity
(according to Directive 2006/42 / EC, Annex II, 1A)

DINA Elektronik GmbH
Esslinger Str. 84
72649 Wolfschlugen
Deutschland

Wir erklären, dass das folgendes Produkt allen einschlägigen Bestimmungen der Richtlinie 2006/42/EG entspricht.
We declare, that the following product fulfils all the relevant provisions of Directive 2006/42/EC.

Produkt/ Product	Funktion/ Function
DNSR-2R Sicherheitsschaltgerät safety switching device ID-No. 33SR10, 33SR11, 33SR12, 33SR13, 33SR14	Zeitrelais time relay

Weitere EU-Richtlinien/ Further EC- directives	
2014/30/EU	EMV-Richtlinie/ EMC-Directive
2011/65/EU	RoHS Richtlinie/ RoHS-Directive

Benannte Stelle/ Notified Body	EG Baumusterprüfbescheinigung/ EC Type-Examination certificate
DGUV Test Prüf- und Zertifizierungsstelle, Elektrotechnik Fachbereich Energie Textil Elektro Medienerzeugnisse Gustav-Heinemann-Ufer 130 D-50968 Köln (Kenn-Nr. 0340)	Reg.-Nr./No.: ET 26034

Bevollmächtigter für die Zusammenstellung der technischen Unterlagen/
Authorized representative for the compilation of the technical documents.

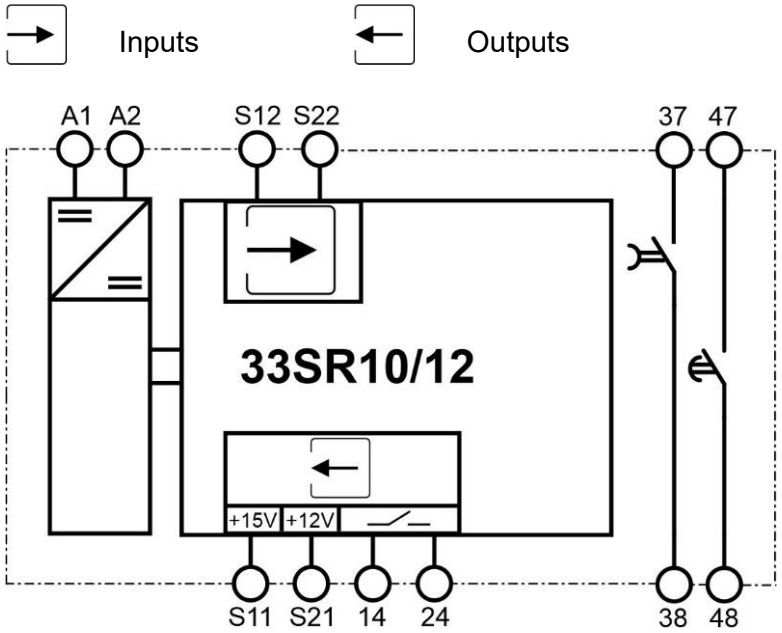
DINA Elektronik GmbH
Esslinger Str. 84
72649 Wolfschlugen
Deutschland

Markus Henzler, Entwicklung Wolfschlugen, 22.09.2026

5 Function description

The time delay relay has two separate starting circuits.

- The inputs are controlled via the internal 15 V voltage at S11 and 12 V voltage at S21.
- The start buttons must be connected between S11 and S12
- (starting circuit 1) and between S21 and S22 (starting circuit 2).
- Diagnostic contacts 14 and 24 close when the device is ready for operation and open if there is a fault.



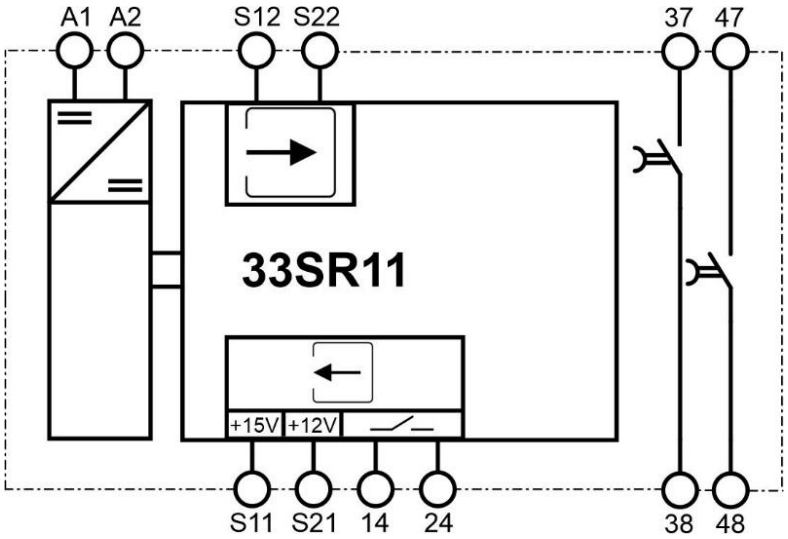
► **Close starting circuit 1 (S11-S12)**
◄ Enabling contact 37/38 closes without delay.

► **Open starting circuit 1 (S11-S12)**
◄ Enabling contact 37/38 opens with a delay.

► **Close starting circuit 2 (S21-S22)**
◄ Enabling contact 47/48 closes with a delay.

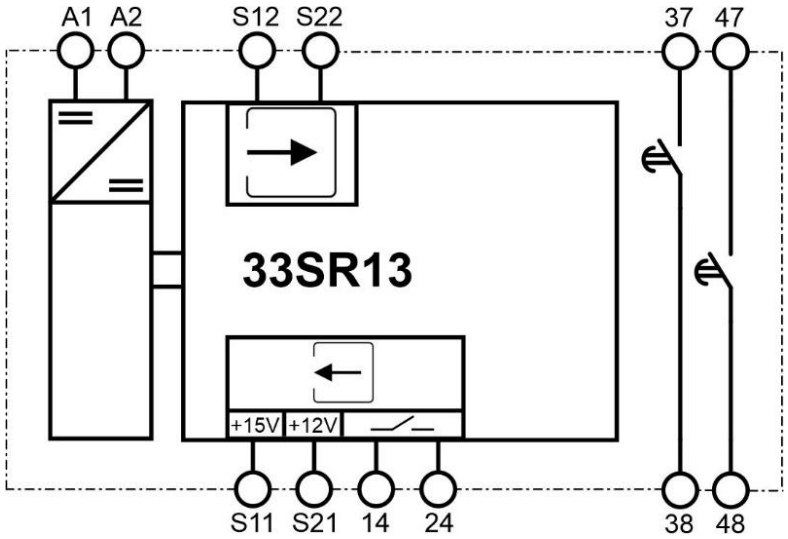
► **Open starting circuit 2 (S21-S22)**
◄ Enabling contact 47/48 opens without delay.

Delay times		
	33SR10	**33SR12**
37/38	1,5s off delay	1,5s off delay
47/48	1,5s on delay	50s on delay



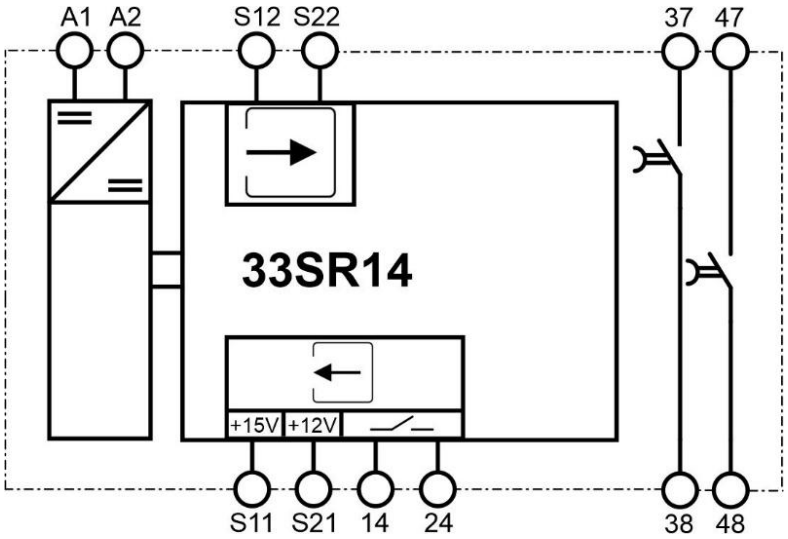
► **Close starting circuit 1 (S11-S12)** ◄ Enabling contact 37/38 closes without delay.	**Delay time**
► **Open starting circuit 1 (S11-S12)** ◄ Enabling contact 37/38 opens with a delay.	
► **Close starting circuit 2 (S21-S22)** ◄ Enabling contact 47/48 closes without delay	
► **Open starting circuit 2 (S21-S22)** ◄ Enabling contact 47/48 opens with a delay.	

	33SR11
37/38	15s off delay
47/48	15s off delay



► **Close starting circuit 1 (S11-S12)** ◄ Enabling contact 37/38 closes with a delay.	**Delay times**
► **Open starting circuit 1 (S11-S12)** ◄ Enabling contact 37/38 opens without delay	
► **Close starting circuit 2 (S21-S22)** ◄ Enabling contact 47/48 closes with a delay.	
► **Open starting circuit 2 (S21-S22)** ◄ Enabling contact 47/48 opens without delay.	

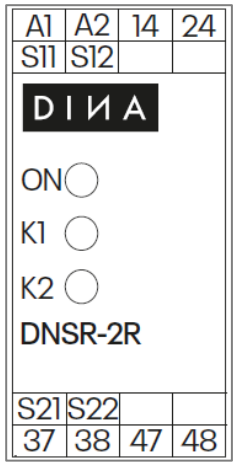
	33SR13
37/38	1,5s on delay
47/48	180s on delay



► **Close starting circuit 1 (S11-S12)** ◄ Enabling contact 37/38 closes without delay.	**Delay time**
► **Open starting circuit 1 (S11-S12)** ◄ Enabling contact 37/38 opens with a delay.	
► **Close starting circuit 2 (S21-S22)** ◄ Enabling contact 47/48 closes without delay.	
► **Open starting circuit 2 (S21-S22)** ◄ Enabling contact 47/48 opens with a delay.	

	33SR14
37/38	30s off delay
47/48	600s off delay

5.1. Connections



A1	Operating voltage +24 V DC
A2	Operating voltage 0 V
S11	Output control voltage 15V
S21	Output control voltage 12V
S12	Input starting circuit 1
S22	Input starting circuit 2
14	Diagnostic contact (1 NO contact)
24	Diagnostic contact (1 NO contact)
37/38	Enabling contact (1 NO contact)
47/48	Enabling contact (1 NO contact), off delay
LED ON	PWR on/off
LED K1	Enabling contact 13/14 status display
LED K2	Enabling contact 47/48 status display

6 Diagnostics and switching status displays

The module has an LED display indicating

- Operational readiness
- Enabling contact status

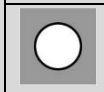
6.1. LED indicators

Legend

LED on

LED off

LED flashing
Please contact the support: support@dina.de

LED	State	Status
ON		Power off
		Power on
K1		Enabling circuit 37/38 open
		Enabling circuit 37/38 closed
		Error
K2		Enabling circuit 47/48 open
		Enabling circuit 47/48 closed
		Error

7 Technical data

7.1. Supply

Operating voltage UB	24 V DC ± 10%
Current consumption at 24V	40 mA in rest position 70 mA in work position
Power consumption at A1/A2	1,6 W

7.2. Digital inputs

Inputs	S12	S22
Input voltage range	15 V DC ± 0.5V	12 V DC ± 0.5V

7.3. Voltage outputs

Outputs	S11	S21
Voltage	15 V DC ± 0.5V	12 V DC ± 0.5V

7.4. Contact outputs

Outputs	37/38, 47/48	14/24
Contact material	AgNi	
Output guidance		
Minimum switching current	10 mA	3 mA
Switching capacity in accordance with IEC 60947-5-1	DC13: 2A/24V AC15: 3A/230V	DC13: 0,5A/24V
Mechanical service life	≥10^7 switching cycles	≥ 5 x10^7 switching cycles
Contact fuse	5 A gL/gG	
Typical response time	10 ms / 6 ms	

7.5. General data

Type of protection (housing and terminals)	IP 20	
Type of protection (place of installation)	min. IP 54	
Clearance and creepage distances between circuits	In accordance with DIN EN 50178	
Rated insulation voltage	37/38, 47/48	14,24

Rated surge voltage/insulation	250V AC	30V AC
Degree of contamination	4 kV	
Overvoltage category	2	
Housing material	III	
Rated insulation voltage	Polyamide (PA), not reinforced	

7.6. Connection data

Terminals	Screw terminals
Conductor cross section	0,25 -1,5mm^2
AWG conductor cross section	24…16
Conductor type	Flexible with end sleeves
Min/max tightening torque	0,5Nm/0,6Nm
Stripping length	8 mm

7.7. Environmental conditions

Operating temperature	-10 °C to +60 °C
Storage temperature	-40 °C to +85 °C
Attitude of place of use	< 2000m above sea level
Shock resistance	15g

7.8. Dimensions

B x H x T	22,5 x 114 x 99 mm (0.886 x 4.488 x 3.897 in)
Size of DIN rail	35,0 mm (1.378 in)
Weight	130 g

7.9. Safety-related parameters

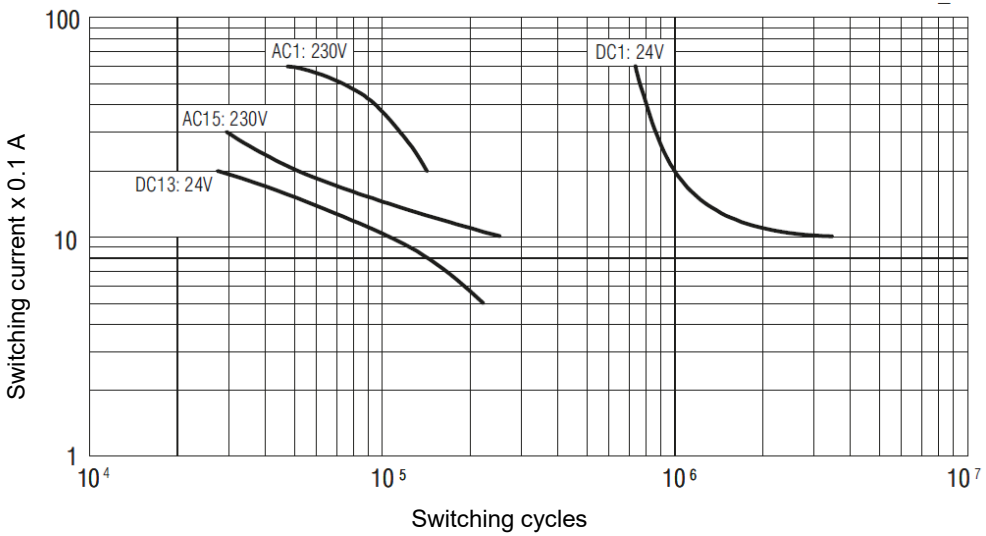
Stop category in accordance with IEC 60204	1

7.10. Safety-related parameters in accordance with DIN EN ISO 13849-1:2016-06

Category	1
Performance Level	c
MTTFd [a]	98
PFHd	4,3E-08
Service life	240 months

7.11. Contact life

Electrical service life of the output contacts in accordance with DIN EN 60947-5-1/Annex C.3



8 Installation and removal

8.1. Installation a module

8.1.1. Overview

(A) 70-75 mm (2.756-2.953 in)

(1) Top hat rail
(2) Locking slider
(3) Cable duct

Procedure

► Hook the module onto the top hat rail **(1)** and press it downward.

◄ The locking slider **(2)** engages under the top hat rail.

8.2. Removing a module

Procedure

► Use a screwdriver **(1)** to move the locking slider away from the module.

► Move the module upward and remove it from the rail.